2012 GENERAL INFORMATION

General Information - TL

CHASSIS AND PAINT CODES

VEHICLE IDENTIFICATION NUMBER

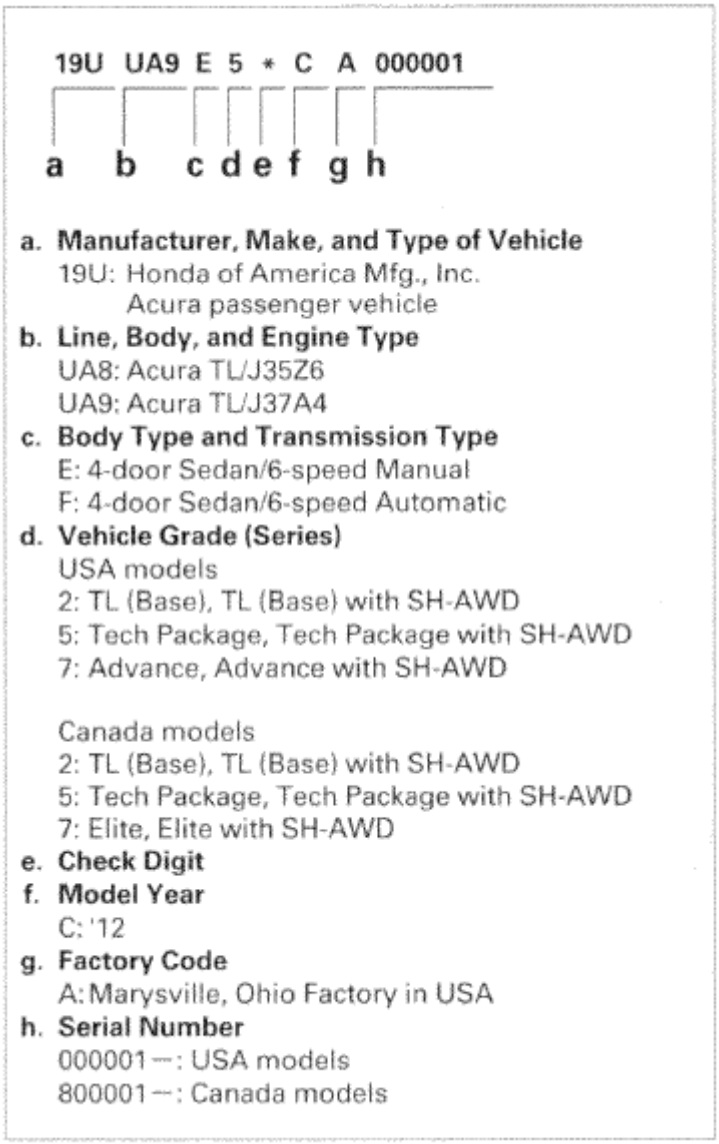


Fig. 1: Identifying Vehicle Identification Number
Courtesy of AMERICAN HONDA MOTOR CO., INC.

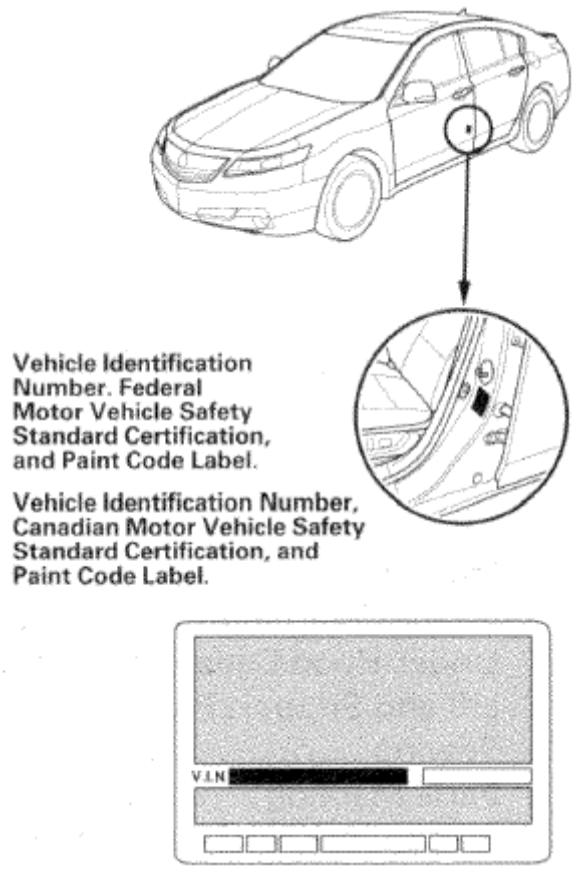


Fig. 2: Identifying Vehicle Identification Number Location
Courtesy of AMERICAN HONDA MOTOR CO., INC.

ENGINE NUMBER

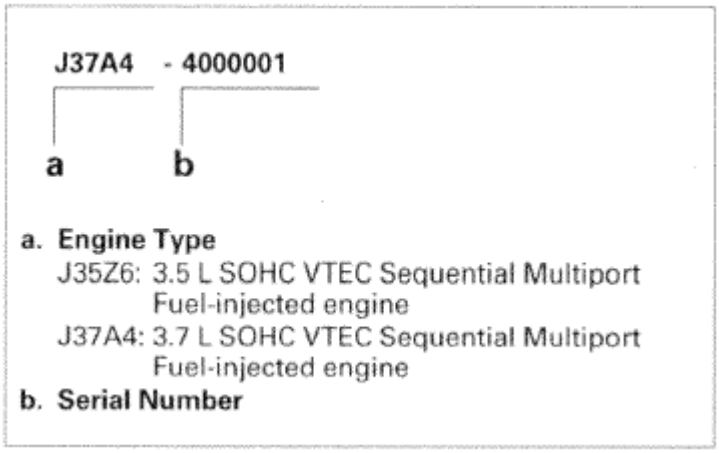


Fig. 3: Identifying Engine Number
Courtesy of AMERICAN HONDA MOTOR CO., INC.

TRANSMISSION NUMBER

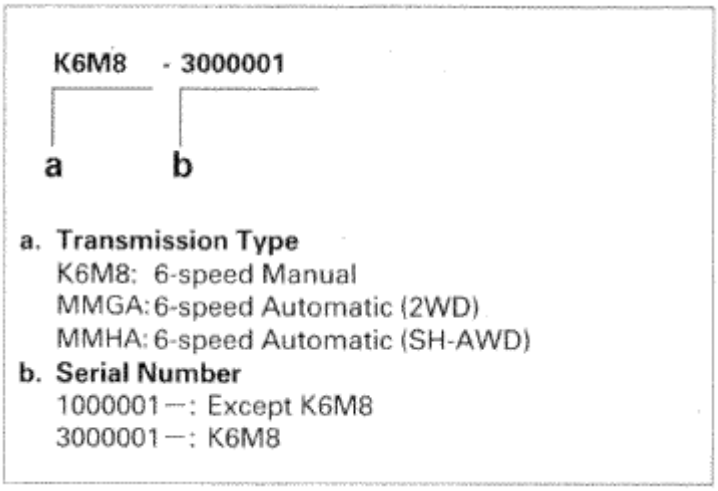


Fig. 4: Identifying Transmission Number
Courtesy of AMERICAN HONDA MOTOR CO., INC.

PAINT CODE

Code	Color	USA models	Canada models
NH-731P	Crystal Black Pearl	o	o
NH-782M	Graphite Luster Metallic	o	o
NH-788P	Bellanova White Pearl	o	o
NH-789M	Forged Silver Metallic II	o	o
R-530P	Basque Red Pearl	o	o
YR-569M	Mayan Bronze Metallic	o	o

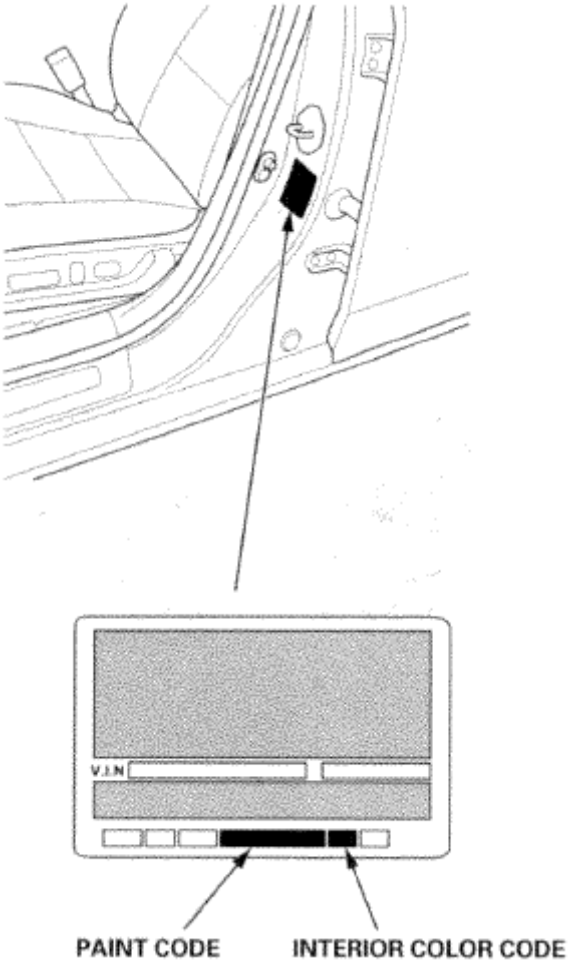


Fig. 5: Identifying Paint Code
Courtesy of AMERICAN HONDA MOTOR CO., INC.

IDENTIFICATION NUMBER LOCATIONS

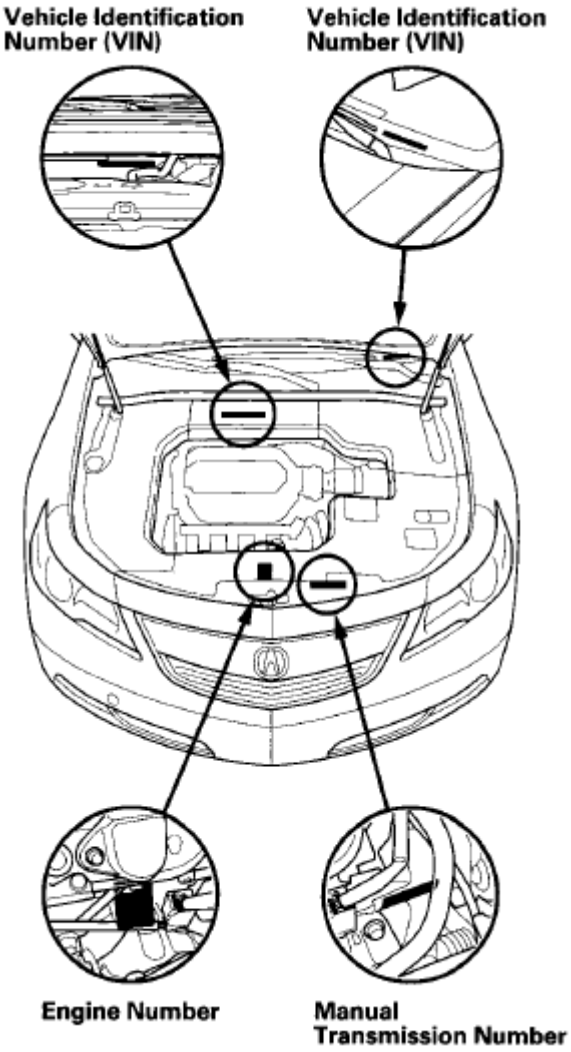


Fig. 6: Identifying Identification Number Locations
Courtesy of AMERICAN HONDA MOTOR CO., INC.

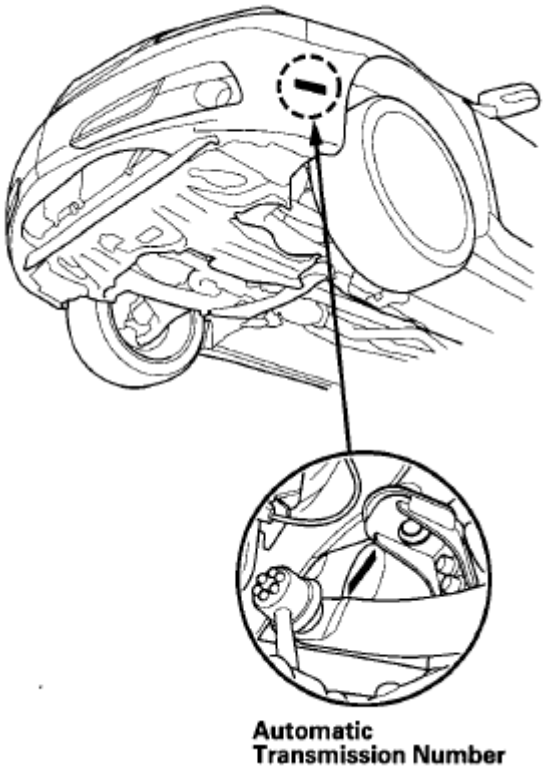


Fig. 7: Identifying Automatic Transmission Number Location
Courtesy of AMERICAN HONDA MOTOR CO., INC.

DANGER/WARNING/CAUTION LABEL LOCATIONS

FRONT PASSENGER'S COMPARTMENT

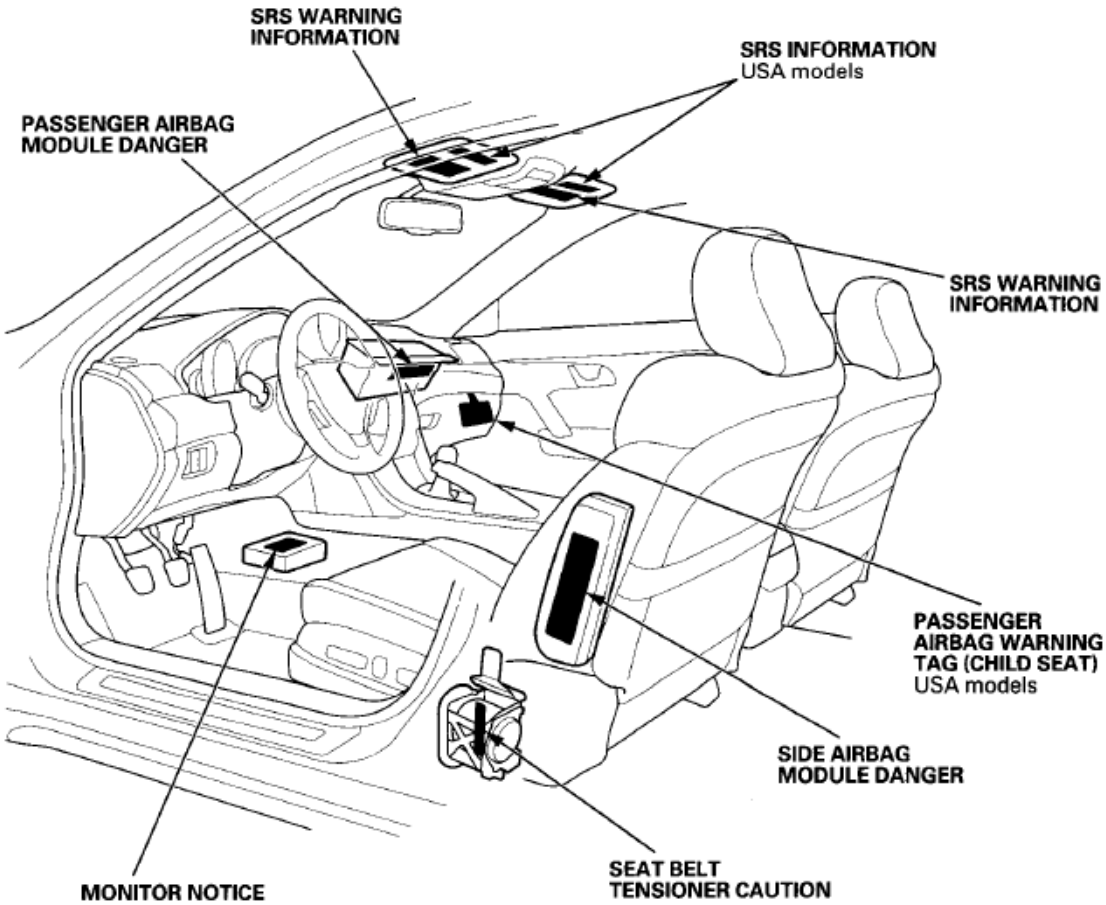


Fig. 8: Identifying Danger/Warning/Caution Label Locations (Front Passenger's Compartment)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

STEERING WHEEL

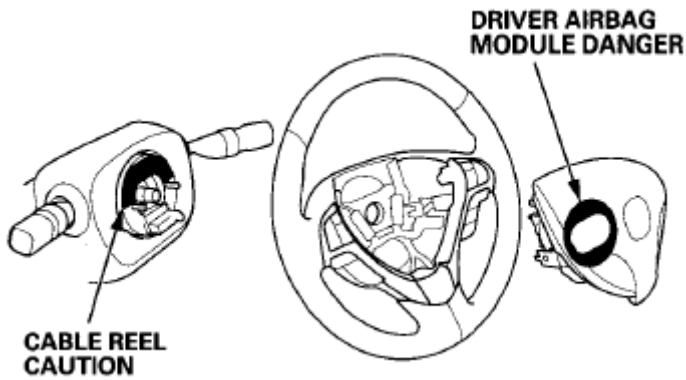


Fig. 9: Identifying Danger/Warning/Caution Label Locations (Steering Wheel)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

REAR PASSENGER'S COMPARTMENT

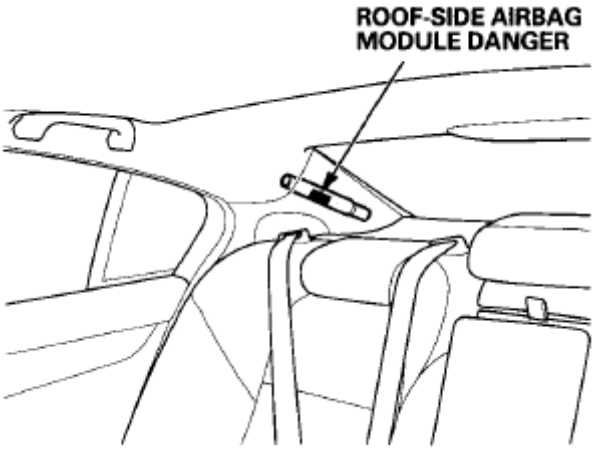


Fig. 10: Identifying Danger/Warning/Caution Label Locations (Rear Passenger's Compartment)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

ENGINE COMPARTMENT

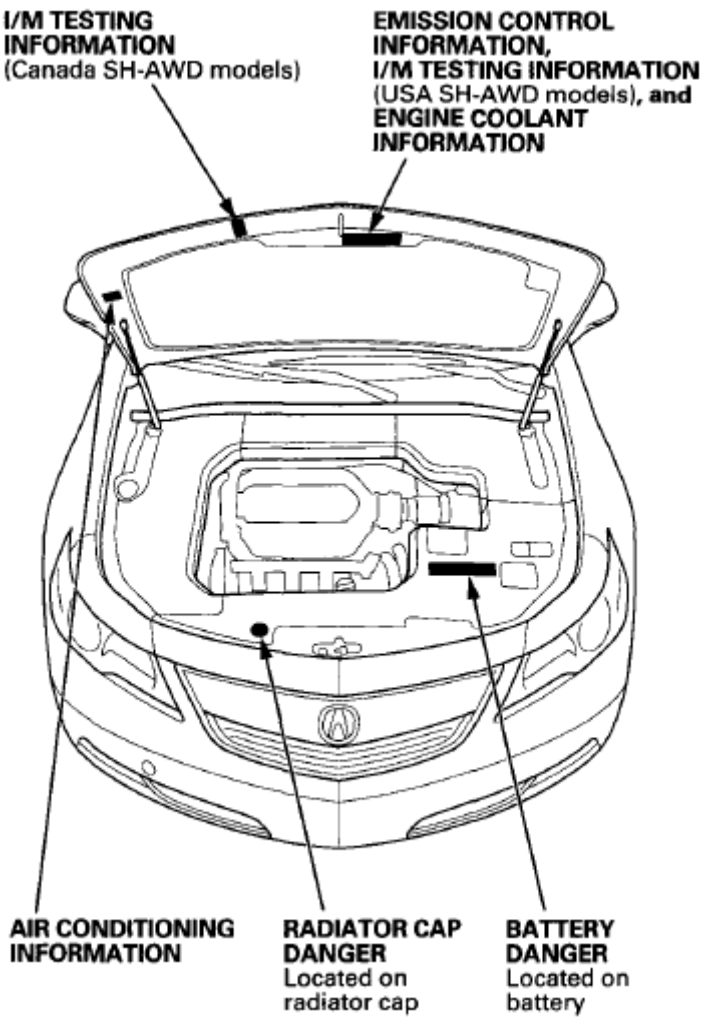


Fig. 11: Identifying Danger/Warning/Caution Label Locations (Engine Compartment)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

DOORJAMB AREA

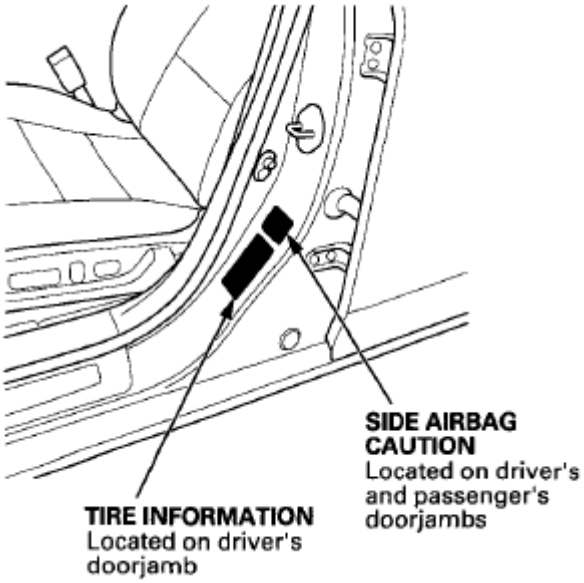


Fig. 12: Identifying Danger/Warning/Caution Label Locations (Doorjamb Area)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

UNDER-HOOD EMISSION CONTROL LABEL

EMISSION GROUP IDENTIFICATION

Example:

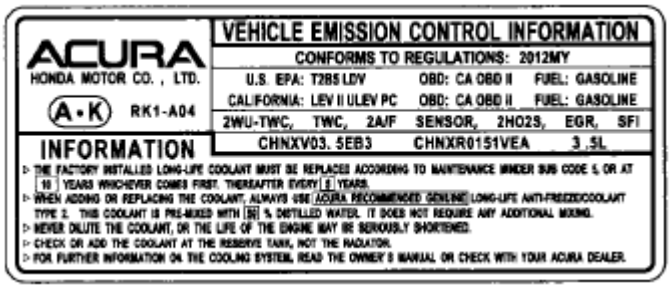


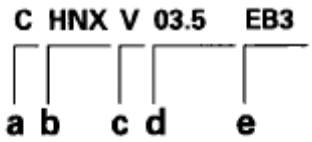
Fig. 13: Identifying Under-Hood Emission Control Label
Courtesy of AMERICAN HONDA MOTOR CO., INC.

'12 Model

CONFORMS TO REGULATIONS: 2012 MY

TEST GROUP AND EVAPORATIVE FAMILY

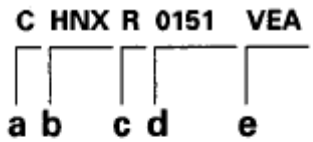
Test Group:



a. **Model Year**
C: '12
b. **Manufacturer Subcode**
HNX: Honda
c. **Family Type**
V: LDV
d. **Displacement Group**
03.5: J35Z6
03.7: J37A4
e. **Sequence Characters**
EB3: '12 model (J35Z6)
JB3: '12 model (J37A4)

Fig. 14: Identifying Test Group Label
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Evaporative Family:



a. **Model Year**
C: '12
b. **Manufacturer Subcode**
HNX: Honda
c. **Family Type**
R: Refueling
d. **Canister Working Capacity Group**
e. **Sequence Characters**
VEA: '12 model

Fig. 15: Identifying Evaporative Family Label
Courtesy of AMERICAN HONDA MOTOR CO., INC.

LIFT AND SUPPORT POINTS

NOTE: **If you are going to remove heavy components such as suspension or the fuel tank from the rear of the vehicle, first support the front of the vehicle with tall**

safety stands. When substantial weight is removed from the rear of the vehicle, the center of gravity can change, causing the vehicle to tip forward on the lift.

VEHICLE LIFT

1. Position the lift pads (A) under the vehicle's front support points (B) and rear support points (C).

NOTE: Be sure the lift pads are properly placed to avoid damaging the vehicle.

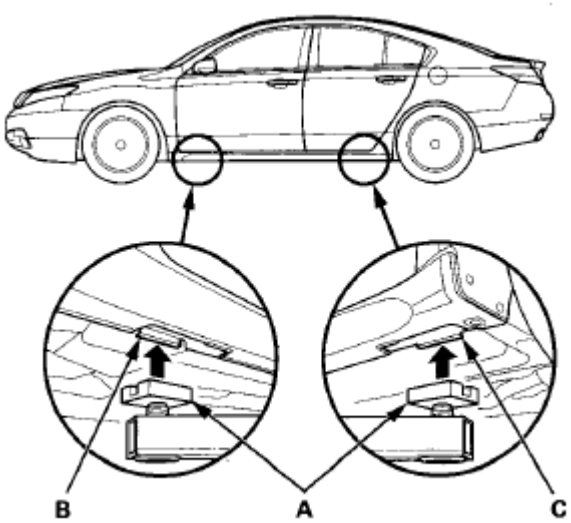


Fig. 16: Identifying Lift Pads, Vehicle's Front Support Points And Rear Support Points
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Raise the lift a few inches, and rock the vehicle gently to be sure it is firmly supported.
3. Raise the lift to its full height, and inspect the vehicle support points for solid contact with the lift pads.

SAFETY STANDS

To support the vehicle on safety stands, use the same support points as for a vehicle lift. Always use safety stands when working on or under any vehicle that is supported only by a jack.

FLOOR JACK

1. When lifting the front of the vehicle, set the parking brake. When lifting the rear of the vehicle, put the shift lever in reverse for manual transmission, or in P for automatic transmission.
2. Block the wheels that are not being lifted.
3. Position the floor jack under the front jacking bracket (A) or the rear jacking bracket (B). Center the jacking bracket on the jack lift platform (C), and jack up the vehicle high enough to fit the safety stands under it.

NOTE: Be sure the floor jack is properly placed to avoid damaging the vehicle.

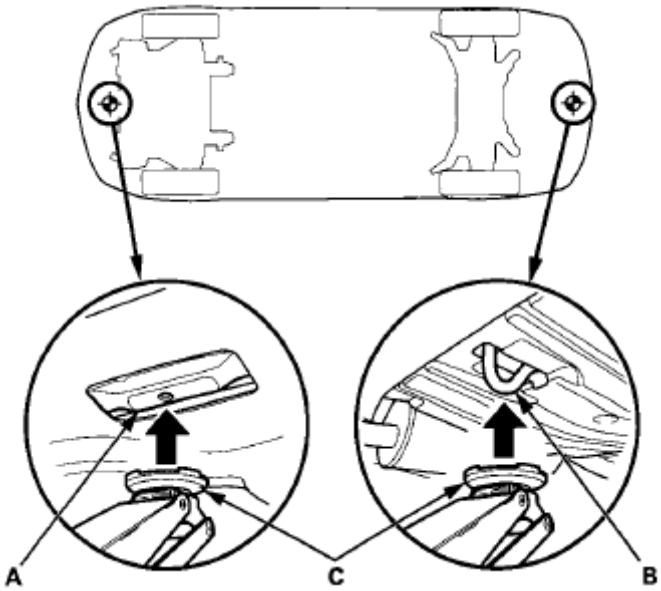


Fig. 17: Identifying Front Jacking Bracket, Rear Jacking Bracket And Center Jacking Bracket On Jack Lift Platform
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Position the safety stands under the support points, and adjust them so the vehicle is level side-to-side.
5. Lower the vehicle onto the stands.

TOWING

If the vehicle needs to be towed, call a professional towing service. Never tow the vehicle behind another vehicle with just a rope or chain. It is very dangerous.

EMERGENCY TOWING

There are three popular methods of towing a vehicle.

FLAT-BED TOW TRUCK EQUIPMENT

The operator loads the vehicle on the back of a flat-bed tow truck. **This is the only way of transporting the vehicle.**

To accommodate the flat-bed tow truck equipment, the vehicle is equipped with a detachable front towing hook (A), front tie down hook slots (B), a rear towing hook (C), and rear tie down hook slots (D).

The towing hooks can be used with a winch to pull the vehicle onto the flat-bed tow truck, and the tie down hook slots can be used to secure the vehicle to the flat-bed tow truck.

NOTE: The front and rear tie down hook slots have rubber plugs (E) over the openings. Be sure to reinstall the plugs after use.

FRONT

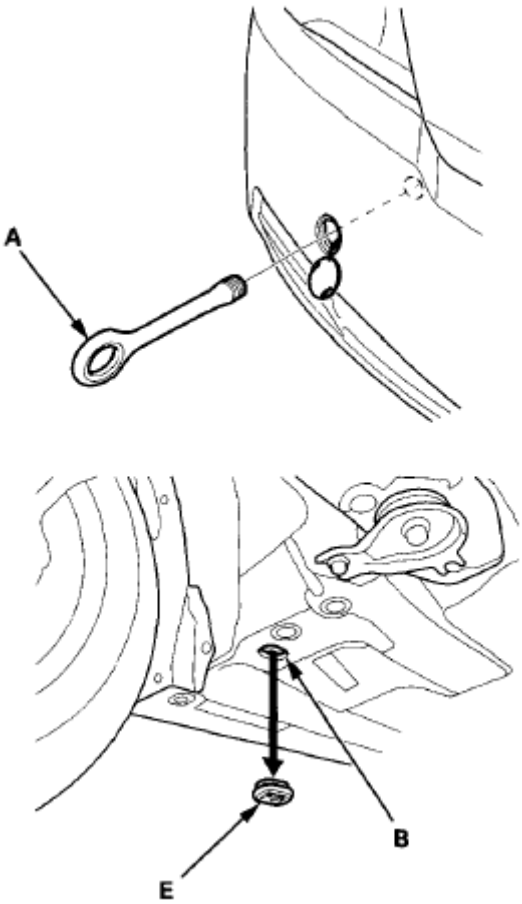


Fig. 18: Identifying Front Towing Related Components
Courtesy of AMERICAN HONDA MOTOR CO., INC.

REAR

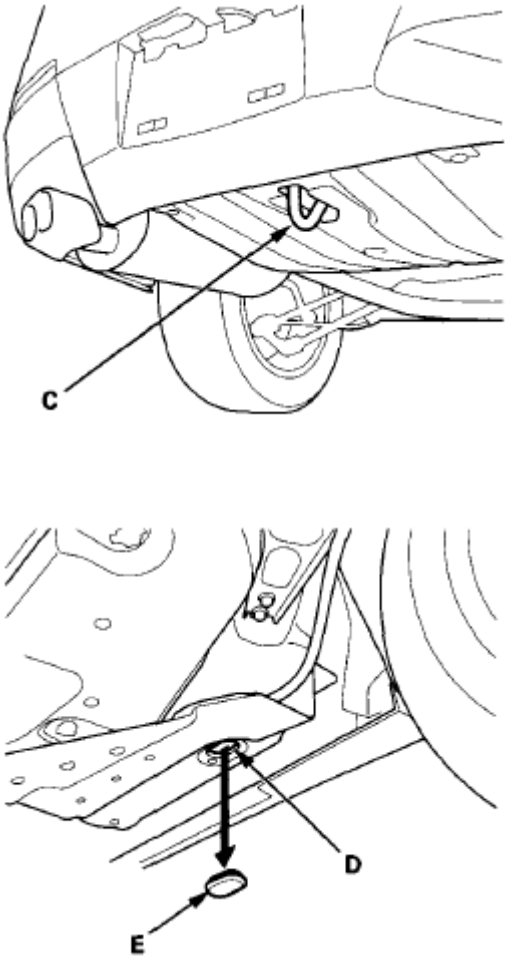


Fig. 19: Identifying Rear Towing Related Components
Courtesy of AMERICAN HONDA MOTOR CO., INC.

FRONT TOWING HOOK INSTALLATION

The detachable front towing hook is for towing very short distances, such as freeing the vehicle. The hook attaches to the anchor in the front bumper.

NOTE:

- **To avoid damage to the vehicle, use the towing hook for straight flat ground towing only. Do not tow on an angle.**
- **Do not use the detachable tow hook as a tie down for securing the vehicle on a flat-bed tow truck. To secure the vehicle on a flat-bed tow truck, use the tie down hook slots provided.**

1. Remove the cover (A) from the front bumper.

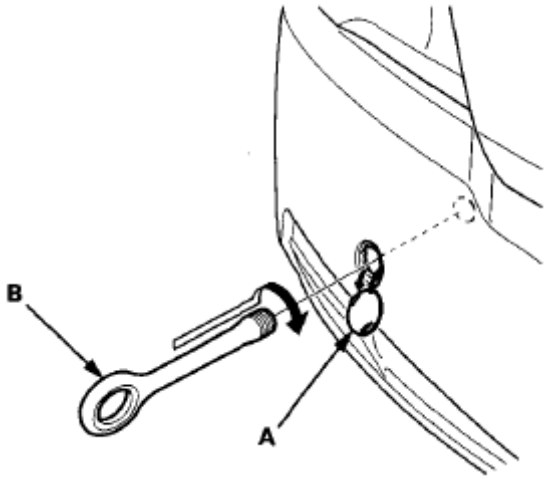


Fig. 20: Screw In Detachable Towing Hook
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Remove the detachable towing hook from the tool kit in the trunk.
3. Screw in the detachable towing hook (B), and tighten it securely by hand.

WHEEL LIFT EQUIPMENT

SH-AWD models

The tow truck uses two pivoting arms that go under the tires (front or rear) and lifts them off the ground. The other two wheels remain on the ground. **Never tow the vehicle with wheel lift equipment.**

Except SH-AWD models

The tow truck uses two pivoting arms that go under the front tires and lifts them off the ground. The rear wheels remain on the ground. **This is an acceptable way of towing the vehicle.**

Sling-type Equipment

The tow truck uses metal cables with hooks on the ends. These hooks go around parts of the frame or suspension, and the cables lift that end of the vehicle off the ground. The Vehicle's suspension and body can be seriously damaged if this method of towing is attempted. **This method of towing the vehicle is unacceptable.**

The only recommended way of towing the SH-AWD models is on a flat-bed tow truck.

NOTE:

- **Towing the SH-AWD models with only two wheels on the ground will damage parts of the SH-AWD system. If the vehicle is damaged, it must be transported on a flat-bed tow truck or trailer.**
- **Improper towing preparation will damage the transmission. Follow the above procedure exactly.**
- **Trying to lift or tow the vehicle by the bumpers will cause serious damage.**

The bumpers are not designed to support the Vehicle's weight.

For the vehicle equipped with the engine start/stop button:

- If the battery is discharged, the ACC mode cannot be selected by pushing the engine start/stop button. Charge or replace the battery to unlock the steering wheel before towing.
- If the ACC mode cannot be selected because of in an electrical problem other than a discharged battery, the vehicle must be transported on a flat-bed tow truck.

PARTS MARKING

To deter vehicle theft, certain major components are marked with the vehicle identification number (VIN). Original parts have self-adhesive labels. Replacement body parts have generic self-adhesive labels. These labels should not be removed. The original engine or transmission VIN plates are not transferable to the replacement engine or transmission.

NOTE: Be careful not to damage the parts marking labels during body repair. Mask the labels before repairing the part.

PRECAUTIONS FOR SUPER HANDLING ALL-WHEEL DRIVE™ (SH-AWD®) SYSTEM

This vehicle is equipped with the Super Handling All Wheel Drive™ (SH-AWD®) system. The SH-AWD system distributes driving torque between the front and rear wheels when accelerating and when wheel spin occurs.

The SH-AWD system does not have a manual switch to disable the AWD system. Whenever service work requires spinning the front or rear wheels with the engine, always lift and support the vehicle so all four wheels are off the ground.

2010-12 COMMON SPECS & PROCEDURES

TL

SPECIFICATIONS INDEX

TL SPECIFICATIONS INDEX

System	Specification/Procedure
Air Conditioning	
Service	**AIR CONDITIONING**
Torque	See applicable component in **HEATING, VENTILATION, AND AIR CONDITIONING** .
Axle Nut/Hub Nut	
Front	245 N.m (181 ft. lbs.)
Rear	181 N.m (134 ft. lbs.)
Battery	**BATTERY**
Brakes	
Bleeding Sequence	**BRAKE SYSTEM BLEEDING**
Disc Brakes	**BRAKES**
Torque	See applicable component in **BRAKES** .
Charging	
Generator	**ENGINE ELECTRICAL (J35Z6)** **ENGINE ELECTRICAL (J37A4)**
Torque	See applicable figure in **ENGINE ELECTRICAL** .
Drive Belts	
Adjustment	**DRIVE BELT INSPECTION**
Belt Routing	**COMPONENT LOCATION INDEX & DRIVE BELT ROUTING** & **DRIVE BELT REPLACEMENT**
Engine Cooling	
General Service Specifications	**COOLING SYSTEM (J35Z6, J37A4)**
Radiator Cap Pressure	93-123 kPa (0.95-1.25 kgf/cm^2 , 14-18 psi)
Thermostat R & I	**THERMOSTAT REPLACEMENT**
Water Pump R & I	**WATER PUMP REPLACEMENT**
Engine Mechanical	
Compression	**ENGINE ASSEMBLY (J35Z6, J37A4)**
Oil Pressure (176°F (80°C)	70 kPa (.7 kgf/cm^2 , 10 psi) @ idle; 490 kPa (5.0 kgf/cm^2 , 71 psi) @ 3000 RPM
Overhaul	See applicable specifications table in **STANDARDS AND SERVICE LIMITS** .
Torque	See applicable component in one of the following articles: **CYLINDER HEAD (J35Z6)** **CYLINDER HEAD (J37A4)** **ENGINE MECHANICAL**

	ENGINE MECHANICAL ENGINE MECHANICAL
Fluid Specifications	See FLUIDS under MAINTENANCE tab.
Flywheel/Flex Plate (Drive Plate) Torque	74 N.m (54 ft. lbs.)
Fuel System	
Pressure Specification	380-430 kPa (3.9-4.4 kgf/cm^2 , 55-63 psi)
Fuel Pressure Test Procedure	**FUEL PRESSURE TEST**
Fuel Filter Location	**FUEL FILTER REPLACEMENT**
Ignition	
Firing Order & Cylinder Identification	**FIRING ORDER & CYLINDER IDENTIFICATION**
Spark Plug	
Type	NGK: ILZKR7B11 DENSO: SXU22HCR11S
Gap	1.0-1.1 mm (.039-.043 in.)
Torque	18 N.m (13 ft. lbs.)
Starting	
Starter	**ENGINE ELECTRICAL (J35Z6) ENGINE ELECTRICAL (J37A4)**
Torque	**STARTER REMOVAL AND INSTALLATION**
Wheel Alignment	
Adjustment Specifications	**SUSPENSION**
Torque	
Front	See applicable component in **SUSPENSION** .
Rear	See applicable component in **SUSPENSION** .
Wheel & Tire	
Wheel Lug Nut Torque	127 N.m (94 ft. lbs.)

2009-12 DTC INDEX

TL

ACURALINK DTCS

NOTE: Retrieval of some diagnostic codes may require the use of special OEM tester or flash method using instrument cluster indicator. For procedures/testing of codes not shown below, refer to appropriate system article.

ACURALINK DIAGNOSTIC TROUBLE CODE (DTC) IDENTIFICATION

DTC	Description
DTC B2240	XM Antenna line failure
DTC U0100	F-CAN Lost communication with ECM/PCM
DTC U0155	F-CAN Lost communication with Gauge Control Module
DTC U128D	Lost Communication with Gauge Control Module

AUTOMATIC TRANSMISSION DTCS

AUTOMATIC TRANSMISSION DIAGNOSTIC TROUBLE CODE (DTC) IDENTIFICATION

DTC	Description
DTC P0705	Short in Transmission Range Switch Circuit (Multiple Shift-Position Input)
DTC P0706	Open in Transmission Range Switch Circuit
DTC P0711	Problem in ATF Temperature Sensor Circuit
DTC P0712	Short in ATF Temperature Sensor Circuit
DTC P0713	Open in ATF Temperature Sensor Circuit
DTC P0714	ATF Temperature Sensor Intermittent Failure
DTC P0716	Problem in Input Shaft (Mainshaft) Speed Sensor Circuit
DTC P0721	Problem in Output Shaft (Countershaft) Speed Sensor Circuit
DTC P0717	Problem in Input Shaft (Mainshaft) Speed Sensor Circuit (No Signal Input)
DTC P0718	Input Shaft (Mainshaft) Speed Sensor Intermittent Failure
DTC P0722	Problem in Output Shaft (Countershaft) Speed Sensor Circuit (No Signal Input)
DTC P0723	Output Shaft (Countershaft) Speed Sensor Intermittent Failure
DTC P0729	Problem in 6th Clutch and 6th Clutch Hydraulic Circuit

DTC P0731	Problem in 1st Clutch and 1st Clutch Hydraulic Circuit
DTC P0732	Problem in 2nd Clutch and 2nd Clutch Hydraulic Circuit
DTC P0733	Problem in 3rd Clutch and 3rd Clutch Hydraulic Circuit
DTC P0734	Problem in 4th Clutch and 4th Clutch Hydraulic Circuit
DTC P0735	Problem in 5th Clutch and 5th Clutch Hydraulic Circuit
DTC P0741	Torque Converter Clutch Hydraulic Circuit Stuck OFF
DTC P0746	A/T Clutch Pressure Control Solenoid Valve A Stuck OFF
DTC P0747	A/T Clutch Pressure Control Solenoid Valve A Stuck ON
DTC P0751	Shift Solenoid Valve A Stuck OFF
DTC P0752	Shift Solenoid Valve A Stuck ON
DTC P0756	Shift Solenoid Valve B Stuck OFF
DTC P0757	Shift Solenoid Valve B Stuck ON
DTC P0761	Shift Solenoid Valve C Stuck OFF
DTC P0762	Shift Solenoid Valve C Stuck ON
DTC P0776	A/T Clutch Pressure Control Solenoid Valve B Stuck OFF
DTC P0777	A/T Clutch Pressure Control Solenoid Valve B Stuck ON
DTC P0796	A/T Clutch Pressure Control Solenoid Valve C Stuck OFF
DTC P0797	A/T Clutch Pressure Control Solenoid Valve C Stuck ON
DTC P0812	Open in Transmission Range Switch ATPR Switch Circuit
DTC P0842	Short in Transmission Fluid Pressure Switch A (2nd Clutch) Circuit, or Transmission Fluid Pressure Switch A (2nd Clutch) Stuck ON
DTC P0843	Open in Transmission Fluid Pressure Switch A (2nd Clutch) Circuit, or Transmission Fluid Pressure Switch A (2nd Clutch) Stuck OFF
DTC P0847	Short in Transmission Fluid Pressure Switch B (3rd Clutch) Circuit, or Transmission Fluid Pressure Switch B (3rd Clutch) Stuck ON
DTC P0848	Open in Transmission Fluid Pressure Switch B (3rd Clutch) Circuit, or Transmission Fluid Pressure Switch B (3rd Clutch) Stuck OFF

DTC P084C	Short in Line Pressure Switch Circuit, or Line Pressure Switch Stuck ON
DTC P0872	Short in Transmission Fluid Pressure Switch C (4th Clutch) Circuit, or Transmission Fluid Pressure Switch C (4th Clutch) Stuck ON
DTC P0873	Open in Transmission Fluid Pressure Switch C (4th Clutch) Circuit, or Transmission Fluid Pressure Switch C (4th Clutch) Stuck OFF
DTC P0877	Short in Transmission Fluid Pressure Switch D (5th Clutch) Circuit, or Transmission Fluid Pressure Switch D (5th Clutch) Stuck ON
DTC P0878	Open in Transmission Fluid Pressure Switch D (5th Clutch) Circuit, or Transmission Fluid Pressure Switch D (5th Clutch) Stuck OFF
DTC P0962	Problem in A/T Clutch Pressure Control Solenoid Valve A Circuit
DTC P0963	Problem in A/T Clutch Pressure Control Solenoid Valve A
DTC P0966	Problem in A/T Clutch Pressure Control Solenoid Valve B Circuit
DTC P0967	Problem in A/T Clutch Pressure Control Solenoid Valve B
DTC P0970	Problem in A/T Clutch Pressure Control Solenoid Valve C Circuit
DTC P0971	Problem in A/T Clutch Pressure Control Solenoid Valve C
DTC P0973	Short in Shift Solenoid Valve A Circuit
DTC P0974	Open in Shift Solenoid Valve A Circuit
DTC P0976	Short in Shift Solenoid Valve B Circuit
DTC P0977	Open in Shift Solenoid Valve B Circuit
DTC P0979	Short in Shift Solenoid Valve C Circuit
DTC P0980	Open in Shift Solenoid Valve C Circuit
DTC P0989	Short in Transmission Fluid Pressure Switch E (6th Clutch) Circuit, or Transmission Fluid Pressure Switch E (6th Clutch) Stuck ON
DTC P0990	Open in Transmission Fluid Pressure Switch E (6th Clutch) Circuit, or Transmission Fluid Pressure Switch E (6th Clutch) Stuck OFF
DTC P1717	Open in Transmission Range Switch ATPRVS Switch Circuit
DTC P177A	Line Pressure Solenoid Valve A Stuck OFF, or Line Pressure Switch Stuck OFF
DTC P2714	A/T Clutch Pressure Control Solenoid Valve D Stuck OFF

DTC P2720	Problem in A/T Clutch Pressure Control Solenoid Valve D Circuit
DTC P2721	Problem in A/T Clutch Pressure Control Solenoid Valve D
DTC P2821	Line Pressure Solenoid Valve A Stuck ON
DTC P2826	Short in Line Pressure Solenoid Valve A Circuit
DTC P2827	Open in Line Pressure Solenoid Valve A Circuit

CATALYTIC CONVERTER DTCS

CATALYTIC CONVERTER DIAGNOSTIC TROUBLE CODE (DTC) IDENTIFICATION

DTC	Description
DTC P0420	Rear Bank Catalyst System Efficiency Below Threshold (Bank 1)
DTC P0430	Front Bank Catalyst System Efficiency Below Threshold (Bank 2)

CLIMATE CONTROL DTCS

CLIMATE CONTROL DIAGNOSTIC TROUBLE CODE (DTC) IDENTIFICATION

DTC	Description
DTC U0155	Lost Communication with Gauge Control Module (Climate Control Unit)
DTC B1215	An Open or Short in the Recirculation Control Motor Circuit
DTC B1225	An Open in the In-Car Temperature Sensor Circuit
DTC B1226	A Short in the In-Car Temperature Sensor Circuit
DTC B1227	An Open in the Outside Air Temperature Sensor Circuit
DTC B1228	A Short in the Outside Air Temperature Sensor Circuit
DTC B1229	An Open in the Sunlight Sensor Circuit
DTC B1230	A Short in the Sunlight Sensor Circuit
DTC B1231	An Open in the Evaporator Temperature Sensor Circuit
DTC B1232	A Short in the Evaporator Temperature Sensor Circuit
DTC B1233	An Open in the Air Mix Control Motor Circuit (Driver's)
DTC B1234	A Short in the Air Mix Control Motor Circuit (Driver's)
DTC B1235	A Problem in the Air Mix Control Motor Circuit, Linkage, Door, or Motor (Driver's)

DTC B1236	An Open in the Passenger's Air Mix Control Motor Circuit
DTC B1237	A Short in the Passenger's Air Mix Control Motor Circuit
DTC B1238	A Problem in the Passenger's Air Mix Control Motor Circuit, Linkage, Door, or Motor
DTC B1239	An Open or Short in the Mode Control Motor Circuit (Driver's)
DTC B1240	A Problem in the Mode Control Motor Circuit, Linkage, Doors, or Motor (Driver's)
DTC B1241	A Problem in the Blower Motor Circuit
DTC B1242	An Open or Short in the Passenger's Mode Control Motor Circuit
DTC B1243	A Problem in the Passenger's Mode Control Motor Circuit, Linkage, Doors, or Motor
DTC B2967	An Open in the Humidity Sensor Circuit
DTC B2968	A Short in the Humidity Sensor Circuit
DTC B2969	Climate Control Unit Lost Communication with Driver's MICU (WIPSW message)
DTC B2979	An Open in the A/C Pressure Sensor Circuit
DTC B2980	A short in the A/C Pressure Sensor Circuit
DTC B2983	A Problem in the Recirculation Control Motor Circuit, Linkage, Door, or Motor

DRIVER POSITION MEMORY

DRIVER POSITION MEMORY DIAGNOSTIC TROUBLE CODE (DTC) IDENTIFICATION

DTC	Description
DTC B1802	Power Seat Control Unit Failure
DTC B1825	Power Seat Slide Motor Pulse Error
DTC B1826	Power Seat Front Up-Down Motor Pulse Error
DTC B1827	Power Seat Rear Up-Down Motor Pulse Error
DTC B1828	Power Seat Recline Motor Pulse Error
DTC B1829	A/T-P Signal and VSP Signal Mismatch
DTC B1830	Left Mirror Position Sensor Open
DTC B1832	Right Mirror Position Sensor Open
DTC B1836	Power Seat Position Sensor Circuit Short
DTC B1837	Memory Position Calling Timeout
DTC B1843	UART Communication Error
DTC B1844	Power Seat Slide Switch Circuit Malfunction
DTC B1845	Power Seat Recline Switch Circuit Malfunction
DTC B1846	Power Seat Front Up-Down Switch Circuit Malfunction

DTC B1847	Power Seat Rear Up-Down Switch Circuit Malfunction
DTC U0155	Power Seat Control Unit Lost Communication With Gauge Control Module
DTC U0199	Power Seat Control Unit Lost Communication With Door Multiplex Control Unit
DTC U1282	Power Seat Control Unit Lost Communication With Driver's MICU

EGR DTCS

EGR DIAGNOSTIC TROUBLE CODE (DTC) IDENTIFICATION

DTC	Description
DTC P0400	EGR System Leak Detected
DTC P0401	EGR Insufficient Flow
DTC P0404	EGR Circuit Range/Performance Problem
DTC P0406	EGR Valve Position Sensor Circuit High Voltage
DTC P2413	EGR System Malfunction

ELECTRONIC THROTTLE CONTROL SYSTEM DTCS

ELECTRONIC THROTTLE CONTROL DIAGNOSTIC TROUBLE CODE (DTC) IDENTIFICATION

DTC	Description
DTC P0122	TP Sensor A Circuit Low Voltage
DTC P0123	TP Sensor A Circuit High Voltage
DTC P0222	TP Sensor B Circuit Low Voltage
DTC P0223	TP Sensor B Circuit High Voltage
DTC P1658	ETCS Control Relay ON Malfunction
DTC P1659	ETCS Control Relay OFF Malfunction
DTC P1683	Throttle Valve Default Position Spring Performance Problem
DTC P1684	Throttle Valve Return Spring Performance Problem
DTC P2101	ETCS Malfunction
DTC P2118	Throttle Actuator Current Range/Performance Problem
DTC P2122	APP Sensor A (TP Sensor D) Circuit Low Voltage
DTC P2123	APP Sensor A (TP Sensor D) Circuit High Voltage
DTC P2127	APP Sensor B (TP Sensor E) Circuit Low Voltage
DTC P2128	APP Sensor B (TP Sensor E) Circuit High Voltage
DTC P2135	TP Sensor A/B Incorrect Voltage Correlation
DTC P2138	APP Sensor A/B (TP Sensor D/E) Incorrect Voltage Correlation

DTC P2176	Throttle Actuator Control System Idle Position Not Learned

EVAP DTCS

EVAP DIAGNOSTIC TROUBLE CODE (DTC) IDENTIFICATION

DTC	Description
DTC P0443	EVAP Canister Purge Valve Circuit Malfunction
DTC P0451	FTP Sensor Circuit Range/Performance Problem
DTC P0452	FTP Sensor Circuit Low Voltage
DTC P0453	FTP Sensor Circuit High Voltage
DTC P0455	EVAP System Large Leak Detected
DTC P0456	EVAP System Very Small Leak Detected
DTC P0457	EVAP System Leak Detected/Fuel Fill Cap Loose or Missing
DTC P0496	EVAP System High Purge Flow Detected
DTC P0497	EVAP System Low Purge Flow Detected (Without SH-AWD)
DTC P0497	EVAP System Low Purge Flow Detected (With SH-AWD)
DTC P0498	EVAP Canister Vent Shut Valve Circuit Low Voltage
DTC P0499	EVAP Canister Vent Shut Valve Circuit High Voltage
DTC P1454	FTP Sensor Circuit Range/Performance Problem
DTC P2422	EVAP Canister Vent Shut Valve Stuck Closed Malfunction
DTC P1458	FTP Sensor Circuit Range/Performance Problem
DTC P145C	EVAP System Purge Flow Malfunction

EXTERIOR LIGHTING DTCS

EXTERIOR LIGHTING DIAGNOSTIC TROUBLE CODE (DTC) IDENTIFICATION

DTC	Description
DTC B10CF	Left Daytime Running Lights Circuit Malfunction
DTC B11CF	Right Daytime Running Lights Circuit Malfunction
DTC B1275	Headlight Switch OFF Position Circuit Malfunction
DTC B1276	Headlight Switch PARKING Position Circuit Malfunction
DTC B1277	Headlight AUTO Position Circuit Malfunction
DTC B1278	Headlight ON Position Circuit Malfunction
DTC B1279	Dimmer Switch Circuit Malfunction
DTC B1575	Auto Lighting Sensor Malfunction

FUEL SUPPLY SYSTEM DTCS

FUEL SUPPLY DIAGNOSTIC TROUBLE CODE (DTC) IDENTIFICATION

DTC	Description
DTC P0461	Fuel Level Sensor (Fuel Gauge Sending Unit) Circuit Range/Performance Problem
DTC P0462	Fuel Level Sensor (Fuel Gauge Sending Unit) Circuit Low Voltage (Without SH-AWD)
DTC P0462	Fuel Level Sensor (Fuel Gauge Sending Unit) Circuit Low Voltage (With SH-AWD)
DTC P0463	Fuel Level Sensor (Fuel Gauge Sending Unit) Circuit High Voltage (Without SH-AWD)
DTC P0463	Fuel Level Sensor (Fuel Gauge Sending Unit) Circuit High Voltage (With SH-AWD)

GAUGES DTCS

GAUGES DIAGNOSTIC TROUBLE CODE (DTC) IDENTIFICATION

DTC	Description
DTC B1152	Gauge Control Module Internal (EEPROM) Error
DTC B1175	Fuel Level Sensor (Fuel Gauge Sending Unit) Circuit Malfunction
DTC B1176	Fuel Level Sensor (Fuel Gauge Sending Unit) Circuit Short
DTC B1192	Gauge Control Module Lost Communication With the Battery Sensor (UART LINE)
DTC U0029	F-CAN Communication Line Error (BUS OFF)
DTC U0100	Gauge Control Module Lost Communication With ECM/PCM
DTC U0122	Gauge Control Module Lost Communication With VSA Modulator-Control Unit (VSA Message)
DTC U0127	Gauge Control Module Lost Communication With the TPMS Control Unit (TPMS Message)
DTC U0131	Gauge Control Module Lost Communication With EPS Control Unit (EPS Message)
DTC U0151	Gauge Control Module Lost Communication With SRS Unit (SRS Message)
DTC U0164	Gauge Control Module Lost Communication With Climate Control Unit
DTC U0199	Gauge Control Module Lost Communication With Door Multiplex Control Unit
DTC U1282	Gauge Control Module Lost Communication With Driver's MICU
DTC U1283	Gauge Control Module Lost Communication With

	Passenger's MICU
DTC U1286	Gauge Control Module Lost Communication With Keyless Access Control Unit
DTC U1289	Gauge Control Module Lost Communication With Remote Slot Control Unit
DTC U128B	Gauge Control Module Lost Communication With Power Control Unit
DTC U128F	Gauge Control Module Lost Communication With BSI Control Unit (BSI Message)

HANDSFREELINK DTCS

HANDSFREELINK DIAGNOSTIC TROUBLE CODE (DTC) IDENTIFICATION

DTC	Description
DTC B1775	Microphone input/output shorted to power or open (with navigation)
DTC B1775	Microphone input/output shorted to power or open (without navigation)
DTC B1776	Microphone input/output shorted to ground (with navigation)
DTC B1776	Microphone input/output shorted to ground (without navigation)
DTC B1779	HandsFreeLink steering wheel switch failure (with navigation)
DTC B1779	HandsFreeLink steering wheel switch failure (without navigation)
DTC B1780	HandsFreeLink steering wheel switch line short (with navigation)
DTC B1780	HandsFreeLink steering wheel switch line short (without navigation)
DTC B1792	HandsFreeLink control module error (with navigation)
DTC B1792	Hands Free Link control module error (without navigation)

IDLE CONTROL SYSTEM DTCS

IDLE CONTROL DIAGNOSTIC TROUBLE CODE (DTC) IDENTIFICATION

DTC	Description
DTC P0506	Idle Control System RPM Lower Than Expected
DTC P0507	Idle Control System RPM Higher Than Expected

IMMOBILIZER SYSTEM DTCS

IMMOBILIZER DIAGNOSTIC TROUBLE CODE (DTC) IDENTIFICATION

DTC	Description
DTC U0155	Immobilizer-Keyless Control Unit Lost Communication With Gauge Control Module
DTC U0199	Immobilizer-Keyless Control Unit Lost Communication With Door Multiplex Control Unit
DTC U1282	Immobilizer-Keyless Control Unit Lost Communication With Driver's MICU

INTAKE AIR SYSTEM DTCS

INTAKE AIR DIAGNOSTIC TROUBLE CODE (DTC) IDENTIFICATION

DTC	Description
DTC P1077	IMT Valve Stuck in High RPM Position
DTC P1078	IMT Valve Stuck in Low RPM Position

KEYLESS ACCESS SYSTEM DTCS

KEYLESS ACCESS DIAGNOSTIC TROUBLE CODE (DTC) IDENTIFICATION

DTC	Description
DTC B12A1	Power Control Unit Internal (CPU) Error
DTC B12C5	Engine Start/Stop Switch Failure
DTC B12C6	Electric Steering Lock Switch C/D Monitor Circuit Failure
DTC B12C7	Electric Steering Lock Motor Circuit Failure
DTC B12D0	Power Control Unit IG1A Circuit Error
DTC B12D1	Power Control Unit IG1B Circuit Error
DTC B12D2	Power Control Unit IG2 Circuit Error
DTC B12D3	Power Control Unit IG Latch Circuit Error
DTC B12E0	Electric Steering Lock Switch Internal Error
DTC B12E1	Electric Steering Lock Motor Internal Error
DTC B12E2	Electric Steering Lock Low Level Failure of MTRCUT1
DTC B12E3	Electric Steering Lock High Level Failure of MTRCUT1
DTC B12E4	Electric Steering Lock High Level Failure of MTRCUT2
DTC B12F0	Power Control Unit Lost Communication With Electric Steering Lock
DTC B12F1	Power Control Unit Lost Communication With Remote Slot Control Unit
DTC B12F2	Power Control Unit Lost Communication With Keyless Access Control Unit

DTC U0155	Power Control Unit Lost Communication With Gauge Control Module
DTC U0199	Power Control Unit Lost Communication With Door Multiplex Control Unit
DTC B1601	Keyless Access Control Unit Internal (CPU) Error
DTC B1602	Keyless Access Control Unit Internal (EEPROM) Error
DTC B1927	MTR CONT Signal Error
DTC B1640	RF Unit Not Connected
DTC B1646	Driver's Door LF Antenna Circuit Open or Short
DTC B1648	Passenger's Door LF Antenna Circuit Open or Short
DTC B1658	Rear Bumper LF Antenna Circuit Open or Short
DTC B1660	Front Interior LF Antenna Circuit Open or Short
DTC B1664	Rear Interior LF Antenna Circuit Open or Short
DTC B1668	Rear Shelf LF Antenna Circuit Open or Short
DTC U0155	Keyless Access Control Unit Lost Communication With Gauge Control Module
DTC U0199	Keyless Access Control Unit Lost Communication With Door Multiplex Control Unit
DTC U1282	Keyless Access Control Unit Lost Communication With Driver's MICU
DTC U1283	Keyless Access Control Unit Lost Communication With Passenger's MICU
DTC B1902	Remote Slot Control Unit Internal Error (EEPROM Error)
DTC B1926	Remote Slot Antenna Open or Short
DTC B1930	Remote Slot Control Unit LOCK/ UNLOCK Error
DTC B1931	Remote Slot Control Unit no Response
DTC U0155	Remote Slot Control Unit Lost Communication With Gauge Control Module

KEYLESS/POWER DOOR LOCKS/SECURITY

KEYLESS/POWER DOOR LOCKS/SECURITY DIAGNOSTIC TROUBLE CODE (DTC) IDENTIFICATION

DTC	Description
DTC B1127	Driver's Door Key Cylinder Switch Malfunction
DTC B1128	Driver's Door Lock Switch Malfunction
DTC B1129	Driver's Door Lock Knob Switch Malfunction

NAVIGATION SYSTEM DTCS

NAVIGATION DIAGNOSTIC TROUBLE CODE (DTC) IDENTIFICATION

DTC	Description
DTC 1102	USB Diag
DTC 1203	DVD Temp Error
DTC 1301	GPS Antenna Error
DTC 1302	GPS Receiver Error 1
DTC 1303	GPS Receiver Error 2
DTC 1304	Gyro Error 1
DTC 1305	Gyro Error 2
DTC 1306	Vehicle Speed Pulse
DTC 1402	Audio Error 2
DTC 1403	Audio Error 3 (Display Error)
DTC 1404	Audio Error 4 (DVD Error)
DTC 1405	Audio Error 5 (HDD Error)
DTC 1409	Audio Error 9 (XM Error)
DTC 1501	Aircon Error
DTC 2703	Aircon Diag
DTC 1701	R- Camera Error
DTC 2608	R- Camera Diag
DTC 1801	HIP Error
DTC 2601	Display Diag: Connect
DTC 2602	Display Diag: ROM
DTC 2603	Display Diag: RAM
DTC 2607	XM Diag
DTC 2607	XM Diag
DTC 2610	DRAM Diag
DTC 2611	HDD Diag
DTC 2612	Sub Display Diag
DTC 2701	GPS Diag: Antenna
DTC 2702	GPS Diag: Receiver in Navi ECU
DTC 2704	HIP Diag (AcuraLink)
DTC 2705	HFL Diag
DTC 2705	HFL Diag
DTC 2706	Gyro Diag : ECU Temp XX °C
DTC 2707	MIC Diag

PCV SYSTEM DTCS

PCV DIAGNOSTIC TROUBLE CODE (DTC) IDENTIFICATION

DTC	Description
DTC P2279	Intake Air System Leak

PGM-FI SYSTEM DTCS

PGM-FI DIAGNOSTIC TROUBLE CODE (DTC) IDENTIFICATION

DTC	Description
DTC P0101	MAF Sensor Circuit Range/Performance Problem
DTC P0102	MAF Sensor Circuit Low Voltage
DTC P0103	MAF Sensor Circuit High Voltage
DTC P0107	MAP Sensor Circuit Low Voltage
DTC P0108	MAP Sensor Circuit High Voltage
DTC P0111	IAT Sensor Circuit Range/Performance Problem
DTC P0112	IAT Sensor Circuit Low Voltage
DTC P0113	IAT Sensor Circuit High Voltage
DTC P0116	ECT Sensor 1 Circuit Range/Performance Problem
DTC P0117	ECT Sensor 1 Circuit Low Voltage
DTC P0118	ECT Sensor 1 Circuit High Voltage
DTC P0125	ECT Sensor 1 Malfunction/Slow Response
DTC P0128	Cooling System Malfunction
DTC P0133	Rear A/F Sensor (Bank 1, Sensor 1) Malfunction/Slow Response
DTC P0153	Front A/F Sensor (Bank 2, Sensor 1) Malfunction/Slow Response
DTC P0134	Rear A/F Sensor (Bank 1, Sensor 1) Heater System Malfunction
DTC P0154	Front A/F Sensor (Bank 2, Sensor 1) Heater System Malfunction
DTC P0135	Rear A/F Sensor (Bank 1, Sensor 1) Heater Circuit Malfunction
DTC P0155	Front A/F Sensor (Bank 2, Sensor 1) Heater Circuit Malfunction
DTC P0137	Rear Secondary HO2S (Bank 1, Sensor 2) Circuit Low Voltage
DTC P0157	Front Secondary HO2S (Bank 2, Sensor 2) Circuit Low Voltage
DTC P0138	Rear Secondary HO2S (Bank 1, Sensor 2) Circuit High Voltage
DTC P0158	Front Secondary HO2S (Bank 2, Sensor 2) Circuit High Voltage
DTC P0139	Rear Secondary HO2S (Bank 1, Sensor 2) Slow Response
DTC P0159	Front Secondary HO2S (Bank 2, Sensor 2) Slow Response
DTC P0141	Rear Secondary HO2S (Bank 1, Sensor 2) Heater Circuit Malfunction

DTC P0161	Front Secondary HO2S (Bank 2, Sensor 2) Heater Circuit Malfunction
DTC P0171	Rear Bank (Bank 1) Fuel System Too Lean
DTC P0172	Rear Bank (Bank 1) Fuel System Too Rich
DTC P0174	Front Bank (Bank 2) Fuel System Too Lean
DTC P0175	Front Bank (Bank 2) Fuel System Too Rich
DTC P0300	Random Misfire and Any Combination of the Following
DTC P0301	No. 1 Cylinder Misfire Detected
DTC P0302	No. 2 Cylinder Misfire Detected
DTC P0303	No. 3 Cylinder Misfire Detected
DTC P0304	No. 4 Cylinder Misfire Detected
DTC P0305	No. 5 Cylinder Misfire Detected
DTC P0306	No. 6 Cylinder Misfire Detected
DTC P0301	No. 1 Cylinder Misfire Detected
DTC P0302	No. 2 Cylinder Misfire Detected
DTC P0303	No. 3 Cylinder Misfire Detected
DTC P0304	No. 4 Cylinder Misfire Detected
DTC P0305	No. 5 Cylinder Misfire Detected
DTC P0306	No. 6 Cylinder Misfire Detected
DTC P0325	Knock Sensor Circuit Malfunction
DTC P0335	CKP Sensor No Signal
DTC P0339	CKP Sensor Circuit Intermittent Interruption
DTC P0351	No. 1 Cylinder Ignition Coil Circuit Malfunction
DTC P0352	No. 2 Cylinder Ignition Coil Circuit Malfunction
DTC P0353	No. 3 Cylinder Ignition Coil Circuit Malfunction
DTC P0354	No. 4 Cylinder Ignition Coil Circuit Malfunction
DTC P0355	No. 5 Cylinder Ignition Coil Circuit Malfunction
DTC P0356	No. 6 Cylinder Ignition Coil Circuit Malfunction
DTC P0365	CMP Sensor Circuit No Signal
DTC P0369	CMP Sensor Circuit Intermittent Interruption
DTC P050A	Cold Start Idle Air Control System Performance Problem
DTC P050B	Cold Start Ignition Timing Control System Performance Problem
DTC P0560	PCM Power Source Circuit Unexpected Voltage
DTC P0562	Charging System Low Voltage
DTC P0563	ECM/PCM Power Source Circuit Unexpected Voltage
DTC P0602	ECM/PCM Programming Error
DTC P060A	ECM/PCM Internal Control Module Malfunction
DTC P0615	Starter Cut Relay STRLD Circuit Malfunction (M/T)

DTC P0615	Starter Cut Relay STRLD Circuit Malfunction (A/T)
DTC P062F	ECM/PCM Internal Control Module Keep Alive Memory (KAM) Error
DTC P0630	VIN Not Programmed or Mismatch
DTC P0641	Sensor Reference Voltage A Malfunction
DTC P0651	Sensor Reference Voltage B Malfunction
DTC P0685	ECM/PCM Power Control Circuit/Internal Circuit Malfunction
DTC P0715	Input Shaft (Mainshaft) Speed Sensor Circuit Malfunction
DTC P0720	Output Shaft (Countershaft) Speed Sensor Circuit Malfunction
DTC P0831	Clutch Pedal Position Switch A Circuit High Voltage
DTC P0835	Clutch Pedal Position Switch B Circuit Low Voltage
DTC P1116	ECT Sensor 1 Circuit Range/Performance Problem
DTC P1128	MAP Sensor Signal Lower Than Expected
DTC P1129	MAP Sensor Signal Higher than Expected
DTC P1172	Rear A/F Sensor (Bank 1, Sensor 1) Circuit Out of Range High
DTC P1174	Front A/F Sensor (Bank 2, Sensor 1) Circuit Out of Range High
DTC P1297	ELD Circuit Low Voltage
DTC P1298	ELD Circuit High Voltage
DTC P1549	Charging System High Voltage
DTC P16BB	Alternator B Terminal Circuit Low Voltage
DTC P16BC	Alternator FR Terminal Circuit/IGP Circuit Low Voltage
DTC P16BD	Starter Cut Relay 2 Malfunction (M/T)
DTC P16BD	Starter Cut Relay 2 Malfunction (A/T)
DTC P16BE	Starter Cut Relay 1 Malfunction (M/T)
DTC P16BE	Starter Cut Relay 1 Malfunction (A/T)
DTC P16BF	Starter Cut Relay STRLY Circuit Malfunction (M/T)
DTC P16BF	Starter Cut Relay STRLY Circuit Malfunction (A/T)
DTC P16E1	+B Cut Relay Circuit Malfunction
DTC P2183	ECT Sensor 2 Circuit Range/Performance Problem
DTC P2184	ECT Sensor 2 Circuit Low Voltage
DTC P2185	ECT Sensor 2 Circuit High Voltage
DTC P2195	Rear A/F Sensor (Bank 1, Sensor 1) Signal Stuck Lean
DTC P2197	Front A/F Sensor (Bank 2, Sensor 1) Signal Stuck Lean
DTC P2227	BARO Sensor Circuit Range/Performance Problem

DTC P2228	BARO Sensor Circuit Low Voltage
DTC P2229	BARO Sensor Circuit High Voltage
DTC P2237	Rear A/F Sensor (Bank 1, Sensor 1) IP Circuit High Voltage
DTC P2240	Front A/F Sensor (Bank 2, Sensor 1) IP Circuit High Voltage
DTC P2238	Rear A/F Sensor (Bank 1, Sensor 1) IP Circuit Low Voltage
DTC P2241	Front A/F Sensor (Bank 2, Sensor 1) IP Circuit Low Voltage
DTC P2243	Rear A/F Sensor (Bank 1, Sensor 1) VCENT Circuit High Voltage
DTC P2247	Front A/F Sensor (Bank 2, Sensor 1) VCENT Circuit High Voltage
DTC P2245	Rear A/F Sensor (Bank 1, Sensor 1) VCENT Circuit Low Voltage
DTC P2249	Front A/F Sensor (Bank 2, Sensor 1) VCENT Circuit Low Voltage
DTC P2251	Rear A/F Sensor (Bank 1, Sensor 1) VS Circuit High Voltage
DTC P2254	Front A/F Sensor (Bank 2, Sensor 1) VS Circuit High Voltage
DTC P2252	Rear A/F Sensor (Bank 1, Sensor 1) VS Circuit Low Voltage
DTC P2255	Front A/F Sensor (Bank 2, Sensor 1) VS Circuit Low Voltage
DTC P2270	Rear Secondary HO2S (Bank 1, Sensor 2) Circuit Signal Stuck Lean
DTC P2272	Front Secondary HO2S (Bank 2, Sensor 2) Circuit Signal Stuck Lean
DTC P2610	ECM/PCM Ignition Off Internal Timer Malfunction
DTC P2A00	Rear A/F Sensor (Bank 1, Sensor 1) Circuit Range/Performance Problem
DTC P2A03	Front A/F Sensor (Bank 2, Sensor 1) Circuit Range/Performance Problem
DTC U0029	F-CAN Malfunction (BUS-OFF (ECM/PCM))
DTC U0114	F-CAN Malfunction (ECM/PCM-SH-AWD Control Unit)
DTC U0122	F-CAN Malfunction (ECM/PCM-VSA Modulator-Control Unit)
DTC U0131	F-CAN Malfunction (ECM/PCM-EPS Control Unit)
DTC U0155	F-CAN Malfunction (ECM/PCM-Gauge Control Module)

POWER WINDOWS DTCS

POWER WINDOWS DIAGNOSTIC TROUBLE CODE (DTC) IDENTIFICATION

DTC	Description
DTC B1125	Driver's Power Window Motor A Pulse Malfunction
DTC B1126	Driver's Power Window Motor B Pulse Malfunction
DTC B1130	Front Passenger's Power Window Motor A-Pulse Malfunction
DTC B1131	Front Passenger's Power Window Motor B-Pulse Malfunction
DTC B1140	Driver's Power Window Position Detect Circuit Malfunction
DTC B1142	Door Multiplex Control Unit Lost Communication With Other Unit (UART communication error)
DTC B1145	Front Passenger's Power Window Position Detect Circuit Malfunction
DTC U0155	Door Multiplex Control Unit Lost Communication With Gauge Control Module
DTC U0164	Door Multiplex Control Unit Lost Communication With Climate Control Unit
DTC U1282	Door Multiplex Control Unit Lost Communication With Driver's MICU
DTC U1283	Door Multiplex Control Unit Lost Communication With Passenger's MICU

TURN SIGNAL/HAZARD WARNING LIGHTS DTCS

TURN SIGNAL/HAZARD WARNING LIGHTS DTCS

DTC	Description
DTC B1280	Turn Signal Switch Circuit Malfunction

VTEC DTCS

VTEC DIAGNOSTIC TROUBLE CODE (DTC) IDENTIFICATION

DTC	Description
DTC P2646	Rocker Arm Oil Pressure Switch Circuit Low Voltage
DTC P2647	Rocker Arm Oil Pressure Switch Circuit High Voltage
DTC P2648	Rocker Arm Oil Control Solenoid Circuit Low Voltage
DTC P2649	Rocker Arm Oil Control Solenoid Circuit High Voltage

WIPERS/WASHERS SYSTEM DTCS

WIPERS/WASHERS DIAGNOSTIC TROUBLE CODE (DTC) IDENTIFICATION

DTC	Description
DTC B1077	Wiper Auto-Stop (As) Signal Circuit Malfunction
DTC B1281	Front Wiper MIST Position Circuit Malfunction
DTC B1282	Front Wiper INT (AUTO) Position Circuit Malfunction
DTC B1283	Front Wiper LOW Position Circuit Malfunction
DTC B1284	Front Wiper HIGH Position Circuit Malfunction

2012 ACCESSORIES & EQUIPMENT

AcuraLink® - TL

COMPONENT LOCATION INDEX

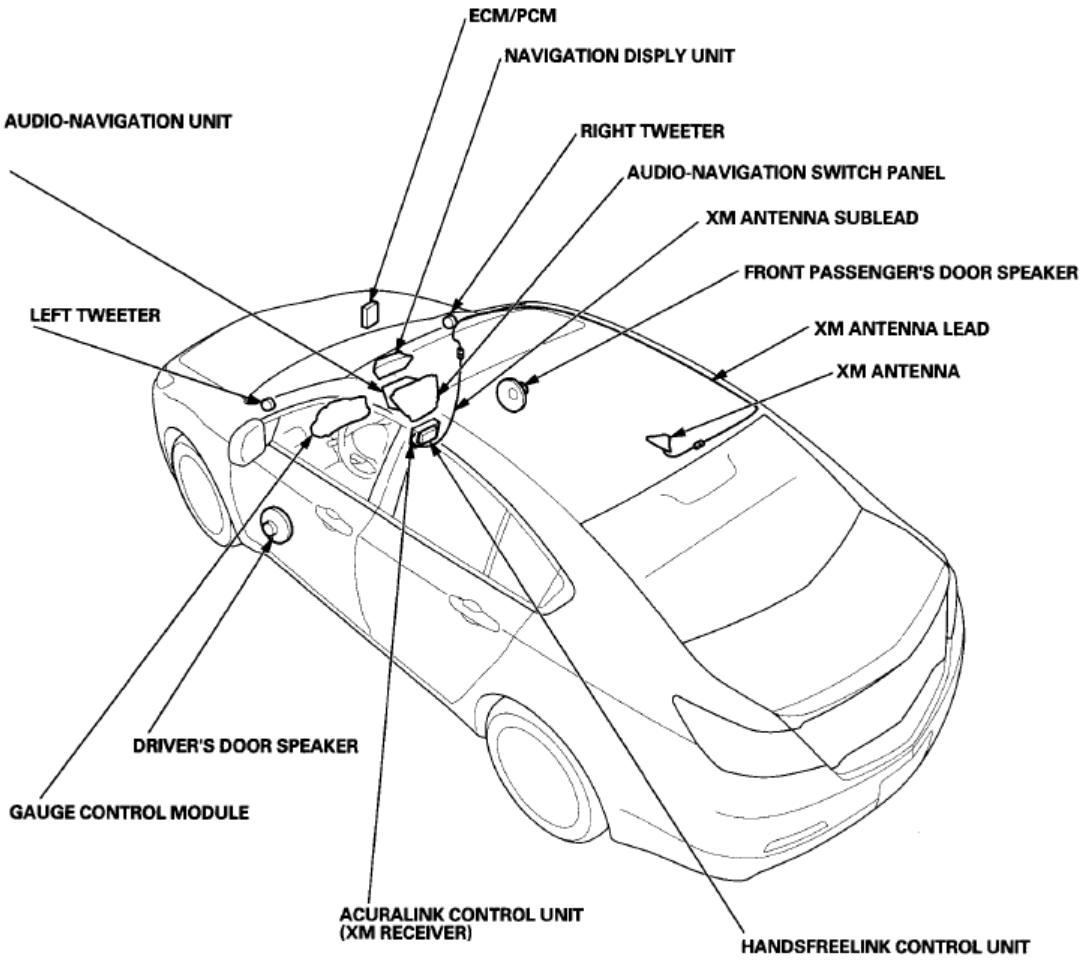


Fig. 1: AcuraLink® System Components Location
Courtesy of AMERICAN HONDA MOTOR CO., INC.

GENERAL TROUBLESHOOTING INFORMATION

HOW TO CHECK FOR DTCS WITH THE HDS

NOTE: Check the vehicle battery condition first (see BATTERY TEST).

1. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
2. Connect the HDS to the data link connector (DLC) (A) located under the driver's side of the dashboard.

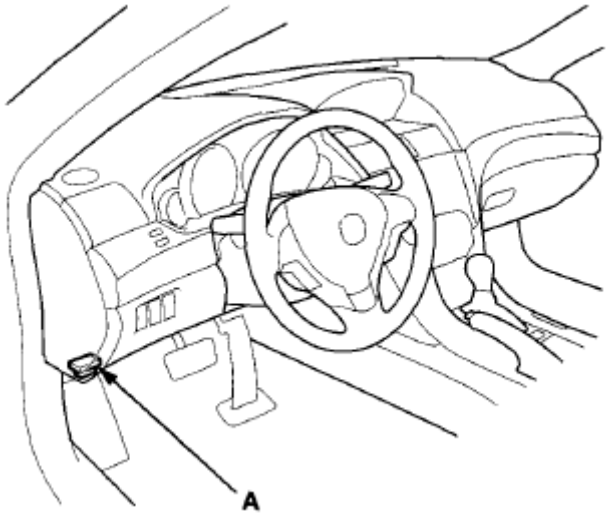


Fig. 2: Locating Data Link Connector (DLC)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
4. Make sure the HDS communicates with the vehicle and the AcuraLink® control unit (XM receiver). If it does not, troubleshoot the DLC circuit (see **DLC CIRCUIT TROUBLESHOOTING**).
5. Select XM/HIP in the BODY ELECTRICAL menu.
6. Select DTCs in the XM/HIP menu.
7. Check for DTCs. If any DTCs are indicated, write down the DTCs, then go to the indicated **DTC TROUBLESHOOTING**. If no DTCs are indicated, refer to **SYMPTOM TROUBLESHOOTING**.

NOTE:

- **After troubleshooting, clear the DTCs with the HDS.**
- **For specific operations, refer to the user's manual that came with the HDS.**

LEVER-LOCKED CONNECTOR

Disconnecting

To disconnect the connector, pull the lever (A) while pushing the lock tab (B) down, then pull the connector (C).

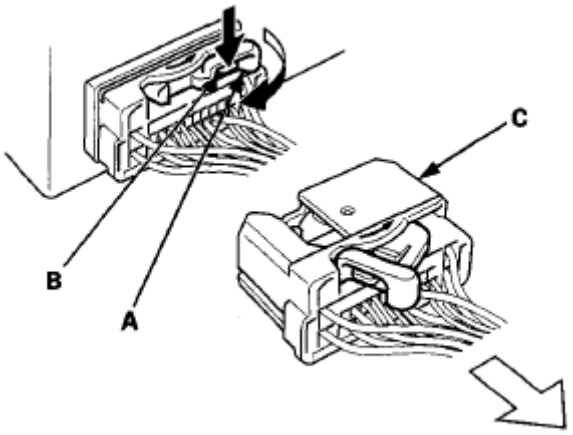


Fig. 3: Disconnecting Lever-Locked Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Connecting

To connect the connector, push the connector into the connector sleeve (A). As the connector is pressed in, the lever (B) moves to the locked position.

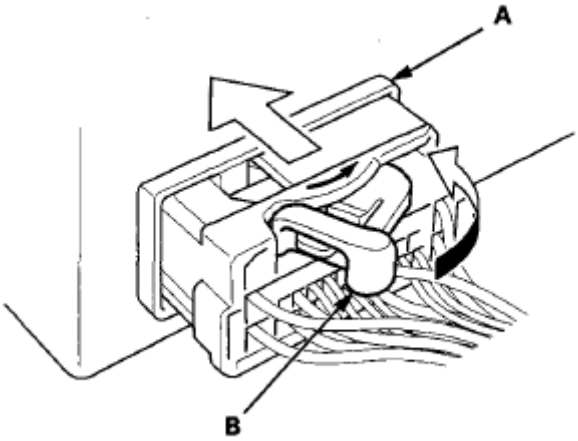


Fig. 4: Connecting Lever-Locked Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

DTC TROUBLESHOOTING INDEX

AcuraLink® CONTROL UNIT

DTC	Description	DTC Type
B2240	XM Antenna line failure	Internal error
U0100	F-CAN Lost communication with ECM/PCM	Loss of communication
U0155	F-CAN Lost communication with Gauge Control Module	Loss of communication

U1280	Communication bus line error (BUS-OFF)	Loss of communication
U128D	Lost Communication with Gauge Control Module	Loss of communication

SYMPTOM TROUBLESHOOTING INDEX

Symptom	Diagnostic Procedure	Also Check for
AcuraLink® services do not work	Symptom Troubleshooting (see **AcuraLink® SERVICES DO NOT WORK**)	• Blown fuse No. 15(10 A) in the under-hood fuse/relay box and No. 12 (7.5 A), No. 18 (7.5 A) in the driver's under-dash fuse/relay box • Poor ground at G501
AcuraLink® services do not work after replacing the AcuraLink® control unit (XM receiver)		• Call Acura Client Services and request an activation. • Call XM customer service and register the replacement AcuraLink® control unit (XM receiver).
AcuraLink® messages cannot be heard or are weak	Symptom Troubleshooting (see **AcuraLink® MESSAGES CANNOT BE HEARD OR ARE WEAK**)	
Traffic or Weather information is not shown on map screen	Navigation System Symptom Troubleshooting (see **TRAFFIC OR WEATHER INFORMATION IS NOT SHOWN ON MAP SCREEN**)	
AcuraLink® messages cannot be deleted	How to Delete Stored AcuraLink® Messages (see **MESSAGE DELETE PROCEDURE (CLIENT)**)	

SYSTEM DESCRIPTION

AcuraLink® Satellite Communication System uses the client's cell phone or XM radio to transmit and receive information about the vehicle. In addition, the AcuraLink® system is also able to initiate voice or data calls with the HandsFreeLink control unit.

The AcuraLink® control unit (XM receiver) is very similar in design to an XM receiver, but it has additional communication features. The main functions include:

- Receiving and playing XM stations. Displaying station, song title and other information on the audio-HVAC subdisplay using the GA-Net bus.
- Receiving XM traffic channel data.

- Gives Feature Guide tips.
- Receiving AcuraLink® messages and displaying them in the navigation display.
- Processing DTC (diagnostic trouble code) error messages from the ECM/PCM, the SRS, and other systems, and displaying them on the navigation display.
- Sending DTC information to the AcuraLink® servers using the client's cell phone (only if the client has set up and enabled this option).
- Receiving weather data.

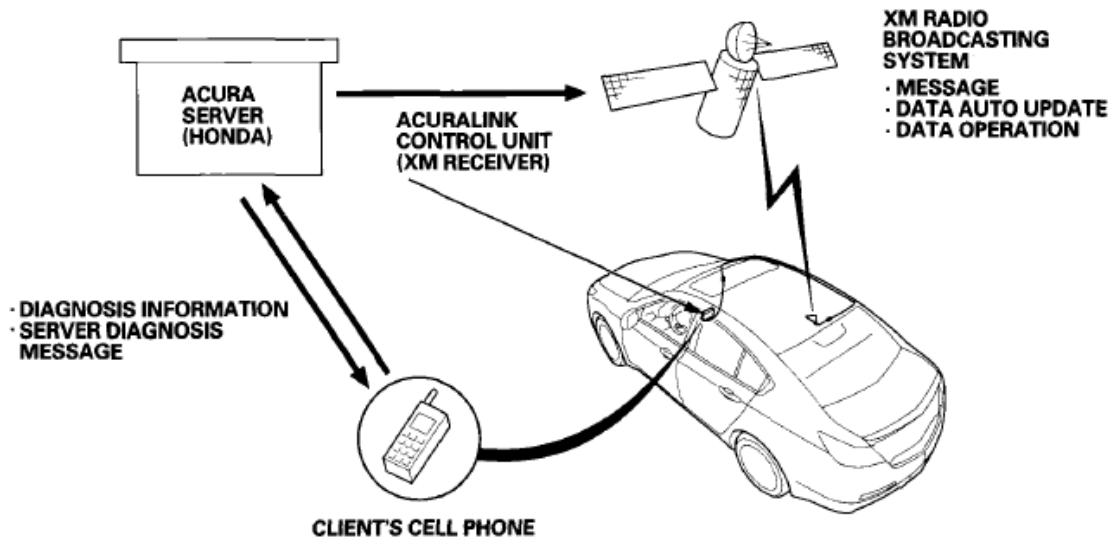


Fig. 5: Identifying AcuraLink® Satellite Communication System Operation
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Service Application

- Malfunction indicator lamp (MIL) explanation (from server message and vehicle message)
- Service information message
- Recall Information
- Quick tips
- Place to provide feedback/view cautions that were not available when vehicle was initially sold
- Correction of address and full name that is registered
- Real time traffic information
- Maintenance information message
- Feature guide (90 days)
- Weather information

HOW TO DELETE STORED ACURALINK® MESSAGES

The AcuraLink® Satellite Communication System stores and displays these types of messages on the navigation system display screen:

- Feature Guide info
- System malfunction info
- Driver warnings
- DTCs
- Quick tips

NOTE:

- **To delete any stored AcuraLink® messages, follow these procedures. The first procedure is for your client. It lets them delete certain types of messages. The second procedure is for technicians. It lets you delete all stored messages.**
- **The diagnostic menu includes a DATA RESET function. Select this only at TQI and when the vehicle changes ownership. It deletes all AcuraLink® messages, log data, and AcuraLink® registration. If you select DATA RESET during the 45-days activation period, the AcuraLink® Feature Guide repeats the first message. AcuraLink® messages related to a repair should be deleted after that repair is done. If you don't delete these messages, they stay in your client's AcuraLink® message log.**

MESSAGE DELETE PROCEDURE (CLIENT)

1. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
2. Touch OK on the disclaimer screen.
3. Press the INFO button to bring up the Information screen.
4. Use the interface dial to select #1 All Messages.
5. Select the item number you want to delete, then select Delete (if you do not see Delete on the display screen, you cannot remove this message).
6. Select Yes to confirm your choice.

MESSAGE DELETE PROCEDURE (SERVICE TECH)

1. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
2. Touch OK on the disclaimer screen.
3. Press and hold the DEST/ROUTE, the MAP/GUIDE, and the CANCEL buttons at the same time for 3 seconds more, and the system diagnostic mode begins.

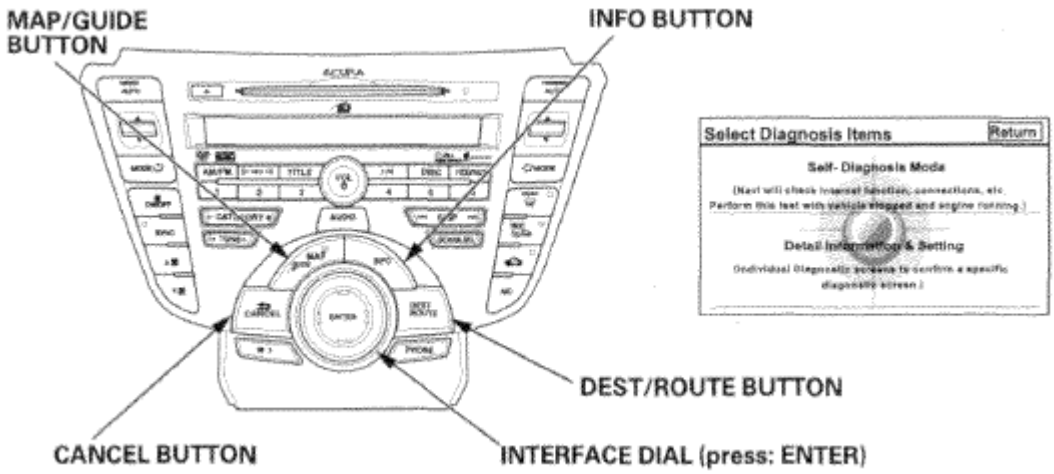


Fig. 6: Identifying Message Delete Procedure Buttons
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Using the interface dial, spinet the XM (HIP) from the Detail Information & Setting, and press the ENTER. Select XM (HIP) Diag (A) front the XM (HIP) System Link.

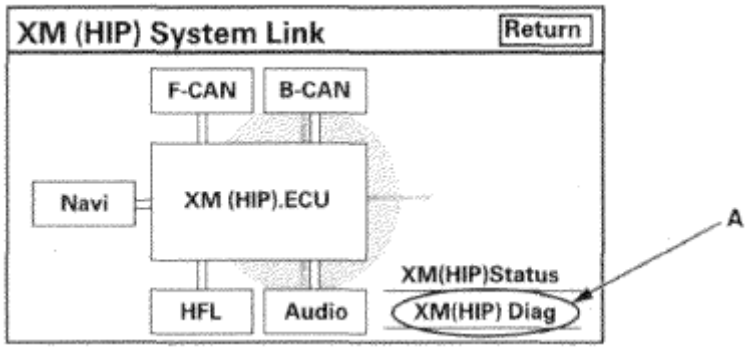


Fig. 7: Identifying XM (HIP) System Link Block Diagram
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Select Diagnostic Info.
6. Select the item you want to delete. After the message and date come up, select Delete.
7. Select Yes to confirm your choice.
8. Repeat step 6 and 7 for each message you want to delete.

ACURALINK® CONTROL UNIT (XM RECEIVER) CONNECTOR FOR INPUTS AND OUTPUTS

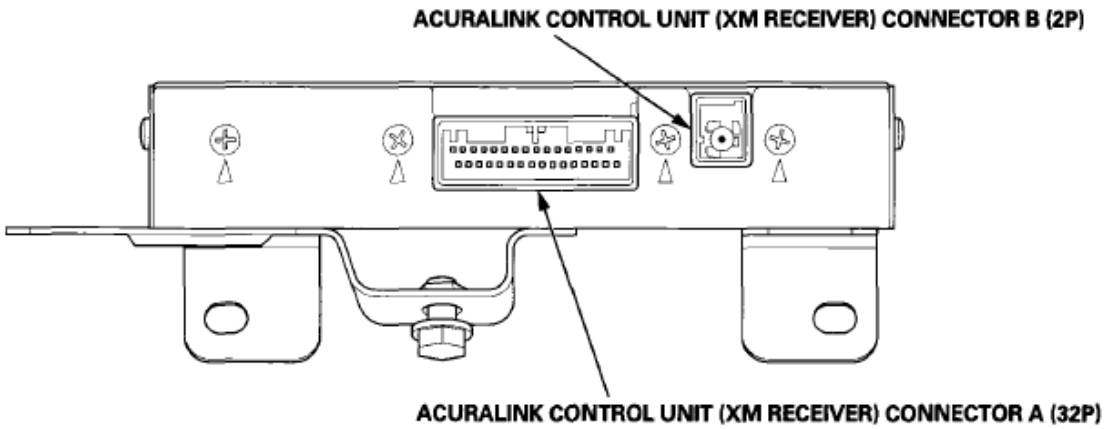


Fig. 8: Identifying AcuraLink® Control Unit (XM Receiver)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

ACURALINK® CONTROL UNIT (XM RECEIVER) CONNECTOR A (32P)

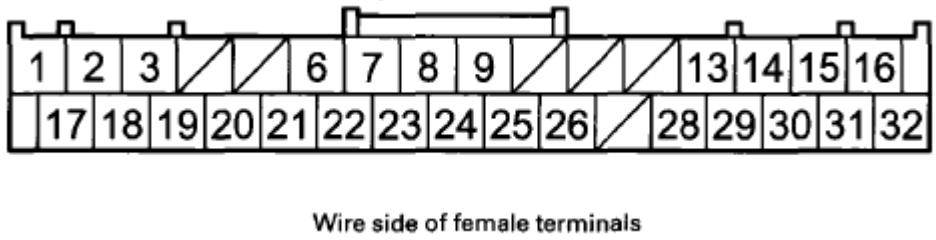


Fig. 9: AcuraLink® Control Unit (XM Receiver) 32P Connector End View
Courtesy of AMERICAN HONDA MOTOR CO., INC.

AcuraLink® CONTROL UNIT (XM RECEIVER) CONNECTOR A (32P)

Cavity	Wire Color	Terminal Name	Connects to
A1	WHT	+ B	No. 15 (10 A) fuse in the under-hood fuse/relay box
A2	BRN	IG1	No. 12 (7.5 A) fuse in the drivers' under-dash fuse/relay box
A3	PUR	ACC	No. 18 (7.5 A) fuse in the drivers' under-dash fuse/relay box
A6	BLK	F-CAN L	F-CAN communication bus line
A7	WHT	F-CAN H	F-CAN communication bus line
A8	BLU	B-CAN L	B-CAN communication bus line
A9	PNK	B-CAN H	B-CAN communication bus line
A13	GRN	AUDIO R +	Audio-navigation unit, HandsFreeLink control unit
A14	WHT	AUDIO R-	Audio-navigation unit, HandsFreeLink control unit
A15	BLK	AUDIO L+	Audio-navigation unit, HandsFreeLink control unit
A16	RED	AUDIO L-	Audio-navigation unit, HandsFreeLink control unit

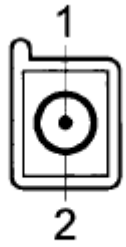
AcuraLink® CONTROL UNIT (XM RECEIVER) CONNECTOR A (32P)

Cavity	Wire Color	Terminal Name	Connects to
A17	WHT	NAVI COMM1	Audio-navigation unit

A18	RED	NAVI COMM2	Audio-navigation unit
A19	GRN	NAVI COMM3	Audio-navigation unit
A20	BLK	NAVI COMM4	Audio-navigation unit
A21	GRY(1)	NAVI COMM SH	Shield for terminals No. 17, No. 18, No. 19, and No. 20
A22	RED	HIP/HFL COMM3	HandsFreeLink control unit
A23	WHT	HIP/HFL COMM4	HandsFreeLink control unit
A24	BLK	HIP/HFL COMM1	HandsFreeLink control unit
A25	GRN	HIP/HFL COMM2	HandsFreeLink control unit
A26	GRY(1)	HIP/HFL COMM SH	Shield for terminals No. 22, No. 23, No. 24, and No. 25
A28	BLK	GND	Body ground to G501
A29	GRY(1)	GA-NET BUS SH	Shield for terminals No. 30 and No. 31
A30	PNK	GA-NET BUS+	Audio-navigation unit, HandsFreeLink control unit, navigation display unit
A31	BLU	GA-NET BUS-	Audio-navigation unit, HandsFreeLink control unit, navigation display unit
A32	GRY(1)	AUDIO SH	Shield for terminals No. 13, No. 14, No. 15, and No. 16

(1) The shielded wires have a heat-shrink tube insulating the outside of the wire. The color of the insulating tube, typically black or dark gray, may not match the color of the wire listed on the circuit diagram.

ACURALINK® CONTROL UNIT (XM RECEIVER) CONNECTOR B (2P)



Terminal side of female terminals

Fig. 10: AcuraLink® Control Unit (XM Receiver) 2P Connector End View
Courtesy of AMERICAN HONDA MOTOR CO., INC.

AcuraLink® CONTROL UNIT (XM RECEIVER) CONNECTOR B (2P)

Cavity	Wire Color	Terminal Name	Connects to
B1	--	SAT/TER	XM antenna
B2	--	GND SH	Shield for terminal No. 1

CIRCUIT DIAGRAM

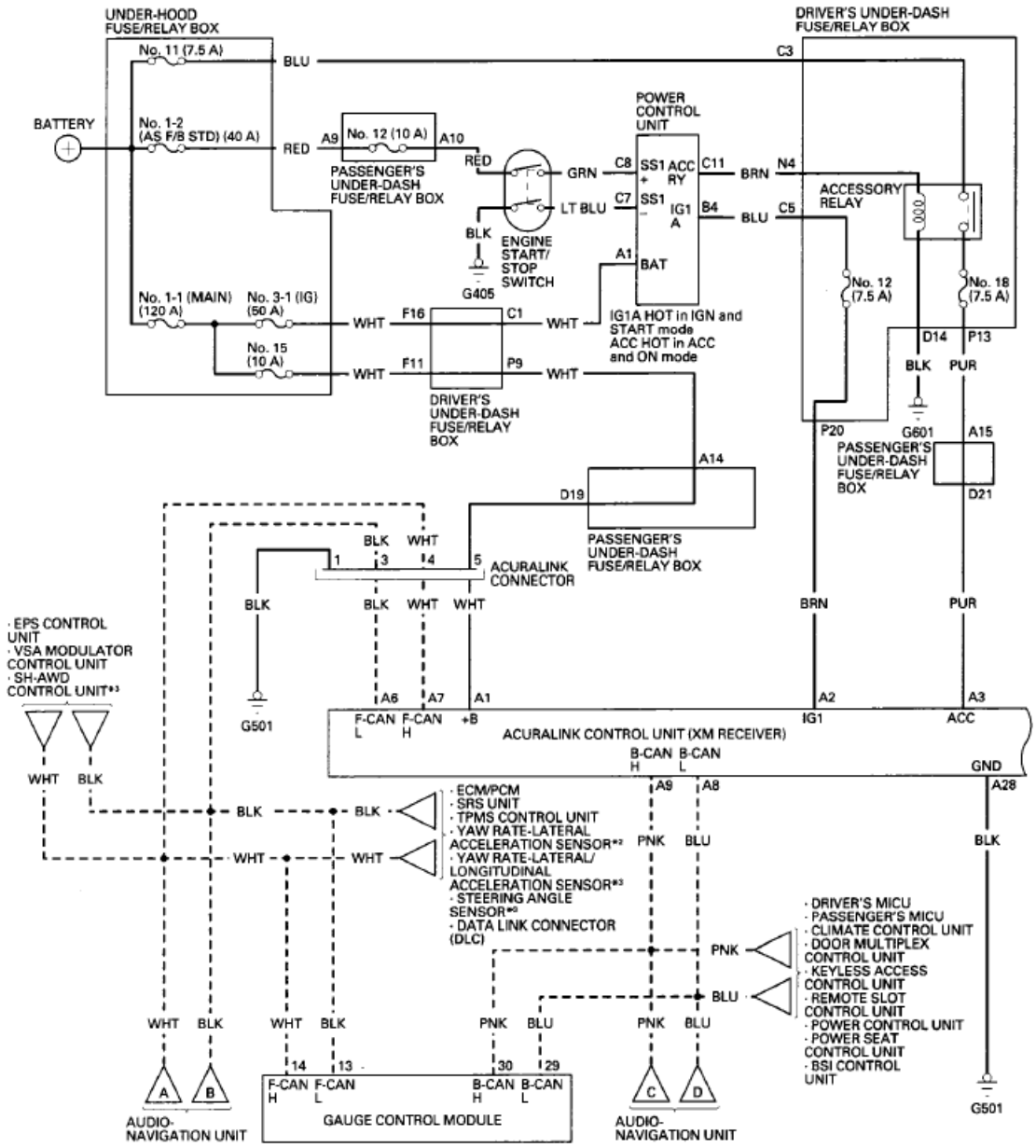


Fig. 11: AcuraLink® Circuit Diagram (1 Of 4)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

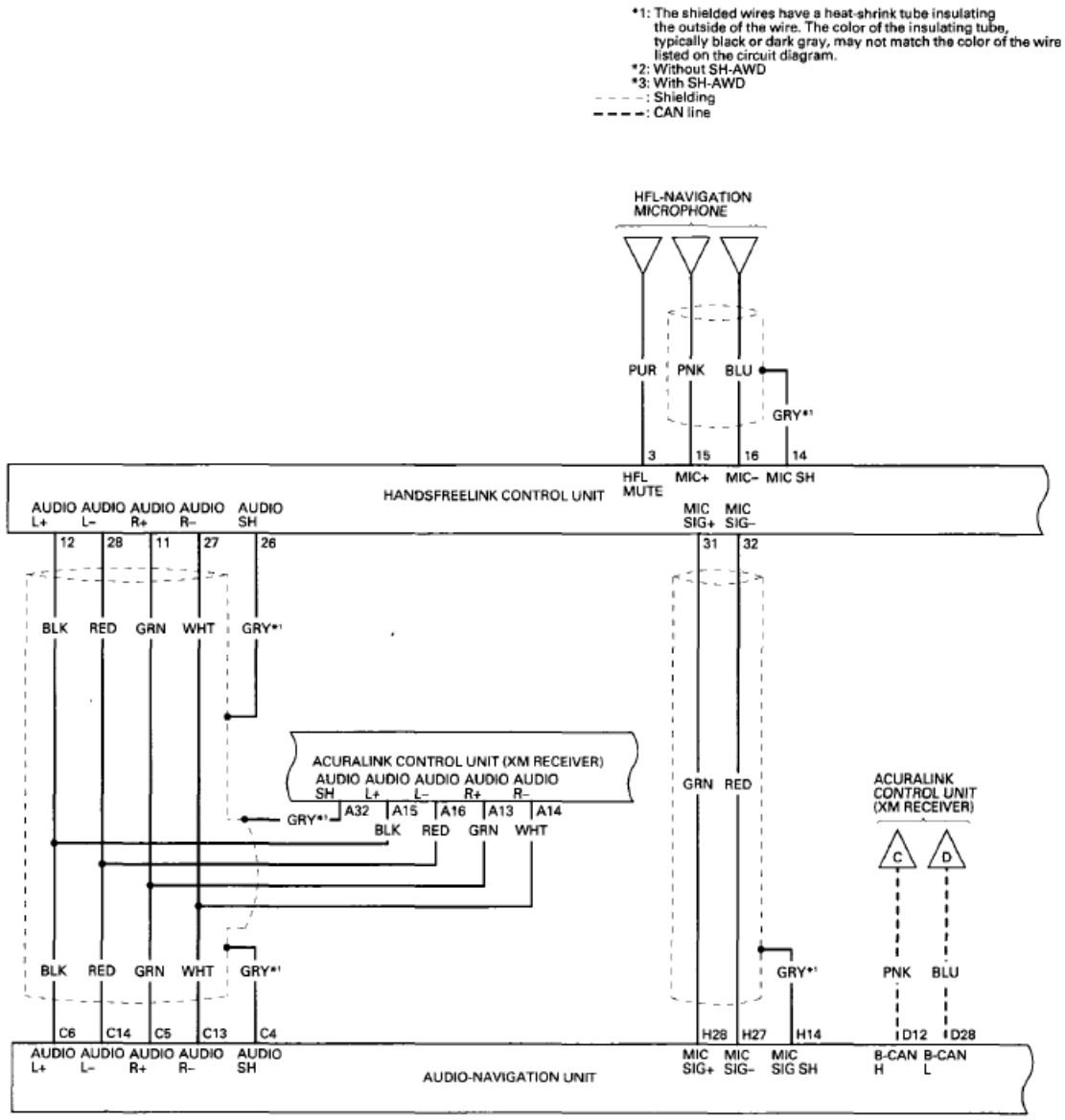


Fig. 12: AcuraLink® Circuit Diagram (2 Of 4)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

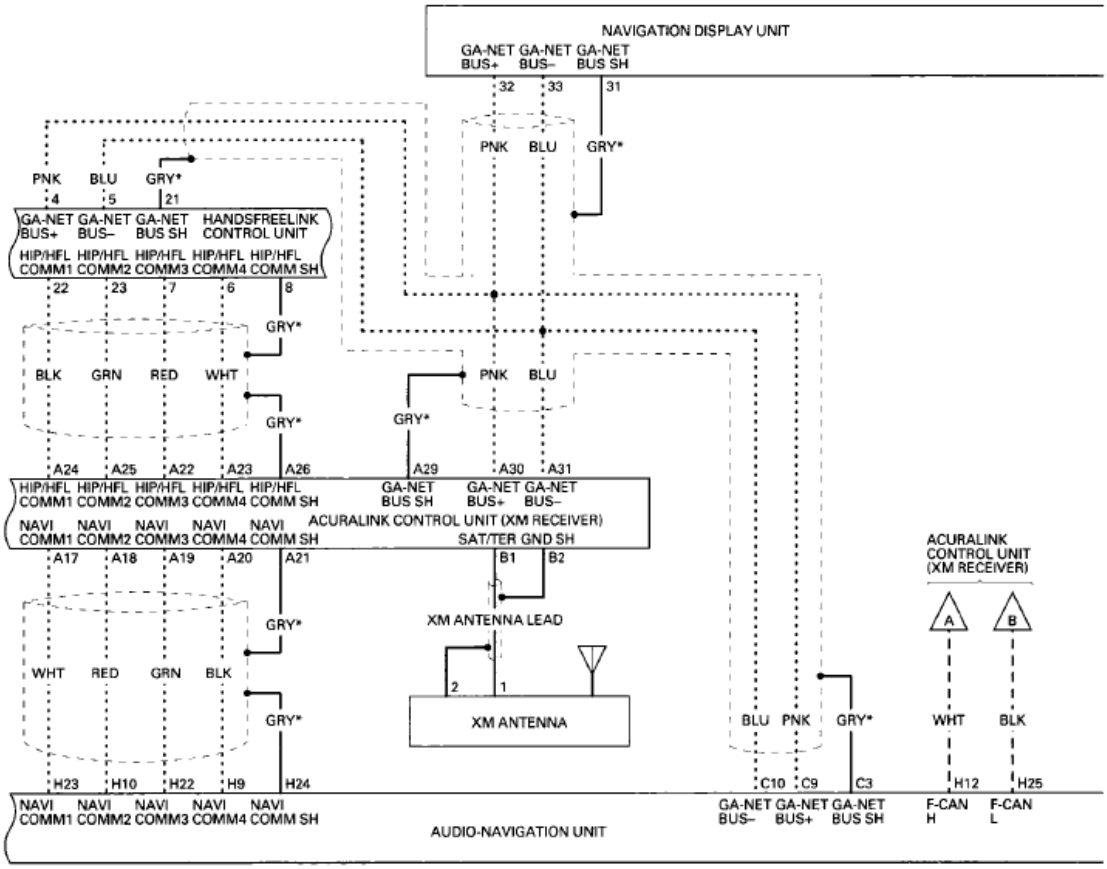


Fig. 13: AcuraLink® Circuit Diagram (3 Of 4)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

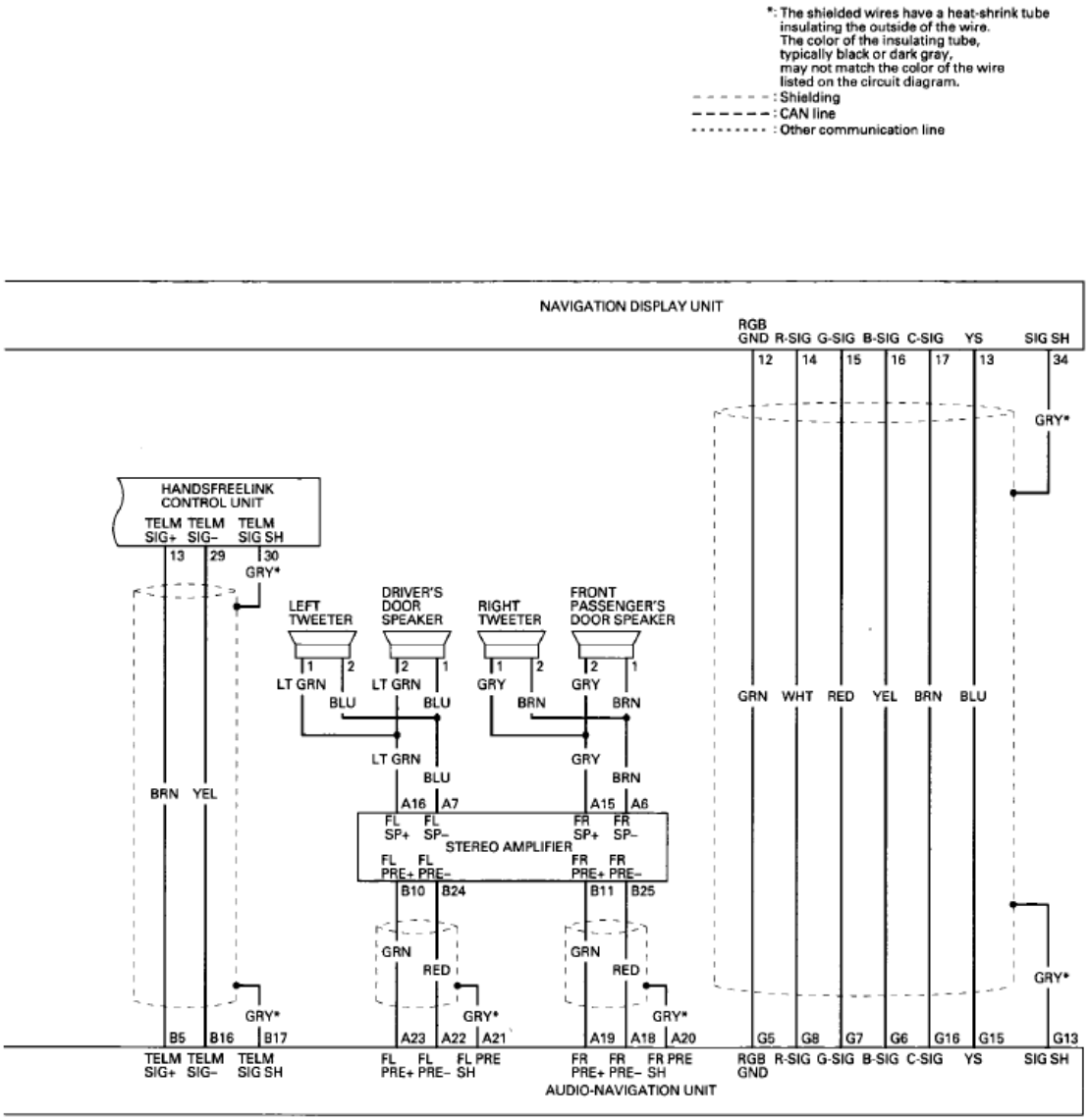


Fig. 14: AcuraLink® Circuit Diagram (4 Of 4)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

SELF-DIAGNOSTIC FUNCTION

NOTE: Only select DATA RESET from the XM (HIP) ECU screen when instructed. Selecting DATA RESET will clear the AcuraLink® registration, and the AcuraLink® service resets to the factory default, if the vehicle was already registered for the AcuraLink® service, it will have to be reactivated by calling Acura Client Services before all features are available.

The AcuraLink® control unit (XM receiver) has a self-diagnostic function. To run the self-diagnostic function, do the following:

HOW TO ENTER THE SELF-DIAGNOSTIC FUNCTION

NOTE: Always check for and repair any CAN DTCs before troubleshooting the AcuraLink® system.

1. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
2. Touch OK on the disclaimer screen.
3. Press and hold the DEST/ROUTE, the MAP/GUIDE, and the CANCEL buttons at the same time for 3 seconds more, and the system diagnostic mode begins.

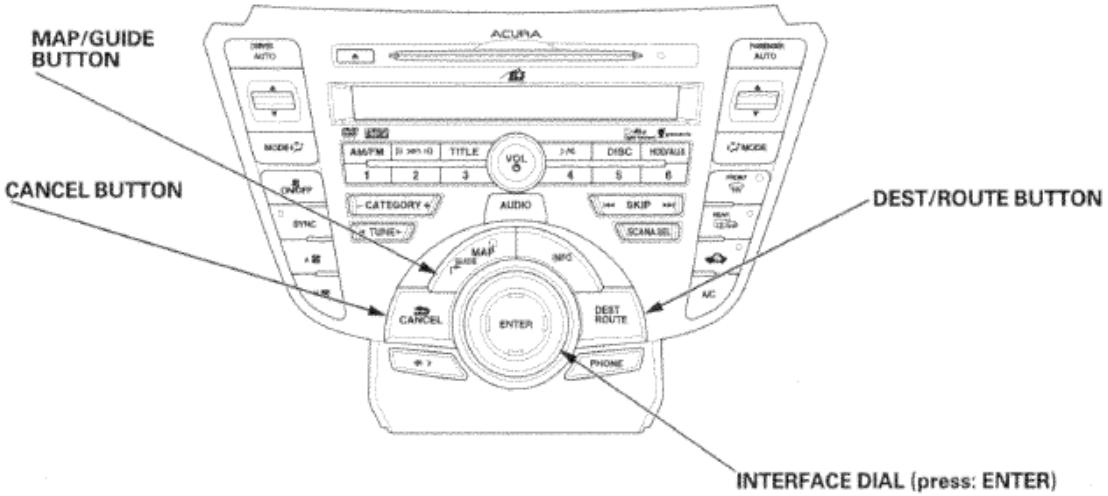


Fig. 15: Identifying Self-Diagnostic Function Buttons
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Using the interface dial, select the Select Diagnosis Items from the Detail Information & Setting, and press the ENTER.

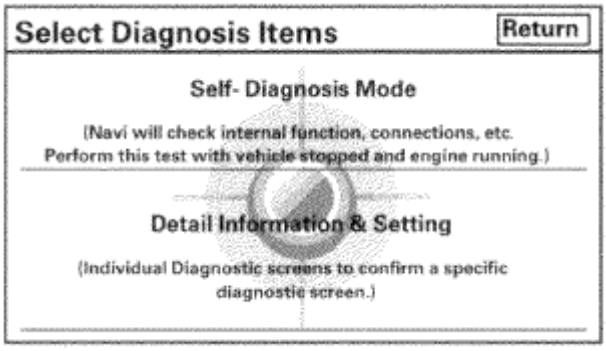


Fig. 16: Screen Display - Select Diagnosis Items (1 Of 2)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Using the interface dial, select the XM (HIP) from the Detail Information & Setting menu, and press the ENTER.

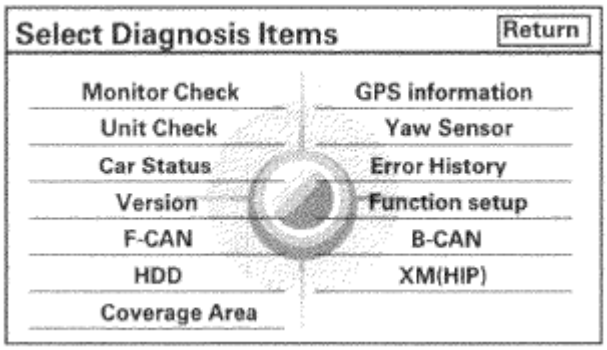


Fig. 17: Screen Display - Select Diagnosis Items (2 Of 2)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. The display shows the XM (HIP) System Link, and does an AcuraLink® connection check for each device. If a connection is faulty, the place where it is faulty is indicated with NG (red color).

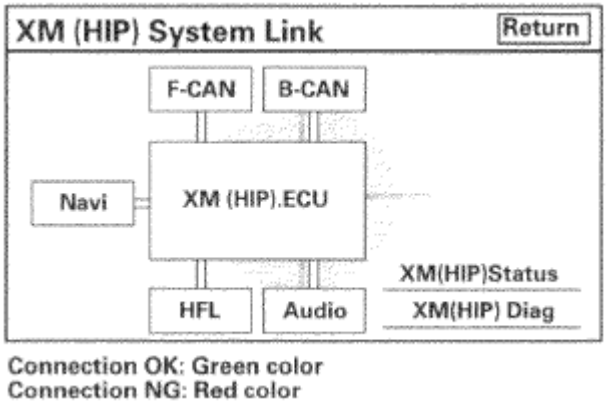


Fig. 18: Screen Display - XM (HIP) System Link Block Diagram
Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. When red (NG) is indicated, check the continuity between the AcuraLink® control unit (XM receiver) and the device indicated in red.

Device Indicated in Red	Test Condition	Test: Desired Result	Possible Cause if Result is not Obtained
	Disconnect these items: • AcuraLink® control unit (XM receiver) connector A (32P) • Yaw rate-lateral	Check for continuity between AcuraLink® control unit (XM receiver) connector A (32P) terminal No. 7 and yaw rate-lateral acceleration sensor 4P connector terminal No. 3(3) or yaw-rate lateral/longitudinal acceleration sensor 4P connector terminal No. 3(2): There should be continuity.	An open in the wire

acceleration sensor 4P connector(3) • Yaw rate-lateral longitudinal acceleration sensor 4P connector(2)	Check for continuity between AcuraLink® control unit (XM receiver) connector A (32P) terminal No. 6 and yaw rate-lateral acceleration sensor 4P connector terminal No. 2(3) or yaw-rate lateral/longitudinal acceleration sensor 4P connector terminal No. 2(2): There should be continuity.	An open in the wire
Disconnect these items: • AcuraLink® control unit (XM receiver) connector A (32P) • ECM/PCM connector A (49P)	Check for continuity between AcuraLink® control unit (XM receiver) connector A (32P) terminal No. 7 and ECM/PCM connector A (49P) terminal No. 49: There should be continuity.	An open in the wire
	Check for continuity between AcuraLink® control unit (XM receiver) connector A (32P) terminal No. 6 and ECM/PCM connector A (49P) terminal No. 48: There should be continuity.	An open in the wire
Disconnect these items: • AcuraLink® control unit (XM receiver) connector A (32P) • Gauge control module 32P connector	Check for continuity between AcuraLink® control unit (XM receiver) connector A (32P) terminal No. 7 and gauge control module 32P connector terminal No. 14: There should be continuity.	An open in the wire
	Check for continuity between AcuraLink® control unit (XM receiver) connector A (32P) terminal No. 6 and gauge control module 32P connector terminal No. 13: There should be continuity.	An open in the wire
Disconnect these items: • AcuraLink® control unit (XM receiver) connector A (32P) • TPMS control unit 20P connector	Check for continuity between AcuraLink® control unit (XM receiver) connector A (32P) terminal No. 7 and TPMS control unit 20P connector terminal No. 2: There should be continuity.	An open in the wire
	Check for continuity between AcuraLink® control unit (XM receiver) connector A (32P) terminal No. 6 and TPMS control unit 20P connector terminal No. 11: There should be continuity.	An open in the wire
	Check for continuity between	

Disconnect these items: • AcuraLink® control unit (XM receiver) connector A (32P) • Audio-navigation unit connector H (28P)	AcuraLink® control unit (XM receiver) connector A (32P) terminal No. 7 and audio-navigation unit connector H (28P) terminal No. 12: There should be continuity.	An open in the wire
	Check for continuity between AcuraLink® control unit (XM receiver) connector A (32P) terminal No. 6 and audio-navigation unit connector H (28P) terminal No. 25: There should be continuity.	An open in the wire
Disconnect these items: • AcuraLink® control unit (XM receiver) connector A (32P) • EPS control unit connector D (28P)	Check for continuity between AcuraLink® control unit (XM receiver) connector A (32P) terminal No. 7 and EPS control unit connector D (28P) terminal No. 1: There should be continuity.	An open in the wire
	Check for continuity between AcuraLink® control unit (XM receiver) connector A (32P) terminal No. 6 and EPS control unit connector D (28P) terminal No. 15: There should be continuity.	An open in the wire
Disconnect these items: • AcuraLink® control unit (XM receiver) connector A (32P) • SH-AWD control unit connector A (20P)'	Check for continuity between AcuraLink® control unit (XM receiver) connector A (32P) terminal No. 7 and SH-AWD control unit connector A (20P) terminal No. 10: There should be continuity.	An open in the wire
	Check for continuity between AcuraLink® control unit (XM receiver) connector A (32P) terminal No. 6 and SH-AWD control unit connector A (20P) terminal No. 20: There should be continuity.	An open in the wire
Disconnect these items: • AcuraLink® control unit (XM receiver) connector A (32P) • Steering angle sensor 5P connector(1)	Check for continuity between AcuraLink® control unit (XM receiver) connector A (32P) terminal No. 7 and steering angle sensor 5P connector terminal No. 10: There should be continuity.	An open in the wire
	Check for continuity between AcuraLink® control unit (XM receiver) connector A (32P) terminal No. 6 and steering angle sensor 5P connector terminal No. 2: There should be continuity.	An open in the wire

Disconnect these items: • AcuraLink® control unit (XM receiver) connector A (32P) • Power control unit connector C (36P)	Check for continuity between AcuraLink® control unit (XM receiver) connector A (32P) terminal No. 7 and power control unit connector C (36P) terminal No. 34: There should be continuity.	An open in the wire
	Check for continuity between AcuraLink® control unit (XM receiver) connector A (32P) terminal No. 6 and power control unit connector C (36P) terminal No. 35: There should be continuity.	An open in the wire
Disconnect these items: • AcuraLink® control unit (XM receiver) connector A (32P) • VSA modulator-control unit 47P connector	Check for continuity between AcuraLink® control unit (XM receiver) connector A (32P) terminal No. 7 and VSA modulator-control unit 47P connector terminal No. 12: There should be continuity.	An open in the wire
	Check for continuity between AcuraLink® control unit (XM receiver) connector A (32P) terminal No. 6 and VSA modulator-control unit 47P connector terminal No. 13: There should be continuity.	An open in the wire
Disconnect these items: • AcuraLink® control unit (XM receiver) connector A (32P) • SRS unit connector A (39P)	Check for continuity between AcuraLink® control unit (XM receiver) connector A (32P) terminal No. 7 and SRS unit connector A (39P) terminal No. 17: There should be continuity.	An open in the wire
	Check for continuity between AcuraLink® control unit (XM receiver) connector A (32P) terminal No. 6 and SRS unit connector A (39P) terminal No. 16: There should be continuity.	An open in the wire
Disconnect these items: • AcuraLink® control unit (XM receiver) connector A (32P) • Yaw rate-lateral acceleration sensor 4P connector(3) • Yaw rate-lateral/longitudinal	Check for continuity between body ground and AcuraLink® control unit (XM receiver) connector A (32P) terminals No. 6 and No. 7 individually: There should be no continuity.	A short in the wire

acceleration sensor 4P connector(2) • ECM/PCM connector A (49P) • Gauge control module 32P connector • Power control unit connector C (36P) • TPMS control unit 20P connector • VSA modulator-control unit 47P connector • SRS unit connector A (39P) • EPS control unit connector D (28P) • SH-AWD control unit connector A (20P)(2) • Steering angle sensor 5P connector(2) • Audio-navigation unit connector H (28P)	Check for continuity between body ground and AcuraLink® control unit (XM receiver) connector A (32P) terminals No. 1 and No. 7 individually: There should be no continuity.	A short to power in the wire
	Check for continuity between body ground and AcuraLink® control unit (XM receiver) connector A (32P) terminals No. 1 and No. 6 individually: There should be no continuity.	A short to power in the wire
Disconnect these items: • Yaw rate-lateral acceleration sensor 4P connector(3) • Yaw rate-lateral/longitudinal acceleration sensor 4P connector(2) • ECM/PCM connector A (49P) • Gauge control module 32P connector • Power control unit connector C (36P) • TPMS control unit 20P connector • VSA modulator-control unit 47P	Check for continuity between body ground and AcuraLink® control unit (XM receiver) connector A (32P) terminals No. 6 and No. 7 individually: There should be no continuity.	A short in the AcuraLink® control unit (XM receiver)

connector • SRS unit connector A (39P) • EPS control unit connector D (28P) • SH-AWD control unit connector A (20P)(2) • Steering angle sensor 5P connector(2) • Audio-navigation unit connector H (28P)		
Disconnect these items: • AcuraLink® control unit (XM receiver) connector A (32P) • ECM/PCM connector A (49P) • Gauge control module 32P connector • Power control unit connector C (36P) • TPMS control unit 20P connector • VSA modulator-control unit 47P connector • SRS unit connector A (39P) • EPS control unit connector D (28P) • SH-AWD control unit connector A (20P)(2) • Steering angle sensor 5P connector(2) • Audio-navigation unit connector H (28P)	Check for continuity between body ground and AcuraLink® control unit (XM receiver) connector A (32P) terminals No. 6 and No. 7 individually: There should be no continuity.	A short in the yaw rate-lateral acceleration sensor(3) or yaw rate-lateral/longitudinal acceleration sensor(2)
Disconnect these items: • AcuraLink® control unit (XM receiver) connector A (32P)		

	• Yaw rate-lateral acceleration sensor 4P connector(3) • Yaw rate-lateral/longitudinal acceleration sensor 4P connector(3) • Gauge control module 32P connector • Power control unit connector C (36P) • TPMS control unit 20P connector • VSA modulator-control unit 47P connector • SRS unit connector A (39P) • EPS control unit connector D(28P) • SH-AWD control unit connector A (20P)(2) • Steering angle sensor 5P connector(2) • Audio-navigation unit connector H (28P)	Check for continuity between body ground and AcuraLink® control unit (XM receiver) connector A (32P) terminals No. 6 and No. 7 individually: There should be no continuity.	A short in the ECM/PCM
	Disconnect these items: • AcuraLink® control unit (XM receiver) connector A (32P) • Yaw rate-lateral acceleration sensor 4P connector(3) • Yaw rate-lateral/longitudinal acceleration sensor 4P connector(2) • ECM/PCM connector A (49P) • Gauge control module 32P connector	Check for continuity between body ground and AcuraLink® control unit (XM receiver) connector A (32P)	A short in EPS control

• Power control unit connector C (36P) • TPMS control unit 20P connector • VSA modulator-control unit 47P connector • SRS unit connector A (39P) • SH-AWD control unit connector A (20P)(2) • Steering angle sensor 5P connector(2) • Audio-navigation unit connector H (28P)	terminals No. 6 and No. 7 individually: There should be no continuity.	unit
Disconnect these items: • AcuraLink® control unit (XM receiver) connector A (32P) • Yaw rate-lateral acceleration sensor 4P connector(3) • Yaw rate-lateral/longitudinal acceleration sensor 4P connector(2) • ECM/PCM connector A (49P) • Power control unit connector C (36P) • TPMS control unit 20P connector • VSA modulator-control unit 47P connector • SRS unit connector A (39P) • EPS control unit connector D (28P) • SH-AWD control unit connector A (20P)(2)	Check for continuity between body ground and AcuraLink® control unit (XM receiver) connector A (32P) terminals No. 6 and No. 7 individually: There should be no continuity.	A short in the gauge control module

• Steering angle sensor 5P connector(2) • Audio-navigation unit connector H (28P)		
Disconnect these items: • AcuraLink® control unit (XM receiver) connector A (32P) • Yaw rate-lateral acceleration sensor 4P connector(3) • Yaw rate-lateral/longitudinal acceleration sensor 4P connector(2) • ECM/PCM connector A (49P) • Gauge control module 32P connector • Power control unit connector C (36P) • VSA modulator-control unit 47P connector • SRS unit connector A (39P) • EPS control unit connector D (28P) • SH-AWD control unit connector A (20P)(2) • Steering angle sensor 5P connector(2) • Audio-navigation unit connector H 28P)	Check for continuity between body ground and AcuraLink® control unit (XM receiver) connector A (32P) terminals No. 6 and No. 7 individually: There should be no continuity.	A short in the TPMS control unit
Disconnect these items: • AcuraLink® control unit (XM receiver) connector A (32P) • Yaw rate-lateral acceleration sensor 4P		

connector(3) • Yaw rate-lateral/longitudinal acceleration sensor 4P connector(2) • ECM/PCM connector A (49P) • Gauge control module 32P connector • Power control unit connector C (36P) • TPMS control unit 20P connector • SRS unit connector A (39P) • EPS control unit connector D (28P) • SH-AWD control unit connector A (20P)(2) • Steering angle sensor 5P connector(2) • Audio-navigation unit connector H (28P)	Check for continuity between body ground and AcuraLink® control unit (XM receiver) connector A (32P) terminals No. 6 and No. 7 individually: There should be no continuity.	A short in the VSA modulator-control unit
Disconnect these items: • AcuraLink® control unit (XM receiver) connector A (32P) • Yaw rate-lateral acceleration sensor 4P connector(3) • Yaw rate-lateral/longitudinal acceleration sensor 4P connector(2) • ECM/PCM connector A (49P) • Gauge control module 32P connector • Power control unit connector C (36P) • TPMS control unit	Check for continuity between body ground and AcuraLink® control unit (XM receiver) connector A (32P) terminals No. 6 and No. 7 individually: There should be no continuity.	A short in the SRS unit

	20P connector • VSA modulator-control unit 47P connector • EPS control unit connector D (28P) • SH-AWD control unit connector A (20P)(2) • Steering angle sensor 5P connector(2) • Audio-navigation unit connector H (28P)		
F-CAN	Disconnect these items: • AcuraLink® control unit (XM receiver) connector A (32P) • Yaw rate-lateral acceleration sensor 4P connector(3) • Yaw rate-lateral/longitudinal acceleration sensor 4P connector(2) • ECM/PCM connector A (49P) • Gauge control module 32P connector • Power control unit connector C (36P) • TPMS control unit 20P connector • VSA modulator-control unit 47P connector • SRS unit connector A (39P) • EPS control unit connector D (28P) • SH-AWD control unit connector A (20P)(2) • Steering angle sensor	Check for continuity between body ground and AcuraLink® control unit (XM receiver) connector A (32P) terminals No. 6 and No. 7 individually: There should be no continuity.	A short in the audio-navigation unit

5P connector(2)		
Disconnect these items: • AcuraLink® control unit (XM receiver) connector A (32P) • Yaw rate-lateral acceleration sensor 4P connector(3) • Yaw rate-lateral/longitudinal acceleration sensor 4P connector(2) • ECM/PCM connector A (49P) • Gauge control module 32P connector • Power control unit connector C (36P) • TPMS control unit 20P connector • VSA modulator-control unit 47P connector • SRS unit connector A (39P) • EPS control unit connector D (28P) • Steering angle sensor 5P connector(2) • Audio-navigation unit connector H (28P)	Check for continuity between body ground and AcuraLink® control unit (XM receiver) connector A (32P) terminals No. 6 and No. 7 individually: There should be no continuity.	A short in the SH-AWD control unit(2)
Disconnect these items: • AcuraLink® control unit (XM receiver) connector A (32P) • Yaw rate-lateral acceleration sensor 4P connector(3) • Yaw rate-lateral/longitudinal acceleration sensor 4P		

connector(2) • ECM/PCM connector A (49P) • Gauge control module 32P connector • Power control unit connector C (36P) • TPMS control unit 20P connector • VSA modulator-control unit 47P connector • SRS unit connector A (39P) • EPS control unit connector D (28P) • SH-AWD control unit connector A (20P)(2) • Audio-navigation unit connector H (28P)	Check for continuity between body ground and AcuraLink® control unit (XM receiver) connector A (32P) terminals No. 6 and No. 7 individually: There should be no continuity.	A short in the steering angle sensor(2)
Disconnect these items: • AcuraLink® control unit (XM receiver) connector A (32P) • Yaw rate-lateral acceleration sensor 4P connector(3) • Yaw rate-lateral/longitudinal acceleration sensor 4P connector(2) • ECM/PCM connector A (49P) • Gauge control module 32P connector • TPMS control unit 20P connector • VSA modulator-control unit 47P connector • SRS unit connector A	Check for continuity between body ground and AcuraLink® control unit (XM receiver) connector A (32P) terminals No. 6 and No. 7 individually: There should be no continuity.	A short in the power control unit

	(39P) • EPS control unit connector D (28P) • SH-AWD control unit connector A (20P)(2) • Steering angle sensor 5P connector(2) • Audio-navigation unit connector H (28P)		
	Disconnect these items: • AcuraLink® control unit (XM receiver) connector A (32P) • Driver's under-dash fuse/relay box connector P (20P)	Check for continuity between AcuraLink® control unit (XM receiver) connector A (32P) terminal No. 9 and driver's under-dash fuse/relay box connector P (20P) terminal No. 6: There should be continuity.	An open in the wire
		Check for continuity between AcuraLink® control unit (XM receiver) connector A (32P) terminal No. 8 and driver's under-dash fuse/relay box connector P (20P) terminal No. 5: There should be continuity.	An open in the wire
	Disconnect these items: • AcuraLink® control unit (XM receiver) connector A (32P) • Passenger's under-dash fuse/relay box connector A (38P)	Check for continuity between AcuraLink® control unit (XM receiver) connector A (32P) terminal No. 9 and passenger's under-dash fuse/relay box connector A (38P) terminal No. 6: There should be continuity.	An open in the wire
		Check for continuity between AcuraLink® control unit (XM receiver) connector A (32P) terminal No. 8 and passenger's under-dash fuse/relay box connector A (38P) terminal No. 29: There should be continuity.	An open in the wire
	Disconnect these items: • AcuraLink® control unit (XM receiver) connector A (32P) • Power window master	Check for continuity between AcuraLink® control unit (XM receiver) connector A (32P) terminal No. 9 and power window master switch 37P connector terminal No. 35: There should be continuity.	An open in the wire
		Check for continuity between AcuraLink® control unit (XM	

switch 37P connector	receiver) connector A (32P) terminal No. 8 and power window master switch 37P connector terminal No. 33: There should be continuity.	An open in the wire
Disconnect these items: • AcuraLink® control unit (XM receiver) connector A (32P) • Gauge control module 32P connector	Check for continuity between AcuraLink® control unit (XM receiver) connector A (32P) terminal No. 9 and gauge control module 32P connector terminal No. 30: There should be continuity.	An open in the wire
	Check for continuity between AcuraLink® control unit (XM receiver) connector A (32P) terminal No. 8 and gauge control module 32P connector terminal No. 29: There should be continuity.	An open in the wire
Disconnect these items: • AcuraLink® control unit (XM receiver) connector A (32P) • BSI control unit 16P connector	Check for continuity between AcuraLink® control unit (XM receiver) connector A (32P) terminal No. 9 and BSI control unit 16P connector terminal No. 6: There should be continuity.	An open in the wire
	Check for continuity between AcuraLink® control unit (XM receiver) connector A (32P) terminal No. 8 and BSI control unit 16P connector terminal No. 5: There should be continuity.	An open in the wire
Disconnect these items: • AcuraLink® control unit (XM receiver) connector A (32P) • Power seat control unit connector A (40P)	Check for continuity between AcuraLink® control unit (XM receiver) connector A (32P) terminal No. 9 and power seat control unit connector A (40P) terminal No. 40: There should be continuity.	An open in the wire
	Check for continuity between AcuraLink® control unit (XM receiver) connector A (32P) terminal No. 8 and power seat control unit connector A (40P) terminal No. 39: There should be continuity.	An open in the wire
Disconnect these items: • AcuraLink® control unit (XM receiver)	Check for continuity between AcuraLink® control unit (XM receiver) connector A (32P) terminal No. 9 and climate control unit connector C (20P) terminal No. 8: There should be continuity.	An open in the wire
	Check for continuity between	

connector A (32P) • Climate control unit connector C (20P)	AcuraLink® control unit (XM receiver) connector A (32P) terminal No. 8 and climate control unit connector C (20P) terminal No. 7: There should be continuity.	An open in the wire
Disconnect these items: • AcuraLink® control unit (XM receiver) connector A (32P) • Audio-navigation unit connector D (36P)	Check for continuity between AcuraLink® control unit (XM receiver) connector A (32P) terminal No. 9 and audio-navigation unit connector D (36P) terminal No. 12: There should be continuity.	An open in the wire
	Check for continuity between AcuraLink® control unit (XM receiver) connector A (32P) terminal No. 8 and audio-navigation unit connector D (36P) terminal No. 28: There should be continuity.	An open in the wire
Disconnect these items: • AcuraLink® control unit (XM receiver) connector A (32P) • Power control unit connector A (36P)	Check for continuity between AcuraLink® control unit (XM receiver) connector A (32P) terminal No. 9 and power control unit connector C (36P) terminal No. 16: There should be continuity.	An open in the wire
	Check for continuity between AcuraLink® control unit (XM receiver) connector A (32P) terminal No. 8 and power control unit connector C (36P) terminal No. 17: There should be continuity.	An open in the wire
Disconnect these items: • AcuraLink® control unit (XM receiver) connector A (32P) • Remote slot control unit 40P connector	Check for continuity between AcuraLink® control unit (XM receiver) connector A (32P) terminal No. 9 and remote slot control unit 40P connector terminal No. 3: There should be continuity.	An open in the wire
	Check for continuity between AcuraLink® control unit (XM receiver) connector A (32P) terminal No. 8 and remote slot control unit 40P connector terminal No. 23: There should be continuity.	An open in the wire
Disconnect these items: • AcuraLink® control unit (XM receiver)	Check for continuity between AcuraLink® control unit (XM receiver) connector A (32P) terminal No. 9 and keyless access control unit connector B (32P) terminal No. 8: There should be continuity.	An open in the wire

connector A (32P) • Keyless access control unit connector B (32P)	Check for continuity between AcuraLink® control unit (XM receiver) connector A (32P) terminal No. 8 and keyless access control unit connector B (32P) terminal No. 7: There should be continuity.	An open in the wire
Disconnect these items: • AcuraLink® control unit (XM receiver) connector A (32P) • Driver's under-dash fuse/relay box connector P (20P) • Passenger's under-dash fuse/relay box connector A (38P) • Power window master switch 37P connector • Gauge control module 32P connector • BSI control unit 16P connector • Power seat control unit connector A (40P) • Climate control unit connector C (20P) • Audio-navigation unit connector D (36P) • Power control unit connector C (36P) • Remote slot control unit 40P connector • Keyless access control unit connector B (32P)	Check for continuity between body ground and AcuraLink® control unit (XM receiver) connector A (32P) terminals No. 8 and No. 9 individually: There should be no continuity.	A short in the wire
	Check for continuity between body ground and AcuraLink® control unit (XM receiver) connector A (32P) terminals No. 1 and No. 8 individually: There should be no continuity.	A short to power in the wire
	Check for continuity between body ground and AcuraLink® control unit (XM receiver) connector A (32P) terminals No. 1 and No. 9 individually: There should be no continuity.	A short to power in the wire
Disconnect these items: • Driver's under-dash fuse/relay box connector P (20P) • Passenger's under-dash fuse/relay box		

connector A (38P) • Power window master switch 37P connector • Gauge control module 32P connector • BSI control unit 16P connector • Power seat control unit connector A (40P) • Climate control unit connector C (20P) • Audio-navigation unit connector D (36P) • Power control unit connector C (36P) • Remote slot control unit 40P connector • Keyless access control unit connector B (32P)	Check for continuity between body ground and AcuraLink® control unit (XM receiver) connector A (32P) terminals No. 8 and No. 9 individually: There should be no continuity.	A short in the AcuraLink® control unit (XM receiver)
Disconnect these items: • AcuraLink® control unit (XM receiver) connector A (32P) • Passenger's under-dash fuse/relay box connector A (38P) • Power window master switch 37P connector • Gauge control module 32P connector • BSI control unit 16P connector • Power seat control unit connector A (40P) • Climate control unit connector C (20P) • Audio-navigation unit connector D (36P) • Power control unit	Check for continuity between body ground and AcuraLink® control unit (XM receiver) connector A (32P) terminals No. 8 and No. 9 individually: There should be no continuity.	A short in the driver's under-dash fuse/relay box

connector C (36P) • Remote slot control unit 40P connector • Keyless access control unit connector B (32P)		
Disconnect these items: • AcuraLink® control unit (XM receiver) connector A (32P) • Driver's under-dash fuse/relay box connector P (20P) • Power window master switch 37P connector • Gauge control module 32P connector • BSI control unit 16P connector • Power seat control unit connector A (40P) • Climate control unit connector C (20P) • Audio-navigation unit connector D (36P) • Power control unit connector C (36P) • Remote slot control unit 40P connector • Keyless access control unit connector B (32P)	Check for continuity between body ground and AcuraLink® control unit (XM receiver) connector A (32P) terminals No. 8 and No. 9 individually: There should be no continuity.	A short in the passenger's under-dash fuse/relay box
Disconnect these items: • AcuraLink® control unit (XM receiver) connector A (32P) • Driver's under-dash fuse/relay box connector P (20P) • Passenger's under-dash fuse/relay box		

connector A (38P) • Gauge control module 32P connector • BSI control unit 16P connector • Power seat control unit connector A (40P) • Climate control unit connector C (20P) • Audio-navigation unit connector D (36P) • Power control unit connector C (36P) • Remote slot control unit 40P connector • Keyless access control unit connector B (32P)	Check for continuity between body ground and AcuraLink® control unit (XM receiver) connector A (32P) terminals No. 8 and No. 9 individually: There should be no continuity.	A short in the door multiplex control unit (built into the power window master switch)
Disconnect these items: • AcuraLink® control unit (XM receiver) connector A (32P) • Driver's under-dash fuse/relay box connector P (20P) • Passenger's under-dash fuse/relay box connector A (38P) • Power window master switch 37P connector • BSI control unit 16P connector • Power seat control unit connector A (40P) • Climate control unit connector C (20P) • Audio-navigation unit connector D (36P) • Power control unit connector C (36P)	Check for continuity between body ground and AcuraLink® control unit (XM receiver) connector A (32P) terminals No. 8 and No. 9 individually: There should be no continuity.	A short in the gauge control module

• Remote slot control unit 40P connector • Keyless access control unit connector B (32P)		
Disconnect these items: • AcuraLink® control unit (XM receiver) connector A (32P) • Driver's under-dash fuse/relay box connector P (20P) • Passenger's under-dash fuse/relay box connector A (38P) • Power window master switch 37P connector • Gauge control module 32P connector • Power seat control unit connector A (40P) • Climate control unit connector C (20P) • Audio-navigation unit connector D (36P) • Power control unit connector C (36P) • Remote slot control unit 40P connector • Keyless access control unit connector B (32P)	Check for continuity between body ground and AcuraLink® control unit (XM receiver) connector A (32P) terminals No. 8 and No. 9 individually: There should be no continuity.	A short in the BSI control unit
Disconnect these items: • AcuraLink® control unit (XM receiver) connector A (32P) • Driver's under-dash fuse/relay box connector P (20P) • Passenger's under-dash fuse/relay box		

connector A (38P) • Power window master switch 37P connector • Gauge control module 32P connector • BSI control unit 16P connector • Climate control unit connector C (20P) • Audio-navigation unit connector D (36P) • Power control unit connector C (36P) • Remote slot control unit 40P connector • Keyless access control unit connector B (32P)	Check for continuity between body ground and AcuraLink® control unit (XM receiver) connector A (32P) terminals No. 8 and No. 9 individually: There should be no continuity.	A short in the power seat control unit
Disconnect these items: • AcuraLink® control unit (XM receiver) connector A (32P) • Driver's under-dash fuse/relay box connector P (20P) • Passenger's under-dash fuse/relay box connector A (38P) • Power window master switch 37P connector • Gauge control module 32P connector • BSI control unit 16P connector • Power seat control unit connector A (40P) • Audio-navigation unit connector D (36P) • Power control unit connector C (36P) • Remote slot control	Check for continuity between body ground and AcuraLink® control unit (XM receiver) connector A (32P) terminals No. 8 and No. 9 individually: There should be no continuity.	A short in the climate control unit

unit 40P connector • Keyless access control unit connector B (32P)		
Disconnect these items: • AcuraLink® control unit (XM receiver) connector A (32P) • Driver's under-dash fuse/relay box connector P (20P) • Passenger's under-dash fuse/relay box connector A (38P) • Power window master switch 37P connector • Gauge control module 32P connector • BSI control unit 16P connector • Power seat control unit connector A (40P) • Climate control unit connector C (20P) • Power control unit connector C (36P) • Remote slot control unit 40P connector • Keyless access control unit connector B (32P)	Check for continuity between body ground and AcuraLink® control unit (XM receiver) connector A (32P) terminals No. 8 and No. 9 individually: There should be no continuity.	A short in the audio-navigation unit
Disconnect these items: • AcuraLink® control unit (XM receiver) connector A (32P) • Driver's under-dash fuse/relay box connector P (20P) • Passenger's under-dash fuse/relay box connector A (38P)		

• Power window master switch 37P connector • Gauge control module 32P connector • BSI control unit 16P connector • Power seat control unit connector A (40P) • Climate control unit connector C (20P) • Audio-navigation unit connector D (36P) • Remote slot control unit 40P connector • Keyless access control unit connector B (32P)	Check for continuity between body ground and AcuraLink® control unit (XM receiver) connector A (32P) terminals No. 8 and No. 9 individually: There should be no continuity.	A short in the power control unit
Disconnect these items: • AcuraLink® control unit (XM receiver) connector A (32P) • Driver's under-dash fuse/relay box connector P (20P) • Passenger's under-dash fuse/relay box connector A (38P) • Power window master switch 37P connector • Gauge control module 32P connector • BSI control unit 16P connector • Power seat control unit connector A (40P) • Climate control unit connector C (20P) • Audio-navigation unit connector D (36P) • Power control unit	Check for continuity between body ground and AcuraLink® control unit (XM receiver) connector A (32P) terminals No. 8 and No. 9 individually: There should be no continuity.	A short in the remote slot control unit

	connector C (36P) • Keyless access control unit connector B (32P)		
B-CAN	Disconnect these items: • AcuraLink® control unit (XM receiver) connector A (32P) • Driver's under-dash fuse/relay box connector P (20P) • Passenger's under-dash fuse/relay box connector A (38P) • Power window master switch 37P connector • Gauge control module 32P connector • BSI control unit 16P connector • Power seat control unit connector A (40P) • Climate control unit connector C (20P) • Audio-navigation unit connector D (36P) • Power control unit connector C (36P) • Remote slot control unit 40P connector	Check for continuity between body ground and AcuraLink® control unit (XM receiver) connector A (32P) terminals No. 8 and No. 9 individually: There should be no continuity.	A short in the keyless access control unit
		Check for continuity between AcuraLink® control unit (XM receiver) connector A (32P) terminal No. 19 and audio-navigation unit connector H (28P) terminal No. 22: There should be continuity.	An open in the wire
		Check for continuity between AcuraLink® control unit (XM receiver) connector A (32P) terminal No. 20 and audio-navigation unit connector H (28P) terminal No. 9: There should be continuity.	An open in the wire

Disconnect these items: • AcuraLink® control unit (XM receiver) connector A (32P) • Audio-navigation unit connector H (28P)	Check for continuity between AcuraLink® control unit (XM receiver) connector A (32P) terminal No. 17 and audio-navigation unit connector H (28P) terminal No. 23: There should be continuity.	An open in the wire
	Check for continuity between AcuraLink® control unit (XM receiver) connector A (32P) terminal No. 18 and audio-navigation unit connector H (28P) terminal No. 10: There should be continuity.	An open in the wire
	Check for continuity between AcuraLink® control unit (XM receiver) connector A (32P) terminal No. 19 and body ground: There should be no continuity.	A short in the wire
	Check for continuity between AcuraLink® control unit (XM receiver) connector A (32P) terminals No. 1 and No. 19: There should be no continuity.	A short to power in the wire
	Check for continuity between AcuraLink® control unit (XM receiver) connector A (32P) terminal No. 20 and body ground: There should be no continuity.	A short in the wire
	Check for continuity between AcuraLink® control unit (XM receiver) connector A (32P) terminals No. 1 and No. 20: There should be no continuity.	A short to power in the wire
	Check for continuity between AcuraLink® control unit (XM receiver) connector A (32P) terminal No. 17 and body ground: There should be no continuity.	A short in the wire
	Check for continuity between AcuraLink® control unit (XM receiver) connector A (32P) terminals No. 1 and No. 17: There should be no continuity.	A short to power in the wire
	Check for continuity between AcuraLink® control unit (XM receiver) connector A (32P) terminal No. 18 and body ground: There should be no continuity.	A short in the wire

	Check for continuity between AcuraLink® control unit (XM receiver) connector A (32P) terminals No. 1 and No. 18: There should be no continuity.	A short to power in the wire
Disconnect audio-navigation unit connector H (28P)	Check for continuity between AcuraLink® control unit (XM receiver) connector A (32P) terminal No. 19 and body ground: There should be no continuity.	A short in the AcuraLink® control unit (XM receiver)
	Check for continuity between AcuraLink® control unit (XM receiver) connector A (32P) terminal No. 20 and body ground: There should be no continuity.	A short in the AcuraLink® control unit (XM receiver)
	Check for continuity between AcuraLink® control unit (XM receiver) connector A (32P) terminal No. 17 and body ground: There should be no continuity.	A short in the AcuraLink® control unit (XM receiver)
	Check for continuity between AcuraLink® control unit (XM receiver) connector A (32P) terminal No. 18 and body ground: There should be no continuity.	A short in the AcuraLink® control unit (XM receiver)
Disconnect AcuraLink® control unit (XM receiver) connector A (32P)	Check for continuity between AcuraLink® control unit (XM receiver) connector A (32P) terminal No. 19 and body ground: There should be no continuity.	A short in the audio-navigation unit
	Check for continuity between AcuraLink® control unit (XM receiver) connector A (32P) terminal No. 20 and body ground: There should be no continuity.	A short in the audio-navigation unit
	Check for continuity between AcuraLink® control unit (XM receiver) connector A (32P) terminal No. 17 and body ground; There should be no continuity.	A short in the audio-navigation unit
	Check for continuity between AcuraLink® control unit (XM receiver) connector A (32P) terminal No. 18 and body ground: There should be no continuity.	A short in the audio-navigation unit
	Check for continuity between	

Disconnect these items: • AcuraLink® control unit (XM receiver) connector A (32P) • HandsFreeLink control unit 32P connector	AcuraLink® control unit (XM receiver) connector A (32P) terminal No. 24 and HandsFreeLink control unit 32P connector terminal No. 22: There should be continuity.	An open in the wire
	Check for continuity between AcuraLink® control unit (XM receiver) connector A (32P) terminal No. 25 and HandsFreeLink control unit 32P connector terminal No. 23: There should be continuity.	An open in the wire
	Check for continuity between AcuraLink® control unit (XM receiver) connector A (32P) terminal No. 22 and HandsFreeLink control unit 32P connector terminal No. 7: There should be continuity.	An open in the wire
	Check for continuity between AcuraLink® control unit (XM receiver) connector A (32P) terminal No. 23 and HandsFreeLink control unit 32P connector terminal No. 6: There should be continuity.	An open in the wire
Disconnect these items: • AcuraLink® control unit (XM receiver) connector A (32P) • HandsFreeLink control unit 32P	Check for continuity between AcuraLink® control unit (XM receiver) connector A (32P) terminal No. 24 and body ground: There should be no continuity.	A short in the wire
	Check for continuity between AcuraLink® control unit (XM receiver) connector A (32P) terminals No. 1 and No. 24: There should be no continuity.	A short to power in the wire
	Check for continuity between AcuraLink® control unit (XM receiver) connector A (32P) terminal No. 25 and body ground: There should be no continuity.	A short in the wire
	Check for continuity between AcuraLink® control unit (XM receiver) connector A (32P) terminals No. 1 and No. 25: There should be no continuity.	A short to power in the wire
	Check for continuity between AcuraLink® control unit (XM receiver) connector A (32P) terminal No. 22 and body ground: There	A short in the wire

	connector	should be no continuity.	
		Check for continuity between AcuraLink® control unit (XM receiver) connector A (32P) terminals No. 1 and No. 22: There should be no continuity.	A short to power in the wire
		Check for continuity between AcuraLink® control unit (XM receiver) connector A (32P) terminal No. 23 and body ground: There should be no continuity.	A short in the wire
		Check for continuity between AcuraLink® control unit (XM receiver) connector A (32P) terminals No. 1 and No. 23: There should be no continuity.	A short to power in the wire
HFL	Disconnect HandsFreeLink control unit 32P connector	Check for continuity between AcuraLink® control unit (XM receiver) connector A (32P) terminal No. 24 and body ground: There should be no continuity.	A short in the AcuraLink® control unit (XM receiver)
		Check for continuity between AcuraLink® control unit (XM receiver) connector A (32P) terminal No. 25 and body ground: There should be no continuity.	A short in the AcuraLink® control unit (XM receiver)
		Check for continuity between AcuraLink® control unit (XM receiver) connector A (32P) terminal No. 22 and body ground: There should be no continuity.	A short in the AcuraLink® control unit (XM receiver)
		Check for continuity between AcuraLink® control unit (XM receiver) connector A (32P) terminal No. 23 and body ground: There should be no continuity.	A short in the AcuraLink® control unit (XM receiver)
	Disconnect AcuraLink® control unit (XM receiver)	Check for continuity between AcuraLink® control unit (XM receiver) connector A (32P) terminal No. 24 and body ground: There should be no continuity.	A short in the HandsFreeLink control unit
		Check for continuity between AcuraLink® control unit (XM receiver) connector A (32P) terminal No. 25 and body ground: There should be no continuity.	A short in the HandsFreeLink control unit

	connector A (32P)	Check for continuity between AcuraLink® control unit (XM receiver) connector A (32P) terminal No. 22 and body ground: There should be no continuity.	A short in the HandsFreeLink control unit
		Check for continuity between AcuraLink® control unit (XM receiver) connector A (32P) terminal No. 23 and body ground: There should be no continuity.	A short in the HandsFreeLink control unit
Audio	Disconnect these items: • AcuraLink® control unit (XM receiver) connector A (32?) • Audio-navigation unit connector C (14P)	Check for continuity between AcuraLink® control unit (XM receiver) connector A (32P) terminal No. 30 and audio-navigation unit connector C (14P) terminal No. 9: There should be continuity.	An open in the wire
		Check for continuity between AcuraLink® control unit (XM receiver) connector A (32P) terminal No. 31 and audio-navigation unit connector C (14P) terminal No. 10: There should be continuity.	An open in the wire
	Disconnect these items: • AcuraLink® control unit (XM receiver) connector A (32P) • Audio-navigation unit connector C (14P) • Navigation display unit 36P connector • HandsFreeLink control unit 32P connector	Check for continuity between AcuraLink® control unit (XM receiver) connector A (32P) terminal No. 30 and body ground: There should be no continuity.	A short in the wire
		Check for continuity between AcuraLink® control unit (XM receiver) connector A (32P) terminals No. 1 and No. 30: There should be no continuity.	A short to power in the wire
		Check for continuity between AcuraLink® control unit (XM receiver) connector A (32P) terminal No. 31 and body ground: There should be no continuity.	A short in the wire
		Check for continuity between AcuraLink® control unit (XM receiver) connector A (32P) terminals No. 1 and No. 31: There should be no continuity.	A short to power in the wire
	Disconnect these items: • Audio-navigation unit connector C (14P)	Check for continuity between AcuraLink® control unit (XM receiver) connector A (32P) terminal No. 30 and body ground: There should be no continuity.	A short in the AcuraLink® control unit (XM receiver)

	• Navigation display unit 36P connector • HandsFreeLink control unit 32P connector	Check for continuity between AcuraLink® control unit (XM receiver) connector A (32P) terminal No. 31 and body ground: There should be no continuity.	A short in the AcuraLink® control unit (XM receiver)
	Disconnect these items: • AcuraLink® control unit (XM receiver) connector A (32P) • Navigation display unit 36P connector • HandsFreeLink control unit 32P connector	Check for continuity between AcuraLink® control unit (XM receiver) connector A (32P) terminal No. 30 and body ground: There should be no continuity.	A short in the audio-navigation unit
		Check for continuity between AcuraLink® control unit (XM receiver) connector A (32P) terminal No. 31 and body ground: There should be no continuity.	A short in the audio-navigation unit
	Disconnect these items: • AcuraLink® control unit (XM receiver) connector A (32P) • Audio-navigation unit connector C (14P) • HandsFreeLink control unit 32P connector	Check for continuity between AcuraLink® control unit (XM receiver) connector A (32P) terminal No. 30 and body ground: There should be no continuity.	A short in the navigation display unit
		Check for continuity between AcuraLink® control unit (XM receiver) connector A (32P) terminal No. 31 and body ground: There should be no continuity.	A short in the navigation display unit
	Disconnect these items: • AcuraLink® control unit (XM receiver) connector A (32P) • Audio-navigation unit connector C (14P) • Navigation display unit 36P connector	Check for continuity between AcuraLink® control unit (XM receiver) connector A (32P) terminal No. 30 and body ground: There should be no continuity.	A short in the HandsFreeLink control unit
		Check for continuity between AcuraLink® control unit (XM receiver) connector A (32P) terminal No. 31 and body ground: There should be no continuity.	A short in the HandsFreeLink control unit

(1) With SH-AWD

(2) With SH-AWD

(3) Without SH-AWD

NOTE:

If the XM antenna connection condition is faulty, XM ANTENNA is indicated on the audio-navigation switch panel display.

8. If the indication does not go away, confirm DTCs, and refer to the relevant system troubleshooting and input tests.

Canceling the Self-Diagnostic Function

Use the interface dial, select the Exit Diag. Press the interface dial to cancel the self-diagnostic function.

DTC TROUBLESHOOTING

DTC B2240: XM ANTENNA LINE FAILURE

1. Connect the HDS to the DLC (see **HOW TO CHECK FOR DTCS WITH THE HDS**).
2. Clear the DTC with the HDS.
3. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode, and then back to ON (II), or the ON mode and wait 30 seconds or more.
4. Check for DTC with the HDS.

   Is DTC B2240 indicated?

   YES -Go to step 5.

   NO -Intermittent failure, the XM antenna is OK at this time. Check for poor connections or loose terminals at the AcuraLink® control unit (XM receiver) and the XM antenna.

5. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
6. Check for poor connections or loose terminals at AcuraLink® control unit (XM receiver) connector B (2P) and the XM antenna 2P connector.

   Are the connections or terminals OK?

   YES -Go to step 7.

   NO -Repair poor connections or loose terminals, and recheck the DTC.

7. Substitute a known-good XM antenna (see **XM ANTENNA REPLACEMENT**).
8. Clear the DTC with the HDS.
9. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode, and then back to ON (II), or the ON mode and wait 30 seconds or more.
10. Check for DTC with the HDS.

    Is DTC B2240 indicated?

    YES -Update the AcuraLink® control unit (see **AcuraLink® CONTROL UNIT UPDATE**) if it does not have the latest software. If the software is the latest, replace the original AcuraLink® control unit (XM receiver) (see **AcuraLink® CONTROL UNIT (XM RECEIVER)**

REMOVAL/INSTALLATION).

NO -Replace the original XM antenna (see **XM ANTENNA REPLACEMENT**).

DTC U0100: F-CAN LOST COMMUNICATION WITH ECM/PCM

1. Connect the HDS to the DLC (see **HOW TO CHECK FOR DTCS WITH THE HDS**).
2. Clear the DTC with the HDS.
3. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode, and then back to ON (II), or the ON mode.
4. Check for DTC with the HDS.

   Is DTC U0100 indicated?

   YES -Go to step 5.

   NO -Intermittent failure, the F-CAN communication line is OK at this time. Check for poor connections or loose terminals at the AcuraLink® control unit (XM receiver).

5. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
6. Disconnect AcuraLink® control unit (XM receiver) connector A (32P).
7. Jump the SCS line with the HDS.
8. Disconnect ECM/PCM connector A (49P).
9. Check for continuity between AcuraLink® control unit (XM receiver) connector A (32P) terminals No. 6 and No. 7 and ECM/PCM connector A (49P) terminals No. 49 and No. 48 respectively.

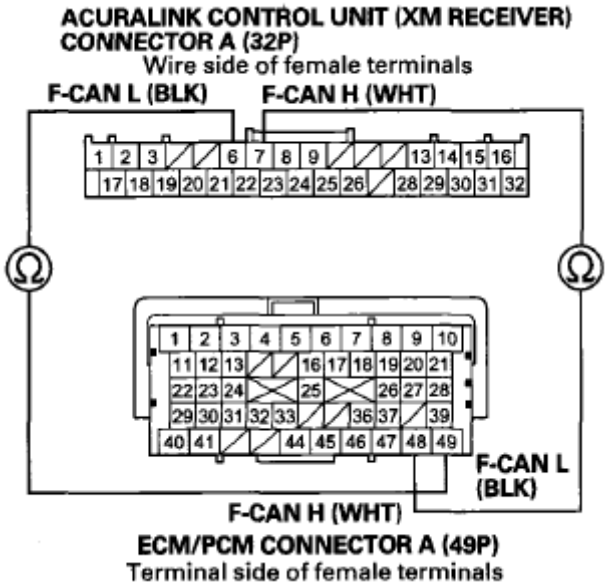


Fig. 19: Checking For Continuity Between AcuraLink® Control Unit (XM Receiver) & ECM With 32P & 49P Connector End Views

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES -Check for poor connections or loose terminals at the AcuraLink® control unit (XM receiver). If OK, Update the AcuraLink® control unit (see **AcuraLink® CONTROL UNIT UPDATE**) if it does not have the latest software. If the software is the latest, replace the AcuraLink® control unit (XM receiver) (see **AcuraLink® CONTROL UNIT UPDATE**).

NO -Repair an open in the wire between the AcuraLink® control unit (XM receiver) and the ECM/PCM.

DTC U0155: F-CAN LOST COMMUNICATION WITH GAUGE CONTROL MODULE

1. Connect the HDS to the DLC (see **HOW TO CHECK FOR DTCS WITH THE HDS**).
2. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
3. Check for DTCs with the HDS and DTC log data in the navigation system diagnostic mode (see **SELF-DIAGNOSTIC FUNCTION**).

   Is DTC U0155 indicated with HDS and on the navigation display?

   YES -Go to step 4.

   NO -Intermittent failure, the F-CAN communication line is OK at this time. Check for poor connections or loose terminals at the AcuraLink® control unit (XM receiver).

4. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
5. Disconnect AcuraLink® control unit (XM receiver) connector A (32P) and the gauge control module 32P connector.
6. Check for continuity between AcuraLink® control unit (XM receiver) connector A (32P) terminals No. 6 and No. 7 and gauge control module 32P connector terminals No. 13 and No. 14 respectively.

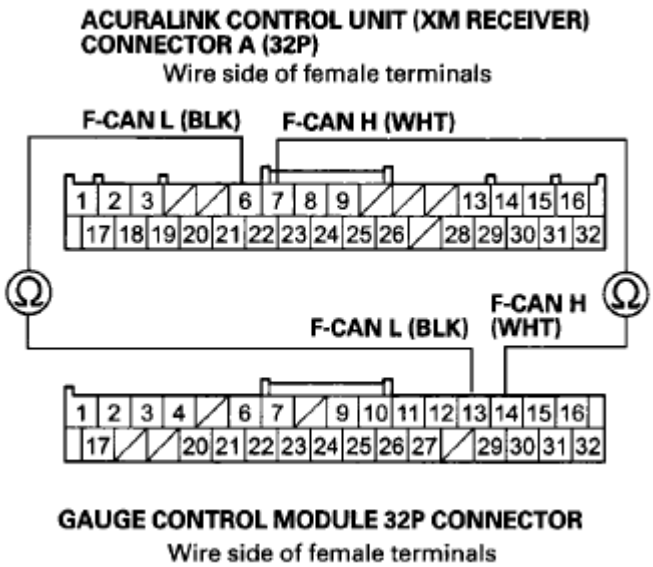


Fig. 20: Checking For Continuity Between AcuraLink® Control Unit (XM Receiver) & Gauge Control Module
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES -Check for poor connections or loose terminals at the AcuraLink® control unit (XM receiver). If OK, Update the AcuraLink® control unit (see **AcuraLink® CONTROL UNIT UPDATE**) if it does not have the latest software. If the software is the latest, replace the AcuraLink® control unit (XM receiver) (see **AcuraLink® CONTROL UNIT UPDATE**).

NO -Repair an open in the wire between the AcuraLink® control unit (XM receiver) and the gauge control module.

DTC U128D: LOST COMMUNICATION WITH GAUGE CONTROL MODULE

NOTE: If you are troubleshooting multiple DTCs, be sure to follow the instructions in B-CAN system diagnosis test mode A (see TROUBLESHOOTING - B-CAN SYSTEM DIAGNOSIS TEST MODE A).

1. Connect the HDS to the DLC (see **HOW TO CHECK FOR DTCS WITH THE HDS**).
2. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
3. Check for DTCs with the HDS and DTC log data in the navigation system diagnostic mode (see **SELF-DIAGNOSTIC FUNCTION**).

Is DTC U128D indicated with HDS and on the navigation display?

YES -Go to step 4.

NO -Intermittent failure, the B-CAN communication line is OK at this time. Check for poor connections

or loose terminals at the AcuraLink® control unit (XM receiver).

4. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
5. Disconnect AcuraLink® control unit (XM receiver) connector A (32P) and the gauge control module 32P connector.
6. Check for continuity between AcuraLink® control unit (XM receiver) connector A (32P) terminals No. 8 and No. 9 and gauge control module 32P connector terminals No. 29 and No. 30 respectively.

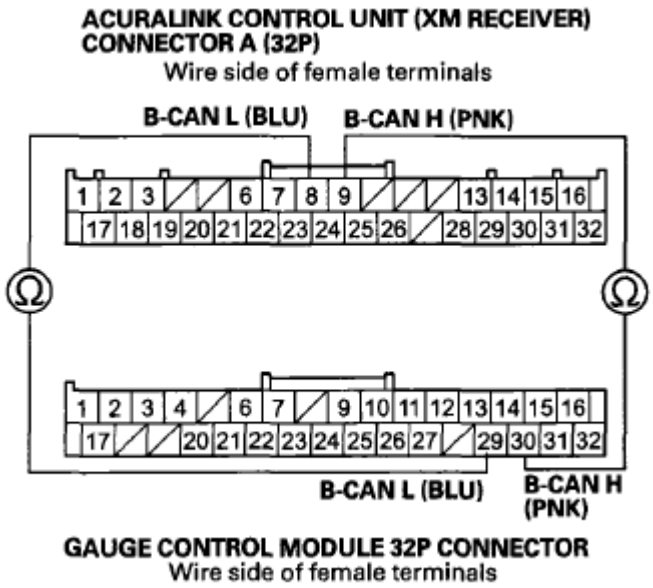


Fig. 21: Checking For Continuity Between AcuraLink® Control Unit (XM Receiver) & Gauge Control Module
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES -Check for poor connections or loose terminals at the AcuraLink® control unit (XM receiver). If OK, Update the AcuraLink® control unit (see **AcuraLink® CONTROL UNIT UPDATE**) if it does not have the latest software. If the software is the latest, replace the AcuraLink® control unit (XM receiver) (see **AcuraLink® CONTROL UNIT UPDATE**).

NO -Repair an open in the wire between the AcuraLink® control unit (XM receiver) and the gauge control module.

SYMPTOM TROUBLESHOOTING

ACURALINK® SERVICES DO NOT WORK

NOTE:

- **In order for the AcuraLink® service to work, the client must have an activated account with XM (receives at least channels, 000, 001, 174, and 247).**

- **Verify the client account status by calling XM Radio at 800-852-9696.**

1. Check the No. 15 (10 A) fuse in the under-hood fuse/relay box and the No. 12 (7.5 A) fuse and the No. 18 (7.5 A) fuse in the driver's under-dash fuse/relay box.

   Are the fuses OK?

   YES -Go to step 2.

   NO -Replace the fuse(s), and recheck. If the fuse(s) blows again, check for a short in the No. 15 (10 A) fuse and/or the No. 12 (7.5 A) fuse and/or the No. 18 (7.5 A) fuse circuits.

2. Turn the ignition switch to ACCESSORY (I), or press the engine start/stop button to select the ACC mode.
3. Measure the voltage between AcuraLink® control unit (XM receiver) connector A (32P) terminal No. 3 and body ground.

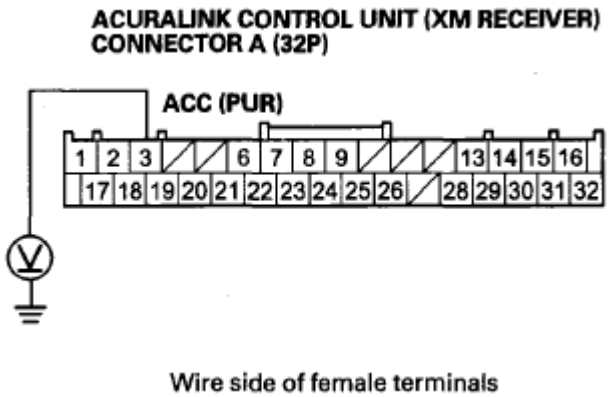


Fig. 22: Measuring Voltage Of AcuraLink® Control Unit (XM Receiver) Terminal No. 3 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

   Is there battery voltage?

   YES -Go to step 4.

   NO -Repair an open in the wire(s) between the AcuraLink® control unit (XM receiver) and the No. 18 (7.5 A) fuse in the driver's under-dash fuse/relay box.

4. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
5. Measure the voltage between AcuraLink® control unit (XM receiver) connector A (32P) terminal No. 2 and body ground.

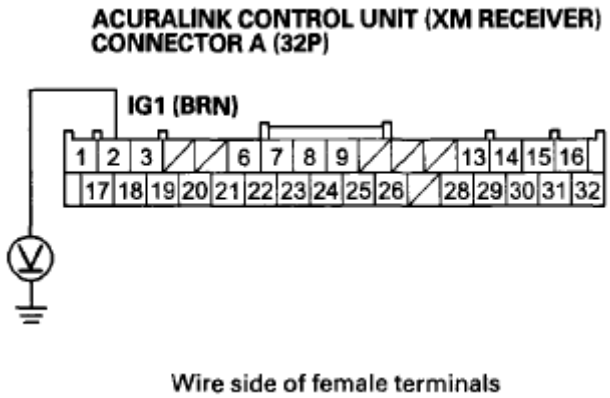


Fig. 23: Measuring Voltage Of AcuraLink® Control Unit (XM Receiver) Terminal No. 2 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there battery voltage?

YES -Go to step 6.

NO -Repair an open in the wire(s) between the AcuraLink® control unit (XM receiver) and the No. 12 (7.5 A) fuse in the driver's under-dash fuse/relay box.

6. Measure the voltage between AcuraLink® control unit (XM receiver) connector A (32P) terminal No. 28 and body ground.

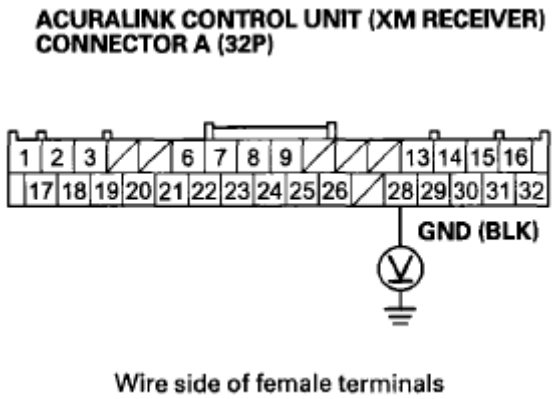


Fig. 24: Measuring Voltage Of AcuraLink® Control Unit (XM Receiver) Terminal No. 28 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there less than 0.2 V?

YES -Check for poor connections or loose terminals at the AcuraLink® control unit (XM receiver). If OK, Update the AcuraLink® control unit (see **AcuraLink® CONTROL UNIT UPDATE**) if it does not have the latest software. If the software is the latest, replace the AcuraLink® control unit (XM receiver) (see **AcuraLink® CONTROL UNIT UPDATE**).

NO -Repair an open or high resistance in the wire between the AcuraLink® control unit (XM receiver) and body ground (G501) (see **CONNECTOR TO FUSE/RELAY BOX INDEX**).

ACURALINK® MESSAGES CANNOT BE HEARD OR ARE WEAK

1. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
2. Check that the audio system is operating normally and the speaker sound levels are normal from different audio sources (AM/FM, XM, CD/DVDs, navigation, etc.).

   Does the audio system work normally and is the audio output from the speaker normal when playing various audio sources?

   YES -Go to step 3.

   NO -Refer to the audio system **SYMPTOM TROUBLESHOOTING**.

3. Check the audio system when AcuraLink® messages are played.

   Does the audio system mute when AcuraLink® messages are being played?

   YES -If audio system mutes and plays the messages at a normal volume, the system is OK at this time. If the messages are weaker than normal, go to step 4.

   NO -Check for B-CAN codes. Repair any B-CAN codes, then recheck. If there are no B-CAN codes, substitute a known-good AcuraLink® control unit (XM receiver) (see **AcuraLink® CONTROL UNIT (XM RECEIVER) REMOVAL/INSTALLATION**).

4. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
5. Disconnect AcuraLink® control unit (XM receiver) connector A (32P) and audio-navigation unit connector H (28P).
6. Check for continuity between AcuraLink® control unit (XM receiver) connector A (32P) and audio-navigation unit connector H (28P) according to the table.

AcuraLink® control unit (XM receiver) connector	Audio-navigation unit connector	Wire color
A17	H23	WHT
A18	H10	RED
A19	H22	GRN
A20	H9	BLK

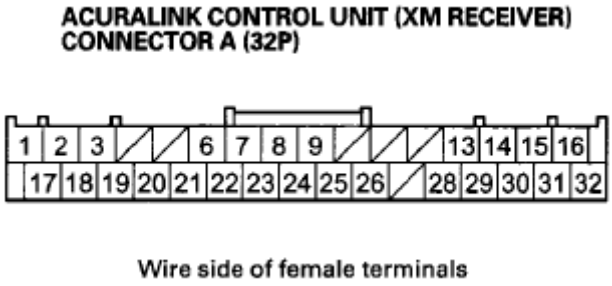


Fig. 25: AcuraLink® Control Unit (XM Receiver) 32P Connector End View
Courtesy of AMERICAN HONDA MOTOR CO., INC.

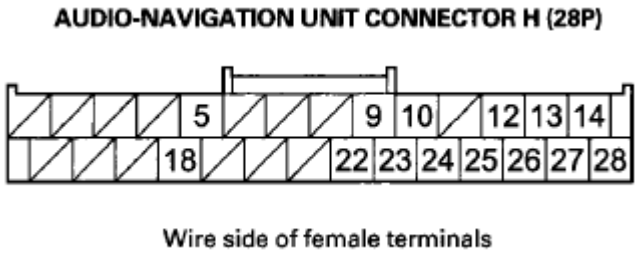


Fig. 26: Audio-Navigation Unit 28P Connector End View
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES -Go to step 7.

NO -There is an open in the wire(s) between the AcuraLink® control unit (XM receiver) and the audio-navigation unit. Replace the affected shielded harness.

7. Check for continuity between AcuraLink® control unit (XM receiver) connector A (32P) and body ground according to the table.

AcuraLink® control unit (XM receiver) connector	Wire color
A17	WHT
A18	RED
A19	GRN
A20	BLK

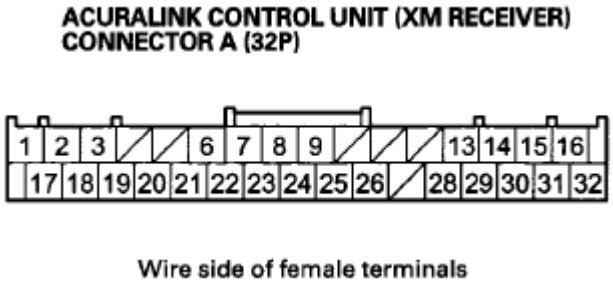


Fig. 27: AcuraLink® Control Unit (XM Receiver) 32P Connector End View
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES -There is short to body ground in the wire(s) between the AcuraLink® control unit (XM receiver) and the audio-navigation unit. Replace the affected shielded harness.

NO -Go to step 8.

8. Check for continuity between the terminal of AcuraLink® control unit (XM receiver) connector A (32P) according to the table.

From terminal	To terminals
A17 (WHT)	A18 (RED), A19 (GRN), A20 (BLK), A21 (GRY)
A18 (RED)	A19 (GRN), A20 (BLK), A21 (GRY)
A19 (GRN)	A20 (BLK), A21 (GRY)
A20 (BLK)	A21 (GRY)

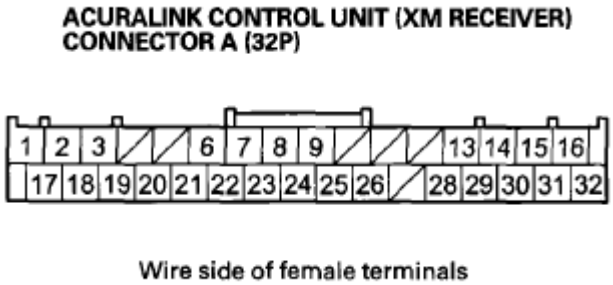


Fig. 28: AcuraLink® Control Unit (XM Receiver) 32P Connector End View
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity between any of the terminals?

YES -There is a short in the wires between the AcuraLink® control unit (XM receiver) and the audio-navigation unit. Replace the affected shielded harness.

NO -Go to step 9.

9. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
10. Measure the voltage between AcuraLink® control unit (XM receiver) connector A (32P) and body ground according to the table.

AcuraLink® control unit (XM receiver) connector	Wire color
A17	WHT
A18	RED
A19	GRN
A20	BLK

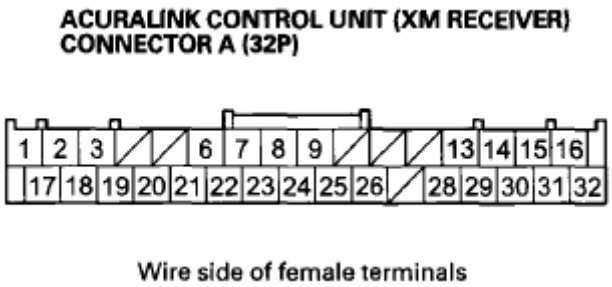


Fig. 29: AcuraLink® Control Unit (XM Receiver) 32P Connector End View
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there less than 0.2 V?

YES -Go to step 11.

NO -There is a short to power in the wire(s) between the AcuraLink® control unit (XM receiver) and the audio-navigation unit. Replace the affected shielded harness.

11. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
12. Reconnect audio-navigation unit connector H (28P).
13. Substitute a known-good AcuraLink® control unit (XM receiver) (see **AcuraLink® CONTROL UNIT (XM RECEIVER) REMOVAL/INSTALLATION**).

Does the problem go away?

YES -Update the AcuraLink® control unit (see **AcuraLink® CONTROL UNIT UPDATE**) if it does not have the latest software. If the software is the latest, replace the AcuraLink® control unit (XM receiver) (see **AcuraLink® CONTROL UNIT UPDATE**).

NO -Replace the audio-navigation unit (see **AUDIO-NAVIGATION UNIT REMOVAL/INSTALLATION**).

ACURALINK® CONTROL UNIT UPDATE

Special Tools Required

- GNA600 and an in workstation with HDS and CM update software
- 256MB PCMCIA Memory Card
- AcuraLink® Reprogramming Cable

NOTE:

- **Before you update an AcuraLink® control unit, read the procedure. The order of connecting and disconnecting connectors is critical, and some steps must be done within a specified period of time. If the steps are not followed exactly, you may have to repeat the procedure from the start, and in some cases, you may damage the GNA600 or the AcuraLink® control unit.**
- **Whenever you install a new AcuraLink® control unit, you must update the AcuraLink® control unit with the latest software.**
- **The GNA600 is the only tool currently available to update the AcuraLink® control unit.**
- **If you are updating a AcuraLink® control unit in a new vehicle, make sure all the fuses are installed.**
- **Make sure the in workstation has the latest HDS software installed (The AcuraLink® update software is contained in the HDS update CD.).**
- **The update may take up to 60 minutes.**
- **You cannot update an AcuraLink® control unit with its current or previous software versions. It will only accept a new software version.**
- **Before you update the AcuraLink® control unit, test the vehicle battery (see BATTERY TEST), and only proceed if the results are good. Make sure the battery is connected to a battery booster (not a battery charger) while updating the AcuraLink® control unit. If the battery is not in good condition, or it dies during the updating procedure, you may damage the AcuraLink® control unit.**
- **If you encounter errors in the software, follow the on-screen instructions, or if necessary, reboot the in workstation, and try again.**
- **There are five process involved in updating the AcuraLink® control unit:**
  - **Setting up the GNA600**
  - **Capturing the current program ID from the AcuraLink® control unit**
  - **Download the new software to the GNA600**
  - **Update the software in the vehicle's AcuraLink® control unit**
  - **Confirm the AcuraLink® self-diagnosis**
- **While updating the AcuraLink® control unit, do not turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.**
- **To prevent damage to the AcuraLink® control unit, do not operate anything electrical (brakes, head lights, etc.) during the update.**
- **Check any official Honda service website for more service information**

about updating the AcuraLink® control unit.

- **To update the AcuraLink® control unit, you must connect the GNA600 to the AcuraLink® connector (A), not the DLC.**

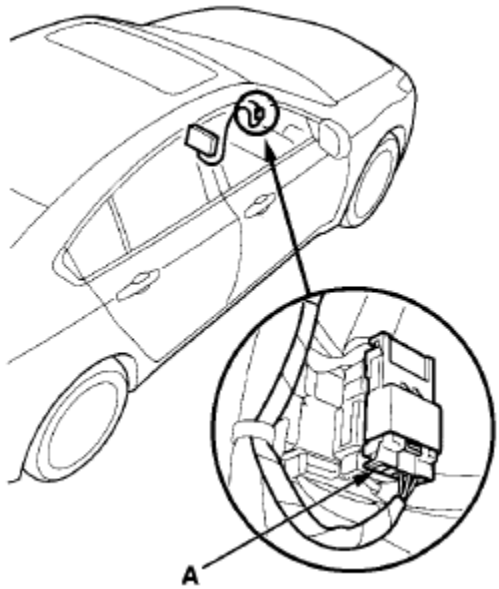


Fig. 30: Identifying AcuraLink® Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

1. Make sure the ignition switch is in LOCK (0), or engine start/stop button is in the OFF mode.
2. Remove the glove box (see **GLOVE BOX REMOVAL/INSTALLATION**).
3. Launch the AcuraLink® Update program, and follow the on-screen instructions to complete the update.

NOTE:

- **If the software in the AcuraLink® control unit is the latest, disconnect the update tool from the AcuraLink® connector.**
- **If the update is part of a troubleshooting or a repair procedure, return to that procedure and continue troubleshooting or repairing the vehicle.**

2012 ACCESSORIES & EQUIPMENT

Audio System - TL

COMPONENT LOCATION INDEX

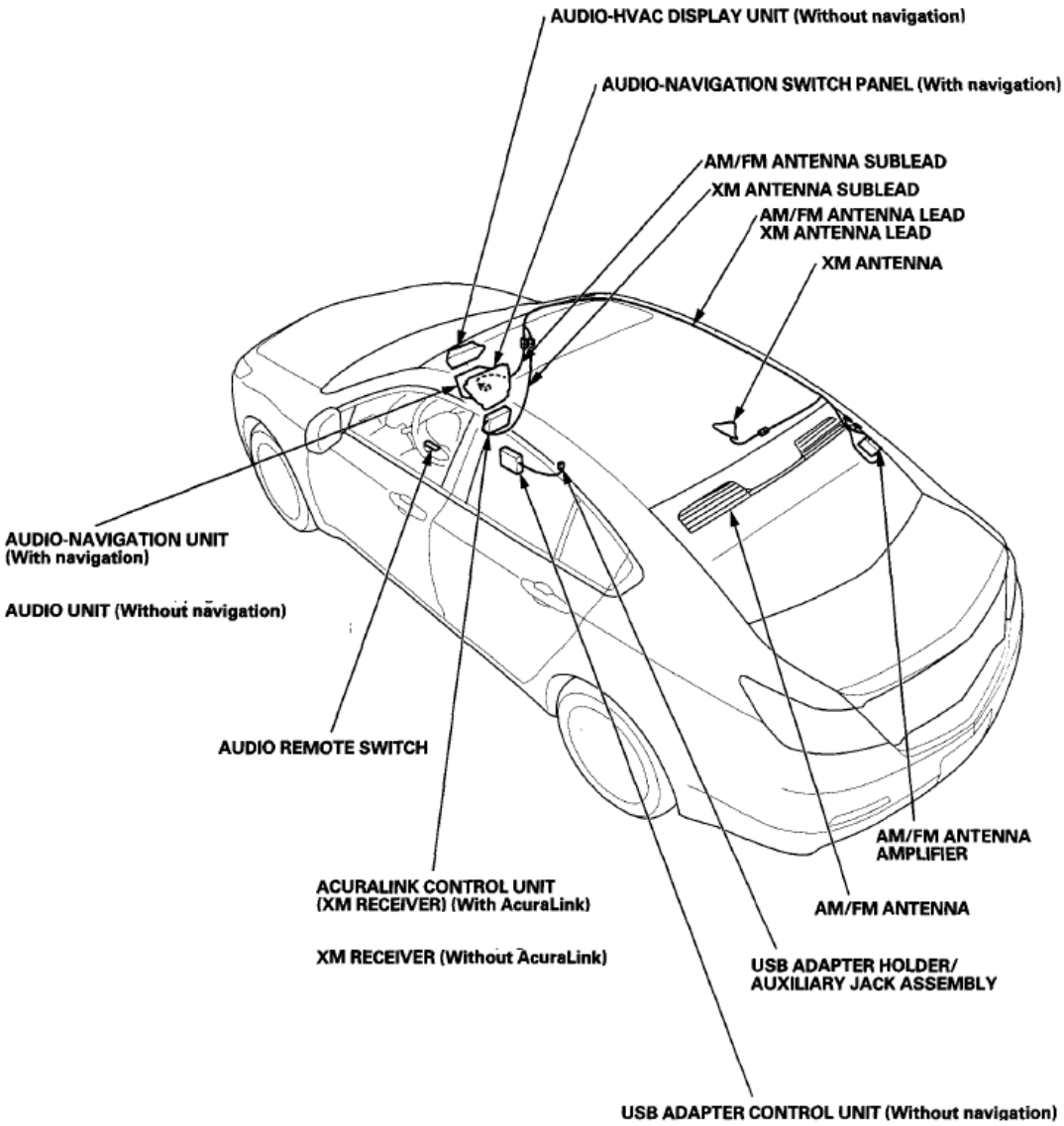


Fig. 1: Audio System Components Location (1 Of 2)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

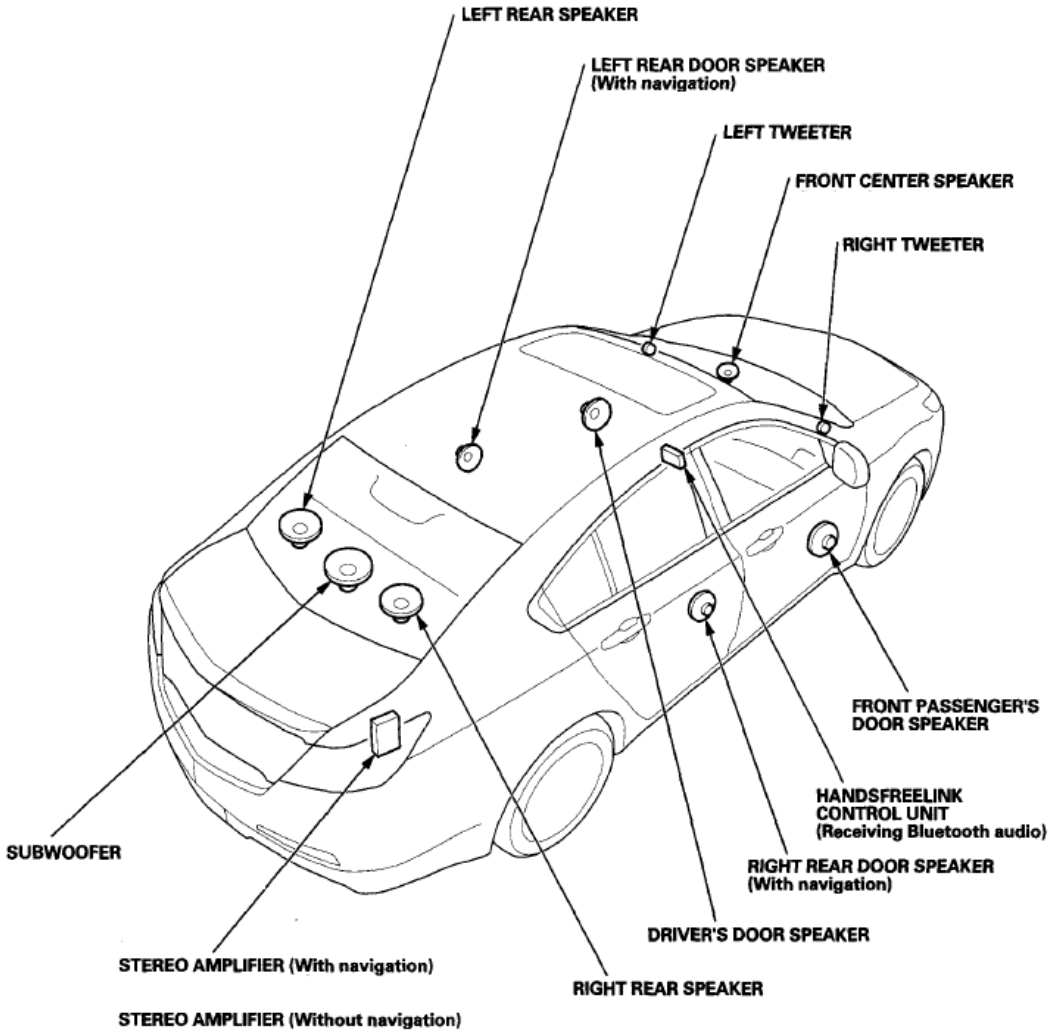


Fig. 2: Audio System Components Location (2 Of 2)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

GENERAL TROUBLESHOOTING INFORMATION

LEVER-LOCKED CONNECTOR

Disconnecting

To disconnect the connector, pull the lever (A) while pushing the lock tab (B) down, then pull the connector (C).

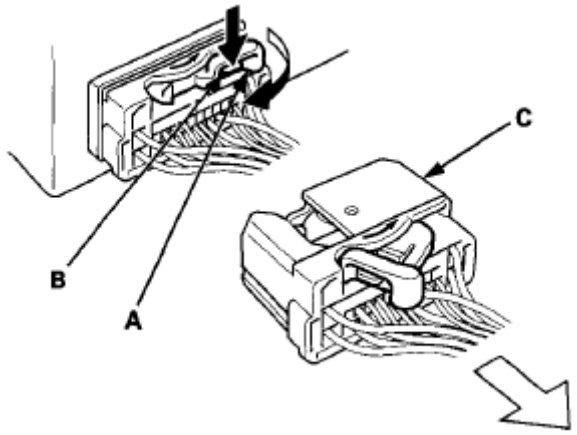


Fig. 3: Disconnecting Lever-Locked Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Connecting

To connect the connector, push the connector into the connector sleeve (A). As the connector is pressed in, the lever (B) moves to the locked position.

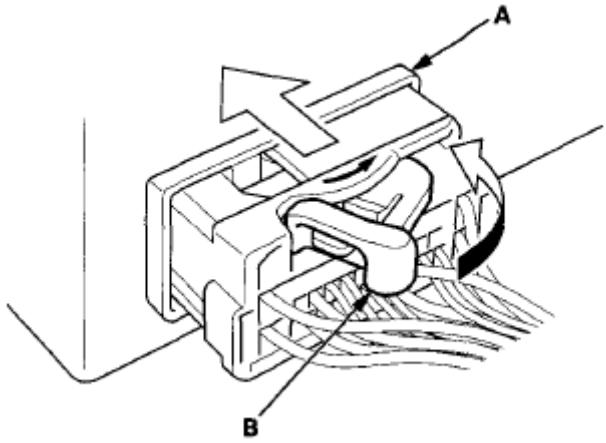


Fig. 4: Connecting Lever-Locked Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

SYMPTOM TROUBLESHOOTING INDEX

Symptom	Diagnostic Procedure	Also Check for
Poor AM or FM radio reception or interference (with navigation)	Symptom Troubleshooting (see **POOR AM OR FM RADIO RECEPTION OR INTERFERENCE (WITH NAVIGATION)**)	• Antenna lead short or open in the wire • Aftermarket window tinting
Poor AM or FM radio reception or interference (without	Symptom Troubleshooting (see **POOR AM OR FM RADIO**	• Antenna lead short or open in

navigation)	**RECEPTION OR INTERFERENCE (WITHOUT NAVIGATION)**)	the wire • Aftermarket window tinting
Audio unit power switch will not turn on (No information display and no sound) (with navigation)	Symptom Troubleshooting (see **AUDIO UNIT POWER SWITCH WILL NOT TURN ON (NO INFORMATION DISPLAY AND NO SOUND) (WITH NAVIGATION)**)	
Audio unit power switch will not turn on (No information display and no sound) (without navigation)	Symptom Troubleshooting (see **AUDIO UNIT POWER SWITCH WILL NOT TURN ON (NO INFORMATION DISPLAY AND NO SOUND) (WITHOUT NAVIGATION)**)	
Audio unit power switch will not turn off (with navigation)	Symptom Troubleshooting (see **AUDIO UNIT POWER SWITCH WILL NOT TURN OFF (WITH NAVIGATION)**)	
Audio unit power switch will not turn off (without navigation)	Symptom Troubleshooting (see **AUDIO UNIT POWER SWITCH WILL NOT TURN OFF (WITHOUT NAVIGATION)**)	
No sound is heard from the speaker(s) (display is normal) (with navigation)	Symptom Troubleshooting (see **NO SOUND IS HEARD FROM THE SPEAKER(S) (DISPLAY IS NORMAL) (WITH NAVIGATION)**)	
No sound is heard from the speaker(s) (display is normal) (without navigation)	Symptom Troubleshooting (see **NO SOUND IS HEARD FROM THE SPEAKER(S) (DISPLAY IS NORMAL) (WITHOUT NAVIGATION)**)	
Auxiliary input sound is low or cannot be heard (with navigation)	Symptom Troubleshooting (see **AUXILIARY INPUT SOUND IS LOW OR CANNOT BE HEARD (WITH NAVIGATION)**)	
Auxiliary input sound is low or cannot be heard (without navigation)	Symptom Troubleshooting (see **AUXILIARY INPUT SOUND IS LOW OR CANNOT BE HEARD (WITHOUT NAVIGATION)**)	
Audio system sound is weak or distorted (display is normal) (with navigation)	Symptom Troubleshooting (see **AUDIO SYSTEM SOUND IS WEAK OR DISTORTED (DISPLAY IS NORMAL)**	

	(WITH NAVIGATION))	
Audio system sound is weak or distorted (display is normal) (without navigation)	Symptom Troubleshooting (see **AUDIO SYSTEM SOUND IS WEAK OR DISTORTED (DISPLAY IS NORMAL) (WITHOUT NAVIGATION)**)	
Radio preset memory is lost (with navigation)	Symptom Troubleshooting (see **RADIO PRESET MEMORY IS LOST (WITH NAVIGATION)**)	
Radio preset memory is lost (without navigation)	Symptom Troubleshooting (see **RADIO PRESET MEMORY IS LOST (WITHOUT NAVIGATION)**)	
Volume does not change (with navigation)	Symptom Troubleshooting (see **VOLUME DOES NOT CHANGE (WITH NAVIGATION)**)	
Volume does not change (without navigation)	Symptom Troubleshooting (see **VOLUME DOES NOT CHANGE (WITHOUT NAVIGATION)**)	
Volume does not increase with speed (with navigation)	Symptom Troubleshooting (see **VOLUME DOES NOT INCREASE WITH SPEED (WITH NAVIGATION)**)	
Volume does not increase with speed (without navigation)	Symptom Troubleshooting (see **VOLUME DOES NOT INCREASE WITH SPEED (WITHOUT NAVIGATION)**)	
Volume is too high or too low when driving at freeway speeds (with navigation)	Symptom Troubleshooting (see **VOLUME IS TOO HIGH OR TOO LOW WHEN DRIVING AT FREEWAY SPEEDS (WITH NAVIGATION)**)	
Volume is too high or too low when driving at freeway speeds (without navigation)	Symptom Troubleshooting (see **VOLUME IS TOO HIGH OR TOO LOW WHEN DRIVING AT FREEWAY SPEEDS (WITHOUT NAVIGATION)**)	
Radio tuner does not change stations (with navigation)	Symptom Troubleshooting (see **RADIO TUNER DOES NOT CHANGE STATIONS (WITH NAVIGATION)**)	
Radio tuner does not change stations (without navigation)	Symptom Troubleshooting (see **RADIO TUNER DOES NOT CHANGE STATIONS**	

	(WITHOUT NAVIGATION))	
Audio system information does not display on the audio-navigation switch panel display	Symptom Troubleshooting (see **AUDIO SYSTEM INFORMATION DOES NOT DISPLAY ON THE AUDIO-NAVIGATION SWITCH PANEL DISPLAY (WITH NAVIGATION)**)	
Audio system information does not display on the audio-HVAC display unit	Symptom Troubleshooting (see **AUDIO SYSTEM INFORMATION DOES NOT DISPLAY ON THE AUDIO-HVAC DISPLAY UNIT (WITHOUT NAVIGATION)**)	
Audio-navigation switch panel button illumination does not work	Symptom Troubleshooting (see **AUDIO-NAVIGATION SWITCH PANEL BUTTON ILLUMINATION DOES NOT WORK (WITH NAVIGATION)**)	
Audio switch panel button illumination does not work	Symptom Troubleshooting (see **AUDIO SWITCH PANEL BUTTON ILLUMINATION DOES NOT WORK (WITHOUT NAVIGATION)**)	
Audio remote switch does not work properly (with navigation)	Symptom Troubleshooting (see **AUDIO REMOTE SWITCH DOES NOT WORK PROPERLY (WITH NAVIGATION)**)	
Audio remote switch does not work properly (without navigation)	Symptom Troubleshooting (see **AUDIO REMOTE SWITCH DOES NOT WORK PROPERLY (WITHOUT NAVIGATION)**)	
Audio disc does not load (with navigation)	Symptom Troubleshooting (see **AUDIO DISC DOES NOT LOAD (WITH NAVIGATION)**)	Damaged disc
Audio disc does not load (without navigation)	Symptom Troubleshooting (see **AUDIO DISC DOES NOT LOAD (WITHOUT NAVIGATION)**)	Damaged disc
Audio disc does not eject (with navigation)	Symptom Troubleshooting (see **AUDIO DISC DOES NOT EJECT (WITH NAVIGATION)**)	• Damaged disc • Disc with a label

Audio disc does not eject (without navigation)	Symptom Troubleshooting (see **AUDIO DISC DOES NOT EJECT (WITHOUT NAVIGATION)**)	• Damaged disc • Disc with a label
Audio disc changer does not load all six discs	Symptom Troubleshooting (see **AUDIO DISC CHANGER DOES NOT LOAD ALL SIX DISCS (WITHOUT NAVIGATION)**)	Tire pressure (over-inflated), disc smudged, or scratched
Audio disc changer does not move between discs	Symptom Troubleshooting (see **AUDIO DISC CHANGER DOES NOT MOVE BETWEEN DISCS (WITHOUT NAVIGATION)**)	
Audio disc does not play (with navigation)	Symptom Troubleshooting (see **AUDIO DISC DOES NOT PLAY (WITH NAVIGATION)**)	Foreign objects such coins or paper inserted into the audio disc changer/CD player
Audio disc does not play (without navigation)	Symptom Troubleshooting (see **AUDIO DISC DOES NOT PLAY (WITHOUT NAVIGATION)**)	Foreign objects such coins or paper inserted into the audio disc changer/CD player
Audio disc skips (with navigation)	Symptom Troubleshooting (see **AUDIO DISC SKIPS (WITH NAVIGATION)**)	Tire pressure (over-inflated), disc smudged, or scratched
Audio disc skips (without navigation)	Symptom Troubleshooting (see **AUDIO DISC SKIPS (WITHOUT NAVIGATION)**)	Tire pressure (over-inflated), disc smudged, or scratched
Audio unit button does not work (with navigation)	Symptom Troubleshooting (see **AUDIO UNIT BUTTON DOES NOT WORK WITH NAVIGATION)**)	
Audio unit button does not work (without navigation)	Symptom Troubleshooting (see **AUDIO UNIT BUTTON DOES NOT WORK (WITHOUT NAVIGATION)**)	
Audio unit disc indicator does not work (with navigation)	Symptom Troubleshooting (see **AUDIO UNIT DISC INDICATOR DOES NOT WORK (WITH NAVIGATION)**)	
Audio unit disc indicator does not work (without navigation)	Symptom Troubleshooting (see **AUDIO UNIT DISC INDICATOR DOES NOT WORK (WITHOUT NAVIGATION)**)	
USB device does not function	Symptom Troubleshooting (see	USB device compatibility (see

(with navigation)	**USB DEVICE DOES NOT FUNCTION (WITH NAVIGATION)**)	Owner's Manual)
USB device does not function (without navigation)	Symptom Troubleshooting (see **USB DEVICE DOES NOT FUNCTION (WITHOUT NAVIGATION)**)	USB device compatibility (see Owner's Manual)
USB input sound is low or cannot be heard (with navigation)	Symptom Troubleshooting (see **USB INPUT SOUND IS LOW OR CANNOT BE HEARD (WITH NAVIGATION)**)	USB device compatibility (see Owner's Manual)
USB input sound is low or cannot be heard (without navigation)	Symptom Troubleshooting (see **USB INPUT SOUND IS LOW OR CANNOT BE HEARD (WITHOUT NAVIGATION)**)	USB device compatibility (see Owner's Manual)
Error code: XM NO SIGNAL or XM LOADING is displayed (with navigation)	Symptom Troubleshooting (see **ERROR CODE: XM NO SIGNAL OR XM LOADING IS DISPLAYED (WITH NAVIGATION)**)	
Error code: XM NO SIGNAL or XM LOADING is displayed (without navigation)	Symptom Troubleshooting (see **ERROR CODE: XM NO SIGNAL OR XM LOADING IS DISPLAYED (WITHOUT NAVIGATION)**)	
Error code: XM ANTENNA or XM LOADING is displayed (with AcuraLink®)	Symptom Troubleshooting (see **ERROR CODE: XM ANTENNA OR XM LOADING IS DISPLAYED (WITH AcuraLink®)**)	
Error code: XM ANTENNA or XM LOADING is displayed (without AcuraLink®)	Symptom Troubleshooting (see **ERROR CODE: XM ANTENNA OR XM LOADING IS DISPLAYED (WITHOUT AcuraLink®)**)	
XM radio display is blank and no station information is displayed (USA models with navigation)	Symptom Troubleshooting (see **XM RADIO DISPLAY IS BLANK AND NO STATION INFORMATION IS DISPLAYED (USA MODELS WITH NAVIGATION)**)	Also refer to **AUDIO SYSTEM INFORMATION DOES NOT DISPLAY ON THE AUDIO-NAVIGATION SWITCH PANEL DISPLAY**
XM radio display is blank and no station information is displayed (Canada models with navigation)	Symptom Troubleshooting (see **XM RADIO DISPLAY IS BLANK AND NO STATION INFORMATION IS DISPLAYED (CANADA**	Also refer to **AUDIO SYSTEM INFORMATION DOES NOT DISPLAY ON THE AUDIO-NAVIGATION SWITCH PANEL DISPLAY**

	MODELS WITH NAVIGATION))	
XM radio display is blank and no station information is displayed (without navigation)	Symptom Troubleshooting (see **XM RADIO DISPLAY IS BLANK AND NO STATION INFORMATION IS DISPLAYED (WITHOUT NAVIGATION)**)	Also refer to **AUDIO SYSTEM INFORMATION DOES NOT DISPLAY ON THE AUDIO-HVAC DISPLAY UNIT**
XM radio preset memory is lost (USA models with navigation)	Symptom Troubleshooting (see **XM RADIO PRESET MEMORY IS LOST (USA MODELS WITH NAVIGATION)**)	
XM radio preset memory is lost (Canada models with navigation)	Symptom Troubleshooting (see **XM RADIO PRESET MEMORY IS LOST (CANADA MODELS WITH NAVIGATION)**)	
XM radio preset memory is lost (without navigation)	Symptom Troubleshooting (see **XM RADIO PRESET MEMORY IS LOST (WITHOUT NAVIGATION)**)	
Poor or no sound with XM radio (Audio unit does display XM channels) (USA models with navigation)	Symptom Troubleshooting (see **POOR OR NO SOUND WITH XM RADIO (AUDIO UNIT DOES DISPLAY XM CHANNELS) (USA MODELS WITH NAVIGATION)**)	
Poor or no sound with XM radio (Audio unit does display XM channels) (Canada models with navigation)	Symptom Troubleshooting (see **POOR OR NO SOUND WITH XM RADIO (AUDIO UNIT DOES DISPLAY XM CHANNELS) (CANADA MODELS WITH NAVIGATION)**)	
Poor or no sound with XM radio (Audio unit does display XM channels) (without navigation)	Symptom Troubleshooting (see **POOR OR NO SOUND WITH XM RADIO (AUDIO UNIT DOES DISPLAY XM CHANNELS) (WITHOUT NAVIGATION)**)	
No sound when Bluetooth audio is used (with navigation)	HFL Symptom Troubleshooting (see **NO SOUND WHEN BLUETOOTH AUDIO IS USED (WITH NAVIGATION)**)	Bluetooth phone compatibility (see Owner's Manual)
No sound when Bluetooth audio	HFL Symptom Troubleshooting	Bluetooth phone compatibility (see

is used (without navigation)	(see **NO SOUND WHEN BLUETOOTH AUDIO IS USED (WITHOUT NAVIGATION)**)	Owner's Manual)
Bluetooth audio does not work (with navigation)	HFL Symptom Troubleshooting (see **BLUETOOTH AUDIO DOES NOT WORK (WITH NAVIGATION)**)	Bluetooth phone compatibility (see Owner's Manual)
Bluetooth audio does not work (without navigation)	HFL Symptom Troubleshooting (see **BLUETOOTH AUDIO DOES NOT WORK (WITHOUT NAVIGATION)**)	Bluetooth phone compatibility (see Owner's Manual)
Bluetooth cell phone cannot be paired (with navigation)	HFL Symptom Troubleshooting (see **BLUETOOTH CELL PHONE CANNOT BE PAIRED (WITH NAVIGATION)**)	Bluetooth phone compatibility (see Owner's Manual)
Bluetooth cell phone cannot be paired (without navigation)	HFL Symptom Troubleshooting (see **BLUETOOTH CELL PHONE CANNOT BE PAIRED (WITH NAVIGATION)**)	Bluetooth phone compatibility (see Owner's Manual)
The communication with cell phone is interrupted or changes	HFL Symptom Troubleshooting (see **THE COMMUNICATION WITH CELL PHONE IS INTERRUPTED OR CHANGES**)	• Electric wave interference • HandsFreeLink control unit • Audio-navigation unit • Bluetooth phone • Harness/connector
Bluetooth cell phone audio function SKIP and PAUSE/RESUME do not work (with navigation)	HFL Symptom Troubleshooting (see **BLUETOOTH CELL PHONE AUDIO FUNCTION SKIP AND PAUSE/RESUME DO NOT WORK (WITH NAVIGATION)**)	(For further information, please contact the cell phone carrier or the cell phone manufacturer.) Bluetooth phone (Some Bluetooth phones do not support the function.)
Bluetooth cell phone audio function SKIP and PAUSE/RESUME do not work (without navigation)	HFL Symptom Troubleshooting (see **BLUETOOTH CELL PHONE AUDIO FUNCTION SKIP AND PAUSE/RESUME DO NOT WORK (WITHOUT NAVIGATION)**)	(For further information, please contact cell phone carrier or the cell phone manufacturer.) Bluetooth phone (Some Bluetooth phones do not support the function.)

SYSTEM DESCRIPTION

OVERVIEW

The audio unit acts as the processor for all audio functions. Select audio functions from the audio unit buttons or the audio remote switch (on the steering wheel). The center display provides the current audio status.

The audio unit has a built-in EEPROM (electrically erasable programmable read-only memory). This memory

holds the audio presets (AM/FM radio frequency, sound settings, etc.) even when the battery is disconnected.

A security signal is daisy-chained between the audio and vehicle components for integration into the vehicle's security system.

There are two audio systems available for the TL:

- The ELS audio system is available on vehicles with navigation. It includes surround sound with 10 speakers.
- The premium audio system is on vehicles without navigation. It includes 8 speakers.

Disc Playback Types	ELS Audio System	Premium Audio System
CD (CD-DA)	o	o
CD-R/RW (uncompressed)	o	o
CD-R/RW (MP3/WMA)	o	o
DVD-Audio	o	X
DVD-Video	X	X
DVD-R/RW (uncompressed)	o	X
DTS CD	o	X
o: Available X: Not available		

HDD Recording (with navigation)

The navigation system uses a HDD (hard disc drive) and can store music. To record music to the HDD, you must use an original CD or uncompressed CD-R files. The music must be loaded on a CD using the CD player. You cannot load music through the USB adapter or auxiliary jack.

Song By Voice™ (with navigation)

You can use the voice control to operate the audio system, including the Song By Voice™ feature. See the Navigation Owner's Manual for more information.

Speed-Sensitive Volume Compensation (SVC)

All audio systems are equipped with speed-sensitive volume compensation (SVC). The audio-navigation unit or the audio unit receives the vehicle speed pulse (VSP) from the ECM/PCM. The system processes the speed input and increases the navigation or the audio system volume level as the vehicle speed increases to compensate for the interior noise that occurs at higher speeds. When the vehicle slows down, the volume returns to its normal level. The SVC has four settings: SVC OFF, SVC LOW, SVC MID, and SVC HIGH that can be adjusted using the audio-navigation unit or the audio unit. The factory default setting is SVC MID.

Telematics Muting Logic

The navigation system provides voice control for the audio, the XM, the USB, the Bluetooth audio, and the CD/DVD player functions. Voice control commands are communicated through the GA-Net (audio unit). When

using the TALK/BACK buttons or route guidance (RG), the center speaker is muted and you hear the navigation instructions through the front speakers. When using the HFL/AcuraLink®, the center speaker, the rear speakers, and the subwoofer are muted and the front speakers give the telephone sound. When using the HFL/AcuraLink® and the RG (Route Guidance) or the TALK/BACK buttons, the rear speakers are muted and you hear the telephone sound and navigation instructions through the front speakers. Muting commands are passed on the GA-Net bus. For more information, see the navigation information. The outline of the audio interruption function is shown in the following table.

Contents	Audio Output				
	Center CH	Left Front CH	Right Front CH	Right Rear CH	Left Rear CH
Pressing TALK/BACK buttons	Navigation output	MUTE	MUTE	MUTE	MUTE
Route Guidance (RG)	Navigation output and audio	Audio	Audio	Audio	Audio
HFL/AcuraLink®	MUTE	Telephone sound	Telephone sound	MUTE	MUTE
HFL/AcuraLink® and RG	Navigation output	Telephone sound	Telephone sound	MUTE	MUTE

Bluetooth Audio

Bluetooth audio allows approved Bluetooth cell phones equipped with music function to play music via a car audio system using Bluetooth technology. You can control the phone's music player remotely using the wireless connection.

- You can play music stored in your cell phone using the wireless connection*1 .
- You can choose next song, previous song and resume/pause via wireless*2 .

*1: Call phone must support AVRCP 1.0, A2DP 1.0 for Bluetooth technology, and also be on the Acura approved HFL list at www.acura.com/handsfreelink.

*2: Not all phones support the Bluetooth audio function.

Supported Devices

- Bluetooth music phones that support AVRCP 1.0/A2DP 1.0.
- Bluetooth adapters for portable music devices including iPod are not supported.

NOTE:

- **Availability of the functions depends on the connected device.**
- **The latest support information is updated through the website www.acura.com/handsfreelink.**

Pairing a Cell Phone

To pair a cell phone, refer to pairing a cell phone in the HandsFreeLink system (see **NAVIGATION THROUGH HFL MENUS**). Once a cell phone is paired, the process does not have to be repeated for the phone.

HOW TO PLAY THE BLUETOOTH AUDIO

Procedure

1. Press the HDD/AUX button (A) or the AUX button (B) to select Bluetooth Audio source.

NOTE:

- **If you press the HDD/AUX button or the AUX button when no cell phone is connected, NO CONNECT is displayed.**
- **If you see NO CONNECT when you are using the cell phone music function, check that the device is properly paired. If it is paired, the cell phone may not be compatible. See www.acura.com/handsfreelink for more information.**
- **Music titles and artist names are not displayed.**

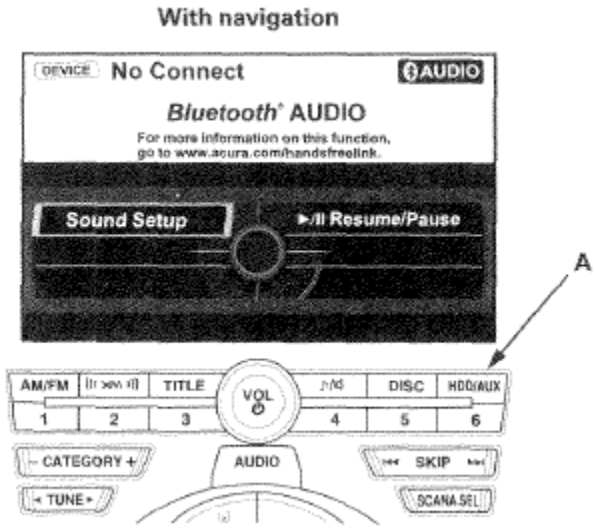


Fig. 5: Screen Display - Bluetooth (With Navigation And No Connection)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

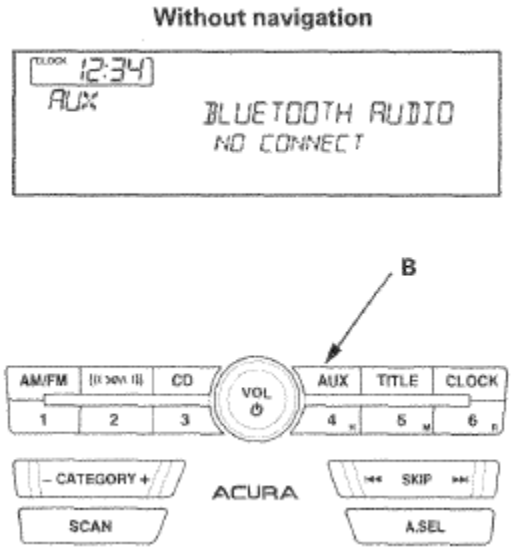


Fig. 6: Screen Display - Bluetooth (Without Navigation And No Connection)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Start playing the music in the paired cell phone.

NOTE: Depending on the cell phone, the music may start automatically, or the user may need to select headset as an audio output.

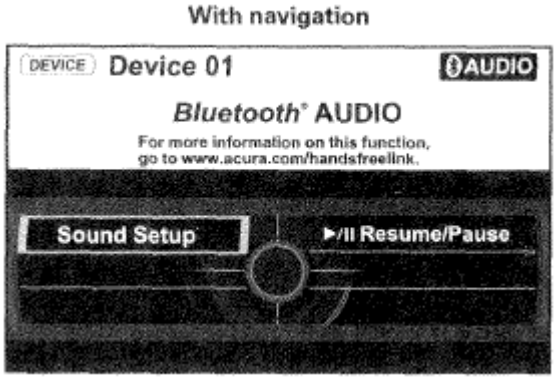


Fig. 7: Screen Display - Bluetooth (With Navigation And Connection)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

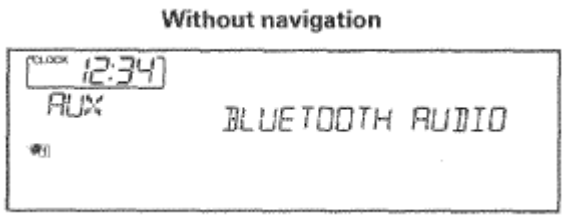


Fig. 8: Screen Display - Bluetooth (Without Navigation And Connection)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. A user can select the next song or the previous song using the SKIP button (A).

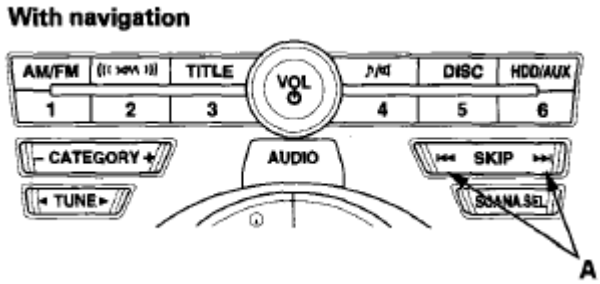


Fig. 9: Identifying Skip Button (With Navigation)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

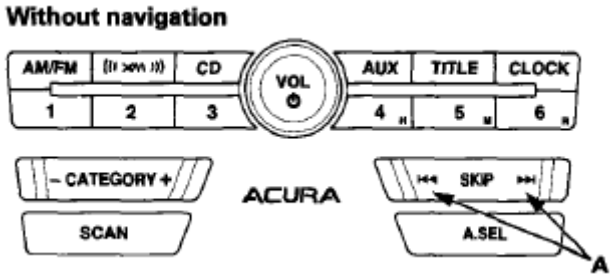


Fig. 10: Identifying Skip Button (Without Navigation)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. With navigation, using the interface dial (A) to select [Sound Setup] or [RESUME/PAUSE].

   Without navigation, using the Setup button (B) to select audio settings (RESUME/PAUSE and sound settings).

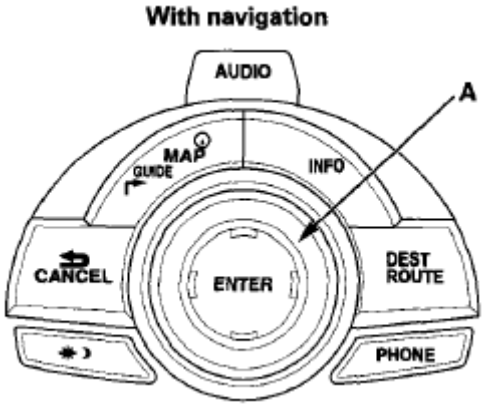


Fig. 11: Identifying Interface Dial
Courtesy of AMERICAN HONDA MOTOR CO., INC.

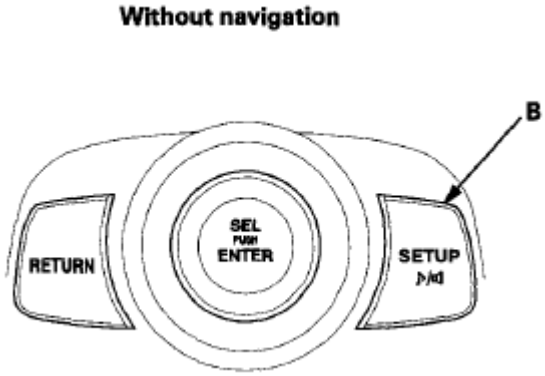


Fig. 12: Identifying Setup Button
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. To turn the Bluetooth audio mode off, select another audio mode (AM/FM, XM, CD/DVD, or USB).

Disc Handing and Cleaning

To avoid damaging or leaving fingerprints on a disc (CD, DVD, DVD-A, etc.), always handle it by the edges and place it in a jewel case whenever it is outside the audio or the audio-navigation unit. Deep scratches or fingerprints on the back of the disc can cause loading problems, poor sound quality, skipping, or other errors.

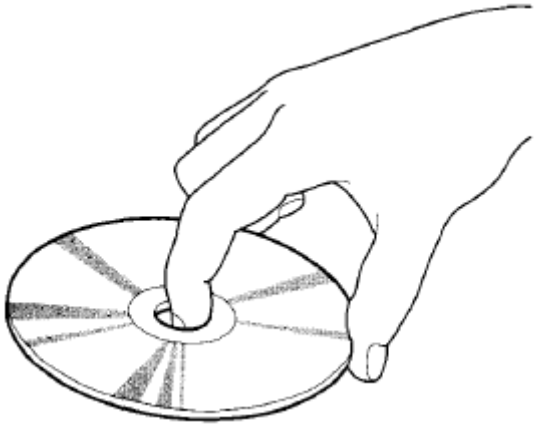


Fig. 13: Handling Disc By Hand
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Smudges and fingerprints can be carefully removed using a mild cleaner and tissues designed to clean eyeglasses. To clean a disc, use a clean soft cloth. Very gently wipe across the disc from the center to the outside edge, never in a circular motion.

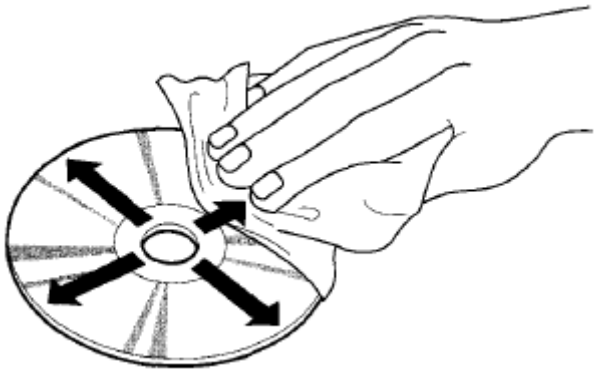


Fig. 14: Cleaning Disc Using Soft Cloth
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Do not place stabilizer rings or labels on the disc.

With Navigation

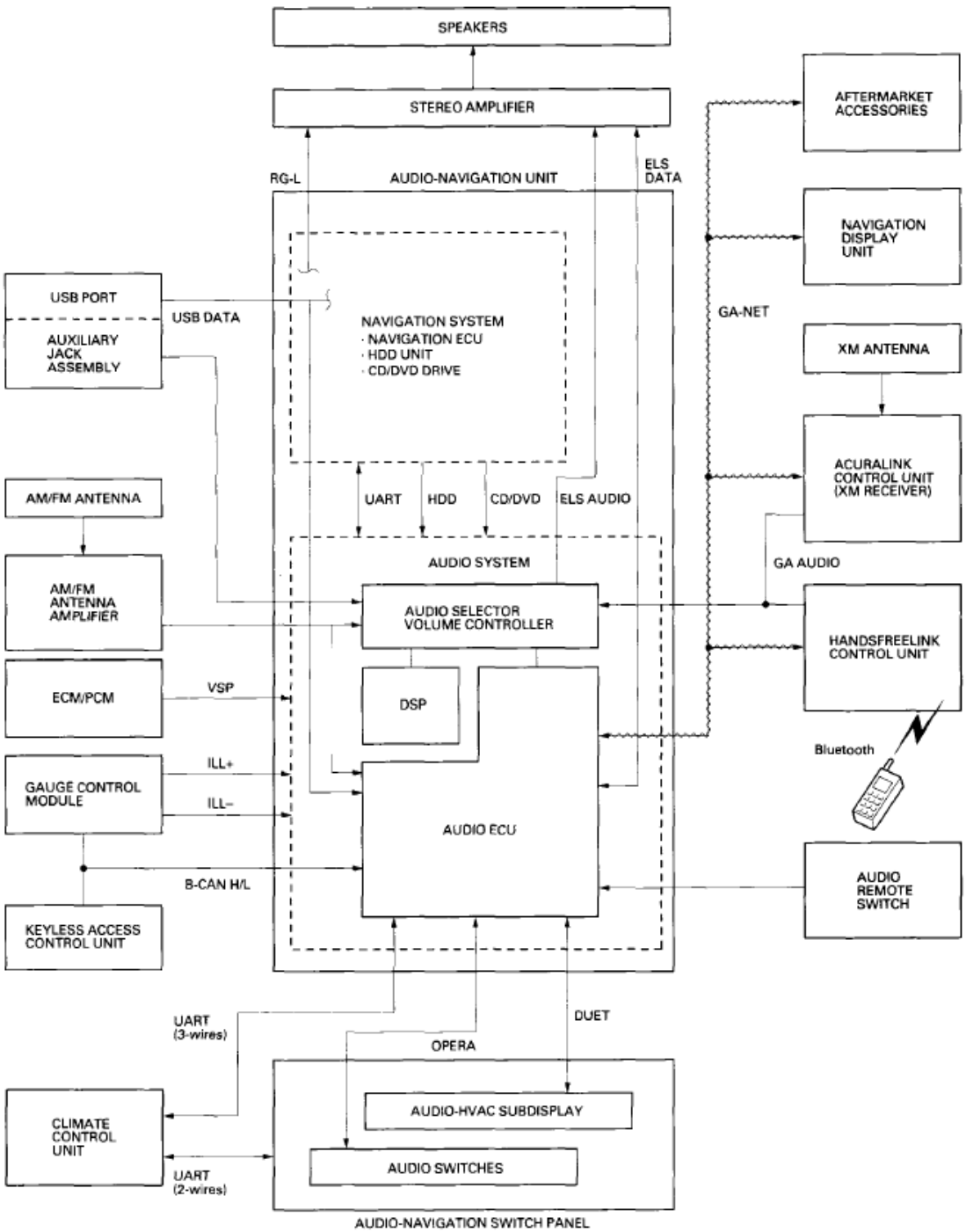


Fig. 15: Audio System Circuit Diagram (1 Of 2)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Without Navigation

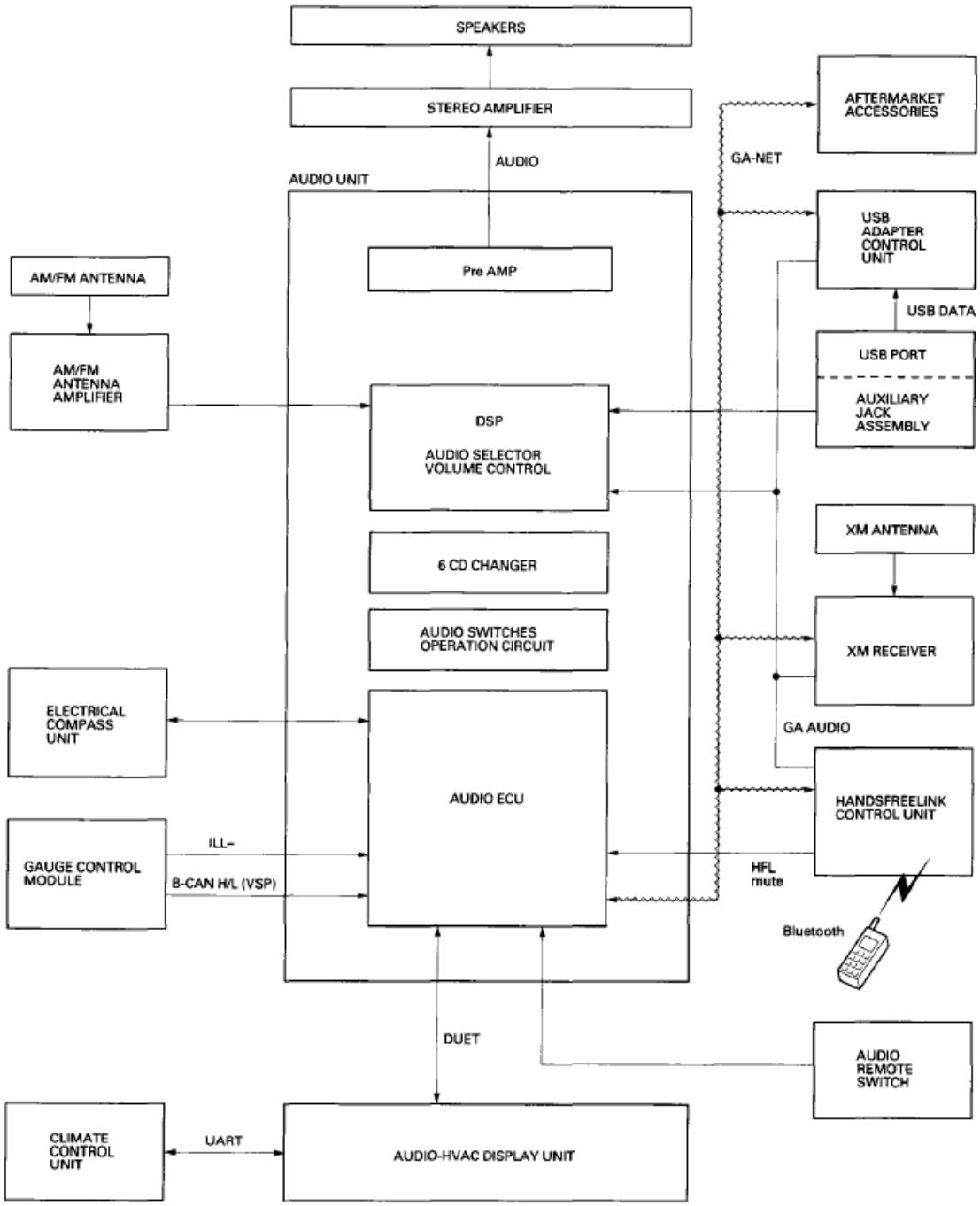


Fig. 16: Audio System Circuit Diagram (2 Of 2)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Audio Glossary

NOTE: All items may not apply to this vehicle. See the Owner's Manual for more information.

Item	Definition
Active noise cancellation	The active noise cancellation system cancels some of the vehicle noise. This occurs in the 1, 500-2, 400 RPM range. Microphones detect the low frequency sound, and the system outputs a canceling sound from the audio speaker.
Active sound control	The next generation of sound control that reduces unwanted sound in the passenger compartment.
AcuraLink®	This device receives information from the XM satellites and passes XM audio information to the audio system. In addition, traffic and weather information is sent to the navigation system.
AM (Amplitude Modulation)	The type of transmission used in the standard radio broadcast band from 530 to 1, 710 kHz.
Amplifier	A device that increases the level of a signal by increasing the current or voltage.
Antenna	A device used to send or receive electromagnetic waves through the air.
ATA (PC Card)	A type of card that has been tested for use in playing WMA and MP3 music files in the PC card slot.
Audio remote switch	The switches on the steering wheel that control the audio system.
Auxiliary jack	Allows the client to use a portable audio device to input audio recordings.
Balance	A control that changes the relative volume of the left and right channels.
Band	A range of frequencies between two definite limits. Bands are assigned by the Federal Communications Commission for specific uses.
Bass	An adjustment for the low frequency sounds of around 160 Hz and below.
Bluetooth Audio	Allows the client to play audio recordings stored on their cell phone through the audio system.
Byte	A unit of storage for computer files and memory. A CD holds approximately 700 million bytes.
Cassette	Audio or video magnetic tape container having two reels. Customer can insert it for play back.
Compact flash	A standard for small-size (3x4 cm), memory cards used in mobile computers, PDAs, and digital cameras. Compact flash memory cards are available in size of 32 MB up to 4 GB or more and can be played in the audio PC slot. Sizes above 1 GB have not been tested.
CD (Compact Disc)	A 4.5-inch plastic disc containing digital audio recording that is played optically on a laser equipped player. Never use discs with a paper label. In a hot vehicle, labels can curl up and jam the unit.
CD (audio disc) changer	CD player that can store and play more than one CD. Two types are available. Some units accept CDs fed into the changer one at a time, and others accept a magazine (with CDs stacked in a container).
CD player	A component designed to play compact disc recordings using a laser optical pickup. The signal from a CD player usually requires amplification.
CSF (Cold Start Fix) screens	These screens are displayed if the system requires a GPS initialization. The vehicle should be moved outside into an open area away from buildings/power lines.
dB (Decibels)	A method of measuring sound or radio signal strength received by the audio unit antenna.
Distortion	Inexact reproduction of an audio signal caused by playing music at levels the audio

	system cannot handle, you will typically hear this as static, pops, or crackles.
Dolby (noise reduction)	A processing system developed by Dolby Laboratories that reduces the background noise on recording media. The result is a cleaner playback from the audio system.
DUET	A serial data communication line used for sub display.
DVD (Digital Versatile Disc)	A 4.5-inch CD-like format used for storing movies with digital audio and video features. The DVD-A format is a DVD format designed for DVD audio systems. Some vehicles can play DVD and DVD-A formats.
Equalizer	A device that changes the relative volume of individual frequency bands to suit personal tastes of the listener.
Fader	The control that adjusts the relative volume levels of front and rear speakers in a four-speaker system.
Format	To prepare a PC card to receive files this function is done on a PC. Always choose either FAT or FAT32, as the NTFS format is not accepted by the system. Pick the default sectors for the format method selected.
FM (Frequency Modulation)	The form of modulation used for radio and television sound transmission in most of the world. Less prone to interference than AM. The FM broadcast band in North America covers roughly 87.7 to 107.9 MHz.
GA-Net	The GA-Net allows the audio unit to communicate with all the audio and navigation components in a vehicle. If there is an open in the GA-Net or components, the entire audio and navigation system may appear inoperative.
GB (Gigabyte)	A unit of memory or disc storage equal to one billion bytes (1, 000 million bytes).
HDD	Hard disc drive. The navigation does not use a DVD, but uses a hard drive to contain the navigation software. Can be updated with a CD or DVD that is inserted into the audio disc slot.
Hertz (Hz)	The unit of frequency equal to one cycle per second (cps). One kilohertz (kHz) equals 1, 000 cps; one megahertz (MHz) equals 1 million cps.
Integrated amplifier	A component that combines a pre amp and a power amp into a single unit. A receiver combines an integrated amp and a tuner into a single unit.
Jewel case	The hard plastic case that contains a compact disc or DVD. Always use a jewel case to prevent scratches on the underside of a CD or DVD.
LCD (Liquid Crystal Display)	A type of digital display that changes reflectance or transmittance when an electrical field is applied to it.
Memory	Circuitry or devices that hold information in electrical or magnetic form, such as the AM/FM radio presets.
MB (Megabyte)	One million bytes. Written as 1 MB. Megabytes are used as a measure of digital storage space. For example, a CD can hold 650 MB.
Mic	An abbreviation for microphone. For vehicles with navigation, the microphone accepts navigation voice commands to control audio and navigation functions.
MP3 music files	MP3 is an audio coding format. MP3 is a popular audio compression format on the Internet and computers. CDs and PC cards with these files can be played on some vehicle's audio system.
Mute	When the navigation gives guidance, the front speakers are muted (no music). When you use the voice control system, all of the speakers are muted.
Noise	Unwanted random sounds like buzzing, hiss, pops, static, whine, etc.

PC card	The slot used for playing MP3 and WMA music files. The PC card is usually a combination of a small flash card in a PCMCIA adaptor that slides into the slot. The ATA, SD, and compact flash types of cards have been tested up to 1 GB.
PCMCIA	A computer standard for the slot that the PC card slides into. Another term for the PC card slot.
Processor	The part of an audio device that performs tasks/calculations. In the audio unit, the processor handles muting to allow the navigation system to speak its voice commands, and the decoding/playback of the sound files, etc.
Radio	A head unit that combines a tuner, a preamplifier, and often a power-amplifier.
Route guidance (RG)	Spoken voice used for turn-by-turn navigation from the audio speakers.
Stereo	A recording of at least two channels where you can hear sound or music from the left or right side.
SD (Secure Digital) card	This compact type of memory card allows for fast data transfer and has built-in security functions. SD cards have a small write-protection switch on the side.
Shield	A metallic foil or braided wire layer surrounding conductors which are designed to prevent electrostatic or electromagnetic interference (noise) from external sources which you hear as buzzing or popping sounds which you hear on the speakers.
Speaker (Loudspeaker)	A device that converts electrical energy into acoustical energy (sound).
Speed-sensitive volume compensation (SVC)	The SVC increases the audio volume to compensate for increased interior noise when the vehicle is driven at freeway speeds.
Subwoofer	A loudspeaker made to reproduce the lowest audio frequencies, from about 25 Hz to 125 Hz.
Track	A sound recording on a CD, tape, or PC card.
Treble	An adjustment to control the volume of the high frequency sounds.
Tuner	A component (or part of a component) that receives radio signals and selects one broadcast from many.
Tweeter	A speaker designed to reproduce the higher frequencies (treble) only.
USB	Universal serial bus. The USB is used for playing audio files (MP3, WMA, AAC, etc.) on the external device through the audio unit.
USB port	Allows the clients to play data such as input audio recording from portable audio devices (such as iPod) or data from USB flash memory.
Voice coil	A coil of wire wrapped around a tube and then attached to the speaker cone or diaphragm. When an audio signal is applied, the coil becomes an electromagnet and interacts with the permanent magnet causing the cone or diaphragm to vibrate. We interpret these vibrations as sound.
Volume control	Allows you to control the loudness of the music.
WMA music file	Windows Media Audio Pile. This is an accepted format for music files to be played on either a CD-R, a CD-RW, or a PC card.
Woofer	A speaker that is designed to reproduce low (bass) frequencies only.
XM radio	Satellite based radio transmission, which also uses a ground based repeater network to ensure seamless reception. The channels originate from XM's broadcast center, in Washington DC, and uplink to two satellites. These satellites transmit the

	signal across the entire continental United States.
XM receiver	The external component that receives and processes the XM signals from the XM satellites, and terrestrial (land) stations. The audio unit communicates to the XM receiver over the GA-Net bus.

AUDIO UNIT CONNECTOR FOR INPUTS AND OUTPUTS (WITH NAVIGATION)

Audio-navigation unit

NOTE: Refer to the navigation system information for audio-navigation unit connector G, H, and J inputs and outputs (see NAVIGATION UNIT CONNECTOR FOR INPUTS AND OUTPUTS).

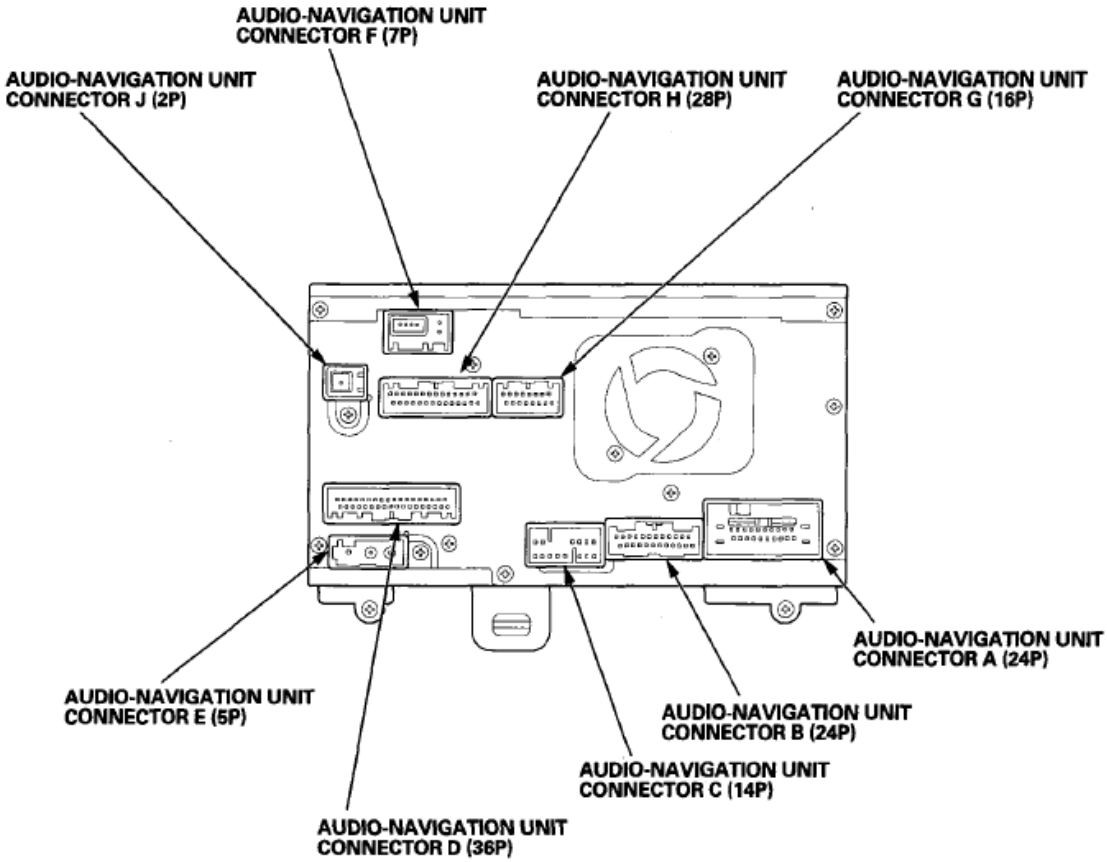
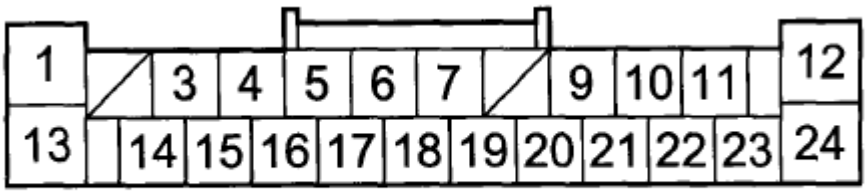


Fig. 17: Identifying Audio-Navigation Unit Input & Output Connectors
Courtesy of AMERICAN HONDA MOTOR CO., INC.

AUDIO-NAVIGATION UNIT CONNECTOR A (24P)



Wire side of female terminals

Fig. 18: Audio-Navigation Unit Connector A (24P) Connector End View
Courtesy of AMERICAN HONDA MOTOR CO., INC.

AUDIO-NAVIGATION UNIT CONNECTOR A (24P)

Cavity	Wire Color	Terminal Name	Connects to
A1	RED	ILL-(LED)	Gauge control module
A3	LT BLU	K-LINE	Data link connector (DLC)
A4	WHT	SCTY2	Navigation display unit
A5	YEL	REMOTE GND	Audio remote, navigation-HFL voice control switch ground
A6	WHT	SUR R PRE-	Stereo amplifier
A7	BLK	SUR R PRE+	Stereo amplifier
A9	GRY(1)	SUR PRE SH	Shield for terminals No. 6, No. 7, No. 10, and No. 11
A10	RED	SUR L PRE-	Stereo amplifier
A11	GRN	SUR L PRE+	Stereo amplifier
A12	BLK	GND	Body ground to G502
A13	PNK	NAVI ILL+	Gauge control module
A14	PUR	ACC	No. 18 (7.5 A) fuse in the driver's under-dash fuse/relay box
A15	BLU	VSP	ECM/PCM (VSP)
A16	PNK	REMOTE	Audio remote switch
A17	WHT	SWD +B	Stereo amplifier
A18	RED	FR PRE-	Stereo amplifier
A19	GRN	FR PRE+	Stereo amplifier
A20	GRY(1)	FR PRE SH	Shield for terminals No. 18 and No. 19
A21	GRY(1)	FL PRE SH	Shield for terminals No. 22 and No. 23
A22	RED	FL PRE-	Stereo amplifier
A23	GRN	FL PRE+	Stereo amplifier
A24	WHT	+ B	No. 15 (10 A) fuse in the under-hood fuse/relay box

(1) The shielded wires have a heat-shrink tube insulating the outside of the wire. The color of the insulating tube, typically black or dark gray, may not match the color of the wire listed on the circuit diagram.

AUDIO-NAVIGATION UNIT CONNECTOR B (24P)

NOTE: **Refer to the navigation system information for the terminals inputs and outputs not shown (see AUDIO-NAVIGATION UNIT CONNECTOR B (24P)).**

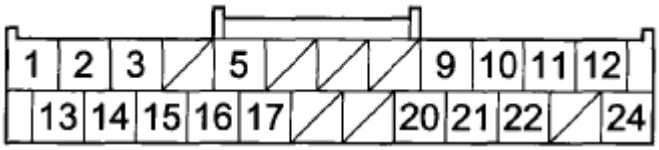


Fig. 19: Audio-Navigation Unit Connector B (24P) Connector End View
Courtesy of AMERICAN HONDA MOTOR CO., INC.

AUDIO-NAVIGATION UNIT CONNECTOR B (24P)

Cavity	Wire Color	Terminal Name	Connects to
B1	RED	AUX L	Auxiliary jack assembly
B2	BLK	AUX SIG GND	Auxiliary jack assembly
B3	ORN	AUX DET	Auxiliary jack assembly
B5	BRN	TELM SIG +	HandsFreeLink control unit
B9	WHT	CTR PRE-	Stereo amplifier
B10	BLK	CTR PRE +	Stereo amplifier
B11	GRY(1)	CTR PRE SH	Shield for terminals No. 9, No. 10, No. 12, and No. 24
B12	GRN	SUBW PRE +	Stereo amplifier
B13	WHT	AUX R	Auxiliary jack assembly
B14	YEL	AUX GND	Auxiliary jack assembly
B15	GRY(1)	AUX SH GND	Shield for terminals No. 1, No. 2, and No. 13
B16	YEL	TELM SIG-	HandsFreeLink control unit
B17	GRY(1)	TELM SIG SH	Shield for terminals No. 5 and No. 16
B24	RED	SUBW PRE-	Stereo amplifier

(1) The shielded wires have a heat-shrink tube insulating the outside of the wire. The color of the insulating tube, typically black or dark gray, may not match the color of the wire listed on the circuit diagram.

AUDIO-NAVIGATION UNIT CONNECTOR C (14P)

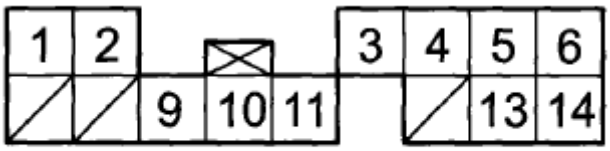


Fig. 20: Audio-Navigation Unit Connector C (14P) Connector End View
Courtesy of AMERICAN HONDA MOTOR CO., INC.

AUDIO-NAVIGATION UNIT CONNECTOR C (14P)

Cavity	Wire Color	Terminal Name	Connects to
C1(3)	YEL	+ B	XM receiver
C2(3)	LT BLU	SYS ACC	XM receiver
C3	GRY(1)	GA-NET BUS SH	Shield for terminals No. 9 and No. 10
C4	GRY(1)	AUDIO SH	Shield for terminals No. 5, No. 6, No. 13, and No. 14
C5	GRN	AUDIO R+	AcuraLink® control unit (XM receiver)(2), XM receiver(3), HandsFreeLink control unit
C6	BLK	AUDIO L+	AcuraLink® control unit (XM receiver)(2), XM receiver(3), HandsFreeLink control unit
C9	PNK	GA-NET BUS+	AcuraLink® control unit (XM receiver)(2), XM receiver(3), HandsFreeLink control unit. Navigation display unit
C10	BLU	GA-NET BUS-	AcuraLink® control unit (XM receiver)(2), XM receiver(3), HandsFreeLink control unit, Navigation display unit
C11(3)	BLK	GND	XM receiver
C13	WHT	AUDIO R-	AcuraLink® control unit (XM receiver)(2), XM receiver(3), HandsFreeLink control unit
C14	RED	AUDIO L-	AcuraLink® control unit (XM receiver)(2), XM receiver(3), HandsFreeLink control unit

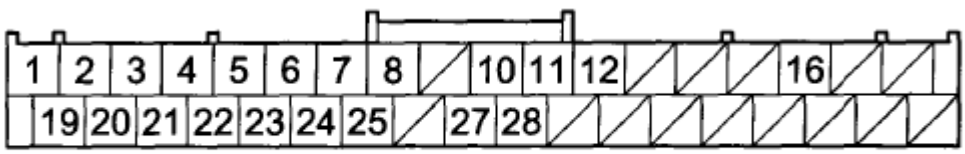
(1) The shielded wires have a heat-shrink tube insulating the outside of the wire. The color of the insulating tube, typically black or dark gray, may not match the color of the wire listed on the circuit diagram.

(2) USA models

(3) Canada models

AUDIO-NAVIGATION UNIT CONNECTOR D (36P)

NOTE: Refer to the navigation system information for the terminals inputs and outputs not shown (see AUDIO-NAVIGATION UNIT CONNECTOR D (36P)).



Wire side of female terminals

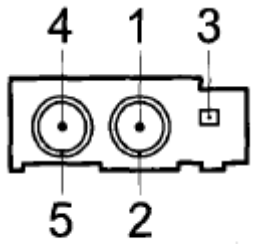
Fig. 21: Audio-Navigation Unit Connector D (36P) Connector End View
Courtesy of AMERICAN HONDA MOTOR CO., INC.

AUDIO-NAVIGATION UNIT CONNECTOR D (36P)

Cavity	Wire Color	Terminal Name	Connects to
D1	YEL	DUET RX	Audio-navigation switch panel
D2	GRY(1)	DUET SH	Shield for terminals No. 1 and No. 19
D3	PUR	OPERA RX	Audio-navigation switch panel
D4	GRY(1)	OPERA SH	Shield for terminals No. 3 and No. 21
D5	BLU	VOL-	Audio-navigation switch panel
D6	GRY(1)	VOL SH	Shield for terminals No. 5, No. 23, and No. 24
D7	RED	ELS DATA-	Stereo amplifier
D8	GRN	ELS DATA-I-	Stereo amplifier
D12	PNK	B-CAN H	B-CAN communication bus
D19	BRN	DUET TX	Audio-navigation switch panel
D20	BLU	DUET CONT	Audio-navigation switch panel
D21	LT BLU	OPERA TX	Audio-navigation switch panel
D22	PNK	OPERA CONT	Audio-navigation switch panel
D23	PNK	VOL+	Audio-navigation switch panel
D24	GRN	PWR SW	Audio-navigation switch panel
D25	GRY(1)	ELS DATA SH	Shield for terminals No. 7 and No. 8
D28	BLU	B-CAN L	B-CAN communication bus

(1) The shielded wires have a heat-shrink tube insulating the outside of the wire. The color of the insulating tube, typically black or dark gray, may not match the color of the wire listed on the circuit diagram.

AUDIO-NAVIGATION UNIT CONNECTOR E (5P)



Terminal side of female terminals

Fig. 22: Audio-Navigation Unit Connector E (5P) Connector End View
Courtesy of AMERICAN HONDA MOTOR CO., INC.

AUDIO-NAVIGATION UNIT CONNECTOR E (5P)

Cavity	Wire Color	Terminal Name	Connects to
E1	--	RF IN	AM/FM antenna amplifier

E2	--	RF SH	Shield for terminal No. 1
E3	--	ANT +B	AM/FM antenna amplifier

AUDIO-NAVIGATION UNIT CONNECTOR F (7P)

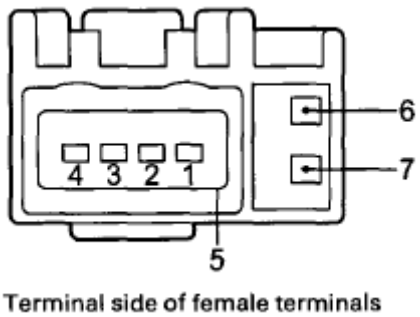


Fig. 23: Audio-Navigation Unit Connector F (7P) Connector End View
Courtesy of AMERICAN HONDA MOTOR CO., INC.

AUDIO-NAVIGATION UNIT CONNECTOR F (7P)

Cavity	Wire Color	Terminal Name	Connects to
F1	--	USB VBUS	USB adapter
F2	--	USB DATA-	USB adapter
F3	--	USB DATA+	USB adapter
F4	--	USB GND	USB adapter
F5	--	USB SH	Shield for terminals No. 1, No. 2, No. 3, and No. 4
F6	--	USB DET	Connects to terminal No. 7
F7	--	USB DET GND	Connects to terminal No. 6

AUDIO UNIT CONNECTOR FOR INPUTS AND OUTPUTS (WITHOUT NAVIGATION)

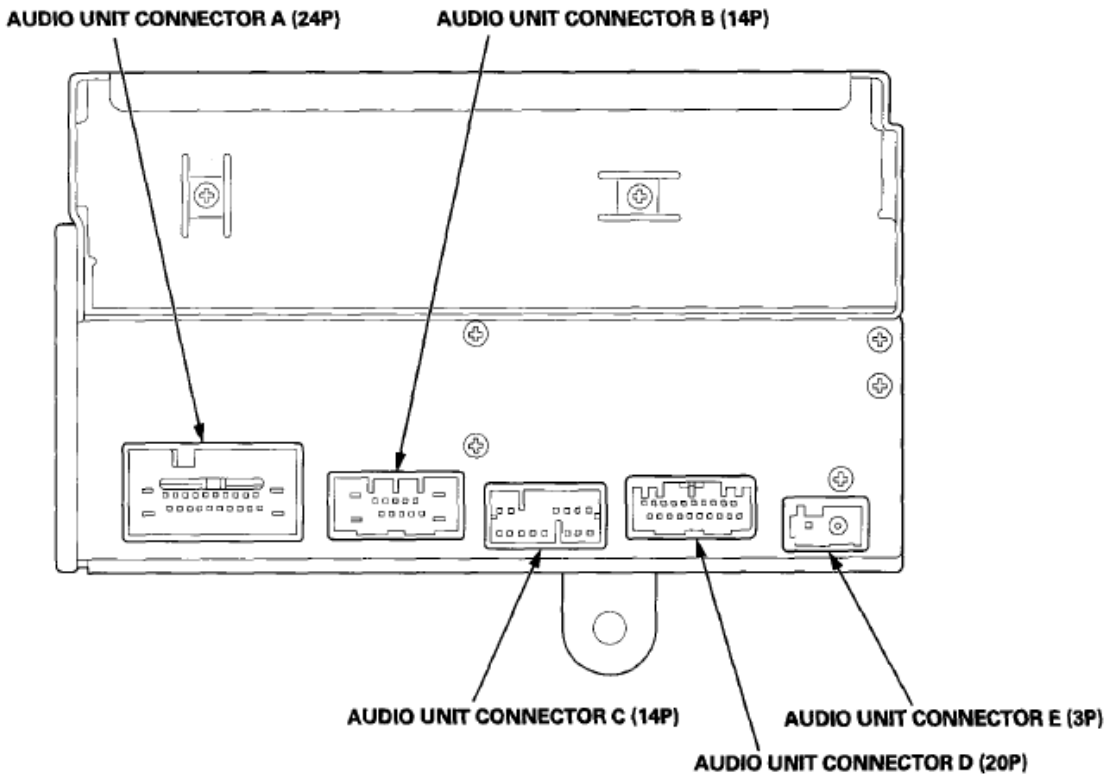


Fig. 24: Identifying Audio Unit Input & Output Connectors
Courtesy of AMERICAN HONDA MOTOR CO., INC.

AUDIO UNIT CONNECTOR A (24P)

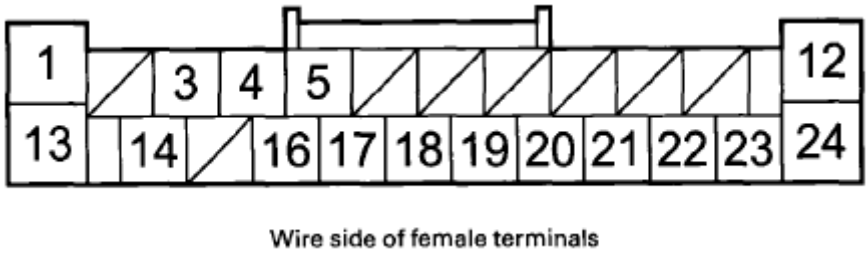


Fig. 25: Audio Unit Connector A (24P) Connector End View
Courtesy of AMERICAN HONDA MOTOR CO., INC.

AUDIO UNIT CONNECTOR A (24P)

Cavity	Wire Color	Terminal Name	Connects to
A1	RED	ILL - (LED)	Gauge control module
A3	LT BLU	K-LINE	Data link connector (DLC)
A4	BRN	SCTY2	Passenger's under-dash fuse/relay box
A5	YEL	REMOTE GND	Audio remote-HFL switch ground
A12	BLK	GND	Body ground to G502
			No. 6 (7.5 A) fuse in the passenger's under-dash fuse/relay

A13	GRY	ILL+	box
A14	PUR	ACC	No. 18 (7.5 A) fuse in the driver's under-dash fuse/relay box
A16	PNK	REMOTE	Audio remote switch
A17	WHT	SWD +B	Stereo amplifier
A18	RED	FR PRE-	Stereo amplifier
A19	GRN	FR PRE +	Stereo amplifier
A20	GRY(1)	FR PRE SH	Shield for terminals No. 18 and No. 19
A21	GRY(1)	FL PRE SH	Shield for terminals No. 22 and No. 23
A22	RED	FL PRE-	Stereo amplifier
A23	GRN	FL PRE+	Stereo amplifier
A24	WHT	+ B	No. 15 (10 A) fuse in the under-hood fuse/relay box
(1) The shielded wires have a heat-shrink tube insulating the outside of the wire. The color of the insulating tube, typically black or dark gray, may not match the color of the wire listed on the circuit diagram.			

AUDIO UNIT CONNECTOR B (14P)

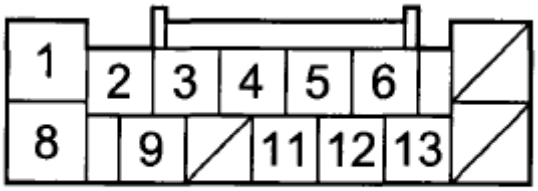


Fig. 26: Audio Unit Connector B (14P) Connector End View
Courtesy of AMERICAN HONDA MOTOR CO., INC.

AUDIO UNIT CONNECTOR B (14P)

Cavity	Wire Color	Terminal Name	Connects to
B1	RED	SUBW PRE-	Stereo amplifier
B2	WHT	CTR PRE-	Stereo amplifier
B3	BLK	CTR PRE +	Stereo amplifier
B4	RED	SUR L PRE-	Stereo amplifier
B5	WHT	SUR R PRE-	Stereo amplifier
B6	GRY(1)	SUR PRE SH	Shield for terminals No. 4, No. 5, No. 11, and No. 12
B8	GRN	SUBW PRE+	Stereo amplifier
B9	GRY(1)	CTR PRE SH	Shield for terminals No. 1, No. 2, No. 3, and No. 8
B11	GRN	SUR L PRE+	Stereo amplifier
B12	BLK	SUR R PRE +	Stereo amplifier
B13	LT GRN	DPL II ON/OFF	Stereo amplifier

(1) The shielded wires have a heat-shrink tube insulating the outside of the wire. The color of the insulating tube, typically black or dark gray, may not match the color of the wire listed on the circuit diagram.

AUDIO UNIT CONNECTOR C (14P)

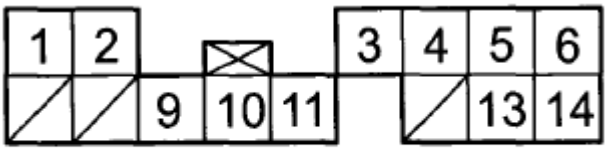


Fig. 27: Audio Unit Connector C (14P) Connector End View
Courtesy of AMERICAN HONDA MOTOR CO., INC.

AUDIO UNIT CONNECTOR C (14P)

Cavity	Wire Color	Terminal Name	Connects to
C1	YEL	+ B	XM receiver, USB adapter control unit
C2	LT BLU	SYS ACC	XM receiver, USB adapter control unit
C3	GRY(1)	GA-NET BUS SH	Shield for terminals No. 9 and No. 10
C4	GRY(1)	AUDIO SH	Shield for terminals No. 5, No. 6, No. 13, and No. 14
C5	GRN	AUDIO R+	XM receiver, HandsFreeLink control unit, USB adapter control unit
C6	BLK	AUDIO L+	XM receiver, HandsFreeLink control unit, USB adapter control unit
C9	PNK	GA-NET BUS+	XM receiver, HandsFreeLink control unit, USB adapter control unit
C10	BLU	GA-NET BUS-	XM receiver, HandsFreeLink control unit, USB adapter control unit
C11	BLK	GND	XM receiver, USB adapter control unit
C13	WHT	AUDIO R-	XM receiver, HandsFreeLink control unit, USB adapter control unit
C14	RED	AUDIO L-	XM receiver, HandsFreeLink control unit, USB adapter control unit

(1) The shielded wires have a heat-shrink tube insulating the outside of the wire. The color of the insulating tube, typically black or dark gray, may not match the color of the wire listed on the circuit diagram.

AUDIO UNIT CONNECTOR D (20P)

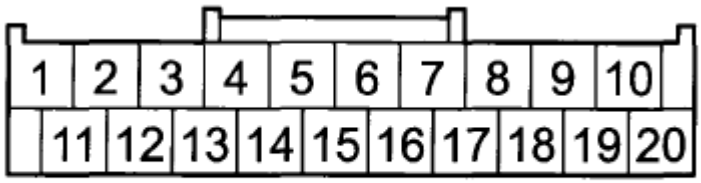


Fig. 28: Audio Unit Connector D (20P) Connector End View
Courtesy of AMERICAN HONDA MOTOR CO., INC.

AUDIO UNIT CONNECTOR D (20P)

Cavity	Wire Color	Terminal Name	Connects to
D1	PNK	COMPASS 2	Electrical compass unit
D2	LT BLU	COMPASS 1	Electrical compass unit
D3	BLK	AUX SIG GND	Auxiliary jack assembly
D4	GRY(1)	AUX SH GND	Shield for terminals No. 3, No. 13, and No. 14
D5	YEL	AUX GND	Auxiliary jack assembly
D6	BRN	DUET TX	Audio-HVAC display unit
D7	YEL	DUET RX	Audio-HVAC display unit
D8	BLU	B-CAN L	B-CAN communication bus
D9	YEL	TELM SIG-	HandsFreeLink control unit
D10	GRY(1)	TELM SIG SH	Shield for terminals No. 9 and No. 19
D11	RED	COMPASS 4	Electrical compass unit
D12	ORN	COMPASS 3	Electrical compass unit
D13	RED	AUX L	Auxiliary jack assembly
D14	WHT	AUX R	Auxiliary jack assembly
D15	ORN	AUX DET	Auxiliary jack assembly
D16	GRY(1)	DUET SH	Shield for terminals No. 6 and No. 7
D17	BLU	DUET CONT	Audio-HVAC display unit
D18	PNK	B-CAN H	B-CAN communication bus
D19	BRN	TELM SIG+	HandsFreeLink control unit
D20	PUR	HFL MUTE	HandsFreeLink control unit

(1) The shielded wires have a heat-shrink tube insulating the outside of the wire. The color of the insulating tube, typically black or dark gray, may not match the color of the wire listed on the circuit diagram.

AUDIO UNIT CONNECTOR E (3P)

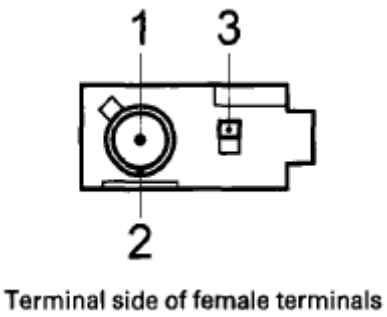


Fig. 29: Audio Unit Connector E (3P) Connector End View
Courtesy of AMERICAN HONDA MOTOR CO., INC.

AUDIO UNIT CONNECTOR E (3P)

Cavity	Wire Color	Terminal Name	Connects to
E1	--	RF IN	AM/FM antenna amplifier
E2	--	RF SH	Shield for terminal No. 1
E3	--	ANT +B	AM/FM antenna amplifier

AUDIO-NAVIGATION SWITCH PANEL CONNECTOR FOR INPUTS AND OUTPUTS (WITH NAVIGATION)

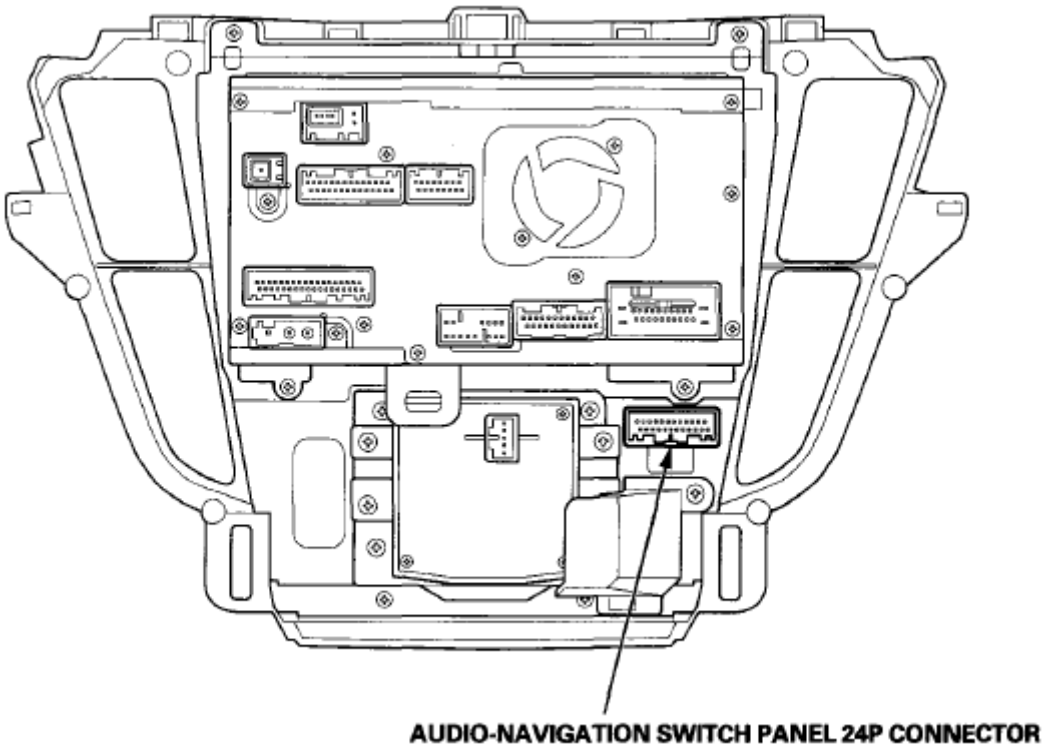


Fig. 30: Identifying Audio-Navigation Switch Panel Connector For Inputs And Outputs
Courtesy of AMERICAN HONDA MOTOR CO., INC.

AUDIO-NAVIGATION SWITCH PANEL 24P CONNECTOR

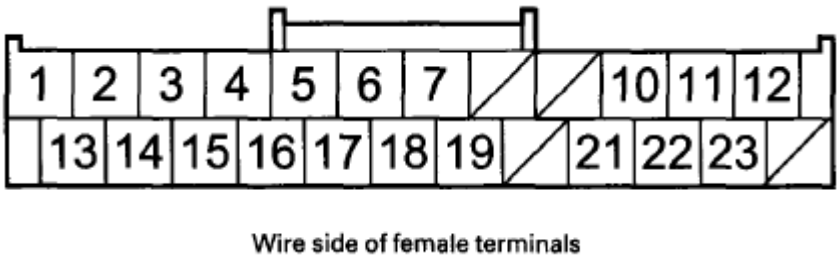


Fig. 31: Audio-Navigation Switch Panel 24P Connector End View
Courtesy of AMERICAN HONDA MOTOR CO., INC.

AUDIO-NAVIGATION SWITCH PANEL 24P CONNECTOR

Cavity	Wire Color	Terminal Name	Connects to
1	BLU	VOL-	Audio-navigation unit
2	GRY(1)	VOL SH	Shield for terminals No. 1, No. 13, and No. 14
3	BLU	DUET CONT	Audio-navigation unit
4	GRY(1)	DUET SH	Shield for terminals No. 15 and No. 16
5	GRY(1)	OPERA SH	Shield for terminals No. 6 and No. 18
6	LT BLU	OPERA TX	Audio-navigation unit
7	RED	DISP CLK	Climate control unit
10	BLK	GND	Body ground to G501
11	RED	ILL- (LED)	Gauge control module
12	LT BLU	ILL-(LCD)	Gauge control module
13	PNK	VOL+	Audio-navigation unit
14	GRN	PWR SW	Audio-navigation unit
15	YEL	DUET RX	Audio-navigation unit
16	BRN	DUET TX	Audio-navigation unit
17	PNK	OPERA CONT	Audio-navigation unit
18	PUR	OPERA RX	Audio-navigation unit
19	PUR	DISP SO	Climate control unit
21	LT GRN	IG2	No. 16 (7.5 A) fuse in the driver's under-dash fuse/relay box
22	WHT	+ B	No. 15 (10 A) fuse in the under-hood fuse/relay box
23	GRY	ILL+	No. 6 (7.5 A) fuse in the passenger's under-dash fuse/relay box

(1) The shielded wires have a heat-shrink tube insulating the outside of the wire. The color of the insulating tube, typically black or dark gray, may not match the color of the wire listed on the circuit diagram.

STEREO AMPLIFIER CONNECTOR FOR INPUTS AND OUTPUTS (WITH NAVIGATION)

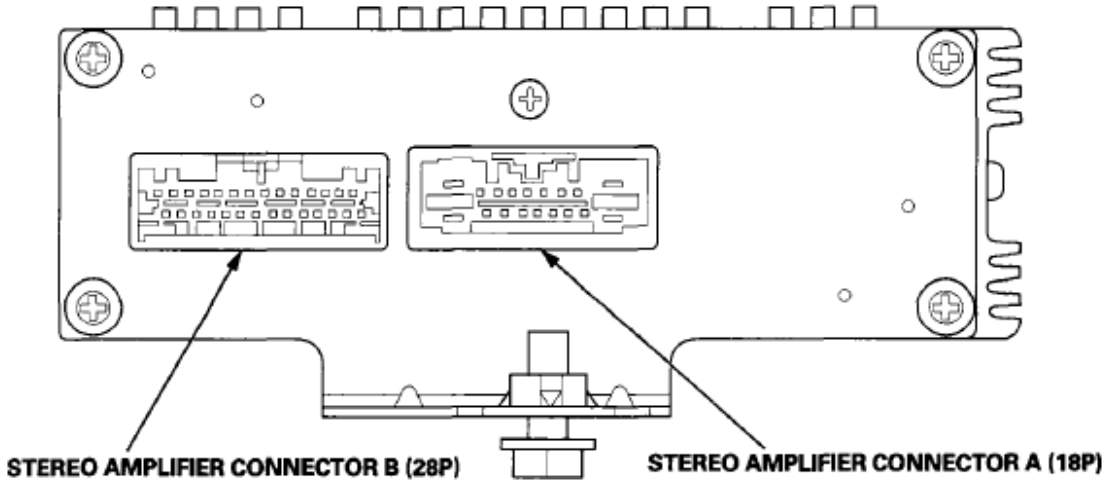


Fig. 32: Identifying Stereo Amplifier Connector For Inputs And Outputs
Courtesy of AMERICAN HONDA MOTOR CO., INC.

STEREO AMPLIFIER CONNECTOR A (18P)

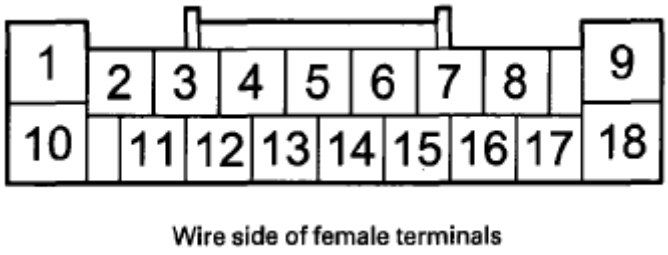


Fig. 33: Stereo Amplifier Connector A (18P) Connector End View
Courtesy of AMERICAN HONDA MOTOR CO., INC.

STEREO AMPLIFIER CONNECTOR A (18P)

Cavity	Wire Color	Terminal Name	Connects to
A1	LT BLU	SUBW SP-	Subwoofer
A2	YEL	CTR SP-	Front center speaker
A3	GRY	RR SP-	Right rear door speaker
A4	GRN	RL SP-	Left rear speaker
A5	YEL	SUR R SP-	Right rear speaker
A6	BRN	FR SP-	Front passenger's door speaker, Right tweeter
A7	BLU	FL SP-	Driver's door speaker, Left tweeter
A8	BLU	SUR L SP-	Left rear speaker
A9	BLK	GND	Body ground to G653
A10	GRY	SUBW SP+	Subwoofer
A11	BRN	CTR SP+	Front center speaker
A12	BRN	RR SP+	Right rear door speaker
A13	RED	RL SP+	Left rear door speaker

A14	BLU	SUR R SP+	Right rear speaker
A15	GRY	FR SP+	Front passenger's door speaker. Right tweeter
A16	LT GRN	FL SP+	Driver's door speaker. Left tweeter
A17	YEL	SUR L SP+	Left rear speaker
A18	WHT	+ B	No. 15 (20 A) fuse in the passenger's under-dash fuse/relay box

STEREO AMPLIFIER CONNECTOR B (28P)

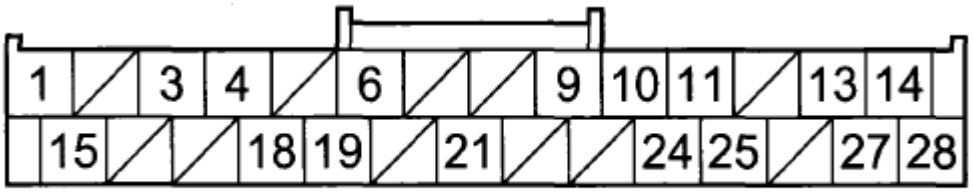


Fig. 34: Stereo Amplifier Connector B (28P) Connector End View
Courtesy of AMERICAN HONDA MOTOR CO., INC.

STEREO AMPLIFIER CONNECTOR B (28P)

Cavity	Wire Color	Terminal Name	Connects to
B1	RED	ELS DATA-	Audio-navigation unit
B3	WHT	SWD +B	Audio-navigation unit
B4	BLK	CTR PRE +	Audio-navigation unit
B6	GRN	SUBW PRE +	Audio-navigation unit
B9	BLK	RG L GND	Audio-navigation unit
B10	GRN	FL PRE +	Audio-navigation unit
B11	GRN	FR PRE +	Audio-navigation unit
B13	GRN	SUR L PRE +	Audio-navigation unit
B14	BLK	SUR R PRE +	Audio-navigation unit
B15	GRN	ELS DATA+	Audio-navigation unit
B18	WHT	CTR PRE-	Audio-navigation unit
B19	RED	SUBW PRE-	Audio-navigation unit
B21	WHT	RG L+	Audio-navigation unit
B24	RED	FL PRE-	Audio-navigation unit
B25	RED	FR PRE-	Audio-navigation unit
B27	RED	SUR L PRE-	Audio-navigation unit
B28	WHT	SUR R PRE-	Audio-navigation unit

STEREO AMPLIFIER CONNECTOR FOR INPUTS AND OUTPUTS (WITHOUT NAVIGATION)

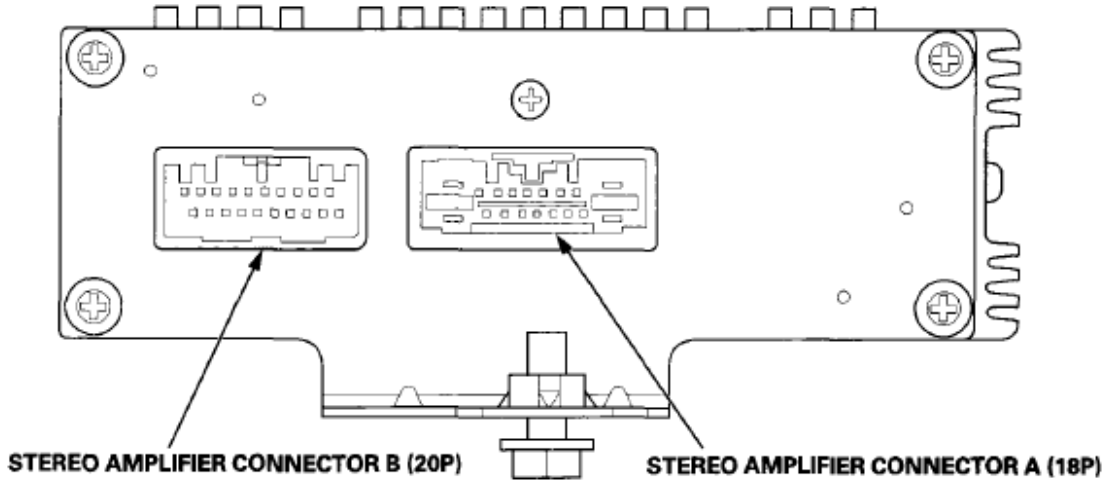


Fig. 35: Identifying Stereo Amplifier Connectors For Inputs And Outputs
Courtesy of AMERICAN HONDA MOTOR CO., INC.

STEREO AMPLIFIER CONNECTOR A (18P)

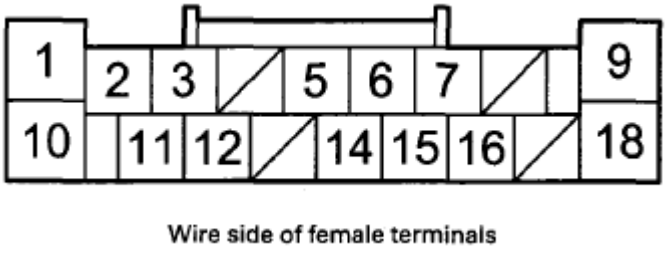


Fig. 36: Stereo Amplifier Connector A (18P) Connector End View
Courtesy of AMERICAN HONDA MOTOR CO., INC.

STEREO AMPLIFIER CONNECTOR A (18P)

Cavity	Wire Color	Terminal Name	Connects to
A1	BLU	SUR L SP-	Left rear speaker
A2	BLU	FL SP-	Driver's door speaker. Left tweeter
A3	LT BLU	SUBW SP-	Subwoofer
A5	YEL	SUR R SP-	Right rear speaker
A6	BRN	FR SP-	Front passenger's door speaker. Right tweeter
A7	YEL	CTR SP-	Front center speaker
A9	BLK	GND	Body ground to G653
A10	YEL	SUR L SP+	Left rear speaker
A11	LT GRN	FL SP+	Driver's door speaker. Left tweeter
A12	GRY	SUBW SP+	Subwoofer
A14	BLU	SUR R SP+	Right rear speaker
A15	GRY	FR SP+	Front passenger's door speaker. Right tweeter
A16	BRN	CTR SP+	Front center speaker

A18	WHT	+ B	No. 15 (20 A) fuse in the passenger's under-dash fuse/relay box

STEREO AMPLIFIER CONNECTOR B (20P)

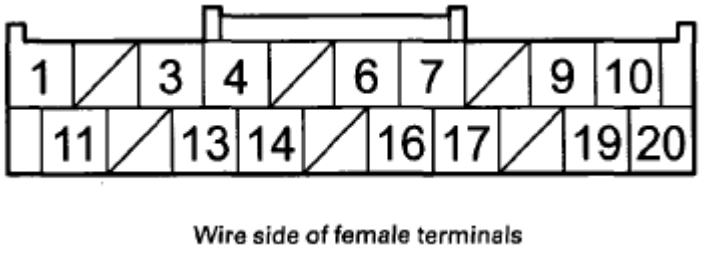


Fig. 37: Stereo Amplifier Connector B (20P) Connector End View
Courtesy of AMERICAN HONDA MOTOR CO., INC.

STEREO AMPLIFIER CONNECTOR B (20P)

Cavity	Wire Color	Terminal Name	Connects to
B1	WHT	SWD +B	Audio unit
B3	BLK	CTR PRE+	Audio unit
B4	GRN	SUBW PRE +	Audio unit
B6	GRN	FL PRE +	Audio unit
B7	GRN	FR PRE+	Audio unit
B9	GRN	SUR L PRE+	Audio unit
B10	BLK	SUR R PRE+	Audio unit
B11	LT GRN	DPL II ON/OFF	Audio unit
B13	WHT	CTR PRE-	Audio unit
B14	RED	SUBW PRE-	Audio unit
B16	RED	FL PRE-	Audio unit
B17	RED	FR PRE-	Audio unit
B19	RED	SUR L PRE-	Audio unit
B20	WHT	SUR R PRE-	Audio unit

XM RECEIVER CONNECTOR FOR INPUTS AND OUTPUTS (WITHOUT ACURALINK®)

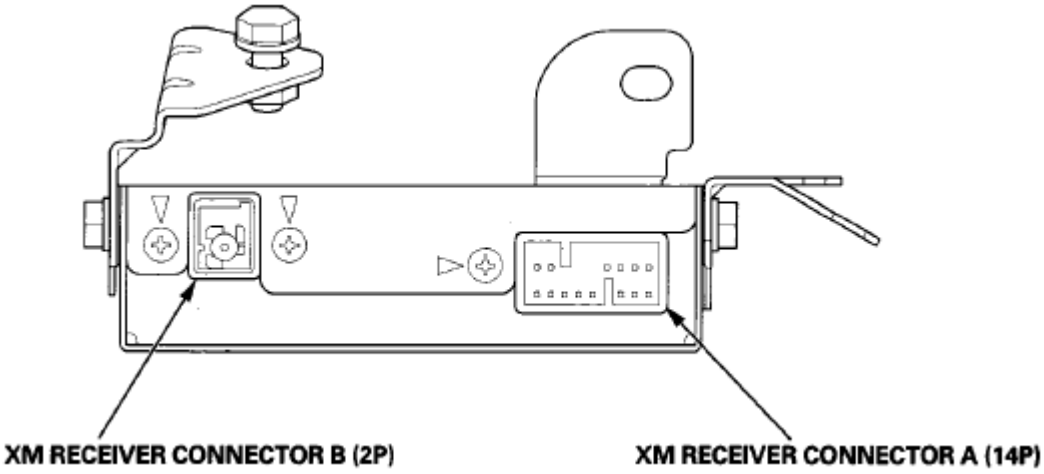


Fig. 38: Identifying XM Receiver Connector For Inputs And Outputs
Courtesy of AMERICAN HONDA MOTOR CO., INC.

XM RECEIVER CONNECTOR A (14P)

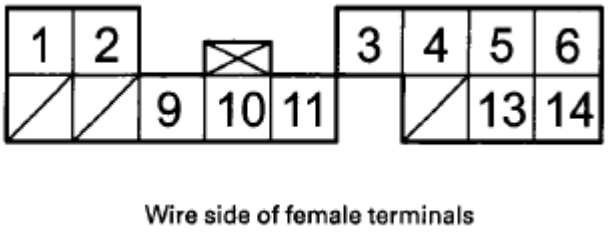


Fig. 39: XM Receiver Connector A (14P) Connector End View
Courtesy of AMERICAN HONDA MOTOR CO., INC.

XM RECEIVER CONNECTOR A (14P) (WITH NAVIGATION)

Cavity	Wire Color	Terminal Name	Connects to
A1	YEL	+ B	Audio-navigation unit
A2	LT BLU	SYS ACC	Audio-navigation unit
A3	GRY(1)	GA-NET BUS SH	Shield for terminals No. 9 and No. 10
A4	GRY(1)	AUDIO SH	Shield for terminals No. 5, No. 6, No. 13, and No. 14
A5	GRN	AUDIO R +	Audio-navigation unit, HandsFreeLink control unit
A6	BLK	AUDIO L+	Audio-navigation unit, HandsFreeLink control unit
A9	PNK	GA-NET BUS+	Audio-navigation unit, HandsFreeLink control unit, Navigation display unit
A10	BLU	GA-NET BUS-	Audio-navigation unit, HandsFreeLink control unit. Navigation display unit
A11	BLK	GND	Audio-navigation unit
A13	WHT	AUDIO R-	Audio-navigation unit, HandsFreeLink control unit
A14	RED	AUDIO L-	Audio-navigation unit, HandsFreeLink control unit

(1) The shielded wires have a heat-shrink tube insulating the outside of the wire. The color of the insulating tube, typically black or dark gray, may not match the color of the wire listed on the circuit diagram.

XM RECEIVER CONNECTOR A (14P) (WITHOUT NAVIGATION)

Cavity	Wire Color	Terminal Name	Connects to
A1	YEL	+ B	Audio unit, USB adapter control unit
A2	LT BLU	SYS ACC	Audio unit, USB adapter control unit
A3	GRY(1)	GA-NET BUS SH	Shield for terminals No. 9 and No. 10
A4	GRY(1)	AUDIO SH	Shield for terminals No. 5, No. 6, No. 13, and No. 14
A5	GRN	AUDIO R +	Audio unit, USB adapter control unit, HandsFreeLink control unit
A6	BLK	AUDIO L+	Audio unit, USB adapter control unit, HandsFreeLink control unit
A9	PNK	GA-NET BUS+	Audio unit, USB adapter control unit, HandsFreeLink control unit
A10	BLU	GA-NET BUS -	Audio unit, USB adapter control unit, HandsFreeLink control unit
A11	BLK	GND	Audio unit, USB adapter control unit
A13	WHT	AUDIO R-	Audio unit, USB adapter control unit, HandsFreeLink control unit
A14	RED	AUDIO L-	Audio unit, USB adapter control unit, HandsFreeLink control unit

(1) The shielded wires have a heat-shrink tube insulating the outside of the wire. The color of the insulating tube, typically black or dark gray, may not match the color of the wire listed on the circuit diagram.

XM RECEIVER CONNECTOR B (2P)



Terminal side of female terminals

Fig. 40: XM Receiver Connector B (2P) Connector End View
Courtesy of AMERICAN HONDA MOTOR CO., INC.

XM RECEIVER CONNECTOR B (2P)

Cavity	Wire Color	Terminal Name	Connects to

B1	--	SAT/TER	XM antenna
B2	--	GND SH	Shield for terminal No. 1

USB ADAPTER CONTROL UNIT CONNECTOR FOR INPUTS AND OUTPUTS (WITHOUT NAVIGATION)

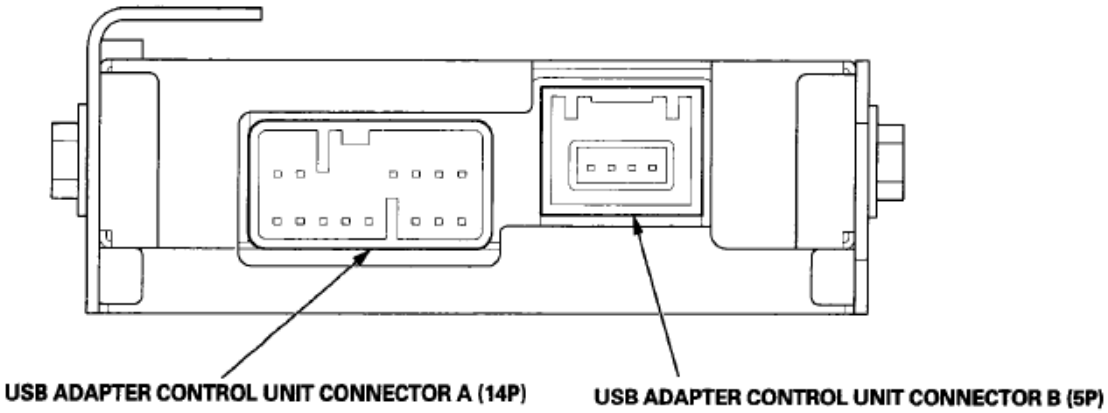


Fig. 41: Identifying USB Adapter Control Unit Connectors For Inputs And Outputs
Courtesy of AMERICAN HONDA MOTOR CO., INC.

USB ADAPTER CONTROL UNIT CONNECTOR A (14P)

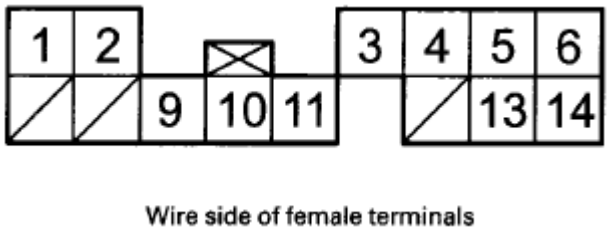


Fig. 42: USB Adapter Control Unit A (14P) Connector End View
Courtesy of AMERICAN HONDA MOTOR CO., INC.

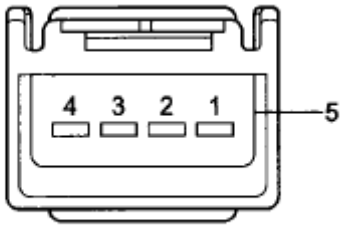
USB ADAPTER CONTROL UNIT CONNECTOR A (14P)

Cavity	Wire Color	Terminal Name	Connects to
A1	YEL	+ B	Audio unit, XM receiver
A2	LT BLU	SYS ACC	Audio unit, XM receiver
A3	GRY(1)	GA-NET BUS SH	Shield for terminals No. 9 and No. 10
A4	GRY(1)	AUDIO SH	Shield for terminals No. 5, No. 6, No. 13, and No. 14
A5	GRN	AUDIO R+	Audio unit, XM receiver, HandsFreeLink control unit
A6	BLK	AUDIO L+	Audio unit, XM receiver, HandsFreeLink control unit
A9	PNK	GA-NET BUS +	Audio unit, XM receiver, HandsFreeLink control unit
A10	BLU	GA-NET BUS -	Audio unit, XM receiver, HandsFreeLink control unit
A11	BLK	GND	Audio unit, XM receiver

A13	WHT	AUDIO R-	Audio unit, XM receiver, HandsFreeLink control unit
A14	RED	AUDIO L-	Audio unit, XM receiver, HandsFreeLink control unit

(1) The shielded wires have a heat-shrink tube insulating the outside of the wire. The color of the insulating tube, typically black or dark gray, may not match the color of the wire listed on the circuit diagram.

USB ADAPTER CONTROL UNIT CONNECTOR B (5P)



Terminal side of female terminals

Fig. 43: USB Adapter Control Unit B (5P) Connector End View
Courtesy of AMERICAN HONDA MOTOR CO., INC.

USB ADAPTER CONTROL UNIT CONNECTOR B (5P)

Cavity	Wire Color	Terminal Name	Connects to
B1	--	USB VBUS	USB adapter
B2	--	USB DATA-	USB adapter
B3	--	USB DATA+	USB adapter
B4	--	USB GND	USB adapter
B5	--	USB SH	Shield for terminals No. 1, No. 2, No. 3, and No. 4

AUDIO-HVAC DISPLAY UNIT CONNECTOR FOR INPUTS AND OUTPUTS (WITHOUT NAVIGATION)

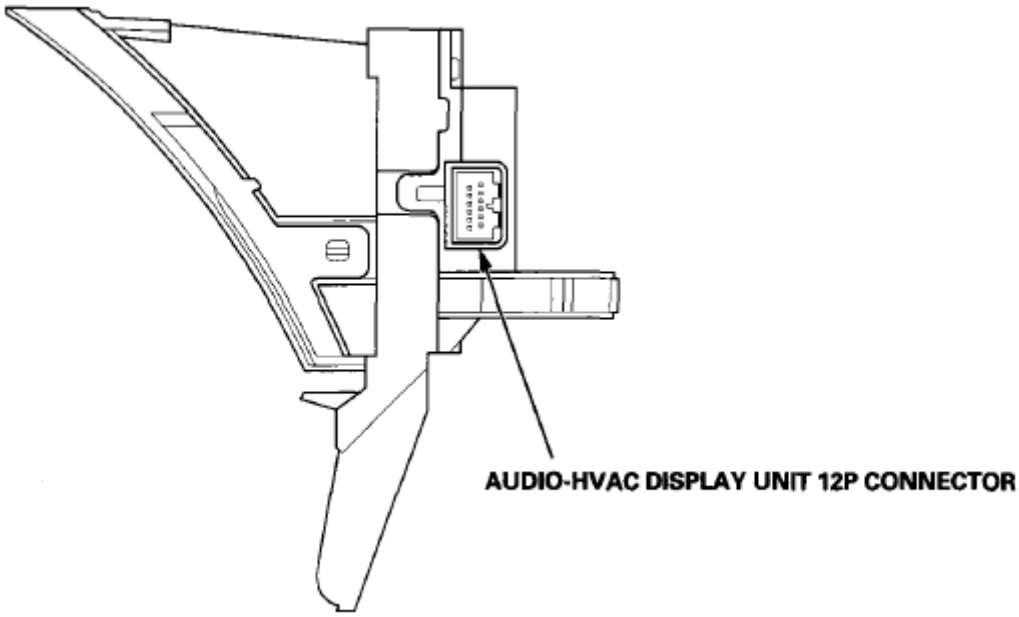


Fig. 44: Identifying Audio-HVAC Display Unit Connector For Inputs And Outputs
Courtesy of AMERICAN HONDA MOTOR CO., INC.

AUDIO-HVAC DISPLAY UNIT 12P CONNECTOR

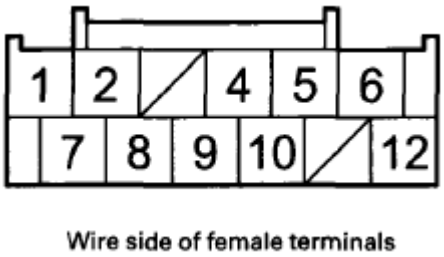


Fig. 45: Audio-HVAC Display Unit 12P Connector End View
Courtesy of AMERICAN HONDA MOTOR CO., INC.

AUDIO-HVAC DISPLAY UNIT 12P CONNECTOR

Cavity	Wire Color	Terminal Name	Connects to
1	YEL	DUET RX	Audio unit
2	BRN	DUET TX	Audio unit
4	BLU	DUET CONT	Audio unit
5	LT GRN	IG2	No. 16 (7.5 A) fuse in the driver's under-dash fuse/relay box
6	WHT	+ B	No. 15 (10 A) fuse in the under-hood fuse/relay box
7	RED	DISP CLK	Climate control unit
8	PUR	DISP SO	Climate control unit
9	BLK	GND	Body ground to G501
10	LT BLU	ILL-(LCD)	Gauge control module
12	GRY	ILL+	No. 6 (7.5 A) fuse in the passenger's under-dash fuse/relay box

AUXILIARY JACK ASSEMBLY CONNECTOR FOR INPUTS AND OUTPUTS

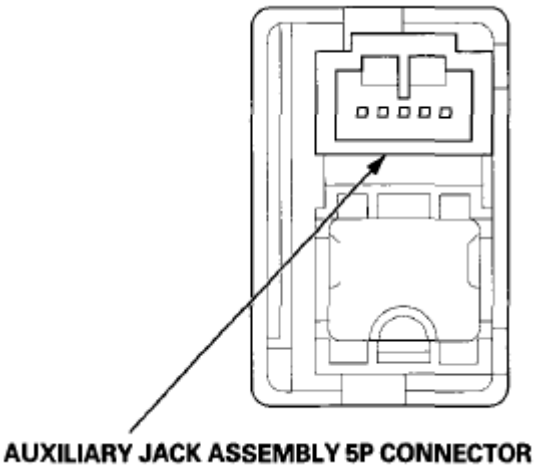


Fig. 46: Identifying Auxiliary Jack Assembly Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

AUXILIARY JACK ASSEMBLY 5P CONNECTOR

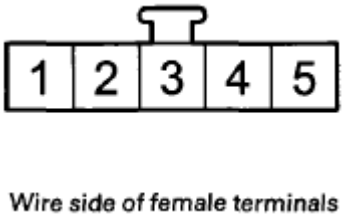


Fig. 47: Auxiliary Jack Assembly 5P Connector End View
Courtesy of AMERICAN HONDA MOTOR CO., INC.

AUXILIARY JACK ASSEMBLY 5P CONNECTOR (WITH NAVIGATION)

Cavity	Wire Color	Terminal Name	Connects to
1	ORN	AUX DET	Audio-navigation unit
2	YEL	AUX GND	Audio-navigation unit
3	BLK	AUX SIG GND	Audio-navigation unit
4	RED	AUX L	Audio-navigation unit
5	WHT	AUX R	Audio-navigation unit

AUXILIARY JACK ASSEMBLY 5P CONNECTOR (WITHOUT NAVIGATION)

Cavity	Wire Color	Terminal Name	Connects to
1	ORN	AUX DET	Audio unit
2	YEL	AUX GND	Audio unit
3	BLK	AUX SIG GND	Audio unit
4	RED	AUX L	Audio unit

5	WHT	AUX R	Audio unit

CIRCUIT DIAGRAM

WITH NAVIGATION

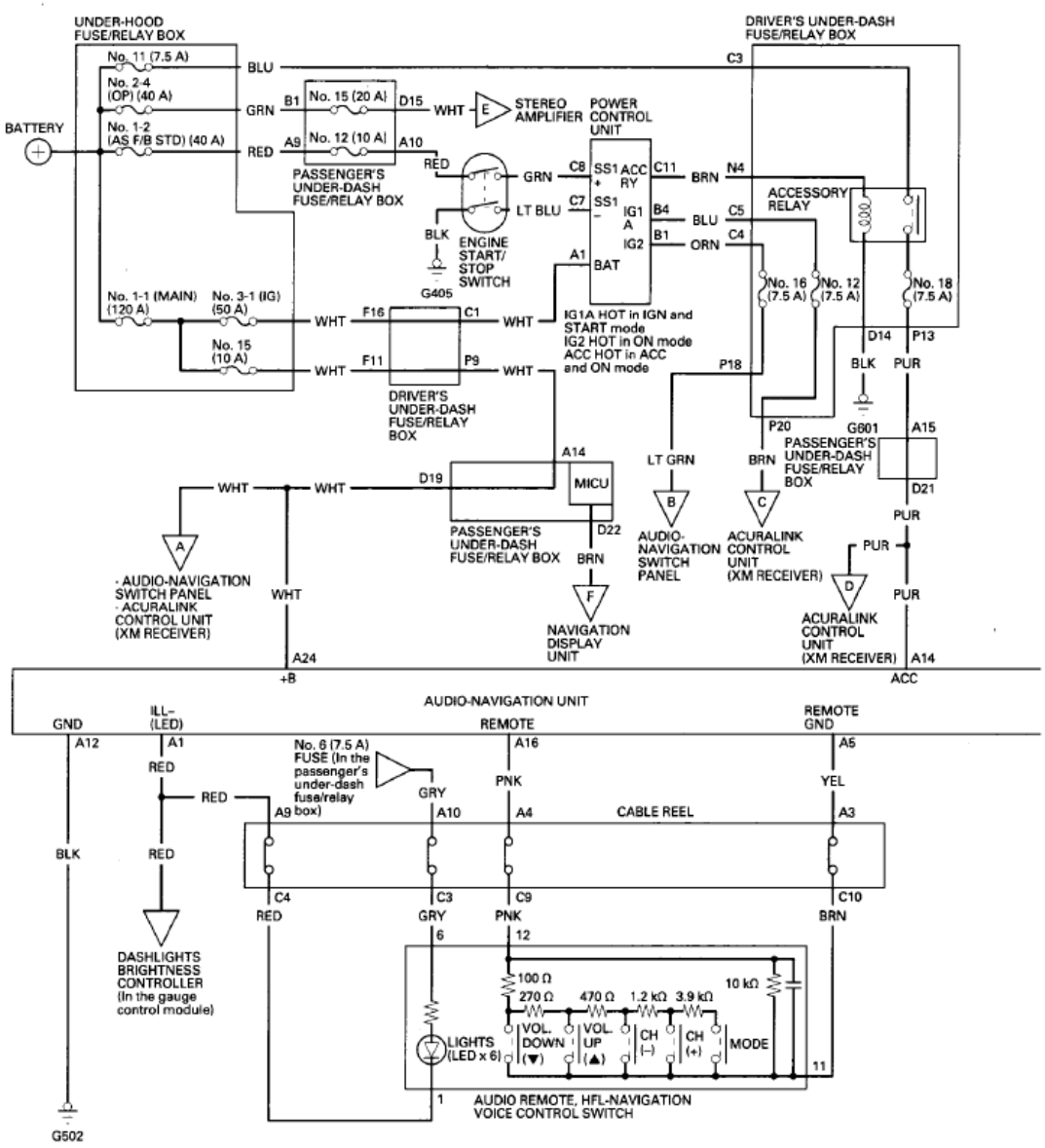


Fig. 48: Audio System Circuit Diagram With Navigation (1 Of 6)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

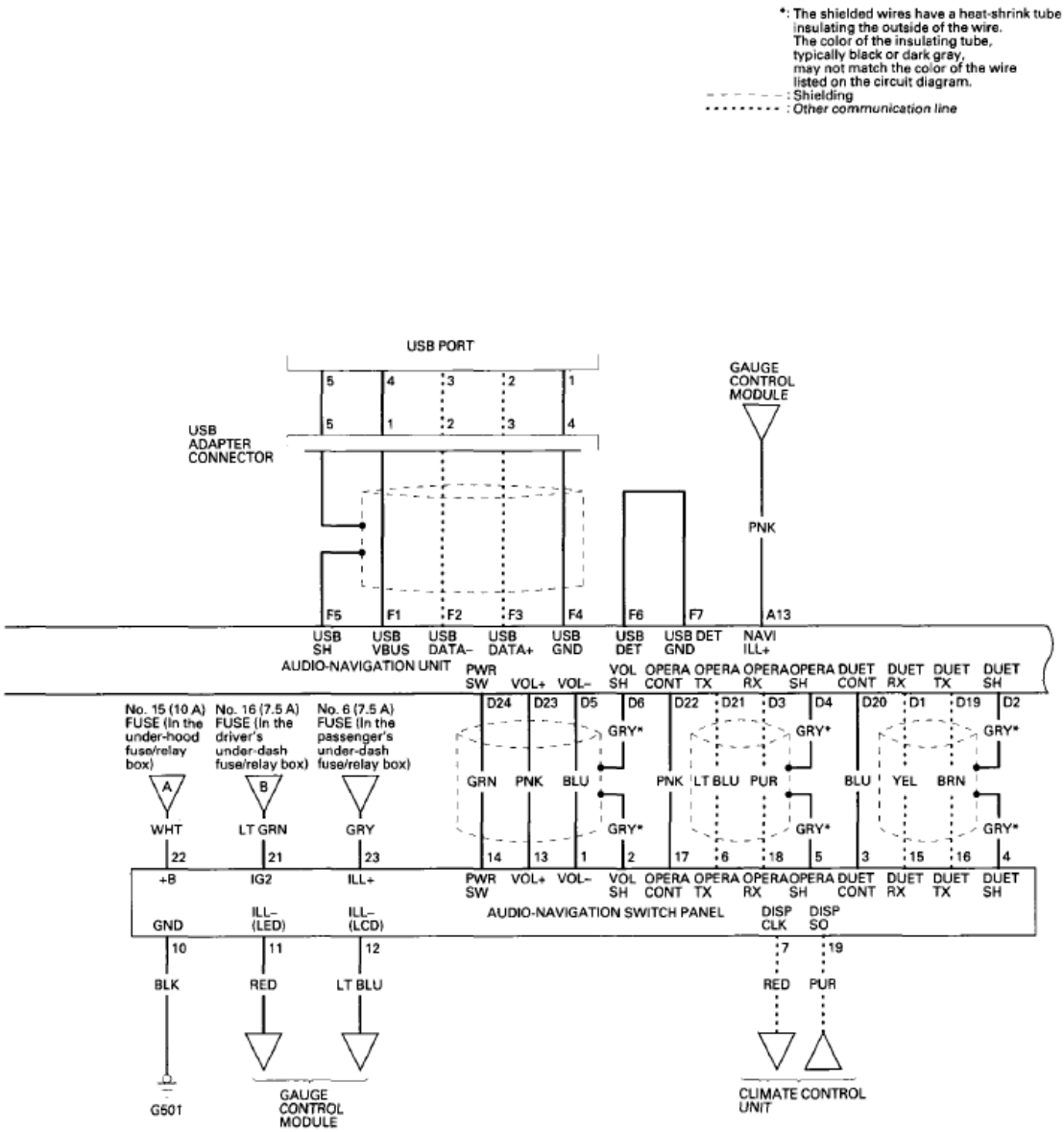


Fig. 49: Audio System Circuit Diagram With Navigation (2 Of 6)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

WITH NAVIGATION

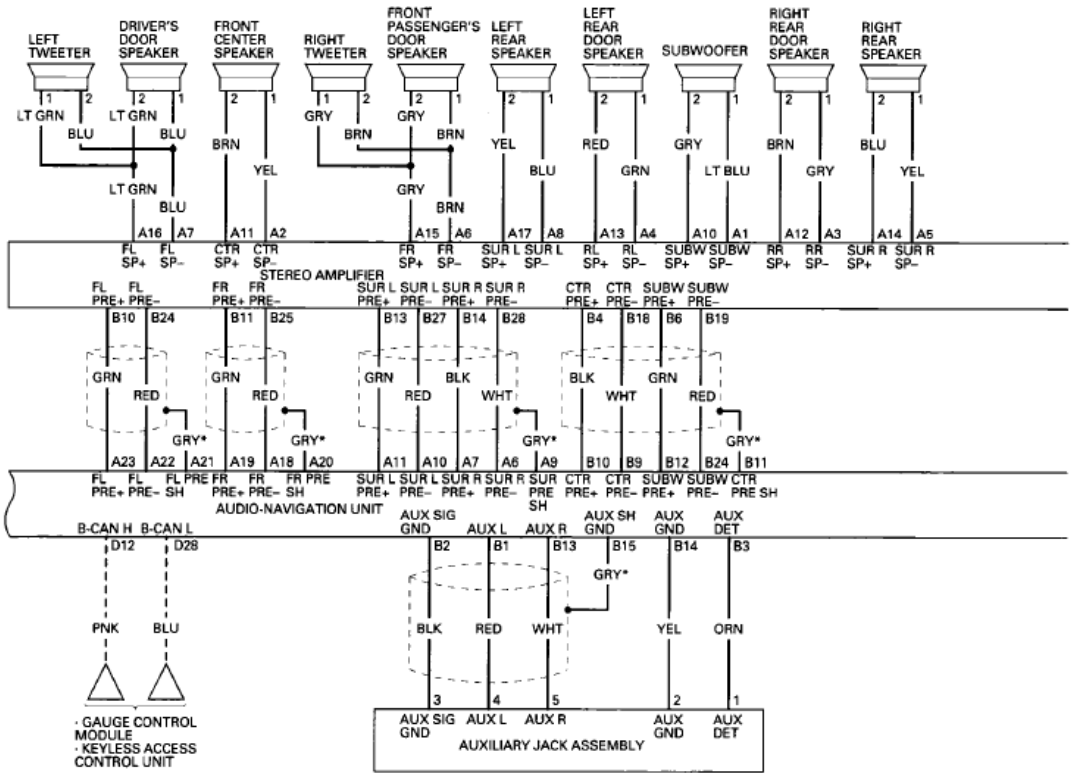


Fig. 50: Audio System Circuit Diagram With Navigation (3 Of 6)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

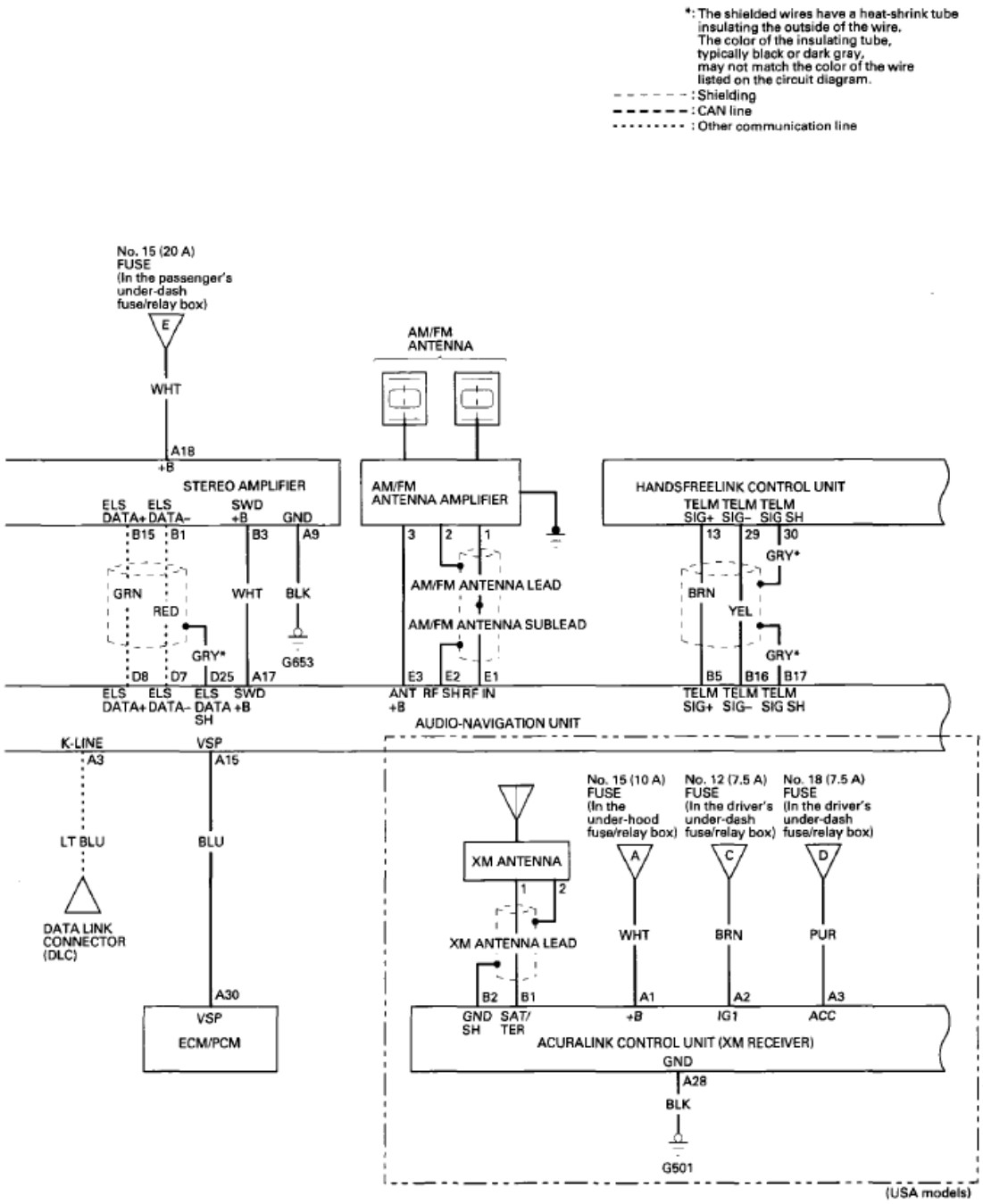


Fig. 51: Audio System Circuit Diagram With Navigation (4 Of 6)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

WITH NAVIGATION

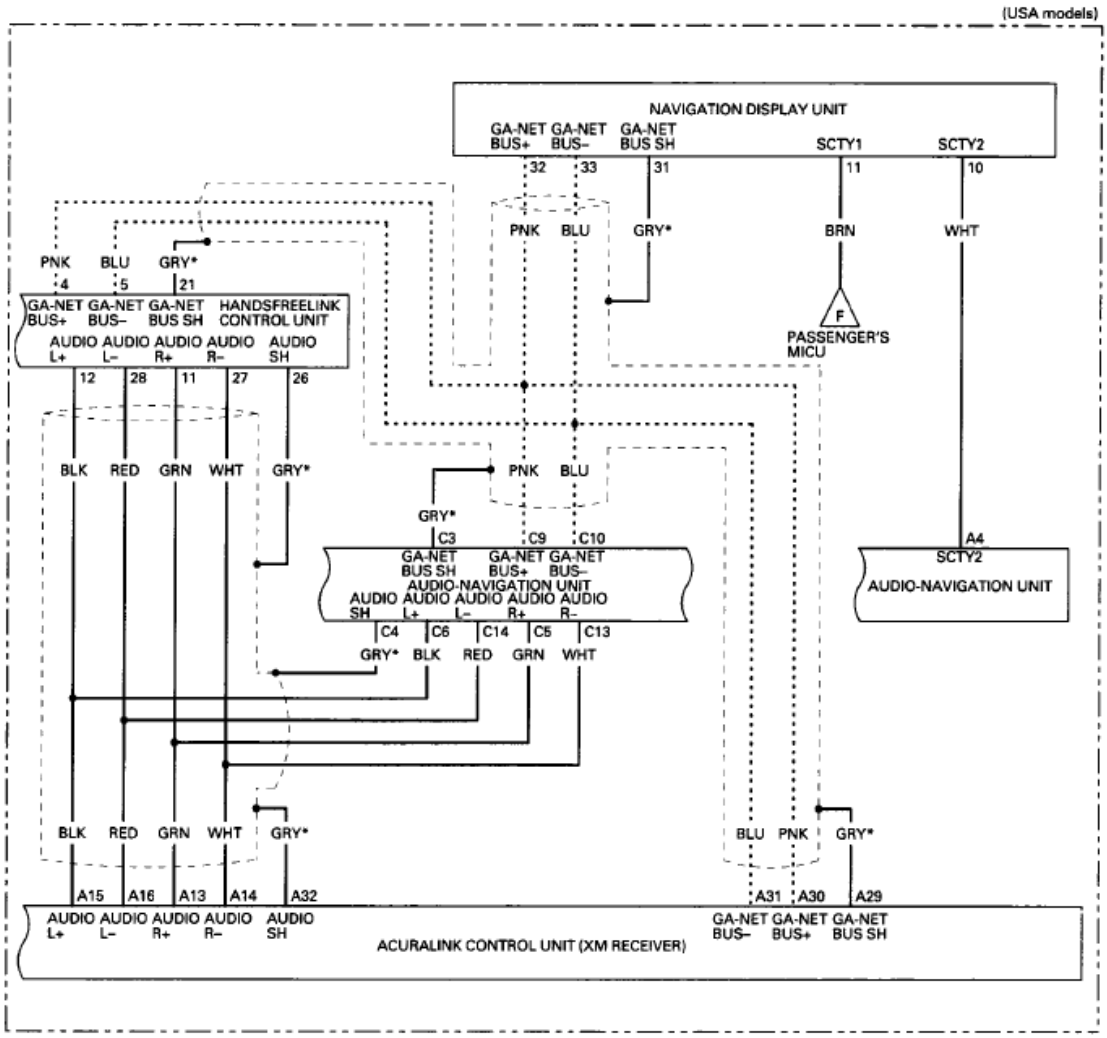


Fig. 52: Audio System Circuit Diagram With Navigation (5 Of 6)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

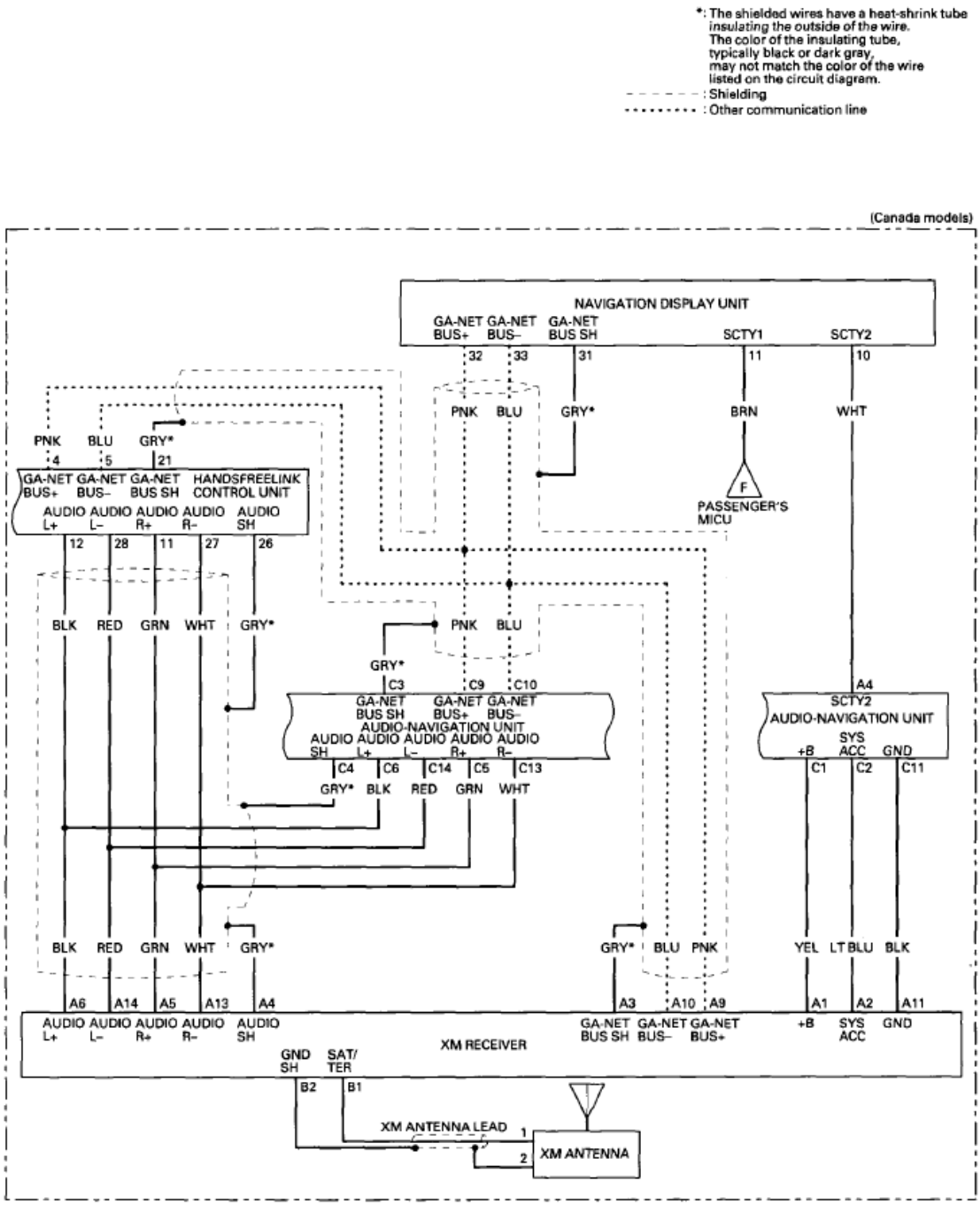


Fig. 53: Audio System Circuit Diagram With Navigation (6 Of 6)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

WITHOUT NAVIGATION

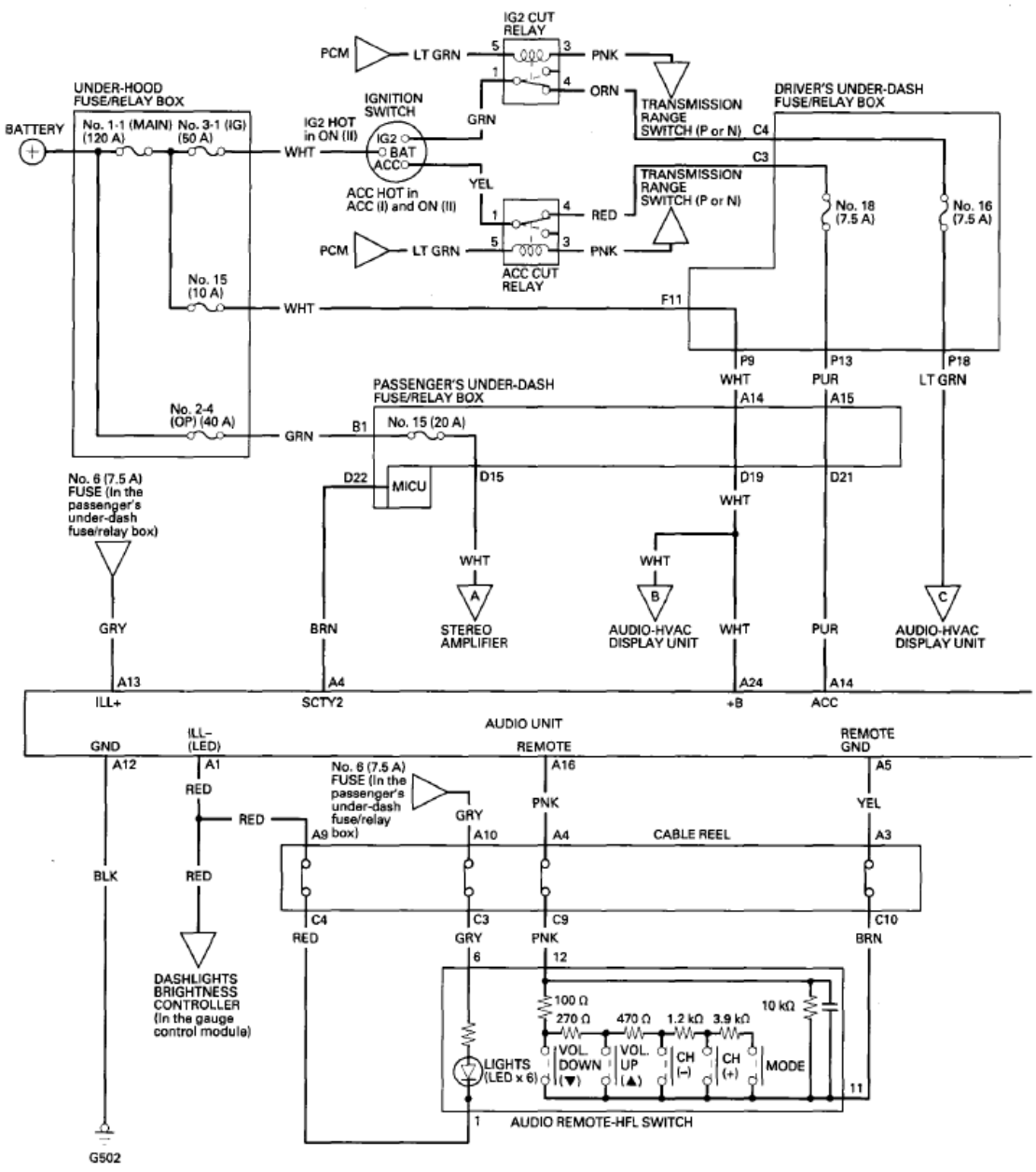


Fig. 54: Audio System Circuit Diagram Without Navigation (1 Of 5)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

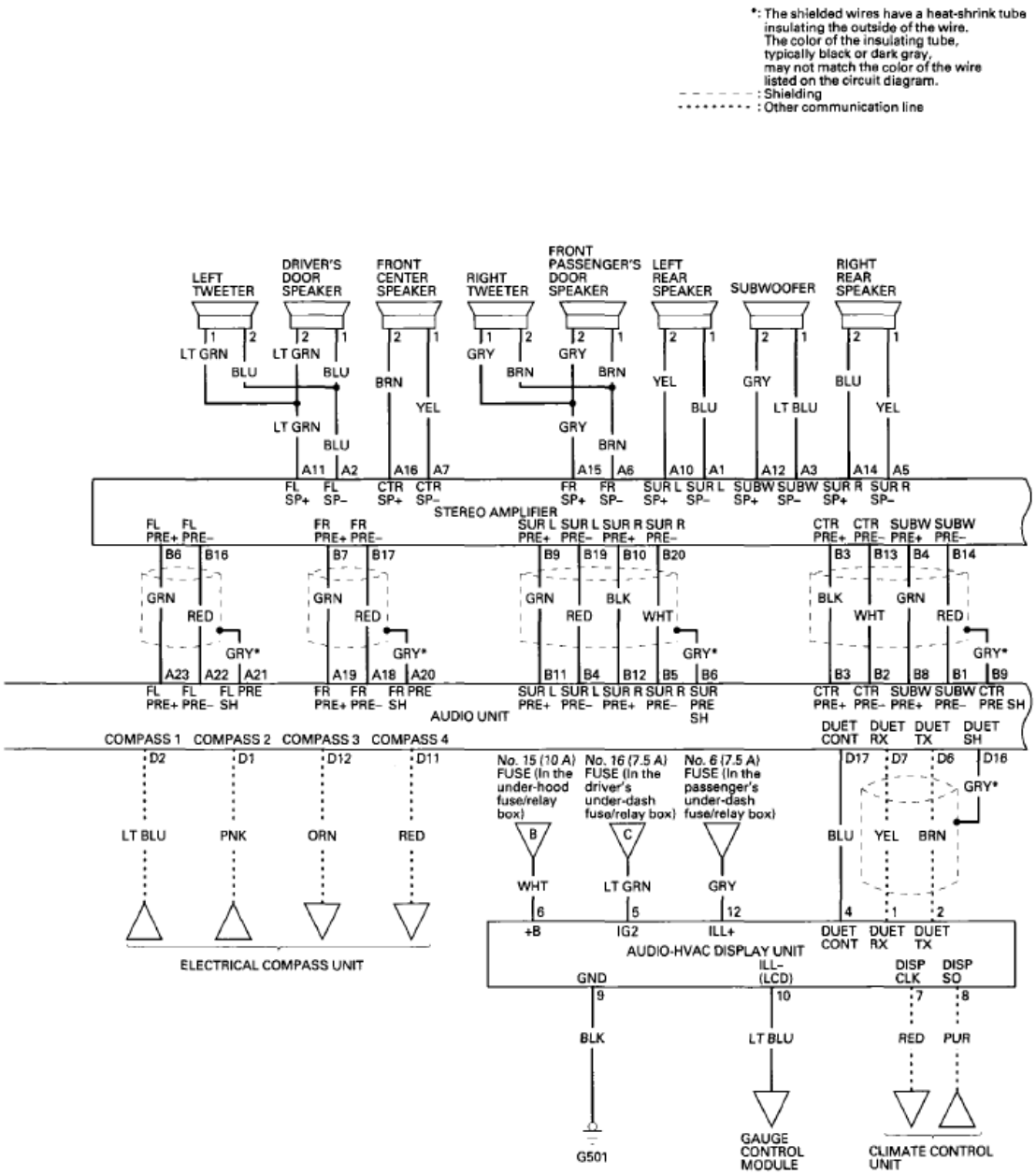


Fig. 55: Audio System Circuit Diagram Without Navigation (2 Of 5)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

WITHOUT NAVIGATION

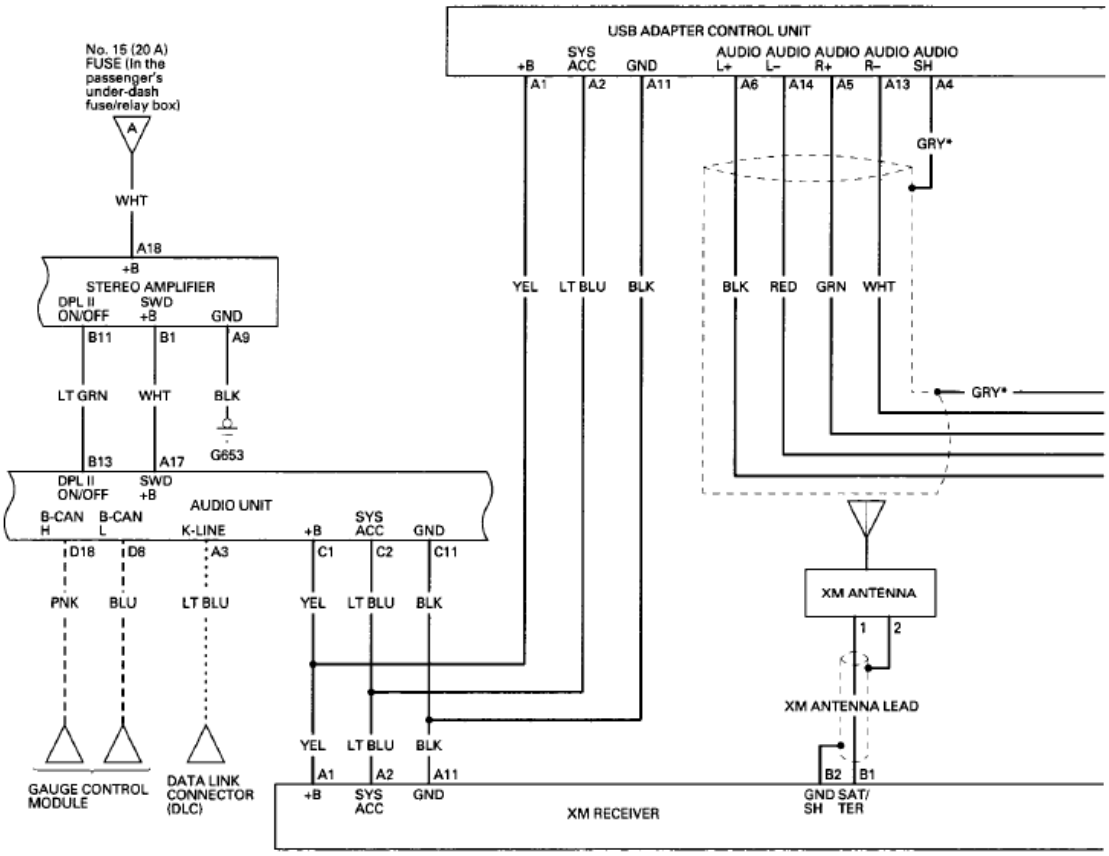


Fig. 56: Audio System Circuit Diagram Without Navigation (3 Of 5)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

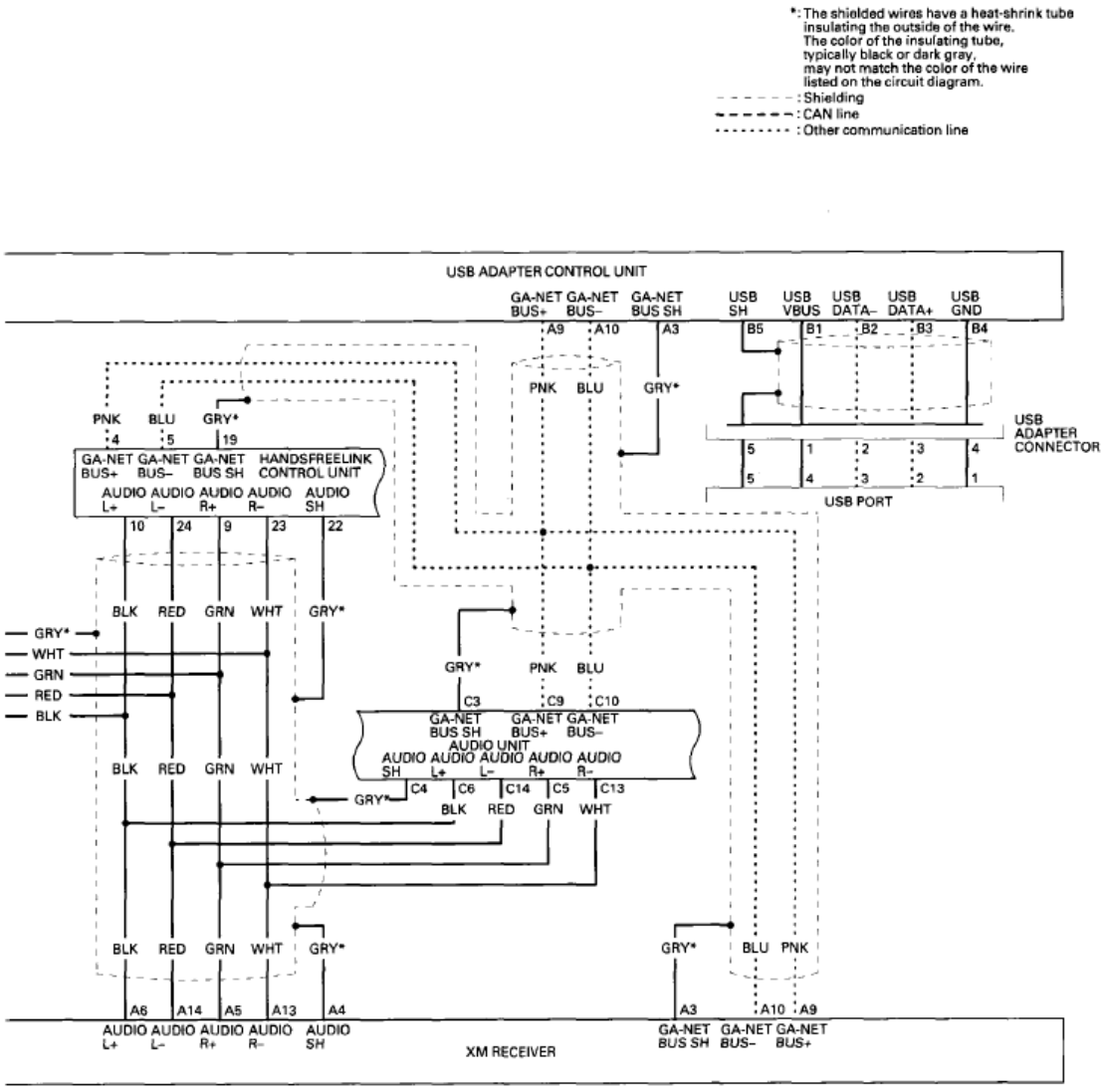


Fig. 57: Audio System Circuit Diagram Without Navigation (4 Of 5)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

WITHOUT NAVIGATION

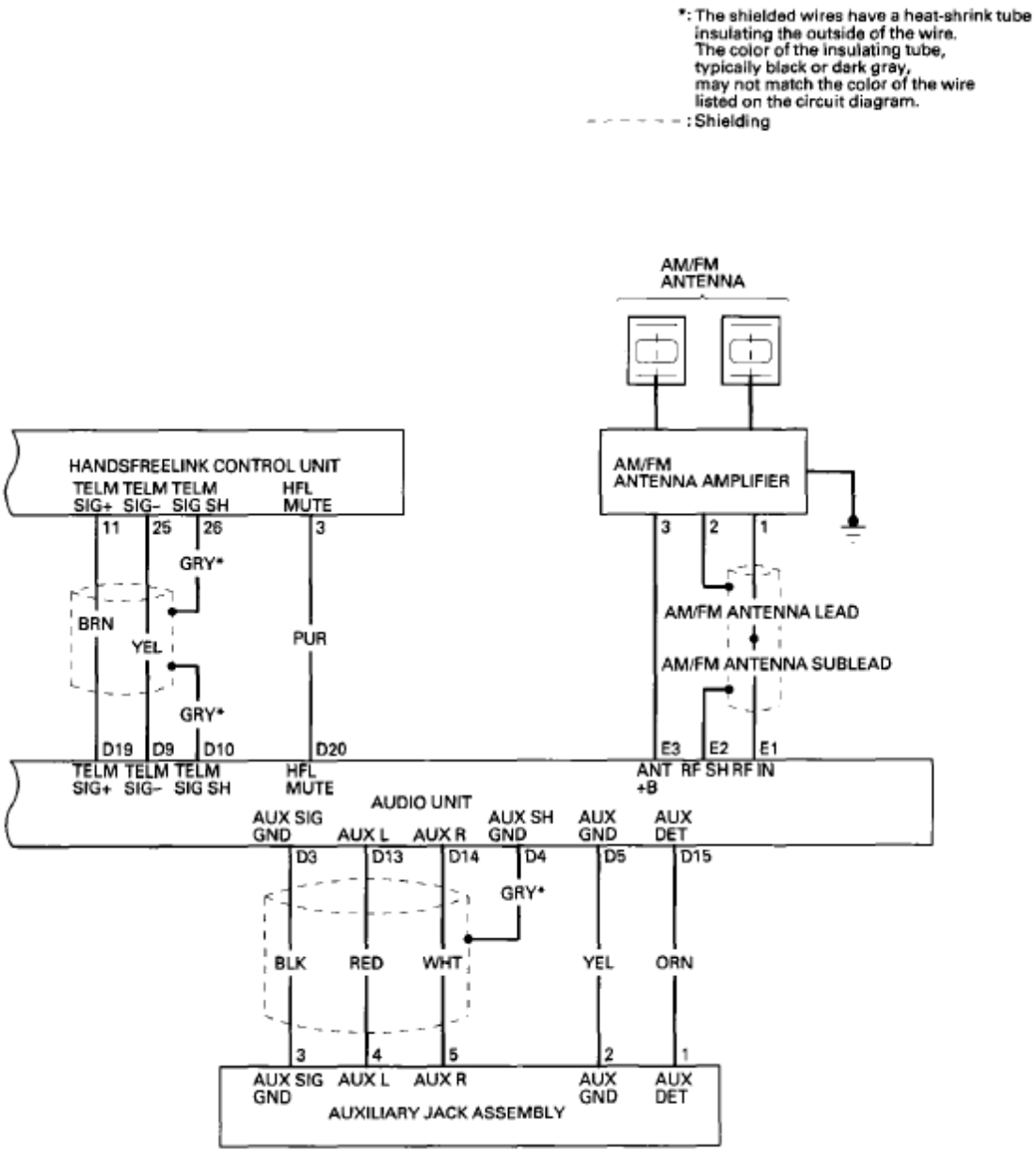


Fig. 58: Audio System Circuit Diagram Without Navigation (5 Of 5)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

SELF-DIAGNOSTIC FUNCTION

HOW TO OBTAIN THE AUDIO UNIT SERIAL NUMBER

NOTE: This procedure can only be done after the power has been disconnected and reconnected to the audio unit, and the audio unit displays CODE when the audio unit is turned on.

1. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.

2. Make sure the audio system is turned off.
3. Push and hold the preset No. 1 and No. 6 buttons.
4. While holding the buttons, push the VOLUME/POWER knob to on.
5. Release the buttons, and the self-diagnosis begins.

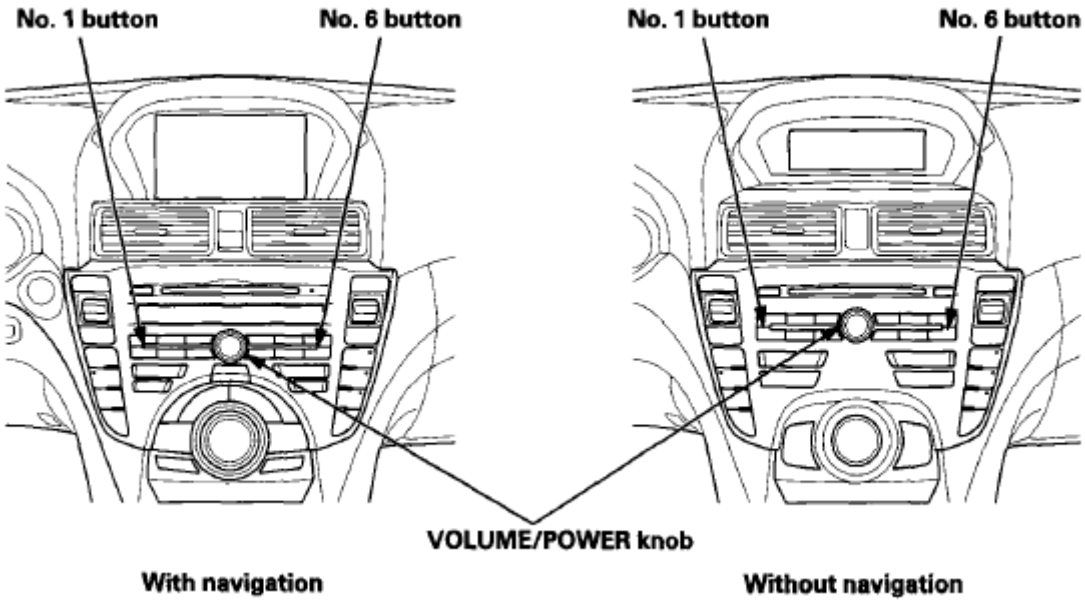


Fig. 59: Identifying Audio Unit Serial Number Button Procedure (With Navigation)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. The display shows an 8 digit serial number.

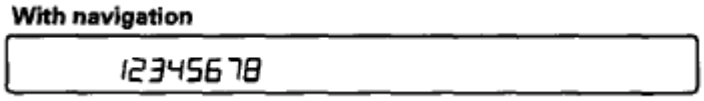


Fig. 60: Screen Display - Audio Unit Serial Number (Without Navigation)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

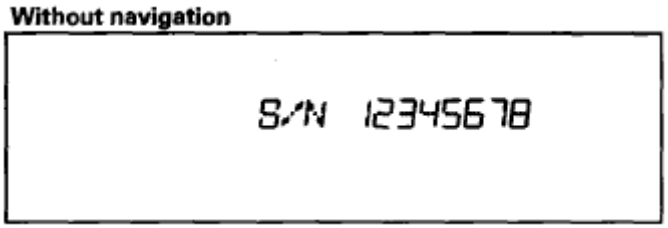


Fig. 61: Screen Display - Audio Unit Serial Number (With Navigation)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Use all 8 numbers as the serial number when using the Interactive Network (iN) to retrieve the 5 digit anti-theft code.

8. To end the self-diagnostic function, turn the audio system off, or turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.

HOW TO CHECK THE AUDIO SYSTEM CONDITION

The audio system has a self-diagnostic function to help find problems with the audio system. To run the self-diagnostic function, do the following:

NOTE:

- **Not all self-diagnostic functions appear on all models.**
- **There may be other self-diagnostic functions that are for factory use only.**
- **The self-diagnostic function does not find every problem with the audio system. Check any official Honda service website for more information about the audio system.**

1. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
2. Make sure the audio system is turned off.
3. Push and hold the preset No. 1 and No. 6 buttons.
4. While holding the buttons, push the VOLUME/POWER knob to on.
5. Release the buttons, and the self-diagnosis begins.

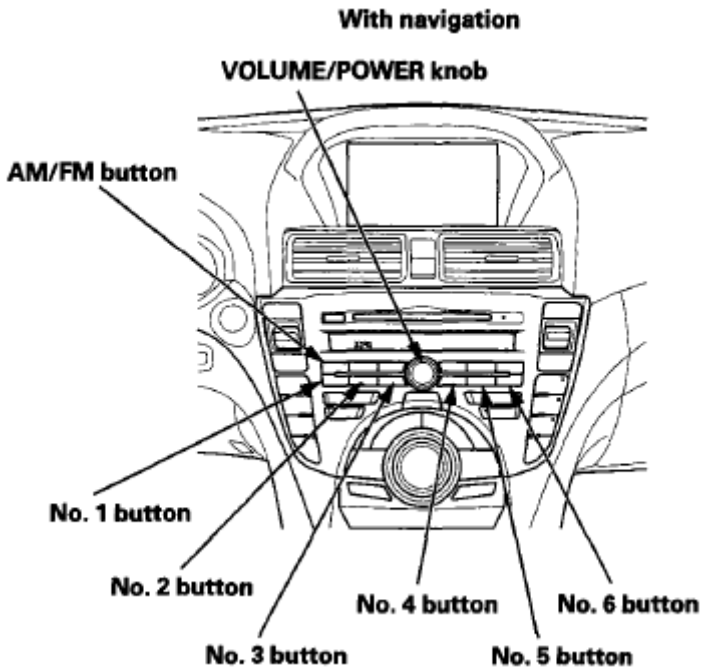


Fig. 62: Identifying Audio System Buttons (With Navigation)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

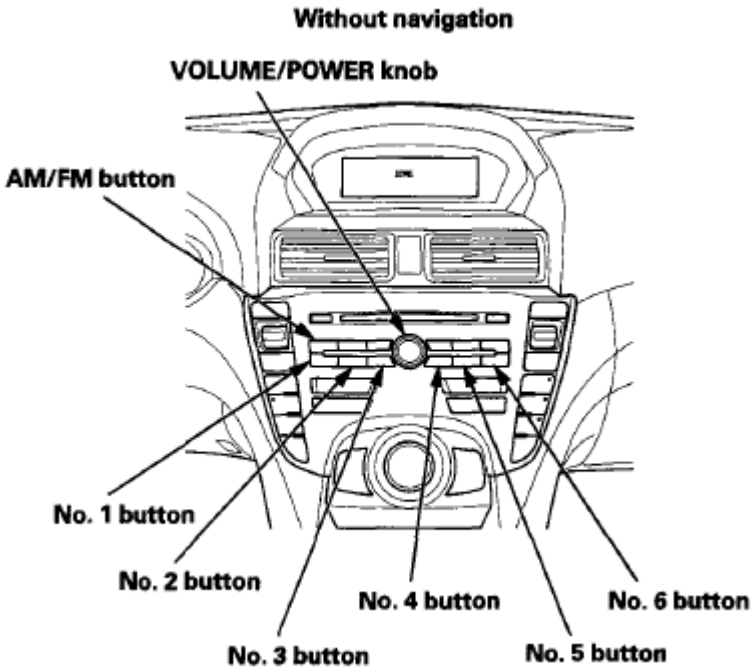


Fig. 63: Identifying Audio System Buttons (Without Navigation)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. When you are in the self-diagnostic mode, pressing a preset button starts the diagnostic mode that is assigned to that preset button.

NOTE: Any other diagnostic screens shown are for factory use only.

No. 2 button

Audio button, knob, and audio remote switch detection: Allows individual manual selection of all audio panel knobs, buttons, and remote switches to verify if they are functional. When properly detected, the selected knob, button, or audio remote switch name and/or value is displayed. To exit this mode, go to step 7. Once you exit this test, you must start again at step 1.

No. 3 button

Entire LCD lighting/light-out mode: Turns on/off the entire LCD to show the presence (LCD stuck on) or absence (LCD dead) of an LCD segment.

No. 4 button

Duty indication mode (for the Illumination dim): Indicates the duty for the Illumination dim when the dash lights are on.

No. 5 button

Vehicle speed pulse (VSP) indication mode: Indicates the vehicle speed pulse.

AM/FM button (press and hold 5 sec)

Reception level indication mode: Indicates the reception level (dB). The A.SEL button is used to change the antenna amplifier on/off.

7. To end the self-diagnostic function, turn the audio system off, or turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.

DISPLAY SPECIFICATIONS

NOTE: Any other diagnostic screens shown are for audio manufacturer's use only.

Entire LCD lighting/lights-outs mode (press No. 3 button)

This diagnostic screen checks for segments that may be dead (off) or stuck on.

All the segments in the display must appear. If there are dead segments, replace the audio-navigation switch panel (see **AUDIO-NAVIGATION SWITCH PANEL REMOVAL/INSTALLATION**), or the audio-HVAC display unit (see **AUDIO-HVAC DISPLAY UNIT REMOVAL/INSTALLATION**).

When the display segments are all on, press the No. 3 button. The entire display must turn black. If any segments are stuck on, replace the audio-navigation switch panel (see **AUDIO-NAVIGATION SWITCH PANEL REMOVAL/INSTALLATION**), or the audio-HVAC display unit (see **AUDIO-HVAC DISPLAY UNIT REMOVAL/INSTALLATION**).

With navigation



Fig. 64: Screen Display - Audio System (With Navigation)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Without navigation



Fig. 65: Screen Display - Audio System (Without Navigation)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Illumination level (for the gauge illumination) indication (press No. 4 button)

This diagnostic screen checks the gauge illumination input.

With the headlights on, you should see a values between 1 (max low) and 11 (with navigation) or 22 (without navigation) (max high).

When you dim and brighten the gauge with the dimmer knob, you should see this value change accordingly.

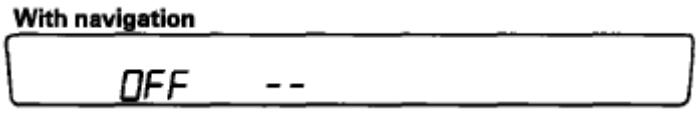


Fig. 66: Screen Display - Illumination Level (With Navigation)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

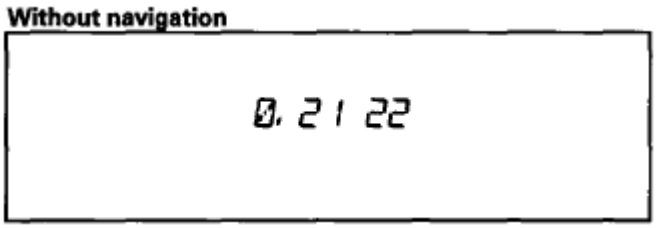


Fig. 67: Screen Display - Illumination Level (Without Navigation)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Vehicle speed pulse indication (press No. 5 button)

This diagnostic screen checks that the audio-navigation unit or the audio unit is receiving the VSP indication.

When you drive the vehicle, the VSP indicates the vehicle speed in km/h.

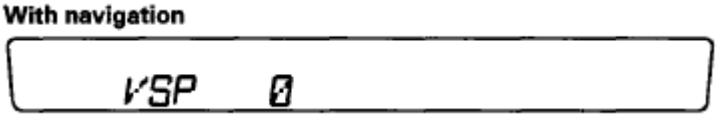


Fig. 68: Screen Display - Vehicle Speed Pulse Indication (With Navigation)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

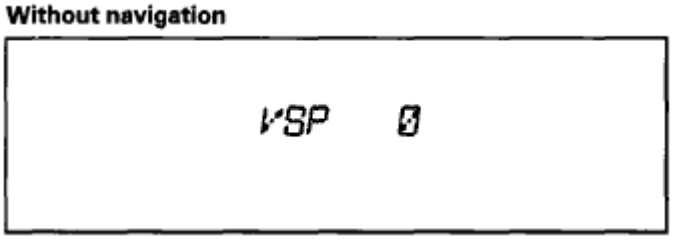


Fig. 69: Screen Display - Vehicle Speed Pulse Indication (Without Navigation)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Reception level indication (press and hold 5 sec AM/FM button)

This diagnostic screen checks the radio reception level. This level then can used in the diagnosis of radio reception quality. The reception level is displayed in decibels (dB).

Preperation:

- Park the vehicle outdoors a location with good radio reception.
- Tune to a powerful local FM radio station, then write down the radio station number.
- Tune to a powerful local AM radio station, then write down the radio station number.

1. Enter the reception level indication mode in the self-diagnostic function. The AM/FM antenna amplifier is on and the character (A) is not displayed in the audio-HVAC display.

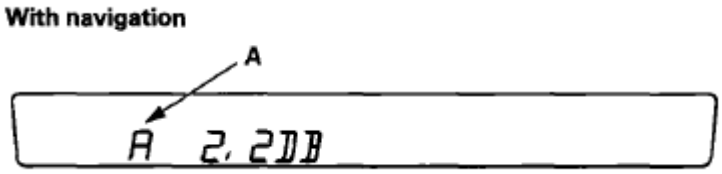


Fig. 70: Screen Display - Reception Level Indication (With Navigation)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

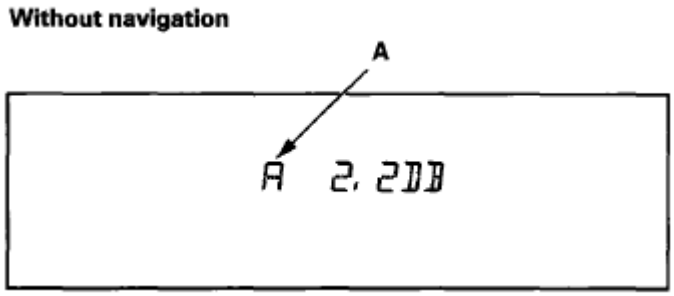


Fig. 71: Screen Display - Reception Level Indication (Without Navigation)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Tune to the FM radio station you wrote down in preparation using the TUNE button (with navigation) or selector knob (without navigation), and note the decibel level of that station.
3. Press and release the A.SEL button to turn the AM/FM antenna amplifier off (A is now displayed in the audio-HVAC display).
4. Note the decibel level of that station.
5. Press and release the A.SEL button to turn the AM/FM antenna amplifier back on (A is not displayed in the audio-HVAC display).
6. Press and hold the AM/FM button for more than 5 seconds to enter the AM reception mode.
7. Tune to the AM radio station you wrote down in preparation using the TUNE button (with navigation) or selector knob (without navigation), and note the decibel level of that station.
8. Press and release the A.SEL button to turn the antenna amplifier off (A is now displayed in the audio-HVAC display).

9. Note the decibel level of that station.
10. Press and release the A.SEL button to turn the AM/FM antenna amplifier back on (A is not displayed in the audio-HVAC display).
11. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode, or audio system off to exit the test mode.
12. Compare your results to a known-good vehicle, (make sure it is the same year and trim level) in the same location and direction, and under the same environmental conditions.

Speaker Check Mode

NOTE:

- **Not all self-diagnostic functions appear on all models.**
- **There may be other self-diagnostic functions that are for factory use only.**

1. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
2. Make sure the audio system is turned off.
3. Push and hold the preset No. 1 and No. 3 buttons.
4. While holding the buttons, push the VOLUME/POWER knob to on.
5. Release the buttons and the speaker check mode begins. A tone should sound from one speaker.
6. Each time you press the SKIP button, the test moves to the next speaker in the order listed in the table.

NOTE: Adjust the volume level to a comfortable level.

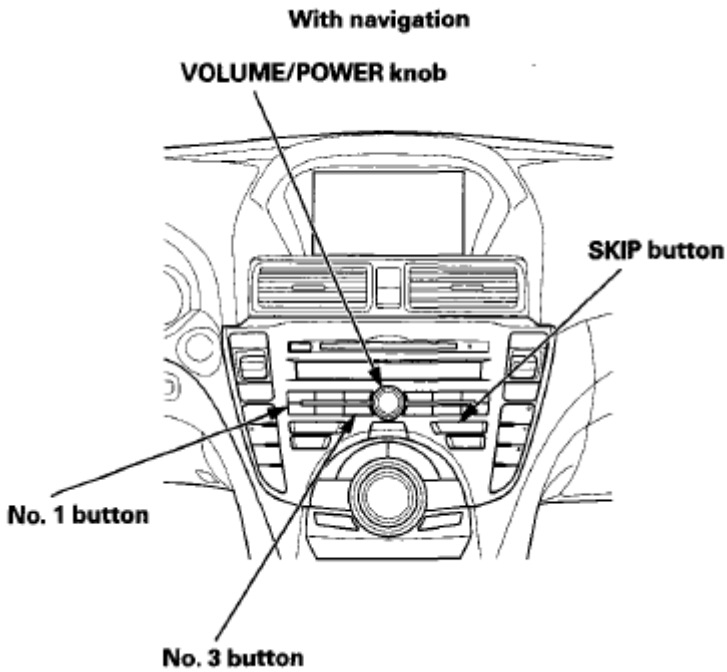


Fig. 72: Identifying Audio System Speaker Test Buttons (With Navigation)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

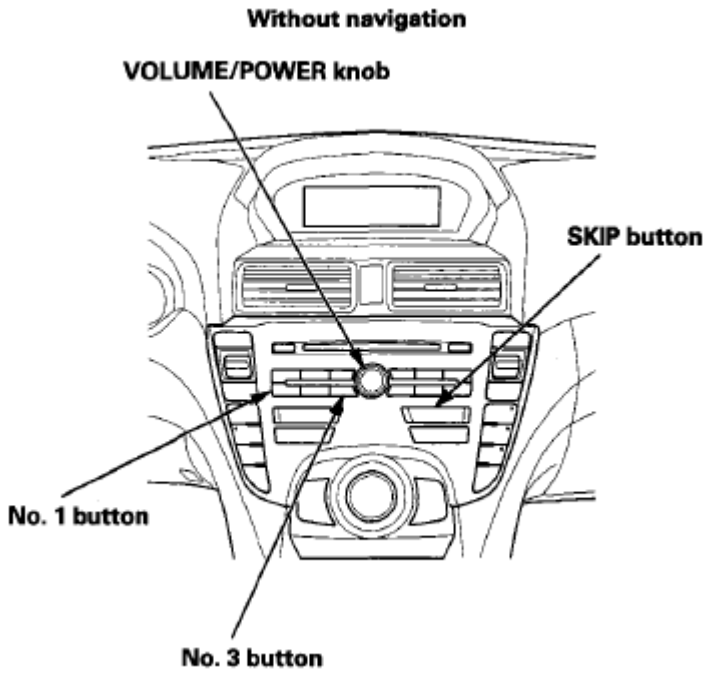


Fig. 73: Identifying Audio System Speaker Test Buttons (Without Navigation)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Display Specifications

(Skip +) is pressed: (1)-->(2)-->(3)-->(4)-->(5)-->(6)-->(7)

(Skip -) is pressed: (1)-->(7)-->(6)-->(5)-->(4)-->(3)-->(2)

	Speaker	Displayed Segments	Remarks
(1)	Driver's door speaker and left tweeter	SPK FR-L	You should hear a tone corresponding to the speaker
(2)	Front center speaker	SPK CNT	You should hear a tone corresponding to the speaker
(3)	Front passenger's door speaker and right tweeter	SPK FR-R	You should hear a tone corresponding to the speaker
(4)	Right rear door speaker(1) and right rear speaker	SPK RR-R	You should hear a tone corresponding to the speaker
(5)	Subwoofer	SPK SUBW	You should hear a tone corresponding to the speaker
(6)	Left rear door speaker(1) and left rear speaker	SPK RR-L	You should hear a tone corresponding to the speaker
(7)	All speakers	SPK ALL	• You should hear a tone corresponding to the speaker • The subwoofer does not sound a tone

(1) With navigation

7. The speaker check mode ends when you turn the audio system off or turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.

XM SELF-DIAGNOSIS

NOTE: This diagnostic screen checks the audio unit's XM radio reception level. To check the XM reception, do the following:

1. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
2. Select XM1 mode.
3. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
4. Push and hold the preset No. 3 and No. 6 buttons.
5. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
6. While holding the buttons for 5 seconds, then release the buttons.
7. Press and release preset No. 1 button to read the error code.

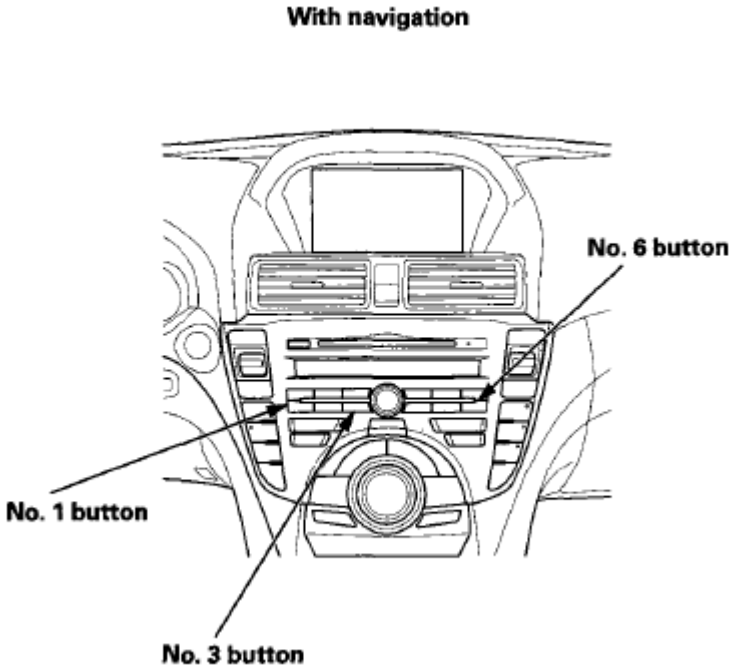


Fig. 74: Identifying XM Self Diagnosis Buttons (With Navigation)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

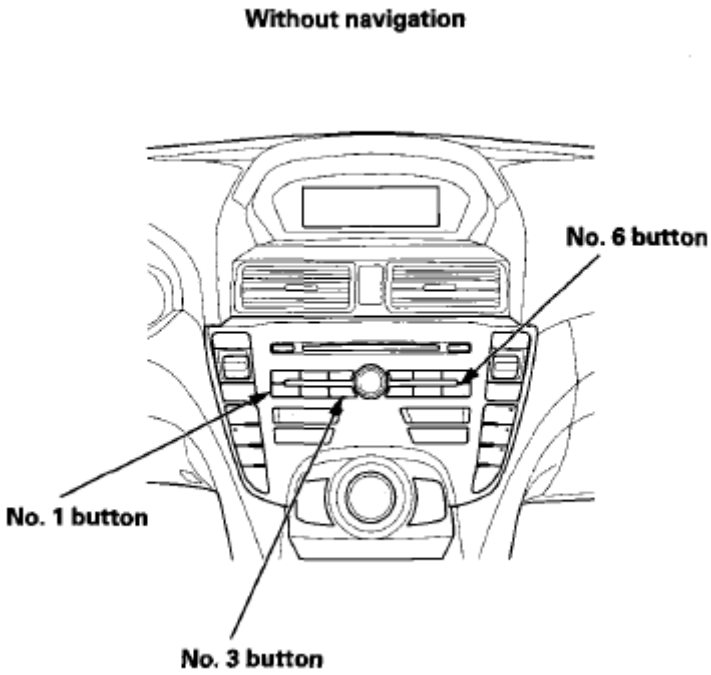


Fig. 75: Identifying XM Self Diagnosis Buttons (Without Navigation)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Error Code No. Displayed	Error Code Title Displayed	Solution
ERROR 00	NO ERROR	System is normal
ERROR 04	NO SIGNAL	Move the vehicle to an open area, and recheck.
ERROR 05	NO XM ACTIVATION	Contact XM Radio at 800-852-9696
ERROR 06	NO XM AUTHORIZATION	Contact XM Radio at 800-852-9696
ERROR 14	ANTENNA NOT CONNECTED/NO SIGNAL	Refer to Error code: XM ANTENNA is displayed; • With AcuraLink® (see **ERROR CODE: XM ANTENNA OR XM LOADING IS DISPLAYED (WITH AcuraLink®)**) • Without AcuraLink® (see **ERROR CODE: XM ANTENNA OR XM LOADING IS DISPLAYED (WITHOUT AcuraLink®)**)
ERROR 24	ANTENNA SHORTED/NO SIGNAL	Refer to Error code: XM ANTENNA is displayed; • With AcuraLink® (see **ERROR CODE: XM ANTENNA OR XM LOADING IS DISPLAYED (WITH AcuraLink®)**) • Without AcuraLink® (see **ERROR CODE: XM ANTENNA OR XM LOADING IS DISPLAYED**

		(WITHOUT AcuraLink®))
ERROR 55	HARDWARE FAILURE (CONDITIONAL ACCESS FAILURE)	Replace the AcuraLink® control unit (XM receiver) (see **AcuraLink® CONTROL UNIT (XM RECEIVER) REMOVAL/INSTALLATION**) or the XM receiver (see **XM RECEIVER REMOVAL/INSTALLATION**).
ERROR 65	HARDWARE FAILURE (CONDITIONAL ACCESS FAILURE)	Replace the AcuraLink® control unit (XM receiver) (see **AcuraLink® CONTROL UNIT (XM RECEIVER) REMOVAL/INSTALLATION**) or the XM receiver (see **XM RECEIVER REMOVAL/INSTALLATION**).

8. To end the XM self-diagnosis, turn the audio system off, or turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.

XM SIGNAL RECEPTION LEVEL INDICATION MODE

NOTE: When you receive any XM complaint, do the XM self-diagnosis to check for any XM error codes. To get the XM error codes, do the following:

1. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
2. Select XM2 mode.
3. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
4. Push and hold the preset No. 3 and No. 6 buttons.
5. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
6. While holding the buttons for 5 seconds, then release the buttons.
7. Press and release preset No. 1 button to read the error code.

Error Code Displayed	Solution
SG NOSIG	Move the vehicle to an open area, and recheck. If the signal does not improve, substitute a known-good XM antenna (see **XM ANTENNA REPLACEMENT**), and recheck.
SG GOOD	The XM signal is OK.
SG MARG	The XM signal is OK.
SG WEAK	Move the vehicle to an open area, and recheck. If the signal does not improve, substitute a known-good XM antenna (see **XM ANTENNA REPLACEMENT**), and recheck.
SG VWEAK	Move the vehicle to an open area, and recheck. If the signal does not improve, substitute a known-good XM antenna (see **XM ANTENNA REPLACEMENT**), and recheck.

8. To end the XM self-diagnosis, turn the audio system off, or turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.

ERROR CODES

The audio system can display a few error codes when some problems are detected with the audio disc player, the audio disc, the XM radio, the USB, or the anti-theft code. This is not a complete list of audio error codes.

Refer to **SYMPTOM TROUBLESHOOTING**, or go to any official Honda service website for more service information.

CD ERROR CODES

Error Code Displayed	Possible Cause	Solution
BAD DISC>PLEASE CHECK> OWNER'S MANUAL>PUSH EJECT	There is a problem with the disc player. A common problem is paper disc labels coming off the disc while in the player.	Try to eject the disc and try another one. If there is still a problem, replace the audio-navigation unit (see **AUDIO-NAVIGATION UNIT REMOVAL/INSTALLATION**), or the audio unit (see **AUDIO UNIT REMOVAL/INSTALLATION**).
HEAT ERROR	Disc player is hot. This can happen if the vehicle is parked out in the hot sun all day.	Park the vehicle in a cooler place for a while and try the disc player again. If the error code is still present, try another disc. If the error code is still present, replace the audio-navigation unit (see **AUDIO-NAVIGATION UNIT REMOVAL/INSTALLATION**), or the audio unit (see **AUDIO UNIT REMOVAL/INSTALLATION**).
UNPLAYABLE FILE	Track/File format not supported.	Current track is skipped. The next supported track or file plays automatically. • Verify that CD file names end in CD-DA. • Verify that CD-R or CD-RW with compressed music formats end in MP3 or WMA. • Other file formats like iTunes (AAC) or Ogg are not recognized. • WMA files may have (DRM) copy protection and cannot be read.
MECH ERROR	• CD label jammed in the mechanism. • CD eject mechanism or motor is inoperative. • CD spindle motor won't spin up the CD.	Press the EJECT button and hold it for 5 seconds. If the CD does not eject, try again. If the CD still won't eject, replace the audio-navigation unit (see **AUDIO-NAVIGATION UNIT REMOVAL/INSTALLATION**), or the audio unit (see **AUDIO UNIT REMOVAL/INSTALLATION**).

USB ERROR CODES

Error Code Displayed	Possible Cause	Solution
FILE ERROR	The audio unit cannot read the file(s).	Check the files in the USB device. There is a possibility that the files have been damaged or are not supported.

MEDIA ERROR UNSUPPORTED	Unsupported USB device is connected.	Connect the applicable USB device (see Owner's Manual).
USB LOADING	Data is being loaded from the USB device.	Check the files in the USB device. There is a possibility that the files have been damaged, or are not supported.
USB NO SONG	There are no files or files that are not supported on the USB device.	Check the files in the USB device. There is a possibility that the files have been damaged, or are not supported.
USB NO DATA	USB device is not connected.	If the code appears when the USB devices is connected, go to USB device does not function troubleshooting: • With navigation (see **USB DEVICE DOES NOT FUNCTION (WITH NAVIGATION)**) • Without navigation (see **USB DEVICE DOES NOT FUNCTION (WITHOUT NAVIGATION)**)

AUDIO UNIT ERROR CODES

Error Code Displayed	Possible Cause	Solution
CODE ERROR 1	Anti-theft code mismatch (1st try).	Enter the correct anti-theft code.
CODE ERROR E	Anti-theft code mismatch (10th try).	Remove the No. 15 (10 A) fuse in the under-hood fuse/relay box, then reinsert it. You will have 10 more tries to enter the correct anti-theft code.

XM ERROR CODES

Error Code Displayed	Possible Cause	Solution
LOADING	XM radio is acquiring audio or program information.	Wait until the radio receives the information.
OFF AIR	XM channel not in service.	Try another XM channel.
NO SIGNAL	Loss of signal.	Both terrestrial and satellite antennas have lost the signal. Park the vehicle outside with a clear view of the southern horizon.
UPDATING	XM radio is receiving information update from the network.	This message disappears once the update finishes.
CHECK ANTENNA	XM antenna error.	Repair an open or a short in the satellite antenna. Substitute a known-good XM antenna (see **XM ANTENNA REPLACEMENT**), and recheck. If the error is gone, replace the original XM antenna. If the error is still present, replace the
ANTENNA		

ERROR		antenna lead.
--	No signal from XM.	Check a known-good vehicle with XM radio. If the known-good vehicle has the same symptoms, contact XM Radio at 800-852-9696.

NOTE: Do these checks with the vehicle parked outside with a clear view of the southern horizon.

SYMPTOM TROUBLESHOOTING

POOR AM OR FM RADIO RECEPTION OR INTERFERENCE (WITH NAVIGATION)

NOTE:

- **Check the vehicle battery condition first (see BATTERY TEST).**
- **Check the connectors for poor connections or loose terminals.**
- **Check for aftermarket accessories including cell phones and chargers plugged into the vehicle accessory power sockets.**
- **Check the radio reception in an open area. Poor reception/interference can be caused by any of these conditions:**
  - **The radio station is far away**
  - **Atmospheric conditions are unfavorable**
  - **Aftermarket metallic window tint**
  - **A tall building, mountains, or high-voltage power lines are nearby**

1. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
2. Do the Seek Stop Test (see **SEEK STOP TEST**) and the reception level indication in the Self-Diagnostic Function (see **RECEPTION LEVEL INDICATION (PRESS AND HOLD 5 SEC AM/FM BUTTON)**).

   Is the test vehicle within 10 % of the known-good vehicle?

   YES -Multipath interference or weak station. Operation is normal.

   NO -Go to step 3.

3. Check the reception/interference is the same in several locations.

   Is the reception/interference the same?

   YES -Go to step 4.

   NO -Multipath interference or weak station. Operation is normal.

4. Check the reception/interference while the engine is running.

Is there noise (static or whine) only with the engine running?

YES -Check the antenna and radio grounds. If OK, check the charging system and the ignition system.

NO -Go to step 5.

5. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
6. Remove the right C-pillar trim (see **C-PILLAR TRIM**).
7. Check for poor connections or loose terminals at the AM/FM antenna amplifier to the window antenna.

   Are the connections or terminals OK?

   YES -Go to step 8.

   NO -Repair poor connections or loose terminals, and recheck. If the symptom/indication is still present, replace the **AM/FM ANTENNA AMPLIFIER**.

8. With the help of an assistant inside the vehicle, have the assistant shine a strong flashlight (A) along each antenna wire (B). Check from the outside of the vehicle for any breaks or openings in the antenna wires (the light shines through any breaks or cuts).

   NOTE: It is easier to see the breaks if you do this test in a dark or shaded area.

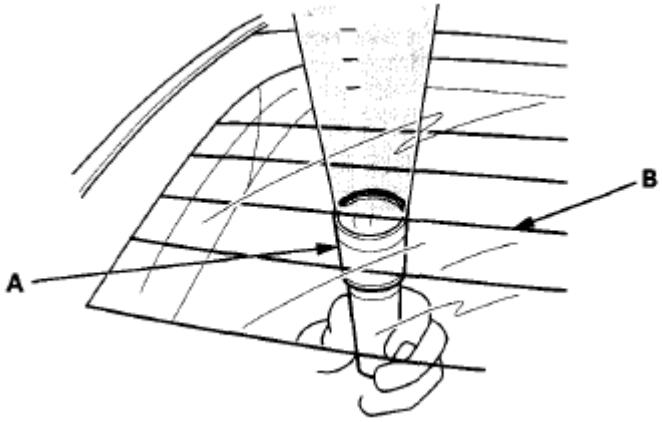


Fig. 76: Identifying Flashlight And Antenna Wire
Courtesy of AMERICAN HONDA MOTOR CO., INC.

   Are there any breaks or cuts in the antenna?

   YES -Repair the window antenna. Go to **AM/FM ANTENNA REPAIR**, or replace the rear window (see **REAR WINDOW REPLACEMENT**) if the damaged section is too long.

   NO -Go to step 9.

9. Disconnect the AM/FM antenna amplifier 3P connector.

10. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
11. Measure the voltage between AM/FM antenna amplifier 3P connector terminal No. 3 and body ground.

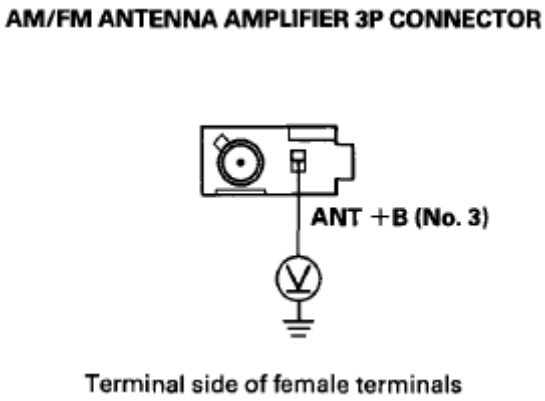


Fig. 77: Measuring Voltage Of AM/FM Antenna Amplifier Terminal No. 3 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there battery voltage?

YES -Go to step 16.

NO -Go to step 12.

12. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
13. Disconnect audio-navigation unit connector E (5P).
14. Check for continuity between audio-navigation unit connector E (5P) terminal No. 3 and AM/FM antenna amplifier 3P connector terminal No. 3.

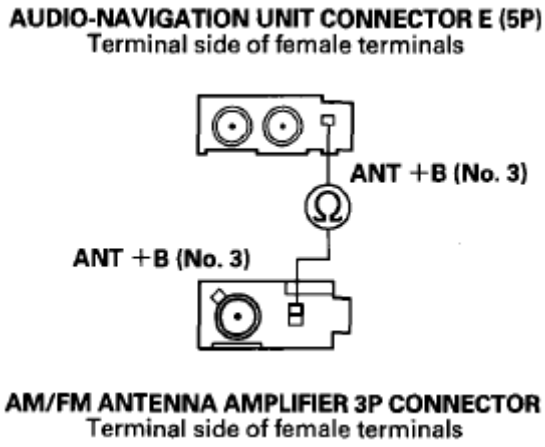


Fig. 78: Checking Continuity Of Audio-Navigation Unit 5P Terminal No. 3 & 3P Terminal No. 3
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES -Go to step 15.

NO -Repair an open in the wire between the audio-navigation unit and the AM/FM antenna amplifier. Also check the AM/FM antenna lead/sublead connector.

15. Check for continuity between audio-navigation unit connector E (5P) terminal No. 3 and body ground.

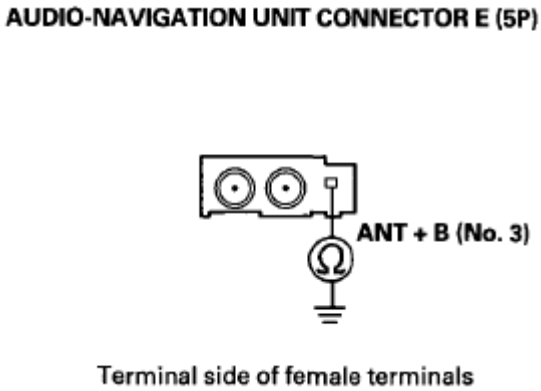


Fig. 79: Checking Continuity Of Audio-Navigation Unit Terminal No. 3 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES -Repair a short to body ground in the wire between the audio-navigation unit and the AM/FM antenna amplifier.

NO -Replace the audio-navigation unit (see **AUDIO-NAVIGATION UNIT REMOVAL/INSTALLATION**).

16. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
17. Disconnect audio-navigation unit connector E (5P).
18. Check for continuity between audio-navigation unit connector E (5P) terminal No. 1 and AM/FM antenna amplifier 3P connector terminal No. 1.

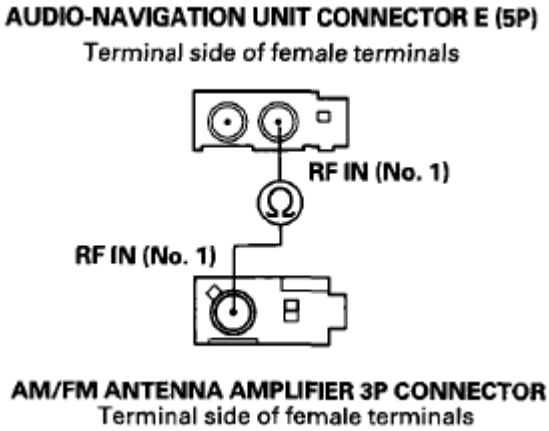


Fig. 80: Checking Continuity Between Audio-Navigation Unit Connector E (5P) Terminal No. 1 & 3P Terminal No. 1
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES -Go to step 19.

NO -Replace the AM/FM antenna lead and/or the sublead.

19. Check for continuity between audio-navigation unit connector E (5P) terminal No. 1 and body ground.

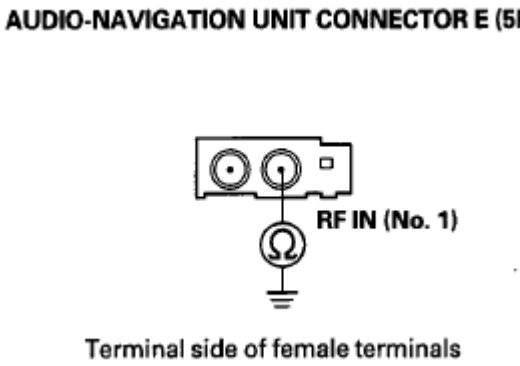


Fig. 81: Checking Continuity Of Audio-Navigation Unit Terminal No. 1 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES -Replace the AM/FM antenna lead and/or the sublead.

NO -Go to step 20.

20. Check for continuity between audio-navigation unit connector E (5P) terminal No. 2 and AM/FM antenna amplifier 3P connector terminal No. 2.

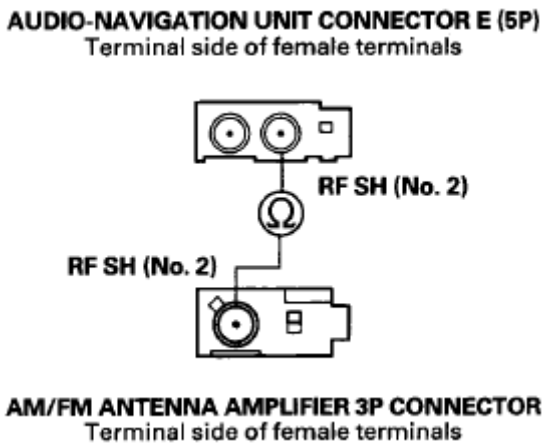


Fig. 82: Checking Continuity Between Audio-Navigation Unit Connector E (5P) Terminal No. 2 & 3P Terminal No. 2
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES -Go to step 21.

NO -Replace the AM/FM antenna lead and/or the sublead.

21. Check for continuity between audio-navigation unit connector E (5P) terminals No. 1 and No. 2.

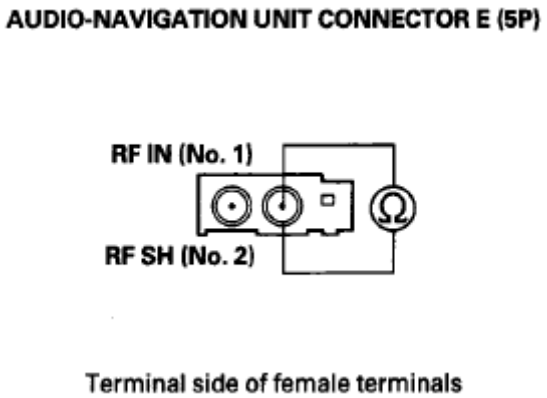


Fig. 83: Checking Continuity Between Audio-Navigation Unit Connector E (5P) Terminals No. 1 And No. 2
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES -Replace the AM/FM antenna lead and/or the sublead.

NO -Replace the AM/FM antenna amplifier (see **AM/FM ANTENNA AMPLIFIER REPLACEMENT**), and recheck. If the reception is still poor, replace the audio-navigation unit (see

AUDIO-NAVIGATION UNIT REMOVAL/INSTALLATION).

POOR AM OR FM RADIO RECEPTION OR INTERFERENCE (WITHOUT NAVIGATION)

NOTE:

- **Check the vehicle battery condition first (see BATTERY TEST).**
- **Check the connectors for poor connections or loose terminals.**
- **Check for aftermarket accessories including cell phones and chargers plugged into the vehicle accessory power sockets.**
- **Check the radio reception in an open area. Poor reception/interference can be caused by any of these conditions:**
  - **The radio station is far away**
  - **Atmospheric conditions are unfavorable**
  - **Aftermarket metallic window tint**
  - **A tall building, mountains, or high-voltage power lines are nearby**

1. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
2. Do the Seek Stop Test (see **SEEK STOP TEST**) and the reception level indication in the Self-Diagnostic Function (see **RECEPTION LEVEL INDICATION (PRESS AND HOLD 5 SEC AM/FM BUTTON)**).

   Is the test vehicle within 10 % of the known-good vehicle?

   YES -Multipath interference or weak station. Operation is normal.

   NO -Go to step 3.

3. Check the reception/interference is the same in several locations.

   Is the reception/interference the same?

   YES -Go to step 4.

   NO -Multipath interference or weak station. Operation is normal.

4. Check the reception/interference while the engine is running.

   Is there noise (static or whine) only with the engine running?

   YES -Check the antenna and radio grounds. If OK, check the charging system and the ignition system.

   NO -Go to step 5.

5. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
6. Remove the right C-pillar trim (see **C-PILLAR TRIM**).

7. Check for poor connections or loose terminals at the AM/FM antenna amplifier to the window antenna.

   Are the connections or terminals OK?

   YES -Go to step 8.

   NO -Repair poor connections or loose terminals, and recheck. If the symptom/indication is still present, replace the AM/FM antenna amplifier (see **AM/FM ANTENNA AMPLIFIER REPLACEMENT**).

8. With the help of an assistant inside the vehicle, have the assistant shine a strong flashlight (A) along each antenna wire (B). Check from the outside of the vehicle for any breaks or openings in the antenna wires (the light shines through any breaks or cuts).

   NOTE: It is easier to see the breaks if you do this test in a dark or shaded area.

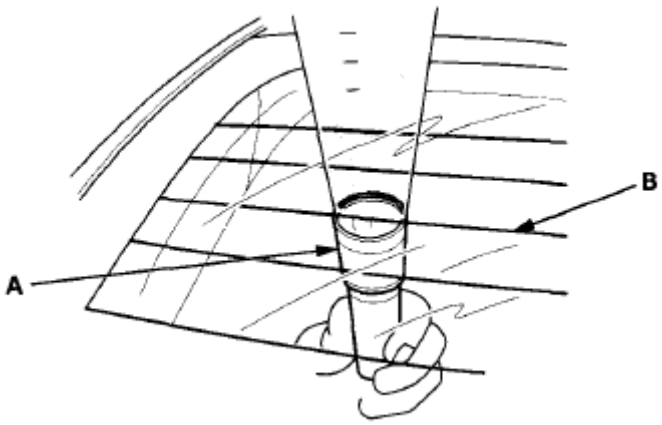


Fig. 84: Identifying Flashlight And Antenna Wire
Courtesy of AMERICAN HONDA MOTOR CO., INC.

   Are there any breaks or cuts in the antenna?

   YES -Repair the window antenna. Go to **AM/FM ANTENNA REPAIR**, or replace the rear window (see **REAR WINDOW REPLACEMENT**) if the damaged section is too long.

   NO -Go to step 9.

9. Disconnect the AM/FM antenna amplifier 3P connector.
10. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
11. Measure the voltage between AM/FM antenna amplifier 3P connector terminal No. 3 and body ground.

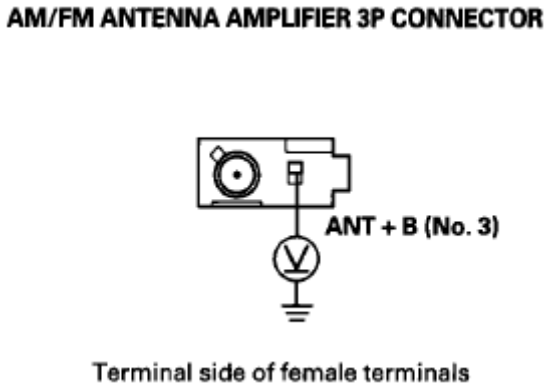


Fig. 85: Measuring Voltage Of AM/FM Antenna Amplifier Terminal No. 3 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there battery voltage?

YES -Go to step 16.

NO -Go to step 12.

12. Turn the ignition switch to LOCK (0), press the engine start/stop button to select the OFF mode.
13. Disconnect audio unit connector E (3P).
14. Check for continuity between audio unit connector E (3P) terminal No. 3 and AM/FM antenna amplifier 3P connector terminal No. 3.

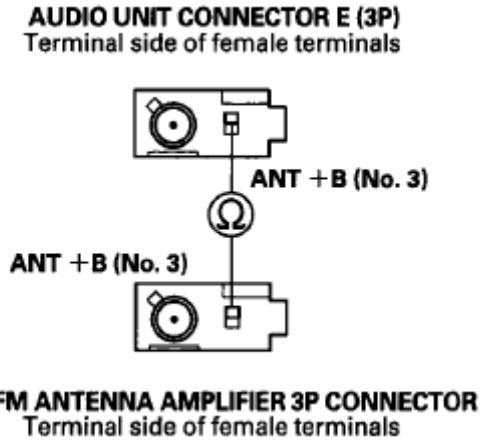


Fig. 86: Checking Continuity Between Audio Unit Connector E (3P) And AM/FM Antenna Amplifier 3P Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES -Go to step 15.

NO -Repair an open in the wire between the audio unit and the AM/FM antenna amplifier. Also check the AM/FM antenna lead/sublead connector.

15. Check for continuity between audio unit connector E (3P) terminal No. 3 and body ground.

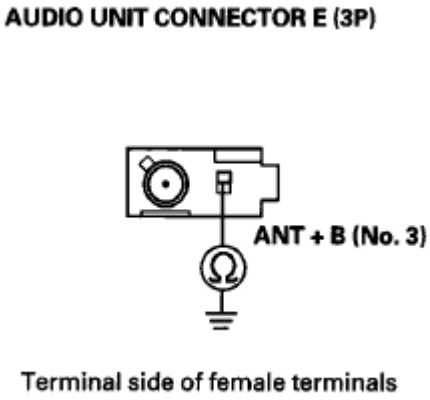


Fig. 87: Checking Continuity Between Audio Unit Connector E (3P) Terminal No. 3 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES -Repair a short to body ground in the wire between the audio unit and the AM/FM antenna amplifier.

NO -Replace the audio unit (see **AUDIO UNIT REMOVAL/INSTALLATION**).

16. Turn the ignition switch to LOCK (0), press the engine start/stop button to select the OFF mode.
17. Disconnect audio unit connector E (3P).
18. Check for continuity between audio unit connector E (3P) terminal No. 1 and AM/FM antenna amplifier 3P connector terminal No. 1.

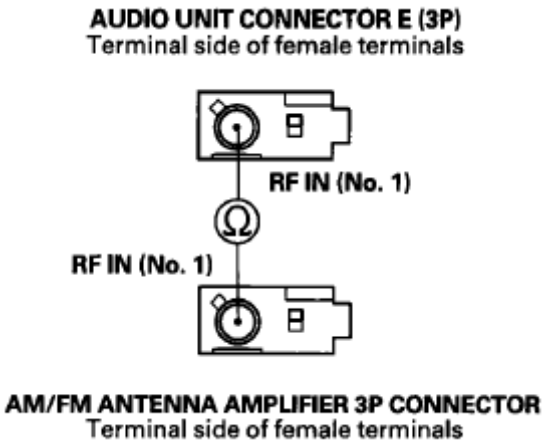


Fig. 88: Checking Continuity Between Audio Unit Connector E (3P) And AM/FM Antenna

Amplifier 3P Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES -Go to step 19.

NO -Replace the AM/FM antenna lead and/or the sublead.

19. Check for continuity between audio unit connector E (3P) terminal No. 1 and body ground.

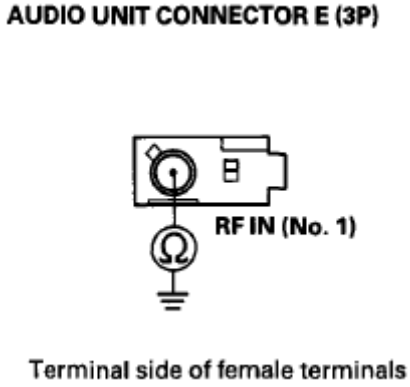


Fig. 89: Checking Continuity Between Audio Unit Connector E (3P) Terminal No. 1 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES -Replace the AM/FM antenna lead and/or the sublead.

NO -Go to step 20.

20. Check for continuity between audio unit connector E (3P) terminal No. 2 and AM/FM antenna amplifier 3P connector terminal No. 2.

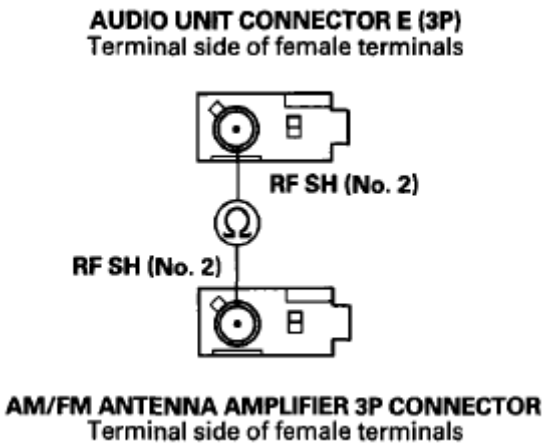


Fig. 90: Checking Continuity Between Audio Unit Connector E (3P) And AM/FM Antenna Amplifier 3P Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES -Go to step 21.

NO -Replace the AM/FM antenna lead and/or the sublead.

21. Check for continuity between audio unit connector E (3P) terminals No. 1 and No. 2.

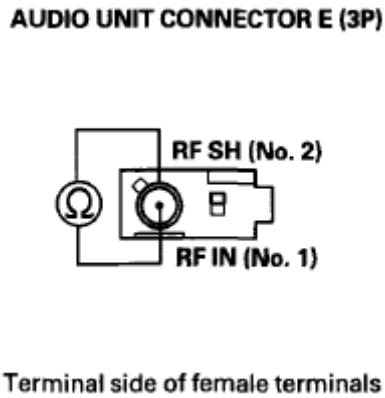


Fig. 91: Checking Continuity Between Audio Unit Connector E (3P) Terminals No. 1 And No. 2
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES -Replace the AM/FM antenna lead and/or the sublead.

NO -Replace the AM/FM antenna amplifier (see **AM/FM ANTENNA AMPLIFIER REPLACEMENT**), and recheck. If the reception is still poor, replace the audio unit (see **AUDIO UNIT REMOVAL/INSTALLATION**).

AUDIO UNIT POWER SWITCH WILL NOT TURN ON (NO INFORMATION DISPLAY AND NO SOUND) (WITH NAVIGATION)

NOTE:

- **Check the vehicle battery condition first (see BATTERY TEST).**
- **Check the connectors for poor connections or loose terminals.**

1. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
2. Press the VOLUME/POWER knob on to see if the audio system turns on.

   Does the audio display operate properly, and does the audio-navigation unit sound normal?

   YES -Intermittent failure, the system is OK at this time.

   NO -Go to step 3.

3. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
4. Check the No. 15(10 A) fuse in the under-hood fuse/relay box and the No. 18 (7.5 A) fuse in the driver's under-dash fuse/relay box.

   Are the fuses OK?

   YES -Go to step 5.

   NO -Replace the fuse(s), and recheck. If the fuse(s) blows again, check for a short in the No. 15(10 A) fuse and/or the No. 18 (7.5 A) fuse circuits.

5. Check for poor connections or loose terminals at audio-navigation unit connectors.

   Are the connections or terminals OK?

   YES -Go to step 6.

   NO -Repair poor connections or loose terminals, and recheck.

6. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
7. Measure the voltage between body ground and audio-navigation unit connector A (24P) terminals No. 14 and No. 24 individually.

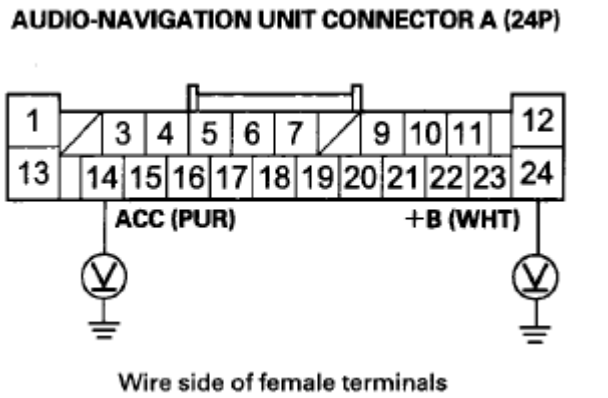


Fig. 92: Measuring Voltage Between Body Ground And Audio-Navigation Unit Connector A (24P) Terminals No. 14 And No. 24
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there battery voltage?

YES -Go to step 8.

NO -If the +B wire does not have voltage, repair an open in the wire between the No. 15(10 A) fuse in the under-hood fuse/relay box and the audio-navigation unit. If the ACC wire does not have voltage, repair an open in the wire between the No. 18 (7.5 A) fuse in the driver's under-dash fuse/relay box and the audio-navigation unit.

8. Measure the voltage between audio-navigation unit connector A (24P) terminal No. 12 and body ground.

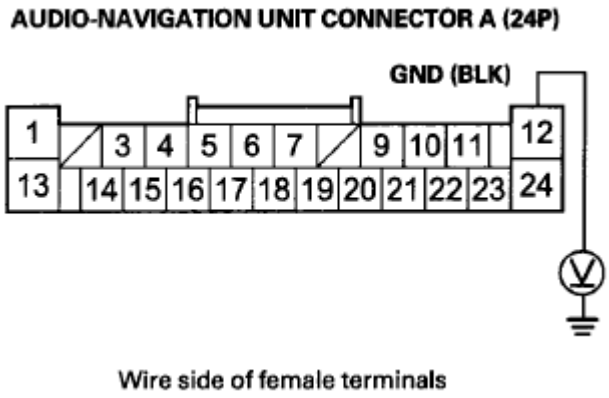


Fig. 93: Measuring Voltage Between Audio-Navigation Unit Connector A (24P) Terminal No. 12 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there less than 0.2 V?

YES -Go to step 9.

NO -Repair an open or high resistance in the wire between the audio-navigation unit and body ground

(G502) (see **CONNECTOR TO FUSE/RELAY BOX INDEX**).

9. Measure the voltage between audio-navigation switch panel 24P connector terminal No. 22 and body ground.

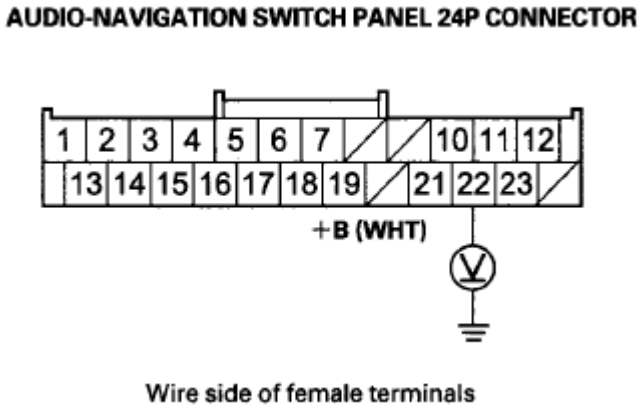


Fig. 94: Measuring Voltage Between Audio-Navigation Switch Panel 24P Connector Terminal No. 22 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there battery voltage?

YES -Go to step 10.

NO -Repair an open in the wire(s) between the No. 15 (10 A) fuse in the under-hood fuse/relay box and the audio-navigation switch panel.

10. Measure the voltage between audio-navigation switch panel 24P connector terminal No. 10 and body ground.

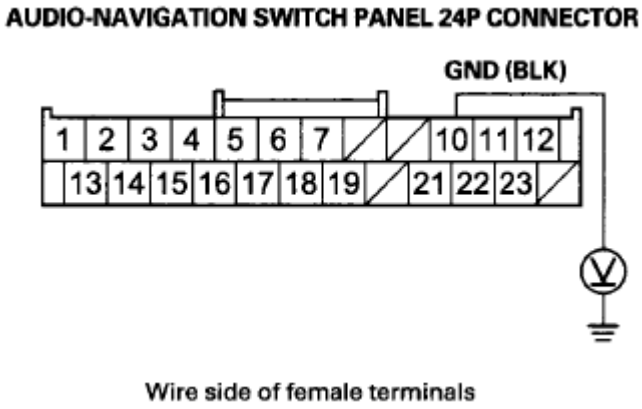


Fig. 95: Measuring Voltage Between Audio-Navigation Switch Panel 24P Connector Terminal No. 10 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there less than 0.2 V?

YES -Go to step 11.

NO -Repair an open or high resistance in the wire between the audio-navigation switch panel and body ground (G501) (see **CONNECTOR TO FUSE/RELAY BOX INDEX**).

11. Measure the voltage between audio-navigation switch panel 24P connector terminal No. 17 and body ground.

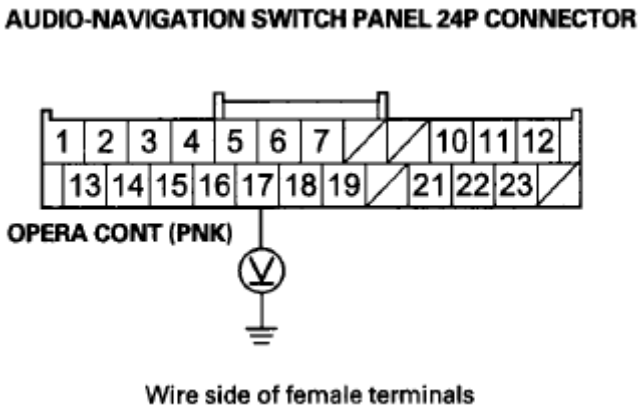


Fig. 96: Measuring Voltage Between Audio-Navigation Switch Panel 24P Connector Terminal No. 17 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there battery voltage?

YES -Go to step 12.

NO -Repair an open or a short in the wire between the audio-navigation switch panel and the audio-navigation unit.

12. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
13. Disconnect audio-navigation unit connector D (36P) and the audio-navigation switch panel 24P connector.
14. Check for continuity between audio-navigation switch panel 24P connector terminal No. 14 and body ground.

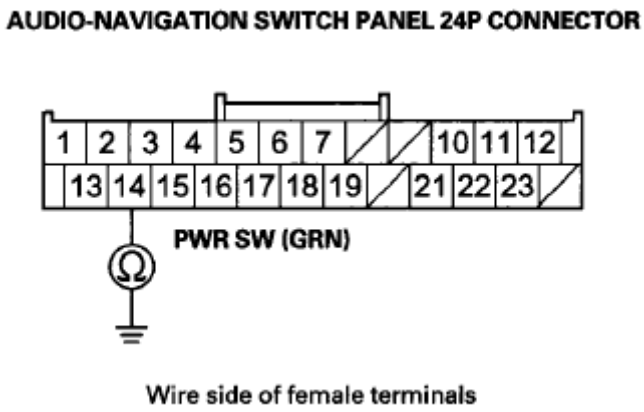


Fig. 97: Checking Continuity Between Audio-Navigation Switch Panel 24P Connector Terminal No. 14 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES -Repair a short to body ground in the wire between the audio-navigation switch panel and the audio-navigation unit.

NO -Go to step 15.

15. Check for continuity between audio-navigation unit connector D (36P) terminal No. 24 and audio-navigation switch panel 24P connector terminal No. 14.

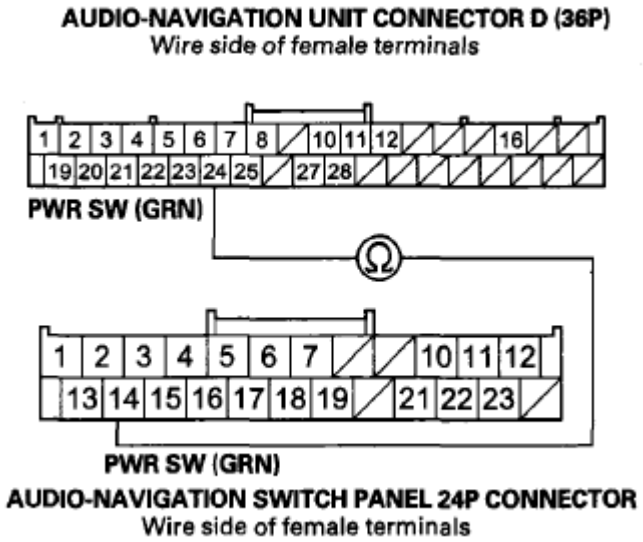


Fig. 98: Checking Continuity Between Audio-Navigation Unit Connector D (36P) And Audio-Navigation Switch Panel 24P Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES -Go to step 16.

NO -Repair an open in the wire between the audio-navigation switch panel and the audio-navigation unit.

16. Reconnect the audio-navigation switch panel 24P connector.
17. Check for continuity between audio-navigation switch panel 24P connector terminal No. 14 and body ground.

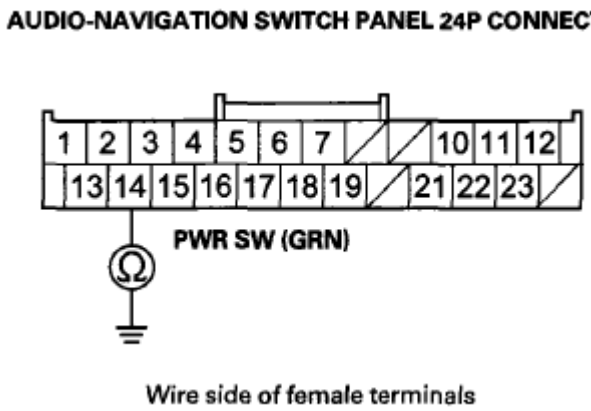


Fig. 99: Checking Continuity Between Audio-Navigation Switch Panel 24P Connector Terminal No. 14 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES -Replace the audio-navigation switch panel (see **AUDIO-NAVIGATION SWITCH PANEL REMOVAL/INSTALLATION**).

NO -Go to step 18.

18. While press and holding the VOLUME/POWER knob, check for continuity between audio-navigation switch panel 24P connector terminal No. 14 and body ground.

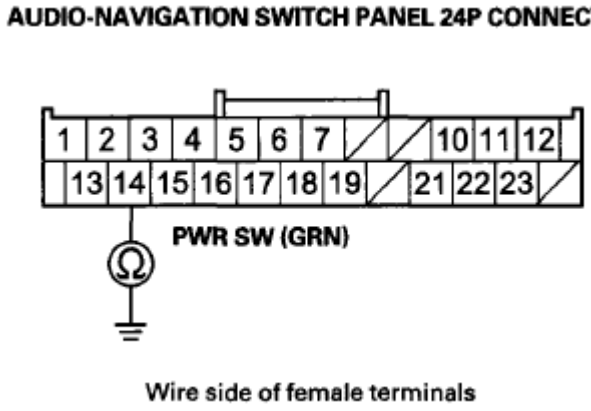


Fig. 100: Checking Continuity Between Audio-Navigation Switch Panel 24P Connector Terminal

No. 14 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES -Go to step 19.

NO -Replace the audio-navigation switch panel (see **AUDIO-NAVIGATION SWITCH PANEL REMOVAL/INSTALLATION**).

19. Disconnect the audio-navigation switch panel 24P connector.
20. Check for continuity between audio-navigation unit connector D (36P) and the audio-navigation switch panel 24P connector according to the table.

Audio-navigation unit connector	Audio-navigation switch panel connector	Wire color
D1	15	YEL
D19	16	BRN
D20	3	BLU

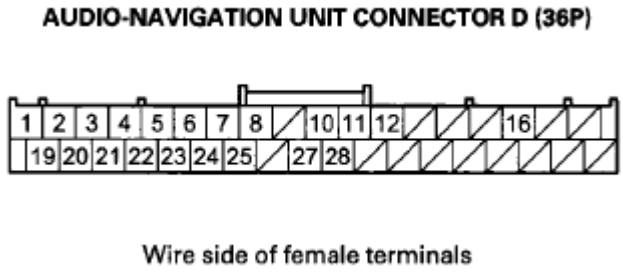


Fig. 101: Checking Continuity Between Audio-Navigation Unit Connector D (36P) And Audio-Navigation Switch Panel 24P Connector (Audio-Navigation Unit Connector)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

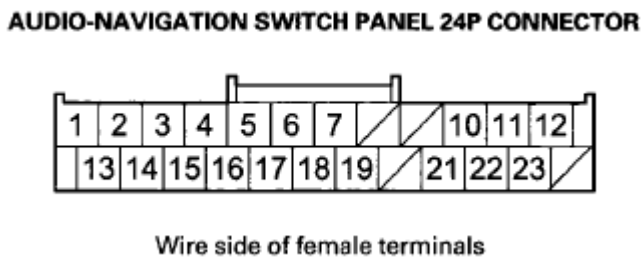


Fig. 102: Checking Continuity Between Audio-Navigation Unit Connector D (36P) And Audio-Navigation Switch Panel 24P Connector (Audio-Navigation Switch Panel Connector)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES -Go to step 21.

NO -There is an open in the wire(s) between the audio-navigation unit and the audio-navigation switch panel. Repair or replace the affected harness.

21. Check for continuity between the audio-navigation switch panel 24P connector and body ground according to the table.

Audio-navigation switch panel connector	Wire color
3	BLU
15	YEL
16	BRN

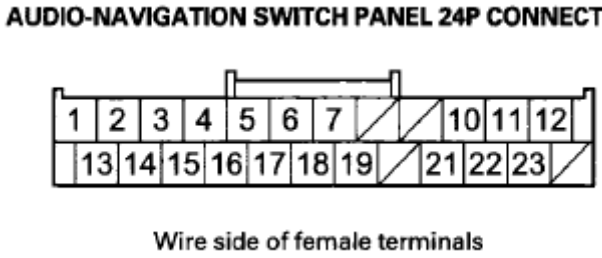


Fig. 103: Checking Continuity Between Audio-Navigation Switch Panel 24P Connector And Body Ground According To Table
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES -There is a short in the wire(s) between the audio-navigation unit and the audio-navigation switch panel. Repair or replace the affected harness.

NO -Go to step 22.

22. Check for continuity between the terminals of the audio-navigation switch panel 24P connector according to the table.

From terminal	To terminals
4 (GRY)	15 (YEL), 16 (BRN)
15 (YEL)	16 (BRN)

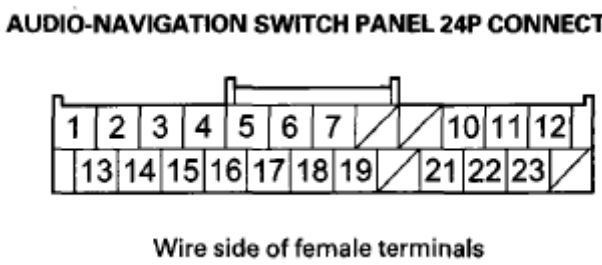


Fig. 104: Checking Continuity Between Terminals Of Audio-Navigation Switch Panel 24P Connector According To Table
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity between any of the terminals?

YES -There is a short in the wires between the audio-navigation unit and the audio-navigation switch panel. Replace the affected shielded harness.

NO -Substitute a known-good audio-navigation switch panel (see **AUDIO-NAVIGATION SWITCH PANEL REMOVAL/INSTALLATION**), then reconnect all of the connectors, and recheck. If the symptom/indication goes away, replace the original audio-navigation switch panel (see **AUDIO-NAVIGATION SWITCH PANEL REMOVAL/INSTALLATION**). If the symptom/indication is still present, replace the audio-navigation unit (see **AUDIO-NAVIGATION UNIT REMOVAL/INSTALLATION**).

AUDIO UNIT POWER SWITCH WILL NOT TURN ON (NO INFORMATION DISPLAY AND NO SOUND) (WITHOUT NAVIGATION)

NOTE:

- **Check the vehicle battery condition first (see BATTERY TEST).**
- **Check the connectors for poor connections or loose terminals.**

1. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
2. Push the VOLUME/POWER knob on to see if the audio unit turns on.

   Does the audio unit display operate properly, and does the audio unit sound normal?

   YES -Intermittent failure, the system is OK at this time.

   NO -Go to step 3.

3. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
4. Check the No. 15 (10 A) fuse in the under-hood fuse/relay box and the No. 18 (7.5 A) fuse in the driver's under-dash fuse/relay box.

   Are the fuses OK?

   YES -Go to step 5.

   NO -Replace the fuse(s), and recheck. If the fuse(s) blows again, check for a short in the No. 15 (10 A) fuse and/or the No. 18 (7.5 A) fuse circuits.

5. Check for poor connections or loose terminals at audio unit connectors

   Are the connections or terminals OK?

YES -Go to step 6.

NO -Repair poor connections or loose terminals, and recheck.

6. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
7. Measure the voltage between body ground and audio unit connector A (24P) terminals No. 14 and No. 24 individually.

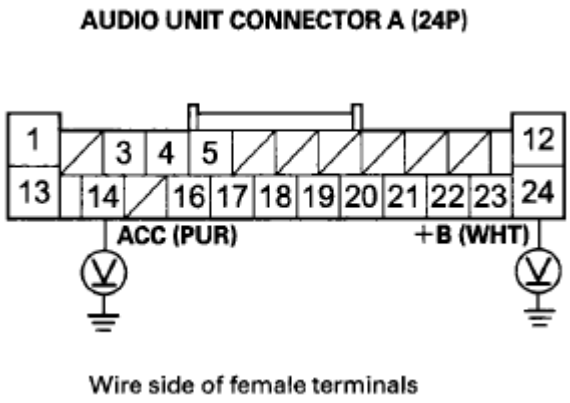


Fig. 105: Measuring Voltage Between Body Ground And Audio Unit Connector A (24P) Terminals No. 14 And No. 24
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there battery voltage?

YES -Go to step 8.

NO -If the +B wire does not have voltage, repair an open in the wire between the No. 15 (10 A) fuse in the under-hood fuse/relay box and the audio unit. If the ACC wire does not have voltage, repair an open in the wire between the No. 18 (7.5 A) fuse in the driver's under-dash fuse/relay box and the audio unit.

8. Measure the voltage between audio unit connector A (24P) terminal No. 12 and body ground.

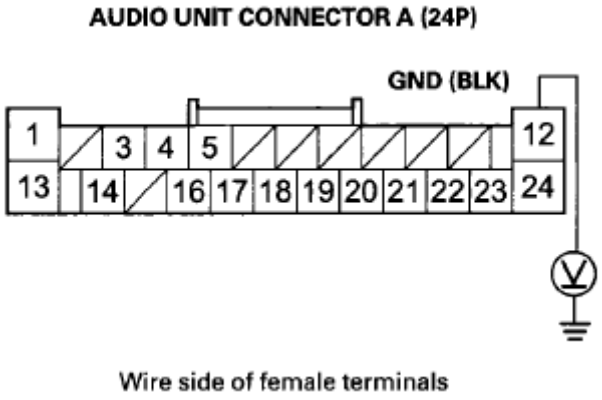


Fig. 106: Measuring Voltage Between Audio Unit Connector A (24P) Terminal No. 12 And Body

Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there less than 0.2 V?

YES -Substitute a known-good audio unit (see **AUDIO UNIT REMOVAL/INSTALLATION**), and recheck. If the symptom/indication goes away, replace the original audio unit (see **AUDIO UNIT REMOVAL/INSTALLATION**).

NO -Repair an open or high resistance in the wire between the audio unit and body ground (G502) (see **CONNECTOR TO FUSE/RELAY BOX INDEX**).

AUDIO UNIT POWER SWITCH WILL NOT TURN OFF (WITH NAVIGATION)

NOTE:

- **Check the vehicle battery condition first (see BATTERY TEST).**
- **Check the connectors for poor connections or loose terminals.**
- **Check for aftermarket accessories plugged info the vehicle's accessory power sockets.**

1. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
2. Push the VOLUME/POWER knob off to see if the audio system turns off.

   Does the audio system turn off?

   YES -Operation is normal.

   NO -Go to step 3

3. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.

   Does the audio-navigation unit turn off?

   YES -Go to step 5.

   NO -Go to step 4.

4. Measure the voltage between audio-navigation unit connector A (24P) terminal No. 14 and body ground.

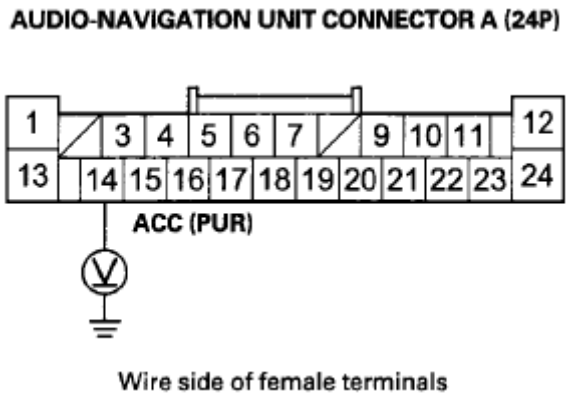


Fig. 107: Measuring Voltage Between Audio-Navigation Unit Connector A (24P) Terminal No. 14 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there battery voltage?

YES -Check for a short to power on the PUR wire.

NO -Substitute a known-good audio-navigation unit (including the HDD) (see **AUDIO-NAVIGATION UNIT REMOVAL/INSTALLATION**), and recheck. If the symptom/indication goes away, replace the original audio-navigation unit (see **AUDIO-NAVIGATION UNIT REMOVAL/INSTALLATION**).

5. Disconnect audio-navigation unit connector D (36P) and the audio-navigation switch panel 24P connector.
6. Check for continuity between audio-navigation switch panel 24P connector terminal No. 14 and body ground.

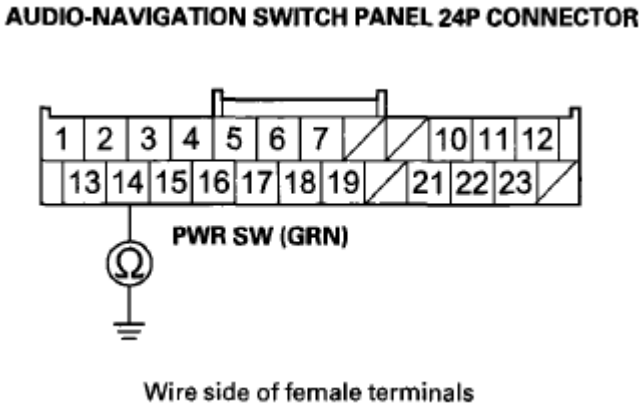


Fig. 108: Checking Continuity Between Audio-Navigation Switch Panel 24P Connector Terminal No. 14 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES -Repair a short to body ground in the wire between the audio-navigation switch panel and the audio-navigation unit.

NO -Go to step 7.

7. Check for continuity between audio-navigation unit connector D (36P) terminal No. 24 and audio-navigation switch panel 24P connector terminal No. 14.

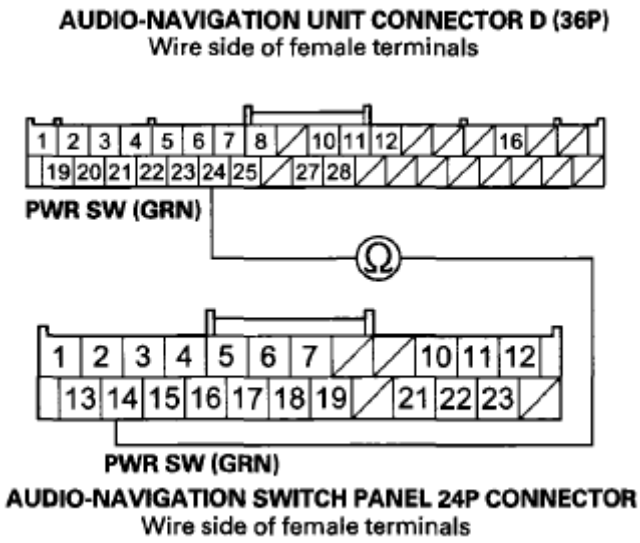


Fig. 109: Checking Continuity Between Audio-Navigation Unit Connector D (36P) And Audio-Navigation Switch Panel 24P Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES -Go to step 8.

NO -Repair an open in the wire between the audio-navigation switch panel and the audio-navigation unit.

8. Reconnect the audio-navigation switch panel 24P connector.
9. Check for continuity between audio-navigation switch panel 24P connector terminal No. 14 and body ground.

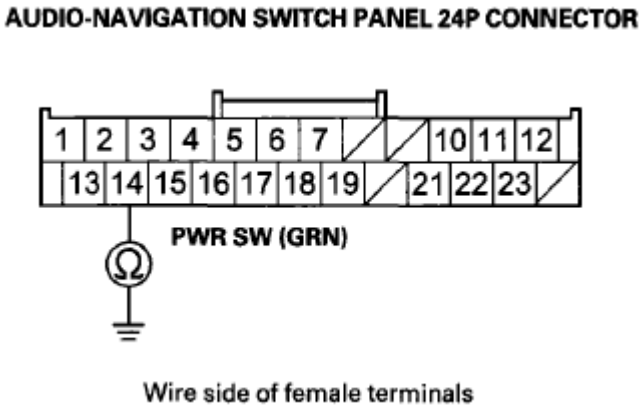


Fig. 110: Checking Continuity Between Audio-Navigation Switch Panel 24P Connector Terminal No. 14 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES -Replace the audio-navigation switch panel (see **AUDIO-NAVIGATION SWITCH PANEL REMOVAL/INSTALLATION**).

NO -Go to step 10.

10. While press and holding the VOLUME/POWER knob, check for continuity between audio-navigation switch panel 24P connector terminal No. 14 and body ground.

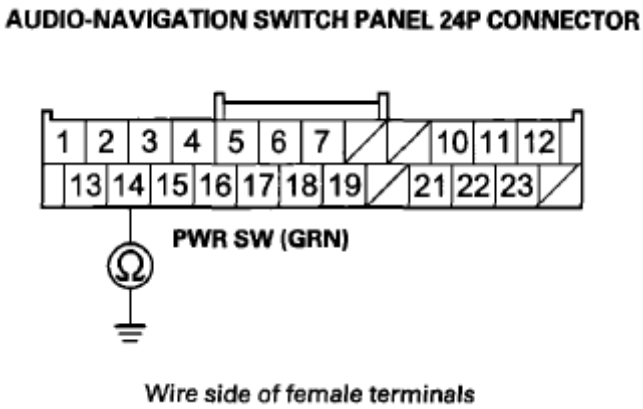


Fig. 111: Checking Continuity Between Audio-Navigation Switch Panel 24P Connector Terminal No. 14 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES -Substitute a known-good audio-navigation unit (including the HDD) (see **AUDIO-NAVIGATION UNIT REMOVAL/INSTALLATION**), and recheck. If the symptom/indication goes away, replace the original audio-navigation unit (see **AUDIO-NAVIGATION UNIT REMOVAL/INSTALLATION**).

NO -Replace the audio-navigation switch panel (see **AUDIO-NAVIGATION SWITCH PANEL REMOVAL/INSTALLATION**).

AUDIO UNIT POWER SWITCH WILL NOT TURN OFF (WITHOUT NAVIGATION)

NOTE:

- **Check the vehicle battery condition first (see BATTERY TEST).**
- **Check the connectors for poor connections or loose terminals.**
- **Check for aftermarket accessories plugged info the vehicle's accessory power sockets.**

1. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
2. Push the VOLUME/POWER knob off to see if the audio unit turns off.

   Does the audio unit turn off?

   YES -Go to step 3.

   NO -Replace the audio unit (see **AUDIO UNIT REMOVAL/INSTALLATION**).

3. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.

   Does the audio unit turn off?

   YES -Operation is normal.

   NO -Go to step 4

4. Measure the voltage between audio unit connector A (24P) terminal No. 14 and body ground.

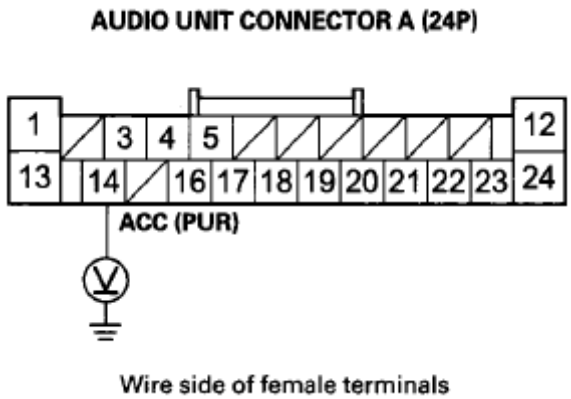


Fig. 112: Measuring Voltage Between Audio Unit Connector A (24P) Terminal No. 14 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there battery voltage?

YES -Check for short to power on the PUR wire.

NO -Substitute a known-good audio unit (see **AUDIO UNIT REMOVAL/INSTALLATION**), and recheck. If the symptom/indication goes away, replace the original audio unit (see **AUDIO UNIT REMOVAL/INSTALLATION**).

NO SOUND IS HEARD FROM THE SPEAKER(S) (DISPLAY IS NORMAL) (WITH NAVIGATION)

NOTE:

- **Check the vehicle battery condition first (see BATTERY TEST).**
- **Check the connectors for poor connections or loose terminals.**
- **Set the fader and balance positions to the center.**
- **Before doing the troubleshooting, do the Audio unit power switch will not turn on (No information display and no sound) troubleshooting (see AUDIO UNIT POWER SWITCH WILL NOT TURN ON (NO INFORMATION DISPLAY AND NO SOUND) (WITH NAVIGATION)).**

1. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
2. Turn on the audio-navigation unit, and make sure the volume button is not set to the MIN level.

   Is it at the MIN level?

   YES -Raise the volume level, and recheck the function.

   NO -Go to step 3.

3. Check for sound in each mode (AM/FM, XM, USB, and CD or DVD).

   Is the sound OK in each mode?

   YES -Intermittent failure. The system is OK at this time. Check for loose connections at the audio-navigation unit and speaker(s).

   NO -

   - If there is no sound in all modes, go to step 4.
   - If there is no sound in AM/FM mode, go to **AM OR FM RADIO RECEPTION INTERFERENCE TROUBLESHOOTING**.
   - If the sound quality is poor only with XM radio, or the XM radio does not function, go to **POOR OR NO SOUND WITH XM RADIO (AUDIO UNIT DOES DISPLAY XM CHANNELS) TROUBLESHOOTING; WITH AcuraLink®** (see), **WITHOUT AcuraLink®** .
   - If sound quality is poor only with USB mode, go to **USB INPUT SOUND IS LOW OR CANNOT BE HEARD TROUBLESHOOTING** .
   - If there is no sound in CD or DVD mode, do the Audio disc does not play troubleshooting (see **AUDIO DISC DOES NOT PLAY (WITH NAVIGATION)**).

4. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
5. Remove the center console panel (see **CENTER CONSOLE PANEL REMOVAL/INSTALLATION**).
6. Disconnect the HandsFreeLink control unit 32P connector (see **HANDSFREELINK CONTROL UNIT REMOVAL/INSTALLATION**).
7. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode, and recheck the audio system for sound.

   Did the sound return?

   YES -Replace the HandsFreeLink control unit (see **HFL SWITCH TEST**).

   NO -Go to step 8.

8. Do the Speaker Check Mode with the Self-Diagnostic Function (see **SPEAKER CHECK MODE**).

   Do all speakers produce a tone?

   YES -Substitute a known-good audio-navigation unit (including the HDD) (see **AUDIO-NAVIGATION UNIT REMOVAL/INSTALLATION**), and recheck. If the symptom/indication goes away, replace the original audio-navigation unit (see **AUDIO-NAVIGATION UNIT REMOVAL/INSTALLATION**).

   NO -Go to step 9.

9. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
10. Check the No. 15 (20 A) fuse in the passenger's under-dash fuse/relay box.

    Is the fuse OK?

    YES -Go to step 11.

    NO -Replace the fuse, and recheck. If the fuse blows again, check for a short in the No. 15 (20 A) fuse circuit.

11. Measure the voltage between stereo amplifier connector A (18P) terminal No. 18 and body ground.

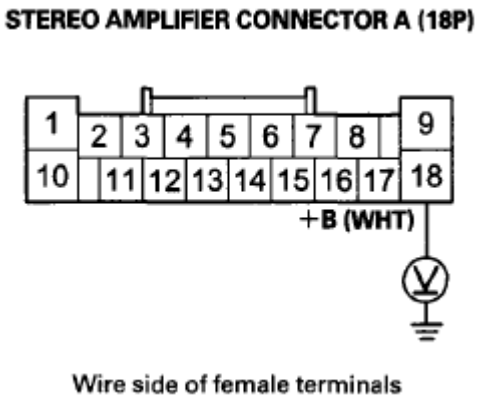


Fig. 113: Measuring Voltage Between Stereo Amplifier Connector A (18P) Terminal No. 18 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there battery voltage?

YES -Go to step 12.

NO -Repair an open in the wire between the No. 15 (20 A) fuse in the passenger's under-dash fuse/relay box and the stereo amplifier.

12. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
13. Measure the voltage between stereo amplifier connector B (28P) terminal No. 3 and body ground.

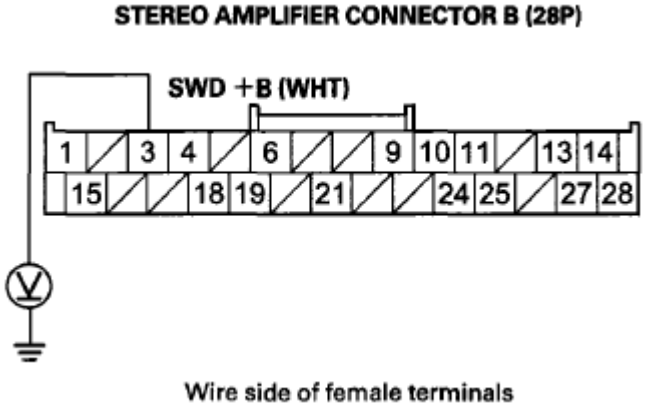


Fig. 114: Measuring Voltage Between Stereo Amplifier Connector B (28P) Terminal No. 3 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there battery voltage?

YES -Go to step 15.

NO -Go to step 14.

14. Measure the voltage between audio-navigation unit connector A (24P) terminal No. 17 and body ground.

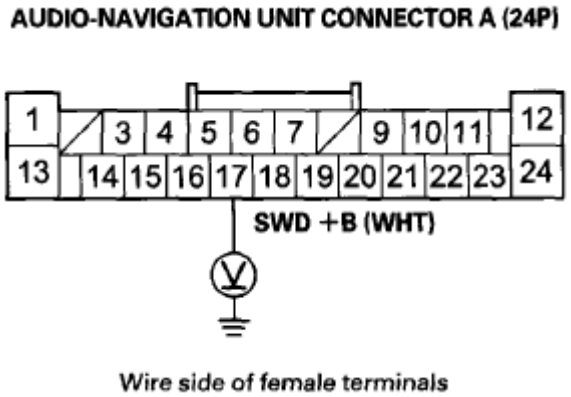


Fig. 115: Measuring Voltage Between Audio-Navigation Unit Connector A (24P) Terminal No. 17 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there battery voltage?

YES -Repair an open in the wire between the stereo amplifier and the audio-navigation unit.

NO -Substitute a known-good audio-navigation unit (including the HDD) (see **AUDIO-NAVIGATION UNIT REMOVAL/INSTALLATION**), and recheck. If the symptom/indication goes away, replace the original audio-navigation unit (see **AUDIO-NAVIGATION UNIT REMOVAL/INSTALLATION**).

15. Measure the voltage between body ground and stereo amplifier connector A (18P) terminal No. 9.

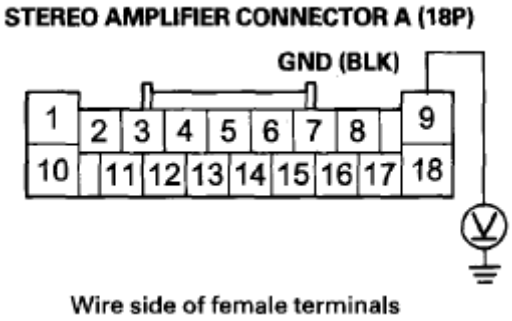


Fig. 116: Measuring Voltage Between Body Ground And Stereo Amplifier Connector A (18P) Terminal No. 9
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there less than 0.2 V?

YES -Go to step 16.

NO -Repair an open or high resistance in the wire between the stereo amplifier and body ground (G653);

with SH-AWD (see **CONNECTOR TO FUSE/RELAY BOX INDEX**), without SH-AWD (see **CONNECTOR TO FUSE/RELAY BOX INDEX**).

16. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
17. Check the faulty speaker(s) for damage.

    Is there any damage?

    YES -Replace the speaker (see **SPEAKER TEST/REPLACEMENT**), and recheck.

    NO -Go to step 18.

18. Remove the speaker(s) with no sound (see **SPEAKER TEST/REPLACEMENT**), and disconnect its connector.
19. Check for poor connections or loose terminals at speaker 2P connectors.

    Are the connections or terminals OK?

    YES -Go to step 20.

    NO -Repair poor connections or loose terminals, and recheck.

20. Test the speaker(s) (see **SPEAKER TEST/REPLACEMENT**).

    Is the speaker(s) OK?

    YES -Go to step 21.

    NO -Replace the speaker(s) (see **SPEAKER TEST/REPLACEMENT**).

21. Reconnect the speaker connector(s).
22. Disconnect stereo amplifier connector A (18P).
23. Check for continuity between body ground and stereo amplifier connector A (18P) according to the table.

Speaker	Stereo amplifier connector	Wire color
Driver's door speaker, left tweeter	A16	LT GRN
	A7	BLU
Front passenger's door speaker, right tweeter	A15	GRY
	A6	BRN
Front center speaker	A11	BRN
	A2	YEL
Left rear door speaker	A13	RED
	A4	GRN
Right rear door speaker	A12	BRN

	A3	GRY
Left rear speaker	A17	YEL
	A8	BLU
Right rear speaker	A14	BLU
	A5	YEL
Subwoofer	A10	GRY
	A1	LT BLU

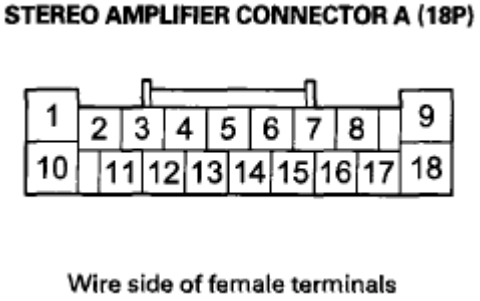


Fig. 117: Checking Continuity Between Body Ground And Stereo Amplifier Connector A (18P) According To Table
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES -Repair a short to body ground in the wire(s) between the stereo amplifier and the speaker(s).

NO -Go to step 24.

24. Disconnect the left tweeter 2P connector and the right tweeter 2P connector.
25. Measure the resistance between each pair of speaker terminals at stereo amplifier connector A (18P) according to the table.

Speaker	Stereo amplifier connector	Wire color	Resistance
Driver's door speaker	A16	LT GRN	About 2 ohms
	A7	BLU	
Front passenger's door speaker	A15	GRY	About 2 ohms
	A6	BRN	
Front center speaker	A11	BRN	About 2 ohms
	A2	YEL	
Left rear door speaker	A13	RED	About 2 ohms
	A4	GRN	
Right rear door speaker	A12	BRN	About 2 ohms
	A3	GRY	
Left rear speaker	A17	YEL	About 2 ohms
	A8	BLU	

Right rear speaker	A14	BLU	About 2 ohms
	A5	YEL	
Subwoofer	A10	GRY	About 2 ohms
	A1	LT BLU	

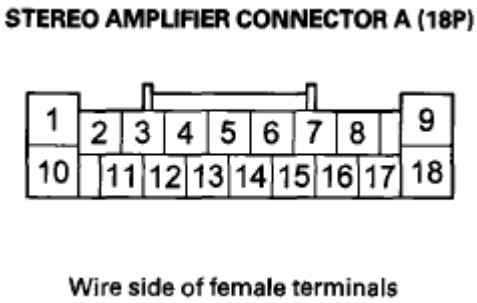


Fig. 118: Measuring Resistance Between Each Pair Of Speaker Terminals At Stereo Amplifier Connector A (18P) According To Table
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there resistance OK?

YES -Go to step 26.

NO -Repair an open or a short in the wire between the stereo amplifier and the speaker(s).

26. Connect stereo amplifier connector A (18P) terminals No. 6 and No. 15 with a jumper wire, and terminals No. 7 and No. 16 with a jumper wire.

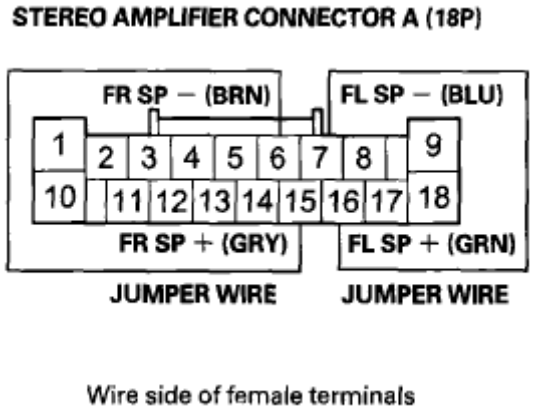


Fig. 119: Connecting Stereo Amplifier Connector A (18P) Terminals No. 6 And No. 15 With Jumper Wire
Courtesy of AMERICAN HONDA MOTOR CO., INC.

27. Check for continuity between the tweeter 2P connector according to the table.

Speaker	Terminal	Wire color

Left tweeter	1	LT GRN
	2	BLU
Right tweeter	1	GRY
	2	BRN



Fig. 120: Checking Continuity Of Tweeter With Connector End View
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES -Go to step 28.

NO -Repair an open in the wire between the stereo amplifier and the tweeter.

28. Disconnect the jumper wires.
29. Disconnect stereo amplifier connector B (28P).
30. Disconnect audio unit connector D (36P).
31. Check for continuity between body ground and audio-navigation unit connector D (36P) terminals No. 7 and No. 8 individually.

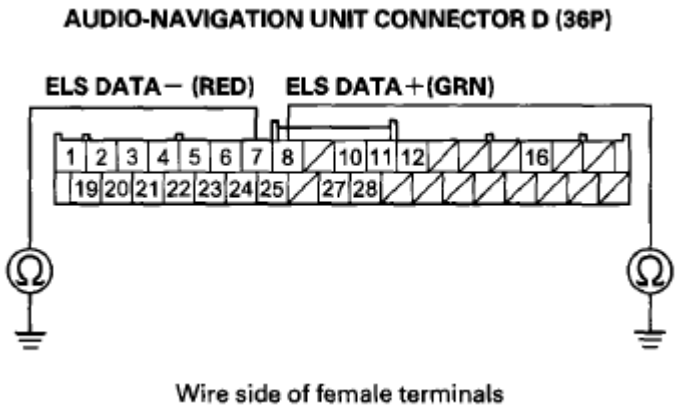


Fig. 121: Checking Continuity Between Body Ground And Audio-Navigation Unit Connector D (36P) Terminals No. 7 And No. 8
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES -There is a short to body ground in the wire(s) between the audio-navigation unit and the stereo amplifier. Replace the affected shielded harness.

NO -Go to step 32.

32. Check for continuity between the terminals of audio-navigation unit connector D (36P) according to the table.

From terminal	To terminals
D7 (RED)	D8 (GRN), D25 (GRY)
D8 (GRN)	D25 (GRY)

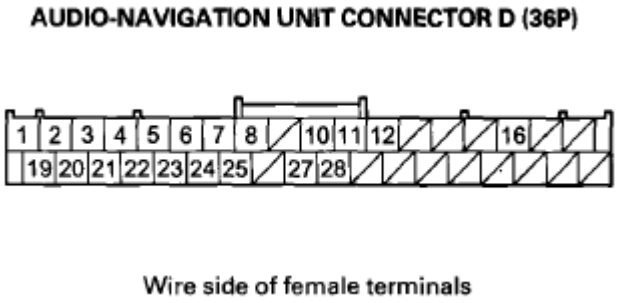


Fig. 122: Checking Continuity Between Terminals Of Audio-Navigation Unit Connector D (36P) According To Table
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity between any of the terminals?

YES -There is a short in the wires between the audio-navigation unit and the stereo amplifier. Replace the affected shielded harness.

NO -Go to step 33.

33. Check for continuity between audio-navigation unit connector D (36P) and stereo amplifier connector B (28P) according to the table.

Audio-navigation unit connector	Stereo amplifier connector	Wire color
D7	B1	RED
D8	B15	GRN

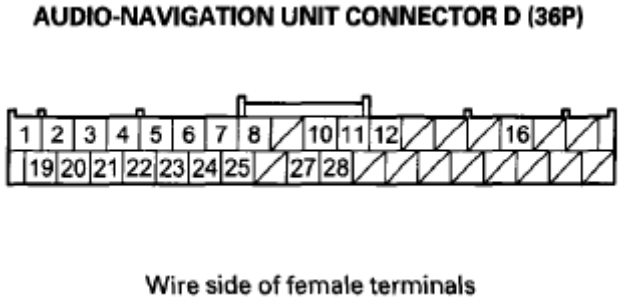


Fig. 123: Checking Continuity Between Audio-Navigation Unit Connector D (36P) Terminals
Courtesy of AMERICAN HONDA MOTOR CO., INC.

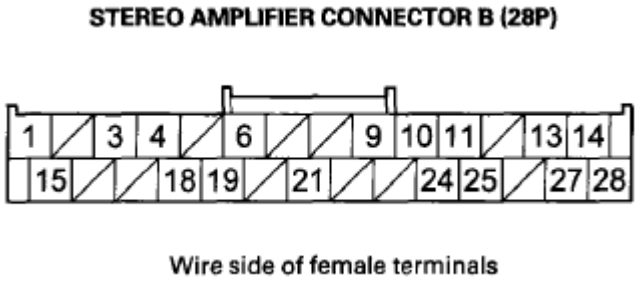


Fig. 124: Checking Continuity Between Terminals Stereo Amplifier Connector B (28P) Terminals
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES -Go to step 34.

NO -There is an open in the wire(s) between the audio-navigation unit and the stereo amplifier. Replace the affected shielded harness.

34. Disconnect audio-navigation unit connector A (24P) and connector B (24P).

NOTE: Eject all the disc(s) before disconnecting the audio-navigation unit to prevent damaging the CD/DVD player's load mechanism.

35. Check for continuity between audio-navigation unit connector A (24P), connector B (24P), and stereo amplifier connector B (28P) according to the table.

Audio-navigation unit connector	Stereo amplifier connector
A6 (WHT)	B28 (WHT)
A7 (BLK)	B14 (BLK)
A10 (RED)	B27 (RED)
AH (GRN)	B13 (GRN)
A18 (RED)	B25 (RED)
A19 (GRN)	B11 (GRN)

A22 (RED)	B24 (RED)
A23 (GRN)	B10 (GRN)
B9 (WHT)	B18 (WHT)
B10 (BLK)	B4 (BLK)
B12 (GRN)	B6 (GRN)
B24 (RED)	B19 (RED)

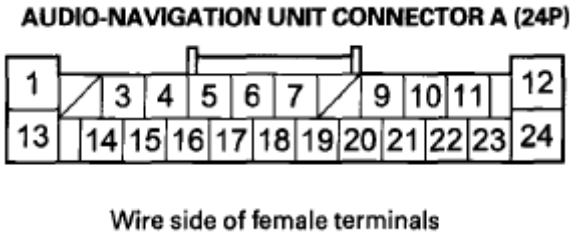


Fig. 125: Checking Continuity Between Audio-Navigation Unit Connector A (24P) Terminals
Courtesy of AMERICAN HONDA MOTOR CO., INC.

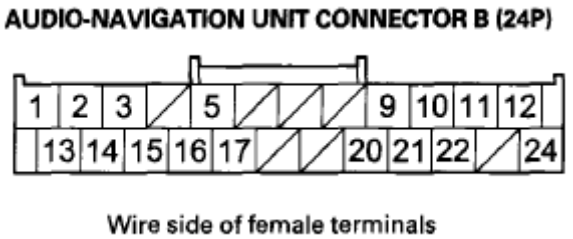


Fig. 126: Checking Continuity Between Audio-Navigation Unit Connector B (24P) Terminals
Courtesy of AMERICAN HONDA MOTOR CO., INC.

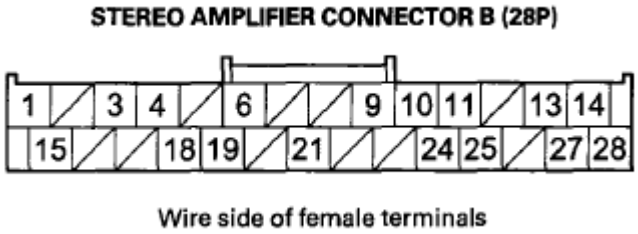


Fig. 127: Checking Continuity Between Stereo Amplifier Connector B (28P) Terminals
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES -Go to step 36.

NO -There is an open in the wire(s) between the stereo amplifier and the audio-navigation unit. Replace the affected shielded harness.

36. Check for continuity between body ground and audio-navigation unit connector A (24P) and connector B

(24P) according to the table.

Audio-navigation unit connector	Wire color
A6	WHT
A7	BLK
A9	GRY
A10	RED
AH	GRN
A18	RED
A19	GRN
A20	GRY
A21	GRY
A22	RED
A23	GRN
B9	WHT
B10	BLK
B11	GRY
B12	GRN
B24	RED

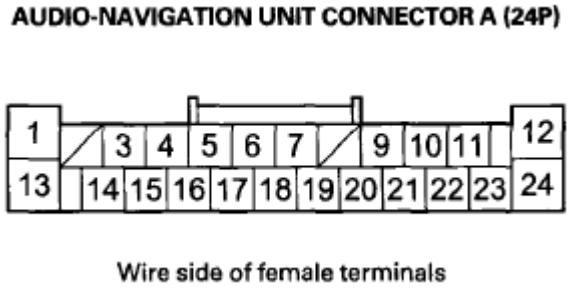


Fig. 128: Checking Continuity Between Body Ground And Audio-Navigation Unit Connector A (24P) Terminals
Courtesy of AMERICAN HONDA MOTOR CO., INC.

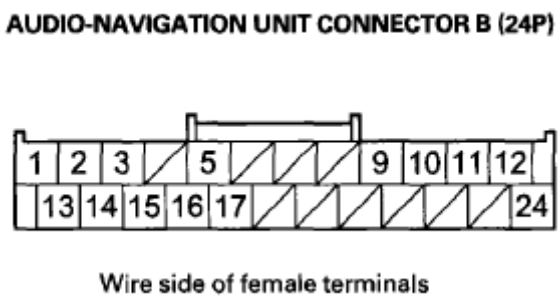


Fig. 129: Checking Continuity Between Body Ground And Audio-Navigation Unit Connector B (24P) Terminals

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES -There is a short to body ground in the wire(s) between the stereo amplifier and the audio-navigation unit. Replace the affected shielded harness.

NO -Go to step 37.

37. Check for continuity between the terminals of stereo amplifier connector B (28P) and audio-navigation unit connector A (24P) and connector B (24P) according to the table.

From terminals	To terminals	
Audio-navigation unit connector	Stereo amplifier connector	Audio-navigation unit connector
A20 (GRY)	B25 (RED)	A18 (GRN)
	B11 (GRN)	A19 (GRN)
A21 (GRY)	B10 (RED)	A22 (RED)
	B24 (GRN)	A23 (GRN)
A9 (GRY)	B28 (RED)	A6 (WHT)
	B14 (GRN)	A7 (BLK)
	B27 (RED)	A10 (RED)
	B13 (GRN)	A11 (GRN)
B11 (GRY)	B18 (RED)	A9 (WHT)
	B4 (GRN)	A10 (BLK)
	B6 (GRN)	A12 (GRN)
	B19 (RED)	A24 (RED)

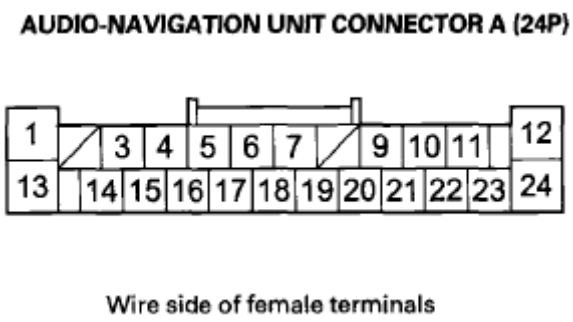


Fig. 130: Checking Continuity Between Terminals Of Audio-Navigation Connector A (24P)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

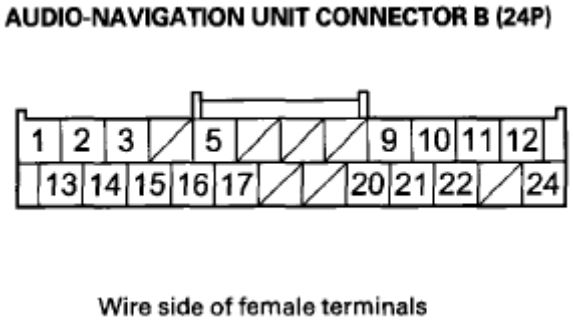


Fig. 131: Checking Continuity Between Terminals Of Audio-Navigation Connector B (24P)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

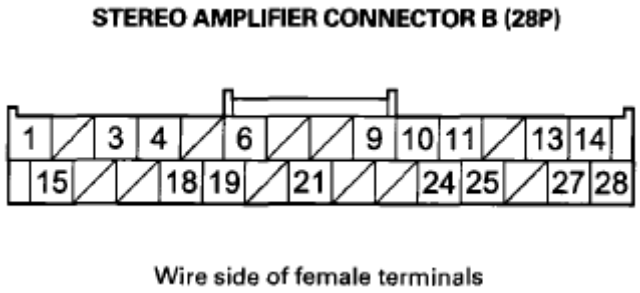


Fig. 132: Checking Continuity Between Terminals Of Stereo Amplifier Connector B (28P)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity between any of the terminals?

YES -There is short in the wires between the audio-navigation unit and the stereo amplifier. Replace the affected shielded harness.

NO -Substitute a known-good stereo amplifier (see **STEREO AMPLIFIER REMOVAL/INSTALLATION**), then reconnect all of the connectors, and recheck. If the symptom/indication goes away, replace the original stereo amplifier (see **STEREO AMPLIFIER REMOVAL/INSTALLATION**). If the symptom/indication is still present, replace the audio-navigation unit (see **AUDIO-NAVIGATION UNIT REMOVAL/INSTALLATION**).

NO SOUND IS HEARD FROM THE SPEAKER(S) (DISPLAY IS NORMAL) (WITHOUT NAVIGATION)

NOTE:

- **Check the vehicle battery condition first (see BATTERY TEST).**
- **Check the connectors for poor connections or loose terminals.**
- **Set the fader and balance positions to the center.**
- **Before doing the troubleshooting, do the Audio unit power switch will not turn on (No information display and no sound) troubleshooting (see AUDIO UNIT POWER SWITCH WILL NOT TURN ON (NO INFORMATION DISPLAY AND NO SOUND) (WITHOUT NAVIGATION)).**

1. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
2. Turn on the audio unit and make sure the volume button is not set to the MIN level.

   Is it at the MIN level?

   YES -Raise the volume level, and recheck the function.

   NO -Go to step 3.

3. Check for sound in each mode (AM/FM, XM, USB, and CD).

   Is the sound OK in each mode?

   YES -Intermittent failure. The system is OK at this time. Check for loose connections at the audio-navigation unit and speaker(s).

   NO -

   - If there is no sound in all modes, go to step 4.
   - If there is no sound in AM/FM mode, go to **AM OR FM RADIO RECEPTION INTERFERENCE TROUBLESHOOTING** .
   - If the sound quality is poor only with XM radio, or the XM radio does not function, go to **POOR OR NO SOUND WITH XM RADIO (AUDIO UNIT DOES DISPLAY XM CHANNELS) TROUBLESHOOTING** .
   - If sound quality is poor only with USB mode, go to **USB INPUT SOUND IS LOW OR CANNOT BE HEARD TROUBLESHOOTING** .
   - If there is no sound in CD mode, go to **AUDIO DISC DOES NOT PLAY TROUBLESHOOTING** .
4. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
5. Remove the center console panel (see **CENTER CONSOLE PANEL REMOVAL/INSTALLATION**).
6. Disconnect the HandsFreeLink control unit 28P connector (see **HANDSFREELINK CONTROL UNIT REMOVAL/INSTALLATION**).
7. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode, and recheck the audio system for sound.

   Did the audio system sound return?

   YES -Replace the HandsFreeLink control unit (see **HFL SWITCH TEST**).

   NO -Go to step 8.

8. Do the Speaker Check Mode with the Self-Diagnostic Function (see **SPEAKER CHECK MODE**).

   Do all speakers produce a tone?

YES -Substitute a known-good audio unit (see **AUDIO UNIT REMOVAL/INSTALLATION**), and recheck. If the symptom/indication goes away, replace the original audio unit (see **AUDIO UNIT REMOVAL/INSTALLATION**).

NO -Go to step 9.

9. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
10. Check the No. 15 (20 A) fuse in the passenger's under-dash fuse/relay box.

Is the fuse OK?

YES -Go to step 11.

NO -Replace the fuse, and recheck. If the fuse blows again, check for a short in the No. 15 (20 A) fuse circuit.

11. Measure the voltage between stereo amplifier connector A (18P) terminal No. 18 and body ground.

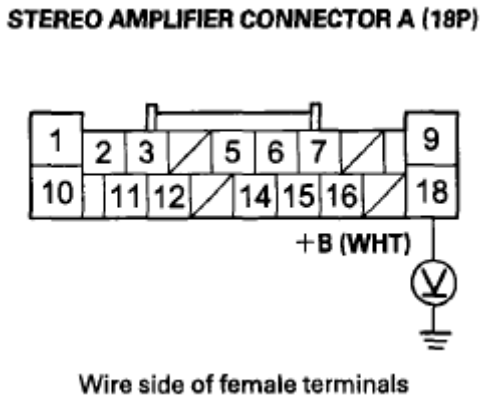


Fig. 133: Measuring Voltage Between Stereo Amplifier Connector A (18P) Terminal No. 18 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there battery voltage?

YES -Go to step 12.

NO -Repair an open in the wire between the No. 15 (20 A) fuse in the passenger's under-dash fuse/relay box and the stereo amplifier.

12. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
13. Measure the voltage between stereo amplifier connector B (20P) terminal No. 1 and body ground.

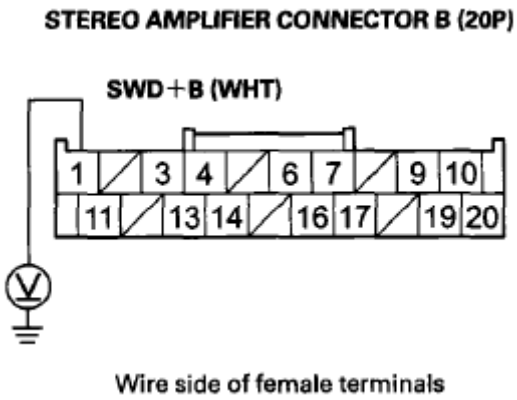


Fig. 134: Measuring Voltage Between Stereo Amplifier Connector B (20P) Terminal No. 1 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there battery voltage?

YES -Go to step 15.

NO -Go to step 14.

14. Measure the voltage between audio unit connector A (24P) terminal No. 17 and body ground.

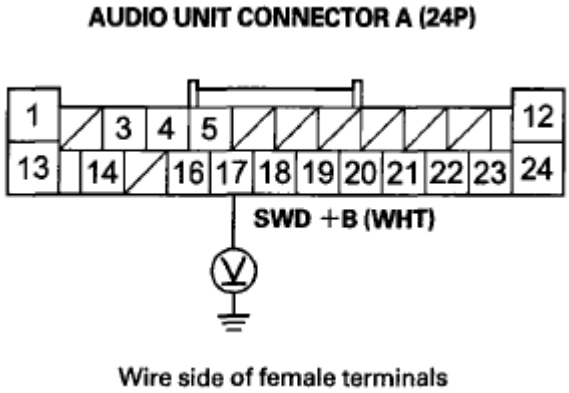


Fig. 135: Measuring Voltage Between Audio Unit Connector A (24P) Terminal No. 17 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there battery voltage?

YES -Repair an open in the wire between the stereo amplifier and the audio unit.

NO -Replace the audio unit (see **AUDIO UNIT REMOVAL/INSTALLATION**).

15. Measure the voltage between body ground and stereo amplifier connector A (18P) terminal No. 9.

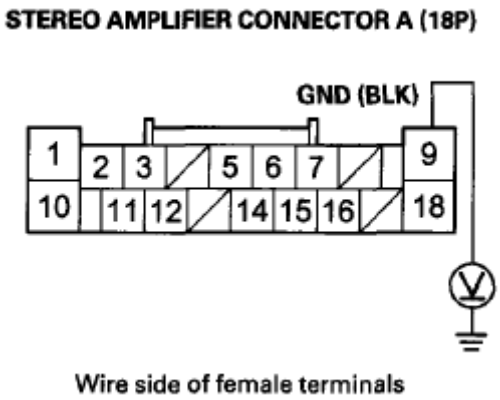


Fig. 136: Measuring Voltage Between Body Ground And Stereo Amplifier Connector A (18P) Terminal No. 9
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there less than 0.2 V?

YES -Go to step 16.

NO -Repair an open or high resistance in the wire between the stereo amplifier and body ground (G653); with SH-AWD (see **CONNECTOR TO FUSE/RELAY BOX INDEX**), without SH-AWD (see **CONNECTOR TO FUSE/RELAY BOX INDEX**).

16. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
17. Check the faulty speaker(s) for damage.

    Is there any damage?

    YES -Replace the speaker (see **SPEAKER TEST/REPLACEMENT**), and recheck.

    NO -Go to step 18.

18. Remove the speaker(s) with no sound (see **SPEAKER TEST/REPLACEMENT**), and disconnect its connector.
19. Check for poor connections or loose terminals at speaker 2P connectors.

    Are the connections or terminals OK?

    YES -Go to step 20.

    NO -Repair poor connections or loose terminals, and recheck.

20. Test the speaker(s) (see **SPEAKER TEST/REPLACEMENT**).

    Is the speaker OK?

YES -Go to step 21.

NO -Replace the speaker(s) (see **SPEAKER TEST/REPLACEMENT**).

21. Reconnect the speaker connector(s).
22. Disconnect stereo amplifier connector A (18P).
23. Check for continuity between stereo amplifier connector A (18P) and body ground according to the table.

Speaker	Stereo amplifier connector	Wire color
Driver's door speaker, left tweeter	A11 (+)	LT GRN
	A2 (-)	BLU
Front passenger's door speaker, right tweeter	A15 (+)	GRY
	A6 (-)	BRN
Front center speaker	A16 (+)	BRN
	A7 (-)	YEL
Left rear speaker	A10 (+)	YEL
	A1 (-)	BLU
Right rear speaker	A14 (+)	BLU
	A5 (-)	YEL
Subwoofer	A12 (+)	GRY
	A3 (-)	LT BLU

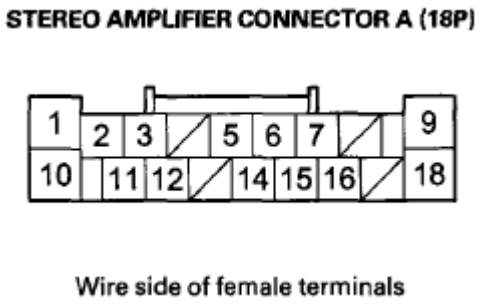


Fig. 137: Checking Continuity Between Stereo Amplifier Connector A (18P) And Body Ground According To Table
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES -Repair a short to body ground in the wire(s) between the stereo amplifier and the speaker(s).

NO -Go to step 24.

24. Disconnect the left tweeter 2P connector and the right tweeter 2P connector.
25. Measure the resistance between each pair of speaker terminals at stereo amplifier connector A (18P) according to the table.

Speaker	Stereo amplifier connector	Wire color	Resistance
Driver's door speaker	A11	LT GRN	About 4 ohms
	A2	BLU	
Front passenger's door speaker	A15	GRY	About 4 ohms
	A6	BRN	
Front center speaker	A16	BRN	About 2 ohms
	A7	YEL	
Left rear speaker	A10	YEL	About 4 ohms
	A1	BLU	
Right rear speaker	A14	BLU	About 4 ohms
	A5	YEL	
Subwoofer	A12	GRY	About 2 ohms
	A3	LT BLU	

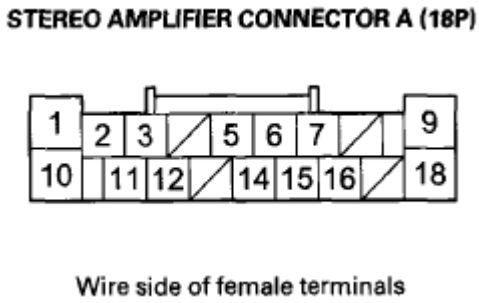


Fig. 138: Measuring Resistance Between Speaker Terminals At Stereo Amplifier Connector A (18P) According To Table
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there resistance OK?

YES -Go to step 26.

NO -Repair an open or a short in the wire between the stereo amplifier and the speaker(s).

26. Connect stereo amplifier connector A (18P) terminals No. 2 and No. 11 with a jumper wire, and terminals No. 6 and No. 15 with a jumper wire.

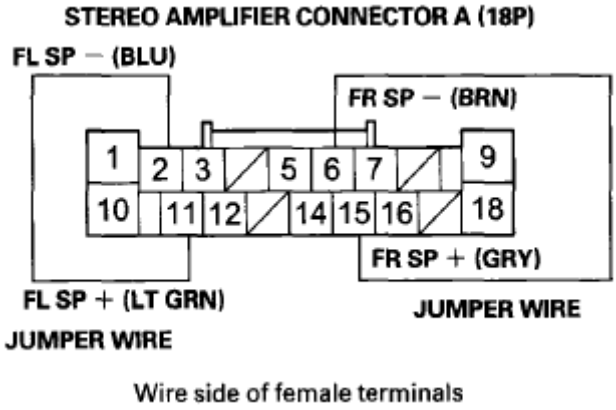


Fig. 139: Connecting Stereo Amplifier Connector A (18P) Terminals No. 2 And No. 11 With Jumper Wire
Courtesy of AMERICAN HONDA MOTOR CO., INC.

27. Check for continuity between the tweeter 2P connector according to the table.

Speaker	Terminal	Wire color
Left tweeter	1	LT GRN
	2	BLU
Right tweeter	1	GRY
	2	BRN

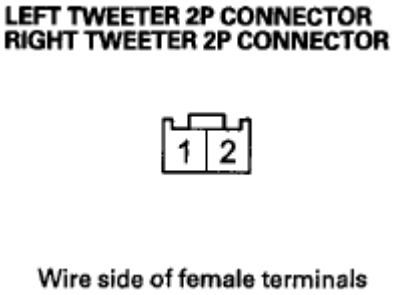


Fig. 140: Checking Continuity Between Tweeter 2P Connector According To Table
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES -Go to step 28.

NO -Repair an open in the wire between the stereo amplifier and the tweeter.

28. Disconnect the jumper wires.
29. Disconnect stereo amplifier connector B (20P).
30. Disconnect audio unit connector A (24P) and connector B (14P).

NOTE: Eject all the CDs before disconnecting the audio unit to prevent damaging the CD player's load mechanism.

31. Check for continuity between audio unit connector A (24P), connector B (14P), and stereo amplifier connector B (20P) according to the table.

Audio unit connector	Stereo amplifier connector
A18 (RED)	B17 (RED)
A19 (GRN)	B7 (GRN)
A22 (RED)	B16 (RED)
A23 (GRN)	B6 (GRN)
B1 (RED)	B14 (RED)
B2 (WHT)	B13 (WHT)
B3 (BLK)	B3 (BLK)
B4 (RED)	B19 (RED)
B5 (WHT)	B20 (WHT)
B8 (GRN)	B4 (GRN)
B11 (GRN)	B9 (GRN)
B12 (BLK)	B10 (BLK)

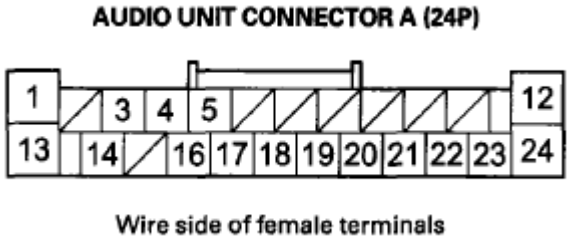


Fig. 141: Checking Continuity Between Audio Unit Connector A (24P) Terminals
Courtesy of AMERICAN HONDA MOTOR CO., INC.

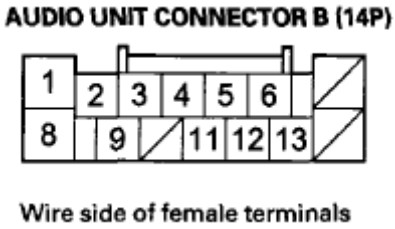


Fig. 142: Checking Continuity Between Audio Unit Connector B (14P) Terminals
Courtesy of AMERICAN HONDA MOTOR CO., INC.

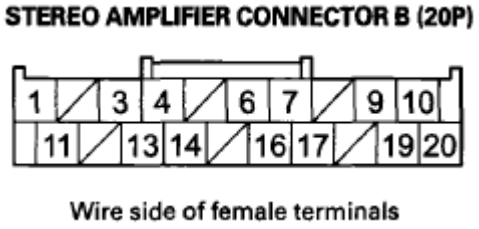


Fig. 143: Checking Continuity Between Stereo Amplifier Connector B (20P) Terminals
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES -Go to step 32.

NO -There is an open in the wire(s) between the stereo amplifier and the audio unit. Replace the affected shielded harness.

32. Check for continuity between body ground and audio unit connector A (24P) and connector B (14P) according to the table.

Audio unit connector	Wire color
A18	RED
A19	GRN
A20	GRY
A21	GRY
A22	RED
A23	GRN
B1	RED
B2	WHT
B3	BLK
B4	RED
B5	WHT
B6	GRY
B8	GRN
B9	GRY
B11	GRN
B12	BLK

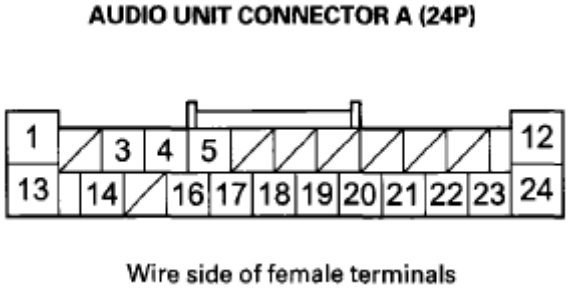


Fig. 144: Checking Continuity Between Body Ground And Audio Unit Connector A (24P)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

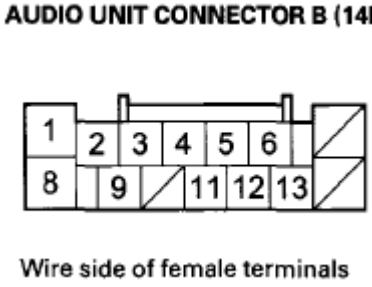


Fig. 145: Checking Continuity Between Body Ground And Audio Unit Connector Identifying B (14P)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES -There is a short to body ground in the wire(s) between the stereo amplifier and the audio unit. Replace the affected shielded harness.

NO -Go to step 33.

33. Check for continuity between the terminals of stereo amplifier connector B (20P) and audio unit connector A (24P) and connector B (14P) according to the table.

From terminals	To terminals	
Audio unit connector	Stereo amplifier connector	Audio unit connector
A20 (GRY)	B17 (RED)	A18 (RED)
	B7 (GRN)	A19 (GRN)
A21 (GRY)	B16 (RED)	A22 (RED)
	B6 (GRN)	A23 (GRN)
B6 (GRY)	B19 (RED)	B4 (RED)
	B20 (WHT)	B5 (WHT)
	B9 (GRN)	B11 (GRN)
	B10 (BLK)	B12 (BLK)
	B14 (RED)	B1 (RED)

B9 (GRY)	B13 (WHT)	B2 (WHT)
	B3 (BLK)	B3 (BLK)
	B4 (GRN)	B8 (GRN)

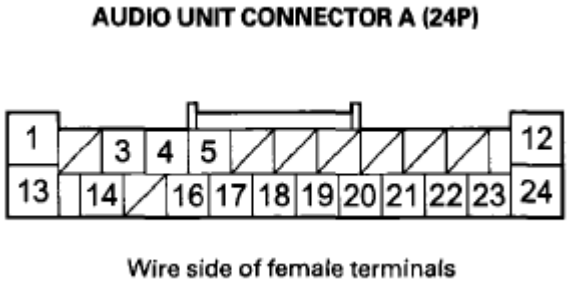


Fig. 146: Checking Continuity Between Terminals Of Audio-Unit Connector A (24P)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

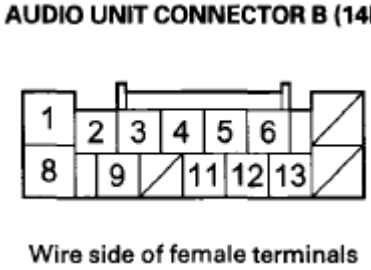


Fig. 147: Checking Continuity Between Terminals Of Audio-Unit Connector B (14P)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

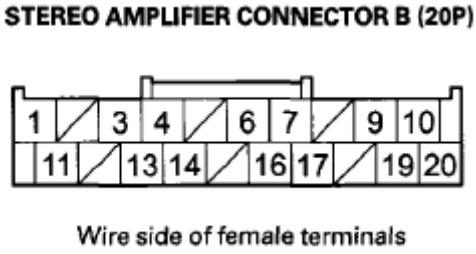


Fig. 148: Checking Continuity Between Terminals Of Stereo Amplifier Connector B (20P)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity between any of the terminals?

YES -There is a short in the wires between the stereo amplifier and the audio unit. Replace the affected shielded harness.

NO -Substitute a known-good stereo amplifier (see **STEREO AMPLIFIER REMOVAL/INSTALLATION**), then reconnect all of the connectors, and recheck. If the symptom/indication goes away, replace the original stereo amplifier (see **STEREO AMPLIFIER REMOVAL/INSTALLATION**). If the symptom/indication is still present, replace the audio unit (see

AUDIO UNIT REMOVAL/INSTALLATION).

AUXILIARY INPUT SOUND IS LOW OR CANNOT BE HEARD (WITH NAVIGATION)

NOTE:

- **Check the vehicle battery condition first (see BATTERY TEST).**
- **Use auxiliary stereo cables with 3.5 mm ends only.**
- **Auxiliary accessories may be played on the audio-navigation unit using the auxiliary input.**
- **Check the connectors for poor connections or loose terminals.**

1. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
2. Turn on the audio system, and connect an auxiliary accessory to the auxiliary input jack.
3. Check the volume operation.

   Is the sound normal?

   YES -Intermittent failure, the system is OK at this time.

   NO -Go to step 4.

4. Make sure the auxiliary accessory volume is set to high.

   Is the volume set to high?

   YES -Go to step 5.

   NO -Raise the auxiliary accessory volume to high. Make sure the audio-navigation unit volume is turned down before retesting.

5. Substitute a known-good auxiliary audio accessory and/or auxiliary stereo cable, and recheck.

   Does the auxiliary audio accessory operate properly?

   YES -Original auxiliary audio accessory or auxiliary stereo cable is faulty.

   NO -Go to step 6.

6. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
7. Remove the USB adapter holder/auxiliary jack assembly (see **USB ADAPTER HOLDER/AUXILIARY JACK ASSEMBLY REPLACEMENT**), and check for poor connection or loose terminals at the auxiliary jack assembly 5P connector.

   Are the connection or terminals OK?

   YES -Go to step 8.

NO -Repair poor connection or loose terminals, and recheck.

8. Disconnect the auxiliary jack assembly 5P connector.
9. Disconnect audio-navigation unit connector B (24P).
10. Check for continuity between audio-navigation unit connector B (24P) and body ground according to the table.

Audio-navigation unit connector	Wire color
B1	RED
B2	BLK
B3	ORN
B13	WHT

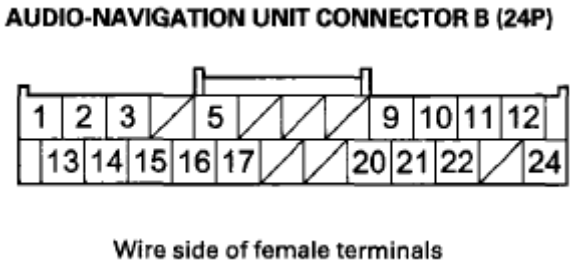


Fig. 149: Checking Continuity Between Audio-Navigation Unit Connector B (24P) And Body Ground According To Table
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES -There is a short to body ground in the wire(s) between the audio-navigation unit and the auxiliary jack assembly. Repair or replace the affected harness.

NO -Go to step 11.

11. Check for continuity between the terminals of audio-navigation unit connector B (24P) according to the table.

From terminal	To terminals
B1 (RED)	B2 (BLK), B13 (WHT), B15 (GRY)
B2 (BLK)	B13 (WHT), B15 (GRY)
B13 (WHT)	B15 (GRY)

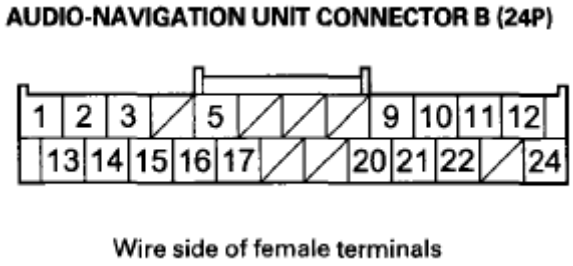


Fig. 150: Checking Continuity Between Terminals Of Audio-Navigation Unit Connector B (24P) According To Table
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity between any of the terminals?

YES -There is a short in the wire(s) between the audio-navigation unit and the auxiliary jack assembly. Replace the affected shielded harness.

NO -Go to step 12.

12. Check for continuity between audio-navigation unit connector B (24P) and the auxiliary jack assembly 5P connector according to the table.

Audio-navigation unit connector	Auxiliary jack assembly connector	Wire color
B1	4	RED
B2	3	BLK
B3	1	ORN
B13	5	WHT
B14	2	YEL

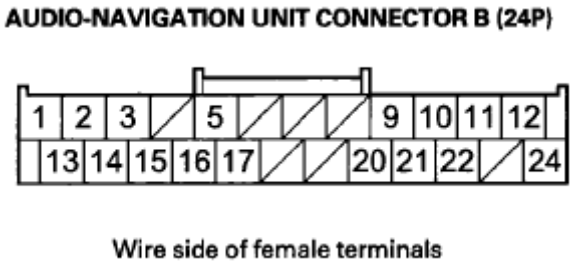


Fig. 151: Checking Continuity Between Audio-Navigation Unit Connector B (24P) Terminals
Courtesy of AMERICAN HONDA MOTOR CO., INC.

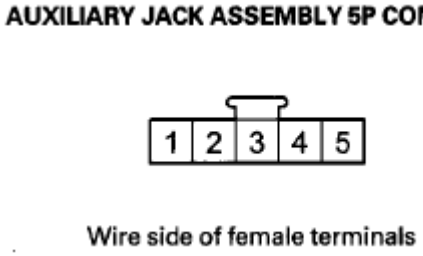


Fig. 152: Checking Continuity Between Auxiliary Jack Assembly 5P Connector Terminals
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES -Substitute a known-good USB adapter holder/auxiliary jack assembly (see **USB ADAPTER HOLDER/AUXILIARY JACK ASSEMBLY REPLACEMENT**), then reconnect all of the connectors, and recheck. If the symptom/indication goes away, replace the original USB adapter holder/auxiliary jack assembly (see **USB ADAPTER HOLDER/AUXILIARY JACK ASSEMBLY REPLACEMENT**). If the symptom/indication is still present, replace the audio-navigation unit (see **AUDIO-NAVIGATION UNIT REMOVAL/INSTALLATION**).

NO -There is an open in the wire(s) between the audio-navigation unit and the auxiliary jack assembly. Repair or replace the affected harness.

AUXILIARY INPUT SOUND IS LOW OR CANNOT BE HEARD (WITHOUT NAVIGATION)

NOTE:

- **Check the vehicle battery condition first (see BATTERY TEST).**
- **Use auxiliary stereo cables with 3.5 mm ends only.**
- **Auxiliary accessories may be played on the audio unit using the auxiliary input.**
- **Check the connectors for poor connections or loose terminals.**

1. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
2. Turn on the audio system, and connect an auxiliary accessory to the auxiliary input jack.
3. Check the volume operation.

   Is the sound normal?

   YES -Intermittent failure, the system is OK at this time.

   NO -Go to step 4.

4. Make sure the auxiliary accessory volume is set to high.

   Is the volume set to high?

YES -Go to step 5.

NO -Raise the auxiliary accessory volume to high. Make sure the audio unit volume is turned down before retesting.

5. Substitute a known-good auxiliary audio accessory and/or auxiliary stereo cable, and recheck.

   Does the auxiliary audio accessory operate properly?

   YES -Original auxiliary audio accessory or auxiliary stereo cable is faulty.

   NO -Go to step 6.

6. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
7. Remove the USB adapter holder/auxiliary jack assembly (see **USB ADAPTER HOLDER/AUXILIARY JACK ASSEMBLY REPLACEMENT**), and check for poor connection or loose terminals at the auxiliary jack assembly 5P connector.

   Are the connection or terminals OK?

   YES -Go to step 8.

   NO -Repair poor connection or loose terminals, and recheck.

8. Disconnect the auxiliary jack assembly 5P connector.
9. Disconnect audio unit connector D (20P).
10. Check for continuity between audio unit connector D (20P) and body ground according to the table.

Audio unit connector	Wire color
D3	BLK
D13	RED
D14	WHT
D15	ORN

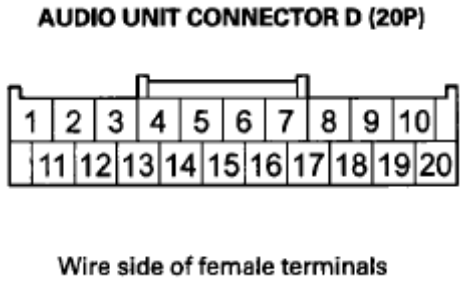


Fig. 153: Checking Continuity Between Audio Unit Connector D (20P) And Body Ground According To Table
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES -There is a short to body ground in the wire(s) between the audio unit and the auxiliary jack assembly. Repair or replace the affected harness.

NO -Go to step 11.

11. Check for continuity between the terminals of audio unit connector D (20P) according to the table.

From terminal	To terminals
D3 (BLK)	D4 (GRY), D13 (RED), D14 (WHT)
D4 (GRY)	D13 (RED), D14 (WHT)
D13 (RED)	D14 (WHT)

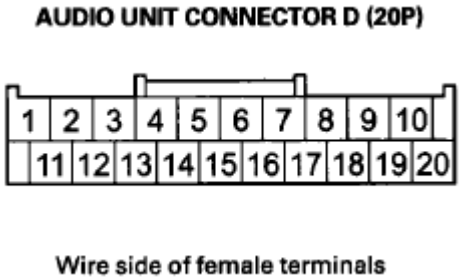


Fig. 154: Checking Continuity Between Terminals Of Audio Unit Connector D (20P) According To Table
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity between any of the terminals?

YES -There is a short in the wire(s) between the audio unit and the auxiliary jack assembly. Replace the affected shielded harness.

NO -Go to step 12.

12. Check for continuity between audio unit connector D (20P) and the auxiliary jack assembly 5P connector according to the table.

Audio unit connector	Auxiliary jack assembly connector	Wire color
D3	3	BLK
D5	2	YEL
D13	4	RED
D14	5	WHT
D15	1	ORN

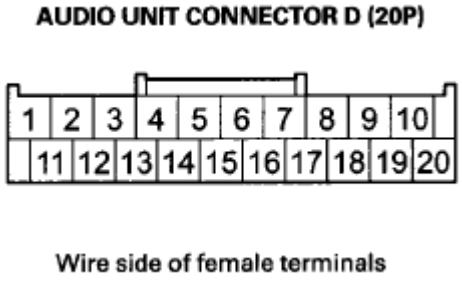


Fig. 155: Checking Continuity Between Audio Unit Connector D (20P) Terminals
Courtesy of AMERICAN HONDA MOTOR CO., INC.

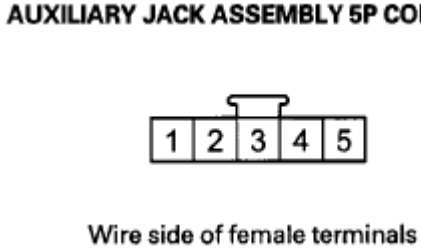


Fig. 156: Checking Continuity Between Auxiliary Jack Assembly 5P Connector Terminals
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES -Substitute a known-good USB adapter holder/auxiliary jack assembly (see **USB ADAPTER HOLDER/AUXILIARY JACK ASSEMBLY REPLACEMENT**), then reconnect all of the connectors, and recheck. If the symptom/indication goes away, replace the original USB adapter holder/auxiliary jack assembly (see **USB ADAPTER HOLDER/AUXILIARY JACK ASSEMBLY REPLACEMENT**). If the symptom/indication is still present, replace the audio unit (see **AUDIO UNIT REMOVAL/INSTALLATION**).

NO -There is an open in the wire(s) between the audio unit and the auxiliary jack assembly. Repair or replace the affected harness.

AUDIO SYSTEM SOUND IS WEAK OR DISTORTED (DISPLAY IS NORMAL) (WITH NAVIGATION)

NOTE:

- **Check the vehicle battery condition first (see BATTERY TEST).**
- **Check the connectors for poor connections or loose terminals.**

1. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
2. Turn on the audio-navigation unit, and check for sound in each mode (AM/FM and CD or DVD).

Is there sound from the speakers, and is the sound quality normal in each mode?

YES -Intermittent failure, the system is OK at this time. Check for loose connections at the audio unit, the

stereo amplifier, and each speaker.

NO -Speakers all work, sound quality is poor:

- If the sound quality is poor only with AM or FM, go to **POOR AM OR FM RADIO RECEPTION OR INTERFERENCE TROUBLESHOOTING** .
- If there is no sound in CD or DVD mode, go to **AUDIO DISC DOES NOT PLAY TROUBLESHOOTING** .
- If the sound is poor in all modes, go to **SOUND QUALITY DIAGNOSIS** .

AUDIO SYSTEM SOUND IS WEAK OR DISTORTED (DISPLAY IS NORMAL) (WITHOUT NAVIGATION)

NOTE:

- **Check the vehicle battery condition first (see BATTERY TEST).**
- **Check the connectors for poor connections or loose terminals.**

1. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
2. Turn on the audio unit, and check for sound in each mode (AM/FM and CD).

Is there sound from the speakers, and is the sound quality normal in each mode?

YES -Intermittent failure. The system is OK at this time. Check for loose connections at the audio unit, the stereo amplifier, and each speaker.

NO -Speakers all work, sound quality is poor:

- If the sound quality is poor only with AM or FM, go to **POOR AM OR FM RADIO RECEPTION OR INTERFERENCE TROUBLESHOOTING** .
- If there is no sound in CD or DVD mode, go to **AUDIO DISC DOES NOT PLAY TROUBLESHOOTING** .
- If the sound is poor in all modes, go to **SOUND QUALITY DIAGNOSIS** .

RADIO PRESET MEMORY IS LOST (WITH NAVIGATION)

NOTE: **If only XM stations are lost, go to XM RADIO PRESET MEMORY IS LOST TROUBLESHOOTING; WITH AcuraLink® (see), WITHOUT AcuraLink® .**

1. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
2. Turn on the audio system, and set each of the radio station preset buttons.

Do each of the buttons set properly?

YES -Go to step 3.

NO -Substitute a known-good audio-navigation switch panel (see **AUDIO-NAVIGATION SWITCH PANEL REMOVAL/INSTALLATION**), and recheck. If the symptom/indication goes away, replace the original audio-navigation switch panel (see **AUDIO-NAVIGATION SWITCH PANEL REMOVAL/INSTALLATION**). If the symptom/indication is still present, replace the audio-navigation unit (see **AUDIO-NAVIGATION UNIT REMOVAL/INSTALLATION**).

3. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode for 1 minute, then back to ON (II), or the ON mode.
4. Test the preset buttons for proper recall operation.

   Do the preset buttons recall the set radio stations?

   YES -Intermittent failure, the system is OK at this time. Check connections at the audio-navigation unit and the audio-navigation switch panel.

   NO -Substitute a known-good audio-navigation unit (including the HDD) (see **AUDIO-NAVIGATION UNIT REMOVAL/INSTALLATION**), and recheck. If the symptom/indication goes away, replace the original audio-navigation unit.

RADIO PRESET MEMORY IS LOST (WITHOUT NAVIGATION)

NOTE: **If only XM stations are lost, go to XM RADIO PRESET MEMORY IS LOST TROUBLESHOOTING .**

1. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
2. Turn on the audio unit, and set each of the radio station preset buttons.

   Do each of the buttons set properly?

   YES -Go to step 3.

   NO -Replace the audio unit (see **AUDIO UNIT REMOVAL/INSTALLATION**).

3. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode for 1 minute, then turn it back to ON (II), or the ON mode.
4. Test the preset buttons for proper recall operation.

   Do the preset buttons recall the set radio stations?

   YES -Intermittent failure, the system is OK at this time. Check connections at the audio unit.

   NO -Replace the audio unit (see **AUDIO UNIT REMOVAL/INSTALLATION**).

VOLUME DOES NOT CHANGE (WITH NAVIGATION)

NOTE:

- **Check the vehicle battery condition first (see BATTERY TEST).**

- **Check the connectors for poor connections or loose terminals.**
- **Set the fader and balance positions to the center.**

1. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
2. Turn on the audio system, and check for sound in each mode (AM/FM and CD or DVD).

   Is the sound normal?

   YES -Go to step 3.

   NO -Go to **SOUND QUALITY DIAGNOSIS** (see) or **NO SOUND IS HEARD FROM THE SPEAKER(S) (DISPLAY IS NORMAL) TROUBLESHOOTING** .

3. Operate the volume knob to see if the volume changes.

   Does the volume change?

   YES -Intermittent failure, the system is OK at this time.

   NO -Go to step 4.

4. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
5. Disconnect the audio-navigation switch panel 24P connector.
6. Disconnect audio-navigation unit connector D (36P).
7. Check for continuity between the audio-navigation switch panel 24P connector and audio-navigation unit connector D (36P) according to the table.

Audio-navigation switch panel connector	Audio-navigation unit connector	Wire color
1	D5	BLU
13	D23	PNK

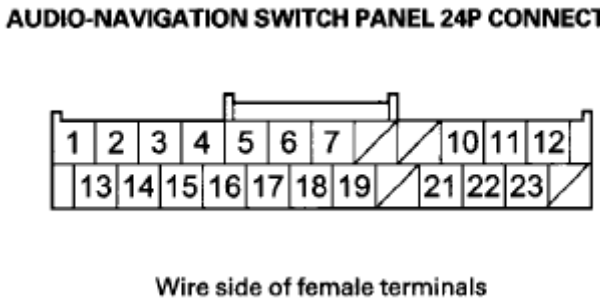
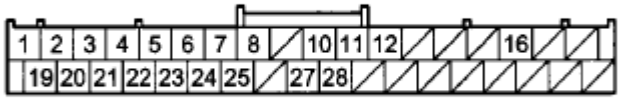


Fig. 157: Checking Continuity Between Audio-Navigation Switch Panel 24P Connector Terminals
Courtesy of AMERICAN HONDA MOTOR CO., INC.

AUDIO-NAVIGATION UNIT CONNECTOR D (36P)



Wire side of female terminals

Fig. 158: Checking Continuity Between Audio-Navigation Unit Connector D (36P) Terminals
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

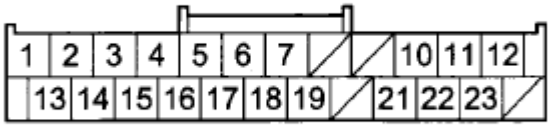
YES -Go to step 8.

NO -There is an open in the wire(s) between the audio-navigation switch panel and the audio-navigation unit. Replace the affected shielded harness.

8. Check for continuity between the audio-navigation switch panel 24P connector and body ground according to the table.

Audio-navigation switch panel connector	Wire color
1	BLU
13	PNK

AUDIO-NAVIGATION SWITCH PANEL 24P CONNECTOR



Wire side of female terminals

Fig. 159: Checking Continuity Between Audio-Navigation Switch Panel 24P Connector And Body Ground According To Table
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES -There is a short to body ground in the wire(s) between the audio-navigation unit and the audio-navigation switch panel. Replace the affected shielded harness.

NO -Go to step 9.

9. Check for continuity between the terminals of the audio-navigation switch panel 24P connector according to the table.

From terminal	To terminals
1 (BLU	2 (GRY), 13(PNK)
2 (GRY)	13 (PNK)

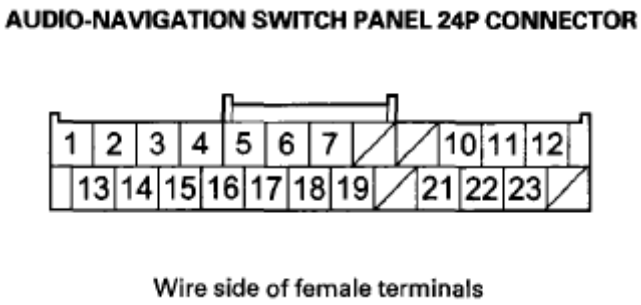


Fig. 160: Checking Continuity Between Terminals Of Audio-Navigation Switch Panel 24P Connector According To Table
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity between any of the terminals?

YES -There is a short in the wires between the audio-navigation switch panel and the audio-navigation unit. Replace the affected shielded harness.

NO -Substitute a known-good audio-navigation unit (including the HDD) (see **AUDIO-NAVIGATION UNIT REMOVAL/INSTALLATION**), then reconnect all of the connectors, and recheck. If the symptom/indication goes away, replace the original audio-navigation unit (see **AUDIO-NAVIGATION UNIT REMOVAL/INSTALLATION**). If the symptom/indication is still present, replace the audio-navigation switch panel (see **AUDIO-NAVIGATION SWITCH PANEL REMOVAL/INSTALLATION**).

VOLUME DOES NOT CHANGE (WITHOUT NAVIGATION)

NOTE:

- **Check the vehicle battery condition first (see BATTERY TEST).**
- **Check the connectors for poor connections or loose terminals.**
- **Set the fader and balance positions to the center.**

1. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
2. Turn on the audio unit, and check for sound in each mode (AM/FM and CD).

Is the sound normal?

YES -Go to step 3.

NO -Go to **SOUND QUALITY DIAGNOSIS** (see) or **NO SOUND IS HEARD FROM THE SPEAKER(S) (DISPLAY IS NORMAL) TROUBLESHOOTING** .

3. Operate the volume knob to see if the volume changes.

   Does the volume change?

   YES -Operation is normal.

   NO -Replace the audio unit (see **AUDIO UNIT REMOVAL/INSTALLATION**).

VOLUME DOES NOT INCREASE WITH SPEED (WITH NAVIGATION)

NOTE:
- **Check the vehicle battery condition first (see BATTERY TEST).**
- **Check the connectors for poor connections or loose terminals.**

1. Test-drive the vehicle at highway speeds, and monitor if the volume increases.

   Does the volume increase?

   YES -Intermittent failure, the system is OK at this time.

   NO -Go to step 2.

2. Verify SVC mode setting in audio-navigation unit sound adjustment set-up.

   Is the SVC set to off?

   YES -Change setting to SVC MID, and recheck.

   NO -Go to step 3.

3. Do the Self-Diagnostic Function for the vehicle speed pulse indication (see **HOW TO CHECK THE AUDIO SYSTEM CONDITION**).
4. With the help of an assistant test-drive the vehicle, and watch the VSP signal.

   Does self-diagnostic function indicate a VSP signal?

   YES -Substitute a known-good audio-navigation unit (including the HDD) (see **AUDIO-NAVIGATION UNIT REMOVAL/INSTALLATION**), and recheck. If the symptom/indication goes away, replace the original audio-navigation unit (see **AUDIO-NAVIGATION UNIT REMOVAL/INSTALLATION**).

   NO -Go to navigation DTC 1306 (Vehicle Speed Pulse) troubleshooting (see **DTC 1305: GYRO ERROR 2**).

VOLUME DOES NOT INCREASE WITH SPEED (WITHOUT NAVIGATION)

NOTE:

- **Check the vehicle battery condition first (see BATTERY TEST).**
- **Check the connectors for poor connections or loose terminals.**

1. Test-drive the vehicle at highway speeds, and monitor if the volume increases.

   Does the volume increase?

   YES -Intermittent failure, the system is OK at this time.

   NO -Go to step 2.

2. Verify SVC mode setting in audio unit sound adjustment set-up.

   Is the SVC set to off?

   YES -Change setting to SVC MID, and recheck.

   NO -Go to step 3.

3. Do the Self-Diagnostic Function for the vehicle speed pulse indication (see **HOW TO CHECK THE AUDIO SYSTEM CONDITION**).
4. With the help of an assistant, test-drive the vehicle and watch the VSP signal.

   Does self-diagnostic function indicate a VSP signal?

   YES -Replace the audio unit (see **AUDIO UNIT REMOVAL/INSTALLATION**).

   NO -Check for B-CAN DTCs (communication BUS Line Error) with the HDS and go to the indicated DTC's troubleshooting. If no B-CAN DTCs or communication bus line errors are found, substitute a known-good audio unit (see **AUDIO UNIT REMOVAL/INSTALLATION**), and recheck. If the symptom/indication goes away, replace the original audio unit (see **AUDIO UNIT REMOVAL/INSTALLATION**).

VOLUME IS TOO HIGH OR TOO LOW WHEN DRIVING AT FREEWAY SPEEDS (WITH NAVIGATION)

NOTE:

- **Check the vehicle battery condition first (see BATTERY TEST).**
- **Check the connectors for poor connections or loose terminals.**

1. Test-drive the vehicle at highway speeds, and monitor volume level.

   Is the volume level too high, or too low?

   YES -Go to step 2.

NO -Intermittent failure, the system is OK at this time.

2. Change SVC mode setting in sound adjustment set-up to SVC MID, and recheck.

   Is the volume level still too high or too low?

   YES -Substitute a known-good audio-navigation unit (including the HDD) (see **AUDIO-NAVIGATION UNIT REMOVAL/INSTALLATION**), and recheck. If the symptom/indication goes away, replace the original audio-navigation unit (see **AUDIO-NAVIGATION UNIT REMOVAL/INSTALLATION**).

   NO -Improper SVC setting for client's sound taste.

VOLUME IS TOO HIGH OR TOO LOW WHEN DRIVING AT FREEWAY SPEEDS (WITHOUT NAVIGATION)

NOTE:
- **Check the vehicle battery condition first (see BATTERY TEST).**
- **Check the connectors for poor connections or loose terminals.**

1. Test-drive the vehicle at highway speeds, and monitor volume level.

   Is the volume level too high, or too low?

   YES -Go to step 2.

   NO -Intermittent failure, the system is OK at this time.

2. Change SVC mode setting in sound adjustment set-up to SVC MID, and recheck.

   Is the volume level still too high or too low?

   YES -Replace the audio unit (see **AUDIO UNIT REMOVAL/INSTALLATION**).

   NO -Improper SVC setting for client's sound taste.

RADIO TUNER DOES NOT CHANGE STATIONS (WITH NAVIGATION)

NOTE:
- **Check the vehicle battery condition first (see BATTERY TEST).**
- **Check the connectors for poor connection or loose terminals.**

1. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
2. Turn on the audio system, and check the audio information on the audio-navigation switch panel display.

   Does the audio information display properly?

   YES -Go to step 3.

NO -Go to **AUDIO UNIT POWER SWITCH WILL NOT TURN ON (NO INFORMATION DISPLAY AND NO SOUND) TROUBLESHOOTING** .

3. Operate the TUNE button to see if the radio station changes.

   Does the radio station change?

   YES -Intermittent failure, the system is OK at this time.

   NO -Go to step 4.

4. Do the Self-Diagnostic Function for the audio button detection (see **HOW TO CHECK THE AUDIO SYSTEM CONDITION**).

   Does the TUNE button respond?

   YES -Substitute a known-good audio-navigation unit (including the HDD) (see **AUDIO-NAVIGATION UNIT REMOVAL/INSTALLATION**), and recheck. If the symptom/indication goes away, replace the original audio-navigation unit (see **AUDIO-NAVIGATION UNIT REMOVAL/INSTALLATION**).

   NO -Substitute a known-good audio-navigation switch panel (see **AUDIO-NAVIGATION SWITCH PANEL REMOVAL/INSTALLATION**), and recheck. If the symptom/indication goes away, replace the original audio-navigation switch panel (see **AUDIO-NAVIGATION SWITCH PANEL REMOVAL/INSTALLATION**).

RADIO TUNER DOES NOT CHANGE STATIONS (WITHOUT NAVIGATION)

NOTE:

- **Check the vehicle battery condition first (see BATTERY TEST).**
- **Check the connectors for poor connection or loose terminals.**

1. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
2. Turn on the audio unit, and check the audio information on the audio-HVAC display.

   Does the audio information display properly?

   YES -Go to step 3.

   NO -Go to **AUDIO UNIT POWER SWITCH WILL NOT TURN ON (NO INFORMATION DISPLAY AND NO SOUND) TROUBLESHOOTING** .

3. Operate the tuning knob to see if the radio station changes.

   Does the radio station change?

   YES -Intermittent failure, the system is OK at this time.

NO -Replace the audio unit (see **AUDIO UNIT REMOVAL/INSTALLATION**).

AUDIO SYSTEM INFORMATION DOES NOT DISPLAY ON THE AUDIO-NAVIGATION SWITCH PANEL DISPLAY (WITH NAVIGATION)

NOTE:

- **Check the vehicle battery condition first (see BATTERY TEST).**
- **Check the connectors for poor connections or loose terminals.**

1. Check for poor connections or loose terminals at the audio-navigation switch panel 24P connector and audio-navigation unit connector D (36P).

   Are the connections or terminals OK?

   YES -Go to step 2.

   NO -Repair poor connections or loose terminals, and recheck.

2. Measure the voltage between audio-navigation switch panel 24P connector terminal No. 22 and body ground.

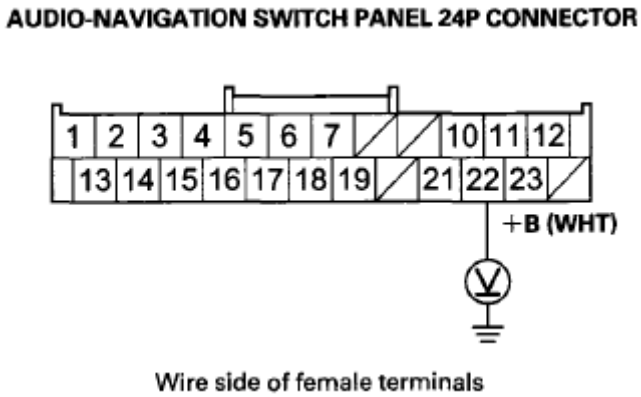


Fig. 161: Measuring Voltage Between Audio-Navigation Switch Panel 24P Connector Terminal No. 22 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

   Is there battery voltage?

   YES -Go to step 4.

   NO -Repair an open in the wire between the No. 15 (10 A) fuse in the under-hood fuse/relay box and the audio-navigation switch panel.

3. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
4. Measure the voltage between audio-navigation switch panel 24P connector terminal No. 10 and body ground.

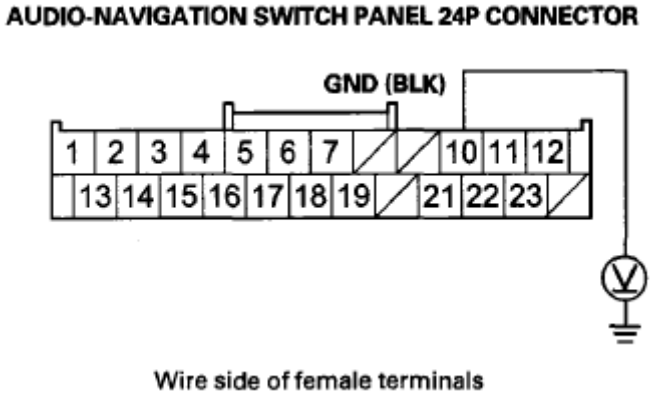


Fig. 162: Measuring Voltage Between Audio-Navigation Switch Panel 24P Connector Terminal No. 10 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there less than 0.2 V?

YES -Go to step 5.

NO -Repair an open or high resistance in the wire between the audio-navigation switch panel and body ground (G501) (see **CONNECTOR TO FUSE/RELAY BOX INDEX**).

5. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
6. Disconnect the audio-navigation switch panel 24P connector.
7. Disconnect audio-navigation unit connector D (36P).
8. Check for continuity between the audio-navigation switch panel 24P connector and audio-navigation unit connector D (36P) according to the table.

Audio-navigation switch panel connector	Audio-navigation unit connector	Wire color
3	D20	BLU
15	D1	YEL
16	D19	BRN

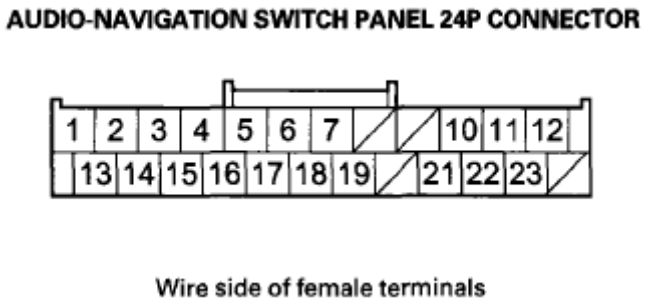


Fig. 163: Checking Continuity Between Audio-Navigation Switch Panel 24P Connector Terminals
Courtesy of AMERICAN HONDA MOTOR CO., INC.

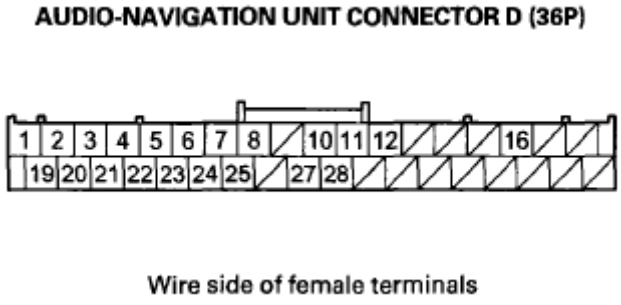


Fig. 164: Checking Continuity Between Audio-Navigation Connector D (36P) Terminals
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES -Go to step 9.

NO -There is an open in the wire(s) between the audio-navigation switch panel and the audio-navigation unit. Repair or replace the affected shielded harness.

9. Check for continuity between the audio-navigation switch panel 24P connector and body ground according to the table.

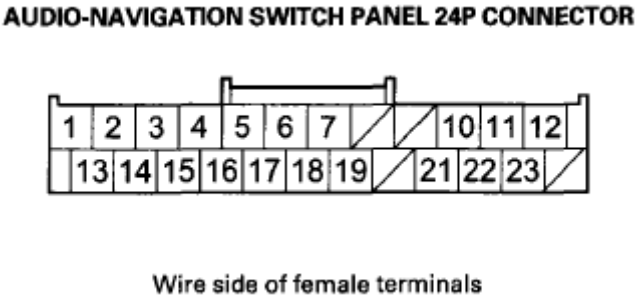


Fig. 165: Checking Continuity Between Audio-Navigation Switch Panel 24P Connector And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES -There is a short in the wire(s) between the audio-navigation switch panel and the audio-navigation unit. Repair or replace the affected shielded harness.

NO -Go to step 10.

10. Check for continuity between the terminals of the audio-navigation switch panel 24P connector according to the table.

From terminal	To terminals

4 (GRY)	15 (YEL), 16(BRN)
15 (YEL)	16 (BRN)

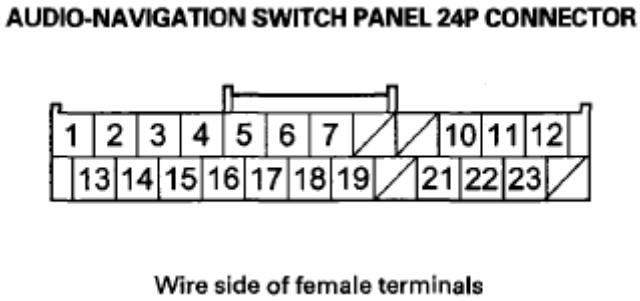


Fig. 166: Checking Continuity Between Terminals Of Audio-Navigation Switch Panel 24P Connector According To Table
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity between any of the terminals?

YES -There is a short in the wires between the audio-navigation switch panel and the audio-navigation unit. Replace the affected shielded harness.

NO -Substitute a known-good audio-navigation switch panel (see **AUDIO-NAVIGATION SWITCH PANEL REMOVAL/INSTALLATION**), then reconnect all of the connectors, and recheck. If the symptom/indication goes away, replace the original audio-navigation switch panel (see **AUDIO-NAVIGATION SWITCH PANEL REMOVAL/INSTALLATION**). If the symptom/indication is still present, replace the audio-navigation unit (see **AUDIO-NAVIGATION UNIT REMOVAL/INSTALLATION**).

AUDIO SYSTEM INFORMATION DOES NOT DISPLAY ON THE AUDIO-HVAC DISPLAY UNIT (WITHOUT NAVIGATION)

NOTE:
- **Check the vehicle battery condition first (see BATTERY TEST).**
- **Check the connectors for poor connections or loose terminals.**

1. Check for poor connections or loose terminals at the audio-HVAC display unit 12P connector and audio unit connector D (20P).

   Are the connections or terminals OK?

   YES -Go to step 3.

   NO -Repair poor connections or loose terminals, and recheck.

2. Measure the voltage between audio-HVAC display unit 12P connector terminal No. 6 and body ground.

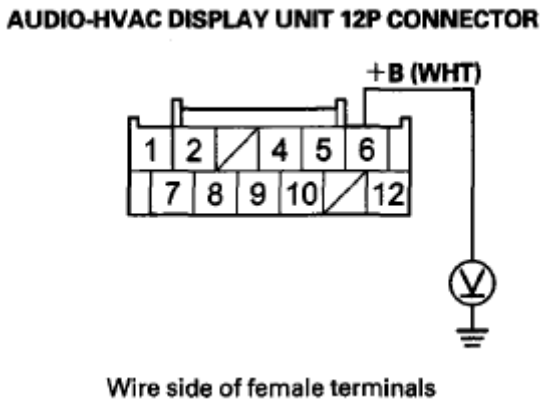


Fig. 167: Measuring Voltage Between Audio-HVAC Display Unit 12P Connector Terminal No. 6 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there battery voltage?

YES -Go to step 4.

NO -Repair an open in the wire between the No. 15 (10 A) fuse in the under-hood fuse/relay box and the audio-HVAC display unit.

3. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
4. Measure the voltage between audio-HVAC display unit 12P connector terminal No. 9 and body ground.

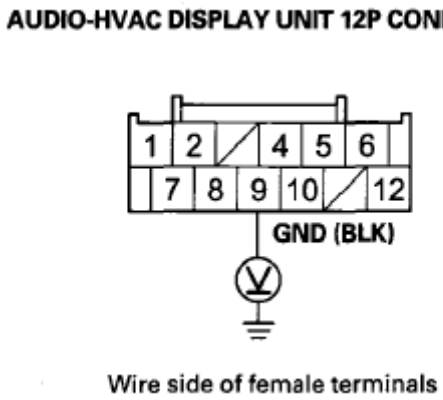


Fig. 168: Measuring Voltage Between Audio-HVAC Display Unit 12P Connector Terminal No. 9 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there less than 0.2 V?

YES -Go to step 5.

NO -Repair an open or high resistance in the wire between the audio-HVAC display unit and body

ground (G501) (see **CONNECTOR TO FUSE/RELAY BOX INDEX**).

5. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
6. Disconnect the audio-HVAC display unit 12P connector.
7. Disconnect audio unit connector D (20P).
8. Check for continuity between audio unit connector D (20P) and the audio-HVAC display unit 12P connector according to the table.

Audio unit connector	Audio-HVAC display unit connector	Wire color
D6	2	BRN
D7	1	YEL
D17	4	BLU

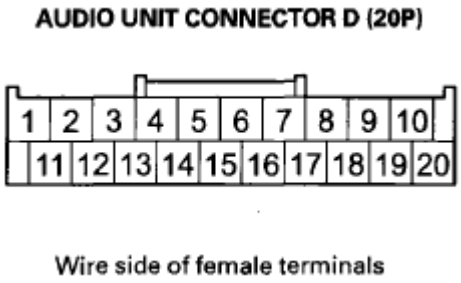


Fig. 169: Checking Continuity Between Audio Unit Connector D (20P) Terminals According To Table
Courtesy of AMERICAN HONDA MOTOR CO., INC.

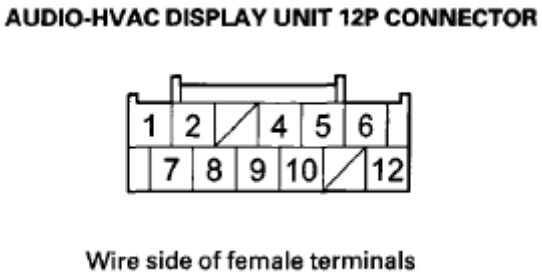


Fig. 170: Checking Continuity Between Audio-HVAC Display Unit 12P Connector Terminals According To Table
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES -Go to step 9.

NO -There is an open in the wire(s) between the audio unit and the audio-HVAC display unit. Repair or replace the affected shielded harness.

9. Check for continuity between the audio unit connector D (20P) and body ground according to the table.

Audio unit connector	Wire color
06	BRN
D7	YEL
D17	BLU

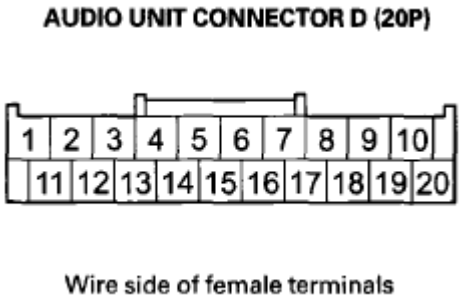


Fig. 171: Checking Continuity Between Audio Unit Connector D (20P) And Body Ground According To Table
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES -There is a short to body ground in the wire(s) between the audio unit and the audio-HVAC display unit. Repair or replace the affected shielded harness.

NO -Go to step 10.

10. Check for continuity between the terminals of audio unit connector D (20P) according to the table.

From terminal	To terminals
D6 (BRN)	D7 (YEL), D16(GRY)
D7 (YEL)	D16 (GRY)

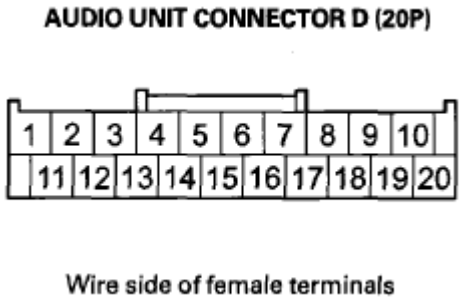


Fig. 172: Checking Continuity Between Terminals Of Audio Unit Connector D (20P) According To Table
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity between any of the terminals?

YES -There is a short in the wires between the audio unit and the audio-HVAC display unit. Replace the affected shielded harness.

NO -Substitute a known-good audio-HVAC display unit (see **AUDIO-HVAC DISPLAY UNIT REMOVAL/INSTALLATION**), then reconnect all of the connectors, and recheck. If the symptom/indication goes away, replace the original audio-HVAC display unit (see **AUDIO-HVAC DISPLAY UNIT REMOVAL/INSTALLATION**). If the symptom/indication is still present, replace the audio unit (see **AUDIO UNIT REMOVAL/INSTALLATION**).

AUDIO-NAVIGATION SWITCH PANEL BUTTON ILLUMINATION DOES NOT WORK (WITH NAVIGATION)

NOTE:

- **Check the vehicle battery condition first (see BATTERY TEST).**
- **Check the connectors for poor connections or loose terminals.**

1. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
2. Turn the combination lighting switch to the parking light position.
3. Check the illumination of the audio-navigation switch panel buttons.

   Are the buttons illuminated?

   YES -Intermittent failure, the system is OK at this time. Check for loose or poor connections at the audio-navigation switch panel 24P connector.

   NO -Go to step 4.

4. Check the illumination of several other buttons not related to the audio system.

   Are the buttons illuminated?

   YES -Go to step 6.

   NO -Troubleshoot the interior lights. Start by checking the No. 6 (7.5 A) fuse in the passenger's under-dash fuse/relay box. If the fuse is OK, check for an open in the wire between passenger's under-dash fuse/relay box and the audio-navigation switch panel.

5. Turn the combination lighting switch to the off position.
6. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
7. Disconnect the audio-navigation switch panel 24P connector.
8. Disconnect the gauge control module 32P connector.
9. Check for continuity between audio-navigation switch panel 24P connector terminals No. 11 and No. 12 and gauge control module 32P connector terminals No. 21 and No. 20 respectively.

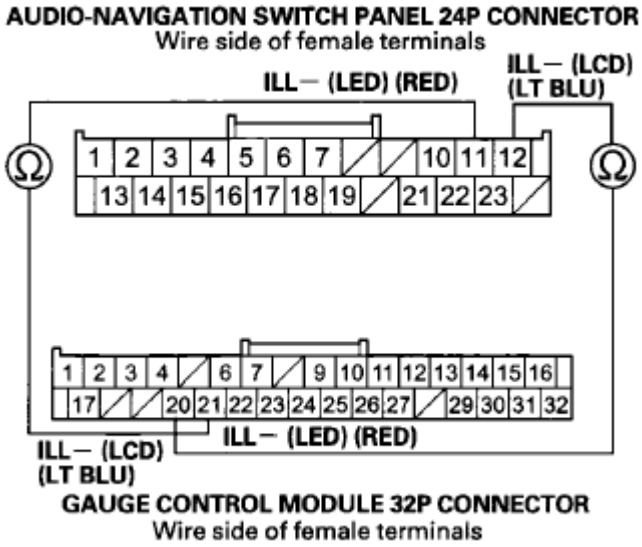


Fig. 173: Checking Continuity Between Audio-Navigation Switch Panel 24P Connector Terminals No. 11 And No. 12
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES -Go to step 10.

NO -Repair an open in the wire between the audio-navigation switch panel and the gauge control module.

10. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
11. With the combination lighting switch to the parking light position, measure the voltage between audio-navigation switch panel 24P connector terminal No. 23 and body ground.

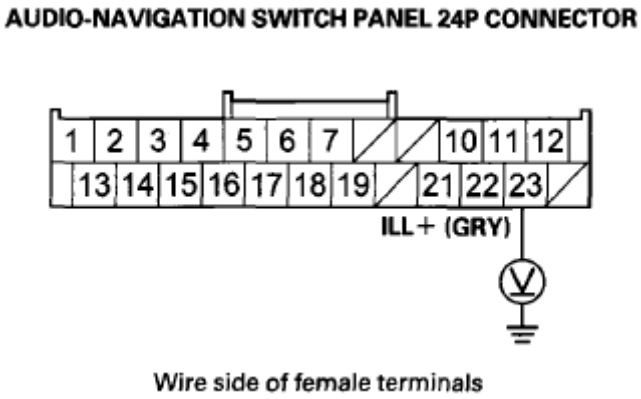


Fig. 174: Measuring Voltage Between Audio-Navigation Switch Panel 24P Connector Terminal No. 23 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there battery voltage?

YES -Substitute a known-good audio-navigation switch panel (see **AUDIO-NAVIGATION SWITCH PANEL REMOVAL/INSTALLATION**), and recheck. If the symptom/indicated goes away, replace the original audio-navigation switch panel (see **AUDIO-NAVIGATION SWITCH PANEL REMOVAL/INSTALLATION**).

NO -Repair an open in the wire between the passenger's under-dash fuse/relay box and the audio-navigation switch panel.

AUDIO SWITCH PANEL BUTTON ILLUMINATION DOES NOT WORK (WITHOUT NAVIGATION)

NOTE:
- **Check the vehicle battery condition first (see BATTERY TEST).**
- **Check the connectors for poor connections or loose terminals.**

1. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
2. Turn the combination lighting switch to the parking light position.
3. Check the illumination of the audio unit buttons.

   Are the buttons illuminated?

   YES -Intermittent failure, the system is OK at this time. Check for loose or poor connections at audio unit connector A (24P).

   NO -Go to step 4.

4. Check the illumination of several other buttons not related to the audio system.

   Are the buttons Illuminated?

   YES -Go to step 6.

   NO -Troubleshoot the interior lights. Start by checking the No. 6 (7.5 A) fuse in the passenger's under-dash fuse/relay box. If the fuse is OK, check for an open in the wire between the passenger's under-dash fuse/relay box and the audio unit.

5. Turn the combination lighting switch to the off position.
6. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
7. Disconnect audio unit connector A (24P).

   NOTE: Eject all the CDs before disconnecting the audio unit to prevent damaging the CD player's load mechanism.

8. Disconnect the gauge control module 32P connector.
9. Check for continuity between audio unit connector A (24P) terminal No. 1 and gauge control module 32P connector terminal No. 21.

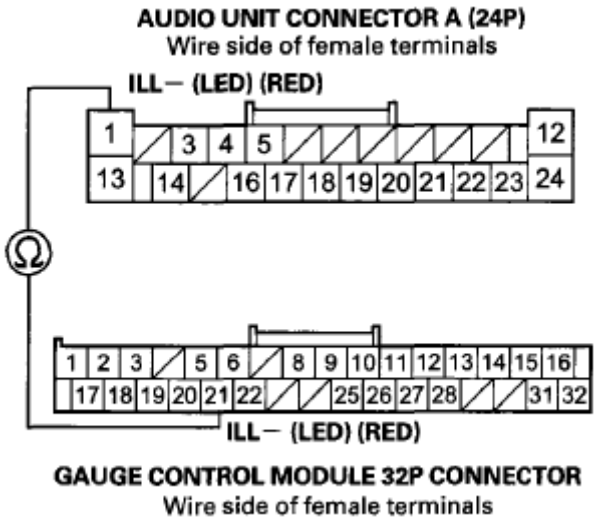


Fig. 175: Checking Continuity Between Audio Unit Connector A (24P) And Gauge Control Module 32P Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES -Go to step 10.

NO -Repair an open in the wire between the audio unit and the gauge control module.

10. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
11. With the combination lighting switch to the parking light position, measure the voltage between audio unit connector A (24P) terminal No. 13 and body ground.

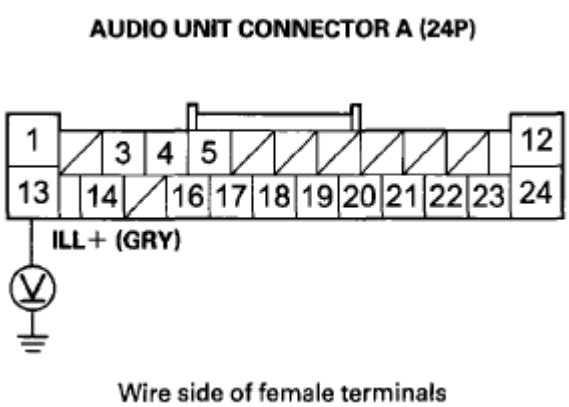


Fig. 176: Measuring Voltage Between Audio Unit Connector A (24P) Terminal No. 13 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there battery voltage?

YES -Replace the audio unit (see **AUDIO UNIT REMOVAL/INSTALLATION**).

NO -Repair an open in the wire between the passenger's under-dash fuse/relay box and the audio unit.

AUDIO REMOTE SWITCH DOES NOT WORK PROPERLY (WITH NAVIGATION)

NOTE:
- **Check the vehicle battery condition first (see BATTERY TEST).**
- **Check the connectors for poor connections or loose terminals.**

1. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
2. Turn on the audio-navigation unit, and check the audio remote switch operation (volume up, volume down, CH (UP), CH (DOWN), MODE).

   Is the audio system operation OK?

   YES -Intermittent failure, the system is OK at this time.

   NO -Go to step 3.

3. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
4. Do the Audio Remote Switch Test (see **AUDIO REMOTE SWITCH TEST**).

   Is the audio remote switch OK?

   YES -Go to step 5.

   NO -Replace the audio remote, HFL-navigation voice control switch (see **STEERING WHEEL DISASSEMBLY/REASSEMBLY**).

5. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
6. Reconnect the audio remote, HFL-navigation voice control switch 12P connector.
7. Disconnect audio-navigation unit connector A (24P).

   NOTE: Eject all the disc(s) before disconnecting the audio-navigation unit to prevent damaging the CD/DVD player's load mechanism.

8. Measure the resistance between audio-navigation unit connector A (24P) terminals No. 5 and No. 16 as specified in the table.

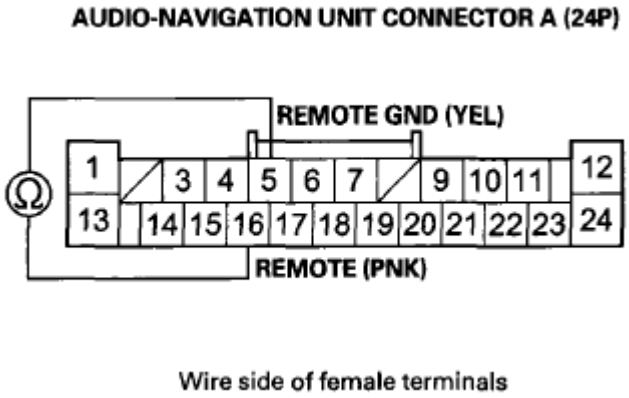


Fig. 177: Measuring Resistance Between Audio-Navigation Unit Connector A (24P) Terminals No. 5 And No. 16
Courtesy of AMERICAN HONDA MOTOR CO., INC.

AUDIO REMOTE SWITCH TABLE

Button held down	VOL DOWN	VOL UP	CH(-)	CH(+)	MODE	No button pressed
Resistance	about 100 ohms	about 357 ohms	about 775 ohms	about 1.7 kohms	about 3.7 kohms	about 10 kohms

Is the resistance OK?

YES -Go to step 9.

NO -Repair a short or high resistance in the wires between the audio-navigation unit and the audio remote switch. If the wires are OK, replace the cable reel (see **CABLE REEL REPLACEMENT**).

9. Disconnect the audio remote, HFL-navigation voice control switch 12P connector.
10. Check for continuity between body ground and audio-navigation unit connector A (24P) terminals No. 5 and No. 16 individually.

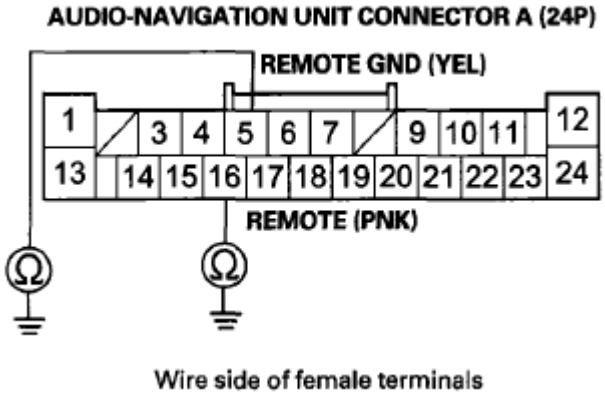


Fig. 178: Checking Continuity Between Body Ground And Audio-Navigation Unit Connector A (24P) Terminals No. 5 And No. 16

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES -Repair a short to body ground in the wire(s) between the audio-navigation unit and the audio remote switch. If the wires are OK, replace the cable reel (see **CABLE REEL REPLACEMENT**).

NO -Substitute a known-good audio-navigation unit (including the HDD) (see **AUDIO-NAVIGATION UNIT REMOVAL/INSTALLATION**), then reconnect all of the connectors, and recheck. If the symptom/indication goes away, replace the original audio-navigation unit (see **AUDIO-NAVIGATION UNIT REMOVAL/INSTALLATION**).

AUDIO REMOTE SWITCH DOES NOT WORK PROPERLY (WITHOUT NAVIGATION)

NOTE:
- **Check the vehicle battery condition first (see BATTERY TEST).**
- **Check the connectors for poor connections or loose terminals.**

1. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
2. Turn on the audio unit, and check the audio remote switch operation (volume up, volume down, CH (UP), CH (DOWN), MODE).

   Is the audio system operation OK?

   YES -Intermittent failure, the system is OK at this time.

   NO -Go to step 3.

3. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
4. Do the Audio Remote Switch Test (see **AUDIO REMOTE SWITCH TEST**).

   Is the audio remote switch OK?

   YES -Go to step 5.

   NO -Replace the audio remote-HFL switch (see **STEERING WHEEL DISASSEMBLY/REASSEMBLY**).

5. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
6. Reconnect the audio remote-HFL switch 12P connector.
7. Disconnect audio unit connector A (24P).

   NOTE: Eject all the CDs before disconnecting the audio unit to prevent damaging the CD player's load mechanism.

8. Measure the resistance between audio unit connector A (24P) terminals No. 5 and No. 16 as specified in

the table.

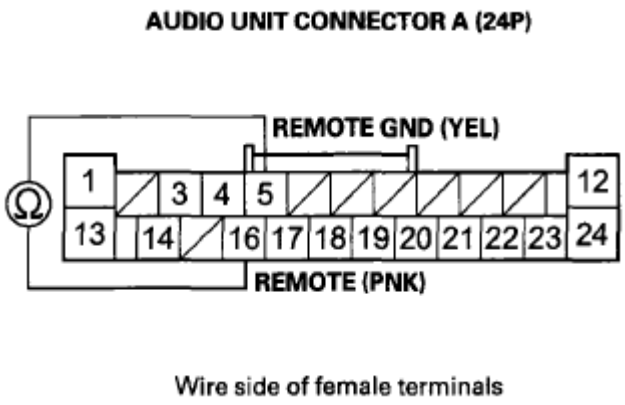


Fig. 179: Measuring Resistance Between Audio Unit Connector A (24P) Terminals No. 5 And No. 16
Courtesy of AMERICAN HONDA MOTOR CO., INC.

AUDIO REMOTE SWITCH TABLE

Button held down	VOL DOWN	VOL UP	CH(-)	CH(+)	MODE	No button pressed
Resistance	about 100 ohms	about 357 ohms	about 775 ohms	about 1.7 kohms	about 3.7 kohms	about 10 kohms

Is the resistance OK?

YES -Go to step 9.

NO -Repair a short or high resistance in the wires between the audio unit and the audio remote switch. If the wires are OK, replace the cable reel (see **CABLE REEL REPLACEMENT**).

9. Disconnect the audio remote-HFL switch 12P connector.
10. Check for continuity between body ground and audio unit connector A (24P) terminals No. 5 and No. 16 individually.

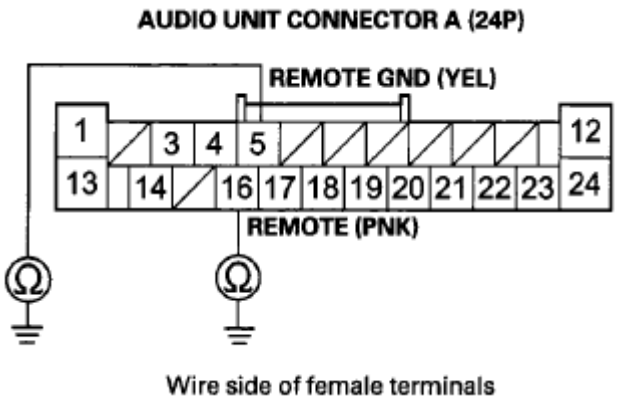


Fig. 180: Checking Continuity Between Body Ground And Audio Unit Connector A (24P) Terminals No. 5 And No. 16
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES -Repair a short to body ground in the wire(s) between the audio unit and the audio remote switch. If the wires are OK, replace the cable reel (see **CABLE REEL REPLACEMENT**).

NO -Replace the audio unit (see **AUDIO UNIT REMOVAL/INSTALLATION**).

AUDIO DISC DOES NOT LOAD (WITH NAVIGATION)

NOTE:

- **Check the vehicle battery condition first (see BATTERY TEST).**
- **Check the connectors for poor connections or loose terminals.**
- **Disc labels should not be used in the audio-navigation unit. They may jam and damage the player mechanism.**
- **Make sure the audio disc is compatible with the system (see the Owner's Manual for more information).**

1. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
2. Insert a known-good disc to see if the symptom can be duplicated.

   Does the disc load?

   YES -Operation is normal. If the disc loads normally, but will not play, go to **AUDIO DISC DOES NOT PLAY TROUBLESHOOTING** (see).

   NO -Go to step 3.

3. Insert another disc.

   Does the disc load?

   YES -The original disc is faulty.

   NO -Substitute a known-good audio-navigation unit (including the HDD) (see **AUDIO-NAVIGATION UNIT REMOVAL/INSTALLATION**), and recheck. If the symptom/indication goes away, replace the original audio-navigation unit (see **AUDIO-NAVIGATION UNIT REMOVAL/INSTALLATION**).

AUDIO DISC DOES NOT LOAD (WITHOUT NAVIGATION)

NOTE:

- **Check the vehicle battery condition first (see BATTERY TEST).**
- **Check the connectors for poor connections or loose terminals.**

- **Disc labels should not be used in the audio unit. They may jam and damage the player mechanism.**
- **Make sure the audio disc is compatible with the system (see the Owner's Manual for more information).**

1. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
2. Insert a known-good disc to see if the symptom can be duplicated.

   Does the disc load?

   YES -Operation is normal. If the disc loads normally, but will not play, go to **AUDIO DISC DOES NOT PLAY TROUBLESHOOTING** (see).

   NO -Go to step 3.

3. Insert another disc.

   Does the disc load?

   YES -The original disc is faulty.

   NO -Replace the audio unit (see **AUDIO UNIT REMOVAL/INSTALLATION**).

AUDIO DISC DOES NOT EJECT (WITH NAVIGATION)

NOTE:

- **Check the vehicle battery condition first (see BATTERY TEST).**
- **Disc labels should not be used in the audio-navigation unit. They may jam and damage the player mechanism.**
- **Check the connectors for poor connections or loose terminals**

1. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
2. Turn on the audio system.

   Does the system turn on?

   YES -Go to step 3.

   NO -Go to **AUDIO UNIT POWER SWITCH WILL NOT TURN ON (NO INFORMATION DISPLAY AND NO SOUND) TROUBLESHOOTING** (see).

3. Check to see if the disc ejects correctly with no binding when you push the EJECT button.

   Does the disc eject properly?

   YES -Operation is normal.

NO -Substitute a known-good audio-navigation unit (including the HDD) (see **AUDIO-NAVIGATION UNIT REMOVAL/INSTALLATION**), and recheck. If the symptom/indication goes away, replace the original audio-navigation unit (see **AUDIO-NAVIGATION UNIT REMOVAL/INSTALLATION**).

AUDIO DISC DOES NOT EJECT (WITHOUT NAVIGATION)

NOTE:

- **Check the vehicle battery condition first (see BATTERY TEST).**
- **Disc labels should not be used in the audio unit. They may jam and damage the player mechanism.**
- **Check the connectors for poor connections or loose terminals**

1. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
2. Turn on the audio unit.

   Does the audio unit turn on?

   YES -Go to step 3.

   NO -Go to **AUDIO UNIT POWER SWITCH WILL NOT TURN ON (NO INFORMATION DISPLAY AND NO SOUND) TROUBLESHOOTING** .

3. Check to see if the disc ejects correctly with no binding when you push the EJECT button.

   Does the disc eject properly?

   YES -Operation is normal.

   NO -Replace the audio unit (see **AUDIO UNIT REMOVAL/INSTALLATION**).

AUDIO DISC CHANGER DOES NOT LOAD ALL SIX DISCS (WITHOUT NAVIGATION)

NOTE:

- **Check the vehicle battery condition first (see BATTERY TEST).**
- **Check the connectors for poor connections or loose terminals.**
- **Disc labels should not be used in the audio unit. They may jam and damage the player mechanism.**

1. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
2. Try loading six discs into the audio unit (in-dash disc changer).

   Does the audio unit accept all six discs?

   YES -Intermittent failure, the audio unit is OK at this time.

   NO -Go to step 3.

3. Try loading the disc player with six known-good discs.

   Does the audio unit (in-dash disc changer) accept all six discs?

   YES -At least one of the original discs is faulty.

   NO -Replace the audio unit (in-dash disc changer) (see **AUDIO UNIT REMOVAL/INSTALLATION**).

AUDIO DISC CHANGER DOES NOT MOVE BETWEEN DISCS (WITHOUT NAVIGATION)

NOTE:

- **Check the vehicle battery condition first (see BATTERY TEST).**
- **Check the connectors for poor connections or loose terminals.**
- **Disc labels should not be used in the audio unit. They may jam and damage the player mechanism.**

1. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
2. Insert six discs into the audio unit (in-dash disc changer), and see if the changer moves between discs.

   Does the changer operate normally?

   YES -Intermittent failure, the disc changer is OK at this time.

   NO -Go to step 3.

3. Insert six known-good discs into the audio unit.

   Does the changer operate normally?

   YES -At least one of the original discs is faulty.

   NO -Replace the audio unit (in-dash disc changer) (see **AUDIO UNIT REMOVAL/INSTALLATION**).

   Special Tools Required

   Diagnostic CD 07AAZ-SDBA100

AUDIO DISC DOES NOT PLAY (WITH NAVIGATION)

NOTE:

- **Check the vehicle battery condition first (see BATTERY TEST).**
- **Check the connectors for poor connections or loose terminals.**
- **Disc labels should not be used in the audio-navigation unit. They may jam and damage the player mechanism.**

1. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
2. Insert a disc into the audio-navigation unit.

   Does the disc load?

   YES -Go to step 3.

   NO -Go to **AUDIO DISC DOES NOT LOAD TROUBLESHOOTING** .

3. Insert a known-good disc to see if the symptom can be duplicated.

   Does the disc play?

   YES -Operation is normal.

   NO -Go to step 4

4. Insert the audio diagnostic CD (T/N 07AAZ-SDBA100) into the audio-navigation unit.

   Does the disc play?

   YES -The original disc is faulty or has an unreadable format.

   NO -Substitute a known-good audio-navigation unit (including the HDD) (see **AUDIO-NAVIGATION UNIT REMOVAL/INSTALLATION**), and recheck. If the symptom/indication goes away, replace the original audio-navigation unit (see **AUDIO-NAVIGATION UNIT REMOVAL/INSTALLATION**).

   Special Tools Required

   Diagnostic CD 07AAZ-SDBA100

AUDIO DISC DOES NOT PLAY (WITHOUT NAVIGATION)

NOTE:

- **Check the vehicle battery condition first (see BATTERY TEST).**
- **Check the connectors for poor connections or loose terminals.**
- **Disc labels should not be used in the audio unit. They may jam and damage the player mechanism.**

1. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
2. Insert a disc into the audio unit.

   Does the disc load?

   YES -Go to step 3.

NO -Go to **AUDIO DISC DOES NOT LOAD TROUBLESHOOTING** .

3. Insert a known-good disc to see if the symptom can be duplicated.

   Does the disc play?

   YES -Operation is normal.

   NO -Go to step 4.

4. Insert the audio diagnostic CD (T/N 07AAZ-SDBA100) into the audio unit.

   Does the disc play?

   YES -The original disc is faulty or has an unreadable format.

   NO -Replace the audio unit (see **AUDIO UNIT REMOVAL/INSTALLATION**).

   Special Tools Required

   - Diagnostic CD 07AAZ-SDBA100
   - Skip Test CD 07AAZ-SDBA200
   - Skip Test CD 07AAZ-SDBA300

AUDIO DISC SKIPS (WITH NAVIGATION)

NOTE:

- **Check the vehicle battery condition first (see BATTERY TEST).**
- **Check the connectors for poor connections or loose terminals.**
- **Disc labels should not be used in the audio-navigation unit. They may jam and damage the player mechanism.**

1. Confirm the vehicles tires are properly inflated.
2. Check the client's disc for scratches and fingerprints.

   NOTE: The following test should be done with the audio system bass and treble set to the client's listening settings. When comparing to known-good vehicles, do the comparison on the same model and trim level.

3. Test-drive the vehicle to identify when the client's disc skips. The audio diagnostic CD (T/N 07AAZ-SDBA100) can be used if the client's disc is not available; use tracks 10-12.

   Does the disc skip?

   YES -Go to step 4.

NO -Operation is normal.

4. Compare the client's disc that skips to a known-good vehicle under the same conditions.

   Does the disc skip in the known-good vehicle under the same conditions?

   YES -The disc player operation is normal, the problem is with the client's disc.

   NO -Go to step 5.

   NOTE: Do the following test with vehicle parked and the engine running.

5. Insert the diagnostic skip test CD (T/N 07AAZ-SDBA300). Play tracks 2-11, and note on which track number(s) the disc starts skipping. Do the same test on a known-good vehicle.

   Does the disc skip on the same track(s) as the known-good vehicle?

   YES -Operation is normal.

   NO -Go to step 6

6. Insert the diagnostic skip test CD (T/N 07AAZ-SDBA200). Play tracks 7-11 and tracks 13-15, and note on which track number(s) the disc starts skipping. Do the same test on a known-good vehicle.

   Does the disc skip on the same track number(s) as the known-good vehicle?

   YES -Operation is normal.

   NO -Substitute a known-good audio-navigation unit (including the HDD) (see **AUDIO-NAVIGATION UNIT REMOVAL/INSTALLATION**), and recheck. If the symptom/indication goes away, replace the original audio-navigation unit (see **AUDIO-NAVIGATION UNIT REMOVAL/INSTALLATION**).

   Special Tools Required

   - Diagnostic CD 07AAZ-SDBA100
   - Skip Test CD 07AAZ-SDBA200
   - Skip Test CD 07AAZ-SDBA300

AUDIO DISC SKIPS (WITHOUT NAVIGATION)

NOTE:

- **Check the vehicle battery condition first (see BATTERY TEST).**
- **Check the connectors for poor connections or loose terminals.**
- **Disc labels should not be used in the audio unit. They may jam and damage the player mechanism.**

1. Confirm the vehicles tires are properly inflated.
2. Check the client's disc for scratches and fingerprints.

NOTE: The following test should be done with the audio system bass and treble set to the client's listening settings. When comparing to known-good vehicles, do the comparison on the same model and trim level.

3. Test-drive the vehicle to identify when the client's disc skips. The audio diagnostic CD (T/N 07AAZ-SDBA100) can be used if the client's CD is not available; use tracks 10-12.

   Does the disc skip?

   YES -Go to step 4.

   NO -Operation is normal.

4. Compare the client's CD that skips to a known-good vehicle under the same conditions.

   Does the disc skip in the known-good vehicle under the same conditions?

   YES -The disc player operation is normal, the problem is with the client's disc.

   NO -Go to step 5.

NOTE: Do the following test with vehicle parked and the engine running.

5. Insert the diagnostic skip test CD (T/N 07AAZ-SDBA300). Play tracks 2-11, and note on which track number(s) the disc starts skipping. Do the same test on a known-good vehicle.

   Does the disc skip on the same track(s) as the known-good vehicle?

   YES -Operation is normal.

   NO -Go to step 6

6. Insert the diagnostic skip test CD (T/N 07AAZ-SDBA200). Play tracks 7-11 and tracks 13-15, and note on which track number(s) the disc starts skipping. Do the same test on a known-good vehicle.

   Does the disc skip on the same track number(s) as the known-good vehicle?

   YES -Operation is normal.

   NO -Substitute a known-good audio unit (see **AUDIO UNIT REMOVAL/INSTALLATION**), and recheck. If the symptom/indication goes away, replace the original audio unit (see **AUDIO UNIT REMOVAL/INSTALLATION**).

AUDIO UNIT BUTTON DOES NOT WORK (WITH NAVIGATION)

NOTE:

- **Check the vehicle battery condition first (see BATTERY TEST).**
- **Check the connectors for poor connections or loose terminals.**

1. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
2. Press the VOLUME/POWER knob on.

   Does the audio system turn on?

   YES -Go to step 3.

   NO -Go to **AUDIO UNIT POWER SWITCH WILL NOT TURN ON (NO INFORMATION DISPLAY AND NO SOUND) TROUBLESHOOTING** .

3. Rotate the VOLUME/POWER knob to see if the volume changes.

   Does the volume change?

   YES -Go to step 4.

   NO -Go to **VOLUME DOES NOT CHANGE TROUBLESHOOTING** .

4. Operate all buttons in the appropriate switch list.

   Switch list

   AM/FM, XM, TITLE, *Musical Note / Speaker Symbol* , DISC, HDD/AUX, Preset 1-6, CATEGORY +/-, SKIP, TUNE, SCAN, A.SEL

   Do all the items in the appropriate switch list work properly?

   YES -Intermittent failure, the system is OK at this time.

   NO -If the all buttons do not respond, go to step 5. If not, substitute a known-good audio-navigation switch panel (see **AUDIO-NAVIGATION SWITCH PANEL REMOVAL/INSTALLATION**), and recheck. If the symptom/indication goes away, replace the original audio-navigation switch panel (see **AUDIO-NAVIGATION SWITCH PANEL REMOVAL/INSTALLATION**). If the symptom/indication is still present, replace the audio-navigation unit (see **AUDIO-NAVIGATION UNIT REMOVAL/INSTALLATION**).

5. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
6. Disconnect the audio-navigation switch panel 24P connector.
7. Disconnect audio-navigation unit connector D (36P).
8. Check for continuity between the audio-navigation switch panel 24P connector and audio-navigation unit

connector D (36P) according to the table.

Audio-navigation switch panel connector	Audio-navigation unit connector	Wire color
6	D21	LT BLU
18	D3	PUR

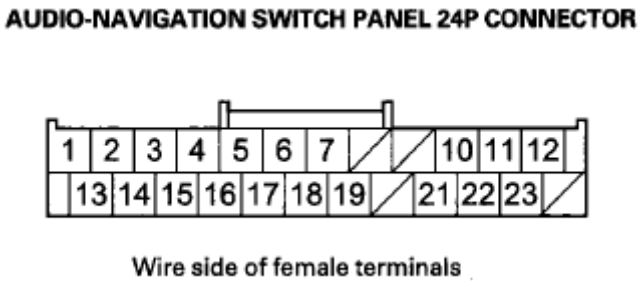


Fig. 181: Checking Continuity Between Audio-Navigation Switch Panel 24P Connector Terminals
Courtesy of AMERICAN HONDA MOTOR CO., INC.

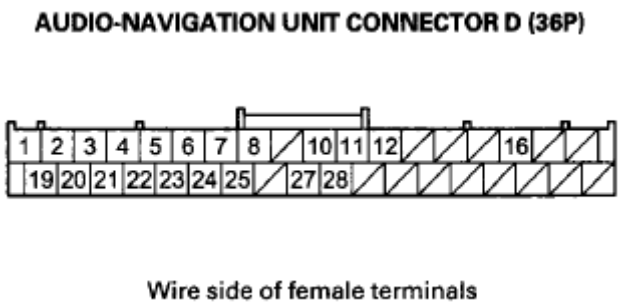


Fig. 182: Checking Continuity Between Audio-Navigation Unit Connector D (36P) Terminals
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES -Go to step 9.

NO -There is an open in the wire(s) between the audio-navigation switch panel and the audio-navigation unit. Replace the affected shielded harness.

9. Check for continuity between the audio-navigation switch panel 24P connector and body ground according to the table.

Audio-navigation switch panel connector	Wire color
6	LT BLU
18	PUR

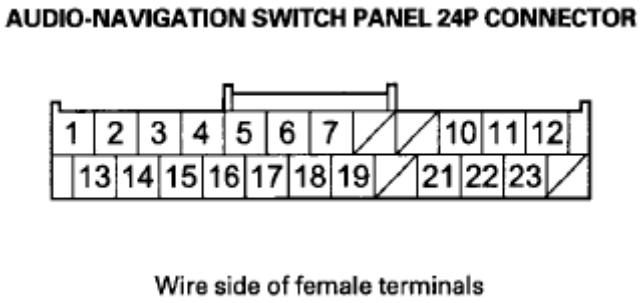


Fig. 183: Checking Continuity Between Audio-Navigation Switch Panel 24P Connector And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES -There is a short to body ground in the wire(s) between the audio-navigation switch panel and the audio-navigation unit. Replace the affected shielded harness.

NO -Go to step 10.

10. Check for continuity between the terminals of the audio-navigation switch panel 24P connector according to the table.

From terminal	To terminals
5 (GRY)	6 (LT BLU), 18 (PUR)
6 (LT BLU)	18 (PUR)

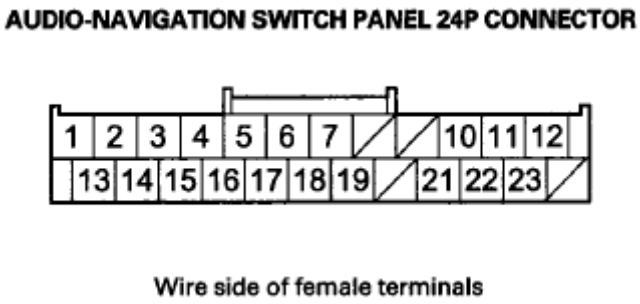


Fig. 184: Checking Continuity Between Terminals Of Audio-Navigation Switch Panel 24P Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity between any of the terminals?

YES -There is a short in the wires between the audio-navigation switch panel and the audio-navigation unit. Replace the affected shielded harness.

NO -Substitute a known-good audio-navigation switch panel (see **AUDIO-NAVIGATION SWITCH**

PANEL REMOVAL/INSTALLATION), and recheck. If the symptom/indication goes away, replace the original audio-navigation switch panel (see **AUDIO-NAVIGATION SWITCH PANEL REMOVAL/INSTALLATION**). If the symptom/indication is still present, replace the audio-navigation unit (see **AUDIO-NAVIGATION UNIT REMOVAL/INSTALLATION**).

AUDIO UNIT BUTTON DOES NOT WORK (WITHOUT NAVIGATION)

NOTE:

- **Check the vehicle battery condition first (see BATTERY TEST).**
- **Check the connectors for poor connections or loose terminals.**

1. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
2. Press the VOLUME/POWER knob on.

   Does the audio unit turn on?

   YES -Go to step 3.

   NO -Go to **AUDIO UNIT POWER SWITCH WILL NOT TURN ON (NO INFORMATION DISPLAY AND NO SOUND) TROUBLESHOOTING** .

3. Operate all buttons in the appropriate switch list.

   Switch list

   AM/FM, XM, CD, AUX, TITLE, CLOCK, Preset 1-6, CATEGORY +/-, SKIP, SCAN, A.SEL, RETURN, SETUP, *Musical Note / Speaker Symbol* , SEL, VOL

   Do all the items in the appropriate switch list work properly?

   YES -Intermittent failure, the system is OK at this time.

   NO -Replace the audio unit (see **AUDIO UNIT REMOVAL/INSTALLATION**).

AUDIO UNIT DISC INDICATOR DOES NOT WORK (WITH NAVIGATION)

NOTE:

- **Check the vehicle battery condition first (see BATTERY TEST).**
- **Check the connectors for poor connections or loose terminals.**
- **Discs with labels should not be used in the audio-navigation unit. They may jam and damage the player mechanism.**

1. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
2. Turn on the audio system.
3. Insert a known-good disc or press the EJECT button.

Is the DISC indicator (LED) indicated?

YES -Intermittent failure, the system is OK at this time. Check for loose or poor connections at the audio-navigation unit and the audio-navigation switch panel.

NO -Substitute a known-good audio-navigation switch panel (see **AUDIO-NAVIGATION SWITCH PANEL REMOVAL/INSTALLATION**), and recheck. If the symptom/indication goes away, replace the original audio-navigation switch panel (see **AUDIO-NAVIGATION SWITCH PANEL REMOVAL/INSTALLATION**). If the symptom/indication is still present, replace the audio-navigation unit (see **AUDIO-NAVIGATION UNIT REMOVAL/INSTALLATION**).

AUDIO UNIT DISC INDICATOR DOES NOT WORK (WITHOUT NAVIGATION)

NOTE:

- **Check the vehicle battery condition first (see BATTERY TEST).**
- **Check the connectors for poor connections or loose terminals.**
- **Discs with labels should not be used in the audio unit. They may jam and damage the player mechanism.**

1. Turn on the audio unit.
2. Insert a known-good disc or press the EJECT button.

Is the DISC indicator (LED) indicated?

YES -Intermittent failure, the system is OK at this time.

NO -Replace the audio unit (see **AUDIO UNIT REMOVAL/INSTALLATION**).

USB DEVICE DOES NOT FUNCTION (WITH NAVIGATION)

NOTE:

- **Check the vehicle battery condition first (see BATTERY TEST).**
- **Check the connectors for poor connections or loose terminals.**
- **Check the USB device requirement:**
  - **Mass-storage class ready digital audio player with USB 2.0 port**
  - **More than 256 MB of RAM**
  - **Support MP3, WMA, and AAC (encoded with the iTunes) files, DRM files are not supported**
- **Not all players and player functions work with the USB adapter. Please see the Owner's Manual for more information. Always test the clients USB device in a known-good vehicle of the same year and trim (if possible). Technologies change and are updated frequently which may result that USB devices may work in newer vehicles, but not in order vehicles of the same model.**
- **If UNSUPPORTED appears on the display, the vehicle is OK, there is a software problem with the USB device.**

1. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
2. Turn on the audio system.
3. Press the HDD/AUX button, and check if it changes to USB mode.

   NOTE: Do not connect the USB device.

   Is USB NO DATA displayed in the audio display?

   YES -Go to step 5.

   NO -Go to step 4.

4. Go into the System Diagnostic Mode (see **SYSTEM DIAGNOSTIC MODE**), and check the System Link (see **SYSTEM LINK**).

   Is the USB icon green?

   YES -Substitute a known-good audio-navigation unit (including the HDD) (see **AUDIO-NAVIGATION UNIT REMOVAL/INSTALLATION**), and recheck. If the symptom/indication goes away, replace the original audio-navigation unit (see **AUDIO-NAVIGATION UNIT REMOVAL/INSTALLATION**).

   NO -Go to step 11.

5. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
6. Connect the client's USB device to a known-good vehicle (same year/trim) that is equipped with a USB adapter, and check the USB device operation.

   Is the USB device working properly in the known-good vehicle?

   YES -Go to step 7.

   NO -If the audio display displays UNSUPPORTED or MEDIA ERROR, the USB device may not be supported or is defective. If the audio display displays USB NO MUSIC, the USB device may have no music files or wrong type music files are on the device. See the Owner's Manual for details on USB device requirements and approved file types.

7. On the client's vehicle, connect the client's USB device to the USB port.
8. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
9. Turn on the audio system.
10. Check the USB device operation in the client's vehicle.

    Does the USB device work properly in the client's vehicle?

    YES -Intermittent failure, the system is OK at this time. Inspect the connectors of the USB device, USB port and USB adapter for wear.

NO -Check the navigation system hard error code (see **HOW TO CHECK ERROR HISTORY (NAVIGATION DTCS)**).

11. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
12. Disconnect audio-navigation unit connector F (7P).
13. Check for continuity between audio-navigation unit connector F (7P) terminals No. 6 and No. 7.

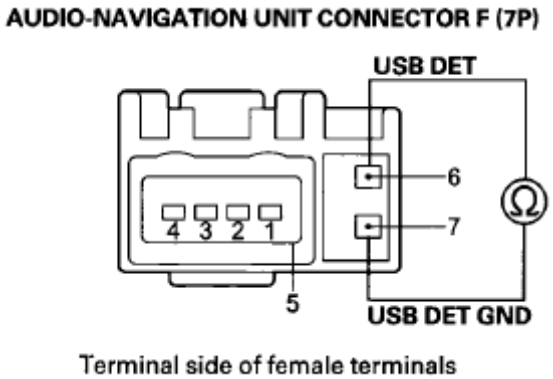


Fig. 185: Checking Continuity Between Audio-Navigation Unit Connector F (7P) Terminals No. 6 And No. 7
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES -Substitute a known-good audio-navigation unit (including the HDD) (see **AUDIO-NAVIGATION UNIT REMOVAL/INSTALLATION**), and recheck. If the symptom/indication goes away, replace the original audio-navigation unit (see **AUDIO-NAVIGATION UNIT REMOVAL/INSTALLATION**).

NO -Replace the USB main harness, then recheck.

USB DEVICE DOES NOT FUNCTION (WITHOUT NAVIGATION)

NOTE:

- **Check the vehicle battery condition first (see BATTERY TEST).**
- **Check the connectors for poor connections or loose terminals.**
- **Check the USB device requirement:**
  - **Mass-storage class ready digital audio player with USB 2.0 port**
  - **More than 256 MB of RAM**
  - **Support MP3, WMA, and AAC (encoded with the iTunes) files, DRM files are not supported**
- **Not all players and player functions work with the USB adapter. Please see the Owner's Manual for more information. Always test the clients USB device in a known-good vehicle of the same year and trim (if possible). Technologies change and are updated frequently which may result that USB devices may work in newer vehicles, but not in order vehicles of the**

same model.

- **If UNSUPPORTED appears on the display, the vehicle is OK, there is a software problem with the USB device.**

1. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
2. Turn on the audio unit.
3. Press the AUX button to select USB mode.

NOTE: Do not connect the USB device.

Is USB NO DATA displayed in the audio display?

YES -Go to step 4.

NO -Go to step 16.

4. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
5. Connect the client's USB device to a known-good vehicle (same year/trim) that is equipped with a USB adapter, and check the USB device operation.

Is the USB device working properly in the known-good vehicle?

YES -Go to step 6.

NO -If the audio display displays UNSUPPORTED or MEDIA ERROR, the USB device may not be unsupported or is defective. If the audio display displays USB NO MUSIC, the USB device may have no music files or wrong type music files are on the device. See the Owner's Manual for details on USB device requirements and approved file types.

6. On the client's vehicle, connect the client's USB device to the USB port.
7. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
8. Turn on the audio unit.
9. Check the USB device operation in the client's vehicle.

Does the USB device work properly in the client's vehicle?

YES -Intermittent failure, the system is OK at this time. Inspect the connectors of the USB device, USB port and USB adapter for wear.

NO -Go to step 10.

10. Turn the ignition switch to LOCK(0), or press the engine start/stop button to select the OFF mode.
11. On the client's vehicle, remove the USB device.
12. Disconnect USB adapter control unit connector B (5P).

13. Check for continuity between USB adapter control unit connector B (5P) and the USB port 5P connector according to the table.

USB adapter control unit connector	USB port connector
B1	4
B2	3
B3	2
B4	1
B5	5



Fig. 186: Checking Continuity Between USB Adapter Control Unit Connector B (5P) Terminals
Courtesy of AMERICAN HONDA MOTOR CO., INC.

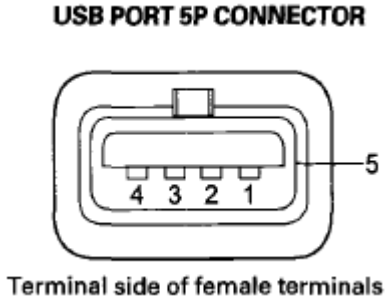


Fig. 187: Checking Continuity Between USB Port 5P Connector Terminals
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES -Replace the USB adapter control unit (see **USB ADAPTER CONTROL UNIT REPLACEMENT**), then recheck.

NO -Go to step 14.

14. Disconnect the USB adapter 5P connector.
15. Check for continuity between the USB adapter 5P connector and the USB port 5P connector according to the table.

USB adapter connector	USB port connector
1	4
2	3
3	2
4	1
5	5

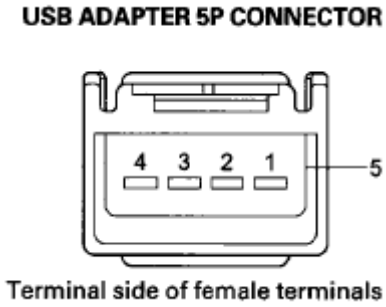


Fig. 188: Checking Continuity Between USB Adapter 5P Connector Terminals
Courtesy of AMERICAN HONDA MOTOR CO., INC.

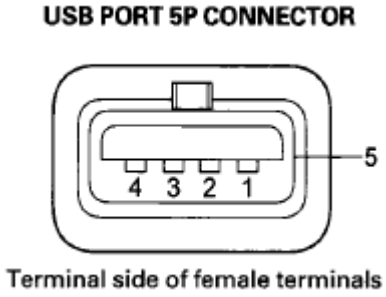


Fig. 189: Checking Continuity Between USB Port 5P Connector Terminals
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES -There is an open in the wire(s) between the USB adapter control unit and the USB adapter. Replace the affected shielded harness.

NO -Replace the USB adapter, then recheck.

16. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
17. Measure the voltage between USB adapter control unit connector A (14P) terminal No. 1 and body ground.

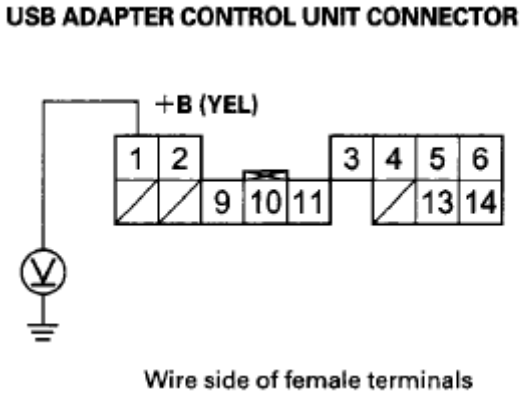


Fig. 190: Measuring Voltage Between USB Adapter Control Unit Connector A (14P) Terminal No. 1 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there battery voltage?

YES -Go to step 19.

NO -Go to step 18.

18. Measure the voltage between audio unit connector C (14P) terminal No. 1 and body ground.

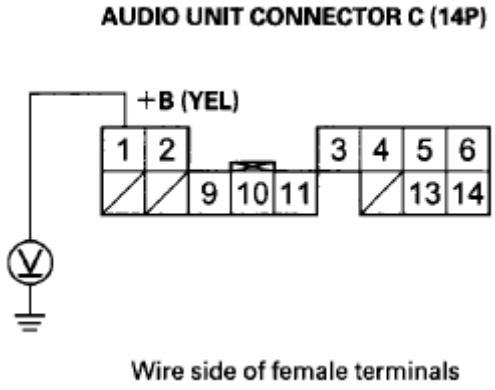


Fig. 191: Measuring Voltage Between Audio Unit Connector C (14P) Terminal No. 1 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there battery voltage?

YES -Repair an open or high resistance in the wire between the USB adapter control unit and the audio unit.

NO -Replace the audio unit (see **AUDIO UNIT REMOVAL/INSTALLATION**).

19. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.

20. Measure the voltage between USB adapter control unit connector A (14P) terminal No. 11 and body ground.

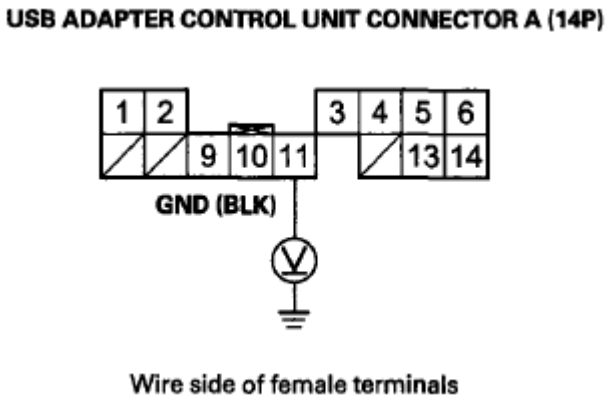


Fig. 192: Measuring Voltage Between USB Adapter Control Unit Connector A (14P) Terminal No. 11 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there less than 0.2 V?

YES -Go to step 21.

NO -Repair an open or high resistance in the wire between the USB adapter control unit and the audio unit.

21. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
22. Disconnect these items:
    - Audio unit connector C (14P)
    - USB adapter control unit connector A (14P)
    - XM receiver connector A (14P)
23. Check for continuity between USB adapter control unit connector A (14P) terminal No. 2 and body ground.

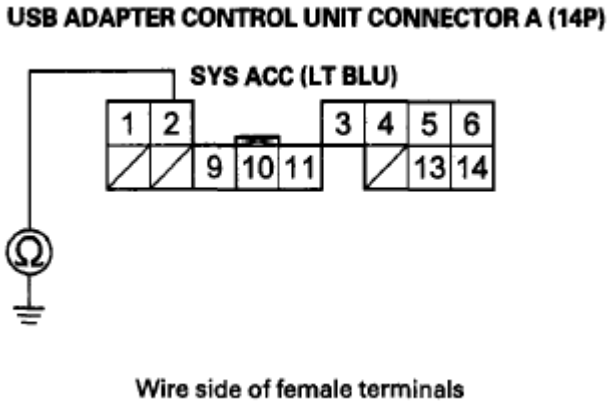


Fig. 193: Checking Continuity Between USB Adapter Control Unit Connector A (14P) Terminal No. 2 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES -Repair a short to body ground in the wire between the USB adapter control unit and the audio unit.

NO -Go to step 24.

24. Check for continuity between audio unit connector C (14P) terminal No. 2 and USB adapter control unit connector A (14P) terminal No. 2.

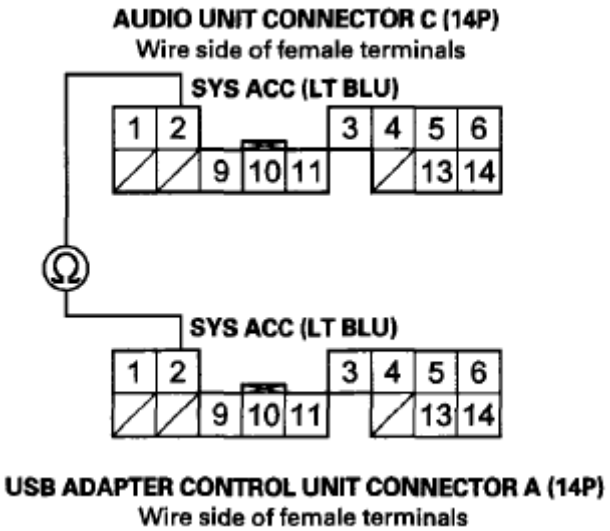


Fig. 194: Checking Continuity Between Audio Unit Connector C (14P) And USB Adapter Control Unit Connector A (14P)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES -Go to step 25.

NO -Repair an open in the wire between the audio unit and the USB adapter control unit.

25. Check for continuity between USB adapter control unit connector A (14P) and audio unit connector C (14P) according to the table.

USB adapter control unit connector	Audio unit connector	Wire color
A9	C9	PNK
A10	C10	BLU

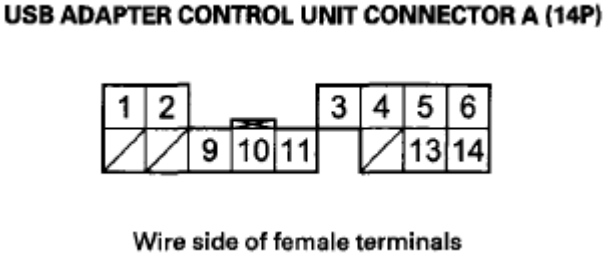


Fig. 195: Checking Continuity Between USB Adapter Control Unit Connector A (14P) Terminals
Courtesy of AMERICAN HONDA MOTOR CO., INC.

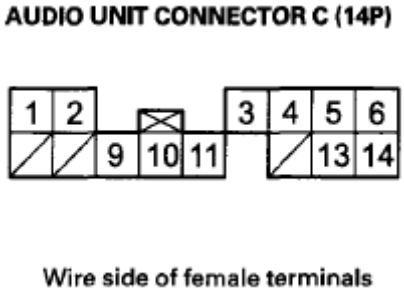


Fig. 196: Checking Continuity Between USB Adapter Control Unit Connector C (14P) Terminals
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES -Go to step 26.

NO -There is an open in the wire(s) between the audio unit and the USB adapter control unit. Replace the affected shielded harness.

26. Disconnect the HandsFreeLink control unit 28P connector.
27. Check for continuity between body ground and audio unit connector C (14P) according to the table.

Audio unit connector	Wire color
C9	PNK

C10	BLU

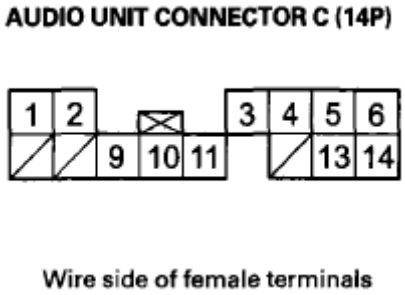


Fig. 197: Checking Continuity Between Body Ground And Audio Unit Connector C (14P) According To Table
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES -There is a short to body ground in the wire(s) between the audio unit and the USB adapter control unit. Replace the affected shielded harness.

NO -Go to step 28.

28. Check for continuity between the terminals of audio unit connector C (14P) according to the table.

From terminal	To terminals
C3 (GRY)	C9 (PNK), C10 (BLU)
C9 (PNK)	C10 (BLU)

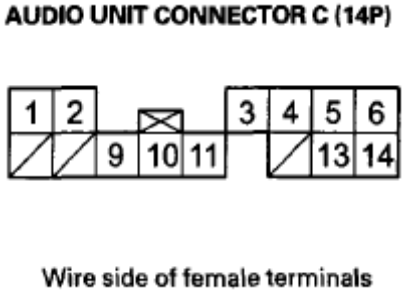


Fig. 198: Checking Continuity Between Terminals Of Audio Unit Connector C (14P) According To Table
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity between any of the terminals?

YES -There is a short in the wires between the audio unit and the USB adapter control unit. Replace the affected shielded harness.

NO -Go to step 29.

29. Reconnect these items:
    - Audio unit connector C (14P)
    - HandsFreeLink control unit 28P connector
    - XM receiver connector A (14P)
30. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
31. Turn on the audio unit.
32. Press the AUX button several times.

    Is the display changed to other mode?

    YES -Replace the USB adapter control unit (see **USB ADAPTER CONTROL UNIT REPLACEMENT**).

    NO -Go to step 33.

33. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
34. Disconnect XM receiver connector A (14P).
35. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
36. Turn on the audio unit.
37. Press the AUX button several times.

    Is the display changed to other mode?

    YES -Replace the XM receiver (see **XM RECEIVER REMOVAL/INSTALLATION**).

    NO -Go to step 38.

38. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
39. Reconnect XM receiver connector A (14P).
40. Disconnect the HandsFreeLink control unit 28P connector.
41. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
42. Turn on the audio unit.
43. Press the AUX button several times.

    Is the display changed to other mode?

    YES -Replace the HandsFreeLink control unit (see **HFL SWITCH TEST**).

    NO -Replace the audio unit (see **AUDIO UNIT REMOVAL/INSTALLATION**).

USB INPUT SOUND IS LOW OR CANNOT BE HEARD (WITH NAVIGATION)

NOTE:

- **Check the vehicle battery condition first (see BATTERY TEST).**
- **Check the connectors for poor connections or loose terminals.**
- **Not all players and player functions work with the USB adapter. Please see the Owner's Manual for more information. Always test the clients USB device in a known-good vehicle of the same year and trim (if possible). Technologies change and are updated frequently which may result in that USB devices may work in newer vehicles, but not in older vehicles of the same model.**

1. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
2. Do the Speaker Check Mode with the Self-Diagnostic Function (see **SPEAKER CHECK MODE**).

   Do all speakers make a sound?

   YES -Go to step 3.

   NO -Go to **NO SOUND IS HEARD FROM THE SPEAKER(S) (DISPLAY IS NORMAL) TROUBLESHOOTING** .

3. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
4. On the client's vehicle, connect the client's USB device to the USB port.
5. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
6. Turn on the audio system.
7. Press the HDD/AUX button until USB appears on the audio display.
8. Check if the USB device can be operated with the audio-navigation unit (Folders or Files UP/DOWN, etc.) (see **HOW TO PLAY THE BLUETOOTH AUDIO**).

   Can you operate the USB device, but there is no sound heard?

   YES -Go to step 9.

   NO -If the sound is normal, the USB device is OK at this time. If the USB device cannot be operated, go to **USB DEVICE DOES NOT FUNCTION TROUBLESHOOTING** .

9. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
10. Connect the client's USB device to a known-good vehicle (same year/trim) that is equipped with a USB adapter, and check the USB device operation.

    Is the USB device working properly in the known-good vehicle?

    YES -Substitute a known-good audio-navigation unit (including the HDD) (see **AUDIO-NAVIGATION UNIT REMOVAL/INSTALLATION**), and recheck. If the symptom/indication goes away, replace the original audio-navigation unit (see **AUDIO-NAVIGATION UNIT REMOVAL/INSTALLATION**).

NO -USB device is faulty or not compatible. Also check the USB adapter and USB adapter connector condition.

USB INPUT SOUND IS LOW OR CANNOT BE HEARD (WITHOUT NAVIGATION)

NOTE:

- **Check the vehicle battery condition first (see BATTERY TEST).**
- **Check the connectors for poor connections or loose terminals.**
- **Not all players and player functions work with the USB adapter. Please see the Owner's Manual for more information.**

1. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
2. Do the Speaker Check Mode with the Self-Diagnostic Function (see **SPEAKER CHECK MODE**).

   Do all speakers make a sound?

   YES -Go to step 3.

   NO -Go to **NO SOUND IS HEARD FROM THE SPEAKER(S) (DISPLAY IS NORMAL) TROUBLESHOOTING** .

3. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
4. On the client's vehicle, connect the client's USB device to the USB port.
5. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
6. Turn on the audio unit.
7. Press the AUX button until USB appears on the audio display.
8. Check if the USB device can be operated with the audio unit (Folders or Files UP/DOWN, etc.) (see **HOW TO PLAY THE BLUETOOTH AUDIO**).

   Can you operate the USB device, but there is no sound heard?

   YES -Go to step 9.

   NO -If the sound is normal, the USB device is OK at this time. If the USB device cannot be operated, go to **USB DEVICE DOES NOT FUNCTION TROUBLESHOOTING** .

9. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
10. Connect the client's USB device to a known-good vehicle (same year/trim) that is equipped with a USB adapter, and check the USB device operation.

    Is the USB device working properly in the known-good vehicle?

    YES -Go to step 11.

    NO -USB device is faulty. Also check the USB adapter and USB adapter connector condition.

11. Return to the client's vehicle.
12. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
13. Turn on the audio unit, and check for sound in each mode (XM or Bluetooth audio).

    Is the sound normal?

    YES -Go to step 14.

    NO -Go to **POOR OR NO SOUND WITH XM RADIO (AUDIO UNIT DOES DISPLAY XM CHANNELS)**, or No sound when Bluetooth audio is used troubleshooting (see **NO SOUND WHEN BLUETOOTH AUDIO IS USED (WITHOUT NAVIGATION)**).

14. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
15. Measure the voltage between USB adapter control unit connector A (14P) terminal No. 1 and body ground.

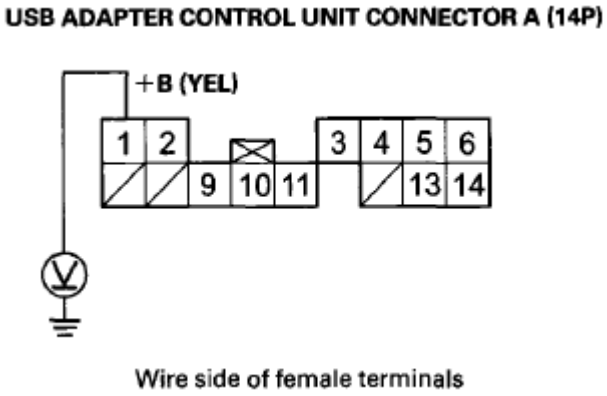


Fig. 199: Measuring Voltage Between USB Adapter Control Unit Connector A (14P) Terminal No. 1 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there battery voltage?

YES -Go to step 17.

NO -Go to step 16.

16. Measure the voltage between audio unit connector C (14P) terminal No. 1 and body ground.

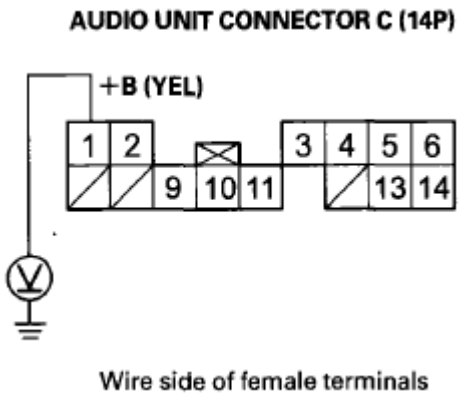


Fig. 200: Measuring Voltage Between Audio Unit Connector C (14P) Terminal No. 1 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there battery voltage?

YES -Repair an open or high resistance in the wire between the USB adapter control unit and the audio unit.

NO -Replace the audio unit (see **AUDIO UNIT REMOVAL/INSTALLATION**).

17. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
18. Measure the voltage between USB adapter control unit connector A (14P) terminal No. 11 and body ground.

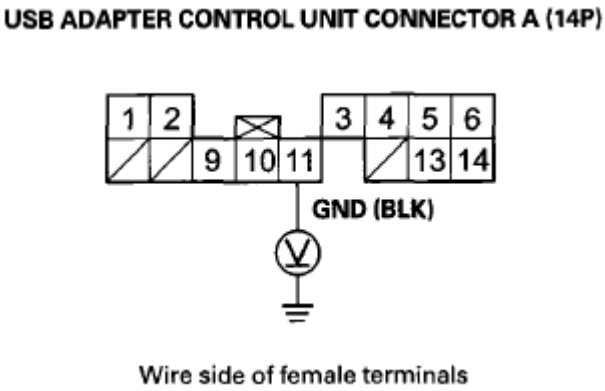


Fig. 201: Measuring Voltage Between USB Adapter Control Unit Connector A (14P) Terminal No. 11 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there less than 0.2 V?

YES -Go to step 19.

NO -Repair an open or high resistance in the wire between the USB adapter control unit and the audio

unit.

19. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
20. Disconnect these items:
    - Audio unit connector C (14P)
    - USB adapter control unit connector A (14P)
    - XM receiver connector A (14P)
21. Check for continuity between USB adapter control unit connector A (14P) terminal No. 2 and body ground.

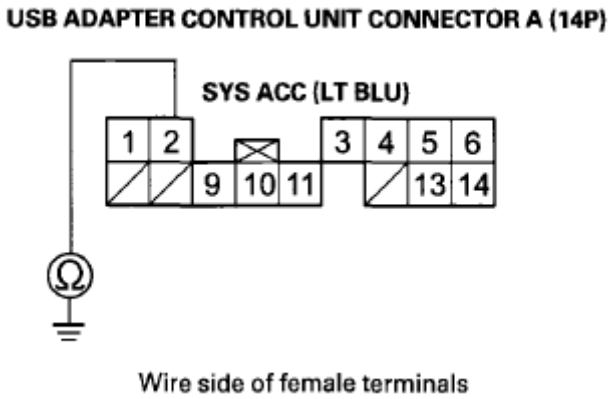


Fig. 202: Checking Continuity Between USB Adapter Control Unit Connector A (14P) Terminal No. 2 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES -Repair a short to body ground in the wire between the USB adapter control unit and the audio unit.

NO -Go to step 22.

22. Check for continuity between audio unit connector C (14P) terminal No. 2 and USB adapter control unit connector A (14P) terminal No. 2.

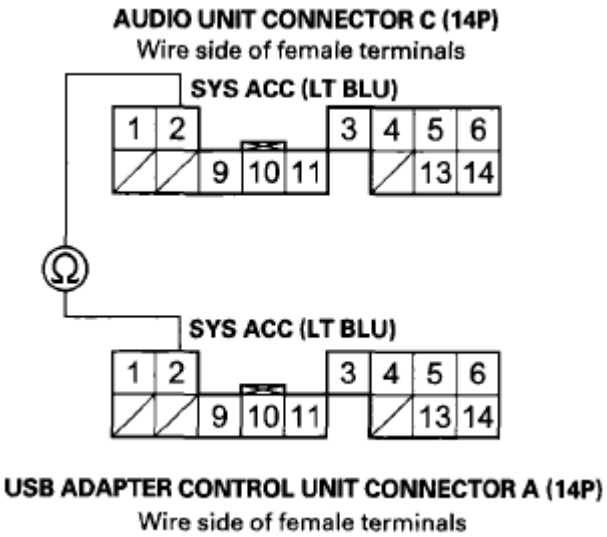


Fig. 203: Checking Continuity Between Audio Unit Connector C (14P) And USB Adapter Control Unit Connector A (14P)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES -Go to step 23.

NO -Repair an open in the wire between the audio unit and the USB adapter control unit.

23. Check for continuity between audio unit connector C (14P)and USB adapter control unit connector A (14P) according to the table.

Audio unit connector	USB adapter control unit connector	Wire color
C5	A5	GRN
C6	A6	BLK
C13	A13	WHT
C14	A14	RED

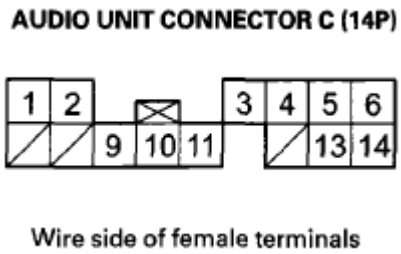
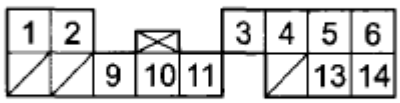


Fig. 204: Checking Continuity Between Audio Unit Connector C (14P) Terminals
Courtesy of AMERICAN HONDA MOTOR CO., INC.

USB ADAPTER CONTROL UNIT CONNECTOR A (14P)



Wire side of female terminals

Fig. 205: Checking Continuity Between USB Adapter Control Unit Connector A (14P) Terminals
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES -Substitute a known-good USB adapter control unit (see **USB ADAPTER CONTROL UNIT REPLACEMENT**), then reconnect all of the connectors, and recheck. If the symptom/indication goes away, replace the original USB adapter control unit (see **USB ADAPTER CONTROL UNIT REPLACEMENT**). If the symptom/indication is still present, replace the audio unit (see **AUDIO UNIT REMOVAL/INSTALLATION**).

NO -There is an open in the wire(s) between the audio unit and the USB adapter control unit. Replace the affected shielded harness.

ERROR CODE: XM NO SIGNAL OR XM LOADING IS DISPLAYED (WITH NAVIGATION)

NOTE:

- **Check the vehicle battery condition first (see BATTERY TEST).**
- **Check the connectors for poor connection or loose terminals.**
- **Check XM radio reception in an open area. Poor reception/interference can be caused by tall buildings, mountains, or high-voltage power lines.**

1. Park the vehicle outside with a clear view of the southern horizon.
2. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
3. Do the XM Self-Diagnosis (see **XM SELF-DIAGNOSIS**).

   Are there other XM error codes displayed?

   YES -Refer to **SOLUTION FOR TROUBLESHOOTING** .

   NO -Go to step 4.

4. Turn on the audio system, and press the XM button to select the XM radio.

   Does the XM radio receive a signal?

   YES -Reception interference, the system is OK at this time.

NO -Go to step 5.

5. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
6. Check for poor connections or loose terminals at the XM antenna 2P connector and AcuraLink® control unit (XM receiver) connector B (2P) or XM receiver connector B (2P).

   Are the connections or terminals OK?

   YES -Go to step 7.

   NO -Repair poor connections or loose terminals, and recheck the XM radio operation. If the signal is restored, the system is OK. If the signal is not restored, go to step 7.

7. Substitute a known-good XM antenna (see **XM ANTENNA REPLACEMENT**), and recheck.

   Does the XM radio receive a signal?

   YES -Replace the original XM antenna (see **XM ANTENNA REPLACEMENT**).

   NO -

   - USA models: Substitute a known-good XM antenna lead, and recheck. If the XM radio receives a signal, replace the original XM antenna lead. If the XM radio does not receive a signal, replace the AcuraLink® control unit (XM receiver) (see **AcuraLink® CONTROL UNIT (XM RECEIVER) REMOVAL/INSTALLATION**).
   - Canada models: Substitute a known-good XM antenna lead, and recheck. If the XM radio receives a signal, replace the original XM antenna lead. If the XM radio does not receive a signal, replace the XM receiver (see **XM RECEIVER REMOVAL/INSTALLATION**).

ERROR CODE: XM NO SIGNAL OR XM LOADING IS DISPLAYED (WITHOUT NAVIGATION)

NOTE:

- **Check the vehicle battery condition first (see BATTERY TEST).**
- **Check the connectors for poor connection or loose terminals.**
- **Check XM radio reception in an open area. Poor reception/interference can be caused by tall buildings, mountains, or high-voltage power lines.**

1. Park the vehicle outside with a clear view of the southern horizon.
2. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
3. Do the XM Self-Diagnosis (see **XM SELF-DIAGNOSIS**).

   Are there other XM error codes displayed?

   YES -Refer to **SOLUTION FOR TROUBLESHOOTING** .

   NO -Go to step 4.

4. Turn on the audio unit, and select XM radio.

   Does the XM radio receive a signal?

   YES -Reception interference, the system is OK at this time.

   NO -Go to step 5.

5. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
6. Check for poor connections or loose terminals at the XM antenna 2P connector and XM receiver connector B (2P).

   Are the connections or terminals OK?

   YES -Go to step 7.

   NO -Repair poor connections or loose terminals, and recheck the XM radio operation. If the signal is restored, the system is OK. If the signal is not restored, go to step 7.

7. Substitute a known-good XM antenna (see **XM ANTENNA REPLACEMENT**), and recheck.

   Does the XM radio receive a signal?

   YES -Replace the original XM antenna (see **XM ANTENNA REPLACEMENT**).

   NO -Substitute a known-good XM antenna lead, and recheck. If the XM radio receives a signal, replace the original XM antenna lead. If the XM radio does not receive a signal, replace the XM receiver (see **XM RECEIVER REMOVAL/INSTALLATION**).

ERROR CODE: XM ANTENNA OR XM LOADING IS DISPLAYED (WITH ACURALINK®)

NOTE:

- **Check the vehicle battery condition first (see BATTERY TEST).**
- **Check the connectors for poor connection or loose terminals.**
- **If you replace the AcuraLink® control unit (XM receiver), the AcuraLink® must be reactivated by Acura Client Services.**
- **Check XM radio reception in an open area. Poor reception/interference can be caused by tall buildings, mountains, or high-voltage power lines.**

1. Park the vehicle outside with a clear view of the southern horizon.
2. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
3. Do the XM Self-Diagnosis (see **XM SELF-DIAGNOSIS**).

   Are there other XM error codes displayed?

   YES -Refer to **SOLUTION FOR TROUBLESHOOTING**. If ERROR 14 or ERROR 24 is displayed,

go to step 4.

NO -Go to step 4.

4. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
5. Check if the AcuraLink® control unit (XM receiver) connectors are properly connected.

   Are the connectors connected properly?

   YES -Go to step 6.

   NO -Reconnect the connector(s), and recheck. If the error message does not go away, go to step 6.

6. Check if the XM antenna 2P connector is properly connected.

   Is the connector properly connected?

   YES -Go to step 7.

   NO -Reconnect the connector, and recheck. If the error message does not go away, go to step 7.

7. Substitute a known-good XM antenna (see **XM ANTENNA REPLACEMENT**), and recheck.

   Is the error message gone?

   YES -Replace the original XM antenna (see **XM ANTENNA REPLACEMENT**).

   NO -Go to step 8.

8. Substitute a known-good AcuraLink® control unit (XM receiver) (see **AcuraLink® CONTROL UNIT (XM RECEIVER) REMOVAL/INSTALLATION**), and recheck.

   Is the error message gone?

   YES -Update the AcuraLink® control unit (see **AcuraLink® CONTROL UNIT UPDATE**) if it does not have the latest software. If the software is the latest, replace the original AcuraLink® control unit (XM receiver) (see **AcuraLink® CONTROL UNIT (XM RECEIVER) REMOVAL/INSTALLATION**).

   NO -Replace the XM antenna lead.

ERROR CODE: XM ANTENNA OR XM LOADING IS DISPLAYED (WITHOUT ACURALINK®)

NOTE:

- **Check the vehicle battery condition first (see BATTERY TEST).**
- **Check the connectors for poor connection or loose terminals.**
- **Check XM radio reception in an open area. Poor reception/interference can**

be caused by tall buildings, mountains, or high-voltage power lines.

1. Park the vehicle outside with a clear view of the southern horizon.
2. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
3. Do the XM Self-Diagnosis (see **XM SELF-DIAGNOSIS**).

   Are there other XM error codes displayed?

   YES -Refer to **SOLUTION FOR TROUBLESHOOTING**. If ERROR 14 or ERROR 24 is displayed, go to step 4.

   NO -Go to step 4.

4. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
5. Check if the XM receiver connectors are properly connected.

   Is the connector connected properly?

   YES -Go to step 6.

   NO -Reconnect the connector, and recheck. If the error message does not go away, go to step 6.

6. Check if the XM antenna 2P connector is properly connected.

   Is the connector connected properly?

   YES -Go to step 7.

   NO -Reconnect the connector, and recheck. If the error message does not go away, go to step 7.

7. Substitute a known-good XM antenna (see **XM ANTENNA REPLACEMENT**), and recheck.

   Is the error message gone?

   YES -Replace the original XM antenna (see **XM ANTENNA REPLACEMENT**).

   NO -Go to step 8.

8. Substitute a known-good XM receiver (see **XM RECEIVER REMOVAL/INSTALLATION**), and recheck.

   Is the error message gone?

   YES -Replace the original XM receiver (see **WITHOUT NAVIGATION**).

   NO -Replace the XM antenna lead.

XM RADIO DISPLAY IS BLANK AND NO STATION INFORMATION IS DISPLAYED (USA MODELS WITH NAVIGATION)

NOTE:

- **Check the vehicle battery condition first (see BATTERY TEST).**
- **Check the connectors for poor connections or loose terminals.**
- **If you replace the XM receiver, the AcuraLink® must be reactivated by Acura Client Services.**

1. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
2. Check for the audio-navigation unit hard error code.

   Is DTC 2601 (Display Diag: Connect) indicated?

   YES -Do the DTC 2601 troubleshooting (see **DTC 2601: DISPLAY DIAG: CONNECT**).

   NO -Go to step 3.

3. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
4. Measure the voltage between AcuraLink® control unit (XM receiver) connector A (32P) terminal No. 1 and body ground.

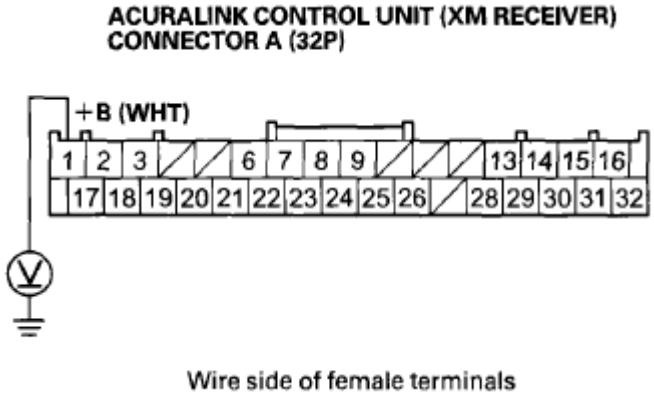


Fig. 206: Measuring Voltage Between AcuraLink® Control Unit (XM Receiver) Connector A (32P) Terminal No. 1 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there battery voltage?

YES -Go to step 5.

NO -Repair an open in the wire between No. 15 (10 A) fuse in the under-hood fuse/relay box and the AcuraLink® control unit (XM receiver).

5. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
6. Measure the voltage between body ground and AcuraLink® control unit (XM receiver) connector A

(32P) terminals No. 2 and No. 3 individually.

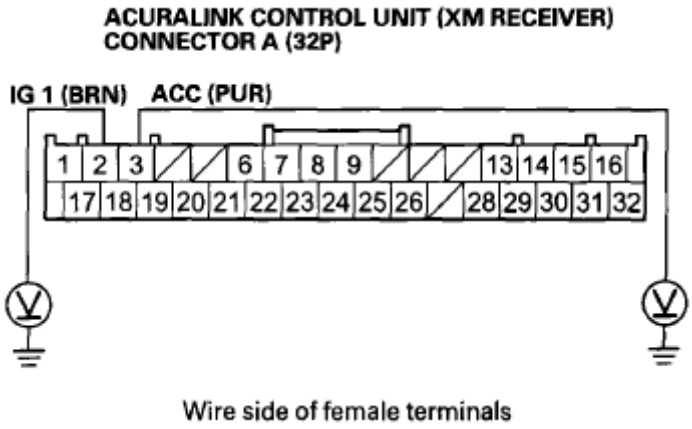


Fig. 207: Measuring Voltage Between Body Ground And AcuraLink® Control Unit (XM Receiver) Connector A (32P) Terminals No. 2 And No. 3
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there battery voltage?

YES -Go to step 7.

NO -If the IG 1 wire does not have voltage, repair an open in the wire between the No. 5 (7.5 A) fuse in the driver's under-dash fuse/relay box and the AcuraLink® control unit (XM receiver). If the ACC wire does not have voltage, repair an open in the wire between the No. 18 (7.5 A) fuse in the driver's under-dash fuse/relay box and the AcuraLink® control unit (XM receiver).

7. Measure the voltage between AcuraLink® control unit (XM receiver) connector A (32P) terminal No. 28 and body ground.

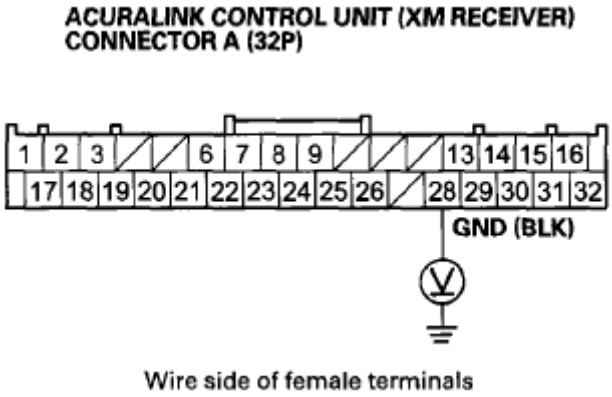


Fig. 208: Measuring Voltage Between AcuraLink® Control Unit (XM Receiver) Connector A (32P) Terminal No. 28 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there less than 0.2 V?

YES -Go to step 8.

NO -Repair an open or high resistance in the wire between the AcuraLink® control unit (XM receiver) and body ground (G501) (see **CONNECTOR TO FUSE/RELAY BOX INDEX**).

8. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
9. Disconnect audio-navigation unit connector C (14P).
10. Disconnect AcuraLink® control unit (XM receiver) connector A (32P).
11. Check for continuity between AcuraLink® control unit (XM receiver) connector A (32P) and audio-navigation unit connector C (14P) according to the table.

AcuraLink® control unit (XM receiver) connector	Audio-navigation unit connector	Wire color
A30	C9	PNK
A31	C10	BLU

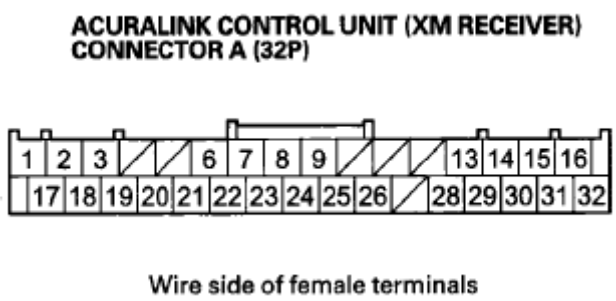


Fig. 209: Checking Continuity Between AcuraLink® Control Unit (XM Receiver) Connector A (32P) Terminals
Courtesy of AMERICAN HONDA MOTOR CO., INC.

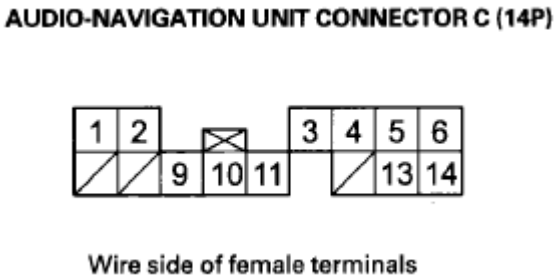


Fig. 210: Checking Continuity Between Audio-Navigation Unit Connector C (14P) Terminals
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES -Go to step 12.

NO -There is an open in the wire(s) between the audio-navigation unit and the AcuraLink® control unit (XM receiver). Replace the affected shielded harness.

12. Reconnect audio-navigation unit connector C (14P).
13. Substitute a known-good AcuraLink® control unit (XM receiver) (see **AcuraLink® CONTROL UNIT (XM RECEIVER) REMOVAL/INSTALLATION**), and recheck.

    Is the symptom/indication go away?

    YES -Update the AcuraLink® control unit (see **AcuraLink® CONTROL UNIT UPDATE**) if it does not have the latest software. If the software is the latest, replace the original AcuraLink® control unit (XM receiver) (see **AcuraLink® CONTROL UNIT (XM RECEIVER) REMOVAL/INSTALLATION**).

    NO -Substitute a known-good audio-navigation unit (including the HDD) (see **AUDIO-NAVIGATION UNIT REMOVAL/INSTALLATION**), and recheck. If the symptom/indication goes away, replace the original audio-navigation unit (see **AUDIO-NAVIGATION UNIT REMOVAL/INSTALLATION**).

XM RADIO DISPLAY IS BLANK AND NO STATION INFORMATION IS DISPLAYED (CANADA MODELS WITH NAVIGATION)

NOTE:
- **Check the vehicle battery condition first (see BATTERY TEST).**
- **Check the connectors for poor connections or loose terminals.**

1. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
2. Check for the audio-navigation unit hard error code.

   Is DTC 2601 (Display Diag: Connect) indicated?

   YES -Do the DTC 2601 troubleshooting (see **DTC 2601: DISPLAY DIAG: CONNECT**).

   NO -Go to step 3.

3. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
4. Measure the voltage between XM receiver connector A (14P) terminal No. 1 and body ground.

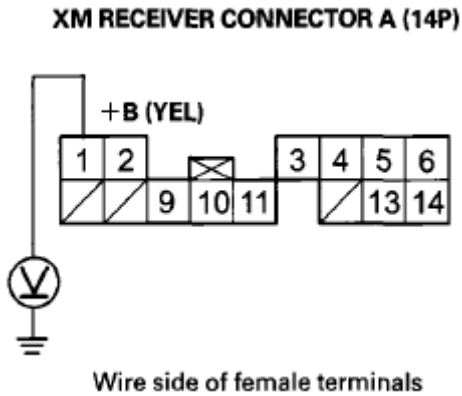


Fig. 211: Measuring Voltage Between XM Receiver Connector A (14P) Terminal No. 1 And Body

Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there battery voltage?

YES -Go to step 6.

NO -Go to step 5.

5. Measure the voltage between audio-navigation unit connector C (14P) terminal No. 1 and body ground.

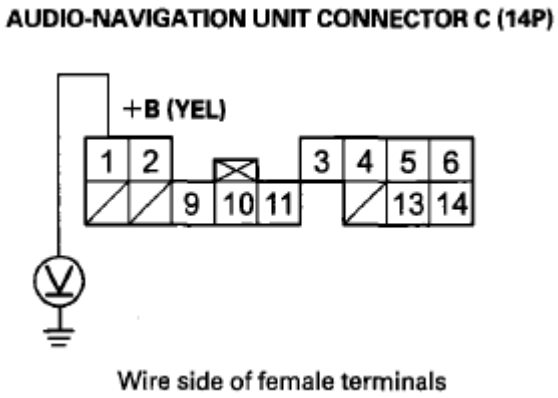


Fig. 212: Measuring Voltage Between Audio-Navigation Unit Connector C (14P) Terminal No. 1 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there battery voltage?

YES -Repair an open or high resistance in the wire between the audio-navigation unit and the XM receiver.

NO -Substitute a known-good audio-navigation unit (including the HDD) (see **AUDIO-NAVIGATION UNIT REMOVAL/INSTALLATION**), and recheck. If the symptom/indication goes away, replace the original audio-navigation unit (see **AUDIO-NAVIGATION UNIT REMOVAL/INSTALLATION**).

6. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
7. Measure the voltage between XM receiver connector A (14P) terminal No. 11 and body ground.

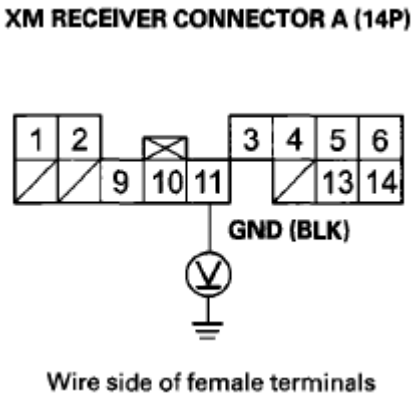


Fig. 213: Measuring Voltage Between XM Receiver Connector A (14P) Terminal No. 11 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there less than 0.2 V?

YES -Go to step 8.

NO -Repair an open or high resistance in the wire between the XM receiver and the audio-navigation unit.

8. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
9. Disconnect audio-navigation unit connector C (14P) and XM receiver connector A (14P).
10. Check for continuity between XM receiver connector A (14P) terminal No. 2 and body ground.

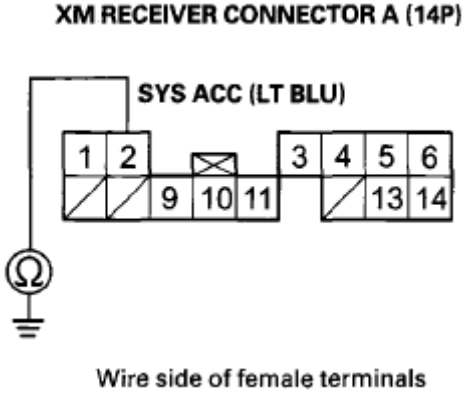


Fig. 214: Checking Continuity Between XM Receiver Connector A (14P) Terminal No. 2 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES -Repair a shot to body ground in the wire between the XM receiver and the audio-navigation unit.

NO -Go to step 11.

11. Check for continuity between audio-navigation unit connector C (14P) terminal No. 2 and XM receiver connector A (14P) terminal No. 2.

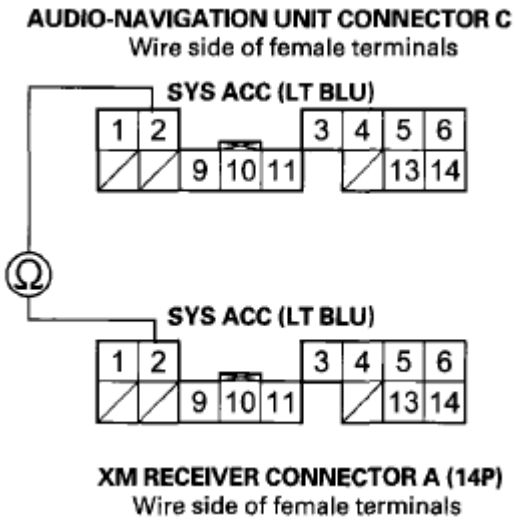


Fig. 215: Checking Continuity Between Audio-Navigation Unit Connector C (14P) Terminal No. 2 And XM Receiver Connector A (14P) Terminal No. 2
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES -Go to step 12.

NO -Repair an open in the wire between the audio-navigation unit and the XM receiver.

12. Check for continuity between XM receiver connector A (14P) and audio-navigation unit connector C (14P) according to the table.

XM receiver connector	Audio-navigation unit connector	Wire color
A9	C9	PNK
A10	C10	BLU

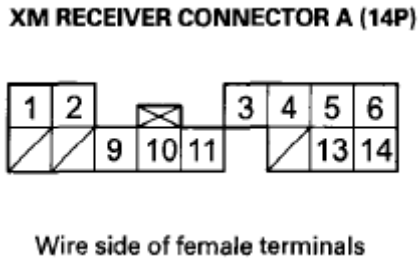


Fig. 216: Checking Continuity Between XM Receiver Connector A (14P) Terminals

Courtesy of AMERICAN HONDA MOTOR CO., INC.

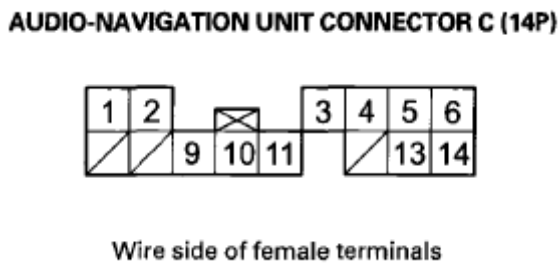


Fig. 217: Checking Continuity Between Audio-Navigation Unit Connector C (14P) Terminals
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES -Substitute a known-good XM receiver (see **XM RECEIVER REMOVAL/INSTALLATION**), then reconnect all of the connectors, and recheck. If the symptom/indication goes away, replace the original XM receiver (see **XM RECEIVER REMOVAL/INSTALLATION**). If the symptom/indication is still present, replace the audio-navigation unit (see **AUDIO-NAVIGATION UNIT REMOVAL/INSTALLATION**).

NO -There is an open in the wire(s) between the audio-navigation unit and the XM receiver. Replace the affected shielded harness.

XM RADIO DISPLAY IS BLANK AND NO STATION INFORMATION IS DISPLAYED (WITHOUT NAVIGATION)

NOTE:

- **Check the vehicle battery condition first (see BATTERY TEST).**
- **Check the connectors for poor connections or loose terminals.**

1. Measure the voltage between XM receiver connector A (14P) terminal No. 1 and body ground.

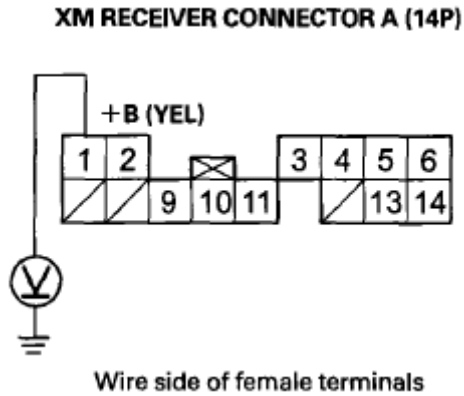


Fig. 218: Measuring Voltage Between XM Receiver Connector A (14P) Terminal No. 1 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there battery voltage?

YES -Go to step 3.

NO -Go to step 2.

2. Measure the voltage between audio unit connector C (14P) terminal No. 1 and body ground.

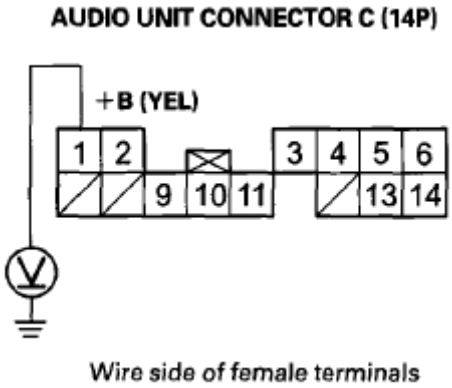


Fig. 219: Measuring Voltage Between Audio Unit Connector C (14P) Terminal No. 1 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there battery voltage?

YES -Repair an open or high resistance in the wire between the audio unit and the XM receiver.

NO -Replace the audio unit (see **AUDIO UNIT REMOVAL/INSTALLATION**).

3. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
4. Measure the voltage between XM receiver connector A (14P) terminal No. 11 and body ground.

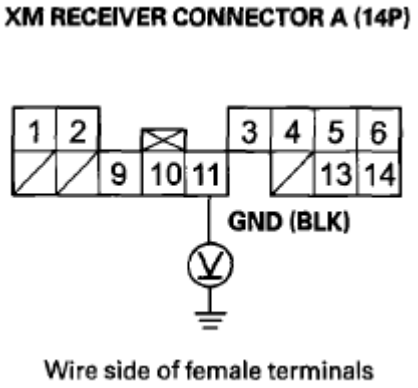


Fig. 220: Measuring Voltage Between XM Receiver Connector A (14P) Terminal No. 11 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there less than 0.2 V?

YES -Go to step 5.

NO -Repair an open or high resistance in the wire between the XM receiver and the audio unit.

5. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
6. Disconnect these items:
   - Audio unit connector C (14P)
   - USB adapter control unit connector A (14P)
   - XM receiver connector A (14P)
7. Check for continuity between XM receiver connector A (14P) terminal No. 2 and body ground.

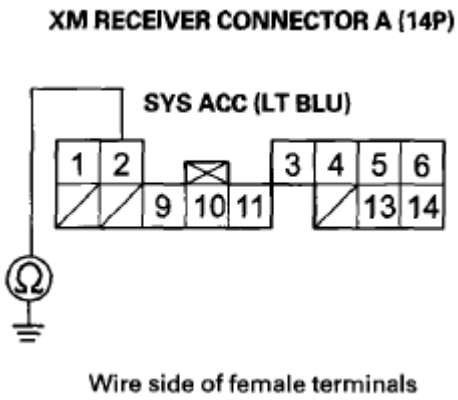


Fig. 221: Checking Continuity Between XM Receiver Connector A (14P) Terminal No. 2 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES -Repair a short to body ground in the wire between the XM receiver and the audio unit.

NO -Go to step 8.

8. Check for continuity between audio unit connector C (14P) terminal No. 2 and XM receiver connector A (14P) terminal No. 2.

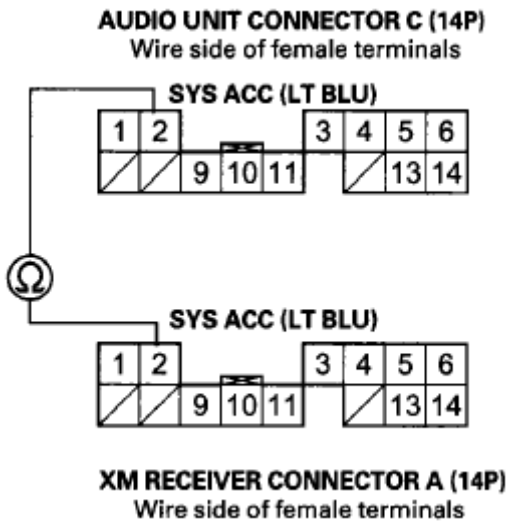


Fig. 222: Checking Continuity Between Audio Unit Connector C (14P) Terminal No. 2 And XM Receiver Connector A (14P) Terminal No. 2
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES -Go to step 9.

NO -Repair an open in the wire between the audio unit and the XM receiver.

9. Check for continuity between XM receiver connector A (14P) and audio unit connector C (14P) according to the table.

XM receiver connector	Audio unit connector	Wire color
A9	C9	PNK
A10	C10	BLU

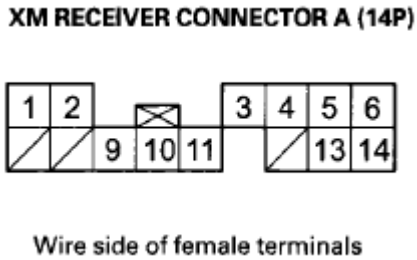


Fig. 223: Checking Continuity Between XM Receiver Connector A (14P) Terminals
Courtesy of AMERICAN HONDA MOTOR CO., INC.

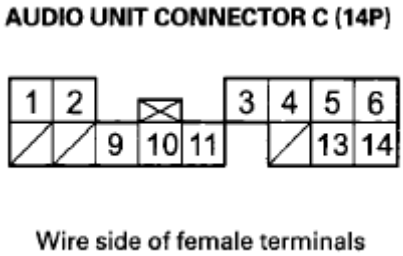


Fig. 224: Checking Continuity Between Audio Unit Connector C (14P) Terminals
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES -Go to step 10.

NO -There is an open in the wire(s) between the XM receiver and the audio unit. Replace the affected shielded harness.

10. Remove the center console panel (see **CENTER CONSOLE PANEL REMOVAL/INSTALLATION**).
11. Disconnect the HandsFreeLink control unit 28P connector.
12. Check for continuity between body ground and audio unit connector C (14P) according to the table.

Audio unit connector	Wire color
C9	PNK
C10	BLU

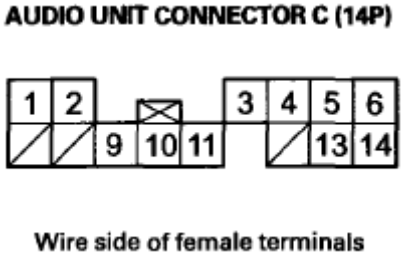


Fig. 225: Checking Continuity Between Body Ground And Audio Unit Connector C (14P) Terminal
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES -There is a short to body ground in the wire(s) between the audio unit and the XM receiver. Replace the affected shielded harness.

NO -Go to step 13.

13. Check for continuity between the terminals of audio unit connector C (14P) according to the table.

From terminal	To terminals
C3 (GRY)	C9 (PNK), C10 (BLU)
C9 (PNK)	C10 (BLU)

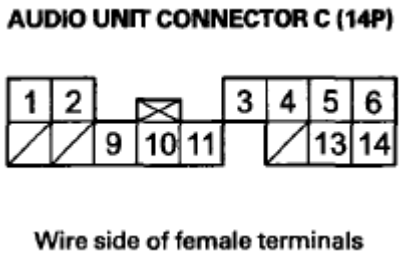


Fig. 226: Checking Continuity Between Terminals Of Audio Unit Connector C (14P) According To Table
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity between any of the terminals?

YES -There is a short in the wires between the audio unit and the XM receiver. Replace the affected shielded harness.

NO -Go to step 14.

14. Reconnect these items:
    - Audio unit connector C (14P)
    - HandsFreeLink control unit 28P connector
    - USB adapter control unit connector A (14P)
15. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
16. Turn on the audio unit.
17. Press the AUX button several times.

Is the display changed to other mode?

YES -Replace the XM receiver (see **XM RECEIVER REMOVAL/INSTALLATION**).

NO -Go to step 18

18. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
19. Disconnect USB adapter control unit connector A (14P).
20. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
21. Turn on the audio unit.
22. Press the AUX button several times.

Is the display changed to other mode?

YES -Replace the USB adapter control unit (see **USB ADAPTER CONTROL UNIT REPLACEMENT**).

NO -Go to step 23.

23. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
24. Reconnect USB adapter control unit connector A (14P).
25. Disconnect the HandsFreeLink control unit 28P connector.
26. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
27. Turn on the audio unit.
28. Press the AUX button several times.

Is the display changed to other mode?

YES -Replace the HandsFreeLink control unit (see **HFL SWITCH TEST**).

NO -Replace the audio unit (see **AUDIO UNIT REMOVAL/INSTALLATION**).

XM RADIO PRESET MEMORY IS LOST (USA MODELS WITH NAVIGATION)

NOTE:

- **Check the vehicle battery condition first (see BATTERY TEST).**
- **Make sure the remotes are linked.**
- **Check the connectors for poor connections or loose terminals.**
- **If you replace the AcuraLink® control unit (XM receiver), the AcuraLink® must be reactivated by Acura Client Services.**
- **If you can only tune to channel 000, 001, 174, and 247, make sure the audio-navigation unit is set to channel mode (see Owner's Manual), if it is set to channel mode, call XM Radio client support, and check the account activation status.**

1. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
2. Turn on the audio system, and set each of the XM radio channel preset buttons.

Do each of the XM radio channel preset buttons set properly?

YES -Go to step 3.

NO -Go to step 5.

3. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode for 1 minute, then back to ON (II), or the ON mode.
4. Test all of the XM radio channel preset buttons for proper recall operation.

Do the preset buttons recall the set radio stations?

YES -Intermittent failure, the system is OK at this time. Check connections at the audio-navigation unit.

NO -Go to step 5.

5. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
6. Measure the voltage between AcuraLink® control unit (XM receiver) connector A (32P) terminal No. 1 and body ground.

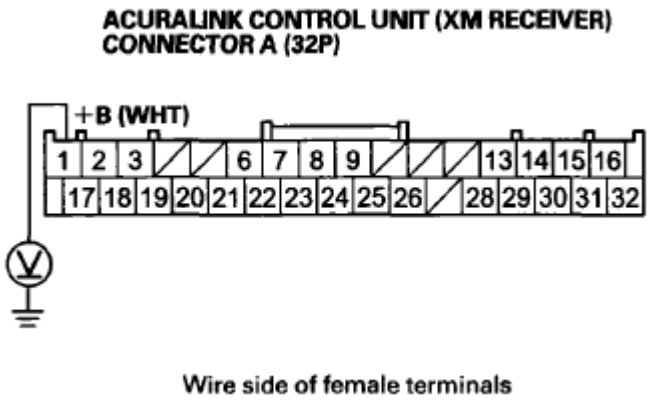


Fig. 227: Measuring Voltage Between AcuraLink® Control Unit (XM Receiver) Connector A (32P) Terminal No. 1 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there battery voltage?

YES -Go to step 7.

NO -Repair an open in the wire between No. 15 (10 A) fuse in the under-hood fuse/relay box and the AcuraLink® control unit (XM receiver).

7. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
8. Measure the voltage between body ground and AcuraLink® control unit (XM receiver) connector A (32P) terminals No. 2 and No. 3 individually.

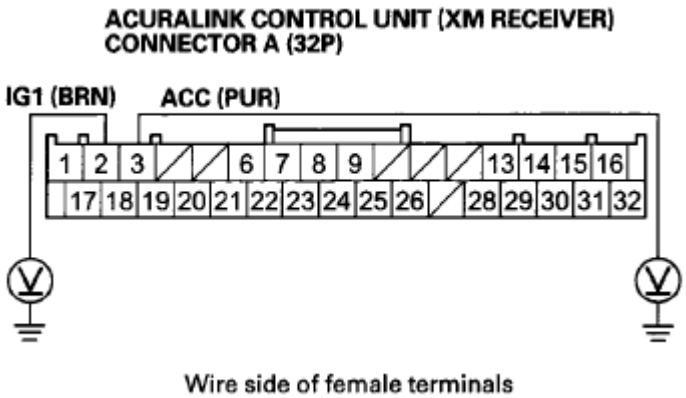


Fig. 228: Measuring Voltage Between Body Ground And AcuraLink® Control Unit (XM Receiver) Connector A (32P) Terminals No. 2 And No. 3
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there battery voltage?

YES -Go to step 9.

NO -If the IG 1 wire does not have voltage, repair an open in the wire between the No. 5 (7.5 A) fuse in the driver's under-dash fuse/relay box and the AcuraLink® control unit (XM receiver). If the ACC wire does not have voltage, repair an open in the wire between the No. 18 (7.5 A) fuse in the driver's under-dash fuse/relay box and the AcuraLink® control unit (XM receiver).

9. Measure the voltage between AcuraLink® control unit (XM receiver) connector A (32P) terminal No. 28 and body ground.

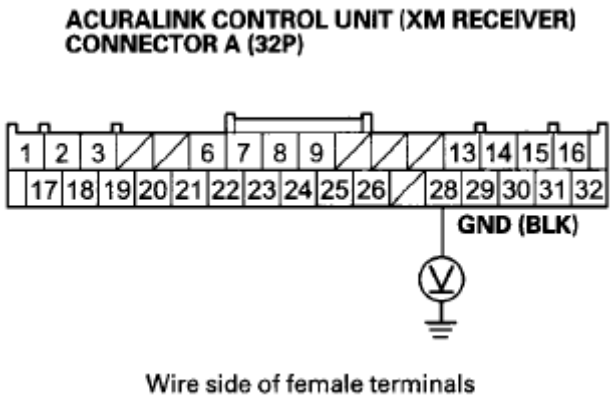


Fig. 229: Measuring Voltage Between AcuraLink® Control Unit (XM Receiver) Connector A (32P) Terminal No. 28 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there less than 0.2 V?

YES -Replace the AcuraLink® control unit (XM receiver) (see **AcuraLink® CONTROL UNIT (XM RECEIVER) REMOVAL/INSTALLATION**).

NO -Repair an open or high resistance in the wire between the AcuraLink® control unit (XM receiver) and body ground (G501) (see **CONNECTOR TO FUSE/RELAY BOX INDEX**).

XM RADIO PRESET MEMORY IS LOST (CANADA MODELS WITH NAVIGATION)

NOTE:

- **Check the vehicle battery condition first (see BATTERY TEST).**
- **Make sure the remotes are linked.**
- **Check the connectors for poor connections or loose terminals.**
- **If you can only tune to channel 000, 001, 174, and 247, make sure the**

audio-navigation unit is set to channel mode (see Owner's Manual), if it is set to channel mode, call XM Radio client support, and check the account activation status.

1. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
2. Turn on the audio system, and set each of the XM radio channel preset buttons.

   Do each of the XM radio channel preset buttons set properly?

   YES -Go to step 3.

   NO -Go to step 5.

3. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode for 1 minute, then back to ON (II), or the ON mode.
4. Test all of the XM radio channel preset buttons for proper recall operation.

   Do the preset buttons recall the set radio stations?

   YES -Intermittent failure, the system is OK at this time. Check connections at the audio-navigation unit.

   NO -Go to step 5.

5. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
6. Measure the voltage between XM receiver connector A (14P) terminal No. 1 and body ground.

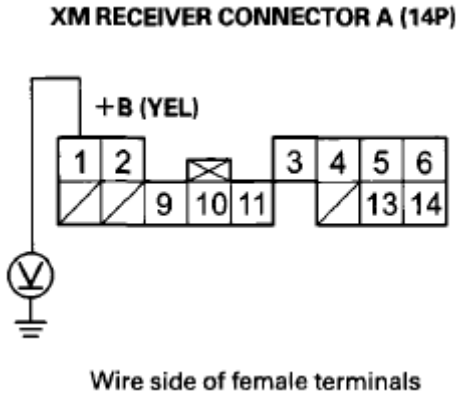


Fig. 230: Measuring Voltage Between XM Receiver Connector A (14P) Terminal No. 1 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there battery voltage?

YES -Go to step 8.

NO -Go to step 7.

7. Measure the voltage between audio-navigation unit connector C(14P) terminal No. 1 and body ground.

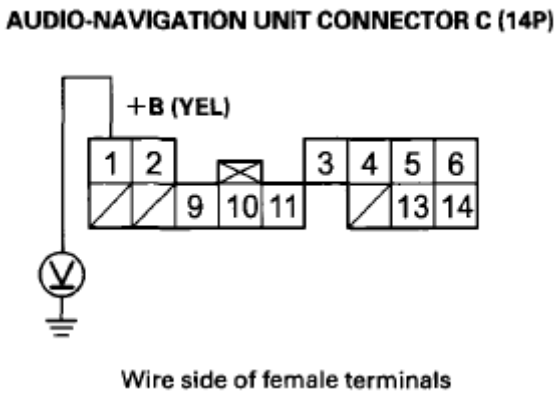


Fig. 231: Measuring Voltage Between Audio-Navigation Unit Connector C(14P) Terminal No. 1 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there battery voltage?

YES -Repair an open or high resistance in the wire between the audio-navigation unit and the XM receiver.

NO -Substitute a known-good audio-navigation unit (including the HDD) (see **AUDIO-NAVIGATION UNIT REMOVAL/INSTALLATION**), and recheck. If the symptom/indication goes away, replace the original audio-navigation unit (see **AUDIO-NAVIGATION UNIT REMOVAL/INSTALLATION**).

8. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
9. Measure the voltage between XM receiver connector A (14P) terminal No. 11 and body ground.

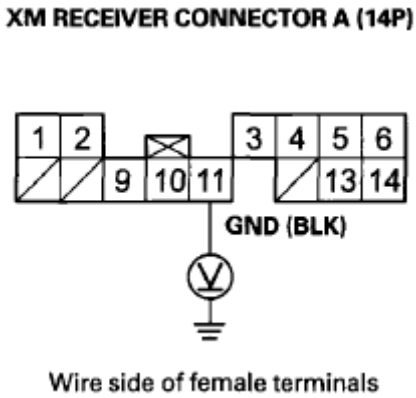


Fig. 232: Measuring Voltage Between XM Receiver Connector A (14P) Terminal No. 11 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there less than 0.2 V?

YES -Replace the XM receiver (see **XM RECEIVER REMOVAL/INSTALLATION**).

NO -Repair an open or high resistance in the wire between the XM receiver and the audio-navigation unit.

XM RADIO PRESET MEMORY IS LOST (WITHOUT NAVIGATION)

NOTE:

- **Check the vehicle battery condition first (see BATTERY TEST).**
- **Make sure the remotes are linked.**
- **Check the connectors for poor connections or loose terminals.**
- **If you can only tune to channel 000, 001, 174, and 247, make sure the audio unit is set to channel mode (see Owner's Manual), if it is set to channel mode, call XM Radio client support, and check the account activation status.**

1. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
2. Turn on the audio system, and set each of the XM radio channel preset buttons.

   Do each of the XM radio channel preset buttons set properly?

   YES -Go to step 3.

   NO -Go to step 5.

3. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode for 1 minute, then back to ON (II), or the ON mode.
4. Test all of the XM radio channel preset buttons for proper recall operation.

   Do the preset buttons recall the set radio stations?

   YES -Intermittent failure, the system is OK at this time. Check connections at the audio unit.

   NO -Go to step 5.

5. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
6. Measure the voltage between XM receiver connector A (14P) terminal No. 1 and body ground.

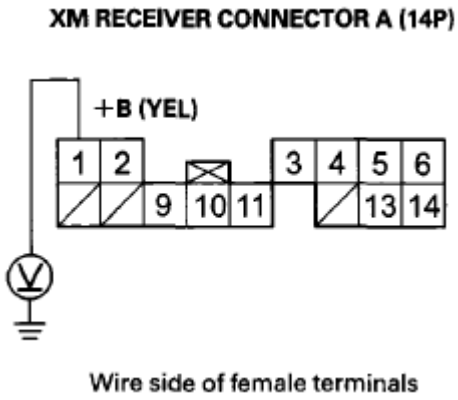


Fig. 233: Measuring Voltage Between XM Receiver Connector A (14P) Terminal No. 1 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there battery voltage?

YES -Go to step 8.

NO -Go to step 7.

7. Measure the voltage between audio unit connector C (14P) terminal No. 1 and body ground.

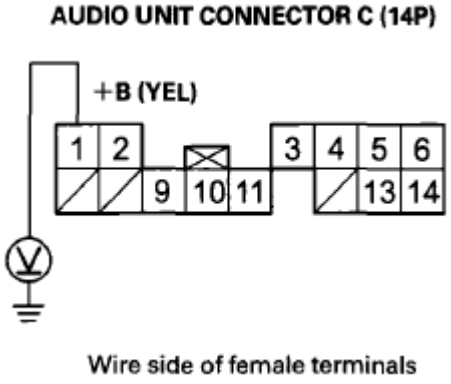


Fig. 234: Measuring Voltage Between Audio Unit Connector C (14P) Terminal No. 1 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there battery voltage?

YES -Repair an open or high resistance in the wire between the audio unit and the XM receiver.

NO -Replace the audio unit (see **AUDIO UNIT REMOVAL/INSTALLATION**).

8. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
9. Measure the voltage between XM receiver connector A (14P) terminal No. 11 and body ground.

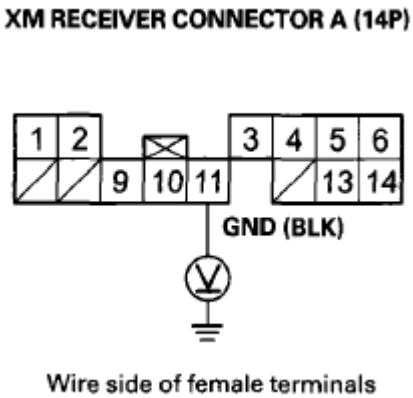


Fig. 235: Measuring Voltage Between XM Receiver Connector A (14P) Terminal No. 11 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there less than 0.2 V?

YES -Replace the XM receiver (see **XM RECEIVER REMOVAL/INSTALLATION**).

NO -Repair an open or high resistance in the wire between the XM receiver and the audio unit.

POOR OR NO SOUND WITH XM RADIO (AUDIO UNIT DOES DISPLAY XM CHANNELS) (USA MODELS WITH NAVIGATION)

NOTE:

- **Check the vehicle battery condition first (see BATTERY TEST).**
- **Check the connector for poor connections or loose terminals.**
- **Check the radio reception in an open area. Poor reception/interference can be caused by tall buildings, mountains, or high-voltage power lines are nearby.**
- **If you can only tune to channel 000, 001, 174, and 247, make sure the audio-navigation unit is set to channel mode (see Owner's Manual), if it is set to channel mode, call XM Radio client support, and check the account activation status.**
- **If you replace the XM receiver, the AcuraLink® must be reactivated by Acura Client Services.**

1. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
2. Turn on the audio system and select XM radio.
3. Check for an error message on the display.

Are there any messages displayed?

YES -Go to **ERROR CODES** .

NO -Go to step 4

4. Disconnect these items:
   - Audio-navigation unit connector C (14P)
   - HandsFreeLink control unit 32P connector
   - AcuraLink® control unit (XM receiver) connector A (32P)
5. Check for continuity between audio-navigation unit connector C (14P) and body ground according to the table.

Audio-navigation unit connector	Wire color
C5	GRN
C6	BLK
C13	WHT
C14	RED

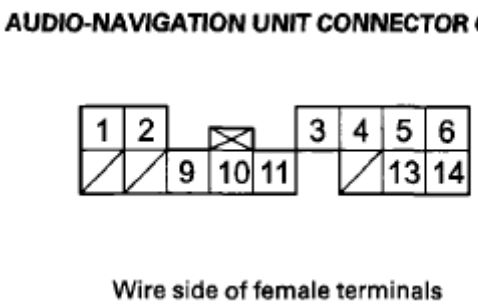


Fig. 236: Checking Continuity Between Audio-Navigation Unit Connector C (14P) And Body Ground According To Table
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES -There is a short to body ground in the wire(s) between the audio-navigation unit and the AcuraLink® control unit (XM receiver). Replace the affected shielded harness.

NO -Go to step 6.

6. Check for continuity between the terminals of audio-navigation unit connector C (14P) according to the table.

From terminal	To terminals
C4 (GRY)	C5 (GRN), C6 (BLK), C13 (WHT), C14 (RED)

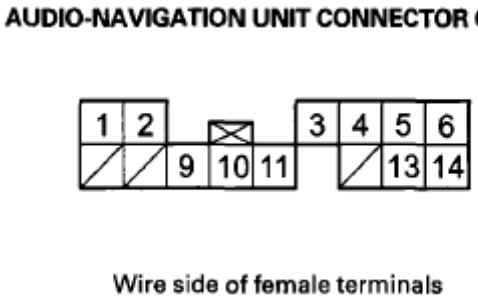


Fig. 237: Checking Continuity Between Terminals Of Audio-Navigation Unit Connector C (14P) According To Table
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity between any of the terminals?

YES -There is a short in the wires between the audio-navigation unit and the AcuraLink® control unit (XM receiver). Replace the affected shielded harness.

NO -Go to step 7.

7. Check for continuity between audio-navigation unit connector C (14P) and AcuraLink® control unit (XM receiver) connector A (32P) according to the table.

Audio-navigation unit connector	AcuraLink® control unit (XM receiver) connector	Wire color
C5	A13	GRN
C6	A15	BLK
C13	A14	WHT
C14	A16	RED

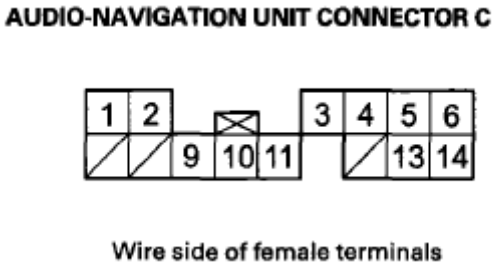


Fig. 238: Checking Continuity Between Audio-Navigation Unit Connector C (14P) Terminals
Courtesy of AMERICAN HONDA MOTOR CO., INC.

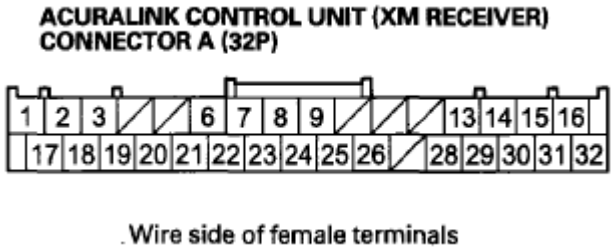


Fig. 239: Checking Continuity Between AcuraLink® Control Unit (XM Receiver) Connector A (32P) Terminals
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES -Go to step 8.

NO -There is an open in the wire(s) between the audio-navigation unit and the AcuraLink® control unit (XM receiver). Replace the affected shielded harness.

8. Reconnect audio-navigation unit connector C (14P).
9. Substitute a known-good AcuraLink® control unit (XM receiver) (see **AcuraLink® CONTROL UNIT (XM RECEIVER) REMOVAL/INSTALLATION**), and recheck.

Is the symptom/indication go away?

YES -Update the AcuraLink® control unit (see **AcuraLink® CONTROL UNIT UPDATE**) if it does not have the latest software. If the software is the latest, replace the original AcuraLink® control unit (XM receiver) (see **AcuraLink® CONTROL UNIT (XM RECEIVER) REMOVAL/INSTALLATION**).

NO -Substitute a known-good audio-navigation unit (including the HDD) (see **AUDIO-NAVIGATION UNIT REMOVAL/INSTALLATION**), and recheck. If the symptom/indication goes away, replace the original audio-navigation unit (see **AUDIO-NAVIGATION UNIT REMOVAL/INSTALLATION**).

POOR OR NO SOUND WITH XM RADIO (AUDIO UNIT DOES DISPLAY XM CHANNELS) (CANADA MODELS WITH NAVIGATION)

NOTE:

- **Check the vehicle battery condition first (see BATTERY TEST).**
- **Check the connector for poor connections or loose terminals.**
- **Check the radio reception in an open area. Poor reception/interference can be caused by tall buildings, mountains, or high-voltage power lines are nearby.**
- **If you can only tune to channel 000, 001, 174, and 247, make sure the audio-navigation unit is set to channel mode (see Owner's Manual), if it is set to channel mode, call XM Radio client support, and check the account activation status.**

- **If you replace the XM receiver, the AcuraLink® must be reactivated by Acura Client Services.**

1. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
2. Turn on the audio system and select XM radio.
3. Check for an error message on the display.

   Are there any messages displayed?

   YES -Go to **ERROR CODES** .

   NO -Go to step 4.

4. Disconnect these items:
   - Audio-navigation unit connector C (14P)
   - HandsFreeLink control unit 32P connector
   - XM receiver connector A (14P)
5. Check for continuity between audio-navigation unit connector C (14P) and body ground according to the table.

Audio-navigation unit connector	Wire color
C5	GRN
C6	BLK
C13	WHT
C14	RED

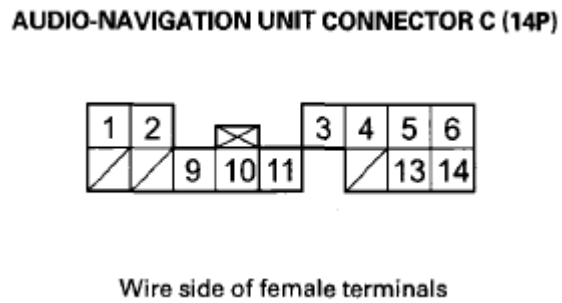


Fig. 240: Checking Continuity Between Audio-Navigation Unit Connector C (14P) And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES -There is a short to body ground in the wire(s) between the audio-navigation unit and the XM receiver. Replace the affected shielded harness.

NO -Go to step 6.

6. Check for continuity between the terminals of audio-navigation unit connector C (14P) according to the table.

From terminal	To terminals
C4 (GRY)	C5 (GRN), C6 (BLK), C13 (WHT), C14 (RED)

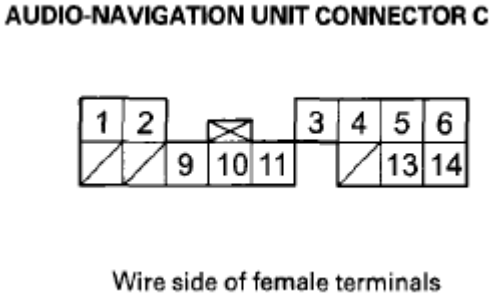


Fig. 241: Checking Continuity Between Terminals Of Audio-Navigation Unit Connector C (14P)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity between any of the terminals?

YES -There is a short in the wires between the audio-navigation unit and the XM receiver. Replace the affected shielded harness.

NO -Go to step 7.

7. Check for continuity between audio-navigation unit connector C (14P) and XM receiver connector A (14P) according to the table.

Audio-navigation unit connector	XM receiver connector	Wire color
C5	A4	GRN
C6	A16	BLK
C13	A13	WHT
C14	A5	RED

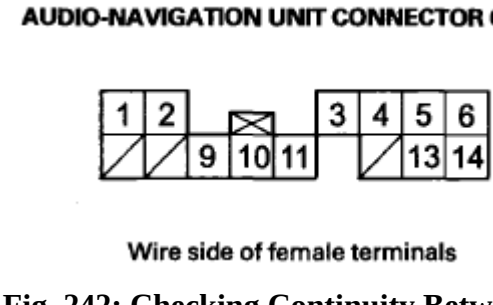


Fig. 242: Checking Continuity Between Audio-Navigation Unit Connector C (14P) Terminals
Courtesy of AMERICAN HONDA MOTOR CO., INC.

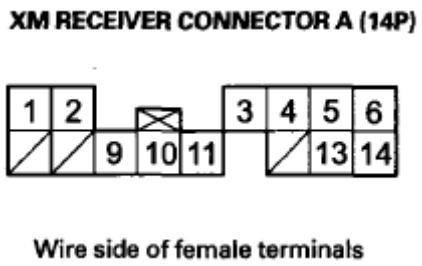


Fig. 243: Checking Continuity Between XM Receiver Connector A (14P) Terminals
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES -Substitute a known-good XM receiver (see **XM RECEIVER REMOVAL/INSTALLATION**), then reconnect all connectors, and recheck. If the symptom/indication goes away, replace the original XM receiver (see **XM RECEIVER REMOVAL/INSTALLATION**). If the symptom/indication is still present, replace the audio-navigation unit (see **AUDIO-NAVIGATION UNIT REMOVAL/INSTALLATION**).

NO -There is an open in the wire(s) between the audio-navigation unit and the XM receiver. Replace the affected shielded harness.

POOR OR NO SOUND WITH XM RADIO (AUDIO UNIT DOES DISPLAY XM CHANNELS) (WITHOUT NAVIGATION)

NOTE:

- **Check the vehicle battery condition first (see BATTERY TEST).**
- **Check the connector for poor connections or loose terminals.**
- **Check the radio reception in an open area. Poor reception/interference can be caused by tall buildings, mountains, or high-voltage power lines are nearby.**
- **If you can only tune to channel 000, 001, 174, and 247, make sure the audio unit is set to channel mode (see Owner's Manual), if it is set to channel mode, call XM Radio client support, and check the account activation status.**

1. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
2. Turn on the audio system and select XM radio.
3. Check for an error message on the display.

Are there any messages displayed?

YES -Go to **ERROR CODES** .

NO -Go to step 4

4. Disconnect these items:
   - Audio unit connector C(14P)
   - HandsFreeLink control unit 28P connector
   - XM receiver connector A (14P)
   - USB adapter control unit connector A (14P)
5. Check for continuity between audio unit connector C (14P) and body ground.

Audio unit connector	Wire color
C5	GRN
C6	BLK
C13	WHT
C14	RED

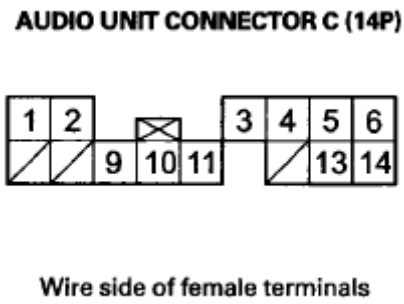


Fig. 244: Checking Continuity Between Audio Unit Connector C (14P) And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES -There is a short to body ground in the wire(s) between the audio unit and the XM receiver. Replace the affected shielded harness.

NO -Go to step 6.

6. Check for continuity between the terminals of audio unit connector C (14P) according to the table.

From terminal	To terminals
C4 (GRY)	C5 (GRN), C6 (BLK), C13 (WHT), C14 (RED)

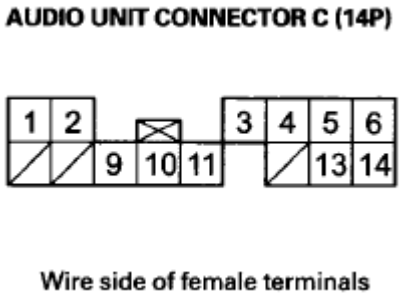


Fig. 245: Checking Continuity Between Terminals Of Audio Unit Connector C (14P) According To Table
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity between any of the terminals?

YES -There is a short in the wires between the audio unit and the XM receiver. Replace the affected shielded harness.

NO -Go to step 7.

7. Check for continuity between audio unit connector C (14P) and XM receiver connector A (14P) according to the table.

Audio unit connector	XM receiver connector	Wire color
C5	A14	GRN
C6	A6	BLK
C13	A13	WHT
C14	A5	RED

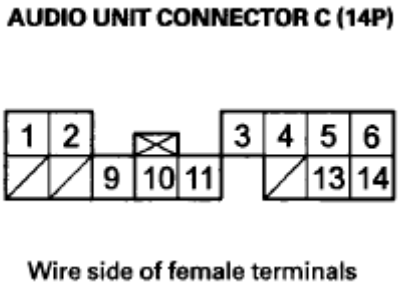


Fig. 246: Checking Continuity Between Audio Unit Connector C (14P) Terminals
Courtesy of AMERICAN HONDA MOTOR CO., INC.

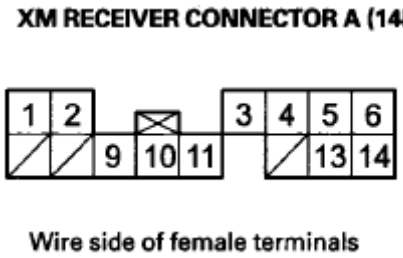


Fig. 247: Checking Continuity Between XM Receiver Connector A (14P) Terminals
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES -Substitute a known-good XM receiver (see **XM RECEIVER REMOVAL/INSTALLATION**), then reconnect all connectors, and recheck. If the symptom/indication goes away, replace the original XM receiver (see **XM RECEIVER REMOVAL/INSTALLATION**). If the symptom/indication is still present, replace the audio unit (see **AUDIO UNIT REMOVAL/INSTALLATION**).

NO -There is an open in the wire(s) between the audio unit and the XM receiver. Replace the affected shielded harness.

SOUND QUALITY DIAGNOSIS

Special Tools Required

Diagnostic CD 07AAZ-SDBA100

Use the following tests to check sound quality.

NOTE: Before beginning the following tests, write down the client's bass, treble, fader and balance settings, then set them to their center positions for the testing.

LEFT/RIGHT CHANNEL ID

Do this test to confirm proper channel routing.

1. Insert the audio diagnostic CD (T/N 07AAZ-SDBA100) into the audio unit.
2. Play track No. 1 (left, both, right channel ID) at a normal, or slightly higher than normal, volume level.
3. The voice should be audible only from the channel or channels when indicated.
    - If the channel ID is correct for each side, go to **PHASE TEST**.
    - If the channel ID is not correct, check for:
        - Shorted speaker wire
        - Faulty stereo amplifier
        - Faulty audio unit

PHASE TEST

Do this test to confirm proper speaker phasing.

1. Insert the audio diagnostic CD (T/N 07AAZ-SDBA100) into the audio unit.
2. Play track No. 2 (phase) at a normal, or slightly higher than normal, volume level.
3. The voice should sound centered and focused when it is in-phase.
4. The voice should sound diffused, and have less bass when it is out of phase.
    - If the voice changes from in-phase to out of phase as indicated by the prompt, the phasing is correct. Go to **ELECTRICAL NOISE TEST**.
    - If the voice always sounds out of phase, phasing is not correct. Check for:
        - Crossed speaker wire
        - Faulty stereo amplifier
        - Faulty audio unit

ELECTRICAL NOISE TEST

Do this test to check for electrical noise being induced into the audio system.

NOTE: Electrical noise may be caused by outside sources that cannot be handled by the audio system. Make sure you remove any cell phones and/or turn off any aftermarket devices before beginning this test.

1. Insert the audio diagnostic CD (T/N 07AAZ-SDBA100) into the audio unit.
2. Play track No. 4 (digital zero) at a normal, or slightly higher than normal, volume level.
3. Operate any electrical device that may create electrical noise in the audio system, including starting the engine.
4. Play track No. 5 (near digital zero) at a normal, or slightly higher than normal, volume level.
5. Operate any electrical device that may create electrical noise in the audio system, including starting the engine.
6. Play track No. 6 (SNR) at a normal, or slightly higher than normal, volume level.
7. Operate any electrical device that may create electrical noise in the audio system, including starting the engine.
    - If no abnormal noise is heard, go to **INDIVIDUAL SPEAKER TEST**.
    - If the noise is present only during the SNR track, replace the audio unit.
    - If the noise is heard during the digital zero or near digital zero track, check for:
        - Poor ground at the audio unit, stereo amplifier, engine, or battery cable
        - Pinched or shorted speaker or stereo amplifier wire
        - Faulty stereo amplifier
        - Faulty audio unit
        - Other faulty components causing excessive electrical noise (ignition coils, alternator, door

lock actuators, etc.). Disconnect any suspect components, and then replay the tracks that were originally noisy. If the noise is gone, check the component's circuit and the component.

INDIVIDUAL SPEAKER TEST

Do this test to identify a faulty speaker.

1. Insert the audio diagnostic CD (T/N 07AAZ-SDBA100) into the audio unit.
2. Play track No. 30 (steady 300 Hz tone) at a normal, or slightly higher than normal, volume level.
3. Listen to each speaker for poor sound compared to the other channels. Use the audio unit's fader and balance settings to help isolate the channel with the problem.
    - If the sound quality produced by a specific speaker is poor, substitute it with a known-good speaker. If the poor sound quality continues, go to Sound Balance Test.
    - If the sound quality is OK, go to Sound Balance Test.

SOUND BALANCE TEST

Do this test to identify a faulty channel or speaker.

1. Insert the audio diagnostic CD (T/N 07AAZ-SDBA100) into the audio unit.
2. Confirm the bass and treble are set to the center positions.
3. Play track No. 3 (pink noise) at a normal, or slightly higher than normal, volume level.
4. A static type sound should be heard through all speakers.
5. Insert the audio diagnostic CD (T/N 07AAZ-SDBA100) into the audio unit of a known-good vehicle.
6. Set the bass and treble to the center positions.
7. Play track No. 3 (pink noise) all the same level as was played in step 3.
8. Compare the sounds made by the two vehicles.
    - If the sound does not have as much bass, check the subwoofer and circuit.
    - If the sound does not have enough hiss, check the tweeters and their circuits.

FREQUENCY SWEEP

Do this test to find rattles or reverberations that may cause a perception of poor sound quality.

1. Insert the audio diagnostic CD (T/N 07AAZ-SDBA100) into the audio unit.
2. Play track No. 13 (sweep from 500 Hz to 35 Hz) at a normal, or slightly higher than normal, volume level.
3. Listen to each speaker for poor sound quality or reverberations caused by specific frequencies. Use the voice-over to estimate the frequency that causes the vibration. Use the audio unit's fader and balance settings to help isolate the channel with the problem.
    - If vibrations or poor sound quality are heard, go to step 4.
    - If no vibrations or poor sound quality are heard, go to Sound Judging.
4. Choose the appropriate track from No. 14 to 25 (small range frequency sweep) or 26 to 53 (single

frequencies) to recreate the frequency that caused the poor sound quality or vibration witnessed in step 3; this aids in diagnosis of the cause.

NOTE: When you get to the track that recreates the problem, select the repeat function on the audio unit, this will help you isolate the cause.

5. Replace or insulate the source of the vibration or, if the speaker is the source of the poor sound quality, replace it.

SOUND JUDGING

Do this test to compare overall sound quality, imaging, and dynamics between the client's vehicle and a known-good vehicle. Only use a vehicle of the same model and trim level for this test.

1. In the client's vehicle, set the bass, treble, fader, and balance settings to the client's normal settings that were written down before beginning the test.
2. Insert the audio diagnostic CD (T/N 07AAZ-SDBA100) into the audio unit.
3. Play tracks No. 7 to 12 (sound quality, midland, dynamics, and imaging demonstration tracks) at a normal, or slightly higher than normal, volume level. Write down the volume setting being used.
4. Listen to areas of the track that stand out as being either very clear or poorer than other areas of the track.
5. In a known-good vehicle, insert the audio diagnostic CD (T/N 07AAZ-SDBA100) into the audio unit.
6. Play the tracks at the same volume level and the same bass, treble, balance, and fader settings as used in step 3 in the client's vehicle.
7. Listen to the same area of the track that stood out as being either very clear or poorer than other areas of the track.
8. Compare the client's vehicle's sound quality results the known-good vehicle's results.
    - If the sound quality in the client's vehicle is comparable to the sound quality in the known-good vehicle, then the client's vehicle is operating as designed.
    - If the sound quality is not comparable, check these items in order:
        - Loose or improperly installed speakers or other hardware that may create interference from the vibrations generated by the speakers
        - Poor power or ground to the stereo amplifier
        - Damaged speaker(s)
        - Faulty stereo amplifier
        - Faulty audio unit

SEEK STOP TEST

Do this test to check the performance of the audio unit's AM and FM reception. Refer to **SYMPTOM TROUBLESHOOTING: AUDIO SOUND WEAK OR DISTORTED (DISPLAY IS NORMAL); WITH NAVIGATION** (see), **WITHOUT NAVIGATION** (see), or **NO SOUND IS HEARD FROM THE SPEAKER(S) (DISPLAY IS NORMAL); WITH NAVIGATION** (see), **WITHOUT NAVIGATION** before continuing with this test.

NOTE:

- **Window tint, aftermarket theft-recovery devices and other aftermarket devices may affect reception.**
- **Changes in cloud cover and other atmospheric conditions will affect the ability of the audio unit to receive radio signals.**

1. Park the client's vehicle in an open area away from buildings or other obstructions.
2. Park a known-good vehicle (same year, model, and trim level) next to the client's vehicle, facing the same direction.
3. Start the engine in the client's vehicle, and turn on the radio.
4. Set the FM receiver to 87.7 MHz.
5. Press the Seek + button, and record the first station that the audio unit locks onto.
6. Press the Seek + button repeatedly, and write down each station that the audio unit locks onto until the station recorded in step 5 is reached again.
7. Set the AM receiver to 530 kHz.
8. Press the Seek + button, and record the first station that the audio unit locks onto.
9. Press the Seek + button repeatedly, and write down each station that the audio unit locks onto until the station recorded in step 8 is reached again.
10. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
11. Start the engine in the known-good vehicle, and then do steps 4 thru 10 on the known-good vehicle.
12. Compare the number of stations received in steps 6 and 9 in the client's vehicle with the number of stations received in the known-good vehicle.
    - If the number of stations received is the same, or within 10%, the audio unit's tuner performance is OK. The problem may be atmospheric conditions, multi-path interference, or other obstructions to the radio signal.
    - If the client's vehicle receives fewer stations by at least 10%, go to step 2 of Poor AM or FM radio reception or interference troubleshooting; with navigation (see **POOR AM OR FM RADIO RECEPTION OR INTERFERENCE (WITH NAVIGATION)**), without navigation (see **POOR AM OR FM RADIO RECEPTION OR INTERFERENCE (WITHOUT NAVIGATION)**).

AUDIO UNIT REMOVAL/INSTALLATION

WITHOUT NAVIGATION

NOTE:

- **Put on gloves to protect your hands.**
- **Take care not to scratch the dashboard and related parts.**
- **Lay a shop towel under the parts when working on them to protect the face panel from scratches or other damage.**
- **Eject all the discs before removing the audio unit to prevent damaging the CD player's load mechanism.**
- **If you are replacing the audio unit, write down the audio presets (if**

possible), then enter them into the new audio unit.

1. Make sure you have the anti-theft codes for the audio system.
2. Remove the dashboard center trim (see **DASHBOARD CENTER TRIM REMOVAL/INSTALLATION**).
3. Remove the dashboard center vent (see **DASHBOARD CENTER VENT REMOVAL/INSTALLATION**).
4. Carefully remove the bolts (A) and (B), then pull the audio unit (C) out.

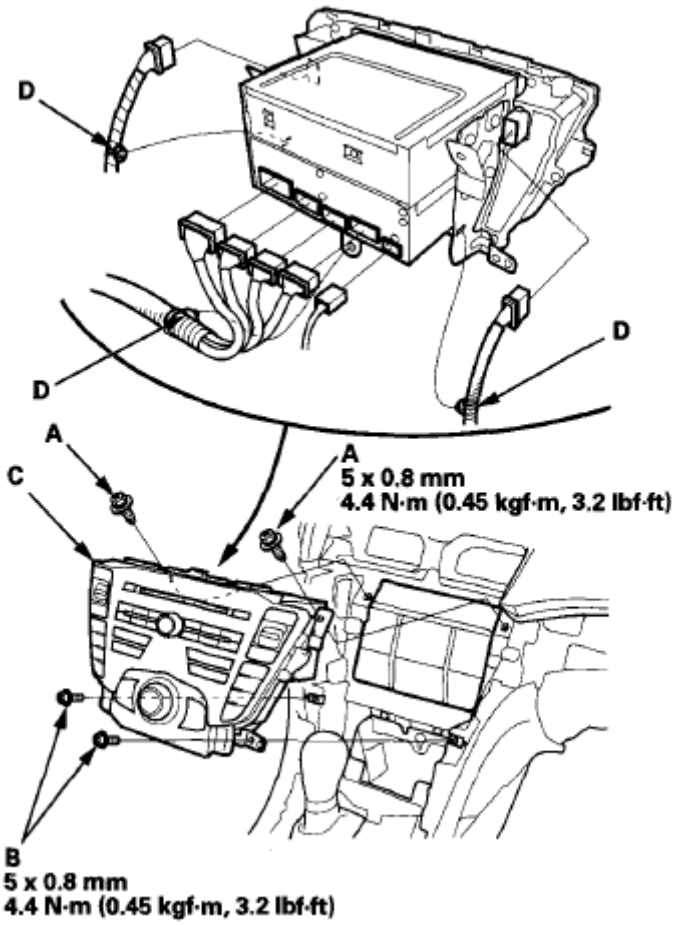


Fig. 248: Identifying Bolts And Audio Unit With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Disconnect the connectors, and detach the clips (D).
6. Remove the climate control switches (see **CLIMATE CONTROL SWITCH REMOVAL/INSTALLATION**).
7. Remove the bolts (A) and stays (B).

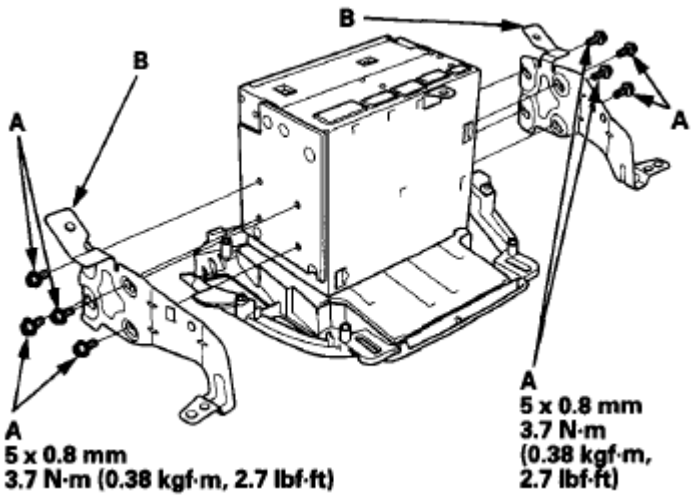


Fig. 249: Identifying Bolts And Stays With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

8. Install the audio unit in the reverse order of removal, and note these items:
   - Make sure all the connectors and the antenna lead are secure.
   - Enter the anti-theft codes for the audio system.
9. Give the new anti-theft codes to the client if the audio unit is replaced.

AUDIO-NAVIGATION SWITCH PANEL REMOVAL/INSTALLATION

WITH NAVIGATION

NOTE:

- **Put on gloves to protect your hands.**
- **Take care not to scratch the dashboard and related parts.**
- **Lay a shop towel under the parts when working on them to protect the face panel from scratches or other damage.**
- **Eject all the discs before removing the audio-navigation unit to prevent damaging the CD/DVD player's load mechanism.**
- **Discharge static electricity from your body before and during the work.**

1. Remove the audio-navigation unit (see **AUDIO-NAVIGATION UNIT REMOVAL/INSTALLATION**).
2. Remove the interface dial (see **INTERFACE DIAL REMOVAL/INSTALLATION**).

Do not touch the terminal connector (A) of the audio-navigation switch panel with your bare hands (if you have touched it, wipe it off thoroughly).

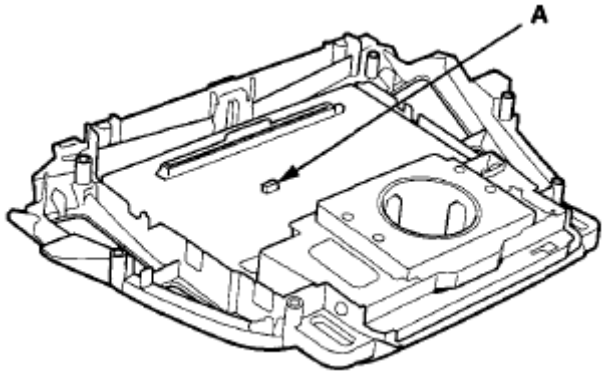


Fig. 250: Identifying Terminal Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Install the audio-navigation switch panel in the reverse order of removal.

AUDIO-HVAC DISPLAY UNIT REMOVAL/INSTALLATION

WITHOUT NAVIGATION

NOTE:

- **Put on gloves to protect your hands.**
- **Take care not to scratch the dashboard and related parts.**
- **Lay a shop towel under the parts when working on them to protect the face panel from scratches or other damage.**

1. Remove the dashboard center vent (see **DASHBOARD CENTER VENT REMOVAL/INSTALLATION**).
2. Carefully remove the screws from the audio-HVAC display unit (A).

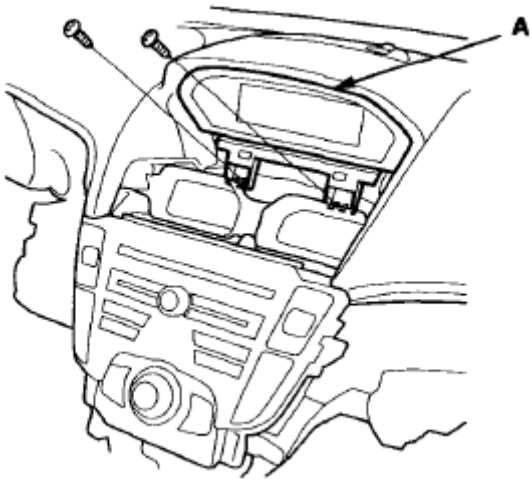


Fig. 251: Identifying Audio-HVAC Display Unit
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Pull out the audio-HVAC display unit. Then disconnect the connector (A) from the audio-HVAC display unit.

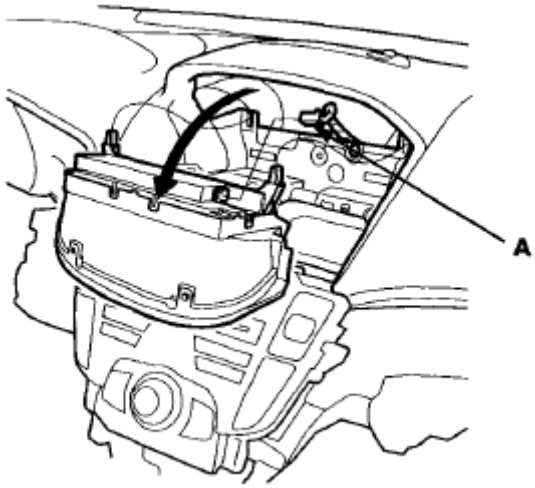


Fig. 252: Identifying Connector Of Audio-HVAC Display Unit
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Install the audio-HVAC display unit in the reverse order of removal.

STEREO AMPLIFIER REMOVAL/INSTALLATION

1. Remove the right trunk side trim panel (see **TRIM REMOVAL/INSTALLATION - TRUNK AREA**).
2. Loosen the mounting bolts (A), then detach the clip (B) and pull out the stereo amplifier (C).

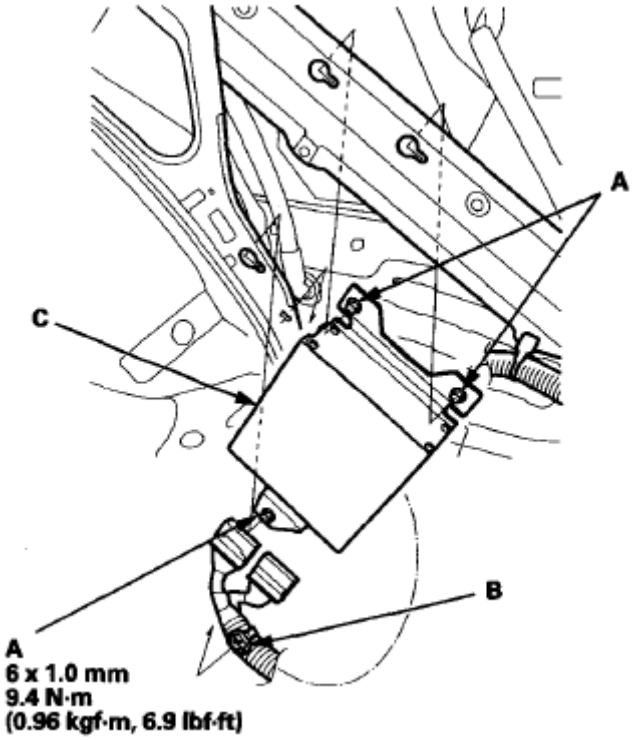


Fig. 253: Identifying Mounting Bolts, Clip And Stereo Amplifier With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Disconnect the connectors from the stereo amplifier, and remove it.
4. Install the stereo amplifier in the reverse order of removal.

ACURALINK® CONTROL UNIT (XM RECEIVER) REMOVAL/INSTALLATION

WITH ACURALINK®

1. Remove the center console (see **CENTER CONSOLE REMOVAL/INSTALLATION**).
2. Remove the HandsFreeLink control unit (see **HFL SWITCH TEST**).
3. Remove the audio-navigation unit (see **AUDIO-NAVIGATION UNIT REMOVAL/INSTALLATION**).
4. Remove the bolts (A), and loosen the bolt (B).

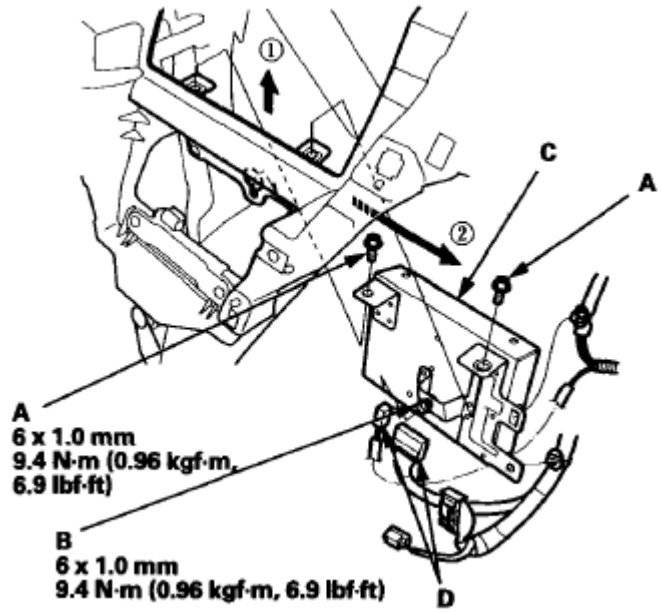


Fig. 254: Identifying Bolts, Connectors And AcuraLink® Control Unit With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Pull the AcuraLink® control unit (XM receiver) (C) out, then disconnect the connectors (D) from the AcuraLink® control unit (XM receiver), and detach the clips.
6. Install the AcuraLink® control unit (XM receiver) in the reverse order of removal.

NOTE: If you replaced the AcuraLink® control unit (XM receiver) make sure it has the latest software (see AcuraLink® CONTROL UNIT UPDATE).

7. Call XM Radio to update the client's account with the new XM/HIP serial number. Also call Acura Client Services to reactivate the AcuraLink®.

XM RECEIVER REMOVAL/INSTALLATION

WITHOUT ACURALINK®

1. Remove the center console (see **CENTER CONSOLE REMOVAL/INSTALLATION**).
2. Remove the HandsFreeLink control unit (see **HFL SWITCH TEST**).
3. Without navigation, remove the audio unit (see **AUDIO UNIT REMOVAL/INSTALLATION**). Canada models with navigation, remove the audio-navigation unit (see **AUDIO-NAVIGATION UNIT REMOVAL/INSTALLATION**).
4. Remove the bolt (A), and loosen the bolt (B).

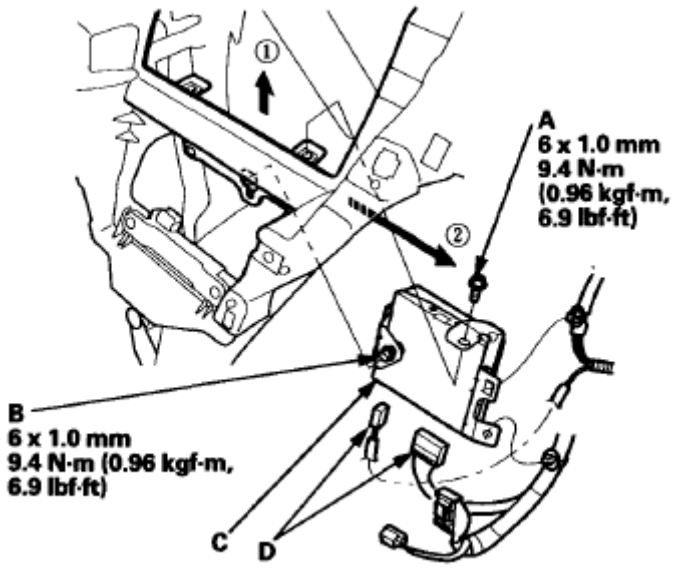


Fig. 255: Identifying Bolts, XM Receiver And Connectors With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Pull the XM receiver (C) out, then disconnect the connectors (D) from the XM receiver, and detach the clips.
6. Install the XM receiver in the reverse order of removal.

NOTE: If you are replacing the XM receiver, register the new XM receiver I.D. number with XM Radio by calling 800-852-9696.

USB ADAPTER CONTROL UNIT REPLACEMENT

WITHOUT NAVIGATION

1. Remove the center console panel (see **CENTER CONSOLE PANEL DISASSEMBLY/REASSEMBLY**).
2. Disconnect the connectors from the USB adapter control unit (A), then remove the screws and the USB adapter control unit.

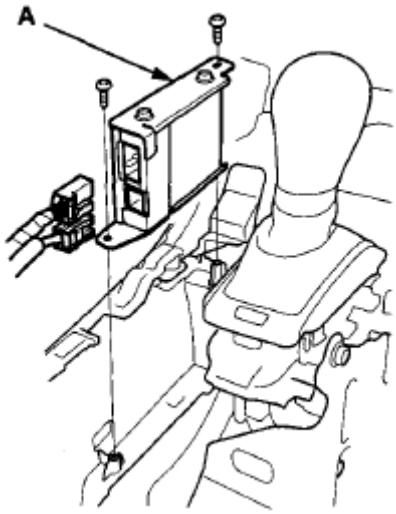


Fig. 256: Identifying USB Adapter Control Unit
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Install the USB adapter control unit in the reverse order of removal.

SPEAKER TEST/REPLACEMENT

FRONT DOOR SPEAKER

1. Remove the front door panel (see **FRONT DOOR PANEL REMOVAL/INSTALLATION**).
2. Remove the bolt (A). Then lift the speaker (B) straight up to release the lower clips (C).

NOTE: If you pull the speaker out too far from the door, you will damage the lower clips.

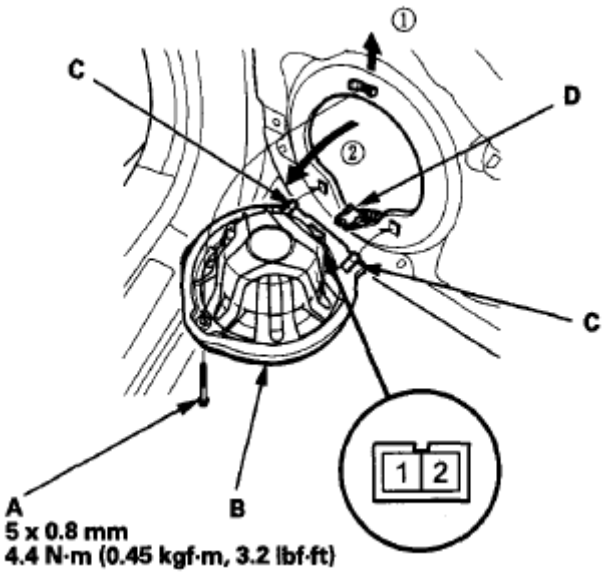


Fig. 257: Identifying Bolt, Speaker And Lower Clips With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Disconnect the 2P connector (D), and remove the speaker.
4. Measure the resistance between terminals No. 1 and No. 2:
   - With navigation, there should be 2 ohms.
   - Without navigation, there should be 4 ohms.
5. If the resistance is not as specified, replace the door speaker.

FRONT CENTER SPEAKER

1. With navigation, remove the navigation display unit (see **NAVIGATION DISPLAY UNIT REMOVAL/INSTALLATION**). Without navigation, remove the audio-HVAC display unit (see **AUDIO-HVAC DISPLAY UNIT REMOVAL/INSTALLATION**).
2. Push out the speaker lid (A) from inside the dashboard, and disconnect the connectors.

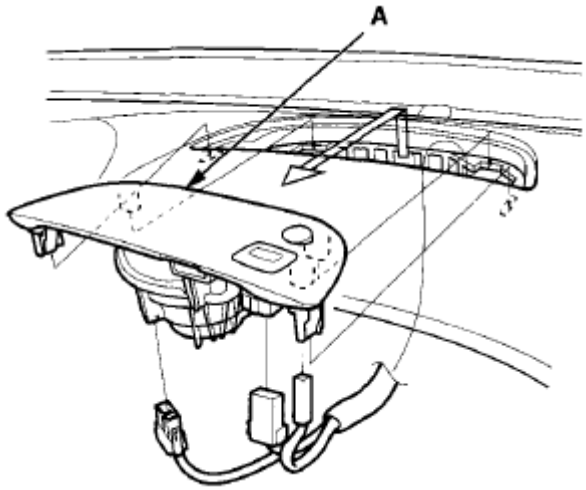


Fig. 258: Identifying Speaker Lid
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Remove the screws and the front center speaker (A).

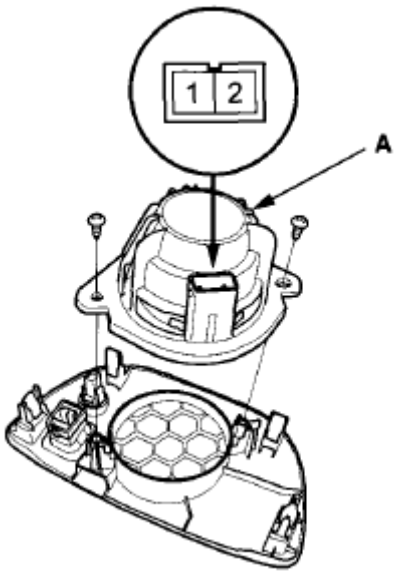


Fig. 259: Identifying Front Center Speaker
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Measure the resistance between terminals No. 1 and No. 2. There should be about 2 ohms.
5. If the resistance is not as specified, replace the front center speaker.

TWEETER

SRS components are located in this area. Review the SRS component locations (see **COMPONENT LOCATION INDEX**), and the precautions and procedures (see **PRECAUTIONS AND PROCEDURES**) before doing repairs or service.

1. Remove the A-pillar trim (see **TRIM REMOVAL/INSTALLATION - PILLAR AREAS**).
2. Release the hooks, and remove the tweeter (A).

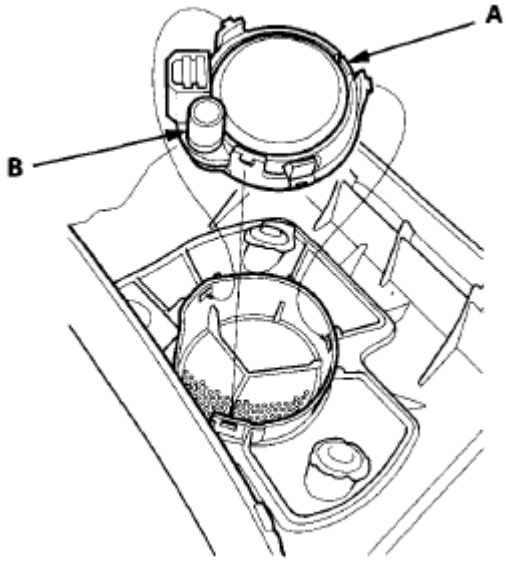


Fig. 260: Identifying Tweeter And Capacitor
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Check the capacitor (B) condition. If any malfunction is found, replace the tweeter.
4. Measure the resistance between the tweeter (A) terminal No. 2 and the outside terminal of the capacitor. There should be about 6 ohms.

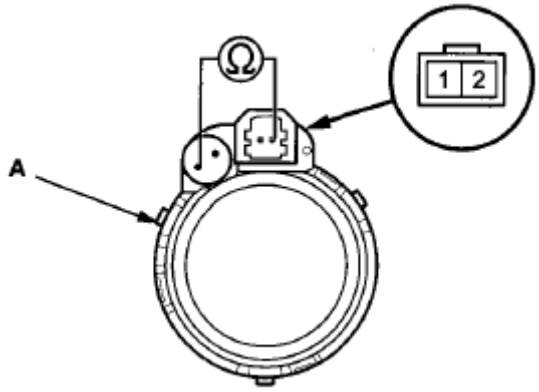


Fig. 261: Identifying Tweeter
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. If the resistance is not as specified, replace the tweeter.

REAR SPEAKER

1. Remove the rear shelf (see **TRIM REMOVAL/INSTALLATION - REAR SHELF AREA**).
2. Remove the mounting bolt (A), then tilt the speaker (B) forward to release the clips (C).

NOTE: If you pull the speaker out too far from the rear bulkhead, you will damage

the clips.

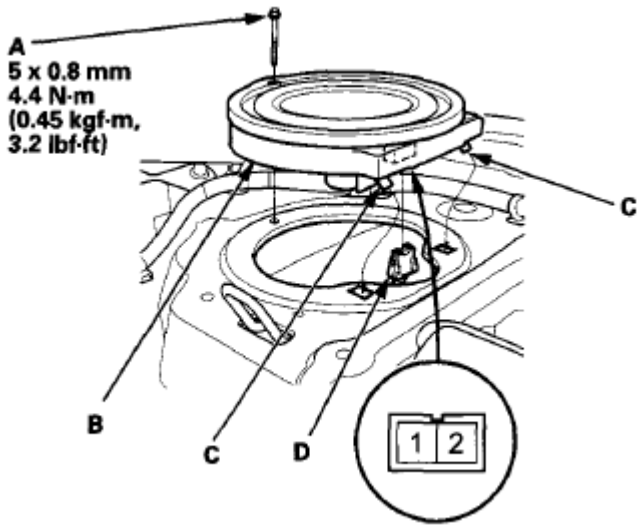


Fig. 262: Identifying Mounting Bolt, 2P Connector, Speaker And Clips With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Disconnect the 2P connector (D), and remove the rear speaker.
4. Measure the resistance between the terminals No. 1 and No. 2:
   - With navigation, there should be 2 ohms.
   - Without navigation, there should be 4 ohms.
5. If the resistance is not as specified, replace the rear speaker.

REAR DOOR SPEAKER (WITH ELS AUDIO)

1. Remove the rear door panel (see **REAR DOOR PANEL REMOVAL/INSTALLATION**).
2. Remove the bolts (A), disconnect the 2P connector (B), and remove the speaker (C).

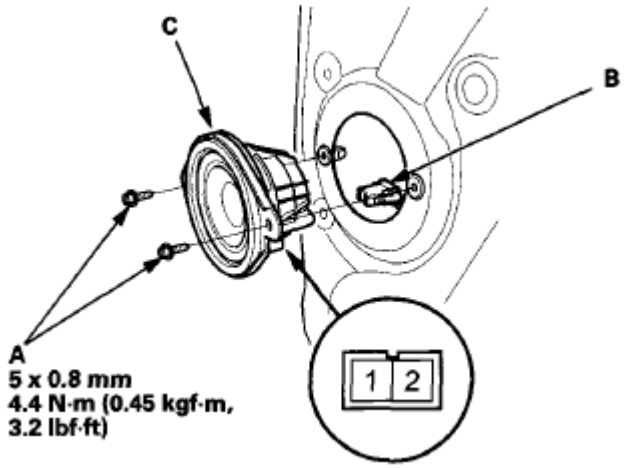


Fig. 263: Identifying Bolts, 2P Connector And Speaker With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Measure the resistance between terminals No. 1 and No. 2. There should be about 2 ohms.
4. If the resistance is not as specified, replace the rear door speaker.

SUBWOOFER

1. Remove the rear shelf (see **TRIM REMOVAL/INSTALLATION - REAR SHELF AREA**).
2. Remove the four mounting bolts (A) from the subwoofer (B).

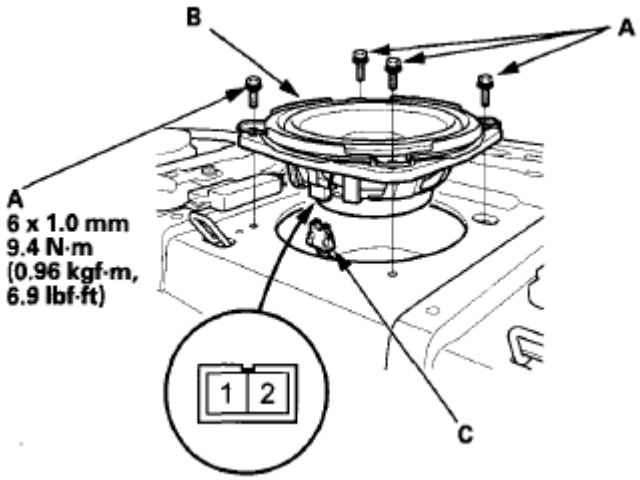


Fig. 264: Identifying Mounting Bolts, 2P Connector And Subwoofer With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Disconnect the 2P connector (C), and remove the subwoofer.
4. Measure the resistance between the terminals No. 1 and No. 2. There should be about 2 ohms.
5. If the resistance is not as specified, replace the subwoofer.

AUDIO REMOTE SWITCH TEST

1. Remove the audio remote, HFL-navigation voice control switch or the audio remote-HFL switch (see **STEERING WHEEL DISASSEMBLY/REASSEMBLY**).
2. Measure the resistance between terminals No. 11 and No. 12 in each switch position according to the table.

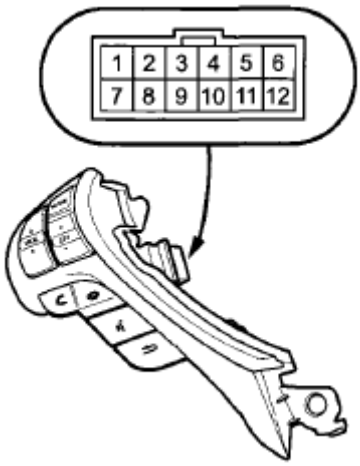


Fig. 265: Measuring Resistance Between Terminals No. 11 And No. 12 In Switch Position According To Table
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Position	Resistance
No button pressed	About 10 kohms
MODE	About 3.7 kohms
CH (+)	About 1.7 kohms
CH (-)	About 775 ohms
^ (VOL. UP)	About 357 ohms
(VOL. DOWN)	About 100 ohms

3. If the resistance is not as specified, replace the switch.

AM/FM ANTENNA AMPLIFIER REPLACEMENT

SRS components are located in this area. Review the SRS component locations (see **COMPONENT LOCATION INDEX**), and the precautions and procedures (see **PRECAUTIONS AND PROCEDURES**) before doing repairs or service.

1. Remove the C-pillar trim (see **C-PILLAR TRIM**).
2. Disconnect the connectors (A) from the AM/FM antenna and connector (B) from the AM/FM antenna amplifier (C).

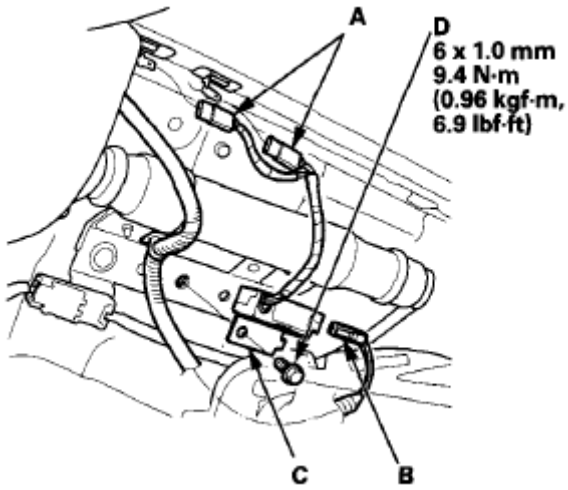


Fig. 266: Identifying Connectors, AM/FM Antenna And Connector, Bolts And Amplifier With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Remove the bolt (D) and the AM/FM antenna amplifier.
4. Install the AM/FM antenna amplifier in the reverse order of removal.

AM/FM ANTENNA REPAIR

NOTE: To make an effective repair, the broken section must be no longer than one inch.

1. Lightly rub the area around the broken section (A) with fine steel wool, then clean it with isopropyl alcohol.

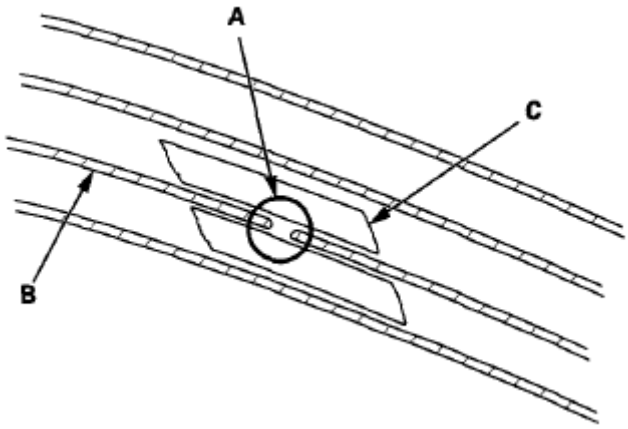


Fig. 267: Identifying Broken Section, Antenna Wire And Cellophane Tape
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Carefully mask above and below the broken portion of the window antenna wire (B) with cellophane tape

(C).

3. Using a commercially available rear window defogger repair kit, apply a heavy coat of paint (A) extending about 1/8" on both sides of the break. Allow 30 minutes to dry.

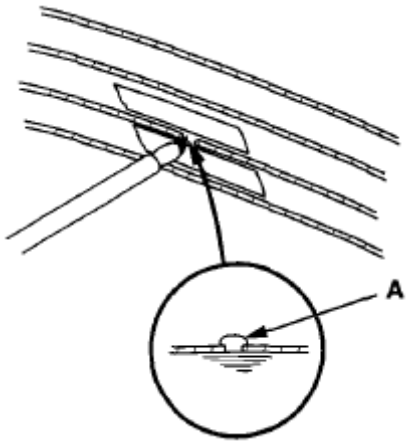


Fig. 268: Identifying Heavy Coat Of Paint
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Check for continuity in the repaired wire.
5. Apply a second coat of paint in the same way. Let it dry 3 hours before removing the tape.

XM ANTENNA REPLACEMENT

1. Pull down the rear portion of the headliner (see **HEADLINER REMOVAL/INSTALLATION**). Take care not to damage the headliner.
2. Disconnect the XM antenna connector (A).

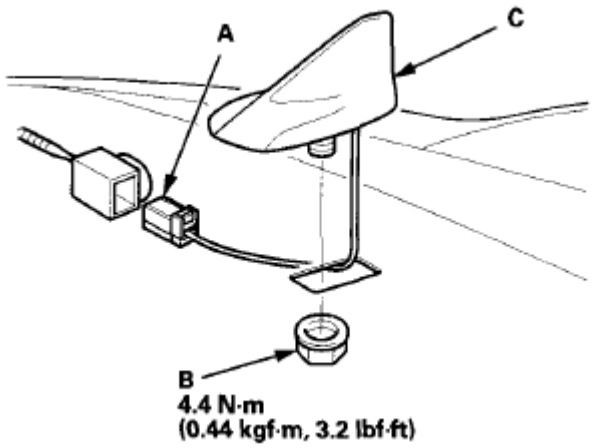


Fig. 269: Identifying XM Antenna Connector, Nut And XM Antenna With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Remove the nut (B) from the XM antenna (C), and remove it.

4. Install the XM antenna in the reverse order of removal.

USB ADAPTER HOLDER/AUXILIARY JACK ASSEMBLY REPLACEMENT

1. Remove the center console (see **CENTER CONSOLE REMOVAL/INSTALLATION**).
2. Detach the connector (A) from the clip. Remove the cover (B) and disconnect the USB adapter connector (C).

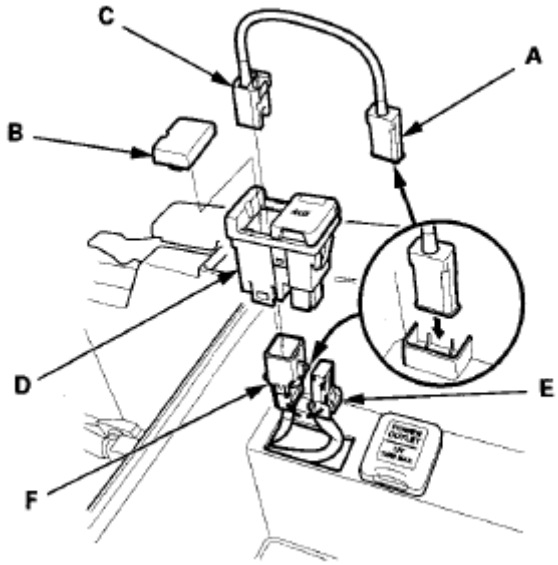


Fig. 270: Identifying Connector, Cover And USB Adapter Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

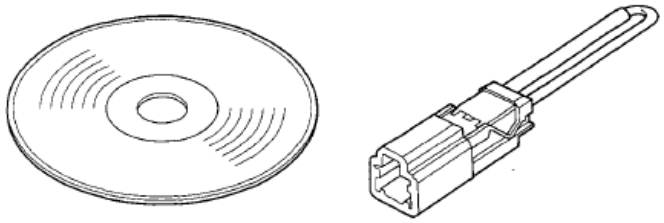
3. Carefully pull out the USB adapter holder/auxiliary jack assembly (D) from the center console box, then disconnect the 5P connector (E) and remove the USB adapter connector (F).
4. Install the USB adapter holder/auxiliary jack assembly in the reverse order of removal.

2012 ACCESSORIES & EQUIPMENT

Audio, Navigation And Telematics (Special Tools) - TL

SPECIAL TOOLS

Ref.No.	Tool Number	Description	Qty
①	07AAZ-SDBA100	Diagnostic CD	1
②	07AAZ-SDBA200	Skip Test CD	1
③	07AAZ-SDBA300	Skip Test CD	1
④	07PAZ-001010A	SCS Service Connector	1



①, ②, ③ ④

Fig. 1: Identifying Audio, Navigation And Telematics Special Tools

2012 ACCESSORIES & EQUIPMENT

Automatic Dimming Inside Mirror - TL

CIRCUIT DIAGRAM

WITHOUT KEYLESS ACCESS SYSTEM

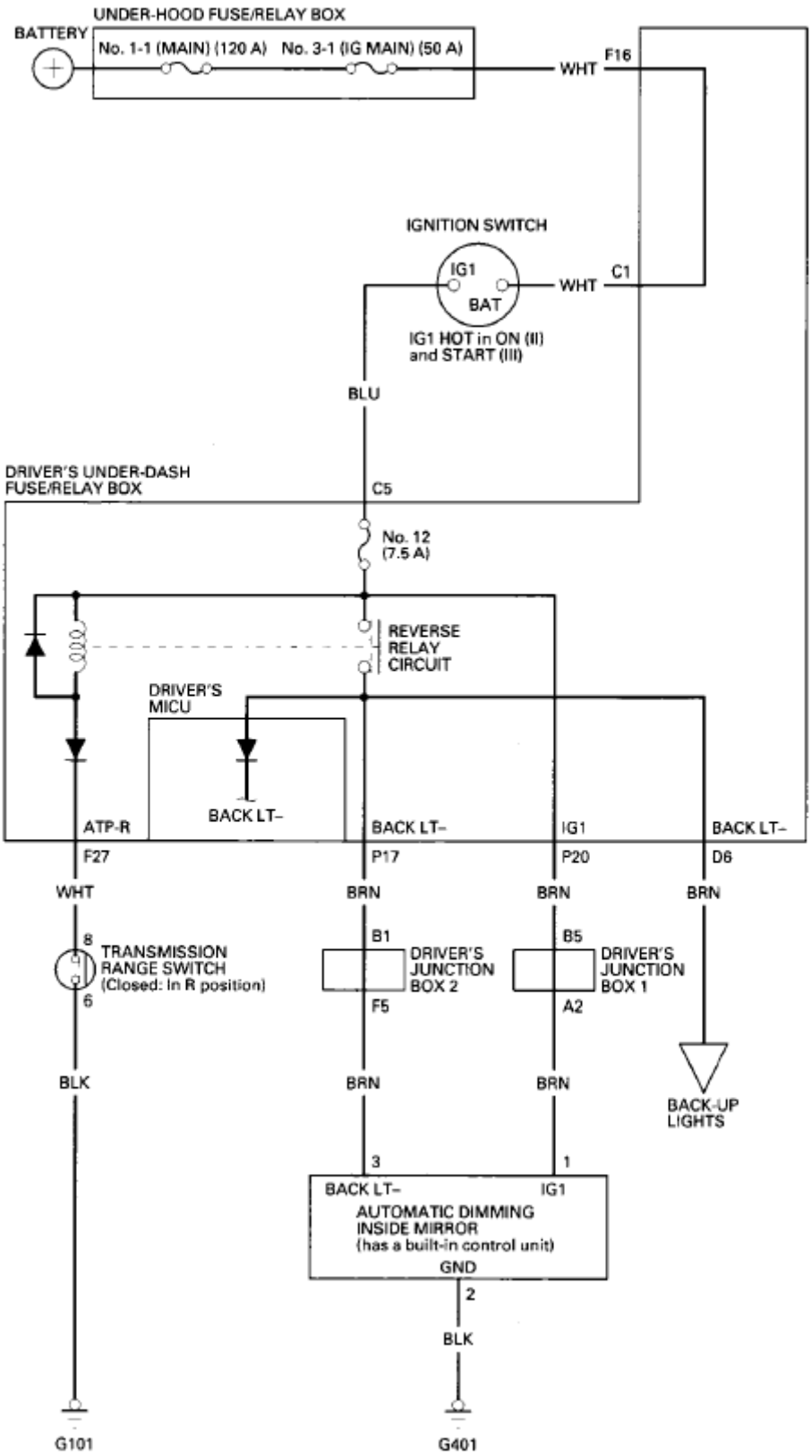


Fig. 1: Automatic Dimming Inside Mirror Circuit Wiring Diagram (1 Of 2)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

WITH KEYLESS ACCESS SYSTEM

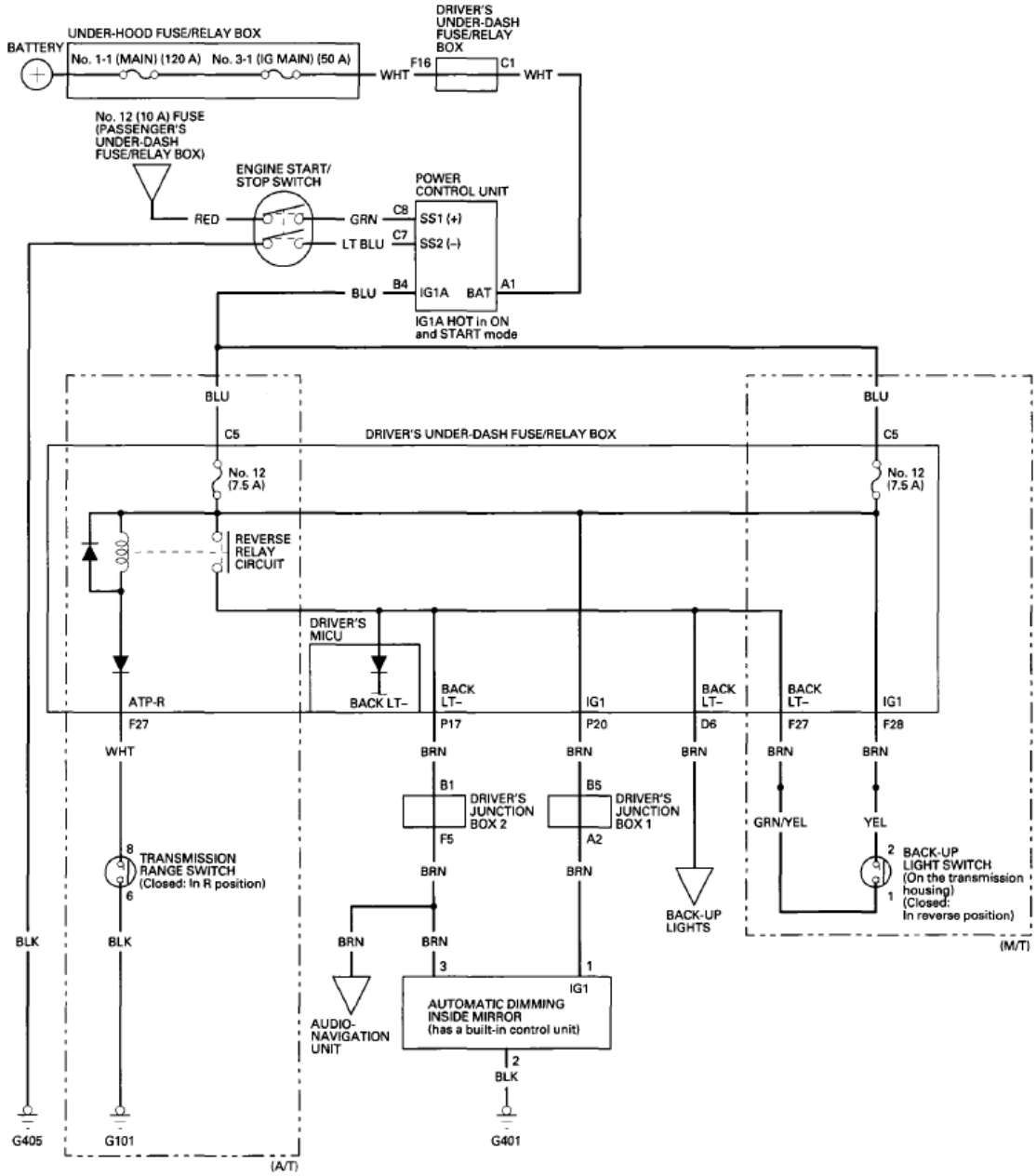


Fig. 2: Automatic Dimming Inside Mirror Circuit Wiring Diagram (2 Of 2)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

SYSTEM DESCRIPTION

The automatic dimming inside mirror has a front-facing lux level sensor (A), rear-facing lux level sensors (B), and a control unit. The control unit receives signals from each sensor. Based on the difference between the two lux levels (the light outside the vehicle and the light from the headlights of the other vehicle, etc.), the control unit controls the electro-chromic gel to reduce glare. This dimming function is canceled when the transmission is in reverse, or when the automatic dimming off switch (C) is turned OFF.

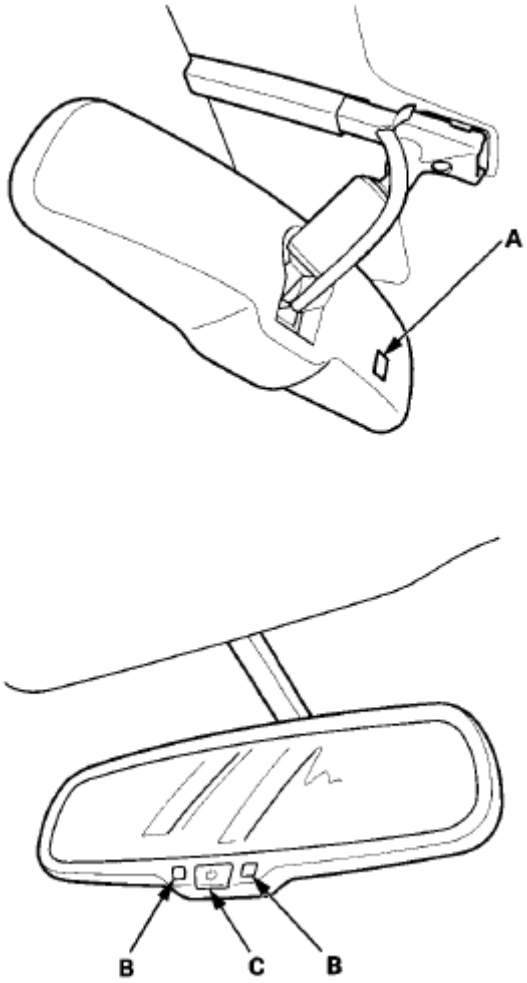


Fig. 3: Identifying Front-Facing Lux Level Sensor
Courtesy of AMERICAN HONDA MOTOR CO., INC.

TEST/REPLACEMENT

1. Check for obstructions (parking stickers, labels, etc.) over the front-facing lux level sensor (A).

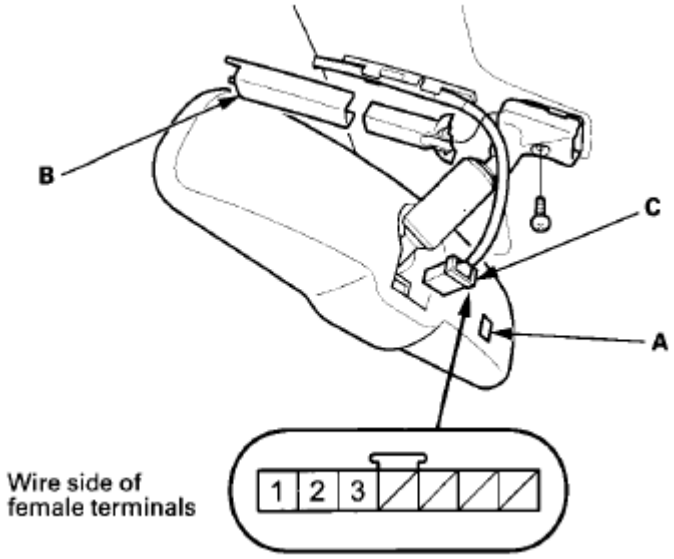


Fig. 4: Identifying Front-Facing Lux Level Sensor, Cover And 7P Connector End View
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Remove the cover (B), then disconnect 7P connector (C).
3. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
4. Measure the voltage between terminal No. 2 and body ground.
    - If there is less than 0.2 V, go to step 5.
    - If there is more than 0.2 V, check for:
        - An open or high resistance in the wire.
        - Poor ground (G401).
5. Measure the voltage between terminal No. 1 and body ground.
    - If there is battery voltage, go to step 6.
    - If there is no voltage, check for:
        - Blown No. 12 (7.5 A) fuse in the driver's under-dash fuse/relay box.
        - An open or high resistance in the wire.
6. Measure the voltage between terminal No. 3 and body ground with the shift lever in Ft (or reverse) position.

- If there is battery voltage, replace the mirror assembly.
- If there is no voltage, check for:
    - An open or high resistance in the wire.
    - Faulty driver's under-dash fuse/relay box.
    - Faulty transmission range switch (A/T).
    - Faulty back-up light switch (M/T).

2012 ACCESSORIES & EQUIPMENT

Blind Spot Information System - TL

SPECIAL TOOLS

Ref.No.	Tool Number	Description	Qty
①	07AAJ-TK8A150	Rim Frame	1
②	07AAJ-STKA160	Target Set	1
③	07AAJ-STKA170	Angle Gauge	1
④	07AAJ-STKA220	Stand Set	1

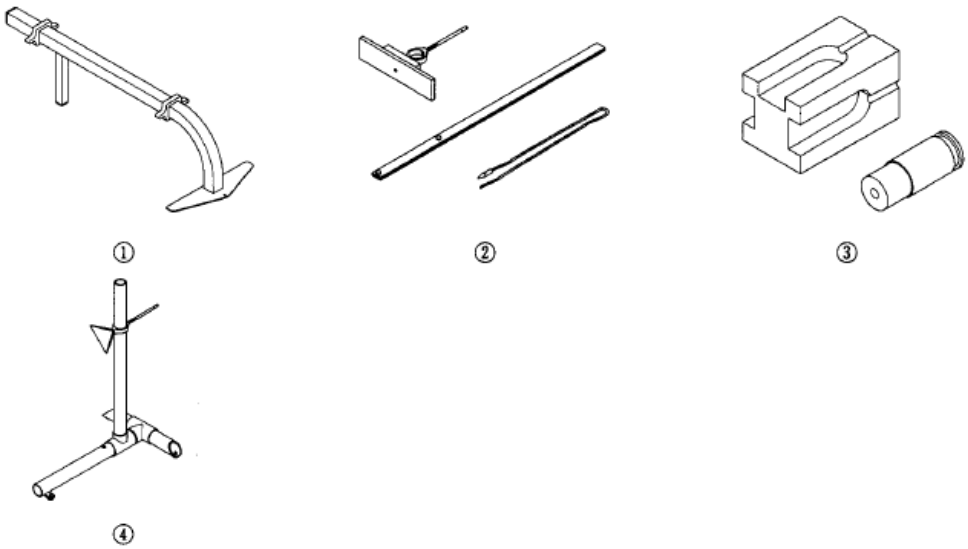
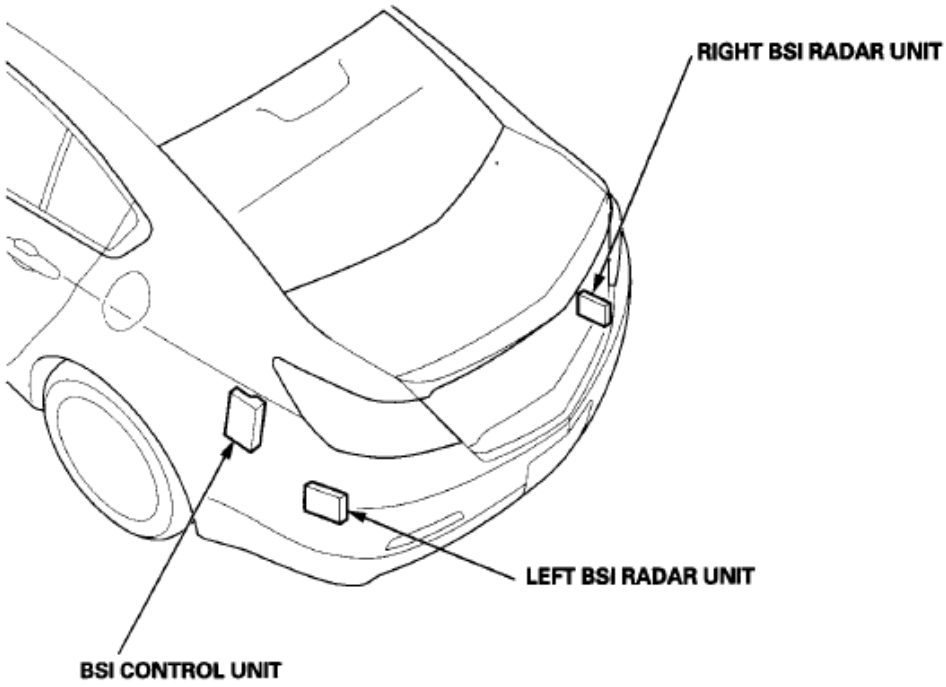


Fig. 1: Blind Spot Information System Special Tools
Courtesy of AMERICAN HONDA MOTOR CO., INC.

COMPONENT LOCATION INDEX



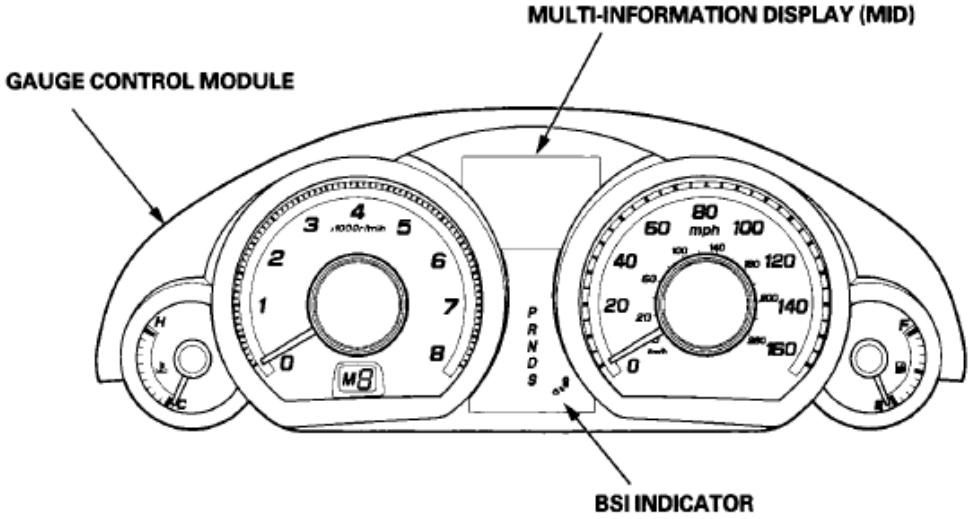


Fig. 2: Blind Spot Information System Components Location (1 Of 2)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

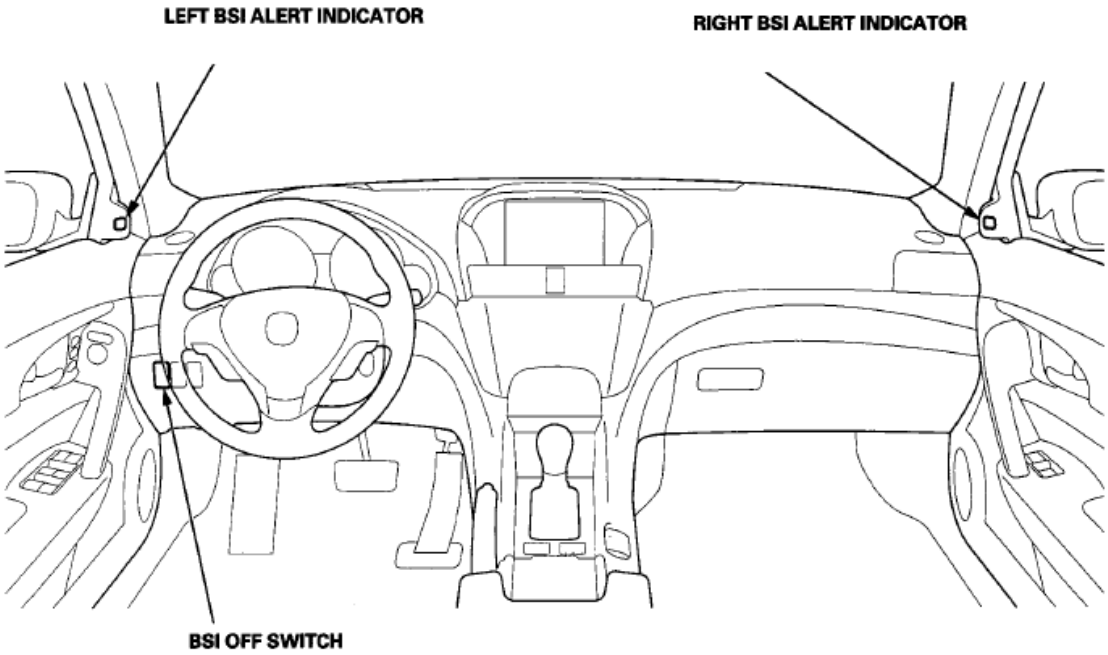


Fig. 3: Blind Spot Information System Components Location (2 Of 2)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

GENERAL TROUBLESHOOTING INFORMATION

BLIND SPOT INFORMATION SYSTEM (BSI) INDICATOR

When the BSI system Is OK, the BSI indicator (A) comes on for about 3 seconds after pressing the engine start/stop button to select the ON mode.

When the BSI system detects a problem while in operation, the BSI system stops control. The BSI indicator comes on, and the BSI system indicates "CHECK BLIND SPOT SYSTEM" in the MID.

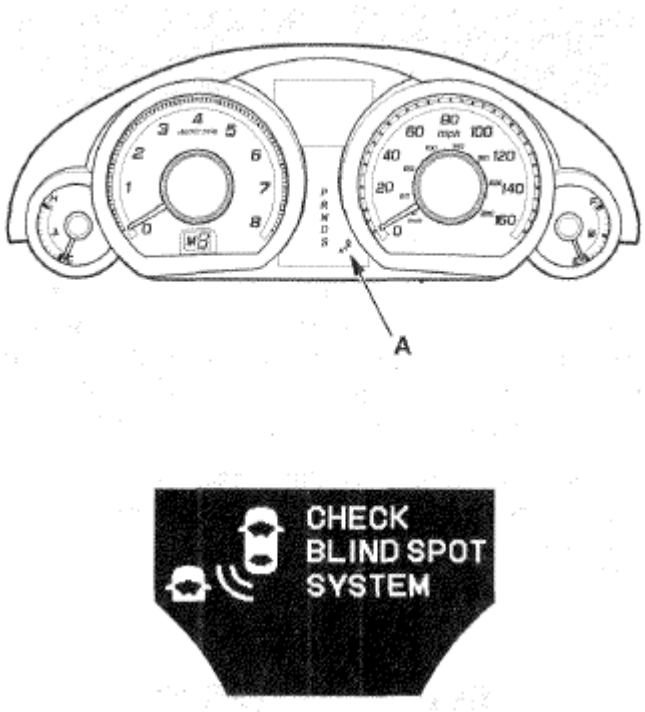


Fig. 4: Identifying Blind Spot Information System Indicator
Courtesy of AMERICAN HONDA MOTOR CO., INC.

BLIND SPOT INFORMATION SYSTEM (BSD) ALERT INDICATOR

While the BSI system is working, the system turns on/blinks* the BSI alert indicator (A) when it detects another vehicle on either side toward the rear.

*: When the driver moves the turn signal lever toward the side with the BSI alert indicator on, the alert indicator blinks to alert the driver.

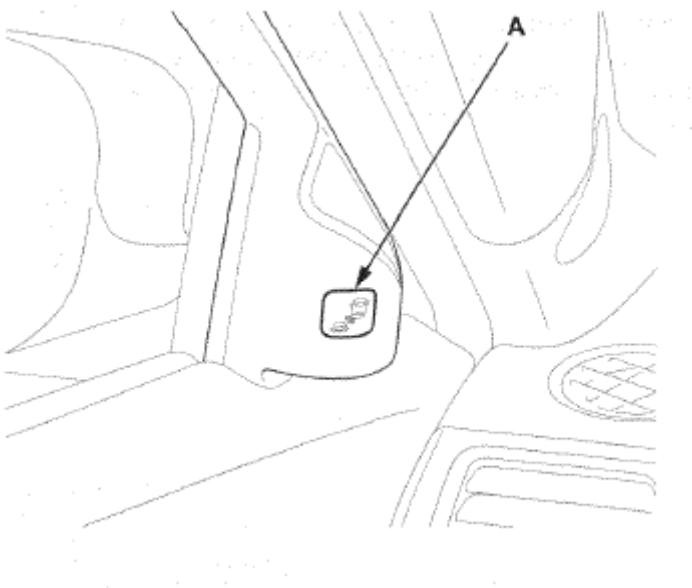


Fig. 5: Identifying BSI Alert Indicator
Courtesy of AMERICAN HONDA MOTOR CO., INC.

BSI OFF SWITCH

Pressing and holding the button on the BSI OFF switch (A) for at least 0.5 second turns the BSI system on or off.

To turn on the BSI system, press the engine start/stop button to select the ON mode, then press the BSI OFF button. The BSI indicator in the gauge control module goes off, and the BSI system indicates that it is turned on in the multi-information display (MID).

To turn off the BSI system, press the button on the BSI OFF switch again. The BSI indicator in the gauge control module comes on, and the BSI system indicates that it is turned off in the MID.

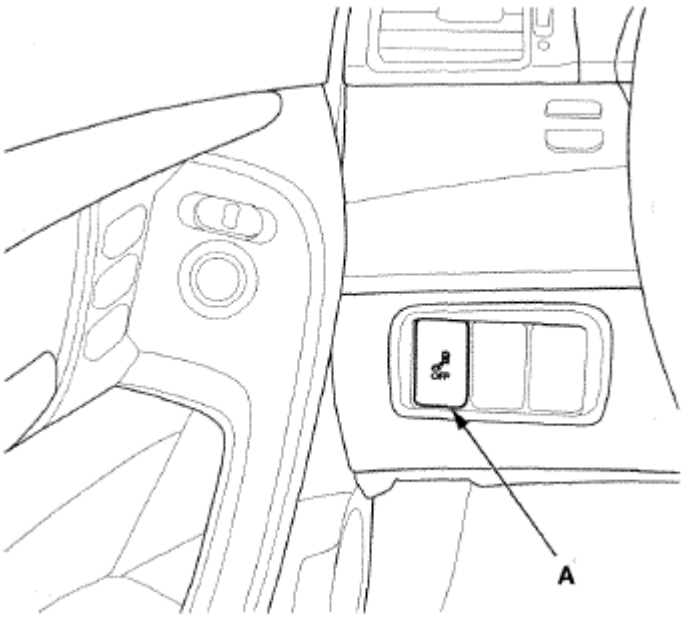


Fig. 6: Identifying BSI OFF Switch
Courtesy of AMERICAN HONDA MOTOR CO., INC.

MULTI-INFORMATION DISPLAY (MID) INDICATION

The BSI system indicates its operation status on the multi-information display (MID) (A) in the gauge control module as below.

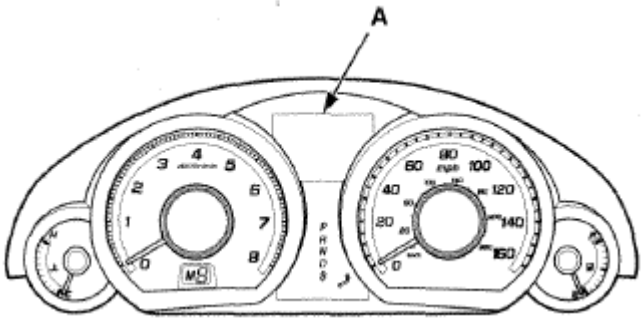


Fig. 7: Identifying Multi-Information Display (MID)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

BSI OFF/BSI ON

The BSI system indicates its condition for only 5 seconds when the system is turned on or off with the BSI OFF switch.



Fig. 8: Display BSI OFF/BSI ON
Courtesy of AMERICAN HONDA MOTOR CO., INC.

CLEAN THE BSI RADAR UNITS

When mud, dirt, wet snow, leaves, or other foreign material sticks to the side of the rear bumper, the BSI system stops control and indicates in the MID that the BSI radar units must be cleaned. It also turns on the BSI indicator at the same time, and stores the DTC(s).

When the obstruction or contamination is removed, the indicator in MID goes off and the BSI system automatically returns to ON.



Fig. 9: Identifying Display Blind Spot Signal
Courtesy of AMERICAN HONDA MOTOR CO., INC.

SELF-DIAGNOSTIC FUNCTION

The BSI system has a self-diagnostic function. If the self-diagnostic function detects a malfunction, the BSI system stops control, turns on the BSI indicator, and stores DTCs.

BLIND SPOT INFORMATION SYSTEM (BSI) CONTROL UNIT

The BSI control unit uses input from the BSI radar units. The BSI radar units also detects its own errors, and it signals the BSI control unit if an error is detected.

BLIND SPOT INFORMATION SYSTEM (BSI) RADAR UNITS

The BSI radar units are installed in the rear bumper on both sides of the vehicle. They detect other vehicles as they approach your vehicle from the rear sides, and they send this information to the BSI control unit.

CAN COMMUNICATION

B-CAN

The BSI control unit is on the B-CAN, and it communicates with other units (AcuraLink™, Gauge control module, MICU) via the B-CAN.

If the BSI control unit detects a communication error or a malfunction in another connected unit, the BSI system will not operate even though it is OK.

In this case, both BSI indicator and related unit indicator will come on and stay on.

BSI-CAN

BSI-CAN is used as a network connecting the BSI control unit and the BSI radar units.

When the BSI control unit does not properly receive information from the BSI-CAN, the BSI system stops control and turns on the BSI indicator.

HOW TO TROUBLESHOOT DTCS

Check the DTCs with the HDS.

Before troubleshooting, check and note these items:

- Ask the client about the conditions when the problem occurred, and try to reproduce the same conditions for troubleshooting.
- If the symptom does not appear and the BSI indicator does not come on during the test-drive, but troubleshooting is done based on the DTC, check for poor connections or loose terminals at all connectors related to the circuit that you are troubleshooting.
- After the troubleshooting or repairs are done, clear the DTCs, and test-drive the vehicle under the same conditions as when the DTC was originally set. Make sure the BSI indicator does not come on.
- The BSI system sometimes stops control because of the environment (weather, road conditions, driving conditions, etc.). A DTC may be stored in these cases.

Some DTCs may be stored even when the system is OK. For example, the BSI indicator may come on with one or more of these DTCs:

B18A5: Left BSI Radar Unit Temperature High

B18A6: Right BSI Radar Unit Temperature High

B18A7: Left BSI Radar Unit Voltage Input Low

B18A8: Right BSI Radar Unit Voltage Input Low

B18A9: Left BSI Radar Unit Voltage Input High

B18AA: Right BSI Radar Unit Voltage Input High

B18B4: Left BSI Radar Unit Dirty

B18B5: Right BSI Radar Unit Dirty

B18BD: BSI Control Unit Voltage Input High

B18BE: BSI Control Unit Voltage Input Low

HOW TO RETRIEVE DTCS

NOTE: Make sure the battery is fully charged before you begin.

1. Press the engine start/stop button to select the OFF mode.
2. Connect the HDS (Honda Diagnostic System) to the data link connector (DLC) (A) located under the driver's side of the dashboard.

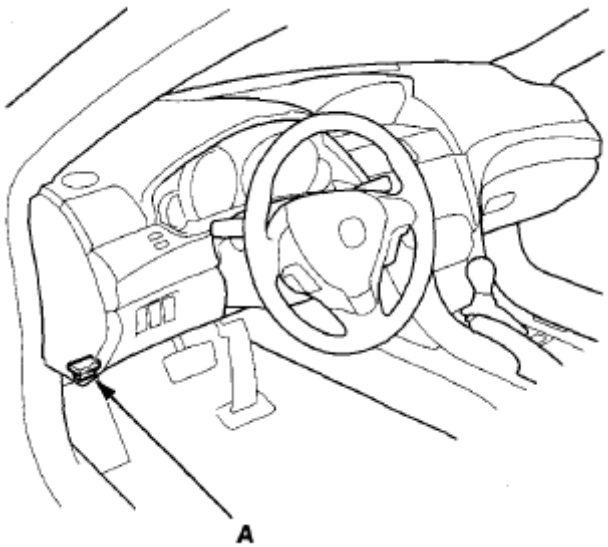


Fig. 10: Identifying Data Link Connector (DLC)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Press the engine start/stop button to select the ON mode.
4. Make sure the HDS communicates with the vehicle and the BSI control unit. If it does not communicate, troubleshoot the DLC circuit (see **DLC CIRCUIT TROUBLESHOOTING**).
5. Use the HDS to check for BSI DTCs.
6. Read and record the DTC.
7. Press the engine start/stop button to select the OFF mode, then wait for 10 seconds.
8. Disconnect the HDS from the DLC.
9. Do the troubleshooting procedure for the DTC.

HOW TO CLEAR DTCS

NOTE: Make sure the battery is fully charged before you begin.

1. Press the engine start/stop button to select the OFF mode.
2. Connect the HDS (Honda Diagnostic System) to the data link connector (DLC) (A) located under the driver's side of the dashboard.

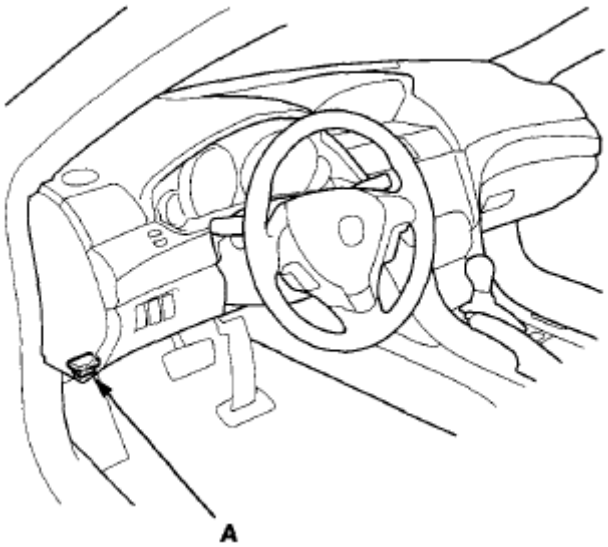


Fig. 11: Identifying Data Link Connector (DLC)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Press the engine start/stop button to select the ON mode.
4. Make sure the HDS communicates with the vehicle and the BSI control unit. If it does not communicate, troubleshoot the DLC circuit (see **DLC CIRCUIT TROUBLESHOOTING**).
5. In the DRIVING SUPPORT MENU of the HDS, select BSI, then choose the Clear DTCs icon, and follow the prompts.
6. Press the engine start/stop button to select the OFF mode, then wait for 10 seconds.
7. Disconnect the HDS from the DLC.

DTC TROUBLESHOOTING INDEX

DTC	Detection Item	BSI Indicator
B18A1	BSI control unit internal circuit error	ON
B18A5	Left BSI radar unit temperature high	ON
B18A6	Right BSI radar unit temperature high	ON
B18A7	Left BSI radar unit voltage input low	ON
B18A8	Right BSI radar unit voltage input low	ON
B18A9	Left BSI radar unit voltage input high	ON
B18AA	Right BSI radar unit voltage input	ON

	high	
B18AF	Left BSI radar unit internal circuit error	ON
B18B1	Right BSI radar unit internal circuit error	ON
B18B4	Left BSI radar unit dirty	ON
B18B5	Right BSI radar unit dirty	ON
B18B6	Lost communication with left BSI radar unit	ON
B18B7	Lost communication with right BSI radar unit	ON
B18B8	Left BSI radar unit azimuth off alignment	ON
B18B9	Right BSI radar unit azimuth off alignment	ON
B18BA	Left BSI radar unit version incorrect	ON
B18BB	Right BSI radar unit version incorrect	ON
B18BC	BSI radar units communication error	ON
B18BD	BSI control unit voltage input high	ON
B18BE	BSI control unit voltage input low	ON
B18C2	Left BSI alert indicator output error	ON
B18CF	Right BSI alert indicator output error	ON
U0155	Lost communication with the gauge control module	ON
U0423	Invalid data received from PCM (vehicle speed data)	ON
U1280	Communication bus line error (BUS-OFF)	ON

SYMPTOM TROUBLESHOOTING INDEX

Symptom	Diagnostic procedure	Also Check for
The BSI alert indicator comes on when no other vehicle is in the detectable area (Wrong indication)	Symptom Troubleshooting (see **THE BSI ALERT INDICATOR COMES ON WHEN NO OTHER VEHICLE IS IN THE DETECTABLE AREA (WRONG INDICATION)**)	
The BSI does not come on when other vehicles are in the detectable area (No indication)	Symptom Troubleshooting (see **THE BSI DOES NOT COME ON WHEN OTHER VEHICLES ARE IN THE DETECTABLE AREA (NO INDICATION)**)	
The BSI OFF switch does not work	Symptom Troubleshooting (see **THE BSI OFF SWITCH DOES NOT WORK**)	
	Symptom Troubleshooting (see **THE BSI**	

The BSI indicator does not go off, or does not come on	**INDICATOR DOES NOT GO OFF, OR DOES NOT COME ON**)	
The MID beeper does not sound when the BSI OFF switch is pushed	Symptom Troubleshooting (see **THE MID BEEPER DOES NOT SOUND WHEN THE BSI OFF SWITCH IS PUSHED**)	
The HDS does not communicate with the BSI	Symptom Troubleshooting (see **THE HDS DOES NOT COMMUNICATE WITH THE BSI**)	Incorrect HDS software
The HDS does not communicate with the PCM or the vehicle	Symptom Troubleshooting (see **DLC CIRCUIT TROUBLESHOOTING**)	• Incorrect HDS software • Shorted reference voltage

SYSTEM DESCRIPTION

BLIND SPOT INFORMATION SYSTEM (BSI)

The BSI system turns on the BSI alert indicators (A) on the front door sash inner trims when another vehicle in the next lane enters the "blind" area where the driver cannot see the vehicle with his peripheral vision or with the inside and outside rearview mirrors.

NOTE: The BSI system does not ensure the safety of the vehicle occupants, nor does it help in low visibility situations such as bad weather.

The BSI system turns on/blinks* the BSI alert indicator in the following situations.

*: When moving the turn signal lever toward the side with the BSI alert indicator on, the alert indicator blinks to alert driver.

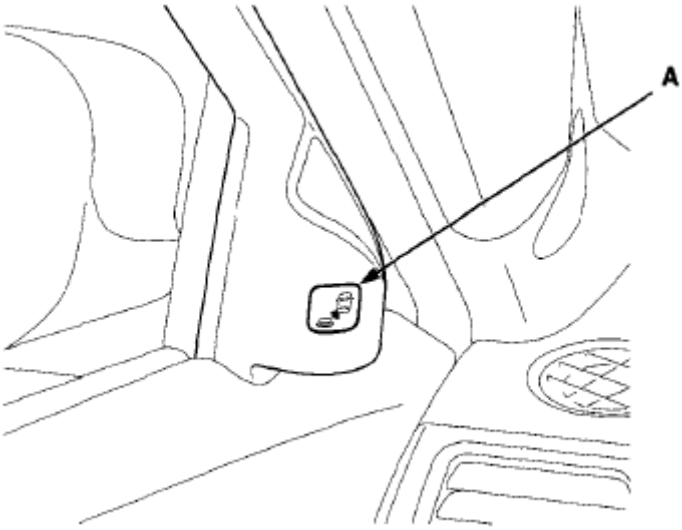


Fig. 12: Identifying BSI Alert Indicators
Courtesy of AMERICAN HONDA MOTOR CO., INC.

1. Pass from rear
    - Vehicle operation speed: 6-99 mph (10-160 km/h)

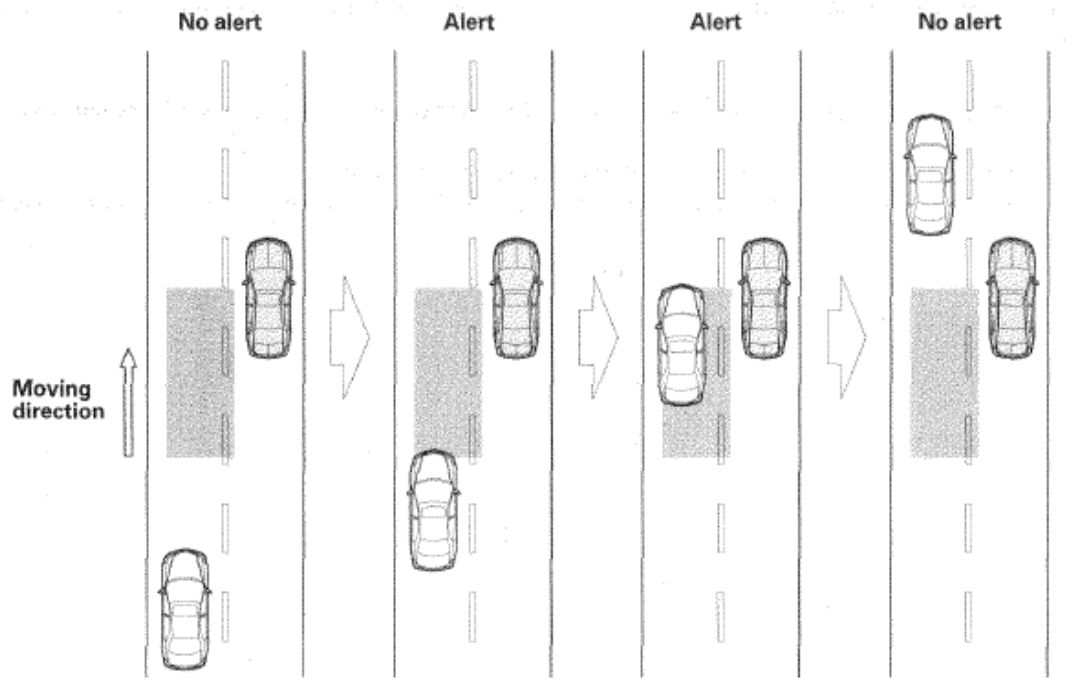


Fig. 13: Identifying Display - Vehicle Operation Speed Limits (Pass From Rear)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Lane changes
    - Vehicle operation speed: 6-93 mph (10-160 km/h)
    - Relative speed: About 12 mph (20km/h)

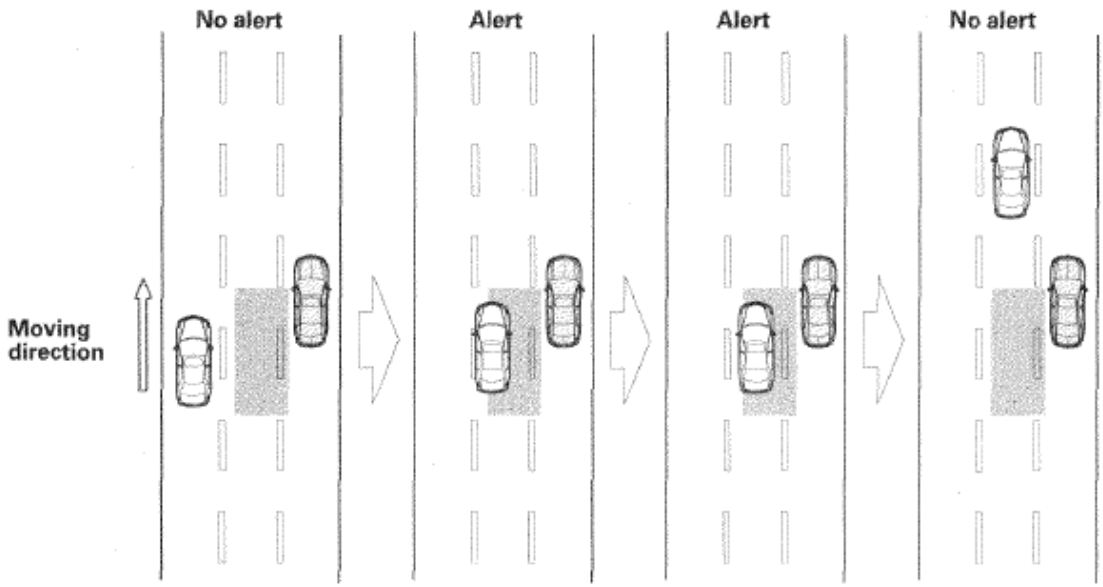


Fig. 14: Identifying Display - Vehicle Operation Speed Limits (Lane Changes)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Passing
    - Vehicle operation speed: 6-99 mph (10-160 km/h)
    - Relative speed: About 12 mph (20km/h)

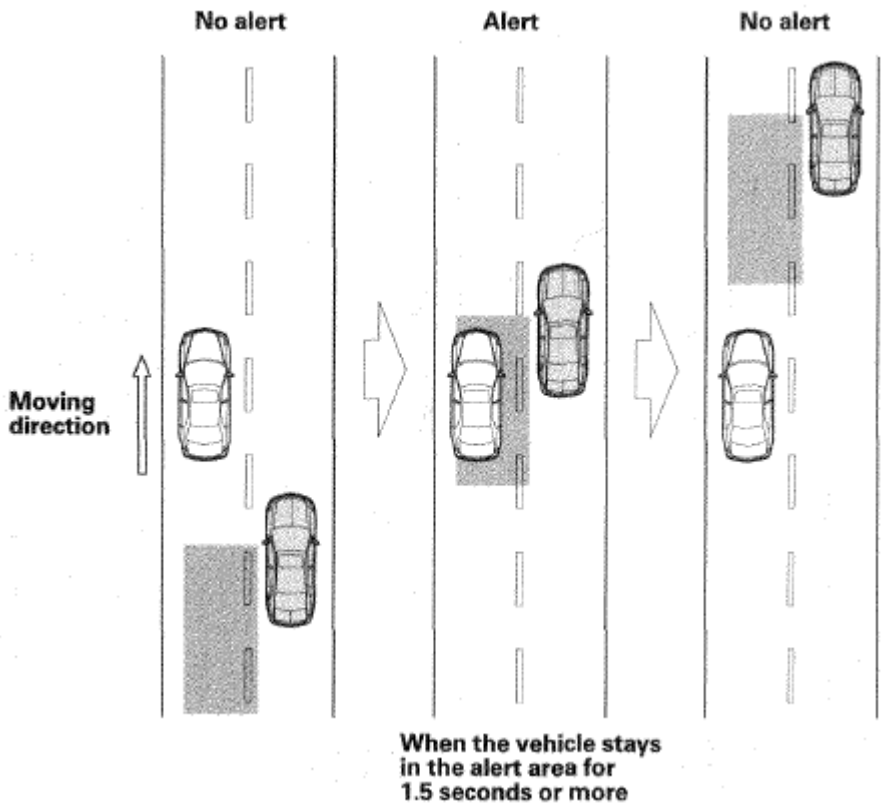


Fig. 15: Identifying Display - Vehicle Operation Speed Limits (Passing)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Starting
    - Vehicle operation speed: 6-99 mph (10-160 km/h)

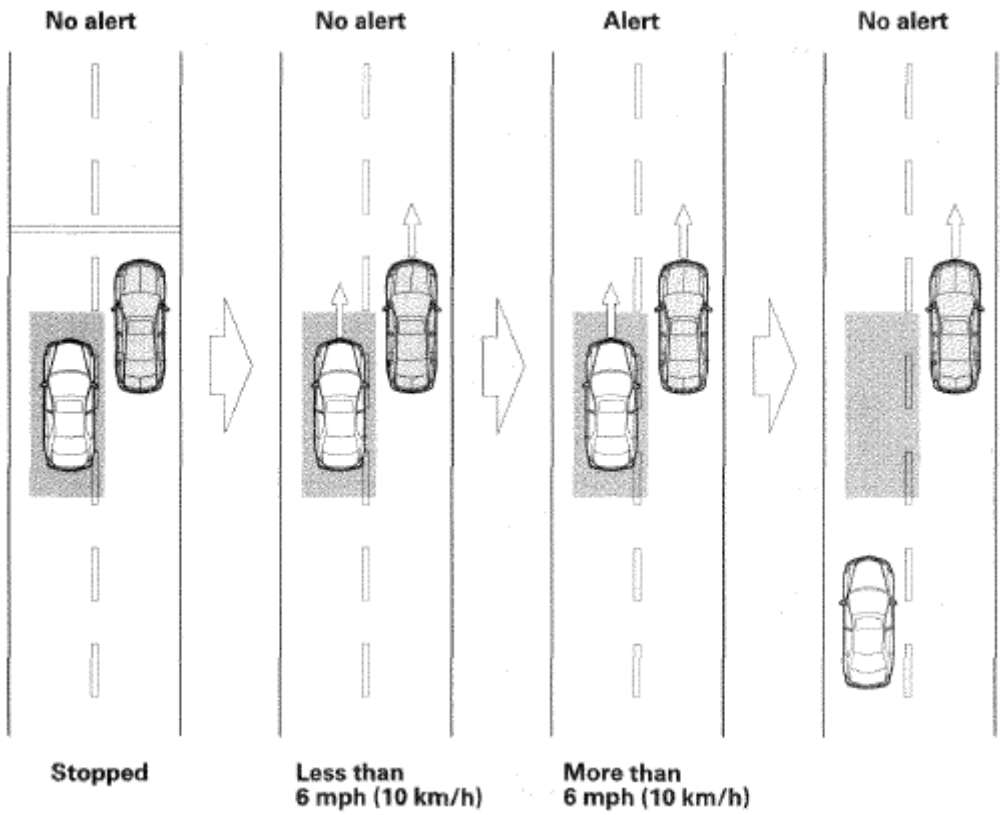


Fig. 16: Identifying Display - Vehicle Operation Speed Limits (Starting)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. One or more lanes apart
    - Vehicle operation speed: 6-99 mph (10-160 km/h)

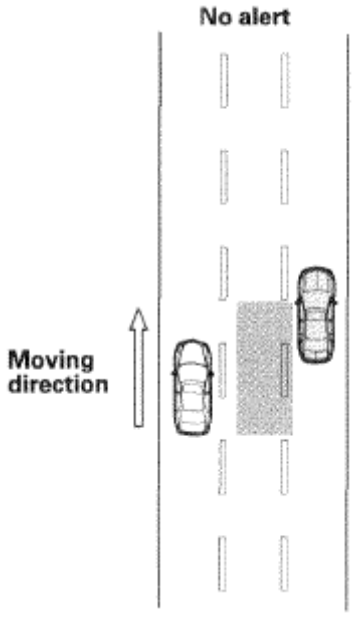


Fig. 17: Identifying Display - Vehicle Operation Speed Limits (One Or More Lanes Apart)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Oncoming vehicle
    - Vehicle operation speed: 6-99 mph (10-160 km/h)

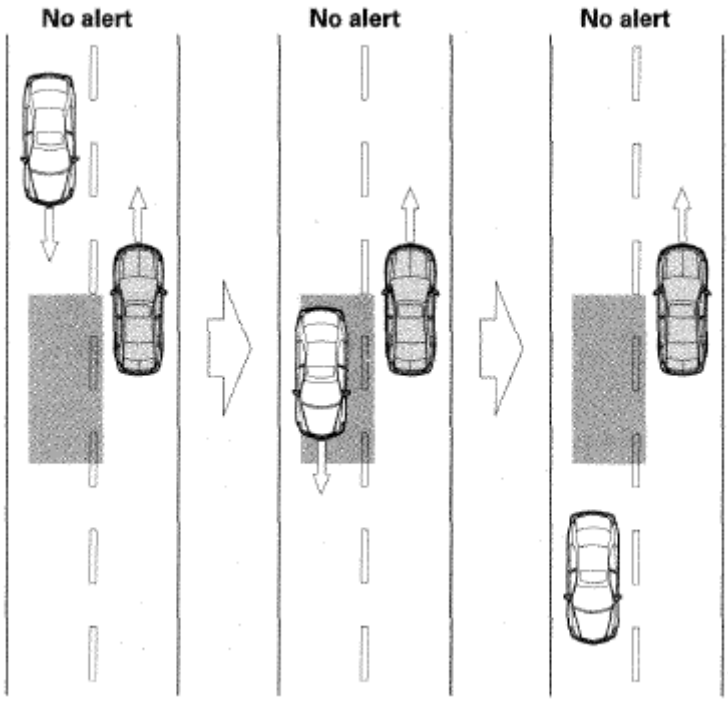


Fig. 18: Identifying Display - Vehicle Operation Speed Limits (Oncoming Vehicle)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Static objects
    - Vehicle operation speed; 6-99 mph (10-160 km/h)

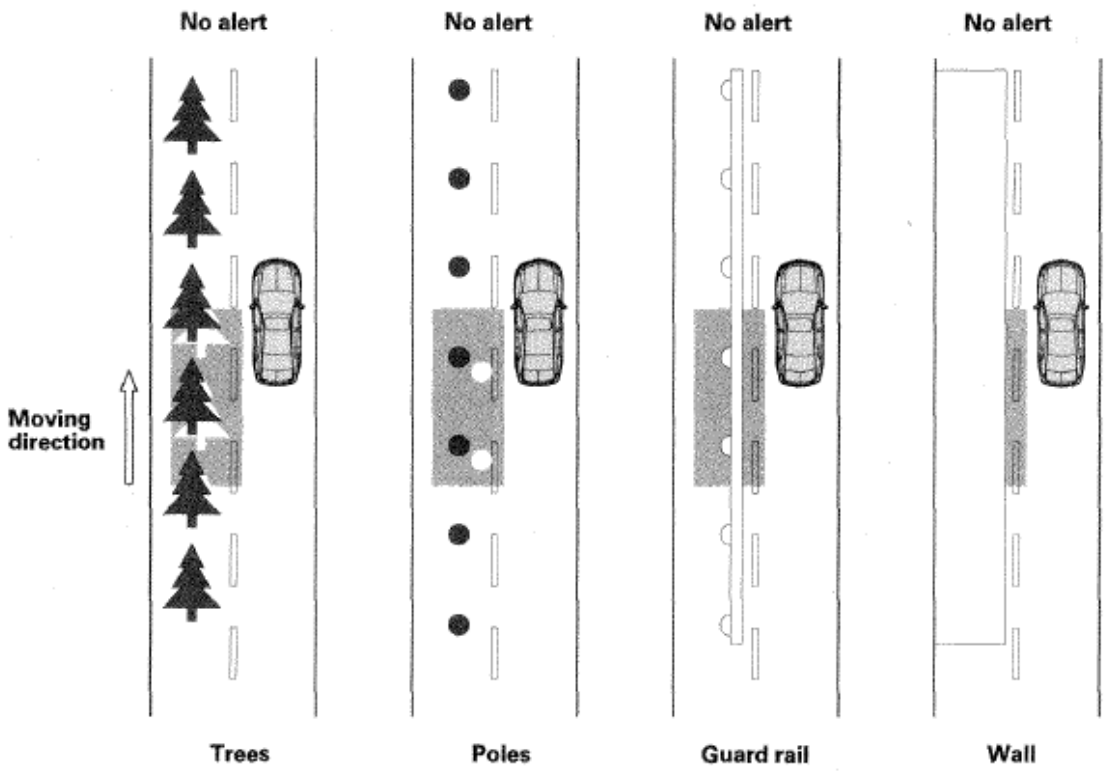


Fig. 19: Identifying Display - Vehicle Operation Speed Limits (Static Objects)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

BLIND SPOT INFORMATION SYSTEM (BSI) CONTROL UNIT

The BSI control unit obtains information from external sensors and switches that are connected to their respective control units.

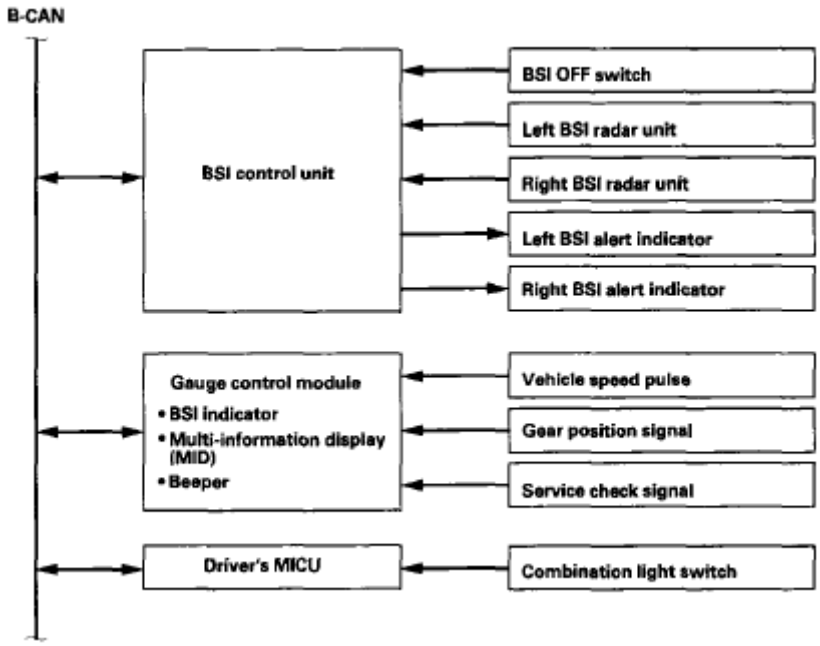


Fig. 20: Blind Spot Information System Control Unit Block Diagram
Courtesy of AMERICAN HONDA MOTOR CO., INC.

BLIND SPOT INFORMATION SYSTEM (BSI) RADAR UNITS

The BSI radar units are installed in the rear bumper on both sides.

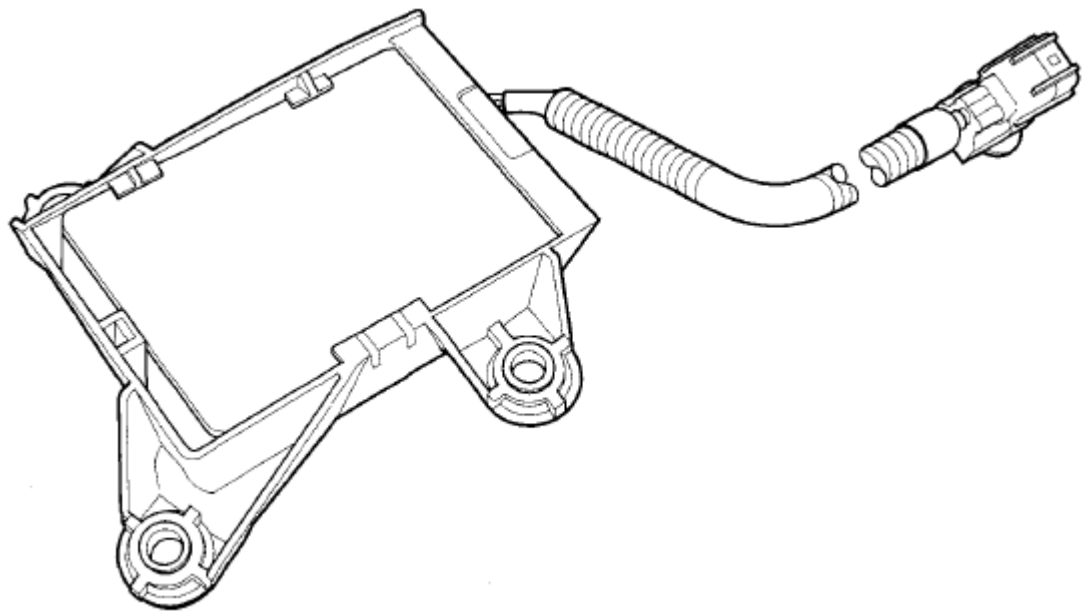


Fig. 21: Identifying Blind Spot Information System Radar Units
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Basic distance function

The BSI radar unit radiates 24 GHz radar waves within the range of 3 m (9.84 ft) toward the rear and 3 m (9.84 ft) on both sides horizontally and 20 degrees on both sides toward the rear. It receives the reflected radar waves when another vehicle enters in this alert area.

Aiming function

The BSI radar unit has a small amount of auto-aiming capability. Straighten the body when auto-aiming is not possible.

Self-Diagnostic function

The BSI radar units have a self-diagnostic function that displays the self-diagnosis information in the MID when the system turns on after pressing the engine start/stop button to select the ON mode.

Sensitivity-Lowering detection function

When the detecting ability of the BSI radar units are hampered by dirt or other contaminants around the rear bumper that covers BSI radar units, the BSI radar units outputs this condition to the BSI control unit until the function recovers.

BLIND SPOT INFORMATION SYSTEM (BSI) CONTROL UNIT INPUTS AND OUTPUTS

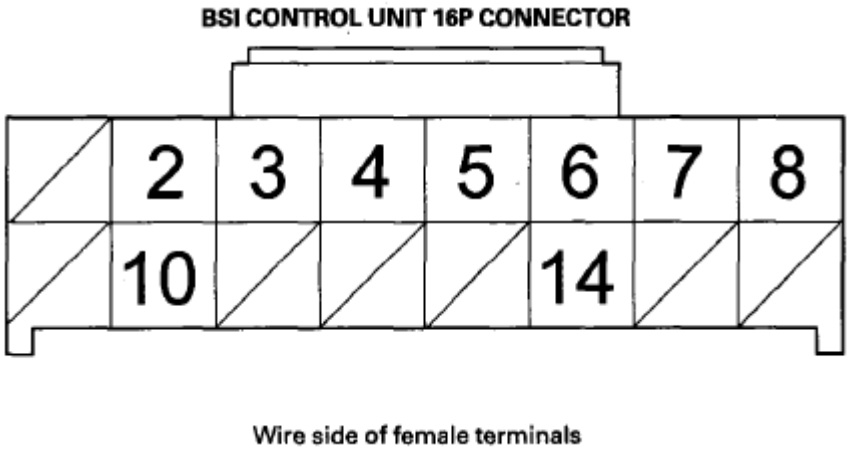


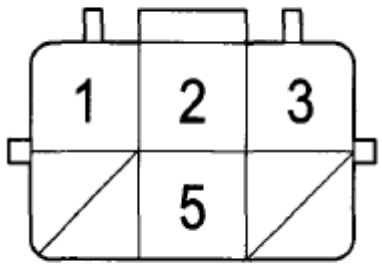
Fig. 22: Blind Spot Information System Control Unit 16P Connector End View
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Terminal number	Wire color	Terminal name	Description	Signal
2	BRN	BSI-CAN L	Radar CAN communication (low) circuit	--
3	YEL	BSI-CAN H	Radar CAN communication (high) circuit	--
4	GRN	L BSI IND+	Drives the left BSI alert indicator	--
5	BLU	B-CAN L	B-CAN communication (low)	--

			circuit	
6	PNK	B-CAN H	B-CAN communication (high) circuit	--
7	BLK	GND	Ground circuit for the BSI system	Less than 0.2 V at all times
8	LT BLU	BSI OFF SW	Detects the BSI OFF switch	--
10	PNK	IG1	Detects the ignition signal	Vehicle in ON mode: battery voltage Vehicle in OFF mode: about 0 V
14	BLU	R BSI IND+	Drives the right BSI alert indicator	--

BLIND SPOT INFORMATION SYSTEM (BSI) RADAR UNIT INPUTS AND OUTPUTS

LEFT BSI RADAR UNIT 6P CONNECTOR



Wire side of female terminals

Fig. 23: Left BSI Radar Unit 6P Connector End View
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Terminal number	Wire color	Terminal name	Description	Signal
1	BRN	BSI-CAN L	Radar CAN communication (low) circuit	--
2	PNK	IG1	Detects the ignition signal	Vehicle in ON mode: battery voltage Vehicle in OFF mode: about 0 V
3	YEL	BSI-CAN H	Radar CAN communication (high) circuit	--
5	BLK	GND	Ground circuit for the BSI radar unit	Less than 0.2 V at all times

BLIND SPOT INFORMATION SYSTEM (BSI) RADAR UNIT INPUTS AND OUTPUTS

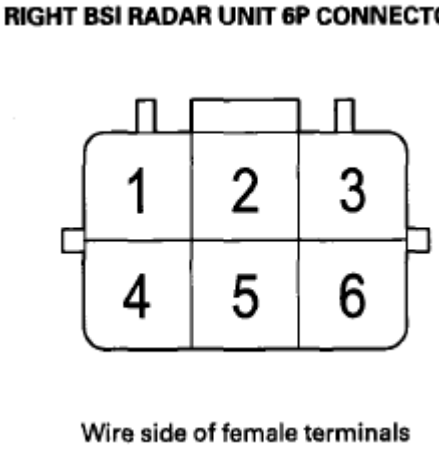


Fig. 24: Identifying Right BSI Radar Unit 6P Connector End View
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Terminal number	Wire color	Terminal name	Description	Signal
1	BRN	BSI-CAN L	Radar CAN communication (low) circuit	--
2	PNK	IG1	Detects the ignition signal	Vehicle in ON mode: battery voltage Vehicle in OFF mode: about 0 V
3	YEL	BSI-CAN H	Radar CAN communication (high) circuit	--
4	BLK	MPIO_0	Digital address input line for radar ID	--
5	BLK	GND	Ground circuit for the BSI radar unit	Less than 0.2 V at all times
6	BLK	MPIO_1	Digital address input line for radar ID	--

CIRCUIT DIAGRAM

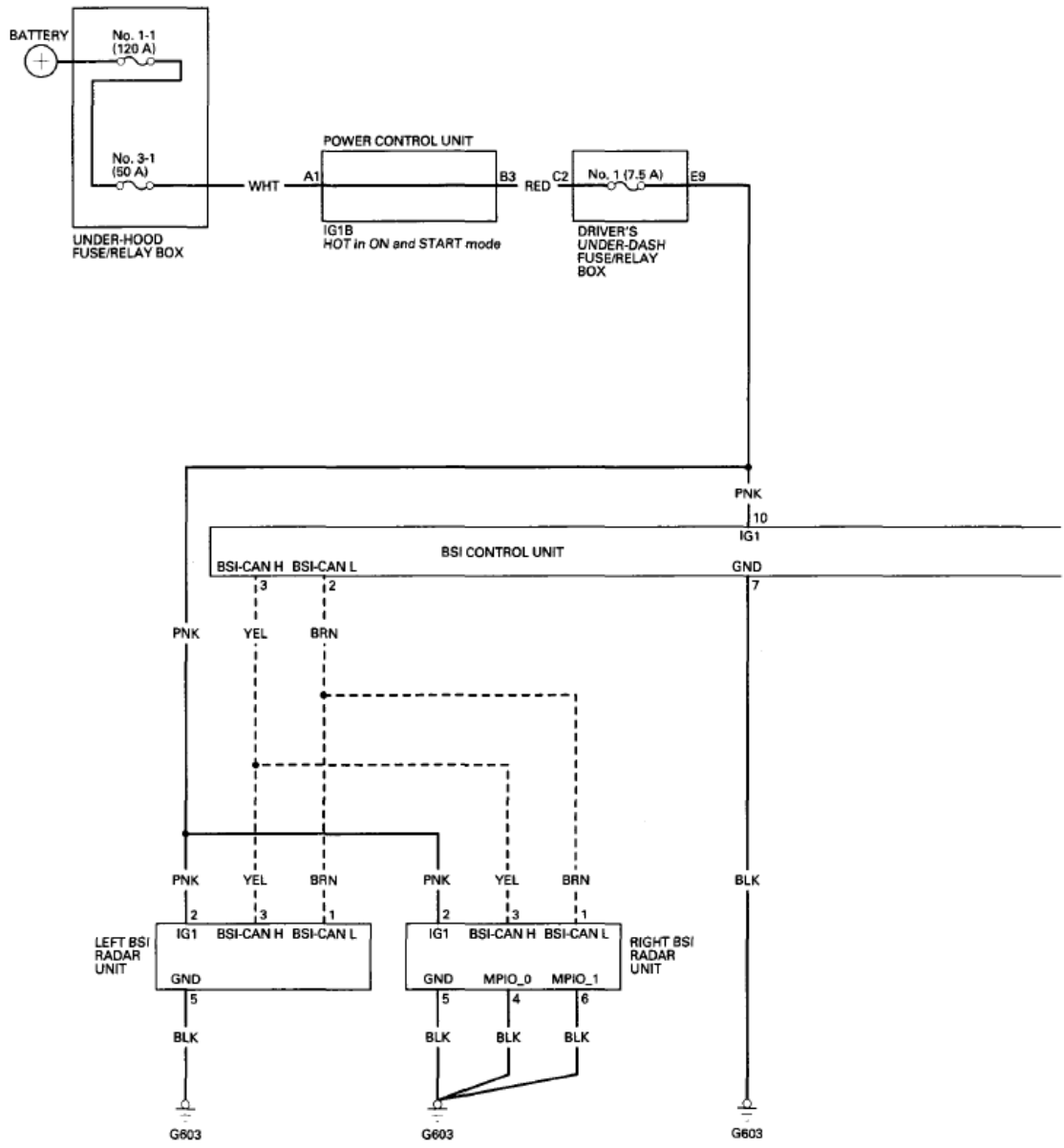


Fig. 25: Blind Spot Information System Circuit Diagram (1 Of 2)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

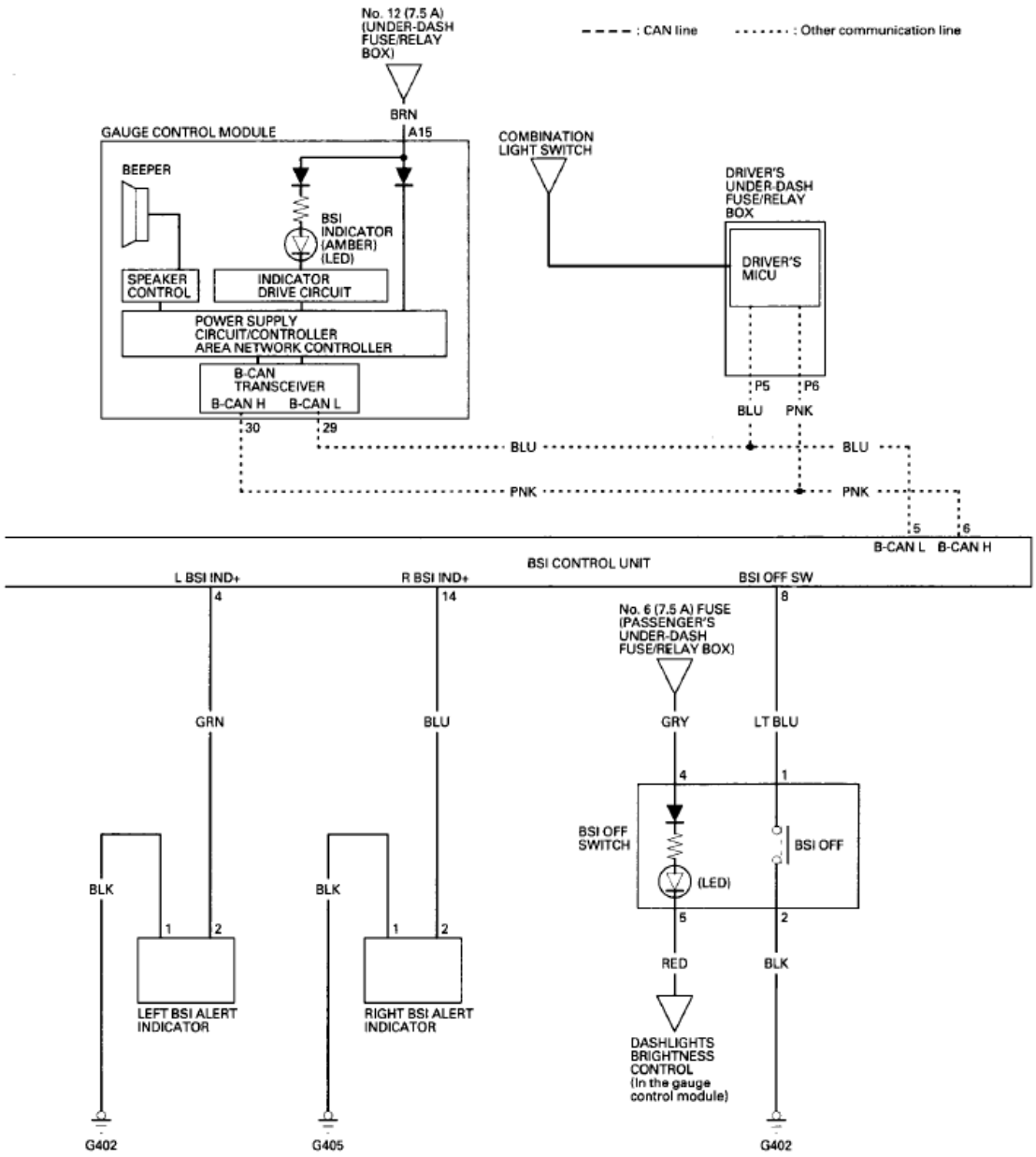


Fig. 26: Blind Spot Information System Circuit Diagram (2 Of 2)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

DTC TROUBLESHOOTING

DTC B18A1: BSI CONTROL UNIT INTERNAL CIRCUIT ERROR

1. Clear the DTCs with the HDS (see **HOW TO CLEAR DTCS**).
2. Press the engine start/stop button to select the ON mode, then wait for 10 seconds.
3. Check for DTCs with the HDS (see **HOW TO CLEAR DTCS**).

Is DTC B18A1 indicated?

YES -Replace the BSI control unit (see **BSI CONTROL UNIT REMOVAL/INSTALLATION**).

NO -Intermittent failure, the system is OK at this time.

DTC B18A5: LEFT BSI RADAR UNIT TEMPERATURE HIGH

NOTE: It is usually difficult to duplicate this DTC.

1. Check for DTCs with the HDS (see **HOW TO CLEAR DTCS**).

   Is DTC B18A5 indicated?

   YES -Go to step 2.

   NO -Intermittent failure, the system is OK at this time.

2. Check the exhaust system and heat shields for modifications or damage.

   Are all parts OK?

   YES -Intermittent failure due to temporary high temperature around the BSI radar unit, the system is OK at this time. Clear the DTCs.

   NO -Repair or replace the faulty part.

DTC B18A6: RIGHT BSI RADAR UNIT TEMPERATURE HIGH

NOTE: It is usually difficult to duplicate this DTC.

1. Check for DTCs with the HDS (see **HOW TO CLEAR DTCS**).

   Is DTC B18A6 indicated?

   YES -Go to step 2.

   NO -Intermittent failure, the system is OK at this time.

2. Check the exhaust system and heat shields for modifications or damage.

   Are all parts OK?

   YES -Intermittent failure due to temporary high temperature around the BSI radar unit, the system is OK at this time. Clear the DTCs.

   NO -Repair or replace the faulty part.

DTC B18A7: LEFT BSI RADAR UNIT VOLTAGE INPUT LOW

1. Clear the DTCs with the HDS (see **HOW TO CLEAR DTCS**).
2. Test-drive the vehicle at 12 mph (20 km/h) for 60 seconds or more.
3. Check for DTCs with the HDS (see **HOW TO CLEAR DTCS**).

   Is DTC B18A7 indicated?

   YES -Go to step 4.

   NO -Intermittent failure, the system is OK at this time.

4. Press the engine start/stop button to select the OFF mode.
5. Check the connection at the left BSI radar unit 6P connector.

   Is the connection OK?

   YES -Go to step 6.

   NO -Repair the poor connection, and retest.

6. Disconnect the left BSI radar unit 6P connector.
7. Press the engine start/stop button to select the ON mode.
8. Measure the voltage between left BSI radar unit 6P connector terminals No. 2 and No. 5. There should be battery voltage.

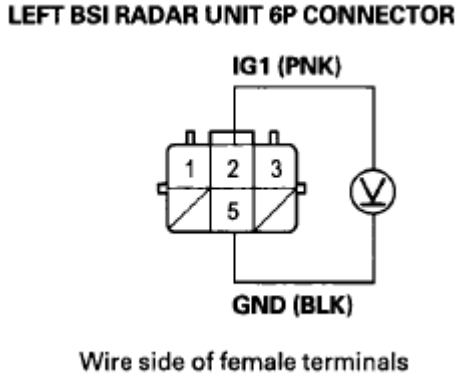


Fig. 27: Measuring Voltage Between Left BSI Radar Unit 6P Connector Terminals No. 2 And No. 5
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there battery voltage?

YES -Replace the left BSI radar unit (see **BSI RADAR UNIT REMOVAL/INSTALLATION**).

NO -Go to step 9.

9. Measure the voltage between left BSI radar unit 6P connector terminal No. 2 and body ground. There should be battery voltage.

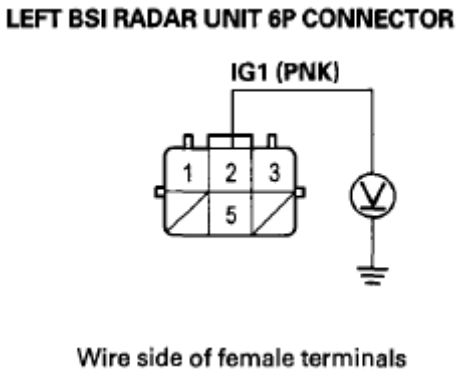


Fig. 28: Measuring Voltage Between Left BSI Radar Unit 6P Connector Terminal No. 2 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there battery voltage?

YES -Repair an open in the wire between the left BSI radar unit 6P connector and body ground (G603).

NO -Repair an open in the wire between the driver's under-dash fuse/relay box and the left BSI radar unit.

DTC B18A8: RIGHT BSI RADAR UNIT VOLTAGE INPUT LOW

1. Clear the DTCs with the HDS (see **HOW TO CLEAR DTCS**).
2. Test-drive the vehicle at 12 mph (20 km/h) for 60 seconds or more.
3. Check for DTCs with the HDS (see **HOW TO CLEAR DTCS**).

Is DTC B18A8 indicated?

YES -Go to step 4.

NO -Intermittent failure, the system is OK at this time.

4. Press the engine start/stop button to select the OFF mode.
5. Check the connection at the right BSI radar unit 6P connector.

Is the connection OK?

YES -Go to step 6.

NO -Repair the poor connection, and retest.

6. Disconnect the right BSI radar unit 6P connector.

7. Press the engine start/stop button to select the ON mode.
8. Measure the voltage between right BSI radar unit 6P connector terminals No. 2 and No. 5. There should be battery voltage.

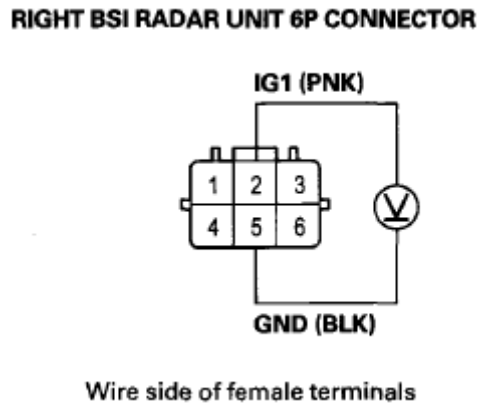


Fig. 29: Measuring Voltage Between Right BSI Radar Unit 6P Connector Terminals No. 2 And No. 5
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there battery voltage?

YES -Replace the right BSI radar unit (see **BSI RADAR UNIT REMOVAL/INSTALLATION**).

NO -Go to step 9.

9. Measure the voltage between right BSI radar unit 6P connector terminals No. 2 and body ground. There should be battery voltage.

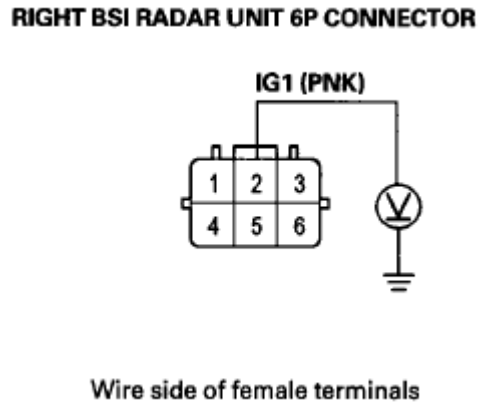


Fig. 30: Measuring Voltage Between Right BSI Radar Unit 6P Connector Terminals No. 2 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there battery voltage?

YES -Repair an open in the wire between the right BSI radar unit 6P connector and body ground (G603).

NO -Repair an open in the wire between the driver's under-dash fuse/relay box and the right BSI radar unit.

DTC B18A9: LEFT BSI RADAR UNIT VOLTAGE INPUT HIGH

NOTE:

- **This DTC could be detected after jump-starting the vehicle with a booster battery or other power source.**
- **This DTC may be indicated due to a faulty charging system, including the battery.**

1. Clear the DTCs with the HDS (see **HOW TO CLEAR DTCS**).
2. Start the engine, then wait for 20 seconds.
3. Check for DTCs with the HDS (see **HOW TO CLEAR DTCS**).

Is DTC B18A9 indicated?

YES -Go to step 4.

NO -Intermittent failure, the system is OK at this time.

4. Press the engine start/stop button to select the OFF mode.
5. Test the battery (see **BATTERY TEST**).

Is the battery OK?

YES -Replace the left BSI radar unit (see **BSI RADAR UNIT REMOVAL/INSTALLATION**).

NO -Replace the battery (see **BATTERY REMOVAL AND INSTALLATION**).

DTC B18AA: RIGHT BSI RADAR UNIT VOLTAGE INPUT HIGH

NOTE:

- **This DTC could be detected after jump-starting the vehicle with a booster battery or other power source.**
- **This DTC may be indicated due to a faulty charging system, including the battery.**

1. Clear the DTCs with the HDS (see **HOW TO CLEAR DTCS**).
2. Start the engine, then wait for 20 seconds.
3. Check for DTCs with the HDS (see **HOW TO CLEAR DTCS**).

Is DTC B18AA indicated?

YES -Go to step 4.

NO -Intermittent failure, the system is OK at this time.

4. Press the engine start/stop button to select the OFF mode.
5. Test the battery (see **BATTERY TEST**).

Is the battery OK?

YES -Replace the right BSI radar unit (see **BSI RADAR UNIT REMOVAL/INSTALLATION**).

NO -Replace the battery (see **BATTERY REMOVAL AND INSTALLATION**).

DTC B18AF: LEFT BSI RADAR UNIT INTERNAL CIRCUIT ERROR

1. Clear the DTCs with the HDS (see **HOW TO CLEAR DTCS**).
2. Press the engine start/stop button to select the ON mode, then wait for 30 seconds.
3. Check for DTCs with the HDS (see **HOW TO CLEAR DTCS**).

Is DTC B18AF indicated?

YES -Replace the left BSI radar unit (see **BSI RADAR UNIT REMOVAL/INSTALLATION**).

NO -Intermittent failure, the system is OK at this time.

DTC B18B1: RIGHT BSI RADAR UNIT INTERNAL CIRCUIT ERROR

1. Clear the DTCs with the HDS (see **HOW TO CLEAR DTCS**).
2. Press the engine start/stop button to select the ON mode, then wait for 30 seconds.
3. Check for DTCs with the HDS (see **HOW TO CLEAR DTCS**).

Is DTC B18B1 indicated?

YES -Replace the right BSI radar unit (see **BSI RADAR UNIT REMOVAL/INSTALLATION**).

NO -Intermittent failure, the system is OK at this time.

DTC B18B4: LEFT BSI RADAR UNIT DIRTY

1. Check the outside of rear bumper for snow, ice, dirt, contaminants, or stickers.
2. From the left rear wheel arch, remove the screws securing the rear bumper (see **LOWER FRONT BUMPER GRILLE REPLACEMENT**).
3. Gently pull on the rear bumper (A) at the left rear wheel arch area to release it from the hooks (B) on the side spacer (C). Do not pull the rear bumper forcibly.

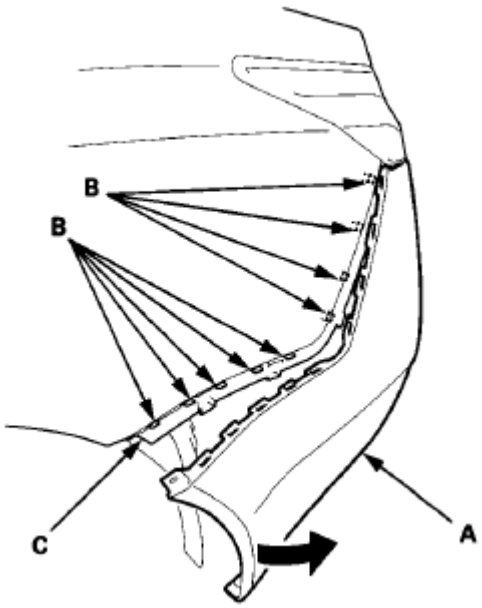


Fig. 31: Pulling On Rear Bumper At Left Rear Wheel Arch Area
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Check the inside of the rear bumper for snow, ice, dirt, or contaminants. Also, check the left BSI radar unit surface for dirt or contaminants.

   Is it OK?

   YES -Intermittent failure due to temporary contamination around the rear bumper, the system is OK at this time. Clear the DTCs.

   NO -Go to step 5.

5. Remove the rear bumper (see **LOWER FRONT BUMPER GRILLE REPLACEMENT**), and wipe off the dirt or contaminants.
6. Check the BSI radar unit bracket for proper installation (see step 4).

   Is it OK?

   YES -Intermittent failure due to temporary contamination around the rear bumper, the system is OK at this time. Clear the DTCs.

   NO -Install the BSI radar unit bracket properly. If damaged, replace the left BSI radar unit (see **BSI RADAR UNIT REMOVAL/INSTALLATION**).

DTC B18B5: RIGHT BSI RADAR UNIT DIRTY

1. Check the outside of rear bumper for snow, ice, dirt, contaminants, or stickers.
2. From the right rear wheel arch, remove the screws securing the rear bumper (see **LOWER FRONT**

BUMPER GRILLE REPLACEMENT).

3. Gently pull on the rear bumper (A) at the right rear wheel arch area to release it from the hooks (B) on the side spacer (C). Do not pull the rear bumper forcibly.

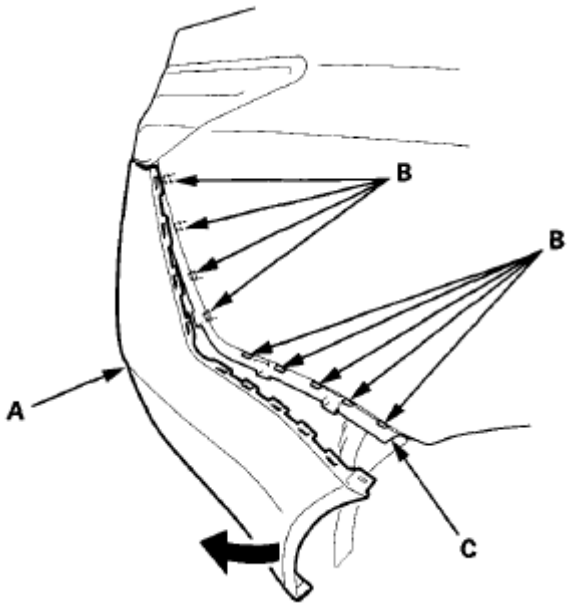


Fig. 32: Pulling On Rear Bumper At Right Rear Wheel Arch Area
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Check the inside of the rear bumper for snow, ice, dirt, or contaminants. Also, check the right BSI radar unit surface for dirt or contaminants.

   Is it OK?

   YES -Intermittent failure due to temporary contamination around the rear bumper, the system is OK at this time. Clear the DTCs.

   NO -Go to step 5.

5. Remove the rear bumper (see **LOWER FRONT BUMPER GRILLE REPLACEMENT**), and wipe off the dirt or contaminants.
6. Check the BSI radar unit bracket for proper installation (see step 4).

   Is it OK?

   YES -Intermittent failure due to temporary contamination around the rear bumper, the system is OK at this time. Clear the DTCs.

   NO -Install the BSI radar unit bracket properly. If damaged, replace the left BSI radar unit (see **BSI RADAR UNIT REMOVAL/INSTALLATION**).

DTC B18B6: LOST COMMUNICATION WITH LEFT BSI RADAR UNIT; DTC B18B7: LOST COMMUNICATION WITH RIGHT BSI RADAR UNIT

1. Clear the DTCs with the HDS (see **HOW TO CLEAR DTCS**).
2. Press the engine start/stop button to select the ON mode, then wait for 60 seconds.
3. Check for DTCs with the HDS (see **HOW TO CLEAR DTCS**).

   Is DTC B18B6 or B18B7 indicated?

   YES -Go to step 4.

   NO -Intermittent failure, the system is OK at this time.

4. Check for DTCs with the HDS (see **HOW TO CLEAR DTCS**).

   Are DTC B18B6 and B18B7 indicated?

   YES -Go to step 5.

   NO -

   - If only DTC B18B6 indicated, go to step 24.
   - If only DTC B18B7 indicated, go to step 32.
5. Press the engine start/stop button to select the OFF mode.
6. Disconnect the left BSI radar unit 6P connector.
7. Press the engine start/stop button to select the ON mode.
8. Measure the voltage between left BSI radar unit 6P connector terminals No. 2 and No. 5. There should be battery voltage.

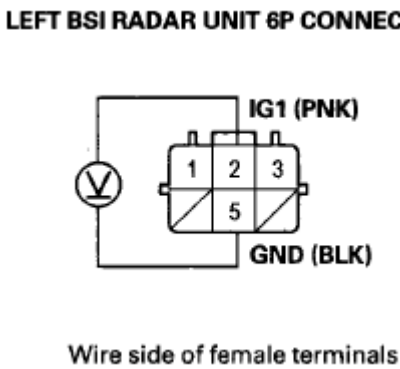


Fig. 33: Measuring Voltage Between Left BSI Radar Unit 6P Connector Terminals No. 2 And No. 5
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there battery voltage?

YES -Go to step 10.

NO -Go to step 9.

9. Measure the voltage between left BSI radar unit 6P connector terminal No. 2 and body ground. There should be battery voltage.

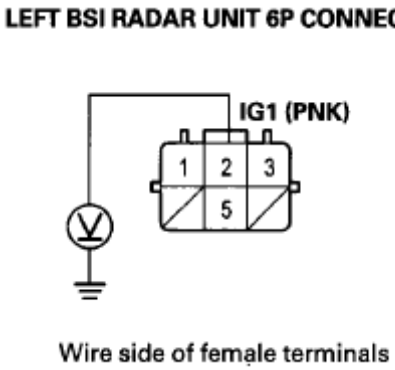


Fig. 34: Measuring Voltage Between Left BSI Radar Unit 6P Connector Terminal No. 2 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there battery voltage?

YES -Repair an open in the wire or poor body ground (G603).

NO -Repair an open in the wire between the BSI control unit and the branch of the IG1 line.

10. Press the engine start/stop button to select the OFF mode.
11. Disconnect the right BSI radar unit 6P connector.
12. Disconnect the BSI control unit 16P connector.
13. Check for continuity between BSI control unit 16P connector terminal No. 2 and body ground.

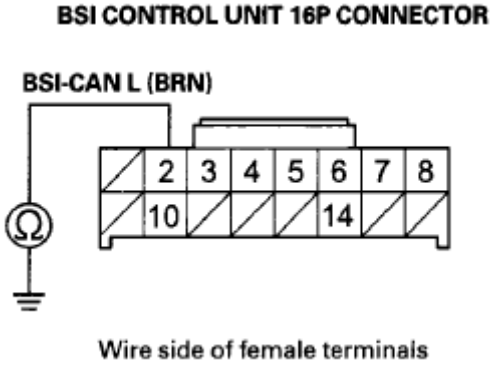


Fig. 35: Checking Continuity Between BSI Control Unit 16P Connector Terminal No. 2 And Body Ground

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES -Repair a short to ground in the wire between the BSI control unit and the branch of the BSI-CAN line (BSI-CAN L)M

NO -Go to step 14.

14. Press the engine start/stop button to select the ON mode.
15. Measure the voltage between BSI control unit 16P connector terminal No. 3 and body ground. There should be less than 0.2 V.

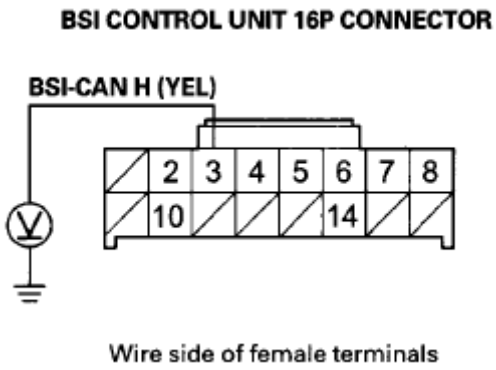


Fig. 36: Measuring Voltage Between BSI Control Unit 16P Connector Terminal No. 3 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is the voltage as specified?

YES -Go to step 16.

NO -Repair a short to power in the wire between the BSI control unit and the branch of the BSI-CAN line (BSI-CAN H).

16. Press the engine start/stop button to select the OFF mode.
17. Check for continuity between BSI control unit 16P connector terminal No. 3 and left BSI radar unit 6P connector terminal No. 3, and between BSI control unit 16P connector terminal No. 2 and left BSI radar unit 6P connector terminal No. 1.

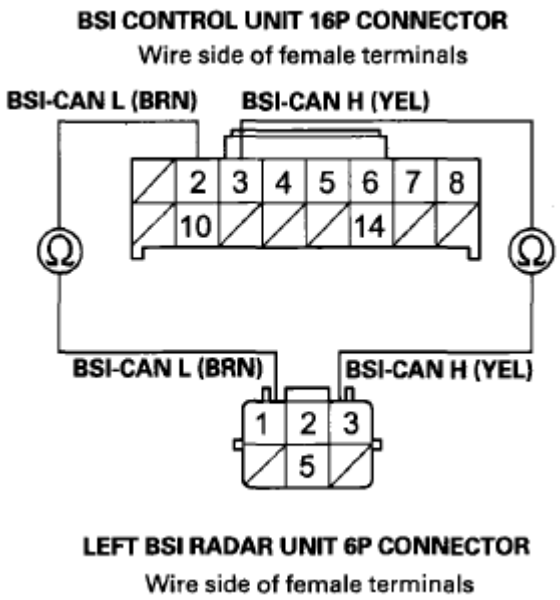


Fig. 37: Checking Continuity Between BSI Control Unit 16P Connector Terminal And Left BSI Radar Unit 6P Connector Terminal
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES -Go to step 18.

NO -Repair an open in the wire between the BSI control unit and the branch of the BSI-CAN line (BSI-CAN H, BSI-CAN L)M

18. Reconnect the left BSI radar unit 6P connector.
19. Reconnect the BSI control unit 16P connector.
20. Press the engine start/stop button to select the ON mode.
21. Clear the DTCs with the HDS (see **HOW TO CLEAR DTCS**).
22. Press the engine start/stop button to select the ON mode, then wait for 60 seconds.
23. Check for DTCs with the HDS (see **HOW TO CLEAR DTCS**).

Are DTC B18B6 and B18B7 indicated?

YES -Replace the right BSI radar unit (see **BSI RADAR UNIT REMOVAL/INSTALLATION**).

NO -Replace the left BSI radar unit (see **BSI RADAR UNIT REMOVAL/INSTALLATION**).

24. Press the engine start/stop button to select the OFF mode.
25. Disconnect the left BSI radar unit 6P connector.
26. Press the engine start/stop button to select the ON mode.
27. Measure the voltage between left BSI radar unit 6P connector terminals No. 2 and No. 5. There should be

battery voltage.

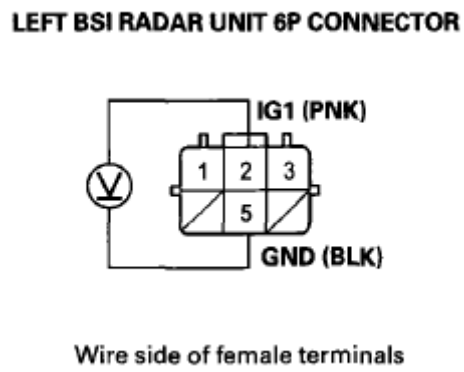


Fig. 38: Measuring Voltage Between Left BSI Radar Unit 6P Connector Terminals No. 2 And No. 5
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there battery voltage?

YES -Go to step 28.

NO -Go to step 31.

28. Press the engine start/stop button to select the OFF mode.
29. Disconnect the BSI control unit 16P connector.
30. Check for continuity between BSI control unit 16P connector terminal No. 3 and left BSI radar unit 6P connector terminal No. 3, and between BSI control unit 16P connector terminal No. 2 and left BSI radar unit 6P connector terminal No. 1.

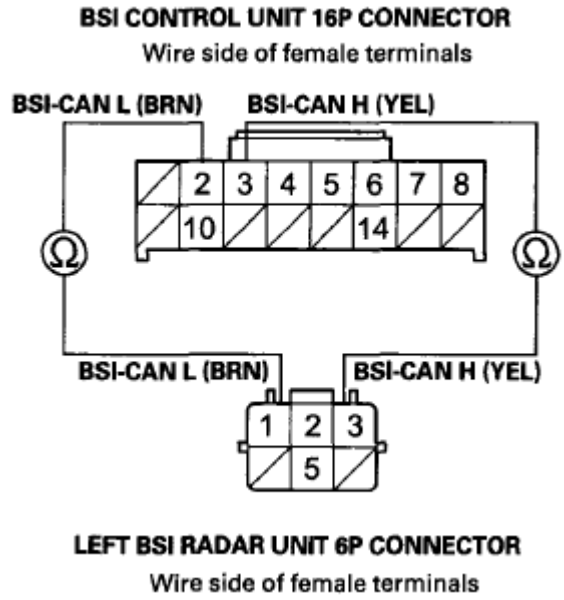


Fig. 39: Checking Continuity Between BSI Control Unit 16P Connector Terminal And Left BSI

Radar Unit 6P Connector Terminal
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES -Replace the left BSI radar unit (see **BSI RADAR UNIT REMOVAL/INSTALLATION**).

NO -Repair an open in the wire between the BSI control unit and the left BSI radar unit.

31. Measure the voltage between left BSI radar unit 6P connector terminal No. 2 and body ground. There should be battery voltage.

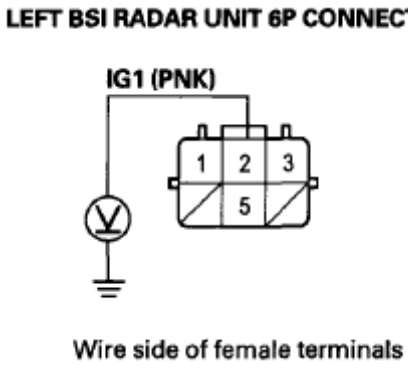


Fig. 40: Measuring Voltage Between Left BSI Radar Unit 6P Connector Terminal No. 2 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there battery voltage?

YES -Repair an open in the wire between the left BSI radar unit and body ground (G603).

NO -Repair an open in the wire between the driver's under-dash fuse/relay box and the left BSI radar unit.

32. Press the engine start/stop button to select the OFF mode.
33. Disconnect the right BSI radar unit 6P connector.
34. Press the engine start/stop button to select the ON mode.
35. Measure the voltage between right BSI radar unit 6P connector terminals No. 2 and No. 5. There should be battery voltage.

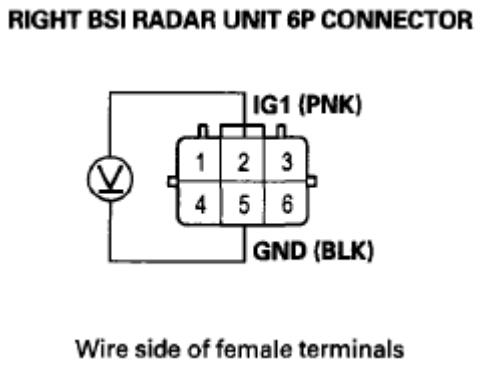


Fig. 41: Measuring Voltage Between Right BSI Radar Unit 6P Connector Terminals No. 2 And No. 5
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there battery voltage?

YES -Go to step 36.

NO -Go to step 40.

36. Press the engine start/stop button to select the OFF mode.
37. Measure the resistance between body ground and right BSI radar unit 6P connector terminals No. 4 and No. 6 individually. There should be less than 1.0 ohms.

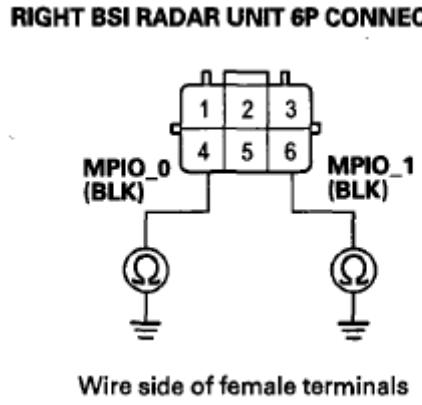


Fig. 42: Measuring Resistance Between Body Ground And Right BSI Radar Unit 6P Connector Terminals No. 4 And No. 6
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is the resistance as specified?

YES -Go to step 38.

NO -Repair an open in the wire between the right BSI radar unit and body ground (G603).

38. Disconnect the BSI control unit 16P connector.
39. Check for continuity between BSI control unit 16P connector terminal No. 3 and right BSI radar unit 6P connector terminal No. 3, and between BSI control unit 16P connector terminal No. 2 and right BSI radar unit 6P connector terminal No. 1.

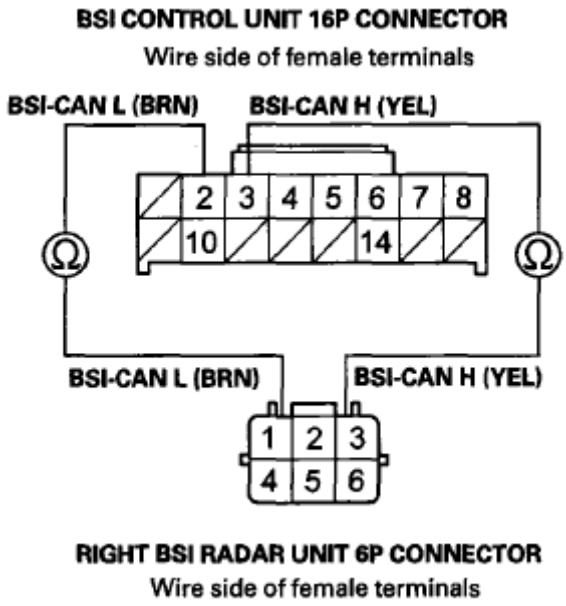


Fig. 43: Checking Continuity Between BSI Control Unit 16P Connector Terminal And Right BSI Radar Unit 6P Connector Terminal
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES -Replace the right BSI radar unit (see **BSI RADAR UNIT REMOVAL/INSTALLATION**).

NO -Repair an open in the wire between the BSI control unit and the right BSI radar unit.

40. Measure the voltage between right BSI radar unit 6P connector terminal No. 2 and body ground. There should be battery voltage.

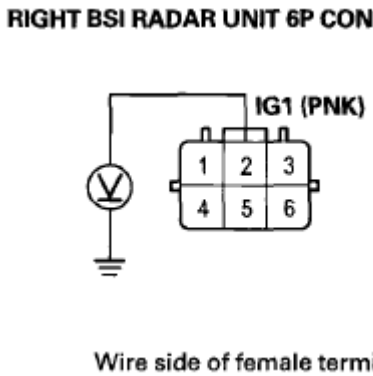


Fig. 44: Measuring Voltage Between Right BSI Radar Unit 6P Connector Terminal No. 2 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there battery voltage?

YES -Repair an open in the wire between the right BSI radar unit and body ground (G603).

NO -Repair an open in the wire between the driver's under-dash fuse/relay box and the right BSI radar unit.

DTC B18B8: LEFT BSI RADAR UNIT AZIMUTH OFF ALIGNMENT; DTC B18B9: RIGHT BSI RADAR UNIT AZIMUTH OFF ALIGNMENT

1. Check the installation of the BSI radar unit (see **BSI RADAR UNIT REMOVAL/INSTALLATION**).

   Is it OK?

   YES -Check the vehicle condition:

   - Make sure the vehicle does not have aftermarket suspension.
   - Make sure all the tires are the correct size.
   - Set the tire pressures to the specifications shown on the doorjamb label.

   If the problem is still present, do the BSI radar unit mounting area check (see **BSI RADAR UNIT MOUNTING AREA CHECK**).

   NO -Replace the BSI radar unit (see **BSI RADAR UNIT REMOVAL/INSTALLATION**).

DTC B18BA: LEFT BSI RADAR UNIT VERSION INCORRECT; DTC B18BB: RIGHT BSI RADAR UNIT VERSION INCORRECT

1. Clear the DTCs with the HDS (see **HOW TO CLEAR DTCS**).
2. Press the engine start/stop button to select the ON mode, then wait for 10 seconds.
3. Check for DTCs with the HDS (see **HOW TO CLEAR DTCS**).

   Are DTC B18BA and/or B18BB indicated?

   YES -Go to step 4.

   NO -Intermittent failure, the system is OK at this time.

4. Check for DTCs with the HDS (see **HOW TO CLEAR DTCS**).

   Are DTC B18BA and/or B18BB indicated?

YES -Go to step 5.

NO -An incorrect BSI radar unit is installed. Replace the BSI radar unit (see **BSI RADAR UNIT REMOVAL/INSTALLATION**) with the proper part.

5. Check the part number of BSI control unit.

   Does the part number of BSI control unit correspond to this vehicle?

   YES -Both BSI radar units are incorrect. Replace both BSI radar units (see **BSI RADAR UNIT REMOVAL/INSTALLATION**) with the proper parts.

   NO -An incorrect BSI control unit is installed. Replace the BSI control unit (see **BSI CONTROL UNIT REMOVAL/INSTALLATION**) with the proper part.

DTC B18BC: BSI RADAR UNITS COMMUNICATION ERROR

1. Clear the DTCs with the HDS (see **HOW TO CLEAR DTCS**).
2. Press the engine start/stop button to select the ON mode, then wait for 60 seconds.
3. Check for DTCs with the HDS (see **HOW TO CLEAR DTCS**).

   Is DTC B18BC indicated?

   YES -Go to step 4.

   NO -Intermittent failure, the system is OK at this time.

4. Press the engine start/stop button to select the OFF mode.
5. Disconnect the left BSI radar unit 6P connector.
6. Disconnect the right BSI radar unit 6P connector.
7. Disconnect the BSI control unit 16P connector.
8. Check for continuity between BSI control unit 16P connector terminal No. 3 and body ground.

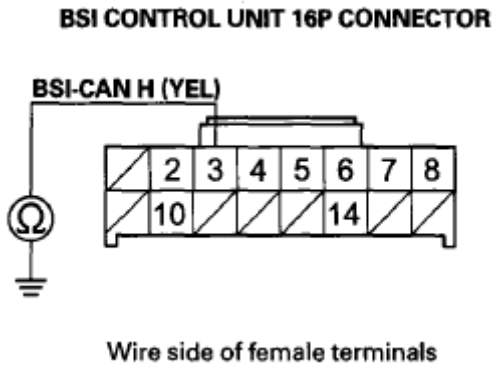


Fig. 45: Checking Continuity Between BSI Control Unit 16P Connector Terminal No. 3 And Body Ground

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES -Repair a short to ground in the wire between the BSI control unit and the branch of the BSI-CAN line (BSI-CAN H).

NO -Go to step 9.

9. Check for continuity between BSI control unit 16P connector terminals No. 2 and No. 3.

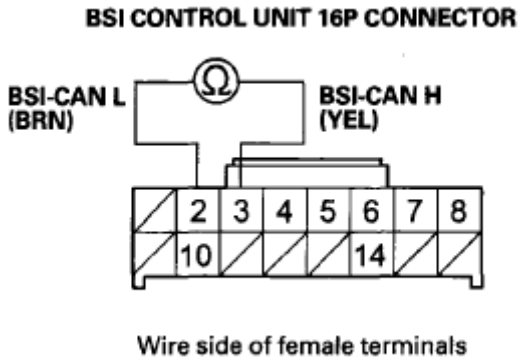


Fig. 46: Checking Continuity Between BSI Control Unit 16P Connector Terminals No. 2 And No. 3
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES -Repair a short in the wires between the BSI-CAN H line and the BSI-CAN L line.

NO -Go to step 10.

10. Press the engine start/stop button to select the ON mode.
11. Measure the voltage between BSI control unit 16P connector terminal No. 2 and body ground. There should be less than 0.2 V.

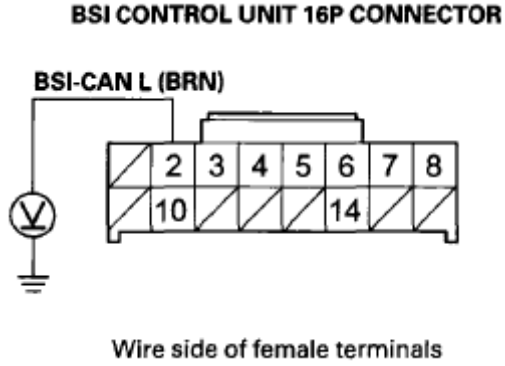


Fig. 47: Measuring Voltage Between BSI Control Unit 16P Connector Terminal No. 2 And Body

Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is the voltage as specified?

YES -Go to step 12.

NO -Repair a short to power in the wire between the BSI control unit and the branch of the BSI-CAN line (BSI-CAN).

12. Press the engine start/stop button to select the OFF mode.
13. Reconnect the BSI control unit 16P connector.
14. Measure the resistance between BSI control unit 16P connector terminals No. 2 and No. 3. There should be an open circuit or at least 1 Mohms.

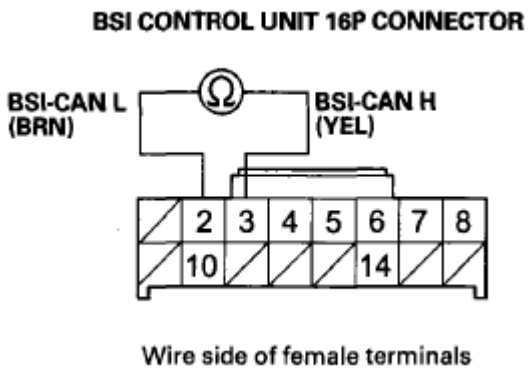


Fig. 48: Measuring Resistance Between BSI Control Unit 16P Connector Terminals No. 2 And No. 3
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is the resistance as specified?

YES -Go to step 15.

NO -Replace the BSI control unit (see **BSI CONTROL UNIT REMOVAL/INSTALLATION**).

15. Reconnect the right BSI radar unit 6P connector.
16. Press the engine start/stop button to select the ON mode.
17. Clear the DTCs with the HDS (see **HOW TO CLEAR DTCS**).
18. Press the engine start/stop button to select the ON mode, then wait for 60 seconds.
19. Check for DTCs with the HDS (see **HOW TO CLEAR DTCS**).

Is DTC B18BC indicated?

YES -Replace the right BSI radar unit (see **BSI RADAR UNIT REMOVAL/INSTALLATION**).

NO -Replace the left BSI radar unit (see **BSI RADAR UNIT REMOVAL/INSTALLATION**).

DTC B18BD: BSI CONTROL UNIT VOLTAGE INPUT HIGH

NOTE: This DTC may be indicated due to a faulty charging system including the battery.

1. Clear the DTCs with the HDS (see **HOW TO CLEAR DTCS**).
2. Press the engine start/stop button to select the ON mode, then wait for 20 seconds.
3. Check for DTCs with the HDS (see **HOW TO CLEAR DTCS**).

Is DTC B18BD indicated?

YES -Go to step 4.

NO -Intermittent failure, the system is OK at this time.

4. Press the engine start/stop button to select the OFF mode.
5. Test the battery (see **BATTERY TEST**).

Is the battery OK?

YES -Replace the BSI control unit (see **BSI CONTROL UNIT REMOVAL/INSTALLATION**).

NO -Replace the battery (see **BATTERY REMOVAL AND INSTALLATION**).

DTC B18BE: BSI CONTROL UNIT VOLTAGE INPUT LOW

1. Clear the DTCs with the HDS (see **HOW TO CLEAR DTCS**).
2. Start the engine, then wait for 30 seconds.
3. Check for DTCs with the HDS (see **HOW TO CLEAR DTCS**).

Is DTC B18BE indicated?

YES -Check the connection between the BSI connector and the BSI control unit. If the connection is OK, check the battery (see **BATTERY TEST**).

NO -Intermittent failure, the system is OK at this time.

DTC B18C2: LEFT BSI ALERT INDICATOR OUTPUT ERROR

1. Clear the DTCs with the HDS (see **HOW TO CLEAR DTCS**).
2. Press the engine start/stop button to select the ON mode, then wait for 10 seconds.
3. Check for DTCs with the HDS (see **HOW TO CLEAR DTCS**).

Is DTC B18C2 indicated?

YES -Go to step 4.

NO -Intermittent failure, the system is OK at this time.

4. Press the engine start/stop button to select the OFF mode.
5. Remove the front door sash inner trim (see **FRONT DOOR SASH INNER TRIM REPLACEMENT**).
6. Measure the resistance between left BSI alert indicator 2P connector terminal No. 1 and body ground. There should be less than 1.0 ohms.

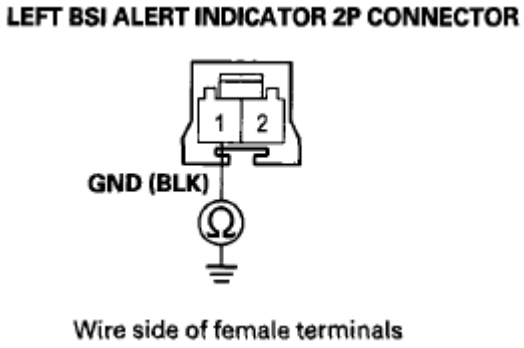


Fig. 49: Measuring Resistance Between Left BSI Alert Indicator 2P Connector Terminal No. 1 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is the resistance as specified?

YES -Go to step 7.

NO -Repair an open in the wire between the left BSI alert indicator and body ground (G402).

7. Press the engine start/stop button to select the ON mode, and within 3 seconds measure the voltage between left BSI alert indicator 2P connector terminals No. 1 and No. 2.

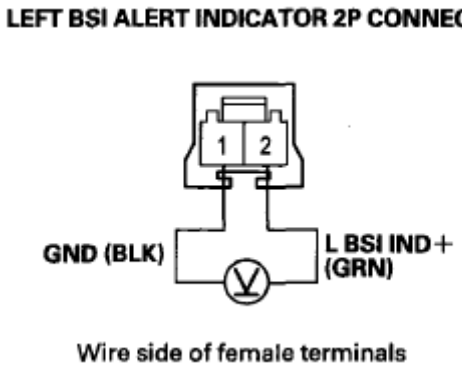


Fig. 50: Measuring Voltage Between Left BSI Alert Indicator 2P Connector Terminals No. 1 And

No. 2
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Does the voltage remain between 12 V and 1 V for 3 seconds after pressing the engine start/stop button to select the ON mode, then go down to 0 V?

YES -Replace the left BSI alert indicator (see **BSI ALERT INDICATOR REMOVAL/INSTALLATION**).

NO -Go to step 8.

8. Press the engine start/stop button to select the OFF mode.
9. Disconnect the BSI control unit 16P connector.
10. Measure the resistance between left BSI alert indicator 2P connector terminal No. 2 and body ground. There should be an open circuit or at least 1 Mohms.

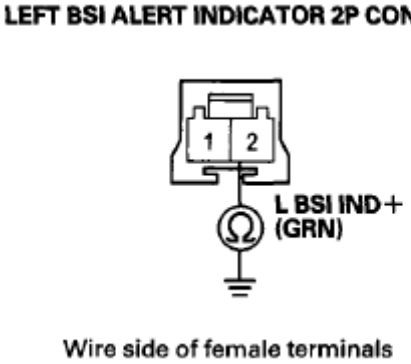


Fig. 51: Measuring Resistance Between Left BSI Alert Indicator 2P Connector Terminal No. 2 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is the resistance as specified?

YES -Go to step 11.

NO -Repair a short to ground in the wire between the BSI control unit and the left BSI alert indicator.

11. Measure the resistance between BSI control unit 16P connector terminal No. 4 and left BSI alert indicator 2P connector terminal No. 2. There should be less than 1.0 ohms.

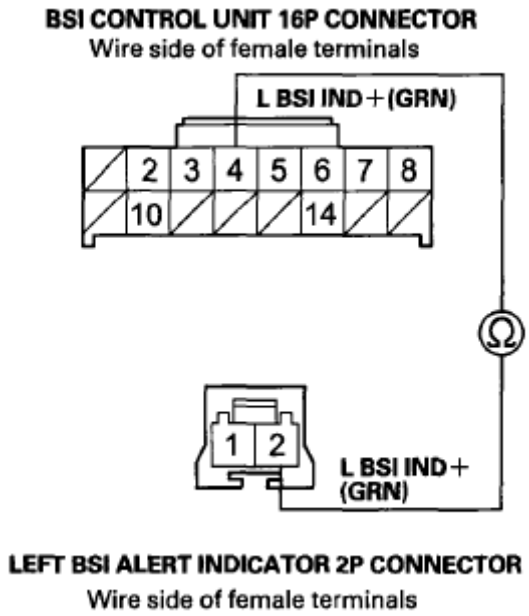


Fig. 52: Measuring Resistance Between BSI Control Unit 16P Connector Terminal No. 4 And Left BSI Alert Indicator 2P Connector Terminal No. 2
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is the resistance as specified?

YES -Go to step 12.

NO -Repair an open in the wire between the BSI control unit and the left BSI alert indicator.

12. Press the engine start/stop button to select the ON mode.
13. Measure the voltage between left BSI alert indicator 2P connector terminal No. 2 and body ground. There should be less than 0.2 V.

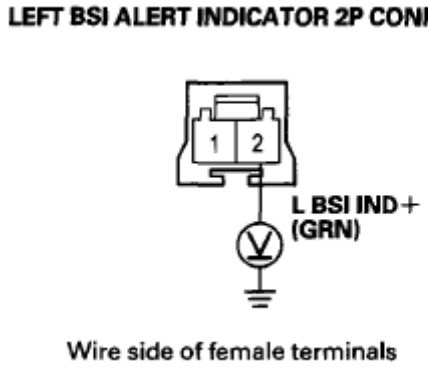


Fig. 53: Measuring Voltage Between Left BSI Alert Indicator 2P Connector Terminal No. 2 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is the voltage as specified?

YES -Replace the BSI control unit (see **BSI CONTROL UNIT REMOVAL/INSTALLATION**).

NO -Repair a short to power in the wire between the BSI control unit and the left BSI alert indicator. If the problem is still present, replace the left BSI alert indicator (see **BSI ALERT INDICATOR REMOVAL/INSTALLATION**).

DTC B18CF: RIGHT BSI ALERT INDICATOR OUTPUT ERROR

1. Clear the DTCs with the HDS (see **HOW TO CLEAR DTCS**).
2. Press the engine start/stop button to select the ON mode, then wait for 10 seconds.
3. Check for DTCs with the HDS (see **HOW TO CLEAR DTCS**).

Is DTC B18CF indicated?

YES -Go to step 4.

NO -Intermittent failure, the system is OK at this time.

4. Press the engine start/stop button to select the OFF mode.
5. Remove the front door sash inner trim (see **FRONT DOOR SASH INNER TRIM REPLACEMENT**).
6. Measure the resistance between right BSI alert indicator 2P connector terminal No. 1 and body ground. There should be less than 1.0 ohms.

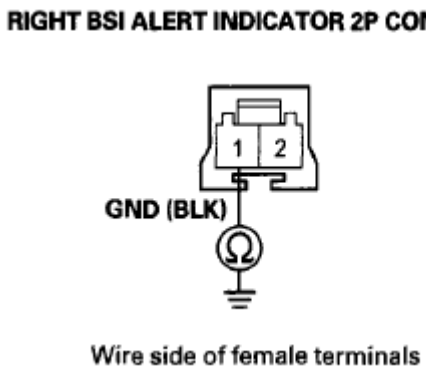


Fig. 54: Measuring Resistance Between Right BSI Alert Indicator 2P Connector Terminal No. 1 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is the resistance as specified?

YES -Go to step 7.

NO -Repair an open in the wire between the right BSI alert indicator and body ground (G405).

7. Press the engine start/stop button to select the ON mode, and within 3 seconds measure the voltage between right BSI alert indicator 2P connector terminals No. 1 and No. 2.

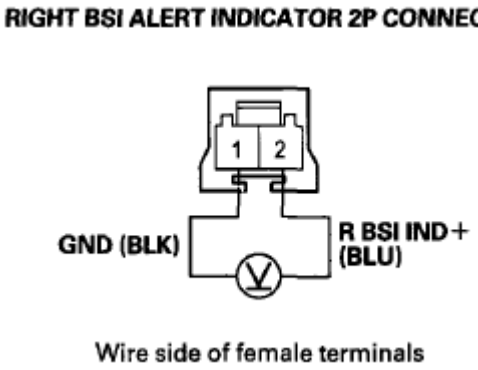


Fig. 55: Measuring Voltage Between Right BSI Alert Indicator 2P Connector Terminals No. 1 And No. 2
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Does the voltage remain between 12 V and 1 V for 3 seconds after pressing the engine start/stop button to select the ON mode, then go down to 0 V?

YES -Replace the right BSI alert indicator (see **BSI ALERT INDICATOR REMOVAL/INSTALLATION**).

NO -Go to step 8.

8. Press the engine start/stop button to select the OFF mode.
9. Disconnect the BSI control unit 16P connector.
10. Measure the resistance between right BSI alert indicator 2P connector terminal No. 2 and body ground. There should be an open circuit or at least 1 Mohms.

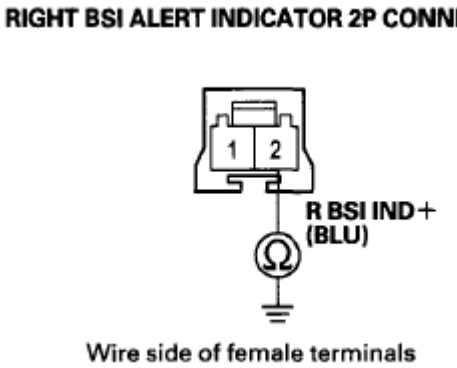


Fig. 56: Measuring Resistance Between Right BSI Alert Indicator 2P Connector Terminal No. 2 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is the resistance as specified?

YES -Go to step 11.

NO -Repair a short to ground in the wire between the BSI control unit and the right BSI alert indicator.

11. Measure the resistance between BSI control unit 16P connector terminal No. 14 and right BSI alert indicator 2P connector terminal No. 2. There should be less than 1.0 ohms.

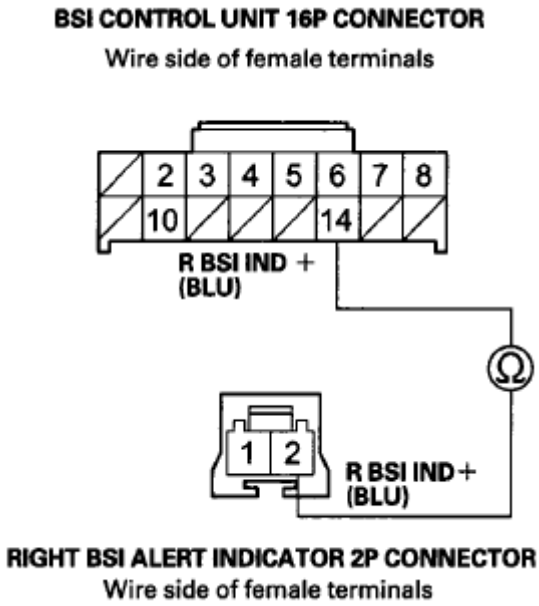


Fig. 57: Measuring Resistance Between BSI Control Unit 16P Connector Terminal No. 14 And Right BSI Alert Indicator 2P Connector Terminal No. 2
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is the resistance as specified?

YES -Go to step 12.

NO -Repair an open in the wire between the BSI control unit and the right BSI alert indicator.

12. Press the engine start/stop button to select the ON mode.
13. Measure the voltage between right BSI alert indicator 2P connector terminal No. 2 and body ground. There should be less than 0.2 V.

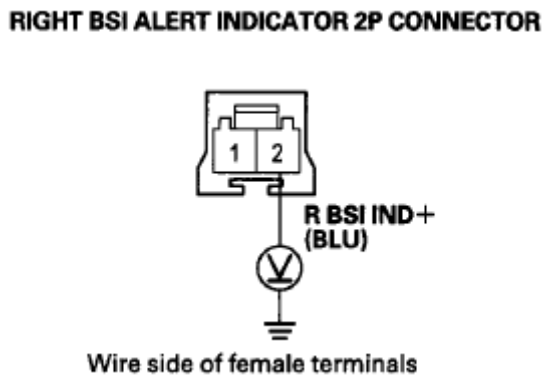


Fig. 58: Measuring Voltage Between Right BSI Alert Indicator 2P Connector Terminal No. 2 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is the voltage as specified?

YES -Replace the BSI control unit (see **BSI CONTROL UNIT REMOVAL/INSTALLATION**).

NO -Repair a short to power in the wire between the BSI control unit and the right BSI alert indicator. If the problem is still present, replace the right BSI alert indicator (see **BSI ALERT INDICATOR REMOVAL/INSTALLATION**).

DTC U0155: LOST COMMUNICATION WITH THE GAUGE CONTROL MODULE

1. Clear the DTCs with the HDS (see **HOW TO CLEAR DTCS**).
2. Press the engine start/stop button to select the ON mode, then wait for 10 seconds.
3. Check for DTCs with the HDS (see **HOW TO CLEAR DTCS**).

   Is DTC U0155 indicated?

   YES -Go to step 4.

   NO -Intermittent failure, the system is OK at this time.

4. Check for any DTCs with the HDS.

   Are there any other gauge control module DTCs indicated?

   YES -Troubleshoot the indicated gauge control module DTC(s). After troubleshooting, clear the DTC.

   NO -Go to step 5.

5. Press the engine start/stop button to select the OFF mode.
6. Disconnect the BSI control unit 16P connector.
7. Disconnect gauge control module 32P connector.

8. Check for continuity between gauge control module 32P connector terminal No. 30 and BSI control unit 16P connector terminal No. 6, and between gauge control module 32P connector terminal No. 29 and BSI control unit 16P connector terminal No 5.

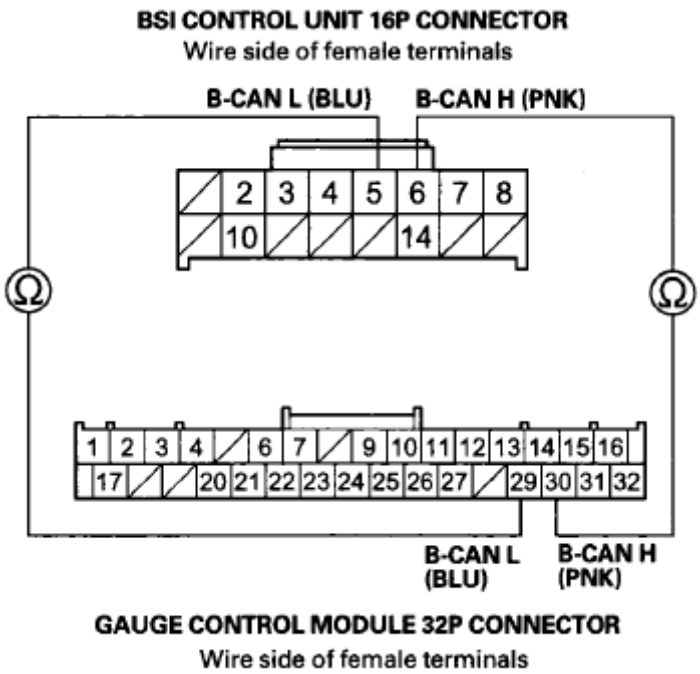


Fig. 59: Checking Continuity Between Gauge Control Module 32P Connector Terminal And BSI Control Unit 16P Connector Terminal
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES -Replace the BSI control unit (see **BSI CONTROL UNIT REMOVAL/INSTALLATION**).

NO -Repair an open in the wire between the gauge control module and the BSI control unit.

DTC U0423: INVALID DATA RECEIVED FROM PCM (VEHICLE SPEED DATA)

1. Clear the DTCs with the HDS (see **HOW TO CLEAR DTCS**).
2. Start the engine, then wait at least 3 seconds.
3. Test-drive the vehicle at 6 mph (10 km/h) or more.
4. Check for DTCs with the HDS (see **HOW TO CLEAR DTCS**).

Is DTC U0423 indicated?

YES -Troubleshoot the indicated PGM-FI system DTC(s). After troubleshooting, clear the DTC.

NO -Intermittent failure, the system is OK at this time.

DTC U1280: COMMUNICATION BUS LINE ERROR (BUS-OFF)

1. Clear the DTCs with the HDS (see **HOW TO CLEAR DTCS**).
2. Press the engine start/stop button to select the ON mode, then wait for 10 seconds.
3. Check for DTCs with the HDS (see **HOW TO CLEAR DTCS**).

   Is DTC U1280 indicated?

   YES -Replace the BSI control unit (see **BSI CONTROL UNIT REMOVAL/INSTALLATION**).

   NO -Intermittent failure, the system is OK at this time.

SYMPTOM TROUBLESHOOTING

THE BSI ALERT INDICATOR COMES ON WHEN NO OTHER VEHICLE IS IN THE DETECTABLE AREA (WRONG INDICATION)

NOTE:
- **If the system malfunctions, always check for DTCs with the HDS.**
- **If a DTC is stored, troubleshoot the DTC first.**

1. Check BSI OFF switch, and make sure the BSI system is ON.

   Is the BSI system ON?

   YES -Go to step 2.

   NO -Cancel the OFF status by operating BSI OFF switch.

2. Interview the client about when the symptom occurred to determine if an inspection is needed.

   NOTE: The BSI system cannot work properly in the following driving situations:

   - In rainy, snowy, or foggy weather.
   - When receiving a jamming signal from outside.
   - When followed by other vehicles at a curve in a road.
   - When another vehicle is getting close to yours when turning right or left.
   - When the rear bumper is deformed.
   - When the sensor is out of place.
   - In places where there is a guardrail, pole, or tree.
   - When an area of bumper around the installed sensor is soiled.

   Is an inspection required?

YES -Go to step 3.

NO -The system is OK at this time. Check the rear bumper for dirt contamination. If everything looks OK, explain BSI system precautions to the client.

3. Make sure that the rear bumper is correctly installed, and check the rear bumper for alteration or deformation.

   Is the rear bumper OK?

   YES -Go to step 4.

   NO -If the rear bumper is incorrectly installed, reinstall it correctly. If it is damaged or deformed, replace it. If it is modified, explain to the client that modifying rear bumper may lead to improper BSI system operation.

4. Remove the rear bumper (see **LOWER FRONT BUMPER GRILLE REPLACEMENT**).
5. Check the inside and outside of the rear bumper for dirt, contaminants, or stickers. Also, check the BSI radar unit surface for dirt or contaminants.

   Are the rear bumper and the BSI radar unit OK?

   YES -Go to step 6.

   NO -Completely wipe off any dirt or contaminants from the BSI radar unit or rear bumper.

6. Check the body surface where the BSI radar unit is mounted for deformation.

   Is the body surface OK?

   YES -Go to step 7.

   NO -Do the BSI radar unit mounting area check (see **BSI RADAR UNIT MOUNTING AREA CHECK**).

7. Check the BSI radar unit for damage.

   Is it OK?

   YES -Do the BSI radar unit aiming inspection (see **BSI RADAR UNIT AIMING INSPECTION**).

   NO -Replace the BSI radar unit (see **BSI RADAR UNIT REMOVAL/INSTALLATION**).

THE BSI DOES NOT COME ON WHEN OTHER VEHICLES ARE IN THE DETECTABLE AREA (NO INDICATION)

NOTE:

- **If the system malfunctions, always check for DTCs with the HDS.**
- **If a DTC is stored, troubleshoot the DTC first.**

1. Check BSI OFF switch, and make sure the BSI system is ON.

   Is the BSI system ON?

   YES -Go to step 2.

   NO -Cancel the OFF status by operating BSI OFF switch.

2. Interview the client about when the symptom occurred to determine if an inspection is needed.

   NOTE: The BSI system cannot work properly in the following driving situations:

   - In rainy, snowy, or foggy weather.
   - When small targets in the detectable area cannot reflect radar; for example, a motor bike.
   - When there is ice, snow, or dirt is stuck to the rear bumper.
   - When driving in a traffic lane divided with road marking ramps.
   - When a vehicle comes over in the lane next to yours from a far lane.
   - When the temperature around the sensor is high.
   - When the rear bumper is deformed.
   - When the sensor is out of place.
   - When an area of bumper around the installed sensor is soiled.

   Is an inspection required?

   YES -Go to step 3.

   NO -The system is OK at this time. Check the rear bumper for dirt contamination. If everything looks OK, explain BSI system precautions to the client.

3. Make sure that the rear bumper is correctly installed, and check the rear bumper for alteration or deformation.

   Is the rear bumper OK?

   YES -Go to step 4.

   NO -If the rear bumper is incorrectly installed, reinstall it correctly. If it is damaged or deformed, replace it. If it is modified, explain to the client that modifying rear bumper may lead to improper BSI system operation.

4. Remove the rear bumper (see **LOWER FRONT BUMPER GRILLE REPLACEMENT**).

5. Check the inside and outside of the rear bumper for dirt, contaminants, or stickers. Also, check the BSI radar unit surface for dirt or contaminants.

   Are the rear bumper and the BSI radar unit OK?

   YES -Go to step 6.

   NO -Completely wipe off any dirt or contaminants from the BSI radar unit or rear bumper.

6. Check the body surface where the BSI radar unit is mounted for deformation.

   Is the body surface OK?

   YES -Go to step 7.

   NO -Do the BSI radar unit mounting area check (see **BSI RADAR UNIT MOUNTING AREA CHECK**).

7. Check the BSI radar unit for damage.

   Is it OK?

   YES -Do the BSI radar unit aiming Inspection (see **BSI RADAR UNIT AIMING INSPECTION**).

   NO -Replace the BSI radar unit (see **BSI RADAR UNIT REMOVAL/INSTALLATION**).

THE BSI OFF SWITCH DOES NOT WORK

NOTE:

- **If the system malfunctions, always check for DTCs with the HDS.**
- **If a DTC is stored, troubleshoot the DTC first.**
- **Check the BSI OFF switch by pressing and holding it for 1 second.**

1. Connect the HDS to the data link connector.
2. Press the engine start/stop button to select the ON mode, then wait for 10 seconds.
3. Select HISTORY DATA CLEAR in the BSI MENU, and clear the operating history with the HDS.
4. Press and hold the BSI OFF switch for at least 1 second, release the switch, then press and hold the BSI OFF switch again for at least 1 second.
5. Select the Data List in the BSI MENU, and check the operating history in the Off to On history of the BSI OFF switch and the On to Off history of the BSI OFF switch with the HDS.

   Are both ON?

   YES -The BSI OFF switch is OK.

   NO -Go to step 6.

6. Press the engine start/stop button to select the OFF mode.
7. Disconnect the BSI OFF switch 5P connector.
8. Check the BSI OFF switch (see **BSI OFF SWITCH TEST/REMOVAL/INSTALLATION**).

   Is it OK?

   YES -Go to step 9.

   NO -Replace the BSI OFF switch (see **BSI OFF SWITCH TEST/REMOVAL/INSTALLATION**).

9. Press the engine start/stop button to select the ON mode.
10. Measure the voltage between BSI OFF switch 5P connector terminals No. 1 and No. 2. There should be battery voltage.

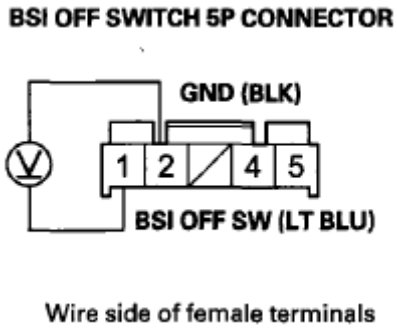


Fig. 60: Measuring Voltage Between BSI OFF Switch 5P Connector Terminals No. 1 And No. 2
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is the voltage as specified?

YES -Go to step 11.

NO -Go to step 13.

11. Press the engine start/stop button to select the OFF mode.
12. Measure the voltage between BSI OFF switch 5P connector terminals No. 1 and No. 2. There should be less than 0.2 V.

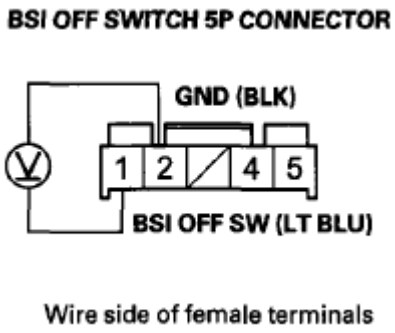


Fig. 61: Measuring Voltage Between BSI OFF Switch 5P Connector Terminals No. 1 And No. 2
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is the voltage as specified?

YES -Replace the BSI control unit (see **BSI CONTROL UNIT REMOVAL/INSTALLATION**).

NO -Repair a short to power in the wire between the BSI control unit and the BSI OFF switch.

13. Press the engine start/stop button to select the OFF mode.
14. Measure the resistance between BSI OFF switch 5P connector terminal No. 2 and body ground. There should be less than 1.0 ohms.

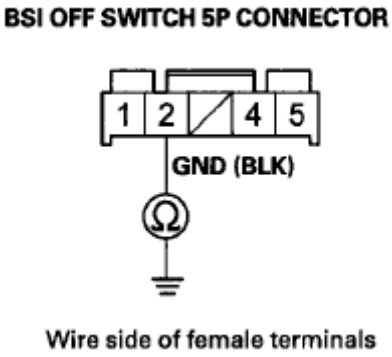


Fig. 62: Measuring Resistance Between BSI OFF Switch 5P Connector Terminal No. 2 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is the resistance as specified?

YES -Go to step 15.

NO -Repair an open in the wire between the BSI OFF switch and body ground (G402).

15. Disconnect the BSI control unit 16P connector.
16. Measure the resistance between BSI control unit 16P connector terminal No. 8 and body ground. There should be an open circuit or at least 1 Mohms.

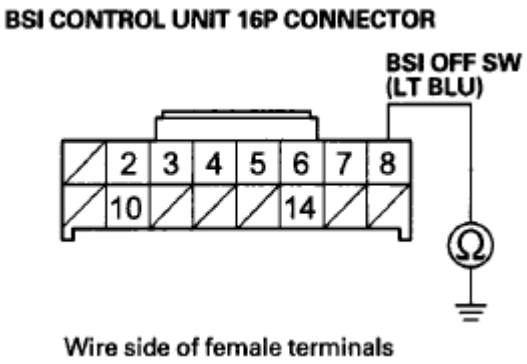


Fig. 63: Measuring Resistance Between BSI Control Unit 16P Connector Terminal No. 8 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is the resistance as specified?

YES -Go to step 17.

NO -Repair a short to ground in the wire between the BSI control unit and the BSI OFF switch.

17. Measure the resistance between BSI control unit 16P connector terminal No. 8 and BSI OFF switch 5P connector terminal No. 1. There should be less than 1.0 ohms.

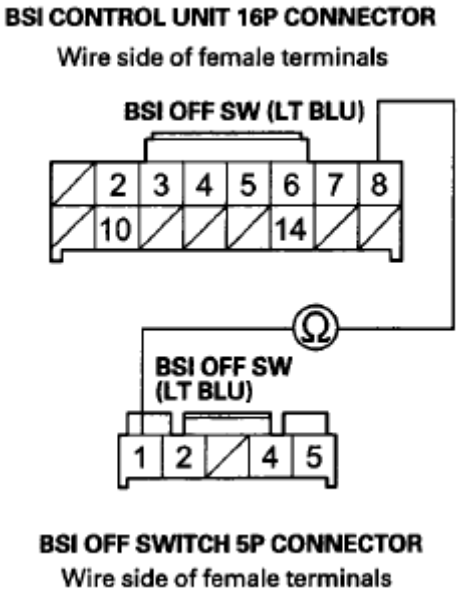


Fig. 64: Measuring Resistance Between BSI Control Unit 16P Connector Terminal No. 8 And BSI OFF Switch 5P Connector Terminal No. 1
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is the resistance as specified?

YES -Replace the BSI control unit (see **BSI CONTROL UNIT REMOVAL/INSTALLATION**).

NO -Repair an open in the wire between the BSI control unit and the BSI OFF switch.

THE BSI INDICATOR DOES NOT GO OFF, OR DOES NOT COME ON

NOTE:
- **If the system malfunctions, always check for DTCs with the HDS.**
- **If a DTC is stored, troubleshoot the DTC first.**

1. Press the engine start/stop button to select the ON mode, then wait for 10 seconds.
2. Check that the BSI indicator comes on for about 2 seconds and then goes off.

   Does the BSI indicator go off?

   YES -The system is OK.

   NO -Go to step 3.

3. Check for DTCs with the HDS (see **HOW TO CLEAR DTCS**).

   Are any DTCs indicated?

   YES -Troubleshoot the indicated DTC(s).

   NO -Go to step 4.

4. Do the gauge control module self-diagnostic function (see **SELF-DIAGNOSTIC FUNCTION**).

   Does the side BSI indicator blink?

   YES -Replace the BSI control unit (see **BSI CONTROL UNIT REMOVAL/INSTALLATION**).

   NO -Replace the gauge control module (see **GAUGE CONTROL MODULE REPLACEMENT**), and recheck.

THE MID BEEPER DOES NOT SOUND WHEN THE BSI OFF SWITCH IS PUSHED

NOTE:
- **If the system malfunctions, always check for DTCs with the HDS.**
- **If a DTC is stored, troubleshoot the DTC first.**

1. Check for DTCs with the HDS (see **HOW TO CLEAR DTCS**).

   Are any DTCs indicated?

   YES -Troubleshoot the indicated DTC(s).

NO -Go to step 2.

2. Do the gauge control module self-diagnostic function (see **SELF-DIAGNOSTIC FUNCTION**).

   Does the beeper sound?

   YES -Replace the BSI control unit (see **BSI CONTROL UNIT REMOVAL/INSTALLATION**).

   NO -Replace the gauge control module (see **GAUGE CONTROL MODULE REPLACEMENT**), and recheck.

THE HDS DOES NOT COMMUNICATE WITH THE BSI

NOTE:
- **If the system malfunctions, always check for DTCs with the HDS.**
- **If a DTC is stored, troubleshoot the DTC first.**

1. Test the battery (see **BATTERY TEST**).

   Is the battery OK?

   YES -Go to step 2.

   NO -Charge or replace the battery (see **BATTERY REMOVAL AND INSTALLATION**) as needed, then recheck.

2. Connect the HDS to the data link connector.
3. Press the engine start/stop button to select the ON mode, then wait for 10 seconds.
4. Make sure the HDS can communicate with the body electrical system.

   Is communication possible?

   YES -Go to step 5.

   NO -Do the MICU unit input test (see **MICU INPUT TEST**).

5. Check for body electrical system DTCs with the HDS (see **WIRE COLOR CODES**).

   Are any DTCs indicated?

   YES -Troubleshoot the indicated body electrical system DTC(s), and retest.

   NO -Go to step 6.

6. Press the engine start/stop button to select the OFF mode.
7. Check the connection at the BSI control unit 16P connector.

Is the connection OK?

YES -Go to step 8.

NO -Repair the poor connection, and recheck.

8. Disconnect the BSI control unit 16P connector.
9. Press the engine start/stop button to select the ON mode.
10. Measure the voltage between BSI control unit 16P connector terminals No. 7 and No. 10. There should be battery voltage.

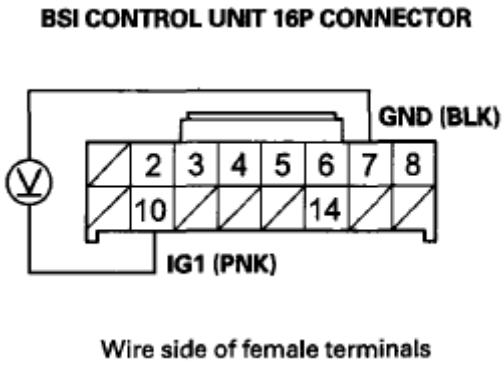


Fig. 65: Measuring Voltage Between BSI Control Unit 16P Connector Terminals No. 7 And No. 10
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there battery voltage?

YES -Go to step 12.

NO -Go to step 11.

11. Measure the voltage between BSI control unit 16P connector terminal No. 10 and body ground. There should be battery voltage.

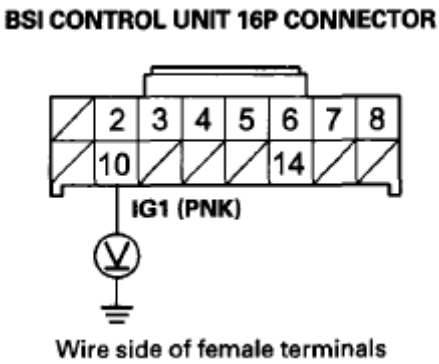


Fig. 66: Measuring Voltage Between BSI Control Unit 16P Connector Terminal No. 10 And Body Ground

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there battery voltage?

YES -Repair an open in the wire between the BSI control unit and body ground (G603).

NO -Repair an open or short to ground in the wire between the driver's under-dash fuse/relay box and the BSI control unit.

12. Press the engine start/stop button to select the OFF mode.
13. Disconnect driver's under-dash fuse/relay box connector P (20P).
14. Check for continuity between driver's under-dash fuse/relay box connector P (20P) terminal No. 6 and BSI control unit 16P connector terminal No. 6, and between driver's under-dash fuse/relay box connector P (20P) terminal No. 5 and BSI control unit 16P connector terminal No. 5.

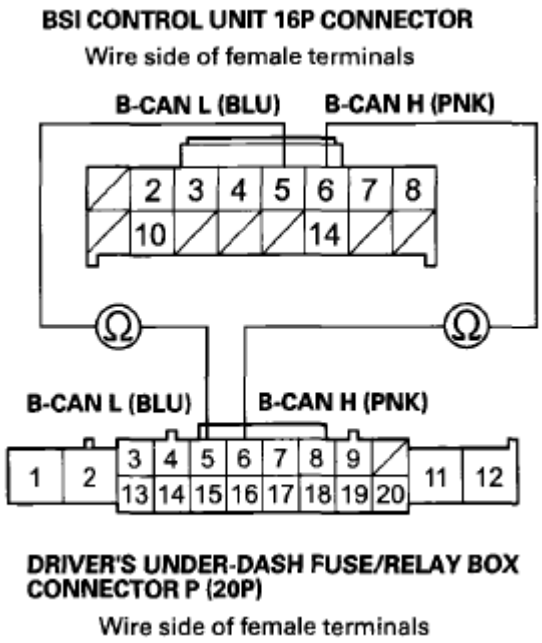


Fig. 67: Checking Continuity Between Driver's Under-Dash Fuse/Relay Box Connector P (20P) Terminal No. 6 And BSI Control Unit 16P Connector Terminal No. 6
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES -Go to step 15.

NO -Repair an open in the wire between the driver's under-dash fuse/relay box and the BSI control unit.

15. Reconnect driver's under-dash fuse/relay box connector P (20P).
16. Reconnect the BSI control unit 16P connector.
17. Press the engine start/stop button to select the ON mode, then wait for 10 seconds.

18. Check that the HDS can communicate with the BSI system.

    Is communication possible?

    YES -Intermittent failure, the system is OK at this time.

    NO -Replace the BSI control unit (see **BSI CONTROL UNIT REMOVAL/INSTALLATION**).

BSI RADAR UNIT REMOVAL/INSTALLATION

1. Remove the rear bumper (see **LOWER FRONT BUMPER GRILLE REPLACEMENT**).
2. Remove the BSI radar unit (A).
    1. Disconnect the 6P connector (B), and detach the harness clip (C).
    2. Remove the bolts.

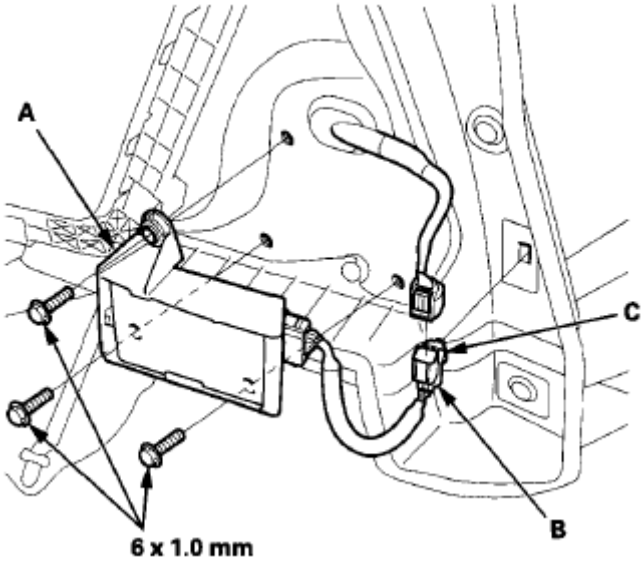


Fig. 68: Identifying BSI Radar Unit, 6P Connector, And Harness Clip
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Clean the surface of the BSI radar unit.
4. Install the BSI radar unit (A).
    1. Tighten the bolts.
    2. Connect the 6P connector (B), and attach the harness clip (C).

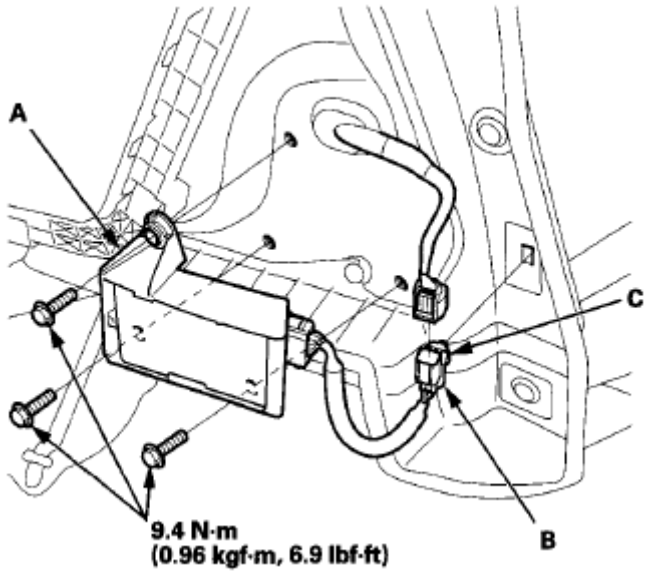


Fig. 69: Identifying BSI Radar Unit, 6P Connector, And Harness Clip With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Do the BSI radar unit aiming inspection (see **BSI RADAR UNIT AIMING INSPECTION**).

BSI CONTROL UNIT REMOVAL/INSTALLATION

1. Remove the left trunk side trim panel (see **TRIM REMOVAL/INSTALLATION - TRUNK AREA**).
2. Remove the BSI control unit (A).
   1. Disconnect the BSI control unit 16P connector (B).
   2. Loosen the bolts.

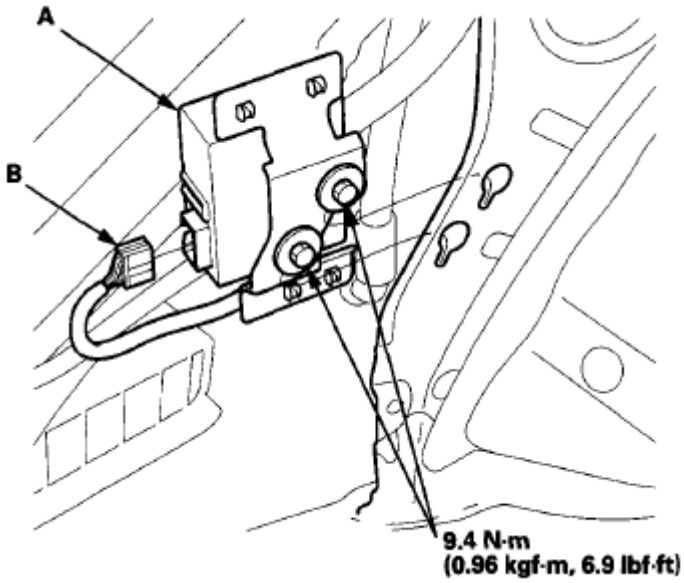


Fig. 70: Identifying BSI Control Unit And 16P Connector With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Install the BSI control unit in the reverse order of removal.

BSI ALERT INDICATOR REMOVAL/INSTALLATION

1. Remove the front door sash inner trim (see **FRONT DOOR SASH INNER TRIM REPLACEMENT**).
2. Remove the screws and the BSI alert indicator (A).

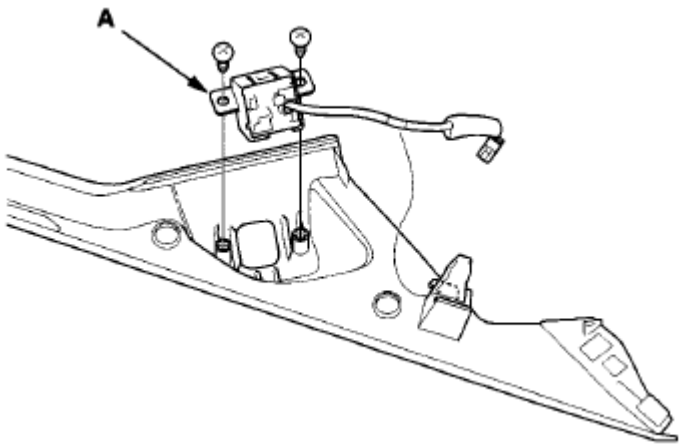


Fig. 71: Identifying BSI Alert Indicator & Fasteners
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Install the BSI alert indicator in the reverse order of removal.

BSI OFF SWITCH TEST/REMOVAL/INSTALLATION

1. Remove the driver's switch panel (see **DRIVER'S SWITCH PANEL REMOVAL/INSTALLATION**).
2. Remove the BSI OFF switch (A) from the driver's dashboard lower panel (B).

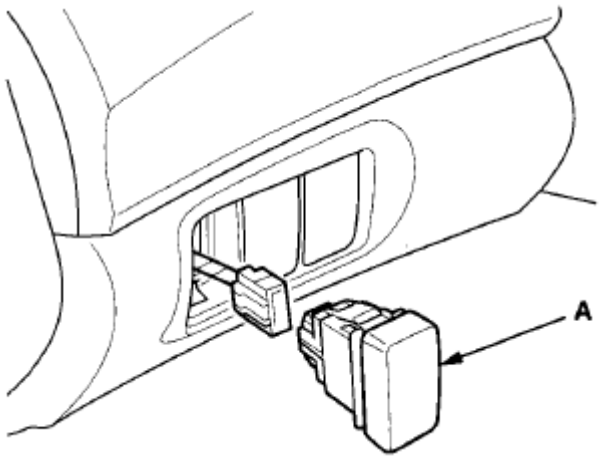


Fig. 72: Identifying BSI OFF Switch And Driver's Dashboard Lower Panel
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. On the switch side, check for continuity between the BSI OFF switch 5P connector terminal in each switch position according to the table.

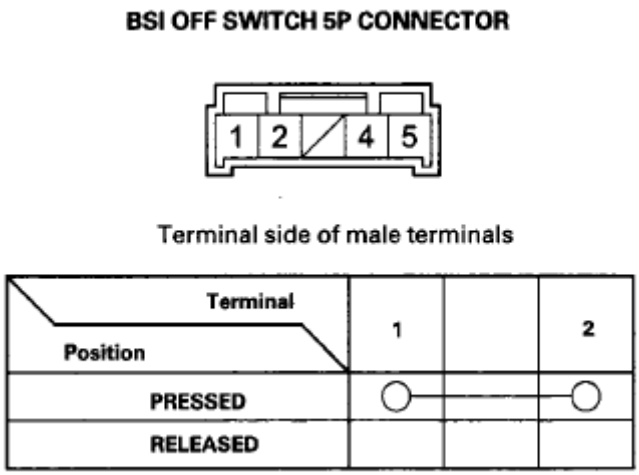


Fig. 73: Identifying Continuity Chart With Connector End View
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. If the continuity is not as specified, remove the BSI OFF switch.

BSI RADAR UNIT AIMING INSPECTION

Special Tools Required

- Rim Frame 07AAJ-TK8A150
- Target Set 07AAJ-STKA160
- Angle Gauge 07AAJ-STKA170
- Stand Set 07AAJ-STKA220

Required Materials:

- Masking tape
- Fine-tip felt marking pen

Inspect the BSI radar unit aiming in these instances:

- After replacing or removing and reinstalling one or both of the BSI radar units.
- After repairing the body panel(s) where the BSI radar unit(s) mount.
- For any of the following aiming axis DTCs:
  - B18B8: Left BSI Radar Unit Azimuth Off Alignment

- B18B9: Right BSI Radar Unit Azimuth Off Alignment

Before Inspection:

- Clean the surface of the BSI radar unit.
- Make sure the vehicle does not have aftermarket suspension.
- Make sure all the tires are the correct size, and set their pressures to the specifications shown on the doorjamb label.
- Make sure the fuel tank is full.
- Remove all cargo from the vehicle except the spare tire and tool kit.
- Park the vehicle on level ground (within 1 degree) with at least 4 m (13.1 ft) of space on both sides and behind the vehicle. Do not do this procedure with the vehicle on a lift or with the tires on steel plates or rollers.
- Make sure the steering wheel is pointed straight ahead, and do not turn it after parking the vehicle.
- Shift the transmission into P, and apply the parking brake.

1. Remove the rear bumper (see **LOWER FRONT BUMPER GRILLE REPLACEMENT**).
2. Set the target (A) on the stand set (B).

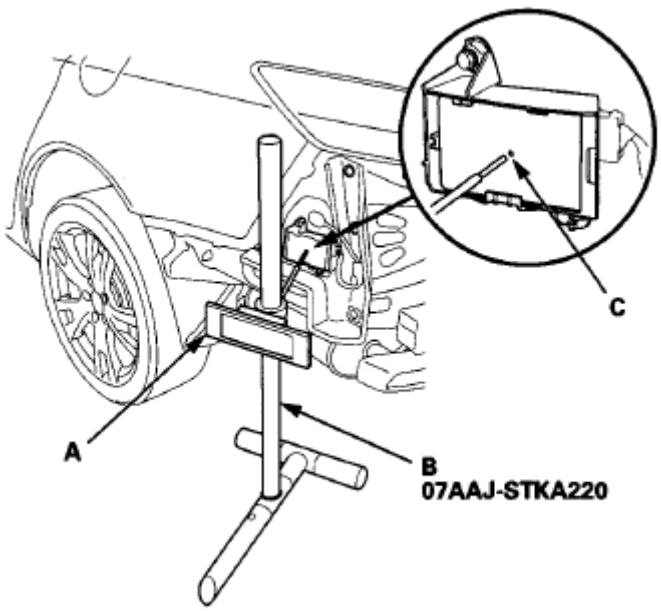


Fig. 74: Measuring Height Of Dot From Floor Using Target And Stand Set
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Set the target height by adjusting the rod to the same height as the dot (C) in the center of the BSI radar unit. Measure and note the height of the dot from the floor.
4. Hold the plumb line against the dot (A) on the radar unit, and lower the plumb bob until it touches the floor. Mark the floor at that point (B).

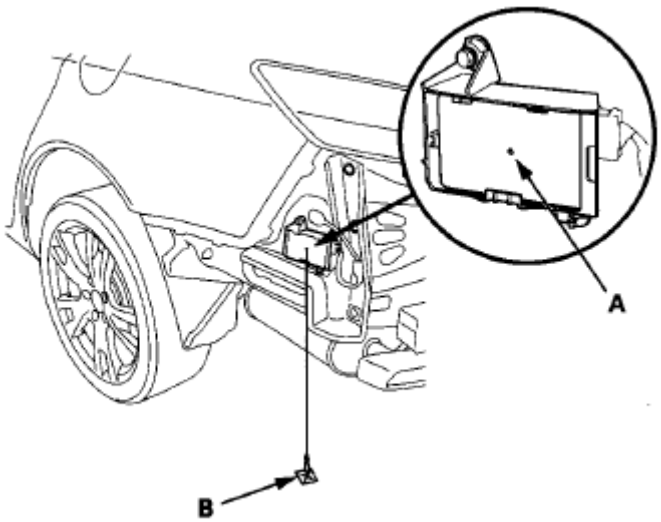


Fig. 75: Identifying Dot On Radar Unit And Mark On Floor At That Point
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Place the rim frame (A) by the rear wheel on the side of the vehicle you are aiming. Adjust the spacers (B, C) to fit against the wheel rim to make the rim frame parallel with the wheel.

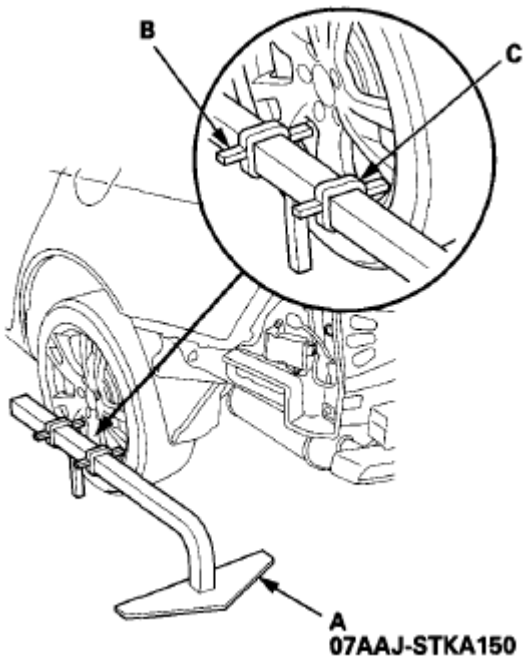


Fig. 76: Adjusting Spacers (B, C) To Fit Wheel Rim Frame Parallel With Wheel
Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Assemble the two sections of the straightedge, then place the hole in the end of the straightedge over the mark on the ground that you made in step 4. Slide the rim frame rearward until the base of the rim frame and the straightedge meet as shown.

NOTE:

- **Make sure the spacers are still touching the wheel rim.**
- **Set the straightedge according to the arrow (A).**

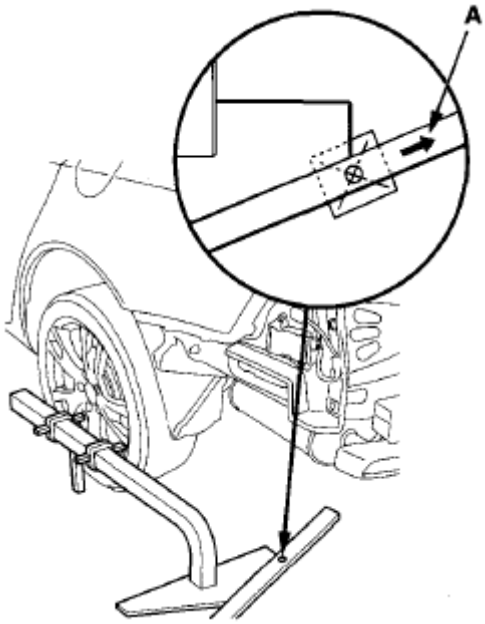


Fig. 77: Sliding Rim Frame Rearward Of Rim Frame And Straightedge Meet
Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Place the target over the other end of the straightedge, and align the hole (A) in the base if the target with the hole in the end of the straightedge as shown.

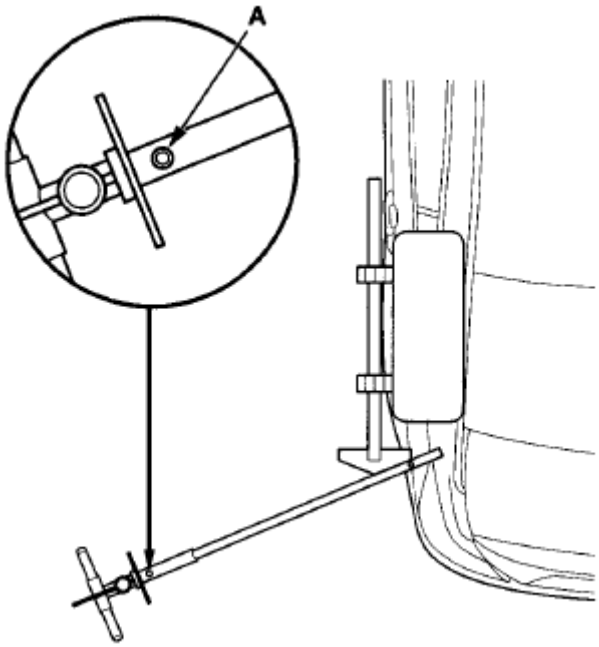


Fig. 78: Aligning Hole In Base And Straightedge
Courtesy of AMERICAN HONDA MOTOR CO., INC.

8. Compare the radar unit height you measured in step 3 with the table to determine which degree setting to use on the angle gauge (A).

   500 to 599 mm (19.69 to 23.58 in) = 2 degrees

   600 to 699 mm (23.62 to 27.52 in) = 1 degree

   700 to 800 mm (27.56 to 31.50 in) = 0 degree

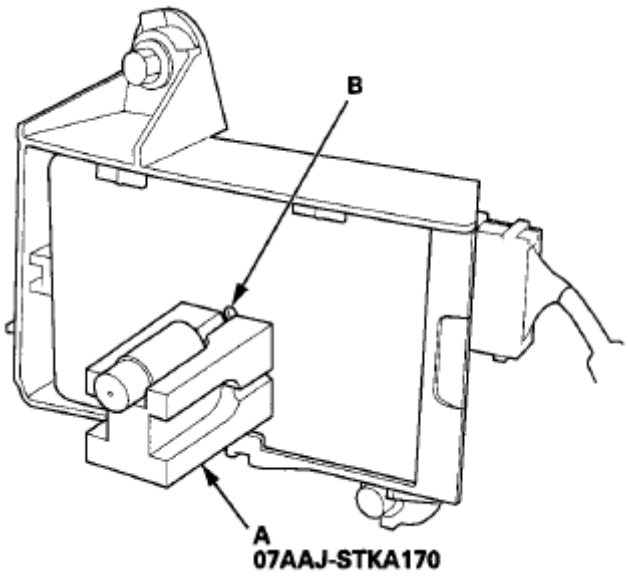


Fig. 79: Measuring Degree Setting By Using Angle Gauge
Courtesy of AMERICAN HONDA MOTOR CO., INC.

9. With the appropriate degree setting on the angle gauge up, set the angle gauge against the radar unit. Align the cutout in the angle gauge with the dot (B) on the radar unit.
10. Turn on the laser pointer (A), and set it on the angle gauge so that the beam shines on the target (8).

CAUTION: Do not aim the laser beam at anyone's eyes.

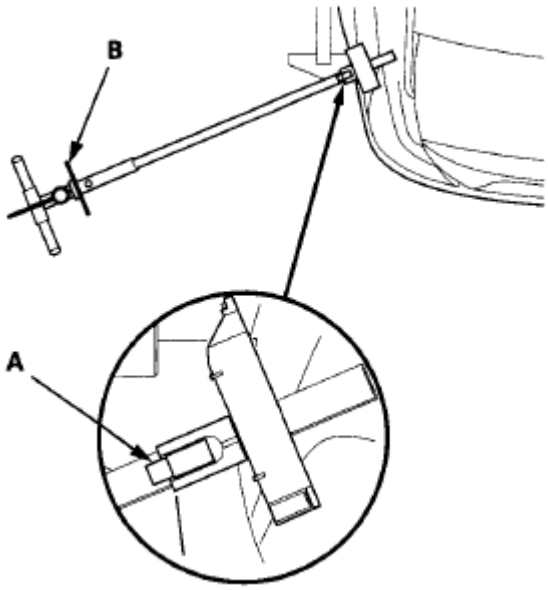


Fig. 80: Setting Beam Shines On Target Using Angle Gauge
Courtesy of AMERICAN HONDA MOTOR CO., INC.

11. Check the point (A) where the laser beam hits the target (B):
    - If the laser beam is within the target, the BSI radar unit is aimed properly, go to step 12.
    - If the laser beam is out of the target range, check the BSI radar unit mounting area (see **BSI RADAR UNIT MOUNTING AREA CHECK**).

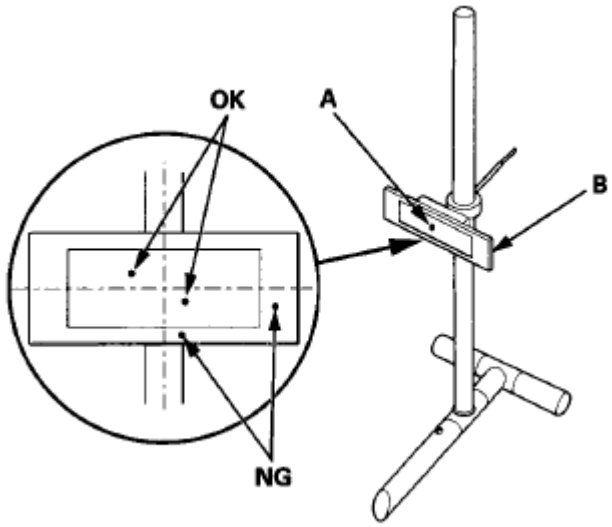


Fig. 81: Checking Laser Beam Hits Target Point
Courtesy of AMERICAN HONDA MOTOR CO., INC.

12. Install the rear bumper (see **LOWER FRONT BUMPER GRILLE REPLACEMENT**).

BSI RADAR UNIT MOUNTING AREA CHECK

Required Materials:

- Masking tape
- Plumb line
- Scale

Before checking:

- Make sure the vehicle does not have aftermarket suspension.
- Make sure all the tires are the correct size, and set their pressures to the specifications shown on the doorjamb label.
- Make sure the fuel tank is full.
- Remove all cargo from the vehicle except the spare tire and tool kit.
- Park the vehicle on level ground (within 1 degree). Do not do this procedure with the vehicle on a lift or with the tires on steel plates or rollers.
- Make sure the steering wheel is pointed straight ahead, and do not turn it after parking the vehicle.
- Shift the transmission into P, and apply the parking brake.

1. Remove the rear bumper (see **LOWER FRONT BUMPER GRILLE REPLACEMENT**).
2. Remove the BSI radar unit(s) (see **BSI RADAR UNIT REMOVAL/INSTALLATION**).

NOTE: Make sure to remove the BSI radar unit when repairing the body.

3. Remove the screw, and detach the hooks (A), then remove the side spacer (B).

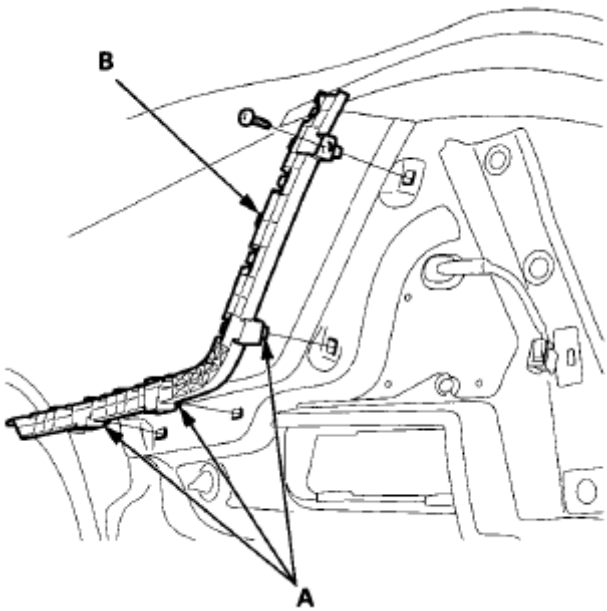


Fig. 82: Identifying Side Spacer, Hooks And Screw
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Detach and the clips, then remove the BSI radar dust cover (A).

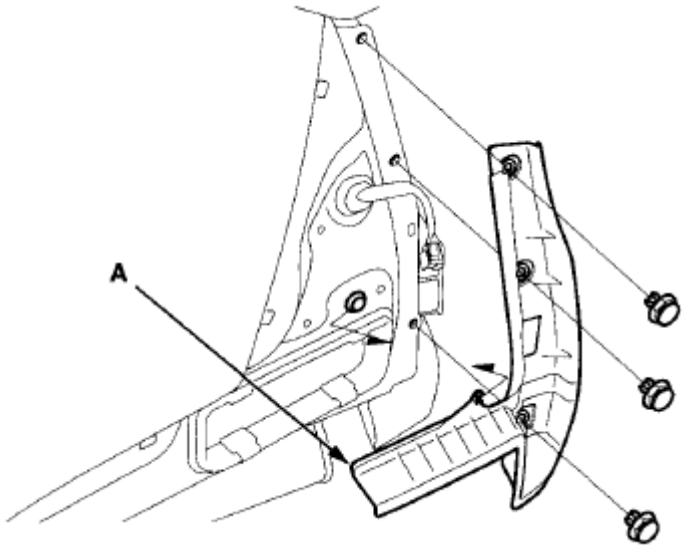


Fig. 83: Identifying BSI Radar Dust Cover & Clips
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Install the appropriate length 6 mm bolts for each of the BSI radar unit mounting holes.

   HOLE A: 30-35 mm (1.18-1.38 in)

   HOLE B: 45-50 mm (1.77-1.97 in)

6. Hold or tape the plumb line against the quarter panel directly above mounting hole A, and thread the bolt in or out until the head of the bolt just touches the plumb line.
7. Measure the distance from the head to the end of the threaded insert in the quarter panel. If needed, have a body shop adjust the body panel.

   HOLE A: 11.0 ± 3.0 mm (0.433 ± 0.118 in)

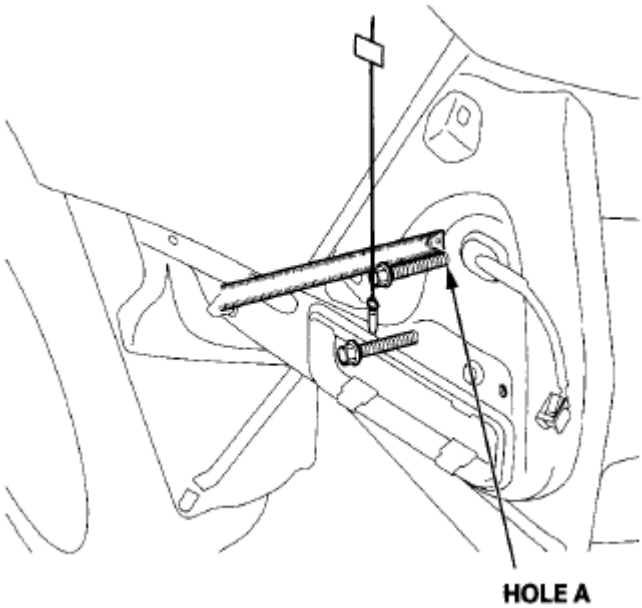


Fig. 84: Measuring Distance From Head To End Of Threaded Insert In Quarter Panel (Hole A)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

NOTE: The illustration shows the left side.

8. Hold or tape the plumb line against the rear quarter panel directly above mounting hole B, and thread the bolt in or out until the head of the bolt just touches the plumb line.
9. Measure the distance from the head to the end of the threaded insert in the quarter panel. If needed, have a body shop adjust the body panel.

HOLE B: HOLE A + 8.4±2.0 mm (0.331±0.079 in)

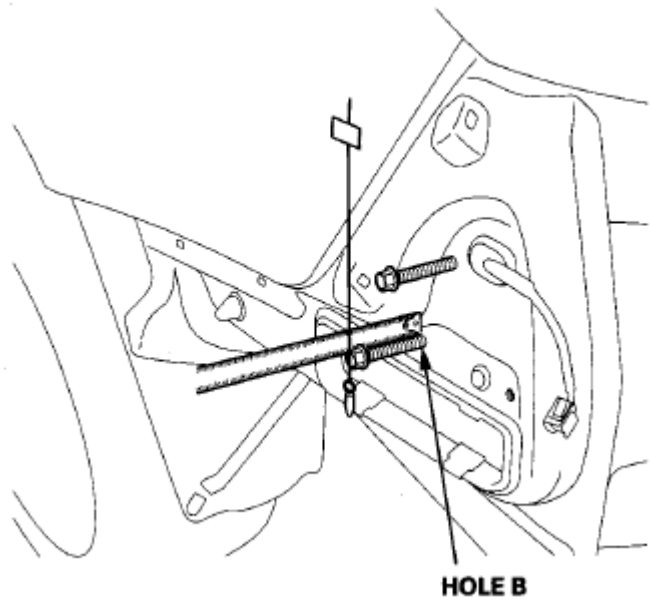


Fig. 85: Measuring Distance From Head To End Of Threaded Insert In Quarter Panel (Hole B)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

NOTE: The illustration shows the left side.

10. Loosely install the BSI radar unit with the two front mounting bolts (see **BSI RADAR UNIT REMOVAL/INSTALLATION**).
11. Make sure there is no gap (A) between the BSI radar unit (B) and the quarter panel at the rear mounting bolt location. Also make sure the bracket hole and the bolt hole are properly aligned. If needed, have a body shop adjust the body panel.

NOTE: When repairing the body panel, remove the BSI radar unit.

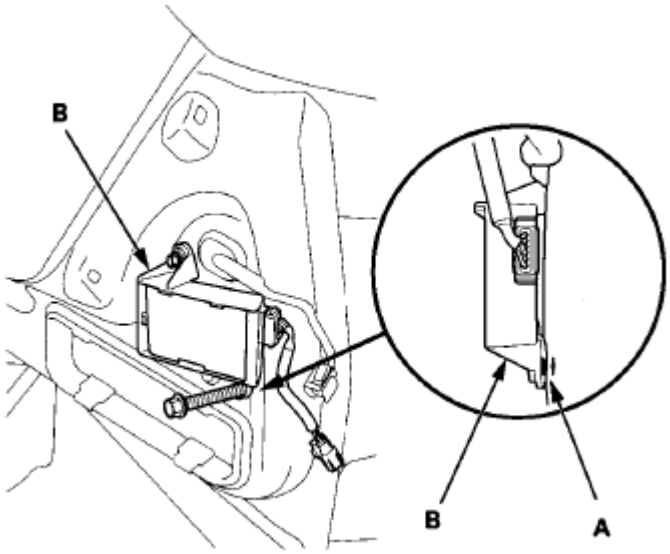


Fig. 86: Identifying Gap Between BSI Radar Unit And Quarter Panel
Courtesy of AMERICAN HONDA MOTOR CO., INC.

NOTE: The illustration shows the left side.

12. Install BSI radar unit, and do the BSI radar unit aiming inspection (see **BSI RADAR UNIT AIMING INSPECTION**).
13. Reinstall the remaining parts.

2012 ACCESSORIES & EQUIPMENT

Consoles - TL

CENTER CONSOLE PANEL REMOVAL/INSTALLATION

Special Tools Required

KTC Trim Tool Set SOJATP2014*

*Available through the Acura Tool and Equipment Program; call 888-424-6857

NOTE:

- **Put on gloves to protect your hands.**
- **Take care not to scratch the front seat, the dashboard, or the related parts.**
- **Use the appropriate tool from the KTC trim tool set to avoid damage when Identifying components.**
- **When prying with a flat-tip screwdriver, wrap it with protective tape to prevent damage.**

1. Remove the dashboard center trims both sides (see **DASHBOARD CENTER TRIM REMOVAL/INSTALLATION**).
2. Remove the screws securing the center console panel (A).

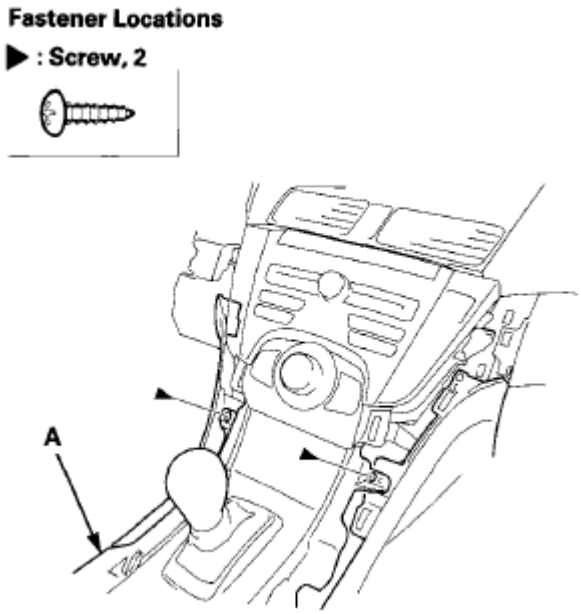


Fig. 1: Identifying Center Console Panel And Fastener Location
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. A/T: Apply the protective tape (A) to the A/T shift panel (B) along the side edge of the shift lever boot

base (C). Pry upon the edge of the shift lever trim with a flat-tipped screwdriver to release the hooks (D).

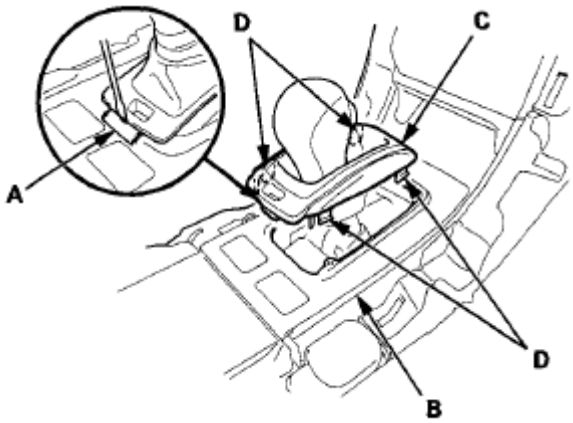


Fig. 2: Identifying Protective Tape, A/T Shift Panel, Shift Lever Boot Base And Hooks
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. M/T: Lower the shift lever boot (A) to release the hooks (B) from the boot, then remove the shift knob (C).

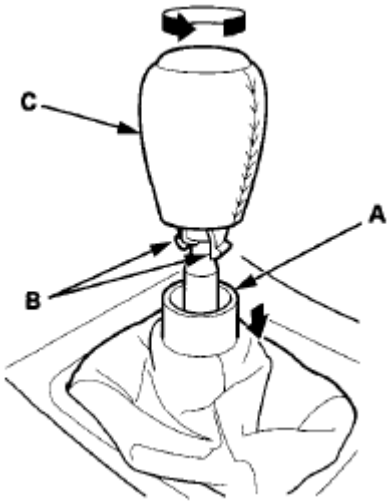


Fig. 3: Lowering Shift Lever Boot To Release Hooks From Boot
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Detach the clips by pulling up the A/T shift panel (A). Disconnect the seat heater switch connectors or seat ventilation switch connectors (B) and the A/T gear shift position indicator light connector (C) (A/T).

NOTE: A/T is shown; M/T is similar.

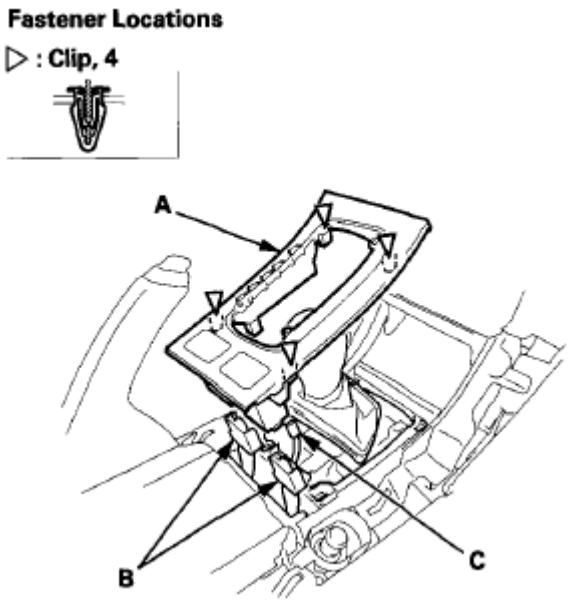


Fig. 4: Identifying A/T Shift Panel, Ventilation Switch Connectors And Light Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Detach the clips by pulling up the center console panel (A). Disconnect the accessory power socket connector (B), then remove the console panel.

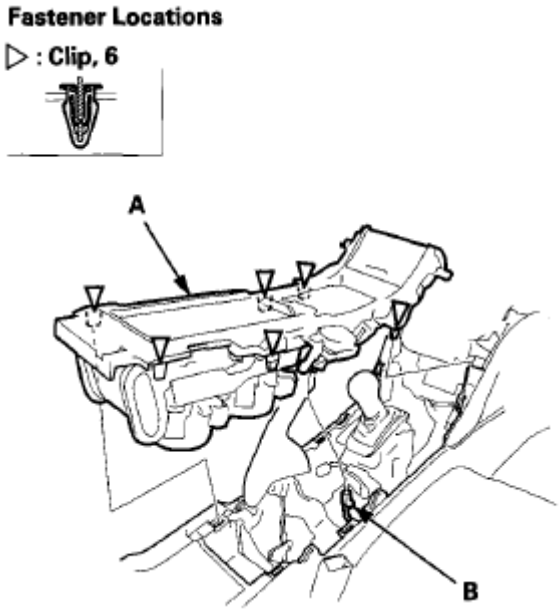


Fig. 5: Identifying Center Console Panel And Power Socket Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Install the console panel in the reverse order of removal, and note these items:
   - If the clips are damaged or stress-whitened, replace them with new ones.
   - Make sure each connector is plugged in properly.

- Push the clips and the hooks into place securely.

CENTER CONSOLE REMOVAL/INSTALLATION

Special Tools Required

KTC Trim Tool Set SOJATP2014*

Available through the Acura Tool and Equipment Program; call 888-424-6857

NOTE:

- **Put on gloves to protect your hands.**
- **Take care not to scratch the front seat, the dashboard, or the related parts.**
- **Use the appropriate tool from the KTC trim tool set to avoid damage when Identifying components.**
- **When prying with a flat-tip screwdriver, wrap it with protective tape to prevent damage.**

1. Remove these items:
   - Dashboard center trims, both sides (see **DASHBOARD CENTER TRIM REMOVAL/INSTALLATION**)
   - **CENTER CONSOLE PANEL**.
   - Center **CONSOLE REAR TRIM**.
   - Passenger's dashboard undercover (see **GLOVE BOX DAMPER REPLACEMENT**)
   - Console carpet trims, both sides (see step 2).
2. Disconnect the center console RF unit connector (A). Remove the center console RF unit mounting bolts, then remove the center console RF unit (B).

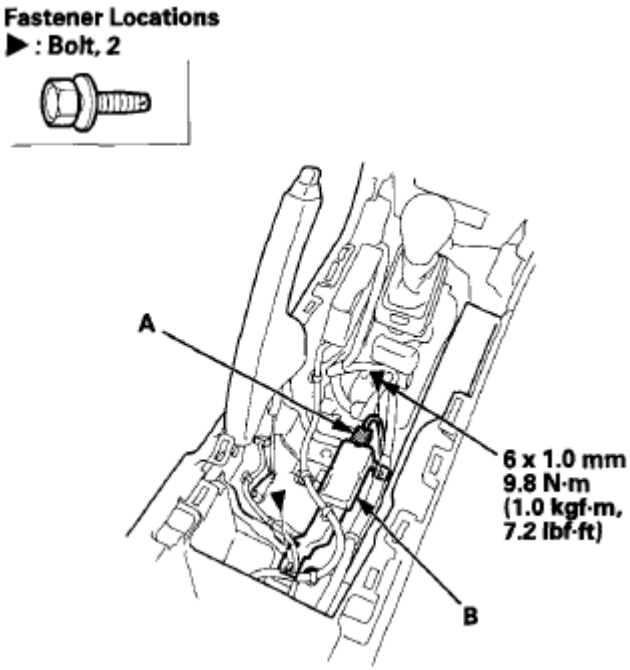


Fig. 6: Identifying RF Unit Connector And Center Console RF Unit With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Loosen the parking brake lever mounting bolts.

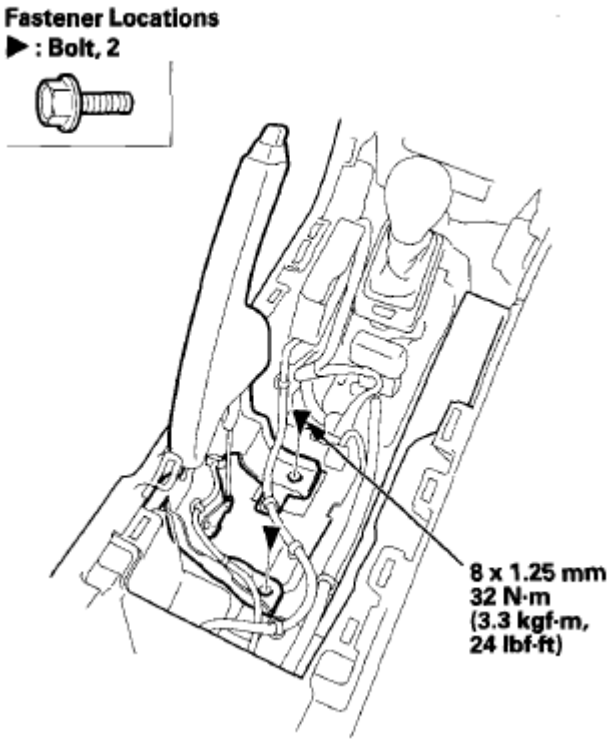


Fig. 7: Loosening Parking Brake Lever Mounting Bolts With Torque Specifications

Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Disconnect the center console subharness connector (A), the parking brake switch connector (B), the USB adapter unit connector (C), and the seat ventilation control unit connector (D), then detach the harness clips (E).

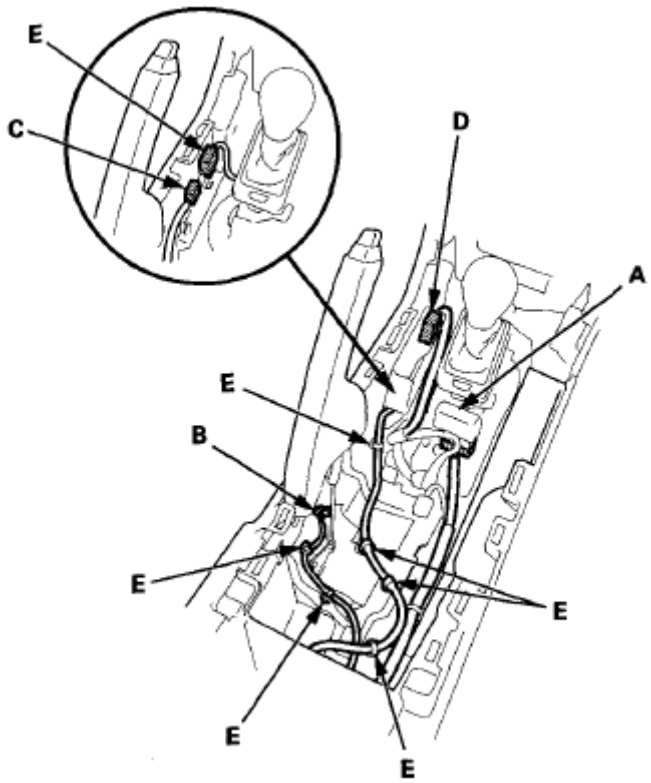


Fig. 8: Identifying Subharness Connector, Parking Brake Switch Connector, USB Adapter Unit Connector, Control Unit Connector And Harness Clips
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Remove the screws securing the center console (A).

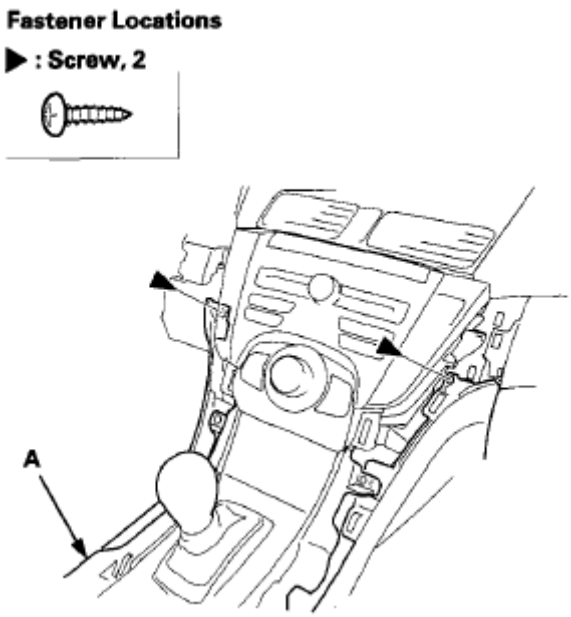


Fig. 9: Identifying Screws Securing Center Console
Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Remove the bolts securing the center console (A).

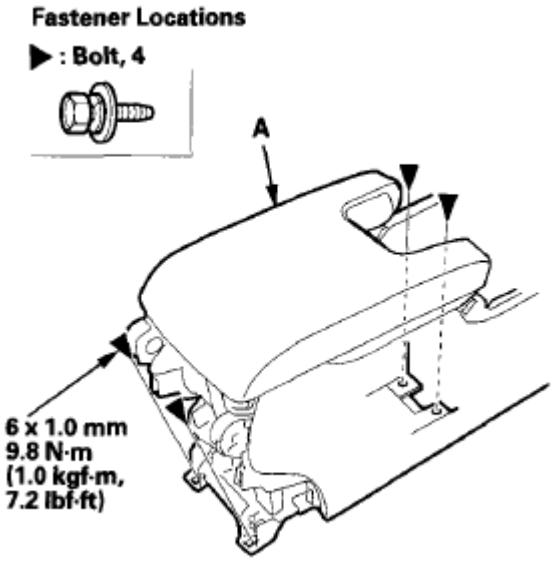


Fig. 10: Identifying Bolts Securing Center Console With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Remove the center console (A).
    1. Detach the clips (B) securing the passenger's front console cover (C).
    2. Detach the clips (D) by pulling out the console from both sides, and pull up the console to release the guide pin (E).

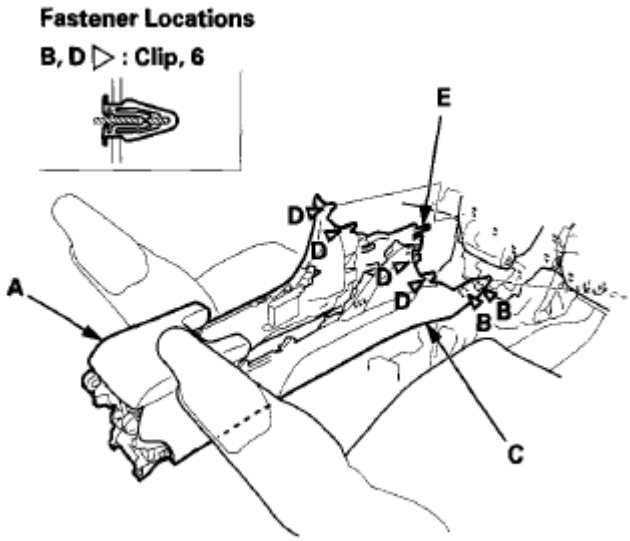


Fig. 11: Identifying Center Console, Clips, Front Console Cover, Clips And Guide Pin
Courtesy of AMERICAN HONDA MOTOR CO., INC.

8. Install the console in the reverse order of removal, and note these items:
   - If the clips are damaged, replace them with new ones.
   - Make sure each connector is plugged in properly.
   - Push the clips and the hooks into place securely.

CENTER CONSOLE REAR TRIM REMOVAL/INSTALLATION

Special Tools Required

KTC Trim Tool Set SOJATP2014*

*Available through the Acura Tool and Equipment Program; call 888-424-6857

NOTE:

- **Take care not to scratch the center console or the related parts.**
- **Use the appropriate tool from the KTC trim tool set to avoid damage when Identifying components.**

1. Gently pull out the center console rear trim (A) to detach the clips, then remove the trim.

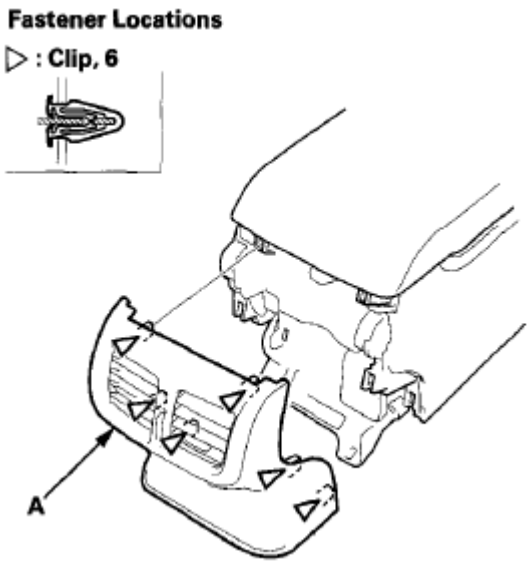


Fig. 12: Identifying Center Console Rear Trim
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Install the trim in the reverse order of removal, and note these items:
   - If the clips are damaged or stress-whitened, replace them with new ones.
   - Push the clips into place securely.

CENTER CONSOLE ARMREST REPLACEMENT

Special Tools Required

KTC Trim Tool Set SOJATP2014*

*Available through the Acura Tool and Equipment Program; call 888-424-6857

NOTE:
- **Take care not to scratch the center console or the related parts.**
- **Use the appropriate tool from the KTC trim tool set to avoid damage when Identifying components.**

1. Remove the **center console rear trim**.
2. Gently pull out the console upper trims (A) to detach the clips, and remove the trims. Remove the screws securing the center console (B).

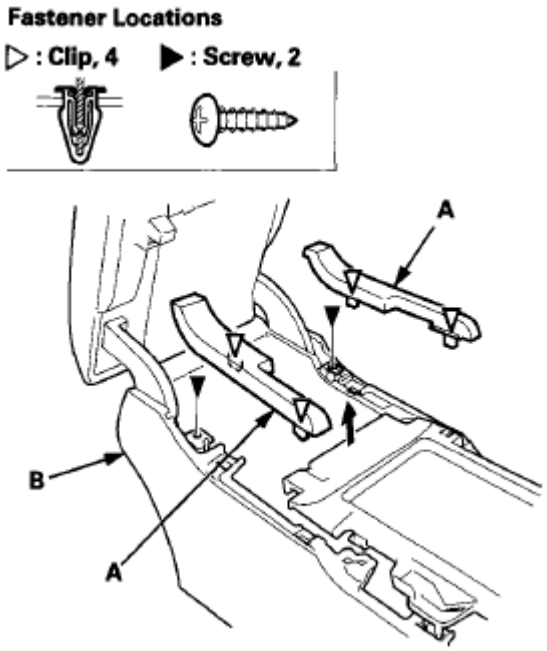


Fig. 13: Identifying Console Upper Trims And Center Console
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Turn the center console light socket (A) 45 ° counterclockwise to remove the socket from the housing. Remove the screws securing the center console armrest (B).

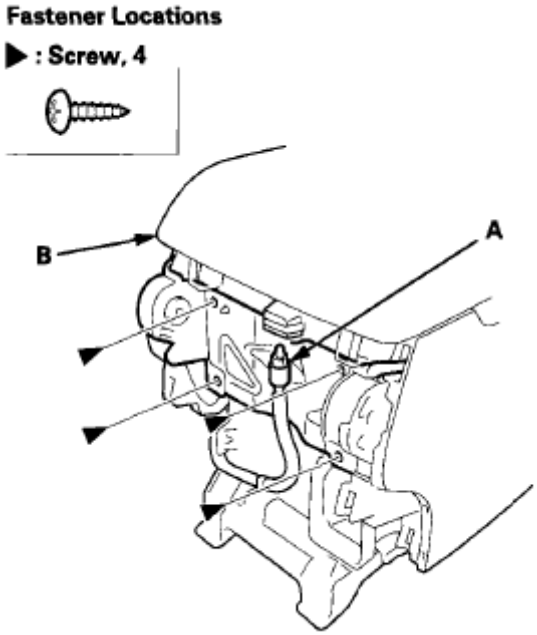


Fig. 14: Identifying Center Console Light Socket And Center Console Armrest
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Pull up the center console armrest (A) and remove it.

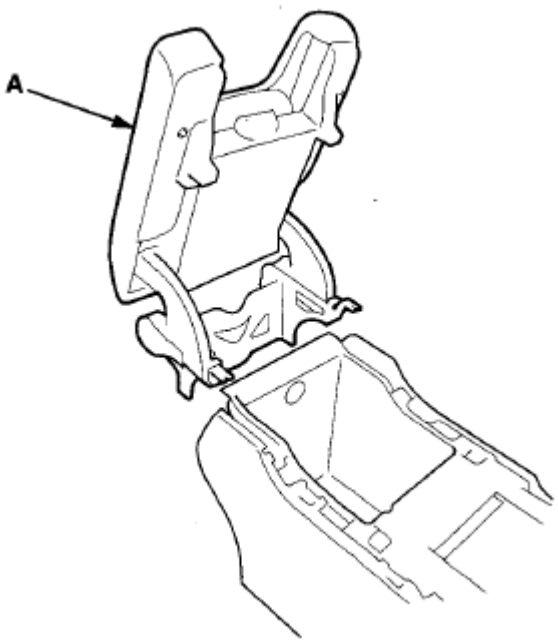


Fig. 15: Identifying Center Console Armrest
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Install the armrest in the reverse order of removal, and note these items:
   - If the clips are damaged or stress-whitened, replace them with new ones.
   - Push the clips into place securely.

CENTER CONSOLE PANEL DISASSEMBLY/REASSEMBLY

Special Tools Required

KTC Trim Tool Set SOJATP2014*

*Available through the Acura Tool and Equipment Program; call 888-424-6857

NOTE:

- **Take care not to scratch the center console or the related parts.**
- **Use the appropriate tool from the KTC trim tool set to avoid damage when Identifying components.**

1. Remove the **CENTER CONSOLE PANEL**.
2. Remove the screws from the back or the center console panel (A), then remove the panel from the center console pocket assembly (B) and the beverage holder assembly (C).

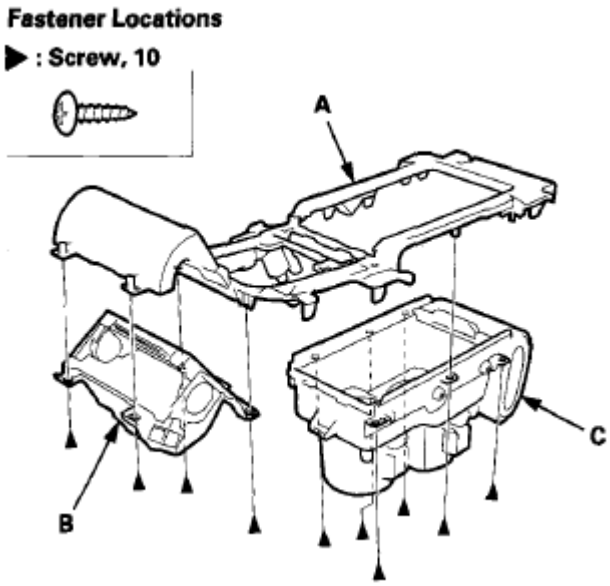


Fig. 16: Identifying Center Console Panel, Center Console Pocket Assembly And Beverage Holder Assembly
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Remove the screws from both sides of the beverage holder (A), then remove the driver's side shutter rail (B), the passenger's side shutter rail (C), and the console shutter (D).

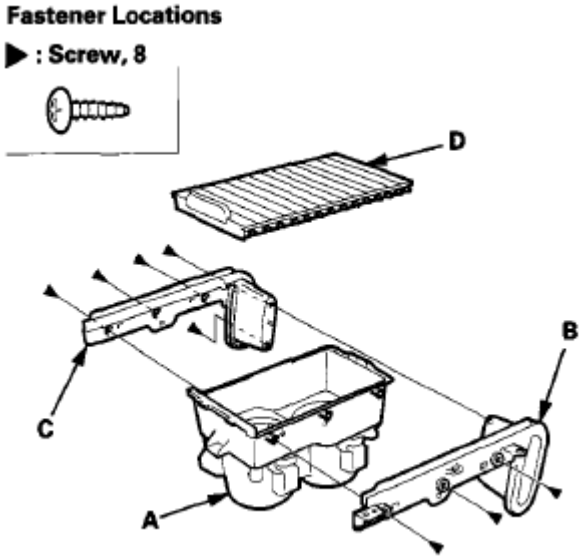


Fig. 17: Identifying Beverage Holder, Driver Side And Passenger Side Shutter Rails And Console Shutter
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Reassemble the center console panel in the reverse order of disassembly.

CENTER CONSOLE DISASSEMBLY/REASSEMBLY

Special Tools Required

KTC Trim Tool Set SOJATP2014*

*Available through the Acura Tool and Equipment Program; call 888-424-6857

NOTE:

- **Take care not to scratch the center console or the related parts.**
- **Use the appropriate tool from the KTC trim tool set to avoid damage when Identifying components.**

1. Remove the **CENTER CONSOLE**.
2. Pry out the rear edge of the console carpet trim (A, B) with the appropriate trim tool to detach the clips and to release the hooks (C) from the center console (D).

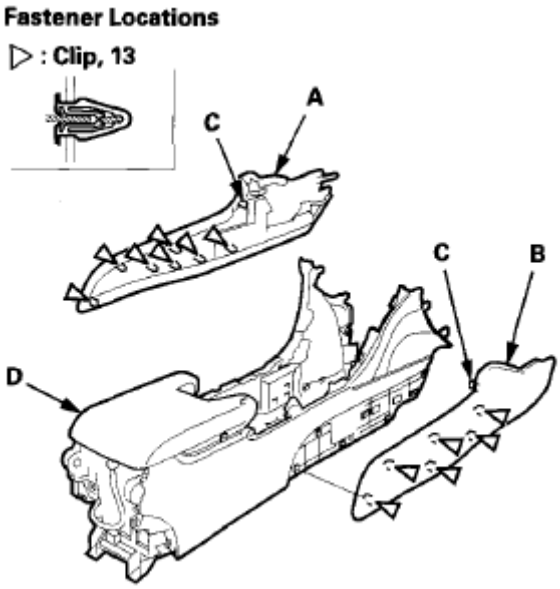


Fig. 18: Identifying Console Carpet Trim, Hooks And Center Console
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Remove the screws from both sides of the center console (A), then remove the console side pockets (B).

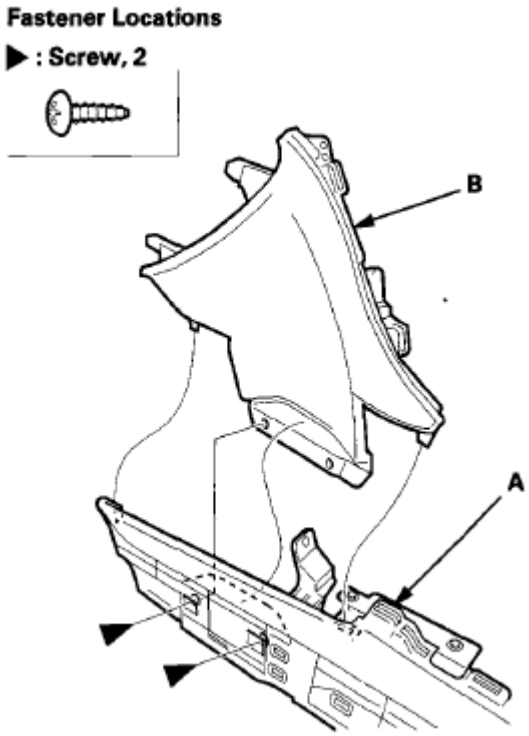


Fig. 19: Identifying Center Console And Side Pockets
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Reassemble the center console in the reverse order of disassembly and note these items:
    - If the clips are damaged or stress-whitened, replace them with new ones.
    - Push the clips and the hooks into place securely.

2012 ACCESSORIES & EQUIPMENT

Cruise Control - TL

COMPONENT LOCATION INDEX

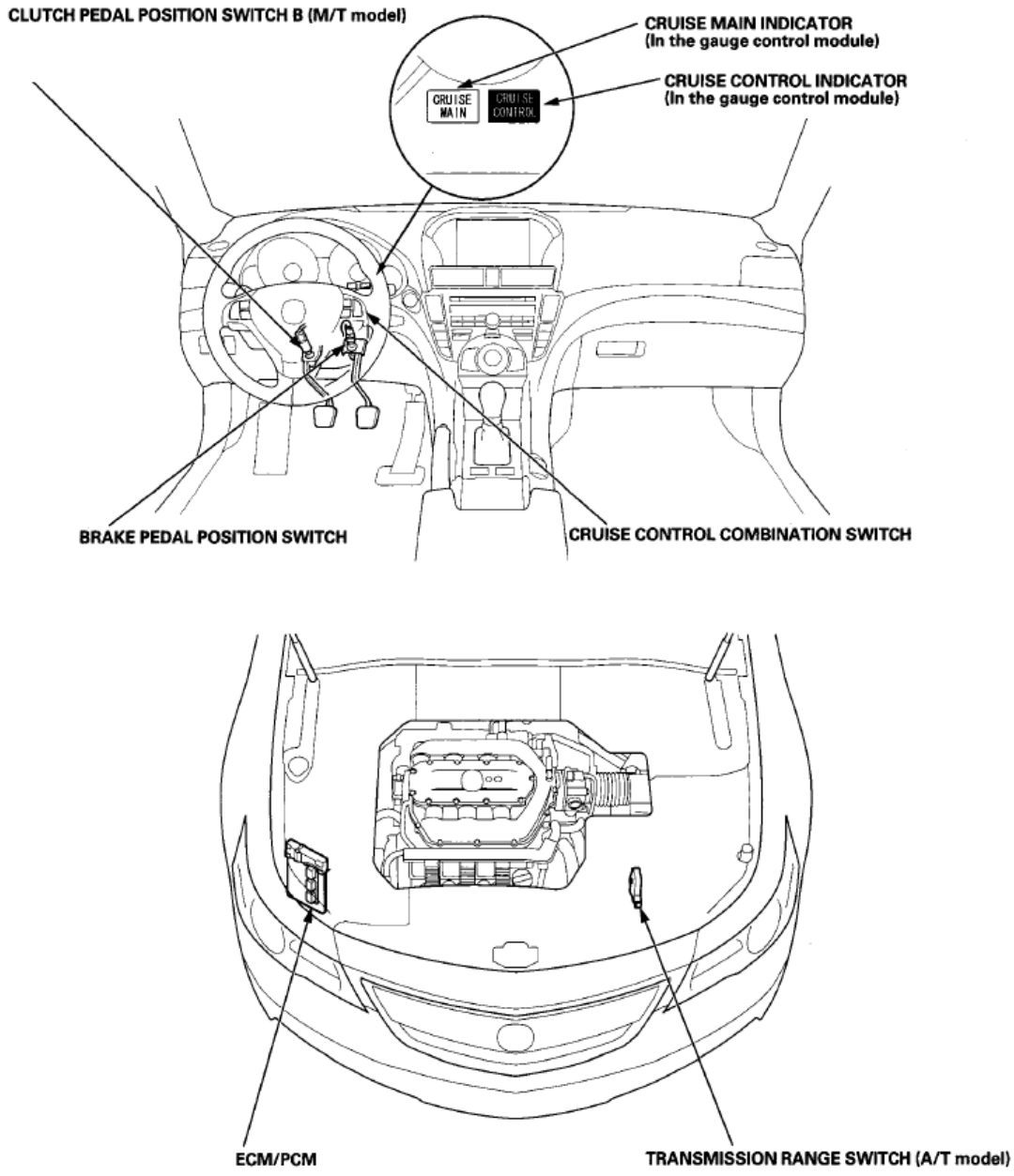


Fig. 1: Cruise Control System Components Location
Courtesy of AMERICAN HONDA MOTOR CO., INC.

SYMPTOM TROUBLESHOOTING INDEX

Symptom	Diagnostic procedure	Also check for
Cruise control cannot be set	1. Check for PGM-FI DTCs (see **GENERAL TROUBLESHOOTING INFORMATION**). 2. Check the No. 10 (20 A) fuse in the under-hood fuse/relay box, and the No. 13 (15 A) fuse in the driver's under-dash fuse/relay box. 3. Do the cruise control combination switch test (see **CRUISE CONTROL COMBINATION SWITCH TEST/REPLACEMENT**). 4. Do the cruise control input test (see **CRUISE CONTROL INPUT TEST**).	Poor ground G301 (M/T model) or G101 (A/T model)
Cruise control can be set, but the cruise main indicator does not come on	1. Do the gauge control module self-diagnostic function procedure (see **SELF-DIAGNOSTIC FUNCTION**). 2. Do the cruise control input test (see **CRUISE CONTROL INPUT TEST**). Test the cruise control main switch signal input. 3. Check for PGM-FI DTCs (see **GENERAL TROUBLESHOOTING INFORMATION**).	Faulty gauge control module
Cruise control can be set, but the cruise control indicator does not come on	1. Do the gauge control module self-diagnostic function procedure (see **SELF-DIAGNOSTIC FUNCTION**). 2. Do the cruise control input test (see **CRUISE CONTROL INPUT TEST**). Test the cruise control indicator signal input. 3. Check for PGM-FI DTCs (see **GENERAL TROUBLESHOOTING INFORMATION**).	Faulty gauge control module
Vehicle does not accelerate accordingly when the resume/accel button is pressed	1. Do the cruise control combination switch test (see **CRUISE CONTROL COMBINATION SWITCH TEST/REPLACEMENT**). 2. Do the cruise control input test (see **CRUISE CONTROL INPUT TEST**). Test the resume/accel switch signal input. 3. Check for PGM-FI DTCs (see **GENERAL TROUBLESHOOTING**	Open circuit, loose or disconnected terminals: ORN or GRY wire

	INFORMATION).	
Set speed does not cancel when the brake pedal is pressed	1. Do the brake pedal position switch test (see **BRAKE PEDAL POSITION SWITCH TEST**). 2. Do the cruise control input test (see **CRUISE CONTROL INPUT TEST**). Test the brake pedal position switch signal input. 3. Check for PGM-FI DTCs (see **GENERAL TROUBLESHOOTING INFORMATION**).	• Short to power on the ORN wire • Faulty brake pedal position switch
Set speed does not cancel (engine RPM stays high) when the clutch pedal is pressed (M/T model)	1. Do the clutch pedal position switch B test (see **CLUTCH PEDAL POSITION SWITCH B TEST**). 2. Do the cruise control input test (see **CRUISE CONTROL INPUT TEST**). Test the clutch pedal position switch B signal input. 3. Check for PGM-FI DTCs (see **GENERAL TROUBLESHOOTING INFORMATION**).	Short to ground in the BRN wire
Set speed does not cancel when the cruise control main button is pressed	1. Do the cruise control combination switch test (see **CRUISE CONTROL COMBINATION SWITCH TEST/REPLACEMENT**). 2. Do the cruise control input test (see **CRUISE CONTROL INPUT TEST**). Test the cruise control main switch signal input. 3. Check for PGM-FI DTCs (see **GENERAL TROUBLESHOOTING INFORMATION**).	Short to ground in the YEL wire
Set speed does not cancel when the cancel button is pressed	1. Do the cruise control combination switch test (see **CRUISE CONTROL COMBINATION SWITCH TEST/REPLACEMENT**). 2. Do the cruise control input test (see **CRUISE CONTROL INPUT TEST**). Test the cancel switch signal input. 3. Check for PGM-FI DTCs (see **GENERAL TROUBLESHOOTING INFORMATION**).	Open circuit, loose or disconnected terminals: LT GRN, ORN or GRY wire
	1. Do the cruise control combination switch	

Set speed does not resume when the resume/accel button is pressed (with the cruise control main switch turned on, and set speed temporarily canceled by pressing the brake pedal)	test (see **CRUISE CONTROL COMBINATION SWITCH TEST/REPLACEMENT**). 2. Do the cruise control input test (see **CRUISE CONTROL INPUT TEST**). Test the resume/accel switch signal input. 3. Check for PGM-FI DTCs (see **GENERAL TROUBLESHOOTING INFORMATION**).	Open circuit, loose or disconnected terminals: ORN or GRY wire
Set speed does not resume when the resume/accel button is pressed (with the cruise control main switch turned on, and set speed temporarily canceled by pressing the clutch pedal) (M/T model)	1. Do the cruise control combination switch test (see **CRUISE CONTROL COMBINATION SWITCH TEST/REPLACEMENT**). 2. Do the cruise control input test (see **CRUISE CONTROL INPUT TEST**). Test the resume/accel switch signal input. 3. Check for PGM-FI DTCs (see **GENERAL TROUBLESHOOTING INFORMATION**).	Open circuit loose or disconnected terminal: LT BLU or GRY wire
Light switch turned on, the cruise control combination switch illumination does not come on	1. Check the No. 6 (7.5 A) fuse in the passenger's under-dash fuse/relay box. 2. Do the cruise control combination switch test (see **CRUISE CONTROL COMBINATION SWITCH TEST/REPLACEMENT**).	Open circuit, loose or disconnected terminals: GRY or RED wires

CIRCUIT DIAGRAM

WITHOUT KEYLESS ACCESS SYSTEM

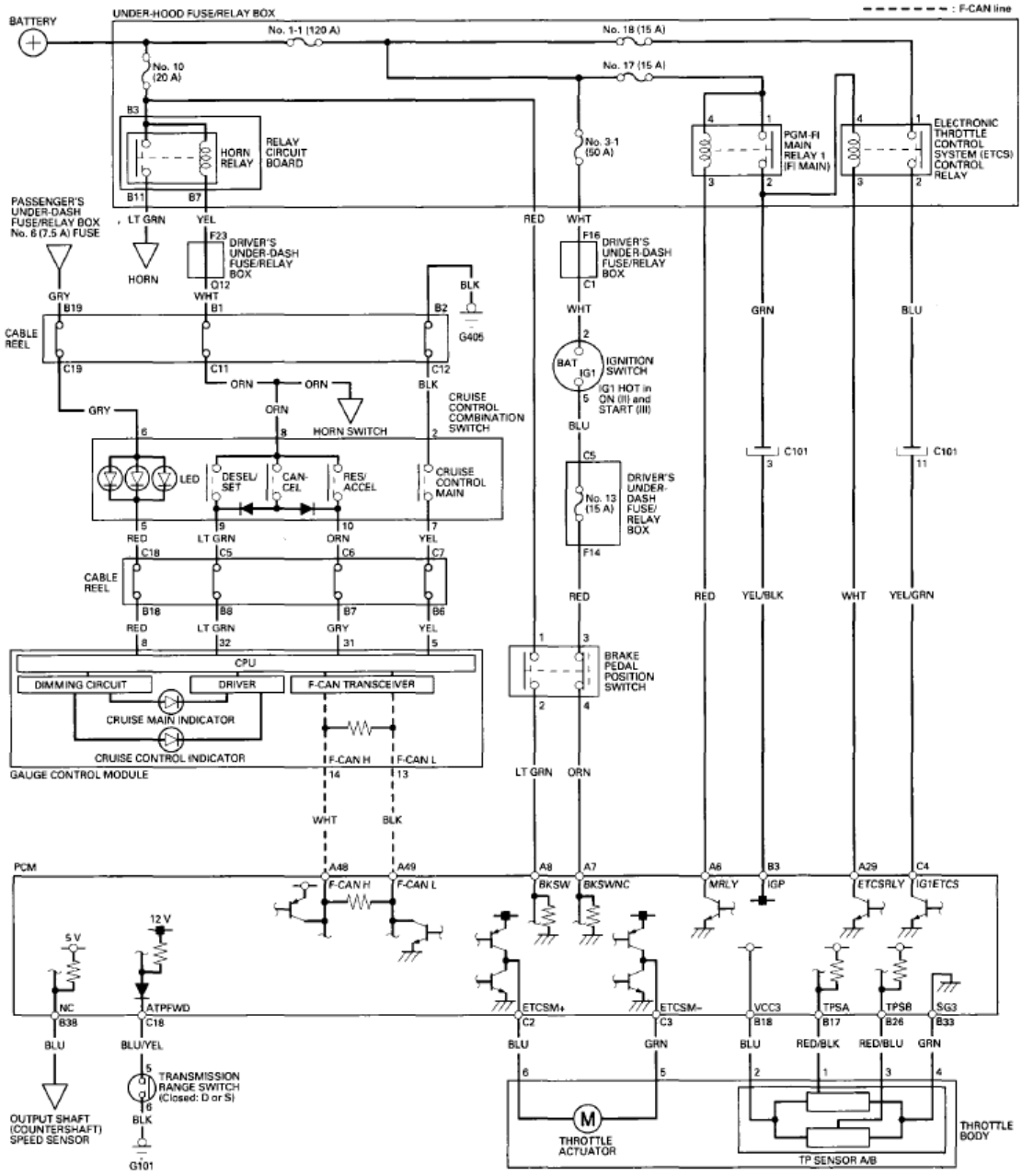


Fig. 2: Cruise Control System Circuit Diagram (Without Keyless Access System)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

WITH KEYLESS ACCESS SYSTEM

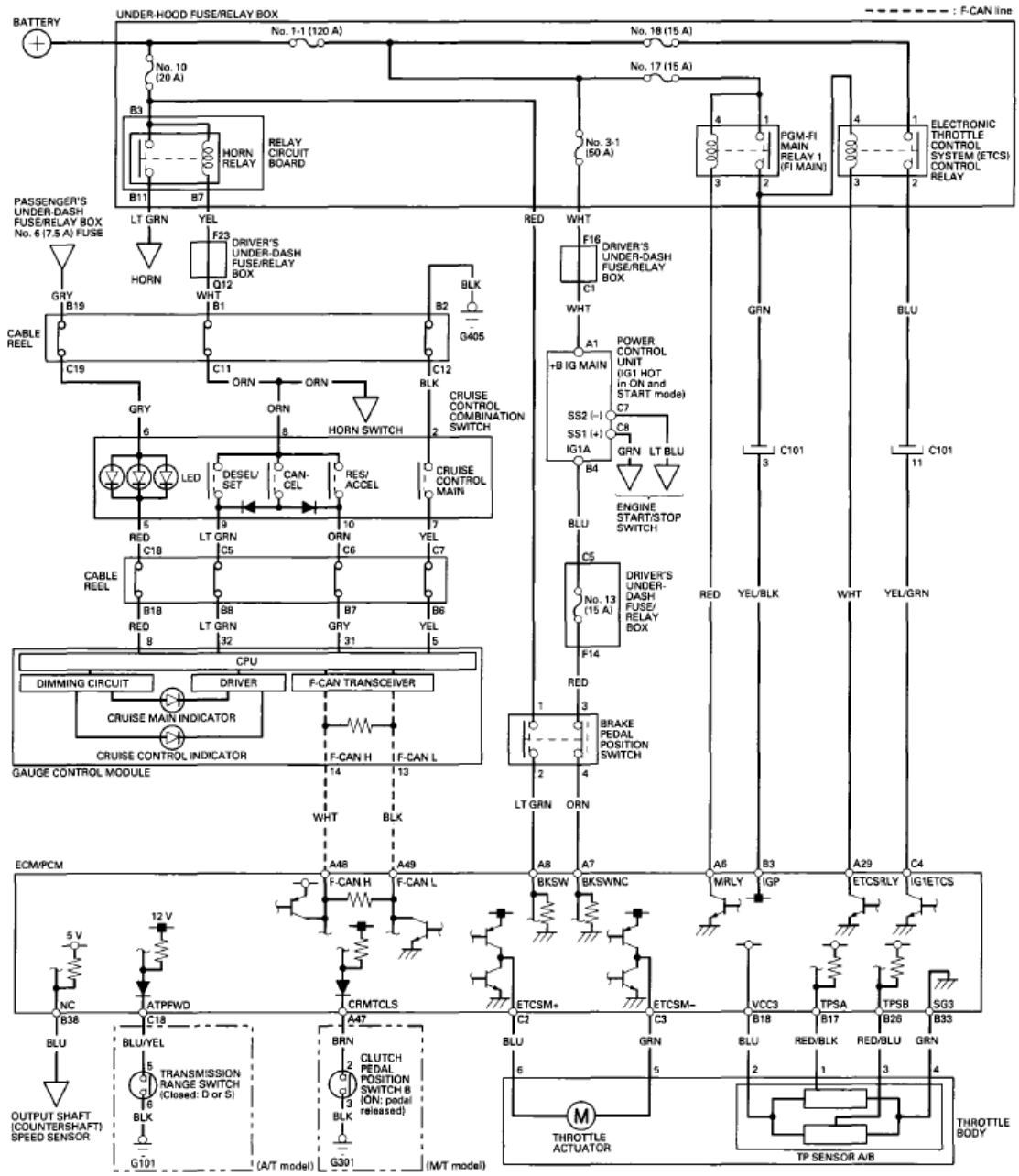


Fig. 3: Cruise Control System Circuit Diagram (With Keyless Access System)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

CRUISE CONTROL INPUT TEST

NOTE: Always make sure that you have the latest HDS software.

1. Connect the Honda HDS to the DLC (see **HOW TO USE THE HDS (HONDA DIAGNOSTIC SYSTEM)**).
2. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.

3. Make sure the HDS communicates with the vehicle and the ECM/PCM. If it does not communicate, troubleshoot the DLC circuit (see **DLC CIRCUIT TROUBLESHOOTING**).
4. Check for and troubleshoot any DTCs (see **GENERAL TROUBLESHOOTING INFORMATION**).
5. Do the following tests while monitoring parameters in the PGM-FI DATA LIST with the HDS.
6. If the input tests prove OK, replace the ECM/PCM (see **ECM/PCM REPLACEMENT**).

NOTE: Intermittent failures are often caused by loose circuit connections. While monitoring cruise control inputs, flex the circuit wires, and note if any of the test results change.

Signal to be tested	Test condition	Parameter: Desired result	Possible cause if result is not obtained
Brake pedal position switch signal	Brake pedal pressed, then released	CRUISE BRAKE SW/IDLE STOP SW should indicate OPEN when the brake pedal is pressed and CLOSE when the brake pedal is released.	• Faulty brake pedal position switch • Blown No. 13 (15 A) fuse in the driver's under-dash fuse/relay box • An open in the wire between the ECM/PCM and the brake pedal position switch • A wire shorted to ground or power between the ECM/PCM and the brake pedal position switch
Clutch pedal position switch B signal (M/T model)	Clutch pedal pressed, then released	SHIFT/CLUTCH SW should indicate ON when the clutch pedal is pressed and OFF when the clutch pedal is released.	• Faulty clutch pedal position switch B • An open in the wire between the ECM and clutch pedal position switch B • A wire shorted to ground between the ECM and clutch pedal position switch B • Poor ground G301
			• Faulty cruise control combination switch

Cruise control main switch signal	Cruise control main button pressed and released	CRUISE MASTER (MAIN) SW should indicate ON when the cruise control main button is pressed and OFF when the cruise control main button is released.	• An open in the wire between the gauge control module and the cruise control combination switch • A wire shorted to ground between the gauge control module and the cruise control combination switch • An open in the wire between the cruise control combination switch and ground G405
Set switch signal	Decel/set button pressed and released	CRUISE SET SW should indicate ON when the decel/set button is pressed and OFF when the decel/set button is released.	• Faulty cruise control combination switch • An open in the wire between the gauge control module and the cruise control combination switch • A wire shorted to ground between the gauge control module and the cruise control combination switch
Resume switch signal	Resume/accel button pressed and released	CRUISE RESUME SW should indicate ON when the resume/accel button is pressed and OFF when the resume/accel button is released.	• Faulty cruise control combination switch • An open in the wire between the gauge control module and the cruise control combination switch • A wire shorted to ground between the gauge control module and the cruise control combination switch
		CRUISE CANCEL SW should	• Faulty cruise control combination switch • An open in the wire between the gauge control module and

Cancel switch signal	Cancel button pressed and released	indicate ON when the cancel button is pressed and OFF when the cancel button is released.	the cruise control combination switch • A wire shorted to ground between the gauge control module and the cruise control combination switch
Cruise control indicator signal	Start the engine, press the cruise control main button on and drive the vehicle above 25 mph (40 km/h) with the cruise control set and cancel the cruise control	CRUISE INDICATOR should indicate ON when the cruise control is set and OFF when the cruise control is cancelled.	• Faulty gauge control module • Faulty cruise control combination switch • An open in the wire between the gauge control module and the cruise control combination switch • A wire shorted to ground between the gauge control module and the cruise control combination switch

CRUISE CONTROL COMBINATION SWITCH TEST/REPLACEMENT

There are SRS components located in this area. Review the SRS component locations (see **COMPONENT LOCATION INDEX**), and the precautions and procedures (see **PRECAUTIONS AND PROCEDURES**), in the SRS before doing repairs or service.

1. Remove the steering wheel (see **STEERING WHEEL REMOVAL**).
2. Remove the steering wheel rear cover (see **STEERING WHEEL REMOVAL**).
3. Disconnect the cable reel subharness connector (A), then remove the steering wheel trim/cruise control combination switch (B).

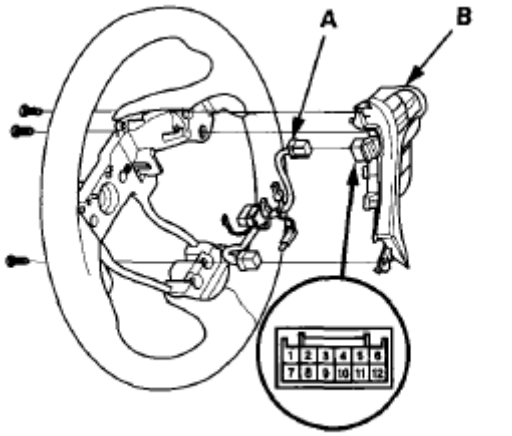


Fig. 4: Identifying Cable Reel Subharness Connector And Steering Wheel Trim/Cruise Control Combination Switch
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Check for continuity between the terminals in each cruise control combination switch position according to the table:
   - If there is continuity, and it matches the table, but the cruise control combination switch failure occurred on the cruise control input test, check and repair the wire harness on the switch circuit.
   - If there is no continuity in one or both positions, replace the steering wheel trim/cruise control combination switch.

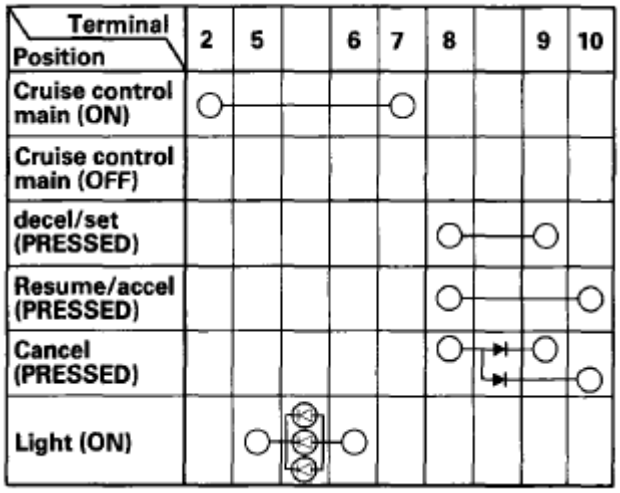


Fig. 5: Identifying Continuity Table
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Install the cruise control combination switch in the reverse order of removal.

CLUTCH PEDAL POSITION SWITCH B TEST

M/T MODEL

1. Disconnect the clutch pedal position switch B connector (A).

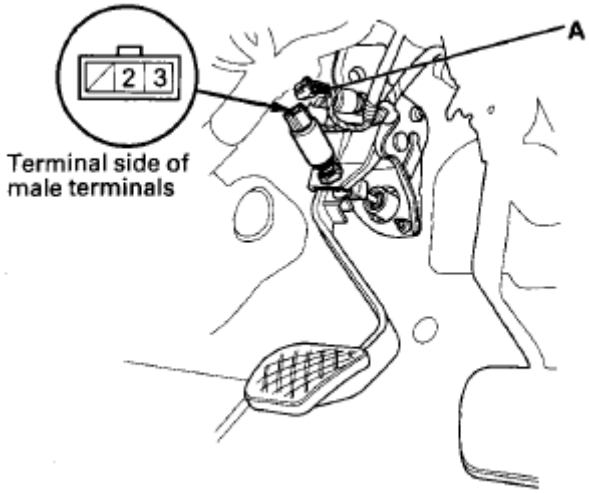


Fig. 6: Identifying Clutch Pedal Position Switch And Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Check for continuity between the terminals according to the table:
   - If the continuity is not as specified, replace the clutch pedal position switch B (see **CLUTCH PEDAL POSITION SWITCH B REPLACEMENT**) and adjust the pedal height (see **CLUTCH PEDAL, CLUTCH PEDAL POSITION SWITCH A, AND CLUTCH PEDAL POSITION SWITCH B ADJUSTMENT**).
   - If OK, connect the clutch pedal position switch B connector.

Terminal / Clutch Pedal	1	2	3
RELEASED		○—○	
PRESSED			

Fig. 7: Identifying Continuity Table
Courtesy of AMERICAN HONDA MOTOR CO., INC.

CLUTCH PEDAL POSITION SWITCH B REPLACEMENT

M/T MODEL

1. Disconnect the clutch pedal position switch B connector (A).

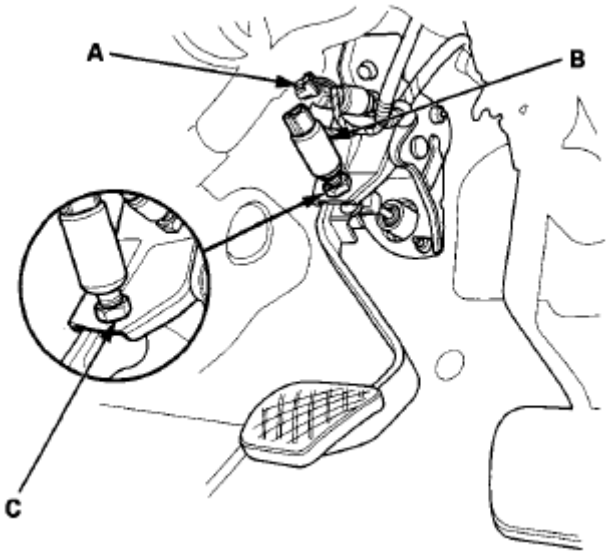


Fig. 8: Identifying Locknut, Clutch Pedal Position Switch, Connector And Switch
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Loosen the locknut (C), then remove clutch pedal position switch B.
3. Install clutch pedal position switch B, and adjust the pedal height (see **CLUTCH PEDAL, CLUTCH PEDAL POSITION SWITCH A, AND CLUTCH PEDAL POSITION SWITCH B ADJUSTMENT**).

2012 ACCESSORIES & EQUIPMENT

Dashboard - TL

COMPONENT LOCATION INDEX

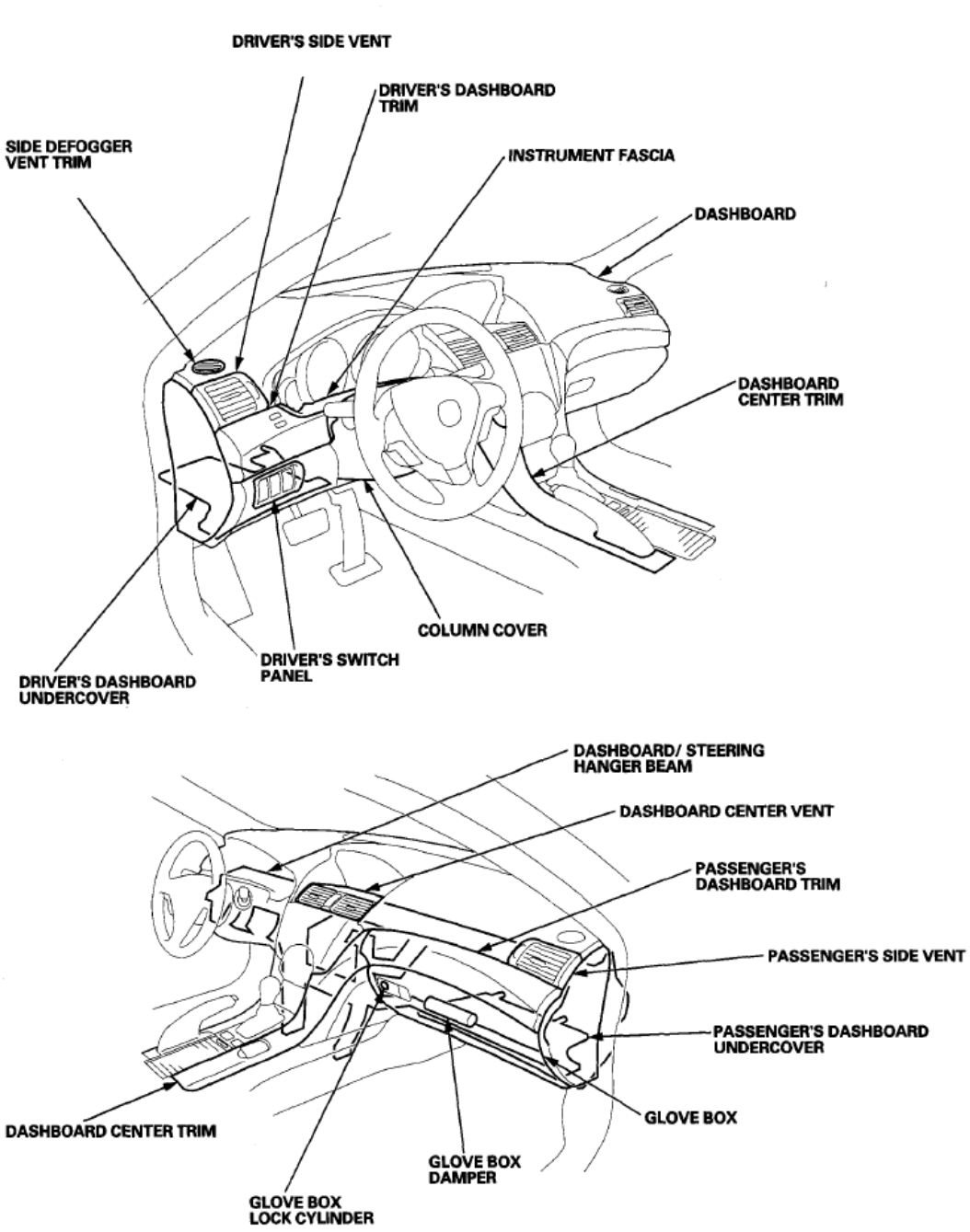


Fig. 1: Dashboard Components Location
Courtesy of AMERICAN HONDA MOTOR CO., INC.

DRIVER'S DASHBOARD TRIM REMOVAL/INSTALLATION

Special Tools Required

KTC Trim Tool Set SOJATP2014*

*Available through the Acura Tool and Equipment Program; call 888-424-6857

NOTE:

- **Take care not to scratch the dashboard or the related parts.**
- **Use the appropriate tool from the KTC trim tool set to avoid damage when removing components.**

1. Remove the driver's dashboard side panel (A).
    1. Open the front door.
    2. Gently pry the bottom edge of the panel with the appropriate trim tool to detach the clips and to release the hooks (B).

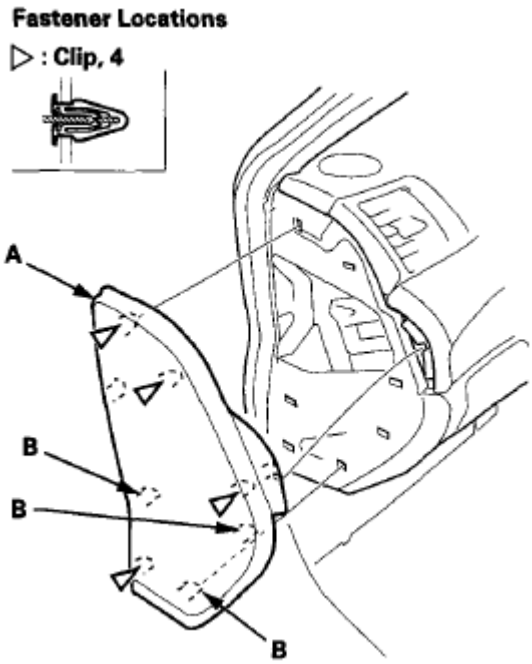


Fig. 2: Identifying Driver's Dashboard Side Panel And Hooks
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Remove the driver's dashboard trim (A).
    1. Pry up the edge of the trim at the driver's dashboard side panel opening.
    2. Detach the clips.
    3. While holding the trim, disconnect the dashlights brightness controller connector (B).

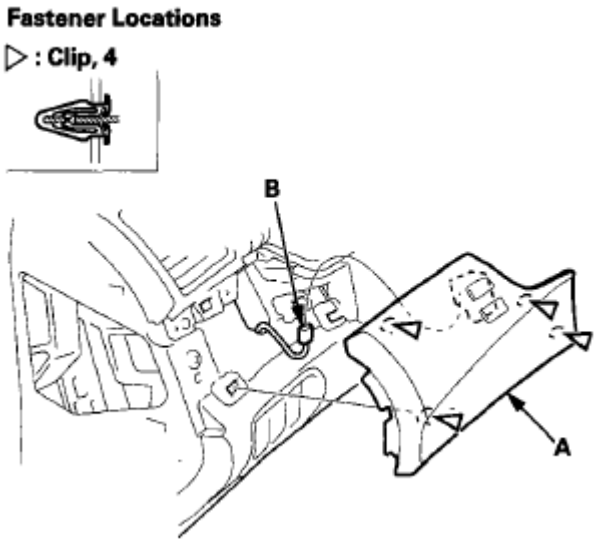


Fig. 3: Identifying Driver's Dashboard Trim And Controller Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Install the trim in the reverse order of removal, and note these items:
   - If the clips are damaged or stress-whitened, replace them with new ones.
   - Make sure the connector is plugged in properly.
   - Push the clips and the hooks into place securely.

DRIVER'S SWITCH PANEL REMOVAL/INSTALLATION

Special Tools Required

KTC Trim Tool Set SOJATP2014*

*Available through the Acura Tool and Equipment Program; call 888-424-6857

NOTE:

- **Take care not to scratch the trim or the panels.**
- **Use the appropriate tool from the KTC trim tool set to avoid damage when removing components.**
- **When prying with a flat-tip screwdriver, wrap it with protective tape to prevent damage.**

1. Remove the driver's switch panel (A).
   1. Apply the protective tape (B) to the dashboard under the edge of the panel.
   2. Pry up on the edge of the panel with a flat-tip screwdriver to release the hooks (C).
   3. Disconnect the following connectors:
      - Connector (D):
        - VSA OFF switch connector

    - BSI OFF switch connector
    - Headlight washer switch connector
- Connector (E):
    - VSA OFF switch connector
    - BSI OFF switch connector
- Connector (F): VSA OFF switch connector

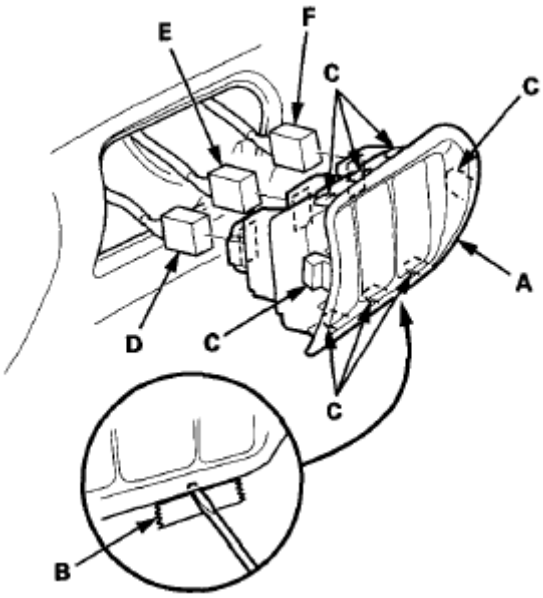


Fig. 4: Identifying Driver's Switch Panel Related Components
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Install the panel in the reverse order of removal, and note these items:
    - Make sure each connector is plugged in properly.
    - Push the hooks into place securely.

INSTRUMENT FASCIA REMOVAL/INSTALLATION

Special Tools Required

KTC Trim Tool Set SOJATP2014*

*Available through the Acura Tool and Equipment Program; call 888-424-6857

NOTE:

- **Take care not to scratch the trim or the panels.**
- **Use the appropriate tool from the KTC trim tool set to avoid damage when removing components.**

1. Remove these items:

- Driver's dashboard trim (see **DRIVER'S DASHBOARD TRIM REMOVAL/INSTALLATION**)
- Dashboard center trim, driver's side (see **DASHBOARD CENTER TRIM REMOVAL/INSTALLATION**)

2. Adjust the steering column to the full tilt down position and to the full telescopic out position.
3. Detach the clips and release the hooks (A) fastening the instrument fascia (B) from the upper column cover (C).

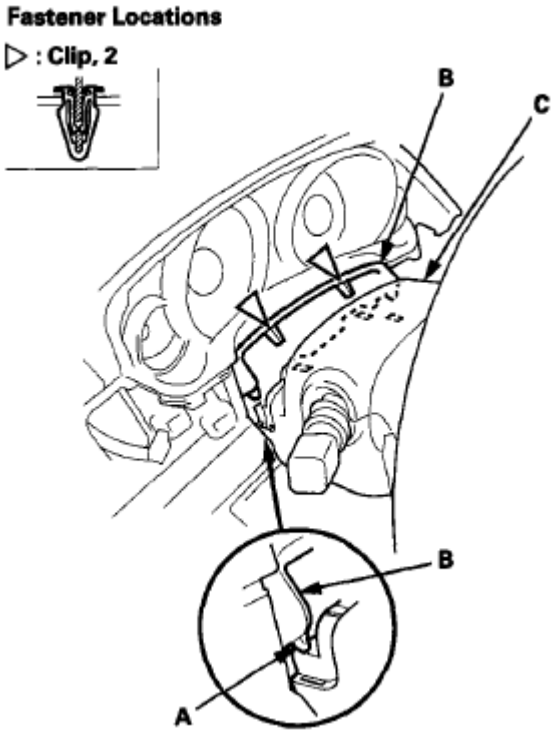


Fig. 5: Identifying Hooks, Instrument Fascia And Upper Column Cover
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Gently pull out the instrument fascia (A) to detach the clips, then remove it.

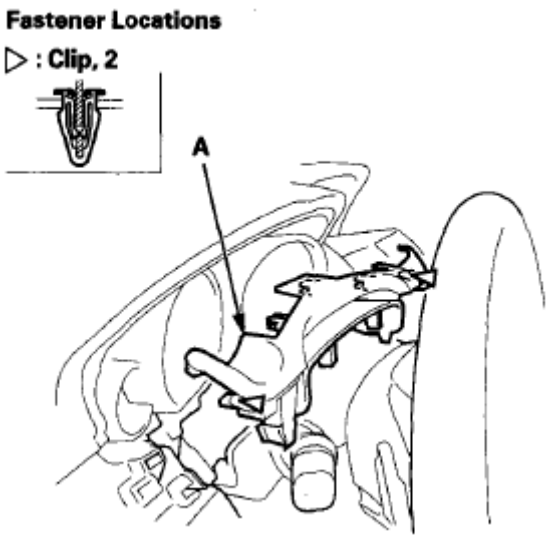


Fig. 6: Identifying Instrument Fascia
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. install the instrument fascia in the reverse order of removal, and note these items:
   - If the clips are damaged or stress-whitened, replace them with new ones.
   - Push the clips and the hooks into place securely.

DRIVER'S DASHBOARD UNDERCOVER REMOVAL/INSTALLATION

Special Tools Required

KTC Trim Tool Set SOJATP2014*

*Available through the Acura Tool and Equipment Program; call 888-424-6857

NOTE:

- **Take care not to scratch the dashboard or the related parts.**
- **Use the appropriate tool from the KTC trim tool set to avoid damage when removing components.**

1. Remove the driver's dashboard undercover (A).
   1. Turn the lock knob (B) 90 °.
   2. Gently pull down the rear edge of the undercover to detach the clip.
   3. Disconnect the footwell light connector (C), and detach the harness clip (D).
   4. Pull the undercover rearward to release the pins (E) from the brackets (F).

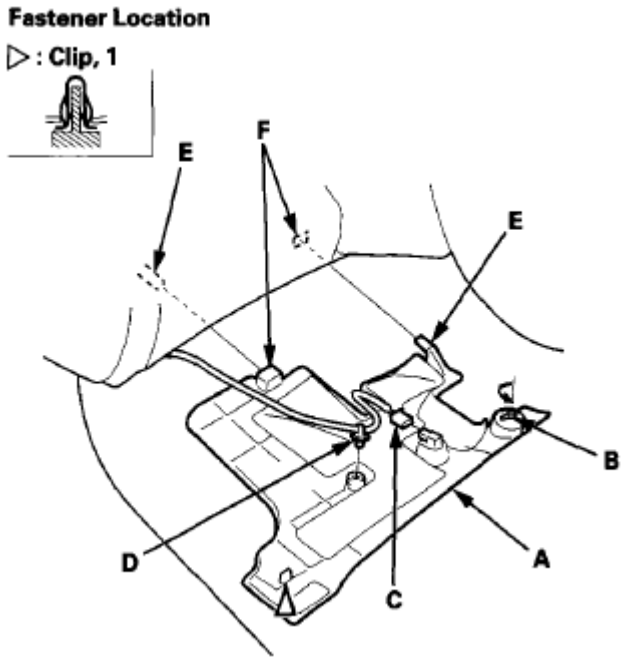


Fig. 7: Identifying Driver's Dashboard Undercover Related Components
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Install the undercover in the reverse order of removal, and note these items:
   - If the clip is damaged or stress-whitened, replace it with a new one.
   - Make sure the connector is plugged in properly.
   - Make sure the pins are installed securely in the brackets.
   - Push the clip into place securely.

DASHBOARD CENTER TRIM REMOVAL/INSTALLATION

Special Tools Required

KTC Trim Tool Set SOJATP2014*

* Available through the Acura Tool and Equipment Program; call 888-424-6857

NOTE:

- **Take care not to scratch the trim or the panels.**
- **Use the appropriate tool from the KTC trim tool set to avoid damage when removing components.**

1. Remove the dashboard center trims (A, B).
   1. Gently pull up the lower area of the trim to detach the clips from the edge of the center console (C).
   2. Disconnect the engine start/stop switch connector (D) (for some models).

Driver's side

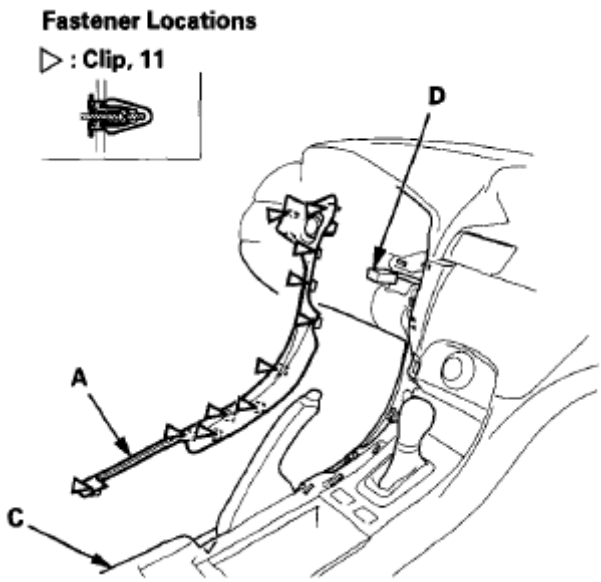


Fig. 8: Identifying Center Trims, Center Console And Start/Switch Connector (Driver'S Side)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Passenger's side

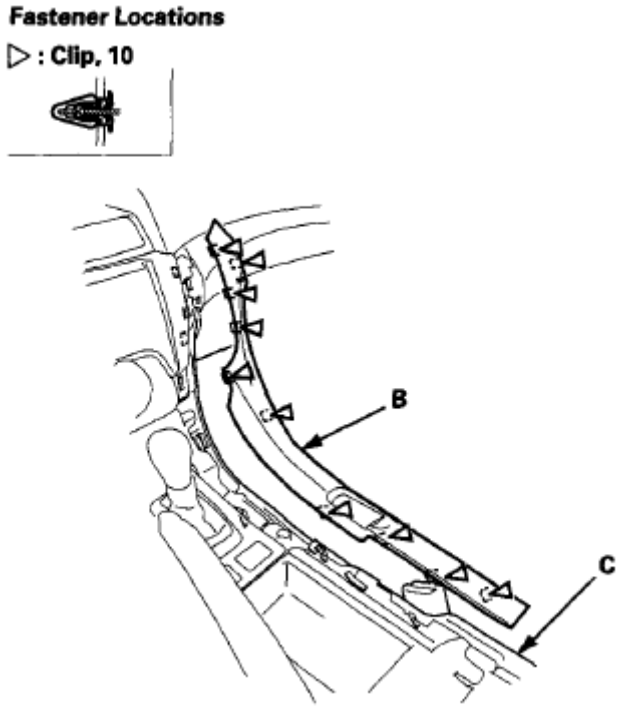


Fig. 9: Identifying Center Trims, Center Console And Start/Switch Connector (Passenger'S Side)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Install the trim in the reverse order of removal, and note these items:
   - If the clips are damaged or stress-whitened, replace them with new ones.
   - Make sure the engine start/stop switch connector is plugged in properly (for some models).
   - Push the clips into place securely.

DRIVER'S SIDE VENT REMOVAL/INSTALLATION

Special Tools Required

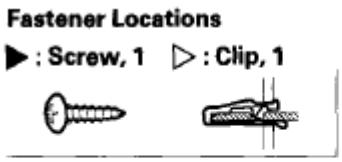
KTC Trim Tool Set SOJATP2014*

*Available through the Acura Tool and Equipment Program; call 888-424-6857

NOTE:

- **Take care not to scratch the dashboard or the panels.**
- **Use the appropriate tool from the KTC trim tool set to avoid damage when removing components.**

1. Remove the driver's dashboard trim (see **DRIVER'S DASHBOARD TRIM REMOVAL/INSTALLATION**).
2. Remove the screw, and detach the clip, then remove the driver's side vent (A).



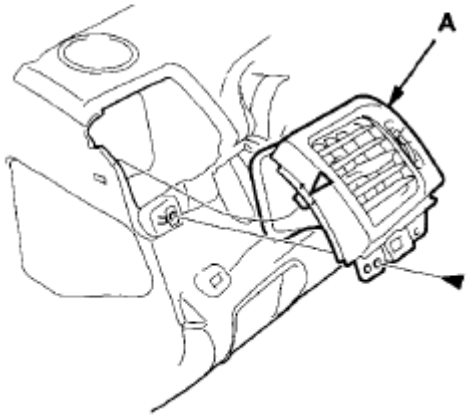


Fig. 10: Identifying Driver's Side Vent
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Install the vent in the reverse order of removal, and note these items:
   - If the clip is damaged or stress-whitened, replace it with a new one.

- Push the clip into place securely.

PASSENGER'S SIDE VENT REMOVAL/INSTALLATION

Special Tools Required

KTC Trim Tool Set SOJATP2014*

*Available through the Acura Tool and Equipment Program; call 888-424-6857

NOTE:

- **Take care not to scratch the dashboard or the panels.**
- **Use the appropriate tool from the KTC trim tool set to avoid damage when removing components.**

1. Remove the glove box (see **GLOVE BOX REMOVAL/INSTALLATION**).
2. Remove the screw (A) securing the duct (B) from the glove box opening. Remove the screws (C) securing the passenger's side vent (D).

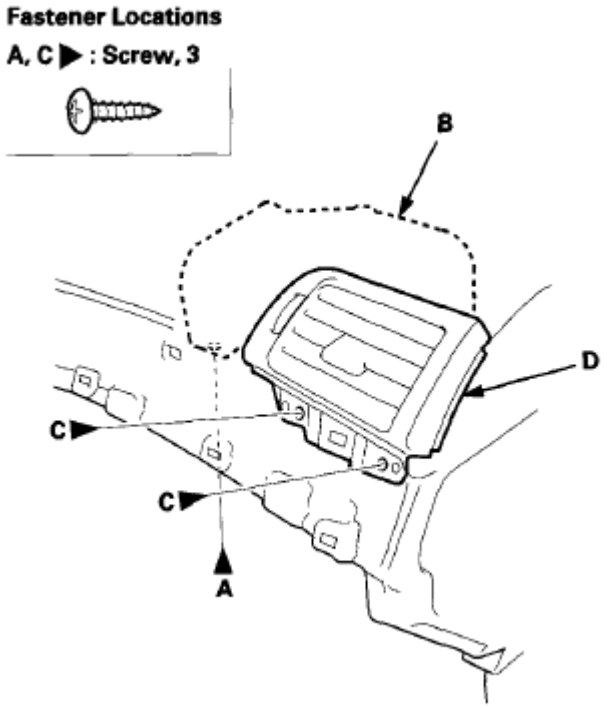


Fig. 11: Identifying Screw, Duct And Passenger's Side Vent
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Pull out the passenger's side vent (A) to detach the clip, then remove it.

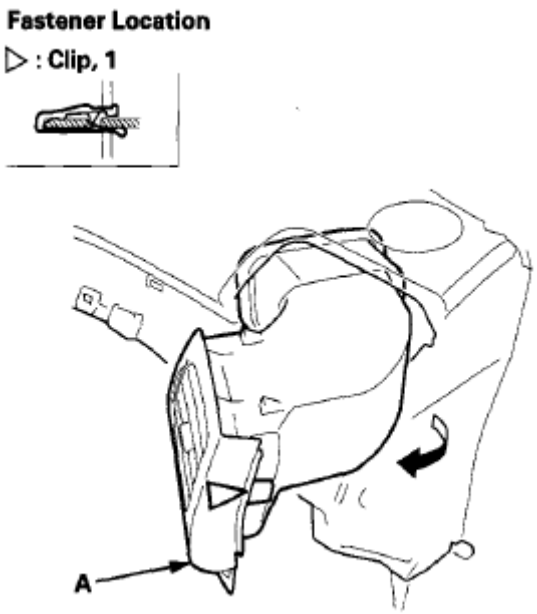


Fig. 12: Pulling Out Passenger's Side Vent To Detach Clip
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Install the vent in the reverse order of removal, and note these items:
   - If the clip is damaged or stress-whitened, replace it with a new one.
   - Push the clip into place securely.

DASHBOARD CENTER VENT REMOVAL/INSTALLATION

Special Tools Required

KTC Trim Tool Set SOJATP2014*

*Available through the Acura Tool and Equipment Program; call 888-424-6857

NOTE:
- **Take care not to scratch the dashboard or the panels.**
- **Use the appropriate tool from the KTC trim tool set to avoid damage when removing components.**

1. Remove the dashboard center vent (A).
   1. Insert a hook-shaped tool into one side of the center vent until it hooks to the back edge of the duct (B).
   2. Carefully pull out one side of the dashboard center vent partially to release the clips (C, D) and the hooks (E), then do the same on the other side.
   3. Disconnect the hazard warning switch/passenger's airbag cutoff indicator connector (F).

NOTE: Do not pull on the vent louvers or the edge of the vent, or you may

damage them.

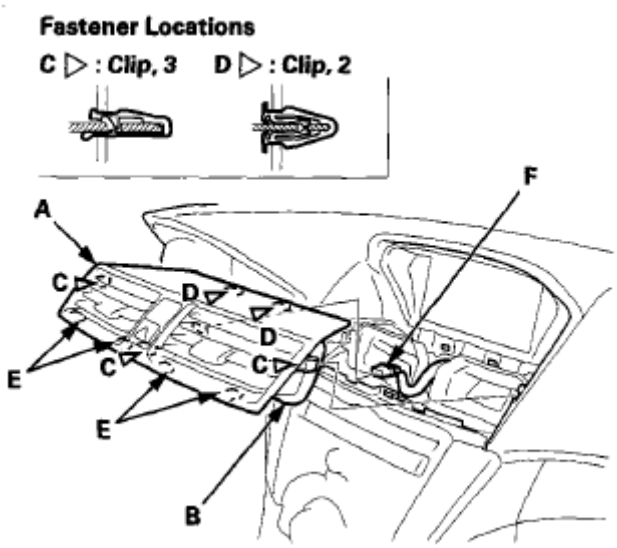


Fig. 13: Identifying Dashboard Center Vent, Duct, Cutoff Indicator Connector, Clips And Hooks
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Install the vent in the reverse order of removal, and note these items:
   - If the clips are damaged or stress-whitened, replace them with new ones.
   - Make sure the connector is plugged in properly.
   - Push the clips and the hooks into place securely.

PASSENGER'S DASHBOARD TRIM REMOVAL/INSTALLATION

Special Tools Required

KTC Trim Tool Set SOJATP2014*

*Available through the Acura Tool and Equipment Program; call 888-424-6857

NOTE:

- **Take care not to scratch the dashboard or the panels.**
- **Use the appropriate tool from the KTC trim tool set to avoid damage when removing components.**

1. Remove the passenger's dashboard side panel (A).
   1. Open the front door.
   2. Gently pry the bottom edge of the panel with the appropriate trim tool to detach the clips and to release the hooks (B).

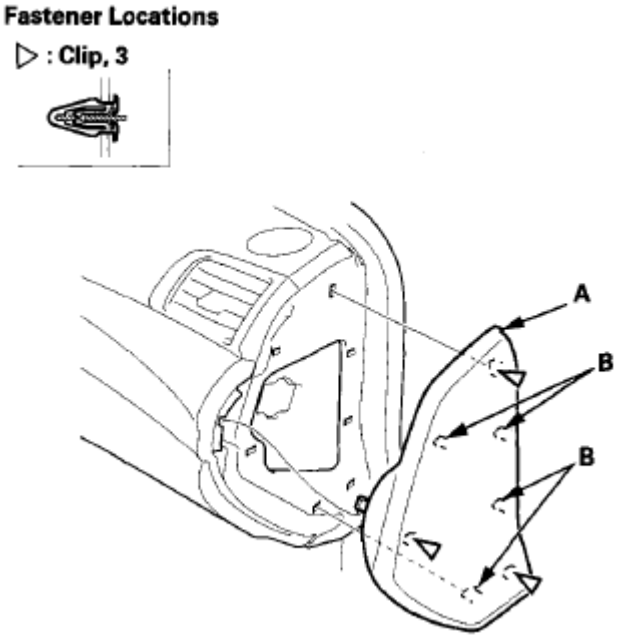


Fig. 14: Identifying Passenger's Dashboard Panel And Hooks
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Remove the dashboard center trim, passenger's side (see **DASHBOARD CENTER TRIM REMOVAL/INSTALLATION**).
3. Remove the passenger's dashboard trim (A).
    1. Pry up the edge of the trim at the passenger's dashboard side panel opening.
    2. Detach the clips along the trim.

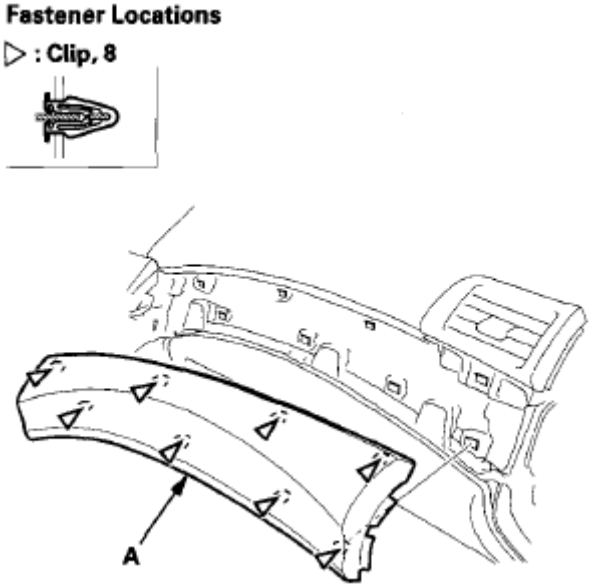


Fig. 15: Identifying Passenger's Dashboard Trim
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Install the trim in the reverse order of removal, and note these items:
   - If the clips are damaged or stress-whitened, replace them with new ones.
   - Push the clips and the hooks into place securely.

GLOVE BOX REMOVAL/INSTALLATION

Special Tools Required

KTC Trim Tool Set SOJATP2014*

* Available through the Acura Tool and Equipment Program; call 888-424-6857

NOTE:

- **Take care not to scratch the dashboard or the panels.**
- **Use the appropriate tool from the KTC trim tool set to avoid damage when removing components.**

1. Remove these items:
   - Passenger's dashboard trim (see **PASSENGER'S DASHBOARD TRIM REMOVAL/INSTALLATION**)
   - Passenger's dashboard undercover (see **PASSENGER'S DASHBOARD UNDERCOVER REMOVAL/INSTALLATION**)
2. Remove the bolts (A) and the screws (B).

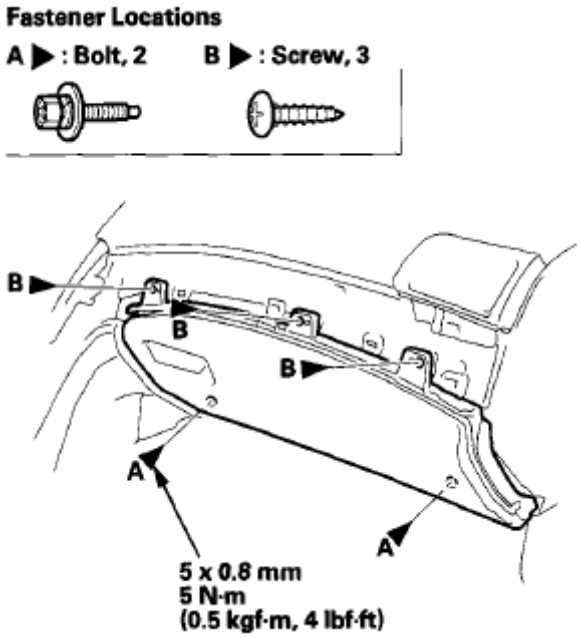


Fig. 16: Identifying Bolts And Screws With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Remove the glove box (A).
    1. Pull out the glove box by hand to detach the clips.
    2. While holding the glove box, disconnect the glove box light bulb (B), the trunk lid opener main switch connector (C), and the keyless access system mode switch connector (D) (for some models).

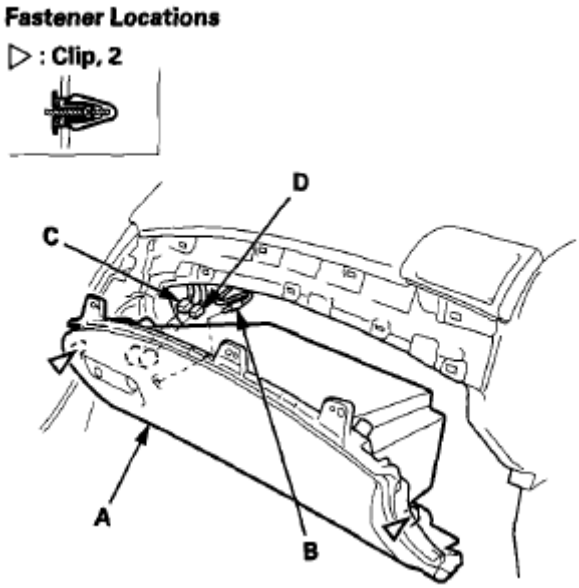


Fig. 17: Identifying Glove Box, Light Bulb, Main Switch Connector And Switch Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Install the glove box in the reverse order of removal, and note these items:
    - If the clips are damaged or stress-whitened, replace them with new ones.
    - Make sure each connector is plugged in properly.
    - Push the clips into place securely.

GLOVE BOX LOCK CYLINDER REPLACEMENT

NOTE: Take care not to scratch the glove box.

1. Remove the glove box (see **GLOVE BOX REMOVAL/INSTALLATION**).
2. While lifting the glove box handle (A), pull out one end of the retainer (B) with a hook-shaped tool of its slot.

NOTE: Do not remove the retainer entirely. Leave one end of the retainer in its original position when removing the lock cylinder.

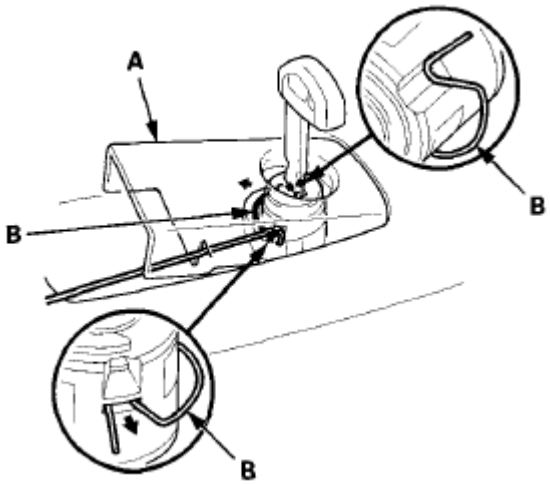


Fig. 18: Identifying Glove Box Handle And Retainer
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Remove the glove box lock cylinder (A).

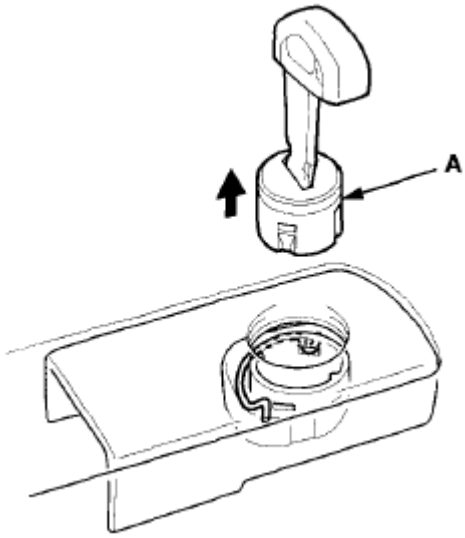


Fig. 19: Identifying Glove Box Lock Cylinder
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Reinstall the end of the retainer (A) in its slot, then install the glove box lock cylinder (B). Push the cylinder into place securely until the retainer snaps into place.

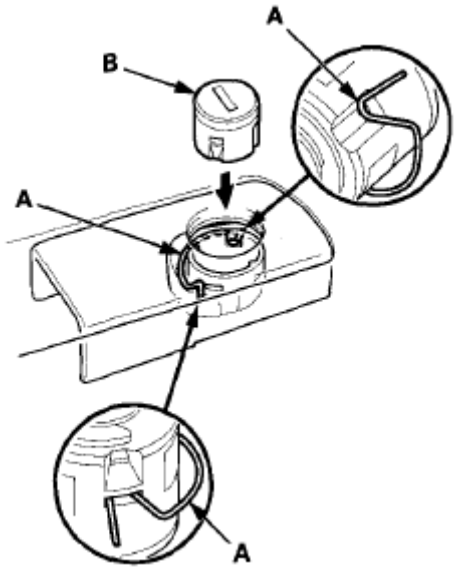


Fig. 20: Identifying Retainer And Glove Box Lock Cylinder
Courtesy of AMERICAN HONDA MOTOR CO., INC.

GLOVE BOX DAMPER REPLACEMENT

NOTE: Take care not to scratch the glove box.

1. Remove the glove box (see **GLOVE BOX REMOVAL/INSTALLATION**).
2. Release the glove box damper string (A), and remove the screws, then remove glove box damper (B).

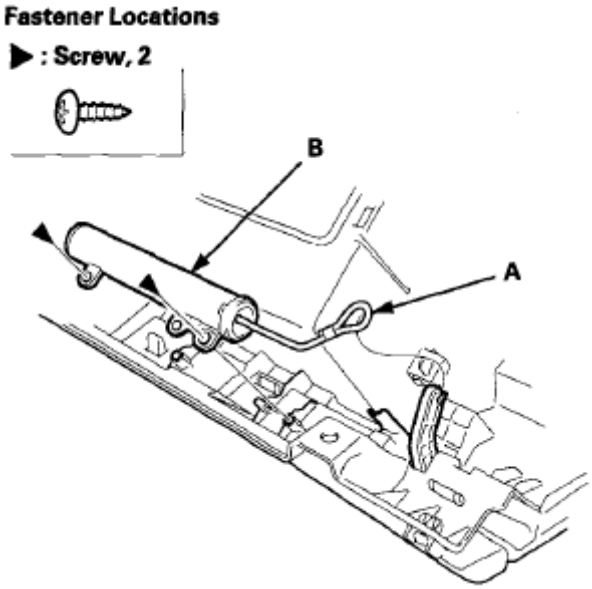


Fig. 21: Identifying Glove Box Damper String And Glove Box Damper
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Install the damper in the reverse order of removal.

PASSENGER'S DASHBOARD UNDERCOVER REMOVAL/INSTALLATION

Special Tools Required

KTC Trim Tool Set SOJATP2014*

* Available through the Acura Tool and Equipment Program; call 888-424-6857

NOTE:

- **Take care not to scratch the dashboard or the related parts.**
- **Use the appropriate tool from the KTC trim tool set to avoid damage when removing components.**

1. Remove the passenger's dashboard undercover (A).
    1. Gently pull down the rear edge of the undercover to detach the clips.
    2. Disconnect the front passenger's footwell light connector (B).
    3. Pull out the undercover to release the pins (C) from the brackets (D).

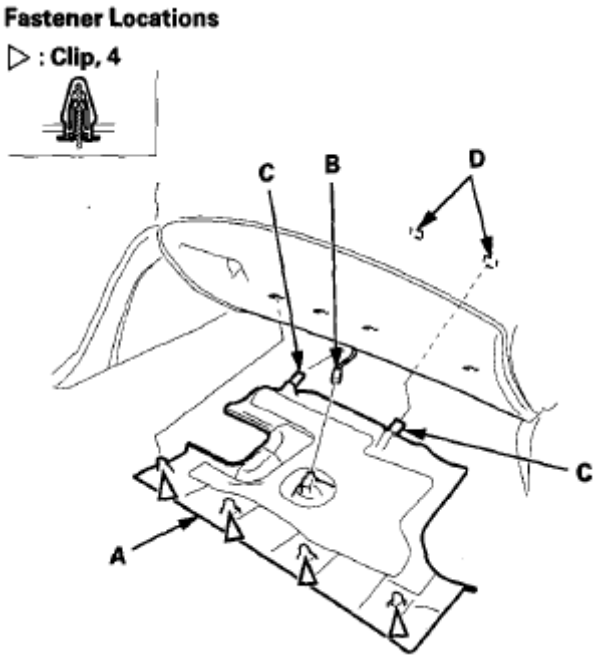


Fig. 22: Identifying Front Passenger's Footwell Light Connector, Passenger's Dashboard Undercover, Pins And Brackets
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Install the undercover in the reverse order of removal, and note these items:
    - If the clips are damaged or stress-whitened, replace them with new ones.

- Make sure the connector is plugged in properly.
- Make sure the pins are installed securely in the brackets.
- Push the clips into place securely.

SIDE DEFOGGER VENT TRIM REMOVAL/INSTALLATION

Special Tools Required

KTC Trim Tool Set SOJATP2014*

*Available through the Acura Tool and Equipment Program; call 888-424-6857

NOTE:

- **Take care not to scratch the dashboard or the panels.**
- **Use the appropriate tool from the KTC trim tool set to avoid damage when removing components.**
- **The left side defogger vent trim is shown; the right side defogger vent trim is similar.**

1. Insert the appropriate trim tool into a gap between the side defogger vent trim (A) and the dashboard, and pry on the hooks (B), then remove the trim.

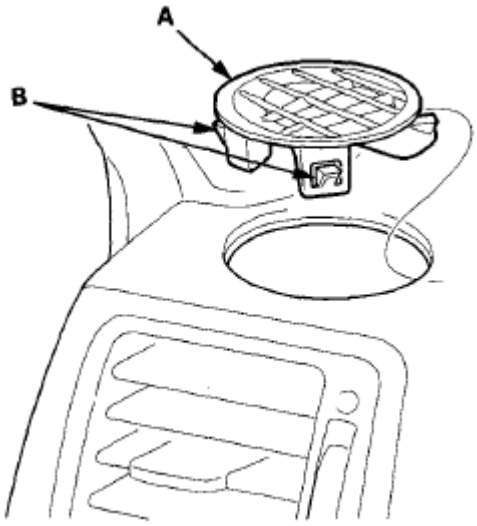


Fig. 23: Identifying Defogger Vent Trim And Hooks
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Install the trim in the reverse order of removal, and push the hooks into place securely.

COLUMN COVER REMOVAL/INSTALLATION

Special Tools Required

KTC Trim Tool Set SOJATP2014*

* Available through the Acura Tool and Equipment Program; call 888-424-6857

NOTE:

- **Put on gloves to protect your hands.**
- **Take care not to scratch the dashboard or the panels.**
- **Use the appropriate tool from the KTC trim tool set to avoid damage when removing components.**
- **Do not pry the column cover surface with any tools.**

1. Remove the instrument fascia (see **INSTRUMENT FASCIA REMOVAL/INSTALLATION**).
2. Turn the steering wheel to access the mounting screws, then remove the screws from the front side of the column cover (A).

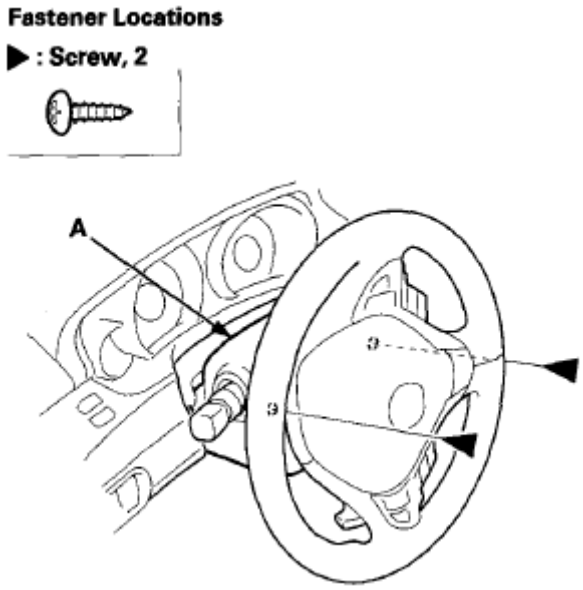


Fig. 24: Turning Steering Wheel To Access Mounting Screws From Column Cover
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Insert a suitable sized screwdriver or equivalent tool into the holes (A) in the lower column cover (B). Gently push to release the hooks (C), and pull up the upper column cover (D) to remove it.

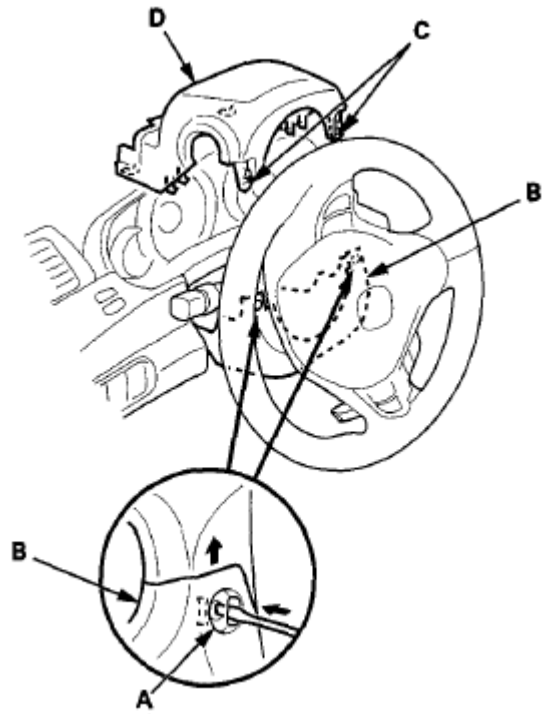


Fig. 25: Pulling Up Upper Column Cover To Remove It
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Remove the screws (A, B), then remove the lower column cover (C).

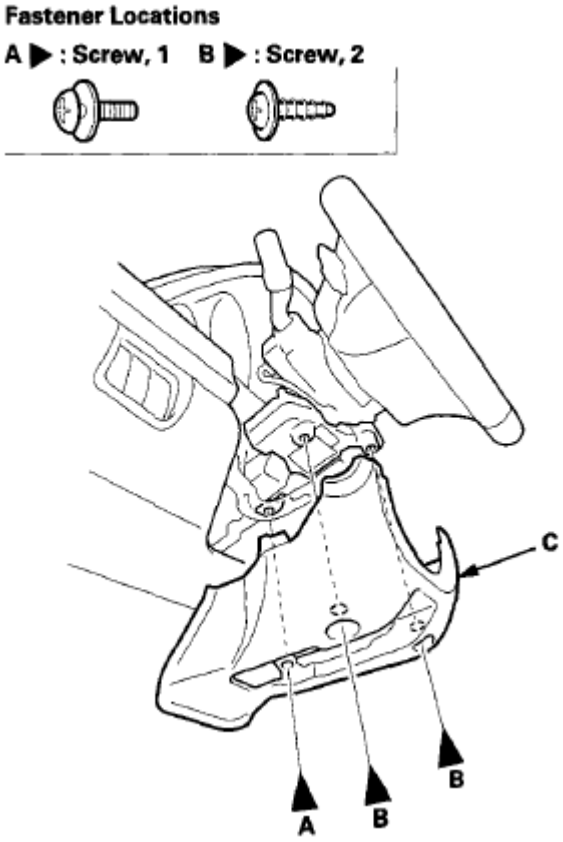


Fig. 26: Identifying Screws And Lower Column Cover
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Install the upper and lower column covers in the reverse order of removal, and note these items:
   - Make sure the wire harnesses are not pinched before tightening the screws.
   - Push the hooks into place securely.

DASHBOARD REPLACEMENT

Special Tools Required

KTC Trim Tool Set SOJATP2014*

* Available through the Acura Tool and Equipment Program; call 888-424-6857

SRS components are located in this area. Review the SRS component locations (see **COMPONENT LOCATION INDEX**) and the precautions and procedures (see **PRECAUTIONS AND PROCEDURES**) before doing repairs or service.

NOTE:

- **Have an assistant help you when removing and installing the dashboard.**
- **Put on gloves to protect your hands.**

- **Take care not to scratch the dashboard, the body, or the related parts.**
- **Take care not to bend the brackets.**
- **Use the appropriate tool from the KTC trim tool set to avoid damage when removing components.**

1. Do the battery terminal disconnection procedure (see **BATTERY TERMINAL DISCONNECTION AND RECONNECTION**), then wait at least 3 minutes before beginning work.
2. Remove these items from the dashboard area:
   - A-pillar trims, both sides (see **TRIM REMOVAL/INSTALLATION - PILLAR AREAS**)
   - Instrument fascia (see **INSTRUMENT FASCIA REMOVAL/INSTALLATION**)
   - Driver's switch panel (see **DRIVER'S SWITCH PANEL REMOVAL/INSTALLATION**)
   - Driver's dashboard undercover (see **DRIVER'S DASHBOARD UNDERCOVER REMOVAL/INSTALLATION**)
   - Hood release handle (see **HOOD RELEASE HANDLE REPLACEMENT**)
   - Dashboard center vent (see **DASHBOARD CENTER VENT REMOVAL/INSTALLATION**)
   - Center console (see **CENTER CONSOLE REMOVAL/INSTALLATION**)
   - Glove box (see **GLOVE BOX REMOVAL/INSTALLATION**)
   - Driver's side vent (see **DRIVER'S SIDE VENT REMOVAL/INSTALLATION**)
   - Passenger's side vent (see **PASSENGER'S SIDE VENT REMOVAL/INSTALLATION**)
   - Side defogger vent trims, both sides (see **SIDE DEFOGGER VENT TRIM REMOVAL/INSTALLATION**)
   - Gauge control module (see **GAUGE CONTROL MODULE REPLACEMENT**)
   - Center speaker (see **FRONT CENTER SPEAKER**)
   - Without navigation: Audio-HVAC display unit (see **AUDIO-HVAC DISPLAY UNIT REMOVAL/INSTALLATION**)
   - With navigation: Navigation display unit (see **NAVIGATION DISPLAY UNIT REMOVAL/INSTALLATION**)
   - Without navigation: Audio unit (see **AUDIO UNIT REMOVAL/INSTALLATION**)
   - With navigation: Audio-Navigation unit (see **AUDIO-NAVIGATION UNIT REMOVAL/INSTALLATION**)
   - Steering column (see **STEERING COLUMN REMOVAL AND INSTALLATION**)
   - Humidity/In-car temperature sensor (see **HUMIDITY/IN-CAR TEMPERATURE SENSOR REPLACEMENT**)
   - Sunlight sensor (see **OUTSIDE AIR TEMPERATURE SENSOR REPLACEMENT**)
   - With navigation: GPS antenna (see **GPS ANTENNA REMOVAL/INSTALLATION**)
   - Front passenger's airbag (see **FRONT PASSENGER'S AIRBAG REPLACEMENT**)
   - With keyless access system: Front interior LF antenna (see **RF UNIT REPLACEMENT**)
   - With keyless access system: Remote slot (see **REMOTE SLOT TEST/REPLACEMENT**)

Driver's Side

3. Detach the harness clip (A) from between the A-pillar (B) and the dashboard (C).

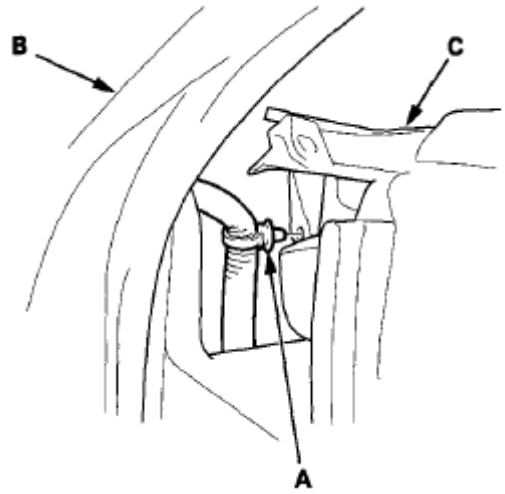


Fig. 27: Identifying Harness Clip, A-Pillar And Dashboard
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Center Area

4. Detach the clip, then remove the center joint duct (A).

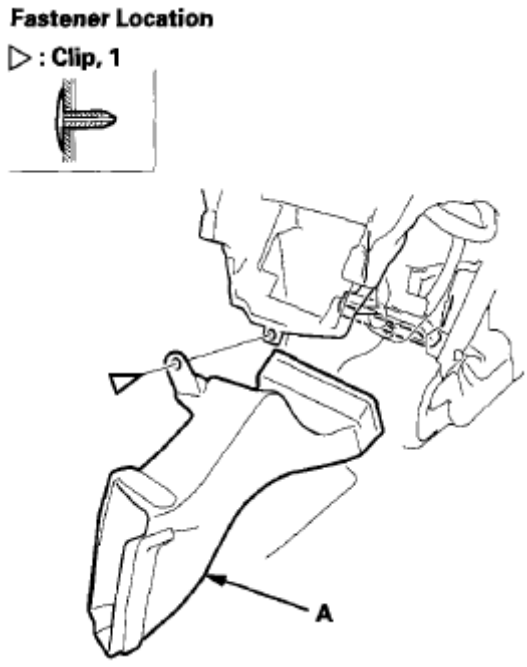


Fig. 28: Identifying Center Joint Duct
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Detach the harness clips (A, B) from below the display unit opening.

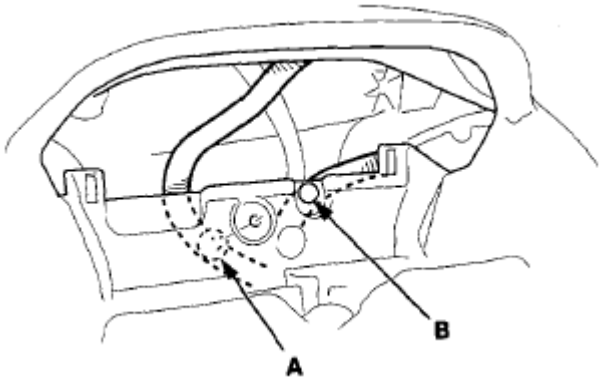


Fig. 29: Identifying Harness Clips Below Display Unit Opening
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Passenger's Side

6. Detach the harness clip (A) from between the A-pillar (B) and the dashboard (C).

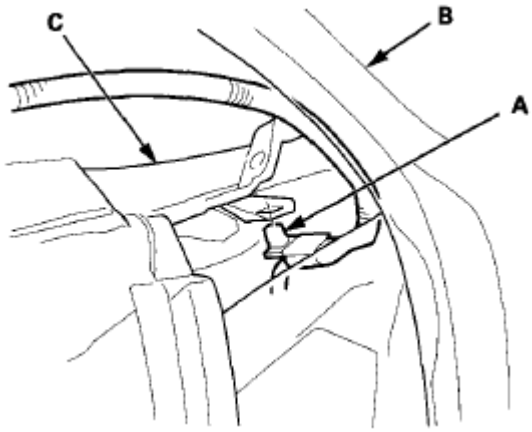


Fig. 30: Identifying Harness Clip, A-Pillar And Dashboard
Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Remove the bolts securing the dashboard (A).

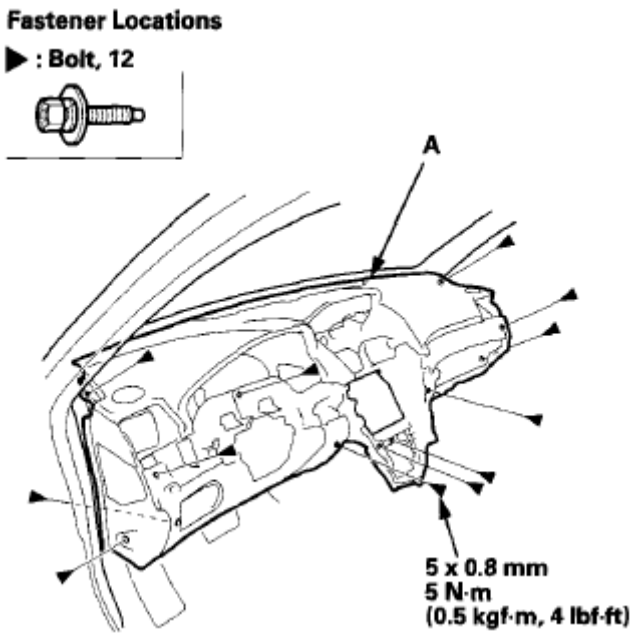


Fig. 31: Identifying Bolts To Secure Dashboard With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

8. Lift up on the dashboard (A) to release it from the guide pins (B), then carefully remove the dashboard through the front door opening.

NOTE: Do not rest the dashboard on its lower console opening, or it may be damaged. Lay it on its front or back.

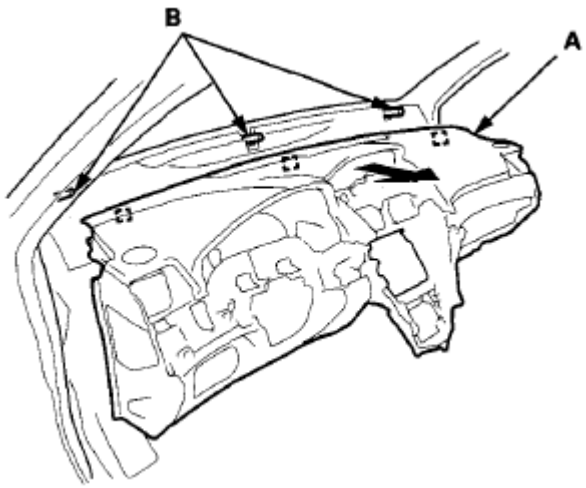


Fig. 32: Identifying Dashboard And Guide Pins
Courtesy of AMERICAN HONDA MOTOR CO., INC.

9. Install the dashboard in the reverse order of removal, and note these items:
   - Make sure the dashboard fits onto the guide pins correctly.

- Make sure the wire harnesses are not pinched before tightening the bolts.
- Do the battery terminal reconnection procedure (see **BATTERY TERMINAL DISCONNECTION AND RECONNECTION**).
- Check for any DTCs that may have been set during repairs, and clear them.

DASHBOARD/STEERING HANGER BEAM REMOVAL/INSTALLATION

Special Tools Required

KTC Trim Tool Set SOJATP2014*

*Available through the Acura Tool and Equipment Program; call 888-424-6857

SRS components are located in this area. Review the SRS component locations (see **COMPONENT LOCATION INDEX**) and the precautions and procedures (see **PRECAUTIONS AND PROCEDURES**) before doing repairs or service.

NOTE:

- **Have an assistant help you when removing and installing the dashboard.**
- **Put on gloves to protect your hands.**
- **Take care not to scratch the dashboard, the body, or the related parts.**
- **Take care not to bend the brackets.**
- **Use the appropriate tool from the KTC trim tool set to avoid damage when removing components.**

1. Do the battery terminal disconnection procedure (see **BATTERY TERMINAL DISCONNECTION AND RECONNECTION**), then wait at least 3 minutes before beginning work.
2. Remove these items from the dashboard:
   - A-pillar trims, both sides (see **TRIM REMOVAL/INSTALLATION - PILLAR AREAS**)
   - Driver's dashboard undercover (see **DRIVER'S DASHBOARD UNDERCOVER REMOVAL/INSTALLATION**)
   - Kick panels, both sides (see **TRIM REMOVAL/INSTALLATION - DOOR AREAS**)
   - Hood release handle (see **HOOD RELEASE HANDLE REPLACEMENT**)
   - Instrument fascia (see **INSTRUMENT FASCIA REMOVAL/INSTALLATION**)
   - Steering column (see **STEERING COLUMN REMOVAL AND INSTALLATION**)
   - Center console (see **CENTER CONSOLE REMOVAL/INSTALLATION**)
   - Passenger's dashboard undercover (see **PASSENGER'S DASHBOARD UNDERCOVER REMOVAL/INSTALLATION**)

Driver's Side

3. Disconnect the roof wire harness connector (A).

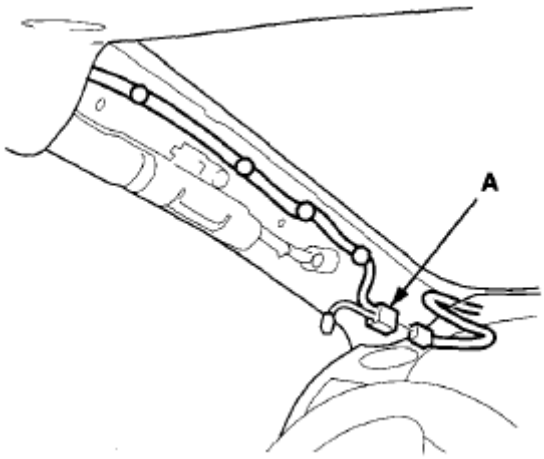


Fig. 33: Identifying Roof Wire Harness Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Disconnect the left side wire harness connectors (A), the left engine compartment wire harness connectors (B), and the driver's door wire harness connector (C) from the driver's under-dash fuse/relay box (D).

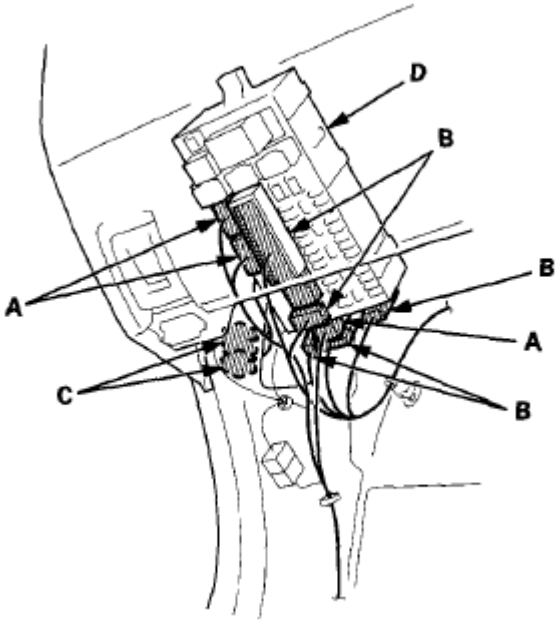


Fig. 34: Identifying Left Side, Left Engine And Driver's Door Wire Harness Connectors
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Detach the harness clip (A) fastening the relay (B) from the brake pedal support member (C). Remove the bolts (D, E), then remove the member, and disconnect the TPMS control unit connector (F).

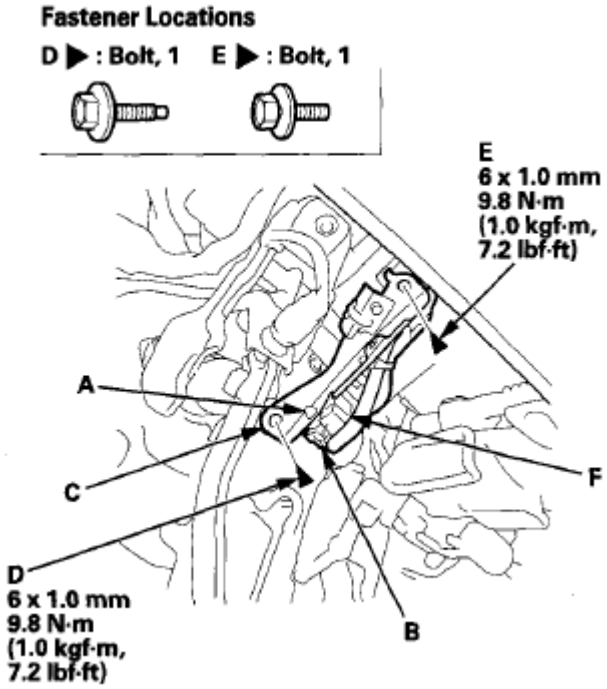


Fig. 35: Identifying Harness Clips, Relay, Brake Pedal Support Member, TPMS Control Unit Connector And Bolts With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Center Dashboard/Console

6. Detach the clip, then remove the center joint duct (A).

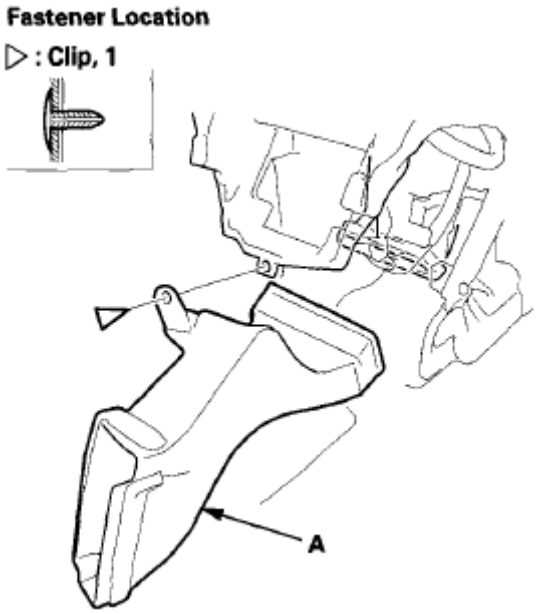


Fig. 36: Identifying Center Joint Duct

Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Detach the clip securing the center side duct (B). Disconnect SRS unit connector A, the A/C wire harness connector (C), and the yaw rate-lateral/(longitudinal) acceleration sensor connector (D), the A/T shift solenoid /park-pin switch connector (E), the center console subharness connector (F), then detach the wire harness clips (G). Remove the TORX ground bolt (H) with a TORX T30 bit.

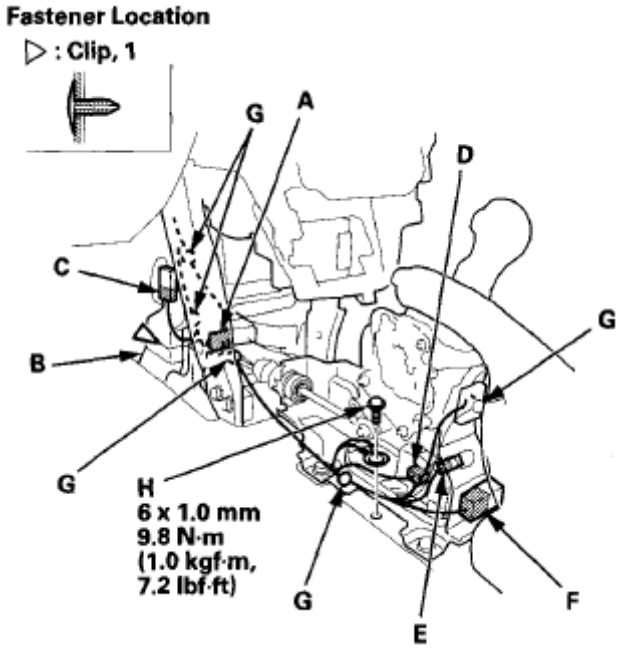


Fig. 37: Identifying Center Side Duct, A/C Wire Harness Connector, Acceleration Sensor Connector, Switch Connector, Connector And Clips With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Center Dashboard (Passenger's Side)

8. Disconnect the A/C wire harness connector (A), and detach the clip securing the center side duct (B).

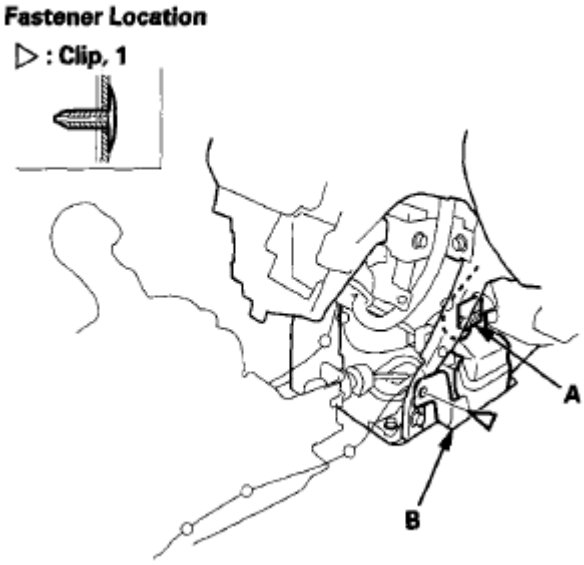


Fig. 38: Identifying A/C Wire Harness Connector And Center Side Duct
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Passenger's Side

9. Disconnect the antenna lead connectors (A).

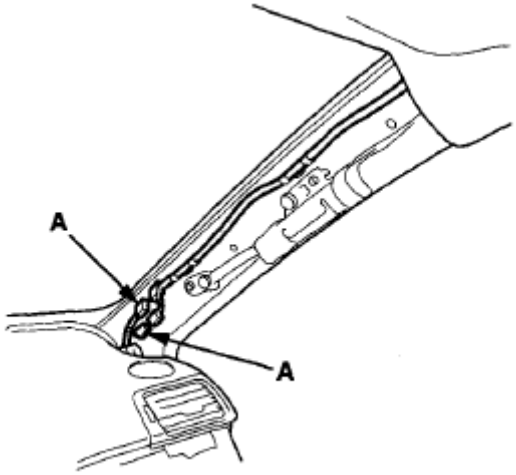


Fig. 39: Identifying Antenna Lead Connectors
Courtesy of AMERICAN HONDA MOTOR CO., INC.

10. Disconnect the passenger's door wire harness connector (A), the right side wire harness connectors (B), and the right engine compartment wire harness connectors (C). Disconnect the dashboard wire harness connector (D) and the audio wire harness connectors (E) from the passenger's under-dash fuse/relay box (F). Detach the harness clip (G).

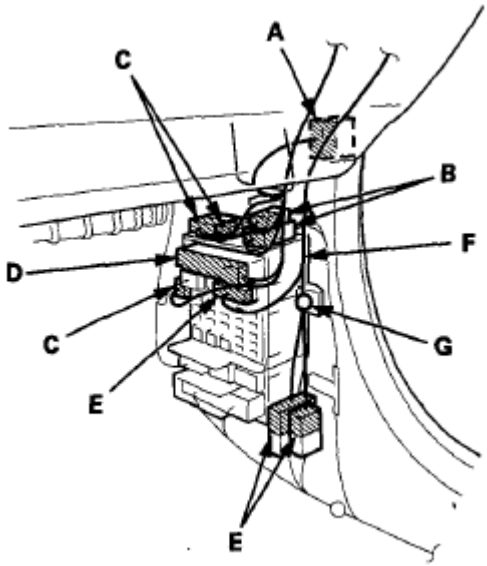


Fig. 40: Identifying Different Types Of Connectors
Courtesy of AMERICAN HONDA MOTOR CO., INC.

11. Remove the center frame mounting bolt (A) and the center joint bracket mounting bolts (B).

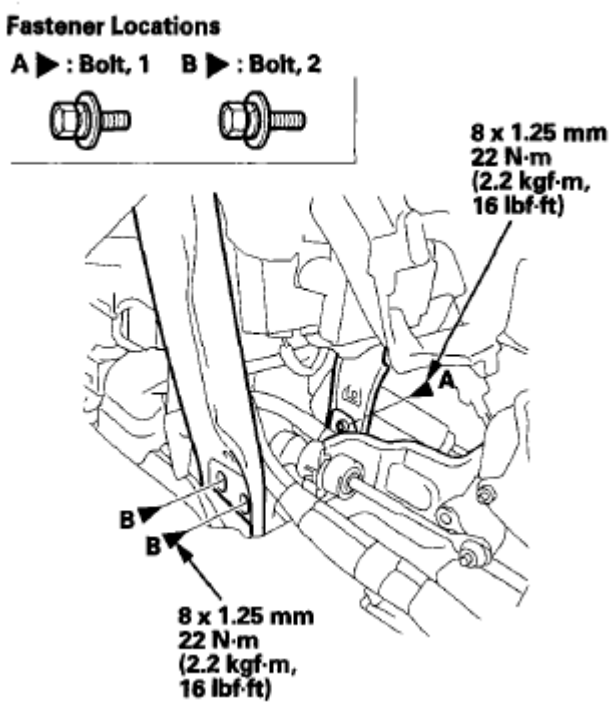


Fig. 41: Identifying Center Frame Mounting Bolt And Center Joint Bracket Mounting Bolts With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

12. Remove the cowl cover (see **FRONT BULKHEAD BRACE COVER REPLACEMENT**).

13. Remove the bolt securing the steering hanger beam.

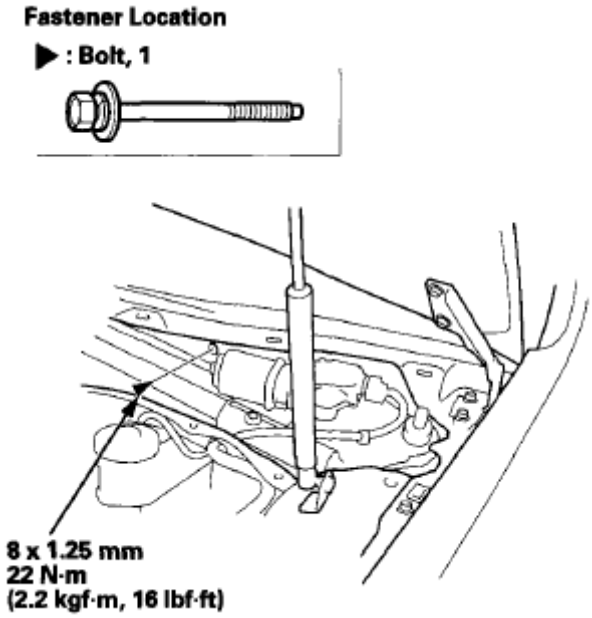


Fig. 42: Identifying Bolt Securing Steering Hanger Beam With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

14. Remove the special bolts (A) from outside the passenger's door.
    1. Remove the caps (B).
    2. Loosen the special bolts until they disengage from the threads on the hanger beam side bracket (C), and engage the inside threads of the collar bolts (D). The thread lock on the special bolts makes the special bolts and the collar bolts turn together.
    3. Continue loosening the special bolts to turn the collar bolts into the fixed space adjusters (E) until the collar bolts engage the stops (F). This creates a gap (G) between the collar bolts and the body.
    4. Loosen the special bolts to disengage them from the collar bolts, then remove them.

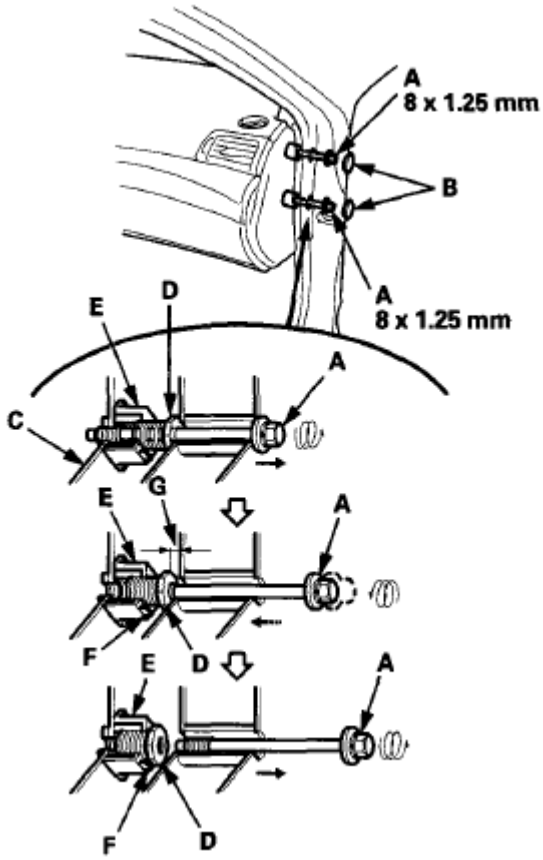


Fig. 43: Identifying Bolts, Side Bracket, Collar Bolts, Space Adjusters, Stops And Gap
Courtesy of AMERICAN HONDA MOTOR CO., INC.

15. Check that the collar bolts (A) are seated in the space adjusters (B).
    1. Insert an 8 mm hex wrench in the collar bolt.
    2. Gently turn the wrench counterclockwise.
    3. If the wrench turns easily, continue turning until the collar bolt seats and engages the stop (C).
    4. If the wrench does not turn easily, the collar bolt is seated.

NOTE: If either collar bolt was not seated, replace the special bolts.

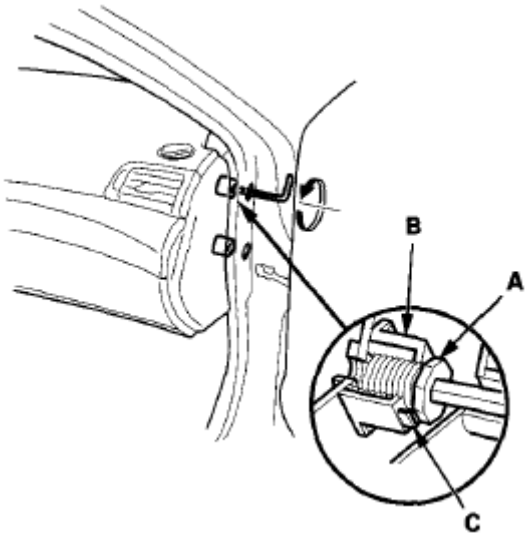


Fig. 44: Identifying Collar Bolts, Space Adjusters And Stop
Courtesy of AMERICAN HONDA MOTOR CO., INC.

16. From outside the driver's door, remove the caps (A), then remove the driver's side bracket bolts from outside the driver's door.

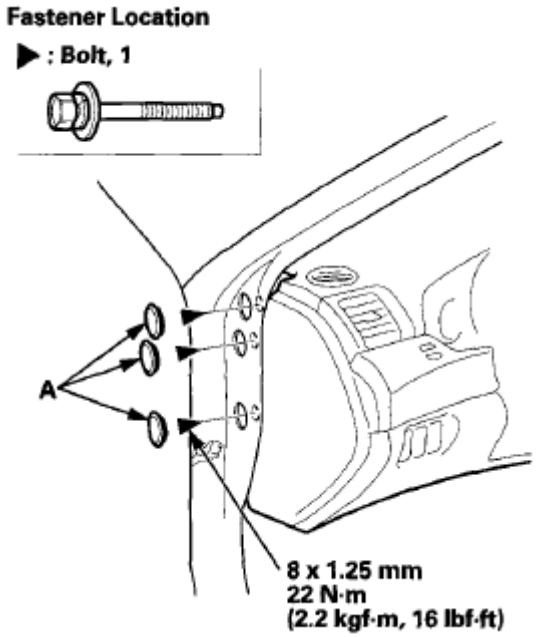


Fig. 45: Identifying Caps From Outside Driver's Door With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

17. Lift up on the dashboard (A) to release it from the guide pins (B) on the body. Carefully remove the dashboard through the front door opening.

NOTE:

- **Take care not to scratch the body with the collar bolts on the passenger's side.**
- **Do not rest the dashboard on its lower center cover opening, or it may be damaged. Lay it on its front or back.**

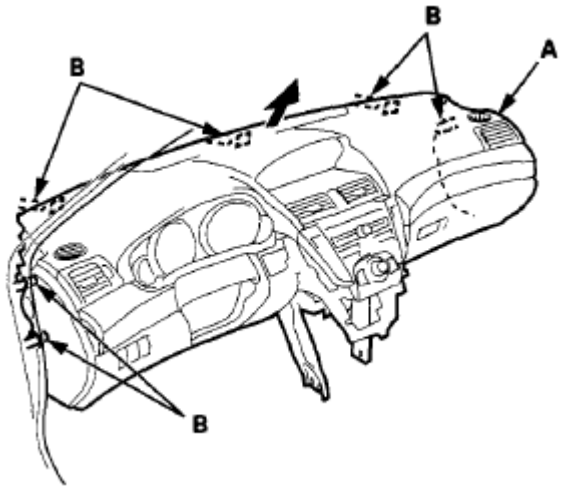


Fig. 46: Lifting Up On Dashboard To Release It From Guide Pins On Body
Courtesy of AMERICAN HONDA MOTOR CO., INC.

18. Install the dashboard in the reverse order of removal, and note these items:
    - If the clips are damaged or stress-whitened, replace them with new ones.
    - Make sure the dashboard fits onto the guide pins correctly.
    - Before tightening the bolts, make sure the wire harnesses are not pinched.
    - Make sure each connector is plugged in properly.
    - Push the clips and the hooks into place securely.
    - Make sure the collar bolts (A) turn easily by hand in the fixed space adjusters (B). Tighten the collar bolts by hand until they engage the stops (C) before reinstalling the dashboard.
    - Before reinstalling the dashboard, screw the special bolts (D) into the collar bolts, and check that they turn together. If they do not turn together, replace the special bolts.
    - After setting the dashboard in the body, reinstall all of the mounting bolts but do not tighten them. First tighten the driver's side bracket bolts to the specified torque. Next, tighten the special bolts. As you tighten the bolts, the collar bolts screw out of the fixed space adjuster until they contact the body. Continue tightening the special bolts to the specified torque.
    - Apply medium strength liquid thread lock to the bolts securing the center joint bracket and the dashboard before reinstallation.
    - After tightening the dashboard mounting bolts, tighten the center joint bracket mounting bolts, and then tighten the center frame mounting bolts.
    - Tighten all remaining mounting bolts to the specified torque.
    - Do the battery terminal reconnection procedure (see **BATTERY TERMINAL**

DISCONNECTION AND RECONNECTION).

- Check for any DTCs that may have been set during repairs, and clear them.

Special bolt tightening on passenger's side

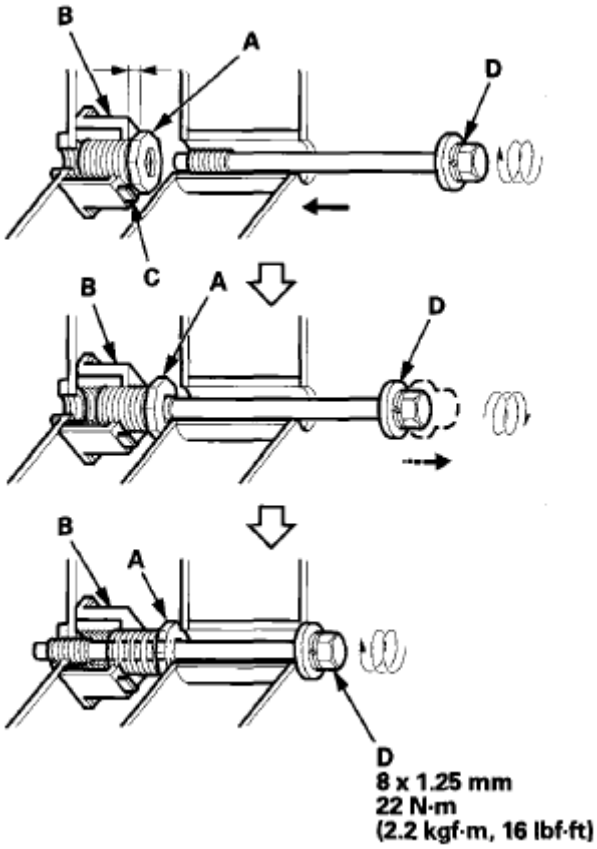


Fig. 47: Identifying Special Bolt Tightening On Passenger's Side With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2012 ACCESSORIES & EQUIPMENT

Dashlights Brightness Controller - TL

CIRCUIT DIAGRAM

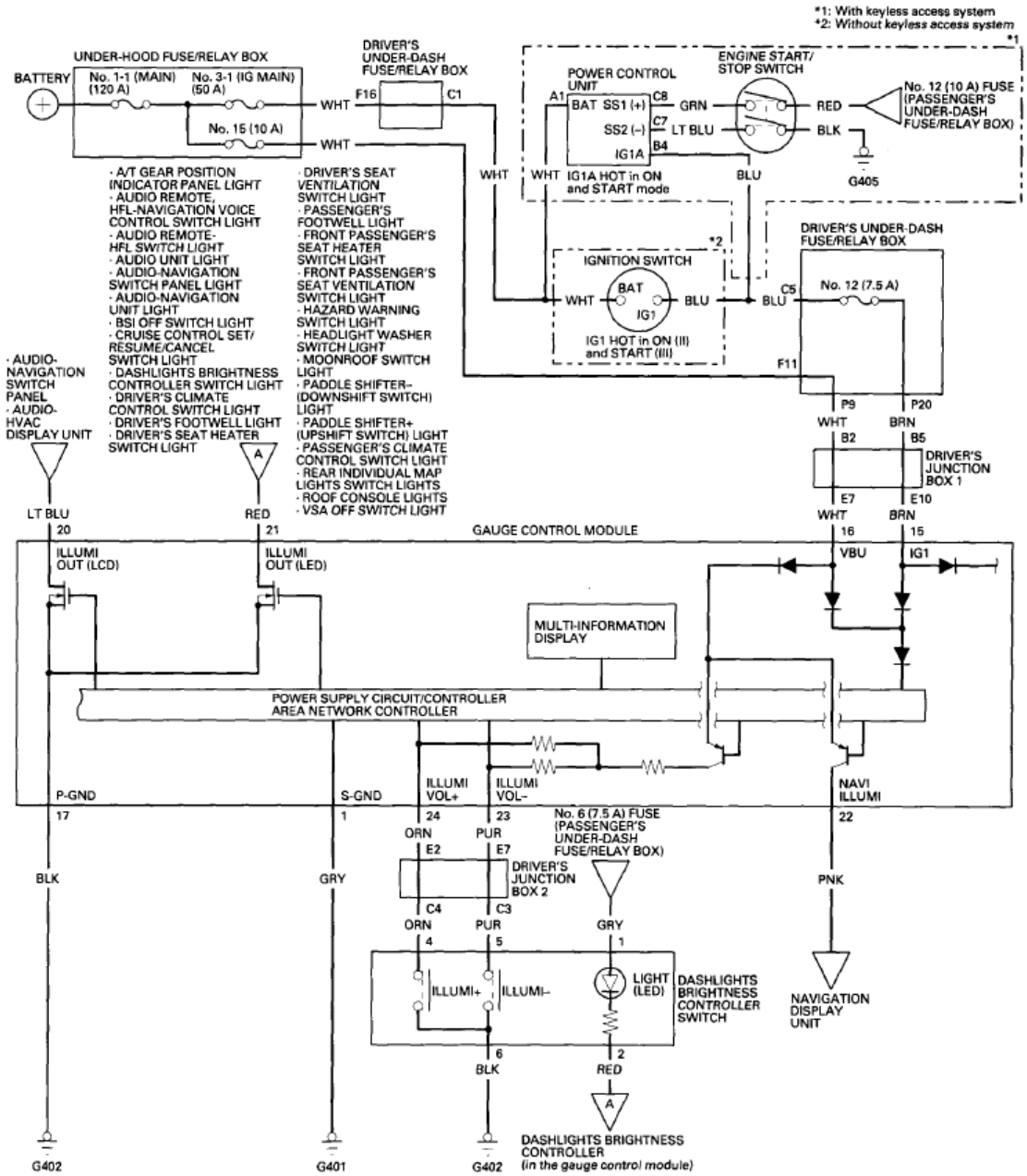


Fig. 1: Dashlights Brightness Controller Circuit Wiring Diagram
Courtesy of AMERICAN HONDA MOTOR CO., INC.

DASHLIGHTS BRIGHTNESS CONTROLLER SWITCH TEST/REPLACEMENT

1. Remove the driver's dashboard trim. (See **DRIVER'S DASHBOARD TRIM REMOVAL/INSTALLATION**).
2. Remove the two screws and dashlights brightness controller switch (A) from the driver's dashboard trim (B).

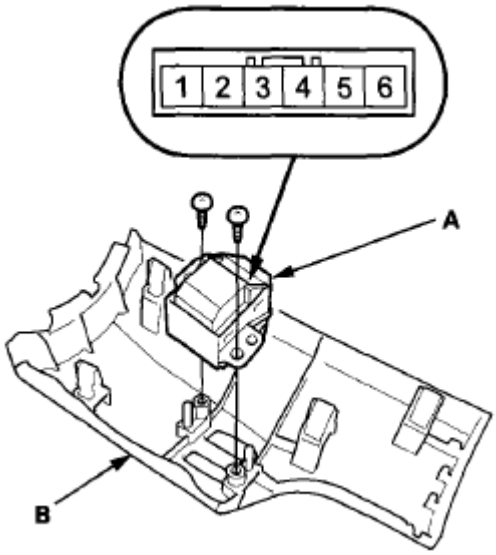


Fig. 2: Identifying Dashlights Brightness Controller Switch & Trim With Connector End View
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Check for continuity between the terminals in each switch position according to the table.

NOTE:

- **Make sure the correct test lead (+ or -) is placed on the terminal.**
- **When checking for continuity across the diode, use the diode setting on the digital volt/ohm meter to check the diode bias.**
- **Be careful of this characteristic; a diode is one that conducts fully in one direction (forward) and not at all in the opposite direction (reverse).**

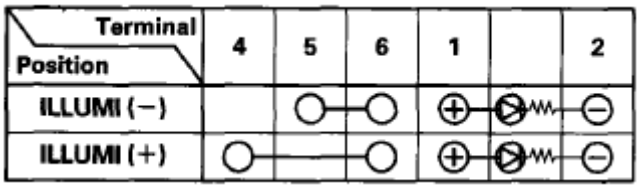


Fig. 3: View Of Continuity Between Terminals
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. If the continuity is not as specified or LED does not turn on, replace the switch.

2012 ACCESSORIES & EQUIPMENT

Driver Position Memory System - TL

COMPONENT LOCATION INDEX

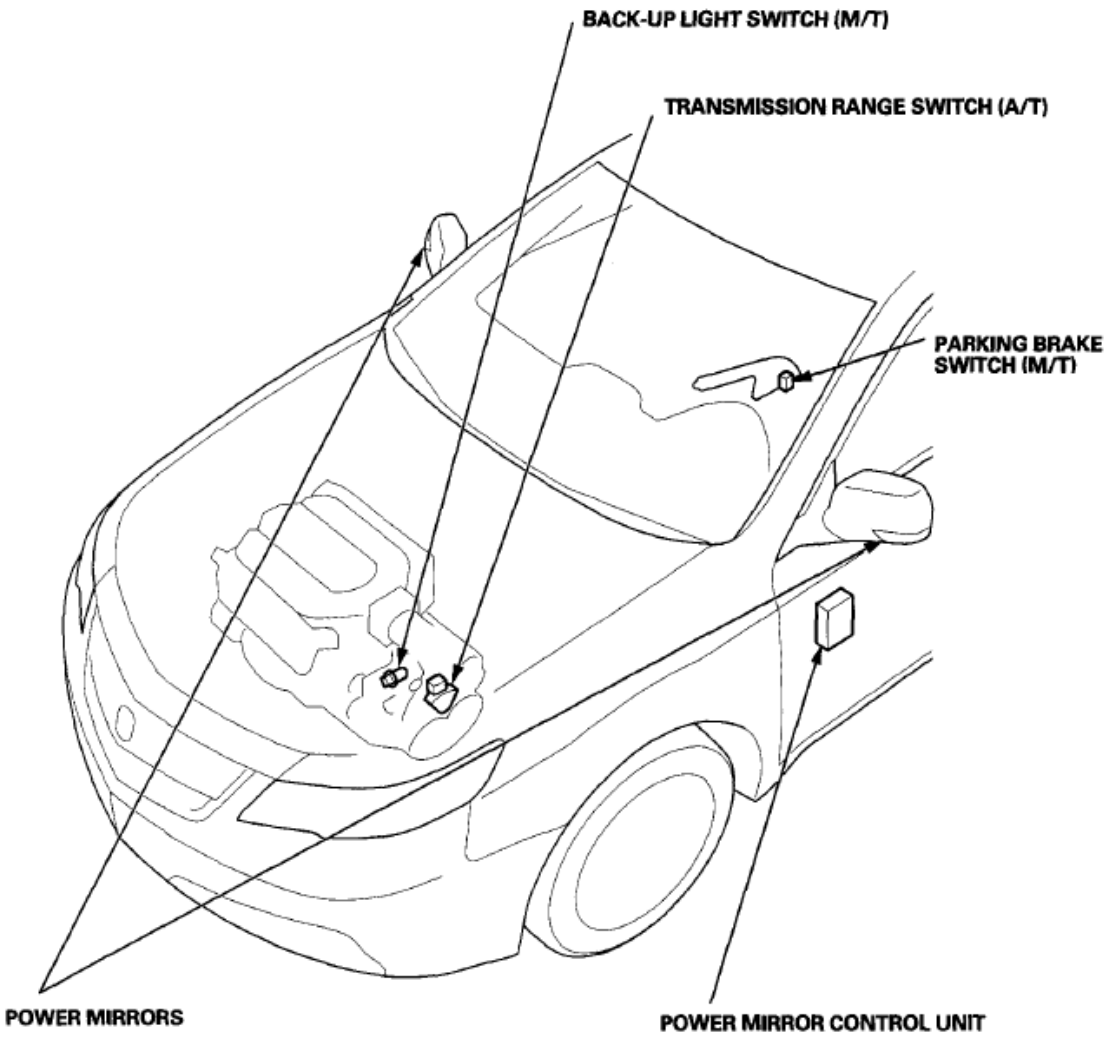


Fig. 1: Driver Position Memory System Components Location (1 Of 3)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

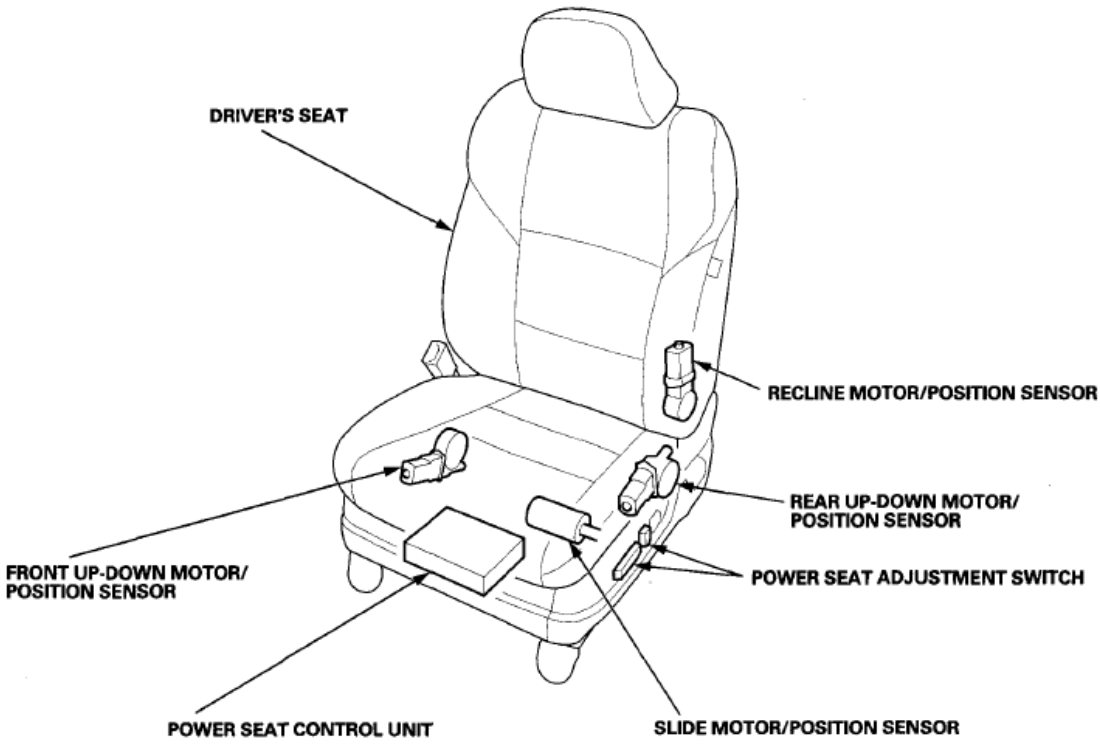


Fig. 2: Driver Position Memory System Components Location (2 Of 3)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

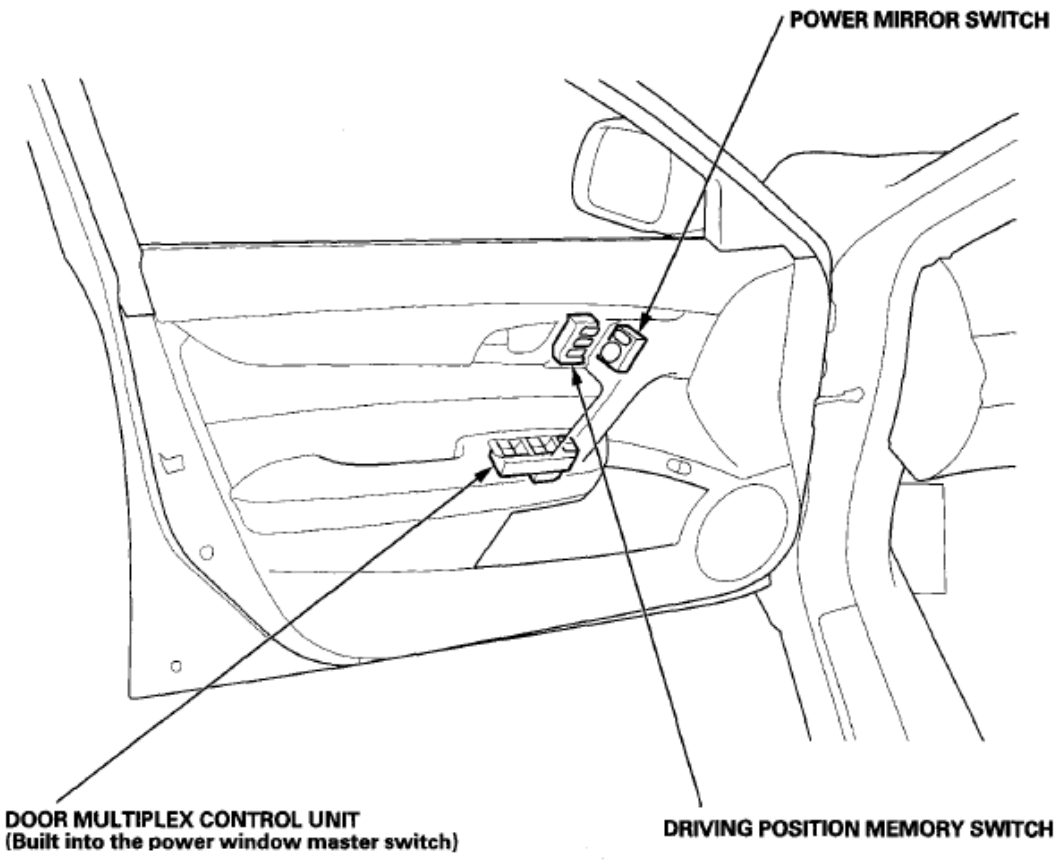


Fig. 3: Driver Position Memory System Components Location (3 Of 3)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

SYSTEM DESCRIPTION

The driver's seat and the power mirrors have a memory feature. All the adjustments can be memorized by pressing the SET button on the driving position memory switch, and then pressing one of two position buttons within 5 seconds. Pressing the appropriate position button will move the seat and the mirrors to the memorized positions.

Along with the seat and mirror settings, the power door lock settings can also be memorized based on which remote (Driver 1 or Driver 2) is used.

This system is integrated with the multiplex integrated control system, and has 9 wake-up and sleep modes. All digital signals are sent via shared B-CAN and UART communication lines. For more information about communication line and wake-up/sleep mode, refer to the Multiplex Integrated Control System Description (see **SYSTEM DESCRIPTION**).

Disconnecting the battery erases the memorized positions.

MEMORIZING A SEAT AND MIRROR POSITION

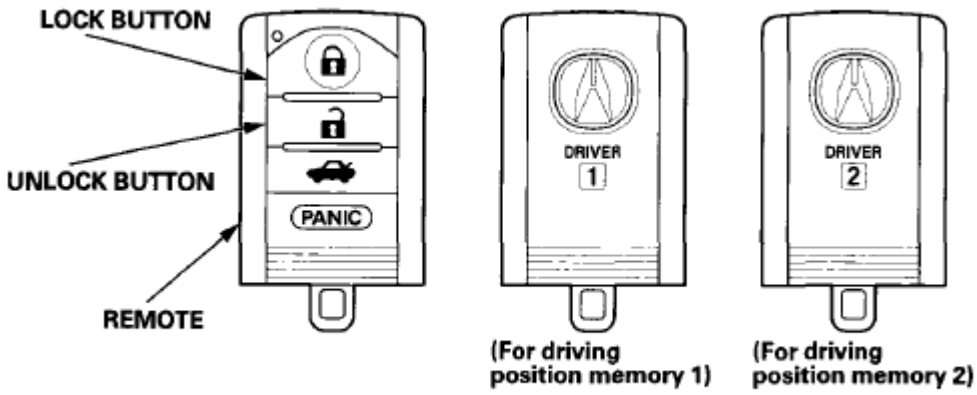
Move the seat and the mirrors to the desired position. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.

Press and hold the SET button on the driver's position memory switch. A single beep is heard and both of the green LEDs begin to flash. Press No. 1 or No. 2 to match the remote that is to be used. There are two more beeps confirming that the seat and the mirror are memorized. The green LED remains lit, unless the seat and the mirrors are moved from the memorized position.

MEMORIZED POSITION RECALL WITH THE REMOTES

After the seat and the mirror positions are memorized, the seat and mirror move to the position when the appropriate remote UNLOCK button is pressed and the driver's door is opened. When the seat and the mirrors move to the memorized position, the green LED corresponding with that remote stays lit until the position is changed or the key is turned to LOCK (0), or engine start/stop button is pressed to select the OFF mode.

Without Keyless Access System



View of the remote when the door key is removed.

Fig. 4: Driver Position Memory System Remote (Without Keyless Access System)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

With Keyless Access System



Fig. 5: Driver Position Memory System Remote (With Keyless Access System)

Courtesy of AMERICAN HONDA MOTOR CO., INC.

POWER SEAT POSITION SENSORS

Each motor has a sensor that detects motor rotation and sends a pulse to the power seat control unit when the motor rotates. The control unit stores the number of pulses in its memory, and the seat position is memorized.

POWER MIRROR POSITION SENSORS

Using of a tilt position sensor and a swing position sensor, the power mirror control circuit in the power mirror control unit detects the voltage changes created by the mirrors moving. These voltage changes are stored in memory, and the power mirror positions are memorized for each stored driving position.

REVERSE MIRROR CONTROL

When the vehicle is shifted to R or reverse (shift lever in R or reverse) with the power mirror selector switch in the Left (or the Right) position, the driver's (or the passenger's) side mirror tilts down automatically to help the driver's view. The mirror returns to the previous position when the shift lever is shifted out of R or reverse. The reverse mirror control is cancelled if the power mirror selector switch is in the center position.

CIRCUIT DIAGRAM

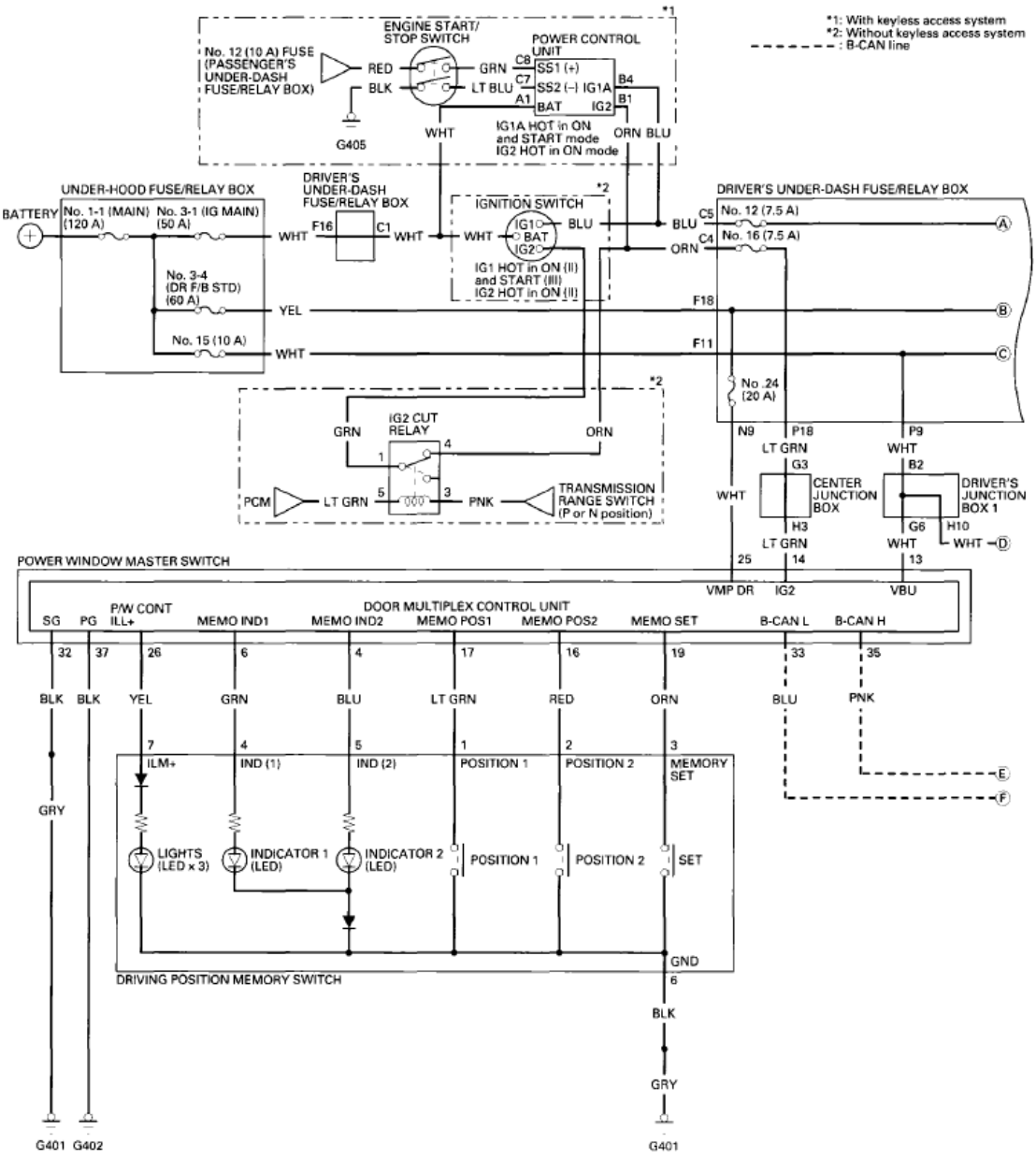


Fig. 6: Driving Position Memory System Circuit Diagram (1 Of 4)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

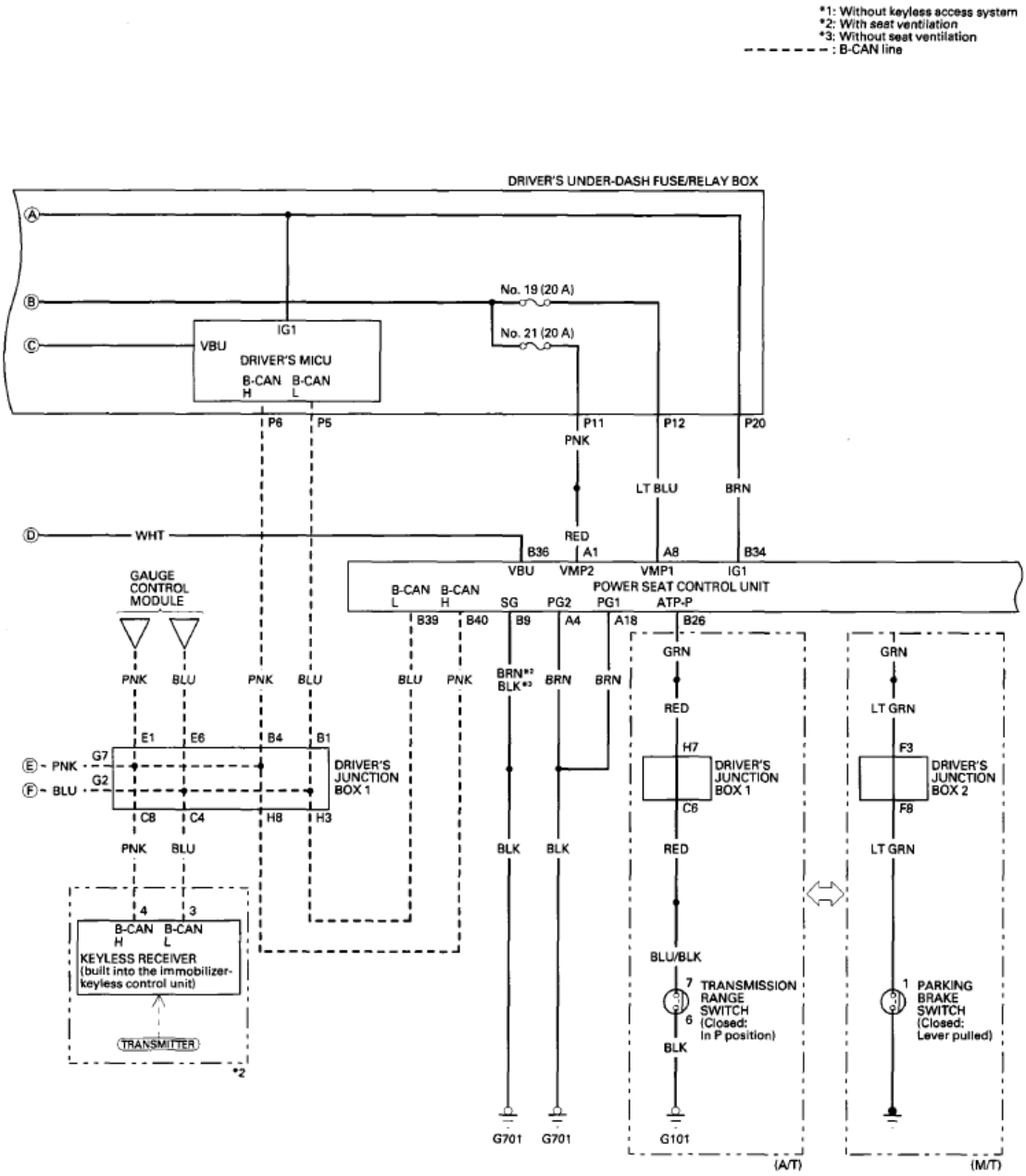


Fig. 7: Driving Position Memory System Circuit Diagram (2 Of 4)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

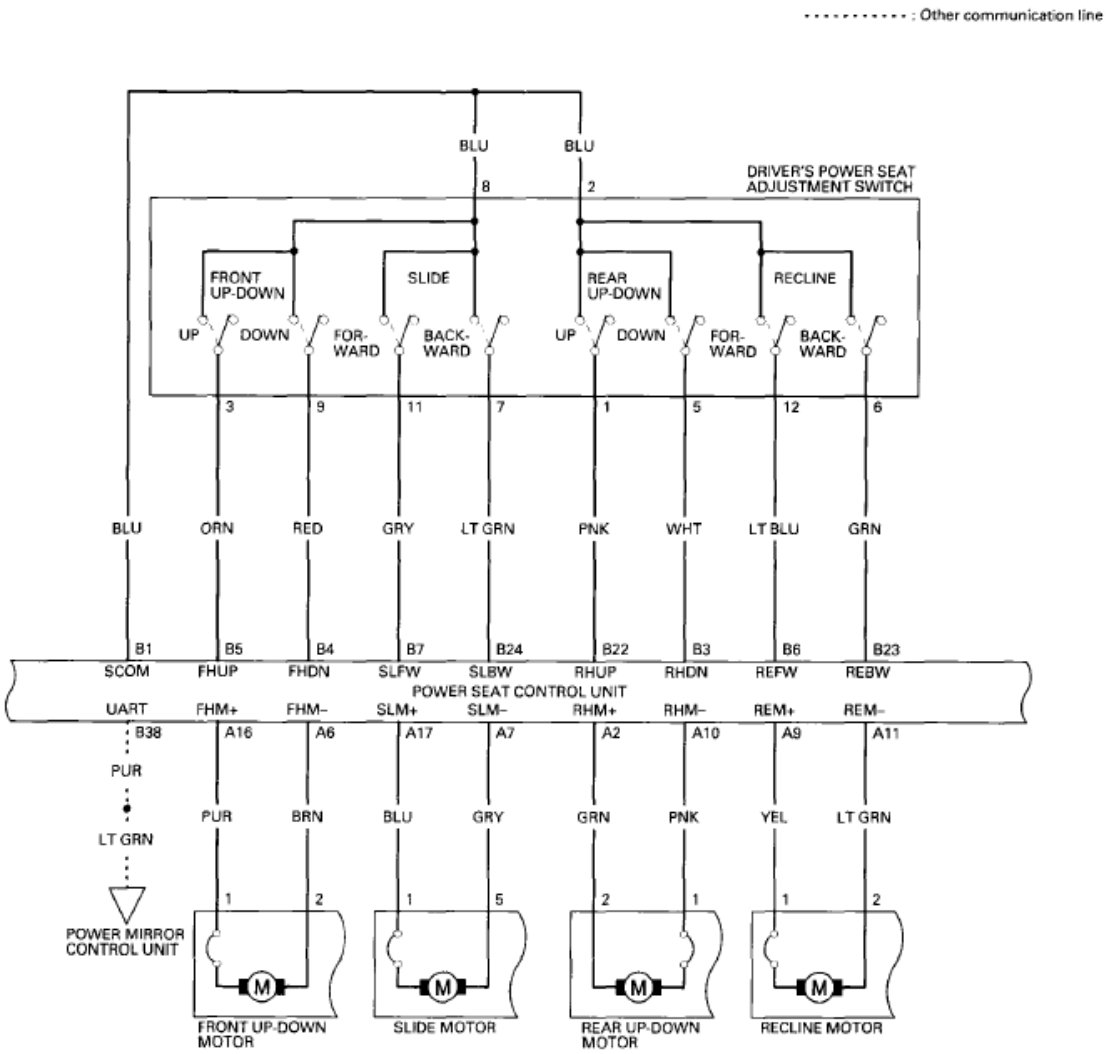


Fig. 8: Driving Position Memory System Circuit Diagram (3 Of 4)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

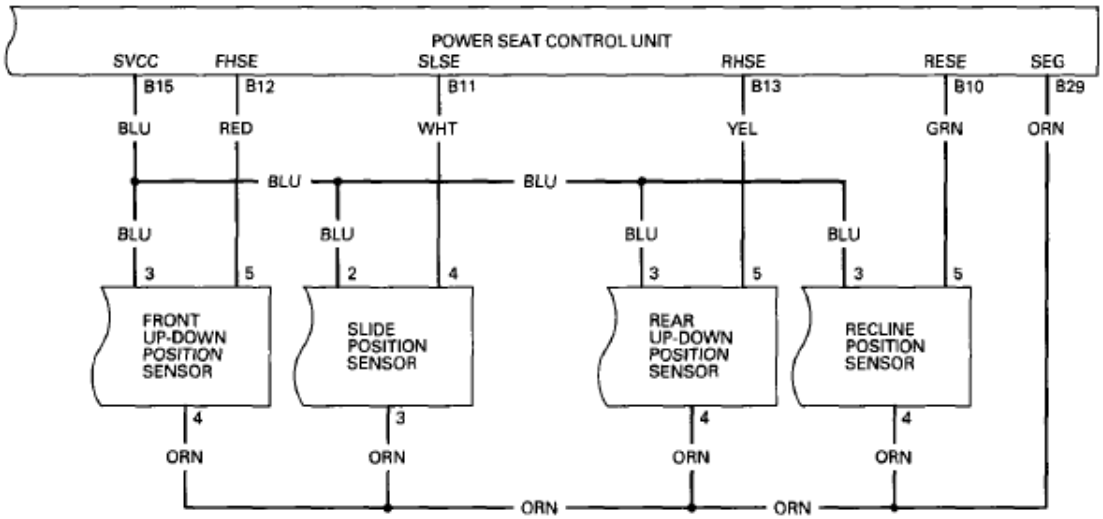


Fig. 9: Driving Position Memory System Circuit Diagram (4 Of 4)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

CIRCUIT DIAGRAM - POWER MIRROR

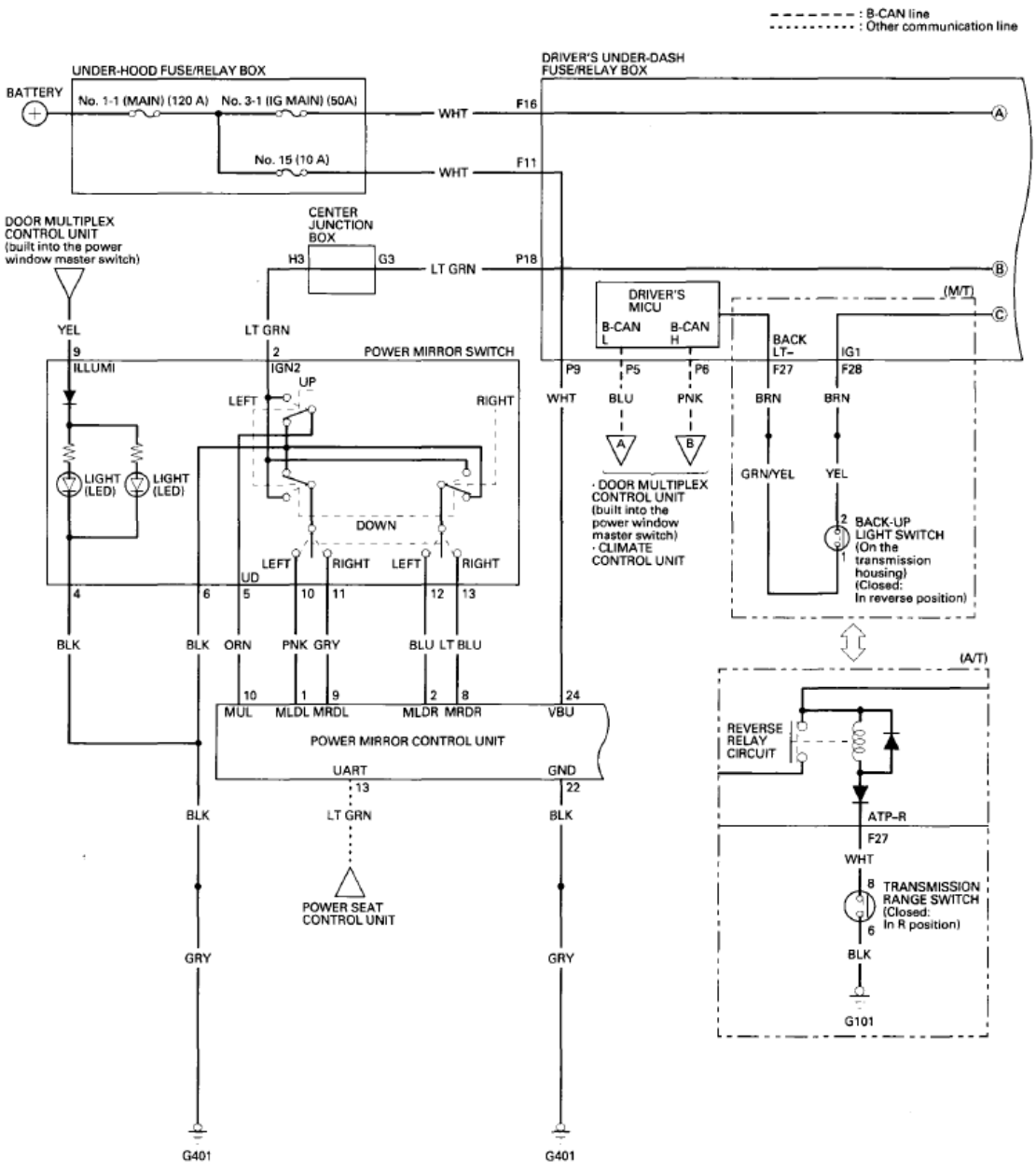


Fig. 10: Power Mirror Circuit Diagram (1 Of 3)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

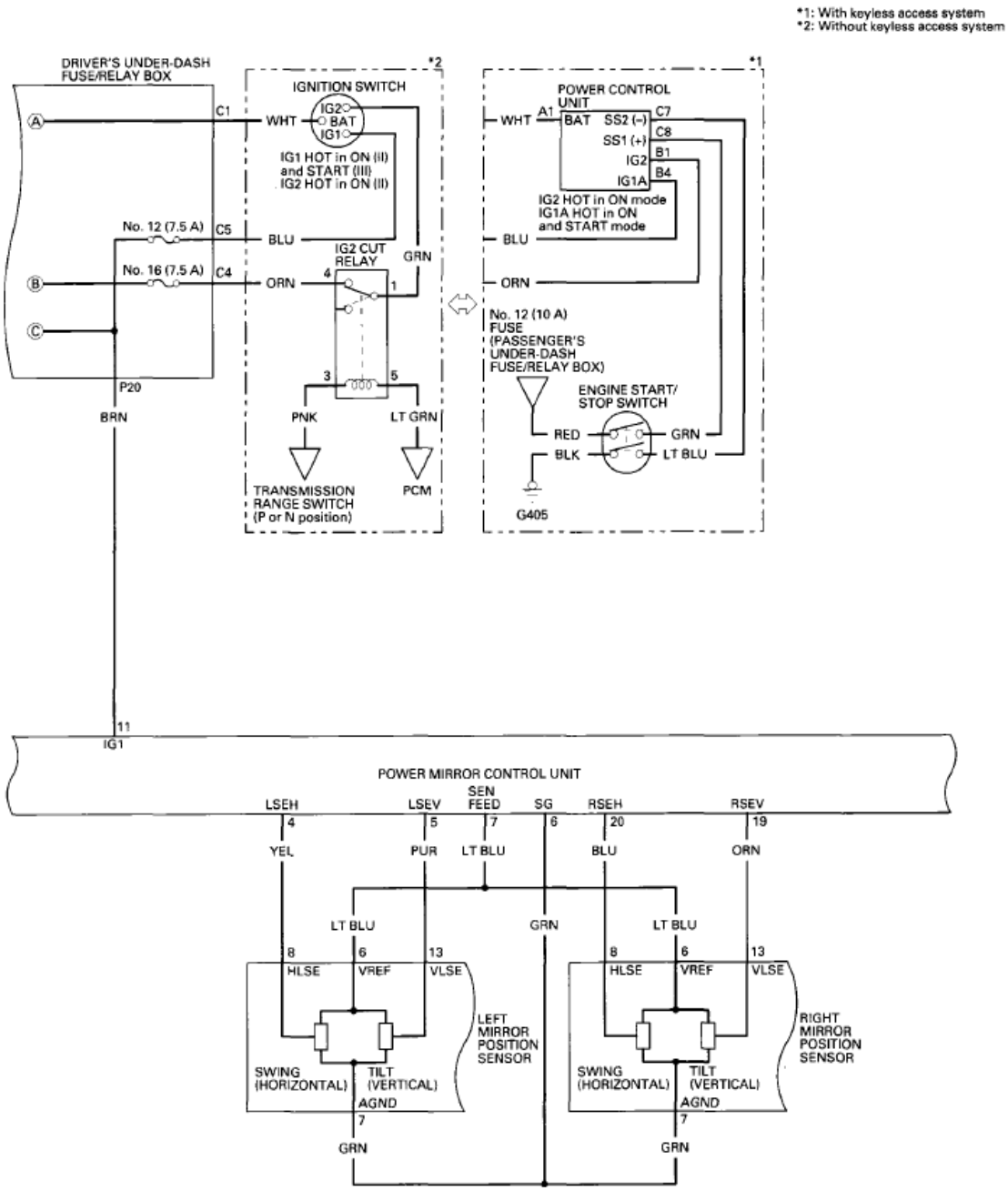


Fig. 11: Power Mirror Circuit Diagram (2 Of 3)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

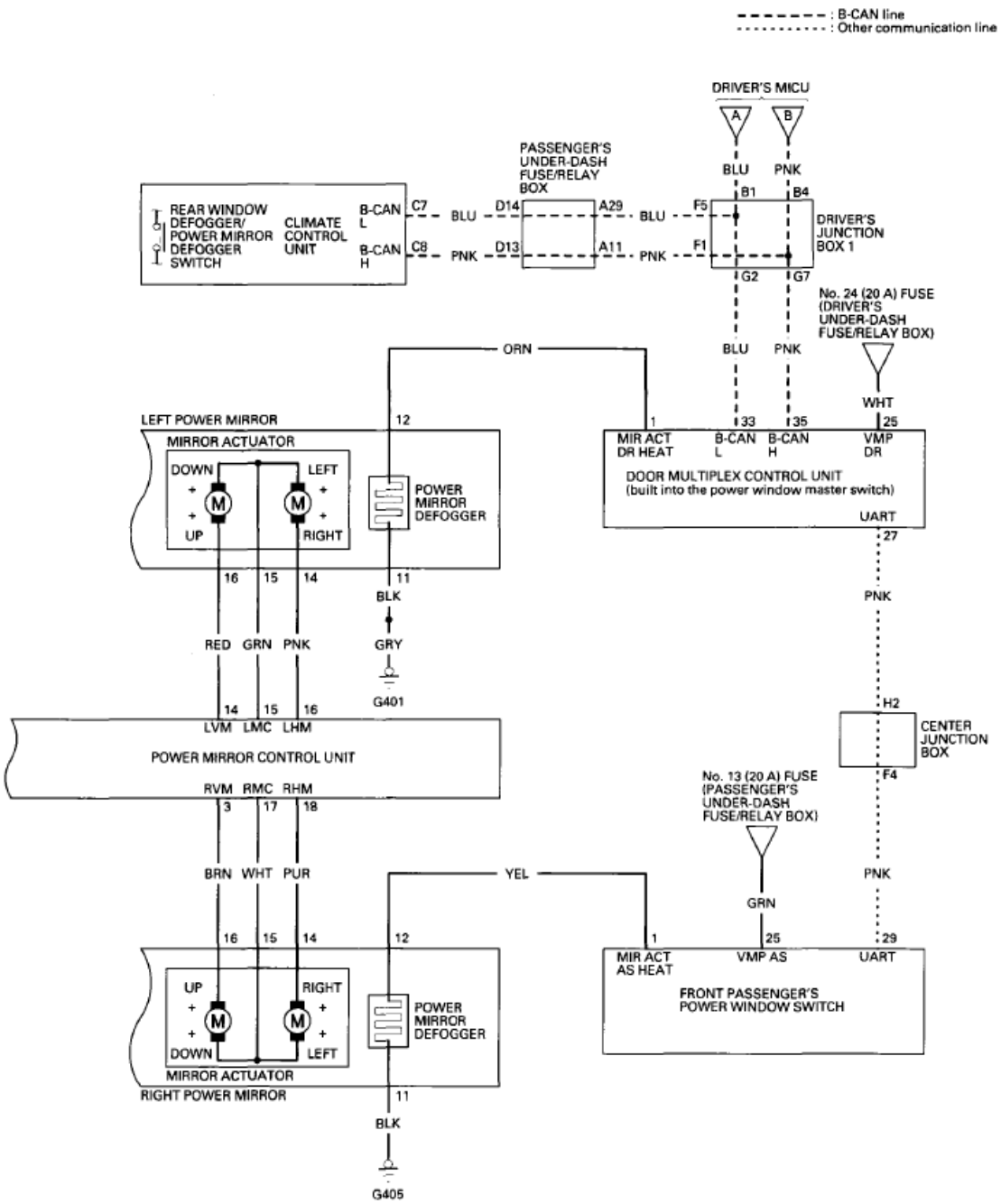


Fig. 12: Power Mirror Circuit Diagram (3 Of 3)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

DTC TROUBLESHOOTING

DTC B1802: POWER SEAT CONTROL UNIT FAILURE

NOTE: **If you are troubleshooting multiple DTCs, be sure to follow the instructions in B-CAN System Diagnosis Test Mode A (see TROUBLESHOOTING - B-CAN**

SYSTEM DIAGNOSIS TEST MODE A).

1. Clear the DTCs with the HDS.
2. Turn the ignition switch to LOCK (0) and then back to ON (II), or press the engine start/stop button to select the OFF mode and then the ON mode.
3. Wait for at least 6 seconds.
4. Check for DTCs with the HDS.

Is DTC B1802 indicated?

YES -Replace the power seat control unit (see **POWER SEAT CONTROL UNIT INPUT TEST/REPLACEMENT**).

NO -Intermittent failure, the system is OK at this time.

DTC B1825: POWER SEAT SLIDE MOTOR PULSE ERROR

NOTE: If you are troubleshooting multiple DTCs, be sure to follow the instructions in B-CAN System Diagnosis Test Mode A (see TROUBLESHOOTING - B-CAN SYSTEM DIAGNOSIS TEST MODE A).

1. Clear the DTCs with the HDS.
2. Turn the ignition switch to LOCK (0) and then back to ON (II), or press the engine start/stop button to select the OFF mode and then the ON mode.
3. Operate the power seat adjustment switch for several seconds in each direction.

NOTE: DTC B1825 is stored when the slide switch is operated more than 1 second after the seat moves to the most forward or backward position, even when the system is OK.

4. Check for DTCs with the HDS.

Is DTC B1825 indicated?

YES -Go to step 5.

NO -Intermittent failure, the system is OK at this time. Check for loose or poor connections.

5. Clear the DTCs with the HDS.

Is DTC B1836 also indicated?

YES -Go to the **DTC B1836 TROUBLESHOOTING**).

NO -Go to step 6.

6. Clear the DTCs with the HDS.

   Are DTCs B1826, B1827, and/or B1828 also indicated?

   YES -Go to step 17.

   NO -Go to step 7.

7. Turn the ignition switch to LOCK (0) and then back to ON (II), or press the engine start/stop button to select the OFF mode and then the ON mode.
8. Operate the slide switch for 2 seconds, and check the slide motor operation.

   Does the slide motor run smoothly?

   YES -Go to step 9.

   NO -Go to step 24.

9. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
10. Disconnect power seat control unit connector B (40P).
11. Disconnect the slide motor/position sensor 5P connector.
12. Check for continuity between power seat control unit connector B (40P) terminals No. 29 and No. 11 and slide motor/position sensor 5P connector terminals No. 3 and No. 4 respectively.

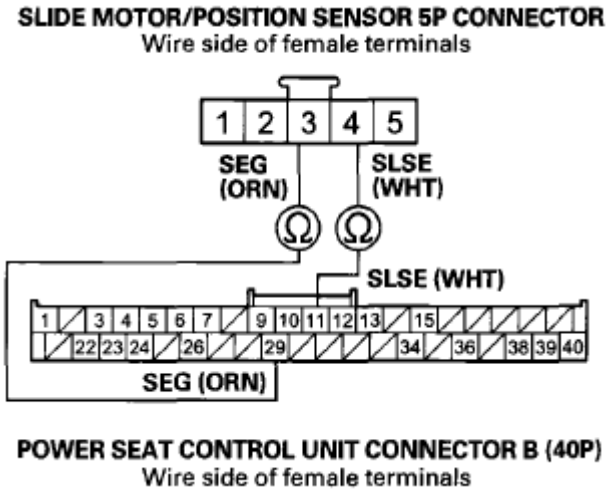


Fig. 13: Checking Continuity Between Power Seat Control Unit Connector B (40P) Terminals No. 29 And No. 11
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES -Go to step 13.

NO -Repair an open or high resistance in the wire.

13. Check for continuity between body ground and power seat control unit connector B (40P) terminal No. 11.

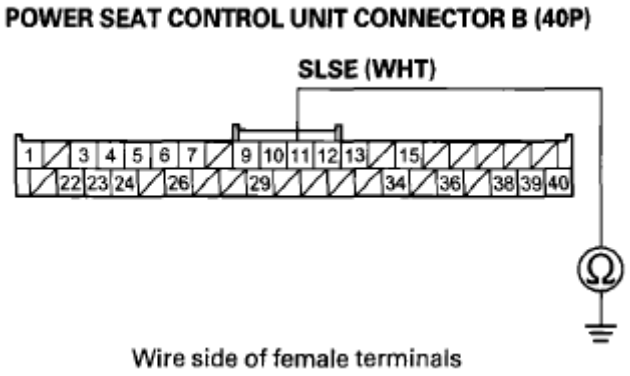


Fig. 14: Checking Continuity Between Body Ground And Power Seat Control Unit Connector B (40P) Terminal No. 11
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES -Repair a short to ground in the wire.

NO -Go to step 14.

14. Reconnect power seat control unit connector B (40P).
15. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
16. Measure the voltage between slide motor/position sensor 5P connector terminals No. 4 (+) and No. 3 (-).

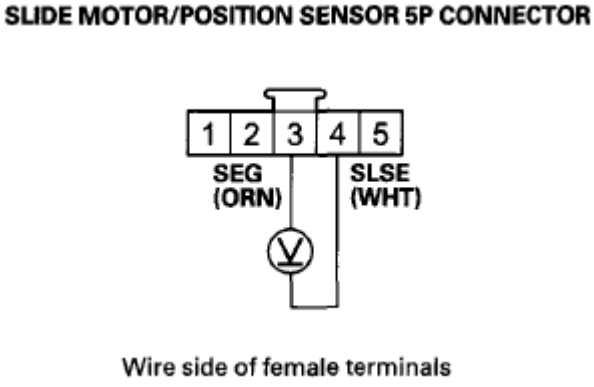


Fig. 15: Measuring Voltage Between Slide Motor/Position Sensor 5P Connector Terminals No. 4 (+) And No. 3 (-)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there about 5 V?

YES -Replace the slide motor/position sensor (see **FRONT SEAT SLIDE MOTOR REPLACEMENT**).

NO -If there is no voltage, replace the power seat control unit (see **POWER SEAT CONTROL UNIT INPUT TEST/REPLACEMENT**). If there is battery voltage, repair a short in the wire (sensor line).

17. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
18. Disconnect power seat control unit connector B (40P).
19. Disconnect the slide motor/position sensor 5P connector.
20. Check for continuity between power seat control unit connector B (40P) terminals No. 15 and No. 29 and slide motor/position sensor 5P connector terminals No. 2 and No. 3 respectively.

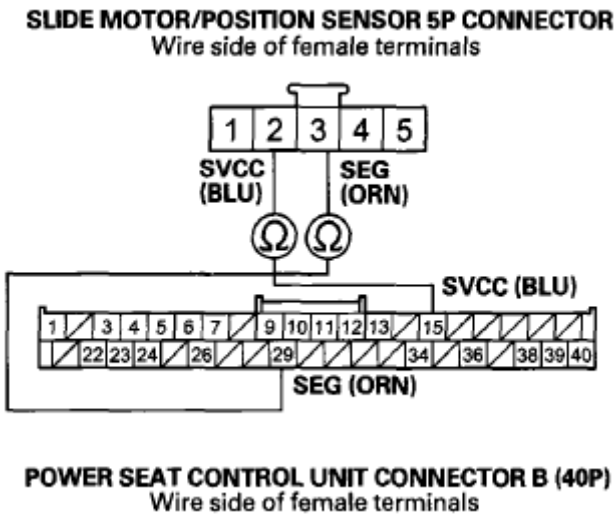


Fig. 16: Checking Continuity Between Power Seat Control Unit Connector B (40P) Terminals No. 15 And No. 29
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES -Go to step 21.

NO -Repair an open or high resistance in the wire.

21. Reconnect power seat control unit connector B (40P).
22. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
23. Measure the voltage between power seat control unit connector B (40P) terminals No. 15 and No. 29.

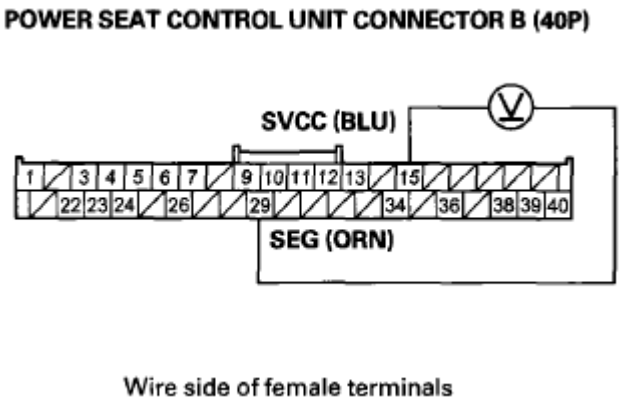


Fig. 17: Measuring Voltage Between Power Seat Control Unit Connector B (40P) Terminals No. 15 And No. 29
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there battery voltage when the slide switch is operated?

YES -Replace the slide motor/position sensor (see **FRONT SEAT SLIDE MOTOR REPLACEMENT**).

NO -Replace the power seat control unit (see **POWER SEAT CONTROL UNIT INPUT TEST/REPLACEMENT**).

24. Check the No. 19 (20 A) fuse in the driver's under-dash fuse/relay box.

    Is the fuse OK?

    YES -Go to step 25.

    NO -Replace the fuse. If the fuse blows again, repair the short to ground on the No. 19 (20 A) fuse circuit.

25. Measure the voltage between body ground and power seat control unit connector A (18P) terminal No. 8.

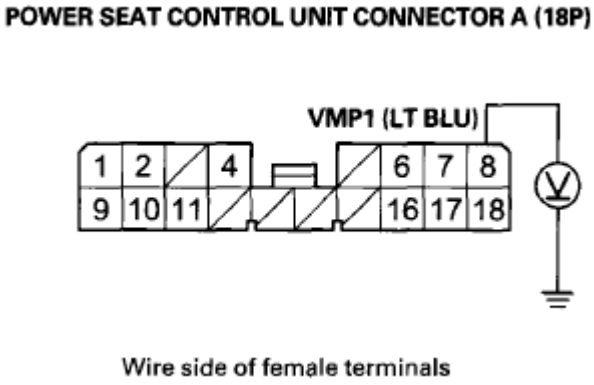


Fig. 18: Measuring Voltage Between Body Ground And Power Seat Control Unit Connector A

(18P) Terminal No. 8
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there battery voltage?

YES -Go to step 26.

NO -Repair an open or high resistance in the wire between the driver's under-dash fuse/relay box and the power seat control unit.

26. Measure the voltage between body ground at power seat control unit connector A (18P) terminal No. 18 when operating the slide switch.

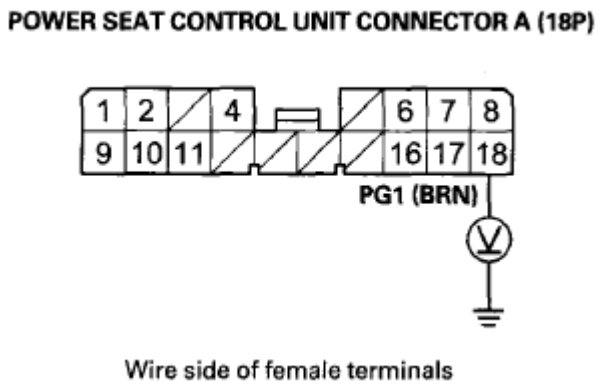


Fig. 19: Measuring Voltage Between Body Ground At Power Seat Control Unit Connector A (18P) Terminal No. 18
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there 0.2 V or more?

YES -Repair an open or high resistance in the wire between the power seat control unit and body ground (G701).

NO -Go to step 27.

27. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
28. Disconnect power seat control unit connector A (18P).
29. Disconnect the slide motor/position sensor 5P connector.
30. Check for continuity between power seat control unit connector A (18P) terminals No. 17 and No. 7 and slide motor/position sensor 5P connector terminals No. 1 and No. 5 respectively.

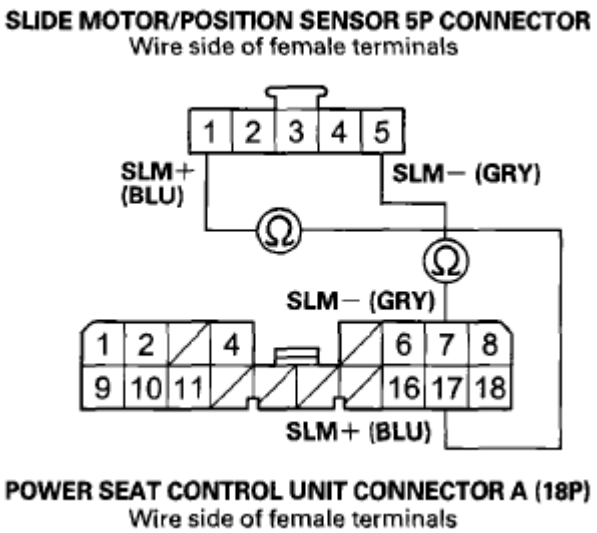


Fig. 20: Checking Continuity Between Power Seat Control Unit Connector A (18P) Terminals No. 17 And No. 7
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES -Go to step 31.

NO -Repair an open or high resistance in the wire.

31. Check for continuity between body ground and slide motor/position sensor 5P connector terminals No. 1 and No. 5 individually.

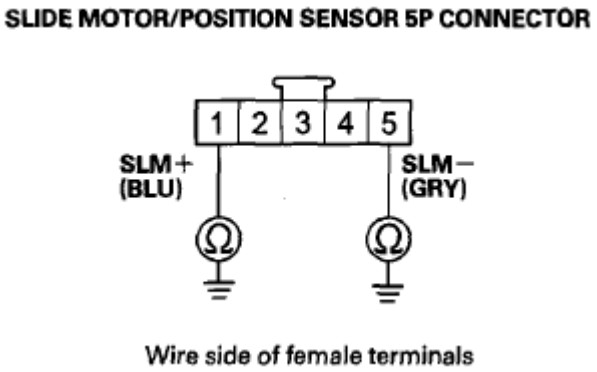


Fig. 21: Checking Continuity Between Body Ground And Slide Motor/Position Sensor 5P Connector Terminals No. 1 And No. 5
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES -Repair a short to ground in the wire.

NO -Go to step 32.

32. Test the slide motor (see **DRIVER'S POWER SEAT MOTOR TEST**).

    Is the motor OK?

    YES -Replace the power seat control unit (see **POWER SEAT CONTROL UNIT INPUT TEST/REPLACEMENT**).

    NO -Replace the slide motor/position sensor (see **FRONT SEAT SLIDE MOTOR REPLACEMENT**).

DTC B1826: POWER SEAT FRONT UP-DOWN MOTOR PULSE ERROR

NOTE: If you are troubleshooting multiple DTCs, be sure to follow the instructions in B-CAN System Diagnosis Test Mode A (see TROUBLESHOOTING - B-CAN SYSTEM DIAGNOSIS TEST MODE A).

1. Clear the DTCs with the HDS.
2. Turn the ignition switch to LOCK (0) and then back to ON (II), or press the engine start/stop button to select the OFF mode and then the ON mode.
3. Operate the power seat adjustment switch for several seconds in each direction.

   NOTE: DTC B1826 is stored when the front up-down switch is operated more than 1 second after the seat moves to the most up or down position, even when the system is OK.

4. Check for DTCs with the HDS.

   Is DTC B1826 indicated?

   YES -Go to step 5.

   NO -Intermittent failure, the system is OK at this time. Check for loose or poor connections.

5. Clear the DTCs with the HDS.

   Is DTC B1836 also indicated?

   YES -Go to the **DTC B1836 TROUBLESHOOTING**).

   NO -Go to step 6.

6. Clear the DTCs with the HDS.

   Are DTCs B1825, B1827, and/or B1828 also indicated?

YES -Go to step 17.

NO -Go to step 7.

7. Turn the ignition switch to LOCK (0) and then back to ON (II), or press the engine start/stop button to select the OFF mode and then the ON mode.
8. Operate the front up-down switch for 2 seconds, and check the front up-down motor operation.

   Does the front up-down motor run smoothly?

   YES -Go to step 9.

   NO -Go to step 24.

9. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
10. Disconnect power seat control unit connector B (40P).
11. Disconnect the front up-down motor/position sensor 5P connector.
12. Check for continuity between power seat control unit connector B (40P) terminals No. 12 and No. 29 and front up-down motor/position sensor 5P connector terminals No. 5 and No. 4 respectively.

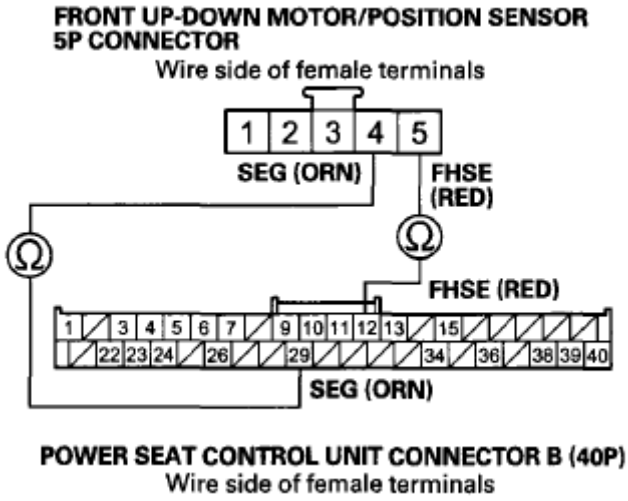


Fig. 22: Checking Continuity Between Power Seat Control Unit Connector B (40P) Terminals No. 12 And No. 29
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES -Go to step 13.

NO -Repair an open or high resistance in the wire.

13. Check for continuity between body ground and power seat control unit connector B (40P) terminal No. 12.

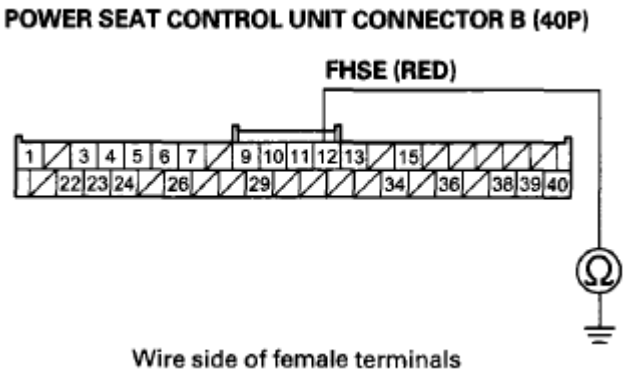


Fig. 23: Checking Continuity Between Body Ground And Power Seat Control Unit Connector B (40P) Terminal No. 12
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES -Repair a short to ground in the wire.

NO -Go to step 14.

14. Reconnect power seat control unit connector B (40P).
15. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
16. Measure the voltage between front up-down motor/position sensor 5P connector terminals No. 5 (+) and No. 4 (-).

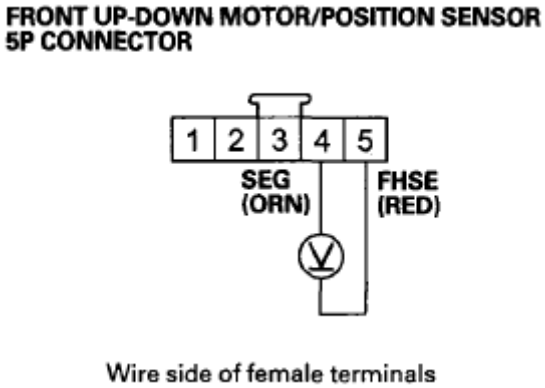


Fig. 24: Measuring Voltage Between Front Up-Down Motor/Position Sensor 5P Connector Terminals No. 5 (+) And No. 4 (-)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there about 5 V?

YES -Faulty front up-down motor/position sensor; replace the seat frame assembly (see **FRONT SEAT FRAME REPLACEMENT**).

NO -If there is no voltage, replace the power seat control unit (see **POWER SEAT CONTROL UNIT INPUT TEST/REPLACEMENT**). If there is battery voltage, repair a short in the wire (sensor line).

17. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
18. Disconnect power seat control unit connector B (40P).
19. Disconnect the front up-down motor/position sensor 5P connector.
20. Check for continuity between power seat control unit connector B (40P) terminals No. 15 and No. 29 and front up-down motor/position sensor 5P connector terminals No. 3 and No. 4 respectively.

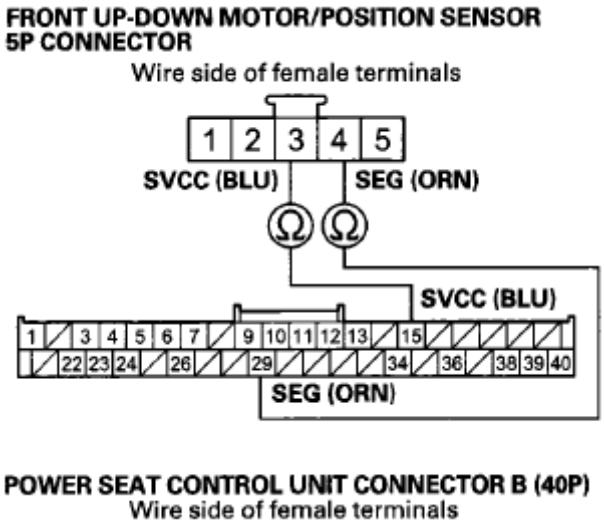


Fig. 25: Checking Continuity Between Power Seat Control Unit Connector B (40P) Terminals No. 15 And No. 29
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES -Go to step 21.

NO -Repair an open or high resistance in the wire.

21. Reconnect power seat control unit connector B (40P).
22. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
23. Measure the voltage between power seat control unit connector B (40P) terminals No. 15 and No. 29.

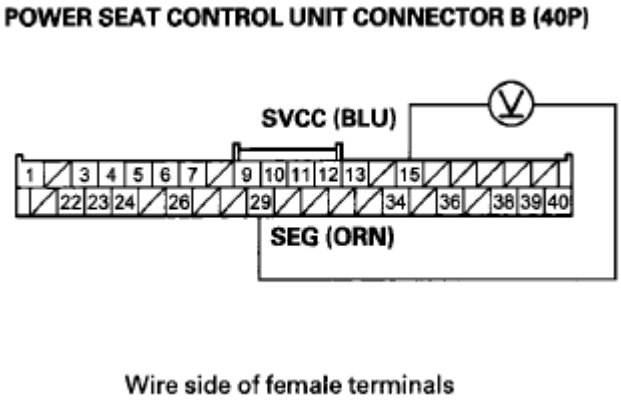


Fig. 26: Measuring Voltage Between Power Seat Control Unit Connector B (40P) Terminals No. 15 And No. 29
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there battery voltage when the front up-down switch is operated?

YES -Faulty front up-down motor/position sensor; replace the seat frame assembly (see **FRONT SEAT FRAME REPLACEMENT**).

NO -Replace the power seat control unit (see **POWER SEAT CONTROL UNIT INPUT TEST/REPLACEMENT**).

24. Check the No. 19 (20 A) fuse in the driver's under-dash fuse/relay box.

    Is the fuse OK?

    YES -Go to step 25.

    NO -Replace the fuse. If the fuse blows again, repair the short to ground on the No. 19 (20 A) fuse circuit.

25. Measure the voltage between body ground and power seat control unit connector A (18P) terminal No. 8.

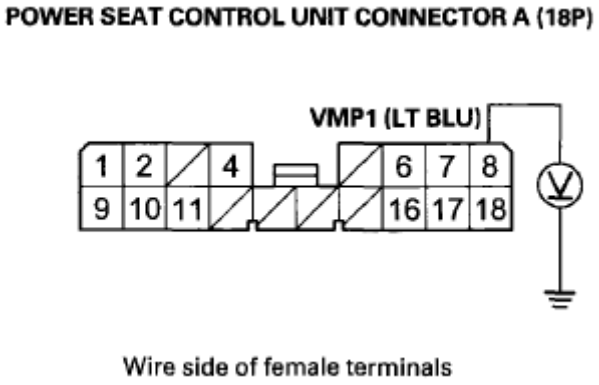


Fig. 27: Measuring Voltage Between Body Ground And Power Seat Control Unit Connector A

(18P) Terminal No. 8
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there battery voltage?

YES -Go to step 26.

NO -Repair an open or high resistance in the wire between the driver's under-dash fuse/relay box and the power seat control unit.

26. Measure the voltage between body ground at power seat control unit connector A (18P) terminal No. 18 when operating the front up-down switch.

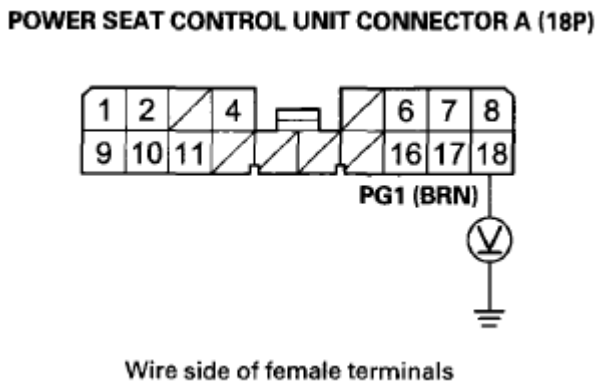


Fig. 28: Measuring Voltage Between Body Ground At Power Seat Control Unit Connector A (18P) Terminal No. 18
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there 0.2 V or more?

YES -Repair an open or high resistance in the wire between the power seat control unit and body ground (G701).

NO -Go to step 27.

27. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
28. Disconnect power seat control unit connector A (18P).
29. Disconnect the front up-down motor/position sensor 5P connector.
30. Check for continuity between power seat control unit connector A (18P) terminals No. 6 and No. 16 and front up-down motor/position sensor 5P connector terminals No. 2 and No. 1 respectively.

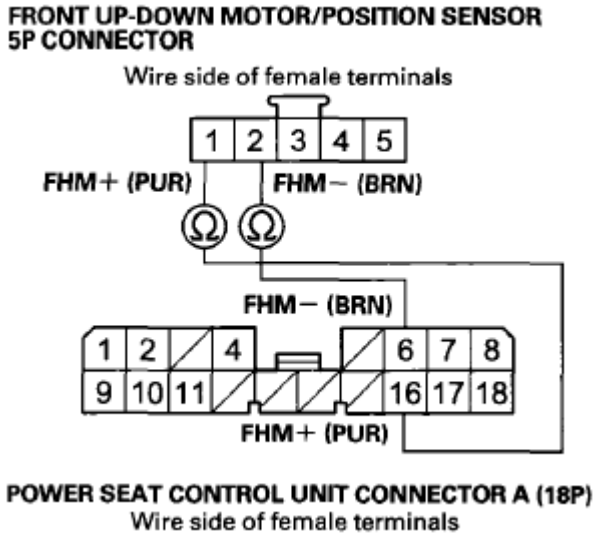


Fig. 29: Checking Continuity Between Power Seat Control Unit Connector A (18P) Terminals No. 6 And No. 16
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES -Go to step 31.

NO -Repair an open or high resistance in the wire.

31. Check for continuity between body ground and front up-down motor/position sensor 5P connector terminals No. 1 and No. 2 individually.

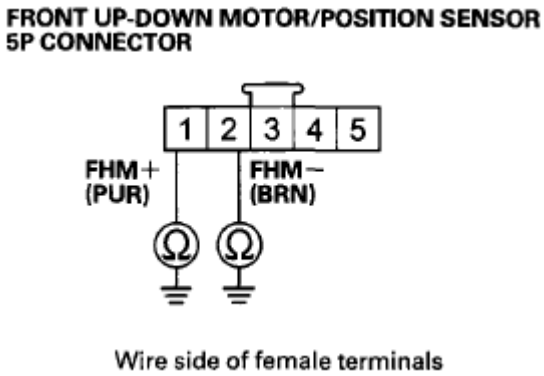


Fig. 30: Checking Continuity Between Body Ground And Front Up-Down Motor/Position Sensor 5P Connector Terminals
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES -Repair a short to ground in the wire.

NO -Go to step 32.

32. Test the front up-down motor (see **DRIVER'S POWER SEAT MOTOR TEST**).

    Is the motor OK?

    YES -Replace the power seat control unit (see **POWER SEAT CONTROL UNIT INPUT TEST/REPLACEMENT**).

    NO -Faulty front up-down motor/position sensor; replace the seat frame assembly (see **FRONT SEAT FRAME REPLACEMENT**).

DTC B1827: POWER SEAT REAR UP-DOWN MOTOR PULSE ERROR

NOTE: If you are troubleshooting multiple DTCs, be sure to follow the instructions in B-CAN System Diagnosis Test Mode A (see TROUBLESHOOTING - B-CAN SYSTEM DIAGNOSIS TEST MODE A).

1. Clear the DTCs with the HDS.
2. Turn the ignition switch to LOCK (0) and then back to ON (II), or press the engine start/stop button to select the OFF mode and then the ON mode.
3. Operate the power seat adjustment switch for several seconds in each direction.

   NOTE: DTC B1827 is stored when the rear up-down switch is operated more than 1 second after the seat moves to the most up or down position, even when the system is OK.

4. Check for DTCs with the HDS.

   Is DTC B1827 indicated?

   YES -Go to step 5.

   NO -Intermittent failure, the system is OK at this time. Check for loose or poor connections.

5. Clear the DTCs with the HDS.

   Is DTC B1836 also indicated?

   YES -Go to the **DTC B1836 TROUBLESHOOTING**).

   NO -Go to step 6.

6. Clear the DTCs with the HDS.

   Are DTCs B1825, B1826, and/or B1828 also indicated?

YES -Go to step 17.

NO -Go to step 7.

7. Turn the ignition switch to LOCK (0) and then back to ON (II), or press the engine start/stop button to select the OFF mode and then the ON mode.
8. Operate the rear up-down switch for 2 seconds, and check the rear up-down motor operation.

   Does the rear up-down motor run smoothly?

   YES -Go to step 9.

   NO -Go to step 24.

9. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
10. Disconnect power seat control unit connector B (40P).
11. Disconnect the rear up-down motor/position sensor 5P connector.
12. Check for continuity between power seat control unit connector B (40P) terminals No. 13 and No. 29 and rear up-down motor/position sensor 5P connector terminals No. 5 and No. 4 respectively.

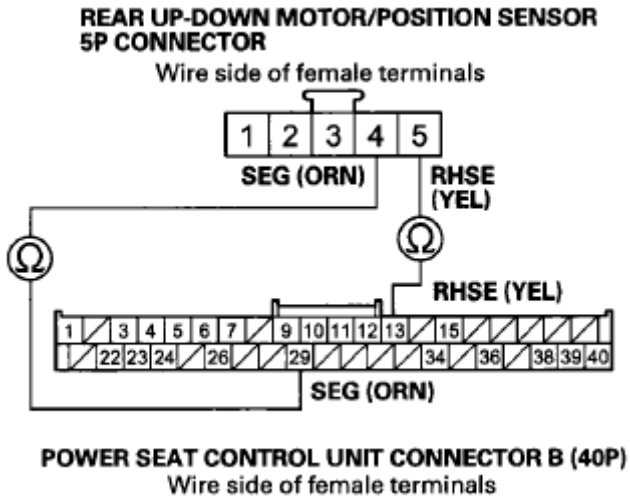


Fig. 31: Checking Continuity Between Power Seat Control Unit Connector B (40P) Terminals No. 13 And No. 29
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES -Go to step 13.

NO -Repair an open or high resistance in the wire.

13. Check for continuity between body ground and power seat control unit connector B (40P) terminal No. 13.

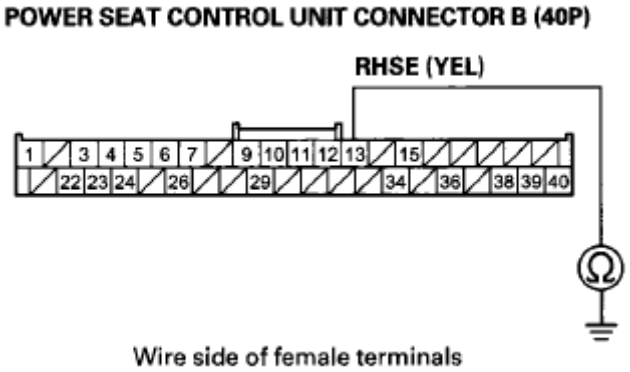


Fig. 32: Checking Continuity Between Body Ground And Power Seat Control Unit Connector B (40P) Terminal No. 13
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES -Repair a short to ground in the wire.

NO -Go to step 14.

14. Reconnect power seat control unit connector B (40P).
15. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
16. Measure the voltage between rear up-down motor/position sensor 5P connector terminals No. 5 (+) and No. 4 (-).

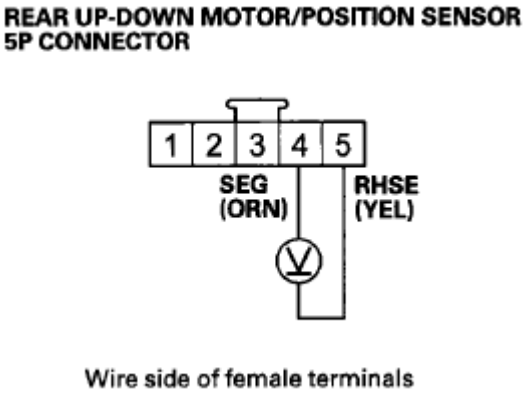


Fig. 33: Measuring Voltage Between Rear Up-Down Motor/Position Sensor 5P Connector Terminals No. 5 (+) And No. 4 (-)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there about 5 V?

YES -Faulty rear up-down motor/position sensor; replace the seat frame assembly (see **FRONT SEAT FRAME REPLACEMENT**).

NO -If there is no voltage, replace the power seat control unit (see **POWER SEAT CONTROL UNIT INPUT TEST/REPLACEMENT**). If there is battery voltage, repair a short in the wire (sensor line).

17. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
18. Disconnect power seat control unit connector B (40P).
19. Disconnect the rear up-down motor/position sensor 5P connector.
20. Check for continuity between power seat control unit connector B (40P) terminals No. 15 and No. 29 and rear up-down motor/position sensor 5P connector terminals No. 3 and No. 4 respectively.

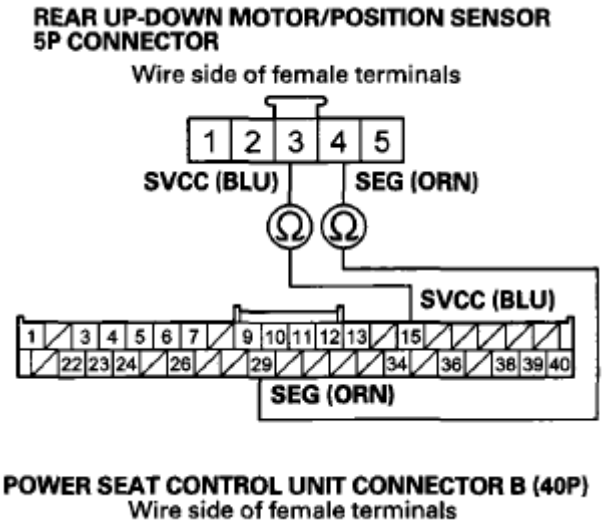


Fig. 34: Checking Continuity Between Power Seat Control Unit Connector B (40P) Terminals No. 15 And No. 29
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES -Go to step 21.

NO -Repair an open or high resistance in the wire.

21. Reconnect power seat control unit connector B (40P).
22. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
23. Measure the voltage between power seat control unit connector B (40P) terminals No. 15 and No. 29.

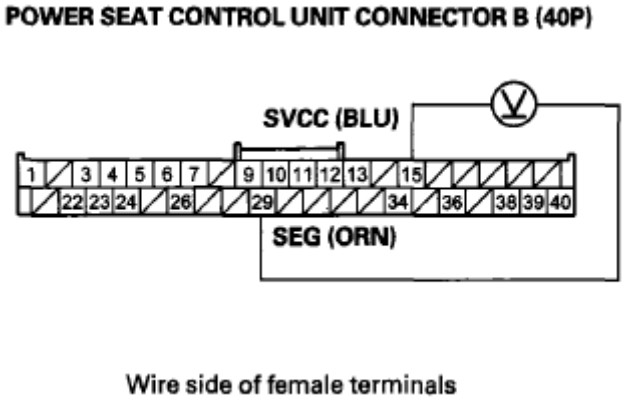


Fig. 35: Measuring Voltage Between Power Seat Control Unit Connector B (40P) Terminals
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there battery voltage when the rear up-down switch is operated?

YES -Faulty rear up-down motor/position sensor; replace the seat frame assembly (see **FRONT SEAT FRAME REPLACEMENT**).

NO -Replace the power seat control unit (see **POWER SEAT CONTROL UNIT INPUT TEST/REPLACEMENT**).

24. Check the No. 21 (20 A) fuse in the driver's under-dash fuse/relay box.

    Is the fuse OK?

    YES -Go to step 25.

    NO -Replace the fuse. If the fuse blows again, repair the short to ground on the No. 21 (20 A) fuse circuit.

25. Measure the voltage between body ground and power seat control unit connector A (18P) terminal No. 1.

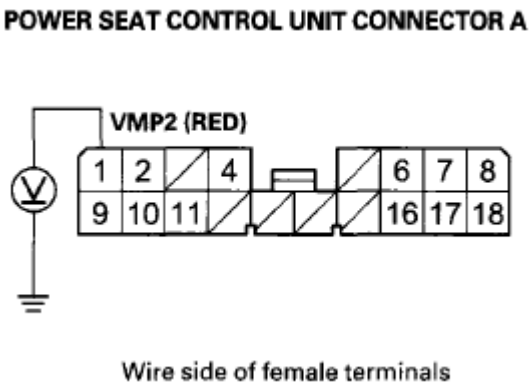


Fig. 36: Measuring Voltage Between Body Ground And Power Seat Control Unit Connector A (18P) Terminal No. 1

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there battery voltage?

YES -Go to step 26.

NO -Repair an open or high resistance in the wire between the driver's under-dash fuse/relay box and the power seat control unit.

26. Measure the voltage between body ground at power seat control unit connector A (18P) terminal No. 4 when operating the rear up-down switch.

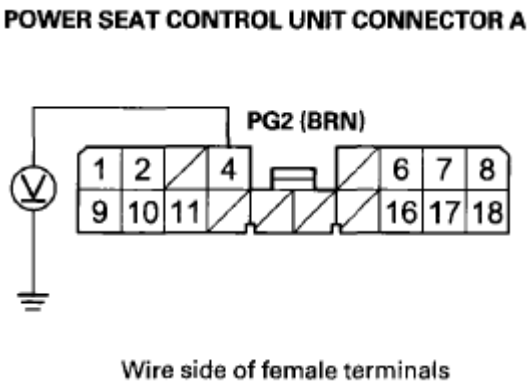


Fig. 37: Measuring Voltage Between Body Ground At Power Seat Control Unit Connector A (18P) Terminal No. 4
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there 0.2 V or more?

YES -Repair an open or high resistance in the wire between the power seat control unit and body ground (G701).

NO -Go to step 27.

27. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
28. Disconnect power seat control unit connector A (18P).
29. Disconnect the rear up-down motor/position sensor 5P connector.
30. Check for continuity between power seat control unit connector A (18P) terminals No. 2 and No. 10 and rear up-down motor/position sensor 5P connector terminals No. 2 and No. 1 respectively.

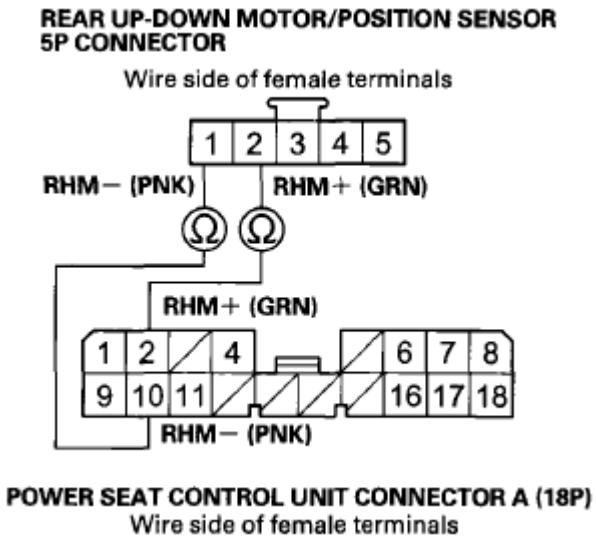


Fig. 38: Checking Continuity Between Power Seat Control Unit Connector A (18P) Terminals No. 2 And No. 10
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES -Go to step 31.

NO -Repair an open or high resistance in the wire.

31. Check for continuity between body ground and rear up-down motor/position sensor 5P connector terminals No. 1 and No. 2 individually.

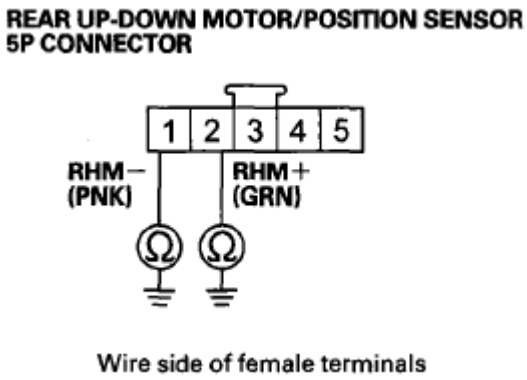


Fig. 39: Checking Continuity Between Body Ground And Rear Up-Down Motor/Position Sensor 5P Connector Terminals
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES -Repair a short to ground in the wire.

NO -Go to step 32.

32. Test the rear up-down motor (see **DRIVER'S POWER SEAT MOTOR TEST**).

    Is the motor OK?

    YES -Replace the power seat control unit (see **POWER SEAT CONTROL UNIT INPUT TEST/REPLACEMENT**).

    NO -Faulty rear up-down motor/position sensor; replace the seat frame assembly (see **FRONT SEAT FRAME REPLACEMENT**).

DTC B1828: POWER SEAT RECLINE MOTOR PULSE ERROR

NOTE: If you are troubleshooting multiple DTCs, be sure to follow the instructions in B-CAN System Diagnosis Test Mode A (see TROUBLESHOOTING - B-CAN SYSTEM DIAGNOSIS TEST MODE A).

1. Clear the DTCs with the HDS.
2. Turn the ignition switch to LOCK (0) and then back to ON (II), or press the engine start/stop button to select the OFF mode and then the ON mode.
3. Operate the power seat adjustment switch for several seconds in each direction.

   NOTE: DTC B1828 is stored when the recline switch is operated more than 1 second after the seat moves to the most forward or backward position, even when the system is OK.

4. Check for DTCs with the HDS.

   Is DTC B1828 indicated?

   YES -Go to step 5.

   NO -Intermittent failure, the system is OK at this time. Check for loose or poor connections.

5. Clear the DTCs with the HDS.

   Is DTC B1836 also indicated?

   YES -Go to the **DTC B1836 TROUBLESHOOTING**.

   NO -Go to step 6.

6. Clear the DTCs with the HDS.

   Are DTCs B1825, B1826, and/or B1827 also indicated?

YES -Go to step 18.

NO -Go to step 7.

7. Turn the ignition switch to LOCK (0) and then back to ON (II), or press the engine start/stop button to select the OFF mode and then the ON mode.
8. Operate the recline switch for 2 seconds, and check the recline motor operation.

   Does the recline motor run smoothly?

   YES -Go to step 9.

   NO -Go to step 24.

9. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
10. Disconnect power seat control unit connector B (40P).
11. Disconnect the recline motor/position sensor 5P connector.
12. Check for continuity between power seat control unit connector B (40P) terminals No. 10 and No. 29 and recline motor/position sensor 5P connector terminals No. 5 and No. 4 respectively.

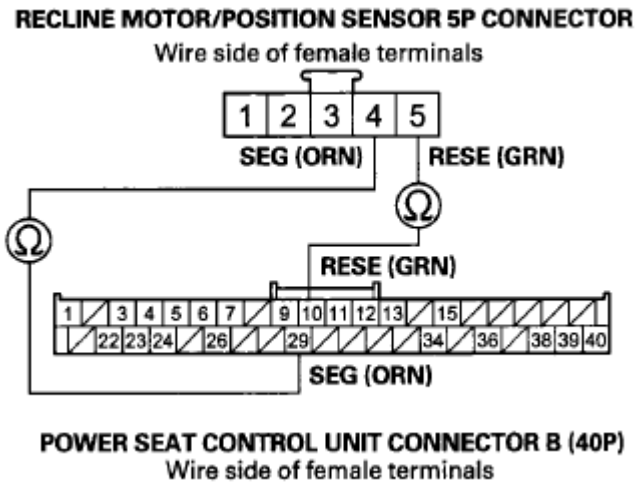


Fig. 40: Checking Continuity Between Power Seat Control Unit Connector B (40P) Terminals No. 10 And No. 29
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES -Go to step 13.

NO -Repair an open or high resistance in the wire.

13. Check for continuity between body ground and power seat control unit connector B (40P) terminal No. 10.

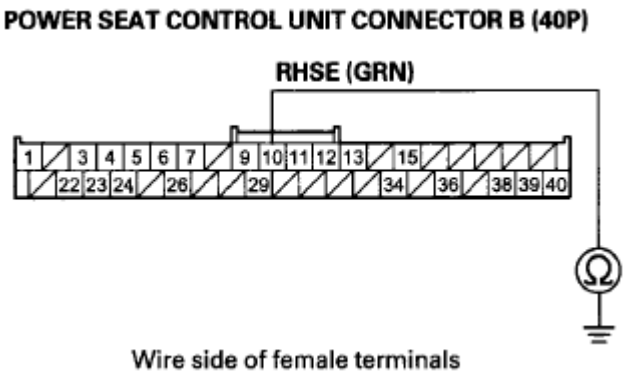


Fig. 41: Checking Continuity Between Body Ground And Power Seat Control Unit Connector B (40P) Terminal No. 10
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES -Repair a short to ground in the wire.

NO -Go to step 14.

14. Reconnect power seat control unit connector B (40P).
15. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
16. Measure the voltage between recline motor/position sensor 5P connector terminals No. 5(+) and No. 4 (-).

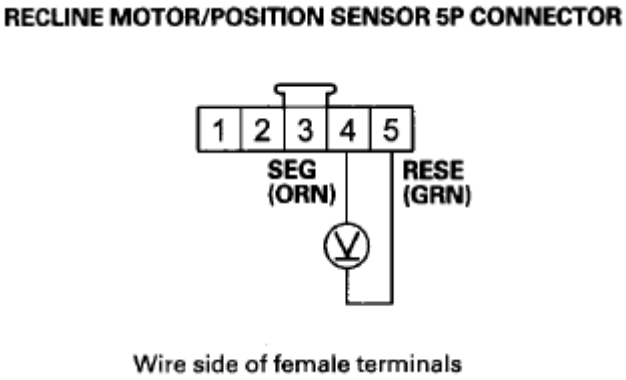


Fig. 42: Measuring Voltage Between Recline Motor/Position Sensor 5P Connector Terminals No. 5 (+) And No. 4 (-)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there about 5 V?

YES -Replace the recline motor/position sensor (see **FRONT SEAT RECLINE MOTOR REPLACEMENT**).

NO -If there is no voltage, replace the power seat control unit (see **POWER SEAT CONTROL UNIT**

INPUT TEST/REPLACEMENT). If there is battery voltage, repair a short in the wire (sensor line).

17. Disconnect power seat control unit connector B (40P).
18. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
19. Disconnect the recline motor/position sensor 5P connector.
20. Check for continuity between power seat control unit connector B (40P) terminals No. 15 and No. 29 and recline motor/position sensor 5P connector terminals No. 3 and No. 4 respectively.

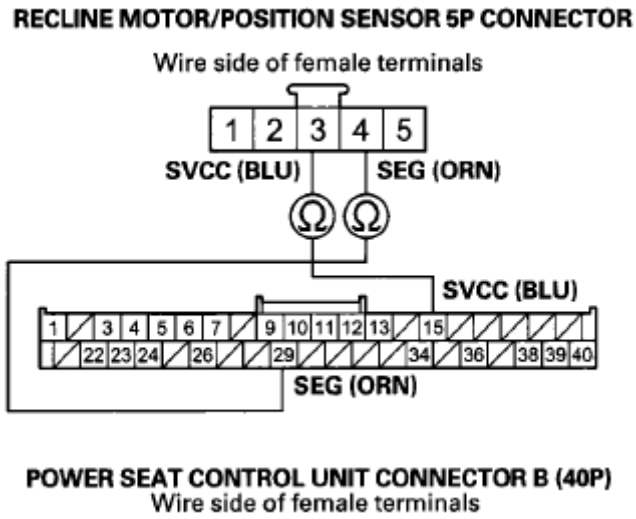


Fig. 43: Checking Continuity Between Power Seat Control Unit Connector B (40P) Terminals No. 15 And No. 29
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES -Go to step 21.

NO -Repair an open or high resistance in the wire.

21. Reconnect power seat control unit connector B (40P).
22. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
23. Measure the voltage between power seat control unit connector B (40P) terminals No. 15 and No. 29.

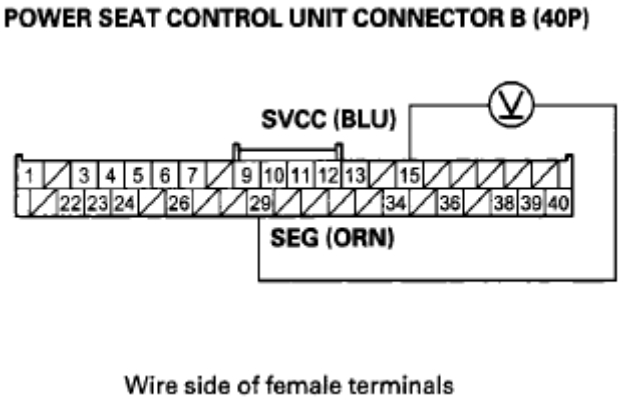


Fig. 44: Measuring Voltage Between Power Seat Control Unit Connector B (40P) Terminals No. 15 And No. 29
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there battery voltage when the recline switch is operated?

YES -Replace the recline motor/position sensor (see **FRONT SEAT RECLINE MOTOR REPLACEMENT**).

NO -Replace the power seat control unit (see **POWER SEAT CONTROL UNIT INPUT TEST/REPLACEMENT**).

24. Check the No. 21 (20 A) fuse in the driver's under-dash fuse/relay box.

    Is the fuse OK?

    YES -Go to step 25.

    NO -Replace the fuse. If the fuse blows again, repair the short to ground on the No. 21 (20 A) fuse circuit.

25. Measure the voltage between body ground and power seat control unit connector A (18P) terminal No. 1.

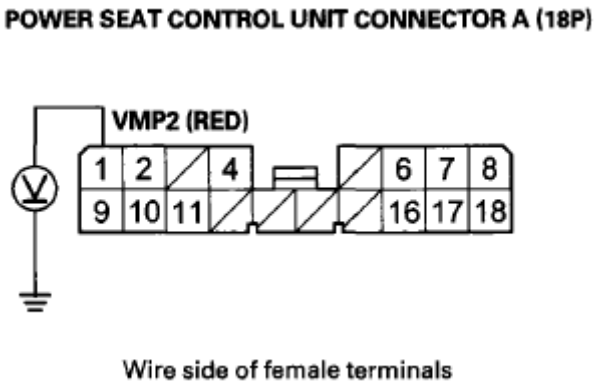


Fig. 45: Measuring Voltage Between Body Ground And Power Seat Control Unit Connector A

(18P) Terminal No. 1
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there battery voltage?

YES -Go to step 26.

NO -Repair an open or high resistance in the wire between the driver's under-dash fuse/relay box and the power seat control unit.

26. Measure the voltage between body ground at power seat control unit connector A (18P) terminal No. 4 when operating the rear up-down switch.

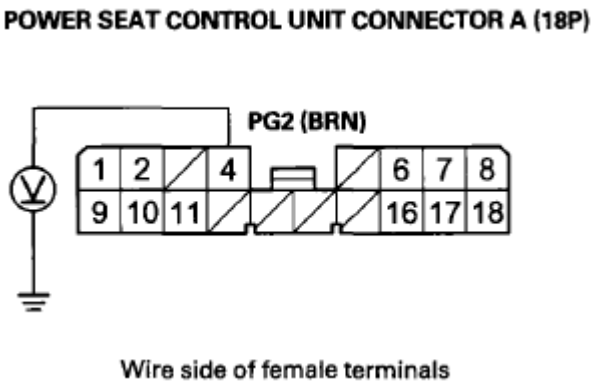


Fig. 46: Measuring Voltage Between Body Ground At Power Seat Control Unit Connector A (18P) Terminal No. 4
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there 0.2 V or more?

YES -Repair an open or high resistance in the wire between the power seat control unit and body ground (G701).

NO -Go to step 27.

27. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
28. Disconnect power seat control unit connector A (18P).
29. Disconnect the recline motor/position sensor 5P connector.
30. Check for continuity between power seat control unit connector A (18P) terminals No. 9 and No. 11 and recline motor/position sensor 5P connector terminals No. 1 and No. 2 respectively.

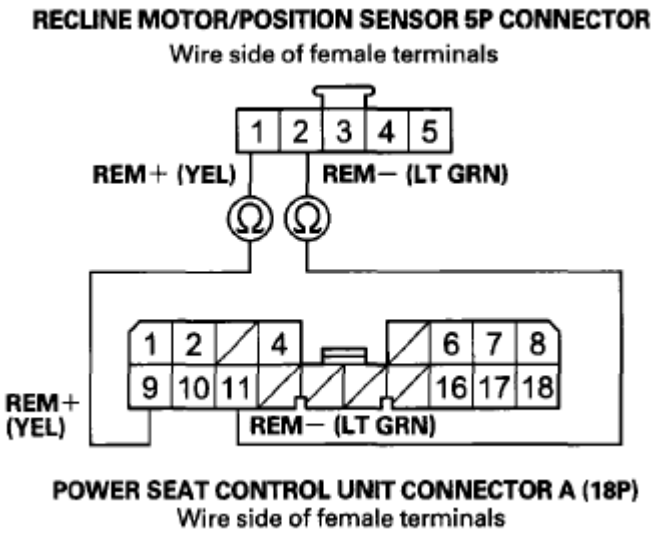


Fig. 47: Checking Continuity Between Power Seat Control Unit Connector A (18P) Terminals No. 9 And No. 11
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES -Go to step 31.

NO -Repair an open or high resistance in the wire.

31. Check for continuity between body ground and recline motor/position sensor 5P connector terminals No. 1 and No. 2 individually.

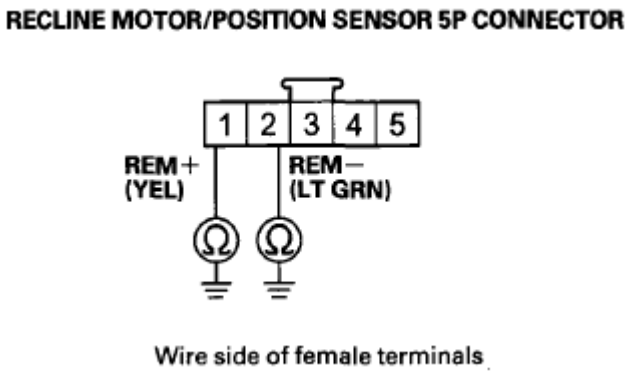


Fig. 48: Checking Continuity Between Body Ground And Recline Motor/Position Sensor 5P Connector Terminals No. 1 And No. 2
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES -Repair a short to ground in the wire.

NO -Go to step 32.

32. Test the recline motor (see **DRIVER'S POWER SEAT MOTOR TEST**).

    Is the motor OK?

    YES -Replace the power seat control unit (see **POWER SEAT CONTROL UNIT INPUT TEST/REPLACEMENT**).

    NO -Replace the recline motor/position sensor (see **FRONT SEAT RECLINE MOTOR REPLACEMENT**).

DTC B1829: A/T-P SIGNAL AND VSP SIGNAL MISMATCH

NOTE: If you are troubleshooting multiple DTCs, be sure to follow the instructions in B-CAN System Diagnosis Test Mode A (see TROUBLESHOOTING - B-CAN SYSTEM DIAGNOSIS TEST MODE A).

1. Clear the DTCs with the HDS.
2. Start the engine.
3. Test drive at 6 mph (10 km/h) for 10 seconds.
4. Check for DTCs with the HDS.

   Is DTC B1829 indicated?

   YES -Go to step 5.

   NO -Intermittent failure, the system is OK at this time. Check for loose or poor connections.

5. Check the P shift position indicator and the MIL.

   Does the P indicator and MIL come on?

   YES -Troubleshoot the automatic transmission system.

   NO -Go to step 6.

6. Check for the gauge control module DTCs with the HDS.

   Are any DTCs indicated?

   YES -Go to the indicated **DTCS TROUBLESHOOTING**.

   NO -Replace the power seat control unit (see **POWER SEAT CONTROL UNIT INPUT TEST/REPLACEMENT**).

DTC B1830: LEFT MIRROR POSITION SENSOR OPEN

NOTE: If you are troubleshooting multiple DTCs, be sure to follow the instructions in B-CAN System Diagnosis Test Mode A (see TROUBLESHOOTING - B-CAN SYSTEM DIAGNOSIS TEST MODE A).

1. Clear the DTC with the HDS.
2. Turn the ignition switch to LOCK (0) and then back to ON (II), or press the engine start/stop button to select the OFF mode and then the ON mode.
3. Operate the left power mirror in each direction with the power mirror switch.
4. Check for DTCs with the HDS.

   Is DTC B1830 indicated?

   YES -Go to step 5.

   NO -Intermittent failure, the system is OK at this time. Check for loose or poor connections.

5. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
6. Remove the driver's door panel (see **FRONT DOOR PANEL REMOVAL/INSTALLATION**).
7. Disconnect the power mirror control unit 24P connector.
8. Disconnect the left power mirror 16P connector.
9. Check for continuity between body ground and left power mirror 16P connector terminal No. 6.

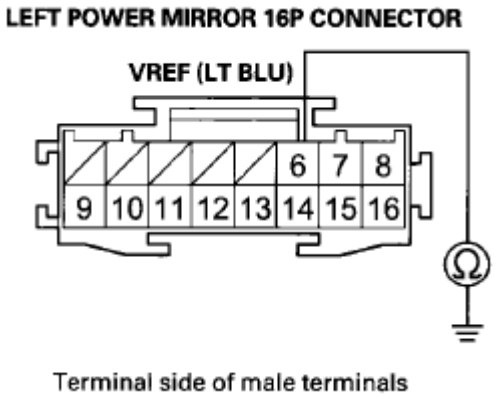


Fig. 49: Checking Continuity Between Body Ground And Left Power Mirror 16P Connector Terminal No. 6
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES -Repair a short to ground in the wire.

NO -Go to step 10.

10. Connect power mirror control unit 24P connector terminal No. 7 to body ground with a jumper wire.

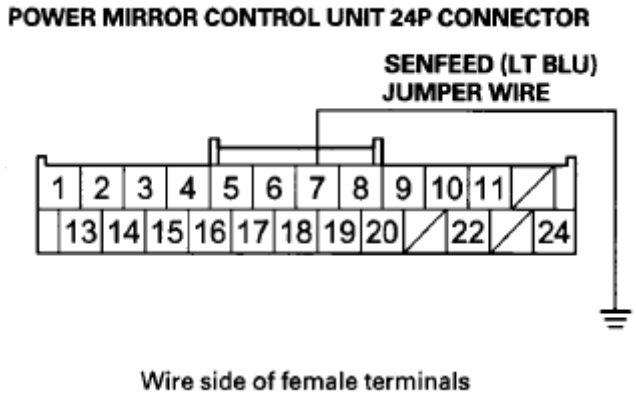


Fig. 50: Connecting Power Mirror Control Unit 24P Connector Terminal No. 7 To Body Ground With Jumper Wire
Courtesy of AMERICAN HONDA MOTOR CO., INC.

11. Check for continuity between body ground and left power mirror 16P connector terminal No. 6.

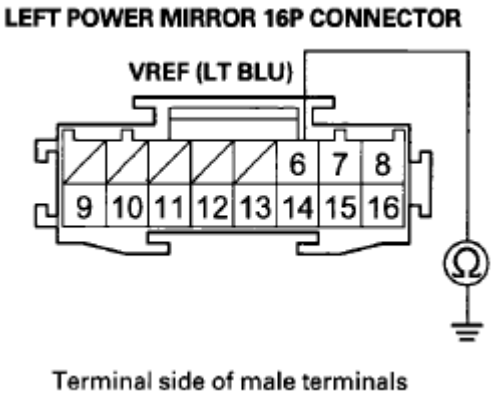


Fig. 51: Checking Continuity Between Body Ground And Left Power Mirror 16P Connector Terminal No. 6
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES -Go to step 12.

NO -Repair an open or high resistance in the wire.

12. Check for continuity between body ground and left power mirror 16P connector terminals No. 8 and No. 13 individually.

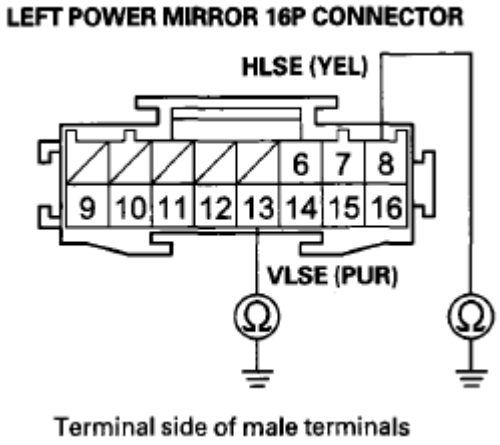


Fig. 52: Checking Continuity Between Body Ground And Left Power Mirror 16P Connector Terminals No. 8 And No. 13
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES -Repair a short to ground in the wire.

NO -Go to step 13.

13. Connect power mirror control unit 24P connector terminals No. 4 and No. 5 to body ground with jumper wires.

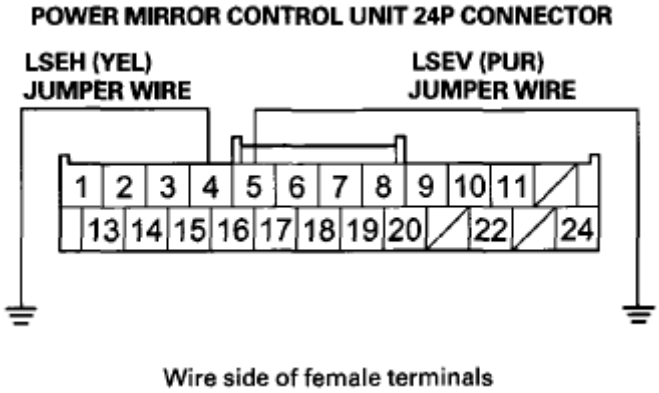


Fig. 53: Connecting Power Mirror Control Unit 24P Connector Terminals No. 4 And No. 5 To Body Ground With Jumper Wires
Courtesy of AMERICAN HONDA MOTOR CO., INC.

14. Check for continuity between body ground and left power mirror 16P connector terminals No. 8 and No. 13 individually.

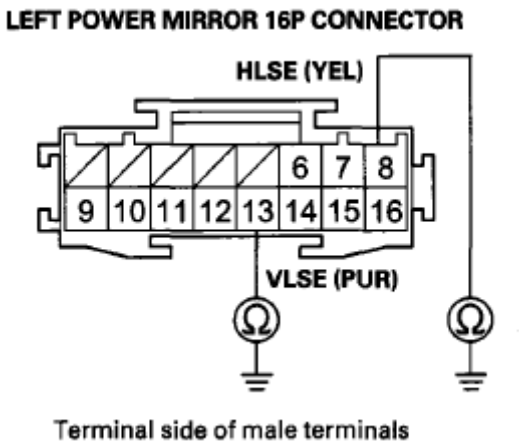


Fig. 54: Checking Continuity Between Body Ground And Left Power Mirror 16P Connector Terminals No. 8 And No. 13
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES -Go to step 15.

NO -Repair an open or high resistance in the wire.

15. Check for continuity between body ground and power mirror control unit 24P connector terminal No. 6.

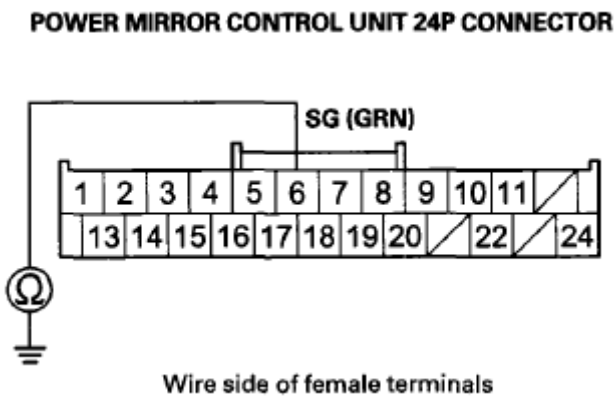


Fig. 55: Checking Continuity Between Body Ground And Power Mirror Control Unit 24P Connector Terminal No. 6
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES -Repair a short to ground in the wire.

NO -Go to step 16.

16. Connect power mirror control unit 24P connector terminal No. 6 to body ground with a jumper wire.

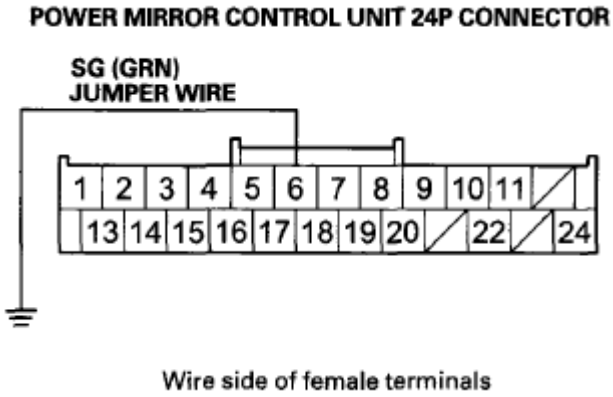


Fig. 56: Connecting Power Mirror Control Unit 24P Connector Terminal No. 6 To Body Ground With Jumper Wire
Courtesy of AMERICAN HONDA MOTOR CO., INC.

17. Check for continuity between body ground and left power mirror 16P connector terminal No. 7.

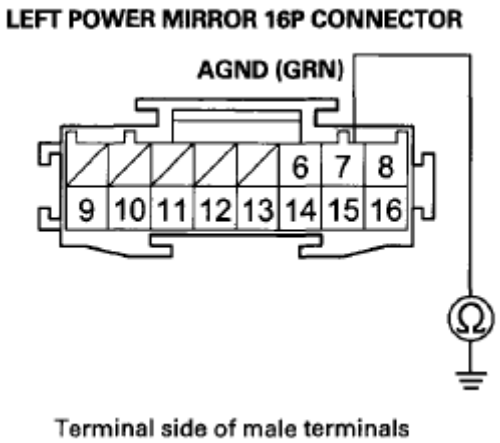


Fig. 57: Checking Continuity Between Body Ground And Left Power Mirror 16P Connector Terminal No. 7
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES -Go to step 18.

NO -Repair an open or high resistance in the wire.

18. Reconnect the power mirror control unit 24P connector.
19. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
20. Measure the voltage between power mirror control unit 24P connector terminals No. 6 and No. 7.

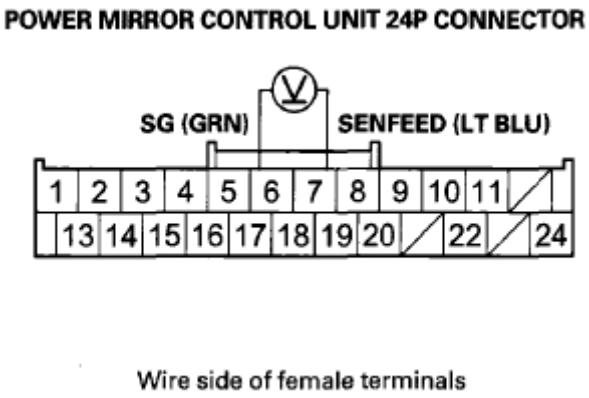


Fig. 58: Measuring Voltage Between Power Mirror Control Unit 24P Connector Terminals No. 6 And No. 7
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there about 5 V?

YES -Faulty left power mirror position sensor; replace the power mirror actuator (see **POWER MIRROR ACTUATOR REPLACEMENT**).

NO -Substitute a known-good power mirror control unit, and recheck. If DTC is gone, the original power mirror control unit is faulty; replace it (see **POWER MIRROR CONTROL UNIT INPUT TEST/REPLACEMENT**).

DTC B1832: RIGHT MIRROR POSITION SENSOR OPEN

NOTE: If you are troubleshooting multiple DTCs, be sure to follow the instructions in B-CAN System Diagnosis Test Mode A (see TROUBLESHOOTING - B-CAN SYSTEM DIAGNOSIS TEST MODE A).

1. Clear the DTCs with the HDS.
2. Turn the ignition switch to LOCK (0) and then back to ON (II), or press the engine start/stop button to select the OFF mode and then the ON mode.
3. Operate the right power mirror in each direction with the power mirror switch.
4. Check for DTCs with the HDS.

   Is DTC B1832 indicated?

   YES -Go to step 5.

   NO -Intermittent failure, the system is OK at this time. Check for loose or poor connections.

5. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
6. Remove the front passenger's door panel (see **FRONT DOOR PANEL REMOVAL/INSTALLATION**).

7. Disconnect the power mirror control unit 24P connector.
8. Disconnect the right power mirror 16P connector.
9. Check for continuity between body ground and right power mirror 16P connector terminal No. 6.

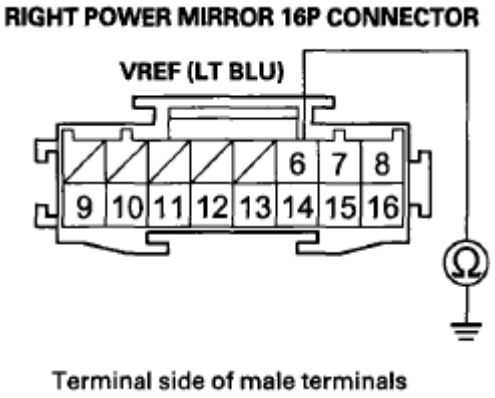


Fig. 59: Checking Continuity Between Body Ground And Right Power Mirror 16P Connector Terminal No. 6
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES -Repair a short to ground in the wire.

NO -Go to step 10.

10. Connect power mirror control unit 24P connector terminal No. 7 to body ground with a jumper wire.

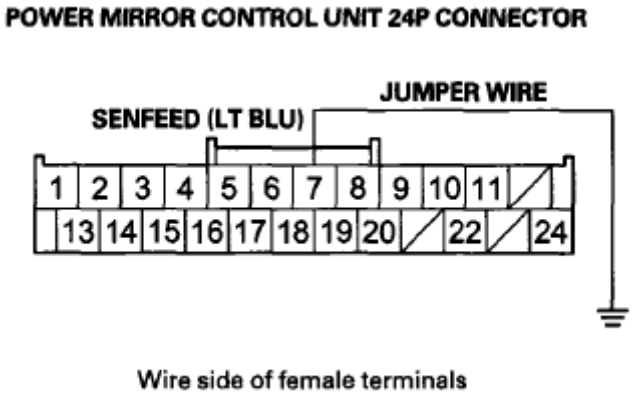


Fig. 60: Connecting Power Mirror Control Unit 24P Connector Terminal No. 7 To Body Ground With Jumper Wire
Courtesy of AMERICAN HONDA MOTOR CO., INC.

11. Check for continuity between body ground and right power mirror 16P connector terminal No. 6.

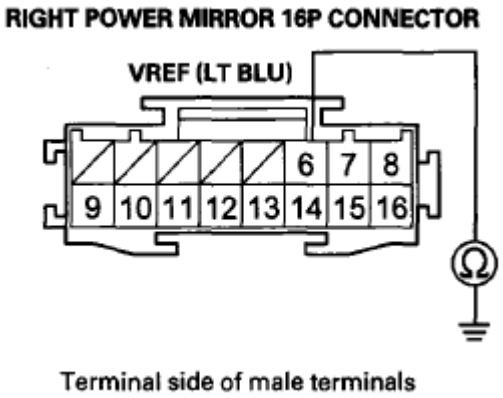


Fig. 61: Checking Continuity Between Body Ground And Right Power Mirror 16P Connector Terminal No. 6
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES -Go to step 12.

NO -Repair an open or high resistance in the wire.

12. Check for continuity between body ground and right power mirror 16P connector terminals No. 8 and No. 13 individually.

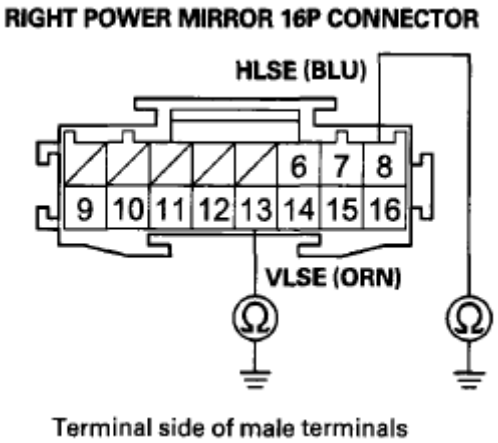


Fig. 62: Checking Continuity Between Body Ground And Right Power Mirror 16P Connector Terminals No. 8 And No. 13
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES -Repair a short to ground in the wire.

NO -Go to step 13.

13. Connect power mirror control unit 24P connector terminals No. 19 and No. 20 to body ground with jumper wires.

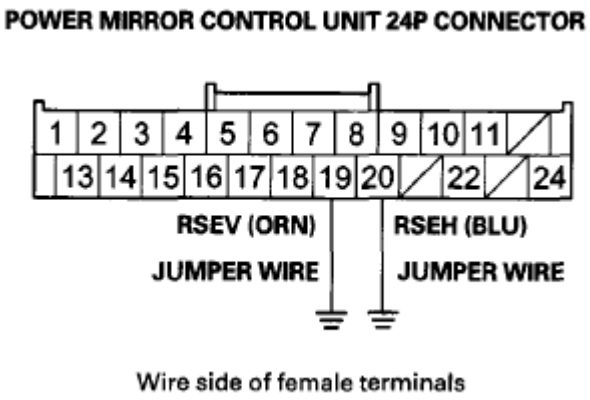


Fig. 63: Connecting Power Mirror Control Unit 24P Connector Terminals No. 19 And No. 20 To Body Ground With Jumper Wires
Courtesy of AMERICAN HONDA MOTOR CO., INC.

14. Check for continuity between body ground and right power mirror 16P connector terminals No. 8 and No. 13 individually.

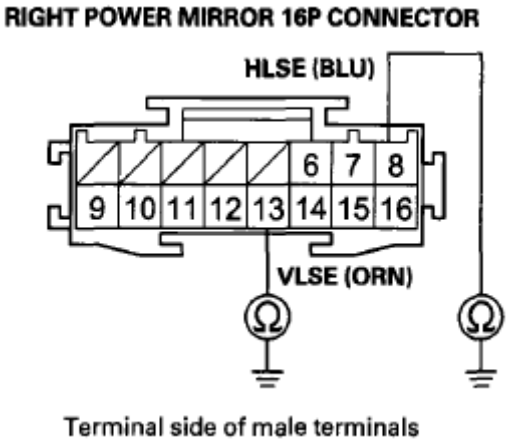


Fig. 64: Checking Continuity Between Body Ground And Right Power Mirror 16P Connector Terminals No. 8 And No. 13
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES -Go to step 15.

NO -Repair an open or high resistance in the wire.

15. Check for continuity between power mirror control unit 24P connector terminal No. 6 and body ground.

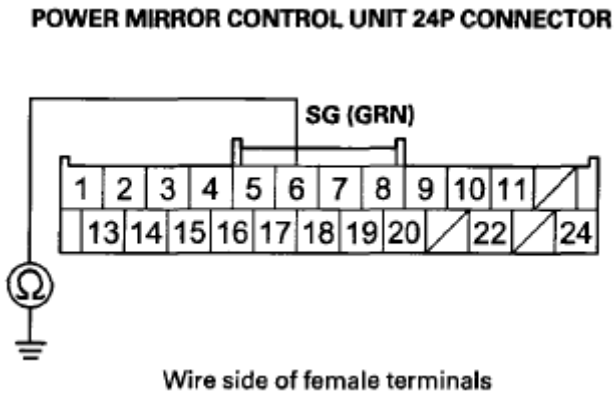


Fig. 65: Checking Continuity Between Power Mirror Control Unit 24P Connector Terminal No. 6 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES -Repair a short to ground in the wire.

NO -Go to step 16.

16. Connect power mirror control unit 24P connector terminal No. 6 to body ground with a jumper wire.

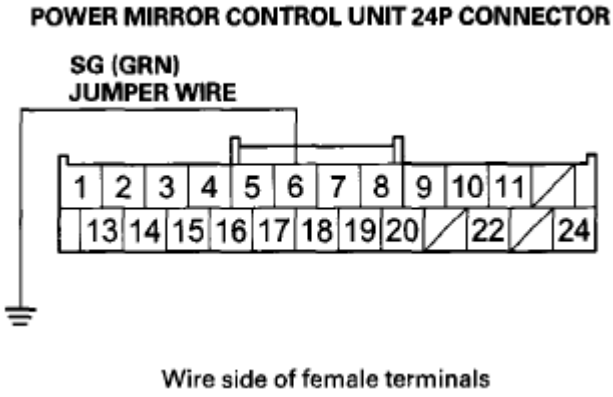


Fig. 66: Connecting Power Mirror Control Unit 24P Connector Terminal No. 6 To Body Ground With Jumper Wire
Courtesy of AMERICAN HONDA MOTOR CO., INC.

17. Check for continuity between body ground and right power mirror 16P connector terminal No. 7.

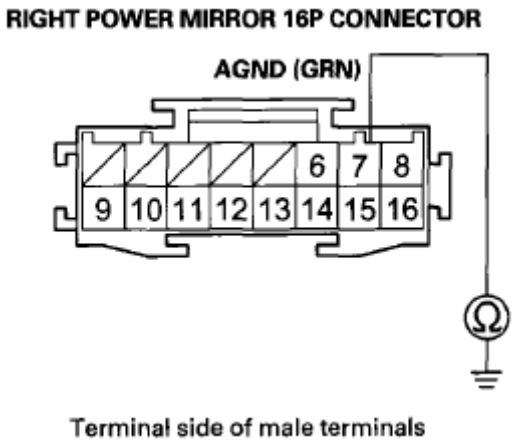


Fig. 67: Checking Continuity Between Body Ground And Right Power Mirror 16P Connector Terminal No. 7
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES -Go to step 18.

NO -Repair an open or high resistance in the wire.

18. Reconnect the power mirror control unit 24P connector.
19. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
20. Measure the voltage between power mirror control unit 24P connector terminals No. 6 and No. 7.

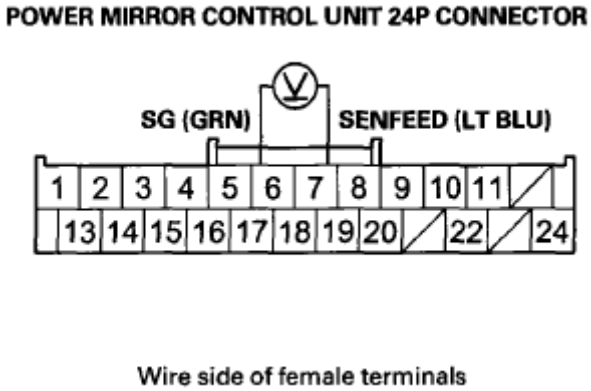


Fig. 68: Measuring Voltage Between Power Mirror Control Unit 24P Connector Terminals No. 6 And No. 7
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there about 5 V?

YES -Faulty right power mirror position sensor; replace the power mirror actuator (see **POWER MIRROR ACTUATOR REPLACEMENT**).

NO -Substitute a known-good power mirror control unit, and recheck. If DTC is gone, the original power mirror control unit is faulty; replace it (see **POWER MIRROR CONTROL UNIT INPUT TEST/REPLACEMENT**).

DTC B1836: POWER SEAT POSITION SENSOR CIRCUIT SHORT

NOTE: If you are troubleshooting multiple DTCs, be sure to follow the instructions in B-CAN System Diagnosis Test Mode A (see TROUBLESHOOTING - B-CAN SYSTEM DIAGNOSIS TEST MODE A).

1. Clear the DTCs with the HDS.
2. Turn the ignition switch to LOCK (0) and then back to ON (II), or press the engine start/stop button to select the OFF mode and then the ON mode.
3. Operate the power seat adjustment switch in all directions for more than 1 second each.
4. Check for DTCs with the HDS.

Is DTC B1836 indicated?

YES -Go to step 5.

NO -Intermittent failure, the system is OK at this time. Check for loose or poor connections.

5. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
6. Disconnect power seat control unit connector B (40P).
7. Disconnect the 5P connector from each motor.
8. Check for continuity between body ground and power seat control unit connector B (40P) terminal No. 15.

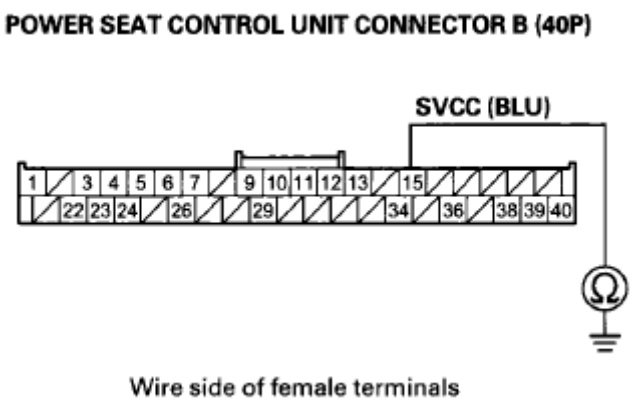


Fig. 69: Checking Continuity Between Body Ground And Power Seat Control Unit Connector B (40P) Terminal No. 15
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES -Repair a short to ground in the wire.

NO -Go to step 9.

9. Check for continuity between slide motor/position sensor terminal No. 2 and the motor body.

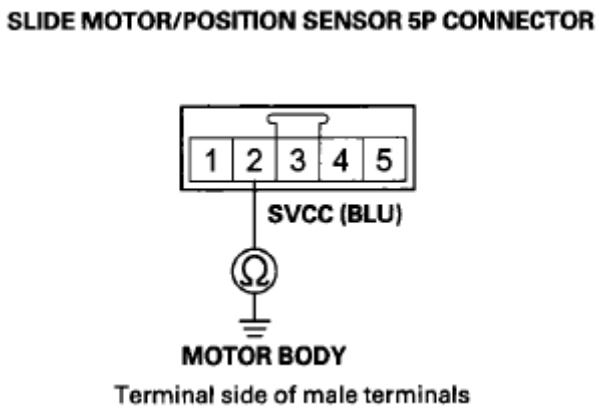


Fig. 70: Checking Continuity Between Slide Motor/Position Sensor Terminal No. 2 And Motor Body
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES -Replace the slide motor/position sensor (see **FRONT SEAT SLIDE MOTOR REPLACEMENT**).

NO -Go to step 10.

10. Check for continuity between front up-down motor/position sensor, rear up-down motor/position sensor, and recline motor/position sensor terminal No. 3 and motor body.

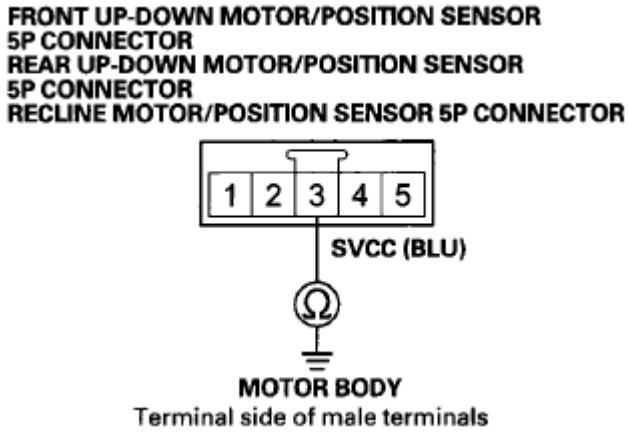


Fig. 71: Checking Continuity Between Front And Rear Up-Down Motor/Position Sensor And Recline Motor/Position Sensor And Motor Body

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES -If the front or rear up-down motor/position sensor is faulty, replace the seat frame assembly (see **FRONT SEAT FRAME REPLACEMENT**). If the recline motor/position sensor is faulty, replace the recline motor/position sensor (see **FRONT SEAT RECLINE MOTOR REPLACEMENT**).

NO -Replace the power seat control unit (see **POWER SEAT CONTROL UNIT INPUT TEST/REPLACEMENT**).

DTC B1837: MEMORY POSITION CALLING TIMEOUT

NOTE: If you are troubleshooting multiple DTCs, be sure to follow the instructions in B-CAN System Diagnosis Test Mode A (see TROUBLESHOOTING - B-CAN SYSTEM DIAGNOSIS TEST MODE A).

1. Clear the DTCs with the HDS.
2. Turn the ignition switch to LOCK (0) and then back to ON (II), or press the engine start/stop button to select the OFF mode and then the ON mode.
3. Move both power mirrors to the full up and full left positions with the power mirror switch.
4. Move the power seat to the full front up and full rear up positions, then slide the seat all the way back and completely recline the seat-back backward with the power seat adjustment switch.
5. Set the seating position into memory by pressing either the Driver 1 or the Driver 2 position memory switch.
6. Using the power seat switches, move the seat away from the position just memorized.
7. Recall the memory position with the driving position memory switch.
8. Wait for 2 minutes.
9. Check for DTCs with the HDS.

   Are any DTCs indicated?

   YES -Go to step 10.

   NO -Intermittent failure, the system is OK at this time. Check for loose or poor connections.

10. Check for DTCs with the HDS.

    Are any DTCs other than B1837 indicated?

    YES -Go to the indicated **DTCS TROUBLESHOOTING**.

    NO -Go to step 11.

11. Clear the DTCs with the HDS.

12. Wait for 6 seconds.
13. Move each power seat motor one at a time, and check the operation time.

    Does any motor fail to run smoothly?

    YES -Go to the **POWER SEAT MOTOR TEST** (see). If the motor is OK, check the engagement of the motor gear.

    NO -Go to the **POWER SEAT CONTROL UNIT INPUT TEST** (see).

DTC B1843: UART COMMUNICATION ERROR

NOTE: If you are troubleshooting multiple DTCs, be sure to follow the instructions in B-CAN System Diagnosis Test Mode A (see TROUBLESHOOTING - B-CAN SYSTEM DIAGNOSIS TEST MODE A).

1. Clear the DTCs with the HDS.
2. Turn the ignition switch to LOCK (0) and then back to ON (II), or press the engine start/stop button to select the OFF mode and then the ON mode.
3. Operate the power seat with the driving position memory switch.
4. Check for DTCs with the HDS.

   Is DTC B1843 indicated?

   YES -Go to step 5.

   NO -Intermittent failure, the system is OK at this time. Check for loose or poor connections.

5. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
6. Disconnect the power seat control unit connectors and power mirror control unit 24P connector.
7. Check for continuity between power seat control unit connector B (40P) terminal No. 38 and power mirror control unit 24P connector terminal No. 13.

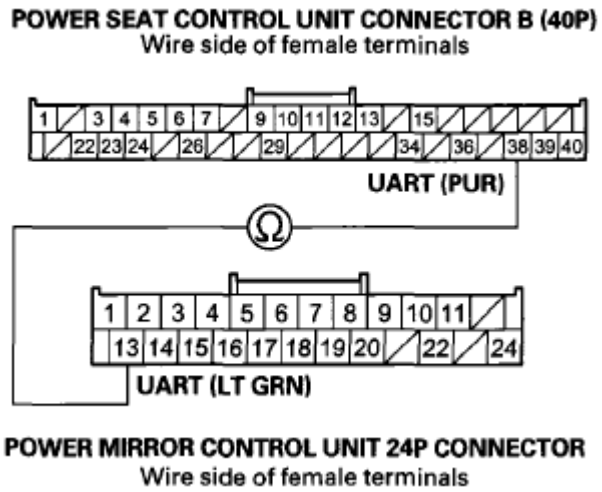


Fig. 72: Checking Continuity Between Power Seat Control Unit Connector B (40P) And Power Mirror Control Unit 24P Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES -Go to step 8.

NO -Repair an open in the wire between the power mirror control unit and power seat control unit.

8. Check for continuity between body ground and power seat control unit connector B (40P) terminal No. 38.

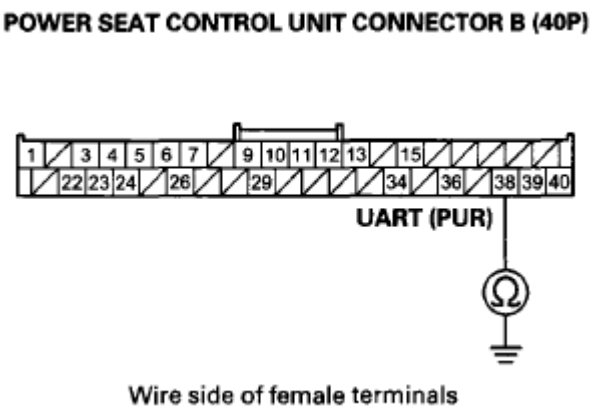


Fig. 73: Checking Continuity Between Body Ground And Power Seat Control Unit Connector B (40P) Terminal No. 38
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES -Repair a short to ground in the wire.

NO -Go to step 9.

9. Reconnect the power mirror control unit 24P connector.
10. Measure the voltage between body ground and power mirror control unit 24P connector terminal No. 24.

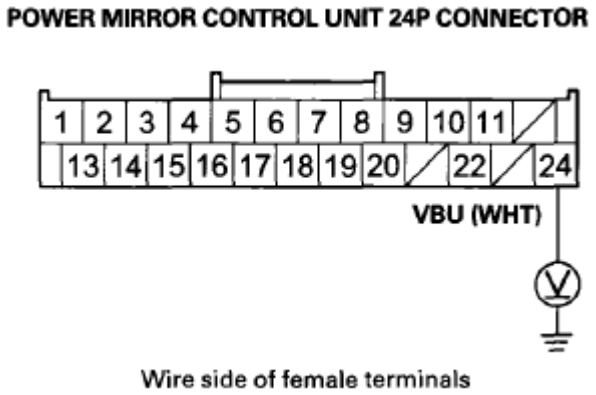


Fig. 74: Measuring Voltage Between Body Ground And Power Mirror Control Unit 24P Connector Terminal No. 24
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there battery voltage?

YES -Go to step 11.

NO -Check No. 15 (10 A) fuse in the under-hood fuse/relay box. If the fuse is OK, repair an open in or high resistance the wire.

11. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
12. Measure the voltage between body ground and power mirror control unit 24P connector terminal No. 22.

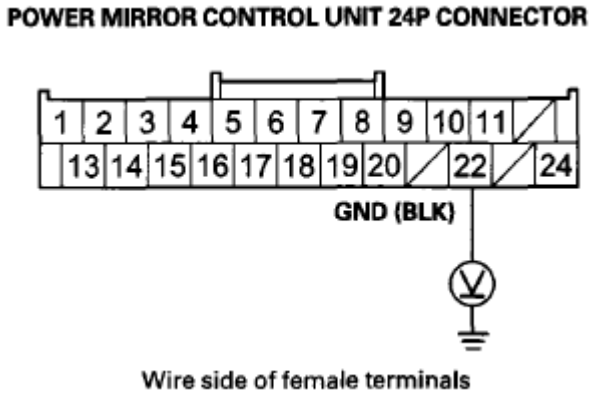


Fig. 75: Measuring Voltage Between Body Ground And Power Mirror Control Unit 24P Connector Terminal No. 22
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there less than 0.2 V?

YES -Replace the power mirror control unit (see **POWER MIRROR CONTROL UNIT INPUT TEST/REPLACEMENT**).

NO -Repair an open or high resistance in the wire between the power mirror control unit and body ground (G401). If the wire is OK, repair G401.

DTC B1844: POWER SEAT SLIDE SWITCH CIRCUIT MALFUNCTION

NOTE: If you are troubleshooting multiple DTCs, be sure to follow the instructions in B-CAN System Diagnosis Test Mode A (see TROUBLESHOOTING - B-CAN SYSTEM DIAGNOSIS TEST MODE A).

1. Clear the DTCs with the HDS.
2. Turn the ignition switch to LOCK (0) and then back to ON (II), or press the engine start/stop button to select the OFF mode and then the ON mode.
3. Operate the slide switch in each direction for more than 1 second.
4. Check for DTCs with the HDS.

Is DTC B1844 indicated?

YES -Go to step 5.

NO -Intermittent failure, the system is OK at this time. Check for loose or poor connections.

5. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
6. Disconnect power seat control unit connector B (40P).
7. Disconnect the power seat adjustment switch 12P connector.
8. Check for continuity between body ground and power seat control unit connector B (40P) terminals No. 1, No. 7, and No. 24 individually.

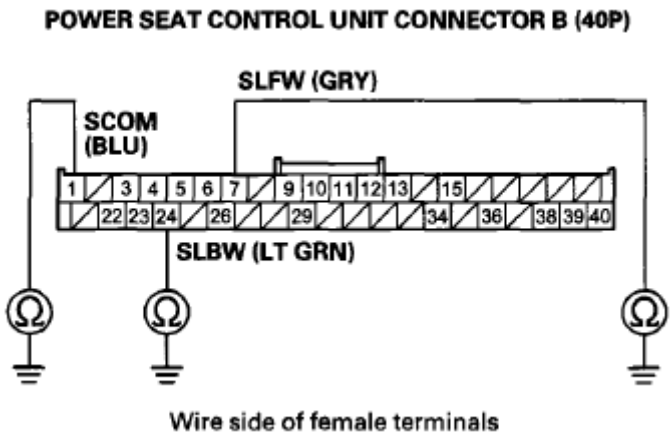


Fig. 76: Checking Continuity Between Body Ground And Power Seat Control Unit Connector B

(40P) Terminals
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES -Repair a short to ground in the wire.

NO -Go to step 9.

9. Check for continuity between these power seat control unit connector B (40P) terminals:
   - No. 1 and No. 7
   - No. 1 and No. 24
   - No. 7 and No. 24

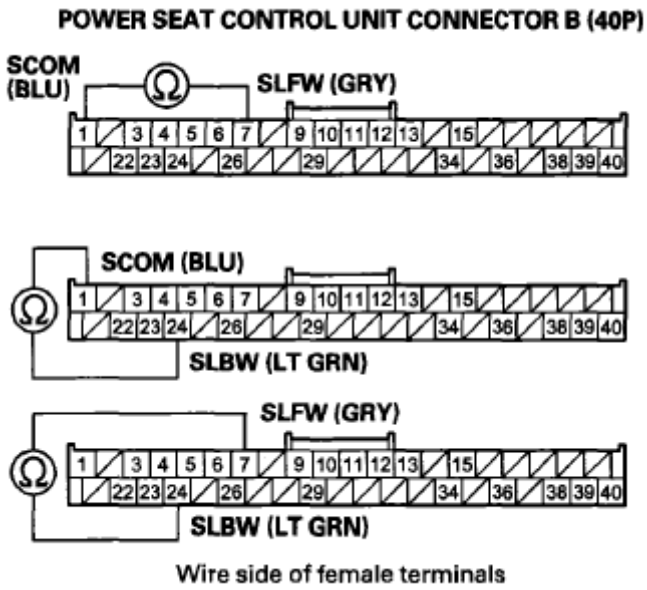


Fig. 77: Checking Continuity Between These Power Seat Control Unit Connector B (40P) Terminals
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES -Repair a short in the wire(s).

NO -Go to step 10.

10. Test the power seat adjustment switch (see **POWER SEAT ADJUSTMENT SWITCH TEST/REPLACEMENT**).

Is the switch OK?

YES -Replace the power seat control unit (see **POWER SEAT CONTROL UNIT INPUT TEST/REPLACEMENT**).

NO -Replace the power seat adjustment switch (see **POWER SEAT ADJUSTMENT SWITCH TEST/REPLACEMENT**).

DTC B1845: POWER SEAT RECLINE SWITCH CIRCUIT MALFUNCTION

NOTE: If you are troubleshooting multiple DTCs, be sure to follow the instructions in B-CAN System Diagnosis Test Mode A (see TROUBLESHOOTING - B-CAN SYSTEM DIAGNOSIS TEST MODE A).

1. Clear the DTCs with the HDS.
2. Turn the ignition switch to LOCK (0) and then back to ON (II), or press the engine start/stop button to select the OFF mode and then the ON mode.
3. Operate the recline switch in each direction for more than 1 second.
4. Check for DTCs with the HDS.

   Is DTC B1845 indicated?

   YES -Go to step 5.

   NO -Intermittent failure, the system is OK at this time. Check for loose or poor connections.

5. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
6. Disconnect power seat control unit connector B (40P).
7. Disconnect the power seat adjustment switch 12P connector.
8. Check for continuity between body ground and power seat control unit connector B (40P) terminals No. 1, No. 6, and No. 23 individually.

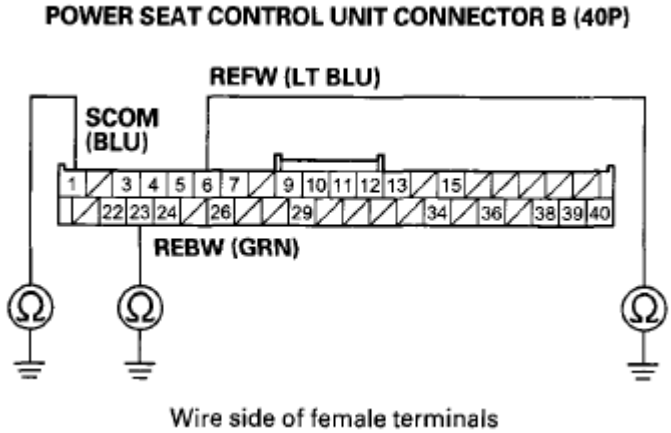


Fig. 78: Checking Continuity Between Body Ground And Power Seat Control Unit Connector B (40P) Terminals
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES -Repair a short to ground in the wire.

NO -Go to step 9.

9. Check for continuity between these power seat control unit connector B (40P) terminals:
   - No. 1 and No. 6
   - No. 1 and No. 23
   - No. 6 and No. 23

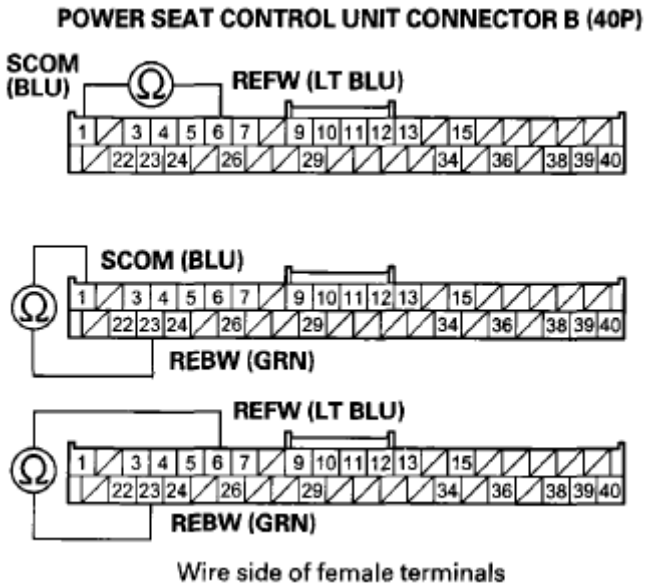


Fig. 79: Checking Continuity Between These Power Seat Control Unit Connector B (40P) Terminals
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES -Repair a short in the wire(s).

NO -Go to step 10.

10. Test the power seat adjustment switch (see **POWER SEAT ADJUSTMENT SWITCH TEST/REPLACEMENT**).

Is the switch OK?

YES -Replace the power seat control unit (see **POWER SEAT CONTROL UNIT INPUT TEST/REPLACEMENT**).

NO -Replace the power seat adjustment switch (see **POWER SEAT ADJUSTMENT SWITCH TEST/REPLACEMENT**).

DTC B1846: POWER SEAT FRONT UP-DOWN SWITCH CIRCUIT MALFUNCTION

NOTE: If you are troubleshooting multiple DTCs, be sure to follow the instructions in B-CAN System Diagnosis Test Mode A (see TROUBLESHOOTING - B-CAN SYSTEM DIAGNOSIS TEST MODE A).

1. Clear the DTCs with the HDS.
2. Turn the ignition switch to LOCK (0) and then back to ON (II), or press the engine start/stop button to select the OFF mode and then the ON mode.
3. Operate the front up-down switch in each direction for more than 1 second.
4. Check for DTCs with the HDS.

   Is DTC B1846 indicated?

   YES -Go to step 5.

   NO -Intermittent failure, the system is OK at this time. Check for loose or poor connections.

5. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
6. Disconnect power seat control unit connector B (40P).
7. Disconnect the power seat adjustment switch 12P connector.
8. Check for continuity between body ground and power seat control unit connector B (40P) terminals No. 1, No. 4, and No. 5 individually.

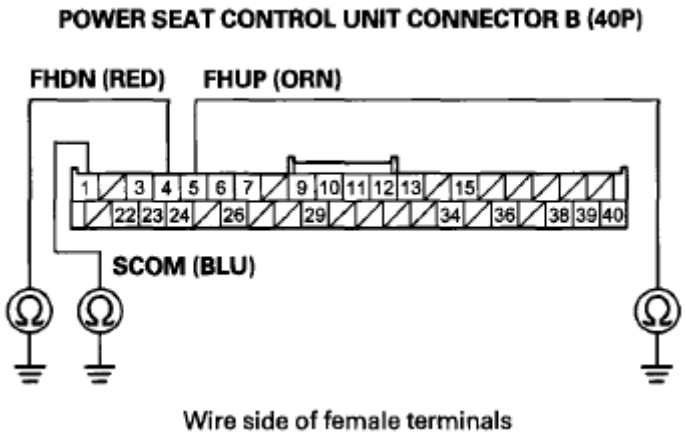


Fig. 80: Checking Continuity Between Body Ground And Power Seat Control Unit Connector B (40P) Terminals
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES -Repair a short to ground in the wire.

NO -Go to step 9.

9. Check for continuity between these power seat control unit connector B (40P) terminals:
   - No. 1 and No. 4
   - No. 1 and No. 5
   - No. 4 and No. 5

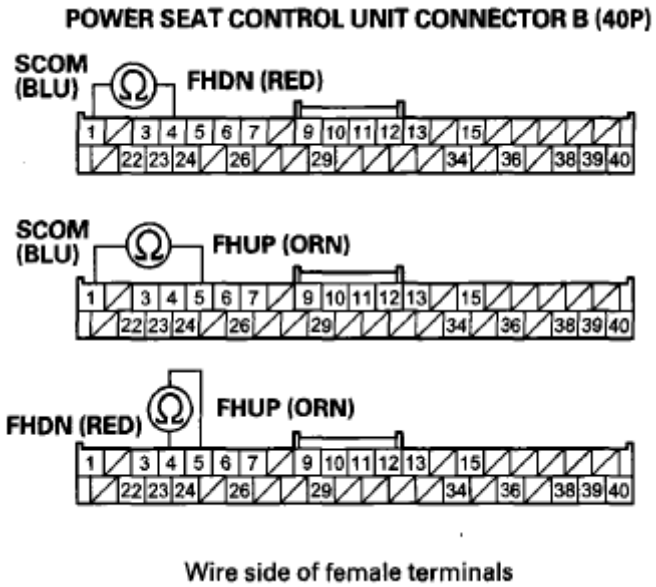


Fig. 81: Checking Continuity Between These Power Seat Control Unit Connector B (40P) Terminals
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES -Repair a short in the wire(s).

NO -Go to step 10.

10. Test the power seat adjustment switch (see **POWER SEAT ADJUSTMENT SWITCH TEST/REPLACEMENT**).

Is the switch OK?

YES -Replace the power seat control unit (see **POWER SEAT CONTROL UNIT INPUT TEST/REPLACEMENT**).

NO -Replace the power seat adjustment switch (see **POWER SEAT ADJUSTMENT SWITCH TEST/REPLACEMENT**).

DTC B1847: POWER SEAT REAR UP-DOWN SWITCH CIRCUIT MALFUNCTION

NOTE: If you are troubleshooting multiple DTCs, be sure to follow the instructions in B-CAN System Diagnosis Test Mode A (see TROUBLESHOOTING - B-CAN SYSTEM DIAGNOSIS TEST MODE A).

1. Clear the DTCs with the HDS.
2. Turn the ignition switch to LOCK (0) and then back to ON (II), or press the engine start/stop button to select the OFF mode and then the ON mode.
3. Operate the rear up-down switch in each direction for more than 1 second.
4. Check for DTCs with the HDS.

   Is DTC B1847 indicated?

   YES -Go to step 5.

   NO -Intermittent failure, the system is OK at this time. Check for loose or poor connections.

5. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
6. Disconnect power seat control unit connector B (40P).
7. Disconnect the power seat adjustment switch 12P connector.
8. Check for continuity between body ground and power seat control unit connector B (40P) terminals No. 1, No. 3, and No. 22 individually.

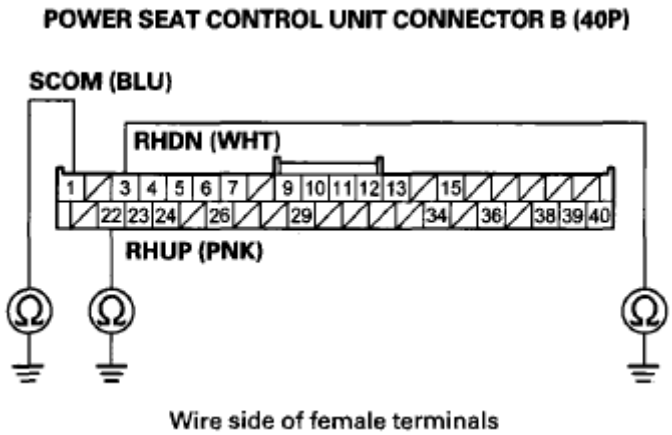


Fig. 82: Checking Continuity Between Body Ground And Power Seat Control Unit Connector B (40P) Terminals
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES -Repair a short to ground in the wire.

NO -Go to step 9.

9. Check for continuity between these power seat control unit connector B (40P) terminals:
   - No. 1 and No. 3
   - No. 1 and No. 22
   - No. 3 and No. 22

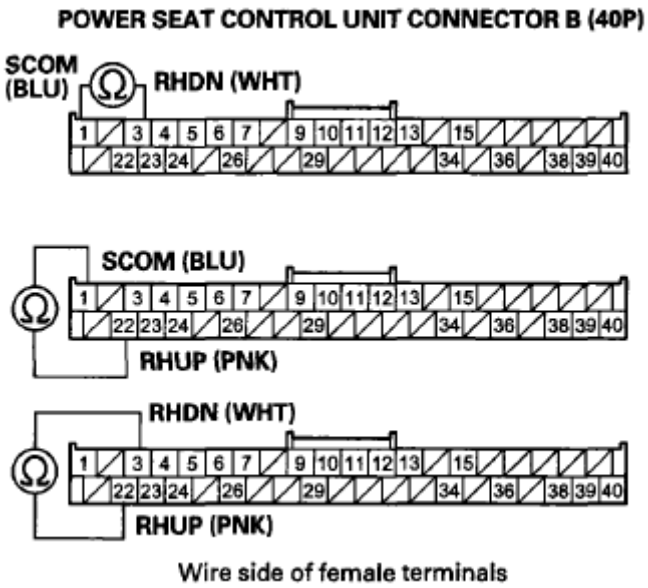


Fig. 83: Checking Continuity Between These Power Seat Control Unit Connector B (40P) Terminals
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES -Repair a short in the wire(s).

NO -Go to step 10.

10. Test the power seat adjustment switch (see **POWER SEAT ADJUSTMENT SWITCH TEST/REPLACEMENT**).

    Is the switch OK?

    YES -Replace the power seat control unit (see **POWER SEAT CONTROL UNIT INPUT TEST/REPLACEMENT**).

    NO -Replace the power seat adjustment switch (see **POWER SEAT ADJUSTMENT SWITCH TEST/REPLACEMENT**).

DTC U0155: POWER SEAT CONTROL UNIT LOST COMMUNICATION WITH GAUGE CONTROL MODULE

NOTE: **If you are troubleshooting multiple DTCs, be sure to follow the instructions in B-CAN System Diagnosis Test Mode A (see TROUBLESHOOTING - B-CAN SYSTEM DIAGNOSIS TEST MODE A).**

1. Clear the DTCs with the HDS.
2. Turn the ignition switch to LOCK (0) and then back to ON (II), or press the engine start/stop button to select the OFF mode and then the ON mode.
3. Wait for at least 6 seconds.
4. Check for DTCs with the HDS.

   Is DTC U0155 indicated?

   YES -Go to step 5.

   NO -Intermittent failure, the system is OK at this time. Check for loose or poor connections between the power seat control unit and the gauge control module.

5. From the BODY ELECTRICAL SYSTEM SELECT menu, select B-CAN CONTROL UNITS INFORMATION, and then select CHECK CONNECTED CONTROL UNITS.

   Is the gauge control module detected?

   YES -Go to step 9.

   NO -Go to step 6.

6. Measure the voltage between body ground and gauge control module 32P connector terminals No. 15 and No. 16 individually.

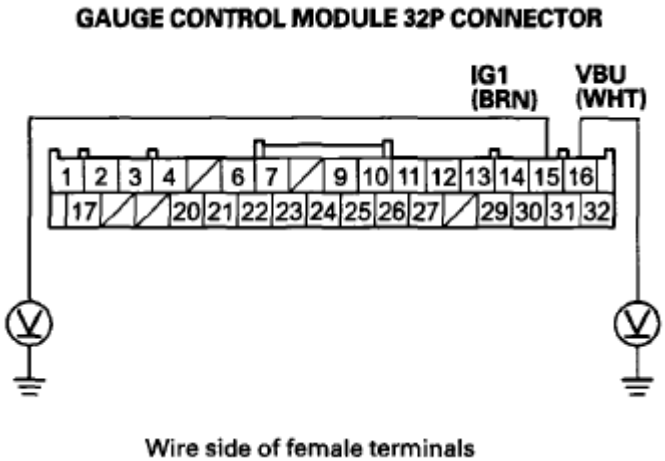


Fig. 84: Measuring Voltage Between Body Ground And Gauge Control Module 32P Connector Terminals No. 15 And No. 16
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there battery voltage?

YES -Go to step 8.

NO -Go to step 7.

7. Check the No. 15 (10 A) fuse in the under-hood fuse/relay box and the No. 12 (7.5 A) fuse in the driver's under-dash fuse/relay box.

   Are the fuses OK?

   YES -Repair an open or high resistance in the No. 15 (10 A) and/or No. 12 (7.5 A) fuse circuit.

   NO -Replace the fuse(s). If the fuse blows again, repair a short to ground in the No. 15 (10 A) and/or No. 12 (7.5 A) fuse circuit.

8. Measure the voltage between body ground and gauge control module 32P connector terminals No. 1 and No. 17 individually.

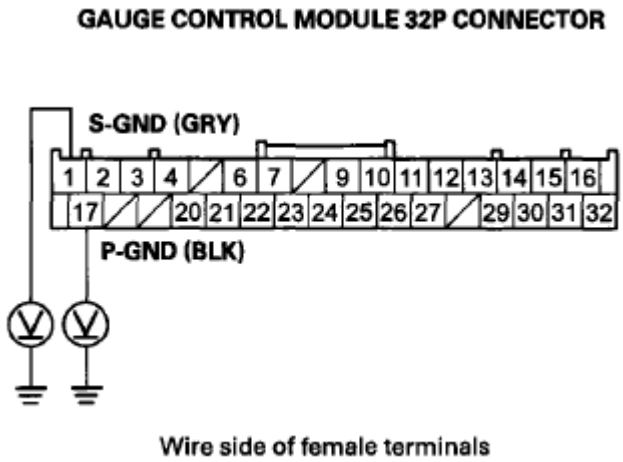


Fig. 85: Measuring Voltage Between Body Ground And Gauge Control Module 32P Connector Terminals No. 1 And No. 17
Courtesy of AMERICAN HONDA MOTOR CO., INC.

   Is there less than 0.2 V?

   YES -Go to step 9.

   NO -Repair an open or high resistance in the ground wire or poor ground (G401) and/or (G402).

9. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
10. Disconnect power seat control unit connector A (40P).
11. Disconnect the gauge control module 32P connector.
12. Check for continuity between gauge control module 32P connector terminals No. 29 and No. 30 and

power seat control unit connector A (40P) terminals No. 39 and No. 40 respectively.

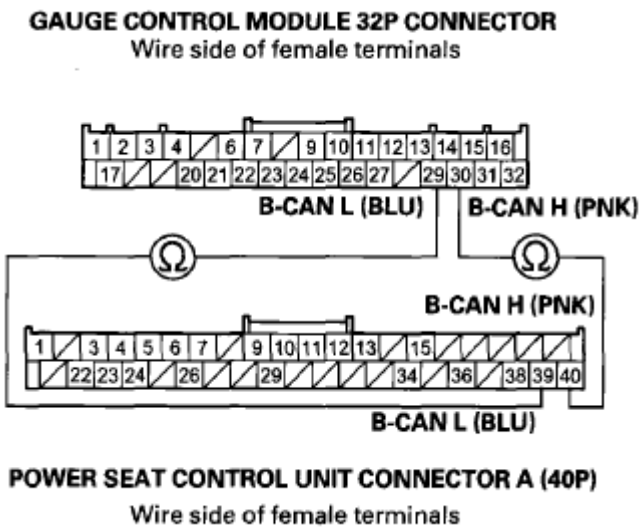


Fig. 86: Checking Continuity Between Gauge Control Module 32P Connector Terminals No. 29 And No. 30
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES -Replace the gauge control module (see **GAUGE CONTROL MODULE REPLACEMENT**).

NO -Repair an open or poor connection in the B-CAN wire between the power seat control unit and the gauge control module.

DTC U0199: POWER SEAT CONTROL UNIT LOST COMMUNICATION WITH DOOR MULTIPLEX CONTROL UNIT

NOTE: If you are troubleshooting multiple DTCs, be sure to follow the instructions in B-CAN System Diagnosis Test Mode A (see TROUBLESHOOTING - B-CAN SYSTEM DIAGNOSIS TEST MODE A).

1. Clear the DTCs with the HDS.
2. Turn the ignition switch to LOCK (0) and then back to ON (II), or press the engine start/stop button to select the OFF mode and then the ON mode.
3. Wait for at least 6 seconds.
4. Check for DTCs with the HDS.

Is DTC U0199 indicated?

YES -Go to step 5.

NO -Intermittent failure, the system is OK at this time. Check for loose or poor connections between the

power seat control unit and the door multiplex control unit.

5. From the BODY ELECTRICAL SYSTEM SELECT menu, select B-CAN CONTROL UNITS INFORMATION, and then select CHECK CONNECTED CONTROL UNITS.

   Is the power window unit detected?

   YES -Go to step 9.

   NO -Go to step 6.

6. Measure the voltage between body ground and power window master switch 37P connector terminal No. 13.

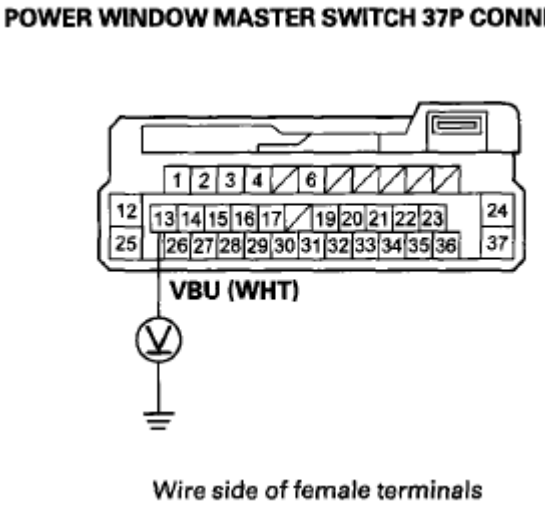


Fig. 87: Measuring Voltage Between Body Ground And Power Window Master Switch 37P Connector Terminal No. 13
Courtesy of AMERICAN HONDA MOTOR CO., INC.

   Is there battery voltage?

   YES -Go to step 8.

   NO -Go to step 7.

7. Check the No. 15(10 A) fuse in the under-hood fuse/relay box.

   Is the fuse OK?

   YES -Repair an open or high resistance in the No. 15 (10 A) fuse circuit.

   NO -Replace the fuse. If the fuse blows again, repair a short to ground in the No. 15 (10 A) fuse circuit.

8. Measure the voltage between body ground and power window master switch 37P connector terminals No. 32 and No. 37 individually.

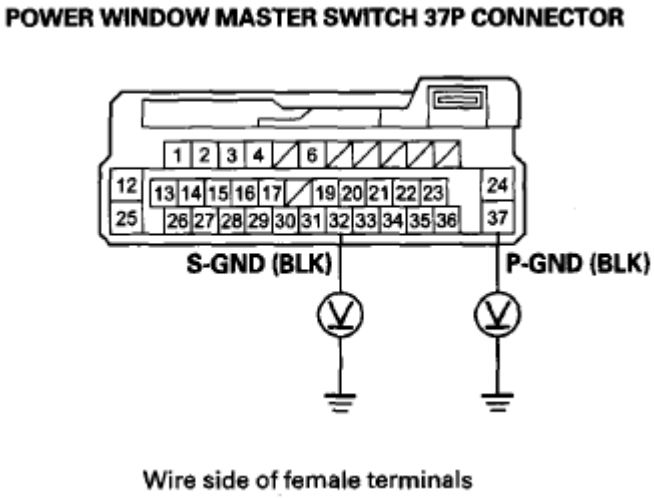


Fig. 88: Measuring Voltage Between Body Ground And Power Window Master Switch 37P Connector Terminals No. And No. 37
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there less than 0.2 V?

YES -Go to step 9.

NO -Repair an open or high resistance in the ground wire or poor ground (G401) and/or (G402).

9. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
10. Disconnect power seat control unit connector A (40P).
11. Disconnect the power window master switch 37P connector.
12. Check for continuity between power window master switch 37P connector terminals No. 33 and No. 35 and power seat control unit connector A (40P) terminals No. 39 and No. 40 respectively.

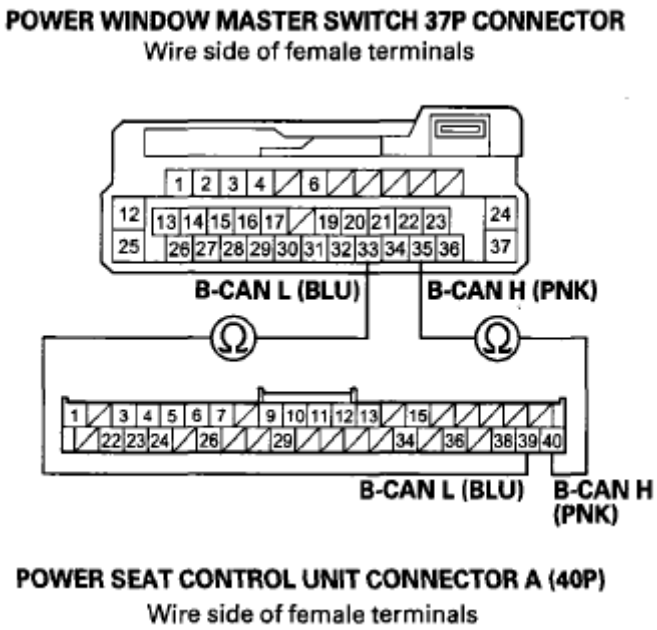


Fig. 89: Checking Continuity Between Power Window Master Switch 37P Connector Terminals No. 33 And No. 35[]
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES -Replace the power window master switch (see **REAR POWER WINDOW SWITCH TEST**).

NO -Repair an open or poor connection in the B-CAN wire between the power seat control unit and the door multiplex control unit.

DTC U1282: POWER SEAT CONTROL UNIT LOST COMMUNICATION WITH DRIVER'S MICU

NOTE: If you are troubleshooting multiple DTCs, be sure to follow the instructions in B-CAN System Diagnosis Test Mode A (see TROUBLESHOOTING - B-CAN SYSTEM DIAGNOSIS TEST MODE A).

1. Clear the DTCs with the HDS.
2. Turn the ignition switch to LOCK (0) and then back to ON (II), or press the engine start/stop button to select the OFF mode and then the ON mode.
3. Wait for at least 6 seconds.
4. Check for DTCs with the HDS.

Is DTC U1282 indicated?

YES -Replace the power seat control unit (see **POWER SEAT CONTROL UNIT INPUT TEST/REPLACEMENT**).

NO -Intermittent failure, the system is OK at this time. Check for loose or poor connections between the power seat control unit and the driver's MICU.

SYSTEM INPUT TEST AND FUNCTION TEST

1. Connect the HDS to the data link connector (DLC).
2. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
3. From the BODY ELECTRICAL SYSTEM SELECT menu, select POWER SEAT/POWER MIRROR, then DTCs.
   - If DTCs are found, troubleshoot the DTCs using B-CAN System Diagnosis Test Mode A (see **TROUBLESHOOTING - B-CAN SYSTEM DIAGNOSIS TEST MODE A**).
   - If no DTCs are found, go to step 4.
4. Exit the DTC mode, and select DATA LIST from the POWER SEAT TEST MODE MENU.
5. Test each input and monitor each output under the condition shown below:
   - If the data list indication is correct, continue to the next switch. If all switches are OK, go to step 6.
   - If the data list indication is not correct, do the appropriate test at the control unit and terminal indicated in the table.
     - Voltage drop tests should be done with the ignition switch in ON (II) or the vehicle ignition in the ON mode, and all connectors connected and the meter negative test lead attached to a good body ground, unless specified otherwise.
     - Continuity tests should be done with the ignition switch in LOCK (0) or the vehicle ignition in the OFF mode, and indicated terminals disconnected.

Data List Input/Command	Condition: Data List Indication	Control Unit/Terminal Number/Test (If applicable)	Possible cause if desired result is not obtained
Slide Switch Forward	Slide switch forward: ON Switch released: OFF	Power seat control unit/B1, B7 Slide switch forward: 0 V Switch released: 5 V	• Faulty driver's power seat adjustment switch (see **POWER SEAT ADJUSTMENT SWITCH TEST/REPLACEMENT**) • Faulty power seat control unit • An open or high resistance in the wire • A short to ground in the wire
Slide Switch Backward	Slide switch backward: ON Switch released: OFF	Power seat control unit/B1, B24 Slide switch backward: 0 V Switch released: 5 V	• Faulty driver's power seat adjustment switch (see **POWER SEAT ADJUSTMENT SWITCH TEST/REPLACEMENT**) • Faulty power seat control unit • An open or high resistance in the

			wire • A short to ground in the wire
Recline Switch Forward	Recline switch forward: ON Switch released: OFF	Power seat control unit/B1, B6 Recline switch forward: 0 V Switch released: 5 V	• Faulty driver's power seat adjustment switch (see **POWER SEAT ADJUSTMENT SWITCH TEST/REPLACEMENT**) • Faulty power seat control unit • An open or high resistance in the wire • A short to ground in the wire
Recline Switch Backward	Recline switch backward: ON Switch released: OFF	Power seat control unit/B1, B23 Recline switch backward: 0 V Switch released: 5 V	• Faulty driver's power seat adjustment switch (see **POWER SEAT ADJUSTMENT SWITCH TEST/REPLACEMENT**) • Faulty power seat control unit • An open or high resistance in the wire • A short to ground in the wire
Front Up-Down Switch Up	Front up-down switch up: ON Switch released: OFF	Power seat control unit/B1, B5 Front up-down switch up: 0 V Switch released: 5 V	• Faulty driver's power seat adjustment switch (see **POWER SEAT ADJUSTMENT SWITCH TEST/REPLACEMENT**) • Faulty power seat control unit • An open or high resistance in the wire • A short to ground in the wire
Front Up-Down Switch Down	Front up-down switch down: ON Switch released: OFF	Power seat control unit/B1, B4 Front up-down switch down: 0 V Switch released: 5 V	• Faulty driver's power seat adjustment switch (see **POWER SEAT ADJUSTMENT SWITCH TEST/REPLACEMENT**) • Faulty power seat control unit • An open or high resistance in the wire • A short to ground in the wire
	Rear up-down	Power seat control unit/B1, B22	• Faulty driver's power seat adjustment switch (see **POWER SEAT ADJUSTMENT SWITCH**

Rear Up-Down Switch Up	switch up: ON Switch released: OFF	Rear up-down switch up: 0 V Switch released: 5 V	**TEST/REPLACEMENT**) • Faulty power seat control unit • An open or high resistance in the wire • A short to ground in the wire
Rear Up-Down Switch Down	Rear up-down switch down: ON Switch released: OFF	Power seat control unit/B1, B3 Rear up-down switch down: 0 V Switch released: 5 V	• Faulty driver's power seat adjustment switch (see **POWER SEAT ADJUSTMENT SWITCH TEST/REPLACEMENT**) • Faulty power seat control unit • An open or high resistance in the wire • A short to ground in the wire
Ignition Switch for Power Seat Control	Ignition switch ON (II) or vehicle ignition ON mode: ON Ignition switch LOCK (0) or vehicle ignition OFF mode: OFF	Power seat control unit/B34 Ignition switch ON (II): 12 V	• Blown No. 12 (7.5 A) fuse in the driver's under-dash fuse/relay box • Faulty under-dash fuse/relay box • Faulty power seat control unit • An open or high resistance in the wire
PBK Switch (M/T)	Parking brake lever pulled: ON Parking brake switch: ON	Power seat control unit/B26 Parking brake switch ON: 0 V	• Faulty parking brake switch • Faulty power seat control unit • An open or high resistance in the wire
ATP Switch (A/T)	Transmission range switch P position: ON Any other position than P: OFF	Power seat control unit/B26 Transmission range switch P: 0 V	• Faulty transmission range switch • Faulty power seat control unit • An open or high resistance in the wire
Slide Sensor	Seat moving forward or backward: ON Seat not moving: OFF	Power seat control unit/B11 Pulses as seat moves: 2.5 V average	• Faulty slide position sensor • Faulty power seat control unit • An open or high resistance in the wire
Front Up-Down Sensor	Seat front moving up/down: ON Seat not moving: OFF	Power seat control unit/B12 Pulses as seat moves: 2.5 V average	• Faulty front up-down position sensor • Faulty power seat control unit • An open or high resistance in the wire
	Seat back		

Recline Sensor	moving forward or backward: ON Seat not moving: OFF	Power seat control unit/B10 Pulses as seat moves: 2.5 V average	• Faulty recline position sensor • Faulty power seat control unit • An open or high resistance in the wire
Rear Up-Down	Sensor Seat rear moving up/down: ON Seat not moving: OFF	Power seat control unit/B13 Pulses as seat moves: 2.5 V average	• Faulty rear up-down sensor • Faulty power seat control unit • An open or high resistance in the wire
DPMS SET Switch	Driving position memory switch SET button pushed: ON Switch released: OFF	Door multiplex control unit/19 Driving position memory switch SET button pushed: 19 (less than 0.2 V) SET button released: 19 (at least 5 V)	• Faulty driving position memory switch • Faulty door multiplex control unit • An open or high resistance in the wire • A short to ground in the wire
DPMS POSITION 1 Switch	Driving position memory switch POSITION 1 button pushed: ON Switch released: OFF	Door multiplex control unit/17 Driving position memory switch POSITION 1 button pushed: 17 (more than 0.2 V) POSITION 1 button released: 17 (at least 5 V)	• Faulty driving position memory switch • Faulty door multiplex control unit • An open or high resistance in the wire • A short to ground in the wire
DPMS POSITION 2 Switch	Driving position memory switch POSITION 2 button pushed: ON Switch released: OFF	Door multiplex control unit/16 Driving position memory switch POSITION 2 button pushed: 16 (more than 0.2 V) POSITION 2 button released: 16 (at least 5 V)	• Faulty driving position memory switch • Faulty door multiplex control unit • An open or high resistance in the wire • A short to ground in the wire

6. Exit the DATA LIST and select FUNCTION TEST.
7. Do each of the function tests listed in the table shown. The appropriate output should occur.
    - If the function operates normally, go to the next function test. If all function tests operate normally, the system is OK.
    - If the function does not occur, do the appropriate test at the control unit and terminal indicated in the table.
        - Voltage drop tests should be done with the ignition switch in ON (II) or the vehicle ignition in the ON mode, and all connectors connected.
        - Continuity tests should be done with the ignition switch in LOCK (0) or the vehicle ignition in the OFF mode, and indicated terminals disconnected.
        - Jumper tests should be done according to the instructions indicated.

- If the test indicates that the component operates normally, but the function will not operate by doing the function test or the normal use of the component, the control unit that operates that function must be faulty; replace it.
- If the test indicates that the component does not operate normally, check for an open or short in the harnesses between the component and the control unit. If the harness is OK, replace the component.

Function Test	Component and Operation	Control Unit/Terminal Number/Test (If applicable)	Possible cause if desired result is not obtained
Power Seat: Slide Motor-Full Forward	Seat slides forward	Power seat control unit/ A8, A18, A7, A17 Disconnect power seat control unit connector A. Connect A8 to A17 and A7 to A18; driver's seat should slide forward.	• Faulty slide motor • An open or high resistance in the wire • A short to ground in the wire
Power Seat: Slide Motor-Full Backward	Seat slides backward	Power seat control unit/ A8, A18, A7, A17 Disconnect power seat control unit connector A. Connect A8 to A7 and A17 to A18; driver's seat should slide backward.	• Faulty slide motor • An open or high resistance in the wire • A short to ground in the wire
Power Seat: Front Up-Down Motor-Full Up	Front of seat moves up	Power seat control unit/ A8, A18, A6, A16 Disconnect power seat control unit connector A. Connect A8 to A16 and A6 to A18; front of driver's seat should move up.	• Faulty front up-down motor • An open or high resistance in the wire • A short to ground in the wire
Power Seat: Front Up-Down Motor-Full Down	Front of seat moves down	Power seat control unit/ A8, A18, A6, A16 Disconnect power seat control unit connector A. Connect A8 to A6 and A16 to A18; front of driver's seat should move down.	• Faulty front up-down motor • An open or high resistance in the wire • A short to ground in the wire
Power Seat: Rear Up-Down Motor-Full Up	Rear of seat moves up	Power seat control unit/ A1, A4, A2, A10 Disconnect power seat control unit connector A. Connect A1 to A2 and A10 to A4; rear of driver's seat should move up.	• Faulty rear up-down motor • An open or high resistance in the wire • A short to ground in the wire
		Power seat control unit/ A1, A4,	• Faulty rear up-down

Power Seat: Rear Up-Down Motor-Full Down	Rear of seat moves down	A2, A10 Disconnect power seat control unit connector A. Connect A1 to A10 and A2 to A4; rear of driver's seat should move down.	motor • An open or high resistance in the wire • A short to ground in the wire
Power Seat: Recline Motor-Full Forward	Seat back moves forward	Power seat control unit/ A1, A4, A11, A9 Disconnect power seat control unit connector A. Connect A1 to A9 and A11 to A4; driver's seat back should move forward.	• Faulty recline motor • An open or high resistance in the wire • A short to ground in the wire
Power Seat: Recline Motor-Full Backward	Seat back moves backward	Power seat control unit/ A1, A4, A11, A9 Disconnect power seat control unit connector A. Connect A1 to A11 and A9 to A4; driver's seat back should move backward.	• Faulty recline motor • An open or high resistance in the wire • A short to ground in the wire

POWER SEAT CONTROL UNIT INPUT TEST/REPLACEMENT

NOTE:

- **If you are troubleshooting multiple DTCs, be sure to follow the instructions in B-CAN System Diagnosis Test Mode A (see TROUBLESHOOTING - B-CAN SYSTEM DIAGNOSIS TEST MODE A).**
- **SRS components are located in this area. Review the SRS component locations (see COMPONENT LOCATION INDEX), and precautions and procedures (see PRECAUTIONS AND PROCEDURES) before doing repairs or servicing.**

1. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
2. Remove the driver's seat (see **FRONT SEAT REMOVAL/INSTALLATION**).

   NOTE: Be careful not to scratch the interior trim.

3. Disconnect the 18P connector (A) and 40P connector (B) from the power seat control unit (C).

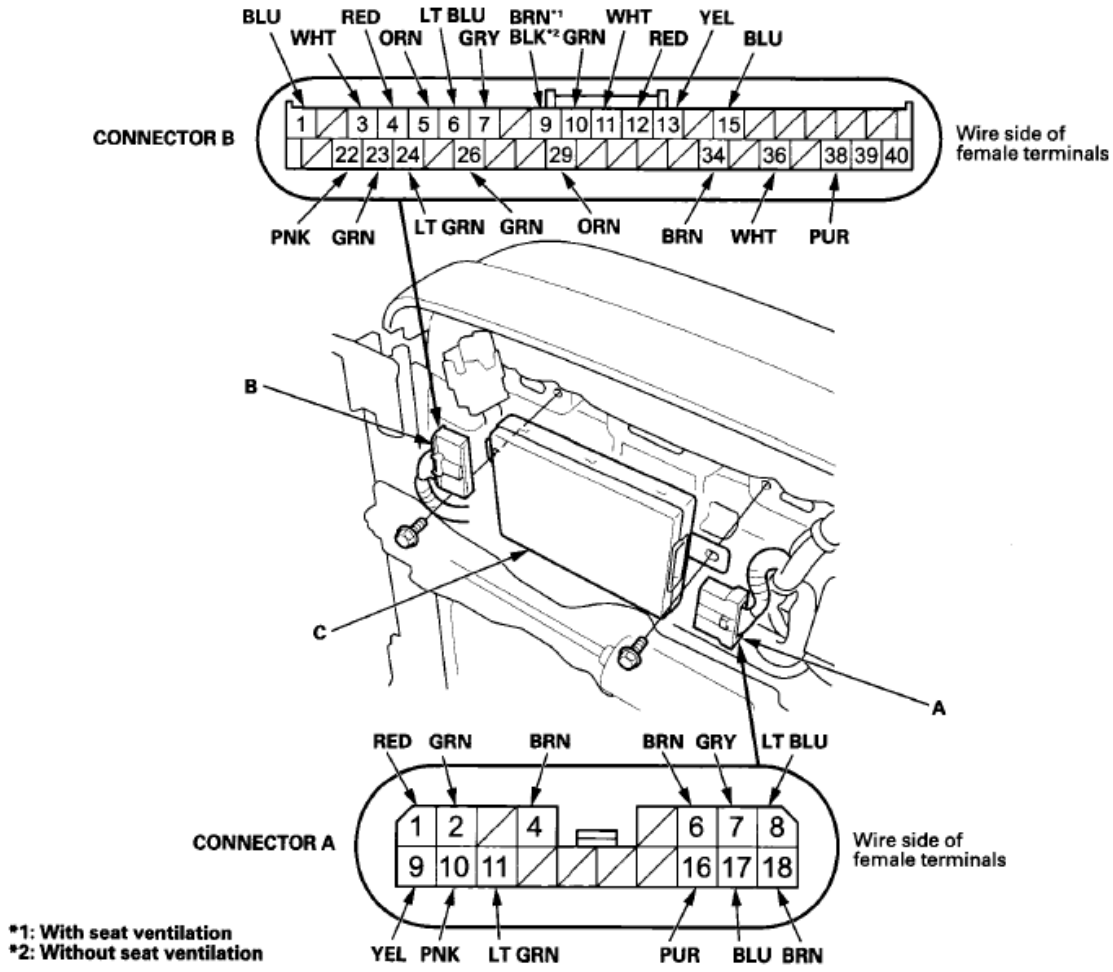


Fig. 90: Identifying 18P Connector, 40P Connector And Power Seat Control Unit
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Inspect the connector and socket terminals to be sure they are all making good contact.
   - If the terminals are bent, loose or corroded, repair them as necessary, and recheck the system.
   - If the terminals look OK, go to step 5.
5. Reconnect the connectors to the power seat control unit, and do the following input tests:
   - If any test indicates a problem, find and correct the cause, then recheck the system.
   - If all the input tests prove OK, go to step 6.

Cavity	Wire	Test condition	Test: Desired result	Possible cause if desired result is not obtained
B34	BRN	Ignition switch ON (II), or power mode ON	Measure the voltage to ground: There should be battery voltage.	• Blown No. 12 (7.5 A) fuse in the driver's under-dash fuse/relay box • An open or high resistance in the wire

B36	WHT	Under all conditions	Measure the voltage to ground: There should be battery voltage.	• Blown No. 15(10 A) fuse in the under-hood fuse/relay box • An open or high resistance in the wire
A1	RED	Under all conditions	Measure the voltage to ground: There should be battery voltage.	• Blown No. 3-4 (DR F/B STD) (60 A) fuse in the under-hood fuse/relay box • Blown No. 21 (20 A) fuse in the driver's under-dash fuse/relay box • An open or high resistance in the wire
A8	LT BLU	Under all conditions	Measure the voltage to ground: There should be battery voltage.	• Blown No. 3-4 (DR F/B STD) (60 A) fuse in the under-hood fuse/relay box • Blown No. 19 (20 A) fuse in the driver's under-dash fuse/relay box • An open or high resistance in the wire
B9(1)	BRN	In all ignition switch positions or all power modes	Measure the voltage to ground: There should be less than 0.2 V.	• Poor ground (G701) • An open or high resistance in the ground wire
B9(2)	BLK	In all ignition switch positions or all power modes	Measure the voltage to ground: There should be less than 0.2 V.	• Poor ground(G701) • An open or high resistance in the ground wire
A4	BRN	In all ignition switch positions or all power modes	Measure the voltage to ground: There should be less than 0.2 V.	• Poor ground (G701) • An open or high resistance in the ground wire
A18	BRN	In all ignition switch positions or all power modes	Measure the voltage to ground: There should be less than 0.2 V.	• Poor ground (G701) • An open or high resistance in the ground wire
B26 (A/T)	GRN	Shift lever in P position	Measure the voltage to ground: There should be less than 0.2 V.	• Faulty transmission range switch • Poor ground (G101) • An open or high resistance in the wire
			Measure the voltage to	• Faulty transmission range

		Shift lever in any other position than P	ground: There should be about 5 V.	switch • A short to ground in the wire
B26 (A/T)	GRN	Ignition switch ON (II), or power mode ON, parking brake lever pulled	Measure the voltage to ground: There should be less than 0.2 V.	• Faulty parking brake switch • An open or high resistance in the wire
		Ignition switch ON (II), or power mode ON, parking brake lever released	Measure the voltage to ground: There should be about 5 V.	• Faulty parking brake switch • A short to ground in the wire
B15	BLU	Ignition switch ON (II), or power mode ON	Measure the voltage to ground: There should be at least about 10 V.	• Faulty position sensor • A short to ground in the wire
B10 • B29	GRN • ORN	Run the recline motor	Measure the voltage between terminals B10 (+) and B29(-): There should be about 2.5 V average.	• Faulty position sensor • An open or high resistance in the wire • A short to ground in the wire
B11 • B29	WHT • ORN	Run the slide motor	Measure the voltage between terminals B11 (+) and B29(-): There should be about 2.5 V average.	• Faulty position sensor • An open or high resistance in the wire • A short to ground in the wire
B12 • B29	RED • ORN	Run the front up-down motor	Measure the voltage between terminals B12 (+) and B29(-): There should be about 2.5 V average.	• Faulty position sensor • An open or high resistance in the wire • A short to ground in the wire
B13 • B29	YEL • ORN	Run the rear up-down motor	Measure the voltage between terminals B13 (+) and B29(-): There should be about 2.5 V average.	• Faulty position sensor • An open or high resistance in the wire • A short to ground in the wire
B1 • B7	BLU • GRY	Slide switch in FORWARD position	Measure the voltage between the terminals: There should be less then 0.2 V.	• Faulty driver's power seat adjustment switch • An open or high resistance in the wire
B1 • B24	BLU • LT GRN	Slide switch in BACKWARD position	Measure the voltage between the terminals: There should be less then 0.2 V.	• Faulty driver's power seat adjustment switch • An open or high resistance in the wire
B1	BLU •	Recline switch in	Measure the voltage between the terminals:	• Faulty driver's power seat adjustment switch

• B6	LT BLU	FORWARD position	There should be less then 0.2 V.	• An open or high resistance in the wire
B1 • B23	BLU • GRN	Recline switch in BACKWARD position	Measure the voltage between the terminals: There should be less then 0.2 V.	• Faulty driver's power seat adjustment switch • An open or high resistance in the wire
B1 • B5	BLU • ORN	Front up-down switch in UP position	Measure the voltage between the terminals: There should be less then 0.2 V.	• Faulty driver's power seat adjustment switch • An open or high resistance in the wire
B1 • B4	BLU • RED	Front up-down switch in DOWN position	Measure the voltage between the terminals: There should be less then 0.2 V.	• Faulty driver's power seat adjustment switch • An open or high resistance in the wire
B1 • B22	BLU • PNK	Rear up-down switch in UP position	Measure the voltage between the terminals: There should be less then 0.2 V.	• Faulty driver's power seat adjustment switch • An open or high resistance in the wire
B1 • B3	BLU • WHT	Rear up-down switch in DOWN position	Measure the voltage between the terminals: There should be less then 0.2 V.	• Faulty driver's power seat adjustment switch • An open or high resistance in the wire
(1) With seat ventilation (2) Without seat ventilation				

6. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode, then disconnect the connectors from the power seat control unit, and do the following input tests:
   - If any test indicates a problem, find and correct the cause, then recheck the system.
   - If all the input tests prove OK, the control unit must be faulty; replace it.

Cavity	Wire	Test condition	Test: Desired result	Possible cause if desired result is not obtained
B38	PUR	Disconnect the power mirror control unit 24P connector	Check for continuity between terminal B38 and power mirror control unit 24P connector terminal No. 13: There should be continuity.	An open in the UART wire
A7 • A17	GRY • BLU	Under all conditions	Connect terminals A1 and A7, and terminals A17 and A4: The seat should slide backward.	• Faulty slide motor • An open or high resistance in the wire
			Connect terminals A1 and A17, and terminals A7 and A4:	

			The seat should slide forward.	
A9 • A11	YEL • LT GRN	Under all conditions	Connect terminals A1 and A9, and terminals A11 and A4: The seat should recline forward. Connect terminals A1 and A11, and terminals A9 and A4: The seat should recline backward.	• Faulty recline motor • An open or high resistance in the wire
A6 • A16	BRN • PUR	Under all conditions	Connect terminals A1 and A6, and terminals A16 and A4: The front of seat should move down. Connect terminals A1 and A16, and terminals A6 and A4: The front of seat should move up.	• Faulty front up-down motor • An open or high resistance in the wire
A2 • A10	GRN • PNK	Under all conditions	Connect terminals A1 and A2, and terminals A10 and A4: The rear of seat should move up. Connect terminals A1 and A10, and terminals A2 and A4: The rear of seat should move down.	• Faulty rear up-down motor • An open or high resistance in the wire

POWER MIRROR CONTROL UNIT INPUT TEST/REPLACEMENT

NOTE: Before troubleshooting the DPMS, troubleshoot the multiplex integrated control system first using B-CAN System Diagnosis Test Mode A (see TROUBLESHOOTING - B-CAN SYSTEM DIAGNOSIS TEST MODE A).

1. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
2. Remove the driver's door panel (see **FRONT DOOR PANEL REMOVAL/INSTALLATION**).
3. Disconnect the 24P connector (A) from the power mirror control unit (B).

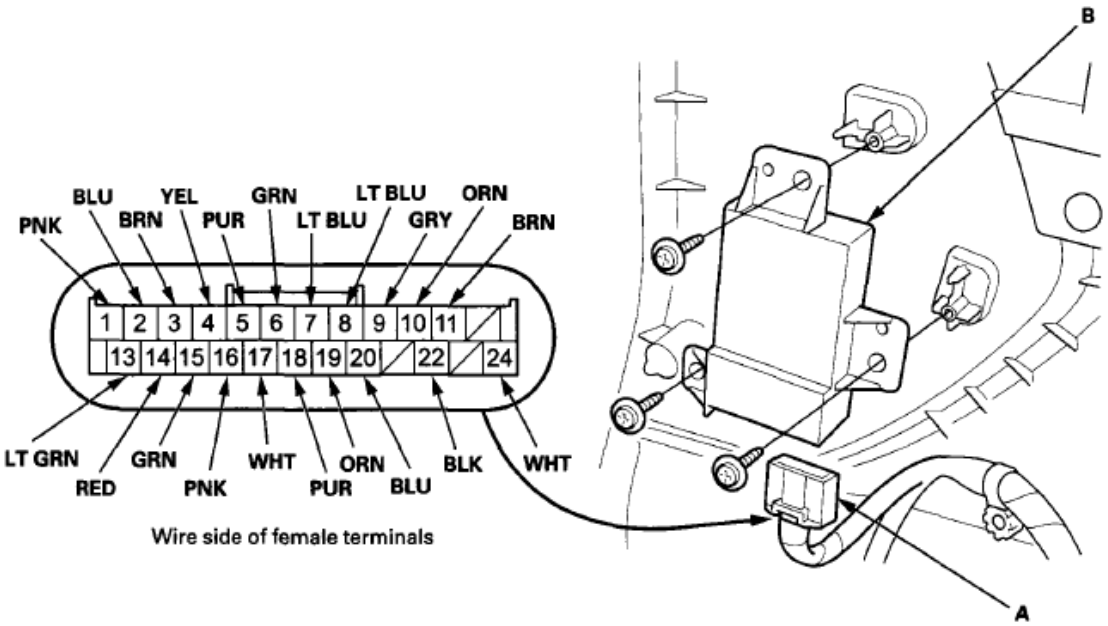


Fig. 91: Identifying 24P Connector And Power Mirror Control Unit
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Inspect the connector and socket terminals to be sure they are all making good contact.
   - If the terminals are bent, loose or corroded, repair them as necessary, and recheck the system.
   - If the terminals look OK, go to step 5.
5. Reconnect the connector to the power mirror control unit, and do the following input tests:
   - If any test indicates a problem, find and correct the cause, then recheck the system.
   - If all the input tests prove OK, go to step 6.

Cavity	Wire	Test condition	Test: Desired result	Possible cause if desired result is not obtained
11	BRN	Ignition switch ON (II), or power mode ON	Measure the voltage to ground: There should be battery voltage.	• Blown No. 12 (7.5 A) fuse in the driver's under-dash fuse/relay box • An open or high resistance in the wire
24	WHT	Under all conditions	Measure the voltage to ground: There should be battery voltage.	• Blown No. 15 (10 A) fuse in the under-hood fuse/relay box • An open or high resistance in the wire
22	BLK	In all ignition switch positions or all power modes	Measure the voltage to ground: There should be less than	• Poor ground (G401) • An open or high resistance in the

			0.2 V.	ground wire
1 • 2	PNK • BLU	Ignition switch ON (II), or power mode ON, and mirror select switch in LEFT, then mirror down switch pressed	Measure the voltage to ground: There should be battery voltage.	• Blown No. 16 (7.5 A) fuse in the driver's under-dash fuse/relay box • Faulty power mirror switch • An open or high resistance in the wire
8 • 9	LT • BLU GRY	Ignition switch ON (II), or power mode ON, and mirror select switch in RIGHT, then mirror down switch pressed	Measure the voltage to ground: There should be battery voltage.	• Blown No. 16 (7.5 A) fuse in the driver's under-dash fuse/relay box • Faulty power mirror switch • An open or high resistance in the wire
10	ORN	Ignition switch ON (II), or power mode ON, and mirror select switch in LEFT or RIGHT, then mirror up switch pressed	Measure the voltage to ground: There should be battery voltage.	• Blown No. 16 (7.5 A) fuse in the driver's under-dash fuse/relay box • Faulty power mirror switch • An open or high resistance in the wire
7	LT BLU	Ignition switch ON (II), or power mode ON	Measure the voltage to ground: There should be about 5 V.	• Faulty mirror position sensor • A short to ground in the wire
4 • 6	YEL • GRN	Swing the left mirror from full left to full right	Measure the voltage between terminals No. 4 and No. 6: There should be about 0.5 V to 4.5 V (average about 2.5 V when the mirror moves).	• Faulty left mirror position sensor • An open or high resistance in the wire • A short to ground in the wire
5 • 6	PUR • GRN	Move the left mirror from full up to full down	Measure the voltage between terminals No. 5 and No. 6: There should be about 0.5 V to 4.5 V (average about 2.5 V when the mirror moves).	• Faulty left mirror position sensor • An open or high resistance in the wire • A short to ground in the wire
			Measure the voltage	

20 • 6	BLU • GRN	Swing the right mirror from full left to full right	between terminals No. 20 and No. 6: There should be about 0.5 V to 4.5 V (average about 2.5 V when the mirror moves).	• Faulty right mirror position sensor • An open or high resistance in the wire • A short to ground in the wire
19 • 6	ORN • GRN	Move the right mirror from full up to full down	Measure the voltage between terminals No. 19 and No. 6: There should be about 0.5 V to 4.5 V (average about 2.5 V when the mirror moves).	• Faulty right mirror position sensor • An open or high resistance in the wire • A short to ground in the wire

6. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode, then disconnect the connectors from the power mirror control unit, and do the following input tests:
   - If any test indicates a problem, find and correct the cause, then recheck the system.
   - If all the input tests prove OK, the control unit must be faulty; replace it.

Cavity	Wire	Test condition	Test: Desired result	Possible cause if desired result is not obtained
13	LT GRN	Disconnect power seat control unit B (40P) connector	Check for continuity between terminal No. 13 and power seat control unit B (40P) connector terminal No. 38: There should be continuity.	An open in the UART wire
14 • 15	RED • GRN	Under all conditions	Connect terminals No. 14 and No. 24, and terminals No. 15 and No. 22: The left mirror should move up.	• Faulty left mirror actuator • An open or high resistance in the wire
			Connect terminals No. 15 and No. 24, and terminals No. 14 and No. 22: The left mirror should move down.	
15 • 16	GRN • PNK	Under all conditions	Connect terminals No. 15 and No. 24, and terminals No. 16 and No. 22: The left mirror should swing left.	• Faulty left mirror actuator • An open or high resistance in the wire
			Connect terminals No. 16 and No. 24, and terminals No. 15 and No. 22: The left mirror should swing right.	
3 • 17	BRN • WHT	Under all conditions	Connect terminals No. 3 and No. 24, and terminals No. 17 and No. 22: The right mirror should move up.	• Faulty right mirror actuator • An open or high resistance in the wire
			Connect terminals No. 17 and No. 24, and terminals No. 3 and No. 22: The right mirror should move down.	
			Connect terminals No. 17 and No. 24, and terminals No. 18 and No. 22:	• Faulty right mirror

17 • 18	WHT • PUR	Under all conditions	The right mirror should swing left. Connect terminals No. 18 and No. 24, and terminals No. 17 and No. 22: The right mirror should swing right.	actuator • An open or high resistance in the wire

DOOR MULTIPLEX CONTROL UNIT INPUT TEST

1. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
2. Remove the driver's door panel (see **FRONT DOOR PANEL REMOVAL/INSTALLATION**).
3. Disconnect the 37P connector (A) from the power window master switch (B).

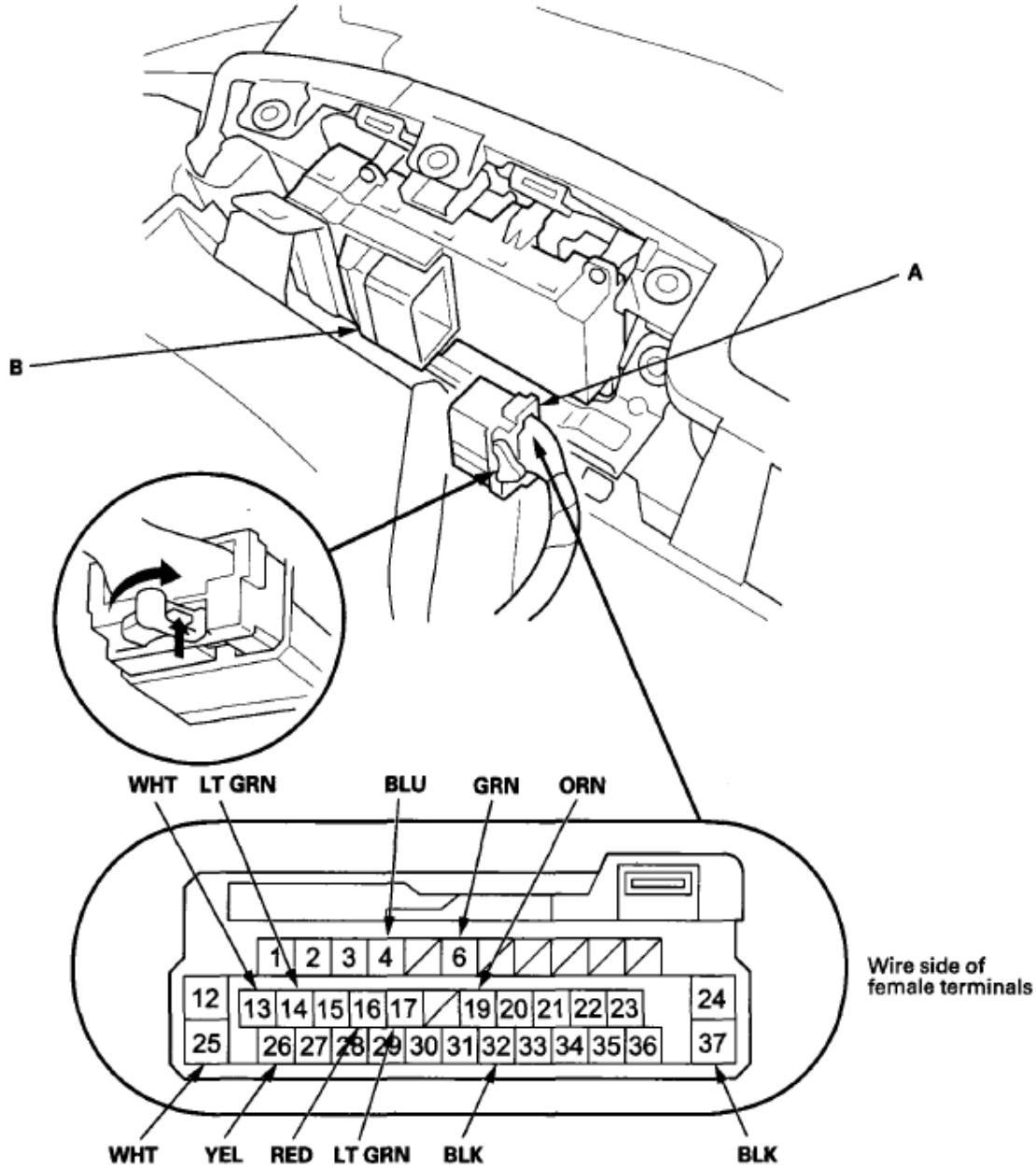


Fig. 92: Identifying 37P Connector And Power Window Master Switch
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Inspect the connector and socket terminals to be sure they are all making good contact.
   - If the terminals are bent, loose or corroded, repair them as necessary, and recheck the system.
   - If the terminals look OK, go to step 5.
5. Reconnect the connector to the power window master switch, and do the following input tests:
   - If any test indicates a problem, find and correct the cause, then recheck the system.
   - If all the input tests prove OK, go to step 6.

Cavity	Wire	Test condition	Test: Desired result	Possible cause if desired result is not obtained
13	WHT	Under all conditions	Measure the voltage to ground: There should be battery voltage.	• Blown No. 15 (10 A) fuse in the under-hood fuse/relay box • An open or high resistance in the wire
14	LT GRN	Ignition switch ON (II), or ignition mode ON	Measure the voltage to ground: There should be battery voltage.	• Blown No. 16 (7.5 A) fuse in the driver's under-dash fuse/relay box • An open or high resistance in the wire
25	WHT	Under all conditions	Measure the voltage to ground: There should be battery voltage.	• Blown No. 3-4 (DR F/B STD) (60 A) fuse in the under-hood fuse/relay box • Blown No. 24 (20 A) fuse in the driver's under-dash fuse/relay box • An open or high resistance in the wire
32	BLK	In all ignition switch positions or all power modes	Measure the voltage to ground: There should be less than 0.2 V.	• Poor ground(G401) • An open or high resistance in the ground wire
37	BLK	In all ignition switch positions or all power modes	Measure the voltage to ground: There should be less than 0.2 V.	• Poor ground(G402) • An open or high resistance in the ground wire
		Ignition switch ON (II), or ignition mode ON, position 2	Measure the voltage to ground:	• Faulty driving position memory switch • Poor ground (G401) or an open

		switch pressed	There should be less than 0.2 V.	in the ground wire • An open or high resistance in the wire
16	RED	Ignition switch ON (II), or ignition mode ON, position 2 switch released	Measure the voltage to ground: There should be about 5 V.	• Faulty driving position memory switch • A short to ground in the wire
17	LT GRN	Ignition switch ON (II), or ignition mode ON, position 1 switch pressed	Measure the voltage to ground: There should be less than 0.2 V.	• Faulty driving position memory switch • Poor ground (G401) or an open in the ground wire • An open or high resistance in the wire
		Ignition switch ON (II), or ignition mode ON, position 1 switch released	Measure the voltage to ground: There should be about 5 V.	• Faulty driving position memory switch • A short to ground in the wire
19	ORN	Ignition switch ON (II), or ignition mode ON, SET switch pressed	Measure the voltage to ground: There should be less than 0.2 V.	• Faulty driving position memory switch • Poor ground (G401) or an open in the ground wire • An open or high resistance in the wire
		Ignition switch ON (II), or ignition mode ON, SET switch released	Measure the voltage to ground: There should be about 5 V.	• Faulty driving position memory switch • A short to ground in the wire

6. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode, then disconnect the connector from the power window master switch, and do the following input tests:
   - If any test indicates a problem, find and correct the cause, then recheck the system.
   - If all the input tests prove OK, the door multiplex control unit must be faulty; replace the power window master switch (see **REAR POWER WINDOW SWITCH TEST**).

NOTE: After replacing the power window master switch, reset the power window control unit (see RESETTING THE POWER WINDOW CONTROL UNIT).

Cavity	Wire	Test condition	Test: Desired result	Possible cause if desired result is not obtained
				• Faulty driving position

				memory switch • Faulty LED • Poor ground(G401) or an open in the ground wire • An open or high resistance in the wire
4	BLU	Under all conditions	Connect terminals No. 13 and No. 4: The driving position memory switch indicator 2 should come on.	
6	GRN	Under all conditions	Connect terminals No. 13 and No. 6: The driving position memory switch indicator 1 should come on.	• Faulty driving position memory switch • Faulty LED • Poor ground (G401) or an open in the ground wire • An open or high resistance in the wire
26	YEL	Under all conditions	Connect terminals No. 13 and No. 26: The driving position memory switch lights should come on.	• Faulty driving position memory switch • Faulty LED • Poor ground (G401) or an open in the ground wire • An open or high resistance in the wire

DRIVING POSITION MEMORY SWITCH TEST/REPLACEMENT

1. Remove the driver's door panel (see **FRONT DOOR PANEL REMOVAL/INSTALLATION**).
2. Disconnect the 7P connector (A) from the driver's position memory switch (B).

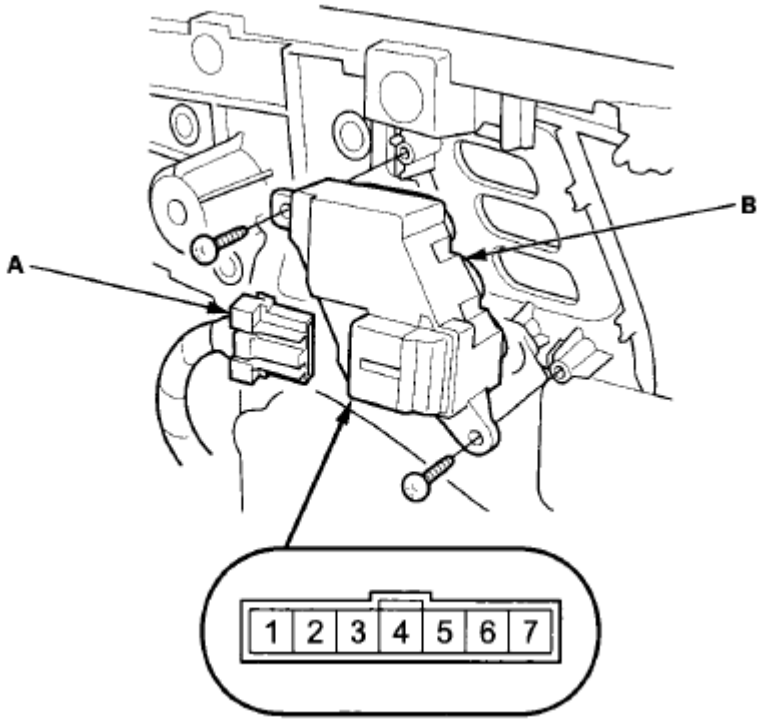


Fig. 93: Identifying 7P Connector And Driver'S Position Memory Switch
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Remove the two screws, then remove the switch from the door panel.
4. Check for continuity between the terminals in each switch position according to the table.

NOTE:

- **Make sure the correct test lead (+ or -) is placed on the terminal.**
- **When checking for continuity across the diode, use the diode setting on the digital volt/ohm meter to check the diode bias.**
- **Be careful of this characteristic; a diode is one that conducts fully in one direction (forward) and not at all in the opposite direction (reverse).**

Position \ Terminal		1	2	3	4	5		6	7
SET button	OFF								
	ON			○				○	
Position 1 button	OFF								
	ON	○						○	
Position 2 button	OFF								
	ON		○					○	
Indicator 1					⊕		⏦ ⊳| ▸		⊖	
Indicator 2						⊕	⏦ ⊳| ▸		⊖	
Lights								⊖ |◂ ⏦ ◂| ⊕	

Fig. 94: Checking Continuity Between Terminals In Each Switch Position According To Table
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. If the continuity is not as specified, replace the switch.

POWER SEAT ADJUSTMENT SWITCH TEST/REPLACEMENT

NOTE: SRS components are located in this area. Review the SRS component locations (see COMPONENT LOCATION INDEX), and precautions and procedures (see PRECAUTIONS AND PROCEDURES) before doing repairs or servicing.

1. Remove the driver's seat (see **FRONT SEAT REMOVAL/INSTALLATION**).
2. Remove the power seat adjustment switch knobs (A) and the recline cover from the driver's seat (see **FRONT SEAT RECLINE COVER REMOVAL/INSTALLATION**), then remove the two screws and the power seat adjustment switch (B).

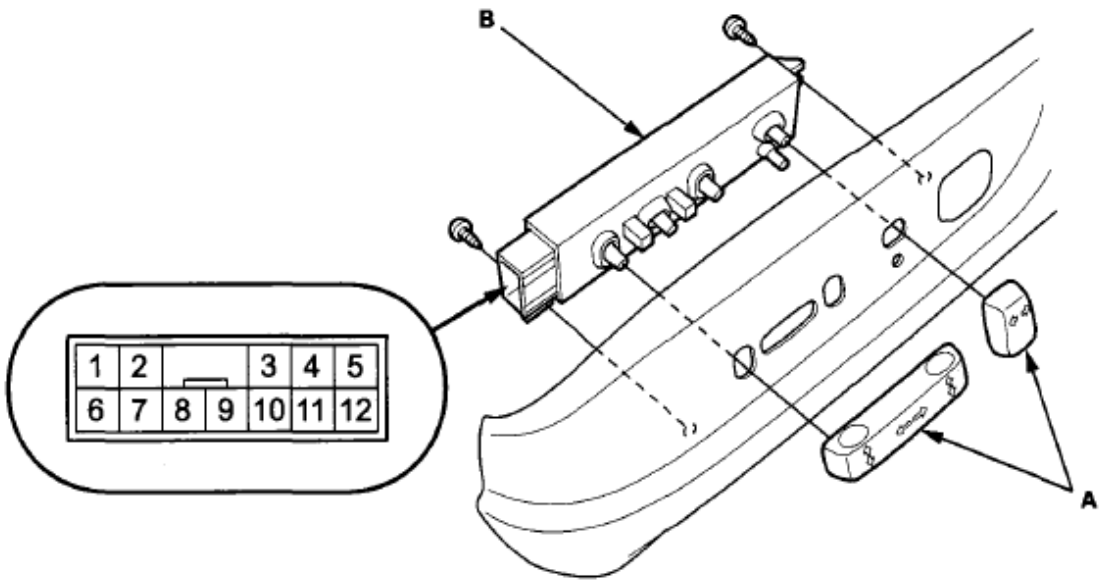


Fig. 95: Identifying Power Seat Adjustment Switch Knobs And Power Seat Adjustment Switch
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Disconnect the 12P connector from the power seat adjustment switch.
4. Reinstall the adjustment switch knobs to the switch.
5. Check for continuity between the terminals in each position according to the table.

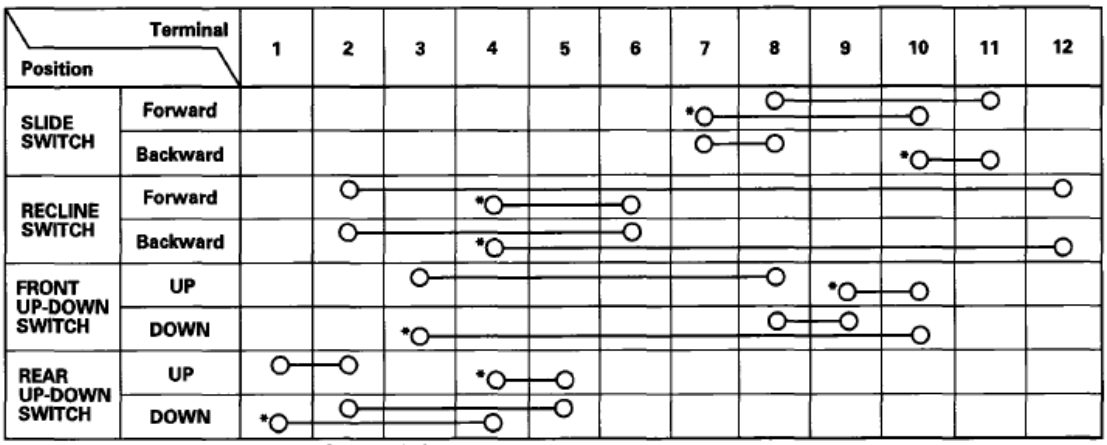


Fig. 96: Checking Continuity Between Terminals In Position According To Table
Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. If the continuity is not as specified, replace the switch.

DRIVER'S POWER SEAT MOTOR TEST

NOTE: SRS components are located in this area. Review the SRS component locations (see COMPONENT LOCATION INDEX), and precautions and procedures (see PRECAUTIONS AND PROCEDURES) before doing repairs or servicing.

1. Remove the driver's seat (see **FRONT SEAT REMOVAL/INSTALLATION**).
2. Disconnect the connector from each power seat motor.

NOTE:

- **For the recline motor, remove the seat-back cover (see FRONT SEAT-BACK COVER REPLACEMENT).**
- **All connectors are terminal side of male terminals.**

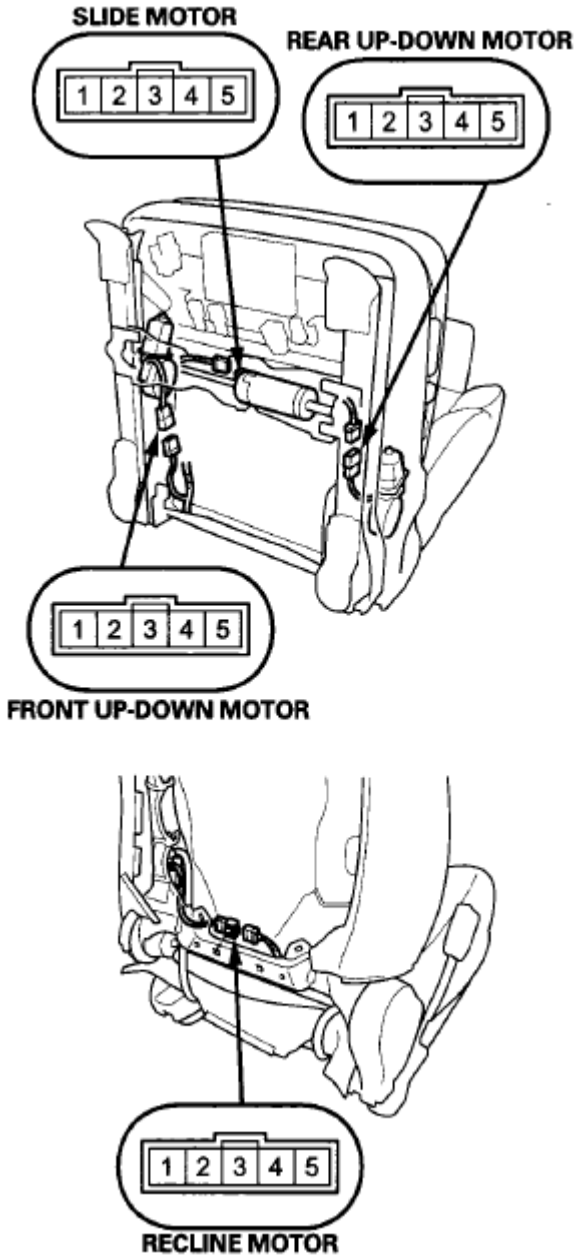


Fig. 97: Identifying Slide, Rear And Front Up-Down And Recline Motors
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Test each motor by connecting power and ground according to the table. When the motor stops running, disconnect battery power immediately.

Position	Terminal	1	5
SLIDE MOTOR	Forward	⊕	⊖
	Backward	⊖	⊕

Fig. 98: Testing Slide Motor By Connecting Power And Ground According To Table
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Position	Terminal	1	2
RECLINE MOTOR	Forward	⊕	⊖
	Backward	⊖	⊕

Fig. 99: Testing Recline Motor By Connecting Power And Ground According To Table
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Position	Terminal	1	2
FRONT UP-DOWN MOTOR	UP	⊕	⊖
	DOWN	⊖	⊕

Fig. 100: Testing Front Up-Down Motor By Connecting Power And Ground According To Table
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Position	Terminal	1	2
REAR UP-DOWN MOTOR	UP	⊖	⊕
	DOWN	⊕	⊖

Fig. 101: Testing Rear Up-Down Motor By Connecting Power And Ground According To Table
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. If the motor does not run or fails to run smoothly, replace:
   - Slide motor (see **FRONT SEAT SLIDE MOTOR REPLACEMENT**)
   - Front up-down motor/seat frame (see **FRONT SEAT FRAME REPLACEMENT**)
   - Rear up-down motor/seat frame (see **FRONT SEAT FRAME REPLACEMENT**)
   - Recline motor (see **FRONT SEAT RECLINE MOTOR REPLACEMENT**)

NOTE: **The front and rear up-down motors are part of the seat frame.**

2012 ACCESSORIES & EQUIPMENT

Electrical Compass - TL

COMPONENT LOCATION INDEX

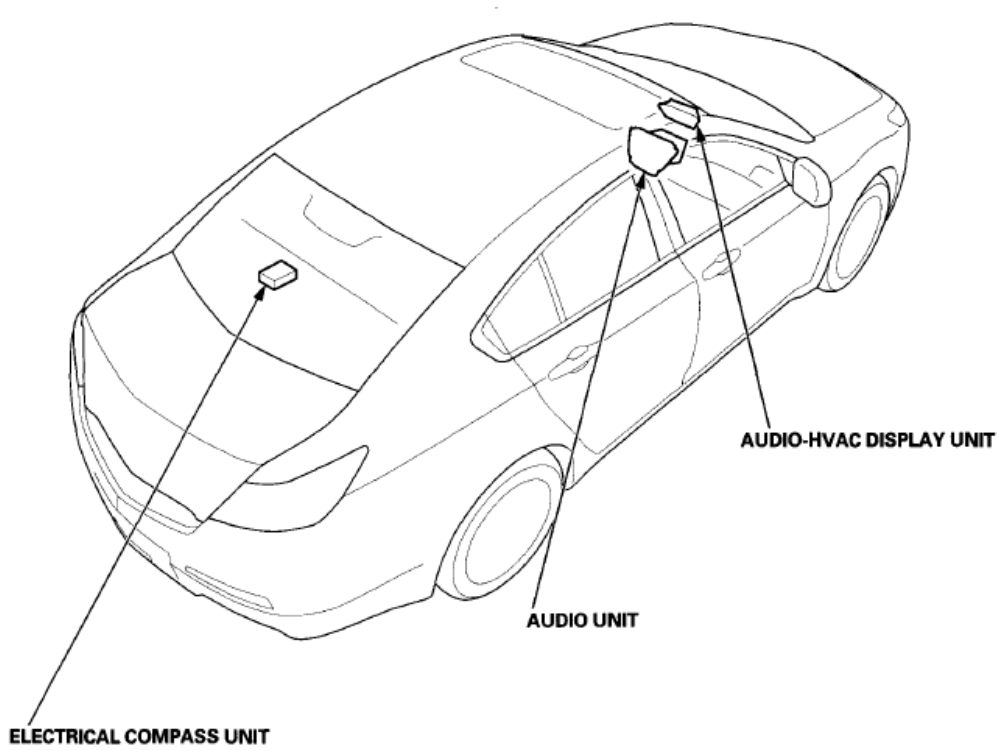


Fig. 1: Electrical Compass Components Location
Courtesy of AMERICAN HONDA MOTOR CO., INC.

SYMPTOM TROUBLESHOOTING INDEX

Symptom	Diagnostic Procedure	Also Check for
Azimuth (direction) information is not shown on the display	**Electrical Compass Troubleshooting**.	
No picture is shown on the display	Audio system information does not display on the audio-HVAC display unit troubleshooting (see **AUDIO SYSTEM INFORMATION DOES NOT DISPLAY ON THE AUDIO-HVAC DISPLAY UNIT (WITHOUT NAVIGATION)**)	The display brightness setting
Compass shows		• Check if the zone setting is correct for

wrong direction	**Compass Zone Selection and Calibration**.	the vehicle geographical location • Audio unit (B-CAN)
Compass does not calibrate	**Electrical Compass Troubleshooting**.	• Make sure the rear door and the trunk lid are closed • Audio unit (B-CAN)
Self-test has failed (flashing the CAL and NW)	**Electrical Compass Troubleshooting**.	Reboot the electrical compass unit

SYSTEM DESCRIPTION

OVERVIEW

The electrical compass sends the azimuth (direction) information in the 8-directions (N, NE, E, SE, S, SW, W, NW) to the audio-HVAC display unit via the audio unit.

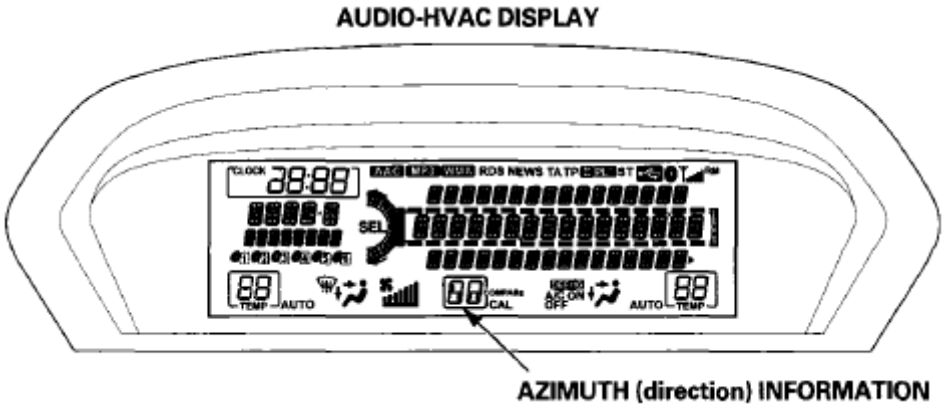


Fig. 2: Identifying Electrical Compass Azimuth Display
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Starting Operation

When the ignition switch is turned to ACCESSORY (I), the electrical compass unit begins to communicate with the audio unit. Then turn the ignition switch to ON (II), the self-test mode begins automatically.

The self-test function checks for the current voltage, non-volatile memory (NVM), and ROM status in the electrical compass unit. If the unit detects a malfunction while in the self-test, it indicates a malfunction by flashing compass information segments (CAL and NW) in the audio-HVAC display unit.

The electrical compass unit send the azimuth (direction) information to the audio unit. The electrical compass unit receive the VSP signal from the gauge control module via the audio unit. The azimuth information is fixed while parked. The electrical compass unit also receives following signals via the audio unit:

- RR DEF (on/off) signal from the climate control unit. The electrical compass unit compensates for magnetic anomalies when the rear window defogger is on.
- INTR LT signal from the driver's MICU. The electrical compass unit not compensates for magnetic anomalies when the rear window defogger is on and the rear door or the trunk lid is opening.

Self-Calibration

The electrical compass unit has a self-calibration function. It detects and compensates for magnetic anomalies caused by bridges, subways and large steel structures. When the vehicle leaves an area with a strong magnetic interference field (2, 400 mG or more), the electrical compass unit automatically begins calibrating. If needed, you can manually **calibrate the compass**.

Zone Selection

Zone selection is required to compensate for the difference between magnetic North and geographic North. This deviation is referred to as declination, the compass compensates for declination when you select the zone where the vehicle is located.

System Diagram

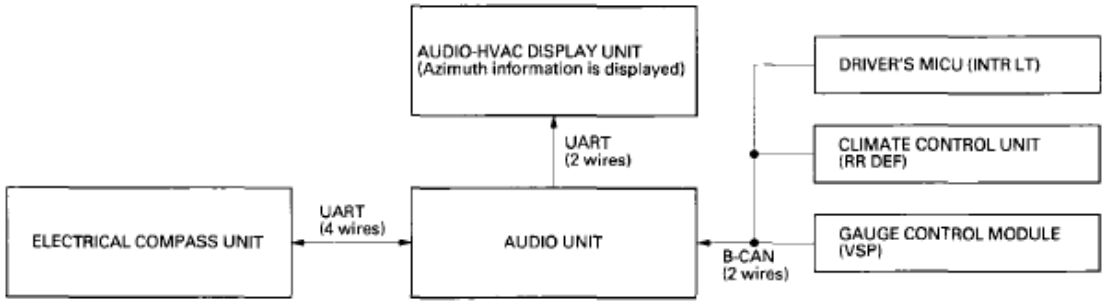


Fig. 3: Electrical Compass System Diagram
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Electrical Compass Unit Connector Inputs and Outputs

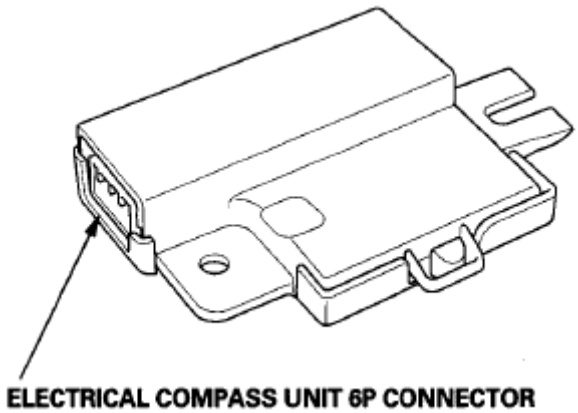
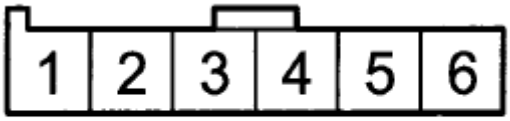


Fig. 4: Identifying Electrical Compass Unit Connector Inputs And Outputs

Courtesy of AMERICAN HONDA MOTOR CO., INC.

ELECTRICAL COMPASS UNIT 6P CONNECTOR



Wire side of female terminals

Fig. 5: Electrical Compass Unit 6P Connector End View
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Electrical Compass Unit 6P Connector

Cavity	Wire Color	Terminal Name	Connects to
1	BRN	IG1	No. 12 (7.5 A) fuse in the driver's under-dash fuse/relay box
2	BLK	GND	Body ground to G651
3	LT BLU	COMPASS 1	Audio unit
4	PNK	COMPASS 2	Audio unit
5	ORN	COMPASS 3	Audio unit
6	RED	COMPASS 4	Audio unit

CIRCUIT DIAGRAM

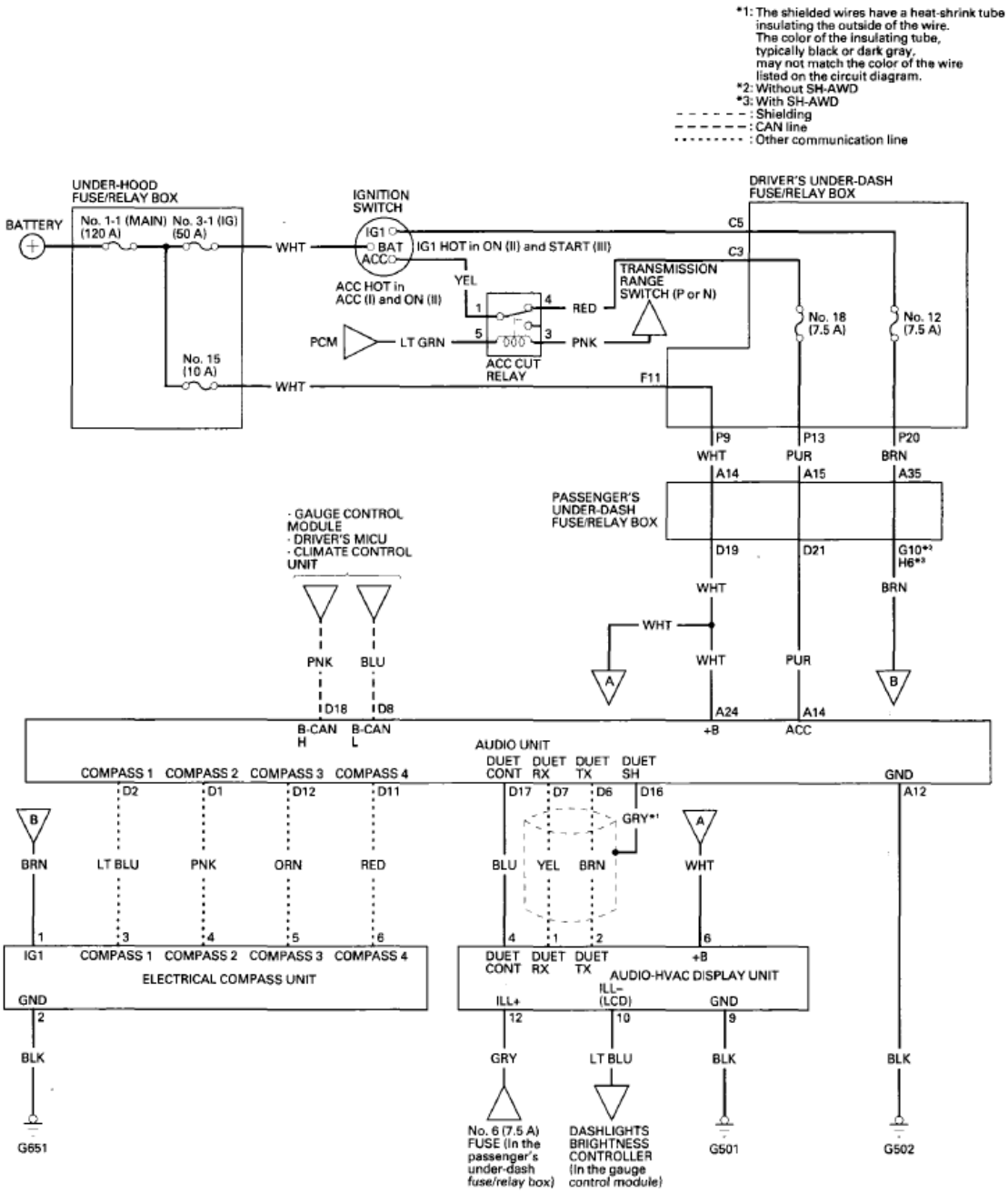


Fig. 6: Electrical Compass Circuit Diagram
Courtesy of AMERICAN HONDA MOTOR CO., INC.

ELECTRICAL COMPASS TROUBLESHOOTING

NOTE: Check the vehicle battery condition first (see BATTERY TEST).

1. Check the No. 12 (7.5 A) fuse in the driver's under-dash fuse/relay box.

   Is the fuse OK?

YES -Go to step 2.

NO -Replace the fuse, and recheck. If the fuse blows again, check for a short in the No. 12 (7.5 A) fuse circuit. •

2. Check if the electrical compass unit 6P connector is properly connected.

   Is the connector properly connected?

   YES -Go to step 3.

   NO -Reconnect the connector, and recheck. •

3. Turn the ignition switch to ON (II).
4. Measure the voltage between electrical compass unit 6P connector terminal No. 1 and body ground.

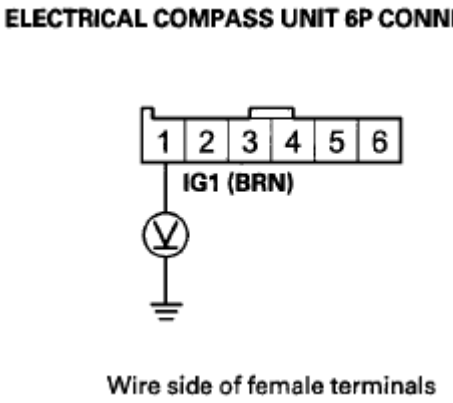


Fig. 7: Measuring Voltage Between Electrical Compass Unit 6P Connector Terminal No. 1 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there battery voltage?

YES -Go to step 5.

NO -Repair an open or high resistance in the wire between electrical compass unit 6P connector terminal No. 1 and the No. 12 (7.5 A) fuse in the driver's under-dash fuse/relay box. •

5. Measure the voltage between electrical compass unit 6P connector terminal No. 2 and body ground.

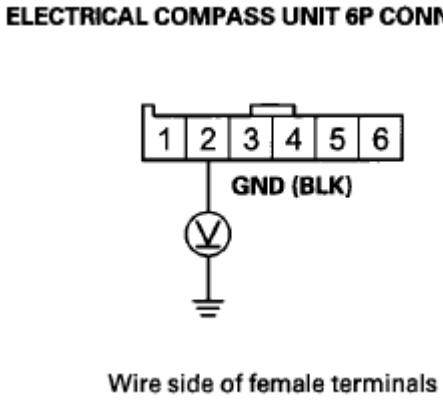


Fig. 8: Measuring Voltage Between Electrical Compass Unit 6P Connector Terminal No. 2 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there less than 0.2 V?

YES -Go to step 6.

NO -Repair an open or high resistance in the wire between electrical compass unit 6P connector terminal No. 2 and body ground (G651); with SH-AWD (see **CONNECTOR TO FUSE/RELAY BOX INDEX**), without SH-AWD (see **CONNECTOR TO FUSE/RELAY BOX INDEX**). •

6. Turn the ignition switch to LOCK (0).
7. Disconnect the electrical compass unit 6P connector and audio unit connector D (20P).
8. Check for continuity between the electrical compass unit 6P connector and body ground according to the table.

Electrical compass unit connector	Wire color
3	LT BLU
4	PNK
5	ORN
6	RED

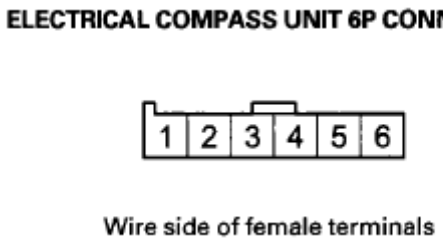


Fig. 9: Electrical Compass Unit 6P Connector End View
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES -Repair a short to body ground in the wire(s) between the electrical compass unit and the audio unit. •

NO -Go to step 9.

9. Check for continuity between the electrical compass unit 6P connector and audio unit connector D (20P) according to the table.

Electrical compass unit connector	Audio unit connector	Wire color
3	D2	LT BLU
4	D1	PNK
5	D12	ORN
6	D11	RED

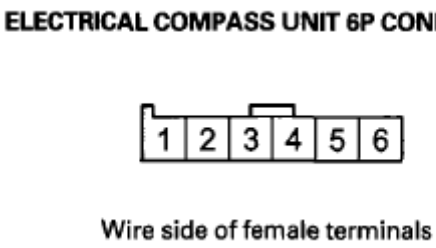


Fig. 10: Electrical Compass Unit 6P Connector End View
Courtesy of AMERICAN HONDA MOTOR CO., INC.

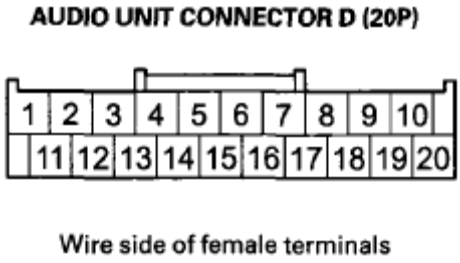


Fig. 11: Audio Unit Connector D (20P) Connector End View
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES -Repair an open in the wire(s) between the electrical compass unit and the audio unit. •

NO -Substitute a known-good **electrical compass unit** (see), and recheck. If the symptom/indication goes away, replace the original **electrical compass unit**. If the symptom/indication is still present, replace the audio unit (see **AUDIO UNIT REMOVAL/INSTALLATION**). •

ELECTRICAL COMPASS ZONE SELECTION AND CALIBRATION

SET THE COMPASS ZONE

NOTE:

- **Do this procedure any time the electrical compass unit is replaced.**
- **Do this procedure in an open area away from buildings, power lines, and other vehicles.**
- **If you see "-- --" in the compass display and the CAL indicator is shown in the display, the compass is self-calibrating.**
- **The compass may need to be manually calibrated after exposure to a strong magnetic field. If the compass seems to be continually showing the wrong direction and is not self-calibrating, do the following procedure.**
- **In most areas, there is a variation between magnetic north and true north. The compass zone needs to be set to your geographic zone to compensate for this variation.**

1. Check the No. 15(10 A) fuse in the under-hood fuse/relay box and the No. 12 (7.5 A) and the No. 18 (7.5 A) fuses in the driver's under-dash fuse/relay box.
2. Turn the ignition switch to ON (II), then press and hold the SETUP button (A) on the audio panel for about 5 seconds until you hear a beep. The display shows the compass setting menu items.

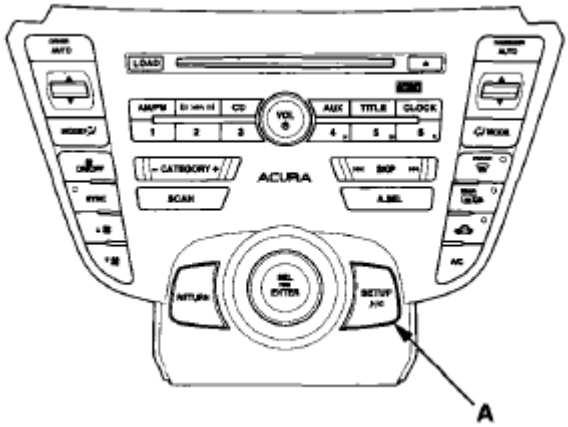


Fig. 12: Identifying Setup Button On Audio Panel
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Find your zone number in the map shown.



Fig. 13: Identifying Zone Numbers Map
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Turn the selector knob (A) to select ZONE, then press the knob to enter the selection. The display shows the currently selected zone number.



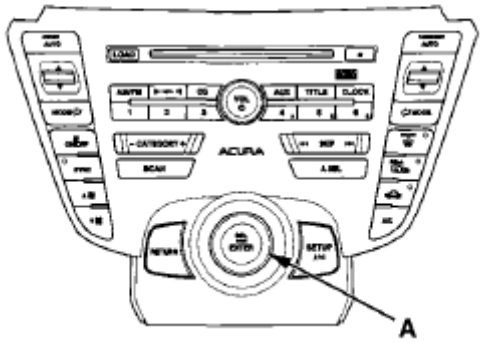


Fig. 14: Identifying Selector Knob
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Turn the selector knob to enter your zone, then press the knob, The display returns to its normal display mode.

NOTE: If necessary, press the RETURN button (A) to return to the previous display. Pressing the SETUP button (B) cancels the compass setting mode.

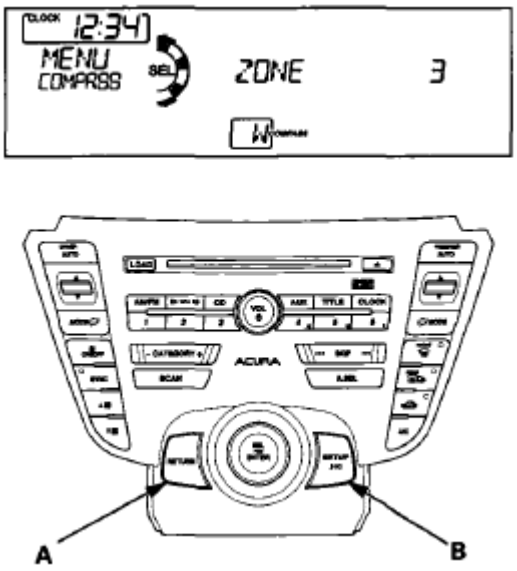


Fig. 15: Identifying Return Button And Setup Button
Courtesy of AMERICAN HONDA MOTOR CO., INC.

CHECK THE COMPASS CALIBRATION

Although the compass is self calibrating, it may need to be manually calibrated after exposure to a strong magnetic field. If the compass is blinking and CAL is shown on the display, do this to calibrate the compass:

1. Turn the ignition switch to ON (II).
2. Press and hold the SETUP button (A) for about 5 seconds until you hear a beep. The display shows you the compass setting menu items.

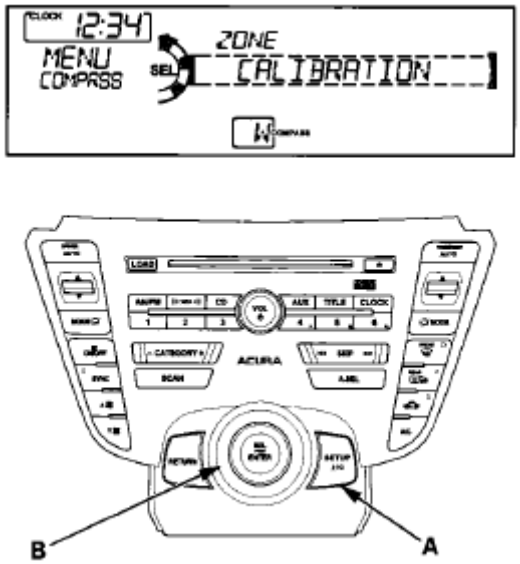
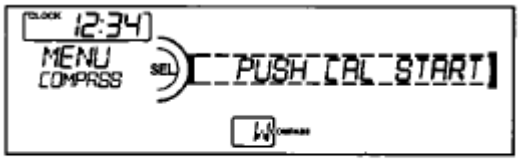


Fig. 16: Identifying Setup Button And Selector Knob
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Turn the selector knob (B) to select CALIBRATION, then press the knob.
4. When the display shows PUSH CAL START, press the selector knob (A). The compass display blinks and the CAL indicator comes on.



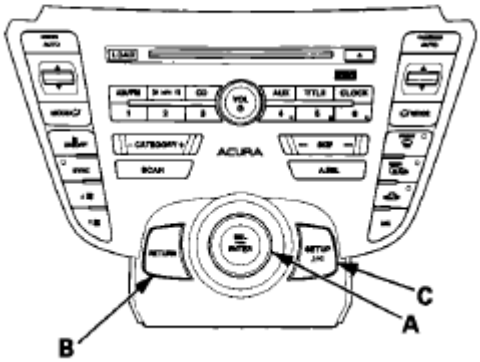


Fig. 17: Identifying Selector Knob, Return Button And Setup Button
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Drive the vehicle slowly in three complete circles (20 seconds or more per a circle). When the calibration is successfully completed, the compass display stops blinking and the CAL indicator goes off.

NOTE:

- **When you are in the setting mode, pressing the RETURN button (B) returns to the previous display. Pressing the SETUP button (C) cancels the compass setting mode.**
- **The audio system is not related to the electrical compass system. Even if the electrical compass system is calibrating, the display returns to the normal display which was last selected.**
- **If the calibration is failure, change the place (an open area away from buildings, power lines, other vehicles, and any other sources of strong magnetic fields) and do the calibration procedure over again.**

ELECTRICAL COMPASS UNIT REMOVAL/INSTALLATION

1. Remove the rear shelf (see **TRIM REMOVAL/INSTALLATION - REAR SHELF AREA**).
2. Remove the bolts (A), then disconnect the 6P connector (B) from the electrical compass unit (C), and remove it.

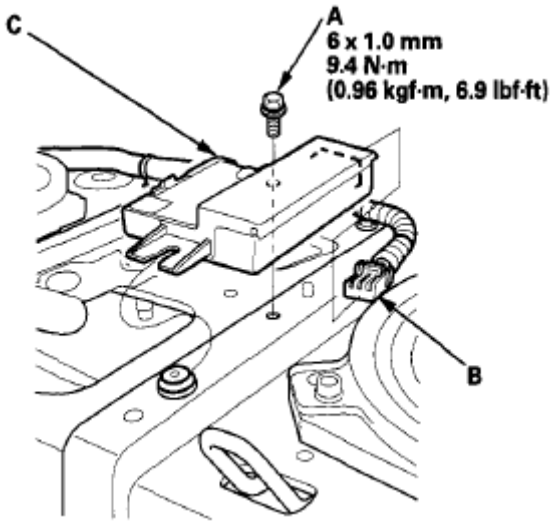


Fig. 18: Identifying Bolts, 6P Connector And Electrical Compass Unit With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Install the electrical compass unit in the reverse order of removal.

NOTE: If you replaced the electrical compass unit, set the compass zone.

2012 ACCESSORIES & EQUIPMENT

Fuel Fill Door Opener - TL

COMPONENT LOCATION INDEX

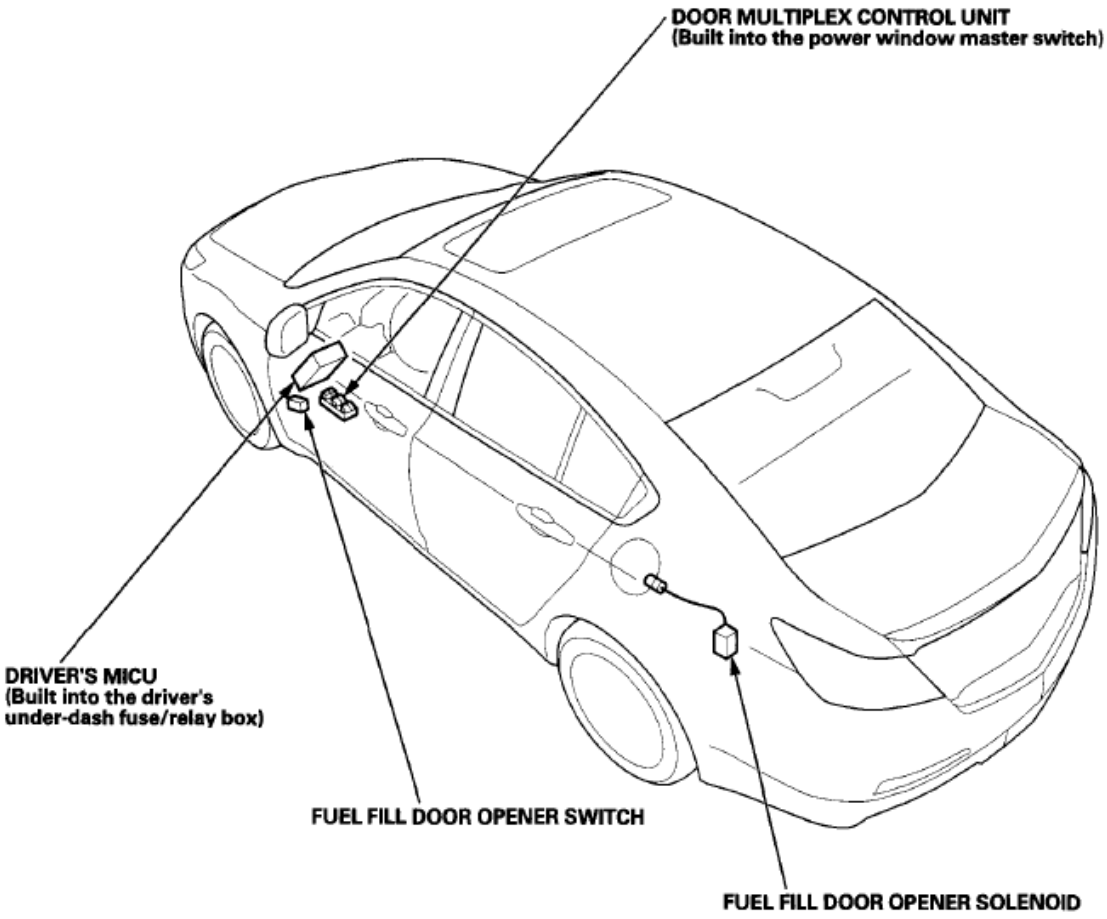


Fig. 1: Fuel Fill Door Opener Components Location
Courtesy of AMERICAN HONDA MOTOR CO., INC.

CIRCUIT DIAGRAM

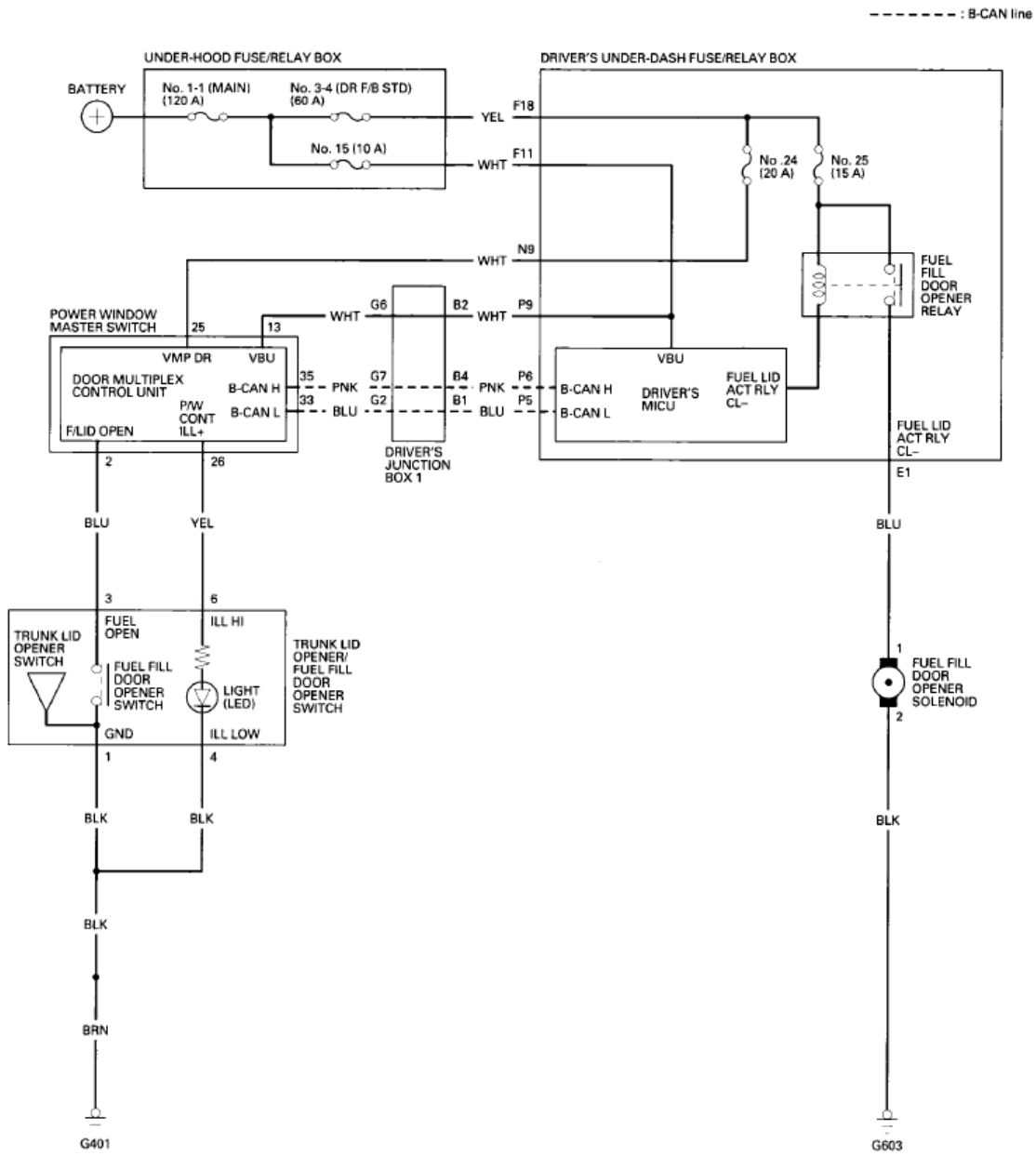


Fig. 2: Fuel Fill Door Opener Circuit Wiring Diagram
Courtesy of AMERICAN HONDA MOTOR CO., INC.

FUEL FILL DOOR OPENER SOLENOID TEST

1. Open the trunk lid, and remove the left trunk side trim panel. (See **TRIM REMOVAL/INSTALLATION - TRUNK AREA**).
2. Disconnect the 2P connector (A) from the fuel fill door opener solenoid (B).

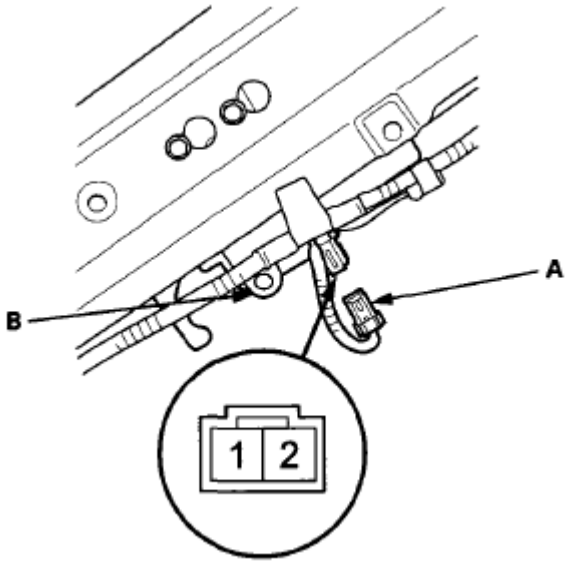


Fig. 3: Identifying Fuel Fill Door Opener Solenoid & 2P Connector End View
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Check solenoid operation by connecting power to terminal No. 1 and ground terminal No. 2 momentarily.

NOTE: To prevent damage to the solenoid only apply battery voltage momentarily.

4. If the solenoid does not actuate, replace it.

FUEL FILL DOOR OPENER SWITCH TEST/REPLACEMENT

1. Remove the driver's door panel. (See **FRONT DOOR PANEL REMOVAL/INSTALLATION**).
2. Disconnect the 6P connector (A) from the fuel fill door opener switch (B).

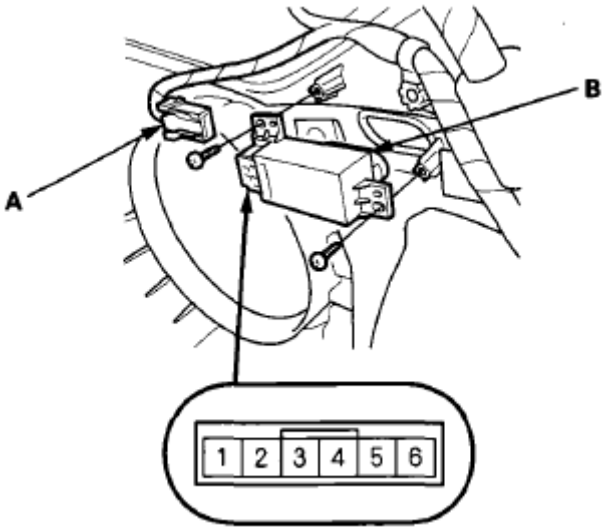


Fig. 4: Fuel Fill Door Opener Switch Connector End View
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Check for continuity between the terminals in each switch position according to the table.

Terminal / Position	1	2
Pushed	○—○	
Released		

Fig. 5: Checking Continuity Between Terminals In Switch Position According To Table
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. If the continuity is not as specified, remove the two screws and replace the switch.
5. Install the switch in the reverse order of removal.

EMERGENCY ACCESS TO FUEL FILL DOOR OPENER SOLENOID

1. Open the trunk lid, then remove the service lid cover.
2. Pull the handle (A) by hand in the direction of the arrow to release the lock.

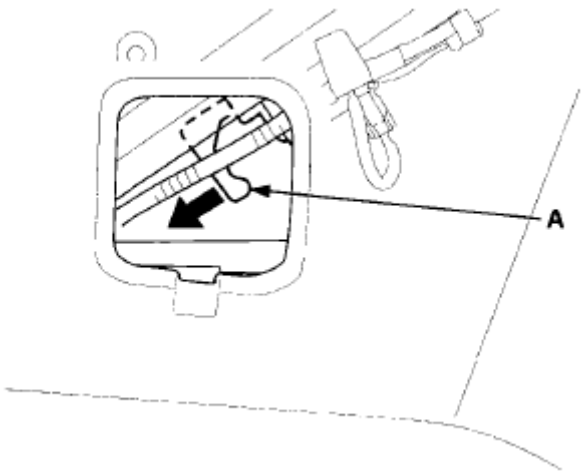


Fig. 6: Pulling Handle By Hand In Direction Of Arrow To Release Lock
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Push on the rear edge of the fuel fill door to open it.

2012 ACCESSORIES & EQUIPMENT

Gauges - TL

COMPONENT LOCATION INDEX

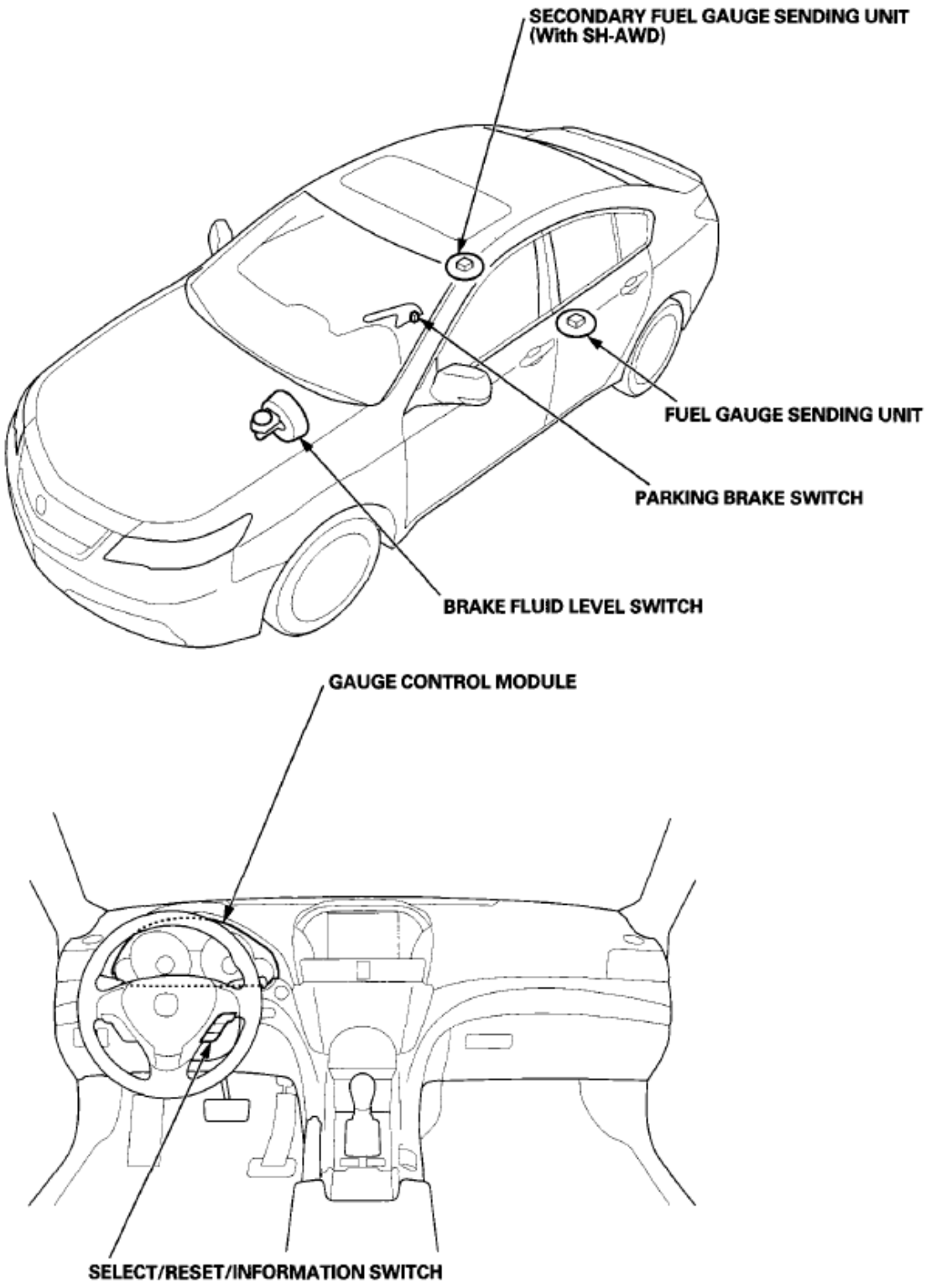


Fig. 1: Gauges Components Location (1 Of 2)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

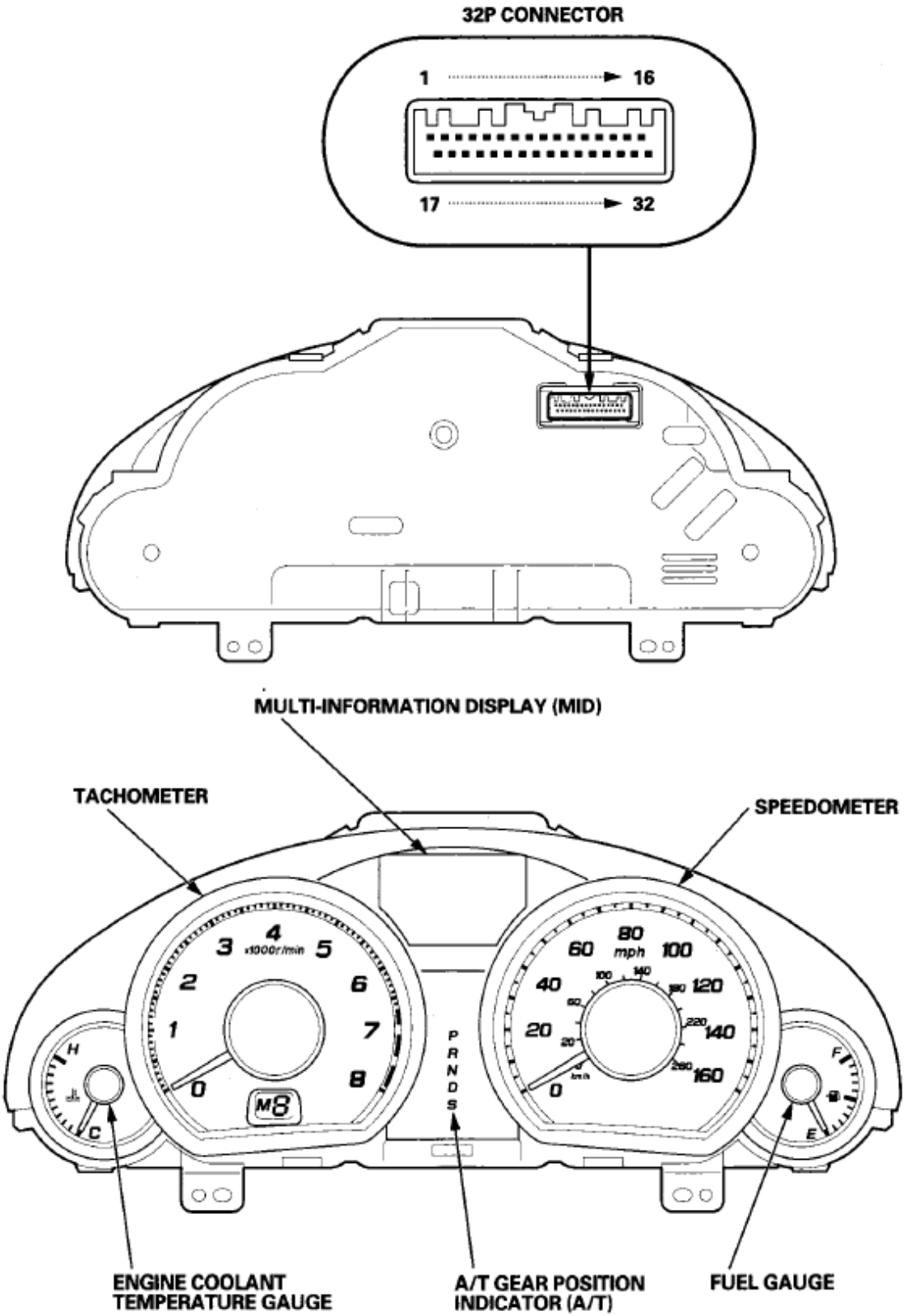


Fig. 2: Gauges Components Location (2 Of 2)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

SELF-DIAGNOSTIC FUNCTION

NOTE: Before testing, troubleshoot the multiplex integrated control unit first, using B-CAN System Diagnosis Test Mode A (see TROUBLESHOOTING - B-CAN SYSTEM DIAGNOSIS TEST MODE A).

The gauge control module has a self-diagnostic function which consists of the following checks:

- The beeper drive circuit check.
- The indicator drive circuit check.
- The switch input test.
- The LCD/MID segments check.
- The gauges drive circuit check (Tachometer, Fuel gauge, Speedometer, Engine coolant temperature gauge).
- The communication line check (of the body-controller area network (B-CAN) communication line and the fast-controller area network (F-CAN) communication line between the gauges).

NOTE: Indicators are also controlled via the communication lines.

ENTERING THE SELF-DIAGNOSTIC FUNCTION WITH THE HDS

Using the HDS, select BODY ELECTRICAL, GAUGES, then FUNCTION TESTS and do the SELF-DIAGNOSTIC FUNCTION.

ENTERING THE SELF-DIAGNOSTIC FUNCTION (MANUAL METHOD)

Before doing the self-diagnostic function, make sure the No. 12 (7.5 A) fuse in the driver's under-dash fuse/relay box and the No. 15 (10 A) fuse in the under-hood fuse/relay box are OK.

1. Push and hold the SEL/RESET button.
2. Turn the combination light switch ON.
3. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
4. Within 5 sec, turn the combination light switch OFF, then ON and OFF again.
5. Within 5 sec, release the SEL/RESET button, and then repeatedly push and release the button three times.

NOTE:

- **While in the self-diagnostic mode, the dashlights brightness controller operates normally.**
- **While in the self-diagnostic mode, the SEL/RESET switch is used to start the Beeper Drive Circuit Test and the Gauge Drive Circuit Check.**
- **If the vehicle speed exceeds 1 mph (2 km/h) or the ignition switch is turned to LOCK (0), or the vehicle is in OFF mode, the self-diagnostic mode ends.**

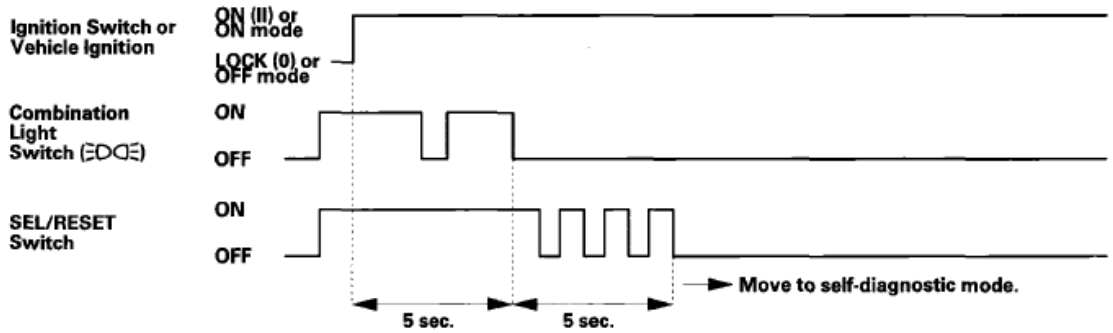


Fig. 3: Identifying Digital Patterns Of Switches
Courtesy of AMERICAN HONDA MOTOR CO., INC.

THE INDICATOR DRIVE CIRCUIT CHECK

When entering the self-diagnostic mode, the following indicators (if equipped) blink:

A/T gear position indicator, ABS indicator, BSI indicator, brake system indicator, charging system indicator, cruise control indicator, cruise main indicator, door indicator, EPS indicator, high beam indicator, fog light indicator, immobilizer indicator, lights-on indicator, keyless access indicator, low oil pressure indicator, low fuel indicator, malfunction indicator lamp (MIL), message indicator, seat belt reminder indicator, security indicator, SH-AWD indicator, side airbag cutoff indicator, SRS indicator, TPMS indicator, VSA indicator, and VSA OFF indicator.

SWITCH INPUT CHECK

At the initial stage of the self-diagnostic function, the beeper sounds intermittently. The beeper sounds continuously when any of the following switch inputs are switched from OFF to ON:

Cruise control main, SET/DECEL, RES/ACCEL, CANCEL switches, SEL/RESET switch, parking brake switch, PREVIOUS, NEXT switch, and VSA OFF switch.

THE BEEPER DRIVE CIRCUIT CHECK

When entering the self-diagnostic mode, the beeper sounds 5 times.

THE LCD/MID SEGMENT CHECK

When entering the self-diagnostic mode, the words "CHECKING NOW" show on the MID, and blink 5 times.

THE GAUGE DRIVE CIRCUIT CHECK

When entering the self-diagnostic mode, the speedometer, the tachometer, the fuel gauge, and the engine coolant temperature gauge needles sweep from the minimum position to maximum position, then return to the minimum position.

NOTE: After the beeper stops sounding and the gauge needles return to the minimum

position, pushing the SEL/RESET button starts the Beeper Drive Circuit Check (one beep) and the Gauge Drive Circuit Check again. The check cannot be started again until the gauge needles return to the minimum position.

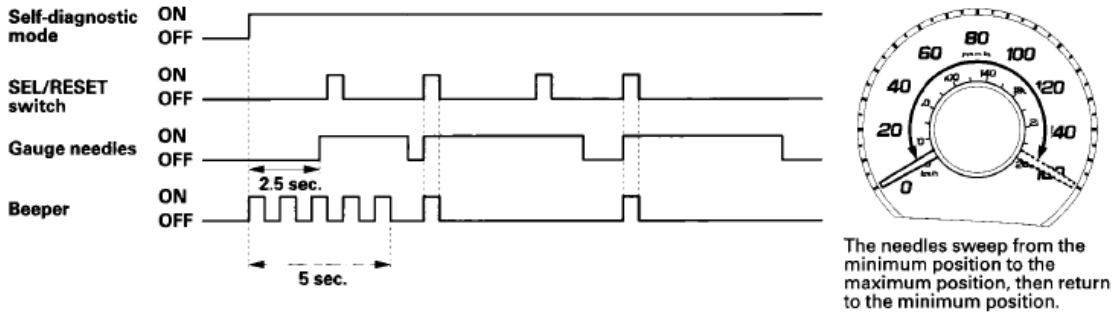


Fig. 4: View Of Digital Patterns Of Switches And Gauge Drive
Courtesy of AMERICAN HONDA MOTOR CO., INC.

If the needles fail to sweep, or the beeper does not sound, replace the gauge control module.

THE COMMUNICATION LINE CHECK

While in the self-diagnostic mode, the Communication Line Check starts after the LCD/MID Segments Check.



Fig. 5: Display Checking Now
Courtesy of AMERICAN HONDA MOTOR CO., INC.

If the communication line is OK, the word "OK" will be indicated on the multi-information display (MID). If there is a communication line error, the word "ERROR" will be indicated on the MID.

Indication pattern

There is a malfunction in the communication line between the F-CAN and the gauge control module. The B-CAN is OK at this time. Check for DTCs in the ECM/PCM and troubleshoot any DTCs found.



Fig. 6: Display Communication Check, B-Can.....Ok And F-Can....Error (1 Of 3)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

There is a malfunction in the communication line between the B-CAN and the gauge control module. The F-CAN line is OK at this time.



Fig. 7: Display Communication Check, B-Can.....Ok And F-Can....Error (2 Of 3)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

There is a malfunction in the communication line between the gauge control module and the F-CAN and the B-CAN. Check for DTCs in the ECM/PCM and troubleshoot any DTCs found.



Fig. 8: Display Communication Check, B-Can.....Ok And F-Can....Error (3 Of 3)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

ENDING THE SELF-DIAGNOSTIC FUNCTION

Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.

NOTE: If the vehicle speed exceeds 1 mph (2 km/h), the self-diagnostic function ends.

CIRCUIT DIAGRAM

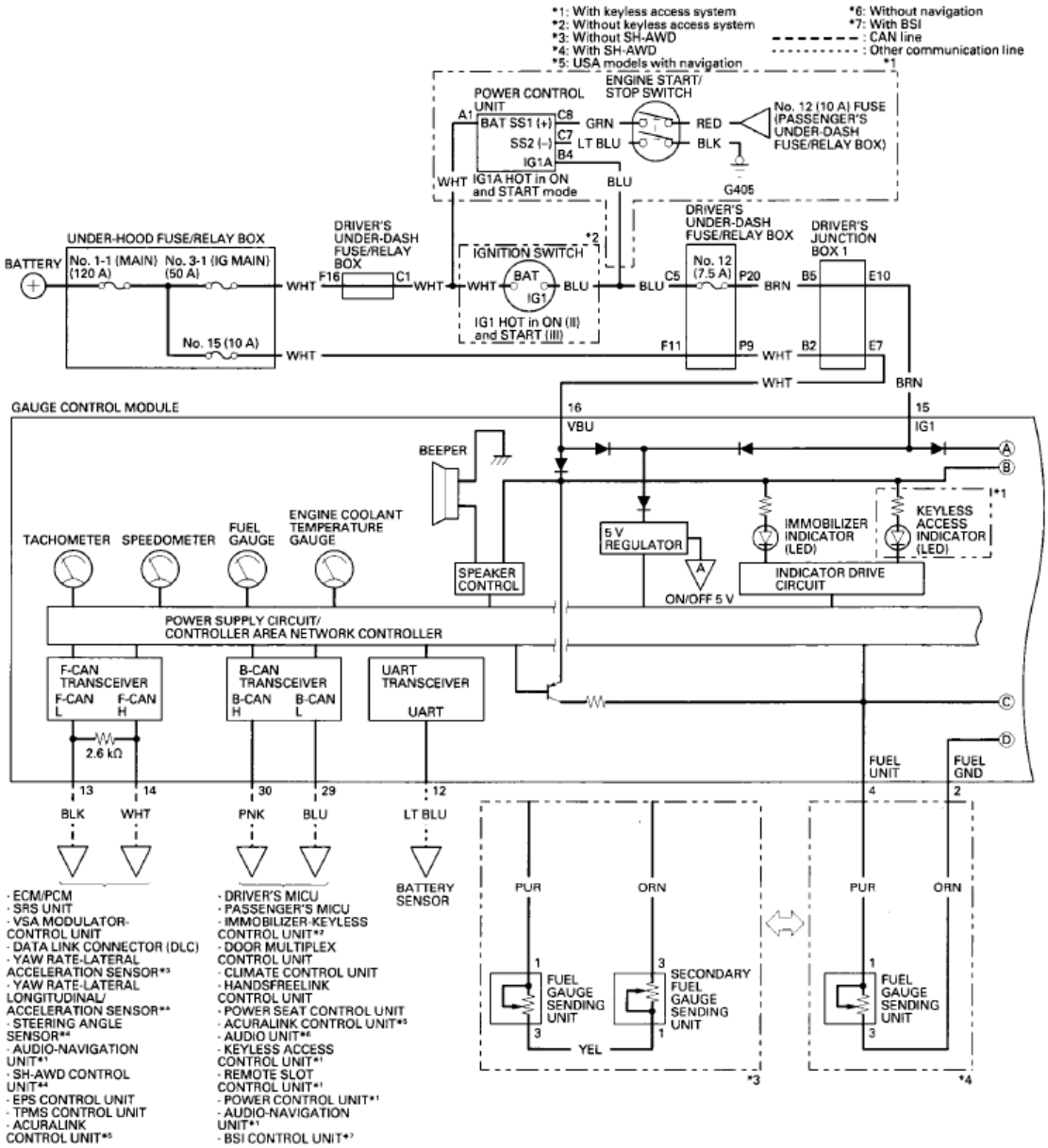


Fig. 9: Gauges Circuit Diagram (1 Of 4)

Courtesy of AMERICAN HONDA MOTOR CO., INC.

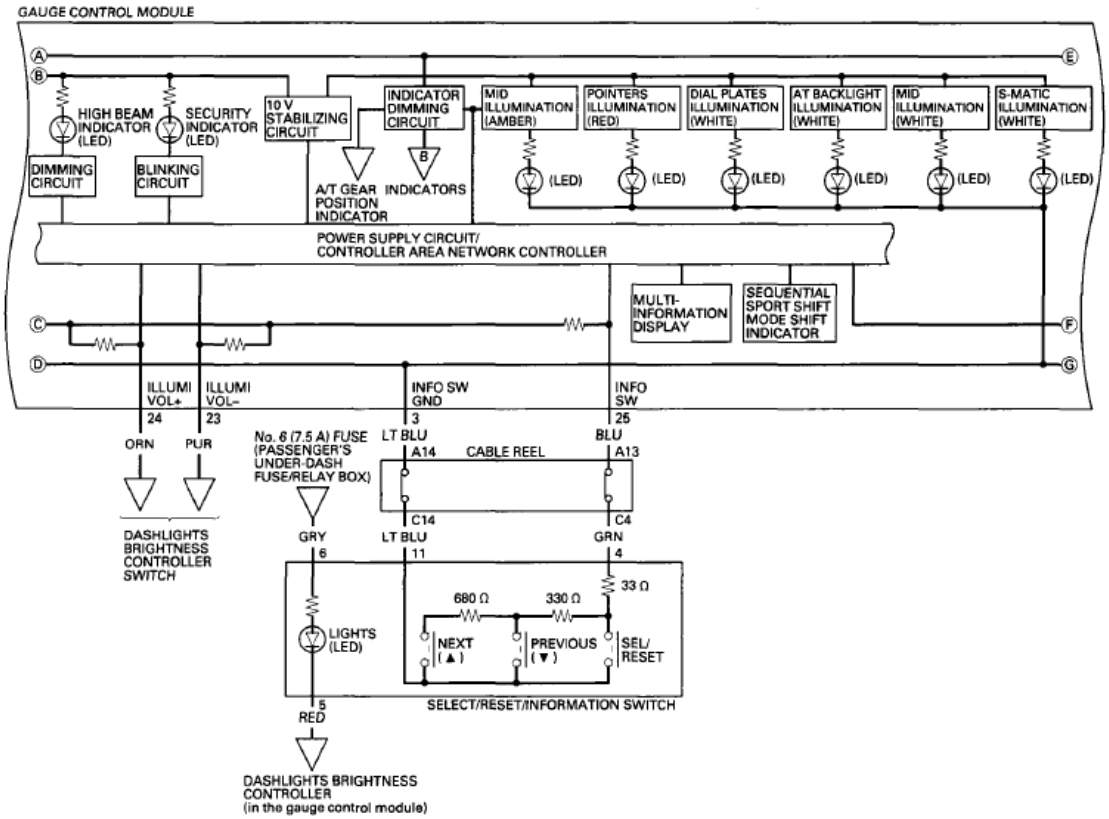


Fig. 10: Gauges Circuit Diagram (2 Of 4)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

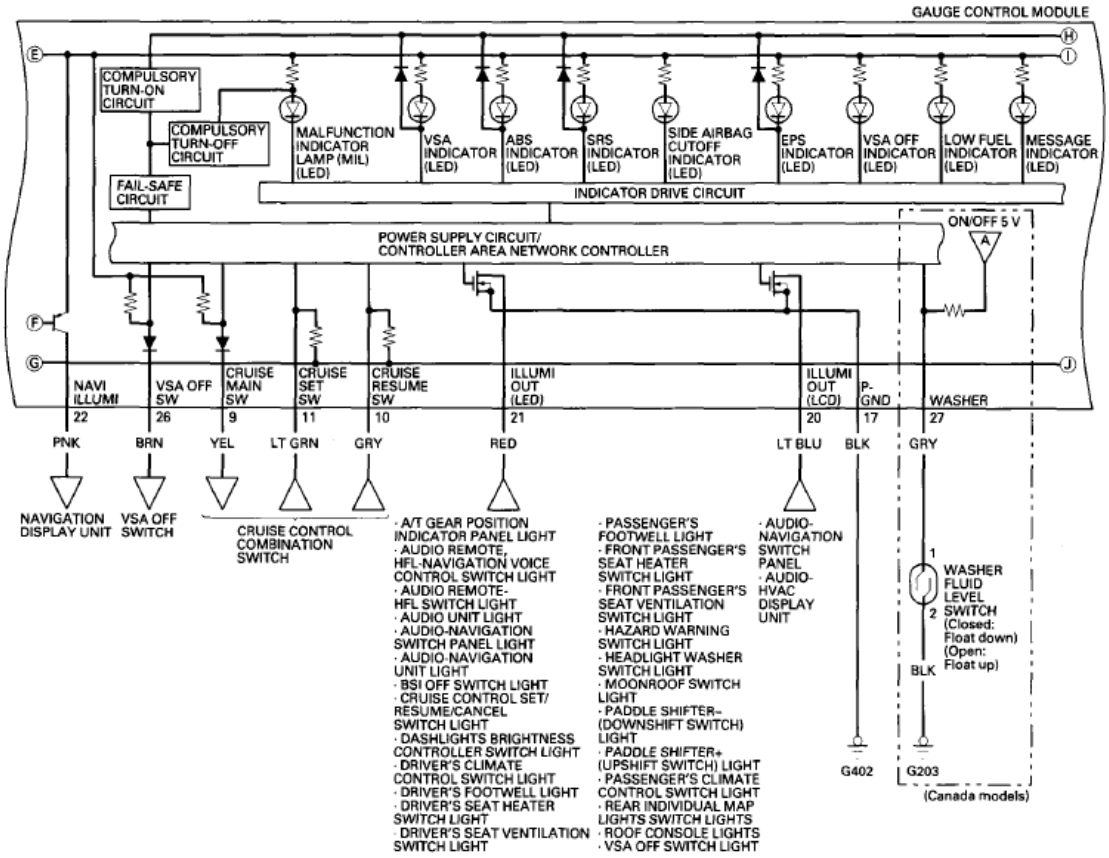


Fig. 11: Gauges Circuit Diagram (3 Of 4)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

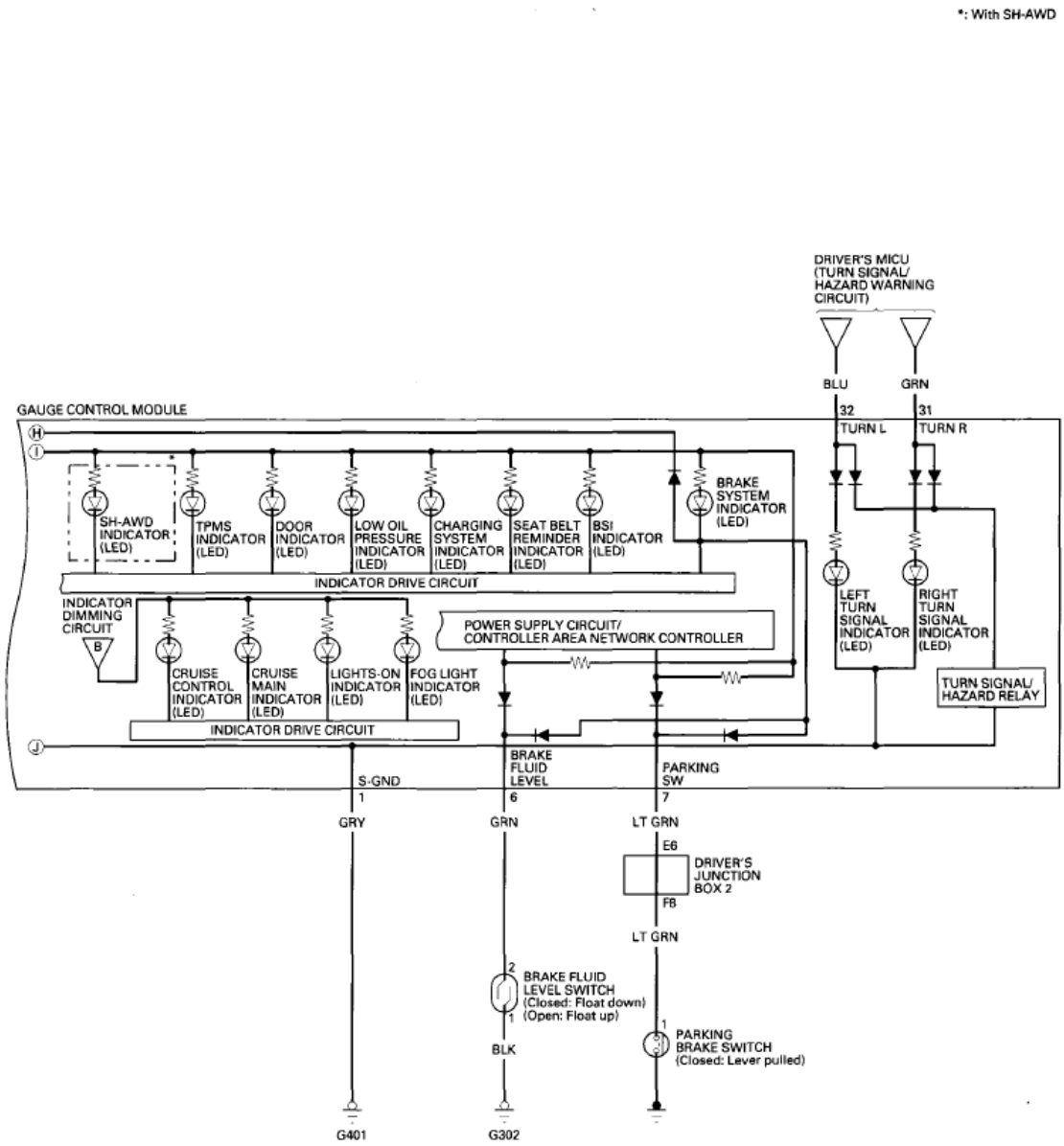


Fig. 12: Gauges Circuit Diagram (4 Of 4)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

DTC TROUBLESHOOTING

DTC B1152: GAUGE CONTROL MODULE INTERNAL (EEPROM) ERROR

NOTE: If you are troubleshooting multiple DTCs, be sure to follow the instructions in B-CAN System Diagnosis Test Mode A (see TROUBLESHOOTING - B-CAN SYSTEM DIAGNOSIS TEST MODE A).

1. Clear the DTCs with the HDS.
2. Turn the ignition switch to LOCK (0) and then back to ON (II), or press the engine start/stop button to

select the OFF mode and then the ON mode.

3. Check for DTCs with the HDS.

   Is DTC B1152 indicated?

   YES -Replace the gauge control module (see **GAUGE CONTROL MODULE REPLACEMENT**).

   NO -Intermittent failure, the system is OK at this time.

DTC B1175: FUEL LEVEL SENSOR (FUEL GAUGE SENDING UNIT) CIRCUIT MALFUNCTION

1. Clear the DTCs with the HDS.
2. Turn the ignition switch to LOCK (0) and then back to ON (II), or press the engine start/stop button to select the OFF mode and then the ON mode.
3. Wait at least than 30 seconds.
4. Check for DTCs with the HDS.

   Is DTCs B1175 indicated?

   YES -

   - Without SH-AWD: Go to step 5.
   - With SH-AWD: Go to step 10.

   NO -Intermittent failure, the system is OK at this time. Check for loose or poor connections.

5. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
6. Disconnect the fuel gauge sending unit 4P connector.
7. Disconnect the gauge control module 32P connector.
8. Check for continuity between gauge control module 32P connector terminals No. 2 and No. 4 and fuel gauge sending unit 4P connector terminals No. 3 and No. 1 respectively.

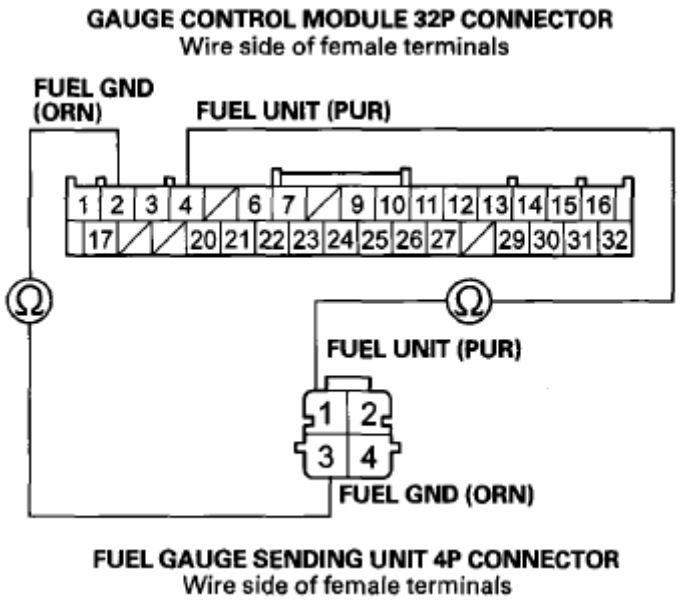


Fig. 13: Checking Continuity Between Gauge Control Module 32P Connector And Fuel Gauge Sending Unit 4P Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES -Go to step 9.

NO -Repair an open or high resistance in the wire.

9. Do the fuel gauge sending unit test (see **FUEL GAUGE SENDING UNIT TEST**).

   Is the fuel gauge sending unit OK?

   YES -Replace the gauge control module (see **GAUGE CONTROL MODULE REPLACEMENT**).

   NO -Replace fuel gauge sending unit (see **FUEL PUMP/FUEL GAUGE SENDING UNIT REPLACEMENT**).

10. Disconnect the fuel gauge sending 4P connector.
11. Disconnect the secondary fuel gauge sending unit 4P connector.
12. Check for continuity between fuel gauge sending unit 4P connector terminal No. 3 and secondary fuel gauge sending unit 4P connector terminal No. 1.

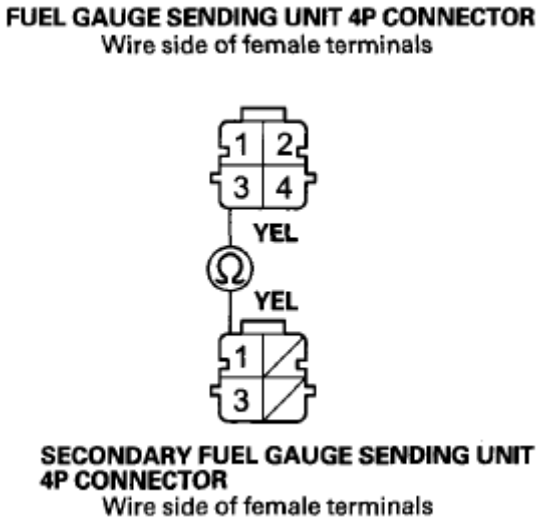


Fig. 14: Checking Continuity Between Fuel Gauge Sending Unit 4P Connector Terminal No. 3 And Secondary Fuel Gauge Sending Unit 4P Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES -Go to step 13.

NO -Repair an open or high resistance in the wire.

13. Disconnect the gauge control module 32P connector.
14. Check for continuity between gauge control module 32P connector terminal No. 2 and fuel gauge sending unit 4P connector terminal No. 3.

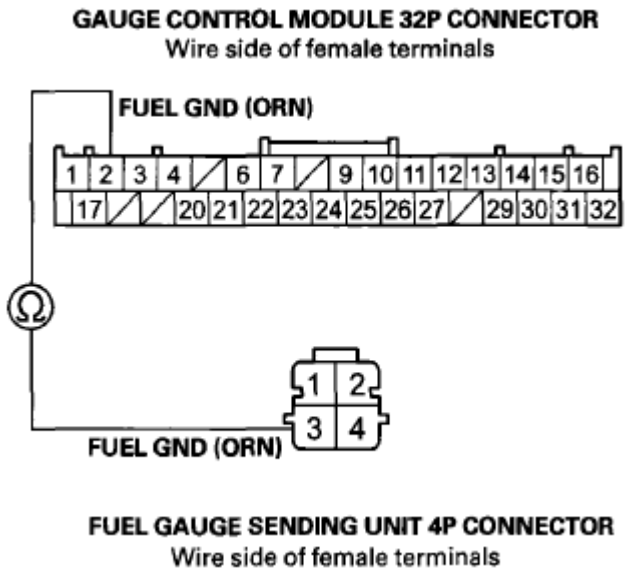


Fig. 15: Checking Continuity Between Gauge Control Module 32P Connector And Fuel Gauge

Sending Unit 4P Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES -Go to step 15.

NO -Repair an open or high resistance in the wire.

15. Check for continuity between gauge control module 32P connector terminal No. 4 and secondary fuel gauge sending unit 4P connector terminal No. 1.

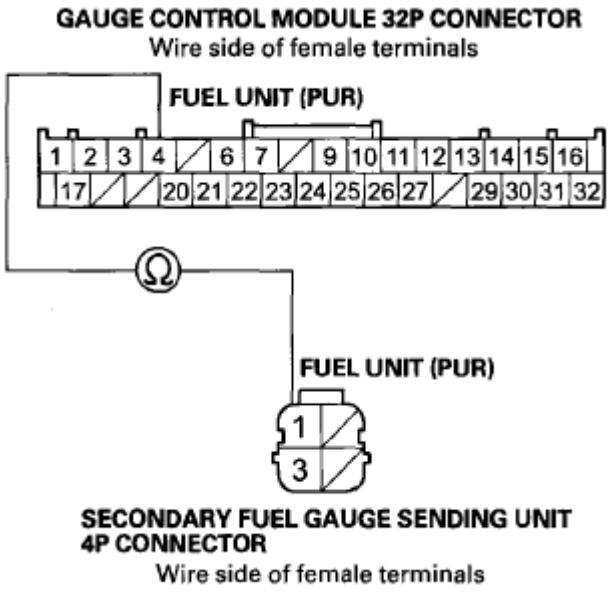


Fig. 16: Checking Continuity Between Gauge Control Module 32P Connector And Secondary Fuel Gauge Sending Unit 4P Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES -Go to step 16.

NO -Repair an open or high resistance in the wire.

16. Do the fuel gauge sending unit test (see **FUEL GAUGE SENDING UNIT TEST**).

Is the fuel tank unit OK?

YES -Go to step 17.

NO -Replace fuel gauge sending unit (see **FUEL PUMP/FUEL GAUGE SENDING UNIT REPLACEMENT**).

17. Do the secondary fuel gauge sending unit test (see **SECONDARY FUEL GAUGE SENDING UNIT TEST**).

    Is the secondary fuel gauge sending unit OK?

    YES -Replace the gauge control module (see **GAUGE CONTROL MODULE REPLACEMENT**).

    NO -Replace the secondary gauge sending unit (see **SECONDARY FUEL GAUGE SENDING UNIT REMOVAL/INSTALLATION**).

DTC B1176: FUEL LEVEL SENSOR (FUEL GAUGE SENDING UNIT) CIRCUIT SHORT

NOTE: If you are troubleshooting multiple DTCs, be sure to follow the instructions in B-CAN System Diagnosis Test Mode A (see TROUBLESHOOTING - B-CAN SYSTEM DIAGNOSIS TEST MODE A).

1. Clear the DTCs with the HDS.
2. Turn the ignition switch to LOCK (0) and then back to ON (II), or press the engine start/stop button to select the OFF mode and then the ON mode.
3. Wait for at least 30 seconds.
4. Check for DTCs with the HDS.

   Is DTC B1176 indicated?

   YES -Go to step 5.

   NO -Intermittent failure, the fuel level sensor circuit is OK at this time. Check for worn/missing insulation or an internal short in the wire.

5. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
6. Disconnect the fuel gauge sending unit 4P connector.
7. Clear the DTCs with the HDS.
8. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
9. Wait for at least 30 seconds.
10. Check for DTCs with the HDS.

    Is DTC B1176 indicated?

    YES -Go to step 11.

    NO -Replace the fuel gauge sending unit (see **FUEL PUMP/FUEL GAUGE SENDING UNIT REPLACEMENT**).

11. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.

12. Disconnect the gauge control module 32P connector.
13. Check for continuity between gauge control module 32P connector terminal No. 4 and body ground.

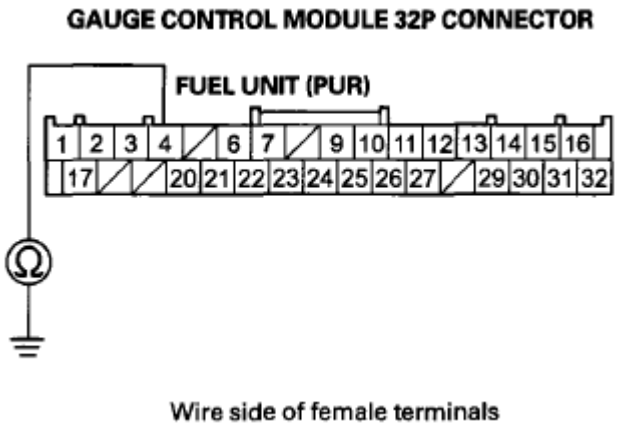


Fig. 17: Checking Continuity Between Gauge Control Module 32P Connector Terminal No. 4 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES -Repair a short to ground in the wire between the gauge control module and the fuel gauge sending unit.

NO -

- Without SH-AWD: Go to step 14.
- With SH-AWD: Go to step 15.

14. Check for continuity between gauge control module 32P connector terminals No. 2 and No. 4.

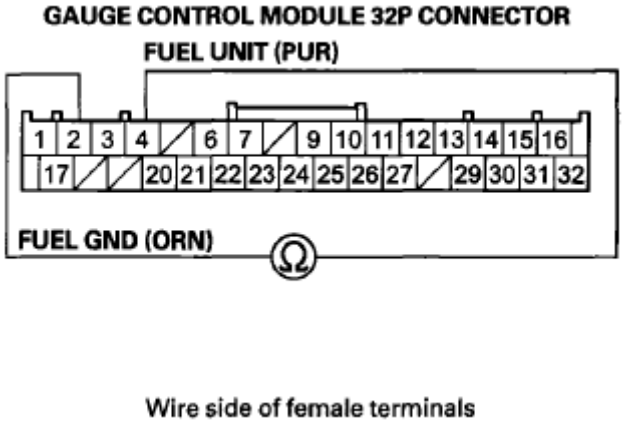


Fig. 18: Checking Continuity Between Gauge Control Module 32P Connector Terminals No. 2 And No. 4
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES -Repair a short to ground in the wire between the gauge control module and the fuel gauge sending unit.

NO -Replace the gauge control module (see **GAUGE CONTROL MODULE REPLACEMENT**).

15. Disconnect the secondary fuel gauge sending unit 4P connector.
16. Check for continuity between fuel gauge sending unit 4P connector terminals No. 1 and No. 3.

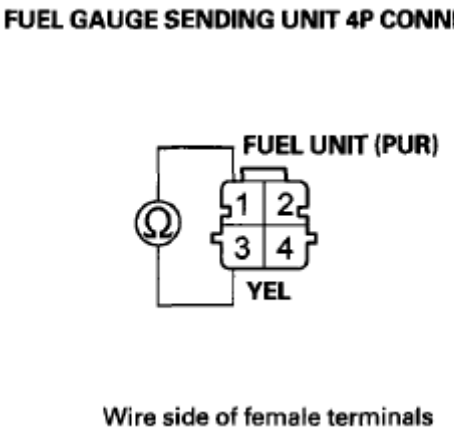


Fig. 19: Checking Continuity Between Fuel Gauge Sending Unit 4P Connector Terminals No. 1 And No. 3
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES -Repair a short in the wire.

NO -Go to step 17.

17. Reconnect the fuel gauge sending unit 4P connector.
18. Reconnect the gauge control module 32P connector.
19. Clear the DTCs with the HDS.
20. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
21. Wait for at least 30 seconds.
22. Check for DTCs with the HDS.

Is DTC B1176 indicated?

YES -Go to step 23.

NO -Replace the secondary fuel gauge sending unit (see **SECONDARY FUEL GAUGE SENDING UNIT REMOVAL/INSTALLATION**).

23. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
24. Disconnect the fuel gauge sending unit 4P connector.
25. Check for continuity between secondary fuel gauge sending unit 4P connector terminal No. 1 and body ground.

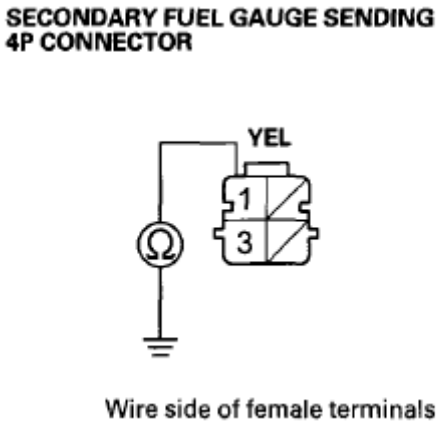


Fig. 20: Checking Continuity Between Secondary Fuel Gauge Sending Unit 4P Connector Terminal No. 1 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES -Repair a short to ground in the wire between the fuel gauge sending unit and the secondary fuel gauge sending unit.

NO -Go to step 27.

26. Disconnect the gauge control module 32P connector.
27. Check for continuity between secondary fuel gauge sending unit 4P connector terminals No. 1 and No. 3.

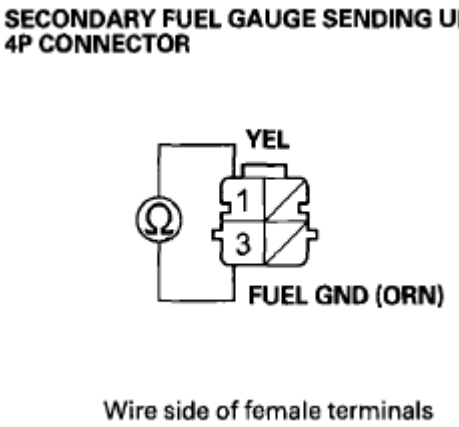


Fig. 21: Checking Continuity Between Secondary Fuel Gauge Sending Unit 4P Connector Terminals No. 1 And No. 3

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES -Repair a short in the wire.

NO -Replace the gauge control module (see **GAUGE CONTROL MODULE REPLACEMENT**).

DTC B1192: GAUGE CONTROL MODULE LOST COMMUNICATION WITH THE BATTERY SENSOR (UART LINE)

NOTE: If you are troubleshooting multiple DTCs, be sure to follow the instructions in B-CAN System Diagnosis Test Mode A (see TROUBLESHOOTING - B-CAN SYSTEM DIAGNOSIS TEST MODE A).

1. Clear the DTCs with the HDS.
2. Wait for at least 15 seconds.
3. Check for DTCs with the HDS.

   Is DTC B1192 indicated?

   YES -Go to step 4.

   NO -Intermittent failure, the battery sensor is OK at this time. Check for loose or poor connections between the battery sensor arid the gauge control module.

4. Check the No. 12 (7.5 A) fuse in the under-hood fuse/relay box.

   Is the fuse OK?

   YES -Go to step 5.

   NO -Replace the fuse. If the fuse blows again, repair a short to ground on the No. 12 (7.5 A) fuse circuit.

5. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
6. Disconnect the battery sensor 2P connector.
7. Measure the voltage between battery sensor 2P connector terminal No. 2 and body ground.

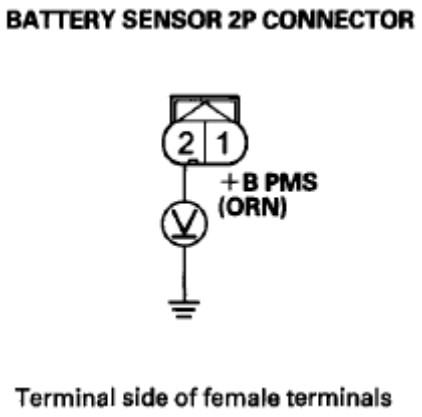


Fig. 22: Measuring Voltage Between Battery Sensor 2P Connector Terminal No. 2 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there battery voltage?

YES -Go to step 8.

NO -Repair an open or high resistance in the wire between the under-hood fuse/relay box and the battery sensor.

8. Disconnect the gauge control module 32P connector.
9. Measure the voltage between battery sensor 2P connector terminal No. 1 and body ground.

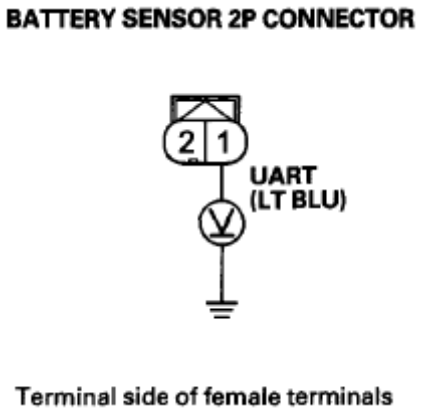


Fig. 23: Measuring Voltage Between Battery Sensor 2P Connector Terminal No. 1 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there voltage?

YES -Repair a short to power in the wire between the gauge control module and the battery sensor.

NO -Go to step 10.

10. Check for continuity between battery sensor 2P connector terminal No. 1 and body ground.

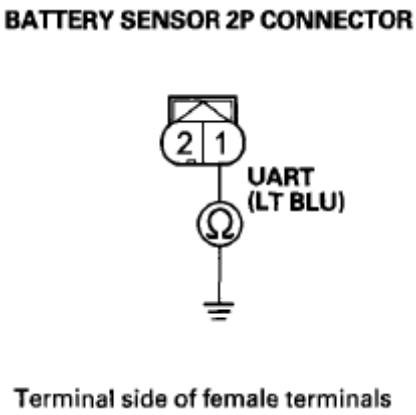


Fig. 24: Checking Continuity Between Battery Sensor 2P Connector Terminal No. 1 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES -Repair a short to ground in the wire between the battery sensor and the gauge control module.

NO -Go to step 11.

11. Check for continuity between battery sensor 2P connector terminal No. 1 and gauge control module 32P connector terminal No. 12.

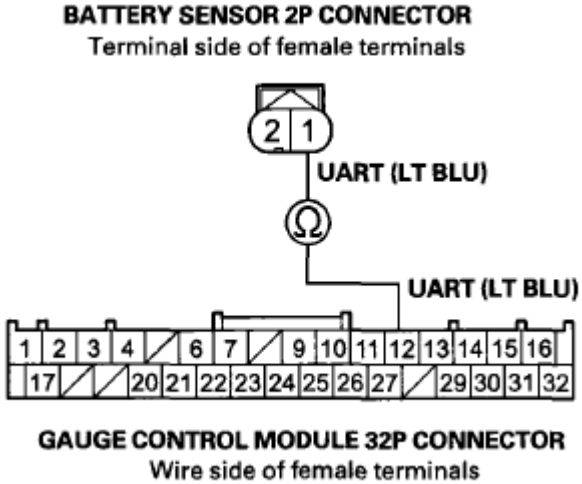


Fig. 25: Checking Continuity Between Battery Sensor 2P Connector Terminal No. 1 And Gauge Control Module 32P Connector Terminal No. 12
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES -Replace gauge control module (see **GAUGE CONTROL MODULE REPLACEMENT**).

NO -Repair an open in the wire between the gauge control module and the battery sensor.

DTC U0029: F-CAN COMMUNICATION LINE ERROR (BUS OFF)

NOTE:

- **Make sure the HDS communicates with the ECM/PCM and other vehicle systems. If it does not, go to DLC Circuit Troubleshooting (see DLC CIRCUIT TROUBLESHOOTING).**
- **If you are troubleshooting multiple DTCs, be sure to follow the instructions in B-CAN System Diagnosis Test Mode A (see TROUBLESHOOTING - B-CAN SYSTEM DIAGNOSIS TEST MODE A).**

1. Clear the DTCs with the HDS.
2. Turn the ignition switch to LOCK (0) and then back to ON (II), or press the engine start/stop button to select the OFF mode and then the ON mode.
3. Wait for at least 6 seconds.
4. Check for DTCs with the HDS.

   Is DTC U0029 indicated?

   YES -Go to step 5.

   NO -Intermittent failure, the system is OK at this time. Check for loose or poor connections, or worn/shorted wires. If the connections are good, check the battery condition (see **BATTERY TEST**) and the charging system.

5. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
6. Disconnect the appropriate connector at each control unit in the table one at a time. Clear the DTC, then recheck for DTCs after each unit is disconnected.

Control Unit	Connector
Gauge control module	32P connector
ECM/PCM	Connector A (49P)
VSA modulator-control unit	47P connector
SRS unit	Connector A (39P)
Audio-navigation unit(1)	Connector H (28P)
TPMS control unit	20P connector
EPS control unit	28P connector
Yaw rate-lateral acceleration sensor(2) Yaw rate-lateral longitudinal/acceleration sensor(3)	4P connector
Steering angle sensor	5P connector
SH-AWD control unit	Connector A (20P)

AcuraLink control unit(4)	Connector A (32P)
(1) With navigation (2) Without SH-AWD (3) With SH-AWD (4) USA models with navigation	

Is DTC U0029 indicated after each individual unit was disconnected?

YES -Go to step 7.

NO -Replace the control unit that was disconnected when DTC U0029 did not set.

7. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
8. Disconnect all the control units connectors in the following table.

Control Unit	Connector
Gauge control module	32P connector
ECM/PCM	Connector A (49P)
VSA modulator-control unit	47P connector
SRS unit	Connector A (39P)
Audio-navigation unit(1)	Connector H (28P)
TPMS control unit	20P connector
EPS control unit	28P connector
Yaw rate-lateral acceleration sensor(2) Yaw rate-lateral longitudinal/acceleration sensor(3)	4P connector
Steering angle sensor(3)	5P connector
SH-AWD control unit(3)	Connector A (20P)
AcuraLink control unit(4)	Connector A (32P)
(1) With navigation (2) Without SH-AWD (3) With SH-AWD (4) USA models with navigation	

9. Disconnect the HDS from the data link connector (DLC).
10. Check for continuity between body ground and gauge control module 32P connector terminals No. 13 and No. 14 individually.

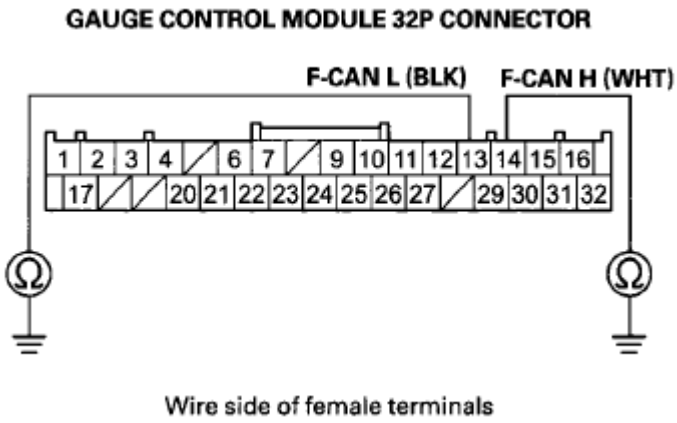


Fig. 26: Checking Continuity Between Body Ground And Gauge Control Module 32P Connector Terminals No. 13 And No. 14
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES -Repair a short to ground in the wire.

NO -Go to step 11.

11. Check for continuity between gauge control module 32P connector terminals No. 13 and No. 14.

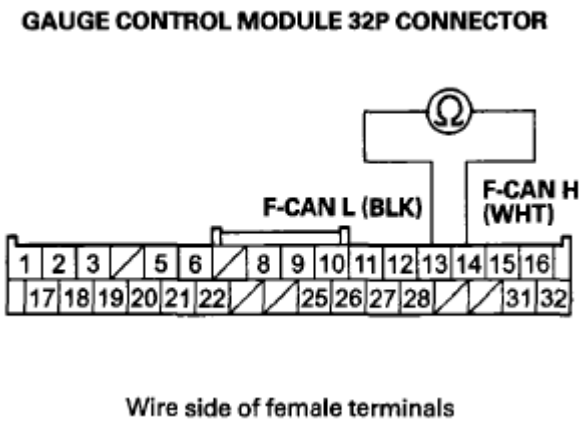


Fig. 27: Checking Continuity Between Gauge Control Module 32P Connector Terminals No. 13 And No. 14
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES -Repair a short in the F-CAN wires.

NO -Replace the gauge control module (see **GAUGE CONTROL MODULE REPLACEMENT**).

DTC U0100: GAUGE CONTROL MODULE LOST COMMUNICATION WITH ECM/PCM

NOTE: If you are troubleshooting multiple DTCs, be sure to follow the instructions in B-CAN System Diagnosis Test Mode A (see TROUBLESHOOTING - B-CAN SYSTEM DIAGNOSIS TEST MODE A).

1. Clear the DTCs with the HDS.
2. Turn the ignition switch to LOCK (0) and then back to ON (II), or press the engine start/stop button to select the OFF mode and then the ON mode.
3. Start and run the engine for at least 5 seconds, then turn the engine off.
4. Check for DTCs with the HDS.

   Is DTC U0100 indicated?

   YES -Go to step 5.

   NO -Intermittent failure, the F-CAN communication line is OK at this time. Check for DTCs in the ECM/PCM with the HDS. If F-CAN DTCs are present, check for loose or poor connections at the gauge control module and the ECM/PCM. If the connections are good, check the battery condition and the charging system, then clear all DTCs.

5. Check for DTCs in the ECM/PCM with the HDS.

   Are any DTCs indicated?

   YES -Go to the ECM/PCM indicated **DTCS TROUBLESHOOTING**, then recheck.

   NO -Go to step 6.

6. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
7. Short the SCS line with the HDS.
8. Disconnect ECM/PCM connector A (49P).
9. Check for continuity between gauge control module 32P connector terminals No. 13 and No. 14 and ECM/PCM connector A (49P) terminals No. 49 and No. 48 respectively.

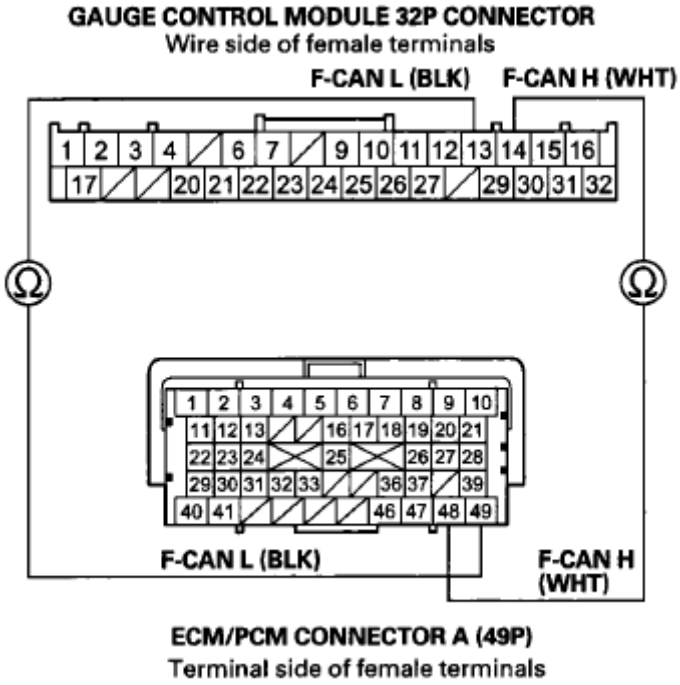


Fig. 28: Checking Continuity Between Gauge Control Module 32P Connector And ECM/PCM Connector A (49P)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES -Substitute a known-good ECM/PCM (see **SUBSTITUTING THE ECM/PCM**), and recheck. If the indication goes away, replace the original ECM/PCM. If the DTC is still present, replace the gauge control module (see **GAUGE CONTROL MODULE REPLACEMENT**).

NO -Repair an open or poor connection in the wire between the ECM/PCM and the gauge control module.

DTC U0122: GAUGE CONTROL MODULE LOST COMMUNICATION WITH VSA MODULATOR-CONTROL UNIT (VSA MESSAGE)

NOTE:

- **If you are troubleshooting multiple DTCs, be sure to follow the instructions in B-CAN System Diagnosis Test Mode A (see TROUBLESHOOTING - B-CAN SYSTEM DIAGNOSIS TEST MODE A).**
- **If the HDS does not communicate with the VSA modulator-control unit, the VSA indicator stays on, and no VSA DTCs are stored, go to symptom troubleshooting for ABS indicator, brake system indicator, and VSA indicator do not go off, and no DTCs are stored (see ABS INDICATOR, BRAKE SYSTEM INDICATOR, AND VSA INDICATOR DO NOT GO OFF).**

1. Clear the DTCs with the HDS.

2. Turn the ignition switch to LOCK (0) and then back to ON (II), or press the engine start/stop button to select the OFF mode and then the ON mode.
3. Wait for at least 6 seconds.
4. Check for DTCs with the HDS.

   Is DTC U0122 indicated?

   YES -Go to step 5.

   NO -Intermittent failure, the F-CAN communication line is OK at this time. Check for DTCs in the ECM/PCM and the VSA modulator-control unit with the HDS. If F-CAN DTCs are present, check for a loose VSA ground or poor connections at the VSA modulator-control unit or gauge control module. If the connections are good, check the battery condition and the charging system, then clear all DTCs.

5. Check for DTCs in the ECM/PCM or VSA with the HDS.

   Are any DTCs indicated?

   YES -Go to the ECM/PCM or VSA indicated **DTCS TROUBLESHOOTING**, then recheck.

   NO -Go to step 6.

6. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
7. Disconnect the VSA modulator-control unit 47P connector.
8. Check for continuity between gauge control module 32P connector terminals No. 13 and No. 14 and VSA modulator-control unit 47P connector terminals No. 13 and No. 12 respectively.

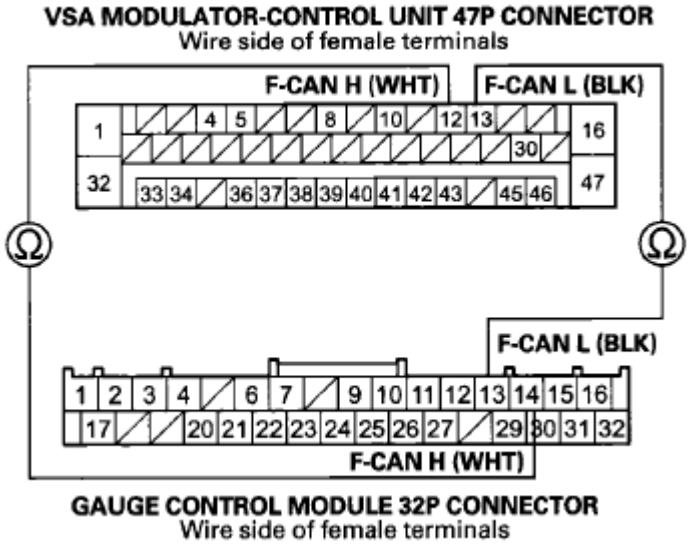


Fig. 29: Checking Continuity Between Gauge Control Module 32P Connector And VSA Modulator-Control Unit 47P Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES -Substitute a known-good VSA modulator-control unit (see **VSA MODULATOR-CONTROL UNIT REMOVAL AND INSTALLATION**), and recheck. If the indication goes away, replace the original VSA modulator-control unit. If the DTC is still present, replace the gauge control module (see **GAUGE CONTROL MODULE REPLACEMENT**).

NO -Repair an open or poor connection in the wire between the VSA modulator-control unit and the gauge control module.

DTC U0127: GAUGE CONTROL MODULE LOST COMMUNICATION WITH THE TPMS CONTROL UNIT (TPMS MESSAGE)

NOTE:

- **If you are troubleshooting multiple DTCs, be sure to follow the instructions in B-CAN System Diagnosis Test Mode A (see TROUBLESHOOTING - B-CAN SYSTEM DIAGNOSIS TEST MODE A).**
- **If the HDS does not communicate with the TPMS control unit, the TPMS indicator stays on, and no TPMS DTCs are stored, go to symptom troubleshooting for TPMS indicator does not go off, and no DTCs are stored (see TPMS INDICATOR DOES NOT GO OFF, AND NO DTCS ARE STORED).**

1. Clear the DTCs with the HDS.
2. Turn the ignition switch to LOCK (0) and then back to ON (II), or press the engine start/stop button to select the OFF mode and then the ON mode.
3. Wait for at least 6 seconds.
4. Check for DTCs with the HDS.

   Is DTC U0127 indicated?

   YES -Go to step 5.

   NO -Intermittent failure, the system is OK at this time. Check for loose or poor connections between the gauge control module and the TPMS control unit.

5. Check for TPMS DTCs with the HDS.

   Are any DTCs indicated?

   YES -Go to the TPMS indicated **DTCS TROUBLESHOOTING**, then recheck.

   NO -Go to step 6.

6. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
7. Disconnect the gauge control module 32P connector.

8. Disconnect the TPMS control unit 20P connector.
9. Check for continuity between the gauge control module 32P connector terminals No. 13 and No. 14 and TPMS control unit 20P connector terminals No. 11 and No. 2 respectively.

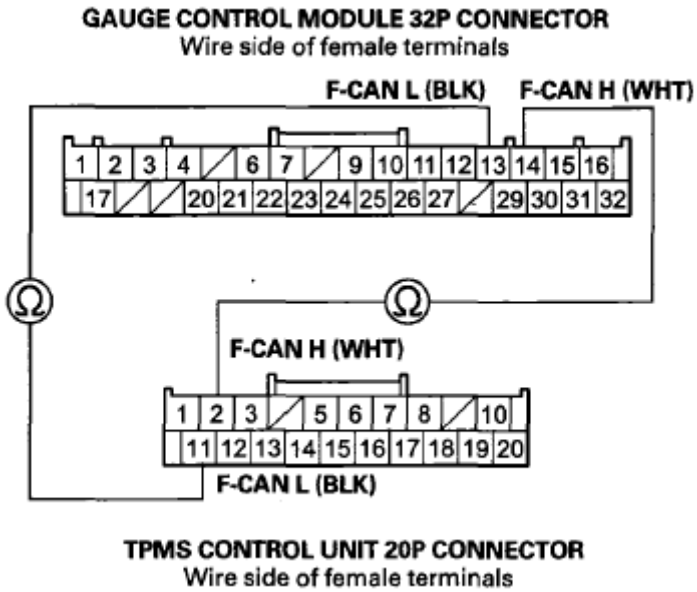


Fig. 30: Checking Continuity Between Gauge Control Module 32P Connector And TPMS Control Unit 20P Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES -Substitute a known-good TPMS control unit (see **TPMS CONTROL UNIT REPLACEMENT**), and recheck. If the indication goes away, replace the original TPMS control unit. If the DTC is still present, replace the gauge control module (see **GAUGE CONTROL MODULE REPLACEMENT**).

NO -Repair an open or poor connection in the wire between the TPMS control unit and the gauge control module.

DTC U0131: GAUGE CONTROL MODULE LOST COMMUNICATION WITH EPS CONTROL UNIT (EPS MESSAGE)

NOTE:

- **If you are troubleshooting multiple DTCs, be sure to follow the instructions in B-CAN System Diagnosis Test Mode A (see TROUBLESHOOTING - B-CAN SYSTEM DIAGNOSIS TEST MODE A).**
- **If the HDS does not communicate with the EPS control unit, the EPS indicator stays on, and no EPS DTCs are stored, go to symptom troubleshooting for EPS indicator does not go off, and no DTCs are stored (see EPS INDICATOR DOES NOT GO OFF, AND NO DTCS ARE STORED).**

1. Clear the DTCs with the HDS.

2. Turn the ignition switch to LOCK (0) and then back to ON (II), or press the engine start/stop button to select the OFF mode and then the ON mode.
3. Wait for at least 6 seconds.
4. Check for DTCs with the HDS.

   Is DTC U0131 indicated?

   YES -Go to step 5.

   NO -Intermittent failure, the system is OK at this time. Check for loose or poor connections between the gauge control module and the EPS control unit.

5. Check for EPS DTCs with the HDS.

   Are any DTCs indicated?

   YES -Go to the EPS indicated **DTCS TROUBLESHOOTING**, then recheck.

   NO -Go to step 6.

6. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
7. Disconnect the gauge control module 32P connector.
8. Disconnect EPS control unit connector D (28P).
9. Check for continuity between the gauge control module 32P connector terminals No. 13 and No. 14 and EPS control unit connector D (28P) terminals No. 15 and No. 1 respectively.

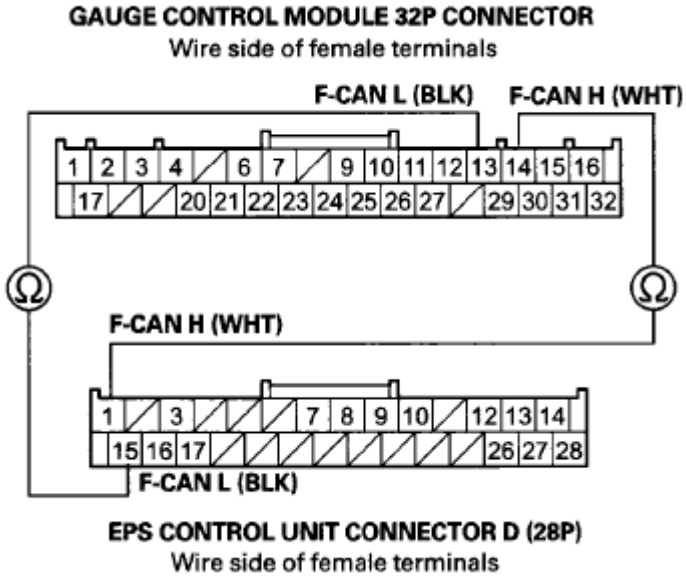


Fig. 31: Checking Continuity Between Gauge Control Module 32P Connector And EPS Control Unit Connector D (28P)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES -Substitute a known-good EPS control unit (see **RACK GUIDE REMOVAL/INSTALLATION**), and recheck. If the indication goes away, replace the original EPS control unit. If the DTC is still present, replace the gauge control module (see **GAUGE CONTROL MODULE REPLACEMENT**).

NO -Repair an open or poor connection in the wire between the EPS control unit and the gauge control module.

DTC U0151: GAUGE CONTROL MODULE LOST COMMUNICATION WITH SRS UNIT (SRS MESSAGE)

NOTE:

- **If you are troubleshooting multiple DTCs, be sure to follow the instructions in B-CAN System Diagnosis Test Mode A (see TROUBLESHOOTING - B-CAN SYSTEM DIAGNOSIS TEST MODE A).**
- **If the HDS does not communicate with the SRS unit, the SRS indicator stays on, go to symptom troubleshooting for SRS indicator does not go off, but no DTCs are stored, or cannot be read (see SYMPTOM TROUBLESHOOTING).**

1. Clear the DTCs with the HDS.
2. Turn the ignition switch to LOCK (0) and then back to ON (II), or press the engine start/stop button to select the OFF mode and then the ON mode.
3. Wait for at least 6 seconds.
4. Check for DTCs with the HDS.

   Is DTC U0151 indicated?

   YES -Go to step 5.

   NO -Intermittent failure, the system is OK at this time. Check for loose or poor connections between the gauge control module and the SRS unit.

5. Check for SRS DTCs with the HDS.

   Are any DTCs indicated?

   YES -Go to the SRS indicated **DTCS TROUBLESHOOTING**, then recheck.

   NO -Go to step 6.

6. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
7. Do the battery terminal disconnection procedure (see **BATTERY TERMINAL DISCONNECTION AND RECONNECTION**), then wait at least 3 minutes.
8. Disconnect the gauge control module 32P connector.

9. Disconnect SRS unit connector A (39P).
10. Check for continuity between gauge control module 32P connector terminals No. 13 and No. 14 and SRS unit connector A (39P) terminals No. 17 and No. 16 respectively.

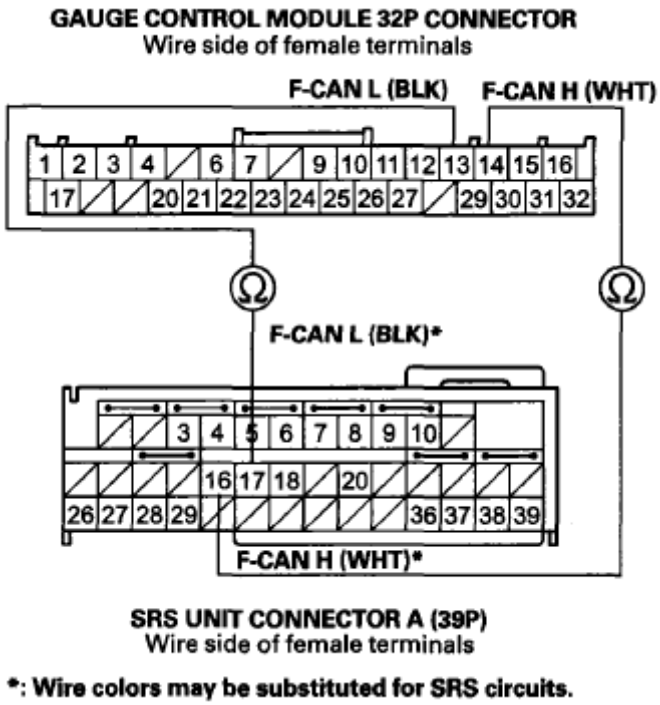


Fig. 32: Checking Continuity Between Gauge Control Module 32P Connector And SRS Unit Connector A (39P)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES -Substitute a known-good SRS unit (see **SRS UNIT REPLACEMENT**), and recheck. If the indication goes away, replace the original SRS unit. If the DTC is still present, replace the gauge control module (see **GAUGE CONTROL MODULE REPLACEMENT**).

NO -Repair an open or poor connection in the wire between the SRS unit and the gauge control module.

DTC U0164: GAUGE CONTROL MODULE LOST COMMUNICATION WITH CLIMATE CONTROL UNIT

NOTE: If you are troubleshooting multiple DTCs, be sure to follow the instructions in B-CAN System Diagnosis Test Mode A (see TROUBLESHOOTING - B-CAN SYSTEM DIAGNOSIS TEST MODE A).

1. Clear the DTCs with the HDS.
2. Turn the ignition switch to LOCK (0) and then back to ON (II), or press the engine start/stop button to select the OFF mode and then the ON mode.

3. Wait for at least 6 seconds.
4. Check for DTCs with the HDS.

   Is DTC U0155 indicated?

   YES -Go to step 5.

   NO -Intermittent failure, the system is OK at this time. Check for loose or poor connections between the gauge control module and the climate control unit.

5. From the BODY ELECTRICAL SYSTEM SELECT menu, select B-CAN CONTROL UNITS INFORMATION, and then select CHECK CONNECTED CONTROL UNITS.

   Is the climate control unit detected?

   YES -Go to step 9.

   NO -Go to step 6.

6. Measure the voltage between body ground and climate control unit connector A (32P) terminal No. 15.

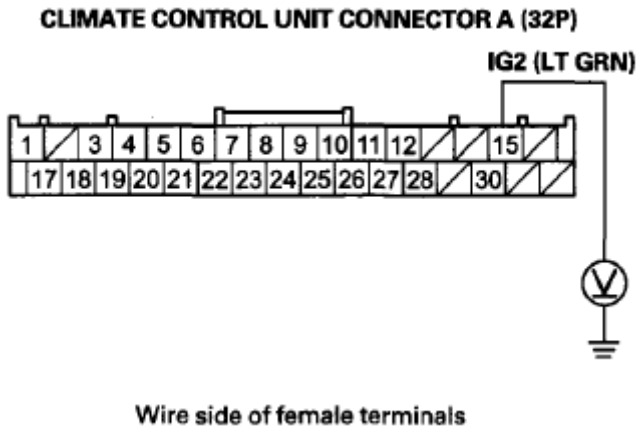


Fig. 33: Measuring Voltage Between Body Ground And Climate Control Unit Connector A (32P) Terminal No. 15
Courtesy of AMERICAN HONDA MOTOR CO., INC.

   Is there battery voltage?

   YES -Go to step 8.

   NO -Go to step 7.

7. Check the No. 16 (7.5 A) fuse in the driver's under-dash fuse/relay box.

   Is the fuse OK?

YES -Repair an open or high resistance in the No. 16 (7.5 A) fuse circuit.

NO -Replace the fuse. If the fuse blows again, repair a short to ground in the No. 16 (7.5 A) fuse circuit.

8. Measure the voltage between body ground and climate control unit connector A (32P) terminal No. 1.

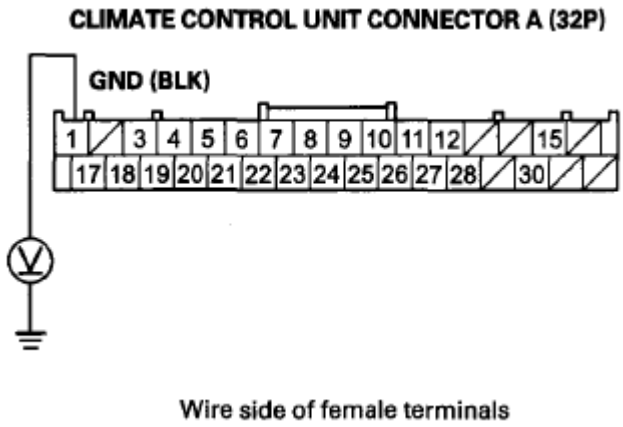


Fig. 34: Measuring Voltage Between Body Ground And Climate Control Unit Connector A (32P) Terminal No. 1
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there less than 0.2 V?

YES -Go to step 9.

NO -Repair an open or high resistance in the ground wire or poor ground (G403).

9. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
10. Disconnect climate control unit connector A (28P).
11. Disconnect the gauge control module 32P connector.
12. Check for continuity between climate control unit connector C (20P) terminals No. 7 and No. 8 and gauge control module connector terminals No. 29 and No. 30 respectively.

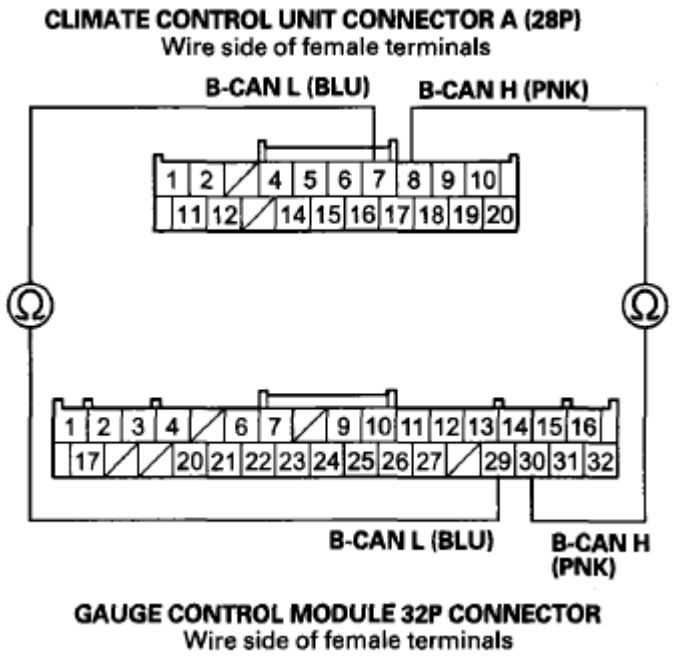


Fig. 35: Checking Continuity Between Climate Control Unit Connector C (20P) Terminals No. 7 And No. 8 And Gauge Control Module Connector Terminals No. 29 And No. 30
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES -Replace the climate control unit (see **EVAPORATOR TEMPERATURE SENSOR REPLACEMENT**).

NO -Repair an open or poor connection in the B-CAN wire between the gauge control module and the climate control unit.

DTC U0199: GAUGE CONTROL MODULE LOST COMMUNICATION WITH DOOR MULTIPLEX CONTROL UNIT

NOTE: If you are troubleshooting multiple DTCs, be sure to follow the instructions in B-CAN System Diagnosis Test Mode A (see TROUBLESHOOTING - B-CAN SYSTEM DIAGNOSIS TEST MODE A).

1. Clear the DTCs with the HDS.
2. Turn the ignition switch to LOCK (0) and then back to ON (II), or press the engine start/stop button to select the OFF mode and then the ON mode.
3. Wait for at least 6 seconds.
4. Check for DTCs with the HDS.

Is DTC U0199 indicated?

YES -Go to step 5.

NO -Intermittent failure, the system is OK at this time. Check for loose or poor connections between the gauge control module and the door multiplex control unit.

5. From the BODY ELECTRICAL SYSTEM SELECT menu, select B-CAN CONTROL UNITS INFORMATION, and then select CHECK CONNECTED CONTROL UNITS.

   Is the power window unit detected?

   YES -Go to step 9.

   NO -Go to step 6.

6. Measure the voltage between body ground and power window master switch 37P connector terminal No. 13.

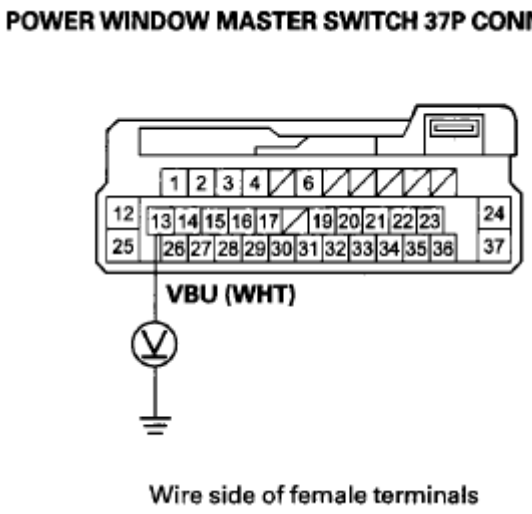


Fig. 36: Measuring Voltage Between Body Ground And Power Window Master Switch 37P Connector Terminal No. 13
Courtesy of AMERICAN HONDA MOTOR CO., INC.

   Is there battery voltage?

   YES -Go to step 8.

   NO -Go to step 7.

7. Check the No. 15 (10 A) fuse in the under-hood fuse/relay box.

   Is the fuse OK?

   YES -Repair an open or high resistance in the No. 15 (10 A) fuse circuit.

NO -Replace the fuse. If the fuse blows again, repair a short to ground in the No. 15(10 A) fuse circuit.

8. Measure the voltage between body ground and power window master switch 37P connector terminals No. 32 and No. 37 individually.

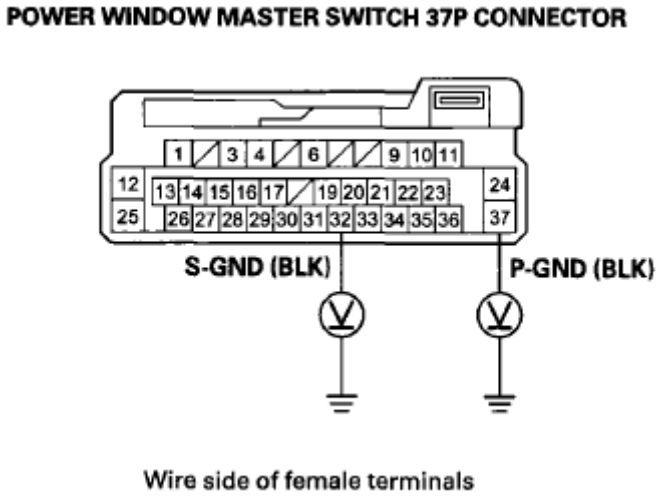


Fig. 37: Measuring Voltage Between Body Ground And Power Window Master Switch 37P Connector Terminals No. 32 And No. 37
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there less than 0.2 V?

YES -Go to step 9.

NO -Repair an open or high resistance in the ground wire or poor ground (G401) and/or (G402).

9. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
10. Disconnect the gauge control module 32P connector.
11. Disconnect the power window master switch 37P connector.
12. Check for continuity between power window master switch 37P connector terminals No. 33 and No. 35 and the gauge control module 32P connector terminals No. 29 and No. 30 respectively.

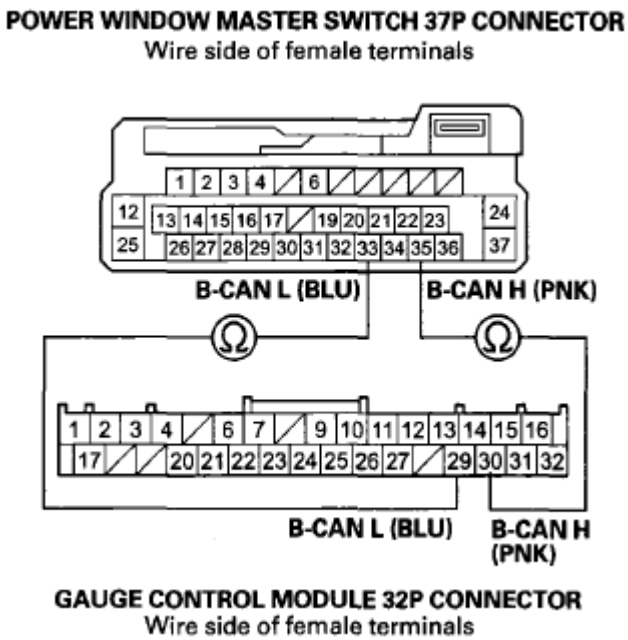


Fig. 38: Checking Continuity Between Power Window Master Switch 37P Connector And No. 35 And Gauge Control Module 32P Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES -Faulty door multiplex control unit; replace the power window master switch (see **REAR POWER WINDOW SWITCH TEST**).

NO -Repair an open or poor connection in the B-CAN wire between the gauge control module and the door multiplex control unit.

DTC U1282: GAUGE CONTROL MODULE LOST COMMUNICATION WITH DRIVER'S MICU

NOTE: If you are troubleshooting multiple DTCs, be sure to follow the instructions in B-CAN System Diagnosis Test Mode A (see TROUBLESHOOTING - B-CAN SYSTEM DIAGNOSIS TEST MODE A).

1. Clear the DTCs with the HDS.
2. Turn the ignition switch to LOCK (0) and then back to ON (II), or press the engine start/stop button to select the OFF mode and then the ON mode.
3. Wait for at least 6 seconds.
4. Check for DTCs with the HDS.

Is DTC U1282 indicated?

YES -Replace the gauge control module (see **GAUGE CONTROL MODULE REPLACEMENT**).

NO -Intermittent failure, the system is OK at this time. Check for loose or poor connections between the gauge control module and the driver's MICU.

DTC U1283: GAUGE CONTROL MODULE LOST COMMUNICATION WITH PASSENGER'S MICU

NOTE: If you are troubleshooting multiple DTCs, be sure to follow the instructions in B-CAN System Diagnosis Test Mode A (see TROUBLESHOOTING - B-CAN SYSTEM DIAGNOSIS TEST MODE A).

1. Clear the DTCs with the HDS.
2. Turn the ignition switch to LOCK (0) and then back to ON (II), or press the engine start/stop button to select the OFF mode and then the ON mode.
3. Wait for at least 6 seconds.
4. Check for DTCs with the HDS.

   Is DTC U01283 indicated?

   YES -Go to step 5.

   NO -Intermittent failure, the system is OK at this time. Check for loose or poor connections between the gauge control module and the passenger's MICU.

5. From the BODY ELECTRICAL SYSTEM SELECT menu, select B-CAN CONTROL UNITS INFORMATION, and then select CHECK CONNECTED CONTROL UNITS.

   Is the passenger's MICU detected?

   YES -Go to step 9.

   NO -Go to step 6.

6. Measure the voltage between body ground and passenger's under-dash fuse/relay box connector A (38P) terminals No. 14 and No. 35 individually.

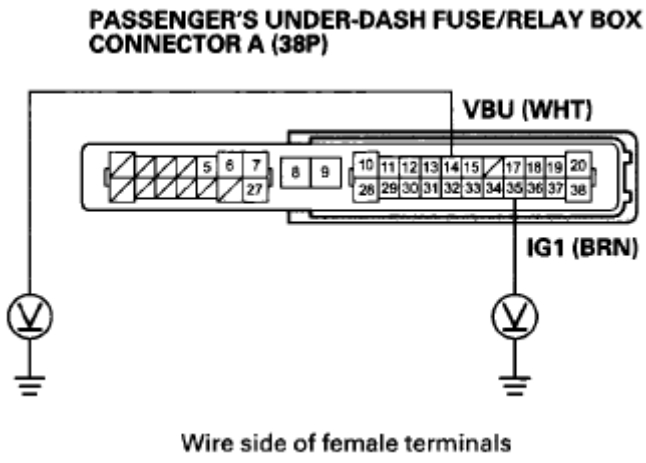


Fig. 39: Measuring Voltage Between Body Ground And Passenger's Under-Dash Fuse/Relay Box Connector A (38P) Terminals No. 14 And No. 35
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there battery voltage?

YES -Go to step 8.

NO -Go to step 7.

7. Check the No. 15(10 A) fuse in the under-hood fuse/relay box and the No. 12 (7.5 A) fuse in the driver's under-dash fuse/relay box.

   Are the fuses OK?

   YES -Repair an open or high resistance in the No. 15 (10 A) and/or No. 12 (7.5 A) fuse circuit.

   NO -Replace the fuse(s). If the fuse blows again, repair a short to ground in the No. 15 (10 A) and/or No. 12 (7.5 A) fuse circuit.

8. Measure the voltage between body ground and passenger's under-dash fuse/relay box connector A (38P) and E (18P) terminals as shown.

Passenger's under-dash fuse/relay box connector	
A36	Body ground
A37	
E15	

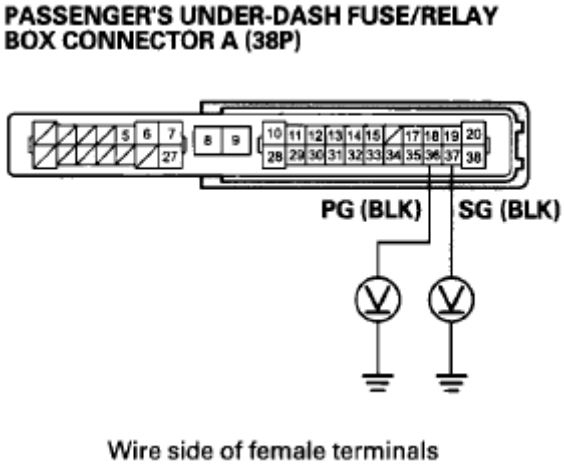


Fig. 40: Measuring Voltage Between Body Ground And Passenger's Under-Dash Fuse/Relay Box Connector A (38P) Terminals
Courtesy of AMERICAN HONDA MOTOR CO., INC.

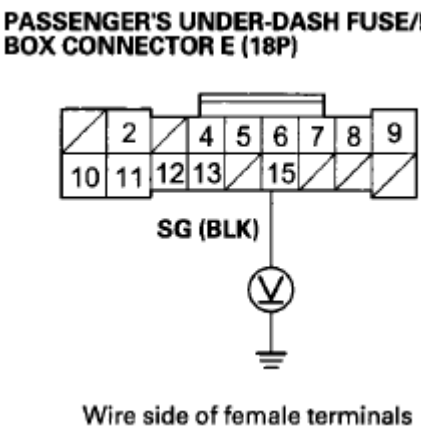


Fig. 41: Measuring Voltage Between Body Ground And Passenger's Under-Dash Fuse/Relay Box Connector E (18P) Terminals
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there less than 0.2 V?

YES -Go to step 9.

NO -Repair an open or high resistance in the ground wire or poor ground (G203), (G401), and/or (G405).

9. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
10. Disconnect passenger's under-dash fuse/relay box connector A (38P).
11. Disconnect the gauge control module 32P connector.
12. Check for continuity between passenger's under-dash fuse/relay box connector A (38P) terminals No. 11 and No. 29 and gauge control module 32P connector terminals No. 30 and No. 29 respectively.

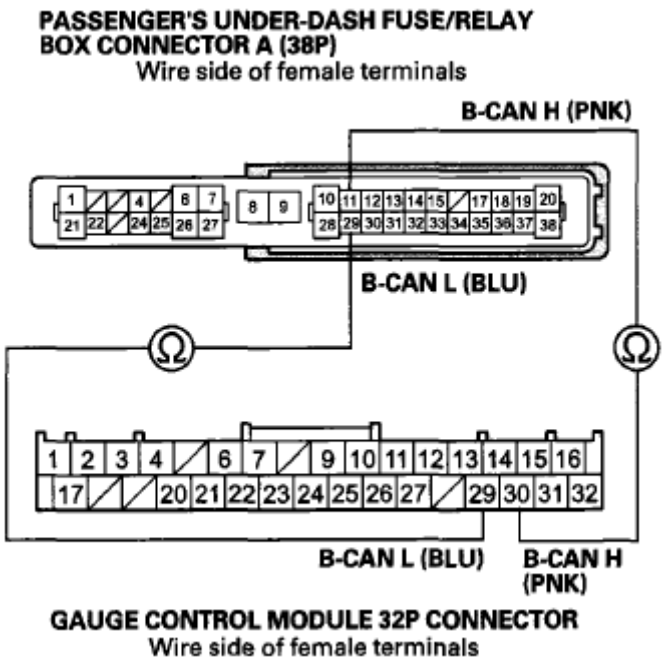


Fig. 42: Checking Continuity Between Passenger's Under-Dash Fuse/Relay Box Connector A (38P) Terminals And Gauge Control Module 32P Connector Terminals
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES -Replace the gauge control module (see **GAUGE CONTROL MODULE REPLACEMENT**).

NO -Repair an open or poor connection in the B-CAN wire between the gauge control module and the passenger's MICU.

DTC U1286: GAUGE CONTROL MODULE LOST COMMUNICATION WITH KEYLESS ACCESS CONTROL UNIT

NOTE: If you are troubleshooting multiple DTCs, be sure to follow the instructions in B-CAN System Diagnosis Test Mode A (see TROUBLESHOOTING - B-CAN SYSTEM DIAGNOSIS TEST MODE A).

1. Clear the DTCs with the HDS.
2. Turn the ignition switch to LOCK (0) and then back to ON (II), or press the engine start/stop button to select the OFF mode and then the ON mode.
3. Wait for at least 6 seconds.
4. Check for DTCs with the HDS.

Is DTC U1286 indicated?

YES -Go to step 5.

NO -Intermittent failure, the system is OK at this time. Check for loose or poor connections between the gauge control module and the keyless access control unit.

5. From the BODY ELECTRICAL SYSTEM SELECT menu, select B-CAN CONTROL UNITS INFORMATION, and then select CHECK CONNECTED CONTROL UNITS.

   Is the keyless access control unit detected?

   YES -Go to step 9.

   NO -Go to step 6.

6. Measure the voltage between body ground and keyless access control unit connector B (32) terminals No. 1 and No. 17 individually.

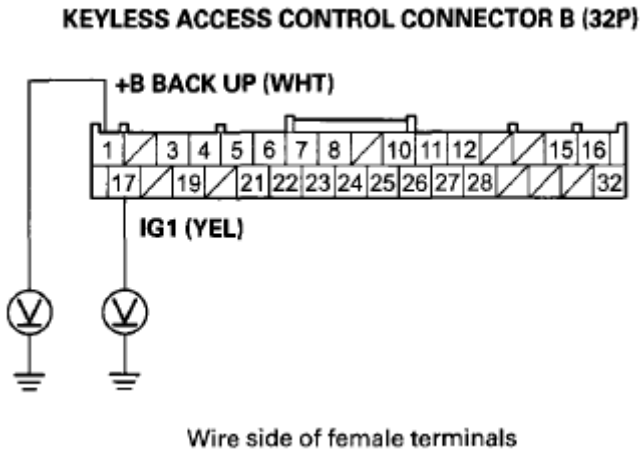


Fig. 43: Measuring Voltage Between Body Ground And Keyless Access Control Unit Connector B (32) Terminals No. 1 And No. 17
Courtesy of AMERICAN HONDA MOTOR CO., INC.

   Is there battery voltage?

   YES -Go to step 8.

   NO -Go to step 7.

7. Check the No. 15 (10 A) fuse in the under-hood fuse/relay box and the No. 9 (20 A) fuse in the driver's under-dash fuse/relay box.

   Are the fuses OK?

   YES -Repair an open or high resistance in the No. 15 (10 A) and/or No. 9 (20 A) fuse circuit.

   NO -Replace the fuse(s). If the fuse blows again, repair a short to ground in the No. 15 (10 A) and/or No. 9 (20 A) fuse circuit.

8. Measure the voltage between body ground and keyless access control unit connector A (36P) and B (32P) terminals as shown.

Keyless access control unit connector	
A36	Body ground
B32	

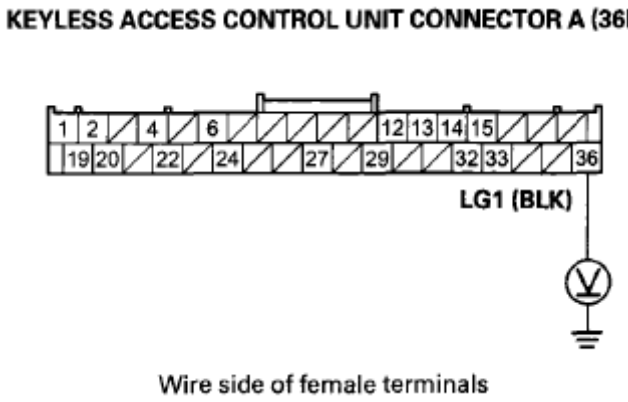


Fig. 44: Measuring Voltage Between Body Ground And Keyless Access Control Unit Connector A (36P) Terminals
Courtesy of AMERICAN HONDA MOTOR CO., INC.

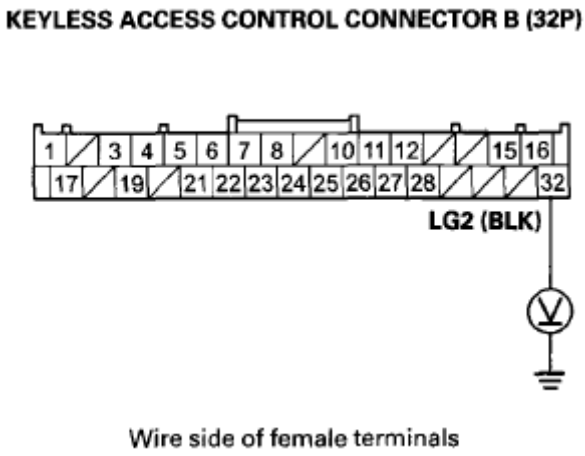


Fig. 45: Measuring Voltage Between Body Ground And Keyless Access Control Unit Connector B (32P) Terminals
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there less than 0.2 V?

YES -Go to step 9.

NO -Repair an open or high resistance in the ground wire or poor ground (G402).

9. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
10. Disconnect keyless access control unit connector B (32P).
11. Disconnect the gauge control module 32P connector.
12. Check for continuity between keyless access control unit connector B (32P) terminals No. 7 and No. 8 and gauge control module 32P connector terminals No. 29 and No. 30 respectively.

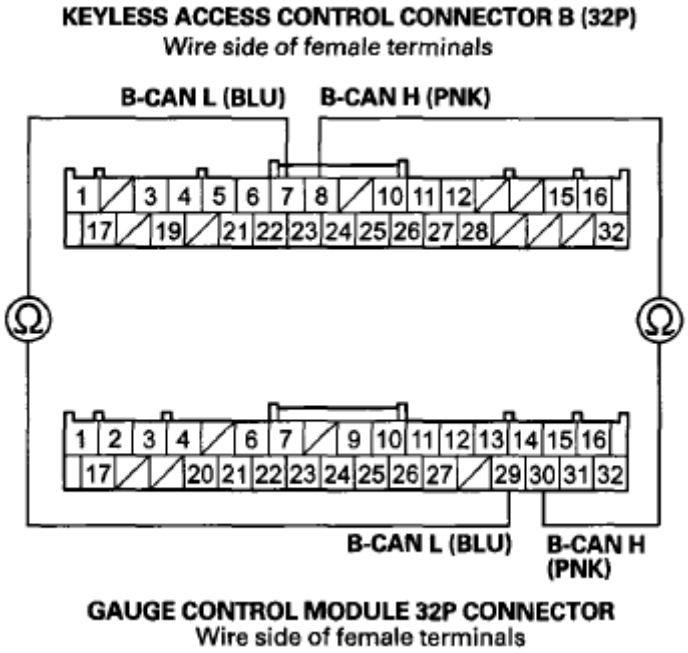


Fig. 46: Checking Continuity Between Keyless Access Control Unit Connector B (32P) And Gauge Control Module 32P Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES -Replace the gauge control module (see **GAUGE CONTROL MODULE REPLACEMENT**).

NO -Repair an open or poor connection in the B-CAN wire between the gauge control module and keyless access control unit.

DTC U1289: GAUGE CONTROL MODULE LOST COMMUNICATION WITH REMOTE SLOT CONTROL UNIT

NOTE: If you are troubleshooting multiple DTCs, be sure to follow the instructions in B-CAN System Diagnosis Test Mode A (see TROUBLESHOOTING - B-CAN SYSTEM DIAGNOSIS TEST MODE A).

1. Clear the DTCs with the HDS.
2. Turn the ignition switch to LOCK (0) and then back to ON (II), or press the engine start/stop button to select the OFF mode and then the ON mode.

3. Wait for at least 6 seconds.
4. Check for DTCs with the HDS.

   Is DTC U1289 indicated?

   YES -Go to step 5.

   NO -Intermittent failure, the system is OK at this time. Check for loose or poor connections between the remote slot control unit and the gauge control module.

5. From the BODY ELECTRICAL SYSTEM SELECT menu, select B-CAN CONTROL UNITS INFORMATION, and then select CHECK CONNECTED CONTROL UNITS.

   Is the remote slot control unit detected?

   YES -Go to step 9.

   NO -Go to step 6.

6. Measure the voltage between body ground and remote slot control unit 40P connector terminals No. 1 and No. 21 individually.

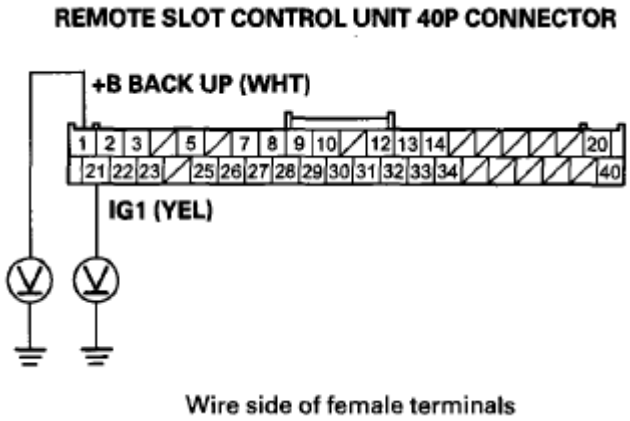


Fig. 47: Measuring Voltage Between Body Ground And Remote Slot Control Unit 40P Connector Terminals No. 1 And No. 21
Courtesy of AMERICAN HONDA MOTOR CO., INC.

   Is there battery voltage?

   YES -Go to step 7.

   NO -Go to step 8.

7. Check the No. 15 (10 A) fuse in the under-hood fuse/relay box and the No. 9 (20 A) fuse in the driver's under-dash fuse/relay box.

Are the fuses OK?

YES -Repair an open or high resistance in the No. 15 (10 A) and/or No. 9 (20 A) fuse circuit.

NO -Replace the fuse(s). If the fuse blows again, repair a short to ground in the No. 15(10 A) and/or No. 9 (20 A) fuse circuit.

8. Measure the voltage between body ground and remote slot control unit 40P connector terminals No. 20 and No. 40 individually.

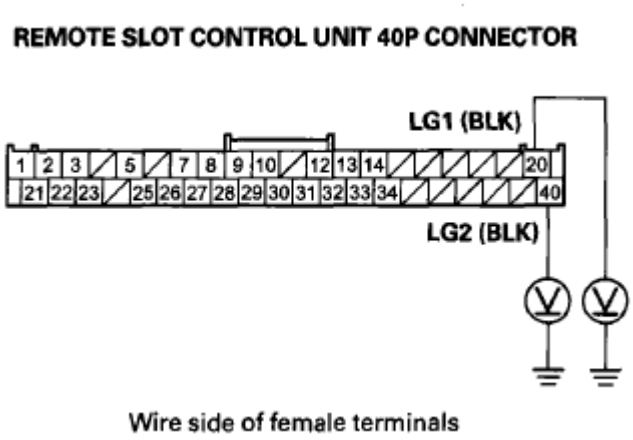


Fig. 48: Measuring Voltage Between Body Ground And Remote Slot Control Unit 40P Connector Terminals No. 20 And No. 40
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there less than 0.2 V?

YES -Go to step 9.

NO -Repair an open or high resistance in the ground wire or poor ground (G405).

9. Turn the ignition switch to LOCK (0) or press the engine start/stop button to select the OFF mode.
10. Disconnect the remote slot control unit 40P connector.
11. Disconnect the gauge control module 32P connector.
12. Check for continuity between gauge control module 32P connector terminals No. 29 and No. 30 and remote slot control unit 40P connector terminals No. 23 and No. 3 respectively.

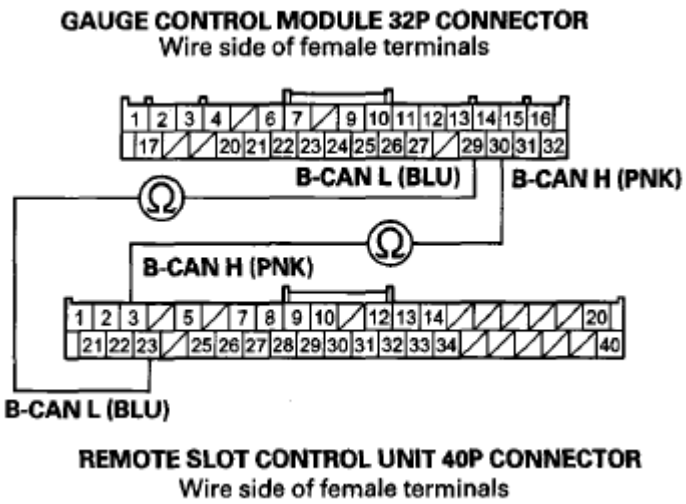


Fig. 49: Checking Continuity Between Gauge Control Module 32P Connector Terminals And Remote Slot Control Unit 40P Connector Terminals
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES -Replace the remote slot control unit (see **RF UNIT REPLACEMENT**).

NO -Repair an open or poor connection in the B-CAN wire between the remote slot control unit and the gauge control module.

DTC U128B: GAUGE CONTROL MODULE LOST COMMUNICATION WITH POWER CONTROL UNIT

NOTE: If you are troubleshooting multiple DTCs, be sure to follow the instructions in B-CAN System Diagnosis Test Mode A (see TROUBLESHOOTING - B-CAN SYSTEM DIAGNOSIS TEST MODE A).

1. Clear the DTCs with the HDS.
2. Turn the ignition switch to LOCK (0) and then back to ON (II), or press the engine start/stop button to select the OFF mode and then the ON mode.
3. Wait for at least 6 seconds.
4. Check for DTCs with the HDS.

   Is DTC U128B indicated?

   YES -Go to step 5.

   NO -Intermittent failure, the system is OK at this time. Check for loose or poor connections between the power control unit and the gauge control module.

5. From the BODY ELECTRICAL SYSTEM SELECT menu, select B-CAN CONTROL UNITS

INFORMATION, and then select CHECK CONNECTED CONTROL UNITS.

Is the power control unit detected?

YES -Go to step 9.

NO -Go to step 6.

6. Measure the voltage between body ground and power control unit connector C (36P) terminal No. 1.

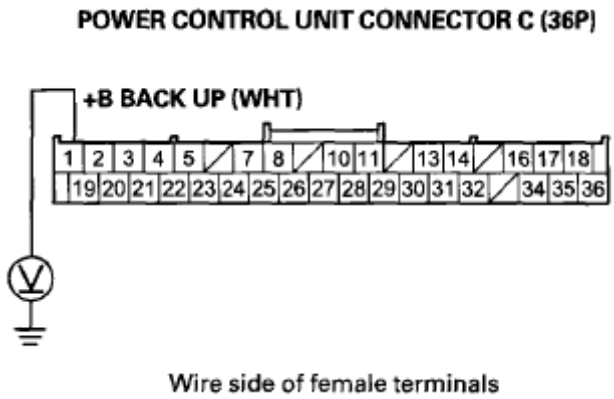


Fig. 50: Measuring Voltage Between Body Ground And Power Control Unit Connector C (36P) Terminal No. 1
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there battery voltage?

YES -Go to step 8.

NO -Go to step 7.

7. Check the No. 15(10 A) fuse in the under-hood fuse/relay box.

Is the fuse OK?

YES -Repair an open or high resistance in the No. 15 (10A) fuse circuit.

NO -Replace the fuse. If the fuse blows again, repair a short to ground in the No. 15 (10 A) fuse circuit.

8. Measure the voltage between body ground and power control unit connector C(36P) terminals No. 18 and No. 36 individually.

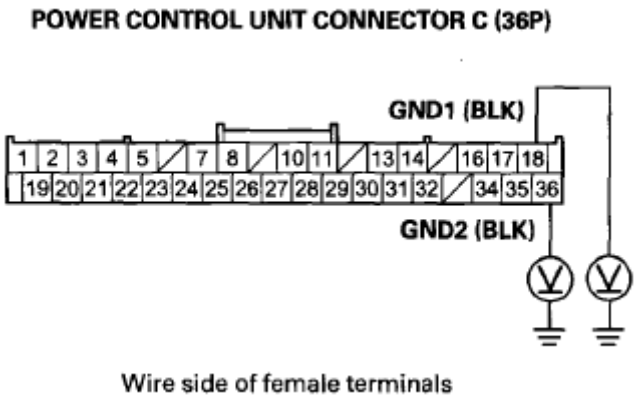


Fig. 51: Measuring Voltage Between Body Ground And Power Control Unit Connector C(36P) Terminals No. 18 And No. 36
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there less than 0.2 V?

YES -Go to step 9.

NO -Repair an open or high resistance in the ground wire or poor ground (G402).

9. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
10. Disconnect power control unit connector C (36P).
11. Disconnect the gauge control module 32P connector.
12. Check for continuity between gauge control module 32P connector terminals No. 29 and No. 30 and power control unit connector C (36P) terminals No. 17 and No. 16 respectively.

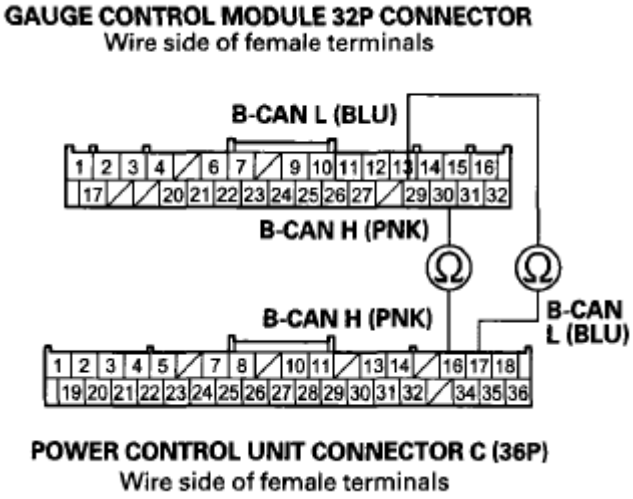


Fig. 52: Checking Continuity Between Gauge Control Module 32P Connector And Power Control Unit Connector C (36P)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES -Replace the power control unit (see **RF UNIT REPLACEMENT**).

NO -Repair an open or poor connection in the B-CAN wire between the power control unit and the gauge control module.

DTC U128F: GAUGE CONTROL MODULE LOST COMMUNICATION WITH BSI CONTROL UNIT (BSI MESSAGE)

NOTE: If you are troubleshooting multiple DTCs, be sure to follow the instructions in B-CAN System Diagnosis Test Mode A (see TROUBLESHOOTING - B-CAN SYSTEM DIAGNOSIS TEST MODE A).

1. Clear the DTCs with the HDS.
2. Turn the ignition switch to LOCK (0) and then back to ON (II), or press the engine start/stop button to select the OFF mode and then the ON mode.
3. Wait for at least 6 seconds.
4. Check for DTCs with the HDS.

   Is DTC U128F indicated?

   YES -Go to step 5.

   NO -Intermittent failure, the system is OK at this time. Check for loose or poor connections between the gauge control module and the BSI control unit.

5. From the BODY ELECTRICAL SYSTEM SELECT menu, select B-CAN CONTROL UNITS INFORMATION, and then select CHECK CONNECTED CONTROL UNITS.

   Is the BSI control unit detected?

   YES -Go to step 9.

   NO -Go to step 6.

6. Measure the voltage between body ground and BSI control unit 16P connector terminal No. 10.

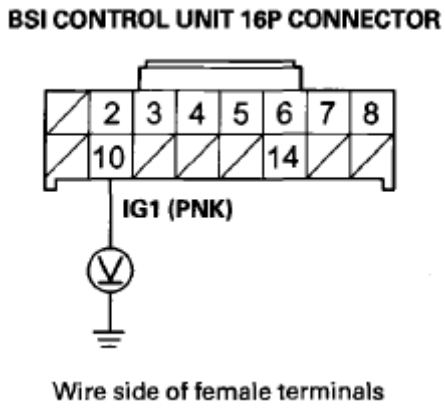


Fig. 53: Measuring Voltage Between Body Ground And BSI Control Unit 16P Connector Terminal No. 10
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there battery voltage?

YES -Go to step 8.

NO -Go to step 7.

7. Check the No. 1 (7.5 A) fuse in the driver's under-dash fuse/relay box.

   Is the fuse OK?

   YES -Repair an open or high resistance in the No. 1 (7.5 A) fuse circuit.

   NO -Replace the fuse. If the fuse blows again, repair a short to ground in the No. 1 (7.5 A) fuse circuit.

8. Measure the voltage between body ground and BSI control unit 16P connector terminal No. 7.

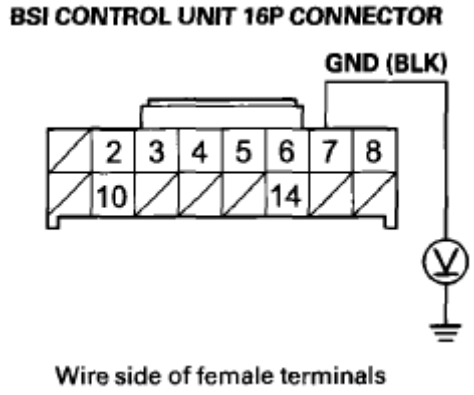


Fig. 54: Measuring Voltage Between Body Ground And BSI Control Unit 16P Connector Terminal No. 7
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there less than 0.2 V?

YES -Go to step 9.

NO -Repair an open or high resistance in the ground wire or poor ground (G603).

9. Turn the ignition switch to LOCK (0) or press the engine start/stop button to select the OFF mode.
10. Disconnect the BSI control unit 16P connector.
11. Disconnect the gauge control module 32P connector.
12. Check for continuity between gauge control module 32P connector terminals No. 29 and No. 30 and BSI control unit 16P connector terminals No. 6 and No. 5 respectively.

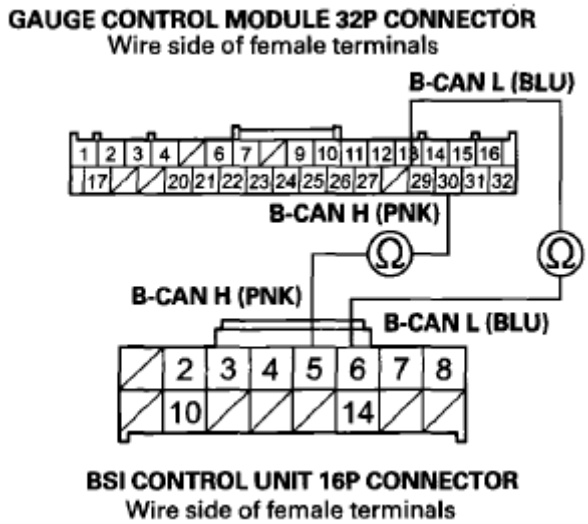


Fig. 55: Checking Continuity Between Gauge Control Module 32P Connector Terminals No. 29 And No. 30 And BSI Control Unit 16P Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES -Replace the BSI control unit (see **BSI RADAR UNIT REMOVAL/INSTALLATION**).

NO -Repair an open or poor connection in the B-CAN wire between the BSI control unit and the gauge control module.

GAUGE CONTROL MODULE INPUT TEST

NOTE: Before testing, do the gauge control module self-diagnostic function (see SELF-DIAGNOSTIC FUNCTION), and make sure the B-CAN communication lines are OK.

1. Remove the gauge control module (see **GAUGE CONTROL MODULE REPLACEMENT**), and disconnect the 32P connector (A) from it.

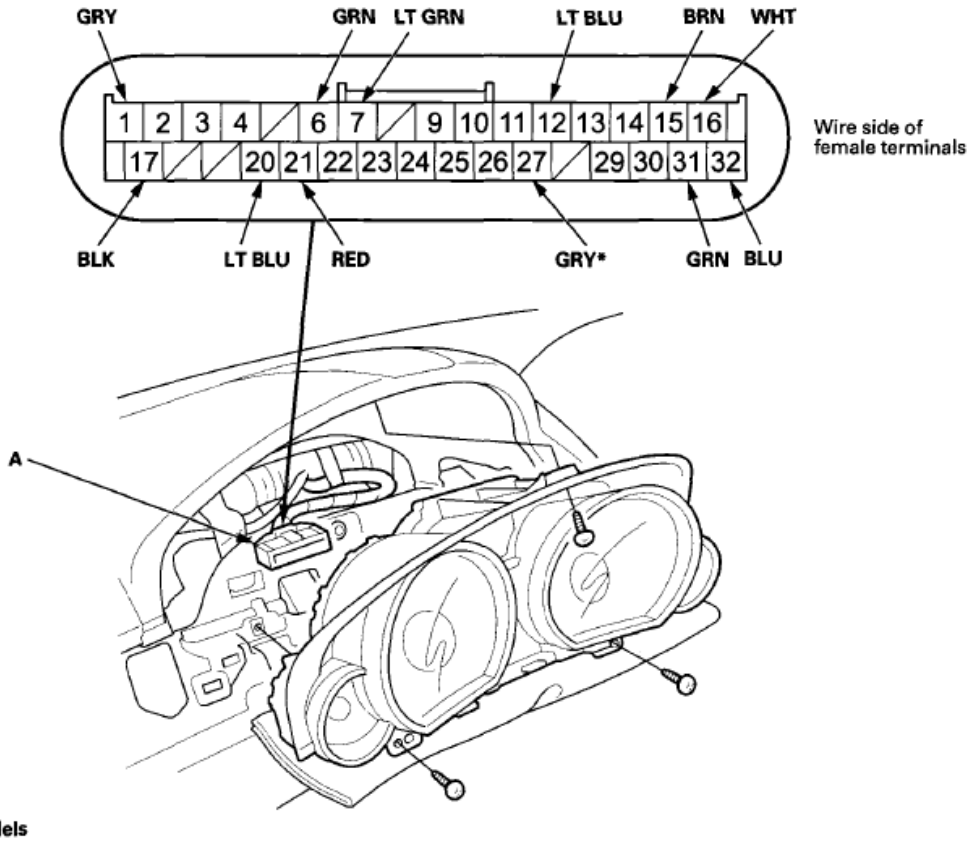


Fig. 56: Gauge Control Module 32P Connector End View
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Inspect the connector and socket terminals to be sure they are all making good contact.
   - If the terminals are bent, loose or corroded, repair them as necessary, and recheck the system.
   - If the terminals are OK, go to step 3.
3. With the connector still disconnected, do the following input tests:
   - If any test indicates a problem, find and correct the cause, then recheck the system.
   - If all the input tests prove OK, go to step 4.

Cavity	Wire	Test condition	Test: Desired result	Possible cause if desired result is not obtained
12	LT BLU	Battery sensor 2P connector disconnected	Check for continuity between terminal No. 12 and battery sensor 2P connector terminal No. 1: There should be continuity.	An open in the UART wire
20	LT BLU	Combination light switch ON	Connect to ground with a jumper wire: Dashlights should come on full bright.	• Faulty LEDs • Faulty bulbs • An open or high resistance in the wire

21	RED	Combination light switch ON	Connect to ground with a jumper wire: Dashlights should come on full bright.	• Faulty LEDs • An open or high resistance in the wire
31	GRN	Ignition switch ON (II), or power mode ON, turn signal switch in RIGHT	Measure the voltage to ground: There should be battery voltage when the lights are flashing.	• Faulty driver's MICU • Faulty combination light switch • An open or high resistance in the wire
32	BLU	Ignition switch ON (II), or power mode ON, turn signal switch in LEFT	Measure the voltage to ground: There should be battery voltage when the lights are flashing.	• Faulty driver's MICU • Faulty combination light switch • An open or high resistance in the wire

4. Reconnect the 32P connector to the gauge control module, and do the following input tests:
   - If any test indicates a problem, find and correct the cause, then recheck the system.
   - If all the input tests prove OK, the gauge control module must be faulty; replace it (see **GAUGE CONTROL MODULE REPLACEMENT**).

Cavity	Wire	Test condition	Test: Desired result	Possible cause if desired result is not obtained
16	WHT	Under all conditions	Measure the voltage to ground: There should be battery voltage.	• Blown No. 15 (10 A) fuse in the under-hood fuse/relay box • An open or high resistance in the wire
15	BRN	Ignition switch ON (II), or power mode ON	Measure the voltage to ground: There should be battery voltage.	• Blown No. 12 (7.5 A) fuse in the driver's under-dash fuse/relay box • An open or high resistance in the wire
1	GRY	In all ignition switch positions or all power modes	Measure the voltage to ground: There should be less than 0.2 V.	• Poor ground(G401) • An open or high resistance in the ground wire
		In all ignition switch positions or	Measure the voltage to	• Poor ground(G402)

17	BLK	all power modes	ground: There should be less than 0.2 V.	• An open or high resistance in the ground wire
27(1)	GRY	Ignition switch ON (II), or power mode ON, washer fluid level is full in the washer reservoir	Measure the voltage to ground: There should be about 5 V.	• Faulty washer fluid level switch • A short to ground in the wire
		Ignition switch ON (II), or power mode ON washer fluid level is low in the washer reservoir	Measure the voltage to ground: There should be less than 0.2 V.	• Faulty washer fluid level switch • Poor ground (G203) or an open in the ground wire • An open or high resistance in the wire
6	GRN	Ignition switch ON (II), or power mode ON, brake fluid level is full in the reservoir	Measure the voltage to ground: There should be battery voltage.	• Faulty brake fluid level switch • A short to ground in the wire
		Ignition switch ON (II), or power mode ON, brake fluid level is low in the reservoir	Measure the voltage to ground: There should be less than 0.2 V.	• Faulty brake fluid level switch • Poor ground (G302) or an open in the ground wire • An open or high resistance in the wire
7	LT GRN	Ignition switch ON (II), or power mode ON, parking brake lever pulled	Measure the voltage to ground: There should be less than 0.2 V.	• Faulty parking brake switch • Faulty parking brake switch ground • An open or high resistance in the wire
		Ignition switch ON (II), or power mode ON, parking brake lever released	Measure the voltage to ground: There should be battery voltage.	• Faulty parking brake switch • A short to ground in the wire
(1) Canada models				

REWRITING THE ODO DATA AND TRANSFERRING THE MAINTENANCE MINDER™ DATA TO A NEW GAUGE CONTROL MODULE

NOTE:

- **Obtain a new gauge control module before starting the rewriting process. Only new gauges can be rewritten.**

- **Rewriting is not possible on a gauge control module that will not communicate with the HDS.**
- **Make sure that the HDS shows the correct VIN for the vehicle you are working on.**
- **Once you have started this procedure, you must complete it before removing the HDS from the DLC.**
- **Connect a jumper battery (do not connect a battery charger) to ensure that correct battery voltage is maintained.**
- **Check any official Honda service website for more service information about the odometer.**

1. Before replacing the gauge control module, connect the HDS.
2. Select GAUGES from the BODY ELECTRICAL SYSTEM SELECT menu with the HDS.
3. Select GAUGE CONTROL MODULE REPLACEMENT (ODO Rewrite) from the ADJUSTMENT menu, and select READ OUT DATA and save ODO value and smart maintenance data into the HDS.
4. Replace the gauge control module (see **GAUGE CONTROL MODULE REPLACEMENT**).
5. Select WRITE DATA and follow the instructions on the HDS display, and install the ODO value and smart maintenance data into the replacement gauge control module. If the data transfer fails, refer to the instructions to release the locked ODO value.

HOW TO RELEASE LOCKED ODOMETER MILEAGE TO THE ORIGINAL GAUGE CONTROL MODULE

If, after you attempt to transfer mileage to a new gauge control module, the odometer display has dashes (- - -), is garbled, or shows an incorrect value, the original gauge control module can be unlocked and restored to its original state. In this way, it can be used again for additional attempts to transfer the mileage:

1. Confirm that you have the latest HDS version of software.
2. Make sure that the HDS shows the correct VIN for the vehicle you are working on.
3. With the ignition switch is in LOCK (0), or the vehicle ignition is in the OFF mode, reconnect the original gauge control module.
4. Completely re-boot the HDS.
5. Clear any stored DTCs.
6. Navigate to BODY ELECTRIC/GAUGES/GAUGE CONTROL MODULE REPLACEMENT (ODO REWRITE, etc.).
7. Select 3. RELEASING LOCKED ODO VALUE.
8. Follow the prompts and the odometer mileage is restored.
9. Start over and make sure the screen prompts are followed.

GAUGE CONTROL MODULE REPLACEMENT

NOTE: Before replacing the gauge control module, retrieve the ODO data and

transferring Maintenance Minder information from the gauge control module with the HDS (see REWRITING THE ODO DATA AND TRANSFERRING THE MAINTENANCE MINDER™ DATA TO A NEW GAUGE CONTROL MODULE).

1. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
2. Adjust the steering column to full tilt down position and to the full telescopic pull position, then remove the instrument fascia (see **DRIVER'S SWITCH PANEL REMOVAL/INSTALLATION**).
3. Remove the three screws from gauge control module (A), then pull the gauge control module out carefully.

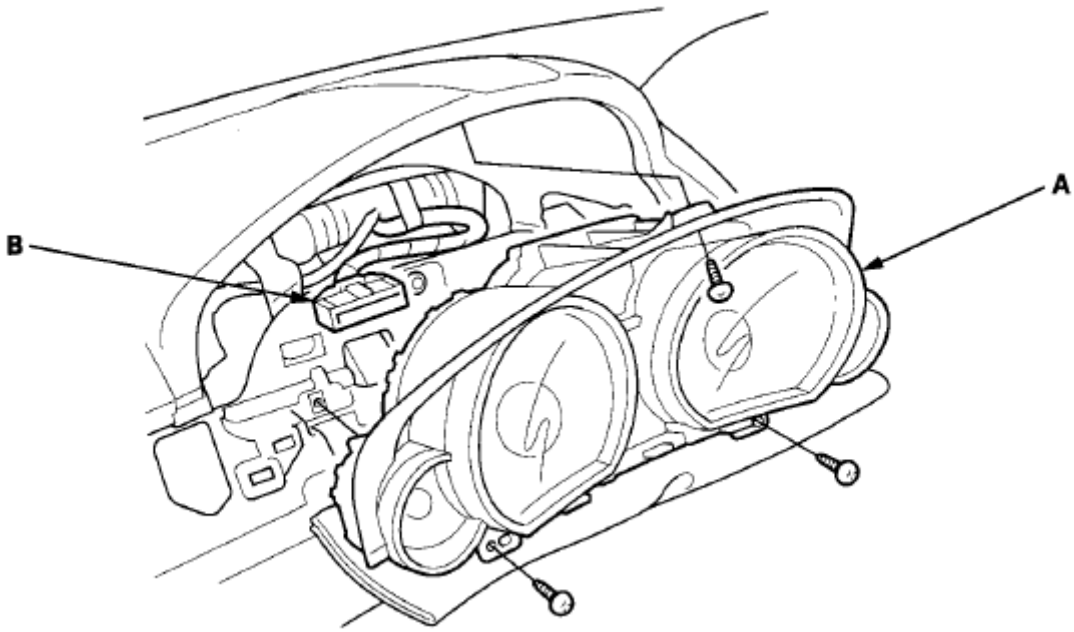


Fig. 57: Identifying Gauge Control Module
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Disconnect the 32P connector (B) from the gauge control module.
5. Install the gauge control module in the reverse order of removal.
6. Do rewriting the ODO data and transferring the Maintenance Minder data to a new gauge control module (see **REWRITING THE ODO DATA AND TRANSFERRING THE MAINTENANCE MINDER™ DATA TO A NEW GAUGE CONTROL MODULE**).

NOTE: Check the official Honda website for more information on how to write odometer information to a gauge control module that will not communicate with the HDS.

OUTSIDE AIR TEMPERATURE INDICATOR CALIBRATION

NOTE: To test the outside air temperature sensor (see OUTSIDE AIR TEMPERATURE SENSOR TEST).

DESCRIPTION

The outside air temperature sensor is located behind the center of the front bumper. The gauge control module uses measurements from this sensor, along with data provided by the climate control unit via the B-CAN communication line, to display the outside air temperature.

Because of the location of the sensor, it may be affected by heat reflection from the road, engine and radiator heat, or hot exhaust from surrounding traffic.

These conditions can heat soak the outside air temperature sensor and cause inaccurate readings. Logic has been written into the gauge control module to help prevent abnormal or fluctuating outside air temperature indicator readings.

OUTSIDE AIR TEMPERATURE INDICATOR LOGIC

Engine coolant temperature is 140 °F (60 °C) or higher:

If the engine coolant temperature is 140 °F (60 °C) or higher when the ignition switch is turned to ON (II), or the engine start/stop button is pressed to select the ON mode, the outside air temperature when the last time the key was turned off is displayed regardless of the current temperature measured by the outside air temperature sensor.

Engine coolant temperature is less than 140 °F (60 °C):

If the engine coolant temperature is less than 140 °F (60 °C) or lower when the ignition switch is turned to ON (II), or the engine start/stop button is pressed to select the ON mode, the current temperature measured by the outside air temperature sensor is indicated.

INFORMATION UPDATE TO THE OUTSIDE AIR TEMPERATURE INDICATOR WHILE DRIVING

Engine coolant temperature is 140 °F (60 °C) or higher:

If the temperature measured by the outside air temperature sensor is greater than the temperature on the outside air temperature indicator, the outside air temperature indicator increases by 1 °F (1 °C) per minute after the vehicle speed is greater than 19 mph (30 km/h) for more than 1 minute and 30 seconds. It continues to increase until the current outside air temperature is indicated. So, the first change to the outside air temperature indicator is 1 minute and 30 seconds after the vehicle speed is greater than 19 mph (30 km/h). If the vehicle speed drops below 19 mph (30 km/h), the indicator does not update again until the vehicle speed has increased to 19 mph (30 km/h) or more for more than 1 minute and 30 seconds again.

Engine coolant temperature is less than 140 °F (60 °C):

If the outside air temperature is less than the indicated temperature, the temperature decreases 1 °F(1 °C) every 2 seconds until the current outside air temperature is indicated regardless of vehicle speed.

TROUBLESHOOTING

If the indicator displays "- - -" for more than 2 seconds after selecting the outside air temperature display mode, the gauge is not receiving the outside temperature data from the climate control unit over the B-CAN. Check the climate control system or multiplex integrated control system for DTCs (see B-CAN System Diagnosis Test Mode A) (see **TROUBLESHOOTING - B-CAN SYSTEM DIAGNOSIS TEST MODE A**).

CALIBRATION PROCEDURE

The outside air temperature indicator's displayed temperature can be recalibrated ±5 °F (or ±3 °C) to meet the client's expectations.

1. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
2. Push and hold the INFORMATION button for at least 3 seconds to enter the customizing mode.
3. While in the customizing mode, select "CHG SETTING", and enter "METER SETUP". Then select "ADJUST OUTSIDE TEMP. DISPLAY", and calibrate the value with the SEL/RESET switch and the INFORMATION switch.

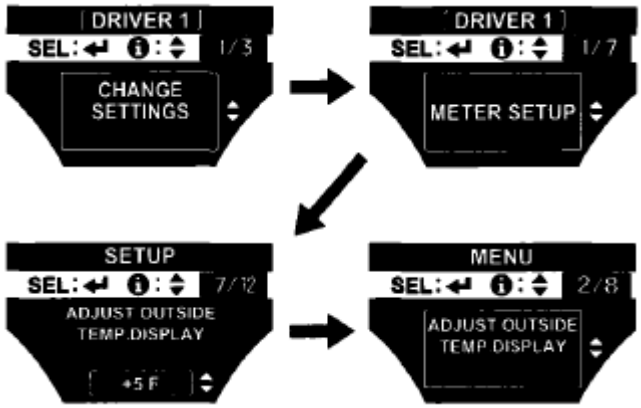


Fig. 58: Display Outside Air Temperature Indicator
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. When the desired correction value appears on the display, release the button, and the recalibrated outside air temperature will be displayed.

NOTE: The recalibration temperature is not the value the sensor sees. Therefore the temperature can only be adjusted ±5 ° from the sensors reading.

Example:

Incorrect value = 68°F (20°C)

Desired correction value = +2°F (+ 1 °C)

Correct value = 70 °F (21 °C)

Desired correction value = -2 °F (-1 °C)

Correct value = 66 °F (19 °C)

NOTE: To recalibrate the display to the true temperature, remove the outside air temperature sensor (A), but leave it connected. Submerge the sensor and a thermometer (B) in a container of ice water (C). Select the calibration mode as described above, then recalibrate the display to the true temperature.

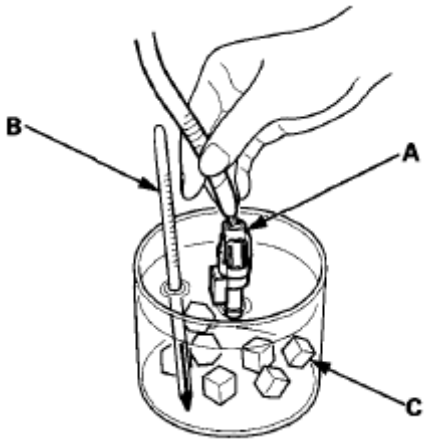


Fig. 59: Calibrating Outside Air Temperature
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. The snow mark is displayed when the temperature is 37 °F (3 °C) or less the first time you turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.



Fig. 60: Display Low Outside Air Temperature
Courtesy of AMERICAN HONDA MOTOR CO., INC.

SELECT/RESET/INFORMATION SWITCH TEST/REPLACEMENT

NOTE: SRS components are located in this area. Review the SRS component locations (see COMPONENT LOCATION INDEX), and precautions and procedures (see PRECAUTIONS AND PROCEDURES) before doing repairs or servicing.

1. Remove the steering wheel (see **STEERING WHEEL REMOVAL**).
2. Remove the paddle shifter (+) (upshift switch) (see **PADDLE SHIFTER REPLACEMENT**).

3. Disconnect the 12P connector (A) from the select/reset/information switch (B).

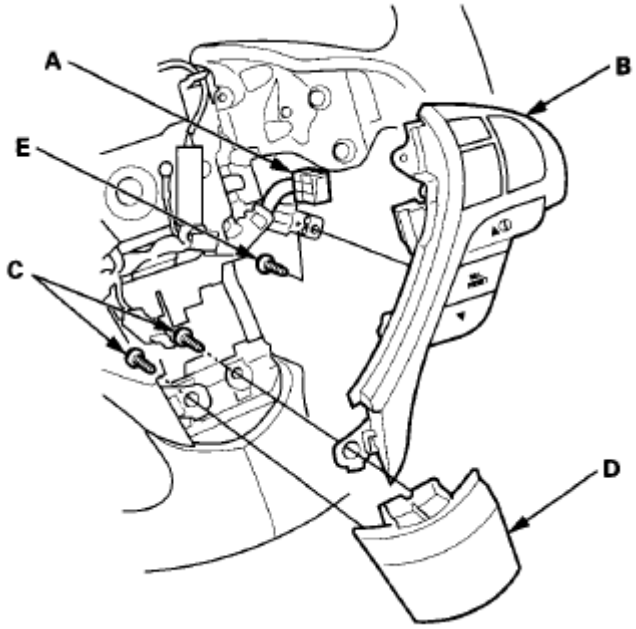


Fig. 61: Identifying 12P Connector, Select/Reset/Information Switch, Center Trim & Fasteners
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Remove the screws (C), then pull out the center trim (D) from the steering wheel.
5. Remove the screw (E), then pull the select/reset/information switch from the steering wheel.
6. Measure the resistance between select/reset/information switch 12P connector terminals No. 4 and No. 11 in each switch position according to the table.

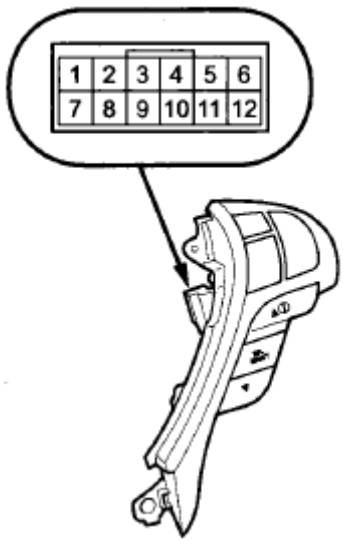


Fig. 62: Select/Reset/Information Switch 12P Connector End View
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Position	Resistance
^	About 1, 043 ohms
SEL/RESET	About 33 ohms
ˇ	About 363 ohms

7. If the resistance is not as specified, replace the switch.
8. If the switch is OK, but there is a problem with the switch function, check the cable reel subharness and cable reel.

2012 ACCESSORIES & EQUIPMENT

Glass - TL

COMPONENT LOCATION INDEX

FRONT

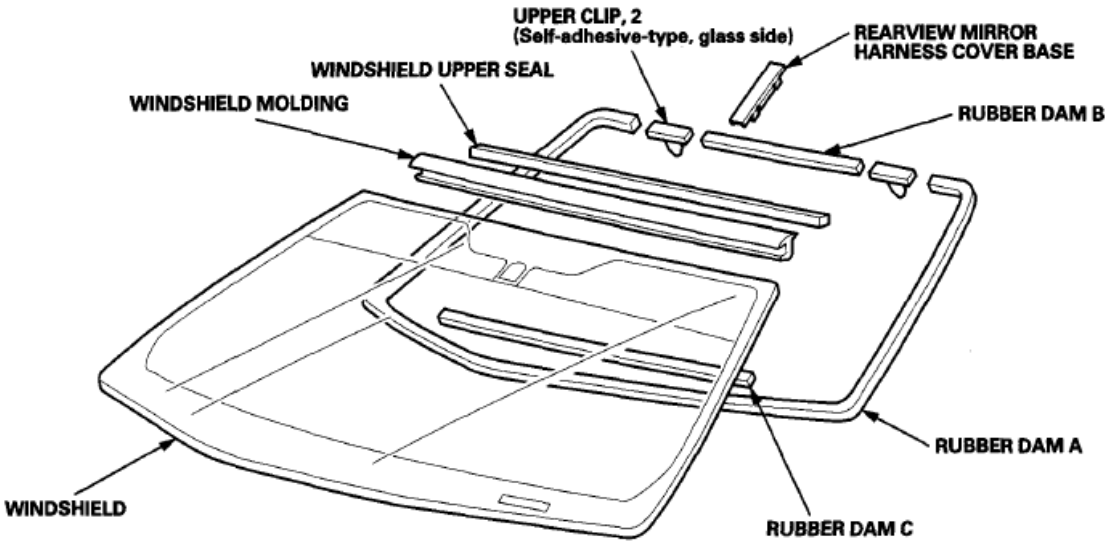


Fig. 1: Front Glass Components Location
Courtesy of AMERICAN HONDA MOTOR CO., INC.

REAR

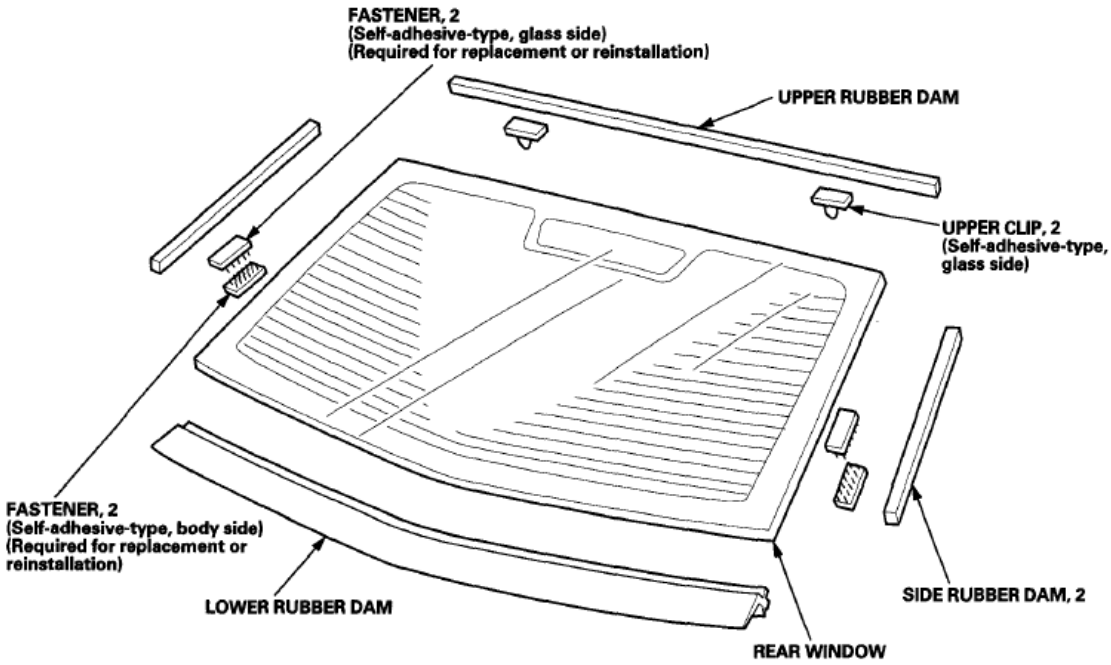


Fig. 2: Rear Glass Components Location
Courtesy of AMERICAN HONDA MOTOR CO., INC.

WINDSHIELD REPLACEMENT

NOTE:

- **Wear eye protection while cutting the glass adhesive with a piano wire.**
- **Put on gloves to protect your hands.**
- **Use seat covers to avoid damaging any surfaces.**
- **Glass adhesive can be efficiently cut with a commercially available auto glass tool. See the tool manufacturer's instructions for details.**

1. Remove these items:
   - Cowl cover (see **FRONT BULKHEAD BRACE COVER REPLACEMENT**)
   - Rearview mirror (see **REARVIEW MIRROR REPLACEMENT**)
   - A-pillar trims, both sides (see **TRIM REMOVAL/INSTALLATION - PILLAR AREAS**)
   - Roof moldings, both sides (see **ROOF MOLDING REPLACEMENT**)
2. Remove the windshield molding (A) from the upper edge of the windshield (B). If necessary, cut the windshield molding with a utility knife.

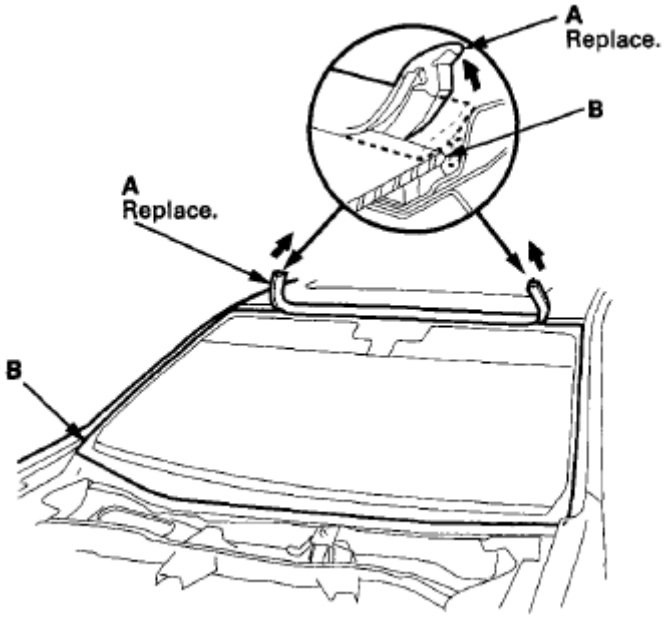


Fig. 3: Identifying Windshield & Molding
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. If the original windshield will be reinstalled, make alignment marks across the windshield and the body with a grease pencil.
4. Pull down the front area of the headliner (see **HEADLINER REMOVAL/INSTALLATION**).

NOTE: Take care not to bend the headliner excessively, or you may crease or break it.

5. Apply protective tape along the edge of the dashboard and the body. Make a hole with an awl through the rubber dam and the adhesive from inside the vehicle at a corner of the windshield. Push a piece of piano wire through the hole, and wrap each end around a piece of wood.
6. With a helper on the outside, pull the piano wire (A) back and forth in a sawing motion. Hold the piano wire as close to the windshield (B) as possible to prevent damage to the body and the dashboard. Carefully cut through the rubber dam and the adhesive (C) around the entire windshield.

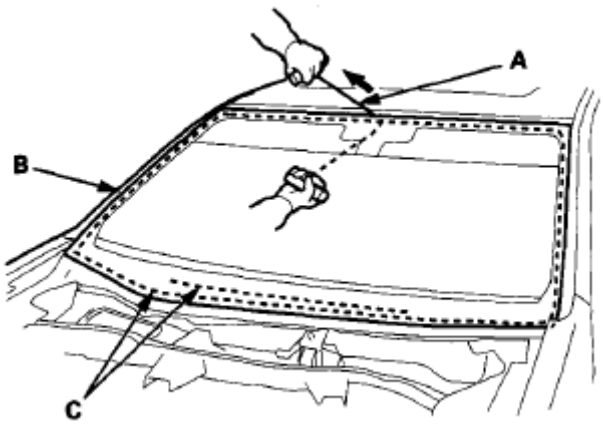


Fig. 4: Identifying Windshield, Piano Wire & Rubber Dam
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Cutting positions

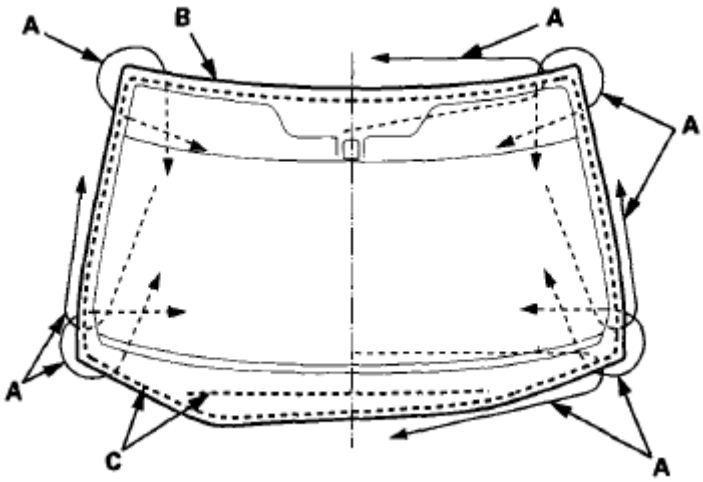


Fig. 5: Identifying Cutting Positions
Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Carefully remove the windshield.
8. Scrape smooth the original adhesive with a knife until there is a thickness of about 2 mm (0.08 in) on the bonding surface around the entire windshield opening flange:
   - Do not scrape down to the painted surface of the body; damaged paint will interfere with proper bonding.
   - Remove the rubber dams from the body.
9. Clean the body bonding surface with a shop towel dampened with isopropyl alcohol. After cleaning, keep oil, grease, and water from getting on the clean surface.
10. If you are reinstalling the original windshield, scrape off the original adhesive, the upper clips, and the rubber dams with a putty knife from the windshield. Clean the bonding surfaces on the inside face and the edge of the windshield with isopropyl alcohol. Make sure the bonding surface is kept free of water, oil,

and grease.

11. Before installing a new windshield, attach a new rearview mirror harness cover base to the inside face of the windshield (see **REARVIEW MIRROR HARNESS COVER BASE REPLACEMENT**).
12. Apply glass primer to the upper clip mounting areas on the windshield (C), and let it dry. Remove the adhesive backing and attach the rubber dam A, B and the upper clips (D) to the inside of the windshield as shown:
    - Make sure the rubber dams and the upper clips line up with the alignment marks (E).
    - Make sure the index tabs (F) on the clips face the left side.
    - Be careful not to touch the windshield where the adhesive will be applied.

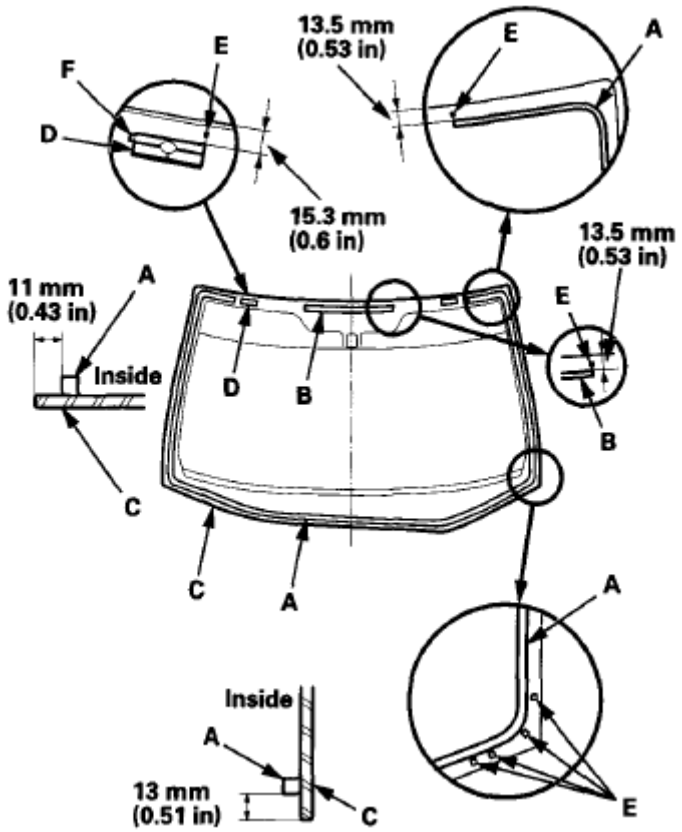


Fig. 6: Identifying Windshield & Fasteners
Courtesy of AMERICAN HONDA MOTOR CO., INC.

13. Attach rubber dam C with adhesive tape to the inside surface of the windshield (A) as shown, using the edge of the black ceramic-coated area (B) as a guide:
    - Make sure the rubber dam lines up with the alignment marks (D).
    - Be careful not to touch the windshield where the adhesive will be applied.

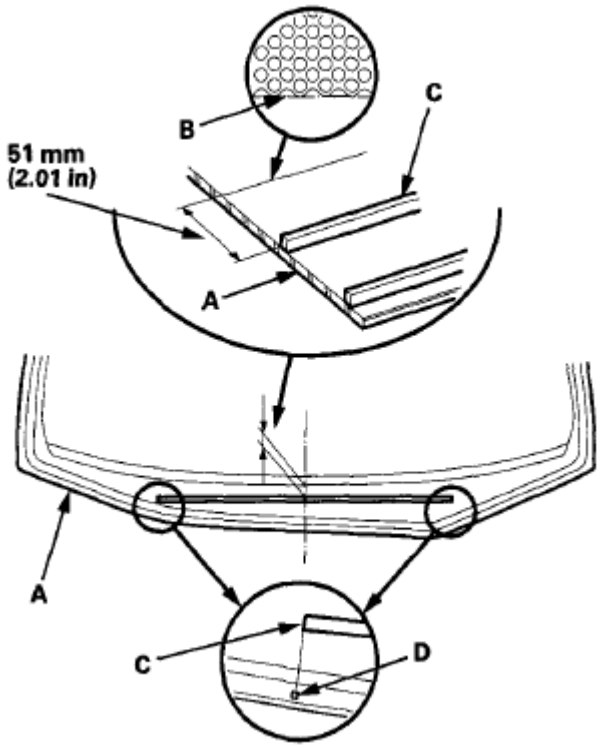


Fig. 7: Identifying Windshield, Black Ceramic-Coated Area And Alignment Marks
Courtesy of AMERICAN HONDA MOTOR CO., INC.

14. Attach the windshield molding (A) with adhesive tape (B) to the upper edge of the windshield (C). Be careful not to touch the windshield where the adhesive will be applied.

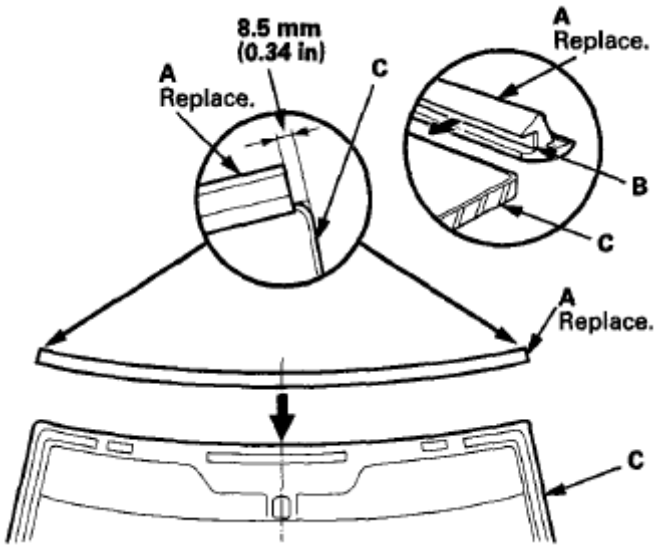


Fig. 8: Identifying Windshield, Tape & Molding
Courtesy of AMERICAN HONDA MOTOR CO., INC.

15. Attach the molding upper seal (A) with adhesive tape to the inside surface of the windshield molding (B)

as shown.

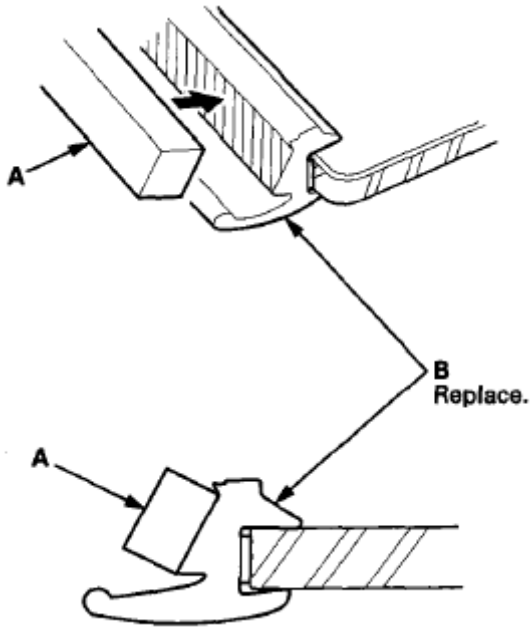


Fig. 9: Identifying Molding Upper Seal, Adhesive Tape & Windshield Molding
Courtesy of AMERICAN HONDA MOTOR CO., INC.

16. Set the windshield in the opening, and center it. Make alignment marks (A) across the windshield and the body with a grease pencil at the four points shown:
    - Make sure the pins (B) of both upper clips (C) contact with the edge of the body holes.
    - Be careful not to touch the windshield where the adhesive will be applied.

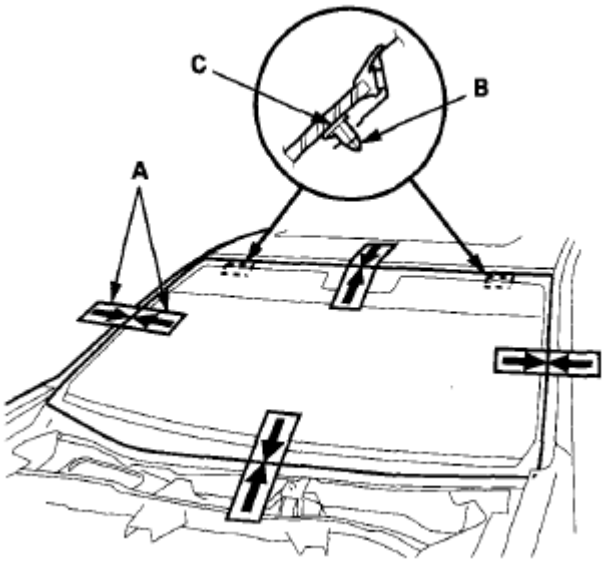


Fig. 10: Identifying Alignment Marks, Pins And Upper Clips
Courtesy of AMERICAN HONDA MOTOR CO., INC.

17. Remove the windshield.
18. Apply a light coat of glass primer to the windshield (A) along the edge of the windshield molding (B) and the rubber dams (C) as shown, then lightly wipe it off with a gauze or a cheesecloth:
    - Apply glass primer to the molding.
    - Do not apply body primer to the windshield, and do not mix up the body and glass primer applicators.
    - Never touch the primed surfaces with your hands. If you do, the adhesive may not bond to the windshield properly, causing a leak after the windshield is installed.
    - Keep water, dust, and abrasive materials away from the primed surfaces.

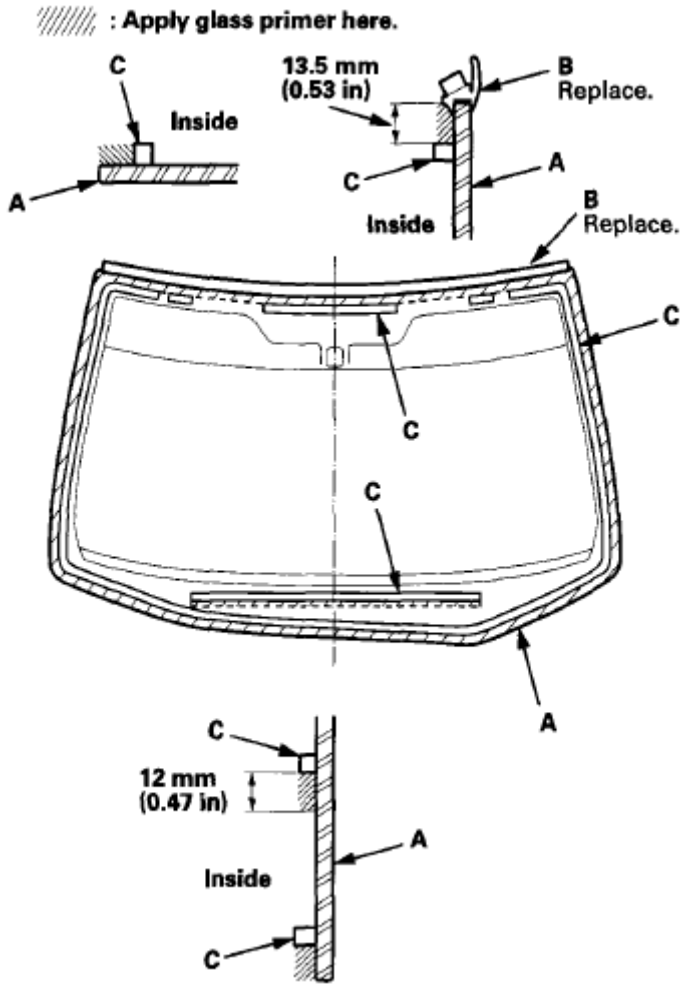


Fig. 11: Identifying Windshield Primer Application Areas, Rubber Dams & Windshield Molding
Courtesy of AMERICAN HONDA MOTOR CO., INC.

19. Carefully apply a light coat of body primer to any exposed paint or metal around the flange where new adhesive will be applied. Let the body primer dry for at least 10 minutes:
    - Do not apply body primer to any original adhesive on the flange.

- Cover on the dashboard before applying the primer.
- Be careful not to mix up the body and glass primer applicators.
- Never touch the primed surfaces with your hands.

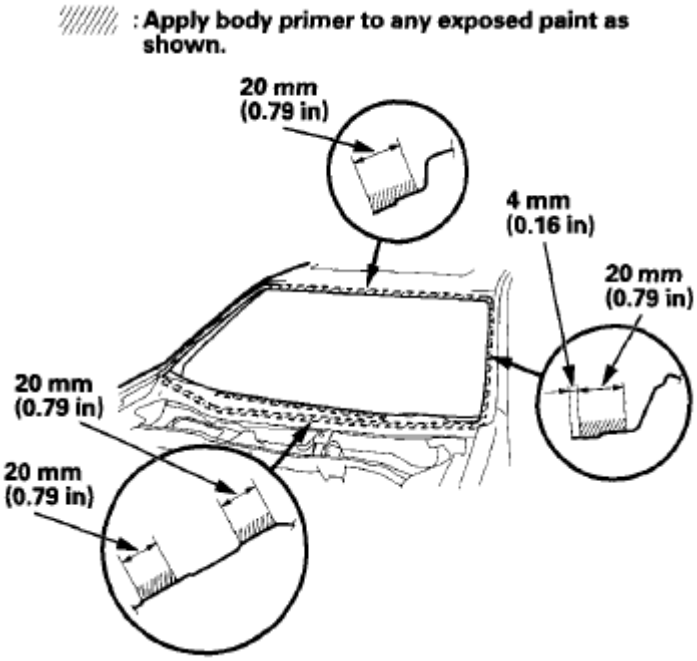


Fig. 12: Identifying Primer Application Areas
Courtesy of AMERICAN HONDA MOTOR CO., INC.

20. Cut a "V" in the end of the nozzle (A) on the adhesive cartridge as shown.

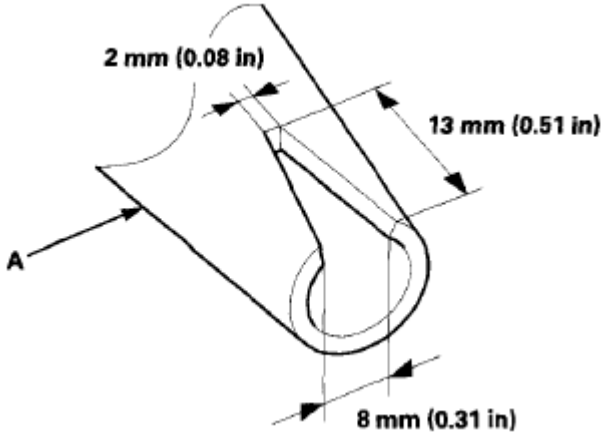


Fig. 13: Identifying Dimensions Of Nozzle On Adhesive Cartridge
Courtesy of AMERICAN HONDA MOTOR CO., INC.

21. Put the cartridge in a caulking gun, and run a continuous bead of the adhesive (A) on the windshield (B) along the edge of the windshield molding (C) and the rubber dams (D) as shown:

- Apply the adhesive within 30 minutes after applying the glass primer.
- Make a slightly thicker bead at each corner.

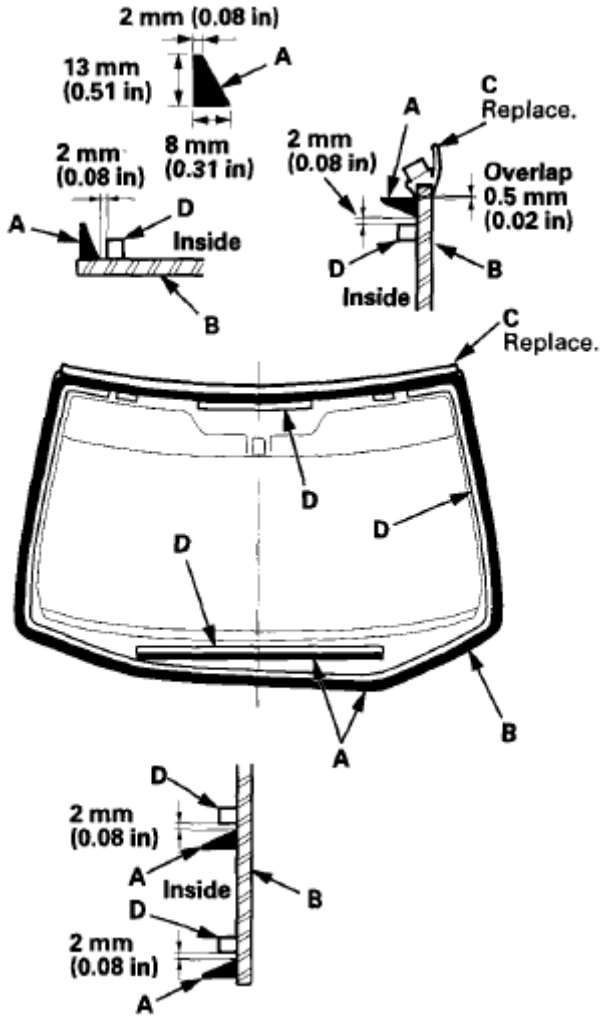


Fig. 14: Identifying Adhesive Application Areas
Courtesy of AMERICAN HONDA MOTOR CO., INC.

22. Hold the windshield over the opening with suction cups, align it with the alignment marks you made in step 16, and set it down on the adhesive. Lightly push on the windshield until its edges are fully seated on the adhesive all the way around.

NOTE: Do not open or close any of the doors for about an hour until the adhesive is dry.

23. Remove the excess adhesive with a putty knife or a shop towel dampened with isopropyl alcohol.
24. Wait at least an hour for the adhesive to dry, then spray water over the windshield and check for leaks. Mark leaking areas, and let the windshield dry, then seal with sealant. Let the vehicle stand for at least 4 hours after windshield installation. If the vehicle has to be used within the first 4 hours, it must be driven

slowly.

25. Reinstall all remaining removed parts.

NOTE: Advise the customer not to do the following things for 2 to 3 days:

- Slam the doors with all the windows rolled up.
- Twist the body excessively (such as when going in and out of driveways at an angle or driving over rough, uneven roads).

REARVIEW MIRROR HARNESS COVER BASE REPLACEMENT

NOTE:

- **Wear eye protection while cutting the glass adhesive with a piano wire.**
- **Put on gloves to protect your hands.**

1. Remove the rearview mirror (see **REARVIEW MIRROR REPLACEMENT**).
2. Carefully cut through the adhesive tape under the rearview mirror harness cover base with a piano wire, then remove the base.
3. Scrape off all of the original the adhesive tape with a putty knife from the windshield. Clean the bonding surface on the inside face of the windshield with isopropyl alcohol. Make sure the bonding surface is kept free of water, oil and grease.
4. If you are reinstalling the original rearview mirror harness cover base (A), scrape off all of the original adhesive tape with a putty knife from the base. Clean the base surface with isopropyl alcohol. Apply primer to the base as shown, and attach the adhesive tape (B) to the base.

   Adhesive tape: Thickness 0.8 mm (0.031 in) Width 7 mm (0.28 in)

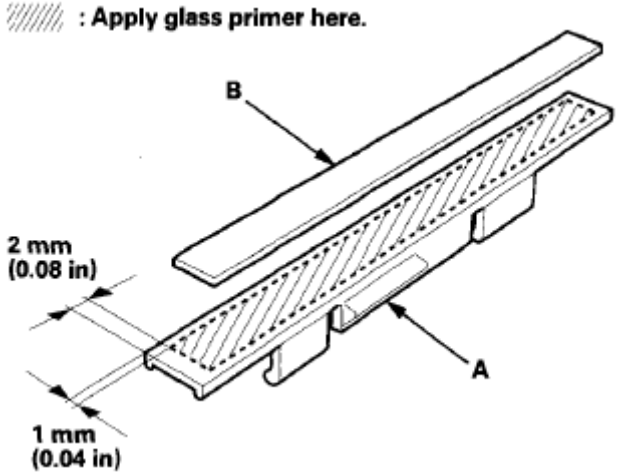


Fig. 15: Identifying Rearview Mirror Harness Cover Base And Adhesive Tape
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Before installing the rearview mirror harness cover base, apply primer to the area where the harness cover

base will be applied to the inside face of the windshield. Let the primer dry at least 10 minutes, then attach it to the windshield within 12 hours.

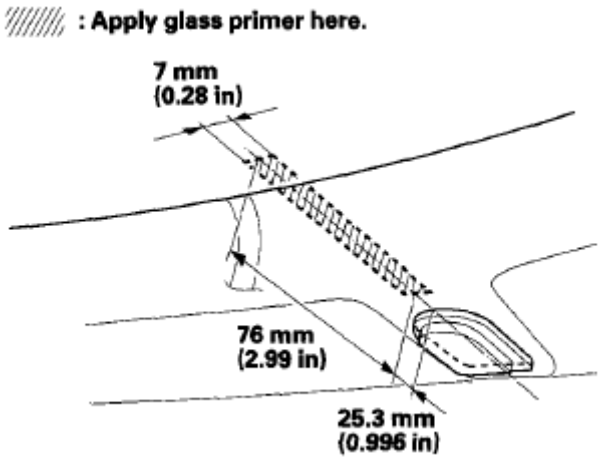


Fig. 16: Identifying Glass Primer Application Area
Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Attach the rearview mirror harness cover base (A) with adhesive tape (B) to the inside face of the windshield as shown, then press the adhesive areas into place securely.

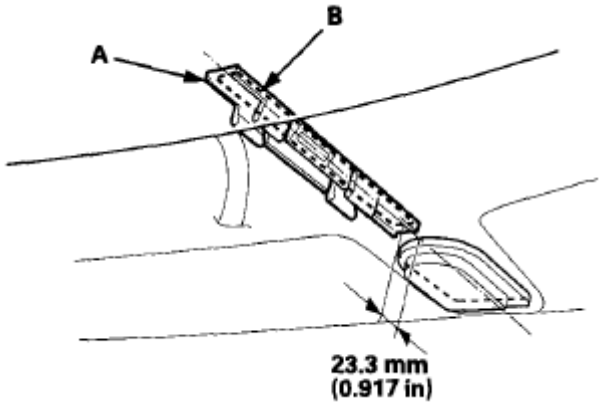


Fig. 17: Identifying Rearview Mirror Harness Cover Base And Adhesive Tape
Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Reinstall all remaining removed parts.

REAR WINDOW REPLACEMENT

NOTE:

- **Wear eye protection while cutting the glass adhesive with a piano wire.**
- **Put on gloves to protect your hands.**
- **Use seat covers to avoid damaging any surfaces.**
- **Do not damage the rear window defogger grid lines, the window antenna**

grid lines, or the terminals.

1. Remove these items:
   - Trunk lid
   - Rear door opening seal, as needed (see **TRIM REMOVAL/INSTALLATION - DOOR AREAS**).
   - Rear center seat belt lower anchor (see **REAR CENTER SEAT BELT AND REAR SEAT BELT BUCKLES**)
   - Rear window molding (see **REAR WINDOW MOLDING REPLACEMENT**)
2. Disconnect the window antenna connectors (A) and the rear window defogger terminals (B).

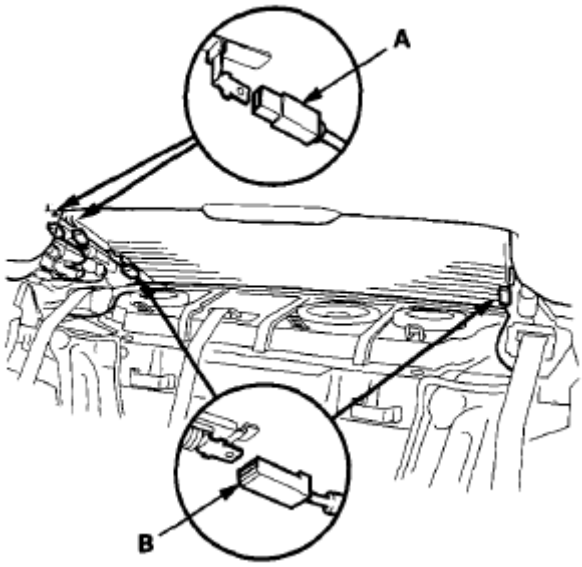


Fig. 18: Identifying Window Antenna Connectors And Rear Window Defogger Terminal
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. If the original rear window will be reinstalled, make alignment marks across the rear window and the body with a grease pencil.
4. Pull down the rear area of the headliner (A) by detaching the clips.

NOTE: Take care not to bend the headliner excessively, or you may crease or break it.

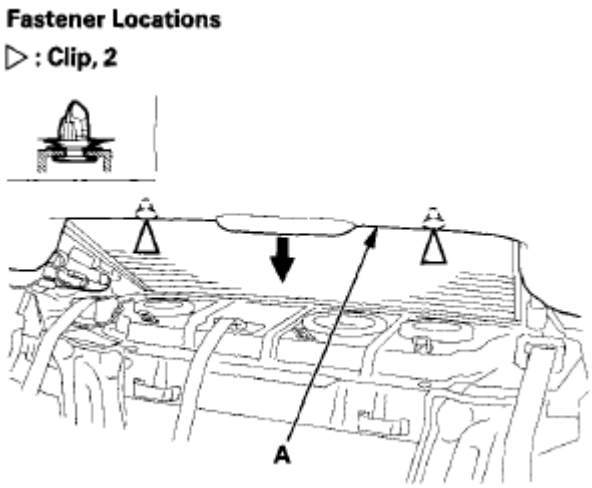


Fig. 19: Identifying Headliner & Clips
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Apply protective tape along the inside and outside edges of the body. Make a hole with an awl through the adhesive from inside the vehicle at a corner of the rear window. Push a piece of piano wire through the hole, and wrap each end around a piece of wood.
6. Remove the lower rubber dam (A) from the lower edge of the rear window (B). If necessary cut the rubber dam with a utility knife.

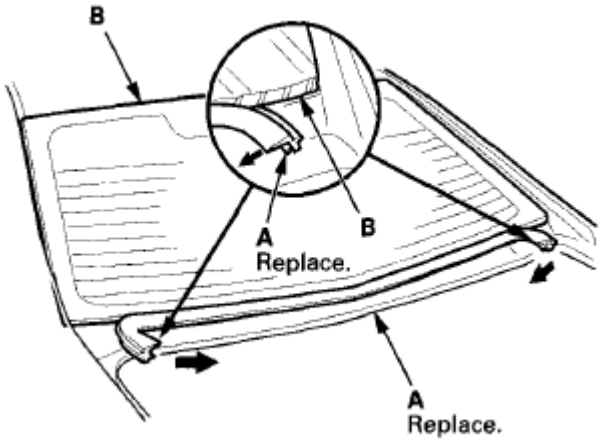


Fig. 20: Removing Lower Rubber Dam From Lower Edge Of Rear Window
Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. With a helper on the outside, pull the piano wire (A) back and forth in a sawing motion. Hold the piano wire as close to the rear window (B) as possible to prevent damage to the body, and carefully cut through the adhesive (C) around the entire rear window.

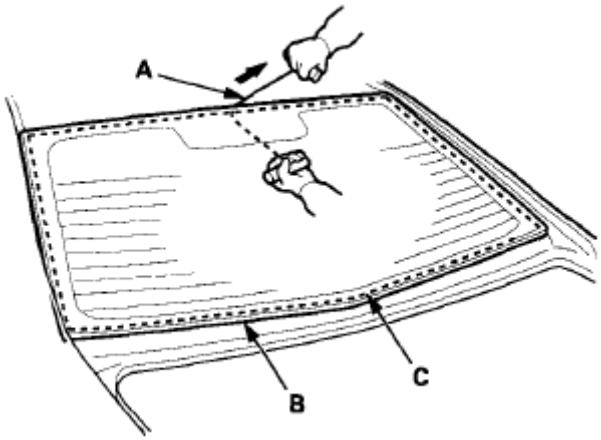


Fig. 21: Pulling Piano Wire Back And Forth In Sawing Motion
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Cutting positions

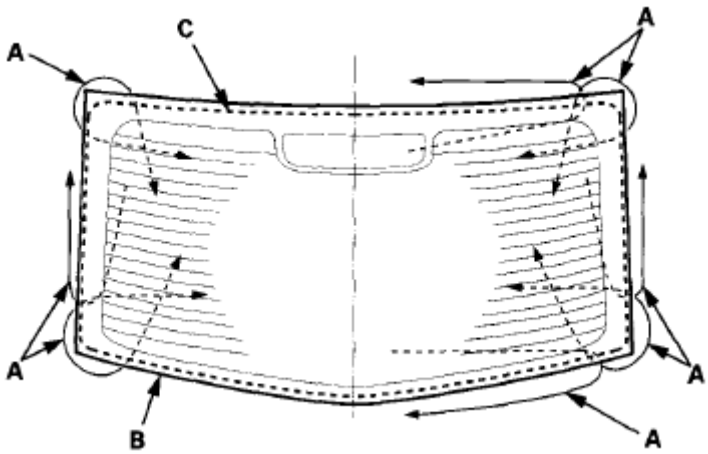


Fig. 22: Cutting Positions Rear Window
Courtesy of AMERICAN HONDA MOTOR CO., INC.

8. Carefully remove the rear window.
9. Scrape smooth the original adhesive with a knife until there is a thickness of about 2 mm (0.08 in) on the bonding surface around the entire rear window opening flange:
    - Do not scrape down to the painted surface of the body; damaged paint will interfere with proper bonding.
    - Remove the fasteners from the body.
10. Clean the body bonding surface with a shop towel dampened with isopropyl alcohol. After cleaning, keep oil, grease, and water from getting on the surface.
11. If you are reinstalling the original windshield, scrape off all of the original adhesive, the fasteners, and the rubber dams with a putty knife from the rear window. Clean the bonding surfaces on inside face and the edge of the rear window with isopropyl alcohol. Make sure the bonding surface is kept free of water, oil, and grease.

12. Apply glass primer to the edge of the rear window (A) where the lower rubber dam (B) will be attached as shown. Attach the lower rubber dam with adhesive tape (C) to the lower edge of the rear window:
    - After installing the rubber dam, cut the ends (D) of the rubber dam as shown.
    - Be careful not to touch the windshield where the adhesive will be applied.

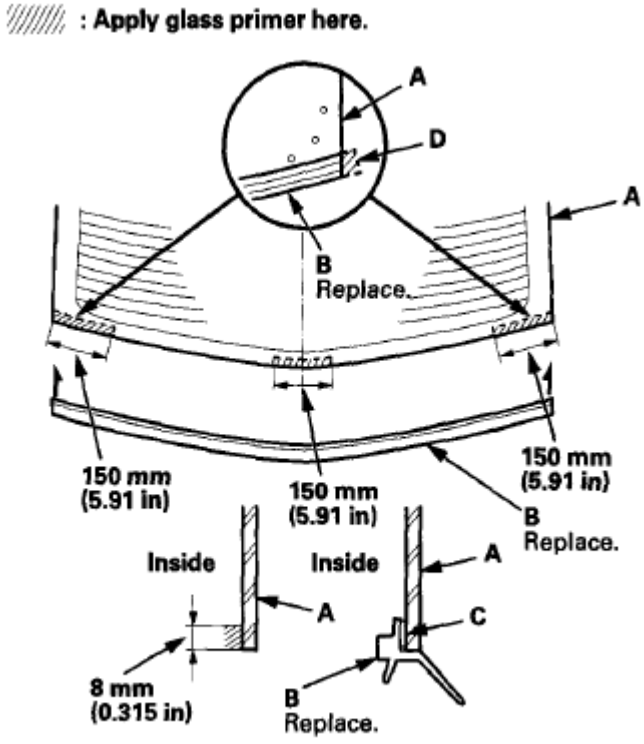


Fig. 23: Applying Glass Primer At Indicated Location
Courtesy of AMERICAN HONDA MOTOR CO., INC.

13. Apply glass primer to the upper clip mounting areas on the rear window, and let it dry. Attach the upper rubber dam (A), the side rubber dams (B), the upper clips (C), and the fasteners (D) with the adhesive tape to the inside face of the rear window (E) as shown:
    - Make sure the upper rubber dam, the side rubber dams, the upper clips, and the fasteners line up with the alignment marks (F). If necessary, cut the excess rubber dams.
    - Make sure the index tabs (G) on the clips face the right side.
    - Be careful not to touch the rear window where the adhesive will be applied.

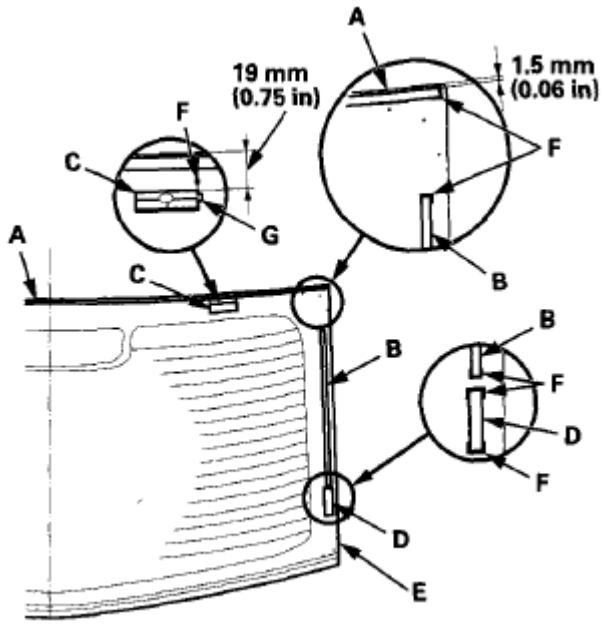


Fig. 24: Identifying Upper Rubber Dam, Rubber Dams, Upper Clips, Fasteners, Rear Window, Alignment Marks And Index Tabs
Courtesy of AMERICAN HONDA MOTOR CO., INC.

14. Attach the fasteners with the adhesive tape to the rear window opening flange (A) of the body on both sides.

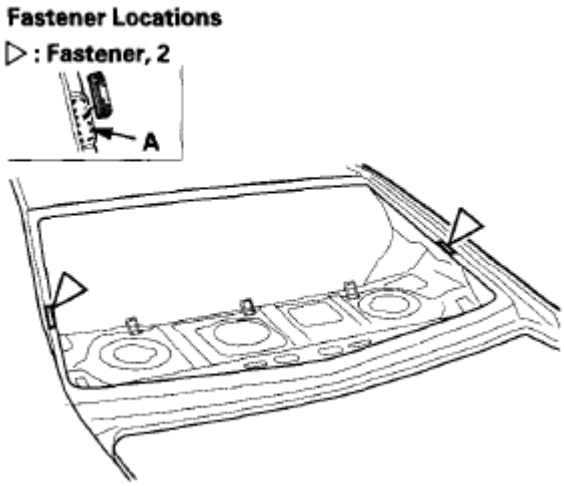


Fig. 25: Attaching Fasteners With Adhesive Tape To Rear Window Opening Flange Of Body On Sides
Courtesy of AMERICAN HONDA MOTOR CO., INC.

15. Set the rear window in the opening, and center it. Make alignment marks (A) across the rear window and the body with a grease pencil at the four points shown:
    - Make sure the pins (B) of both upper clips (C) contact with the edge of the body holes.

- Be careful not to touch the rear window where the adhesive will be applied.

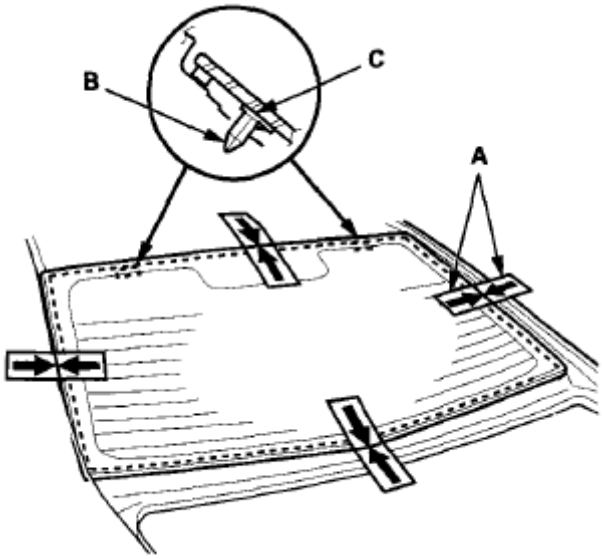


Fig. 26: Identifying Alignments Marks, Pins And Upper Clips
Courtesy of AMERICAN HONDA MOTOR CO., INC.

16. Remove the rear window.
17. Apply a light coat of glass primer to the rear window (A) along the edge of the rubber dams (B) as shown, then lightly wipe it off with gauze or cheesecloth:
    - Apply the glass primer to the corner areas of the rear window using the printed dots (C) on the rear window as a guide.
    - Do not apply body primer to the rear window, and do not mix up the body and glass primer applicators.
    - Never touch the primed surfaces with your hands. If you do, the adhesive may not bond to the rear window properly, causing a leak after the rear window is installed.
    - Keep water, dust, and abrasive materials away from the primed surfaces.

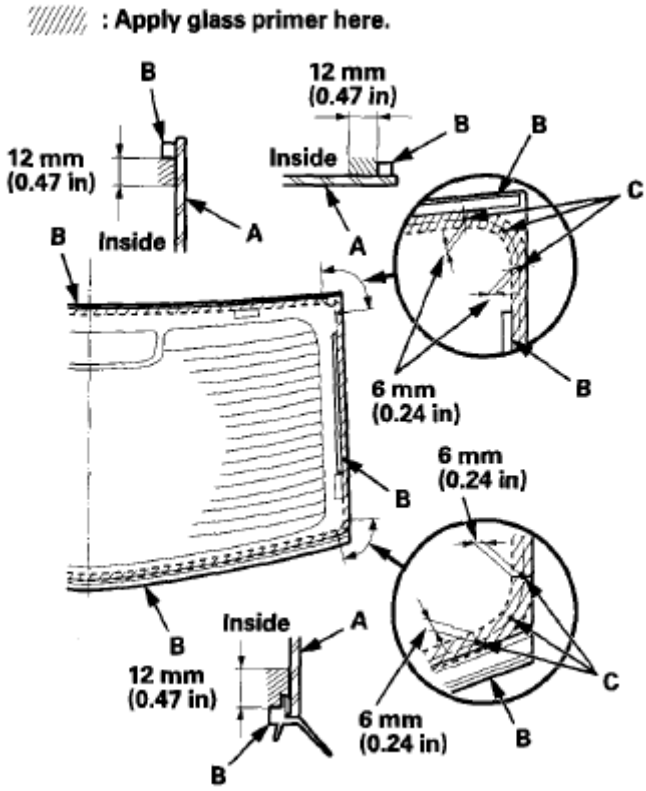


Fig. 27: Identifying Glass Primer Application Areas
Courtesy of AMERICAN HONDA MOTOR CO., INC.

18. Carefully apply a light coat of body primer to any exposed paint or metal around the flange where the new adhesive will be applied. Let the body primer dry for at least 10 minutes:
    - Do not apply body primer to any original adhesive on the flange.
    - Be careful not to mix up the body and glass primer applicators.
    - Never touch the primed surfaces with your hands.

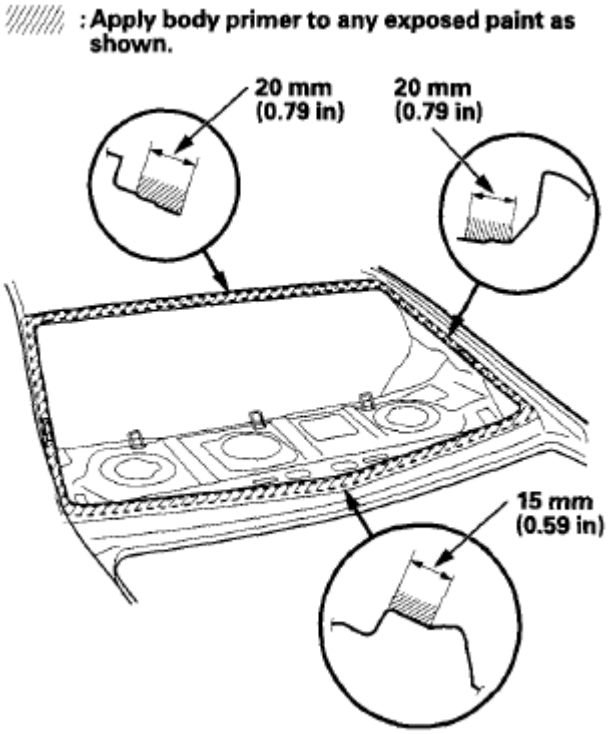


Fig. 28: Applying Body Primer To Exposed Paint As Indicated
Courtesy of AMERICAN HONDA MOTOR CO., INC.

19. Cut a "V" in the end of the nozzle (A) on the adhesive cartridge as shown.

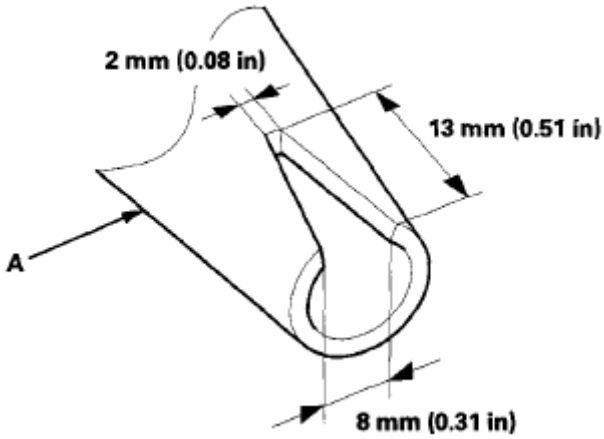


Fig. 29: Identifying Dimensions Of Nozzle On Adhesive Cartridge
Courtesy of AMERICAN HONDA MOTOR CO., INC.

20. Put the cartridge in a caulking gun, and run a continuous bead of the adhesive (A) to the rear window (B) along the edge of the rubber dams (C) as shown:
    - Use the printed dots (D) as a guide when you apply the adhesive to the corners of the rear window.
    - Apply the adhesive within 30 minutes after applying the glass primer.

- Make a slightly thicker bead at each corner.

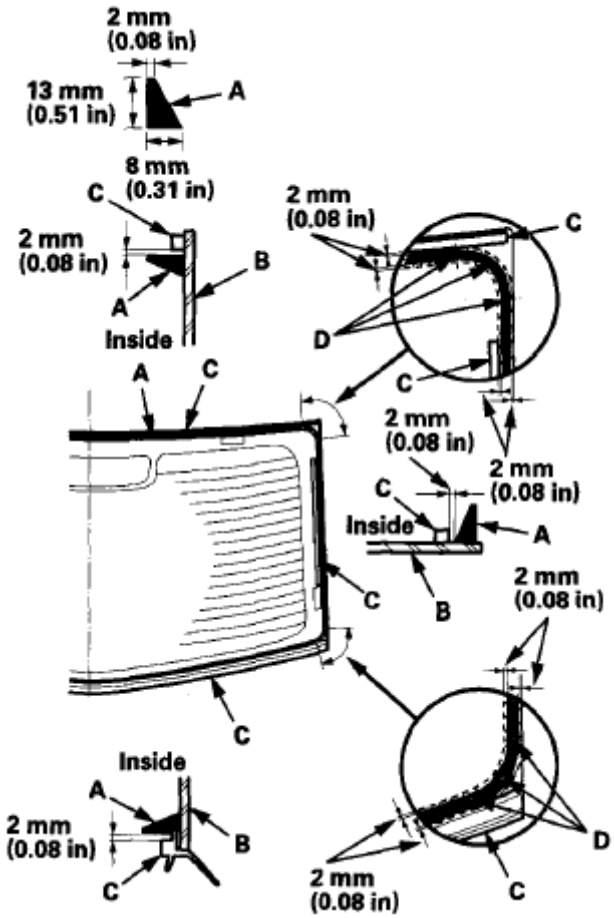


Fig. 30: Identifying Adhesive, Rear Window, Edge Of Rubber Dams And Printed Dots
Courtesy of AMERICAN HONDA MOTOR CO., INC.

21. Hold the rear window over the opening with suction cups, align it with the alignment marks you made in step 15, and set it down on the adhesive. Lightly push on the rear window until its edges are fully seated on the adhesive all the way around.

NOTE: Do not open or close any of the doors for about an hour until the adhesive is dry.

22. Remove the excess adhesive with a putty knife or a shop towel dampened with isopropyl alcohol.
23. Wait at least an hour for the adhesive to dry, then spray water over the rear window and check for leaks. Mark the leaking areas, let the rear window dry, then seal with sealant. Let the vehicle stand for at least 4 hours after rear window installation. If the vehicle has to be used within the first 4 hours, it must be driven slowly.
24. Reinstall all remaining removed parts.

NOTE: Advise the client not to do the following things for 2 to 3 days:

- **Slam the doors with all the windows rolled up.**
- **Twist the body excessively (such as when going in and out of driveways at an angle or driving over rough, uneven roads).**

2012 ACCESSORIES & EQUIPMENT

HandsFreeLink System - TL

COMPONENT LOCATION INDEX

WITH NAVIGATION

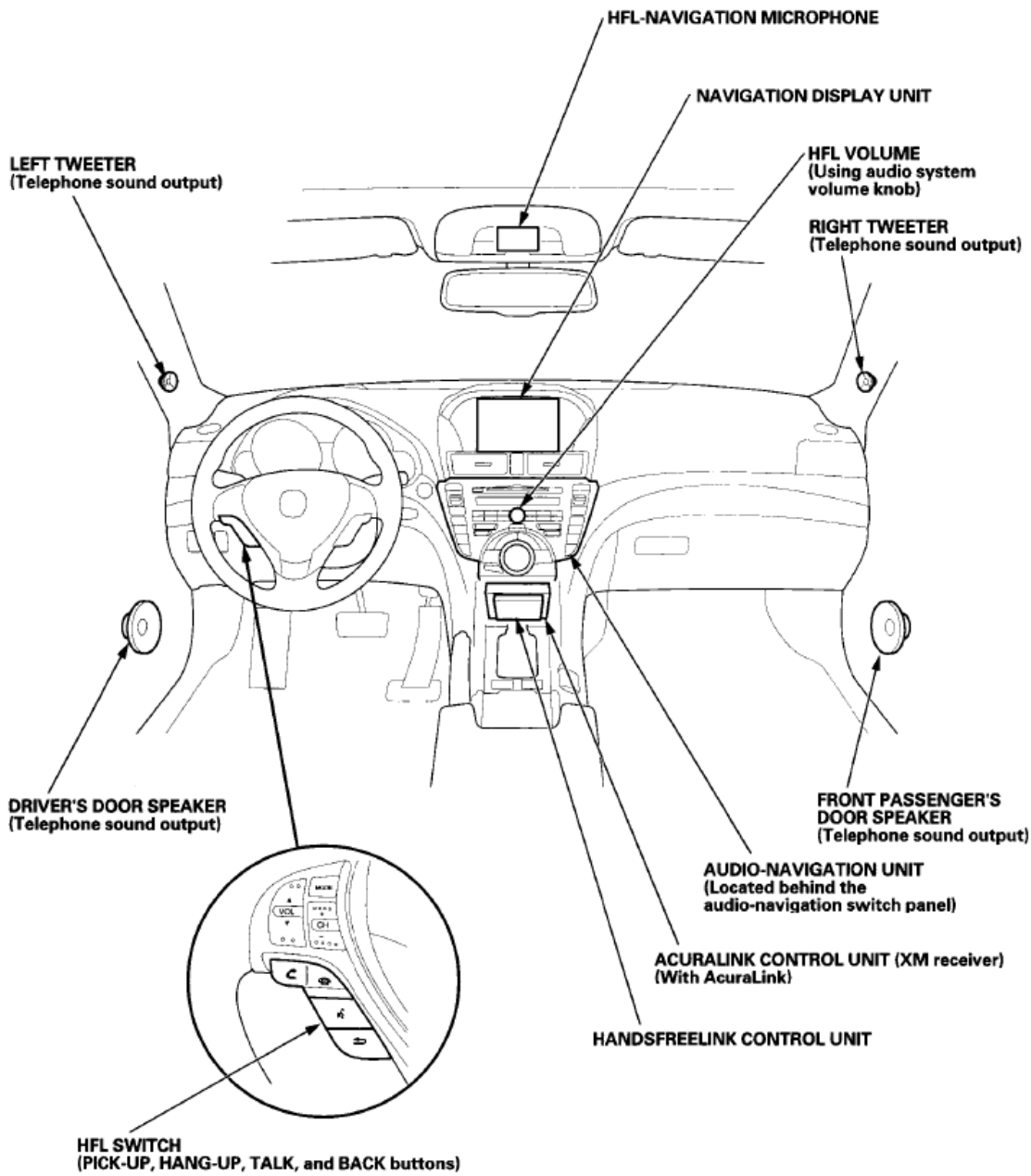


Fig. 1: HandsFreeLink System Components Location (1 Of 2)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

WITHOUT NAVIGATION

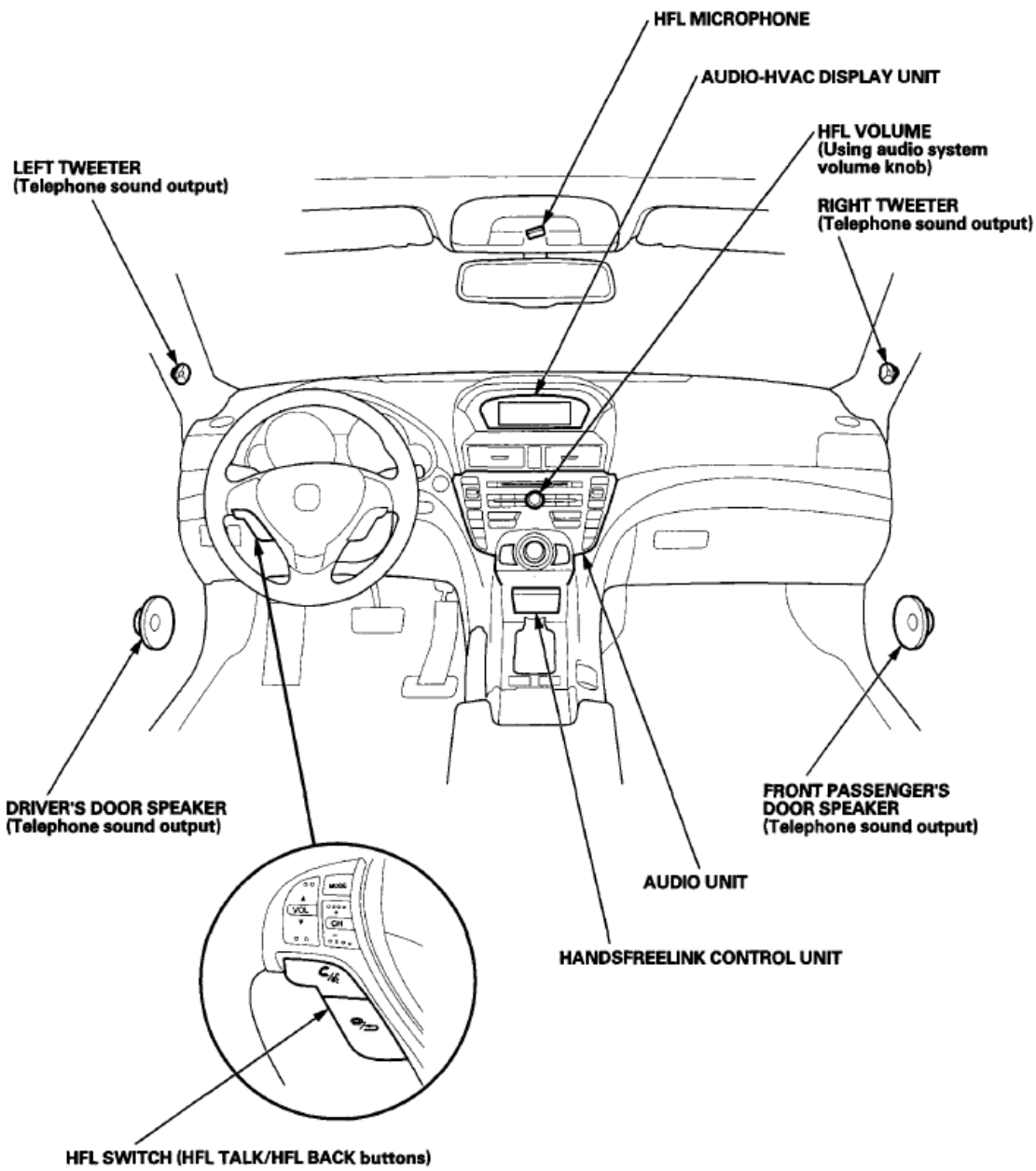


Fig. 2: HandsFreeLink System Components Location (2 Of 2)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

GENERAL TROUBLESHOOTING INFORMATION

HOW TO CHECK FOR DTCS WITH THE HDS (WITHOUT NAVIGATION)

NOTE: Check the vehicle battery condition first (see BATTERY TEST).

1. Make sure the ignition switch is in LOCK (0), or press the engine start/stop button to select the OFF mode.
2. Connect the HDS to the data link connector (DLC) (A) located under the driver's side of the dashboard.

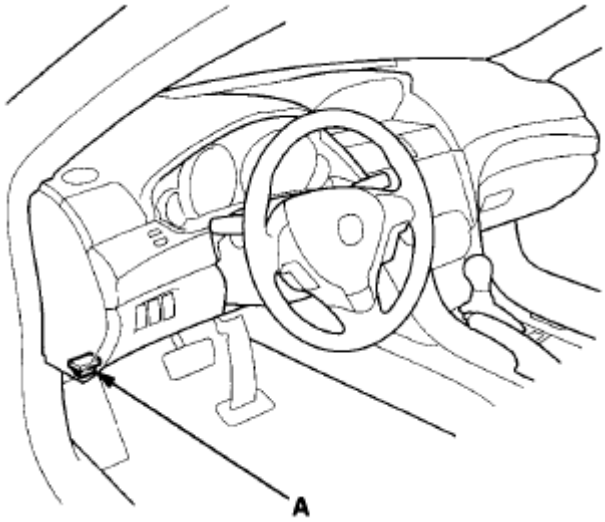


Fig. 3: Identifying Data Link Connector (DLC)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
4. Make sure the HDS communicates with the vehicle and the HandsFreeLink Control Unit. If it does not, troubleshoot the DLC circuit (see **DLC CIRCUIT TROUBLESHOOTING**).
5. Select HandsFreeLink in the BODY ELECTRICAL menu.
6. Select DTCs in the HandsFreeLink menu.
7. Check for DTCs. If any DTCs are indicated, write down the DTCs, then go to the indicated DTC troubleshooting. If no DTCs are indicated, refer to **Symptom Troubleshooting Index** symptom troubleshooting.

NOTE:

- **After troubleshooting, clear the DTCs with the HDS.**
- **For specific operations, refer to HOW TO USE THE HDS (HONDA DIAGNOSTIC SYSTEM) .**

LEVER-LOCKED CONNECTOR

Disconnecting

To disconnect the connector, pull the lever (A) while pushing the lock tab (B) down, then pull the connector (C).

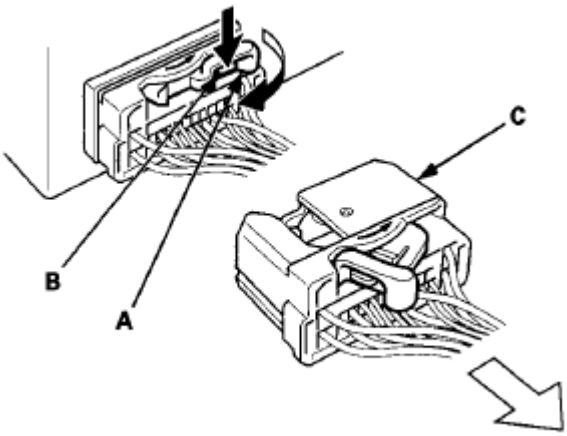


Fig. 4: Disconnecting Lever-Locked Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Connecting

To connect the connector, push the connector into the connector sleeve (A). As the connector is pressed in, the lever (B) moves to the locked position.

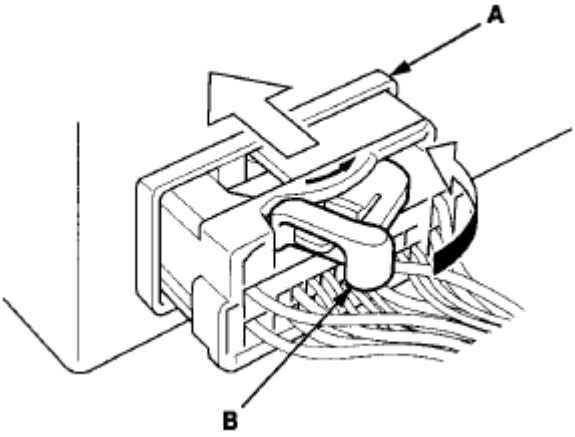


Fig. 5: Connecting Lever-Locked Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

INTRODUCTION

The HFL system works only with Acura approved Bluetooth®-enabled cell phones with a hands-free profile. If you are not sure if your cell phone is compatible with the HFL system, Acura has a dedicated call center at 888-528-7876 and web site www.acura.com/handsfreelink, to answer your questions.

The HFL system allows you to make and receive hands-free calls. It cannot control the phone's performance (call quality and signal strength). For more information about performance and performance problems, refer to Dropped Calls.

Always call the HFL call center first, not Tech Line because the HFL call center has the latest information about

cell phone software versions, settings and other issues.

Most HFL complaints are due to pairing, configuration, or compatibility issues. Contact the Acura call center before replacing the HandsFreeLink Control Unit.

The call center is open Monday thru Friday from 6:00 a. m. to 6:00 p.m. CST; Saturday from 7:00 a.m. to 6:00 p.m. CST; and Sunday from 8:00 a.m. to 6:00 p.m. CST.

CHECKING CELL PHONE COMPATIBILITY

The most important step in troubleshooting HFL issues is to identify the client's phone model, the software version, and the cellular carrier that experiences the HFL problem. Not all phones with the Bluetooth feature and a hands-free profile are compatible with the Acura HFL system.

Go to www.acura.com/handsfreelink or call Acura's dedicated call center at 888-528-7876, and check if the client's phone is approved to work with the Acura HFL system.

NOTE:

- **These approved, archived, and currently testing phone model lists are constantly changing, so make sure you view them frequently.**
- **Phones are added as they are approved.**
- **Phones can be removed from the approved list if a software bug is discovered that makes the phone incompatible. There phones can be added back to the approved list if the phone manufacturer corrects the bug.**
- **If the software bug is corrected, a new software version is created and may be listed in the Supported Features section of the phone. If you have trouble finding the phone's software version, you can call the HFL call center at 888-528-7876.**
- **The Acura web site now includes the software versions that are tested and approved. When software versions are listed, you need to know which version is loaded on the phone to help you troubleshoot the client's complaint. If you cannot access the Acura web site, call the HFL call center at 888-528-7876 for further assistance.**

VOICE CONTROL TIPS AND IMPROVING VOICE RECOGNITION

With navigation, HFL voice control and voice recognition is not supported. The HFL system stores a simple voice tag for the Speed Dial. But HFL is controlled by using the navigation voice recognition system.

To give a voice command to the HFL system, press and release the HFL TALK button (A). Always wait for the beep, then give your command in a clear, natural voice. The HFL microphone is on the ceiling by the map lights.

If the HFL system does not recognize your voice command, you'll hear "Pardon? Press the HFL TALK button and say a command. For a list of commands, say HandsFreeHelp." If your command is not recognized a second time, you'll hear "Bluetooth HandsFreeLink main menu. Available calling options are call, dial, redial, and

transfer. Available setup options are phone setup, phone book, and system setup. For more detailed help, say HandsFreeHelp." If your command is not recognized a third time, the HFL system sends you to its Help menu.

To hear a list of available options at any time, press the HFL TALK button, and say "help."

The HFL system may have problems recognizing some voices. To improve voice recognition:

- Close the windows and moonroof.
- Set the fan speed to low (1 or 2) or off.
- Adjust the airflow from the center vents down, so that it's not blowing against the microphone on the ceiling.
- Speak in a clear and natural voice. If the system cannot recognize your command, try speaking louder, slower in a deeper tone.
- If the background noise is too loud, you may need to speak louder.
- If you speak with something in your mouth, or your voice is too high, the system may not interpret your command correctly.
- Find out if the problem is with one person or with everyone who uses the system. If the system has a problem with only one person's voice, this is a system limitation.

Many issues result from the client not using the system properly. When the HFL TALK button is pressed, the client hears one audible tone. When the HFL BACK button is pressed, the client hears two audible tones. Make sure to press the HFL BACK button to exit out of the HFL main menu after completing a call and before giving any navigation commands.

The HFL system may experience a number recognition issue, such as when a client rattles off a set of numbers in a group unrecognized by the system. The HFL system understands phone numbers in specific blocks of 3, 4, 7, 10, and 11 numbers. For example, the system understands:

1234567890

123-456-7890

The system may become confused if numbers are stated in other blocks like these:

1234-567-890

12-34-56-78-90

12345-67890

123-4567-890

1-2-3-4-5-6-7-8-9-0

Without navigation

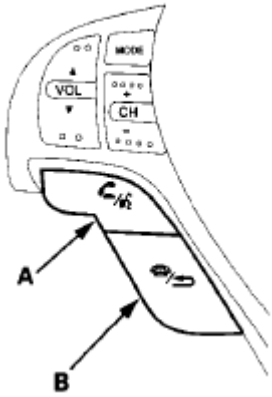


Fig. 6: Identifying HFL System Button (Without Navigation)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

NAVIGATION THROUGH HFL MENUS

With navigation, HFL voice control and voice recognition is not supported. The HFL system stores a simple voice tag for the Speed Dial. But HFL is controlled by using the navigation voice recognition system.

To skip a voice prompt, press and release the HFL TALK button (A) while the HFL system is speaking. The system beings listening for your next voice command.

To go back a step in a voice command sequence, press and release the HFL BACK button (B), or press the HFL TALK button and say "Go back." If you do not say anything while the HFL system is listening for your voice command, it times out and stops voice recognition. The next time you press and release the HFL TALK button, the HFL system begins listening from the point it timed out.

If you've finished or want to stop a voice command sequence at anytime, press and release the HFL BACK button, or press and release the HFL TALK button, wait for the beep, and say "Cancel." The next time you press and release the HFL TALK button, the HFL system begins from its main menu. To avoid keeping the audio system muted, press and release the HFL BACK button when you are finished.

Without navigation

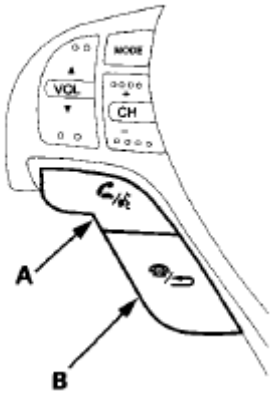


Fig. 7: Identifying HFL System Button (With Navigation)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

PAIRING A CELL PHONE

You must pair an approved Bluetooth-compatible phone to the HFL system before you can make and receive calls. For a current list of approved phones and specific phone pairing instructions for each phone, see Checking Cell Phone Compatibility, go to www.acura.com/handsfreelink, or call 888-528-7876.

The following procedure works for most Acura approved phones. If you cannot pair your phone to the HFL system with this procedure, refer to your phone's operating manual, vehicle's Owner's Manual, visit www.acura.com/handsfreelink, or call 888-528-7876.

NOTE:

- **You cannot pair a phone while the vehicle is moving.**
- **Your phone must be in its Discovery mode.**
- **A maximum of six approved Bluetooth-compatible phones can be paired to the system.**

WITH NAVIGATION

The commands for pairing the phone can either be selected using the interface dial or by using the navigation voice recognition system (TALK and BACK buttons).

NOTE: **The navigation system can pair up to six approved phones. If you try to pair a seventh phone, a message appears that prompts you to delete one of your existing phones.**

1. Turn the ignition switch to ACCESSORY (I), or press the engine start/stop button to select the ACC mode and make sure the phone you are pairing is on and in its discovery mode.
2. Press the INFO button, and turn the interface dial to select Cellular Phone, then press ENTER.
3. Move the interface dial down to select Phone Setup.
4. Select Connection, then press Enter.
5. Select Add New Phone, then press Enter.
6. When a four-digit pass key number appears on the screen, wait until prompted by the phone, then enter the pass key into your cellphone.
7. Once the phone is successfully paired, the screen displays "The pairing was successful."

WITHOUT NAVIGATION

1. With your approved phone on and the ignition switch in ACCESSORY (I) or ON (II), or press the engine start/stop button to select the ACC or ON mode, press and release the HFL TALK button. After the beep, say "Phone setup." The HFL responds, "Phone setup options are pair, edit, delete, list, status, next phone, set pairing code."
2. Press and release the HFL TALK button. After the beep, say "Pair." The HFL responds, "The pairing

process requires operation of your mobile phone. For safety, only perform this function while the vehicle is stopped. For proper system function a compatible Bluetooth phone is required. Please visit www.acura.com/handsfreelink for a list of approved phones and other system information. HandsFreeLink is waiting to pair with a Bluetooth phone. From your phone, search for Bluetooth devices, and select HandsFreeLink. When prompted by your mobile phone enter the pairing code 0000."

3. When prompted by your mobile phone, enter the pairing code 0000. Refer to your cell phone user guide for more information about searching for a Bluetooth device.
4. Once the phone is recognized by the HFL system, it responds, "HandsFreeLink has connected to a new phone. A name is needed to identify this phone. Press the talk button and say a name. For example, John's phone."
5. Press and release the HFL TALK button. After the beep, say the name you want to use. For example, say "Tom's phone." The HFL responds, "Tom's phone has been successfully paired."

PAIRING TROUBLESHOOTING

Many pairing issues are resolved by altering the client's phone settings.

If you cannot get an approved HFL phone to pair, contact Acura's dedicated call center at 888-528-7876, or go online to www.acura.com/handsfreelink.

DROPPED CALLS

Clients may perceive dropped calls as being an HFL system fault, but most dropped calls are resultant from cell phone and cell phone carrier issues. The HFL system does not directly handle the cell phone signal. It allows the cell phones to transmit the cell phone audio over the vehicle's audio system.

Many dropped calls issues can be resolved by changing the client's phone settings. For help on approved HFL settings, contact Acura's dedicated call center at 888-528-7876, or go online to www.acura.com/handsfreelink.

Always confirm with the client if the number of dropped calls is higher while using the HFL system as opposed to using the cell phone only. Clients often confuse problems with their phone or carrier as a problem with the HFL system. The HFL system cannot control or determine:

- Cellular connection quality
- Signal strength
- Cellular coverage
- Ambient weather conditions that affect cellular signals

When a client complains about dropped calls, ask questions about when or where the calls are dropped, such as:

- Do you drive the same route on a regular basis?
- Does the call drop in the same location?
- Where do you keep your cell phone?
- Have you compared the number of dropped calls using the HFL versus making calls from the handset?
- Does your phone have an antenna that needs to be extended?

Many reasons for a dropped call are not related to the HFL system. Here are some causes for dropped calls:

- If the quantity of dropped calls is about the same when the client uses the HFL system versus the handset, the issue is likely due to the cellular phone or carrier.
- If the phone is equipped with a retractable antenna, it needs to be extended to maximize signal strength.
- If a client also notices that the calls tend to drop in the same areas, the HFL system may be operating normally, but something about the area diminishes cellular coverage to a point where the call drops.
- Hills or mountains can block or interfere with cellular signals.
- High-rise buildings, bridges, or other large structures may block or interfere with cellular signals.
- Placing the cell phone in a purse, in a metal briefcase, under the seat, in the glove box, or in the trunk can all affect signal reception.
- There are coverage gaps in the cellular service. When driving, a call is typically passed from one tower to another. If the client drives through an area where there is a coverage gap between towers, the call drops.
- Electrical storms, heavy rain, or overcast conditions interfere with signal strength.
- The cell phone battery's state of change can affect signal reception. A low battery may reduce the phone's ability to boost the antenna's power and function properly, especially in low signal strength areas. Some phone manufacturers trade off signal transmission and reception strength for battery life. As the battery weakens, the signal strength may also weaken. Some cell phones may operate more effectively than others in low signal strength areas, especially with a partially charged battery, and depending on whether or not the retractable antenna is fully extended (if applicable). On these models, make sure the antenna is always extended to maximize signal strength and extend battery life.

PHONE WILL NOT AUTOMATICALLY CONNECT THE HFL

If a client complains that their cell phone is not automatically connecting to the HFL system when they enter the vehicle, do this:

1. Make sure the Bluetooth feature is turned on in the cell phone.
2. Make sure the cell phone is properly paired to the HFL system.
3. Do a soft reset to the cell phone.
4. Check if the phone has an Authorized Connection or Trusted option.
5. Check the battery and signal strength on the cell phone. Pairing a phone requires optimal signal strength and a nearly full battery.

INCOMING CALLS

Call the HFL call center at 888-528-7876 after you have duplicated the problem.

If a client complains that they cannot receive incoming calls through the HFL system, see if the call is routing to the cell phone instead of the HFL system. An easy way to know if the call is routed to the cell phone is when the client says, "I can't hear the caller, but they can hear me."

1. Make sure the Bluetooth feature is turned on in the cell phone.
2. Make sure the cell phone is paired to the HFL system and linked.

3. Make sure the answer settings in the cell phone are set to multi-key or any-key answer. If the phone is set to flip-open to answer, recommend changing the setting to Any Key or leaving the phone flipped open when using the HFL system.
4. Make sure the Auto Answer feature is turned off in the cell phone.
5. Do a soft reset to the phone.
6. Make sure the battery is fully charged and there is adequate signal strength.
7. Ask the client if they have set specific ring tones or ringer IDs to specific contacts. If they have, recommend returning them to a standard ring tone for all calls.
8. Make sure the client is pressing the PICK-UP button (A) or the HFL TALK button (B) and not the HANG-UP button (C), the HFL BACK button (D), the TALK button (E), or the BACK button (F).

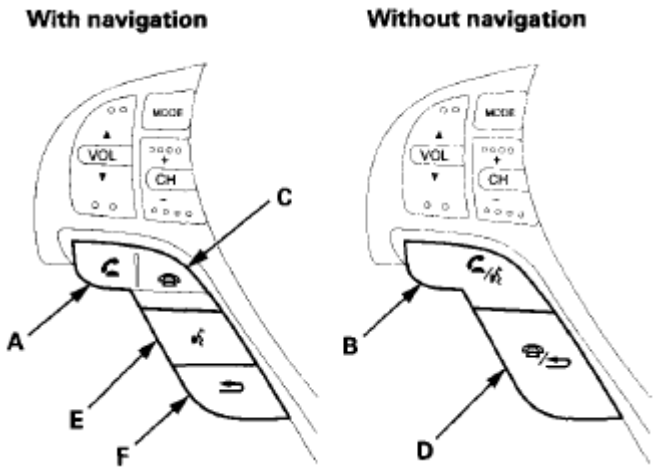


Fig. 8: Identifying HFL Talk Buttons
Courtesy of AMERICAN HONDA MOTOR CO., INC.

OUTGOING CALLS

Call the HFL call center at 888-528-7876 after you have duplicated the problem.

If a client says that they cannot place a call using the HFL system, ask if the call was initiated through the HFL system or the cell phone itself.

If the call is placed by the HFL system:

1. Make sure the Bluetooth feature is turned on in the cell phone.
2. Make sure the cell phone is paired to the HFL system and linked.
3. Make sure the client is pressing the TALK button (A) or the HFL TALK button (B) before each command and going through the calling process correctly.

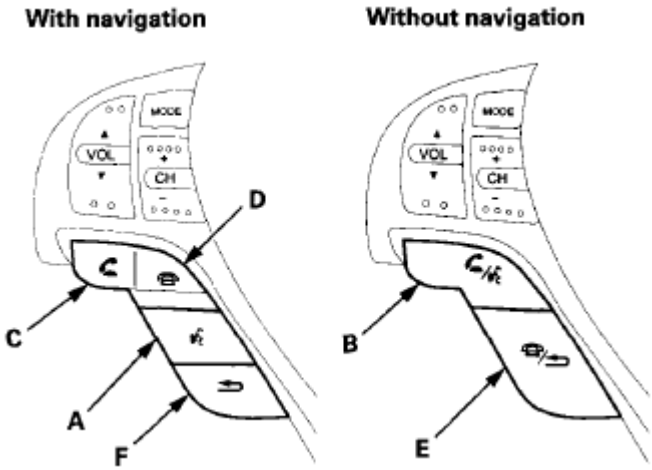


Fig. 9: Identifying HFL Talk Buttons
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Make sure the client is pressing the PICK-UP button (C) or the HFL TALK button and not the HANG-UP button (D), the HFL BACK button (E), the TALK button, or the BACK button (F).
5. Check if the cell phone has an Authorized Connections or Trusted option.
6. Do a soft reset to the cell phone.

If the call is placed by the cell phone:

The call will remain on the handset until you transfer it over to the HFL system. To continue the call on the HFL system, you must use the Transfer command by pressing and releasing the TALK button or the HFL TALK button during an active call and saying "Transfer." The client can now continue the call using the HFL system.

CLEARING THE HFL SYSTEM

With Navigation

The commands for deleting a phone can either be selected using the interface dial or by using the navigation voice recognition system (use the TALK and BACK buttons).

NOTE:

- **All the phones paired to the HFL cannot be deleted at once. You must delete one phone at a time.**
- **If the system is locked and the pass code is lost or forgotten, see symptom troubleshooting.**

1. Turn the ignition switch to ACCESSORY (I), or press the engine start/stop button to select the ACC mode.
2. Press the INFO button, and turn the interface dial to select Cellular Phone, then press ENTER.
3. Move the interface dial down to select Phone Setup.

4. Select Edit User, and press ENTER.
5. Select Delete, then select the phone you want to delete from the list. Press ENTER to select the phone, then press ENTER again to confirm.
6. Repeat steps 4-5 for each phone you want to delete.

Without Navigation

NOTE:

- **This operation clears the HFL system of all passcode(s), any paired phones, and all names in the HFL phonebook.**
- **Clearing the HFL system is recommend before selling the vehicle.**
- **If the system is locked and the pass code is lost or forgotten, see the symptom troubleshooting.**

1. Press and release the HFL TALK button. After the beep, say "System setup clear" and the HFL system responds, "This process will clear all paired phones, clear all entries in the phonebook, clear the security passcode and restore all defaults in the system setup. Is this what you would like to do?."
2. Press and release the HFL TALK button. After the beep, say "Yes" and the HFL system responds, "Preparing to clear the system, which may take up to 2 minutes to complete."
3. Press and release the HFL TALK button. After the beep, say "Continue" to proceed, or say "Go back" or "Cancel."
4. If you said "Continue" the HFL responds, "Please wait until the system is cleared". After a short period of time (up to two minutes) the HFL responds, "The system has been cleared."

GLOSSARY OF TERMS

Auto Answer

This cell phone setting forces incoming calls to automatically be answered by the handset. Disable this feature on the phone when using the HFL system, as it may interfere with the HFL system answering incoming calls. Set the phone setting to:

- Send Only
- Any Key
- Multi-Key answer

Answer Options

These cell phone settings allow you to select how you would like to answer an incoming call on the handset. The answer option in the phone can affect inbound calls on the HFL system.

Authorized Connection

This cell phone setting allows the phone to connect automatically with the HFL system without prompting the client for permission to connect. In some instances, it can affect the ability of the phone to properly route sound to the HFL system.

Bluetooth Power

This cell phone function enables or disables the Bluetooth application. When using a hands-free device such as HFL, the Bluetooth application needs to be enabled.

Discovery Mode

You need to have the cell phone in Discovery Mode to allow other devices with Bluetooth capabilities (such as the HFL system) to find the phone during the pairing process.

HFL Button

- TALK button (A) or the HFL TALK button (B): This button activates the voice control system and is used for all voice commends. Press and release it, wait for a beep, and give a voice command.
- BACK button (C) or the HFL BACK button (D): This button has the same function as the CANCEL button. When you press and release it, the current voice command is canceled and the display returns to the previous screen.
- PICK-UP button (E) or the HFL TALK button: This button is used to answer incoming calls or to make outgoing calls. You can also go directly to the Cellular Phone screen by pressing this button.
- HANG-UP button (F) or the HFL BACK button: This button is used to end a call.

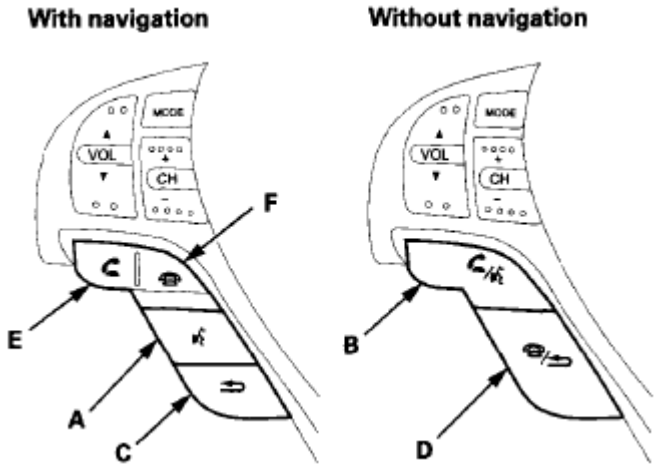


Fig. 10: Identifying HFL Buttons
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Hard Reset (cellular phone)

Hard resets clear the saved settings in the cell phone and restores it to the factory defaults. A hard reset should be done only as a last resort (see the cell phone owner's manual for more information).

Linking

This is when your paired phone is actively ready to use the HFL system. You can pair up to six phones to the HFL system, but only one phone can be linked at a time. If two paired phones are in the vehicle, only the phone

that is linked can use the HFL system and functions. The second phone must be used as a normal handset.

Pairing

A description for linking two Bluetooth devices together. In this case, you are linking a cell phone with the HFL system. After the pairing process is complete, the devices are able to recognize each other and communicate wirelessly via Bluetooth.

Soft Reset (cellular phone)

This helps to restore the basic functions of the phone. To do a soft reset, turn the phone power off, remove and reinsert the cell phone battery, then turn the phone back on. See the cell phone user manual for more information.

Software Version

This refers to the software version loaded in the cell phone. The software version that was tested and determined to be compatible with the HFL system may be listed on the HFL website. Not all software versions are compatible with the HFL system.

DTC TROUBLESHOOTING INDEX

HandsFreeLink Control Unit

DTC	Description	DTC Type
B1775	**Microphone input/output shorted to power or open (with navigation)**	Signal error
	Microphone input/output shorted to power or open (without navigation)	Signal error
B1776	**Microphone input/output shorted to ground (with navigation)**	Signal error
	Microphone input/output shorted to ground (without navigation)	Signal error
B1779	**HandsFreeLink steering wheel switch failure (with navigation)**	Signal error
	HandsFreeLink steering wheel switch failure (without navigation)	Signal error
B1780	**HandsFreeLink steering wheel switch line short (with navigation)**	Signal error
	HandsFreeLink steering wheel switch line short (without navigation)	Signal error
B1792	**HandsFreeLink control module error (with navigation)**	Internal error
	HandsFreeLink control module	Internal error

	error (without navigation)	
U1280	Communication bus line error (BUS-OFF) (without navigation)	Loss of communication

SYMPTOM TROUBLESHOOTING INDEX

NOTE: Most HFL problems with pairing and HFL function are usually caused by the cell phone and its configuration. Call the HFL call center at 888-528-7876 for help before replacing any HFL components.

Symptom	Diagnostic Procedure	Also Check for
HFL does not respond	**Control Unit Input Test**.	Without navigation, check and repair all CAN related DTCs
The MID displays and HFL message do not go away after pressing the HFL BACK button (without navigation)	**Symptom Troubleshooting**.	Check and repair all CAN related DTCs
The Bluetooth icon in the audio-navigation switch panel display or the audio-HVAC display is not displayed (with navigation)	There is no HFL-compatible phone paired to the vehicle. Pair an approved HFL-compatible phone to the vehicle	• The phone must be on the list of Acura approved Bluetooth phones and configured correctly. For a current list of approved phones, go to www.acura.com/handsfreelink, or call 888-528-7876 for further assistance • With navigation, check the System Diagnostic Mode (see **SYSTEM DIAGNOSTIC MODE**), and use the System Link (see **SYSTEM LINK**)
The Acura approved Bluetooth phone is having problems pairing to the vehicle	HFL **Self-Diagnostic Function** or see **HFL System Troubleshooting**.	The phone must be on the list of Acura approved Bluetooth phones and configured correctly. For a current list of approved phones, go to www.acura.com/handsfreelink, or call 888-528-7876 for further assistance
The Acura approved Bluetooth phone cannot use all its functions	HFL **Self-Diagnostic Function** or see **HFL System Troubleshooting**.	The phone must be on the list of Acura approved Bluetooth phones and configured correctly. For a current list of approved phones, go to www.acura.com/handsfreelink, or call 888-528-7876 for further assistance
The Acura approved Bluetooth phone does not place or receive calls using the HFL system	HFL **Self-Diagnostic Function** or see **HFL System Troubleshooting**.	The phone must be on the list of Acura approved Bluetooth phones and configured correctly. For a current list of approved phones, go to www.acura.com/handsfreelink, or call 888-528-7876 for further assistance
The client wants the HFL system reset (all phones		

and address information cleared from the HFL system)	**Clearing the HFL System**.	
The HFL system is locked and the pass code has been lost or forgotten (without navigation)	Symptom Troubleshooting (see **Symptom Troubleshooting Index**).	See the Owner's Manual for additional information
The HFL system does not recognize all voice commands (without navigation)	Symptom Troubleshooting (see **Symptom Troubleshooting Index**).	Also see **Voice Control Tips**.
The HFL system speaks in French or Spanish (without navigation)	See the HFL section in the Owner's Manual for Changing Language	
The address book does not transfer from a Bluetooth phone to the navigation system (with navigation)	There is no HFL compatible phone paired to the vehicle or the approved phone does not support the function. Pair an approved HFL compatible phone to the vehicle	The phone must be on the list of approved Bluetooth phones and configured correctly. For a list of approved phones, go to www.acura.com/handsfreelink, or call the HFL call center at 888-528-7876
The HFL messages cannot be heard or are weak (with navigation)	Symptom Troubleshooting (see **Symptom Troubleshooting Index**).	
The HFL messages cannot be heard or are weak (without navigation)	Symptom Troubleshooting (see **Symptom Troubleshooting Index**).	
No sound when Bluetooth audio is used (with navigation)	Symptom Troubleshooting (see **Symptom Troubleshooting Index**).	Bluetooth phone compatibility (see Owner's Manual)
No sound when Bluetooth audio is used (without navigation)	Symptom Troubleshooting (see **Symptom Troubleshooting Index**).	Bluetooth phone compatibility (see Owner's Manual)
Bluetooth audio does not work (with navigation)	Symptom Troubleshooting (see **Symptom Troubleshooting Index**).	Bluetooth phone compatibility (see Owner's Manual)
Bluetooth audio does not work (without navigation)	Symptom Troubleshooting (see **Symptom Troubleshooting Index**).	Bluetooth phone compatibility (see Owner's Manual)
Bluetooth cell phone cannot be paired (with navigation)	Symptom Troubleshooting (see **Symptom Troubleshooting Index**).	Bluetooth phone compatibility (see Owner's Manual)
Bluetooth cell phone cannot be paired	Symptom Troubleshooting (see **Symptom**	Bluetooth phone compatibility (see Owner's

(without navigation)	**Troubleshooting Index**).	Manual)
The communication with cell phone is interrupted or changes	Symptom Troubleshooting (see **Symptom Troubleshooting Index**).	• Electric wave interference • Bluetooth phone • Harness/connector
Bluetooth cell phone audio function SKIP and PAUSE/RESUME do not work (with navigation)	Symptom Troubleshooting (see **Symptom Troubleshooting Index**).	Bluetooth phone (For further information, please contact to the cell phone carrier or the cell phone manufacturer.)
Bluetooth cell phone audio function SKIP and PAUSE/RESUME do not work (without navigation)	Symptom Troubleshooting (see **Symptom Troubleshooting Index**).	Bluetooth phone (For further information, please contact to the cell phone carrier or the cell phone manufacturer.)

SYSTEM DESCRIPTION

HANDSFREELINK CONTROL UNIT CONNECTOR FOR INPUTS AND OUTPUTS (WITH NAVIGATION)

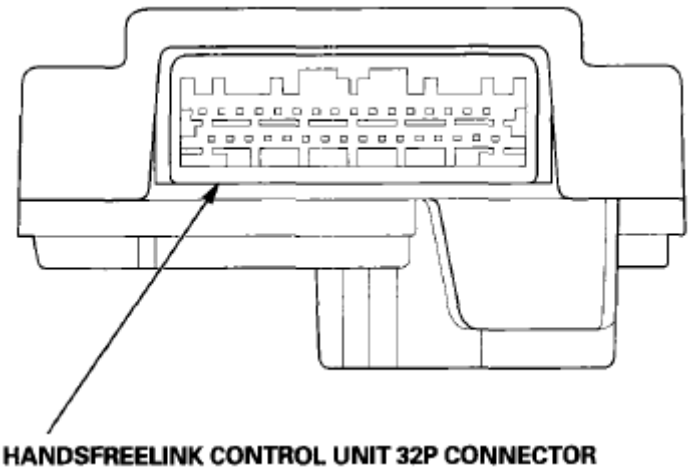


Fig. 11: Identifying HandsFreeLink Control Unit Connector For Inputs And Outputs
Courtesy of AMERICAN HONDA MOTOR CO., INC.

HANDSFREELINK CONTROL UNIT 32P CONNECTOR

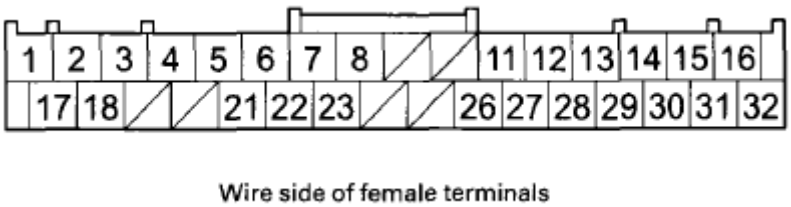


Fig. 12: HandsFreeLink Control Unit 32P Connector End View
Courtesy of AMERICAN HONDA MOTOR CO., INC.

HandsFreeLink Control Unit 32P Connector

Cavity	Wire Color	Terminal Name	Connects to
1	BLK	GND	Body ground to G501
2	GRY	HFL STRG SW	HFL switch
3	PUR	HFL MUTE	HFL-navigation microphone
4	PNK	GA-NET BUS +	Audio-navigation unit, AcuraLink control unit (XM receiver)(2), XM receiver(3), Navigation display unit
5	BLU	GA-NET BUS-	Audio-navigation unit, AcuraLink control unit (XM receiver)(2), XM receiver(3), Navigation display unit
6(2)	WHT	HIP/NAV COMM4	AcuraLink control unit (XM receiver)
7(2)	RED	HIP/NAV COMM3	AcuraLink control unit (XM receiver)
8(2)	GRY(1)	HIP/NAV COMM SH	Shield for terminals No. 6, No. 7, No. 22, and No. 23
11	GRN	AUDIO R +	Audio-navigation unit, AcuraLink control unit(XM receiver)(2), XM receiver(3)
12	BLK	AUDIO L+	Audio-navigation unit, AcuraLink control unit (XM receiver)(2), XM receiver(3)
13	BRN	TELM SIG +	Audio-navigation unit
14	GRY	MIC SH	Shield for terminals No. 15 and No. 16
15	PNK	MIC+	HFL-navigation microphone
16	BLU	MIC-	HFL-navigation microphone
17	WHT	+ B	No. 15 (10 A) fuse in the under-hood fuse/relay box
18	PUR	ACC	No. 18 (7.5 A) fuse in the driver's under-dash fuse/relay box
21	GRY(1)	GA-NET BUS SH	Shield for terminals No. 4 and No. 5
22(2)	BLK	HIP/NAV COMM1	AcuraLink control unit (XM receiver)
23(2)	GRN	HIP/NAV COMM2	AcuraLink control unit (XM receiver)
26	GRY(1)	AUDIO SH	Shield for terminals No. 11, No. 12, No. 27, and No. 28
27	WHT	AUDIO R-	Audio-navigation unit, AcuraLink control unit (XM receiver)(2), XM receiver(3)
28	RED	AUDIO L-	Audio-navigation unit, AcuraLink control unit (XM receiver)(2), XM receiver(3)
29	YEL	TELM SIG-	Audio-navigation unit

30	GRY(1)	TELM SIG SH	Shield for terminals No. 13 and No. 29
31	GRN	MIC SIG +	Audio-navigation unit
32	RED	MIC SIG-	Audio-navigation unit

(1) The shielded wires have a heat-shrink tube insulating the outside of the wire. The color of the insulating tube, typically black or dark gray, may not match the color of the wire listed on the circuit diagram.

(2) USA models

(3) Canada models

HANDSFREELINK CONTROL UNIT CONNECTOR FOR INPUTS AND OUTPUTS (WITHOUT NAVIGATION)

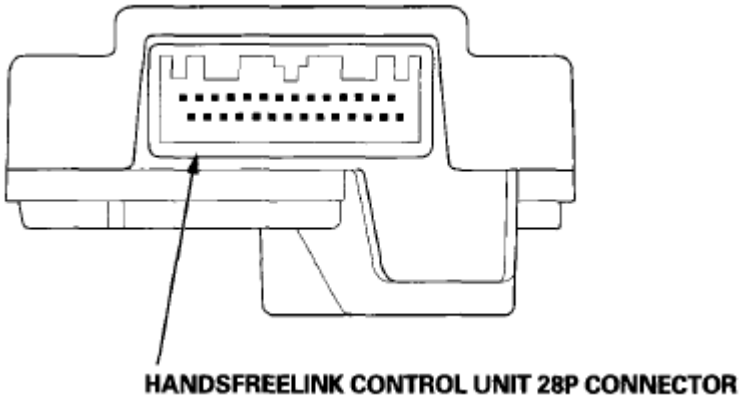


Fig. 13: Identifying HandsFreeLink Control Unit Connector For Inputs And Outputs
Courtesy of AMERICAN HONDA MOTOR CO., INC.

HANDSFREELINK CONTROL UNIT 28P CONNECTOR

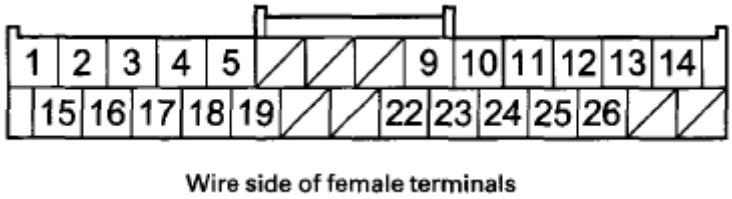


Fig. 14: HandsFreeLink Control Unit 28P Connector End View
Courtesy of AMERICAN HONDA MOTOR CO., INC.

HandsFreeLink Control Unit 28P Connector

Cavity	Wire Color	Terminal Name	Connects to
1	BLK	GND	Body ground to G501
2	GRY	HFL STRG SW	HFL switch
3	PUR	HFL MUTE	Audio unit

4	PNK	GA-NET BUS +	Audio unit, XM receiver, USB adapter control unit
5	BLU	GA-NET BUS-	Audio unit, XM receiver, USB adapter control unit
9	GRN	AUDIO R+	Audio unit, XM receiver, USB adapter control unit
10	BLK	AUDIO L+	Audio unit, XM receiver, USB adapter control unit
11	BRN	TELM SIG +	Audio unit
12	GRY(1)	MIC SH	Shield for terminals No. 13 and No. 14
13	PNK	MIC+	HFL microphone (roof console)
14	BLU	MIC-	HFL microphone (roof console)
15	WHT	+ B	No. 15 (10 A) fuse in the under-hood fuse/relay box
16	PUR	ACC	No. 18 (7.5 A) fuse in the driver's under-dash fuse/relay box
17	BLU	B-CAN L	B-CAN communication bus line
18	PNK	B-CAN H	B-CAN communication bus line
19	GRY*	GA-NET BUS SH	Shield for terminals No. 4 and No. 5
22	GRY(1)	AUDIO SH	Shield for terminals No. 9, No. 10, No. 23, and No. 24
23	WHT	AUDIO R-	Audio unit, XM receiver, USB adapter control unit
24	RED	AUDIO L-	Audio unit, XM receiver, USB adapter control unit
25	YEL	TELM SIG-	Audio unit
26	GRY-	TELM SIG SH	Shield for terminals No. 11 and No. 25

(1) The shielded wires have a heat-shrink tube typically black or dark gray, may not match insulating the outside of the wire. The color of the insulating tube, the color of the wire listed on the circuit diagram.

CIRCUIT DIAGRAM

WITH NAVIGATION

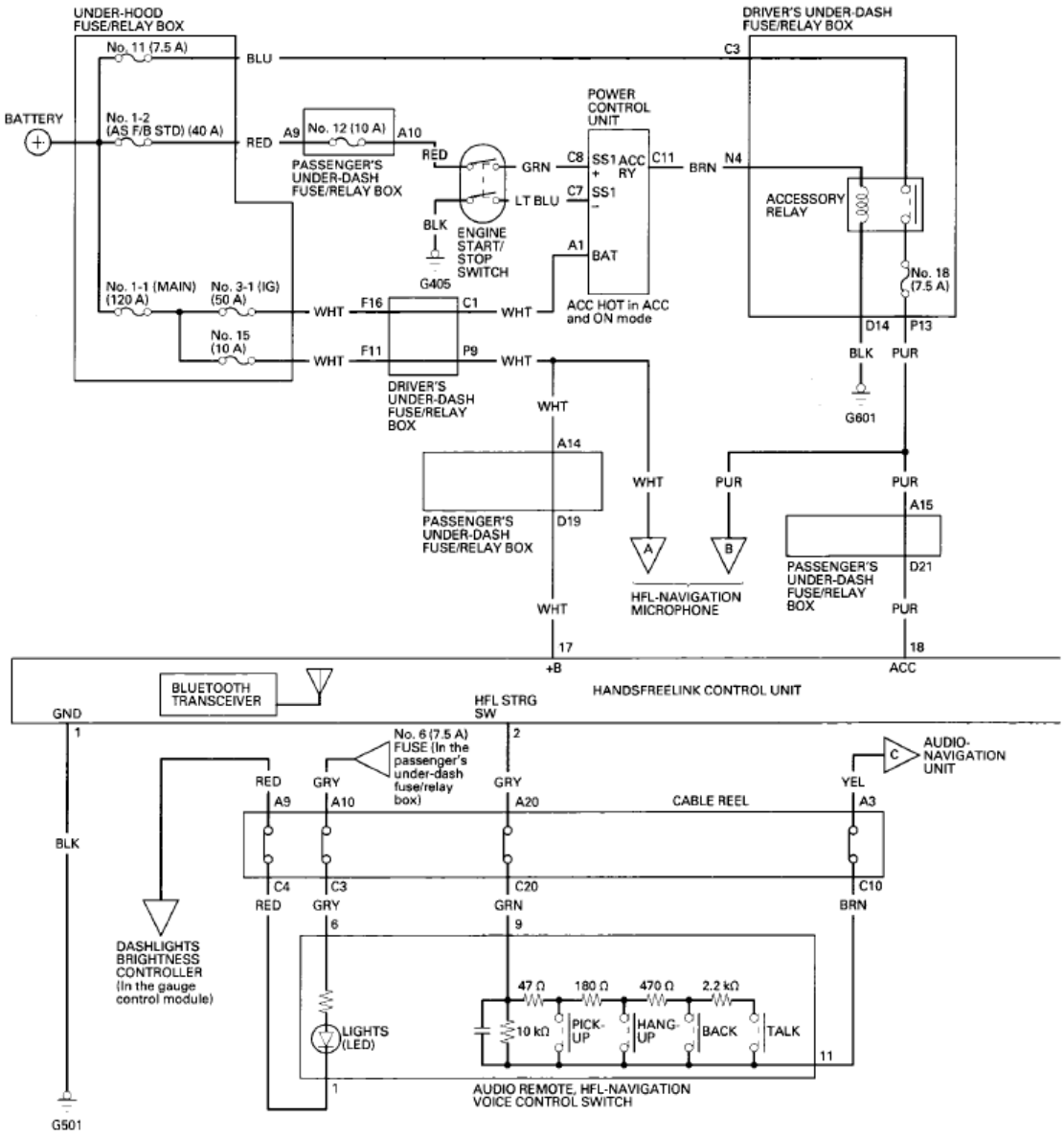


Fig. 15: HandsFreeLink System Circuit Diagram (1 Of 5)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

*: The shielded wires have a heat-shrink tube insulating the outside of the wire. The color of the insulating tube, typically black or dark gray, may not match the color of the wire listed on the circuit diagram.
- - - - - - : Shielding

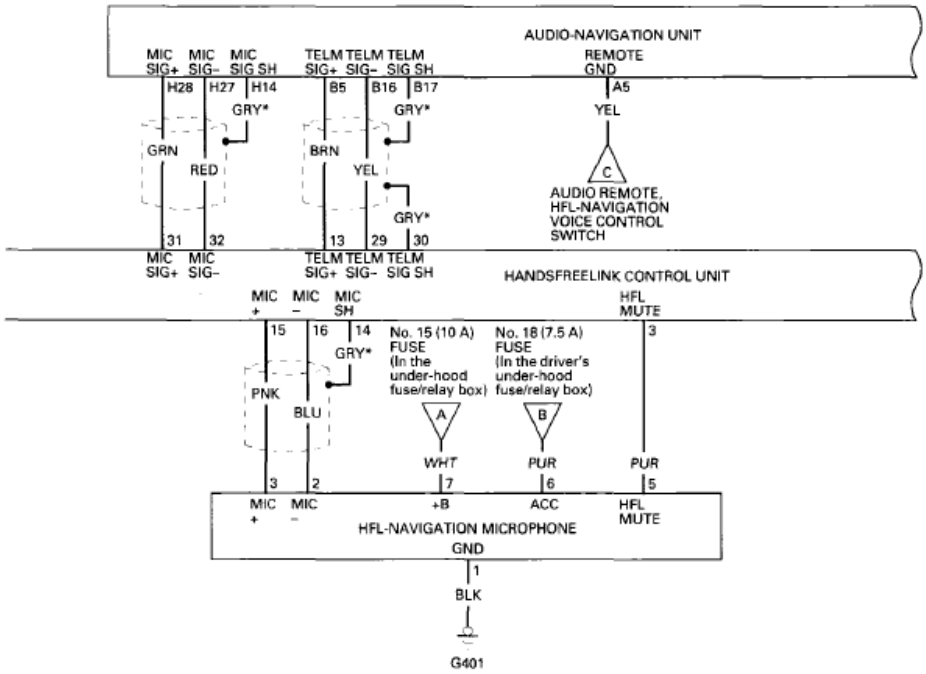


Fig. 16: HandsFreeLink System Circuit Diagram (2 Of 5)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

WITH NAVIGATION

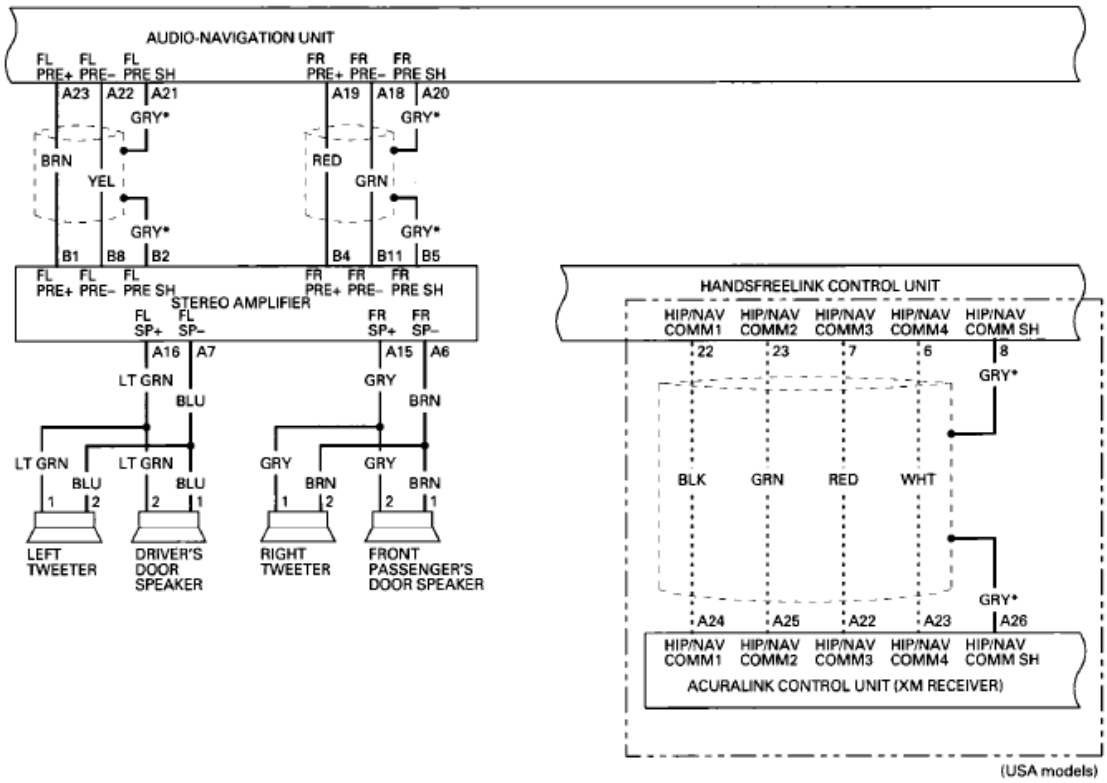


Fig. 17: HandsFreeLink System Circuit Diagram (3 Of 5)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

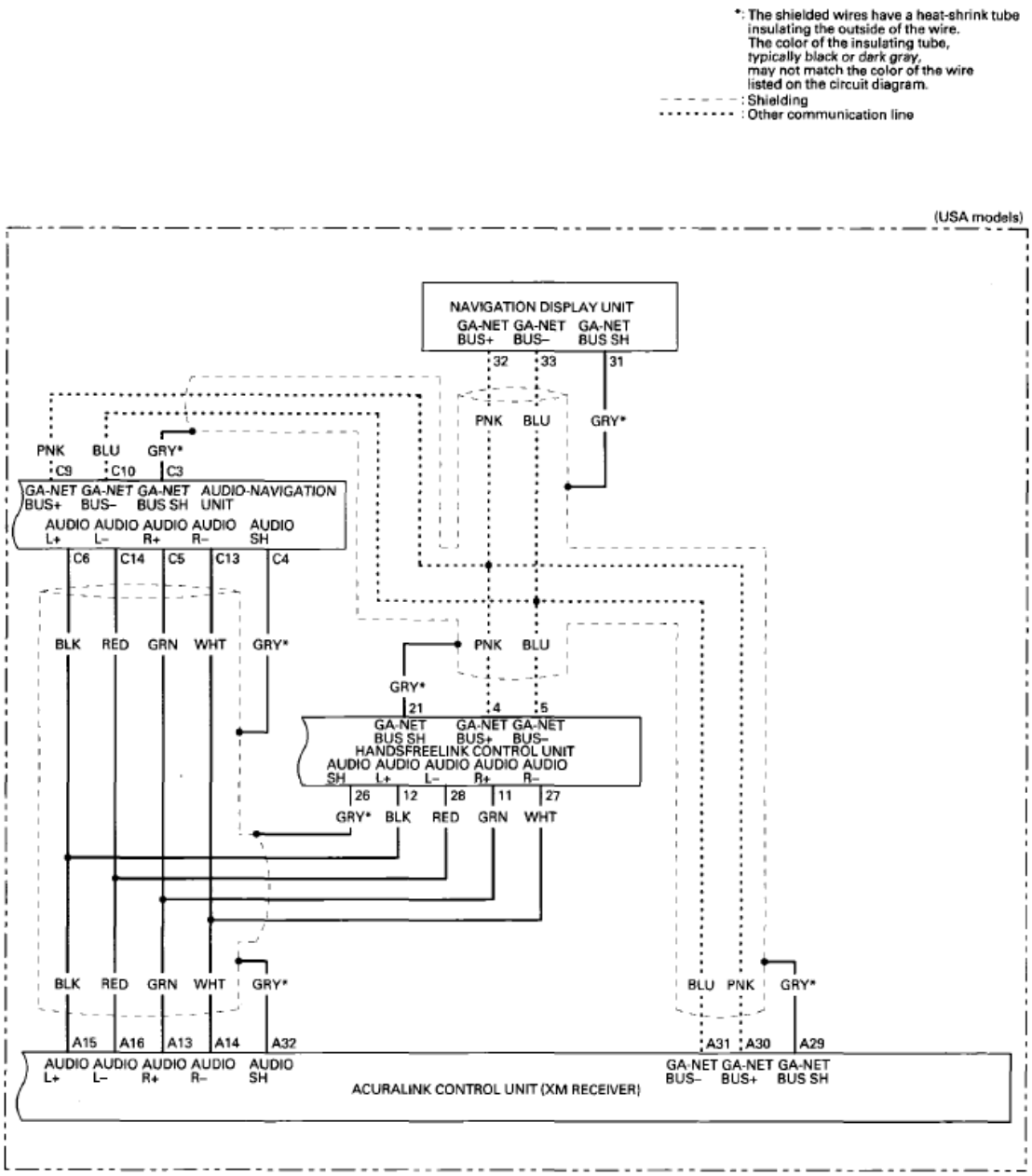


Fig. 18: HandsFreeLink System Circuit Diagram (4 Of 5)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

WITH NAVIGATION

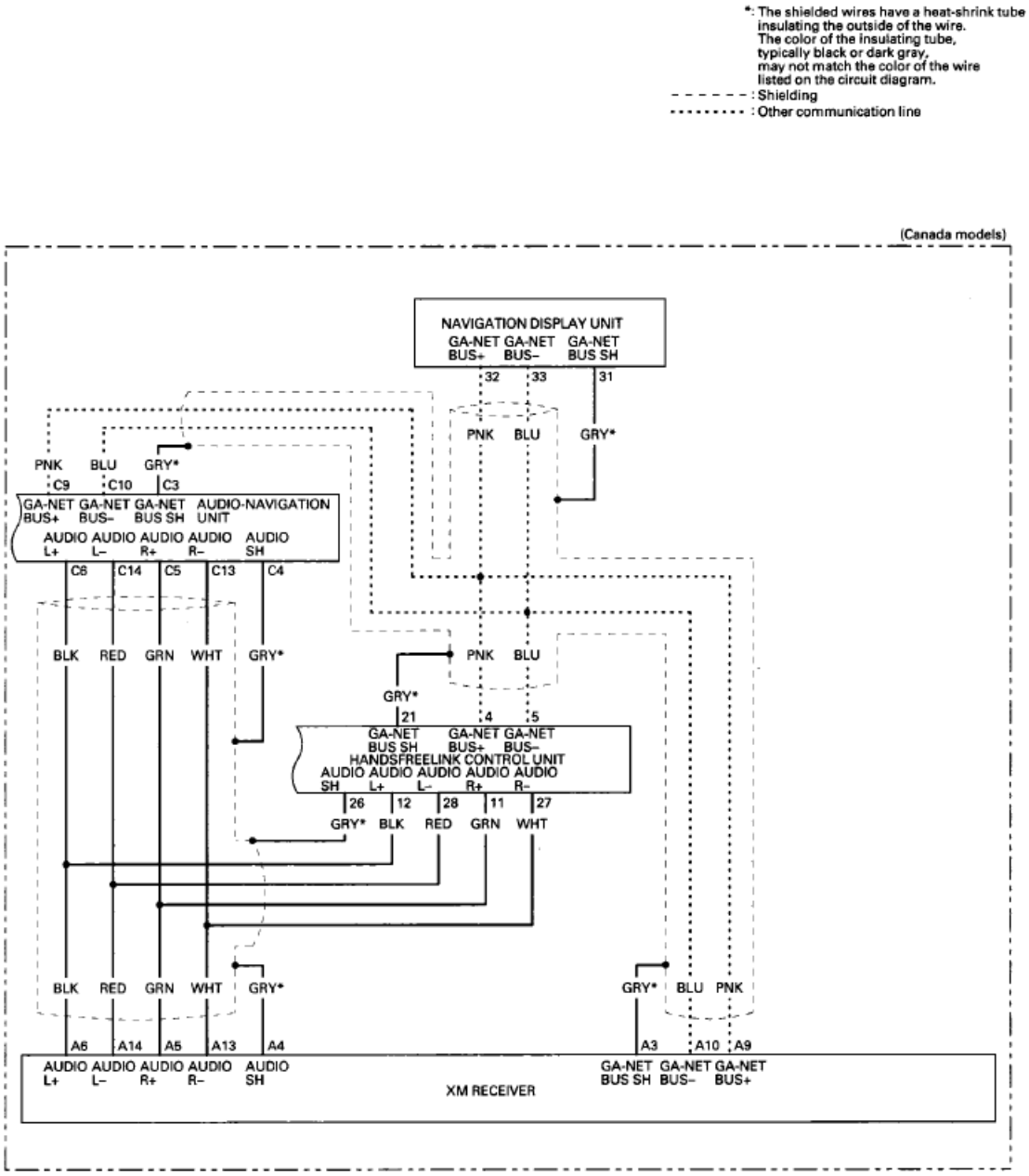


Fig. 19: HandsFreeLink System Circuit Diagram (5 Of 5)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

WITHOUT NAVIGATION

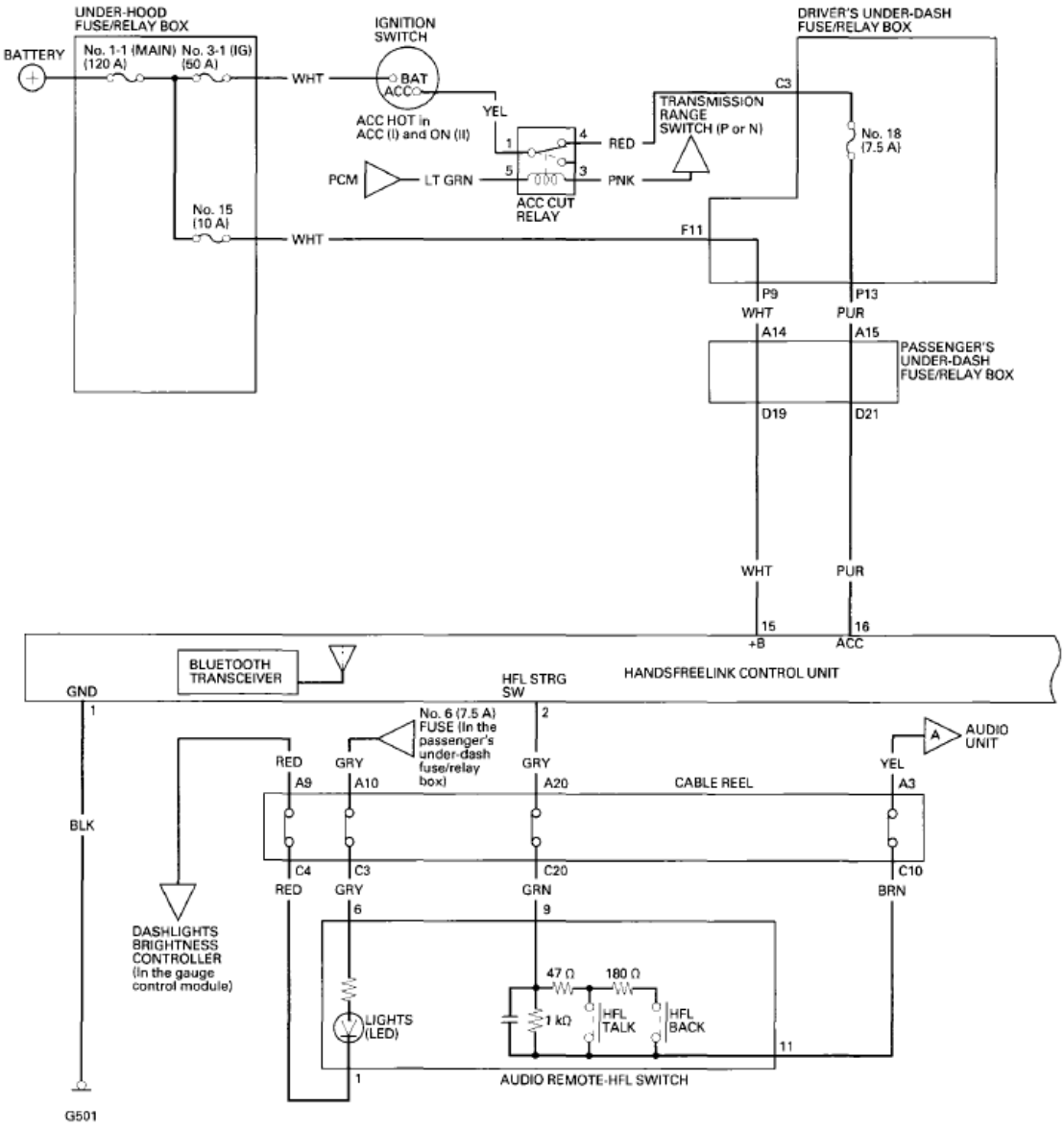


Fig. 20: HandsFreeLink System Circuit Diagram (1 Of 3)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

WITHOUT NAVIGATION

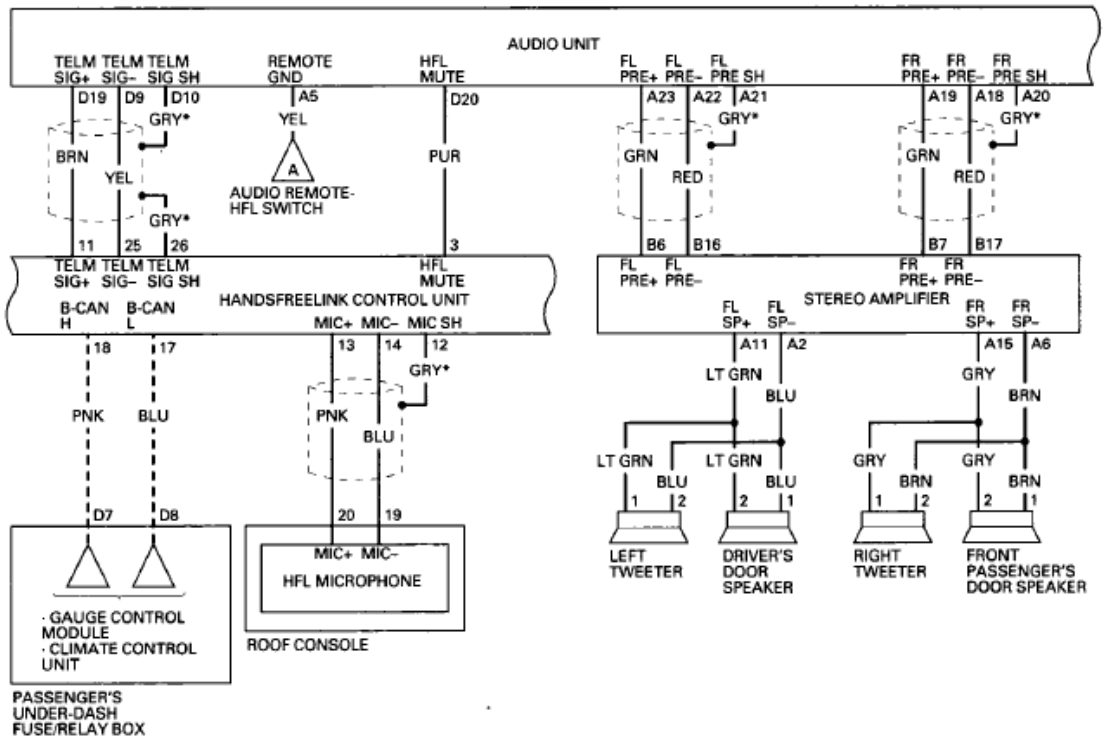


Fig. 21: HandsFreeLink System Circuit Diagram (2 Of 3)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

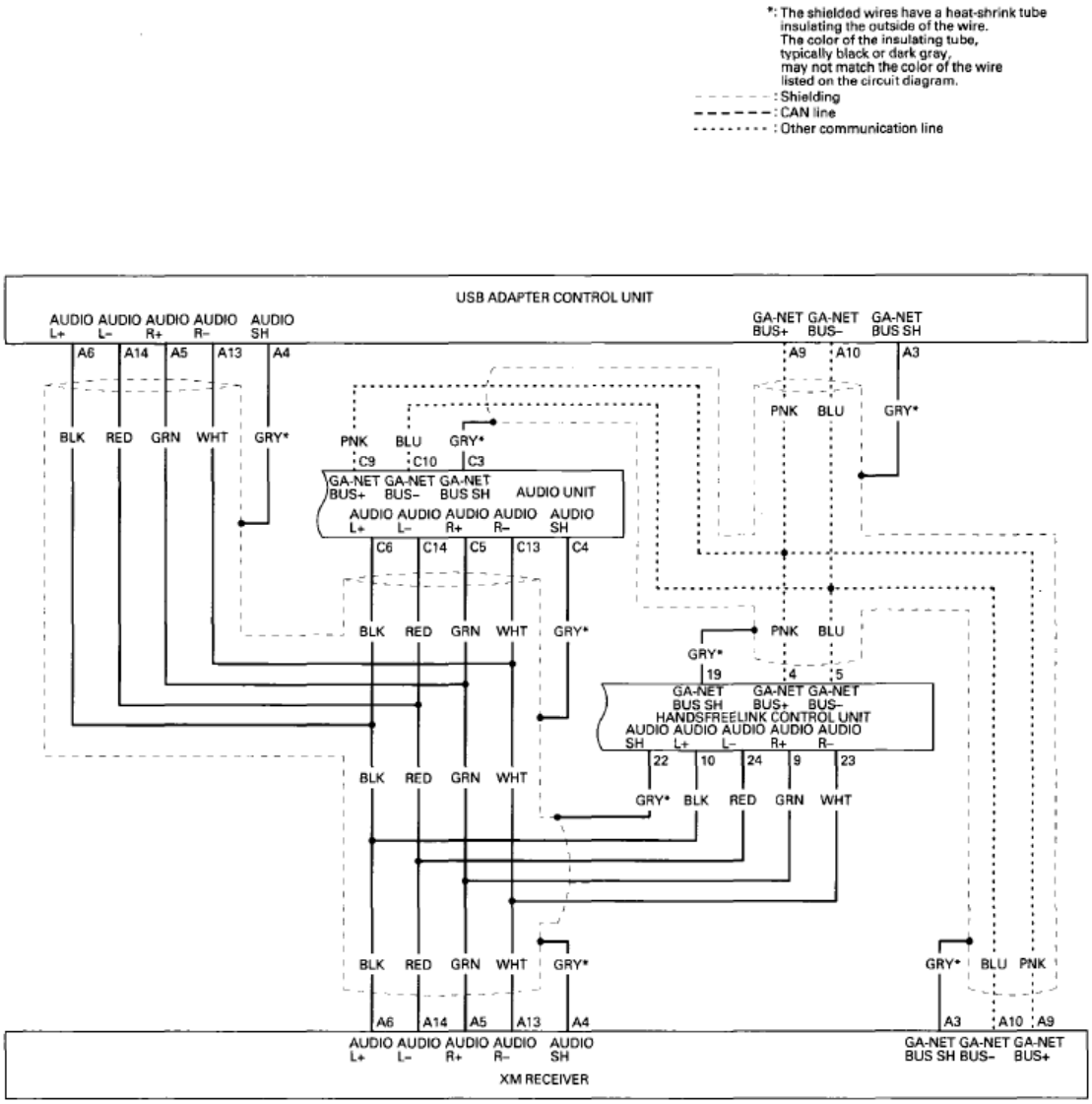


Fig. 22: HandsFreeLink System Circuit Diagram (3 Of 3)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

SELF-DIAGNOSTIC FUNCTION

HOW TO CHECK THE HANDSFREELINK SYSTEM CONDITION

NOTE:

- **Check the vehicle battery condition first (see BATTERY TEST).**
- **Make sure the audio system or the navigation system anti-theft code is entered.**
- **The self-diagnostic function can only be initiated while the HFL is in its idle state.**

1. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.

2. Press and hold the HANG-UP button (A) or the HFL BACK button (B) for more than 5 seconds.

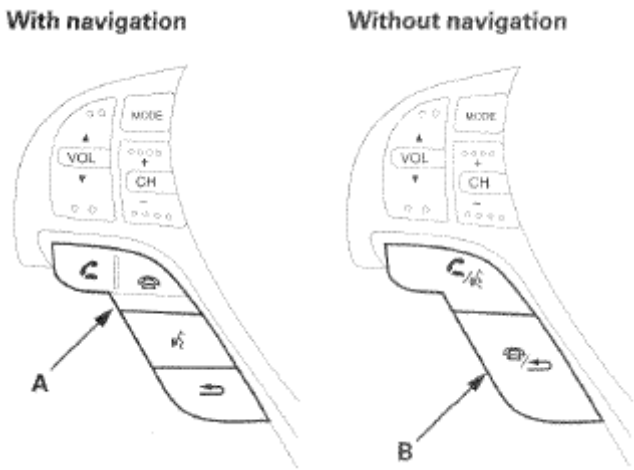


Fig. 23: Identifying Hang-Up Button And HFL Back Button
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. The HFL system starts the self-diagnosis, the following will occurs:
   - If the HFL system is OK, and there are no HFL DTCs, the HFL system says, "The HFT is OK."
   - If there are any HFL DTCs stored, the HFL system says, "The HFT is NG."

The self-diagnosis ends if the HFL system returns to its idle state.

HOW TO CHECK THE HFL DTCS (WITH NAVIGATION)

1. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
2. Press and hold the DEST/ROUTE, the MAP/GUIDE, and the CANCEL buttons for 3 seconds or more, and the navigation system diagnostic mode begins.

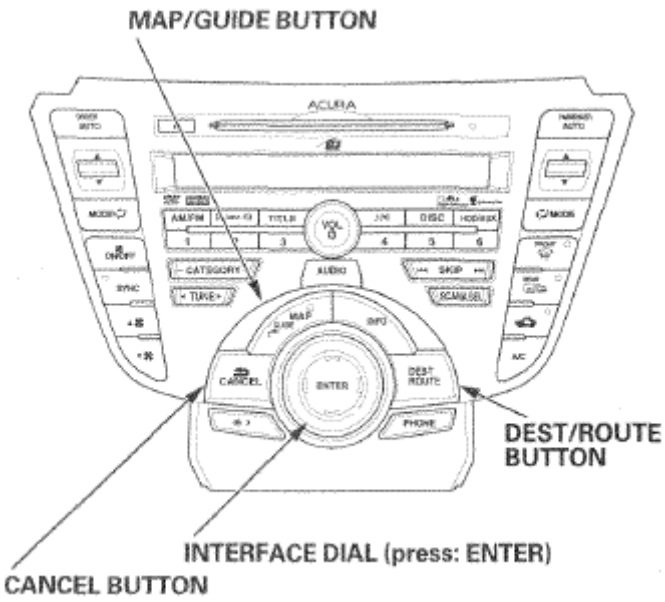


Fig. 24: Identifying Dest/Route, Map/Guide, And Cancel Buttons
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Using the interface dial, select the Detail Information & Setting, then press the ENTER button.

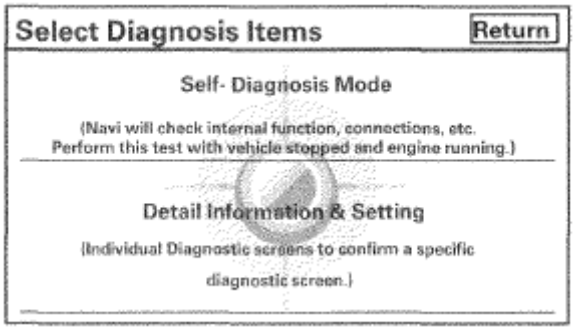


Fig. 25: View Of Interface Dial, Detail Information & Setting
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Select the Unit Check from the Detail Information & Setting menu, then press the ENTER button.

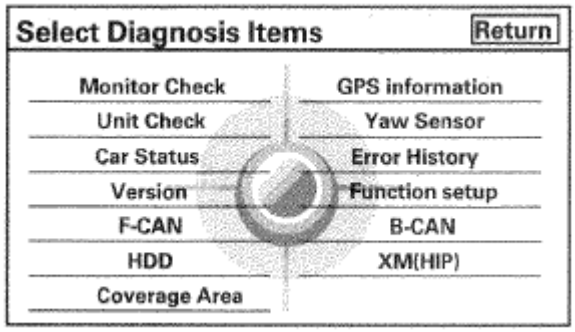


Fig. 26: View Of Detail Information & Setting Menu
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Select the HFT from the Unit Check menu, then press the ENTER button.

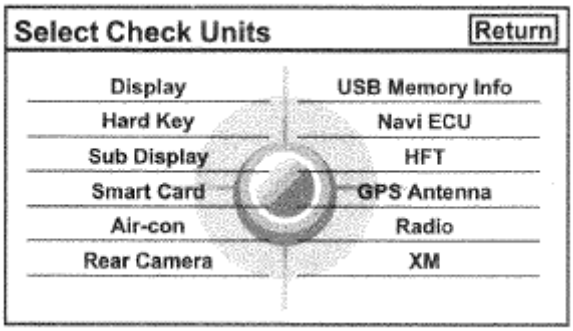


Fig. 27: View Of Unit Check Menu
Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Check the GA-NET and the DESIP status in the HFT diagnosis.

NOTE: If HFL Part Number and HFL S/W Version are not shown, go to HandsFreeLink Control Unit Input Test.

- If OK, go to step 7.
- If GA-NET is NG, go to HandsFreeLink **Control Unit Input Test**.
- If DESIP (USA models) is NG, go to navigation DTC 2705 (HFL Diag) troubleshooting (see **DTC 2705: HFL DIAG**).

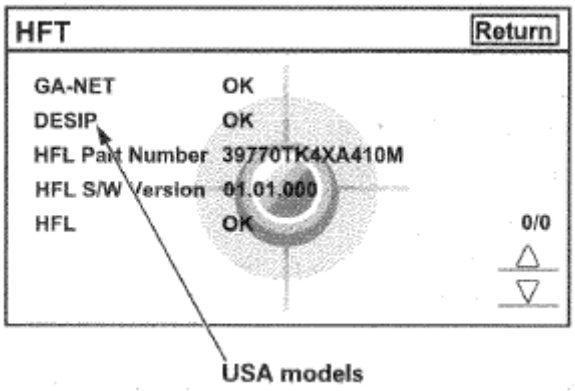


Fig. 28: Identifying DESIP (USA Models)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Check the HFL status in the HFT diagnosis:
   - If OK, the system is OK at this time, go to step 8.
   - If NG and any DTC are displayed, go to indicated HandsFreeLink DTC troubleshooting.

8. To end the self-diagnostic function, select the Return, or turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.

HFL SYSTEM TROUBLESHOOTING

NOTE:

- **Before doing this troubleshooting, refer to General Troubleshooting Information to make sure the phone is compatible and configured correctly.**
- **Make sure the phone is Acura approved and configured correctly. Online, go to www.acura.com/handsfreelink, or call the HFL call center at 888-528-7876.**
- **You must be able to duplicate the client's concern to successfully diagnose the problem.**
- **Always use the client's phone to successfully diagnose the problem.**

1. Make sure the phone is approved by checking www.acura.com/handsfreelink, or call the HFL call center at 888-528-7876.

   Is the Bluetooth phone approved?

   YES -Go to step 2.

   NO -Explain to the client that the cell phone is not approved. Recommend they get a phone that does appear on the www.acura.com/handsfreelink. •

2. Check if the cell phone has any special requirements (software version, configuration, etc.). Call the HFL call center at 888-528-7876 for help.

   Is the correct software version loaded and is the phone properly configured?

   YES -Go to step 3.

   NO -Explain to your client that the cell phone software needs to be updated or the cell phone needs to be configured properly. If the HFL call center is able to help you configure the phone, explain the proper settings, otherwise direct your client to contact their cell phone manufacturer or carrier. •

3. Check the features of the approved phone at www.acura.com/handsfreelink, or call the HFL call center at 888-528-7876.

   Are all the features approved?

   YES -Go to step 4.

   NO -Check and see if the feature that is not approved is the same as the customer complaint. If the complaint is about the feature that is not approved, the vehicle is OK. Explain to the customer that the

feature is not approved to work with the HFL. If the complaint is an approved feature, go to step 4.

4. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
5. Press and hold the HANG-UP button or the **HFL BACK button** for more than 5 seconds.

   Do you hear the message "The HFT is OK"?

   YES -Go to step 6.

   NO -Check for **HFL DTCs with the System Diagnostic Mode** or the **HDS**. •

6. Try to duplicate the problem or have the client demonstrate the problem.

   Can you duplicate the problem?

   YES -Go to step 7.

   NO -The system is OK at this time. •

7. Pair the phone to a known-good vehicle (same model, year, and trim), and try duplicate the problem.

   Does the phone have the same problem on the known-good vehicle?

   YES -Call the HFL call center at 888-528-7876 to make sure the phone is configured correctly and has the correct software. If the phone is configured correctly, it is either a characteristic of the HFL system, or a characteristic of the particular approved phone being used. Explain to your client that this is a system characteristic. Another phone from the approved phone list may give more favorable results. •

   NO -Substitute a known-good **HandsFreeLink Control Unit**, and recheck. If the problem goes away, replace the **Original HandsFreeLink Control Unit**. •

DTC TROUBLESHOOTING

DTC B1775: MICROPHONE INPUT/OUTPUT SHORTED TO POWER OR OPEN (WITH NAVIGATION)

NOTE: Check the vehicle battery condition first (see BATTERY TEST).

1. Do the HFL **Self-Diagnostic Function**, and check for HFL DTCs.

   Is DTC B1775 indicated?

   YES -Go to step 2.

   NO -Intermittent failure, the system is OK at this time. •

2. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
3. Check for poor connection or loose terminals at the HFL-navigation microphone 7P connector.

   Are the connection or terminals OK?

   YES -Go to step 4.

   NO -Repair poor connections or loose terminals, and recheck. •

4. Disconnect the HFL-navigation microphone 7P connector.
5. Remove the center console panel (see **CENTER CONSOLE PANEL REMOVAL/INSTALLATION**).
6. Disconnect the HandsFreeLink Control Unit 32P connector (see step 2.
7. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
8. Measure the voltage between HandsFreeLink Control Unit 32P connector terminal No. 15 and body ground.

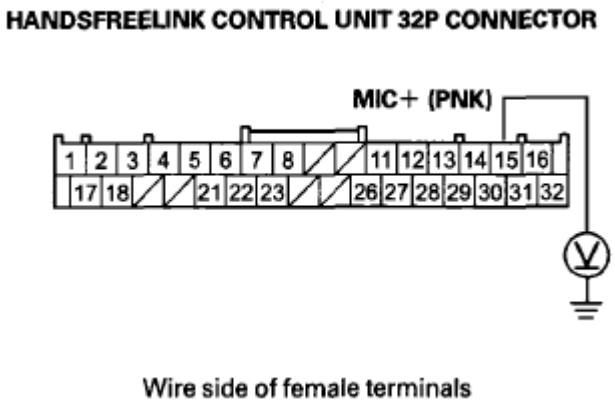


Fig. 29: Measuring Voltage Between HandsFreeLink Control Unit 32P Connector Terminal No. 15 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

   Is there voltage?

   YES -There is a short to power in the wire between the HandsFreeLink Control Unit and the HFL-navigation microphone. Replace the affected shielded harness. •

   NO -Go to step 9.

9. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
10. Check for continuity between HandsFreeLink Control Unit 32P connector terminals No. 15 and No. 16 and HFL-navigation microphone 7P connector terminals No. 3 and No. 2 respectively.

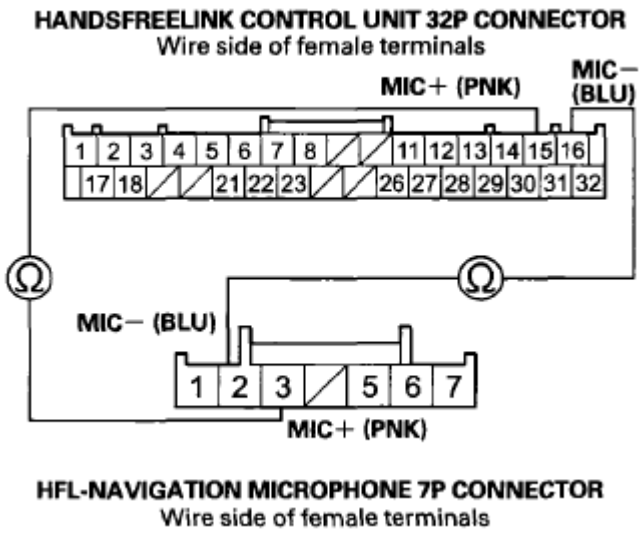


Fig. 30: Checking For Continuity Between HandsFreeLink Control Unit 32P Connector And HFL-Navigation Microphone 7P Connector Terminals
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES -Go to step 11.

NO -There is an open in the wire between the HandsFreeLink Control Unit and the HFL-navigation microphone. Replace the affected shielded harness. •

11. Disconnect audio-navigation unit connector H (28P).
12. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
13. Measure the voltage between HandsFreeLink Control Unit 32P connector terminal No. 31 and body ground.

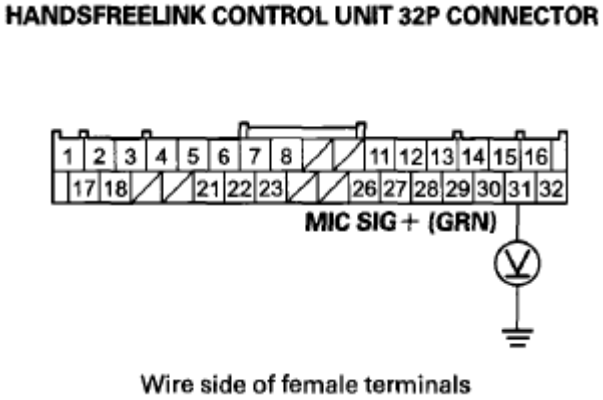


Fig. 31: Measuring Voltage Between HandsFreeLink Control Unit 32P Connector Terminal No. 31 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there voltage?

YES -There is a short to power in the wire between the HandsFreeLink Control Unit and the audio-navigation unit. Replace the affected shielded harness. •

NO -Go to step 14.

14. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
15. Substitute a known-good HFL-navigation microphone (see **NAVIGATION DISPLAY VISOR REMOVAL/INSTALLATION**).
16. Reconnect the HandsFreeLink Control Unit 32P connector and audio-navigation unit connector H (28P).
17. Do the HFL **Self-Diagnostic Function**, and check for HFL DTCs.

Is DTC B1775 indicated?

YES -Substitute a known-good **HandsFreeLink Control Unit**, and recheck. If the symptom/indication goes away, replace the original **HandsFreeLink Control Unit**. If the symptom/indication is still present, replace the audio-navigation unit (see **AUDIO-NAVIGATION UNIT REMOVAL/INSTALLATION**). •

NO -Replace the original HFL-navigation microphone (see **NAVIGATION DISPLAY VISOR REMOVAL/INSTALLATION**). •

DTC B1775: MICROPHONE INPUT/OUTPUT SHORTED TO POWER OR OPEN (WITHOUT NAVIGATION)

NOTE:

- **Check the vehicle battery condition first (see BATTERY TEST).**
- **If you are troubleshooting multiple DTCs, be sure to follow the instructions in B-CAN system diagnosis test mode A (see TROUBLESHOOTING - B-CAN SYSTEM DIAGNOSIS TEST MODE A).**

1. Connect the **HDS** to the DLC.
2. Clear the DTCs with the HDS.
3. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode, then back to ON (II), or the ON mode
4. Check for DTCs with the HDS.

Is DTC B1775 indicated?

YES -Go to step 5.

NO -Intermittent failure, the system is OK at this time. •

5. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
6. Check for poor connection or loose terminals at the roof console 20P connector.

Are the connection or terminals OK?

YES -Go to step 7.

NO -Repair poor connections or loose terminals, and recheck. •

7. Disconnect the roof console 20P connector.
8. Remove the center console panel (see **CENTER CONSOLE PANEL REMOVAL/INSTALLATION**).
9. Disconnect the HandsFreeLink Control Unit 28P connector (see step 2).
10. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
11. Measure the voltage between HandsFreeLink Control Unit 28P connector terminal No. 13 and body ground.

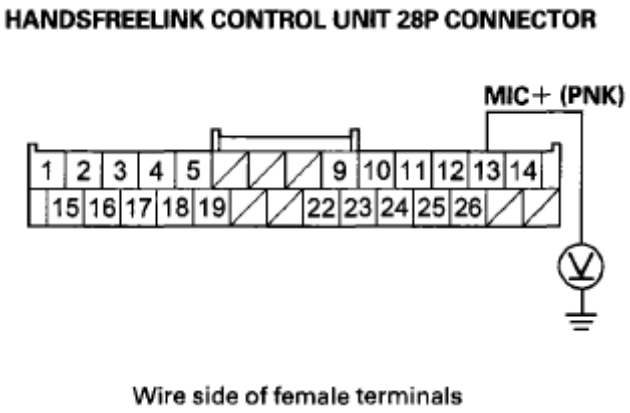


Fig. 32: Measuring Voltage Between HandsFreeLink Control Unit 28P Connector Terminal No. 13 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there voltage?

YES -There is a short to power in the wires between the HandsFreeLink Control Unit and the HFL microphone. Replace the affected shielded harness. •

NO -Go to step 12.

12. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
13. Check for continuity between HandsFreeLink Control Unit 28P connector terminals No. 13 and No. 14 and roof console 20P connector terminals No. 20 and No. 19 respectively.

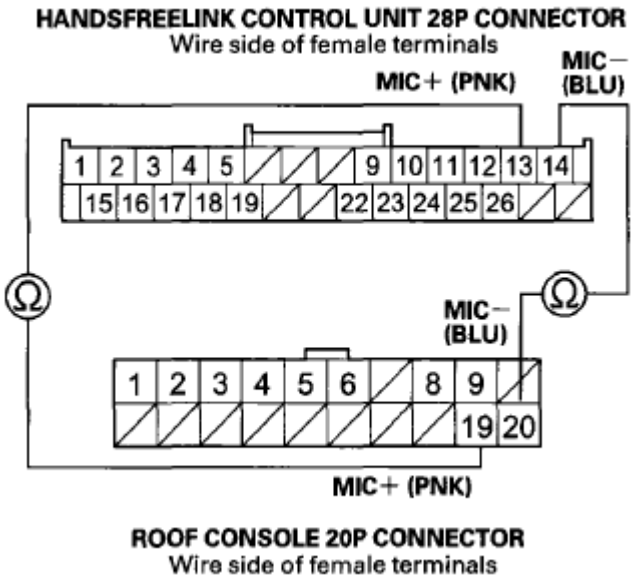


Fig. 33: Checking For Continuity Between HandsFreeLink Control Unit 28P Connector And Roof Console 20P Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES -Substitute a known-good **HFL microphone**, and recheck. If the symptom/indication goes away, replace the original **HFL microphone**. If the symptom/indication is still present, replace the **HandsFreeLink Control Unit**. •

NO -There is an open in the wire between the HandsFreeLink Control Unit and the HFL microphone. Replace the affected shielded harness. •

DTC B1776: MICROPHONE INPUT/OUTPUT SHORTED TO GROUND (WITH NAVIGATION)

NOTE: Check the vehicle battery condition first (see BATTERY TEST).

1. Do the HFL **Self-Diagnostic Function**, and check for HFL DTCs.

   Is DTC B1776 indicated?

   YES -Go to step 2.

   NO -Intermittent failure, the system is OK at this time. •

2. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
3. Disconnect the HFL-navigation microphone 7P connector.
4. Remove the center console panel (see **CENTER CONSOLE PANEL REMOVAL/INSTALLATION**).

5. Disconnect the HandsFreeLink Control Unit 32P connector (see step 2).
6. Check for continuity between HandsFreeLink Control Unit 32P connector terminals No. 14 and No. 15.

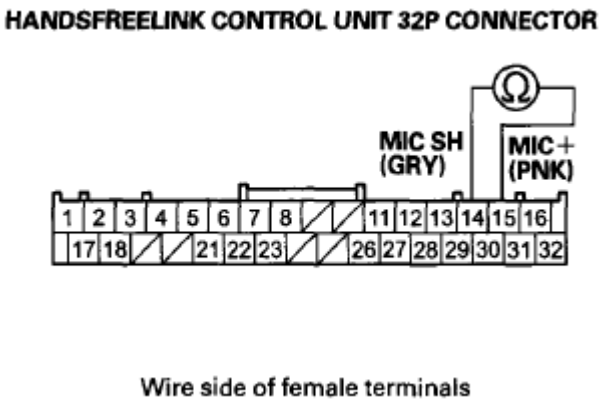


Fig. 34: Checking For Continuity Between HandsFreeLink Control Unit 32P Connector Terminals No. 14 And No. 15
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES -There is a short in the wires between the HandsFreeLink Control Unit and the HFL-navigation microphone. Replace the affected shielded harness. •

NO -Go to step 7.

7. Check for continuity between HandsFreeLink Control Unit 32P connector terminal No. 15 and body ground.

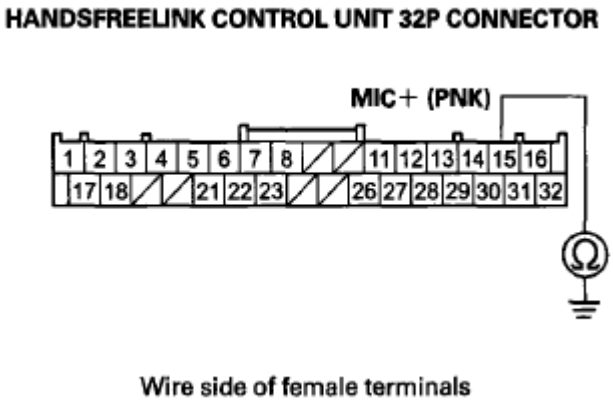


Fig. 35: Checking For Continuity Between HandsFreeLink Control Unit 32P Connector Terminal No. 15 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES -There is a short to body ground in the wire between the HandsFreeLink Control Unit and the HFL-navigation microphone. Replace the affected shielded harness. •

NO -Go to step 8.

8. Disconnect audio-navigation unit connector H (28P).
9. Check for continuity between HandsFreeLink Control Unit 32P connector terminal No. 31 and body ground.

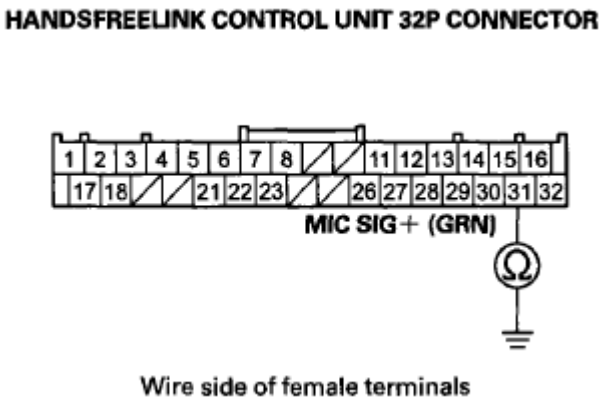


Fig. 36: Checking For Continuity Between HandsFreeLink Control Unit 32P Connector Terminal No. 31 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES -There is a short to body ground in the wire between the HandsFreeLink Control Unit and the audio-navigation unit. Replace the affected shielded harness. •

NO -Go to step 10.

10. Check for continuity between audio-navigation unit connector H (28P) terminals No. 14 and No. 28.

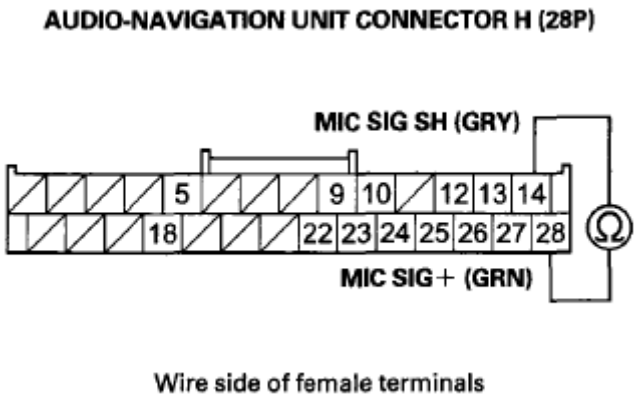


Fig. 37: Checking For Continuity Between Audio-Navigation Unit Connector H (28P) Terminals

No. 14 And No. 28
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES -There is a short in the wires between the audio-navigation unit and the HandsFreeLink Control Unit. Replace the affected shielded harness. •

NO -Go to step 11.

11. Substitute a known-good HFL-navigation microphone (see **NAVIGATION DISPLAY VISOR REMOVAL/INSTALLATION**).
12. Reconnect the HandsFreeLink Control Unit 32P connector and audio-navigation unit connector H (28P).
13. Do the HFL **Self-Diagnostic Function**, and check for HFL DTCs.

Is DTC B1776 indicated?

YES -Substitute a known-good **HandsFreeLink Control Unit**, and recheck. If the symptom/indication goes away, replace the original **HandsFreeLink Control Unit**. If the symptom/indication is still present, replace the audio-navigation unit (see **AUDIO-NAVIGATION UNIT REMOVAL/INSTALLATION**). •

NO -Replace the original HFL-navigation microphone (see **NAVIGATION DISPLAY VISOR REMOVAL/INSTALLATION**). •

DTC B1776: MICROPHONE INPUT/OUTPUT SHORTED TO GROUND (WITHOUT NAVIGATION)

NOTE:

- **Check the vehicle battery condition first (see BATTERY TEST).**
- **If you are troubleshooting multiple DTCs, be sure to follow the instructions in B-CAN system diagnosis test mode A (see TROUBLESHOOTING - B-CAN SYSTEM DIAGNOSIS TEST MODE A).**

1. Connect the **HDS** to the DLC.
2. Clear the DTCs with the HDS.
3. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode, then back to ON (II), or the ON mode.
4. Check for DTCs with the HDS.

Is DTC B1776 indicated?

YES -Go to step 5.

NO -Intermittent failure, the system is OK at this time. •

5. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.

6. Disconnect the roof console 20P connector.
7. Remove the center console panel (see **CENTER CONSOLE PANEL REMOVAL/INSTALLATION**).
8. Disconnect the HandsFreeLink Control Unit 28P connector (see step 2).
9. Check for continuity between HandsFreeLink Control Unit 28P connector terminals No. 12 and No. 13.

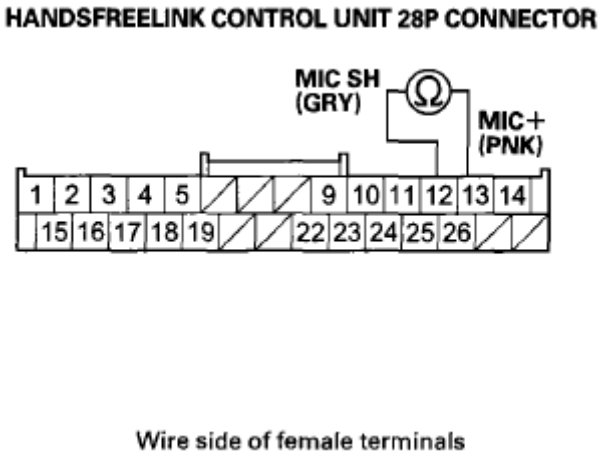


Fig. 38: Checking For Continuity Between HandsFreeLink Control Unit 28P Connector Terminals No. 12 And No. 13
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES -There is a short in the wires between the HandsFreeLink Control Unit and the HFL microphone. Replace the affected shielded harness. •

NO -Go to step 10.

10. Check for continuity between HandsFreeLink Control Unit 28P connector terminal No. 13 and body ground.

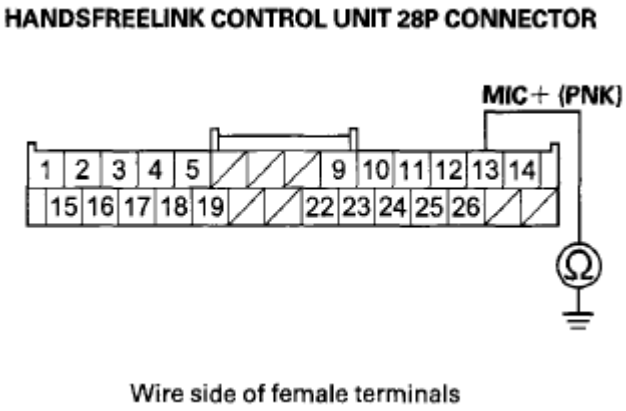


Fig. 39: Checking For Continuity Between HandsFreeLink Control Unit 28P Connector Terminal

No. 13 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES -There is a short to body ground in the wire between the HandsFreeLink Control Unit and the HFL microphone. Replace the affected shielded harness. •

NO -Substitute a known-good **HFL microphone**, and recheck. If the symptom/indication goes away, replace the original **HFL microphone**. If the symptom/indication is still present, replace the **HandsFreeLink Control Unit**. •

DTC B1779: HANDSFREELINK STEERING WHEEL SWITCH FAILURE (WITH NAVIGATION)

NOTE: Check the vehicle battery condition first (see BATTERY TEST).

1. Start the vehicle, and turn the steering wheel left and right several times.
2. Do the HFL **Self-Diagnostic Function**, and check for HFL DTCs.

   Is DTC B1779 indicated?

   YES -Go to step 3.

   NO -Intermittent failure, the system is OK at this time. •

3. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
4. Do the **HFL Switch Test**.

   Is the switch OK?

   YES -Go to step 5.

   NO -Replace the audio remote, HFL-navigation voice control switch (see **STEERING WHEEL DISASSEMBLY/REASSEMBLY**). •

5. Remove the center console panel (see **CENTER CONSOLE PANEL REMOVAL/INSTALLATION**).
6. Disconnect the HandsFreeLink Control Unit 32P connector (see step 2).
7. Disconnect the audio remote, HFL-navigation voice control switch 12P connector, and connect the cable reel connectors.
8. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
9. Measure the voltage between audio remote, HFL-navigation voice control switch 12P connector terminal No. 9 and body ground.

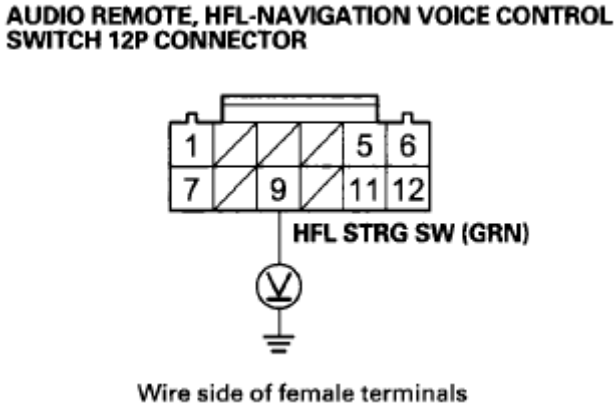


Fig. 40: Measuring Voltage Between Audio Remote, HFL-Navigation Voice Control Switch 12P Connector Terminal No. 9 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there voltage?

YES -Go to step 13.

NO -Go to step 10.

10. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
11. Check for continuity between HandsFreeLink Control Unit 32P connector terminal No. 2 and audio remote, HFL-navigation voice control switch 12P connector terminal No. 9.

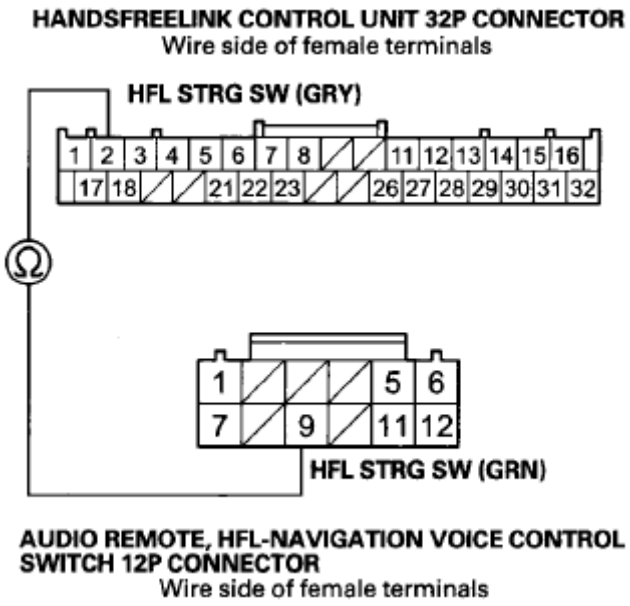


Fig. 41: Checking For Continuity Between HandsFreeLink Control Unit 32P Connector And Audio Remote, HFL-Navigation Voice Control Switch 12P Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES -Go to step 16.

NO -Repair an open in the wire between the switch, the cable reel, and the HandsFreeLink Control Unit. •

12. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
13. Disconnect cable reel connector A (20P).
14. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
15. Measure the voltage between HandsFreeLink Control Unit 32P connector terminal No. 2 and body ground.

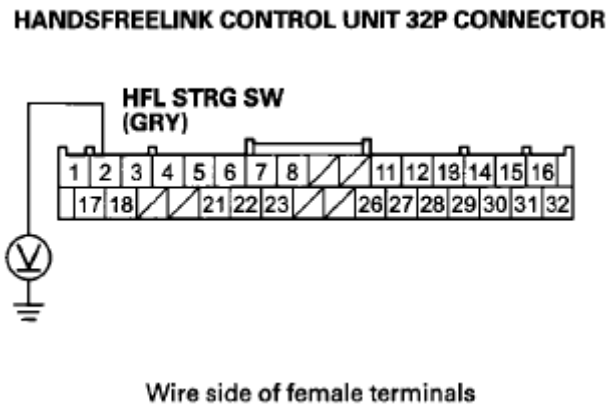


Fig. 42: Measuring Voltage Between HandsFreeLink Control Unit 32P Connector Terminal No. 2 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there voltage?

YES -Repair a short to power in the wire between the HandsFreeLink Control Unit and the cable reel. •

NO -Replace the cable reel (see **CABLE REEL REPLACEMENT**). •

16. Disconnect audio-navigation unit connector A (24P).

NOTE: Eject all the discs before disconnecting the audio-navigation unit to prevent damaging the CD/DVD player's load mechanism.

17. Check for continuity between audio remote, HFL-navigation voice control switch 12P connector terminal No. 11 and audio-navigation unit connector A (24P) terminal No. 5.

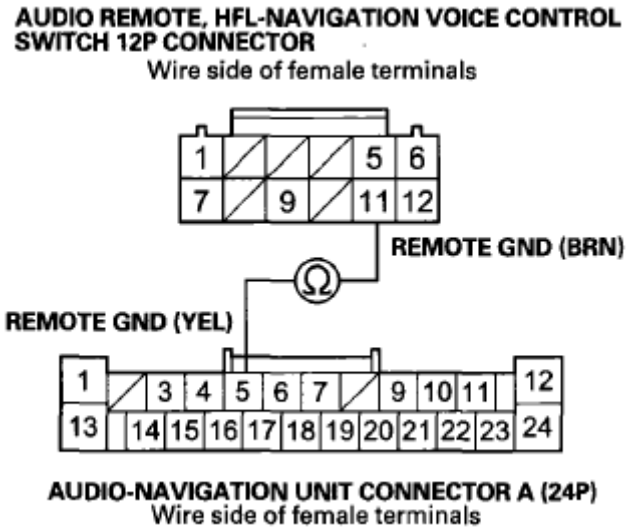


Fig. 43: Checking For Continuity Between Audio Remote, HFL-Navigation Voice Control Switch 12P Connector And Audio-Navigation Unit Connector (24P)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES -Replace the **HandsFreeLink Control Unit**. •

NO -Repair an open in the wire between the switch, the cable reel, and the audio-navigation unit. •

DTC B1779: HANDSFREELINK STEERING WHEEL SWITCH FAILURE (WITHOUT NAVIGATION)

NOTE:

- **Check the vehicle battery condition first (see BATTERY TEST).**
- **If you are troubleshooting multiple DTCs, be sure to follow the instructions in B-CAN system diagnosis test mode A (see TROUBLESHOOTING - B-CAN SYSTEM DIAGNOSIS TEST MODE A).**

1. Connect the **HDS** to the DLC.
2. Clear the DTCs with the HDS.
3. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode, then start the vehicle and turn the steering wheel back and forth several times.
4. Check for DTCs with the HDS.

Is DTC B1779 indicated?

YES -Go to step 5.

NO -Intermittent failure, the system is OK at this time. •

5. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
6. Do the **HFL Switch Test**.

   Is the switch OK?

   YES -Go to step 7.

   NO -Replace the audio remote-HFL switch (see **STEERING WHEEL DISASSEMBLY/REASSEMBLY**). •

7. Remove the center console panel (see **CENTER CONSOLE PANEL REMOVAL/INSTALLATION**).
8. Disconnect the HandsFreeLink Control Unit 28P connector (see step 2).
9. Disconnect the audio remote-HFL switch 12P connector, and connect the cable reel connectors.
10. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
11. Measure the voltage between audio remote-HFL switch 12P connector terminal No. 9 and body ground.

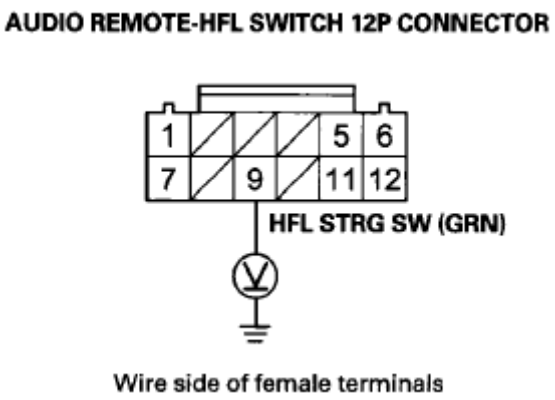


Fig. 44: Measuring Voltage Between Audio Remote-HFL Switch 12P Connector Terminal No. 9 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there voltage?

YES -Go to step 14.

NO -Go to step 12.

12. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
13. Check for continuity between HandsFreeLink Control Unit 28P connector terminal No. 2 and audio remote-HFL switch 12P connector terminal No. 9.

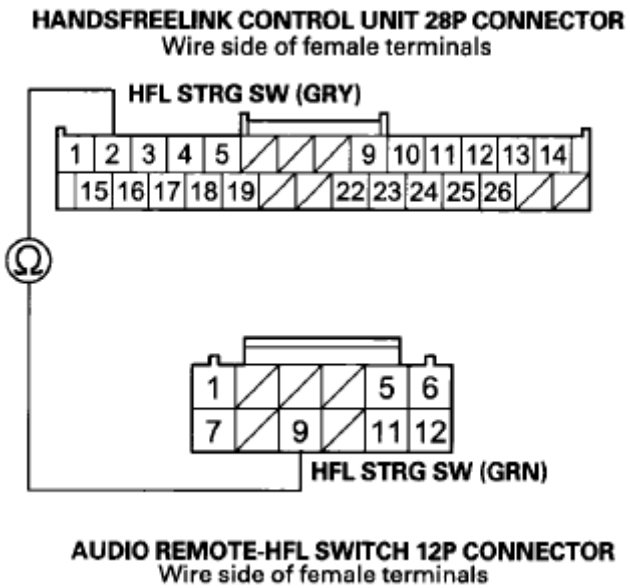


Fig. 45: Checking For Continuity Between HandsFreeLink Control Unit 28P Connector And Audio Remote-HFL Switch 12P Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES -Go to step 18.

NO -Repair an open in the wire between the switch, the cable reel, and the HandsFreeLink Control Unit. •

14. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
15. Disconnect cable reel connector A (20P).
16. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
17. Measure the voltage between HandsFreeLink Control Unit 28P connector terminal No. 2 and body ground.

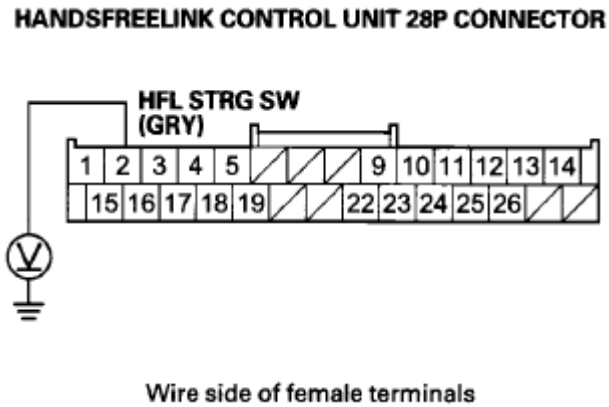


Fig. 46: Measuring Voltage Between HandsFreeLink Control Unit 28P Connector Terminal No. 2

And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there voltage?

YES -Repair a short to power in the wire between the HandsFreeLink Control Unit and the audio remote-HFL switch. •

NO -Replace the cable reel (see **CABLE REEL REPLACEMENT**). •

18. Disconnect audio-navigation unit connector A (24P).

NOTE: Eject all the discs before disconnecting the audio unit to prevent damaging the CD player's load mechanism.

19. Check for continuity between audio remote-HFL switch 12P connector terminal No. 11 and audio unit connector A (24P) terminal No. 5.

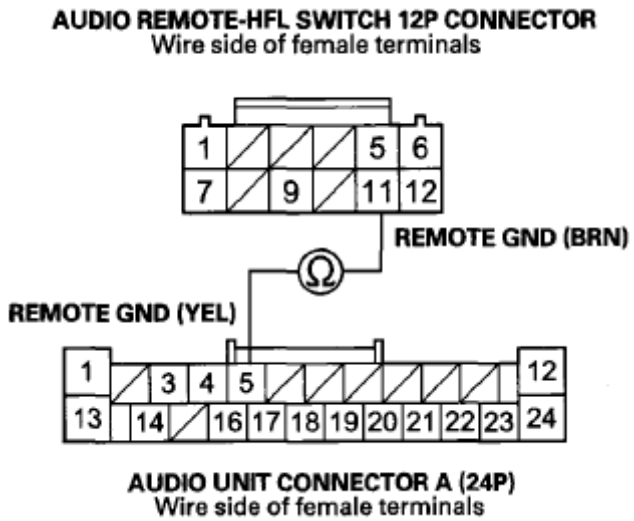


Fig. 47: Checking For Continuity Between Audio Remote-HFL Switch 12P Connector Terminal No. 11 And Audio Unit Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES -Replace the **HandsFreeLink Control Unit**. •

NO -Repair an open in the wire between the switch, the cable reel, and the audio unit. •

DTC B1780: HANDSFREELINK STEERING WHEEL SWITCH LINE SHORT (WITH NAVIGATION)

NOTE: Check the vehicle battery condition first (see BATTERY TEST).

1. Start the vehicle, and turn the steering wheel left and right several times.
2. Do the HFL **Self-Diagnostic Function**, and check for HFL DTCs.

   Is DTC B1780 indicated?

   YES -Go to step 3.

   NO -Intermittent failure, the system is OK at this time. •

3. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
4. Do the **HFL Switch Test**.

   Is the switch OK?

   YES -Go to step 5.

   NO -Replace the audio remote, HFL-navigation voice control switch (see **STEERING WHEEL DISASSEMBLY/REASSEMBLY**). •

5. Remove the center console panel (see **CENTER CONSOLE PANEL REMOVAL/INSTALLATION**).
6. Disconnect the HandsFreeLink Control Unit 32P connector (see step 2).
7. Disconnect the audio remote, HFL-navigation voice control switch 12P connector, and connect the cable reel connectors.
8. Check for continuity between HandsFreeLink Control Unit 32P connector terminal No. 2 and body ground.

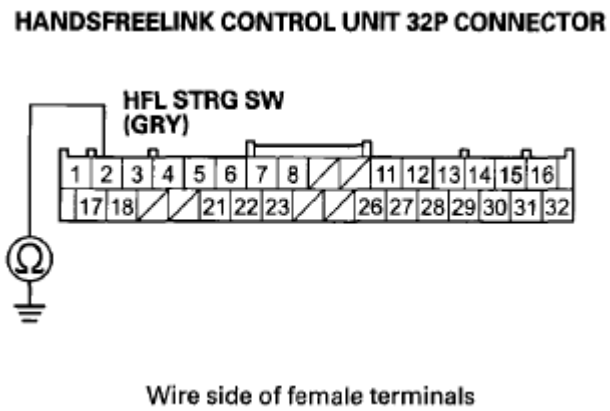


Fig. 48: Checking For Continuity Between HandsFreeLink Control Unit 32P Connector Terminal No. 2 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES -Repair a short to body ground in the wire between the switch, the cable reel, and the HandsFreeLink Control Unit. •

NO -Replace the **HandsFreeLink Control Unit**. •

DTC B1780: HANDSFREELINK STEERING WHEEL SWITCH LINE SHORT (WITHOUT NAVIGATION)

NOTE:

- **Check the vehicle battery condition first (see BATTERY TEST).**
- **If you are troubleshooting multiple DTCs, be sure to follow the instructions in B-CAN system diagnosis test mode A (see TROUBLESHOOTING - B-CAN SYSTEM DIAGNOSIS TEST MODE A).**

1. Connect the HDS to the DLC.
2. Clear the DTCs with the **HDS**.
3. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode, then start the vehicle and turn the steering wheel back and forth several times.
4. Check for DTCs with the HDS.

   Is DTC B1780 indicated?

   YES -Go to step 5.

   NO -Intermittent failure, the system is OK at this time. •

5. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
6. Do the **HFL Switch Test**.

   Is the switch OK?

   YES -Go to step 7.

   NO -Replace the audio remote-HFL switch (see **STEERING WHEEL DISASSEMBLY/REASSEMBLY**). •

7. Remove the center console panel (see **CENTER CONSOLE PANEL REMOVAL/INSTALLATION**).
8. Disconnect the HandsFreeLink Control Unit 28P connector (see step 2).
9. Disconnect the audio remote-HFL switch 12P connector, and connect the cable reel connectors.
10. Check for continuity between HandsFreeLink Control Unit 28P connector terminal No. 2 and body ground.

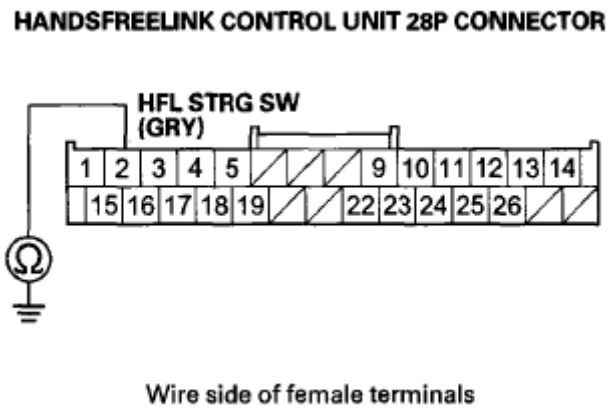


Fig. 49: Checking For Continuity Between HandsFreeLink Control Unit 28P Connector Terminal No. 2 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES -Repair a short to body ground in the wire between the switch, the cable reel, and the HandsFreeLink Control Unit. •

NO -Replace the **HandsFreeLink Control Unit**. •

DTC B1792: HANDSFREELINK CONTROL MODULE ERROR (WITH NAVIGATION)

NOTE: Check the vehicle battery condition first (see BATTERY TEST).

1. Do the HFL **Self-Diagnostic Function**, and check for HFL DTCs.

   Is DTC B1792 indicated?

   YES -Replace the **HandsFreeLink Control Unit**. •

   NO -Intermittent failure, the system is OK at this time. •

DTC B1792: HANDS FREE LINK CONTROL MODULE ERROR (WITHOUT NAVIGATION)

NOTE:

- **Check the vehicle battery condition first (see BATTERY TEST).**
- **If you are troubleshooting multiple DTCs, be sure to follow the instructions in B-CAN system diagnosis test mode A (see TROUBLESHOOTING - B-CAN SYSTEM DIAGNOSIS TEST MODE A).**

1. Connect the **HDS** to the DLC.
2. Clear the DTCs with the HDS.
3. Turn the ignition switch to LOCK (0) and then back to ON (II), or press the engine start/stop button to

select the OFF mode and then the ON mode.

4. Check for DTCs with the HDS.

   Is DTC B1792 indicated?

   YES -Replace the **HandsFreeLink Control Unit**. •

   NO -Intermittent failure, the system is OK at this time. •

SYMPTOM TROUBLESHOOTING

THE MID DISPLAYS AND HFL MESSAGE DO NOT GO AWAY AFTER PRESSING THE HFL BACK BUTTON (WITHOUT NAVIGATION)

1. Connect the **HDS** to the DLC.
2. Clear the DTCs with the **HDS**.
3. Turn the ignition switch to LOCK (0) and then back to ON (II), or press the engine start/stop button to select the OFF mode and then the ON mode.
4. Check for DTCs with the HDS.

   Are there any DTCs indicated?

   YES -Repair the indicated DTCs. •

   NO -Go to step 5.

5. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
6. Substitute a known-good **HandsFreeLink Control Unit**, then turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode, and recheck the multi-information display (MID).

   Are the HFL digits cleared?

   YES -Replace the original **HandsFreeLink Control Unit**. •

   NO -Replace the gauge control module (see **GAUGE CONTROL MODULE REPLACEMENT**). •

THE HFL SYSTEM DOES NOT RECOGNIZE ALL VOICE COMMANDS (WITHOUT NAVIGATION)

NOTE: Make sure the client's phone is compatible with Acura approved. See www.acura.com/handsfreelink for more information.

1. Connect the **HDS** to the DLC.
2. Clear the DTCs with the HDS.
3. Turn the ignition switch to LOCK (0) and then back to ON (II), or press the engine start/stop button to

select the OFF mode and then the ON mode.

4. Check for DTCs.

   Are there any DTCs indicated?

   YES -Repair the indicated DTCs. •

   NO -Go to step 5.

5. Check if client's concern is duplicated.

   Can the client's problem be duplicated?

   YES -Go to step 6.

   NO -The system is OK at this time. Ask the client to demonstrate the concern. •

6. Pair the client's phone to a known-good vehicle, and try to duplicate the concern.

   Can you duplicate the concern?

   YES -Call the HFL call center at 888-528-7876, and inquire if there are any known issues for the concern. If there are no known issues, explain to the client this is a system characteristic and cannot be improved at this time. •

   NO -Substitute a known-good **HFL Microphone**, and recheck. If the symptom/indication goes away, replace the original **HFL Microphone**. If the symptom/indication is still present, replace the **HandsFreeLink Control Unit**. •

THE HFL SYSTEM IS LOCKED AND THE PASS CODE HAS BEEN LOST OR FORGOTTEN (WITHOUT NAVIGATION)

1. Connect the **HDS** to the DLC.
2. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
3. From the Body Electrical menu, select HandsFreeLink.
4. Select Miscellaneous Tests, then select Pass code reset.
5. Follow the HDS prompts to reset the pass code.

THE HFL MESSAGES CANNOT BE HEARD OR ARE WEAK (WITH NAVIGATION)

NOTE: Check the vehicle battery condition first (see BATTERY TEST).

1. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
2. Check that the audio system is operating normally and the speaker sound levels from different audio sources (AM/FM, XM, CD, navigation, etc.).

Does the audio system work normally and is the audio output from the speaker normal when playing various audio sources?

YES -Go to step 3.

NO -Refer to the audio system symptom troubleshooting. •

3. Press and hold the HANG-UP button for more than 5 seconds.

   Do you hear the message "The HFT is OK"?

   YES -Intermittent failure, the system is OK at this time. •

   NO -Go to step 4.

4. Do the HFL **Self-Diagnostic Function**, and check for HFL DTCs.

   Are there any DTCs indicated?

   YES -Repair the indicated DTCs. •

   NO -Go to step 5.

5. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
6. Do the **HFL Switch Test**.

   Is the switch OK?

   YES -Go to step 7.

   NO -Replace the audio remote, HFL-navigation voice control switch (see **STEERING WHEEL DISASSEMBLY/REASSEMBLY**). •

7. Remove the center console panel (see **CENTER CONSOLE PANEL REMOVAL/INSTALLATION**).
8. Disconnect the HandsFreeLink Control Unit 32P connector (see step 2.
9. Disconnect audio-navigation unit connector B (24P).
10. Check for continuity between HandsFreeLink Control Unit 32P connector terminals No. 13 and No. 29 and audio-navigation unit connector B (24P) terminals No. 5 and No. 16 respectively.

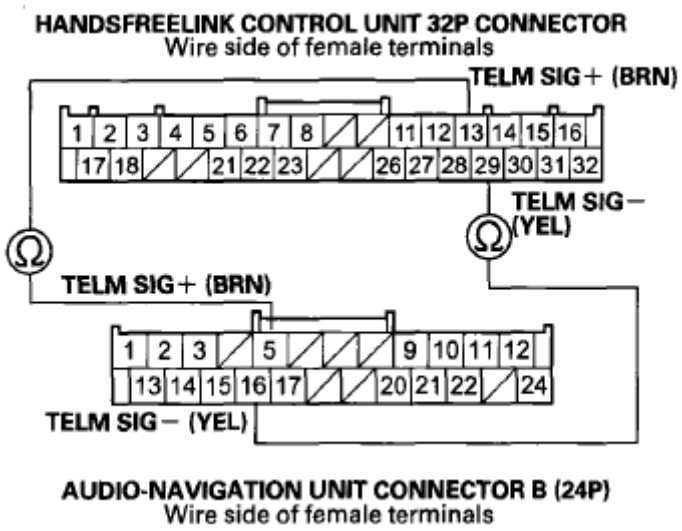


Fig. 50: Checking For Continuity Between HandsFreeLink Control Unit 32P Connector And Audio-Navigation Unit Connector (24P)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES -Go to step 11.

NO -There is an open in the wire(s) between the HandsFreeLink Control Unit and the audio-navigation unit. Replace the affected shielded harness. •

11. Check for continuity between body ground and audio-navigation unit connector B (24P) terminals No. 5 and No. 16 individually.

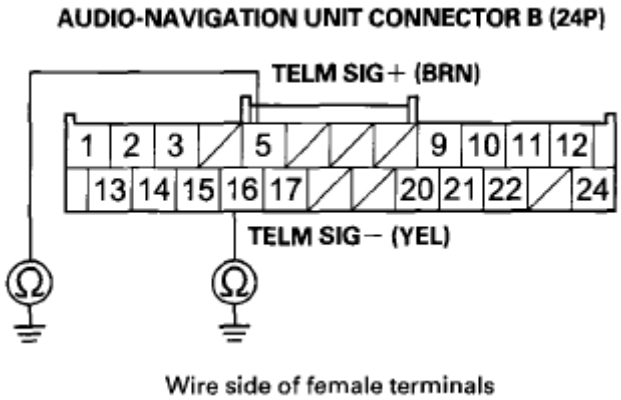


Fig. 51: Checking For Continuity Between Body Ground And Audio-Navigation Unit Connector (24P)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES -There is a short to body ground in the wire(s) between the HandsFreeLink Control Unit and the audio-navigation unit. Replace the affected shielded harness. •

NO -Go to step 12.

12. Check for continuity between the terminals of audio-navigation unit connector B (24P) according to the table.

From terminal	To terminals
B5 (BRN)	B16 (YEL), B17 (GRY)
B16 (YEL)	B17 (GRY)

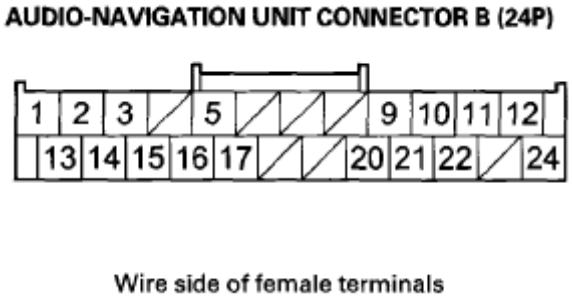


Fig. 52: Audio-Navigation Unit (24P) Connector End View
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity between any of the terminals?

YES -There is a short in the wire(s) between the HandsFreeLink Control Unit and the audio-navigation unit. Replace the affected shielded harness. •

NO -Substitute a known-good **HandsFreeLink Control Unit**, and recheck. If the symptom/indication goes away, replace the original **HandsFreeLink Control Unit**. If the symptom/indication is still present, replace the audio-navigation unit (see **AUDIO-NAVIGATION UNIT REMOVAL/INSTALLATION**). •

THE HFL MESSAGES CANNOT BE HEARD OR ARE WEAK (WITHOUT NAVIGATION)

NOTE: Check the vehicle battery condition first (see BATTERY TEST).

1. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
2. Check that the audio system is operating normally and the speaker sound levels from different audio sources (AM/FM, XM, CD, navigation, etc.).

Does the audio system work normally and is the audio output from the speaker normal when playing various audio sources?

YES -Go to step 3.

NO -Refer to the audio system symptom troubleshooting. •

3. Press and hold the HFL BACK button for more than 5 seconds.

   Do you hear the message "The HFT is OK"?

   YES -Go to step 4.

   NO -Go to step 5.

4. Turn on the audio unit, and press and hold the HFL BACK button for more than 5 seconds.

   Does the audio system mute when the message "The HFT is OK" is played?

   YES -Intermittent failure, the system is OK at this time. •

   NO -Go to step 18.

5. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
6. Connect the **HDS** to the DLC.
7. Clear the DTCs with the HDS.
8. Turn the ignition switch to LOCK (0) and then back to ON (II), or press the engine start/stop button to select the OFF mode and then the ON mode.
9. Check for DTCs.

   Are there any DTCs indicated?

   YES -Repair the indicated DTCs. •

   NO -Go to step 10.

10. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
11. Do the **HFL Switch Test**.

    Is the switch OK?

    YES -Go to step 12.

    NO -Replace the audio remote-HFL switch (see **STEERING WHEEL DISASSEMBLY/REASSEMBLY**). •

12. Remove the center console panel (see **CENTER CONSOLE PANEL REMOVAL/INSTALLATION**).
13. Disconnect the HandsFreeLink Control Unit 28P connector (see step 2).
14. Disconnect audio unit connector D (20P).

15. Check for continuity between HandsFreeLink Control Unit 28P connector terminals No. 11 and No. 25 and audio unit connector D (20P) terminals No. 19 and No. 9 respectively.

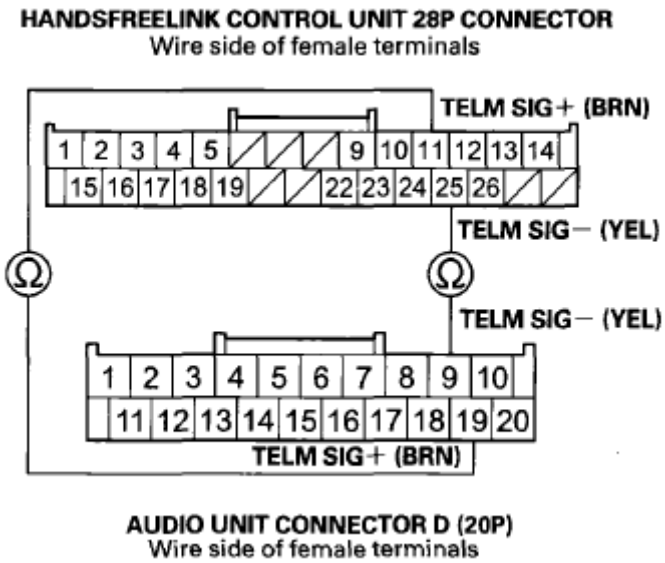


Fig. 53: Checking For Continuity Between HandsFreeLink Control Unit 28P Connector And Audio Unit Connector D (20P)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES -Go to step 16.

NO -There is an open in the wire(s) between the HandsFreeLink Control Unit and the audio unit. Replace the affected shielded harness. •

16. Check for continuity between body ground and audio unit connector D (20P) terminals No. 9 and No. 19 individually.

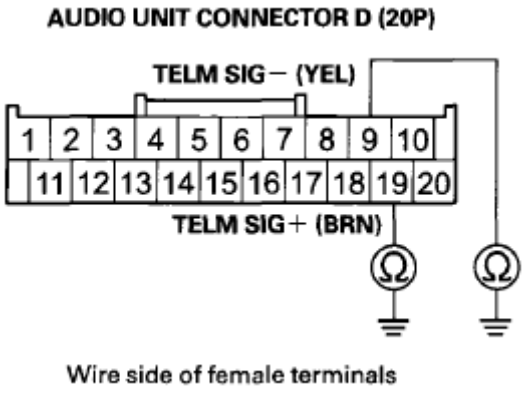


Fig. 54: Checking For Continuity Between Body Ground And Audio Unit Connector D (20P) Terminals No. 9 And No. 19

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES -There is a short to body ground in the wire(s) between the HandsFreeLink Control Unit and the audio unit. Replace the affected shielded harness. •

NO -Go to step 17.

17. Check for continuity between the terminals of audio unit connector D (20P) according to the table.

From terminal	To terminals
D9 (BRN)	D10 (GRY), D19 (YEL)
D10 (GRY)	D19 (YEL)

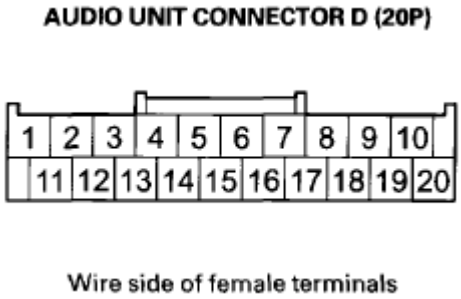


Fig. 55: Audio Unit (20P) Connector End View
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity between any of the terminals?

YES -There is a short in the wire(s) between the HandsFreeLink Control Unit and the audio unit. Replace the affected shielded harness. •

NO -Substitute a known-good **HandsFreeLink Control Unit**, and recheck. If the symptom/indication goes away, replace the original **HandsFreeLink Control Unit**. If the symptom/indication is still present, replace the audio unit (see **AUDIO UNIT REMOVAL/INSTALLATION**). •

18. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
19. Remove the center console panel (see **CENTER CONSOLE PANEL REMOVAL/INSTALLATION**).
20. Disconnect the HandsFreeLink Control Unit 28P connector (see step 2).
21. Disconnect audio unit connector D (20P).
22. Check for continuity between HandsFreeLink Control Unit 28P connector terminal No. 3 and audio unit connector D (20P) terminal No. 20.

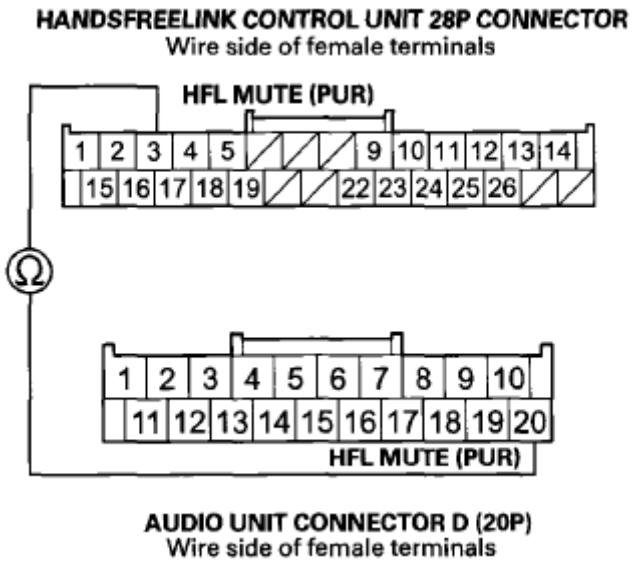


Fig. 56: Checking For Continuity Between HandsFreeLink Control Unit 28P Connector And Audio Unit Connector D (20P)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES -Go to step 23.

NO -Repair an open in the wire between the HandsFreeLink Control Unit and the audio unit. •

23. Check for continuity between body ground and HandsFreeLink Control Unit 28P connector terminal No. 3.

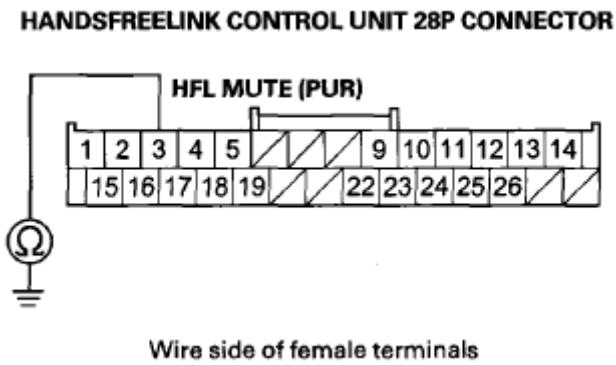


Fig. 57: Checking For Continuity Between Body Ground And HandsFreeLink Control Unit 28P Connector Terminal No. 3
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES -Repair a short to body ground in the wire between the HandsFreeLink Control Unit and the audio

unit. •

NO -Substitute a known-good **HandsFreeLink Control Unit**, and recheck. If the symptom/indication goes away, replace the original the **HandsFreeLink Control Unit**. If the symptom/indication is still present, replace the audio unit (see **AUDIO UNIT REMOVAL/INSTALLATION**). •

NO SOUND WHEN BLUETOOTH AUDIO IS USED (WITH NAVIGATION)

NOTE:

- **Check the vehicle battery condition first (see BATTERY TEST).**
- **Check the connectors for poor connections or loose terminals.**
- **Set the fader and balance positions to the center.**
- **Check if the cell phone with Bluetooth audio functions normally.**
- **Make sure the cell phone is properly paired.**

1. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
2. Turn on the audio system, and check for sound in each mode (AM/FM and CD).

   Is the sound is normal?

   YES -Go to step 3.

   NO -Go to Sound Quality Diagnosis (see **SOUND QUALITY DIAGNOSIS**) or No sound is heard from the speaker(s) (display is normal) troubleshooting (see **AUDIO UNIT POWER SWITCH WILL NOT TURN OFF (WITHOUT NAVIGATION)**). •

3. Press the HDD/AUX button, and check if it changes to Bluetooth audio source.

   Does it change to Bluetooth audio source?

   YES -Go to step 4.

   NO -Go to **Bluetooth audio does not work troubleshooting**. •

4. Check if it is connected when switching to Bluetooth audio screen by pressing the HDD/AUX button.

   Is NO CONNECTION displayed?

   YES -Go to **Bluetooth cell phone cannot be paired troubleshooting**. •

   NO -Go to step 5.

5. Check if the Bluetooth audio device can be played.

   Does the Bluetooth audio play?

YES -Intermittent failure, the audio-navigation unit is OK at this time. •

NO -Go to step 6.

6. Turn on the audio system, and check for XM radio sound.

   Is the sound normal?

   YES -Go to step 7.

   NO -Go to step 12.

7. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
8. Remove the center console panel (see **CENTER CONSOLE PANEL REMOVAL/INSTALLATION**).
9. Disconnect the HandsFreeLink Control Unit 32P connector (see step 2).
10. Disconnect audio-navigation unit connector C (14P).
11. Check for continuity between audio unit connector C (14P) and the HandsFreeLink Control Unit 32P connector according to the table.

	Audio-navigation unit connector	HandsFreeLink Control Unit connector	Wire color
AUDIO R+	C5	11	GRN
AUDIO R-	C13	27	WHT
AUDIO L+	C6	12	BLK
AUDIO L-	C14	28	RED

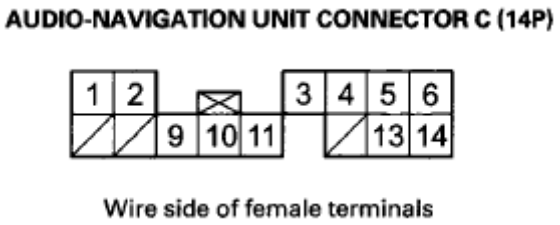


Fig. 58: Audio-Navigation Unit (14P) Connector End View
Courtesy of AMERICAN HONDA MOTOR CO., INC.

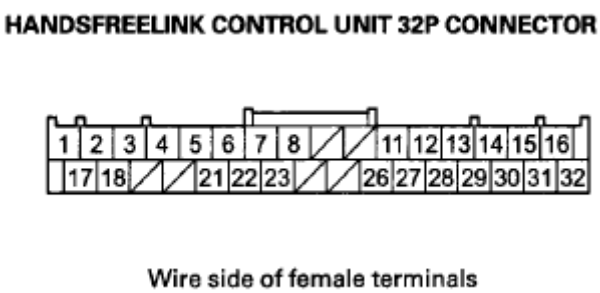


Fig. 59: HandsFreeLink Control Unit (32P) Connector End View

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES -Substitute a known-good **HandsFreeLink Control Unit**, and recheck. If the symptom/indication goes away, replace the original **HandsFreeLink Control Unit**. If the symptom/indication is still present, replace the audio-navigation unit (see **AUDIO-NAVIGATION UNIT REMOVAL/INSTALLATION**). •

NO -There is an open in the wire(s) between the audio-navigation unit and the HandsFreeLink Control Unit. Replace the affected shielded harness. •

12. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
13. Remove the center console panel (see **CENTER CONSOLE PANEL REMOVAL/INSTALLATION**).
14. Disconnect these items:
    - Audio-navigation unit connector C(14P)
    - AcuraLink control unit(XM receiver) connector A (32P) (USA models)
    - XM receiver connector A (14P) (Canada models)
    - HandsFreeLink Control Unit 32P connector
15. Check for continuity between the HandsFreeLink Control Unit 32P connector and body ground according to the table.

	HandsFreeLink Control Unit connector	Wire color
AUDIO R+	11	GRN
AUDIO R-	27	WHT
AUDIO L+	12	BLK
AUDIO L-	28	RED

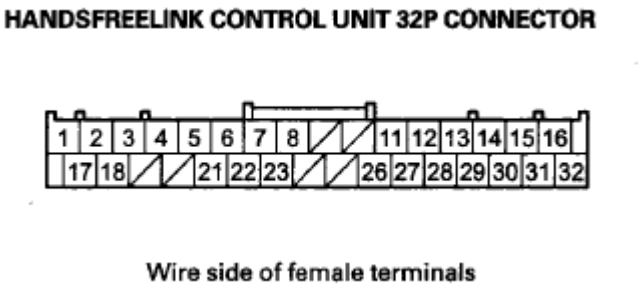


Fig. 60: HandsFreeLink Control Unit 32P Connector End View
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES -There is a short to body ground in the wire(s) between the audio-navigation unit, then AcuraLink control unit (XM receiver) or XM receiver, and the HandsFreeLink Control Unit. Replace the affected

shielded harness. •

NO -Go to step 16.

16. Check for continuity between audio-navigation unit connector C (14P) and the HandsFreeLink Control Unit 32P connector according to the table.

	Audio-navigation unit connector	HandsFreeLink Control Unit connector	Wire color
AUDIO R+	C5	11	GRN
AUDIO R-	C13	27	WHT
AUDIO L+	C6	12	BLK
AUDIO L-	C14	28	RED

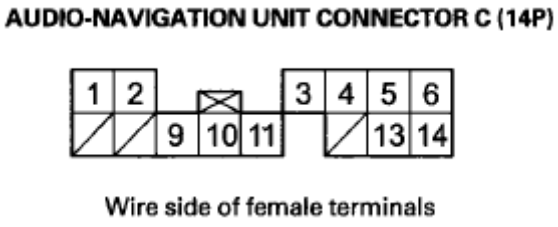


Fig. 61: Audio-Navigation Unit (14P) Connector End View
Courtesy of AMERICAN HONDA MOTOR CO., INC.

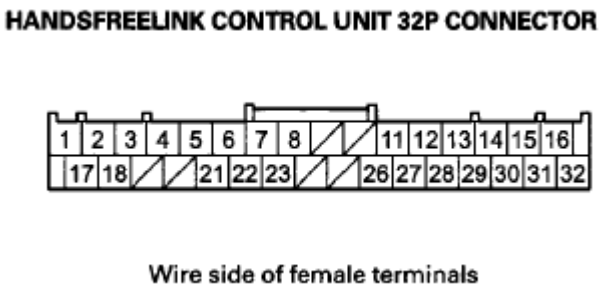


Fig. 62: HandsFreeLink Control Unit 32P Connector End View
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES -Go to step 17.

NO -There is an open in the wire(s) between the audio-navigation unit and the HandsFreeLink Control Unit. Replace the affected shielded harness. •

17. Check for continuity between the terminals of the HandsFreeLink Control Unit 32P connector according to the table.

From terminal	To terminals

26 (GRY)	11 (GRN), 12 (BLK), 27 (WHT), 28 (RED)

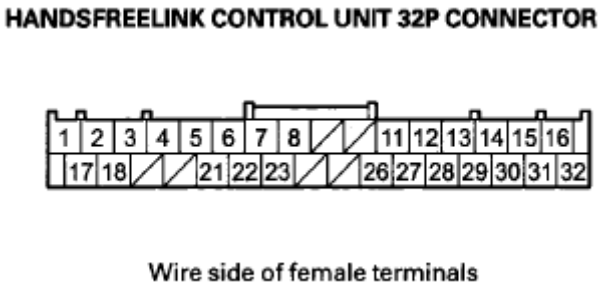


Fig. 63: HandsFreeLink Control Unit 32P Connector End View
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES -There is a short in the wires between the audio-navigation unit and the HandsFreeLink Control Unit. Replace the affected shielded harness. •

NO -Go to step 18.

18. Reconnect audio-navigation unit connector C (14P) and the HandsFreeLink Control Unit 32P connector.
19. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
20. Check if the Bluetooth audio device can be played.

Does the Bluetooth audio play?

YES -There is an internal malfunction where the connector for either the AcuraLink control unit (XM receiver) (USA models) or the XM receiver (Canada models) is connected. •

NO -Go to step 21.

21. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
22. Disconnect the HandsFreeLink Control Unit 32P connector.
23. Reconnect AcuraLink control unit (XM receiver) connector A (32P) (USA models) or XM receiver connector A (14P) (Canada models).
24. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
25. Check if the XM radio can be played.

Is the sound normal?

YES -Substitute a known-good **HandsFreeLink Control Unit**, and recheck. If the symptom/indication goes away, replace the original **HandsFreeLink Control Unit**. •

NO -Substitute a known-good audio-navigation unit (including the HDD) (see **AUDIO-NAVIGATION UNIT REMOVAL/INSTALLATION**), and recheck. If the symptom/indication goes away, replace the

original audio-navigation unit (see **AUDIO-NAVIGATION UNIT REMOVAL/INSTALLATION**). •

NO SOUND WHEN BLUETOOTH AUDIO IS USED (WITHOUT NAVIGATION)

NOTE:

- **Check the vehicle battery condition first (see BATTERY TEST).**
- **Check the connectors for poor connections or loose terminals.**
- **Set the fader and balance positions to the center.**
- **Check if the cell phone with Bluetooth audio functions normally.**
- **Make sure the cell phone is properly paired.**

1. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
2. Turn on the audio unit, and check for sound in each mode (AM/FM and CD).

   Is the sound is normal?

   YES -Go to step 3.

   NO -Go to Sound Quality Diagnosis (see **SOUND QUALITY DIAGNOSIS**) or No sound is heard from the speaker(s) (display is normal) troubleshooting (see **NO SOUND IS HEARD FROM THE SPEAKER(S) (DISPLAY IS NORMAL) (WITHOUT NAVIGATION)**). •

3. Press the AUX button, and check if it changes to Bluetooth audio source.

   Does it change to Bluetooth audio source?

   YES -Go to step 4.

   NO -Go to **Bluetooth audio does not work troubleshooting**. •

4. Check if it is connected when switching to Bluetooth audio screen by pressing the AUX button.

   Is NO CONNECTION displayed?

   YES -Go to **Bluetooth cell phone cannot be paired troubleshooting**. •

   NO -Go to step 5.

5. Check if the Bluetooth audio device can be played.

   Does the Bluetooth audio play?

   YES -Intermittent failure, the audio unit is OK at this time. •

   NO -Go to step 6.

6. Turn on the audio unit, and check for sound in each mode (XM and USB).

   Is the sound normal?

   YES -Go to step 7.

   NO -Go to step 12.

7. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
8. Remove the center console panel (see **CENTER CONSOLE PANEL REMOVAL/INSTALLATION**).
9. Disconnect the HandsFreeLink Control Unit 28P connector (see step 2).
10. Disconnect audio unit connector C (14P).
11. Check for continuity between audio unit connector C (14P) and the HandsFreeLink Control Unit 28P connector according to the table.

	Audio unit connector	HandsFreeLink Control Unit connector	Wire color
AUDIO R +	C5	9	GRN
AUDIO R-	C13	23	WHT
AUDIO L+	C6	10	BLK
AUDIO L-	C14	24	RED

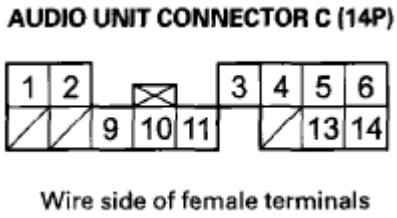


Fig. 64: Audio Unit (14P) Connector End View
Courtesy of AMERICAN HONDA MOTOR CO., INC.

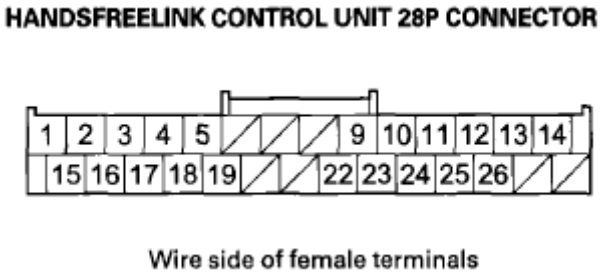


Fig. 65: HandsFreeLink Control Unit 28P Connector End View
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES -Substitute a known-good **HandsFreeLink Control Unit**, and recheck. If the symptom/indication goes away, replace the original **HandsFreeLink Control Unit**. •

NO -There is an open in the wire(s) between the audio unit and the HandsFreeLink Control Unit. Replace the affected shielded harness. •

12. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
13. Remove the center console panel (see **CENTER CONSOLE PANEL REMOVAL/INSTALLATION**).
14. Disconnect these items:
    - Audio unit connector C (14P)
    - XM receiver connector A (14P)
    - USB adapter control unit connector A (14P)
    - HandsFreeLink Control Unit 28P connector
15. Check for continuity between the HandsFreeLink Control Unit 28P connector and body ground according to the table.

	HandsFreeLink Control Unit connector	Wire color
AUDIO R+	9	GRN
AUDIO R-	23	WHT
AUDIO L+	10	BLK
AUDIO L-	24	RED

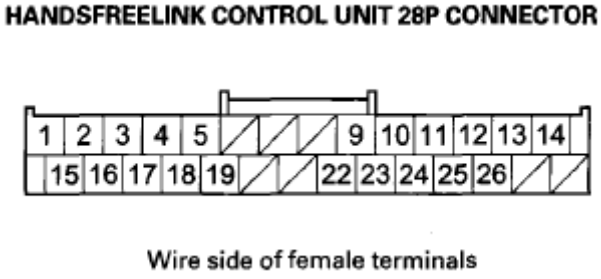


Fig. 66: HandsFreeLink Control Unit 28P Connector End View
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES -There is a short to body ground in the wire(s) between the audio unit and the HandsFreeLink Control Unit. Replace the affected shielded harness. •

NO -Go to step 16.

16. Check for continuity between audio unit connector C (14P) and the HandsFreeLink Control Unit 28P connector according to the table.

	Audio unit connector	HandsFreeLink Control Unit connector	Wire color
AUDIO R+	C5	9	GRN
AUDIO R-	C13	23	WHT
AUDIO L+	C6	10	BLK
AUDIO L-	C14	24	RED

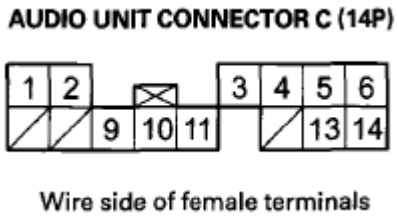


Fig. 67: Audio Unit (14P) Connector End View
Courtesy of AMERICAN HONDA MOTOR CO., INC.

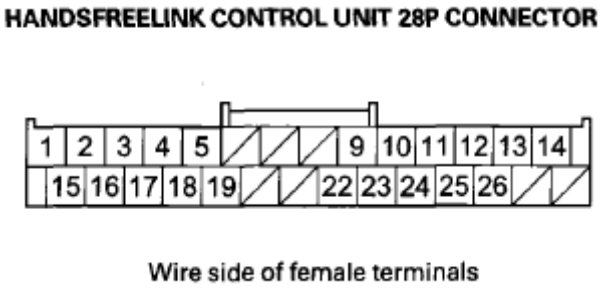


Fig. 68: HandsFreeLink Control Unit 28P Connector End View
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

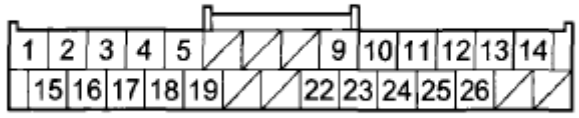
YES -Go to step 17.

NO -There is an open in the wire(s) between the audio unit and the HandsFreeLink Control Unit. Replace the affected shielded harness. •

17. Check for continuity between the terminals of the HandsFreeLink Control Unit 28P connector according to the table.

From terminal	To terminals
22 (GRY)	9 (GRN), 23 (WHT), 10 (BLK), 24 (RED)

HANDSFREELINK CONTROL UNIT 28P CONNECTOR



Wire side of female terminals

Fig. 69: HandsFreeLink Control Unit 28P Connector End View
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES -There is a short in the wires between the audio unit and the HandsFreeLink Control Unit. Replace the affected shielded harness. •

NO -Go to step 18.

18. Reconnect the audio unit connector C(14P) and the HandsFreeLink Control Unit 28P connector.
19. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
20. Check if the Bluetooth audio device can be played.

Does the Bluetooth audio play?

YES -There is an internal malfunction where the connector for either the XM receiver or the USB adapter control unit is connected. •

NO -Go to step 21.

21. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
22. Disconnect the HandsFreeLink Control Unit 28P connector.
23. Reconnect XM receiver connector A (14P) and the USB adapter control unit connector A (14P).
24. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
25. Turn on the audio unit, and check for sound in each mode (XM and USB).

Is the sound normal?

YES -Substitute a known-good **HandsFreeLink Control Unit**, and recheck. If the symptom/indication goes away, replace the original **HandsFreeLink Control Unit**. •

NO -Substitute a known-good audio unit (see **AUDIO UNIT REMOVAL/INSTALLATION**), and recheck. If the symptom/indication goes away, replace the original audio unit (see **AUDIO UNIT REMOVAL/INSTALLATION**). •

BLUETOOTH AUDIO DOES NOT WORK (WITH NAVIGATION)

NOTE:

- **Check the vehicle battery condition first (see BATTERY TEST).**
- **Check the connectors for poor connections or loose terminals.**
- **Check if the cell phone with Bluetooth audio functions normally.**
- **Make sure the cell phone is properly paired.**

1. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
2. Turn on the audio unit, and press HDD/AUX button to select Bluetooth audio source.

   Does it change to Bluetooth audio source?

   YES -Go to step 5.

   NO -Go to step 3.

3. Check if the Bluetooth audio device can be played.

   Does the Bluetooth audio play?

   YES -Intermittent failure, the audio-navigation unit is OK at this time. •

   NO -Go to step 4.

4. Pair and check the Bluetooth device function on a known-good vehicle equipped with Bluetooth audio.

   Is the Bluetooth device normal?

   YES -Check online at www.acura.com/handsfreelink or call the HFL call center at 888-528-7876 to make sure the Bluetooth audio device is compatible with the HFL system and that there are no known issues. •

   NO -Defective Bluetooth device or is not compatible. •

5. Check for the navigation system hard error codes (see **HOW TO CHECK ERROR HISTORY (NAVIGATION DTCS)**).

   Are there any DTC's related to the Display or XM systems?

   YES -Go to step 6.

   NO -Go to step 11.

6. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
7. Remove the center console panel (see **CENTER CONSOLE PANEL REMOVAL/INSTALLATION**).
8. Disconnect the HandsFreeLink Control Unit 32P connector (see step 2).
9. Disconnect audio-navigation unit connector C (14P).

10. Check for continuity between audio-navigation unit connector C (14P) and the HandsFreeLink Control Unit 32P connector according to the table.

	Audio-navigation unit connector	HandsFreeLink Control Unit connector	Wire color
GA-NET BUS+	C9	4	PNK
GA-NET BUS-	C10	5	BLU

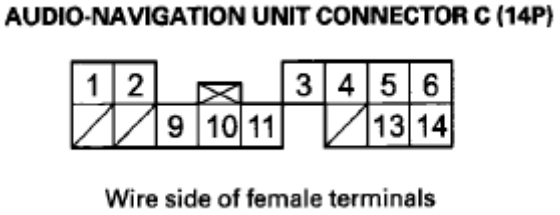


Fig. 70: Audio-Navigation Unit (14P) Connector End View
Courtesy of AMERICAN HONDA MOTOR CO., INC.

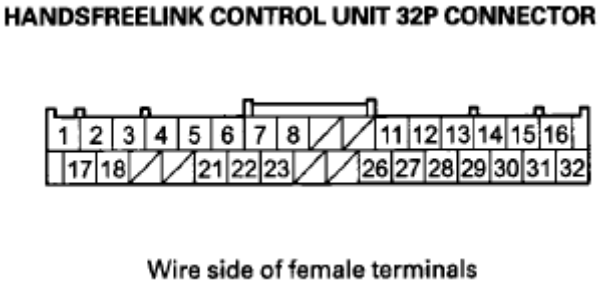


Fig. 71: HandsFreeLink Control Unit 32P Connector End View
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES -Substitute a known-good **HandsFreeLink Control Unit**, and recheck. If the symptom/indication goes away, replace the original **HandsFreeLink Control Unit**. •

NO -There is an open in the wire(s) between the audio-navigation unit and the HandsFreeLink Control Unit. Replace the affected shielded harness. •

11. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
12. Remove the center console panel (see **CENTER CONSOLE PANEL REMOVAL/INSTALLATION**).
13. Disconnect these items:
    - Audio-navigation unit connector C(14P)
    - AcuraLink control unit (XM receiver) connector A (32P) (USA models)
    - XM receiver connector A (14P) (Canada models)

- Navigation display unit 36P connector
- HandsFreeLink Control Unit 32P connector

14. Check for continuity between the HandsFreeLink Control Unit 32P connector and body ground according to the table.

	HandsFreeLink Control Unit connector	Wire color
GA-NET BUS+	4	PNK
GA-NET BUS-	5	BLU

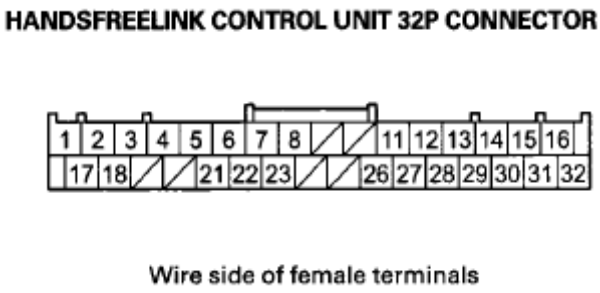


Fig. 72: View Of HandsFreeLink Control Unit Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES -There is a short to body ground in the wire(s) between the HandsFreeLink Control Unit and the audio-navigation unit. Replace the affected shielded harness. •

NO -Go to step 15.

15. Check for continuity between audio-navigation unit connector C (14P) and the HandsFreeLink Control Unit 32P connector according to the table.

	Audio-navigation unit connector	HandsFreeLink Control Unit connector	Wire color
GA-NET BUS+	C9	4	PNK
GA-NET BUS-	C10	5	BLU

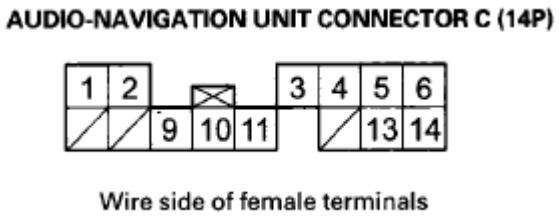


Fig. 73: View Of Audio-Navigation Unit Connector 32P
Courtesy of AMERICAN HONDA MOTOR CO., INC.

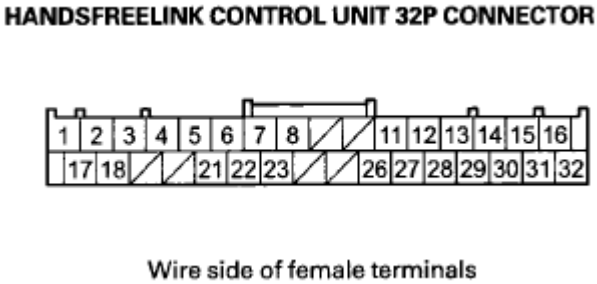


Fig. 74: View Of HandsFreeLink Control Unit 32P Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES -Go to step 16.

NO -There is an open in the wire(s) between the audio-navigation unit and the HandsFreeLink Control Unit. Replace the affected shielded harness. •

16. Check for continuity between the terminals of the HandsFreeLink Control Unit 32P connector according to the table.

From terminal	To terminals
4 (PNK)	5 (BLU), 21 (GRY)
5 (BLU)	21 (GRY)

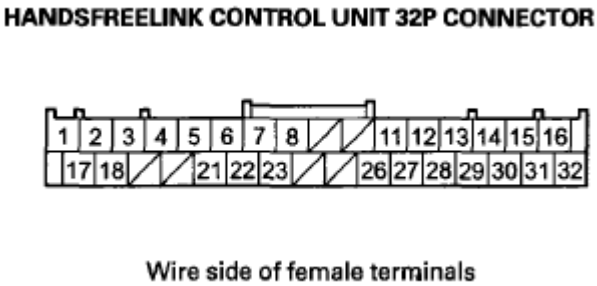


Fig. 75: View Of HandsFreeLink Control Unit 32P Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES -There is a short in the wires between the audio-navigation unit and the HandsFreeLink Control Unit. Replace the affected shield harness. •

NO -Go to step 17.

17. Reconnect audio-navigation unit connector C (14P) and the HandsFreeLink Control Unit 32P connector.
18. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.

19. Check if the Bluetooth device can be played.

    Does the Bluetooth audio play?

    YES -Intermittent failure, the system is OK at this time. Check for loose or poor connections at the AcuraLink control unit (XM receiver), the XM receiver, or the navigation display unit. •

    NO -Go to step 20.

20. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
21. Disconnect the HandsFreeLink Control Unit 32P connector.
22. Reconnect AcuraLink control unit (XM receiver) connector A (32P) or XM receiver connector A (14P), and the navigation display unit 36P connector.
23. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
24. Check if the XM radio plays.

    Is the sound normal?

    YES -Substitute a known-good **HandsFreeLink Control Unit**, and recheck. If the symptom/indication goes away, replace the original **HandsFreeLink Control Unit**. •

    NO -Substitute a known-good audio-navigation unit (including the HDD) (see **AUDIO-NAVIGATION UNIT REMOVAL/INSTALLATION**), and recheck. If the symptom/indication goes away, replace the original audio-navigation unit (see **AUDIO-NAVIGATION UNIT REMOVAL/INSTALLATION**). •

BLUETOOTH AUDIO DOES NOT WORK (WITHOUT NAVIGATION)

NOTE:

- **Check the vehicle battery condition first (see BATTERY TEST).**
- **Check the connectors for poor connections or loose terminals.**
- **Check if the cell phone with Bluetooth audio functions normally.**
- **Make sure the cell phone is properly paired.**

1. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
2. Turn on the audio unit, and press AUX button to select Bluetooth audio source.

   Does it change to Bluetooth audio source?

   YES -Go to step 5.

   NO -Go to step 3.

3. Check if the Bluetooth device can be played.

   Does the Bluetooth audio play?

YES -Intermittent failure, the audio unit is OK at this time. •

NO -Go to step 4.

4. Register and check the Bluetooth audio device function on a known-good vehicle equipped with Bluetooth audio.

   Is the Bluetooth device normal?

   YES -Check online at www.acura.com/handsfreelink or call the HFL call center at 888-528-7876 to make sure the Bluetooth audio device is compatible with the HFL system and that there are no known issues. •

   NO -Defective Bluetooth device. •

5. Turn on the audio unit, and check for sound in each mode (XM and USB).

   Is the sound is normal?

   YES -Go to step 6.

   NO -Go to step 11.

6. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
7. Remove the center console panel (see **CENTER CONSOLE PANEL REMOVAL/INSTALLATION**).
8. Disconnect the HandsFreeLink Control Unit 28P connector (see step 2).
9. Disconnect audio unit connector C (14P).
10. Check for continuity between audio unit connector C (14P) and the HandsFreeLink Control Unit 28P connector according to the table.

	Audio unit connector	HandsFreeLink Control Unit connector	Wire color
GA-NET BUS+	C9	4	PNK
GA-NET BUS-	C10	5	BLU

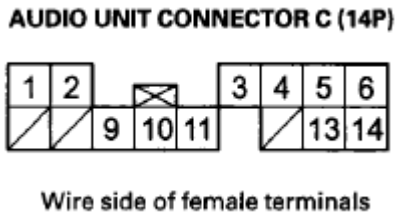


Fig. 76: View Of Audio Unit Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

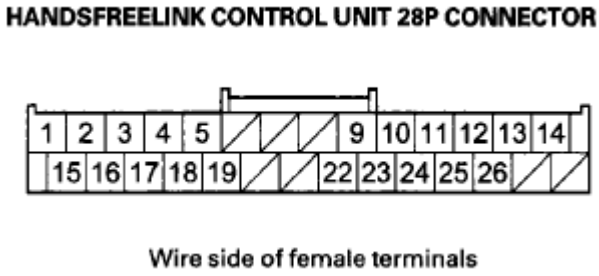


Fig. 77: View Of HandsFreeLink Control Unit Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES -Substitute a known-good **HandsFreeLink Control Unit**, and recheck. If the symptom/indication goes away, replace the original **HandsFreeLink Control Unit**. •

NO -There is an open in the wire(s) between the audio unit and the HandsFreeLink Control Unit. Replace the affected shielded harness. •

11. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
12. Remove the center console panel (see **CENTER CONSOLE PANEL REMOVAL/INSTALLATION**).
13. Disconnect these items:
    - Audio unit connector C (14P)
    - XM receiver connector A (14P)
    - USB adapter control unit connector A (14P)
    - HandsFreeLink Control Unit 28P connector
14. Check for continuity between the HandsFreeLink Control Unit 28P connector and body ground according to the table.

	HandsFreeLink Control Unit connector	Wire color
GA-NET BUS+	4	PNK
GA-NET BUS-	5	BLU

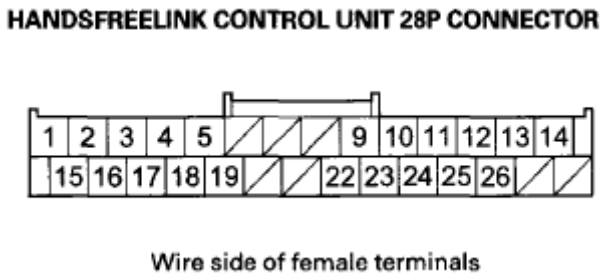


Fig. 78: View Of HandsFreeLink Control Unit 28P Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES -There is a short to body ground in the wire(s) between the HandsFreeLink Control Unit and the audio unit. Replace the affected shielded harness. •

NO -Go to step 15.

15. Check for continuity between audio unit connector C (14P) and the HandsFreeLink Control Unit 28P connector according to the table.

	Audio unit connector	HandsFreeLink Control Unit connector	Wire color
GA-NET BUS +	C9	4	PNK
GA-NET BUS-	C10	5	BLU

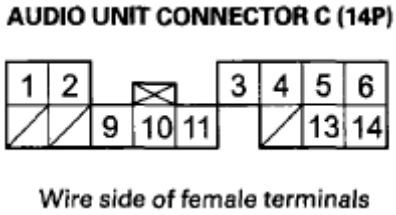


Fig. 79: View Of Audio Unit Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

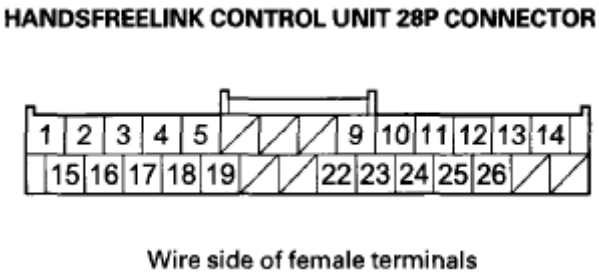


Fig. 80: View Of HandsFreeLink Control Unit Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES -Go to step 16.

NO -There is an open in the wire(s) between the audio unit and the HandsFreeLink Control Unit. Replace the affected shielded harness. •

16. Check for continuity between the terminals of the HandsFreeLink Control Unit 28P connector according to the table.

From terminal	To terminals

4 (PNK)	5 (BLU), 19 (GRY)
5 (BLU)	19 (GRY)

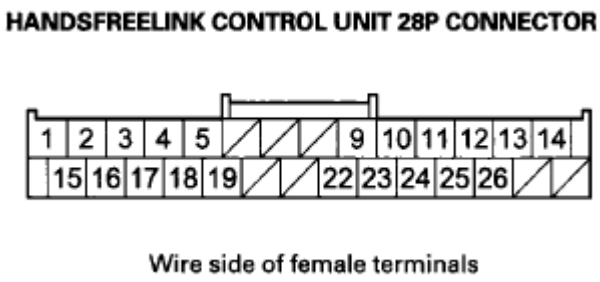


Fig. 81: View Of HandsFreeLink Control Unit 28P Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES -There is a short in the wires between the audio unit and the HandsFreeLink Control Unit. Replace the affected shield harness. •

NO -Go to step 17.

17. Reconnect audio unit connector C (14P) and the HandsFreeLink Control Unit 28P connector.
18. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
19. Check if the Bluetooth device can be played.

Does the Bluetooth audio play?

YES -Intermittent failure, the system is OK at this time. Check for loose or poor connections at the XM receiver or the USB adapter control unit. •

NO -Go to step 20.

20. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
21. Disconnect the HandsFreeLink Control Unit 28P connector.
22. Reconnect XM receiver connector A (14P) and USB adapter control unit connector A (14P).
23. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
24. Turn on the audio unit, and check for sound in each mode (XM and USB).

Is the sound normal?

YES -Substitute a known-good **HandsFreeLink Control Unit**, and recheck. If the symptom/indication goes away, replace the original **HandsFreeLink Control Unit**. •

NO -Substitute a known-good audio unit (see **AUDIO UNIT REMOVAL/INSTALLATION**) and recheck. If the symptom/indication goes away, replace the original audio unit (see **AUDIO UNIT**

REMOVAL/INSTALLATION). •

BLUETOOTH CELL PHONE CANNOT BE PAIRED (WITH NAVIGATION)

NOTE:

- **Check the vehicle battery condition first (see BATTERY TEST).**
- **Check the connectors for poor connections or loose terminals.**
- **When six Bluetooth phones are already paired, delete a device before pairing another one.**

1. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
2. Press the PICK-UP button.

   Does a beep sound?

   YES -

   - If you have the client's Bluetooth phone, go to step 4.
   - If you have not the client's Bluetooth phone, go to step 3.

   NO -Go to The HFL messages cannot be heard or are weak troubleshooting. •

3. Pair a known-good Bluetooth phone to the client's vehicle.

   Can you pair the Bluetooth phone, and does it operate normally?

   YES -The client's Bluetooth phone is defective or not compatible. •

   NO -Substitute a known-good **HandsFreeLink Control Unit**, and recheck. If the symptom/indication goes away, replace the original **HandsFreeLink Control Unit**. •

4. Check online at www.acura.com/handsfreelink or call the HFL call center at 888-528-7876 to make sure the client's Bluetooth phone is compatible with the HFL system and that there are no known issues.
5. Pair the client's Bluetooth phone to a known-good vehicle.

   Can you pair the Bluetooth phone, and does it operate normally?

   YES -Substitute a known-good **HandsFreeLink Control Unit**, and recheck. If the symptom/indication goes away, replace the original **HandsFreeLink Control Unit**. •

   NO -The client's Bluetooth phone is defective or not compatible. •

BLUETOOTH CELL PHONE CANNOT BE PAIRED (WITHOUT NAVIGATION)

NOTE:

- **Check the vehicle battery condition first (see BATTERY TEST).**

- **Check the connectors for poor connections or loose terminals.**
- **When six Bluetooth phones are already paired, delete a device before pairing another one.**

1. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
2. Press the HFL TALK button.

   Does a beep sound?

   YES -

   - If you have the client's Bluetooth phone, go to step 4.
   - If you have not the client's Bluetooth phone, go to step 3.

   NO -Go to **The HFL messages cannot be heard or are weak troubleshooting**. •

3. Pair a known-good Bluetooth phone to the client's vehicle.

   Can you pair the Bluetooth phone, and does it operate normally?

   YES -The client's Bluetooth phone is defective or not compatible. •

   NO -Substitute a known-good **HandsFreeLink Control Unit**, and recheck. If the symptom/indication goes away, replace the original **HandsFreeLink Control Unit**. •

4. Check online at www.acura.com/handsfreelink or call the HFL call center at 888-528-7876 to make sure the client's Bluetooth phone is compatible with the HFL system and that there are no known issues.
5. Pair the client's Bluetooth phone to a known-good vehicle.

   Can you pair the Bluetooth phone, and does it operate normally?

   YES -Substitute a known-good **HandsFreeLink Control Unit**, and recheck. If the symptom/indication goes away, replace the original **HandsFreeLink Control Unit**. •

   NO -The client's Bluetooth phone is defective or not compatible. •

THE COMMUNICATION WITH CELL PHONE IS INTERRUPTED OR CHANGES

NOTE:

- **Check the vehicle battery condition first (see BATTERY TEST).**
- **Check the connectors for poor connections or loose terminals.**
- **Check if the audio system functions normally.**
- **The connected device may not function properly when it is in the trunk or in a metallic case.**
- **Check online at www.acura.com/handsfreelink or call the HFL call center**

at 888-528-7876 to make sure the Bluetooth phone is compatible with the HFL system and that there are no known issues.

1. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
2. Turn on the audio-navigation unit, and check for sound in each mode (AM/FM, XM, and CD) while pairing the Bluetooth audio device.

   Does the symptom occur?

   YES -Go to **bluetooth Audio Does Not Work Troubleshooting; WITH NAVIGATION**, or **bluetooth Audio Does Not Work Troubleshooting; WITHOUT NAVIGATION**. •

   NO -Go to step 3.

3. Check the communication abnormality of connected Bluetooth audio device.

   Does the symptom occur in a specific place or under an specific condition?

   YES -Intermittent failure. Bluetooth audio is OK at this time. Influence or electric wave interference. •

   NO -

   - If you have the client's Bluetooth phone, go to step 5.
   - If you have not the client's Bluetooth phone, go to step 4.

4. Pair a known-good Bluetooth phone to the client's vehicle.

   Can you pair the Bluetooth phone, and does it operate normally?

   YES -The client's Bluetooth phone is defective or not compatible. •

   NO -Go to No sound when Bluetooth audio is used troubleshooting; **WITH NAVIGATION**, or **WITHOUT NAVIGATION**. •

5. Pair the client's Bluetooth phone to a known-good vehicle.

   Can you pair the Bluetooth phone, and does it operate normally?

   YES -Go to No sound when Bluetooth audio is used troubleshooting; **WITH NAVIGATION**, or **WITHOUT NAVIGATION**. •

   NO -The client's Bluetooth phone is defective or not compatible. •

BLUETOOTH CELL PHONE AUDIO FUNCTION SKIP AND PAUSE/RESUME DO NOT WORK (WITH NAVIGATION)

NOTE:

- **Check the vehicle battery condition first (see BATTERY TEST).**
- **Check the connectors for poor connections or loose terminals.**
- **Check if the audio system functions normally.**
- **Check if it functioned normally at the time of initial pairing.**
- **Some mobile phones do not support the function.**
- **Check online at www.acura.com/handsfreelink or call the HFL call center at 888-528-7876 to make sure the Bluetooth phone is compatible with the HFL system and that there are no known issues.**

1. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
2. Turn on the audio-navigation unit, and check that MENU, SKIP, and TITLE button function normally with the audio-navigation unit.

   Is the audio-navigation unit operation OK?

   YES -Go to step 3.

   NO -Substitute a known-good audio-navigation unit (including the HDD) (see **AUDIO-NAVIGATION UNIT REMOVAL/INSTALLATION**), and recheck. If the symptom/indication goes away, replace the original audio-navigation unit (see **AUDIO-NAVIGATION UNIT REMOVAL/INSTALLATION**). •

3. Check that music plays with the Bluetooth device.

   Is the system normal?

   YES -

   - If you have the client's Bluetooth phone, go to step 5.
   - If you have not the client's Bluetooth phone, go to step 4.

   NO -Go to **No sound when Bluetooth audio is used troubleshooting**. •

4. Pair a known-good cell phone to the client's vehicle.

   Can you pair the Bluetooth phone, and does it operate normally?

   YES -The client's Bluetooth phone is defective or not compatible. •

   NO -Substitute a known-good **HandsFreeLink Control Unit**, and recheck. If the symptom/indication goes away, replace the original **HandsFreeLink Control Unit**. •

5. Pair the client's phone to a known-good vehicle.

   Can you pair the Bluetooth phone, and does it operate normally?

YES -Substitute a known-good **HandsFreeLink Control Unit**, and recheck. If the symptom/indication goes away, replace the original **HandsFreeLink Control Unit**. •

NO -The client's Bluetooth phone is defective or not compatible. •

BLUETOOTH CELL PHONE AUDIO FUNCTION SKIP AND PAUSE/RESUME DO NOT WORK (WITHOUT NAVIGATION)

NOTE:

- **Check the vehicle battery condition first (see BATTERY TEST).**
- **Check the connectors for poor connections or loose terminals.**
- **Check if the audio system functions normally.**
- **Check if it functioned normally at the time of initial pairing.**
- **Some mobile phones do not support the function.**
- **Check online at www.acura.com/handsfreelink or call the HFL call center at 888-528-7876 to make sure the Bluetooth phone is compatible with the HFL system and that there are no known issues.**

1. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
2. Turn on the audio unit, and check that SET UP, SKIP, and TITLE button function normally with the audio unit.

   Is the audio unit operation OK?

   YES -Go to step 3.

   NO -Substitute a known-good audio unit (see **AUDIO UNIT REMOVAL/INSTALLATION**), and recheck. If the symptom/indication goes away, replace the original audio unit (see **AUDIO UNIT REMOVAL/INSTALLATION**). •

3. Check that music plays with the Bluetooth device.

   Is the system normal?

   YES -

   - If you have the client's Bluetooth phone, go to step 5.
   - If you have not the client's Bluetooth phone, go to step 4.

   NO -Go to **No sound when Bluetooth audio is used troubleshooting**. •

4. Pair a known-good cell phone to the client's vehicle.

   Can you pair the Bluetooth phone, and does it operate normally?

   YES -The client's Bluetooth phone is defective or not compatible. •

NO -Substitute a known-good **HandsFreeLink Control Unit**, and recheck. If the symptom/indication goes away, replace the original **HandsFreeLink Control Unit**. •

5. Pair the client's phone to a known-good vehicle.

   Can you pair the Bluetooth phone, and does it operate normally?

   YES -Substitute a known-good **HandsFreeLink Control Unit**, and recheck. If the symptom/indication goes away, replace the original **HandsFreeLink Control Unit**. •

   NO -The client's Bluetooth phone is defective or not compatible. •

HFL SWITCH TEST

1. Remove the audio remote, HFL-navigation voice control switch or the audio remote-HFL switch (see **STEERING WHEEL DISASSEMBLY/REASSEMBLY**).

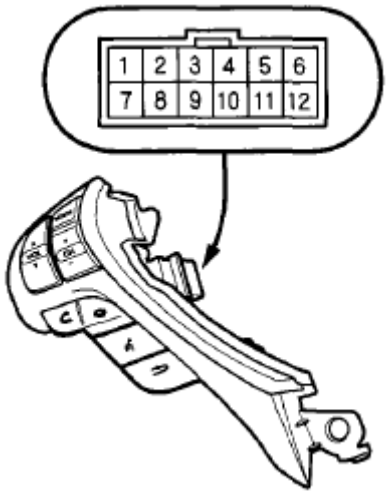


Fig. 82: Identifying Audio Remote, HFL-Navigation Voice Control Switch
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Measure the resistance between terminals No. 9 and No. 11 in each switch position according to the table.

HFL Switch (with navigation)

Position	Resistance
No button pressed	About 10 kohms
PICK-UP button pressed	About 47 ohms
HANG-UP button pressed	About 222 ohms

HFL Switch (without navigation)

Position	Resistance
No button pressed	About 1 kohms
HFL TALK button pressed	About 45 ohms
HFL BACK button pressed	About 185 ohms

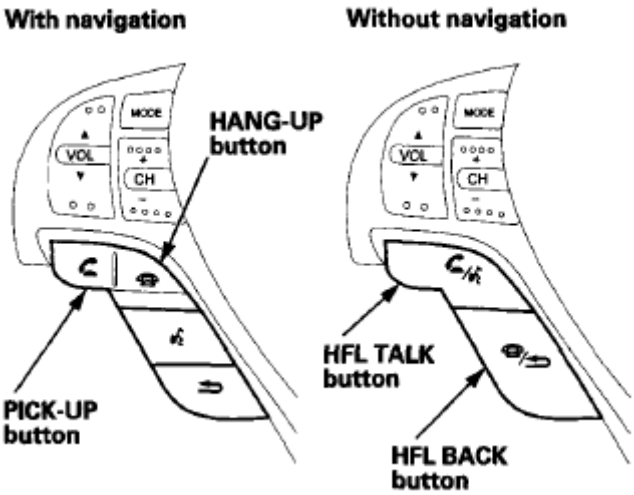


Fig. 83: Identifying HFL Switch
Courtesy of AMERICAN HONDA MOTOR CO., INC.

HANDSFREELINK CONTROL UNIT REMOVAL/INSTALLATION

NOTE: Tell the client they need to write down all phone numbers as there is no way to transfer the information in the original HandsFreeLink Control Unit to a new HandsFreeLink Control Unit.

1. Remove the center console panel (see **CENTER CONSOLE PANEL REMOVAL/INSTALLATION**).
2. Disconnect the connector (A).

NOTE: With keyless access: Disconnect the LF antenna 2P connector (B).

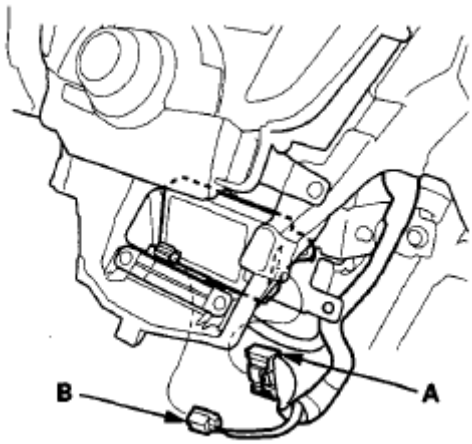


Fig. 84: Identifying Connector And LF Antenna 2P Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Remove the screws (A) and HandsFreeLink Control Unit(B).

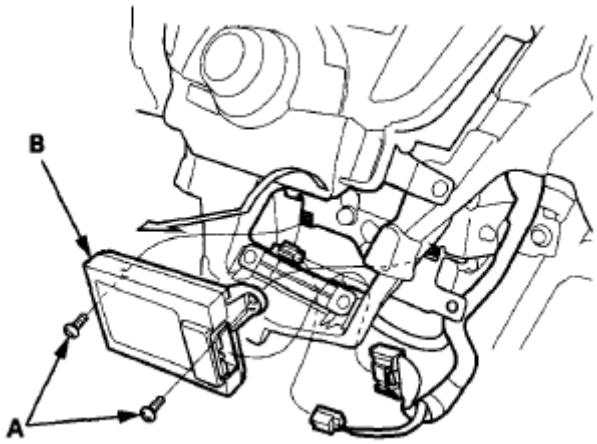


Fig. 85: Identifying Screws And HandsFreeLink Control Unit
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Install the HandsFreeLink Control Unit in the reverse order of removal.

   After replacing the HandsFreeLink Control Unit, tell the client:

   - They need to pair their phones to the system.
   - They need to set up their system preferences.

HFL MICROPHONE REMOVAL/INSTALLATION

WITHOUT NAVIGATION

1. Remove the roof console (see **HEADLINER REMOVAL/INSTALLATION**).

2. Remove the screws and bracket (A).

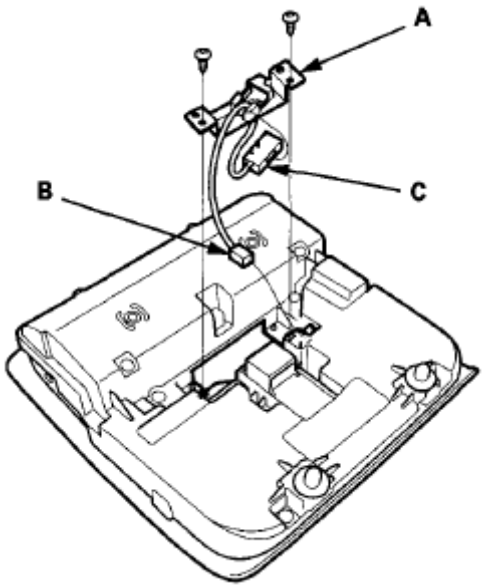


Fig. 86: Identifying Screws And Bracket, Connector And HFL Microphone
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Disconnect the connector (B) and remove the HFL microphone (C).
4. Install the HFL microphone in the reverse order of removal.

CONTROL UNIT INPUT TEST

WITH NAVIGATION

1. Remove the **HandsFreeLink Control Unit**.
2. Inspect the connector (A) and socket (B) terminals for a good pinfit to be sure they are all making good contact.
   - If the terminals are bent, loose or corroded, repair them as necessary, and recheck the system.
   - If the terminals look OK, go to step 3.

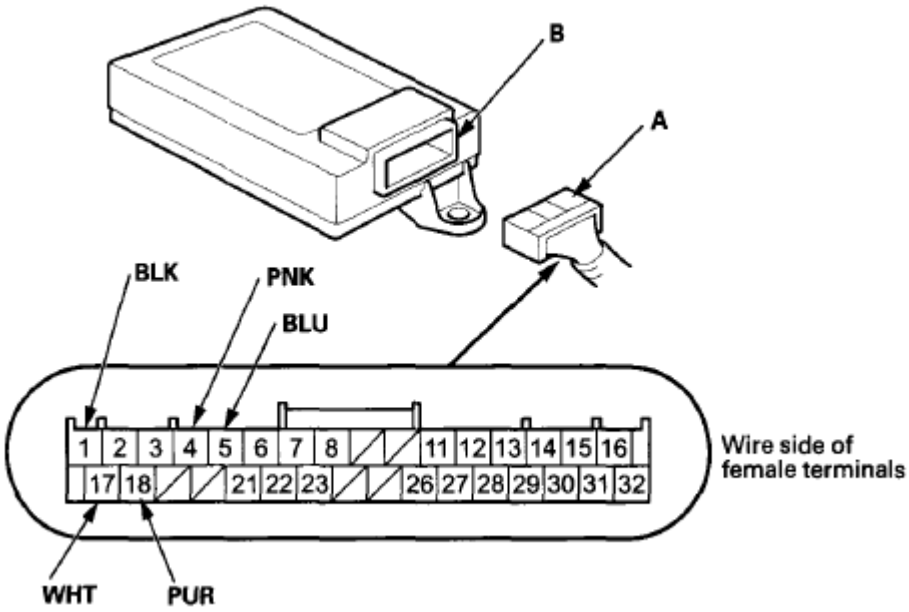


Fig. 87: Identifying Connector And Socket Terminals
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Reconnect the connector, and make these input tests at the connector.
   - If any test indicates a problem, find and correct the cause, then recheck the system.
   - If all the input tests prove OK, go to step 4.

Cavity	Wire Color	Test Condition	Test: Desired Result	Possible Cause if Desired Result is not Obtained
1	BLK	Ignition switch in ACCESSORY (I) or ON (II), or the engine start/stop button to ACC mode or ON mode	Measure the voltage to body ground: There should be less than 0.2 V.	• Poor ground (G501) • An open or high resistance in the wire
17	WHT	Under all conditions	Measure the voltage to body ground: There should be battery voltage.	• Blown No. 15 (10 A) fuse in the under-hood fuse/relay box • An open in the wire
18	PUR	Ignition switch in ACCESSORY (I) or ON (II), or the engine start/stop button to ACC mode or ON mode	Measure the voltage to body ground: There should be battery voltage.	• Blown No. 18 (7.5 A) fuse in the driver's under-dash fuse/relay box • An open in the wire

4. Disconnect the 32P connector again, and make this input test at the connector. If the input test proves OK, the HandsFreeLink Control Unit is faulty, replace it.

Cavity	Wire Color	Test Condition	Test: Desired Result	Possible Cause if Desired Result is not Obtained
4	PNK	Audio-navigation unit connector C(14P) disconnected	Check for continuity between terminal No. 4 and audio-navigation unit connector C (14P) terminal No. 9 : There should be continuity.	An open in the wire
		Disconnect these items: • Audio-navigation unit connector C (14P) • Navigation display unit 36P connector • AcuraLink control unit connector A (32P)(1) • XM receiver connector A (32P)(2)	Check for continuity to body ground: There should be no continuity.	Short to body ground in the wire
			Check for continuity between terminal No. 4 and No. 3: There should be no continuity.	Short in the wire
			Check for continuity between terminal No. 4 and No. 5: There should be no continuity.	Short in the wire
5	BLU	Audio-navigation unit connector C (14P) disconnected	Check for continuity between terminal No. 5 and audio-navigation unit connector C (14P) terminal No. 10: There should be continuity.	An open in the wire
		Disconnect these items: • Audio-navigation unit connector C (14P) • Navigation display unit 36P connector • AcuraLink control unit connector A (32P)(1) • XM receiver connector A (32P)(2)	Check for continuity to body ground: There should be no continuity.	Short to body ground in the wire
			Check for continuity between terminal No. 5 and No. 3: There should be no continuity.	Short in the wire

(1) USA models

(2) Canada models

WITHOUT NAVIGATION

1. Remove the **HandsFreeLink Control Unit**.
2. Inspect the connector (A) and socket (B) terminals for a good pinfit to be sure they are all making good contact.

- If the terminals are bent, loose or corroded, repair them as necessary, and recheck the system.
- If the terminals look OK, go to step 3.

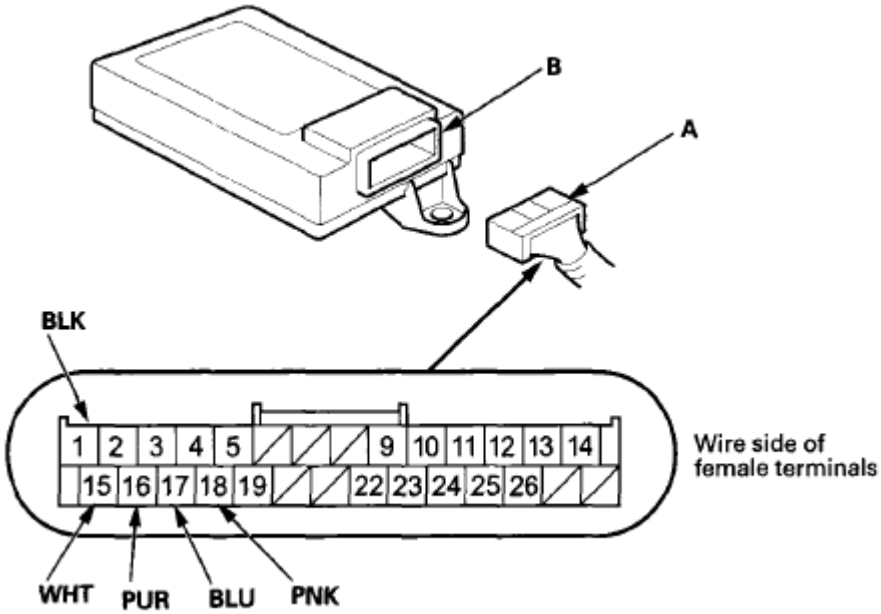


Fig. 88: Identifying Connector And Socket Terminals
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Reconnect the connector, and make these input tests at the connector.
   - If any test indicates a problem, find and correct the cause, then recheck the system.
   - If all the input tests prove OK, go to step 4.

Cavity	Wire Color	Test Condition	Test: Desired Result	Possible Cause if Desired Result is not Obtained
1	BLK	Ignition switch in ACCESSORY (I) or ON (II), or the engine start/stop button to ACC mode or ON mode	Measure the voltage to body ground: There should be less than 0.2 V.	• Poor ground (G501) • An open or high resistance in the wire
15	WHT	Under all conditions	Measure the voltage to body ground: There should be battery voltage.	• Blown No. 15 (10 A) fuse in the under-hood fuse/relay box • An open in the wire
16	PUR	Ignition switch in ACCESSORY (I) or ON (II), or the engine start/stop button to ACC mode or ON mode	Measure the voltage to body ground: There should be battery voltage.	• Blown No. 18 (7.5 A) fuse in the driver's under-dash fuse/relay box • An open in the wire

4. Disconnect the 28P connector again, and make this input test at the connector.
   - If the test indicates a problem, find and correct the cause and check for B-CAN related DTCs, then recheck the system.
   - If the input test proves OK, the HandsFreeLink Control Unit is faulty, replace it.

Cavity	Wire Color	Test Condition	Test: Desired Result	Possible Cause if Desired Result is not Obtained
17	BLU	Passenger's under-dash fuse/relay box connector D (28P) disconnected	Check for continuity between terminal No. 17 and passenger's under-dash fuse/relay box connector D (28P) terminal No. 8: There should be continuity.	An open in the wire
18	PNK	Passenger's under-dash fuse/relay box connector D (28P) disconnected	Check for continuity between terminal No. 18 and passenger's under-dash fuse/relay box connector D(28P) terminal No. 7: There should be continuity.	An open in the wire

2012 ACCESSORIES & EQUIPMENT

HomeLink Remote Control System - TL

CIRCUIT DIAGRAM

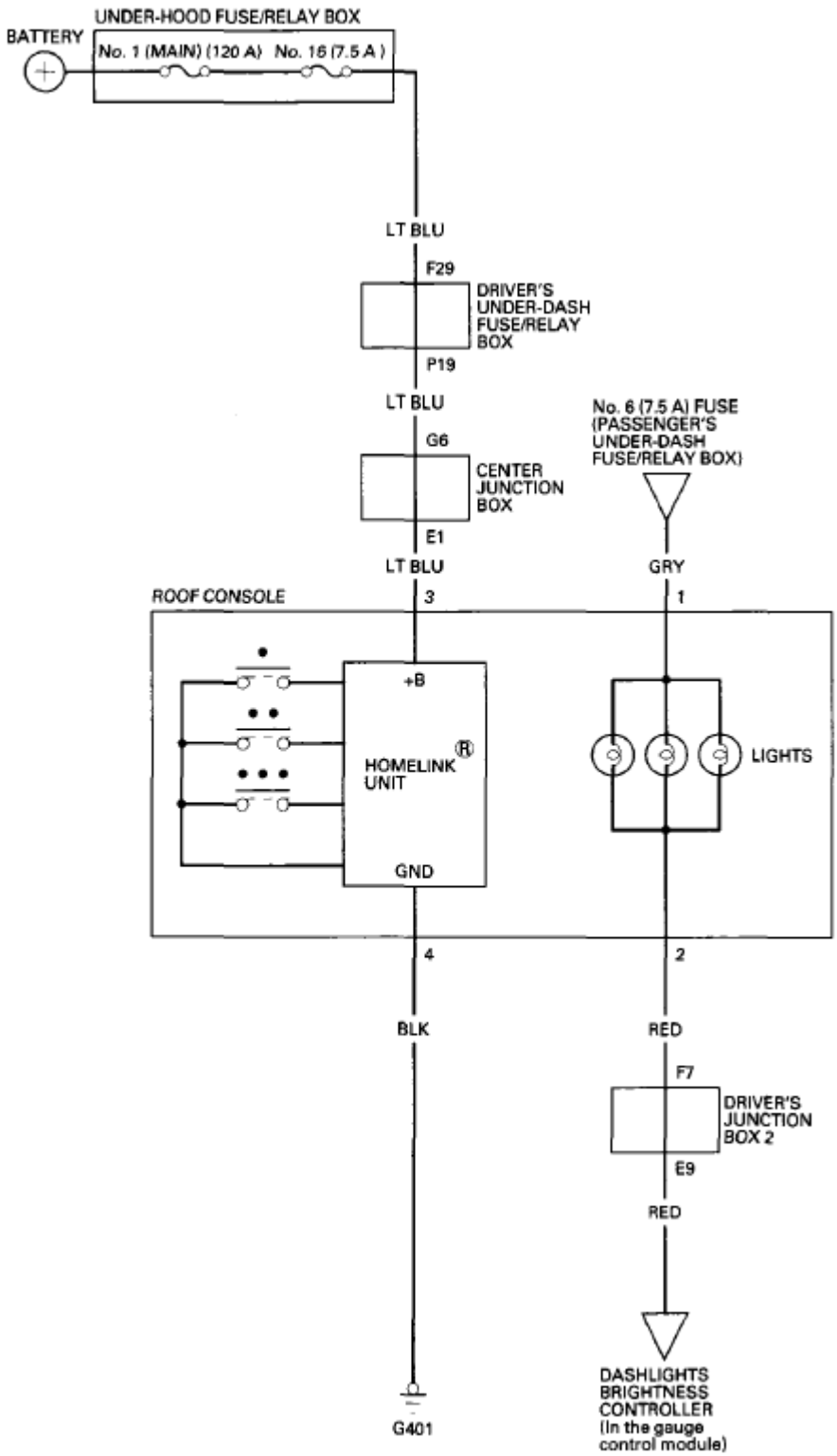


Fig. 1: HomeLink Remote Control System Circuit Wiring Diagram
Courtesy of AMERICAN HONDA MOTOR CO., INC.

TEST

NOTE:

- **Explain to the client that garage door remote transmitters come in two types: Fixed code and rolling code. Each type has its own programming method, and each method is covered in the owner's manual. If the client has concerns about the HomeLink unit, have the client contact the HomeLink assistance desk at 800-355-3515.**
- **If HomeLink will not open the client's garage, do the following procedures.**

1. Press any of the buttons on the HomeLink unit.
   - If the red indicator comes on, go to step 4.
   - If the red indicator does not come on, go to step 2.
2. Remove the roof console (see **ROOF CONSOLE INPUT TEST/REPLACEMENT**).
3. Measure the voltage between terminals No. 3 (+) and No. 4 (-) of the roof console 20P connector. There should be battery voltage.
   - If the voltage is not as specified, check for these problems:
     - Blown No. 16 (7.5 A) fuse in the under-hood fuse/relay box.
     - Faulty under-dash fuse/relay box.
     - An open or high resistance in the wire.
     - Poor ground (G401).
   - If the voltage is specified, go to step 4.

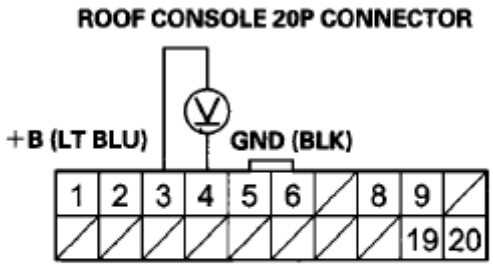


Fig. 2: Measuring Voltage Between Roof Console 20P Connector Terminal No. 3 And 4 With Connector End View
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Make sure the genie remote transmitter (test remote) has fresh batteries.
5. Clear any previously learned codes by pressing and holding the two outside buttons (A) on the HomeLink unit (B) for until (about 20 seconds) the red indicator (C) on the unit starts blinking, release the buttons.

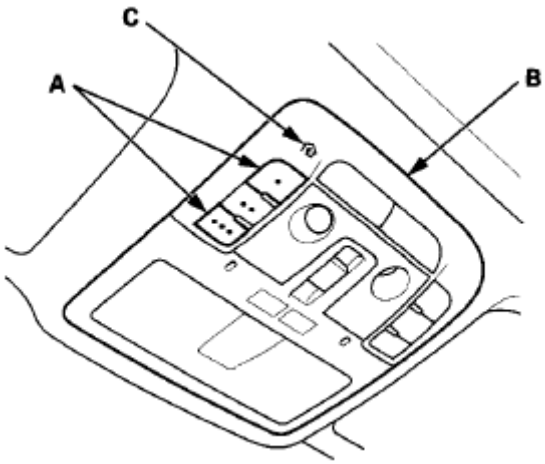


Fig. 3: Identifying Outside Buttons, Homelink Unit And Red Indicator
Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Point the test remote transmitter (A) straight up exactly 101.6 mm (4.0 in) away from the HomeLink unit (B).

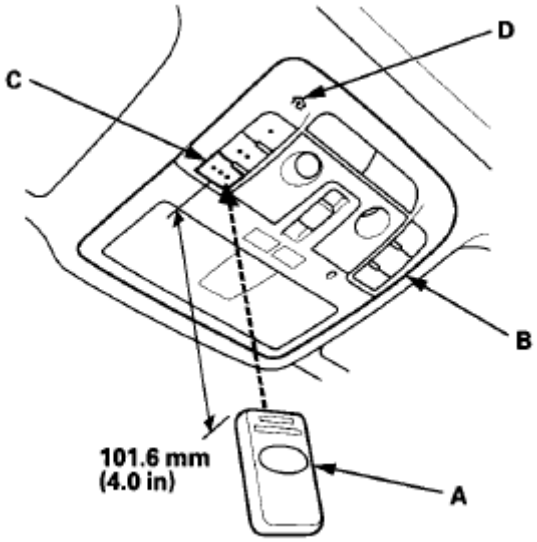


Fig. 4: Identifying Remote Transistor And Homelink Unit
Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Press and hold the test transmitter button and one of the HomeLink unit buttons (C) at the same time.
8. Wait for about 20 seconds while watching the red indicator (D) on the HomeLink unit.
   - If the red indicator starts out blinking slowly and then blinks faster, the unit is OK. Release the buttons, then clear the learned code (see step 1). For more information, go online to www.homelink.com.
   - If the red indicator does not blink, the HomeLink unit is faulty; replace the roof console (see **ROOF CONSOLE INPUT TEST/REPLACEMENT**).

2012 ACCESSORIES & EQUIPMENT

Horns - TL

COMPONENT LOCATION INDEX

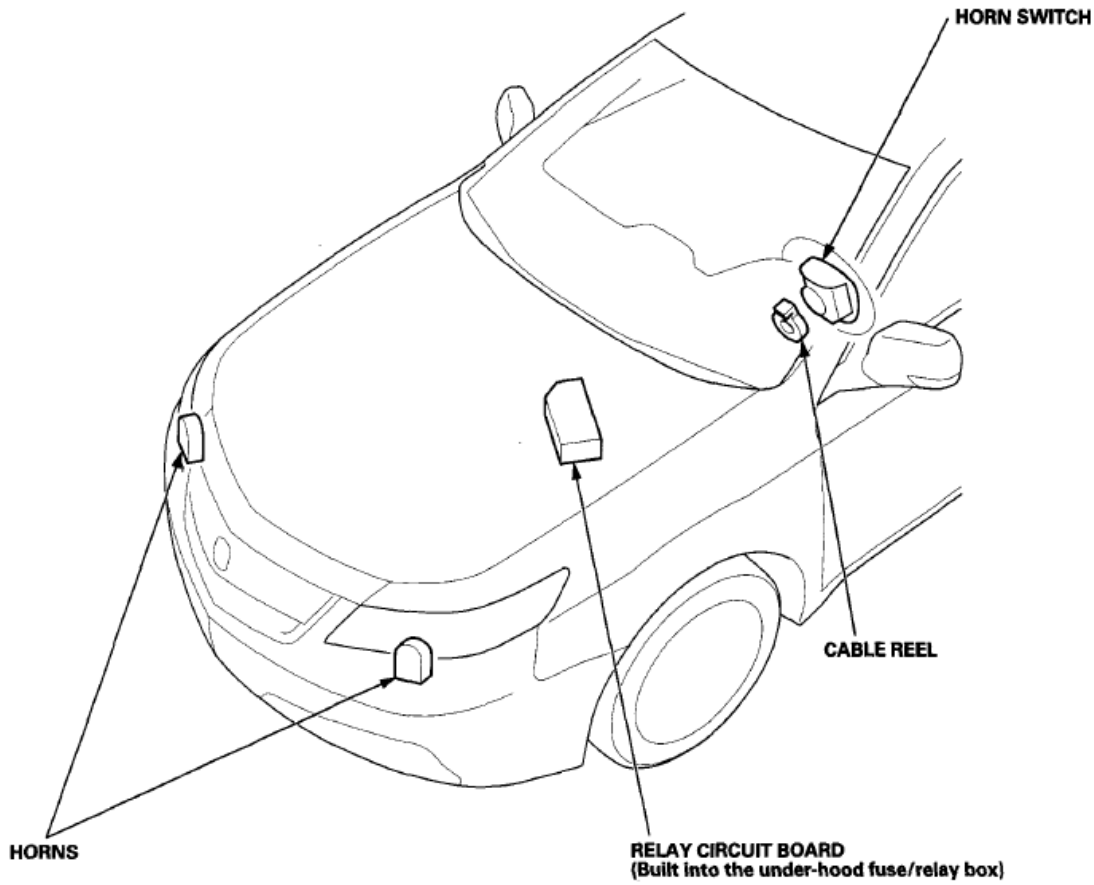


Fig. 1: Horns Components Location
Courtesy of AMERICAN HONDA MOTOR CO., INC.

CIRCUIT DIAGRAM

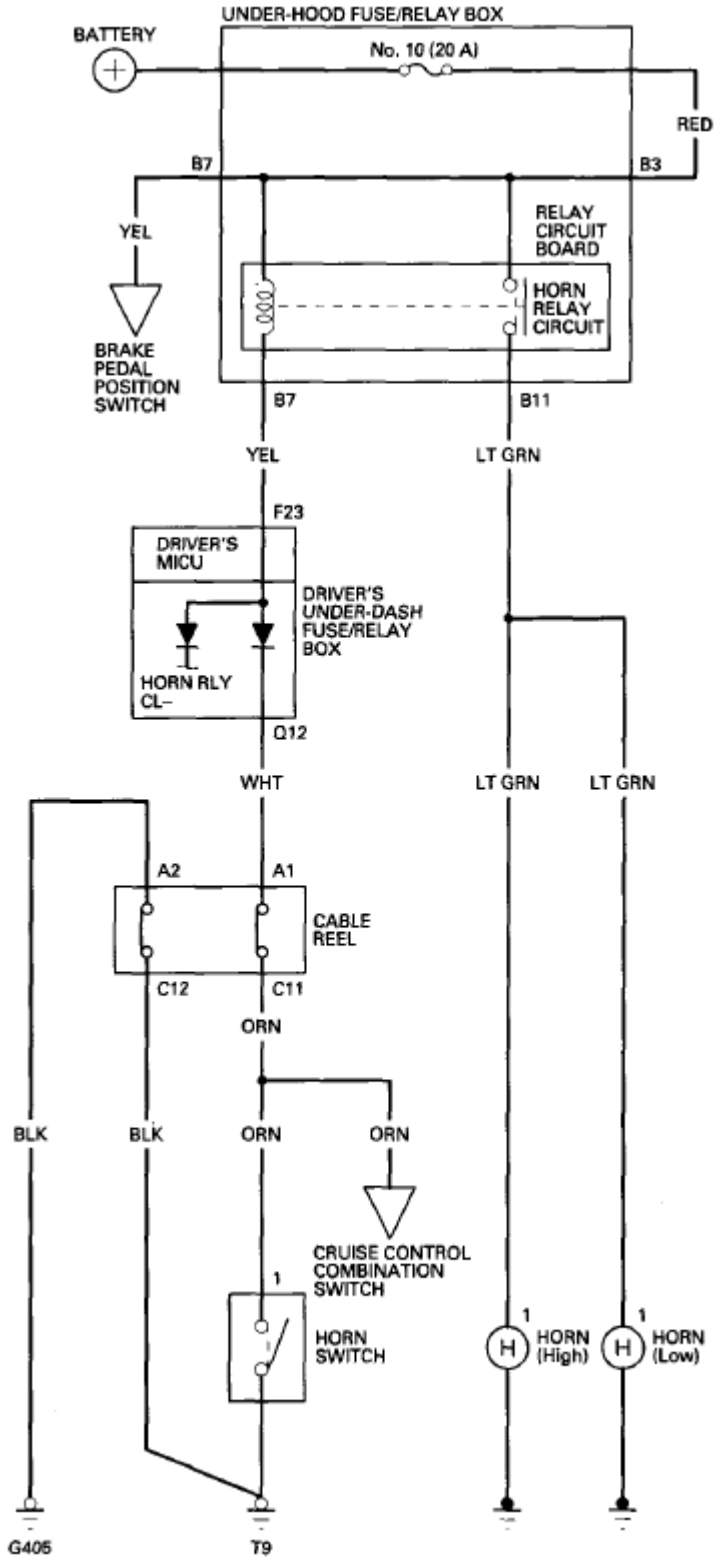


Fig. 2: Horns Circuit Diagram
Courtesy of AMERICAN HONDA MOTOR CO., INC.

HORN TEST/REPLACEMENT

1. Remove the front bumper (see **FRONT BUMPER REMOVAL/INSTALLATION**).
2. Disconnect the 1P connector (A) from each horn (B), then remove the bolt.

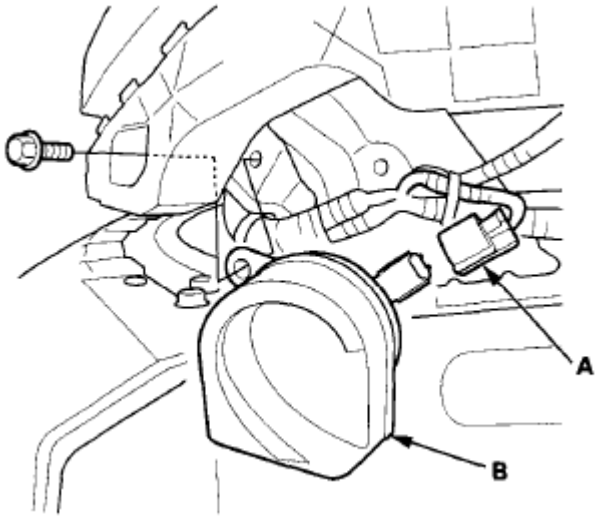


Fig. 3: Identifying 1P Connector And Horn
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Test the horn by momentarily connecting battery power to the terminal (A) and grounding the bracket (B). The horn should sound.

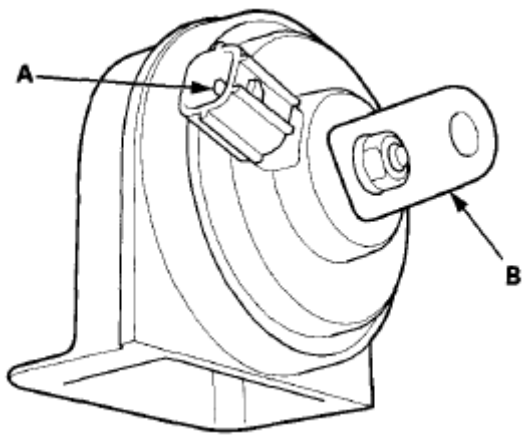


Fig. 4: Identifying Terminal And Grounding Bracket
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. If it fails to sound, replace it.

HORN SWITCH TEST

NOTE:

- **SRS components are located in this area. Review the SRS component locations (see COMPONENT LOCATION INDEX), and precautions and procedures (see PRECAUTIONS AND PROCEDURES) before doing repairs or servicing.**
- **Check for a blown No. 10(20A) fuse in the under-hood fuse/relay box. If it is blown, check for a faulty horn relay (built in the relay circuit board) (see POWER RELAY TEST).**

1. Remove the steering column covers (see **SIDE DEFOGGER VENT TRIM REMOVAL/INSTALLATION**).
2. Disconnect cable reel connector A (20P) (A) from the cable reel (B).

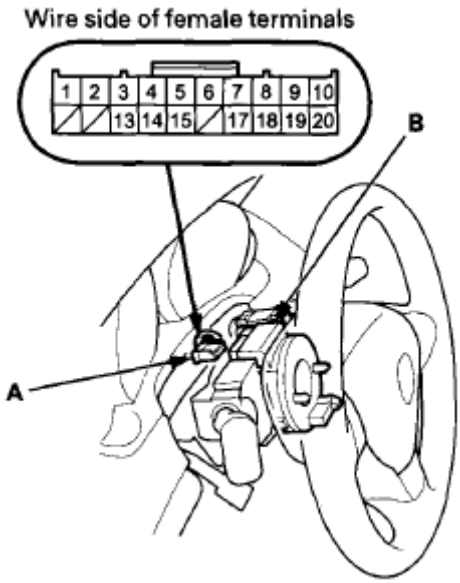


Fig. 5: Cable Reel With A (20P) Connector End View
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Connect cable reel connector A (20P) terminals No. 1 and No. 2 with a jumper wire. The horns should sound.
   - If the horns sound, go to step 7.
   - If the horns do not sound, go to step 4.
4. Remove the jumper wire from cable reel connector A (20P).
5. Check for continuity between cable reel connector A (20P) terminal No. 2 and body ground. There should continuity.
   - If there is continuity, go to step 6.
   - If there is no continuity, repair an open or high resistance in the wire, or poor ground (G405).
6. Measure the voltage between cable reel connector A (20P) terminal No. 1 and body ground. There should be battery voltage.
   - If there is battery voltage, replace the horns.

- If there is no voltage, repair an open in the wire, or faulty driver's MICU; replace the driver's under-dash fuse/relay box (see **DRIVER'S UNDER-DASH FUSE/RELAY BOX (MICU) REMOVAL AND INSTALLATION**).

7. Reconnect cable reel connector A (20P) to the cable reel, then remove the driver's airbag assembly (see **DRIVER'S AIRBAG REPLACEMENT**).
8. Connect cable reel connector C (20P) terminals No. 11 and No. 12 with a jumper wire. The horns should sound.
   - If the horns sound, go to step 9.
   - If the horns do not sound, repair open in the wire, or replace the cable reel (see **CABLE REEL REPLACEMENT**).
9. Disconnect the cable reel connector C (20P) (A).

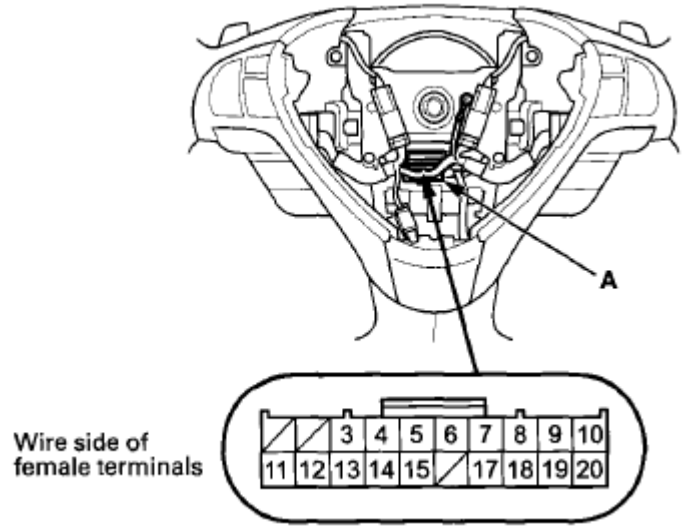


Fig. 6: Cable Reel C (20P) Connector End View
Courtesy of AMERICAN HONDA MOTOR CO., INC.

10. Check for continuity between terminal (T9) and cable reel connector C (20P) terminal No. 12. There should be continuity.
    - If there is continuity, go to step 11
    - If there is no continuity.
      - An open in the wire, replace the cable reel subharness.
      - Poor terminal (T9).

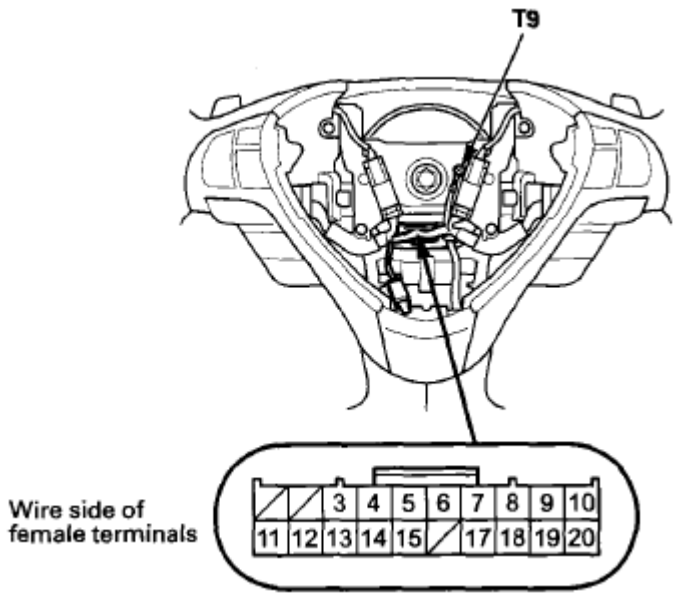


Fig. 7: Checking Cable Reel Connector C (20P) Terminal And Terminal (T9) For Continuity
Courtesy of AMERICAN HONDA MOTOR CO., INC.

11. Check for continuity between cable reel connector C (20P) terminal No. 11 and horn switch positive terminal 1P. There should be continuity.

- If there is continuity, check or adjust the installation of the driver's airbag assembly and the horn switch plate or, replace the driver's airbag assembly.
- If there is no continuity, repair open in the wire, or replace the cable reel subharness.

2012 ACCESSORIES & EQUIPMENT

Ignition Switch - TL

COMPONENT LOCATION INDEX

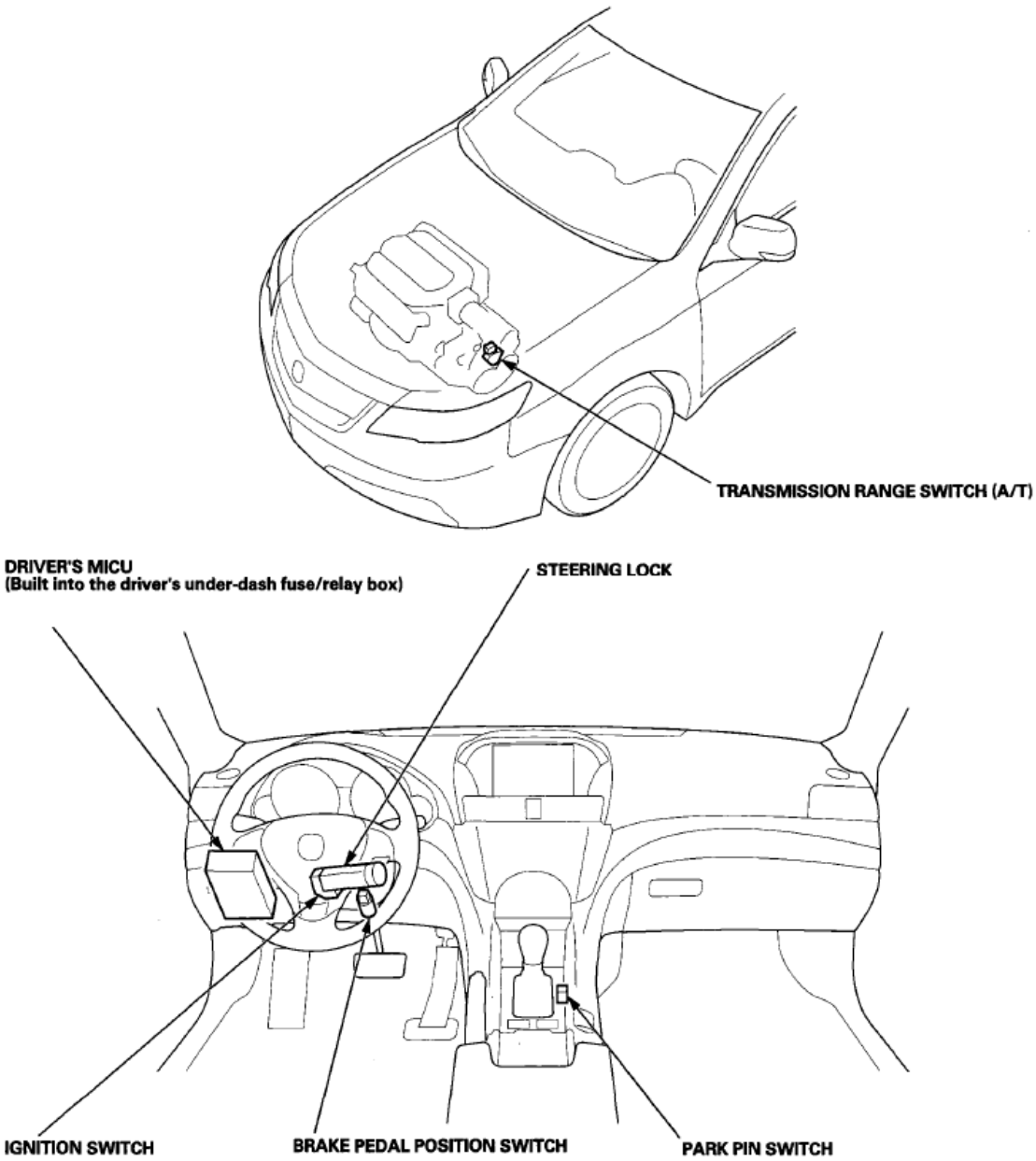


Fig. 1: Ignition Switch Components Location
Courtesy of AMERICAN HONDA MOTOR CO., INC.

CIRCUIT DIAGRAM - WITHOUT KEYLESS ACCESS SYSTEM

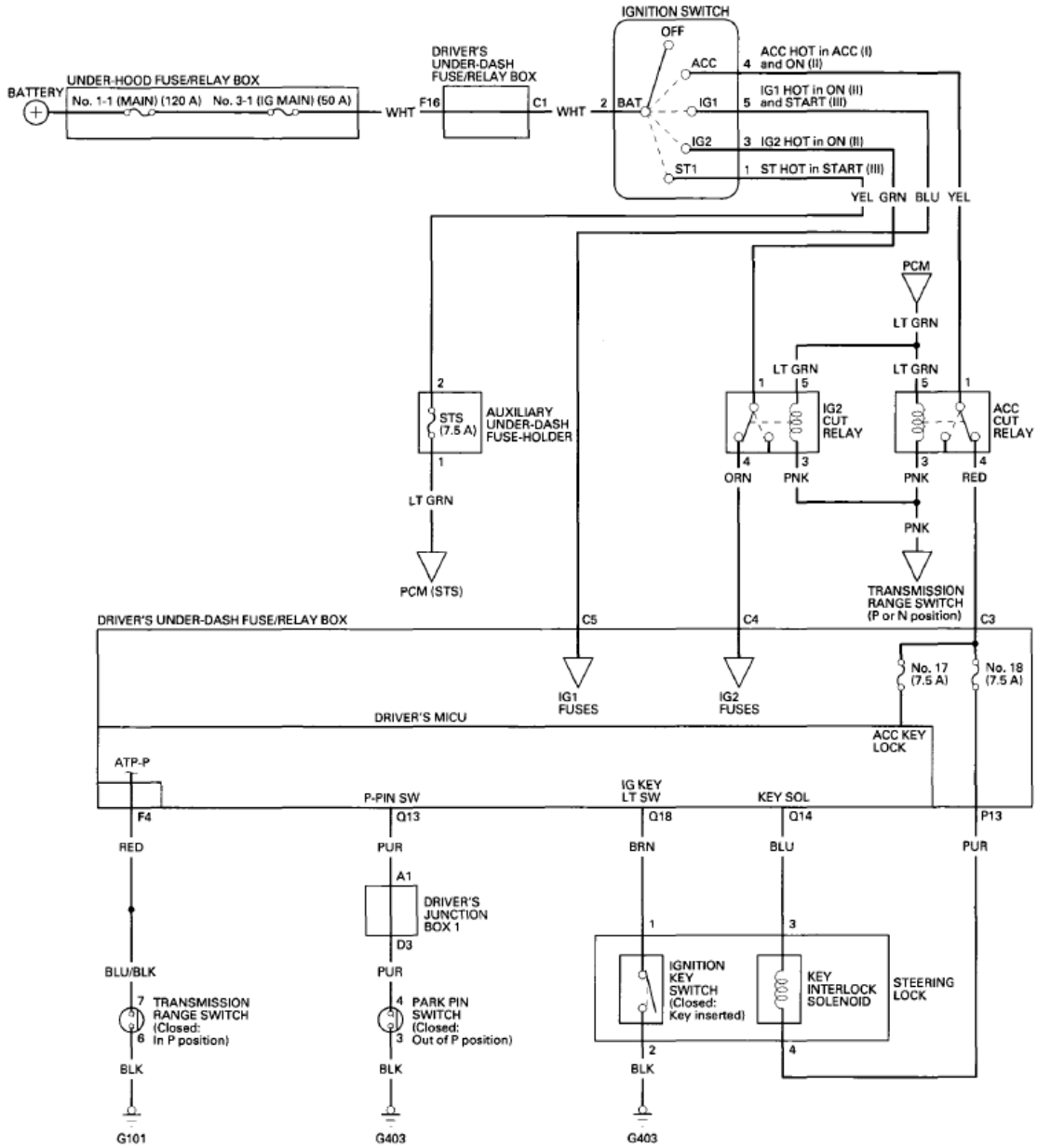


Fig. 2: Ignition Switch Circuit Diagram (w/o Keyless Access System)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

KEY INTERLOCK SYSTEM CIRCUIT TROUBLESHOOTING

NOTE: SRS components are located in this area. Review the SRS component locations (see COMPONENT LOCATION INDEX), and precautions and procedures (see PRECAUTIONS AND PROCEDURES) before doing repairs or servicing.

1. Check the A/T system DTCs with the HDS.

   Are DTCs P0705 and/or P0706 indicated?

YES -Go to DTC troubleshooting P0705 (see **DTC TROUBLESHOOTING**), P0706 (see **DTC P0706: OPEN IN TRANSMISSION RANGE SWITCH CIRCUIT**).

NO -Go to step 2.

2. Move the shift lever to P and set the parking brake.
3. Remove the column covers (see **SIDE DEFOGGER VENT TRIM REMOVAL/INSTALLATION**).
4. Disconnect the steering lock 6P connector.
5. Turn the ignition switch to ACCESSORY (I).
6. Check if the ignition switch can be turned to LOCK (0).

   Can the ignition switch be turned to LOCK (0)?

   YES -Go to step 7.

   NO -Replace the ignition key cylinder/steering lock (see **STEERING LOCK REPLACEMENT**).

7. Check the No. 18 (7.5 A) fuse in the driver's under-dash fuse/relay box.

   Is the fuse OK?

   YES -Go to step 8.

   NO -Replace the fuse. If the fuse blows again, repair a short to ground in the No. 18 (7.5 A) fuse circuit.

8. Make sure the ignition switch is turned to LOCK (0).
9. Disconnect driver's under-dash fuse/relay box connector Q (20P).
10. Check for continuity between steering lock 6P connector terminal No. 3 and body ground.

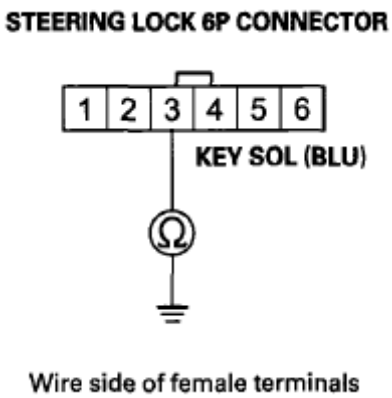


Fig. 3: Checking Continuity Between Steering Lock 6P Connector Terminal No. 3 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES -Repair a short to body ground in the wire between the key interlock solenoid and the driver's MICU.

NO -Go to step 11.

11. Check for continuity between driver's under-dash fuse/relay box connector Q (20P) terminal No. 14 and steering lock 6P connector terminal No. 3.

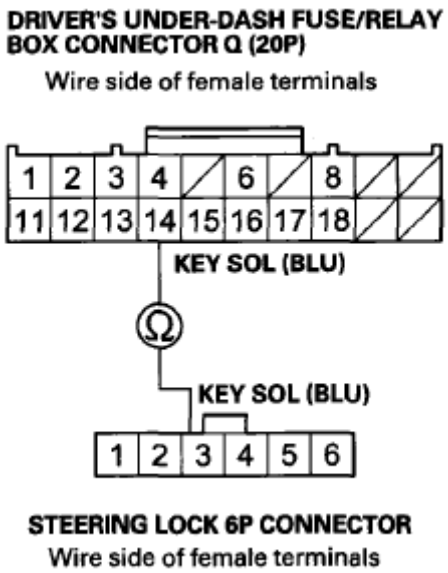


Fig. 4: Checking Continuity Between Driver's Under-Dash Fuse/Relay Box Connector Q (20P) Terminal No. 14 And Steering Lock 6P Connector Terminal No. 3
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES -Go to step 12.

NO -Repair an open or high resistance in the wire between the key interlock solenoid and the driver's MICU.

12. Move the shift lever to P.
13. Remove the center console (see **CENTER CONSOLE PANEL REMOVAL/INSTALLATION**).
14. Disconnect the shift lever 12P connector.
15. Do the park pin switch test (see **PARK PIN SWITCH TEST**).

Is the switch OK?

YES -Go to step 16.

NO -Check the park pin switch installation. If the switch installation is OK, the park pin switch is faulty; replace the park pin switch (see **PARK PIN SWITCH TEST**), and retest.

16. Check for continuity between A/T shift lock solenoid/park pin switch 4P connector terminal No. 4 and body ground.

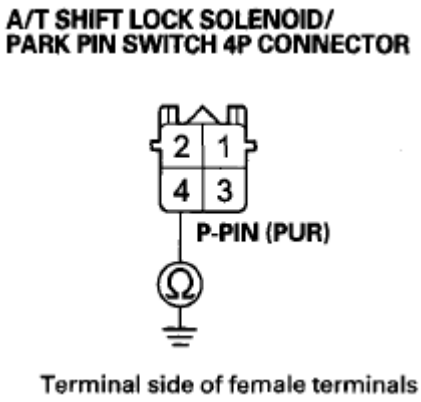


Fig. 5: Checking Continuity Between A/T Shift Lock Solenoid/Park Pin Switch 4P Connector Terminal No. 4 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES -Repair a short to body ground in the wire between A/T shift lock solenoid/park pin switch 4P connector terminal No. 4 and the driver's MICU.

NO -Go to step 17.

17. Check for continuity between A/T shift lock solenoid/park pin switch 4P connector terminal No. 3 and body ground.

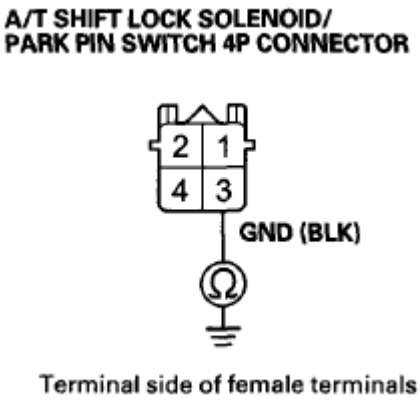


Fig. 6: Checking Continuity Between A/T Shift Lock Solenoid/Park Pin Switch 4P Connector Terminal No. 3 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES -Go to step 18.

NO -Repair an open or high resistance in the between A/T shift lock solenoid/park pin switch and body ground (G403).

18. Check the A/T system Data List with the HDS.

    Is the transmission range switch indicated ON when the shift lever is in P, and is the transmission range switch indicated OFF when the shift lever is shifted to any position other than P?

    YES -Go to step 20.

    NO -Go to step 19.

19. Do the transmission range switch test (see **TRANSMISSION RANGE SWITCH TEST**).

    Is the switch OK?

    YES -Go to step 20.

    NO -Check the transmission range switch installation. If the switch installation is OK, replace the transmission range switch (see **TRANSMISSION RANGE SWITCH TEST**), and retest.

20. Disconnect the transmission range switch connector.
21. Check for continuity between driver's under-dash fuse/relay box connector F (33P) terminal No. 4 and transmission range switch connector terminal No. 7.

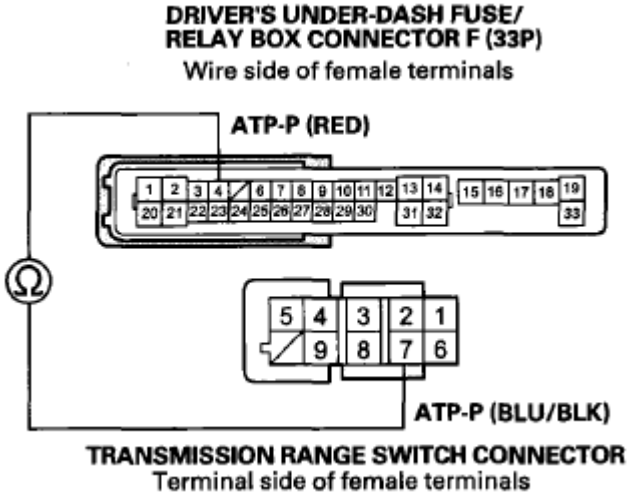


Fig. 7: Checking Continuity Between Driver's Under-Dash Fuse/Relay Box Connector F (33P) Terminal No. 4 And Transmission Range Switch Connector Terminal No. 7
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES -Go to step 22.

NO -Repair an open or high resistance in the wire between the driver's under-dash fuse/relay box and the transmission range switch.

22. Check for continuity between transmission range switch connector terminal No. 6 and body ground.

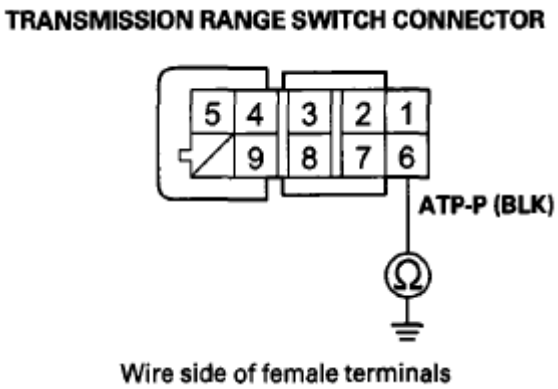


Fig. 8: Checking Continuity Between Transmission Range Switch Connector Terminal No. 6 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES -Faulty driver's MICU; replace the driver's under-dash fuse/relay box (see **DRIVER'S UNDER-DASH FUSE/RELAY BOX (MICU) REMOVAL AND INSTALLATION**).

NO -Repair an open or high resistance in the ground wire or poor ground (G101).

KEY INTERLOCK SOLENOID TEST

NOTE: SRS components are located in this area. Review the SRS component locations (see COMPONENT LOCATION INDEX), and precautions and procedures (see PRECAUTIONS AND PROCEDURES) before doing repairs or servicing.

1. Remove the steering column covers (see **SIDE DEFOGGER VENT TRIM REMOVAL/INSTALLATION**).
2. Disconnect the steering lock 6P connector (A).

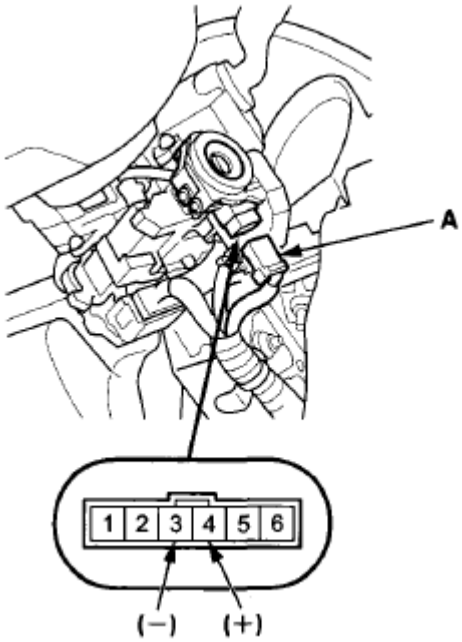


Fig. 9: Steering Lock 6P Connector End View
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Insert the ignition key in the key cylinder, then turn the ignition key to ACCESSORY (I).
4. Connect the positive battery terminal to steering lock assembly connector terminal No. 4, and connect the negative battery terminal to terminal No. 3. Check that the ignition key cannot be turned to LOCK (0). Release the battery terminals, and check that the key can be turned to the LOCK (0) position and removed from the cylinder.
5. If the key interlock solenoid works improperly, replace the ignition key cylinder/steering lock (see **STEERING LOCK REPLACEMENT**).

PARK PIN SWITCH TEST

1. Remove the center console panel (see **CENTER CONSOLE PANEL REMOVAL/INSTALLATION**).
2. Disconnect the A/T shift lock solenoid/park pin switch 4P connector (A) from the park pin switch (B).

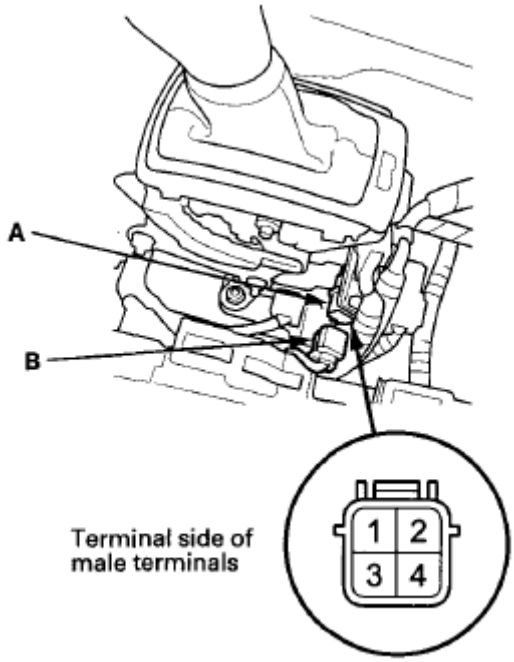


Fig. 10: Identifying A/T Shift Lock Solenoid/Park Pin Switch 4P Connector And Park Pin Switch
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Check for continuity between terminals No. 3 and No. 4.
   - There should be continuity when the shift lever button is pressed or the shift lever is moved out of P.
   - There should be no continuity when the shift the shift lever is moved to P and the shift lever button is released.
4. If the continuity is not as specified, check the shift cable adjustment (see **SHIFT CABLE ADJUSTMENT**). If the cable adjustment is OK, go to step 5.

   If the park pin switch fails the test, replace the park pin switch (see **PARK PIN SWITCH REPLACEMENT**).

5. Install the parts in the reverse order of removal (see **CENTER CONSOLE PANEL REMOVAL/INSTALLATION**).

IGNITION SWITCH TEST

NOTE: SRS components are located in this area. Review the SRS component locations (see COMPONENT LOCATION INDEX), and precautions and procedures (see PRECAUTIONS AND PROCEDURES) before doing repairs or servicing.

1. Do the battery terminal disconnection procedure (see **BATTERY TERMINAL DISCONNECTION AND RECONNECTION**).
2. Remove the steering column covers (see **SIDE DEFOGGER VENT TRIM REMOVAL/INSTALLATION**).

3. Disconnect the 5P connector (A) from the ignition switch (B).

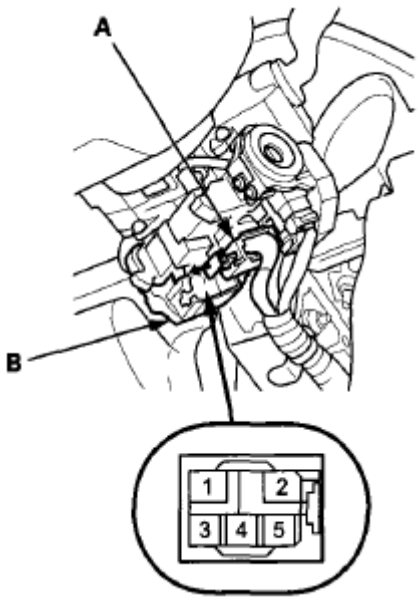


Fig. 11: Identifying Ignition Switch & 5P Connector End View
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Check for continuity between the terminals in each switch position according to the table.

Terminal / Position	4 (ACC)	2 (BAT)	5 (IG1)	3 (IG2)	1 (ST1)
0 (LOCK)					
I (ACC)	○——	——○			
II (ON)	○——	——○	——○	——○	
III (START)		——○	——○		——○

Fig. 12: Continuity Reference Chart
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. If the continuity is not as specified, replace the ignition switch (see **IGNITION SWITCH REPLACEMENT**).
6. Do the battery terminal reconnection procedure (see **BATTERY TERMINAL DISCONNECTION AND RECONNECTION**).

IGNITION SWITCH REPLACEMENT

NOTE: SRS components are located in this area. Review the SRS component locations (see COMPONENT LOCATION INDEX), and precautions and procedures (see

PRECAUTIONS AND PROCEDURES) before doing repairs or servicing.

1. Do the battery terminal disconnection procedure (see **BATTERY TERMINAL DISCONNECTION AND RECONNECTION**).
2. Remove the steering column covers (see **SIDE DEFOGGER VENT TRIM REMOVAL/INSTALLATION**).
3. Disconnect the 5P connector (A) from the ignition switch (B).

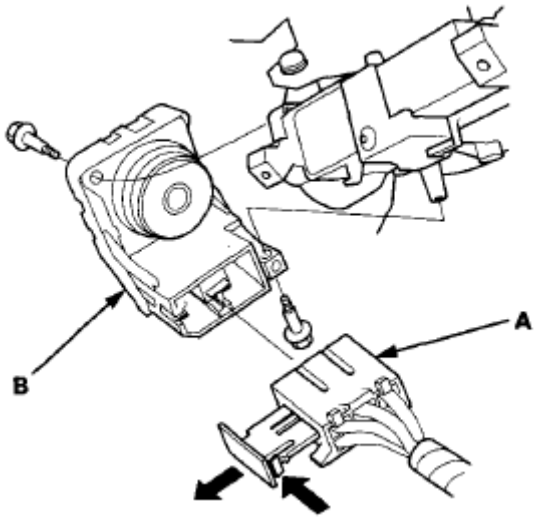


Fig. 13: Identifying 5P Connector & Ignition Switch
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Remove the two screws and the ignition switch.
5. Install the parts in the reverse order of removal.
6. Do the battery terminal reconnection procedure (see **BATTERY TERMINAL DISCONNECTION AND RECONNECTION**).

2012 ACCESSORIES & EQUIPMENT

Immobilizer System - TL

COMPONENT LOCATION INDEX

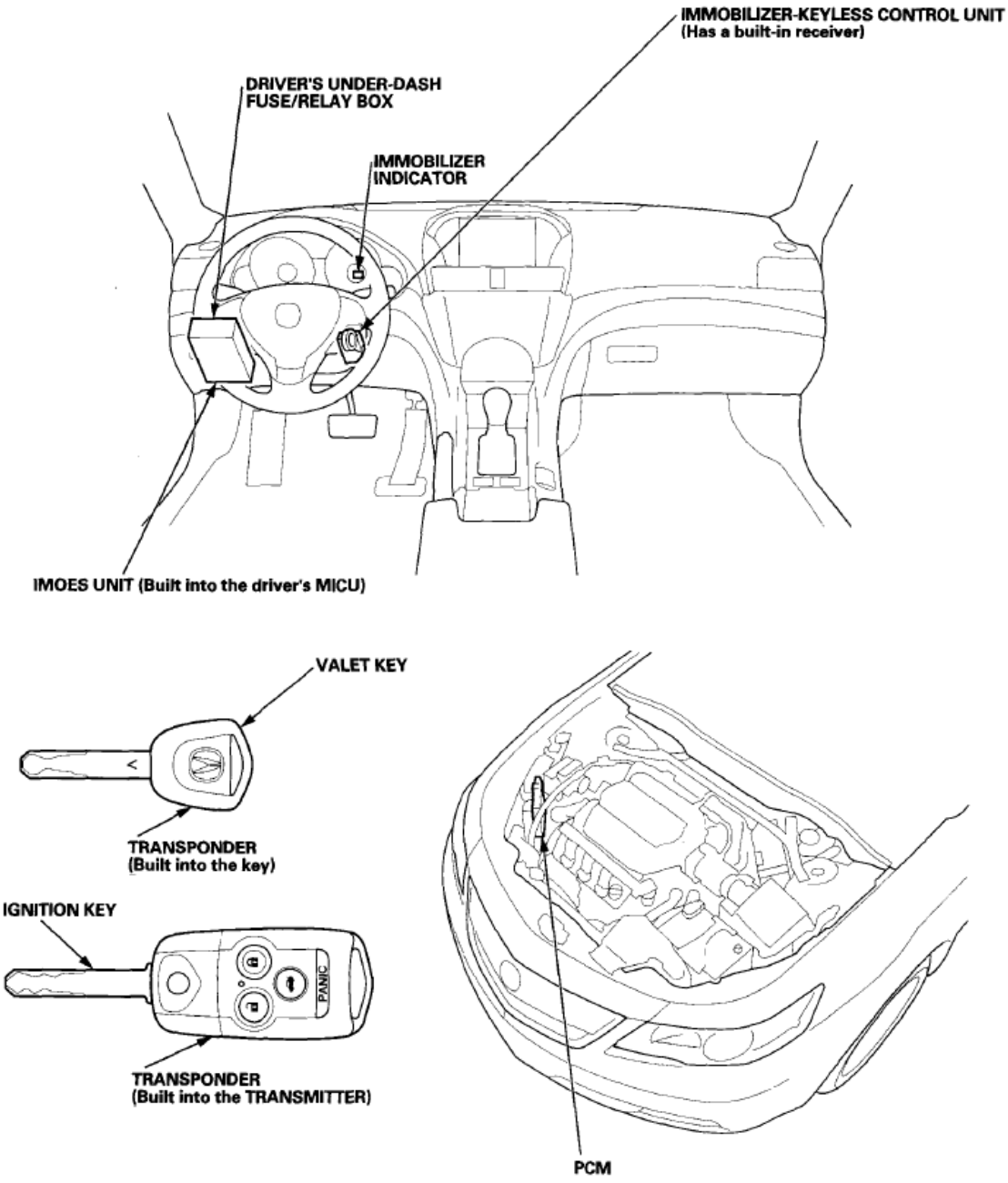


Fig. 1: Immobilizer System Components Location
Courtesy of AMERICAN HONDA MOTOR CO., INC.

SYSTEM DESCRIPTION

The vehicle is equipped with a Type VII (GEN 5) immobilizer system that disables the vehicle unless a programmed ignition key is used.

This system consists of a transponder built into the ignition key, an immobilizer-keyless control unit (has a built-in receiver), the driver's MICU (has a built-in imoes unit), an immobilizer indicator, and the PCM.

When the immobilizer key (programmed by the HDS) is inserted into the ignition switch and turned to ON (II), the immobilizer-keyless control unit sends power to the transponder. The transponder then sends a coded signal back to the immobilizer-keyless control unit, which then sends a coded signal to the PCM and the driver's MICU (imoes unit). The PCM and driver's MICU (imoes unit) identify this coded signal, then voltage is supplied to the fuel pump.

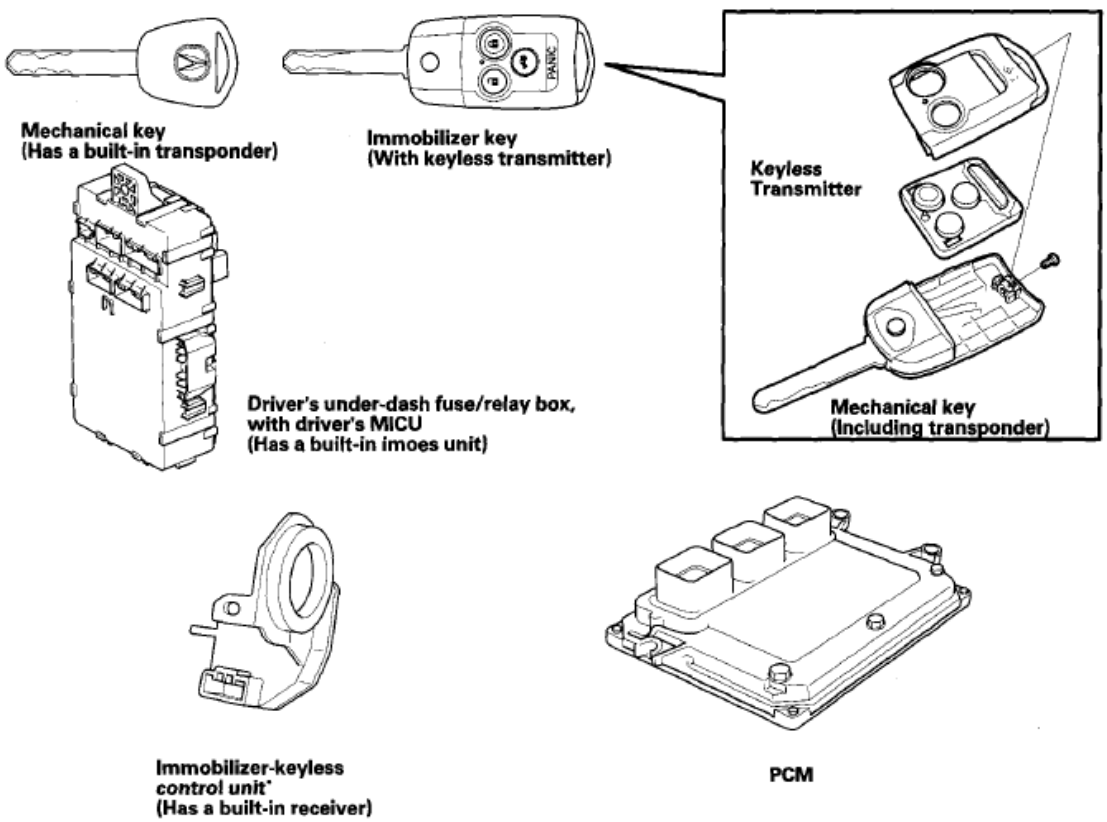


Fig. 2: Identifying Immobilizer System Components
Courtesy of AMERICAN HONDA MOTOR CO., INC.

***: The immobilizer-keyless control unit can store up to 6 immobilizer keys per vehicle; the original 2 keys that came with the vehicle, and up to four more keys can be added.**

If the wrong key is used or the code was not received or recognized, the indicator flashes once, then it blinks until the ignition switch is turned to LOCK (0). When the ignition switch is turned to the LOCK (0) position, the indicator blinks ten times to signal that unit has reset correctly, then the indicator goes off.

CIRCUIT DIAGRAM

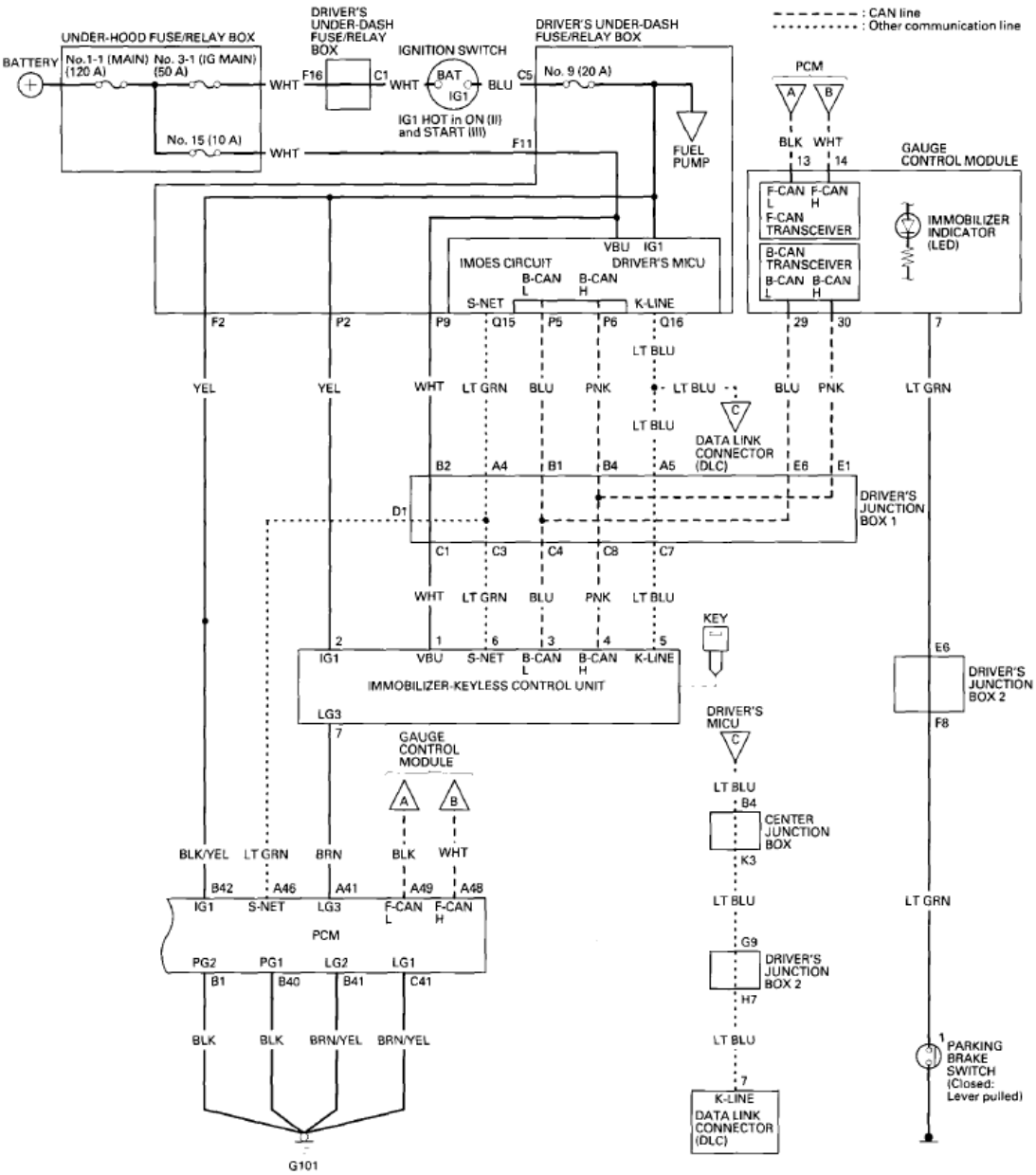


Fig. 3: Immobilizer System Circuit Diagram
Courtesy of AMERICAN HONDA MOTOR CO., INC.

DTC TROUBLESHOOTING

DTC U0155: IMMOBILIZER-KEYLESS CONTROL UNIT LOST COMMUNICATION WITH GAUGE CONTROL MODULE

NOTE: If you are troubleshooting multiple DTCs, be sure to follow the instructions in B-CAN System Diagnosis Test Mode A (see TROUBLESHOOTING - B-CAN SYSTEM DIAGNOSIS TEST MODE A).

1. Clear the DTCs with the HDS.
2. Turn the ignition switch to LOCK (0) and then back to ON (II), or press the engine start/stop button to select the OFF mode and then the ON mode.
3. Wait for at least 6 seconds.
4. Check for DTCs with the HDS.

   Is DTC U0155 indicated?

   YES -Go to step 5.

   NO -Intermittent failure, the system is OK at this time. Check for loose or poor connections between the immobilizer-keyless control unit and the gauge control module.

5. From the BODY ELECTRICAL SYSTEM SELECT menu, select B-CAN CONTROL UNITS INFORMATION, and then select CHECK CONNECTED CONTROL UNITS.

   Is the gauge control module detected?

   YES -Go to step 9.

   NO -Go to step 6.

6. Measure the voltage between body ground and gauge control module 32P connector terminals No. 15 and No. 16 individually.

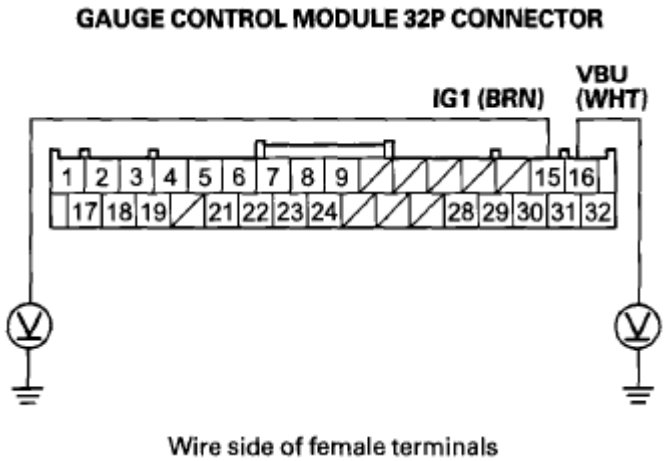


Fig. 4: Measuring Voltage Between Body Ground And Gauge Control Module 32P Connector Terminals No. 15 And No. 16
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there battery voltage?

YES -Go to step 8.

NO -Go to step 7.

7. Check the No. 15 (10 A) fuse in the under-hood fuse/relay box and the No. 12 (7.5 A) fuse in the driver's under-dash fuse/relay box.

   Are the fuses OK?

   YES -Repair an open or high resistance in the No. 15 (10 A) and/or No. 12 (7.5 A) fuse circuit.

   NO -Replace the fuse(s). If the fuse blows again, repair a short to ground in the No. 15 (10 A) and/or No. 12 (7.5 A) fuse circuit.

8. Measure the voltage between body ground and gauge control module 32P connector terminals No. 1 and No. 17 individually.

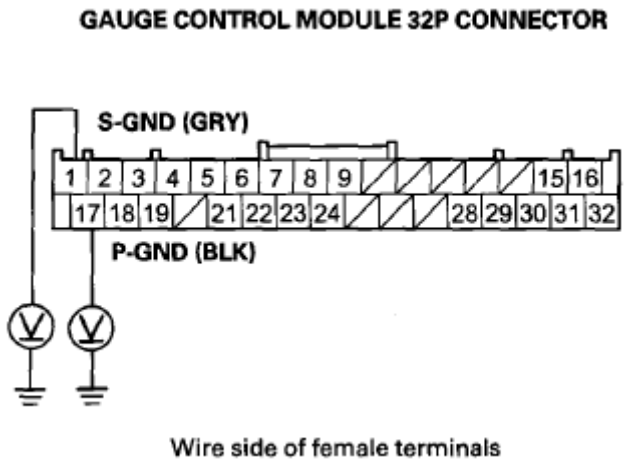


Fig. 5: Measuring Voltage Between Body Ground And Gauge Control Module 32P Connector Terminals No. 1 And No. 17
Courtesy of AMERICAN HONDA MOTOR CO., INC.

   Is there less than 0.2 V?

   YES -Go to step 9.

   NO -Repair an open or high resistance in the ground wire or poor ground (G401) and/or (G402).

9. Turn the ignition switch to LOCK (0).
10. Disconnect the immobilizer-keyless control unit 7P connector.
11. Disconnect the gauge control module 32P connector.
12. Check for continuity between gauge control module 32P connector terminals No. 29 and No. 30 and

immobilizer-keyless control unit 7P connector terminals No. 3 and No. 4 respectively.

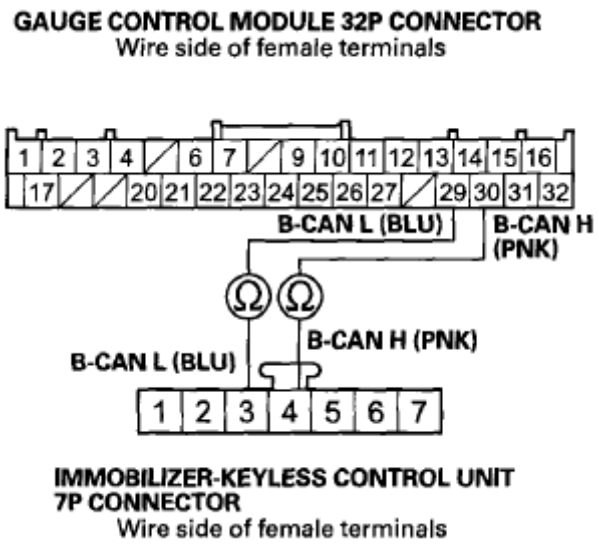


Fig. 6: Checking Continuity Between Gauge Control Module 32P Connector Terminals No. 29 And No. 30
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES -Replace the gauge control module (see **GAUGE CONTROL MODULE REPLACEMENT**).

NO -Repair an open or poor connection in the B-CAN wire between the immobilizer-keyless control unit and the gauge control module.

DTC U0199: IMMOBILIZER-KEYLESS CONTROL UNIT LOST COMMUNICATION WITH DOOR MULTIPLEX CONTROL UNIT

NOTE: If you are troubleshooting multiple DTCs, be sure to follow the instructions in B-CAN System Diagnosis Test Mode A (see TROUBLESHOOTING - B-CAN SYSTEM DIAGNOSIS TEST MODE A).

1. Clear the DTCs with the HDS.
2. Turn the ignition switch to LOCK (0), and then back to ON (II).
3. Wait for at least 6 seconds.
4. Check for DTCs with the HDS.

Is DTC U0199 indicated?

YES -Go to step 5.

NO -Intermittent failure, the system is OK at this time. Check for loose or poor connections between the

immobilizer-keyless control unit and the door multiplex control unit.

5. From the BODY ELECTRICAL SYSTEM SELECT menu, select B-CAN CONTROL UNITS INFORMATION, and then select CHECK CONNECTED CONTROL UNITS.

   Is the power window unit detected?

   YES -Go to step 9.

   NO -Go to step 6.

6. Measure the voltage between body ground and power window master switch 37P connector terminal No. 13.

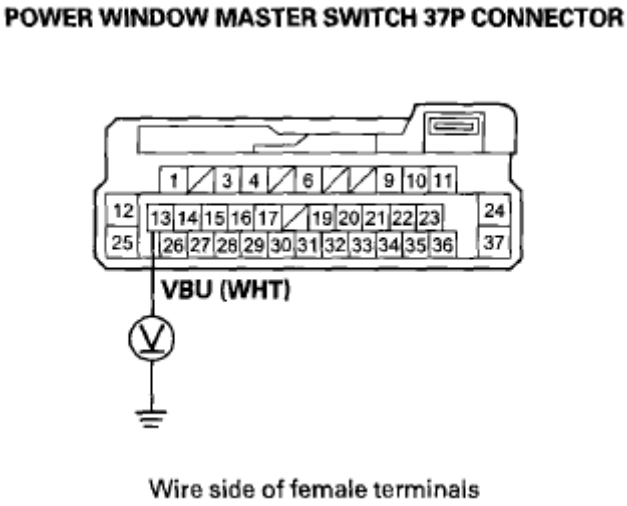


Fig. 7: Measuring Voltage Between Body Ground And Power Window Master Switch 37P Connector Terminal No. 13
Courtesy of AMERICAN HONDA MOTOR CO., INC.

   Is there battery voltage?

   YES -Go to step 8.

   NO -Go to step 7.

7. Check the No. 15 (10 A) fuse in the under-hood fuse/relay box.

   Is the fuse OK?

   YES -Repair an open or high resistance in the No. 15 (10 A) fuse circuit.

   NO -Replace the fuse. If the fuse blows again, repair a short to ground in the No. 15 (10 A) fuse circuit.

8. Measure the voltage between body ground and power window master switch 37P connector terminals No. 32 and No. 37 individually.

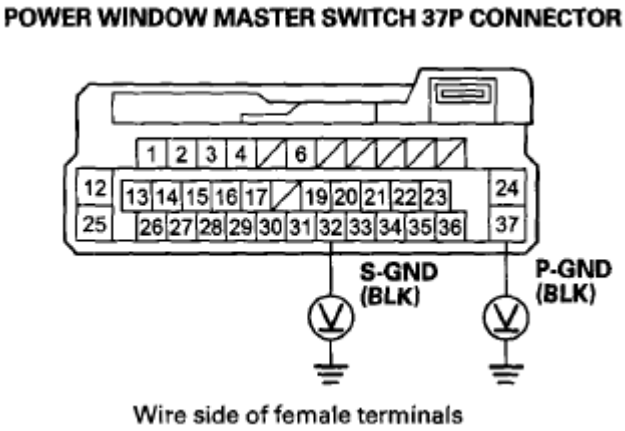


Fig. 8: Measuring Voltage Between Body Ground And Power Window Master Switch 37P Connector Terminals No. 32 And No. 37
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there less than 0.2 V?

YES -Go to step 9.

NO -Repair an open or high resistance in the ground wire or poor ground (G401) and/or (G402).

9. Turn the ignition switch to LOCK (0).
10. Disconnect the immobilizer-keyless control unit 7P connector.
11. Disconnect the power window master switch 37P connector.
12. Check for continuity between power window master switch 37P connector terminals No. 33 and No. 35 and immobilizer-keyless control unit 7P connector terminals No. 3 and No. 4 respectively.

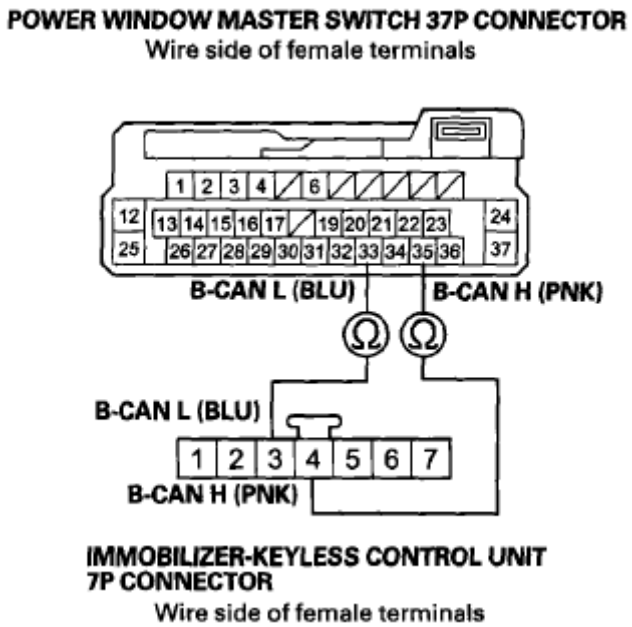


Fig. 9: Checking Continuity Between Power Window Master Switch 37P Connector Terminals No. 33 And No. 35
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES -Replace the power window master switch (see **REAR POWER WINDOW SWITCH TEST**).

NO -Repair an open or poor connection in the B-CAN wire between the immobilizer-keyless control unit and the door multiplex control unit.

DTC U1282: IMMOBILIZER-KEYLESS CONTROL UNIT LOST COMMUNICATION WITH DRIVER'S MICU

NOTE: If you are troubleshooting multiple DTCs, be sure to follow the instructions in B-CAN System Diagnosis Test Mode A (see TROUBLESHOOTING - B-CAN SYSTEM DIAGNOSIS TEST MODE A).

1. Clear the DTCs with the HDS.
2. Turn the ignition switch to LOCK (0), and then back to ON (II).
3. Wait for at least 6 seconds.
4. Check for DTCs with the HDS.

Is DTC U1282 indicated?

YES -Go to the driver's MICU input test, and do all power, ground, and communication input tests (see **MICU INPUT TEST**). If the tests prove OK, replace the driver's under-dash fuse/relay box (see **DRIVER'S UNDER-DASH FUSE/RELAY BOX (MICU) REMOVAL AND INSTALLATION**). If

the DTC is still present, replace the immobilizer-keyless control unit (see **IMMOBILIZER-KEYLESS CONTROL UNIT REPLACEMENT**).

NO -Intermittent failure, the system is OK at this time. Check for loose or poor connections between the immobilizer-keyless control unit and the driver's MICU.

SYMPTOM TROUBLESHOOTING INFORMATION

GENERAL CHECK BEFORE TROUBLESHOOTING

Before troubleshooting the immobilizer system, check the following general items and solve any if applicable:

- The battery is low; charge the battery fully, then troubleshoot the immobilizer system.
- The ignition key is not a genuine Acura part; use an Acura-approved key blank, register the key, then troubleshoot the immobilizer system.
- A key ring, keys, or a key case is used; remove the key from it, and troubleshoot the immobilizer system with the key only.
- An aftermarket electrical part is installed; remove it, then troubleshoot the immobilizer system.

SYMPTOM TROUBLESHOOTING USING THE IMMOBILIZER INDICATOR LIGHTING PATTERN

The pattern of the immobilizer indicator can help troubleshoot the condition of the immobilizer system. Here are descriptions of the four possible patterns:

Normal operation

If the immobilizer code is identified, the immobilizer indicator quickly flashes once when the ignition switch is turned to ON (II).

The immobilizer indicator does not come on when the ignition switch is turned to LOCK (0).

Immobilizer code is not identified

If the immobilizer code is not identified, the immobilizer indicator quickly flashes once, then blinks until the ignition switch is turned to LOCK (0). When the ignition switch is turned to LOCK (0), the indicator blinks ten times, then goes OFF to show the system is correctly reset.

The state of the immobilizer key registration and the S-NET line can be checked by doing a SYSTEM CHECK (see **SYSTEM CHECK**) and STATUS LOG CHECK (see **STATUS LOG**) with the HDS.

Immobilizer indicator does not come on

If the immobilizer indicator does not come on after turning the ignition switch to ON (II), there is an open or short in the F-CAN lines between the PCM and the gauge control module. Watch the malfunction indicator lamp (MIL). If the MIL stays on, go to the PGM-FI system troubleshooting (see **GENERAL TROUBLESHOOTING INFORMATION**).

Immobilizer indicator does not go off

If the immobilizer indicator does not go off after turning the ignition switch to ON (II), do the gauge control module self-diagnostic function (see **SELF-DIAGNOSTIC FUNCTION**). If the indicator drive circuit is OK, do the SYSTEM CHECK and STATUS LOG CHECK with the HDS.

SYMPTOM TROUBLESHOOTING USING MALFUNCTIONING CIRCUIT FUNCTIONS

If a malfunction occurs in the immobilizer circuit, use the table to cross-reference the malfunction criteria to the line(s) that should be checked in the table:

Function / Line Error		Immobilizer Indicator	Engine Start	Key Registration	Tester Communication	Keyless Operation
Terminal No. (Wire color)	Cause of Malfunction					
1 (WHT)	VBU line open or short	Comes on, then goes off.	Possible	Impossible	Possible	Impossible
2 (YEL)	IG1 line open or short	Blinking	Impossible	Impossible	Impossible	Possible
3 (BLU)	B-CAN L line open or short	Comes on, then goes off.	Possible	Possible	Immobilizer: Possible Keyless: Impossible	Impossible
4 (PNK)	B-CAN H line open or short	Comes on, then goes off.	Possible	Possible	Immobilizer: Possible Keyless: Impossible	Impossible
5 (LT BLU)	K-LINE line open or short	Comes on, then goes off.	Possible	Impossible	Impossible	Possible
6 (LT GRN)	S-NET line open or short	Blinking	Impossible	Impossible	Impossible	Possible
7 (BRN)	GND (LG3) line open	Blinking	Impossible	Impossible	Impossible	Impossible

Fig. 10: Identifying Malfunctioning Circuit Functions Table
Courtesy of AMERICAN HONDA MOTOR CO., INC.

SYSTEM CHECK AND STATUS LOG

NOTE: The HDS can be used to:

- **Check the state of the immobilizer key registration and the S-NET line by doing a SYSTEM CHECK.**
- **Check the number of times the immobilizer-keyless control unit did not permit the engine to run by checking the STATUS LOG (see STATUS LOG).**

1. Connect the HDS to the data link connector (DLC), then turn the ignition switch to ON (II) and follow the prompts to the SYSTEM SELECTION MENU.

NOTE: If the HDS does not communicate with the vehicle, go to the DLC circuit

troubleshooting (see DLC CIRCUIT TROUBLESHOOTING).

2. At SYSTEM SELECTION MENU, enter IMMOBI, then select IMMOBILIZER SETUP.
3. Do the SYSTEM CHECK. If there is a system check number, do the troubleshooting for the item indicated (see **SYSTEM CHECK**).
4. Check the STATUS LOG using the HDS (see **STATUS LOG**). Troubleshoot the line with the highest counts first. If all the lines are 0 (zero), the problem may not be caused by the immobilizer system; check for ignition or fuel problems.

NOTE: Once repaired, clear the status log by removing the No. 15 (10 A) fuse in the under-hood fuse/relay box or disconnecting the battery.

SYMPTOM TROUBLESHOOTING INDEX

1. Troubleshoot the immobilizer system in the order shown:

Order of Priority	Symptom	Possible cause
1	Immobilizer indicator blinks.	Symptom troubleshooting (see **IMMOBILIZER INDICATOR BLINKS**).
2	Engine does not start with the immobilizer key.	Symptom troubleshooting (see **ENGINE DOES NOT START WITH THE IMMOBILIZER KEY**).
3	Immobilizer indicator does not come on.	Check the MIL indication. If the MIL comes on, go to the PGM-FI System MIL circuit troubleshooting (see **MIL CIRCUIT TROUBLESHOOTING**).
4	Immobilizer indicator does not go off.	Symptom troubleshooting (see **IMMOBILIZER INDICATOR DOES NOT GO OFF**).

SYMPTOM TROUBLESHOOTING

IMMOBILIZER INDICATOR BLINKS

NOTE: Before troubleshooting, check the items listed in General Check before Troubleshooting (see GENERAL CHECK BEFORE TROUBLESHOOTING).

1. Turn the ignition switch to LOCK (0).
2. Connect the HDS, then turn the ignition switch to ON (II).
3. From the SYSTEM SELECTION MENU, enter IMMOBI, select IMMOBILIZER SETUP, then select SYSTEM CHECK, NUMBER OF KEYS, and STATUS LOG.
4. Select the SYSTEM CHECK.

Is SYSTEM CHECK indicated?

YES -Troubleshoot the immobilizer system according to the result of the SYSTEM CHECK (see

SYSTEM CHECK) and STATUS LOG (see **STATUS LOG**).

NO -Go to step 5.

5. Turn the ignition switch to LOCK (0).
6. Enter the vehicle, and remove the ignition key from the ignition switch, then close all doors.
7. Operate the keyless transmitter LOCK and UNLOCK several times in the vehicle.

Do the door lock actuators work normally?

YES -Go to step 8.

NO -Check for a poor ground through PCM to G101 and/or an open or high resistance in the wire between immobilizer-keyless control unit 7P connector terminal No. 7 and PCM connector A (49P) terminal No. 41.

8. Turn the ignition switch to ON (II).
9. Back-probe and measure the voltage between immobilizer-keyless control unit 7P connector terminal No. 2 and body ground.

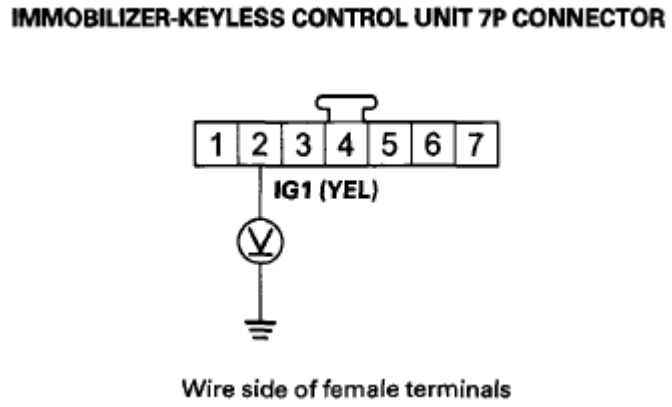


Fig. 11: Measuring Voltage Between Immobilizer-Keyless Control Unit 7P Connector Terminal No. 2 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there battery voltage?

YES -Replace the immobilizer-keyless control unit (see **IMMOBILIZER-KEYLESS CONTROL UNIT REPLACEMENT**).

NO -Check for a blown No. 9 (20 A) fuse in the driver's under-dash fuse/relay box. If the fuse is OK, repair an open in the YEL wire between the driver's under-dash fuse/relay box and the immobilizer-keyless control unit.

ENGINE DOES NOT START WITH THE IMMOBILIZER KEY

NOTE: Before troubleshooting, check the items listed in General Check before Troubleshooting (see GENERAL CHECK BEFORE TROUBLESHOOTING).

1. Try to start the engine.

   Does the engine start?

   YES -Intermittent failure, the vehicle is OK at this time. Check STATUS LOG (see **STATUS LOG**) and check the line indicated in the table.

   NO -Go to step 2.

2. Turn the ignition switch to LOCK (0).
3. Turn the ignition switch to ON (II), and check the immobilizer indicator.

   Does the indicator blink once, then stay off?

   YES -Go to step 4.

   NO -Go to the **IMMOBILIZER INDICATOR BLINKS TROUBLESHOOTING** (see).

4. Turn the ignition switch to START (III).

   Does the starter motor run?

   YES -Go to step 5.

   NO -Go to Starting System, and check the starter motor (see **STARTER PERFORMANCE TEST**).

5. Try to start the engine with the immobilizer key.

   Does the engine start?

   YES -Go to step 6.

   NO -Go to the PGM-FI System Symptom Troubleshooting (see **GENERAL TROUBLESHOOTING INFORMATION**).

6. Wait for a few minutes with the engine running.

   Does the engine stop?

   YES -Go to the PGM-FI System Symptom Troubleshooting (see **GENERAL TROUBLESHOOTING INFORMATION**).

   NO -The system is OK at this time.

IMMOBILIZER INDICATOR DOES NOT GO OFF

1. Turn the ignition switch to LOCK (0).
2. Connect the HDS to the data link connector (DLC).
3. Turn the ignition switch to ON (II).
4. From the SYSTEM SELECTION MENU, enter IMMOBI, then select IMMOBILIZER SETUP, then select SYSTEM CHECK, NUMBER OF KEYS, and STATUS LOG.

   NOTE: If the HDS does not communicate with the immobilizer-keyless control unit, check the power, ground, and K-line connectors.

5. Do the SYSTEM CHECK with the HDS.

   Is N-1 OK indicated?

   YES -Do the indicator drive circuit check (see **THE INDICATOR DRIVE CIRCUIT CHECK**). If the indicator does not go off; replace the gauge control module (see **GAUGE CONTROL MODULE REPLACEMENT**).

   NO -Substitute a known-good immobilizer-keyless control unit, then register it and recheck. If the symptom goes away, replace the original immobilizer-keyless control units (see **IMMOBILIZER-KEYLESS CONTROL UNIT REPLACEMENT**).

SYSTEM CHECK

1. Connect the HDS to the data link connector (DLC).
2. Turn the ignition switch to ON (II).
3. Monitor the SYSTEM CHECK in the IMMOBILIZER INFO with the HDS.

   NOTE: If the HDS does not communicate with the immobilizer keyless control unit, check the power, ground, and K-line connectors.

4. If the HDS displays NORMAL N-1, the immobilizer system is OK at this time, refer to the **STATUS LOG**. If the HDS displays any other messages, check as follows:

System Check No.	System Check	Possible Cause
A-1	The key is not registered	• This key is not registered in the immobilizer-keyless control unit. Try to register keys using the HDS. • No communication between the antenna and the immobilizer key because of interference from metal such as key chains/key rings/other keys.

		• Low battery voltage.
A-2	Communication error between the key and immobilizer-keyless control unit	• Intermittent interruption between transponder and immobilizer-keyless control unit. • The immobilizer key type is incorrect non-Acura key. • Key failure (transponder failure) • No communication between the antenna and the immobilizer key because of interference from metal such as key chains/key rings/other keys. • Low battery voltage.
A-3	No communication between the key and immobilizer-keyless control unit	• The ignition switch was turned to ON (II) with a non-immobilizer key. • The immobilizer key type is incorrect non-Acura key. • Key failure (transponder failure) • No communication between the antenna and the immobilizer key because of interference from metal such as key chains/key rings/other keys. • Low battery voltage. • Immobilizer-keyless control unit failure
B-1	The PCM is not registered	• The PCM was not registered. Try to register the PCM using the HDS. • No communication between the PCM and the immobilizer-keyless control unit because of low battery voltage. • No communication between the immobilizer-keyless control unit and the PCM because of electrical interference. • Open in the IG1 line
B-2	Error of communication format in PCM	• The PCM was not registered. Try to register the PCM using the HDS. • No communication between the PCM and the immobilizer-keyless control unit because of low battery voltage. • No communication between the immobilizer-keyless control unit and the PCM because of electrical interference.
C-1	The imoes unit is not registered	• Imoes unit was not registered. • No communication between the imoes unit and the immobilizer-keyless control unit because of low battery voltage.

		• No communication between the imoes unit and the immobilizer-keyless control unit because of electrical interference. • Try to register the imoes unit with the HDS.
C-2	Error of communication format in imoes unit	• Imoes unit was not registered. • No communication between the imoes unit and the immobilizer-keyless control unit because of low battery voltage. • No communication between the imoes unit and the immobilizer-keyless control unit because of electrical interference. • Try to register the imoes unit with the HDS.
D-1	S-NET line short	• S-NET line short from the PCM to the imoes or immobilizer-keyless control unit. (S-NET line short) • No communication between the PCM and the immobilizer-keyless control unit because of low battery voltage. • No communication between the immobilizer-keyless control unit and the PCM because of electrical interference. • Immobilizer-keyless control unit failure • PCM failure
D-2	No communication between imoes unit and immobilizer-keyless control unit (S-NET line)	• Blown fuse • S-NET line open from the imoes unit to the immobilizer-keyless control unit. (S-NET line open) • No communication between the imoes unit and the immobilizer-keyless control unit because of low battery voltage. • No communication between the imoes unit and the immobilizer-keyless control unit because of electrical interference. • Immobilizer-keyless control unit failure • Imoes unit failure
D-3	No communication between PCM and immobilizer-keyless control unit (S-NET line)	• Blown fuse • S-NET line open from the PCM to the immobilizer-keyless control unit. • No communication between the PCM and the immobilizer-keyless control unit because of low battery voltage.

		• No communication between the immobilizer-keyless control unit and the PCM because of electrical interference. • Immobilizer-keyless control unit failure • PCM failure
E-1	Initial registration of immobilizer-keyless control unit is not completed	The immobilizer-keyless control unit is not registered. Try to register the immobilizer-keyless control unit using the HDS.
E-2		
E-3		
E-4		
E-5		
F-1	Special Mode	Turn the ignition switch to ON (II) and to LOCK (0) with the registered key.
F-2		
F-3		
F-4		
F-5		

STATUS LOG

If you suspect there is an immobilizer system problem, check the status log in the HDS.

1. Connect the HDS to the data link connector (DLC).
2. Turn the ignition switch to ON (II).
3. On the HDS screen, at SYSTEM SELECTION MENU, enter IMMOBI, then select IMMOBILIZER SETUP, select SYSTEM CHECK, NUMBER OF KEYS, and STATUS LOG, then select STATUS LOG.
4. Check the STATUS LOG count. Troubleshoot the status with the highest count first. If no counts are listed, the immobilizer system is OK. Continue with normal symptom troubleshooting.

Status Log No.	Detected Item	Probable Cause
A-1	KEY CODE MISMATCH(1) (Code format correct, but code data does not match)	• The key was not registered • Interference from metal such as key chains • Low battery voltage
A-2	KEY CODE MISMATCH(2) (Incorrect code format)	• Ignition switch was turned to ON (II) with another type of immobilizer key or aftermarket key • Interference from metal such as key chains • Low battery voltage
A-3	KEY CODE MISMATCH(3) (No	• Ignition switch was turned to ON (II) with another type of immobilizer key or aftermarket key • Interference from metal such as key chains

	transponder detected)	• Low battery voltage • Key failure • Immobilizer-keyless control unit failure
B-1	PCM CODE MISMATCH(1) (Code format correct, but code data does not match)	• PCM was not registered correctly • Low battery voltage • Poor or loose terminal connections at the immobilizer-keyless control unit • Communication line electrical noise
B-2	PCM MISMATCH(2) (Incorrect code format)	• PCM was not registered correctly • Low battery voltage • Poor or loose terminal connections at the immobilizer-keyless control unit • Communication line electrical noise
C-1	IMOES UNIT MISMATCH(1) (Code format correct, but data does not match)	• Imoes unit was not registered • The communication was not good between imoes unit and immobilizer-keyless control unit by battery voltage low • The communication was not good between imoes unit and immobilizer-keyless control unit by influence of some noise
C-2	IMOES UNIT MISMATCH(2) (Incorrect code format)	• Imoes unit was not registered correctly • The communication was not good between imoes unit and immobilizer-keyless control unit by battery voltage low • The communication was not good between imoes unit and immobilizer-keyless control unit by influence of some noise
D-1	S-NET LINE PROBLEM(1) (Short to ground)	• Low battery voltage • Poor or loose terminal connections at the immobilizer-keyless control unit and the PCM • Communication line electrical noise
D-2	S-NET LINE PROBLEM(2) (No communication)	• Blown fuse • Harness open from imoes unit to immobilizer-keyless control unit • The communication was not good between imoes unit and immobilizer-keyless control unit by battery voltage low • The communication was not good between imoes unit and immobilizer-keyless control unit by influence of some noise

		• Imoes unit failure • Immobilizer-keyless control unit failure
D-3	S-NET LINE PROBLEM(3) (Open line or PCM failure)	• Open or short in the harness from the PCM to the immobilizer-keyless control unit • Low battery voltage • Poor or loose terminal connections at the immobilizer-keyless control unit and the PCM • Communication line electrical noise • Poor S-NET data communication due to electrical interference

IMMOBILIZER-KEYLESS CONTROL UNIT INPUT TEST

NOTE:

- **SRS components are located in this area. Review the SRS component locations (see COMPONENT LOCATION INDEX), and precautions and procedures (see PRECAUTIONS AND PROCEDURES) before doing repairs or servicing.**
- **Before testing, troubleshoot the multiplex integrated control unit first, using B-CAN System Diagnosis Test Mode A (see TROUBLESHOOTING - B-CAN SYSTEM DIAGNOSIS TEST MODE A).**

1. Remove the steering column covers (see **SIDE DEFOGGER VENT TRIM REMOVAL/INSTALLATION**).
2. Disconnect the 7P connector (A) from the immobilizer-keyless control unit (B).

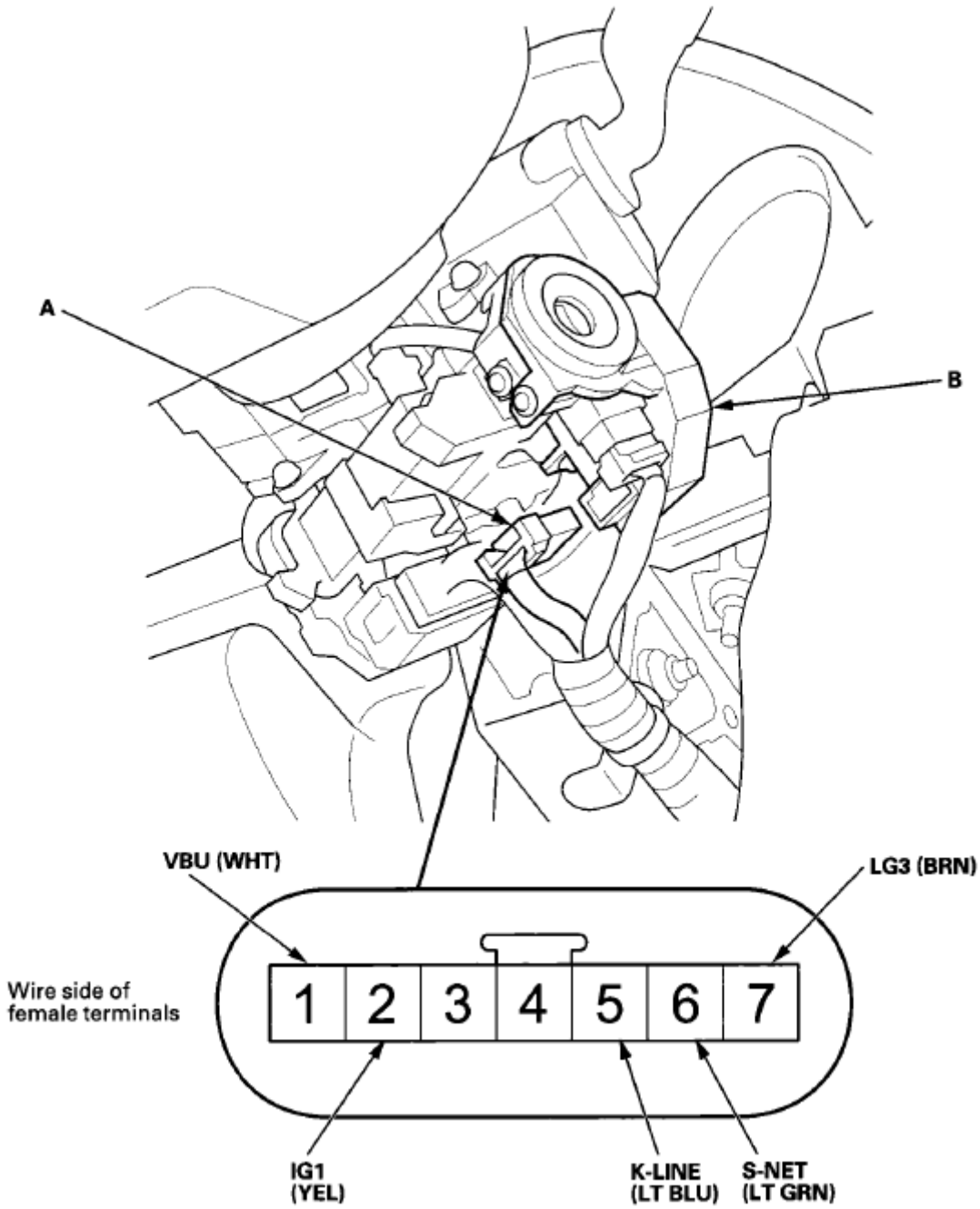


Fig. 12: Identifying Immobilizer-Keyless Control Unit With 7P Connector End View
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Inspect the connector and socket terminals to be sure they are all making good contact.
   - If the terminals are bent, loose or corroded, repair them as necessary, and recheck the system.
   - If the terminals look OK, go to step 4.
4. With the connector still disconnected, do the following input tests:
   - If any test indicates a problem, find and correct the cause, then recheck the system.

- If all the input tests prove OK, go to step 5.

Cavity	Wire	Terminal name	Test condition	Test: Desired result	Possible cause if desired result is not obtained
6	LT GRN	S-NET	Disconnect PCM connector A (49P) (see **ECM/PCM REPLACEMENT**)	Measure the voltage to ground: There should be about 5 V.	• A short to ground in the wire • An open in the wire • Faulty imoes unit (built into the MICU) • Faulty driver's under-dash fuse/relay box • An open in the S-NET wire
			Disconnect the battery negative terminal	Measure the resistance between terminal and body ground: There should be more than 50 k ohms.	
			Disconnect PCM connector A (49P) (see **ECM/PCM REPLACEMENT**)	Check for continuity between terminal and PCM connector A (49P) terminal No. 46: There should be continuity.	An open in the wire

5. Reconnect the connector to the immobilizer-keyless control unit, and do the following input tests:
   - If any test indicates a problem, find and correct the cause, then recheck the system.
   - If all the input tests prove OK, replace the immobilizer-keyless control unit (see **IMMOBILIZER-KEYLESS CONTROL UNIT REPLACEMENT**).

NOTE: If you replace the immobilizer-keyless control unit, do the immobilizer registration (see IMMOBILIZER KEY REGISTRATION).

Cavity	Wire	Terminal name	Test condition	Test: Desired result	Possible cause if desired result is not obtained
1	WHT	VBU	Under all conditions	Measure the voltage to ground: There should be battery voltage.	• Blown No. 15 (10 A) fuse in the under-hood fuse/relay box • An open or high resistance in the wire
2	YEL	IG1	Ignition switch ON (II)	Measure the voltage to ground: There should be battery voltage.	• Blown No. 9 (20 A) fuse in the driver's under-dash fuse/relay box • An open or high resistance in the wire

7	BRN	LG3	Under all conditions	Measure the voltage to ground: There should be less than 0.2 V.	• Faulty PCM • Poor ground(G101) or an open in the ground wire • An open or high resistance in the wire
5	LT BLU	K-LINE	Ignition switch ON (II)	Measure the voltage to ground: There should be 9-12 V.	• Faulty control unit on the K-LINE • K-LINE short to ground

IMMOBILIZER KEY REGISTRATION

NOTE:

- **The HDS is required for registration of the immobilizer keys.**
- **Programming the immobilizer also programs the keyless transmitter.**
- **Check for aftermarket electrical equipment that can cause problems with transponder operation.**
- **The immobilizer-keyless control unit can store up to six immobilizer keys.**

ADD ONE NEW KEY/KEYLESS TRANSMITTER

1. Have a registered key, a new immobilizer key, and the first password from the iN system.
2. Connect the HDS to the data link connector (DLC).
3. Turn the ignition switch to ON (II).
4. Select IMMOBI from the SYSTEM SELECTION MENU, then select IMMOBILIZER SETUP.
5. Select ADD AND DELETE KEYS, then ADD 1 KEY.
6. Do the registration according to the instructions on the HDS screen.
7. Check if the engine can be started with the newly registered key.
8. When prompted by the HDS, do the keyless transmitter programming.
9. Make sure the keyless remote operation works properly.

ADD AND DELETE KEYS/KEYLESS TRANSMITTERS, THEN SELECT DELETE OR ADD KEYS

1. Have all registered keys, all new keys, and the first password from the iN system.
2. Connect the HDS to the data link connector (DLC).
3. Turn the ignition switch to ON (II).
4. Select IMMOBI from the SYSTEM SELECTION MENU, then select IMMOBILIZER SETUP.
5. Select ADD AND DELETE KEYS, or DELETE OR ADD MULTIPLE KEYS.
6. Do the registration according to the instructions on the HDS screen.
7. Check if the engine can be started with all the registered keys.
8. When prompted by the HDS, do the keyless transmitter programming.

9. Make sure the keyless remote operation works properly.

ALL KEYS ARE LOST

1. Prepare all new keys and have the immobilizer PCM code.
2. Connect the HDS to the data link connector (DLC).
3. Turn the ignition switch to ON (II).
4. Select IMMOBI from the SYSTEM SELECTION MENU, then select IMMOBILIZER SETUP.
5. Select ADD AND DELETE KEYS, then ALL KEYS LOST.
6. Do the registration according to the instructions on the HDS screen.
7. Check if the engine can be started using all the registered keys.
8. When prompted by the HDS, do the keyless transmitter programming.
9. Make sure the keyless remote operation works properly.

IMMOBILIZER-KEYLESS CONTROL UNIT REGISTRATION

1. Have all registered keys and the PCM code.
2. Connect the HDS to the data link connector (DLC).
3. Turn the ignition switch to ON (II).
4. Select IMMOBI from the SYSTEM SELECTION MENU, then select IMMOBILIZER SETUP.
5. Select REPLACE IMMOBILIZER RECEIVER/CONTROL UNIT.
6. Do the registration according to the instructions on the HDS screen.
7. Check that the engine can be started with all registered keys, and check that the door locks operate using the Immobilizer key transmitter.

IMMOBILIZER-KEYLESS CONTROL UNIT REPLACEMENT

NOTE: SRS components are located in this area. Review the SRS component locations (see COMPONENT LOCATION INDEX), and precautions and procedures (see PRECAUTIONS AND PROCEDURES) before doing repairs or servicing.

1. Remove the steering column covers (see **SIDE DEFOGGER VENT TRIM REMOVAL/INSTALLATION**).
2. Disconnect the 7P connector (A) from the immobilizer-keyless control unit (B).

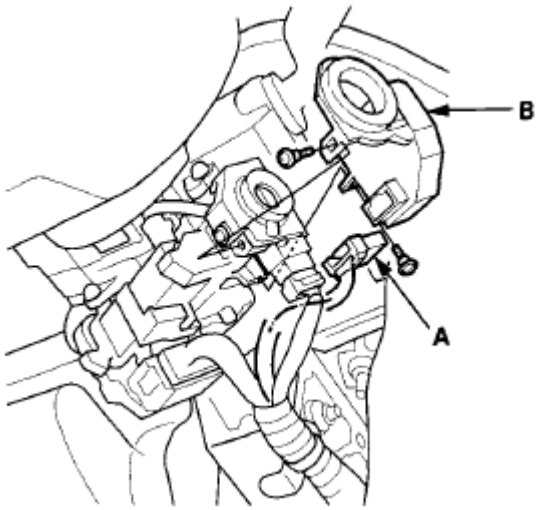


Fig. 13: Identifying Immobolizer-Keyless Control Unit
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Remove the two screws and the immobilizer-keyless control unit.
4. Install the immobilizer-keyless control unit in the reverse order of removal.
5. After replacement, register the immobilizer-keyless control unit (see **IMMOBILIZER KEY REGISTRATION**), and make sure the immobilizer system works properly.
6. Program all of the client's keys/keyless transmitters (see **ADD AND DELETE KEYS/KEYLESS TRANSMITTERS, THEN SELECT DELETE OR ADD KEYS**).

2012 ACCESSORIES & EQUIPMENT

Keyless/Power Door Locks/Security System - TL

COMPONENT LOCATION INDEX

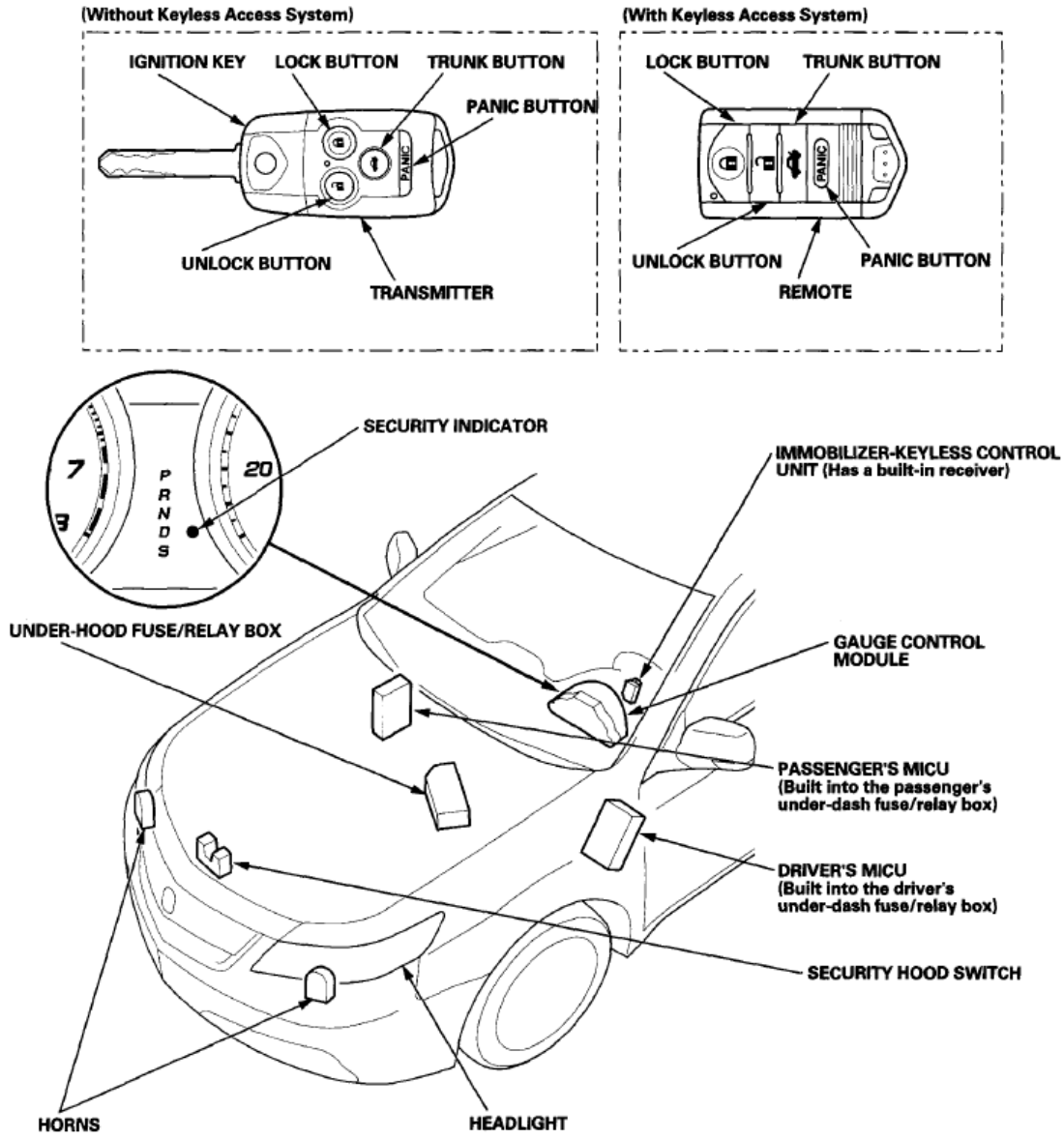


Fig. 1: Keyless/Power Door Locks/Security System Components Location (1 Of 3)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

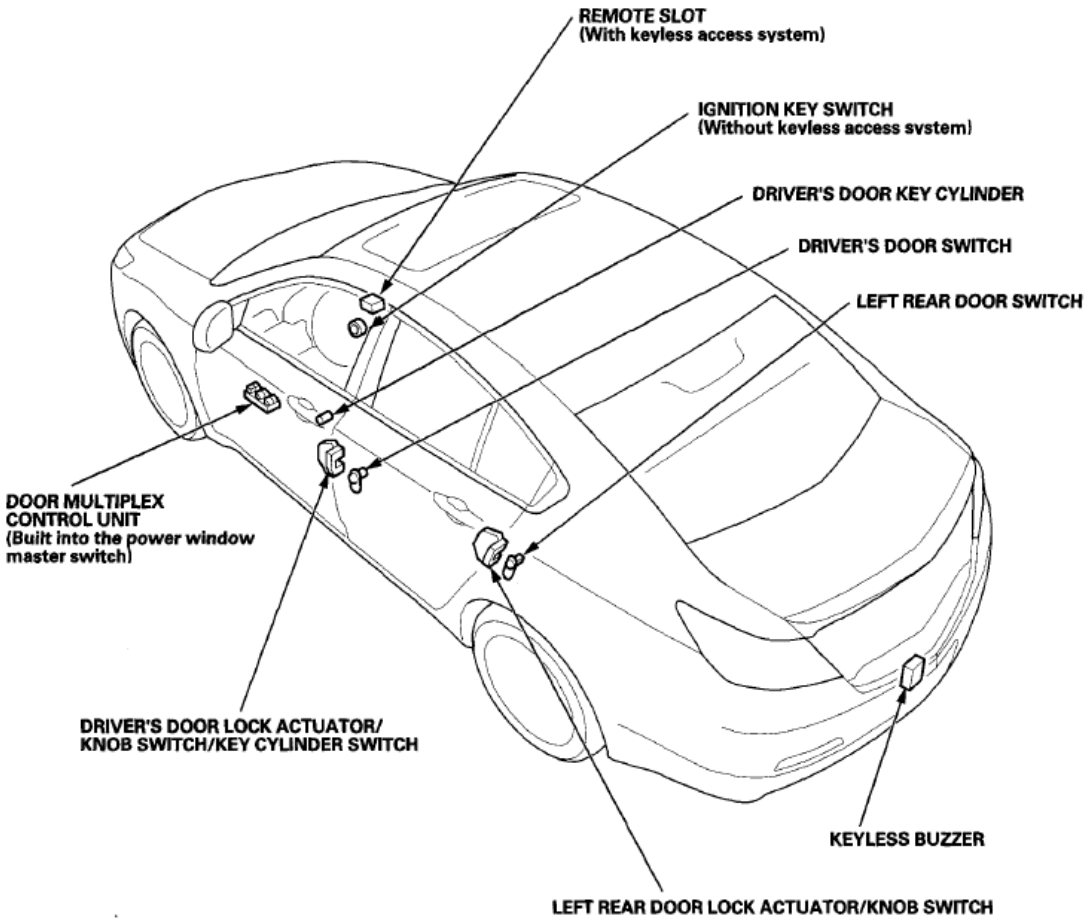


Fig. 2: Keyless/Power Door Locks/Security System Components Location (2 Of 3)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

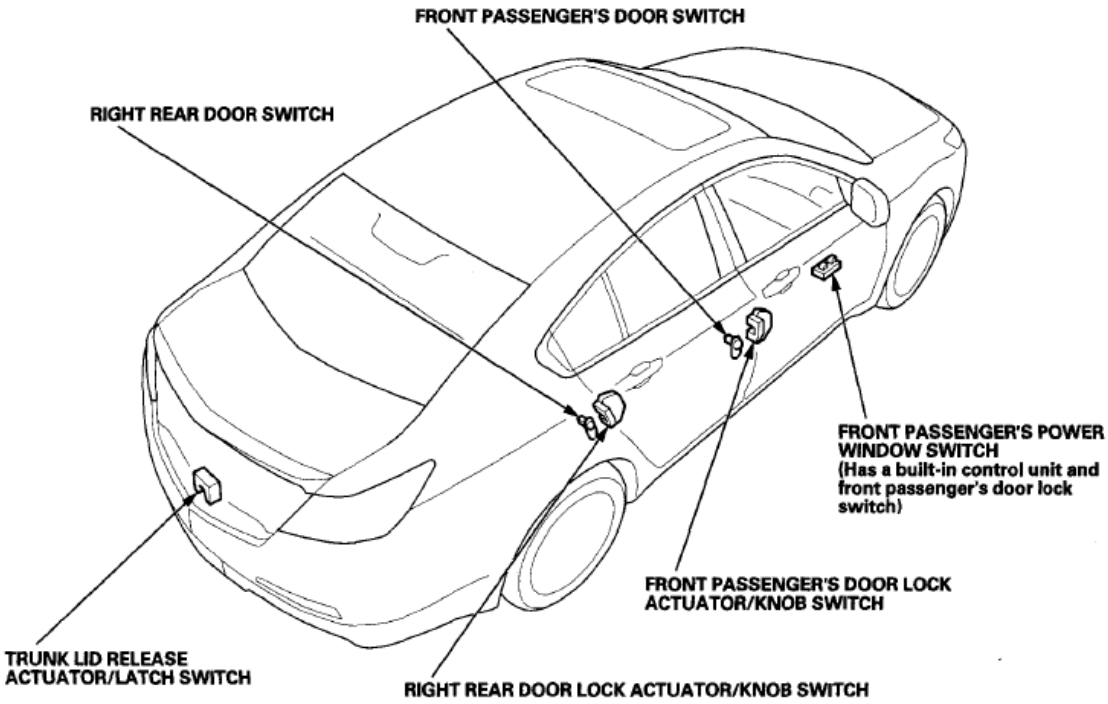


Fig. 3: Keyless/Power Door Locks/Security System Components Location (3 Of 3)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

SYSTEM DESCRIPTION

SECURITY ALARM

The security alarm system automatically arms after the doors, hood, and trunk lid are closed and locked. For the system to arm, the ignition switch must be in the LOCK (0), or the vehicle ignition in the OFF mode, with the key removed from the ignition switch, or the remote removed from the remote slot, and the driver's and passenger's MICUs must receive signals that the doors, hood, and trunk lid are closed and locked. The alarm can be disarmed at any time by unlocking the driver door with the key or pressing the UNLOCK button on the transmitter, or by grabbing either the driver's or front passenger's door handle with the keyless access remote in range.

When everything is closed and locked, the only inputs that are grounded, and have 0 V, are the driver's door lock knob switch (LOCK position) and the audio unit or audio-navigation unit (if equipped). In other words, all of the other switches are open, and have about 10 to 12 V, including the key cylinder switches. A beep sounds and the parking lights flash to confirm the security alarm system is armed if the LOCK button is pressed a second time within 5 seconds. The security indicator in the gauge control module begins to flash immediately after the vehicle is completely closed and locked, and 15 seconds later, the security system arms. If the security indicator does not flash, the system is not arming.

If one of the switches is misadjusted or shorted internally, or there is a short in one of the keyless/power door lock/security circuits, the security system will not arm. As long as the control unit continues to receive a ground signal (0 V) except for the driver's door lock/unlock knob switch input, it senses that the vehicle is not closed

and locked, and the system will not arm. A switch that is slightly misadjusted can cause the alarm to sound for no apparent reason. In this case, a significant change in outside air temperature, the vibration of a passing truck, or someone bumping into the vehicle could cause the alarm to sound.

NOTE: There is no glass breakage or motion detection feature.

If anything is opened or improperly unlocked after the system is armed, the control unit receives a ground signal from that switch, and the 10 to 12 V reference drops to 0 V. If the audio unit or audio-navigation unit (if equipped) is disconnected, the input loses its ground, and the input voltage goes from 0 V to 10 to 12 V. The system sounds the alarm when any of these occur:

- A door or the trunk lid is forced open.
- A door is unlocked without using the key or the transmitter.
- The hood is opened.
- The audio unit or audio-navigation unit (if equipped) is disconnected.
- The transmitter PANIC button is pressed.

When the system sounds the alarm, the horn sounds and the exterior lights flash for 2 minutes. The alarm can be stopped at any time by unlocking the driver's door by pressing any button on the transmitter.

NOTE: The security system can be customized in the multi-information display (MID) to suit the client's needs. For more information about keyless/security system options, refer to the Owner's manual.

KEYLESS ENTRY SYSTEM

The keyless entry system is integrated with the multiplex integrated control system. The multiplex integrated control unit (MICU) receives LOCK, UNLOCK, and PANIC signals from the immobilizer-keyless control unit (keyless receiver).

The keyless entry system allows you to lock and unlock the vehicle with the transmitter. When you press the LOCK button, all doors lock. When you press the UNLOCK button once, only the driver's door unlocks. The other doors will unlock when you press the button a second time. The doors will not lock with the transmitter if a door is not fully closed, or if the key is in the ignition switch.

When the switch for the front individual map lights and rear individual map lights are in the DOOR position, it comes on when the UNLOCK button is pressed. If a door is not opened, the light goes off and the doors relock in about 30 seconds. If the doors are locked with the transmitter within 30 seconds, the light goes off immediately.

NOTE: The keyless entry system can be customized in the multi-information display (MID) to suit the client's needs. For more information about keyless/security system options, refer to the Owner's manual.

PANIC MODE

The panic mode sounds the alarm in order to attract attention. When the PANIC button on the transmitter is pressed and held for 2 seconds, the horns sound and the exterior lights flash for about 20 seconds.

The panic mode can be cancelled at anytime by pressing any button on the transmitter or by turning the ignition switch to ON (II), or press the engine start/stop button to select the ON mode. The panic mode will not function if the ignition switch is in ON (II), or the vehicle ignition in the ON mode.

CIRCUIT DIAGRAM

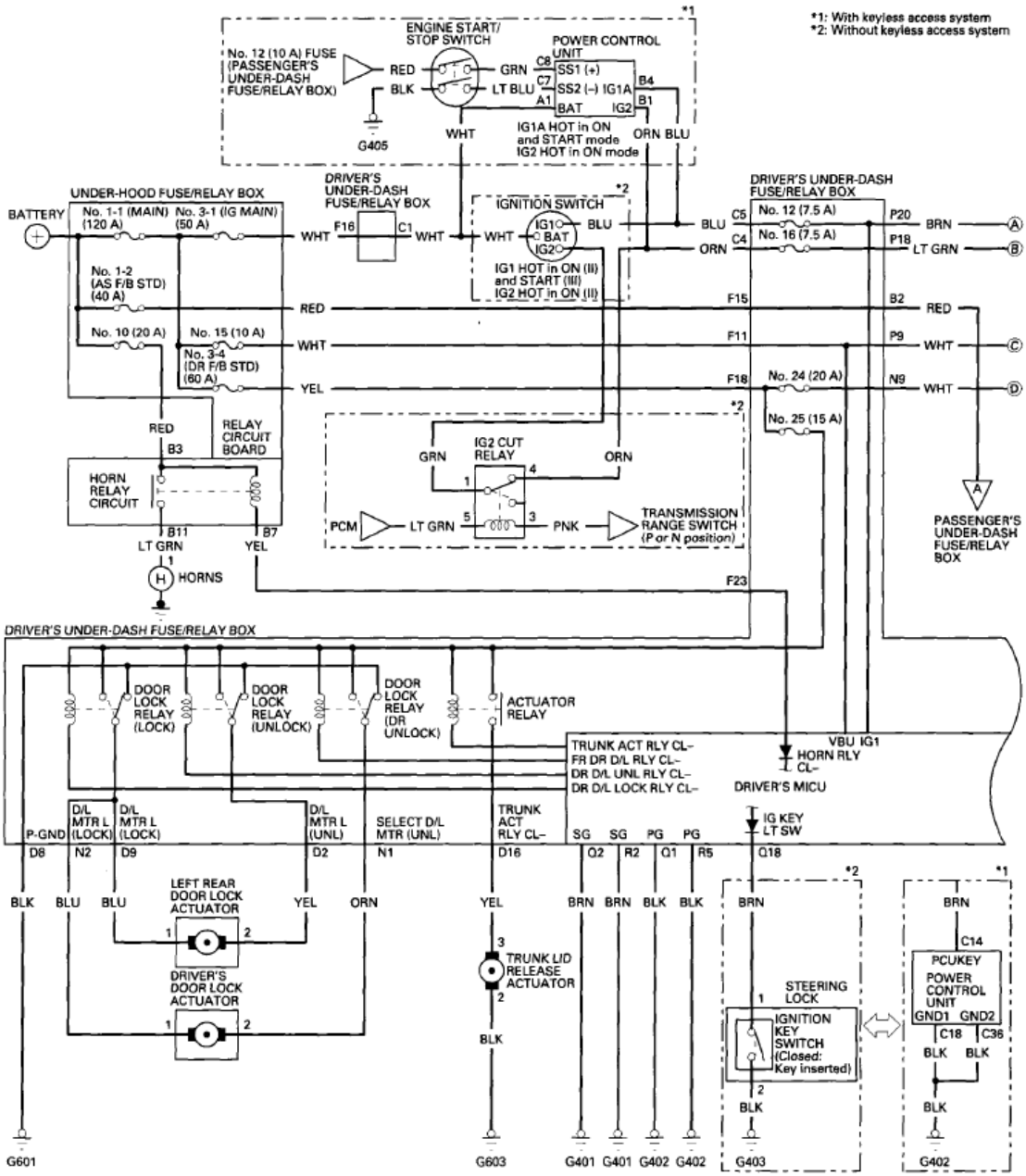


Fig. 4: Keyless/Power Door Locks/Security System - Circuit Diagram (1 Of 4)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

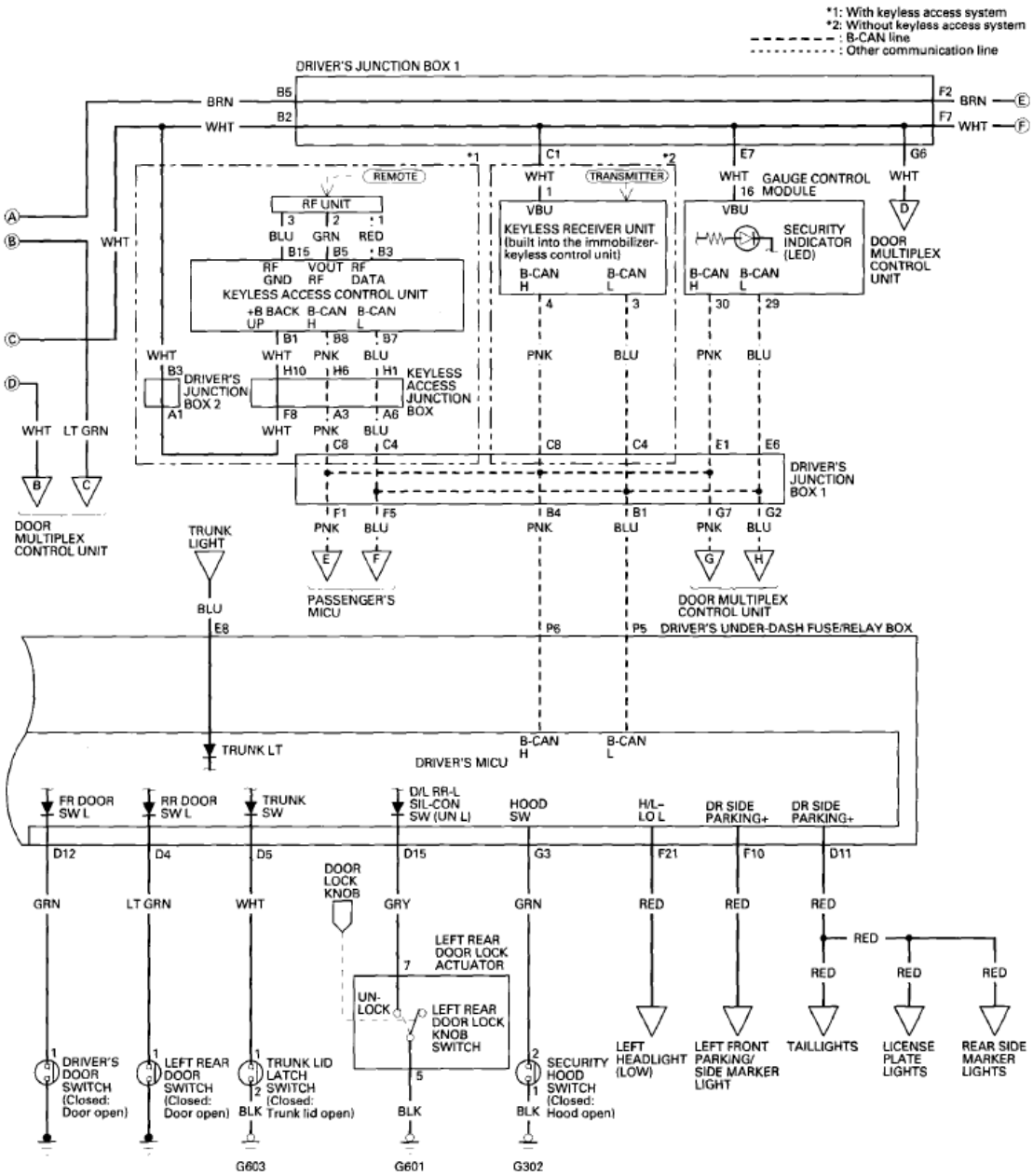


Fig. 5: Keyless/Power Door Locks/Security System - Circuit Diagram (2 Of 4)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

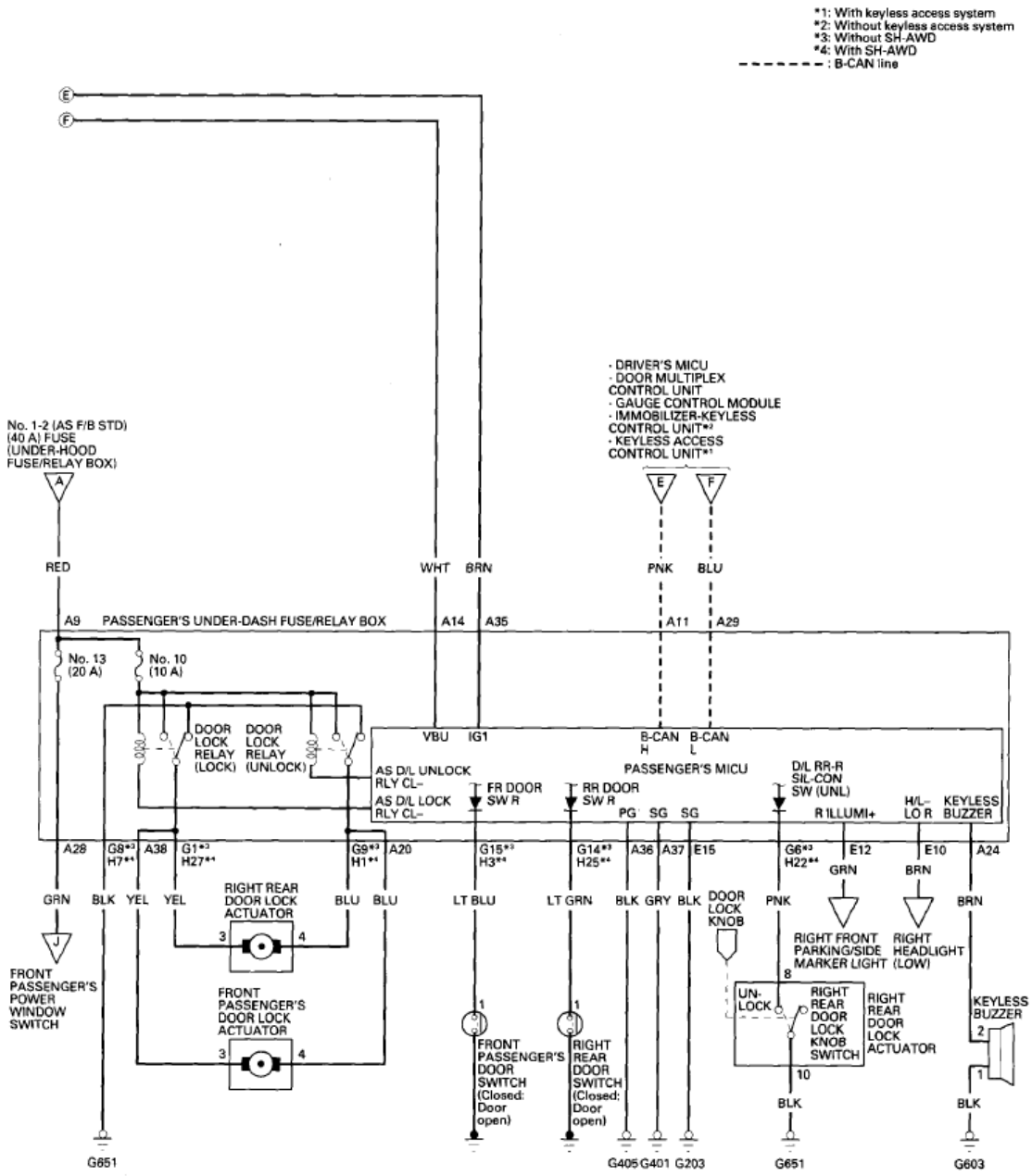


Fig. 6: Keyless/Power Door Locks/Security System - Circuit Diagram (3 Of 4)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

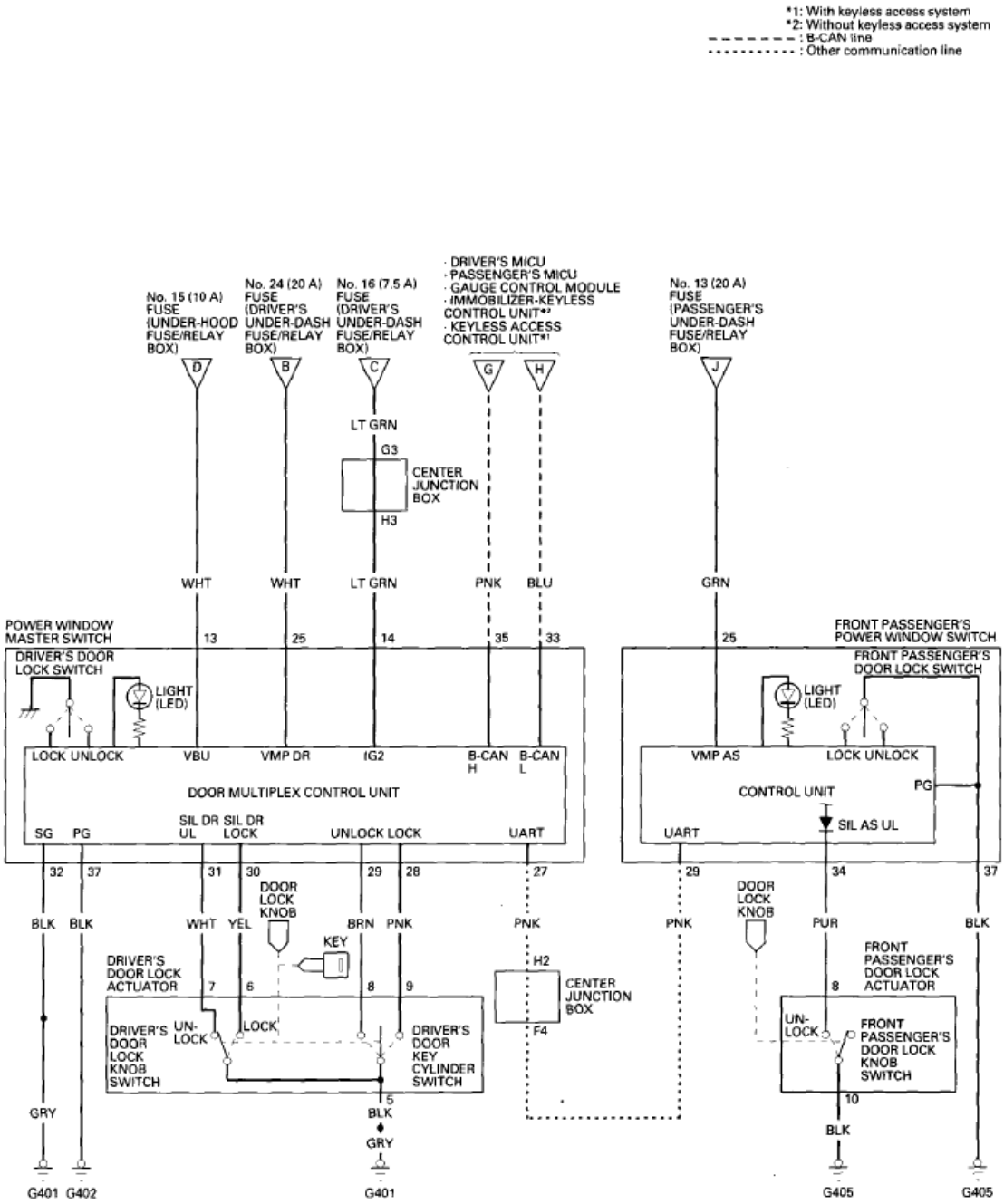


Fig. 7: Keyless/Power Door Locks/Security System - Circuit Diagram (4 Of 4)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

DTC TROUBLESHOOTING

DTC B1127: DRIVER'S DOOR KEY CYLINDER SWITCH MALFUNCTION

NOTE:

- **If you are troubleshooting multiple DTCs, be sure to follow the instructions in B-CAN System Diagnosis Test Mode A (see TROUBLESHOOTING - B-**

CAN SYSTEM DIAGNOSIS TEST MODE A).

- **For vehicles without keyless access, you will need two keys to do this troubleshooting.**
- **For vehicles with keyless access, use the key inside the keyless remote.**

1. Clear the DTCs with the HDS.
2. With one ignition key, turn the ignition switch to LOCK (0) and then back to ON (II), or press the engine start/stop button to select the OFF mode and then the ON mode.
3. Insert the second ignition key or remote into the driver's door key cylinder switch, and turn the key to the LOCK and UNLOCK positions 10 times.
4. Check for DTCs with the HDS.

   Is DTC B1127 indicated?

   YES - Go to step 5.

   NO - Intermittent failure, the driver's door key cylinder switch system is OK at this time. Check for loose or poor connections.

5. With the driver's door key cylinder in the neutral position, select KEYLESS TRANSMITTER with the HDS, and enter DATA LIST.
6. Check the ON/OFF information of the DRIVER'S DOOR KEY CYLINDER SWITCH (LOCK) and DRIVER'S DOOR KEY CYLINDER SWITCH (UNLOCK) in the DATA LIST.

   Are both information indicators OFF?

   YES - Go to step 12.

   NO - Go to step 7.

7. Disconnect the driver's door lock actuator 10P connector.
8. Check the ON/OFF information of the DRIVER'S DOOR KEY CYLINDER SWITCH (LOCK) and DRIVER'S DOOR KEY CYLINDER SWITCH (UNLOCK) in the DATA LIST.

   Are both information indicators OFF?

   YES - Faulty driver's door key cylinder switch; replace the driver's door latch (see **FRONT DOOR LATCH REPLACEMENT**).

   NO - Go to step 9.

9. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
10. Disconnect the power window master switch 37P connector.
11. Check for continuity between body ground and power window master switch 37P connector terminals No. 28 and No. 29 individually.

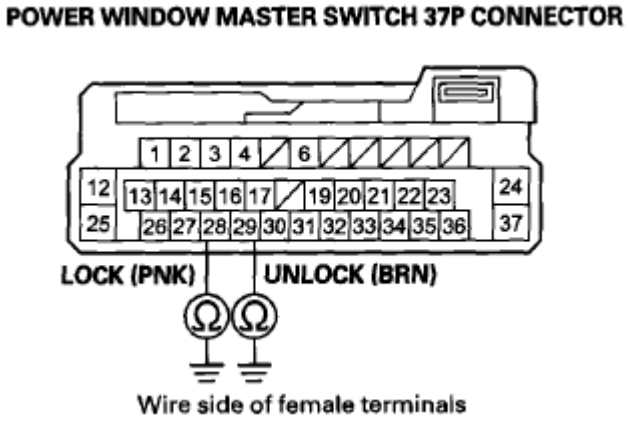


Fig. 8: Checking Continuity Between Body Ground And Power Window Master Switch 37P Connector Terminals No. 28 And No. 29 Individually With Connector End View
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair a short to ground in the LOCK or UNLOCK wire.

NO - Replace the power window master switch (see **REAR POWER WINDOW SWITCH TEST**).

12. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
13. Disconnect the driver's door lock actuator 10P connector.
14. Disconnect the power window master switch 37P connector.
15. Check for continuity between power window master switch 37P connector terminals No. 28 and No. 29.

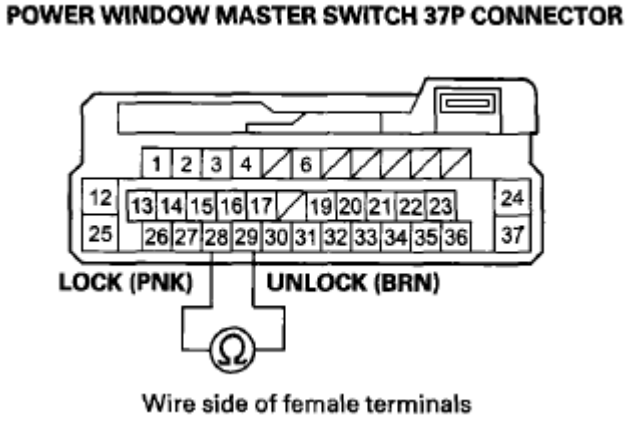


Fig. 9: Checking Continuity Between Power Window Master Switch 37P Connector Terminals No. 28 And No. 29
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair a short between the LOCK and UNLOCK wires.

NO - Substitute a known-good power window master switch. If the symptom goes away, replace the original power window master switch (see **REAR POWER WINDOW SWITCH TEST**). If not, driver's door key cylinder switch is faulty; replace the driver's door latch (see **FRONT DOOR LATCH REPLACEMENT**).

DTC B1128: DRIVER'S DOOR LOCK SWITCH MALFUNCTION

NOTE: If you are troubleshooting multiple DTCs, be sure to follow the instructions in B-CAN System Diagnosis Test Mode A (see TROUBLESHOOTING - B-CAN SYSTEM DIAGNOSIS TEST MODE A).

1. Clear the DTCs with the HDS.
2. Lock and unlock the driver's door with the driver's door lock switch.
3. Check for DTCs with the HDS.

Is DTC B1128 indicated?

YES - Replace the power window master switch (see **REAR POWER WINDOW SWITCH TEST**).

NO - Intermittent failure, the system is OK at this time. Check for a loose or poor connection.

DTC B1129: DRIVER'S DOOR LOCK KNOB SWITCH MALFUNCTION

NOTE: If you are troubleshooting multiple DTCs, be sure to follow the instructions in B-CAN System Diagnosis Test Mode A (see TROUBLESHOOTING - B-CAN SYSTEM DIAGNOSIS TEST MODE A).

1. Clear the DTCs with the HDS.
2. Turn the ignition switch to LOCK (0) and then back to ON (II), or press the engine start/stop button to select the OFF mode and then the ON mode.
3. Operate the driver's door lock knob switch several times.
4. Check for DTCs with the HDS.

Is DTC B1129 indicated?

YES - Go to step 5.

NO - Intermittent failure, the driver's door lock knob switch system is OK at this time. Check for loose or poor connections.

5. Select KEYLESS TRANSMITTER from the BODY ELECTRICAL SYSTEM SELECT menu, and enter DATA LIST.
6. Check the ON/OFF information of the DRIVER'S DOOR LOCK KNOB SWITCH (LOCK) and the DRIVER'S DOOR LOCK KNOB SWITCH (UNLOCK).

Is the DRIVER'S DOOR LOCK KNOB SWITCH (LOCK) information indicator ON and the DRIVER'S DOOR LOCK KNOB SWITCH (UNLOCK) information indicator OFF with the driver's door lock knob switch in LOCK position, and is the DRIVER'S DOOR LOCK KNOB SWITCH (LOCK) information indicator OFF and the DRIVER'S DOOR LOCK KNOB SWITCH (UNLOCK) information indicator ON with the driver's door lock knob switch in UNLOCK position?

YES - Replace the power window master switch (see **REAR POWER WINDOW SWITCH TEST**).

NO - Go to step 7.

7. Disconnect the driver's door lock actuator 10P connector.
8. Check the ON/OFF information of the DRIVER'S DOOR LOCK KNOB SWITCH (LOCK) and DRIVER'S DOOR LOCK KNOB SWITCH (UNLOCK) in the DATA LIST.

   Are both information indicators OFF?

   YES - Go to step 12.

   NO - Go to step 9.

9. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
10. Disconnect the power window master switch 37P connector.
11. Check for continuity between body ground and power window master switch 37P connector terminals No. 30 and No. 31 individually.

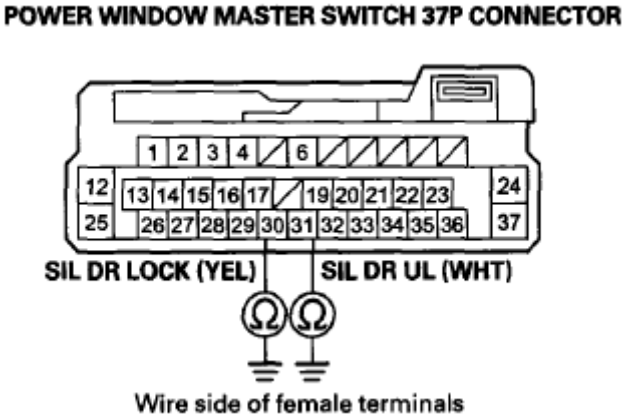


Fig. 10: Checking Continuity Between Body Ground And Power Window Master Switch 37P Connector Terminals No. 30 And No. 31 Individually
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair a short to ground in the LOCK or UNLOCK wire.

NO - Replace the power window master switch (see **REAR POWER WINDOW SWITCH TEST**).

12. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
13. Disconnect the power window master switch 37P connector.
14. Check for continuity between power window master switch 37P connector terminals No. 30 and No. 31.

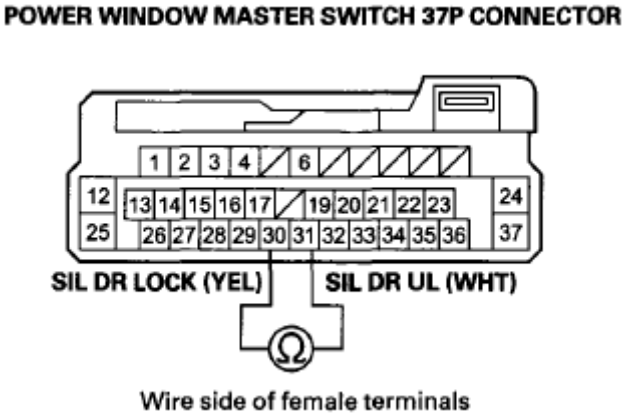


Fig. 11: Checking Continuity Between Power Window Master Switch 37P Connector Terminals No. 30 And No. 31
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair a short between the LOCK and UNLOCK wires.

NO - Check for an open or high resistance in the driver's door lock knob switch (LOCK) wire or the driver's door lock knob switch (UNLOCK) wire between the door multiplex control unit and the driver's door lock knob switch. If the wires are OK, the driver's door lock knob switch is faulty; replace the driver's door latch (see **FRONT DOOR LATCH REPLACEMENT**).

SYMPTOM TROUBLESHOOTING INDEX

1. Check for B-CAN DTCs. If any B-CAN DTCs are indicated, troubleshoot and resolve them first.
2. If the door lock system and the keyless operation do not work, troubleshoot the door locks first.

NOTE: The system does not function when the ignition switch is ON (II), or the vehicle ignition is in the ON mode.

Symptom	Check Items	Also check for
	• Poor ground (G203, G401, G402, G405, G601, G651) • Driver's door key cylinder switch test (see **DOOR KEY CYLINDER SWITCH TEST**) • Door switch test (check the door switch ON/OFF information with the HDS)	

All the doors will not lock or unlock with driver's door key cylinder or door lock switch or keyless transmitter	• Door lock switch test (check the door switch ON/OFF information with the HDS) • Door lock actuator test (see **DOOR LOCK ACTUATOR TEST**) • Driver's MICU input test (see **CONTROL UNIT INPUT TEST**) • Passenger's MICU input test (see **CONTROL UNIT INPUT TEST**) • Check the UART line ○ An open in the wire ○ A short to ground wire ○ A short to power wire	
Driver's and left rear doors will not lock or unlock with driver's door key cylinder or door lock switch or keyless transmitter	• Poor ground (G401, G402, G601) • Blown No. 24 (20 A) fuse in the driver's under-dash fuse/relay box • Blown No. 25 (15 A) fuse in the driver's under-dash fuse/relay box • Driver's MICU input test (see **CONTROL UNIT INPUT TEST**) • Door multiplex control unit input test (see **CONTROL UNIT INPUT TEST**)	
Front passenger's and right rear doors will not lock or unlock with driver's door key cylinder or door lock switch or keyless transmitter	• Poor ground (G203, G401, G405, G651) • Blown No. 1-2 (AS F/B STD) (40 A) fuse in the under-hood fuse/relay box • Blown No. 10 (10 A) fuse in the passenger's under-dash fuse/relay box • Blown No. 13 (20 A) fuse in the passenger's under-dash fuse/relay box • Passenger's MICU input test (see **CONTROL UNIT INPUT TEST**) • Door multiplex control unit input test (see **CONTROL UNIT INPUT TEST**)	
Keyless operation does not work (LOCK, UNLOCK, PANIC)	Symptom troubleshooting (see **KEYLESS OPERATION DOES NOT WORK (LOCK, UNLOCK, PANIC)**)	Customized settings in the multi-information display (MID), see Owner's manual for details
Doors will not unlock (or lock) with the transmitter, but will unlock (or lock) with the door lock switch	• Symptom troubleshooting (see **DOORS WILL NOT UNLOCK (OR LOCK) WITH THE TRANSMITTER, BUT WILL UNLOCK (OR LOCK) WITH THE DOOR LOCK SWITCH AND THE DOOR KEY**	

and the door key cylinder switch	**CYLINDER SWITCH**) • Door lock switch test (check the door switch ON/OFF information with the HDS)	
Doors automatically relock 30 seconds after being unlocked with the transmitter even though a door has been opened	• Symptom troubleshooting (see **DOORS AUTOMATICALLY RELOCK 30 SECONDS AFTER BEING UNLOCKED WITH THE TRANSMITTER EVEN THOUGH A DOOR HAS BEEN OPENED**) • Door switch test (check the door switch ON/OFF information with the HDS)	
Only driver's door will unlock or door locks relock immediately after unlocking with the remote	Driver's door lock knob switch test (see **DOOR LOCK KNOB SWITCH TEST**)	
Trunk lid release actuator will not work when the trunk lid outer handle switch is pressed	• Lock knob switch is faulty • Open lock knob switch unlock input wire • Door lock actuator is faulty	
The horn does not sound and/or the headlights do not flash when the PANIC button on the transmitter is pressed	Symptom troubleshooting (see **THE HORN DOES NOT SOUND AND/OR THE HEADLIGHTS DO NOT FLASH WHEN THE PANIC BUTTON ON THE TRANSMITTER IS PRESSED**)	Customized settings in the multi-information display (MID), see Owner's manual for details
Keyless operation will work even though the ignition key is in the ignition switch	Ignition key switch test (see **IGNITION KEY SWITCH TEST**)	
Security alarm system will not arm	Symptom troubleshooting (see **SECURITY ALARM SYSTEM WILL NOT ARM**)	

SYMPTOM TROUBLESHOOTING

THE HORN DOES NOT SOUND AND/OR THE HEADLIGHTS DO NOT FLASH WHEN THE PANIC BUTTON ON THE TRANSMITTER IS PRESSED

NOTE: Before troubleshooting, check the B-CAN DTCs. If any DTC is indicated, refer to the B-CAN System Diagnosis Test Mode A (see TROUBLESHOOTING - B-CAN SYSTEM DIAGNOSIS TEST MODE A), and troubleshoot the indicated DTCs first.

1. Press the PANIC button.

   Do the horns sound?

   YES - Go to step 3.

NO - Go to step 2.

2. Press the horn button.

   Do the horns sound?

   YES - Go to step 3.

   NO - Check the horn relay circuit (see **CIRCUIT DIAGRAM**).

3. Turn the headlight switch ON.

   Do the headlights come on?

   YES - Go to step 4.

   NO - Check the lighting circuit. Do the MICU input test (see **MICU INPUT TEST**).

4. Do the transmitter test (see **TRANSMITTER TEST**).

   Is the transmitter OK?

   YES - Substitute a known-good immobilizer-keyless control unit, and recheck. If there is still a problem, substitute a known-good driver's under-dash fuse/relay box, and recheck. If the problem goes away, replace the original immobilizer-keyless control unit (see **IMMOBILIZER-KEYLESS CONTROL UNIT REGISTRATION**) or the driver's under-dash fuse/relay box (see **DRIVER'S UNDER-DASH FUSE/RELAY BOX (MICU) REMOVAL AND INSTALLATION**).

   NO - Replace the transmitter.

DOORS AUTOMATICALLY RELOCK 30 SECONDS AFTER BEING UNLOCKED WITH THE TRANSMITTER EVEN THOUGH A DOOR HAS BEEN OPENED

NOTE:

- **Opening the trunk does not cancel this function; only an open door signal cancels the automatic relock.**
- **Before troubleshooting, check the B-CAN DTCs. If any DTC is indicated, refer to the B-CAN System Diagnosis Test Mode A (see TROUBLESHOOTING - B-CAN SYSTEM DIAGNOSIS TEST MODE A), and troubleshoot the indicated DTCs first.**
- **The driver's door switch and the left rear door switch are connected to the driver's MICU, and the front passenger's door switch and the right rear door switch are connected to the passenger's MICU.**

1. Move the interior light switch to the DOOR position.
2. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
3. Watch the front individual map light and the multi-information display on the gauge control module.

Does the front individual map light and multi-information display come on when each door is opened, and go off when each door is closed?

YES - Substitute a known-good driver's (or passenger's) under-dash fuse/relay box, and recheck. If the symptom goes away, replace the original under-dash fuse/relay box.

NO - Repair an open or high resistance in the wire between the driver's (or passenger's) MICU (see **DRIVER'S UNDER-DASH FUSE/RELAY BOX (MICU) REMOVAL AND INSTALLATION**) and each door switch, or a bad door switch.

KEYLESS OPERATION DOES NOT WORK (LOCK, UNLOCK, PANIC)

NOTE:

- **Before troubleshooting, check the B-CAN DTCs. If any DTC is indicated, refer to the B-CAN System Diagnosis Test Mode A (see TROUBLESHOOTING - B-CAN SYSTEM DIAGNOSIS TEST MODE A), and troubleshoot the indicated DTCs first.**
- **If the LOCK and UNLOCK buttons work OK, but the PANIC button does not, see the troubleshooting for the horn does not sound and/or the headlights do not flash when the PANIC button on the transmitter is pressed (see THE HORN DOES NOT SOUND AND/OR THE HEADLIGHTS DO NOT FLASH WHEN THE PANIC BUTTON ON THE TRANSMITTER IS PRESSED).**

1. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
2. Try to start the engine.

   Does the engine start?

   YES - The immobilizer system is OK, go to step 3.

   NO - Go to the immobilizer symptom troubleshooting (see **SYMPTOM TROUBLESHOOTING INDEX**).

3. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
4. Do the transmitter test.
   - Without keyless access system (see **WITHOUT KEYLESS ACCESS SYSTEM**)
   - With keyless access system (see **KEYLESS ACCESS SYSTEM MODE SWITCH TEST/REPLACEMENT**)

   Is the transmitter OK?

   YES - Replace the immobilizer-keyless control unit (see **IMMOBILIZER-KEYLESS CONTROL UNIT REGISTRATION**).

   NO - Replace the transmitter.

DOORS WILL NOT UNLOCK (OR LOCK) WITH THE TRANSMITTER, BUT WILL UNLOCK (OR LOCK) WITH THE DOOR LOCK SWITCH AND THE DOOR KEY CYLINDER SWITCH

NOTE: Before troubleshooting, check the B-CAN DTCs. If any DTC is indicated, refer to the B-CAN System Diagnosis Test Mode A (see TROUBLESHOOTING - B-CAN SYSTEM DIAGNOSIS TEST MODE A), and troubleshoot the indicated DTCs first.

1. Turn the ignition switch to LOCK (0).
2. Remove the ignition key from the ignition switch.
3. Close and lock the doors.
4. Try to lock/unlock the doors with the keyless transmitter.

   Do the door lock actuators work normally?

   YES - Intermittent failure, the system is OK at this time. Check for loose or poor connections.

   NO - Go to step 5.

5. Open the driver's door.

   Does the key-in reminder chime sound?

   YES - Faulty ignition key switch, or short to ground on the wire related to the ignition switch. Repair the wire as needed.

   NO - Go to step 6.

6. Do the transmitter test (see **TRANSMITTER TEST**).

   Is the transmitter OK?

   YES - Substitute a known-good driver's under-dash fuse/relay box, and recheck. If there is still a problem, substitute a known-good immobilizer-keyless control unit, and recheck. If the problem goes away, replace the original immobilizer-keyless control unit (see **IMMOBILIZER-KEYLESS CONTROL UNIT REGISTRATION**).

   NO - Replace the transmitter.

SECURITY ALARM SYSTEM WILL NOT ARM

NOTE: Before troubleshooting, check the B-CAN DTCs. If any DTC is indicated, refer to the B-CAN System Diagnosis Test Mode A (see TROUBLESHOOTING - B-CAN SYSTEM DIAGNOSIS TEST MODE A), and troubleshoot the indicated DTCs first.

1. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
2. Select SECURITY from the BODY ELECTRICAL menu, and enter the DATA LIST with the HDS.
3. Check the ON/OFF information in the DATA LIST when each switch is operating.
   - TRUNK LID/TAILGATE SWITCH
   - SECURITY HOOD SWITCH
   - DRIVER'S DOOR LOCK KNOB SWITCH (LOCK)
   - DRIVER'S DOOR LOCK KNOB SWITCH (UNLOCK)
   - FRONT PASSENGER'S DOOR LOCK KNOB SW (UNLOCK)
   - DRIVER'S DOOR SWITCH
   - FRONT PASSENGER'S DOOR SWITCH
   - DRIVER'S DOOR KEY CYLINDER SWITCH (LOCK)
   - DRIVER'S DOOR KEY CYLINDER SWITCH (UNLOCK)
   - DRIVER'S REAR DOOR KNOB SWITCH (UNLOCK)
   - PASSENGER'S REAR DOOR KNOB SW. (UNLOCK)
   - DRIVER'S REAR DOOR SWITCH
   - PASSENGER'S REAR DOOR SWITCH

   Is each switch information OK?

   YES - Intermittent failure, the system is OK at this time.

   NO - Troubleshoot the indicated circuit.

   - Trunk lid latch switch circuit troubleshooting (see **TRUNK LID LATCH SWITCH CIRCUIT TROUBLESHOOTING**)
   - Security hood switch circuit troubleshooting (see **SECURITY HOOD SWITCH CIRCUIT TROUBLESHOOTING**)
   - Driver's door lock knob switch circuit troubleshooting (see **DRIVER'S DOOR LOCK KNOB SWITCH CIRCUIT TROUBLESHOOTING**)
   - Front passenger's door lock knob switch circuit troubleshooting (see **FRONT PASSENGER'S DOOR LOCK KNOB SWITCH CIRCUIT TROUBLESHOOTING**)
   - Driver's door switch circuit troubleshooting (see **DRIVER'S DOOR SWITCH CIRCUIT TROUBLESHOOTING**)
   - Front passenger's door switch circuit troubleshooting (see **FRONT PASSENGER'S DOOR SWITCH CIRCUIT TROUBLESHOOTING**)
   - Driver's door key cylinder switch circuit troubleshooting (see **DRIVER'S DOOR KEY CYLINDER SWITCH CIRCUIT TROUBLESHOOTING**)
   - Left rear door lock knob switch circuit troubleshooting (see **LEFT REAR DOOR LOCK KNOB SWITCH CIRCUIT TROUBLESHOOTING**)
   - Right rear door lock knob switch circuit troubleshooting (see **RIGHT REAR DOOR LOCK KNOB SWITCH CIRCUIT TROUBLESHOOTING**)

- Left rear door switch circuit troubleshooting (see **LEFT REAR DOOR SWITCH CIRCUIT TROUBLESHOOTING**)
- Right rear door switch circuit troubleshooting (see **RIGHT REAR DOOR SWITCH CIRCUIT TROUBLESHOOTING**)

TRUNK LID LATCH SWITCH CIRCUIT TROUBLESHOOTING

1. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
2. With the trunk lid closed, select SECURITY with the HDS, and enter the DATA LIST.
3. Check the ON/OFF information of the TRUNK LID/TAILGATE SWITCH in the DATA LIST.

   Is information indicator ON?

   YES - Go to step 4.

   NO - Go to step 8.

4. Disconnect the trunk lid latch 3P connector.
5. Check the ON/OFF information of the TRUNK LID/TAILGATE SWITCH in the DATA LIST.

   Is information indicator OFF?

   YES - Faulty trunk lid latch switch; replace the trunk lid latch (see **TRUNK LID LATCH REPLACEMENT**).

   NO - Go to step 6.

6. Disconnect driver's under-dash fuse/relay box connector D(16P).
7. Check for continuity between driver's under-dash fuse/relay box connector D (16P) terminal No. 5 and body ground.

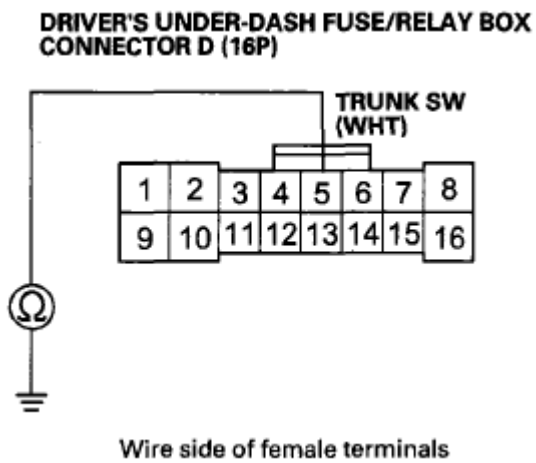


Fig. 12: Checking Continuity Between Driver's Under-Dash Fuse/Relay Box Connector D (16P)

Terminal No. 5 And Body Ground With Connector End View
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair a short to ground in the wire.

NO - Faulty driver's MICU; replace the driver's under-dash fuse/relay box (see **DRIVER'S UNDER-DASH FUSE/RELAY BOX (MICU) REMOVAL AND INSTALLATION**).

8. Disconnect the trunk lid latch 3P connector.
9. Connect trunk lid latch 3P connector terminal No. 1 and body ground with a jumper wire.

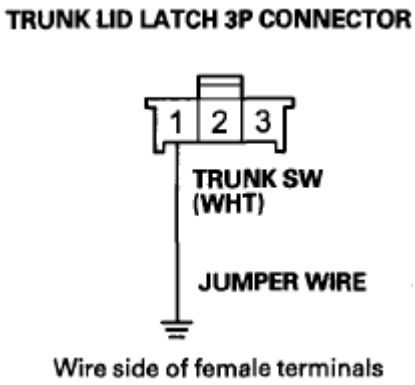


Fig. 13: Connecting Trunk Lid Latch 3P Connector Terminal No. 1 And Body Ground With Jumper Wire With Connector End View
Courtesy of AMERICAN HONDA MOTOR CO., INC.

10. Check the ON/OFF information of the TRUNK LID/TAILGATE SWITCH in the DATA LIST.

    Is information indicator ON?

    YES - Go to step 11.

    NO - Go to step 12.

11. Check for continuity between trunk lid latch 3P connector terminal No. 2 and body ground.

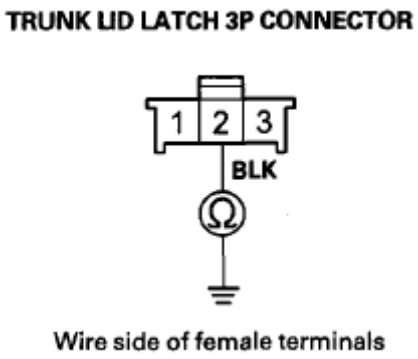


Fig. 14: Checking Continuity Between Trunk Lid Latch 3P Connector Terminal No. 2 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Faulty trunk lid latch switch; replace the trunk lid latch (see **TRUNK LID LATCH REPLACEMENT**).

NO - Repair an open or high resistance in the ground wire or poor ground (G603).

12. Connect driver's under-dash fuse/relay box connector D (16P) terminal No. 5 and body ground with a jumper

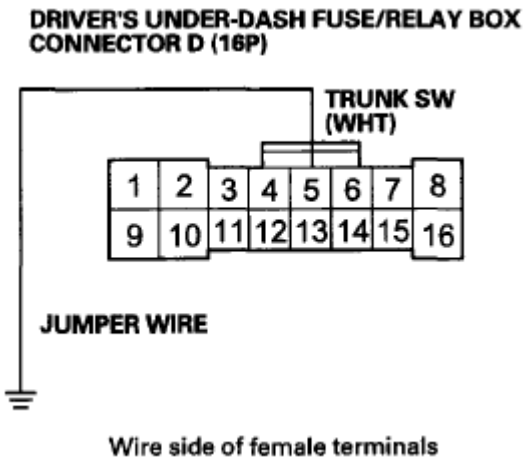


Fig. 15: Connecting Driver's Under-Dash Fuse/Relay Box Connector D (16P) Terminal No. 5 And Body Ground With Jumper
Courtesy of AMERICAN HONDA MOTOR CO., INC.

13. Check the ON/OFF information of the TRUNK LID/TAILGATE SWITCH in the DATA LIST.

Is information indicator ON?

YES - Repair an open or high resistance in the wire.

NO - Faulty driver's MICU; replace the driver's under-dash fuse/relay box (see **DRIVER'S UNDER-DASH FUSE/RELAY BOX (MICU) REMOVAL AND INSTALLATION**).

SECURITY HOOD SWITCH CIRCUIT TROUBLESHOOTING

1. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
2. With the hood closed, select SECURITY with the HDS, and enter the DATA LIST.
3. Check the ON/OFF information of the SECURITY HOOD SWITCH in the DATA LIST.

   Is information indicator ON?

   YES - Go to step 4.

   NO - Go to step 8.

4. Disconnect the security hood switch 2P connector.
5. Check the ON/OFF information of the SECURITY HOOD SWITCH in the DATA LIST.

   Is information indicator OFF?

   YES - Faulty security hood switch; replace the hood latch (see **HOOD LATCH REPLACEMENT**).

   NO - Go to step 6.

6. Disconnect driver's under-dash fuse/relay box connector G (13P).
7. Check for continuity between driver's under-dash fuse/relay box connector G (13P) terminal No. 3 and body ground.

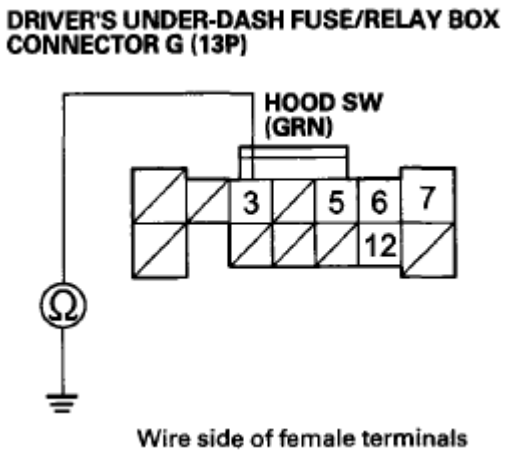


Fig. 16: Checking Continuity Between Driver's Under-Dash Fuse/Relay Box Connector G (13P) Terminal No. 3 And Body Ground With Connector End View
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair a short to ground in the wire.

NO - Faulty driver's MICU; replace the driver's under-dash fuse/relay box (see **DRIVER'S UNDER-DASH FUSE/RELAY BOX (MICU) REMOVAL AND INSTALLATION**).

8. Disconnect the security hood switch 2P connector.
9. Connect security hood switch 2P connector terminal No. 2 and body ground with a jumper wire.

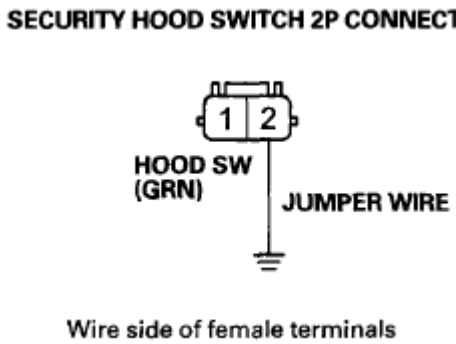


Fig. 17: Connecting Security Hood Switch 2P Connector Terminal No. 2 And Body Ground With Jumper Wire With Connector End View
Courtesy of AMERICAN HONDA MOTOR CO., INC.

10. Check the ON/OFF information of the SECURITY HOOD SWITCH in the DATA LIST.

Is information indicator ON?

YES - Go to step 11.

NO - Go to step 12.

11. Check for continuity between security hood switch 2P connector terminal No. 1 and body ground.

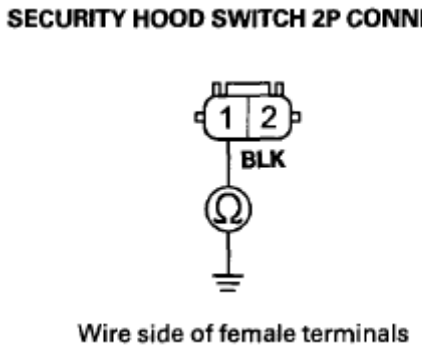


Fig. 18: Checking Continuity Between Security Hood Switch 2P Connector Terminal No. 1 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Faulty security hood switch; replace the hood latch (see **HOOD LATCH REPLACEMENT**).

NO - Repair an open or high resistance in the ground wire or poor ground (G302).

12. Connect driver's under-dash fuse/relay box connector G (13P) terminal No. 3 and body ground with a jumper

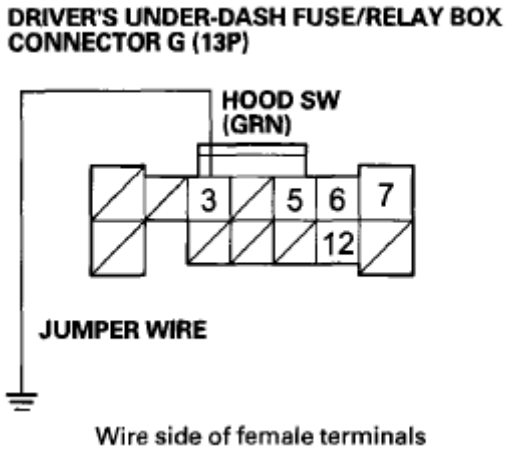


Fig. 19: Connecting Driver's Under-Dash Fuse/Relay Box Connector G (13P) Terminal No. 3 And Body Ground With Jumper
Courtesy of AMERICAN HONDA MOTOR CO., INC.

13. Check the ON/OFF information of the SECURITY HOOD SWITCH in the DATA LIST.

Is information indicator ON?

YES - Repair an open or high resistance in the wire.

NO - Faulty driver's MICU; replace the driver's under-dash fuse/relay box (see **DRIVER'S UNDER-DASH FUSE/RELAY BOX (MICU) REMOVAL AND INSTALLATION**).

DRIVER'S DOOR LOCK KNOB SWITCH CIRCUIT TROUBLESHOOTING

1. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
2. With the driver's door lock knob switch in LOCK position, select SECURITY with the HDS, and enter the DATA LIST.
3. Check the ON/OFF information of the DRIVER'S DOOR LOCK KNOB SWITCH (UNLOCK) in the DATA LIST.

Is Information indicator ON?

YES - Go to step 4.

NO - Go to step 8.

4. Disconnect the driver's door latch 10P connector.
5. Check the ON/OFF information of the DRIVER'S DOOR LOCK KNOB SWITCH (UNLOCK) in the DATA LIST.

   Is information indicator OFF?

   YES - Faulty driver's door lock knob switch; replace the driver's door latch (see **FRONT DOOR LATCH REPLACEMENT**).

   NO - Go to step 6.

6. Disconnect the power window master switch 37P connector.
7. Check for continuity between power window master switch 37P connector terminal No. 32 and body ground.

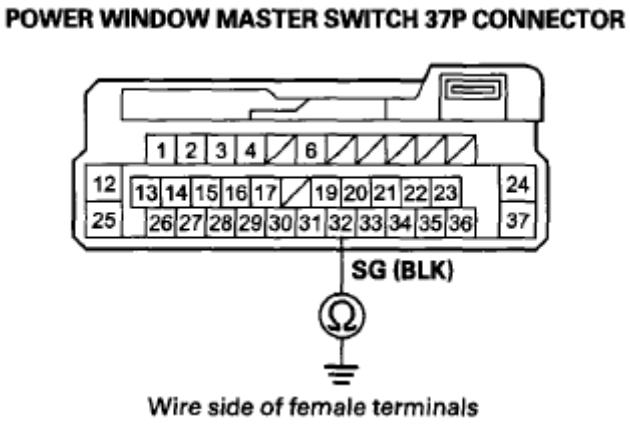


Fig. 20: Checking Continuity Between Power Window Master Switch 37P Connector Terminal No. 32 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair a short to ground in the wire.

NO - Faulty door multiplex control unit; replace the power window master switch (see **REAR POWER WINDOW SWITCH TEST**).

8. Disconnect the driver's door latch 10P connector.
9. Connect driver's door latch 10P connector terminal No. 7 and body ground with a jumper wire.

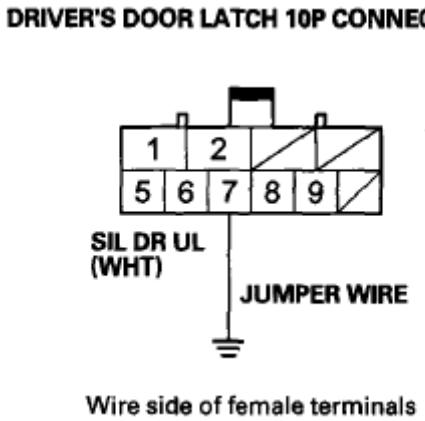


Fig. 21: Connecting Driver's Door Latch 10P Connector Terminal No. 7 And Body Ground With Jumper Wire With Connector End View
Courtesy of AMERICAN HONDA MOTOR CO., INC.

10. Check the ON/OFF information of the DRIVER'S DOOR LOCK KNOB SWITCH (UNLOCK) in the DATA LIST.

    Is information indicator ON?

    YES - Go to step 11.

    NO - Go to step 12.

11. Check for continuity between driver's door latch 10P connector terminal No. 5 and body ground.

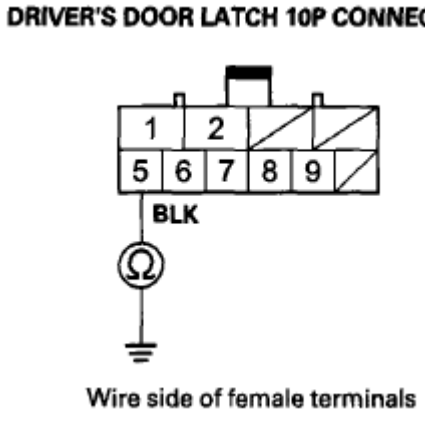


Fig. 22: Checking Continuity Between Driver's Door Latch 10P Connector Terminal No. 5 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Faulty driver's door lock knob switch; replace the driver's door latch (see **FRONT DOOR**

LATCH REPLACEMENT).

NO - Repair an open or high resistance in the ground wire or poor ground (G401).

12. Connect power window master switch 37P connector terminal No. 31 and body ground with a jumper wire.

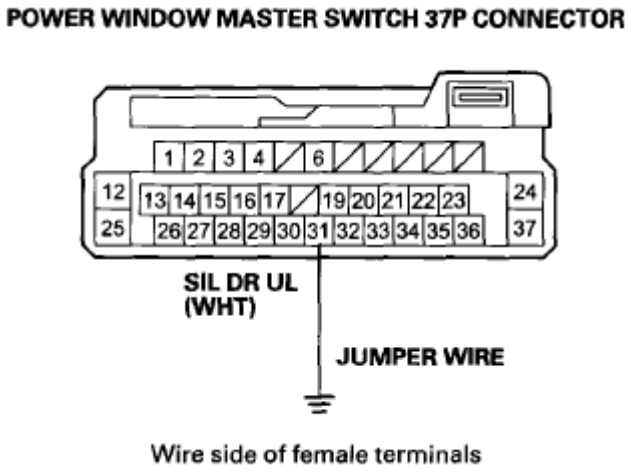


Fig. 23: Connecting Power Window Master Switch 37P Connector Terminal No. 31 And Body Ground With Jumper Wire
Courtesy of AMERICAN HONDA MOTOR CO., INC.

13. Check the ON/OFF information of the DRIVER'S DOOR LOCK KNOB SWITCH (UNLOCK) in the DATA LIST.

Is information indicator ON?

YES - Repair an open or high resistance in the wire.

NO - Faulty door multiplex control unit; replace the power window master switch (see **REAR POWER WINDOW SWITCH TEST**).

FRONT PASSENGER'S DOOR LOCK KNOB SWITCH CIRCUIT TROUBLESHOOTING

1. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
2. With the front passenger's door lock knob switch in LOCK position, select SECURITY with the HDS, and enter the DATA LIST.
3. Check the ON/OFF information of the FRONT PASSENGER'S DOOR LOCK KNOB SWITCH (UNLOCK) in the DATA LIST.

Is information indicator ON?

YES - Go to step 4.

NO - Go to step 8.

4. Disconnect the front passenger's door latch 10P connector.
5. Check the ON/OFF information of the FRONT PASSENGER'S DOOR LOCK KNOB SWITCH (UNLOCK) in the DATA LIST.

   Is information indicator OFF?

   YES - Faulty front passenger's door lock knob switch; replace the front passenger's door latch (see **FRONT DOOR LATCH REPLACEMENT**).

   NO - Go to step 6.

6. Disconnect the front passenger's power window switch 37P connector.
7. Check for continuity between front passenger's power window switch 37P connector terminal No. 34 and body ground.

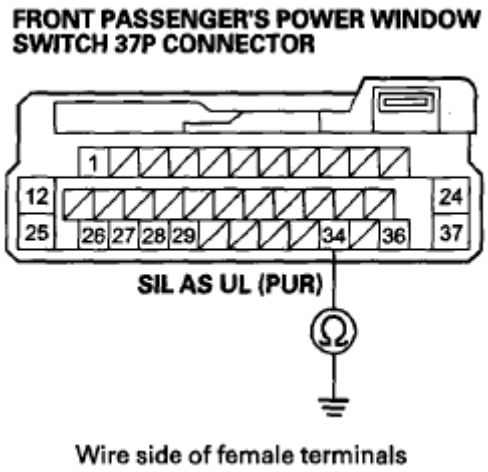


Fig. 24: Checking Continuity Between Front Passenger'S Power Window Switch 37P Connector Terminal No. 34 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair a short to ground in the wire.

NO - Replace the front passenger's power window switch (see **FRONT PASSENGER'S POWER WINDOW SWITCH REPLACEMENT**).

8. Disconnect the front passenger's door latch 10P connector.
9. Connect front passenger's door latch 10P connector terminal No. 8 and body ground with a jumper wire.

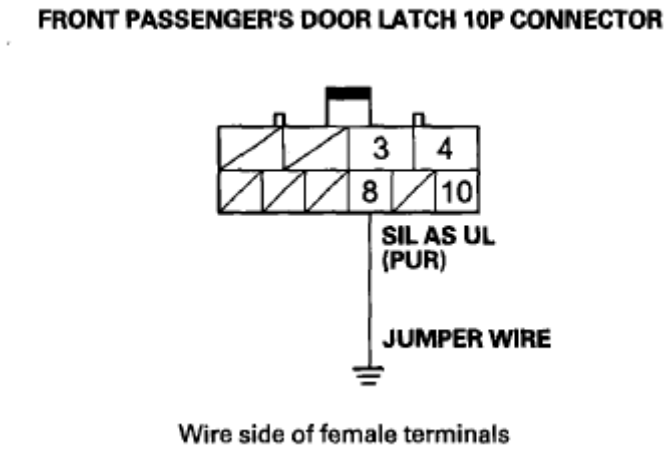


Fig. 25: Connecting Front Passenger's Door Latch 10P Connector Terminal No. 8 And Body Ground With Jumper Wire
Courtesy of AMERICAN HONDA MOTOR CO., INC.

10. Check the ON/OFF information of the FRONT PASSENGER'S DOOR LOCK KNOB SWITCH (UNLOCK) in the DATA LIST.

    Is information indicator ON?

    YES - Go to step 11.

    NO - Go to step 12.

11. Check for continuity between front passenger's door latch 10P connector terminal No. 10 and body ground.

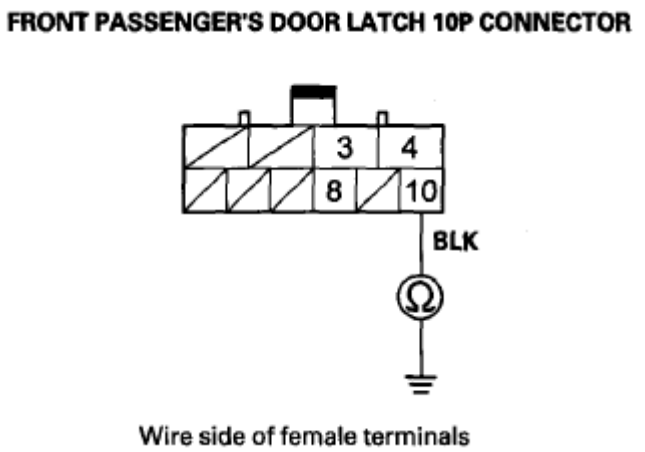


Fig. 26: Checking Continuity Between Front Passenger's Door Latch 10P Connector Terminal No. 10 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Faulty front passenger's door lock knob switch (UNLOCK); replace the front passenger's door latch (see **FRONT DOOR LATCH REPLACEMENT**).

NO - Repair an open or high resistance in the ground wire or poor ground (G405).

12. Connect front passenger's power window switch 37P connector terminal No. 34 and body ground with a jumper wire.

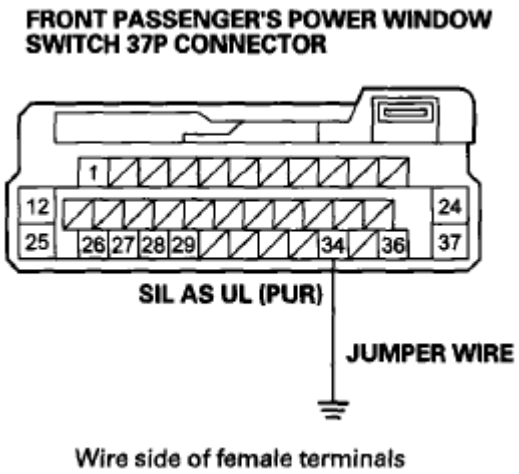


Fig. 27: Connecting Front Passenger's Power Window Switch 37P Connector Terminal No. 34 And Body Ground With Jumper Wire
Courtesy of AMERICAN HONDA MOTOR CO., INC.

13. Check the ON/OFF information of the FRONT PASSENGER'S DOOR LOCK KNOB SWITCH (UNLOCK) in the DATA LIST.

Is information indicator ON?

YES - Repair an open or high resistance in the wire.

NO - Replace the front passenger's power window switch (see **FRONT PASSENGER'S POWER WINDOW SWITCH REPLACEMENT**).

DRIVER'S DOOR SWITCH CIRCUIT TROUBLESHOOTING

1. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
2. With the driver's door closed, select SECURITY with the HDS, and enter the DATA LIST.
3. Check the ON/OFF information of the DRIVER'S DOOR SWITCH in the DATA LIST.

Is information indicator ON?

YES - Go to step 4.

NO - Go to step 9.

4. Remove the driver's door switch.
5. Disconnect the driver's door switch 1P connector.
6. Check for continuity between the driver's door switch 1P connector and switch ground.

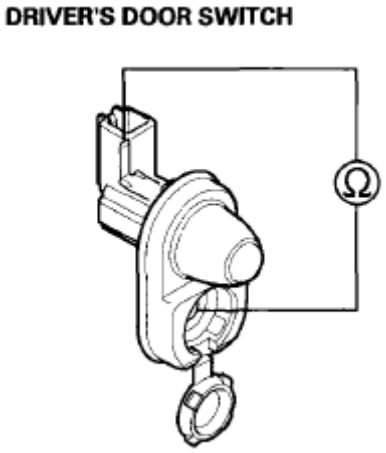


Fig. 28: Checking Continuity Between Driver's Door Switch 1P Connector And Switch Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there no continuity when the switch is pushed, and is there continuity when the switch is released?

YES - Go to step 7.

NO - Replace the driver's door switch.

7. Disconnect driver's under-dash fuse/relay box connector D(16P).
8. Check for continuity between driver's under-dash fuse/relay box connector D (16P) terminal No. 12 and body ground.

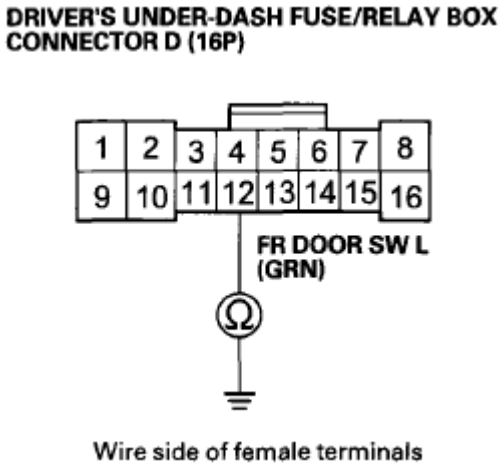


Fig. 29: Checking Continuity Between Driver's Under-Dash Fuse/Relay Box Connector D (16P) Terminal No. 12 And Body Ground

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair a short to ground in the wire.

NO - Faulty driver's MICU; replace the driver's under-dash fuse/relay box (see **DRIVER'S UNDER-DASH FUSE/RELAY BOX (MICU) REMOVAL AND INSTALLATION**).

9. Remove the driver's door switch.
10. Disconnect the driver's door switch 1P connector.
11. Check for continuity between driver's door switch 1P connector and switch ground.

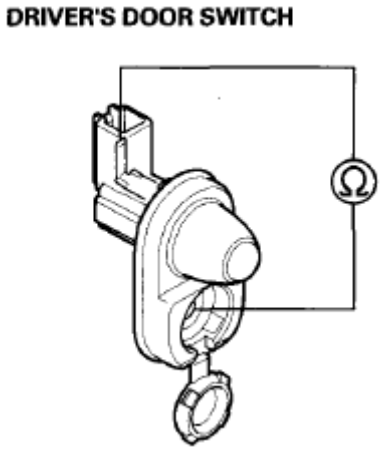


Fig. 30: Checking Continuity Between Driver's Door Switch 1P Connector And Switch Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there no continuity when the switch is pushed, and is there continuity when the switch is released?

YES - Go to step 12.

NO - Replace the driver's door switch.

12. Connect driver's under-dash fuse/relay box connector D (16P) terminal No. 12 and body ground with a jumper wire.

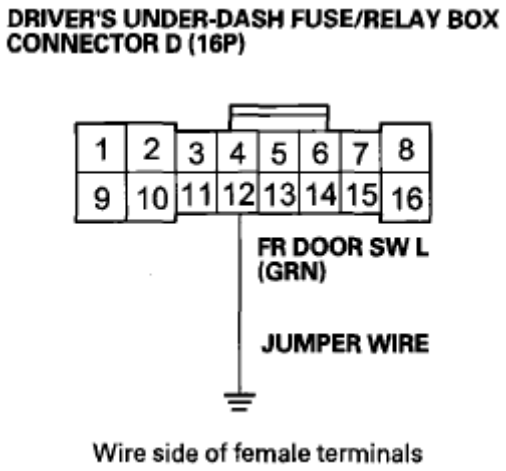


Fig. 31: Connecting Driver's Under-Dash Fuse/Relay Box Connector D (16P) Terminal No. 12 And Body Ground With Jumper Wire
Courtesy of AMERICAN HONDA MOTOR CO., INC.

13. Check the ON/OFF information of the DRIVER'S DOOR SWITCH in the DATA LIST.

    Is information indicator ON?

    YES - Repair an open or high resistance in the wire.

    NO - Faulty driver's MICU; replace the driver's under-dash fuse/relay box (see **DRIVER'S UNDER-DASH FUSE/RELAY BOX (MICU) REMOVAL AND INSTALLATION**).

FRONT PASSENGER'S DOOR SWITCH CIRCUIT TROUBLESHOOTING

1. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
2. With the front passenger's door closed, select SECURITY with the HDS, and enter the DATA LIST.
3. Check the ON/OFF information of the FRONT PASSENGER'S DOOR SWITCH in the DATA LIST.

   Is information indicator ON?

   YES - Go to step 4.

   NO - Go to step 9.

4. Remove the front passenger's door switch.
5. Disconnect the front passenger's door switch 1P connector.
6. Check for continuity between front passenger's door switch 1P connector and switch ground.

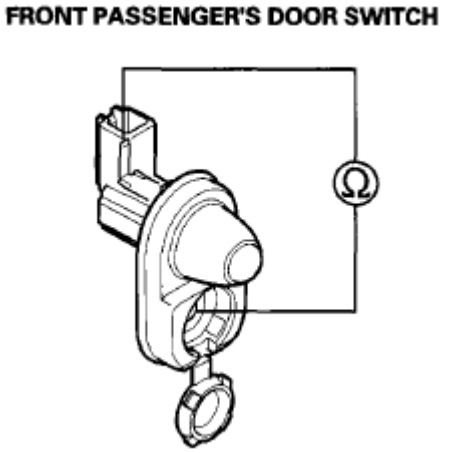


Fig. 32: Checking Continuity Between Front Passenger's Door Switch 1P Connector And Switch Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there no continuity when the switch is pushed, and is there continuity when the switch is released?

YES - Go to step 7.

NO - Replace the front passenger's door switch.

7. With SH-AWD: Disconnect passenger's under-dash fuse/relay box connector H (38P).

   Without SH-AWD: Disconnect passenger's under-dash fuse/relay box connector G (16P).

8. With SH-AWD: Check for continuity between passenger's under-dash fuse/relay box connector H (38P) terminal No. 3 and body ground.

   Without SH-AWD: Check for continuity between passenger's under-dash fuse/relay box connector G (16P) terminal No. 15 and body ground.

   With SH-AWD

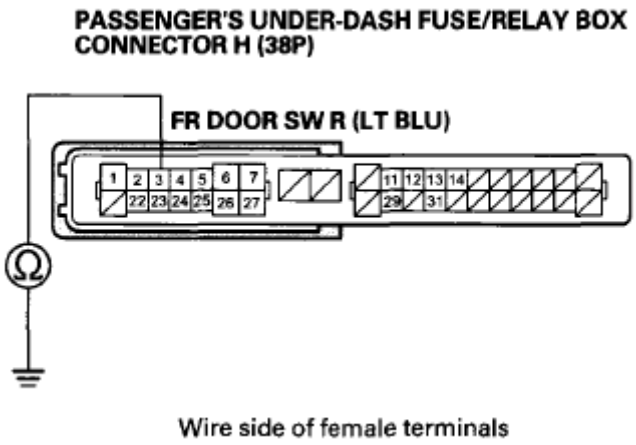


Fig. 33: Checking Continuity Between Passenger's Under-Dash Fuse/Relay Box Connector H (38P) Terminal No. 3 And Body Ground - With SH-AWD With Connector End View
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Without SH-AWD

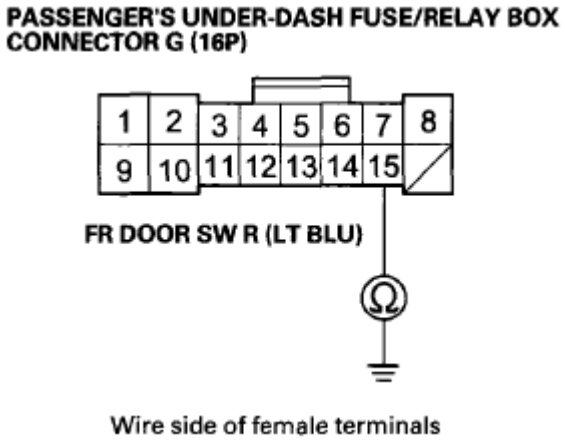


Fig. 34: Checking Continuity Between Passenger'S Under-Dash Fuse/Relay Box Connector G (16P) Terminal No. 15 And Body Ground - Without SH-AWD With Connector End View
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair a short to ground in the wire.

NO - Faulty passenger's MICU; replace the passenger's under-dash fuse/relay box (see **PASSENGER'S UNDER-DASH FUSE/RELAY BOX (MICU) REMOVAL AND INSTALLATION**).

9. Remove the front passenger's door switch.
10. Disconnect the front passenger's door switch 1P connector.
11. Check for continuity between front passenger's door switch 1P connector and switch ground.

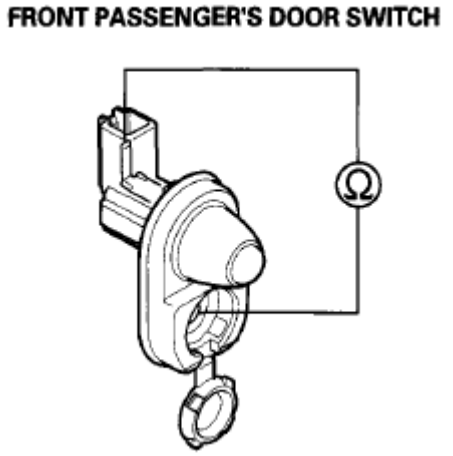


Fig. 35: Checking Continuity Between Front Passenger's Door Switch 1P Connector And Switch Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there no continuity when the switch is pushed, and is there continuity when the switch is released?

YES - Go to step 12.

NO - Replace the front passenger's door switch.

12. With SH-AWD: Connect passenger's under-dash fuse/relay box connector H (38P) terminal No. 3 and body ground with a jumper wire. Without SH-AWD: Connect passenger's under-dash fuse/relay box connector G (16P) terminal No. 15 and body ground with a jumper wire.

With SH-AWD

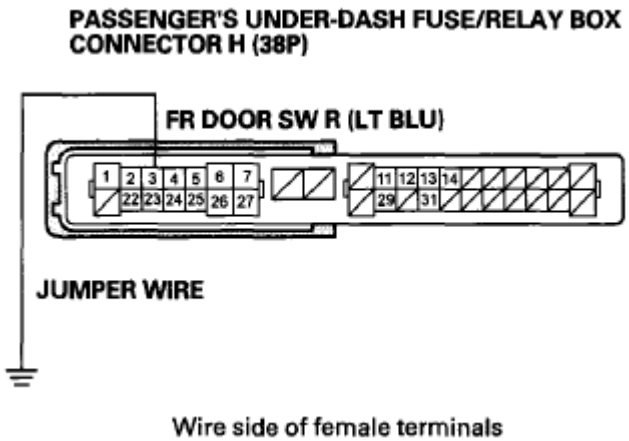


Fig. 36: Connecting Passenger's Under-Dash Fuse/Relay Box Connector H (38P) Terminal No. 3 And Body Ground With Jumper Wire - With SH-AWD
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Without SH-AWD

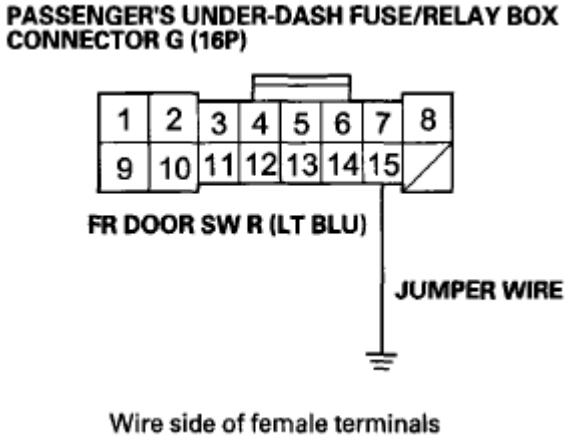


Fig. 37: Connecting Passenger's Under-Dash Fuse/Relay Box Connector G (16P) Terminal No. 15 And Body Ground With Jumper Wire - Without SH-AWD
Courtesy of AMERICAN HONDA MOTOR CO., INC.

13. Check the ON/OFF information of the FRONT PASSENGER'S DOOR SWITCH in the DATA LIST.

    Is information indicator ON?

    YES - Repair an open or high resistance in the wire.

    NO - Faulty passenger's MICU; replace the passenger's under-dash fuse/relay box (see **PASSENGER'S UNDER-DASH FUSE/RELAY BOX (MICU) REMOVAL AND INSTALLATION**).

DRIVER'S DOOR KEY CYLINDER SWITCH CIRCUIT TROUBLESHOOTING

NOTE: Before troubleshooting, check the B-CAN DTCs. If any DTC is indicated, refer to the B-CAN System Diagnosis Test Mode A (see TROUBLESHOOTING - B-CAN SYSTEM DIAGNOSIS TEST MODE A), and troubleshoot the indicated DTCs first.

1. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
2. Disconnect the driver's door latch 10P connector.
3. Connect driver's door latch 10P connector terminal No. 9 and body ground with a jumper wire.

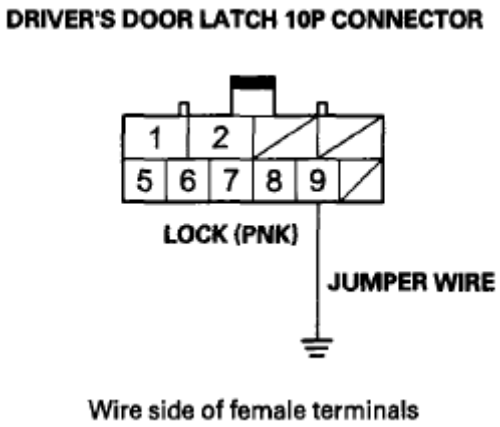


Fig. 38: Connecting Driver's Door Latch 10P Connector Terminal No. 9 And Body Ground With Jumper Wire
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Select SECURITY with the HDS, and enter the DATA LIST.
5. Check the ON/OFF information of the DRIVER'S DOOR KEY CYLINDER SWITCH (LOCK) in the DATA LIST.

   Is information indicator ON?

   YES - Go to step 6.

   NO - Go to step 8.

6. Test the driver's door key cylinder switch (see **DOOR KEY CYLINDER SWITCH TEST**).

   Is the switch OK?

   YES - Go to step 7.

   NO - Faulty driver's door key cylinder switch; replace the driver's door latch (see **FRONT DOOR LATCH REPLACEMENT**).

7. Check for continuity between driver's door latch 10P connector terminal No. 5 and body ground.

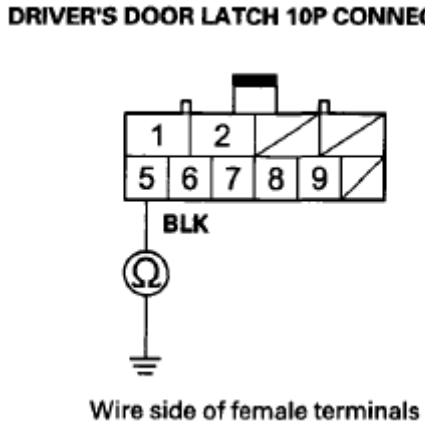


Fig. 39: Checking Continuity Between Driver's Door Latch 10P Connector Terminal No. 5 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Faulty door multiplex control unit; replace the power window master switch (see **REAR POWER WINDOW SWITCH TEST**).

NO - Repair an open or high resistance in the wire or poor ground (G401).

8. Connect power window master switch 37P connector terminal No. 28 and body ground with a jumper wire.

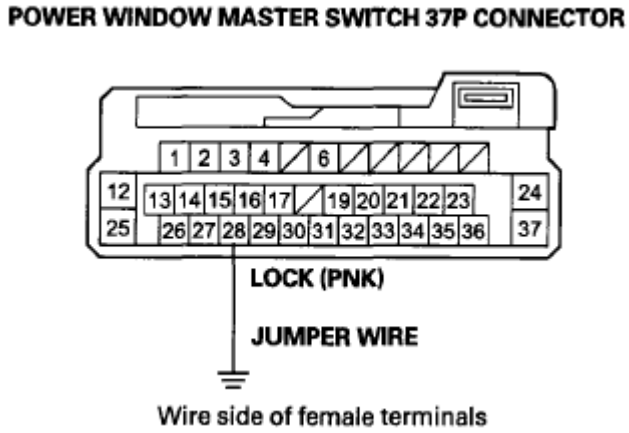


Fig. 40: Connecting Power Window Master Switch 37P Connector Terminal No. 28 And Body Ground With Jumper Wire
Courtesy of AMERICAN HONDA MOTOR CO., INC.

9. Check the ON/OFF information of the DRIVER'S DOOR KEY CYLINDER SWITCH (LOCK) in the DATA LIST.

Is information indicator ON?

YES - Repair an open or high resistance in the wire.

NO - Faulty door multiplex control unit; replace the power window master switch (see **REAR POWER WINDOW SWITCH TEST**).

LEFT REAR DOOR LOCK KNOB SWITCH CIRCUIT TROUBLESHOOTING

1. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
2. With the left rear door lock knob switch in LOCK position, select SECURITY with the HDS, and enter the DATA LIST.
3. Check the ON/OFF information of the DRIVER'S REAR DOOR LOCK KNOB SWITCH (UNLOCK) in the DATA LIST.

   Is information indicator ON?

   YES - Go to step 4.

   NO - Go to step 8.

4. Disconnect the left rear door latch 10P connector.
5. Check the ON/OFF information of the DRIVER'S REAR DOOR LOCK KNOB SWITCH (UNLOCK) in the DATA LIST.

   Is information indicator OFF?

   YES - Faulty left rear door lock knob switch; replace the left rear door latch (see **REAR DOOR LATCH REPLACEMENT**).

   NO - Go to step 6.

6. Disconnect driver's under-dash fuse/relay box connector D(16P).
7. Check the ON/OFF information of the DRIVER'S REAR DOOR LOCK KNOB SWITCH (UNLOCK) in the DATA LIST.

   Is information indicator OFF?

   YES - Repair a short to ground in the wire.

   NO - Faulty driver's MICU; replace the driver's under-dash fuse/relay box (see **DRIVER'S UNDER-DASH FUSE/RELAY BOX (MICU) REMOVAL AND INSTALLATION**).

8. Disconnect the left rear door latch 10P connector.
9. Connect left rear door latch 10P connector terminal No. 7 and body ground with a jumper wire.

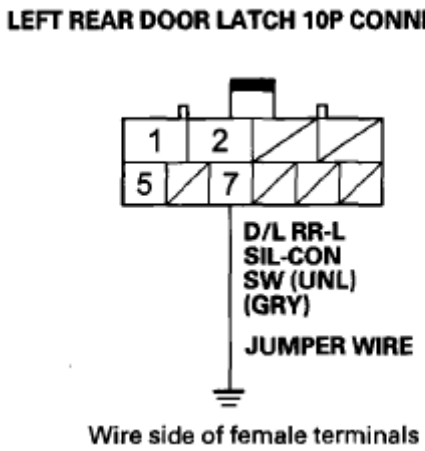


Fig. 41: Connecting Left Rear Door Latch 10P Connector Terminal No. 7 And Body Ground With Jumper Wire
Courtesy of AMERICAN HONDA MOTOR CO., INC.

10. Check the ON/OFF information of the DRIVER'S REAR DOOR LOCK KNOB SWITCH (UNLOCK) in the DATA LIST.

    Is information indicator ON?

    YES - Go to step 11.

    NO - Go to step 12.

11. Check for continuity between left rear door latch 10P connector terminal No. 5 and body ground.

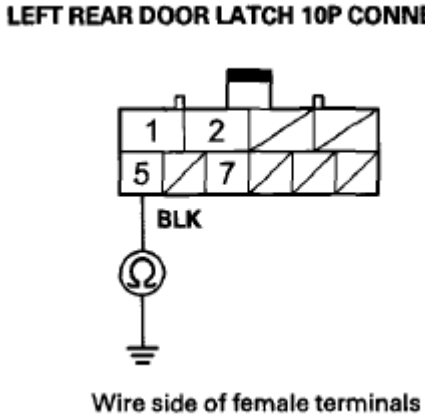


Fig. 42: Checking Continuity Between Left Rear Door Latch 10P Connector Terminal No. 5 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Faulty left rear door lock knob switch; replace the left rear door latch (see **REAR DOOR LATCH**

REPLACEMENT).

NO - Repair an open or high resistance in the ground wire or poor ground (G601).

12. Connect driver's under-dash fuse/relay box connector D (16P) terminal No. 15 and body ground with a jumper wire.

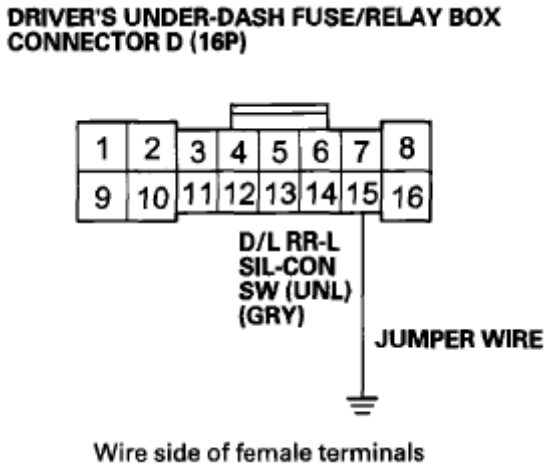


Fig. 43: Connecting Driver's Under-Dash Fuse/Relay Box Connector D (16P) Terminal No. 15 And Body Ground With Jumper Wire
Courtesy of AMERICAN HONDA MOTOR CO., INC.

13. Check the ON/OFF information of the DRIVER'S REAR DOOR LOCK KNOB SWITCH (UNLOCK) in the DATA LIST.

Is information indicator ON?

YES - Repair an open or high resistance in the wire.

NO - Faulty driver's MICU; replace the driver's under-dash fuse/relay box (see **DRIVER'S UNDER-DASH FUSE/RELAY BOX (MICU) REMOVAL AND INSTALLATION**).

RIGHT REAR DOOR LOCK KNOB SWITCH CIRCUIT TROUBLESHOOTING

1. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
2. With the right rear door lock knob switch in LOCK position, select SECURITY with the HDS, and enter the DATA LIST.
3. Check the ON/OFF information of the PASSENGER'S REAR DOOR LOCK KNOB SW. (UNLOCK) in the DATA LIST.

Is information indicator ON?

YES - Go to step 4.

NO - Go to step 8.

4. Disconnect the right rear door latch 10P connector.
5. Check the ON/OFF information of the PASSENGER'S REAR DOOR LOCK KNOB SW. (UNLOCK) in the DATA LIST.

   Is information indicator OFF?

   YES - Faulty right rear door lock knob switch; replace the right rear door latch (see **REAR DOOR LATCH REPLACEMENT**).

   NO - Go to step 6.

6. With SH-AWD: Disconnect the passenger's under-dash fuse/relay box connector H (38P). Without SH-AWD: Disconnect the passenger's under-dash fuse/relay box connector G (16P).
7. With SH-AWD: Check for continuity between passenger's under-dash fuse/relay box connector H (38P) terminal No. 22 and body ground. Without SH-AWD: Check for continuity between passenger's under-dash fuse/relay box connector G (16P) terminal No. 6 and body ground.

   With SH-AWD

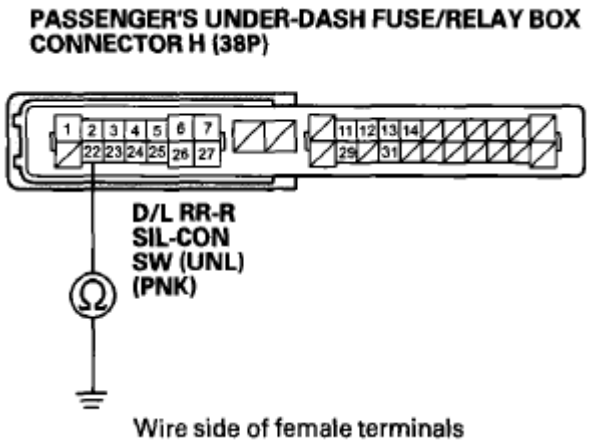


Fig. 44: Checking Continuity Between Passenger's Under-Dash Fuse/Relay Box Connector H (38P) Terminal No. 22 And Body Ground - With SH-AWD
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Without SH-AWD

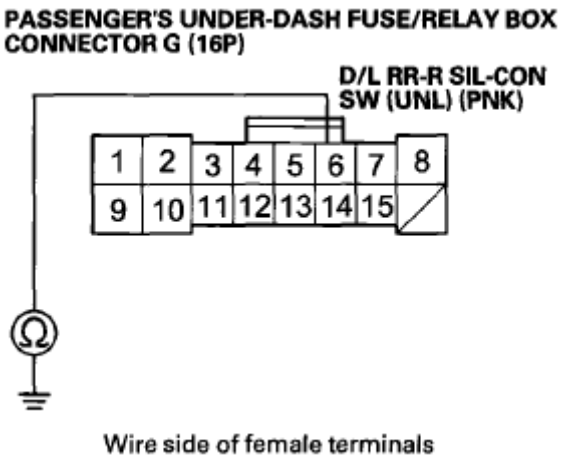


Fig. 45: Checking Continuity Between Passenger's Under-Dash Fuse/Relay Box Connector G (16P) Terminal No. 6 And Body Ground - Without SH-AWD
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair a short to ground in the wire.

NO - Faulty passenger's MICU; replace the passenger's under-dash fuse/relay box (see **PASSENGER'S UNDER-DASH FUSE/RELAY BOX (MICU) REMOVAL AND INSTALLATION**).

8. Disconnect the right rear door latch 10P connector.
9. Connect right rear door latch 10P connector terminal No. 8 and body ground with a jumper wire.

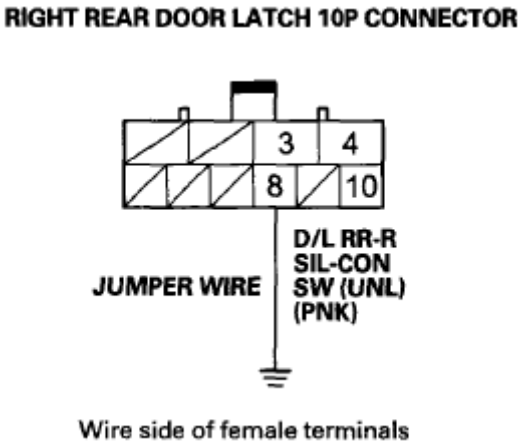


Fig. 46: Connecting Right Rear Door Latch 10P Connector Terminal No. 8 And Body Ground With Jumper Wire
Courtesy of AMERICAN HONDA MOTOR CO., INC.

10. Check the ON/OFF information of the PASSENGER'S REAR DOOR LOCK KNOB SW. (UNLOCK) in the DATA LIST.

Is information indicator ON?

YES - Go to step 11.

NO - Go to step 12.

11. Check for continuity between right rear door latch 10P connector terminal No. 10 and body ground.

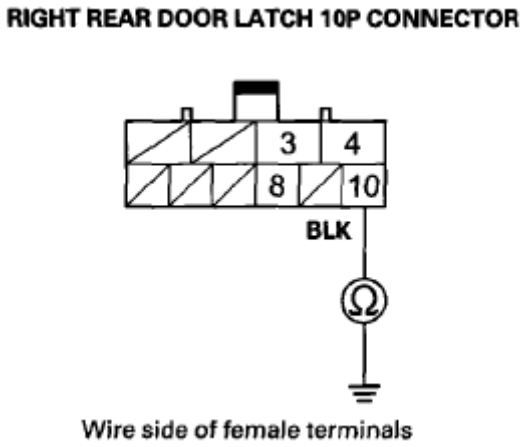


Fig. 47: Checking Continuity Between Right Rear Door Latch 10P Connector Terminal No. 10 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Faulty right rear door lock knob switch (UNLOCK); replace the right rear door latch (see **REAR DOOR LATCH REPLACEMENT**).

NO - Repair an open or high resistance in the ground wire or poor ground (G651).

12. With SH-AWD: Connect passenger's under-dash fuse/relay box connector H (38P) terminal No. 22 and body ground with a jumper wire. Without SH-AWD: Connect passenger's under-dash fuse/relay box connector G (16P) terminal No. 6 and body ground with a jumper wire.

With SH-AWD

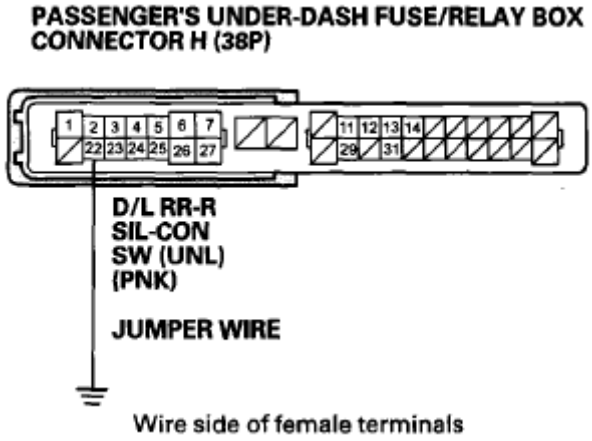


Fig. 48: Connecting Passenger's Under-Dash Fuse/Relay Box Connector H (38P) Terminal No. 22 And Body Ground With Jumper Wire - With SH-AWD
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Without SH-AWD

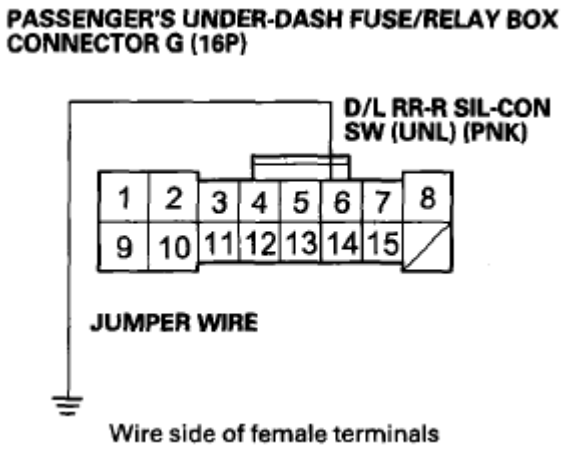


Fig. 49: Connecting Passenger's Under-Dash Fuse/Relay Box Connector G (16P) Terminal No. 6 And Body Ground With Jumper Wire - Without SH-AWD
Courtesy of AMERICAN HONDA MOTOR CO., INC.

13. Check the ON/OFF information of the PASSENGER'S REAR DOOR LOCK KNOB SW. (UNLOCK) in the DATA LIST.

    Is information indicator ON?

    YES - Repair an open or high resistance in the wire.

    NO - Faulty passenger's MICU; replace the passenger's under-dash fuse/relay box (see **PASSENGER'S UNDER-DASH FUSE/RELAY BOX (MICU) REMOVAL AND INSTALLATION**).

LEFT REAR DOOR SWITCH CIRCUIT TROUBLESHOOTING

1. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
2. With the left rear door closed, select SECURITY with the HDS, and enter the DATA LIST.
3. Check the ON/OFF information of the DRIVER'S REAR DOOR SWITCH in the DATA LIST.

   Is information indicator ON?

   YES - Go to step 4.

   NO - Go to step 9.

4. Remove the left rear door switch.
5. Disconnect the left rear door switch 1P connector.
6. Check for continuity between the left rear door switch 1P connector and switch ground.

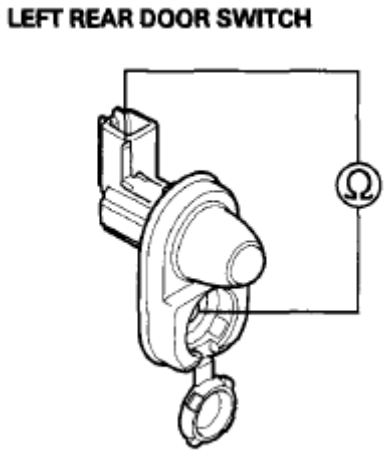


Fig. 50: Checking Continuity Between Left Rear Door Switch 1P Connector And Switch Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there no continuity when the switch is pushed, and is there continuity when the switch is released?

YES - Go to step 7.

NO - Replace the left rear door switch.

7. Disconnect driver's under-dash fuse/relay box connector D(16P).
8. Check for continuity between driver's under-dash fuse/relay box connector D (16P) terminal No. 4 and body ground.

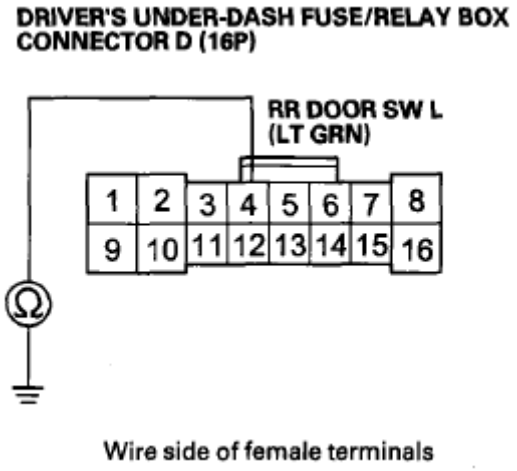


Fig. 51: Checking Continuity Between Driver's Under-Dash Fuse/Relay Box Connector D (16P) Terminal No. 4 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair a short to ground in the wire.

NO - Faulty driver's MICU; replace the driver's under-dash fuse/relay box (see **DRIVER'S UNDER-DASH FUSE/RELAY BOX (MICU) REMOVAL AND INSTALLATION**).

9. Remove the left rear door switch.
10. Disconnect the left rear door switch 1P connector.
11. Check for continuity between left rear door switch 1P connector and switch ground.

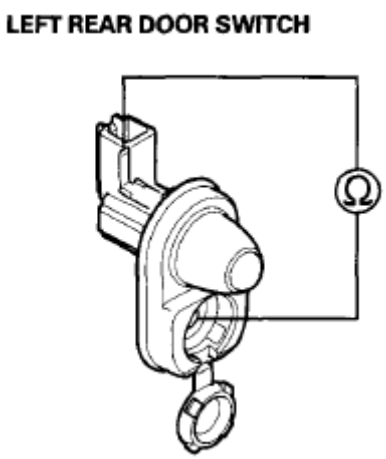


Fig. 52: Checking Continuity Between Left Rear Door Switch 1P Connector And Switch Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there no continuity when the switch is pushed, and is there continuity when the switch is released?

YES - Go to step 12.

NO - Replace the left rear door switch.

12. Connect driver's under-dash fuse/relay box connector D (16P) terminal No. 4 and body ground with a jumper wire.

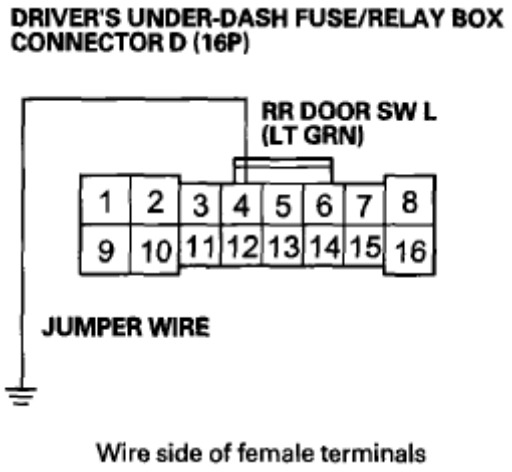


Fig. 53: Connecting Driver's Under-Dash Fuse/Relay Box Connector D (16P) Terminal No. 4 And Body Ground With Jumper Wire
Courtesy of AMERICAN HONDA MOTOR CO., INC.

13. Check the ON/OFF information of the DRIVER'S REAR DOOR SWITCH in the DATA LIST.

Is information indicator ON?

YES - Repair an open or high resistance in the wire.

NO - Faulty driver's MICU; replace the driver's under-dash fuse/relay box (see **DRIVER'S UNDER-DASH FUSE/RELAY BOX (MICU) REMOVAL AND INSTALLATION**).

RIGHT REAR DOOR SWITCH CIRCUIT TROUBLESHOOTING

1. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
2. With closed the right rear door closed, select SECURITY with the HDS, and enter the DATA LIST.
3. Check the ON/OFF information of the PASSENGER'S REAR DOOR SWITCH in the DATA LIST.

Is information indicator ON?

YES - Go to step 4.

NO - Go to step 9.

4. Remove the right rear door switch.

5. Disconnect the right rear door switch 1P connector.
6. Check for continuity between right rear door switch 1P connector and switch ground.

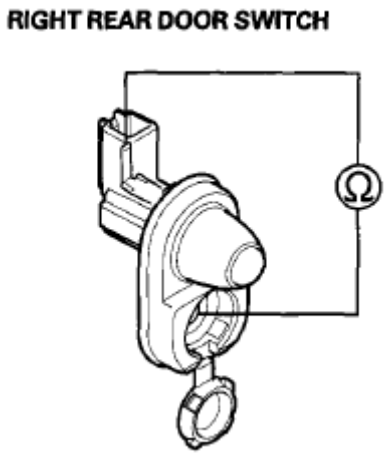


Fig. 54: Checking Continuity Between Right Rear Door Switch 1P Connector And Switch Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there no continuity when the switch is pushed, and is there continuity when the switch is released?

YES - Go to step 7.

NO - Replace the right rear door switch.

7. With SH-AWD: Disconnect passenger's under-dash fuse/relay box connector H (38P).

   Without SH-AWD: Disconnect passenger's under-dash fuse/relay box connector G (16P).

8. With SH-AWD: Check for continuity between passenger's under-dash fuse/relay box connector H (38P) terminal No. 25 and body ground.

   Without SH-AWD: Check for continuity between passenger's under-dash fuse/relay box connector G (16P) terminal No. 14 and body ground.

   With SH-AWD

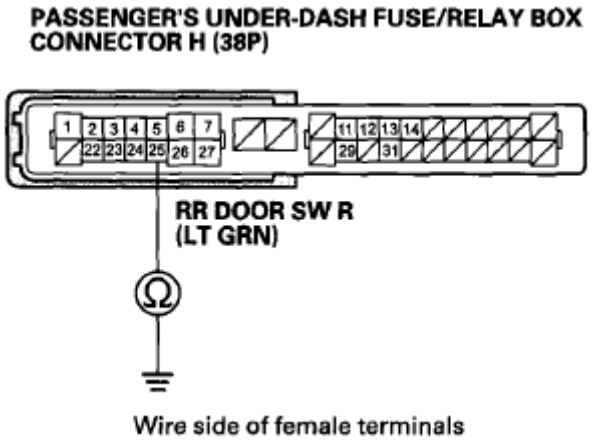


Fig. 55: Checking Continuity Between Passenger's Under-Dash Fuse/Relay Box Connector H (38P) Terminal No. 25 And Body Ground - With SH-AWD
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Without SH-AWD

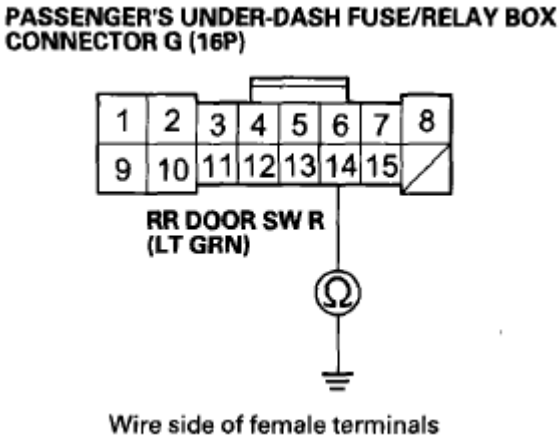


Fig. 56: Checking Continuity Between Passenger's Under-Dash Fuse/Relay Box Connector G (16P) Terminal No. 14 And Body Ground - Without SH-AWD
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair a short to ground in the wire.

NO - Faulty passenger's MICU; replace the passenger's under-dash fuse/relay box (see **PASSENGER'S UNDER-DASH FUSE/RELAY BOX (MICU) REMOVAL AND INSTALLATION**).

9. Remove the right rear door switch.
10. Disconnect the right rear door switch 1P connector.
11. Check for continuity between right rear door switch 1P connector and switch ground.

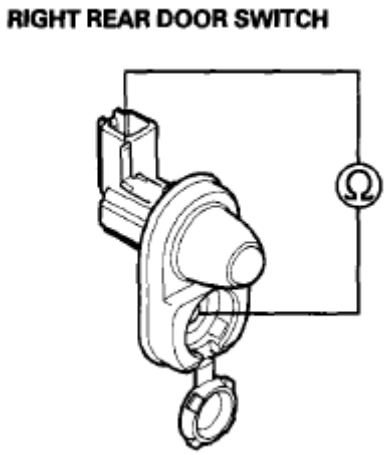


Fig. 57: Checking Continuity Between Right Rear Door Switch 1P Connector And Switch Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there no continuity when the switch is pushed, and is there continuity when the switch is released?

YES - Go to step 12.

NO - Replace the right rear door switch.

12. With SH-AWD: Connect passenger's under-dash fuse/relay box connector H (38P) terminal No. 25 and body ground with a jumper wire. Without SH-AWD: Connect passenger's under-dash fuse/relay box connector G (16P) terminal No. 14 and body ground.

With SH-AWD

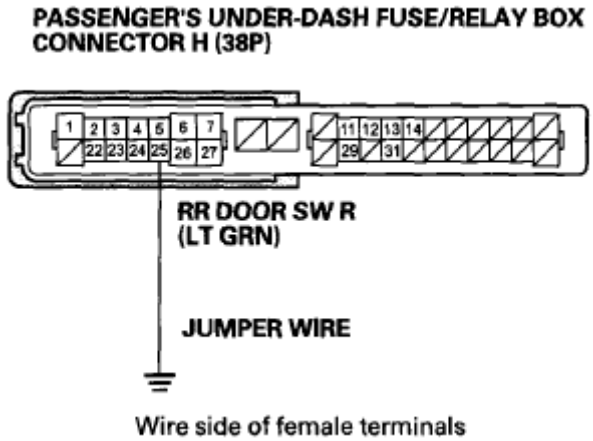


Fig. 58: Connecting Passenger's Under-Dash Fuse/Relay Box Connector H (38P) Terminal No. 25 And Body Ground With Jumper Wire - With SH-AWD
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Without SH-AWD

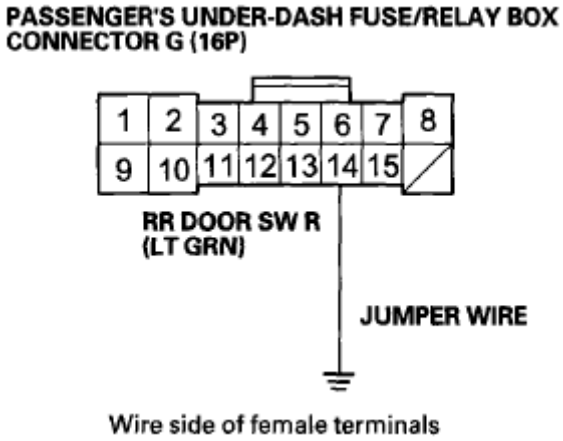


Fig. 59: Connecting Passenger's Under-Dash Fuse/Relay Box Connector G (16P) Terminal No. 14 And Body Ground - Without SH-AWD
Courtesy of AMERICAN HONDA MOTOR CO., INC.

13. Check the ON/OFF information of the PASSENGER'S REAR DOOR SWITCH in the DATA LIST.

    Is information indicator ON?

    YES - Repair an open or high resistance in the wire.

    NO - Faulty passenger's MICU; replace the passenger's under-dash fuse/relay box (see **PASSENGER'S UNDER-DASH FUSE/RELAY BOX (MICU) REMOVAL AND INSTALLATION**).

CONTROL UNIT INPUT TEST

NOTE: Before testing, troubleshoot the multiplex integrated control system first, using B-CAN System Diagnosis Test Mode A (see TROUBLESHOOTING - B-CAN SYSTEM DIAGNOSIS TEST MODE A), and make sure the lighting system works properly.

Driver's MICU

1. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
2. Remove the driver's dashboard undercover (see **DRIVER'S DASHBOARD UNDERCOVER REMOVAL/INSTALLATION**).
3. Disconnect driver's under-dash fuse/relay box connectors D, F, G, N, Q, and R.

NOTE: All connector views are wire side of female terminals.

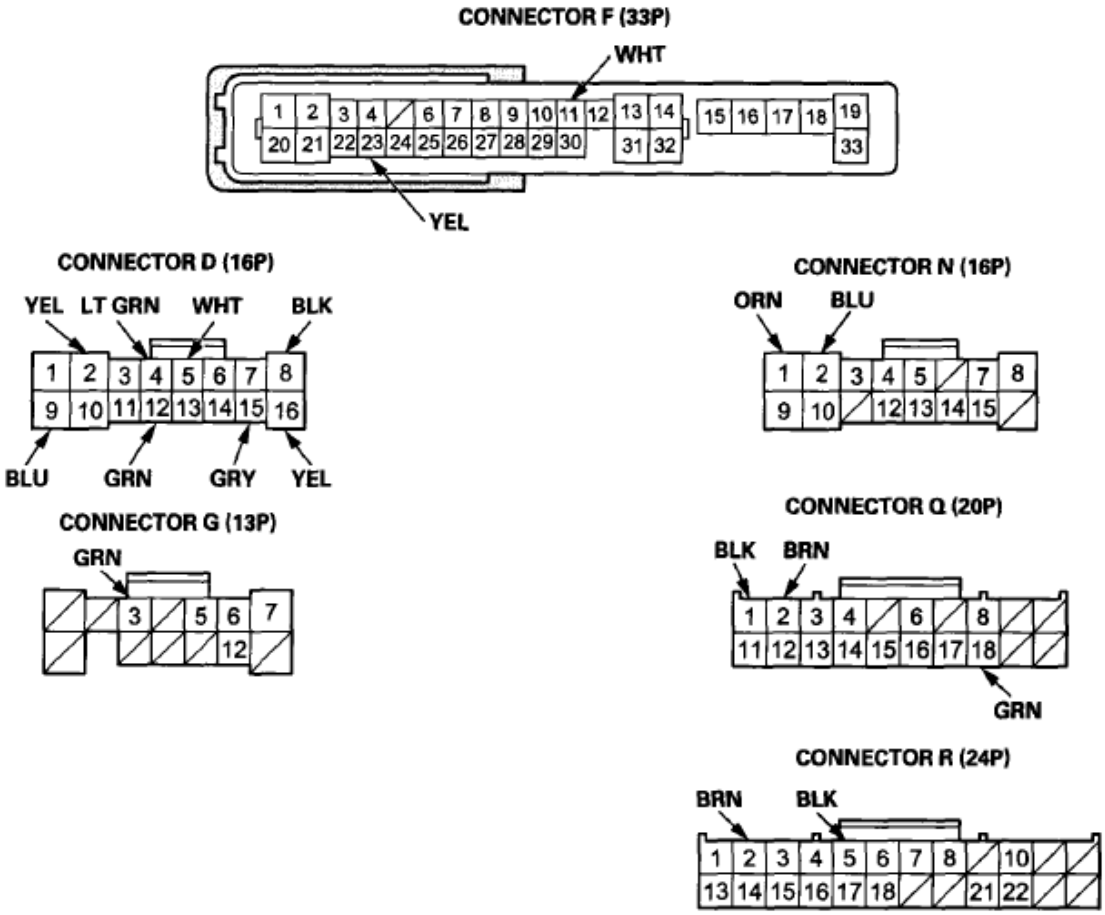


Fig. 60: Identifying Driver's MICU F (33P), D (16P), N (16P), G (13P), Q (20P) & R (24P) Connector End Views
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Inspect the connector and socket terminals to be sure they are all making good contact.
   - If the terminals are bent, loose or corroded, repair them as necessary, and recheck the system.
   - If the terminals look OK, go to step 5.
5. With the connectors still disconnected, do the following input tests:
   - If any test indicates a problem, find and correct the cause, then recheck the system.
   - If all the input tests prove OK, go to step 6.

NOTE: Before testing, make sure the No. 15 (10 A) fuse in the under-hood fuse/relay box is OK.

Cavity	Wire	Test condition	Test: Desired result	Possible cause if desired result is not obtained
D2	YEL	Connect terminal F11 to terminal D2 (or D9), and terminal D9 (or D2) to body	Check actuator operation: The left rear door lock actuator	• Faulty left rear door lock actuator • An open or high

D9	BLU	ground.	should UNLOCK (or LOCK).	resistance in the wire
D16	YEL	Connect terminal F11 to terminal D16 momentarily	Check actuator operation: The trunk lid release actuator should work.	• Faulty trunk lid release actuator • Poor ground (G603) or an open in the ground wire • An open or high resistance in the wire
F11	WHT	Under all conditions	Measure the voltage to ground: There should be battery voltage.	• Blown No. 15 (10 A) fuse in the under-hood fuse/relay box • An open or high resistance in the wire
F23	YEL	Under all conditions	Connect to ground with a jumper wire: The horns should sound.	• Blown No. 10 (20 A) fuse in the under-hood fuse/relay box • Faulty horn relay circuit • Faulty horn • An open or high resistance in the wire
D8	BLK	Under all conditions	Check for continuity to ground: There should be continuity.	• Poor ground (G601) • An open or high resistance in the ground wire
N1	ORN	Connect terminal F11 to terminal N1 (or N2), and terminal N2 (or N1) to body ground.	Check actuator operation: The driver's door lock actuator should UNLOCK (or LOCK).	• Faulty driver's door lock actuator • An open or high resistance in the wire
N2	BLU			

6. Reconnect the connectors to the driver's under-dash fuse/relay box, and do the following input tests:
7. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
   - If any test indicates a problem, find and correct the cause, then recheck the system.
   - If all the input tests prove OK, go to step 8.

Cavity	Wire	Test condition	Test: Desired result	Possible cause if desired result is not obtained
Q1	BLK	In all ignition switch positions or all power modes	Measure the voltage to ground: There should be less than 0.2 V.	• Poor ground (G402) • An open or high resistance in the ground wire

Q2	BRN	In all ignition switch positions or all power modes	Measure the voltage to ground: There should be less than 0.2 V.	• Poor ground(G401) • An open or high resistance in the ground wire
R2	BRN	In all ignition switch positions or all power modes	Measure the voltage to ground: There should be less than 0.2 V.	• Poor ground(G401) • An open or high resistance in the ground wire
R5	BLK	In all ignition switch positions or all power modes	Measure the voltage to ground: There should be less than 0.2 V.	• Poor ground(G402) • An open or high resistance in the ground wire
D4	LT GRN	Left rear door open	Measure the voltage to ground: There should be less than 0.2 V.	• Faulty left rear door switch • Faulty left rear door switch ground • An open or high resistance in the wire
		Left rear door closed	Measure the voltage to ground: There should be about 5 V.	• Faulty left rear door switch • A short to ground in the wire
D5	WHT	Trunk lid open	Measure the voltage to ground: There should be less than 0.2 V.	• Faulty trunk lid latch switch • Poor ground (G603) or an open in the ground wire • An open or high resistance in the wire
		Trunk lid closed	Measure the voltage to ground: There should be about 5 V.	• Faulty trunk lid latch switch • A short to ground in the wire
D12	GRN	Driver's door open	Measure the voltage to ground: There should be less than 0.2 V.	• Faulty driver's door switch • Faulty driver's door switch ground • An open or high resistance in the wire
			Measure the voltage to	• Faulty driver's door switch

		Driver's door closed	ground: There should be about 5 V.	• A short to ground in the wire
D15	GRY	Left rear door lock knob switch in UNLOCK	Measure the voltage to ground: There should be less than 0.2 V.	• Faulty left rear door lock knob switch • Poor ground (G601) or an open in the ground wire • An open or high resistance in the wire
		Left rear door lock knob switch in LOCK	Measure the voltage to ground: There should be about 5 V.	• Faulty left rear door lock knob switch • A short to ground in the wire
G3	GRN	Hood open	Measure the voltage to ground: There should be less than 0.2 V.	• Faulty security hood switch • Poor ground (G302) or an open in the ground wire • An open or high resistance in the wire
		Hood closed	Measure the voltage to ground: There should be about 5 V.	• Faulty security hood switch • A short to ground in the wire
Q18(1)	BRN	Ignition key inserted into the ignition switch	Measure the voltage to ground: There should be less than 0.2 V.	• Faulty ignition key switch • Poor ground (G403) or an open in the ground wire • An open or high resistance in the wire
		Ignition switch LOCK (0), and the ignition key removed from the ignition switch	Measure the voltage to ground: There should be about 5 V.	• Faulty ignition key switch • A short to ground in the wire
Q18(2)	BRN	Keyless access remote inserted into the remote slot	Measure the voltage to ground: There should be less than 0.2 V.	• Faulty power control unit • Poor ground (G402) or an open in the ground wire • An open or high

				resistance in the wire
		Keyless access remote removed from the remote slot	Measure the voltage to ground: There should be about 5 V.	• Faulty power control unit • A short to ground in the wire
(1) Without keyless access system (2) With keyless access system				

Passenger's MICU

8. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
9. Remove the passenger's kick panel (see **TRIM REMOVAL/INSTALLATION - DOOR AREAS**).
10. Disconnect passenger's under-dash fuse/relay box connectors A, E, G*1 , (or H*2).

*1: Without SH-AWD

*2: With SH-AWD

NOTE: All connector views are wire side of female terminals.

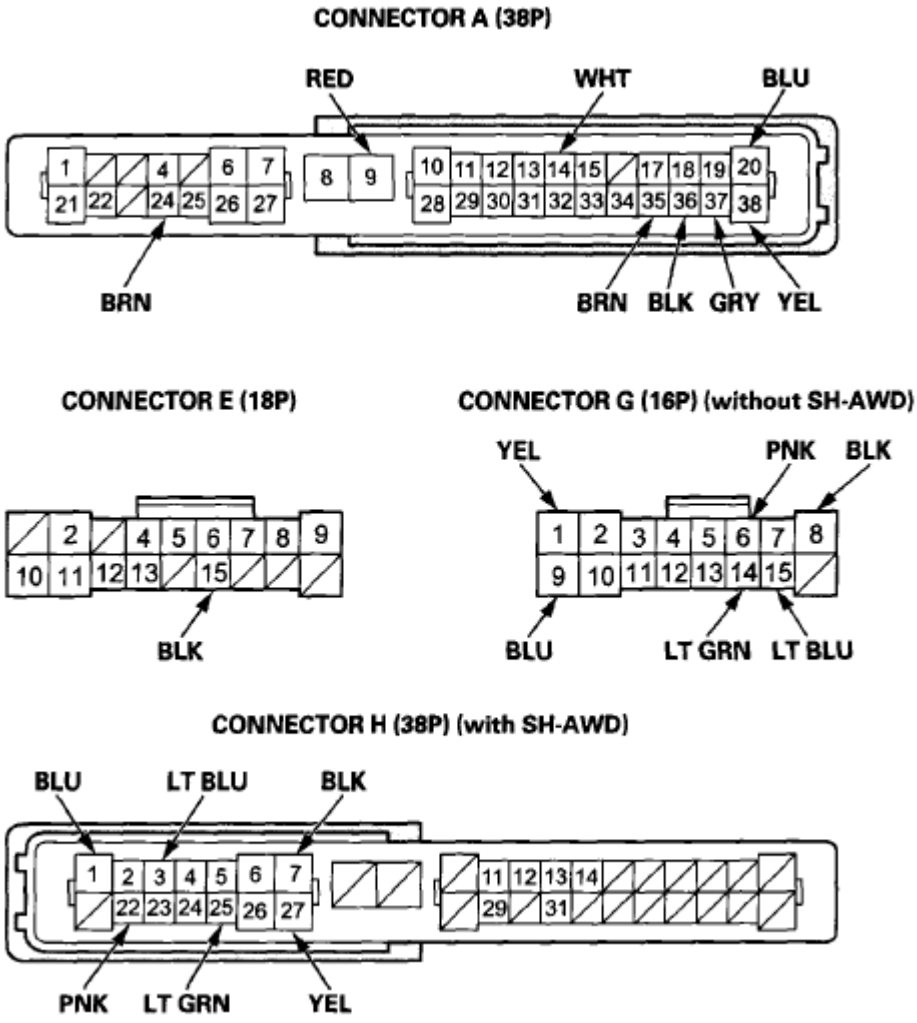


Fig. 61: Identifying Passenger's MICU A (38P), E (18P), G (16P) (w/o SH-AWD) & H (38P) (w/ SH-AWD) Connector End Views
Courtesy of AMERICAN HONDA MOTOR CO., INC.

11. Inspect the connector and socket terminals to be sure they are all making good contact.
    - If the terminals are bent, loose or corroded, repair them as necessary, and recheck the system.
    - If the terminals look OK, go to step 12.
12. With the connectors still disconnected, do the following input tests:
    - If any test indicates a problem, find and correct the cause, then recheck the system.
    - If all the input tests prove OK, go to step 13.

NOTE: Before testing, make sure the No. 15(10 A) fuse in the under-hood fuse/relay box is OK.

Cavity	Wire	Test condition	Test: Desired result	Possible cause if desired result is not obtained

G8[1] or H7[2]	BLK	Under all conditions	Check for continuity to ground: There should be continuity.	• Poor ground(G651) • An open or high resistance in the ground wire
A20	BLU	Connect terminal A14 to terminal A20 (or A38), and terminal A38 (or A20) to body ground.	Check actuator operation: The front passenger's door lock actuator should UNLOCK (or LOCK).	• Faulty front passenger's door lock actuator • An open or high resistance in the wire
A38	YEL			
G1[1]	YEL	Connect terminal A14 to terminal G1 (or G9), and terminal G9 (or G1)to body ground.	Check actuator operation: The right rear door lock actuator should LOCK (or UNLOCK).	• Faulty right rear door lock actuator • An open or high resistance in the wire
G9[1]	BLU			
H27[2]	YEL	Connect terminal A14 to terminal H27 (or H1), and terminal H1 (or H27) to body ground.	Check actuator operation: The right rear door lock actuator should LOCK (or UNLOCK).	• Faulty right rear door lock actuator • An open or high resistance in the wire
H1[2]	BLU			
(1) Without SH-AWD (2) With SH-AWD				

13. Reconnect the connectors to the passenger's under-dash fuse/relay box, and do the following input tests:
    - If any test indicates a problem, find and correct the cause, then recheck the system.
    - If all the input tests prove OK, go to step 14.

Cavity	Wire	Test condition	Test: Desired result	Possible cause if desired result is not obtained
A9	RED	Under all conditions	Measure the voltage to ground: There should be battery voltage.	• Blown No. 1-2 (AS F/B STD) (40 A) fuse in the under-hood fuse/relay box • Faulty driver's under-dash fuse/relay box • An open or high resistance in the wire
A14	WHT	Under all conditions	Measure the voltage to ground: There should be battery voltage.	• Blown No. 15 (10 A) fuse in the under-hood fuse/relay box • Faulty driver's under-dash fuse/relay box • An open or high resistance in

				the wire
A35	BRN	Ignition switch ON (II), or power mode ON	Measure the voltage to ground: There should be battery voltage.	• Blown No. 12(7.5 A) fuse in the driver's under-dash fuse/relay box • Faulty driver's under-dash fuse/relay box • An open or high resistance in the wire
A36	BLK	In all ignition switch positions or all power modes	Measure the voltage to ground: There should be less than 0.2 V.	• Poor ground(G405) • An open or high resistance in the ground wire
A37	GRY	In all ignition switch positions or all power modes	Measure the voltage to ground: There should be less than 0.2 V.	• Poor ground(G401) • An open or high resistance in the ground wire
E15	BLK	In all ignition switch positions or all power modes	Measure the voltage to ground: There should be less than 0.2 V.	• Poor ground(G203) • An open or high resistance in the ground wire
G14(1) or H25(2)	LT GRN	Right rear door open	Measure the voltage to ground: There should be less than 0.2 V.	• Faulty right rear door switch • Faulty right rear door switch ground • An open or high resistance in the wire
		Right rear door closed	Measure the voltage to ground: There should be about 5 V.	• Faulty right rear door switch • A short to ground in the wire
G15(1) or H3(2)	LT BLU	Front passenger's door open	Measure the voltage to ground: There should be less than 0.2 V.	• Faulty front passenger's door switch • Faulty front passenger's door switch ground • An open or high resistance in the wire
		Front passenger's door closed	Measure the voltage to ground: There should be about 5 V.	• Faulty front passenger's door switch • A short to ground in the wire
G6(1) or H22*3	PNK	Right rear door lock knob switch in UNLOCK	Measure the voltage to ground: There should be less than 0.2 V.	• Faulty right rear door lock knob switch • Poor ground (G651) or an open in the ground wire • An open or high resistance in the wire

		Right rear door lock knob switch in LOCK	Measure the voltage to ground: There should be about 5 V.	• Faulty right rear door lock knob switch • A short to ground in the wire
(1) Without SH-AWD (2) With SH-AWD				

Door Multiplex Control Unit

14. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
15. Remove the driver's door panel (see **FRONT DOOR PANEL REMOVAL/INSTALLATION**).
16. Disconnect the 37P connector from the power window master switch.

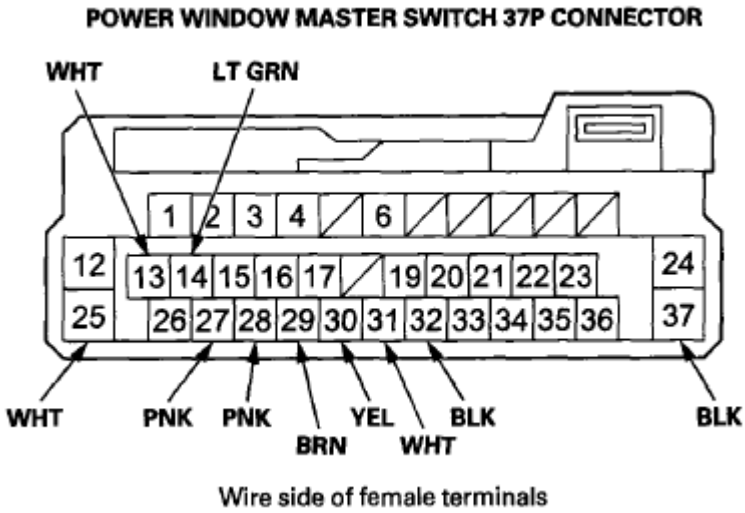


Fig. 62: Identifying Door Multiplex Control Unit Connector End View
Courtesy of AMERICAN HONDA MOTOR CO., INC.

17. Inspect the connector and socket terminals to be sure they are all making good contact.
    - If the terminals are bent, loose or corroded, repair them as necessary, and recheck the system.
    - If all the terminals look OK, go to step 18.
18. Reconnect the driver's door harness to driver's door subharness.
19. With the connector still disconnected, do the following input tests:
    - If any test indicates a problem, find and correct the cause, then recheck the system.
    - If all the input test proves OK, go to step 20.

Cavity	Wire	Test condition	Test: Desired result	Possible cause if desired result is not obtained
			Check for continuity between power	

27	PNK	Disconnect the front passenger's power window switch 37P connector and moonroof control unit/motor 14P connector	window master switch 37P connector terminal No. 27 and front passenger's power window switch 37P connector terminal No. 29: There should be continuity.	An open in the UART wire
			Check for continuity to ground: There should be no continuity.	A short to ground in the wire

20. Reconnect the 37P connector to the power window master switch, and do the following input tests:
    - If any test indicates a problem, find and correct the cause, then recheck the system.
    - If all the input tests prove OK, go to step 21.

Cavity	Wire	Test condition	Test: Desired result	Possible cause if desired result is not obtained
13	WHT	Under all conditions	Measure the voltage to ground: There should be battery voltage.	• Blown No. 15 (10 A) fuse in the under-hood fuse/relay box • Faulty driver's under-dash fuse/relay box • An open or high resistance in the wire
14	LT GRN	Ignition switch ON (II), or power mode ON	Measure the voltage to ground: There should be battery voltage.	• Blown No. 16 (7.5 A) fuse in the driver's under-dash fuse/relay box • Faulty driver's under-dash fuse/relay box • An open or high resistance in the wire
25	WHT	Under all conditions	Measure the voltage to ground: There should be battery voltage.	• Blown No. 24 (20 A) fuse in the driver's under-dash fuse/relay box • Faulty driver's under-dash fuse/relay box • An open or high resistance in the wire
32	BLK	In all ignition switch positions or all power modes	Measure the voltage to ground: There should be less than 0.2 V.	• Poor ground(G401) • An open or high resistance in the ground wire
37	BLK	In all ignition switch positions or all power modes	Measure the voltage to ground: There should be less than 0.2 V.	• Poor ground(G402) • An open or high resistance in the ground wire

28	PNK	Driver's door key cylinder switch in LOCK	Measure the voltage to ground: There should be less than 0.2 V.	• Faulty driver's door key cylinder switch • Poor ground (G401) or an open in the ground wire • An open or high resistance in the wire
		Driver's door key cylinder switch in neutral or UNLOCK	Measure the voltage to ground: There should be about 5 V.	• Faulty driver's door key cylinder switch • A short to ground in the wire
29	BRN	Driver's door key cylinder switch in UNLOCK	Measure the voltage to ground: There should be less than 0.2 V.	• Faulty driver's door key cylinder switch • Poor ground (G401) or an open in the ground wire • An open or high resistance in the wire
		Driver's door key cylinder switch in neutral or LOCK	Measure the voltage to ground: There should be about 5 V.	• Faulty driver's door key cylinder switch • A short to ground in the wire
30	YEL	Driver's door lock knob switch in LOCK	Measure the voltage to ground: There should be less than 0.2 V.	• Faulty driver's door lock knob switch • Poor ground (G401) or an open in the ground wire • An open or high resistance in the wire
		Driver's door lock knob switch in neutral or UNLOCK	Measure the voltage to ground: There should be about 5 V.	• Faulty driver's door lock knob switch • A short to ground in the wire
31	WHT	Driver's door lock knob switch in UNLOCK	Measure the voltage to ground: There should be less than 0.2 V.	• Faulty driver's door lock knob switch • Poor ground (G401) or an open in the ground wire • An open or high resistance in the wire
		Driver's door lock knob switch in neutral or LOCK	Measure the voltage to ground: There should be about 5 V.	• Faulty driver's door lock knob switch • A short to ground in the wire

Front Passenger's Power Window Switch

21. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
22. Remove the front passenger's door panel (see **FRONT DOOR PANEL**

REMOVAL/INSTALLATION).

23. Disconnect the 37P connector from the front passenger's power window switch.

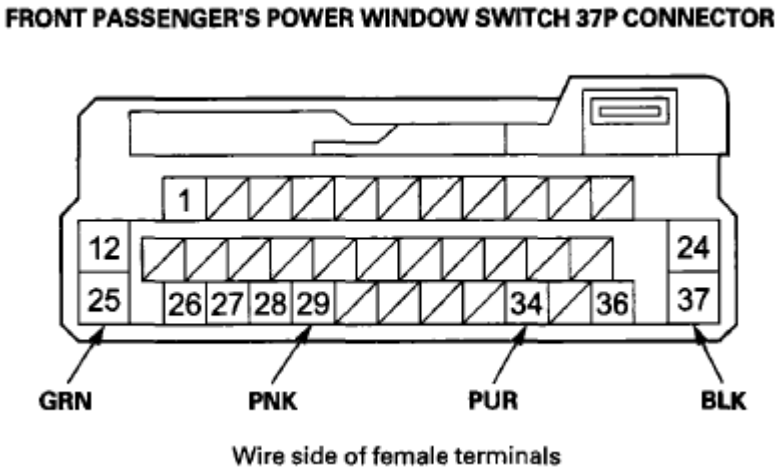


Fig. 63: Identifying Front Passenger's Power Window Switch Connector End View
Courtesy of AMERICAN HONDA MOTOR CO., INC.

24. Inspect the connector and socket terminals to be sure they are all making good contact.
    - If the terminals are bent, loose or corroded, repair them as necessary, and recheck the system.
    - If the terminals look OK, go to step 25.
25. With the connector still disconnected, do the following input tests:
    - If any test indicates a problem, find and correct the cause, then recheck the system.
    - If all the input test proves OK, go to step 26.

Cavity	Wire	Test condition	Test: Desired result	Possible cause if desired result is not obtained
29	PNK	Disconnect the front passenger's power window switch 37P connector	Check for continuity between power window master switch 37P connector terminal No. 27 and front passenger's power window switch 37P connector terminal No. 29: There should be continuity.	An open in the UART wire
			Check for continuity to ground: There should be no continuity.	A short to ground in the UART wire

26. Reconnect the 37P connector to the front passenger's power window switch, and do the following input tests:
    - If any test indicates a problem, find and correct the cause, then recheck the system.
    - If all the input tests prove OK, go to step 27.

				Possible cause if desired result is

Cavity	Wire	Test condition	Test: Desired result	not obtained
25	GRN	Under all conditions	Measure the voltage to ground: There should be battery voltage.	• Blown No. 13 (20 A) fuse in the passenger's under-dash fuse/relay box • An open or high resistance in the wire
37	BLK	In all ignition switch positions or all power modes	Measure the voltage to ground: There should be less than 0.2 V.	• Poor ground (G405) • An open or high resistance in the ground wire
34	PUR	Front passenger's door lock knob switch in UNLOCK	Measure the voltage to ground: There should be less than 0.2 V.	• Faulty front passenger's door lock knob switch • Poor ground (G405) or an open in the ground wire • An open or high resistance in the wire
		Front passenger's door lock knob switch in LOCK	Measure the voltage to ground: There should be about 5 V.	• Faulty front passenger's door lock knob switch • A short to ground in the wire

27. If multiple failures are found on more than one control unit, replace the driver's under-dash fuse/relay box (includes the driver's MICU) (see **DRIVER'S UNDER-DASH FUSE/RELAY BOX (MICU) REMOVAL AND INSTALLATION**). If input failures are related to a particular control unit, replace the control unit.

DOOR LOCK ACTUATOR TEST

DRIVER'S DOOR AND LEFT REAR DOOR

1. Remove the door panel:
   - Driver's door (see **FRONT DOOR PANEL REMOVAL/INSTALLATION**)
   - Left rear door (see **REAR DOOR PANEL REMOVAL/INSTALLATION**)
2. Disconnect the 10P connector (A) from the actuator (B).

NOTE: The illustration shows the driver's door.

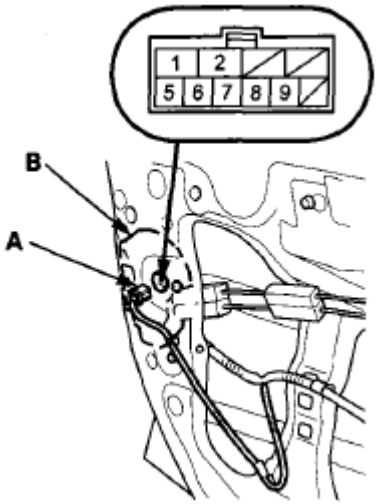


Fig. 64: Identifying 10P Connector And Actuator
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Check the actuator operation by connecting power and ground according to the table. To prevent damage to the actuator, apply battery voltage only momentarily.

Position \ Terminal	1	2
LOCK	⊕	⊖
UNLOCK	⊖	⊕

Fig. 65: Actuator Operation Reference Chart
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. If the actuator does not operate as specified, the actuator is faulty; replace the door latch:
   - Driver's door (see **FRONT DOOR LATCH REPLACEMENT**)
   - Left rear door (see **REAR DOOR LATCH REPLACEMENT**)

FRONT PASSENGER'S DOOR AND RIGHT REAR DOOR

1. Remove the door panel:
   - Front passenger's door (see **FRONT DOOR PANEL REMOVAL/INSTALLATION**)
   - Right rear door (see **REAR DOOR PANEL REMOVAL/INSTALLATION**)
2. Disconnect the 10P connector (A) from the actuator (B).

NOTE: The illustration shows the front passenger's door.

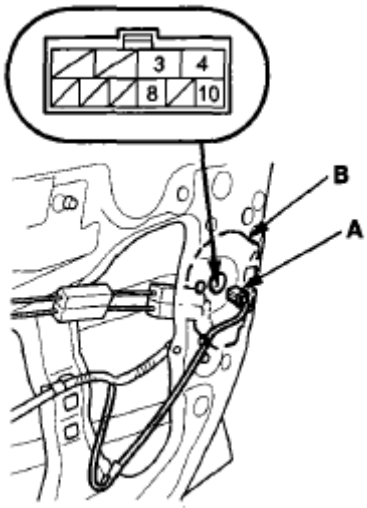


Fig. 66: Identifying 10P Connector And Actuator
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Check the actuator operation by connecting power and ground according to the table. To prevent damage to the actuator, apply battery voltage only momentarily.

Terminal / Position	3	4
LOCK	⊕	⊖
UNLOCK	⊖	⊕

Fig. 67: Actuator Operation Reference Chart
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. If the actuator does not operate as specified, the actuator is faulty; replace the door latch:
   - Front passenger's door (see **FRONT DOOR LATCH REPLACEMENT**)
   - Right rear door (see **REAR DOOR LATCH REPLACEMENT**)

DOOR LOCK KNOB SWITCH TEST

DRIVER'S DOOR

1. Remove the driver's door panel (see **FRONT DOOR PANEL REMOVAL/INSTALLATION**).
2. Disconnect the 10P connector (A) from the door lock actuator (6).

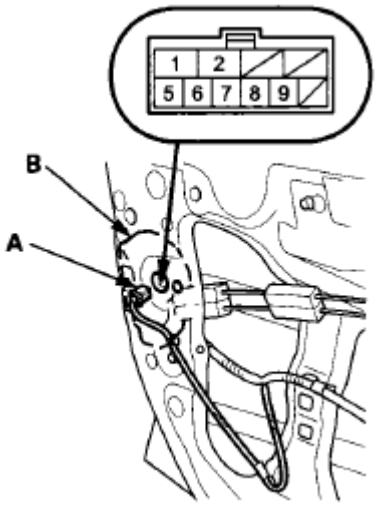


Fig. 68: Identifying 10P Connector And Door Lock Actuator
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Check for continuity between the terminals.
   - There should be continuity between terminals No. 6 and No. 5 when the door lock knob switch is in the LOCK position and no continuity when the switch is in the UNLOCK position.
   - There should be continuity between terminals No. 7 and No. 5 when the door lock knob switch is in the UNLOCK position and no continuity when the switch is in the LOCK position.
   - Check for continuity between terminals No. 6 and No. 7 of door lock knob switch. There should be no continuity in either LOCK or UNLOCK positions.
4. If the continuity is not as specified, the switch is faulty; replace the driver's door latch (see **FRONT DOOR LATCH REPLACEMENT**).

PASSENGER'S DOORS

1. Remove the passenger's door panel:
   - Front passenger's door (see **FRONT DOOR PANEL REMOVAL/INSTALLATION**)
   - Left and right rear door (see **REAR DOOR PANEL REMOVAL/INSTALLATION**)
2. Disconnect the 10P connector (A) from the door lock actuator (B).

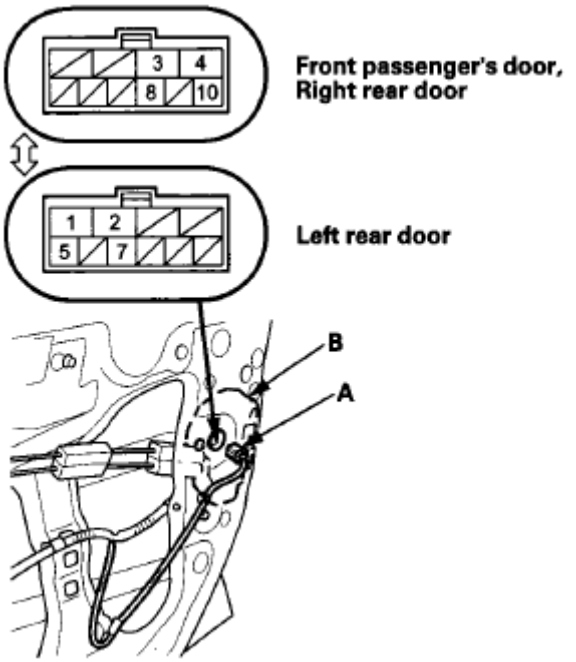


Fig. 69: Identifying 10P Connector And Door Lock Actuator
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Check for continuity between the terminals.

   There should be continuity between terminals No. 8 [No. 7] and No. 10 [No. 5] when the door lock knob switch in the UNLOCK position and no continuity when the switch is in the LOCK position.

   [] : Left rear door

4. If the continuity is not as specified, the switch is faulty; replace the door latch:
   - Front passenger's door (see **FRONT DOOR LATCH REPLACEMENT**)
   - Left and right rear door (see **REAR DOOR LATCH REPLACEMENT**)

DOOR KEY CYLINDER SWITCH TEST

1. Remove the driver's door panel (see **FRONT DOOR PANEL REMOVAL/INSTALLATION**).
2. Disconnect the 10P connector (A) from the door lock actuator (key cylinder switch) (B).

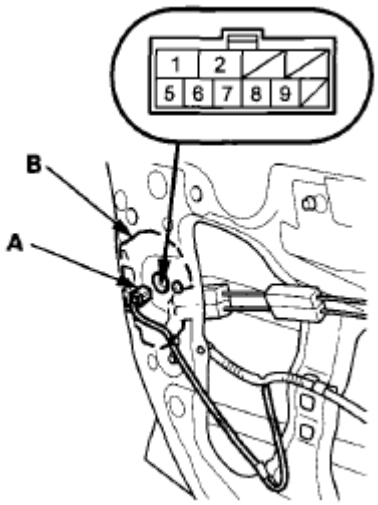


Fig. 70: Identifying 10P Connector And Door Lock Actuator (Key Cylinder Switch)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Check for continuity between the terminals.
   - There should be continuity between terminals No. 9 and No. 5 when the door key cylinder switch is in LOCK position.
   - There should be no continuity between terminals No. 9 and No. 5 when the door key cylinder switch is in the neutral or UNLOCK position.
   - There should be continuity between terminals No. 8 and No. 5 when the door key cylinder switch is in UNLOCK position.
   - There should be no continuity between terminals No. 8 and No. 5 when the door key cylinder switch is in the neutral or LOCK position.
   - There should be no continuity between terminals No. 8 and No. 9 when the key is in the neutral position.
4. If the continuity is not as specified, the switch is faulty; replace the driver's door latch (see **FRONT DOOR LATCH REPLACEMENT**).

SECURITY HOOD SWITCH TEST

1. Open the hood then remove the bulkhead cover (see **ENGINE COMPARTMENT COVER REPLACEMENT**).
2. Disconnect the 2P connector (A) from the security hood switch.

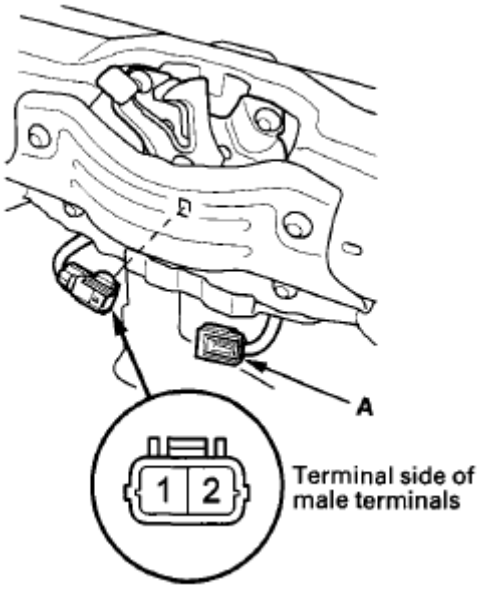


Fig. 71: Identifying 2P Connector & Security Hood Switch
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Check for continuity between the terminals.
   - There should be continuity between terminals No. 1 and No. 2 when the hood is opened (latch released).
   - There should be no continuity between terminals No. 1 and No. 2 when the hood is closed (latch pushed down).
4. If the continuity is not as specified, the switch is faulty; replace the hood latch (see **HOOD LATCH REPLACEMENT**).

TRUNK LID RELEASE ACTUATOR TEST

1. Open the trunk lid, and remove the trunk lid trim (see **TRIM REMOVAL/INSTALLATION - TRUNK LID**).
2. Disconnect the 3P connector (A) from the trunk lid latch switch/trunk release actuator (B).

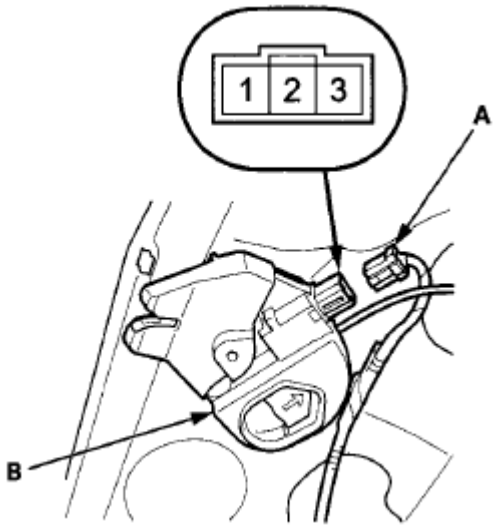


Fig. 72: Identifying 3P Connector And Trunk Lid Latch Switch/Trunk Release Actuator
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Check actuator operation by connecting power to the terminal No. 3 and ground to terminal No. 2 momentarily to prevent damage to the actuator. The actuator should work.
4. If the actuator does not work, the trunk lid release actuator is faulty; replace the trunk lid latch (see **TRUNK LID LATCH REPLACEMENT**).

KEYLESS BUZZER REPLACEMENT

1. Remove the rear bumper (see **LOWER FRONT BUMPER GRILLE REPLACEMENT**).
2. Disconnect the 2P connector (A) from the keyless buzzer (B).

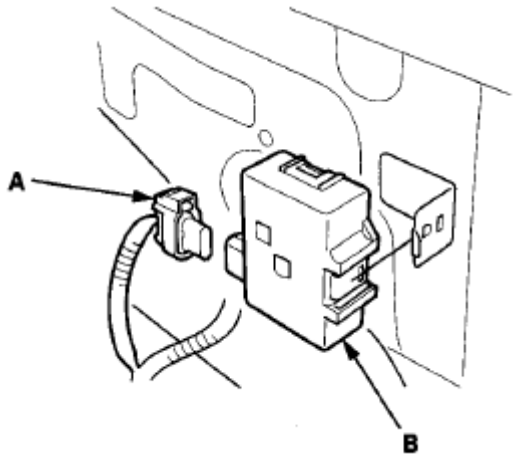


Fig. 73: Identifying 2P Connector And Keyless Buzzer
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Remove the buzzer from the bracket.

4. Install the buzzer in the reverse order of removal.

TRANSMITTER TEST

WITHOUT KEYLESS ACCESS SYSTEM

NOTE:

- **If the doors unlock or lock with the transmitter, but the LED on the transmitter does not come on, the LED is faulty; replace the transmitter.**
- **If any door is open, you cannot lock the doors with the transmitter.**
- **If you unlocked the doors with the transmitter, but do not open any of the doors within 30 seconds, the doors relock automatically. Opening the trunk does not cancel this function; only an open door signal cancels the automatic relock.**
- **The doors do not lock or unlock with the transmitter if the ignition key is inserted in the ignition switch.**

WITH HDS

1. Press the transmitter lock or unlock button at least 10 times to reset the transmitter.
   - If the locks work, the transmitter is OK.
   - If any of the transmitter buttons do not work, replace the transmitter, then register the new transmitter (see **IMMOBILIZER KEY REGISTRATION**).
   - If the locks do not work, go to step 2.
2. Connect the HDS to the data link connector (DLC).
3. Select KEYLESS TRANSMITTER from the BODY ELECTRICAL SYSTEM SELECT menu, next select inspection then select INSPECTION, then KEYLESS CHECK.
4. Follow the screen prompts to change to check each button operation.

   NOTE: The door lock actuators may or may not cycle when receiving input from the transmitter.

   - If KEYLESS ENTRY TRANSMITTER CODE WAS RECEIVED is indicated, the transmitter is OK.
   - If DIFFERENT KEYLESS ENTRY TRANSMITTER CODE WAS RECEIVED is indicated, the transmitter is not registered to the vehicle. If necessary, register the transmitter (see **IMMOBILIZER KEY REGISTRATION**).
   - If KEYLESS ENTRY TRANSMITTER CODE WAS NOT RECEIVED is indicated, go to step 5.
5. Open the transmitter, and check for water damage.
   - If you find any water damage, replace the transmitter, then register the new transmitter (see **IMMOBILIZER KEY REGISTRATION**).
   - If there is no water damage, go to step 6.

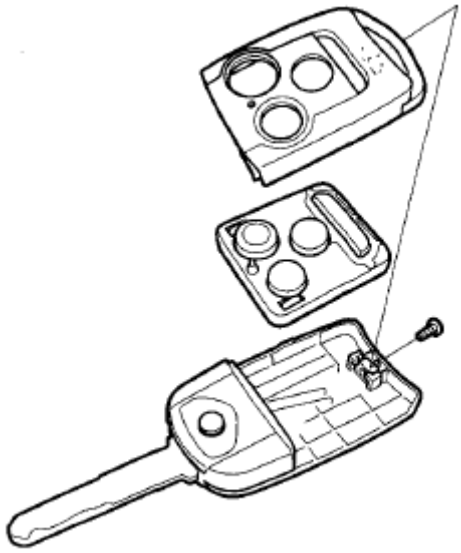


Fig. 74: Identifying Keyless Entry Transmitter
Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Replace the transmitter battery (A) with a new one, and press the lock or unlock button and check the response on the screen of the HDS.
   - If KEYLESS ENTRY TRANSMITTER CODE WAS RECEIVED is indicated, the transmitter is OK.
   - If KEYLESS ENTRY TRANSMITTER CODE WAS NOT RECEIVED is indicated, go to step 7.

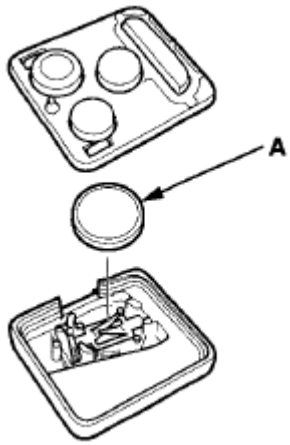


Fig. 75: Identifying Transmitter Battery
Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Use a different known-good keyless transmitter assembly and repeat steps 3 and 4.

NOTE: The keyless transmitter does not need to be programmed to the vehicle for this test.

- If DIFFERENT KEYLESS ENTRY TRANSMITTER CODE WAS RECEIVED is indicated, replace the keyless transmitter and do the immobilizer system registration (see **IMMOBILIZER KEY REGISTRATION**).
- If KEYLESS ENTRY TRANSMITTER CODE WAS NOT RECEIVED is indicated, the immobilizer-keyless control unit is faulty, replace it and do the immobilizer system registration (see **IMMOBILIZER KEY REGISTRATION**).

NOTE: The keyless transmitter is combined with the immobilizer transponder, so when the transponder is registered by the HDS, the keyless transmitter programming is completed automatically.

WITHOUT HDS

1. Start the engine.
   - If the engine does not start, go to the immobilizer system troubleshooting (see **SYMPTOM TROUBLESHOOTING INDEX**).
   - If the engine starts, go to step 2.
2. Press the transmitter lock or unlock button at least 10 times to reset the transmitter.
   - If the locks work, the transmitter is OK.
   - If the locks do not work, go to step 3.
3. Open the transmitter, and check for water damage.
   - If you find any water damage, replace the transmitter and register the new transmitter (see **IMMOBILIZER KEY REGISTRATION**).
   - If there is no water damage, go to step 4.

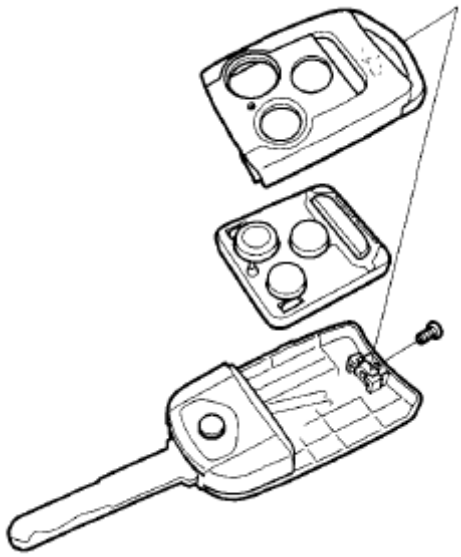


Fig. 76: Exploded View Of Keyless Entry Transmitter
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Replace the transmitter battery (A) with a new one (CR 1616), and try to lock and unlock the doors with the transmitter by pressing the lock or unlock button five or six times.
    - If the doors lock and unlock, the transmitter is OK.
    - If the doors do not lock and unlock, go to step 5.

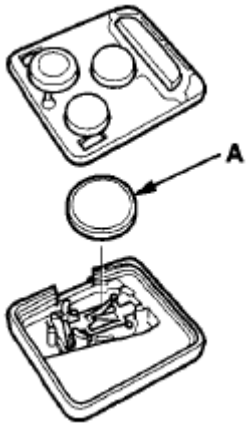


Fig. 77: Identifying Transmitter Battery
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Reprogram and register the transmitter (see **IMMOBILIZER KEY REGISTRATION**), then try to lock and unlock the doors.
    - If the doors lock and unlock, the transmitter is OK.
    - If the doors do not lock and unlock, substitute a known-good transmitter, register it and recheck (see **IMMOBILIZER KEY REGISTRATION**). If still not operating, replace the immobilizer-keyless control unit (see **IMMOBILIZER-KEYLESS CONTROL UNIT REGISTRATION**).

TRIPPED SENSOR HISTORY

The security system stores information on the last tripped sensor if the security system had been actuated. The information can be retrieved using the HDS.

To retrieve the last tripped sensor data:

1. Select HISTORY DATA from the SECURITY MODE MENU.
2. Scroll through the data list.
    - Sensors that were actuated will indicate DETECT.
    - Sensors that were not actuated will indicate NONE.
3. Inspect the DETECT circuit for:
    - Misadjusted or damaged switch.
    - Loose or corroded connections.
    - Intermittent short to ground.

2012 ACCESSORIES & EQUIPMENT

Keyless Access System - TL

COMPONENT LOCATION INDEX

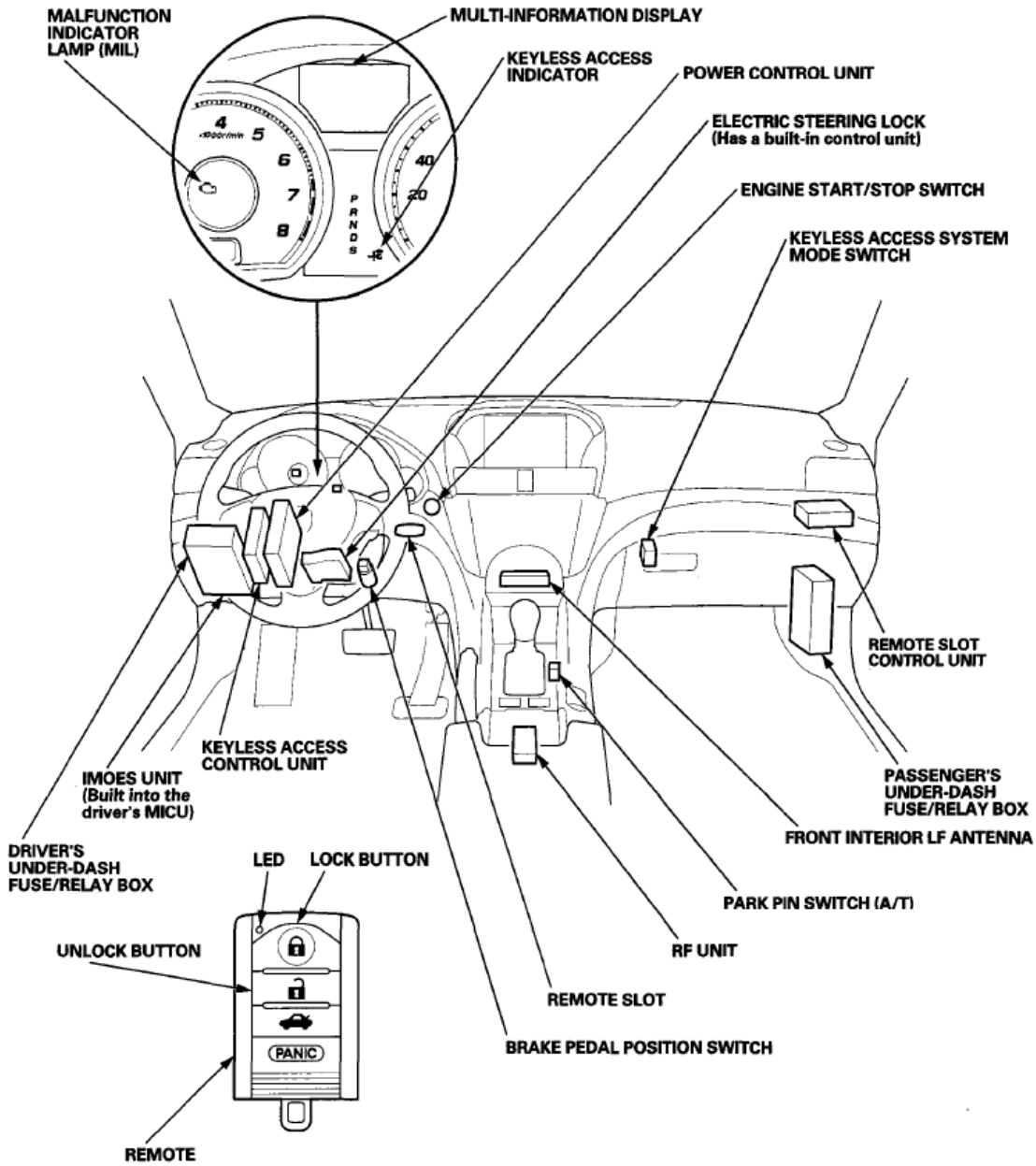
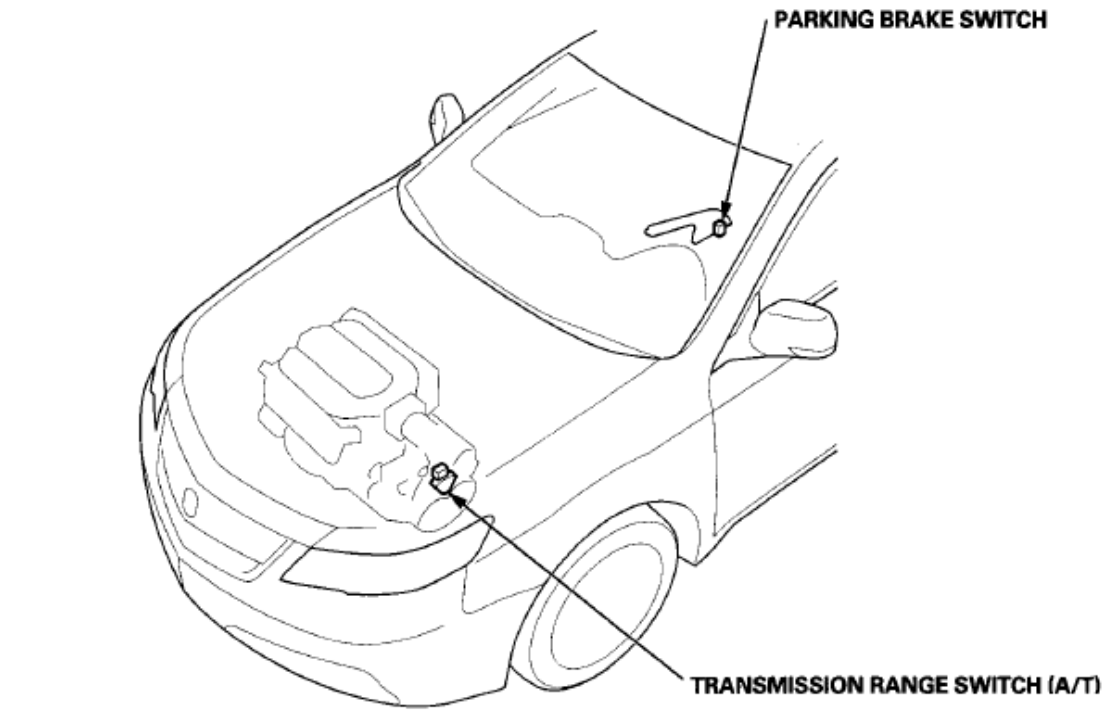


Fig. 1: Keyless Access System Components Location (1 Of 4)
Courtesy of AMERICAN HONDA MOTOR CO., INC.



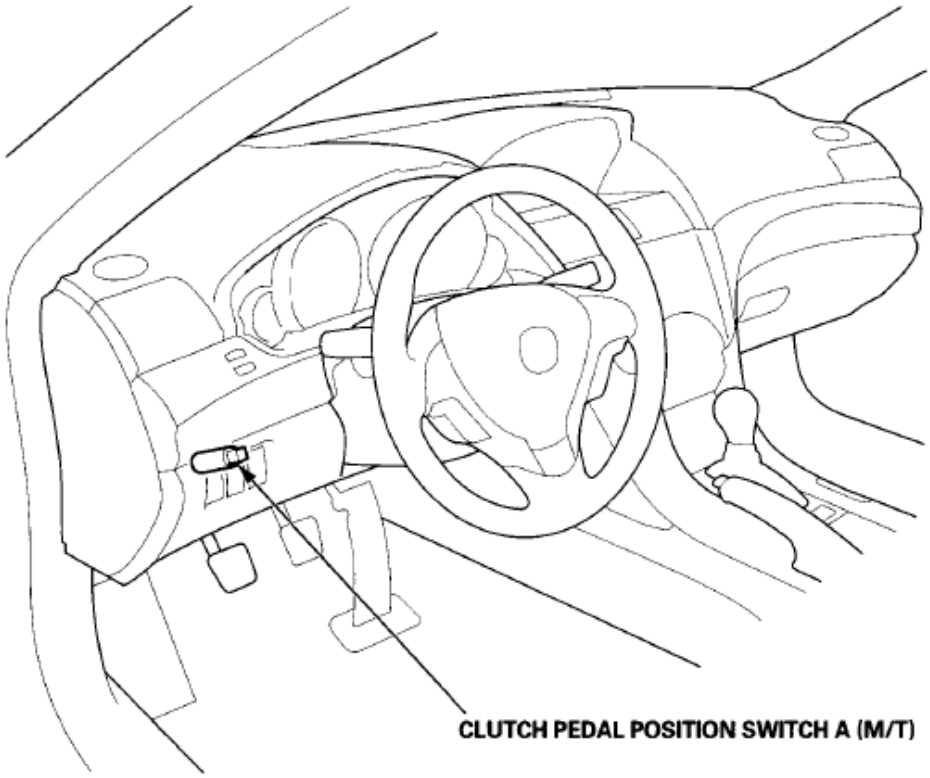


Fig. 2: Keyless Access System Components Location (2 Of 4)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

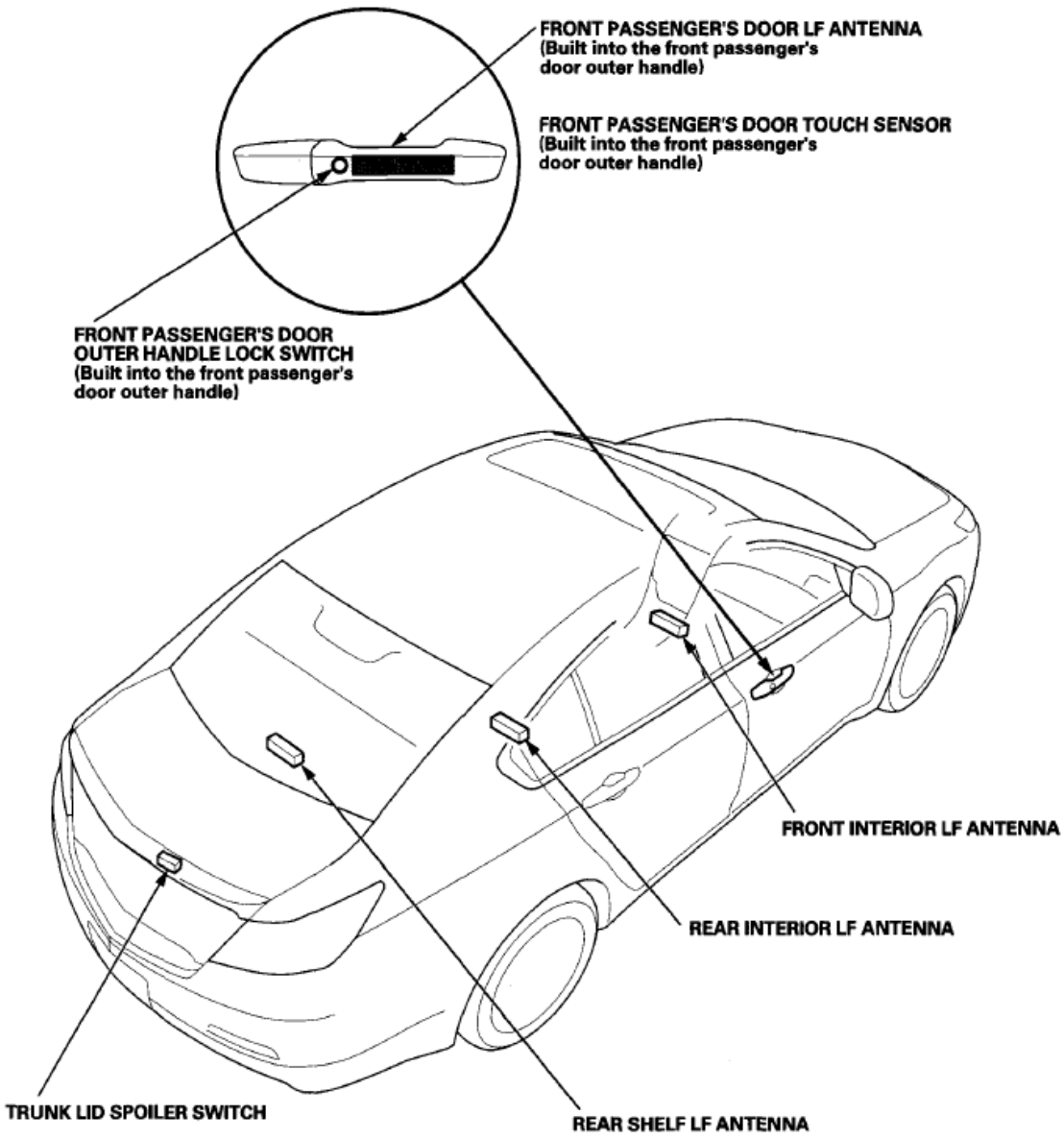


Fig. 3: Keyless Access System Components Location (3 Of 4)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

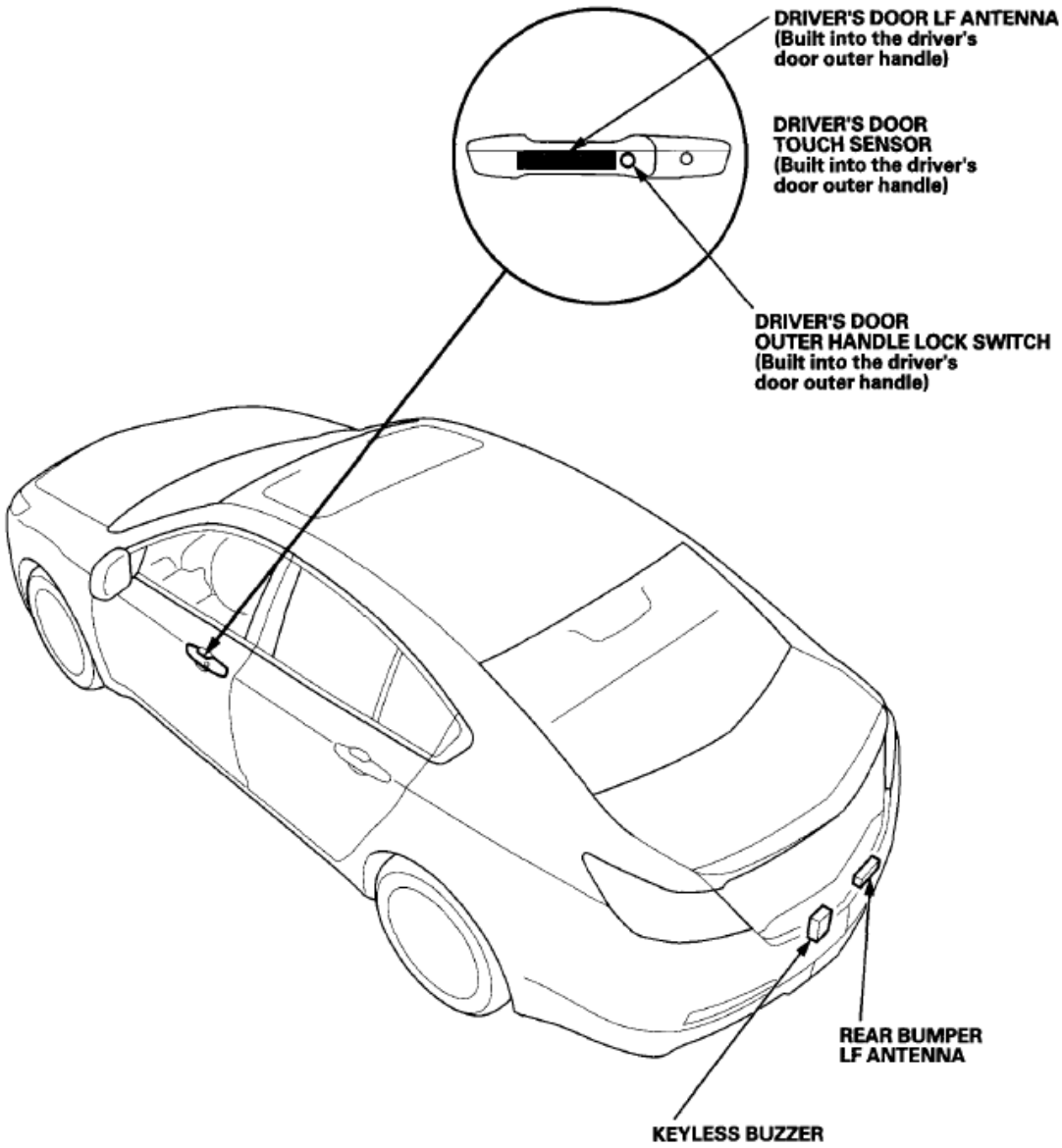
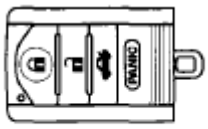


Fig. 4: Keyless Access System Components Location (4 Of 4)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

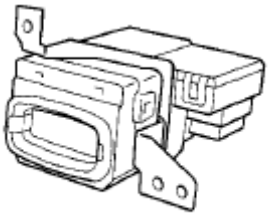
SYSTEM DESCRIPTION

The keyless access system consists of the keyless access control unit, the power control unit, the engine start/stop switch, the remote slot control unit, the electric steering lock, the remote slot, the door outer handle touch sensors/door lock switches, the LF (low frequency) antennas, the RF (radio frequency) unit, the keyless access indicator, the keyless buzzer, the keyless access system mode switch, and the remote. The function of the system is to allow the driver keyless entry into the vehicle along with starting the engine without an ignition key.



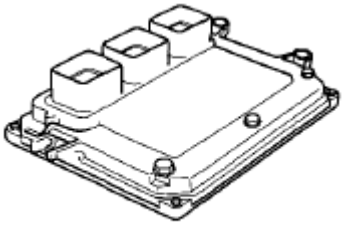
Remote
(Has a built-in transponder)

Fig. 5: Identifying Remote
Courtesy of AMERICAN HONDA MOTOR CO., INC.



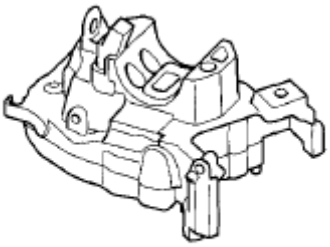
Remote slot

Fig. 6: Identifying Remote Slot
Courtesy of AMERICAN HONDA MOTOR CO., INC.



ECM/PCM

Fig. 7: Identifying ECM/PCM
Courtesy of AMERICAN HONDA MOTOR CO., INC.



Electric steering lock
(Has a built-in control unit)

Fig. 8: Identifying Electric Steering Lock
Courtesy of AMERICAN HONDA MOTOR CO., INC.

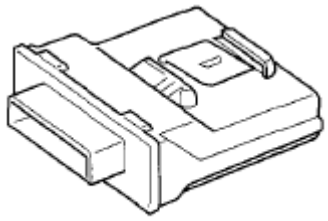


Fig. 9: Identifying Remote Slot Control Unit
Courtesy of AMERICAN HONDA MOTOR CO., INC.



Fig. 10: Identifying Driver's Under- Dash Fuse/Relay Box (with Driver's MICU)
Courtesy of AMERICAN HONDA MOTOR CO., INC.



Fig. 11: Identifying Keyless Access Control Unit
Courtesy of AMERICAN HONDA MOTOR CO., INC.

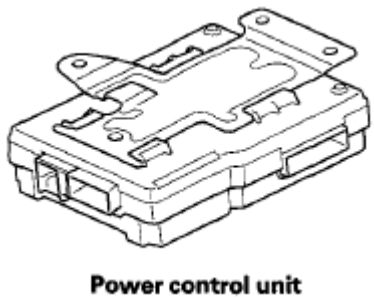


Fig. 12: Identifying Power Control Unit
Courtesy of AMERICAN HONDA MOTOR CO., INC.

POWER CONTROL UNIT

The power control unit is located under left side of dash. The power control unit controls the power modes based upon signal from the engine start/stop switch, transmission range switch (A/T), park pin switch (A/T), brake pedal position switch (A/T), clutch pedal position switch A (M/T), and B- CAN.

KEYLESS ACCESS CONTROL UNIT

The keyless access control unit is located under left side of dash. The control unit detects the remotes which allows access using the touch sensors in the outer door handles, and also allows the vehicle to operate using the one push start.

TOUCH SENSORS AND LOCK SWITCHES

The touch sensors and lock switches are built into the driver's and front passenger's door outer handles. To operate the door locks without the built- in key while carrying the remote, grip the door outer handle to unlock the doors and press the lock switch on the door outer handle to lock the doors.

RF (RADIO FREQUENCY) UNIT

RF unit is located under the center console.

LF (LOW FREQUENCY) ANTENNAS

The front interior, rear interior and rear shelf LF antennas send the signals to the remote placed in the interior. The driver's door, front passenger's door, and rear bumper LF antennas send the signals to the keyless remote outside of the vehicle.

ENGINE START/STOP SWITCH

The engine start/stop switch is located on the left side of dash. The power modes of the power control unit can be changed by pressing the engine start/stop button.

KEYLESS ACCESS SYSTEM MODE SWITCH

The keyless access system mode switch is installed in a glove box, and turns the keyless access function ON and OFF.

REMOTE SLOT

The remote slot is located on the left side of dash. Insert the remote into the remote slot when the remote battery is dead, or the keyless access system mode switch is OFF. The remote cannot be removed until the power mode is OFF.

REMOTE SLOT CONTROL UNIT

The remote slot control unit is installed behind the glove box, and it controls the remote slot lock.

Built- in immobilizer function operates when the keyless access function is off.

ELECTRIC STEERING LOCK

The electric steering lock control unit is built into the electric steering lock, and it controls the steering lock motor. When the remote code is identified, the electric steering lock control unit unlocks the steering lock by controlling the steering lock motor.

FAIL- SAFE FUNCTION

The system has a fail- safe function. If any malfunction occurs, the keyless access system indicator and the malfunction indicator lamp (MIL) in the gauge come on.

SELF- DIAGNOSTIC FUNCTION

The system also has a self- diagnostic function.

POWER MODE CONTROL FUNCTION

The keyless access system has four power modes: OFF, ACC, ON, and START. The power modes can be changed by pressing the engine start/stop button. The power mode changes to START mode any time the engine start/stop button is pressed while also pressing the brake pedal (A/T) or clutch pedal (M/T).

- OFF and START mode: Indicator (A) in the engine start/stop button is off.
- ACC mode: Indicator in the engine start/stop button comes on green.
- ON mode: Indicator in the engine start/stop button remains green when the engine is not running (If the engine is running, the indicator goes off).

NOTE: If the keyless access system mode switch is OFF, Insert the remote into the remote slot, and press the engine start/stop button to select the mode.

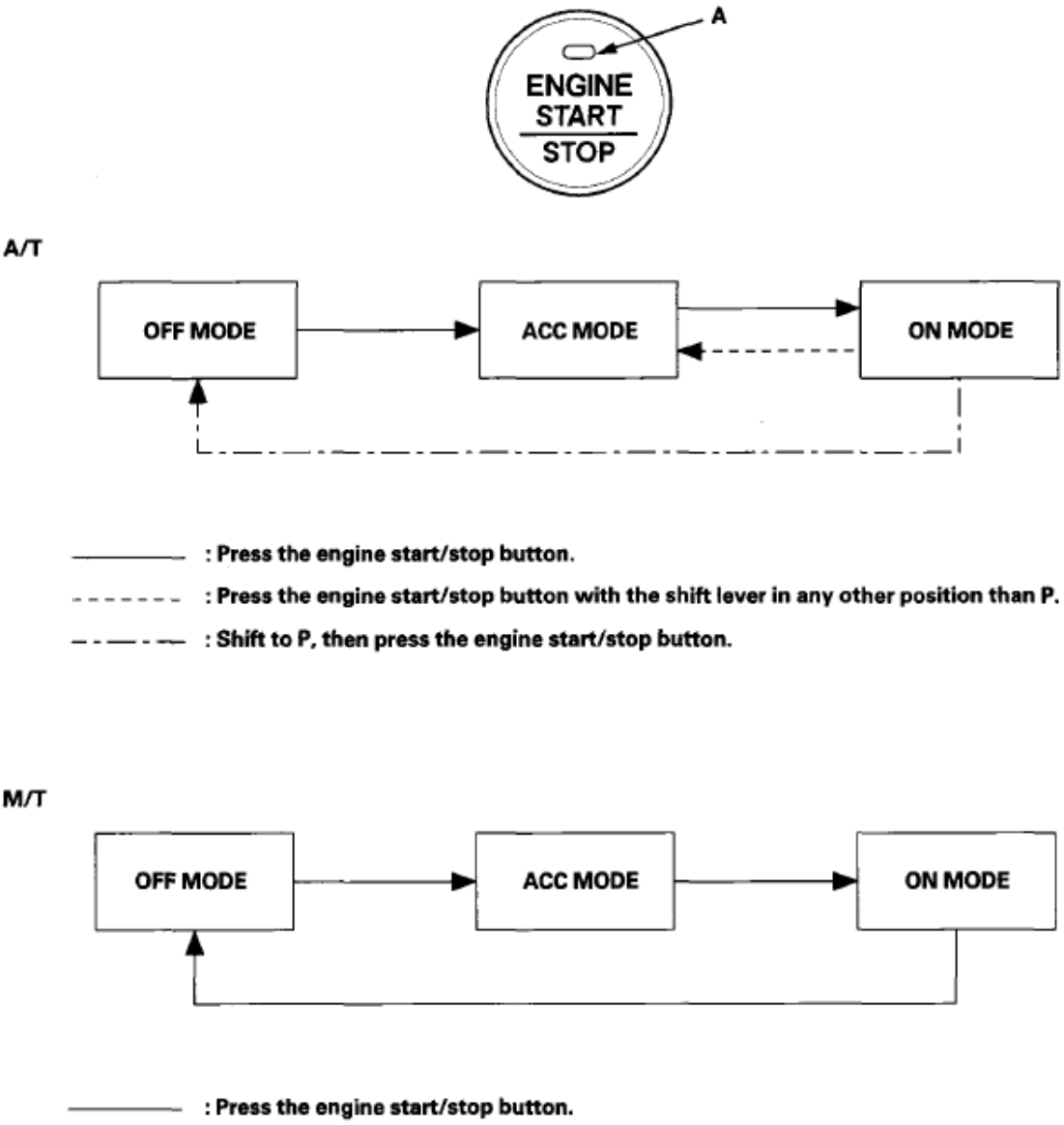


Fig. 13: Power Mode Control Function Diagram
Courtesy of AMERICAN HONDA MOTOR CO., INC.

MULTI- INFORMATION DISPLAY INDICATION PATTERN

NOTE: Some examples of indication patterns are shown.

When the door is opened and the power mode is OFF, the display alternates every 3 seconds.

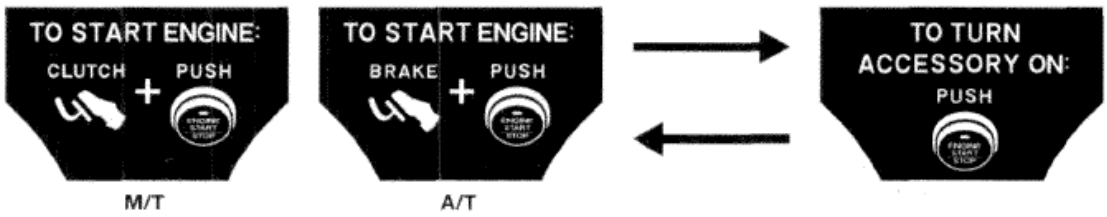


Fig. 14: Multi- Information Display Indication Pattern - Power Mode OFF
Courtesy of AMERICAN HONDA MOTOR CO., INC.

When the power mode is ACC, the display alternates in 3 seconds.

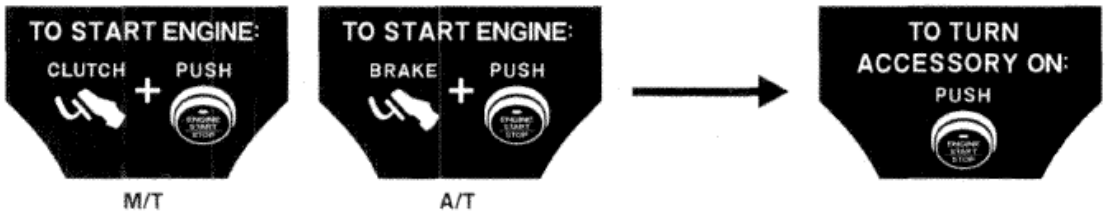


Fig. 15: Multi- Information Display Indication Pattern - Power Mode ACC
Courtesy of AMERICAN HONDA MOTOR CO., INC.

When the power mode is ON.

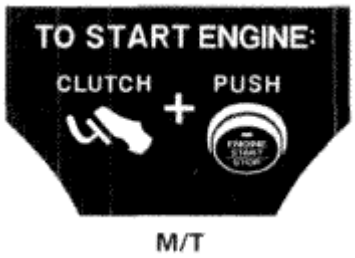


Fig. 16: Multi- Information Display Indication Pattern - Power Mode ON For M/T
Courtesy of AMERICAN HONDA MOTOR CO., INC.



Fig. 17: Multi- Information Display Indication Pattern - Power Mode ON For A/T
Courtesy of AMERICAN HONDA MOTOR CO., INC.

EMERGENCY ENGINE STOP FUNCTION

If you must stop the engine while driving in a serious emergency condition, do either of the following operations:

- Press and hold the engine start/stop button.
- Press the engine start/stop button three times continuously.

IMMOBILIZER FUNCTION

The vehicle is equipped with a Type VII (GEN 5) immobilizer system that disables the vehicle unless a programmed remote is used.

This system consists of a transponder built into the remote, a remote slot control unit, the driver's MICU (has a built- in imoes unit), an immobilizer indicator, and the ECM/PCM.

When the remote (programmed by the HDS) is inserted into the remote slot and the engine start/stop switch is pressed to select the ON mode, the remote slot control unit sends power to the transponder. The transponder then sends a coded signal back to the remote slot control unit, which then sends a coded signal to the ECM/PCM and the driver's MICU (imoes unit). The ECM/PCM and driver's MICU (imoes unit) identify this coded signal, then voltage is supplied to the fuel pump.

If the wrong remote is used or the code was not received or recognized by the units, the Indicator flashes once, then it blinks until the OFF mode is selected by pressing the engine start/stop button. When the OFF mode is selected by pressing the engine start/stop button, the indicator blinks ten times to signal that unit has reset correctly, then the indicator goes off.

CIRCUIT DIAGRAM

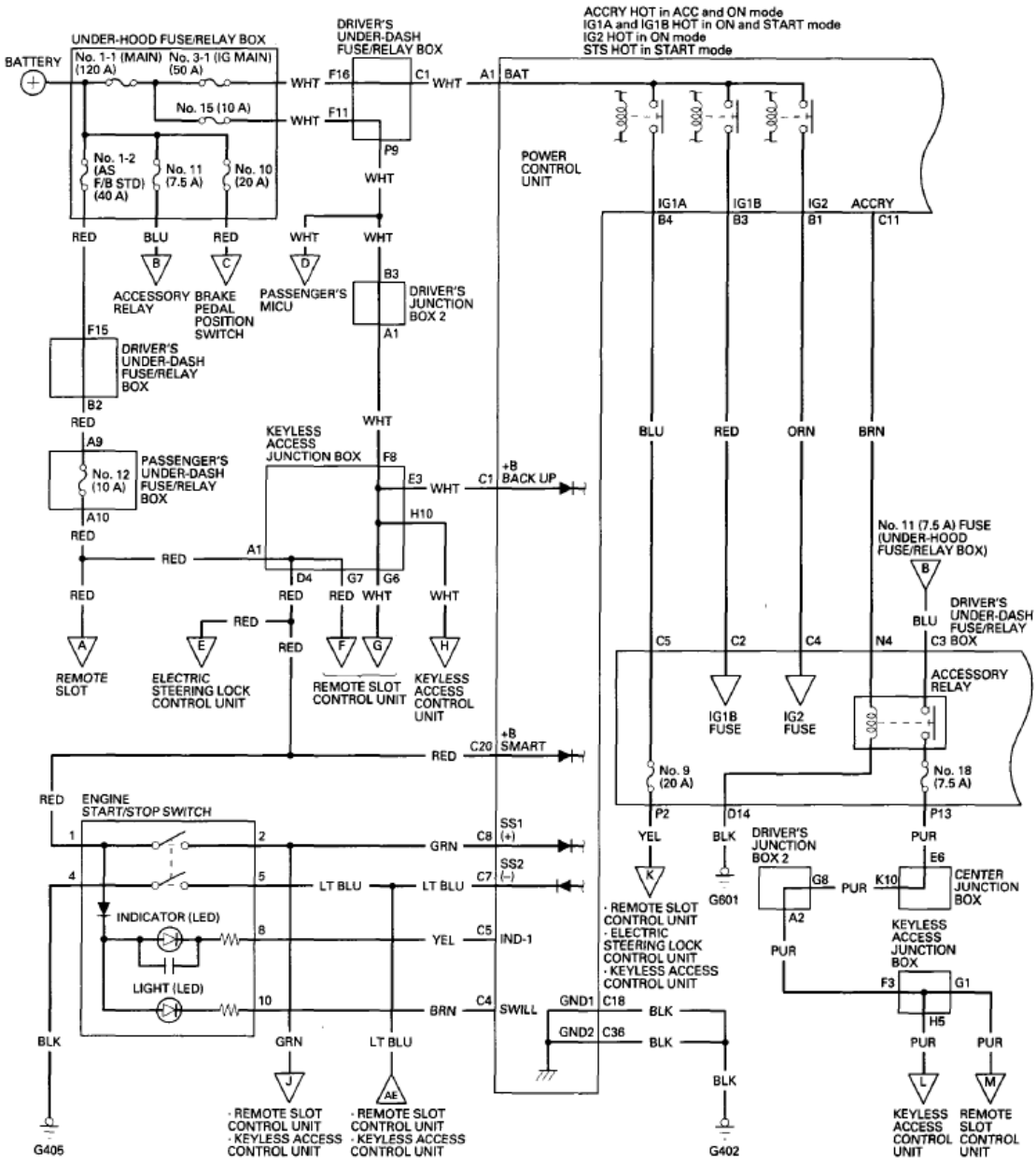


Fig. 18: Keyless Access System - Circuit Diagram (1 Of 7)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

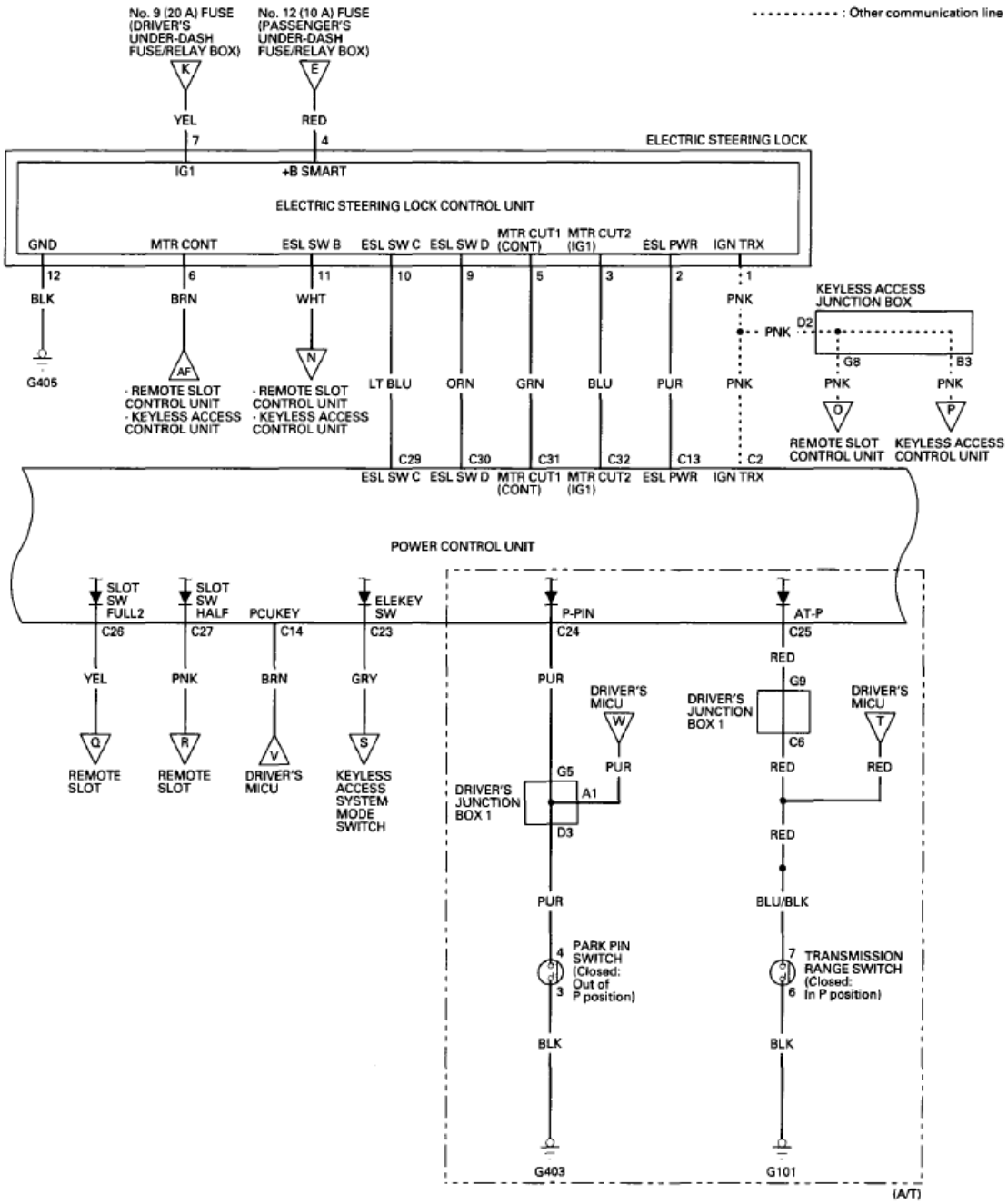


Fig. 19: Keyless Access System - Circuit Diagram (2 Of 7)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

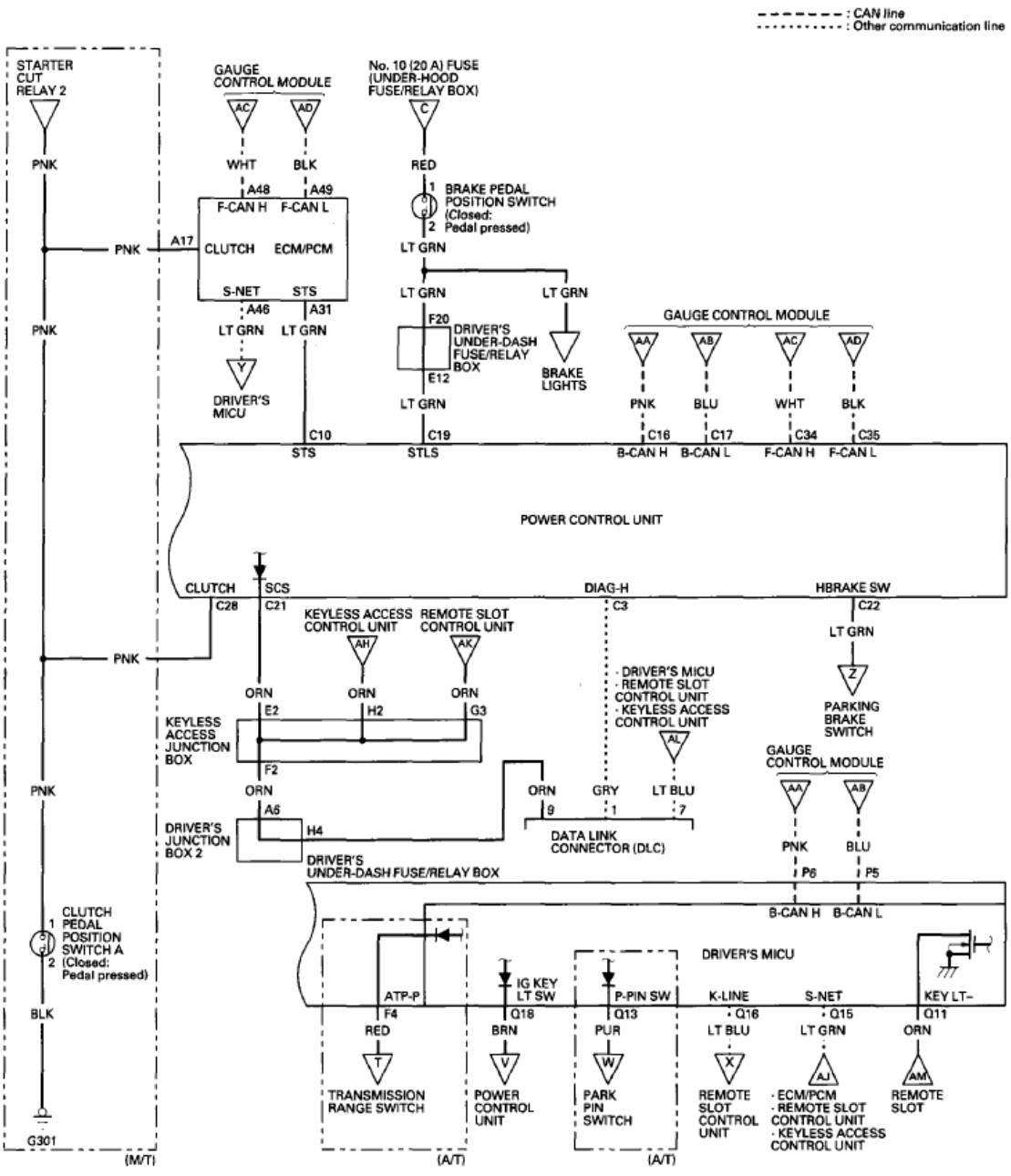


Fig. 20: Keyless Access System - Circuit Diagram (3 Of 7)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

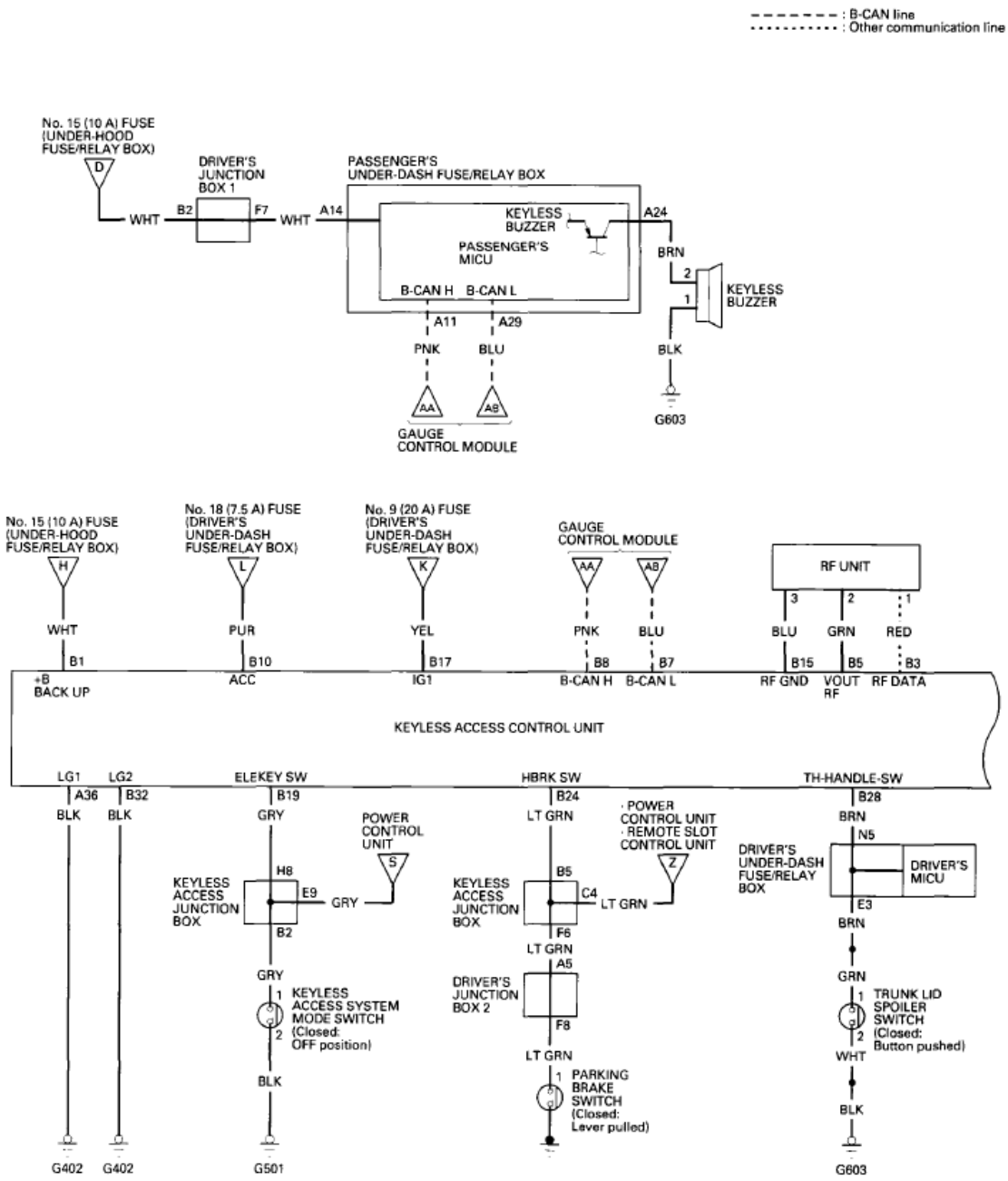


Fig. 21: Keyless Access System - Circuit Diagram (4 Of 7)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

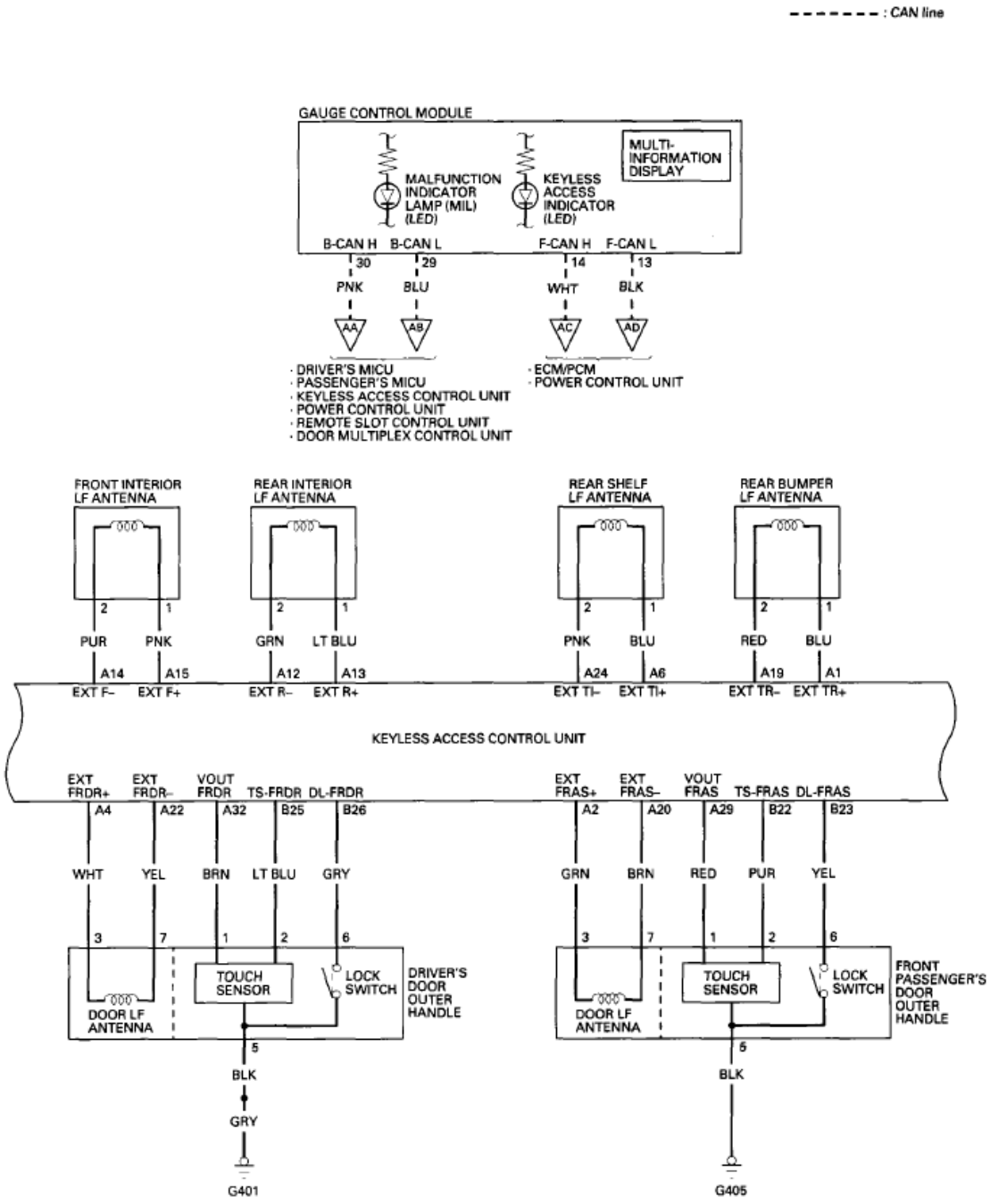


Fig. 22: Keyless Access System - Circuit Diagram (5 Of 7)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

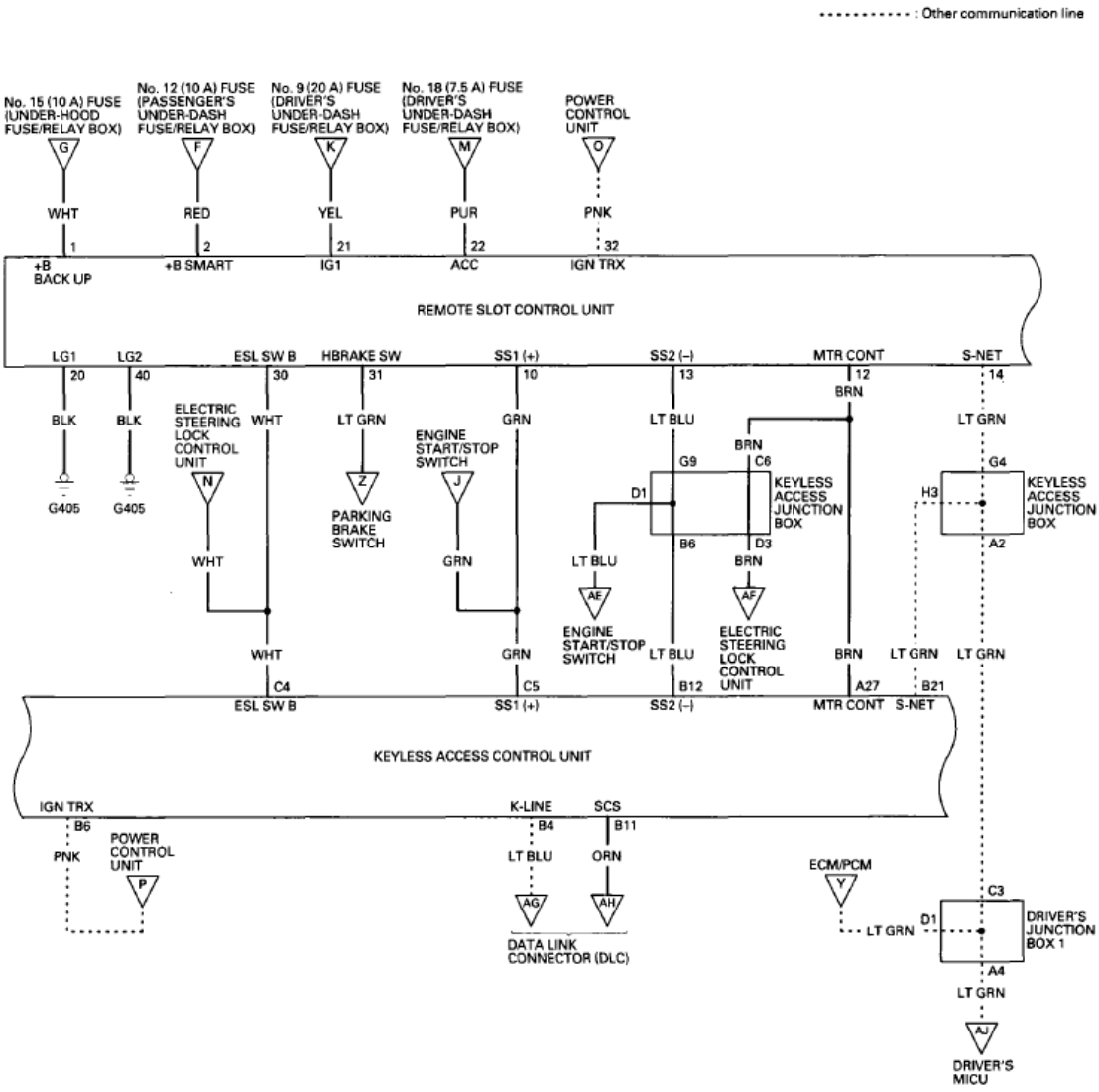


Fig. 23: Keyless Access System - Circuit Diagram (6 Of 7)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

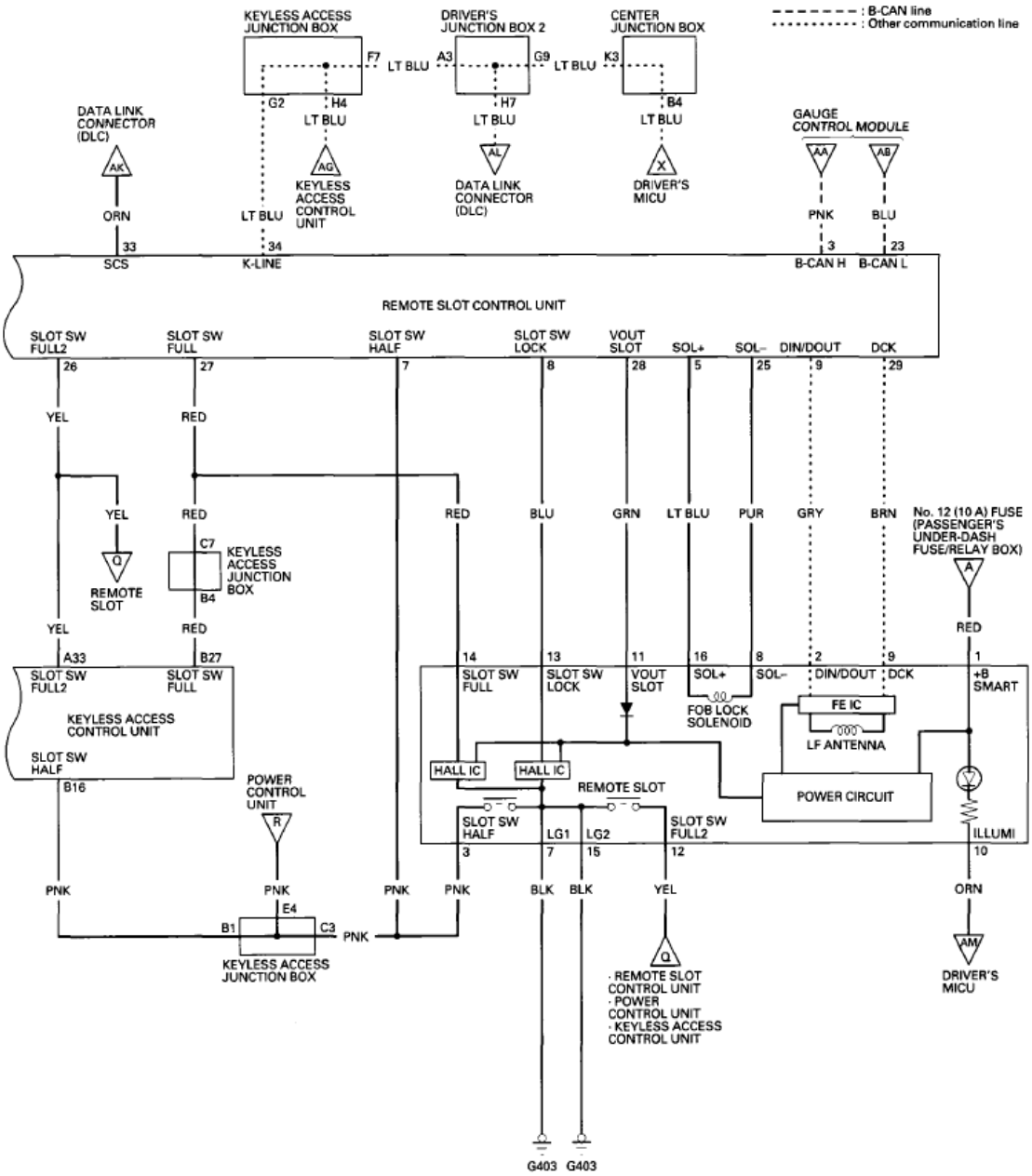


Fig. 24: Keyless Access System - Circuit Diagram (7 Of 7)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

GENERAL TROUBLESHOOTING INFORMATION

SELF- DIAGNOSTIC FUNCTION

The keyless access system has a self- diagnostic function. If any malfunction is stored in the keyless access control unit, the DTC codes can be determined by the keyless access indicator blinking pattern.

Short the SCS line with the HDS, then press the engine start/stop button to select the ON mode. The keyless

access indicator starts to show the DTCs if any DTCs are stored.

The DTC is cleared when the battery terminal is disconnected, or by removing the No. 15 (10 A) fuse from the under- hood fuse/relay box.

DTC	Keyless access indicator		Description
B1601	1	o	Keyless access control unit internal (CPU) error
B1602	2	o	Keyless access control unit internal (EEPROM) error
B1640	40	o	RF unit not connected
B1646	46	o	Driver's door LF antenna circuit open or short
B1648	48	o	Passenger's door LF antenna circuit open or short
B1658	58	o	Rear bumper LF antenna circuit open or short
B1660	60	o	Front interior LF antenna circuit open or short
B1664	64	o	Rear interior LF antenna circuit open or short
B1668	68	o	Rear shelf LF antenna circuit open or short
U0155	10	o	Keyless access control unit lost communication with gauge control module
U0199	7	o	Keyless access control unit lost communication with door multiplex control unit
U1280	100	o	Communication bus line error (BUS- OFF) (see **DTC U1280: COMMUNICATION BUS LINE ERROR (BUS- OFF)**)
U1282	5	o	Keyless access control unit lost communication with driver's MICU
U1283	16	o	Keyless access control unit lost communication with passenger's MICU
NOTE: **When the engine start/stop button is pressed and the mode changes to ON, the keyless access indicator comes on when any malfunction is detected.**			

DTC TROUBLESHOOTING

DTC B12A1: POWER CONTROL UNIT INTERNAL (CPU) ERROR

NOTE: If you are troubleshooting multiple DTCs, be sure to follow the instructions in B-CAN System Diagnosis Test Mode A (see TROUBLESHOOTING - B- CAN SYSTEM DIAGNOSIS TEST MODE A).

1. Do the battery terminal disconnect procedure (see **BATTERY TERMINAL DISCONNECTION AND RECONNECTION**).
2. Wait for at least 10 seconds to clear the DTCs.
3. Do the battery terminal reconnection procedure (see **BATTERY TERMINAL DISCONNECTION AND RECONNECTION**).
4. Press and hold the engine start/stop button.
5. Wait for at least 10 seconds.
6. Check for DTCs with the HDS.

Is DTC B12A1 indicated?

YES - Replace the power control unit (see **CONTROL UNIT INPUT TEST**).

NO - Intermittent failure, the system is OK at this time.

DTC B12C5: ENGINE START/STOP SWITCH FAILURE

NOTE: If you are troubleshooting multiple DTCs, be sure to follow the instructions in B-CAN System Diagnosis Test Mode A (see TROUBLESHOOTING - B- CAN SYSTEM DIAGNOSIS TEST MODE A).

1. Clear the DTCs with the HDS.
2. Press the engine start/stop button at least 20 times, then wait for at least 20 seconds.
3. Check for DTCs with the HDS.

Is DTC B12C5 indicated?

YES - Go to step 4.

NO - Intermittent failure, the system is OK at this time. Check for loose or poor connections.

4. Do the engine start/stop switch test (see **ENGINE START/STOP SWITCH TEST/REPLACEMENT**).

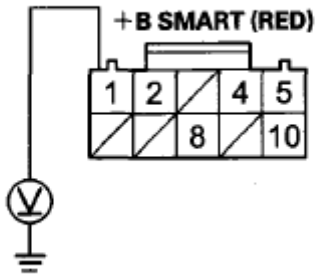
Is the engine start/stop switch OK?

YES - Go to step 5.

NO - Replace the engine start/stop switch (see **ENGINE START/STOP SWITCH TEST/REPLACEMENT**).

5. Reconnect the engine start/stop switch 10P connector.
6. Measure the voltage between body ground and engine start/stop switch 10P connector terminal No. 1.

ENGINE START/STOP SWITCH 10P CONNECTOR



Wire side of female terminals

Fig. 25: Measuring Voltage Between Body Ground And Engine Start/Stop Switch 10P Connector Terminal No. 1 With Connector End View
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there battery voltage?

YES - Go to step 7.

NO - Check the No. 12 (10 A) fuse in the passenger's under- dash fuse/relay box. If the fuse is OK, check for an open in the wire.

7. Press and hold the engine start/stop button.
8. Measure the voltage between body ground and engine start/stop switch 10P connector terminal No. 4.

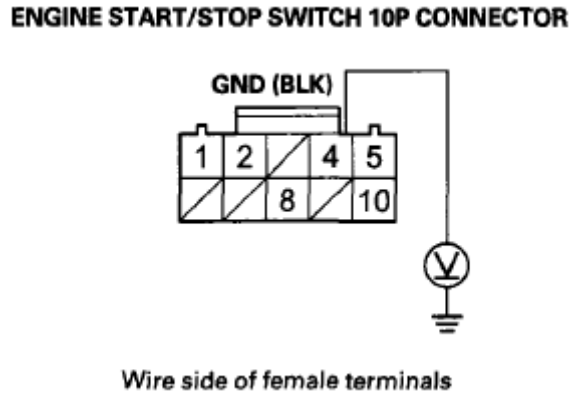


Fig. 26: Measuring Voltage Between Body Ground And Engine Start/Stop Switch 10P Connector Terminal No. 4
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there less than 0.2 V?

YES - Go to step 9.

NO - Repair an open or high resistance in the wire or poor ground (G405).

9. Disconnect the engine start/stop switch 10P connector.
10. Disconnect power control unit connector C (36P).
11. Check for continuity between engine start/stop switch 10P connector terminals No. 2 and No. 5, and power control unit connector C (36P) terminals No. 8 and No. 7 respectively.

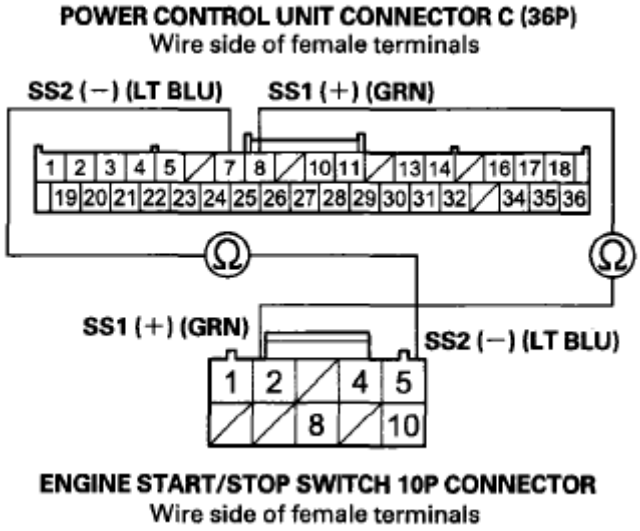


Fig. 27: Checking Continuity Between Engine Start/Stop Switch 10P Connector Terminals And Power Control Unit Connector C (36P) Terminals With Connector End View
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Replace the power control unit (see **CONTROL UNIT INPUT TEST**).

NO - Repair an open or high resistance in the wire.

DTC B12C6: ELECTRIC STEERING LOCK SWITCH C/D MONITOR CIRCUIT FAILURE

NOTE: If you are troubleshooting multiple DTCs, be sure to follow the instructions in B-CAN System Diagnosis Test Mode A (see TROUBLESHOOTING - B- CAN SYSTEM DIAGNOSIS TEST MODE A).

1. Clear the DTCs with the HDS.
2. Press the engine start/stop button at least 10 times.
3. Check for DTCs with the HDS.

   Is DTC B12C6 indicated?

   YES - Go to step 4.

   NO - Intermittent failure, the system is OK at this time. Check for loose or poor connections.

4. Measure the voltage between body ground and electric steering lock 12P connector terminal No. 12.

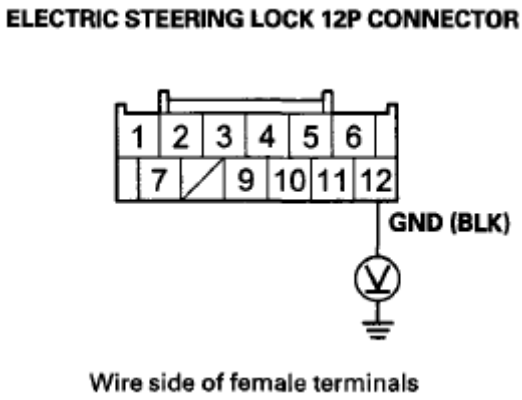


Fig. 28: Measuring Voltage Between Body Ground And Electric Steering Lock 12P Connector Terminal No. 12 With Connector End View
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there less than 0.2 V?

YES - Go to step 5.

NO - Repair an open or high resistance in the wire or poor ground (G405).

5. Disconnect the electric steering lock 12P connector.
6. Disconnect power control unit connector C (36P).
7. Check for continuity between body ground and electric steering lock 12P connector terminals No. 9 and No. 10 individually.

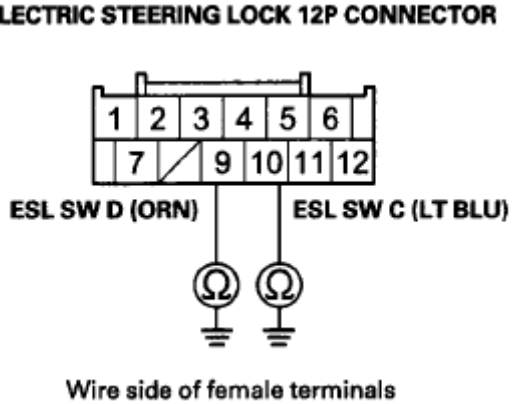


Fig. 29: Checking Continuity Between Body Ground And Electric Steering Lock 12P Connector Terminals No. 9 And No. 10 Individually
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair a short to ground in the wire.

NO - Go to step 8.

8. Check for continuity between power control unit connector C (36P) terminals No. 29 and No. 30, and electric steering lock 12P connector terminals No. 10 and No. 9 respectively.

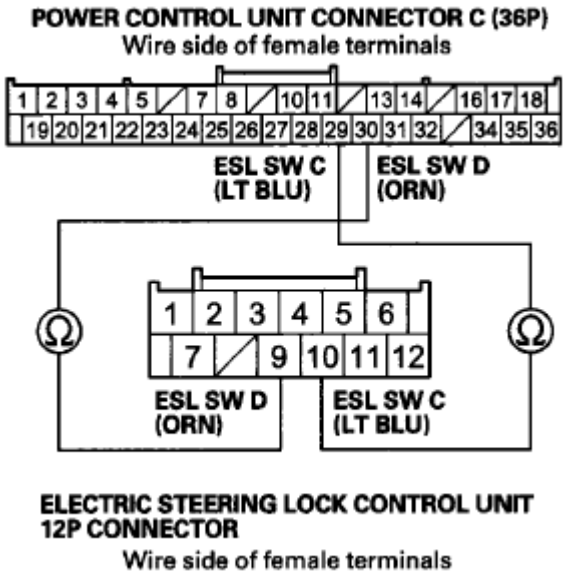


Fig. 30: Checking Continuity Between Power Control Unit Connector C (36P) Terminals And Electric Steering Lock 12P Connector Terminals
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 9.

NO - Repair an open or high resistance in the wire.

9. Reconnect power control unit connector C (36P).
10. Select PCU from the ONE-PUSH START system select menu with the HDS, and enter DATA LIST.
11. Check each PCU value with the DATA LIST menu.
12. Connect the jumper wires to body ground and to electric steering control unit 12P connector terminals No. 10 and No. 9.

Data List	Value
ESL SWITCH C	ON
ESL SWITCH D	ON

Are all data list values correct?

YES - Replace the electric steering lock (see **STEERING LOCK REPLACEMENT**).

NO - Replace the power control unit (see **CONTROL UNIT INPUT TEST**).

DTC B12C7: ELECTRIC STEERING LOCK MOTOR CIRCUIT FAILURE

NOTE: If you are troubleshooting multiple DTCs, be sure to follow the instructions in B-CAN System Diagnosis Test Mode A (see TROUBLESHOOTING - B- CAN SYSTEM DIAGNOSIS TEST MODE A).

1. Clear the DTCs with the HDS.
2. Do this procedure 10 times: Press the engine start/stop button to select the OFF, ACC, ON, and OFF mode.
3. Check for DTCs with the HDS.

   Is DTC B12C7 indicated?

   YES - Go to step 4.

   NO - Intermittent failure, the system is OK at this time. Check for loose or poor connections.

4. Disconnect the engine start/stop switch 10P connector.
5. Check for continuity between body ground and electric steering lock 12P connector terminal No. 12.

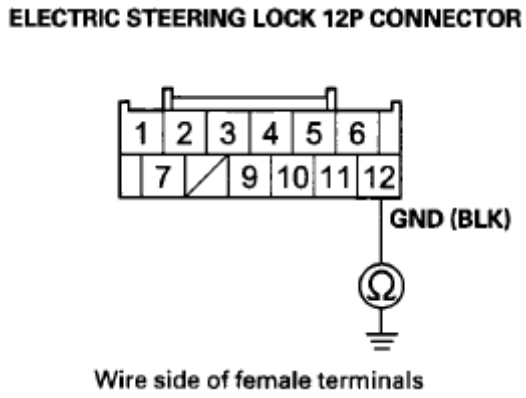


Fig. 31: Checking Continuity Between Body Ground And Electric Steering Lock 12P Connector Terminal No. 12
Courtesy of AMERICAN HONDA MOTOR CO., INC.

   Is there continuity?

   YES - Go to step 6.

   NO - Repair an open or high resistance in the wire or poor ground (G405).

6. Disconnect the electric steering lock 12P connector.
7. Disconnect power control unit connector C (36P).

8. Check for continuity between body ground and electric steering lock 12P connector terminals No. 3 and No. 5 individually.

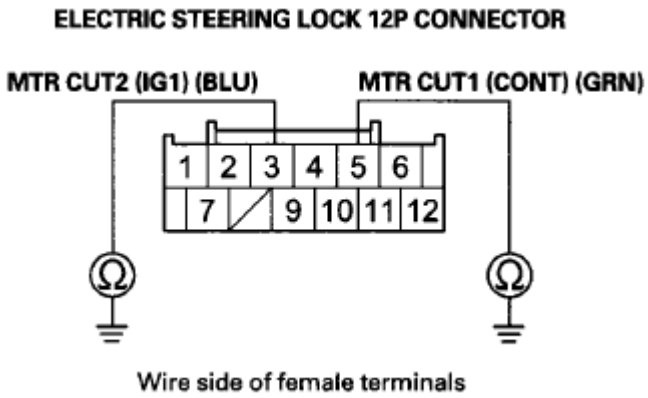


Fig. 32: Checking Continuity Between Body Ground And Electric Steering Lock 12P Connector Terminals No. 3 And No. 5 Individually
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair a short to ground in the wire.

NO - Go to step 9.

9. Check for continuity between power control unit connector C (36P) terminals No. 31 and No. 32, and electric steering lock 12P connector terminals No. 5 and No. 3 respectively.

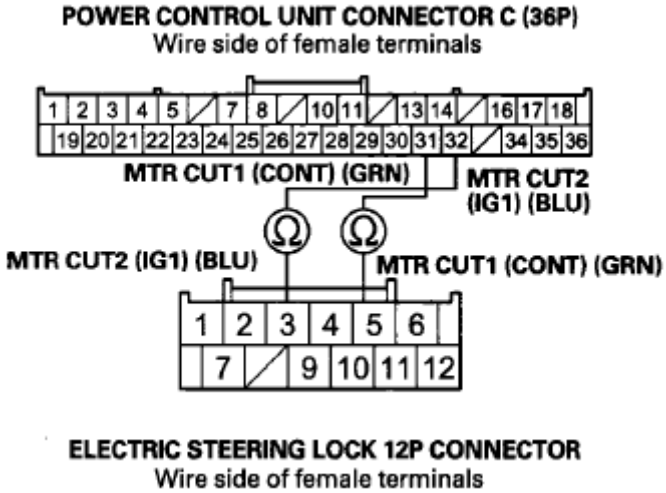


Fig. 33: Checking Continuity Between Power Control Unit Connector C (36P) Terminals And Electric Steering Lock 12P Connector Terminals
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Substitute a known- good power control unit. If the symptom goes away, replace the original power control unit (see **CONTROL UNIT INPUT TEST**). If not, replace the electric steering lock (see **STEERING LOCK REPLACEMENT**).

NO - Repair an open or high resistance in the wire.

DTC B12D0: POWER CONTROL UNIT IG1A CIRCUIT ERROR; DTC B12D1: POWER CONTROL UNIT IG1B CIRCUIT ERROR; DTC B12D2: POWER CONTROL UNIT IG2 CIRCUIT ERROR; DTC B12D3: POWER CONTROL UNIT IG LATCH CIRCUIT ERROR

NOTE:
- **If you are troubleshooting multiple DTCs, be sure to follow the instructions in B- CAN System Diagnosis Test Mode A (see TROUBLESHOOTING - B- CAN SYSTEM DIAGNOSIS TEST MODE A).**
- **Make sure aftermarket accessories are not installed.**

1. Clear the DTCs with the HDS.
2. Do this procedure 5 times:
   - Press the engine start/stop button to select the OFF mode
   - Wait 10 seconds
   - Select the ACC mode
   - Wait 10 seconds
   - Select the ON mode
   - Wait 10 seconds before repeating this procedure
3. Check for DTCs with the HDS.

   Are DTCs B12D0, B12D1, B12D2, and/or B12D3 indicated?

   YES - Replace the power control unit (see **CONTROL UNIT INPUT TEST**).

   NO - Intermittent failure, the system is OK at this time.

DTC B12E0: ELECTRIC STEERING LOCK SWITCH INTERNAL ERROR

NOTE: **If you are troubleshooting multiple DTCs, be sure to follow the instructions in B- CAN System Diagnosis Test Mode A (see TROUBLESHOOTING - B- CAN SYSTEM DIAGNOSIS TEST MODE A).**

1. Clear the DTCs with the HDS.
2. Do this procedure at least 10 times: Press the engine start/stop button to select the OFF, ACC, ON, and OFF mode.
3. Check for DTCs with the HDS.

   Is DTC B12E0 indicated?

YES - Replace the electric steering lock (see **STEERING LOCK REPLACEMENT**).

NO - Intermittent failure, the system is OK at this time.

DTC B12E1: ELECTRIC STEERING LOCK MOTOR INTERNAL ERROR; DTC B12E2: ELECTRIC STEERING LOCK LOW LEVEL FAILURE OF MTRCUT1; DTC B12E3: ELECTRIC STEERING LOCK HIGH LEVEL FAILURE OF MTRCUT1; DTC B12E4: ELECTRIC STEERING LOCK HIGH LEVEL FAILURE OF MTRCUT2

NOTE: If you are troubleshooting multiple DTCs, be sure to follow the instructions in B-CAN System Diagnosis Test Mode A (see TROUBLESHOOTING - B- CAN SYSTEM DIAGNOSIS TEST MODE A).

1. Clear the DTCs with the HDS.
2. Do this procedure 11 times: Press the engine start/stop button to select the OFF, ACC, ON, and OFF mode.
3. Check for DTCs with the HDS.

Are DTCs B12E1, B12E2, B12E3, and/or B12E4 indicated?

YES - Go to step 4.

NO - Intermittent failure, the system is OK at this time. Check for loose or poor connections.

4. Disconnect the electric steering lock 12P connector.
5. Measure the voltage between body ground and electric steering lock 12P connector terminal No. 4.

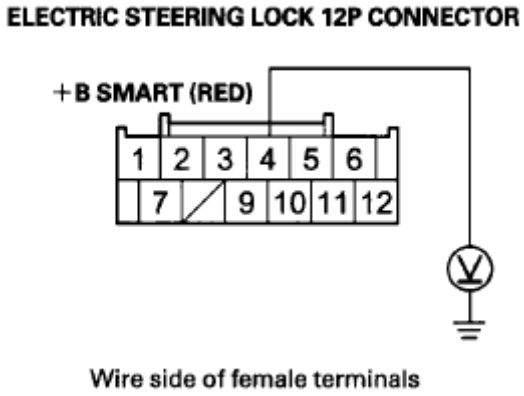


Fig. 34: Measuring Voltage Between Body Ground And Electric Steering Lock 12P Connector Terminal No. 4
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there battery voltage?

YES - Go to step 6.

NO - Blown No. 12 (10 A) fuse in the passenger's under- dash fuse/relay box, repair an open or high resistance in the wire.

6. Reconnect the electric steering lock 12P connector.
7. Measure the voltage between body ground and electric steering lock 12P connector terminal No. 12.

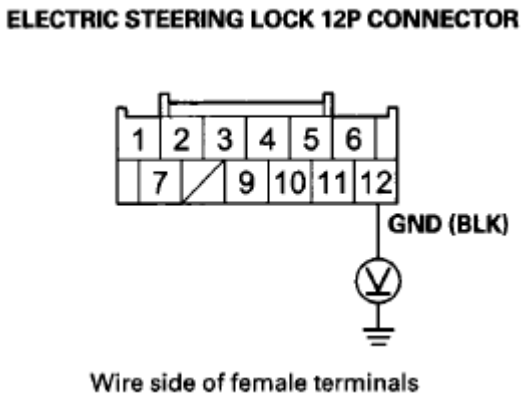


Fig. 35: Measuring Voltage Between Body Ground And Electric Steering Lock 12P Connector Terminal No. 12
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there less than 0.2 V?

YES - Go to step 8.

NO - Repair an open or high resistance in the wire or poor ground (G405).

8. Press the engine start/stop button to select the ON mode.
9. Measure the voltage between body ground and electric steering lock 12P connector terminal No. 7.

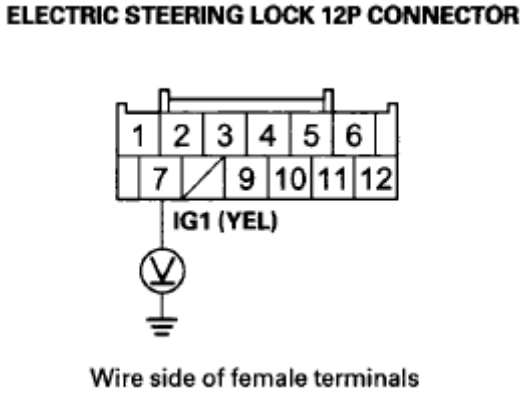


Fig. 36: Measuring Voltage Between Body Ground And Electric Steering Lock 12P Connector Terminal No. 7
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there battery voltage?

YES - Go to step 10.

NO - Repair an open or high resistance in the wire or blown No. 9 (20 A) fuse in the driver's under- dash fuse/relay box.

10. Press the engine start/stop button to select the OFF mode.
11. Disconnect the remote slot control unit 40P connector.
12. Disconnect keyless access control unit connector A (36P).
13. Check for continuity between electric steering lock 12P connector terminal No. 6 and remote slot control unit 40P connector terminal No. 12.

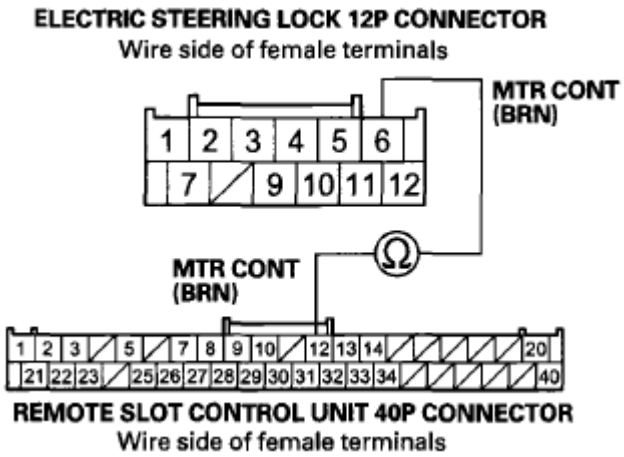


Fig. 37: Checking Continuity Between Electric Steering Lock 12P Connector Terminal No. 6 And Remote Slot Control Unit 40P Connector Terminal No. 12
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 14.

NO - Repair an open or high resistance in the wire.

14. Check for continuity between electric steering lock 12P connector terminal No. 6 and keyless access control unit connector A (36P) terminal No. 27.

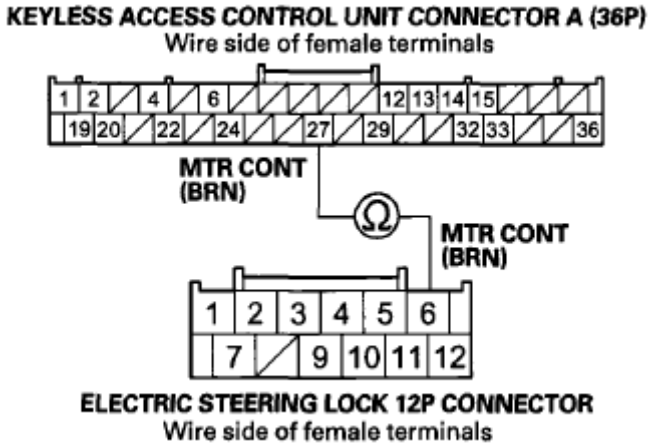


Fig. 38: Checking Continuity Between Electric Steering Lock 12P Connector Terminal No. 6 And Keyless Access Control Unit Connector A (36P) Terminal No. 27
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 15.

NO - Repair an open or high resistance in the wire.

15. Disconnect power control unit connector C (36P).
16. Check for continuity between electric steering lock 12P connector terminals No. 5 and No. 3 and power control unit connector C (36P) terminals No. 31 and No. 32 respectively.

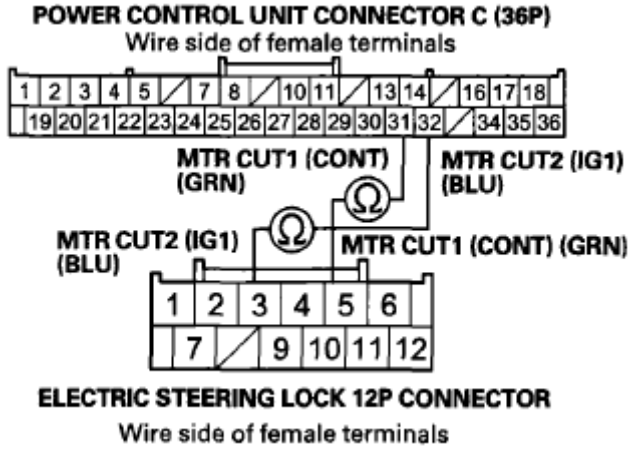


Fig. 39: Checking Continuity Between Electric Steering Lock 12P Connector Terminals And Power Control Unit Connector C (36P) Terminals
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Substitute a known- good electric steering lock. If the symptom goes away, replace the original electric steering lock (see **STEERING LOCK REPLACEMENT**). If not, replace the remote slot control unit (see **CONTROL UNIT INPUT TEST**).

NO - Repair an open or high resistance in the wire.

DTC B12F0: POWER CONTROL UNIT LOST COMMUNICATION WITH ELECTRIC STEERING LOCK

NOTE: If you are troubleshooting multiple DTCs, be sure to follow the instructions in B-CAN System Diagnosis Test Mode A (see TROUBLESHOOTING - B- CAN SYSTEM DIAGNOSIS TEST MODE A).

1. Clear the DTCs with the HDS.
2. Do this procedure 10 times: Press the engine start/stop button to select the OFF, ACC, ON, and OFF mode.
3. Check for DTCs with the HDS.

   Is DTC B12F0 indicated?

   YES - Go to step 4.

   NO - Intermittent failure, the system is OK at this time. Check for loose or poor connections.

4. Measure the voltage between body ground and electric steering lock 12P connector terminal No. 4.

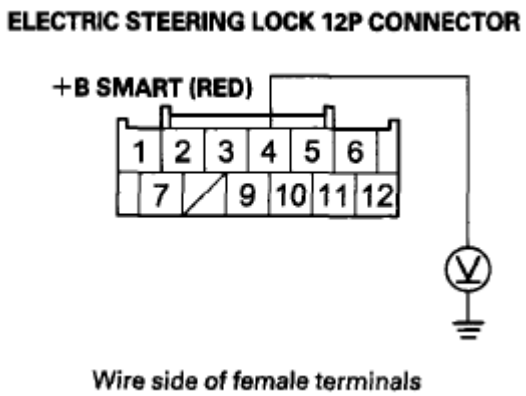


Fig. 40: Measuring Voltage Between Body Ground And Electric Steering Lock 12P Connector Terminal No. 4
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there battery voltage?

YES - Go to step 5.

NO - Blown No. 12 (10 A) fuse in the passenger's under- dash fuse/relay box, repair an open or high

resistance in the wire.

5. Measure the voltage between body ground and electric steering lock 12P connector terminal No. 12.

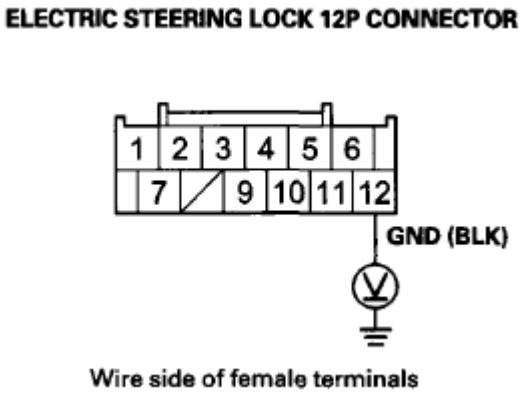


Fig. 41: Measuring Voltage Between Body Ground And Electric Steering Lock 12P Connector Terminal No. 1
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there less than 0.2 V?

YES - Go to step 6.

NO - Repair an open or high resistance in the wire or poor ground (G405).

6. Press the engine start/stop button to select the OFF mode.
7. Disconnect these items:
   - Electric steering lock 12P connector
   - Power control unit connector C (36P)
   - Remote slot control unit 40P connector
   - Keyless access control unit connector B (32P)
8. Check for continuity between body ground and electric steering lock 12P connector terminal No. 1.

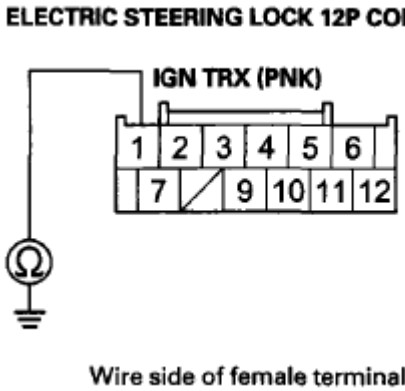


Fig. 42: Checking Continuity Between Body Ground And Electric Steering Lock 12P Connector Terminal No. 1
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair a short to ground in the wire.

NO - Go to step 9.

9. Check for continuity between electric steering lock 12P connector terminal No. 1 and power control unit connector C (36P) terminal No. 2.

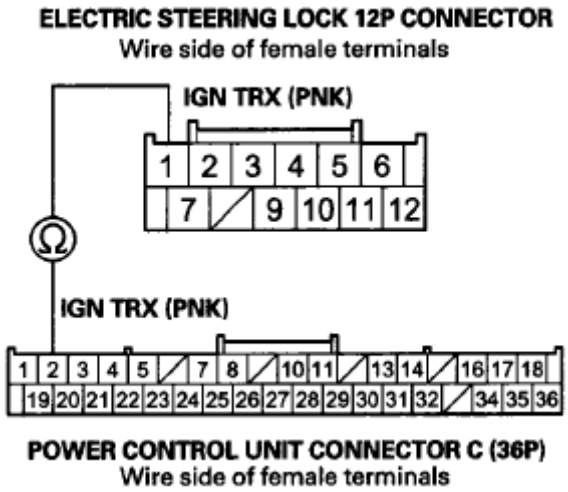


Fig. 43: Checking Continuity Between Electric Steering Lock 12P Connector Terminal No. 1 And Power Control Unit Connector C (36P) Terminal No. 2
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 10.

NO - Repair an open or high resistance in the wire.

10. Reconnect these items:
    - Electric steering lock 12P connector
    - Power control unit connector C (36P)
    - Remote slot control unit 40P connector
    - Keyless access control unit connector B (32P)
11. Do the battery terminal disconnect procedure (see **BATTERY TERMINAL DISCONNECTION AND RECONNECTION**).
12. Wait for at least 10 seconds to clear the DTCs.

13. Do the battery terminal reconnection procedure (see **BATTERY TERMINAL DISCONNECTION AND RECONNECTION**).
14. Turn the keyless access system mode switch ON.
15. If necessary, remove the remote from the remote slot.
16. Press the engine start/stop button to select the ON mode, then select the OFF mode.
17. Insert the remote into the remote slot.
18. Press and hold the engine start/stop button to select the ON mode.

    Does the mode change to ON?

    YES - Go to step 19.

    NO - Go to step 22.

19. Clear the DTCs with the HDS.
20. Do this procedure 10 times: Press the engine start/stop button to select the OFF, ACC, ON, and OFF mode.
21. Check for DTCs with the HDS.

    Is DTC B12F0 indicated?

    YES - Replace the electric steering lock (see **STEERING LOCK REPLACEMENT**).

    NO - Intermittent failure, the system is OK at this time. Check for loose or poor connections.

22. Connect the HDS to the data link connector (DLC).
23. Select COMMUNICATION STATUS in the INSPECTION MENU with the HDS.
24. Check the value of STATUS with ESL, STATUS with KEYLESS ACCESS CONTROL UNIT, and STATUS with SLOT with the HDS.

	HDS Description	Value
Status with ESL	MTR CUT1 (Cont) Status	1
	MTR CUT2 (IG) Status	1
	IG1 Input State of ESL	1
	MTRCONT Status of ESL	1
	ESL Motor Status	1
	Switch D detection for Unlock Status	1
	Switch C detection for Unlock Status	1
	Switch B detection for Unlock Status	1
Status with KEYLESS ACCESS CONTROL UNIT	FOR KEY Authentication Result	1
Status with SLOT	FOR KEY Authentication Result	1

Are only values of status with ESL 1?

YES - Replace the electric steering lock (see **STEERING LOCK REPLACEMENT**).

NO - Replace the power control unit (see **CONTROL UNIT INPUT TEST**).

DTC B12F1: POWER CONTROL UNIT LOST COMMUNICATION WITH REMOTE SLOT CONTROL UNIT

NOTE: If you are troubleshooting multiple DTCs, be sure to follow the instructions in B-CAN System Diagnosis Test Mode A (see TROUBLESHOOTING - B- CAN SYSTEM DIAGNOSIS TEST MODE A).

1. Insert the remote into the remote slot.
2. Clear the DTCs with the HDS.
3. Do this procedure 10 times: Press the engine start/stop button to select the OFF, ACC, ON, and OFF mode.
4. Check for DTCs with the HDS.

   Is DTC B12F1 indicated?

   YES - Go to step 5.

   NO - Intermittent failure, the system is OK at this time. Check for loose or poor connections.

5. Select ONE-PUSH START from the SYSTEM SELECTION MENU with the HDS.
6. Select the REMOTE SLOT CONTROL UNIT and check for DTCs with the HDS.

   Are any DTCs indicated?

   YES - Go to the indicated **DTCS TROUBLESHOOTING**.

   NO - Go to step 7.

7. Press the engine start/stop button to select the OFF mode.
8. Disconnect these items:
   - Power control unit connector C (36P)
   - Remote slot control unit 40P connector
   - Electric steering lock 12P connector
   - Keyless access control unit connector B (32P)
9. Check for continuity between body ground and power control unit connector C (36P) terminal No. 2.

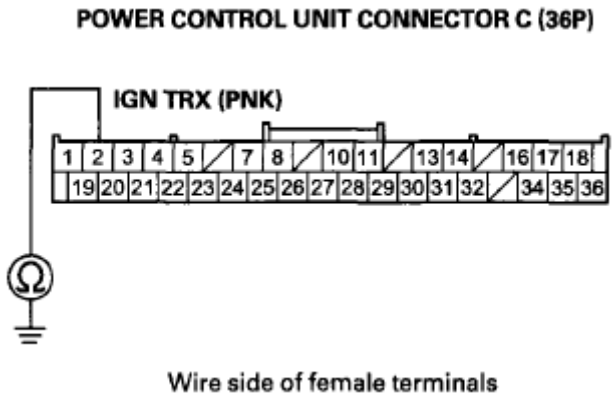


Fig. 44: Checking Continuity Between Body Ground And Power Control Unit Connector C (36P) Terminal No. 2
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair a short to ground in the wire.

NO - Go to step 10.

10. Check for continuity between remote slot control unit 40P connector terminal No. 32 and power control unit connector C (36P) terminal No. 2.

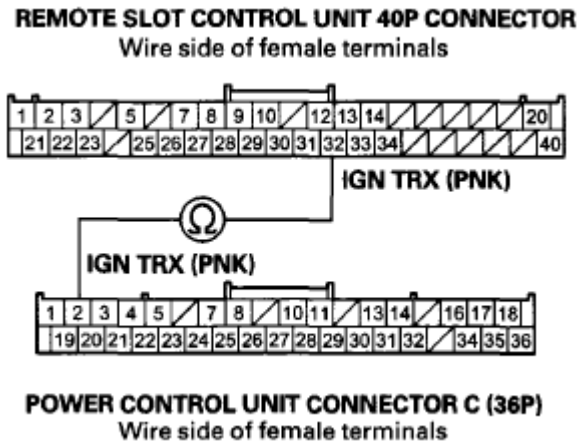


Fig. 45: Checking Continuity Between Remote Slot Control Unit 40P Connector Terminal No. 32 And Power Control Unit Connector C (36P) Terminal No. 2
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 11.

NO - Repair an open or high resistance in the wire.

11. Reconnect these items:
    - Power control unit connector C (36P)
    - Remote slot control unit 40P connector
    - Electric steering lock 12P connector
    - Keyless access control unit connector B (32P)
12. Do the battery terminal disconnect procedure (see **BATTERY TERMINAL DISCONNECTION AND RECONNECTION**).
13. Wait for at least 10 seconds to clear the DTCs.
14. Do the battery terminal reconnection procedure (see **BATTERY TERMINAL DISCONNECTION AND RECONNECTION**).
15. Turn the keyless access system mode switch ON.
16. If necessary, remove the remote from the remote slot.
17. Press the engine start/stop button to select the ON mode, then select the OFF mode.
18. Insert the remote into the remote slot.
19. Press and hold the engine start/stop button to select the ON mode.

    Does the mode change to ON?

    YES - Go to step 20.

    NO - Go to step 23.

20. Clear the DTCs with the HDS.
21. Do this procedure 10 times: Press the engine start/stop button to select the OFF, ACC, ON, and OFF mode.
22. Check for DTCs with the HDS.

    Is DTC B12F1 indicated?

    YES - Replace the remote slot control unit (see **CONTROL UNIT INPUT TEST**).

    NO - Intermittent failure, the system is OK at this time. Check for loose or poor connections.

23. Connect the HDS to the data link connector (DLC).
24. Select COMMUNICATION STATUS in the INSPECTION MENU with the HDS.
25. Check the value of STATUS with ESL, STATUS with KEYLESS ACCESS CONTROL UNIT, and STATUS with SLOT with the HDS.

HDS Description		Value
	MTR CUT1 (Cont) Status	1
	MTR CUT2 (IG) Status	1
	IG1 Input State of ESL	1

Status with ESL	MTRCONT Status of ESL	1
	ESL Motor Status	1
	Switch D detection for Unlock Status	1
	Switch C detection for Unlock Status	1
	Switch B detection for Unlock Status	1
Status with KEYLESS ACCESS CONTROL UNIT	FOR KEY Authentication Result	1
Status with SLOT	FOR KEY Authentication Result	1

Are only values of status with SLOT 1?

YES - Replace the remote slot control unit (see **CONTROL UNIT INPUT TEST**).

NO - Replace the power control unit (see **CONTROL UNIT INPUT TEST**).

DTC B12F2: POWER CONTROL UNIT LOST COMMUNICATION WITH KEYLESS ACCESS CONTROL UNIT

NOTE: If you are troubleshooting multiple DTCs, be sure to follow the instructions in B-CAN System Diagnosis Test Mode A (see TROUBLESHOOTING - B- CAN SYSTEM DIAGNOSIS TEST MODE A).

1. Make sure the remote is not in the remote slot.
2. Clear the DTCs with the HDS.
3. Do this procedure 10 times: Press the engine start/stop button to select the OFF, ACC, ON, and OFF mode.
4. Check for DTCs with the HDS.

   Is DTC B12F2 indicated?

   YES - Go to step 5.

   NO - Intermittent failure, the system is OK at this time. Check for loose or poor connections.

5. Select ONE-PUSH START from the SYSTEM SELECTION MENU with the HDS.
6. Select the KEYLESS ACCESS CONTROL UNIT and check for DTCs with the HDS.

   Are any DTCs indicated?

   YES - Go to the indicated **DTCS TROUBLESHOOTING**.

   NO - Go to step 7.

7. Press the engine start/stop button to select the OFF mode.
8. Disconnect these items:

- Power control unit connector C (36P)
- Remote slot control unit 40P connector
- Electric steering lock 12P connector
- Keyless access control unit connector B (32P)

9. Check for continuity between body ground and power control unit connector C (36P) terminal No. 2.

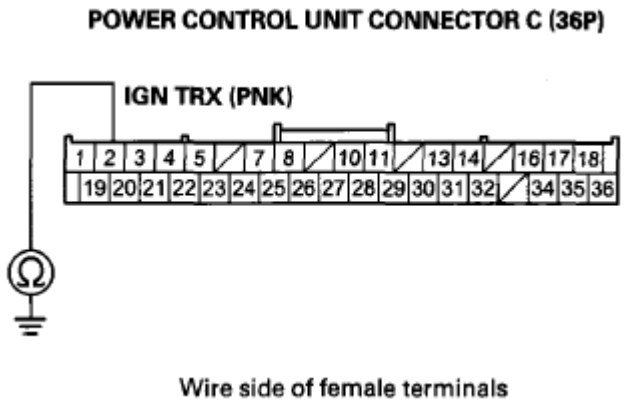


Fig. 46: Checking Continuity Between Body Ground And Power Control Unit Connector C (36P) Terminal No. 2
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair a short to ground in the wire.

NO - Go to step 10.

10. Check for continuity between keyless access control unit connector B (32P) terminal No. 6 and power control unit connector C (36P) terminal No. 2.

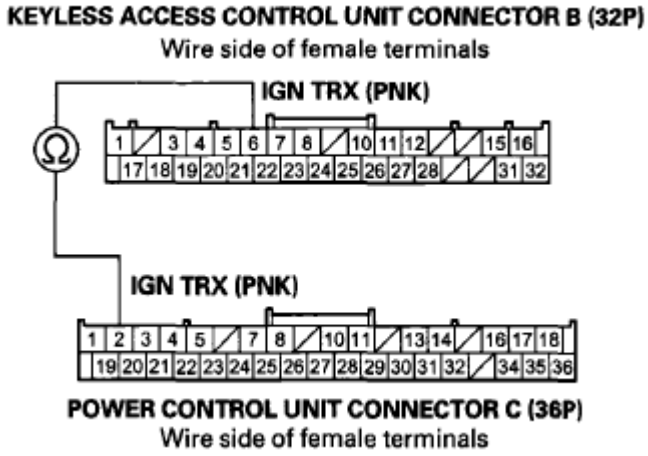


Fig. 47: Checking Continuity Between Keyless Access Control Unit Connector B (32P) Terminal No. 6 And Power Control Unit Connector C (36P) Terminal No. 2

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 11.

NO - Repair an open or high resistance in the wire.

11. Reconnect these items:
    - Power control unit connector C (36P)
    - Remote slot control unit 40P connector
    - Electric steering lock 12P connector
    - Keyless access control unit connector B (32P)
12. Do the battery terminal disconnect procedure (see **BATTERY TERMINAL DISCONNECTION AND RECONNECTION**).
13. Wait for at least 10 seconds to clear the DTCs.
14. Do the battery terminal reconnection procedure (see **BATTERY TERMINAL DISCONNECTION AND RECONNECTION**).
15. Turn the keyless access system mode switch ON.
16. If necessary, remove the remote from the remote slot.
17. Press the engine start/stop button to select the ON mode, then select the OFF mode.
18. Insert the remote into the remote slot.
19. Press and hold the engine start/stop button to select the ON mode.

    Does the mode change to ON?

    YES - Go to step 20.

    NO - Go to step 23.

20. Clear the DTCs with the HDS.
21. Press the engine start/stop button to select the OFF.
22. Check for DTCs with the HDS.

    Is DTC B12F2 indicated?

    YES - Replace the keyless access control unit (see **KEYLESS ACCESS CONTROL UNIT**).

    NO - Intermittent failure, the system is OK at this time. Check for loose or poor connections.

23. Connect the HDS to the data link connector (DLC).
24. Select COMMUNICATION STATUS in the INSPECTION MENU with the HDS.
25. Check the value of STATUS with ESL, STATUS with KEYLESS ACCESS CONTROL UNIT, and

STATUS with SLOT with the HDS.

HDS Description		Value
Status with ESL	MTR CUT1 (Cont) Status	1
	MTR CUT2 (IG) Status	1
	IG1 Input State of ESL	1
	MTRCONT Status of ESL	1
	ESL Motor Status	1
	Switch D detection for Unlock Status	1
	Switch C detection for Unlock Status	1
	Switch B detection for Unlock Status	1
Status with KEYLESS ACCESS CONTROL UNIT	FOR KEY Authentication Result	1
Status with SLOT	FOR KEY Authentication Result	1

Are only values of status with KEYLESS ACCESS CONTROL UNIT 1?

YES - Replace the keyless access control unit (see **KEYLESS ACCESS CONTROL UNIT**).

NO - Replace the power control unit (see **CONTROL UNIT INPUT TEST**).

DTC U0155: POWER CONTROL UNIT LOST COMMUNICATION WITH GAUGE CONTROL MODULE

NOTE: If you are troubleshooting multiple DTCs, be sure to follow the instructions in B-CAN System Diagnosis Test Mode A (see TROUBLESHOOTING - B- CAN SYSTEM DIAGNOSIS TEST MODE A).

1. Clear the DTCs with the HDS.
2. Press the engine start/stop button to select the OFF, ACC, and ON mode.
3. Wait for at least 6 seconds.
4. Check for DTCs with the HDS.

   Is DTC U0155 indicated?

   YES - Go to step 5.

   NO - Intermittent failure, the system is OK at this time. Check for loose or poor connections between the power control unit and the gauge control module.

5. From the BODY ELECTRICAL SYSTEM SELECT menu, select B- CAN CONTROL UNITS INFORMATION, and then select CHECK CONNECTED CONTROL UNITS.

   Is the gauge control module detected?

   YES - Go to step 9.

NO - Go to step 6.

6. Measure the voltage between body ground and gauge control module 32P connector terminals No. 15 and No. 16 individually.

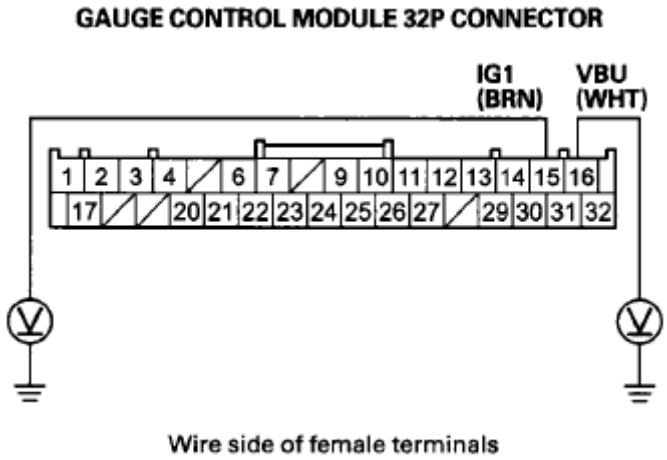


Fig. 48: Measuring Voltage Between Body Ground And Gauge Control Module 32P Connector Terminals No. 15 And No. 16 Individually
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there battery voltage?

YES - Go to step 9.

NO - Go to step 7.

7. Check the No. 15(10 A) fuse in the under- hood fuse/relay box and the No. 12 (7.5 A) fuse in the driver's under- dash fuse/relay box.

Are the fuses OK?

YES - Repair an open or high resistance in the No. 15 (10 A) and/or No. 12 (7.5 A) fuse circuit.

NO - Replace the fuse(s). If the fuse blows again, repair a short to ground in the No. 15(10 A) and/or No. 12 (7.5 A) fuse circuit.

8. Measure the voltage between body ground and gauge control module 32P connector terminals No. 1 and No. 17 individually.

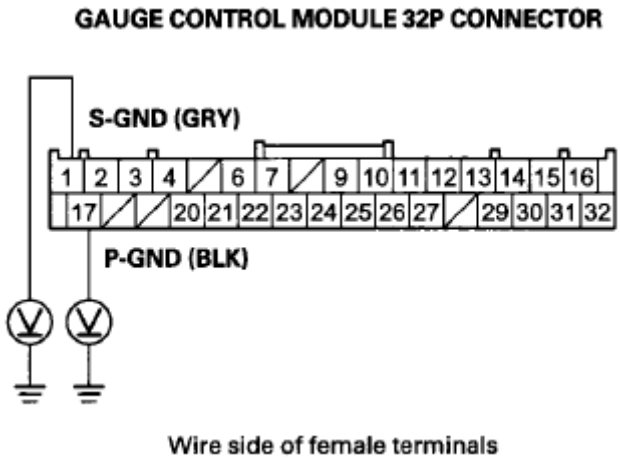


Fig. 49: Measuring Voltage Between Body Ground And Gauge Control Module 32P Connector Terminals No. 1 And No. 17 Individually
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there less than 0.2 V?

YES - Go to step 9.

NO - Repair an open or high resistance in the ground wire or poor ground (G401) and/or (G402).

9. Press the engine start/stop button to select the OFF mode.
10. Disconnect power control unit connector C (36P).
11. Disconnect the gauge control module 32P connector.
12. Check for continuity between gauge control module 32P connector terminals No. 29 and No. 30 and power control unit connector C (36P) terminals No. 17 and No. 16 respectively.

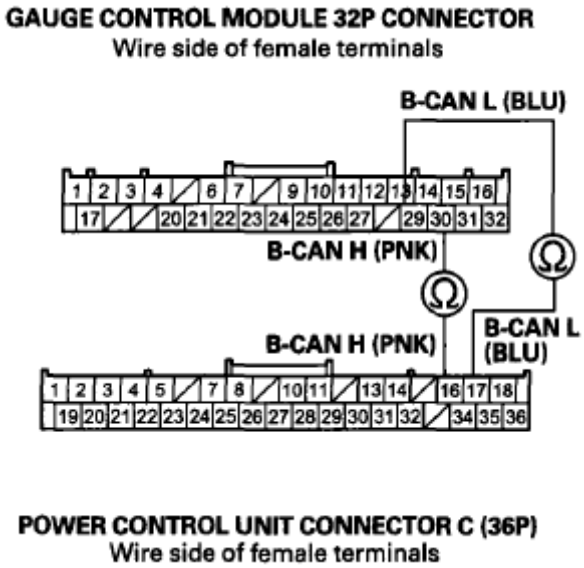


Fig. 50: Checking Continuity Between Gauge Control Module 32P Connector Terminals And Power Control Unit Connector C (36P) Terminals
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Replace the gauge control module (see **GAUGE CONTROL MODULE REPLACEMENT**).

NO - Repair an open or poor connection in the B- CAN wire between the power control unit and the gauge control module.

DTC U0199: POWER CONTROL UNIT LOST COMMUNICATION WITH DOOR MULTIPLEX CONTROL UNIT

NOTE: If you are troubleshooting multiple DTCs, be sure to follow the instructions in B-CAN System Diagnosis Test Mode A (see TROUBLESHOOTING - B- CAN SYSTEM DIAGNOSIS TEST MODE A).

1. Clear the DTCs with the HDS.
2. Press the engine start/stop button to select the OFF, ACC, and ON mode.
3. Wait for at least 6 seconds.
4. Check for DTCs with the HDS.

   Is DTC U0199 indicated?

   YES - Go to step 5.

   NO - Intermittent failure, the system is OK at this time. Check for loose or poor connections between the power control unit and the door multiplex control unit.

5. From the BODY ELECTRICAL SYSTEM SELECT menu, select B- CAN CONTROL UNITS INFORMATION, and then select CHECK CONNECTED CONTROL UNITS.

   Is the power window unit detected?

   YES - Go to step 9.

   NO - Go to step 6.

6. Measure the voltage between body ground and power window master switch 37P connector terminal No. 13.

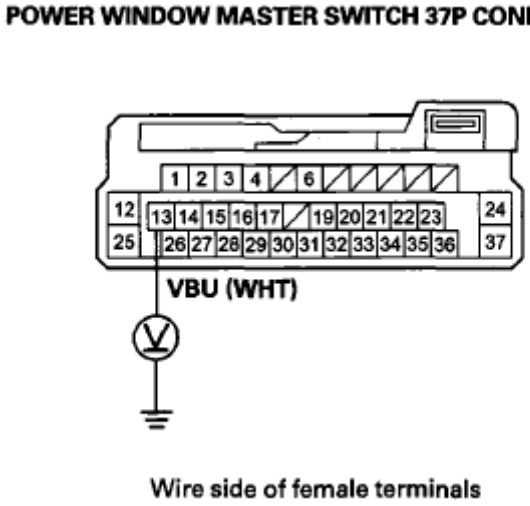


Fig. 51: Measuring Voltage Between Body Ground And Power Window Master Switch 37P Connector Terminal No. 13
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there battery voltage?

YES - Go to step 8.

NO - Go to step 7.

7. Check the No. 15 (10 A) fuse in the under- hood fuse/relay box.

   Is the fuse OK?

   YES - Repair an open or high resistance in the No. 15 (10 A) fuse circuit.

   NO - Replace the fuse. If the fuse blows again, repair a short to ground in the No. 15(10 A) fuse circuit.

8. Measure the voltage between body ground and power window master switch 37P connector terminals No. 32 and No. 37 individually.

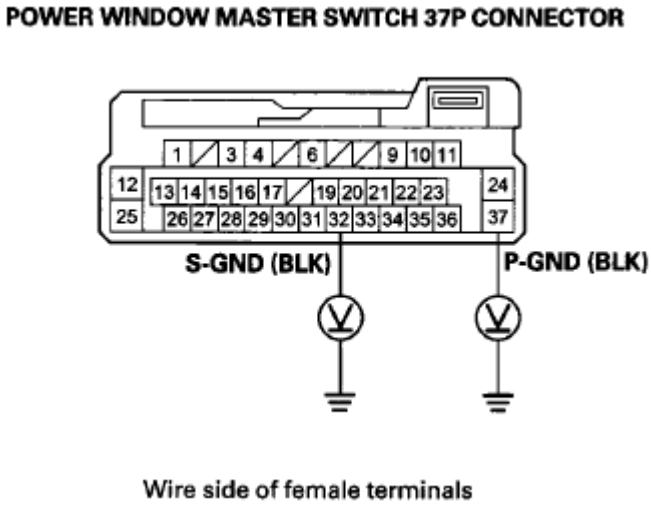


Fig. 52: Measuring Voltage Between Body Ground And Power Window Master Switch 37P Connector Terminals No. 32 And No. 37 Individually
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there less than 0.2 V?

YES - Go to step 9.

NO - Repair an open or high resistance in the ground wire or poor ground (G401) and/or (G402).

9. Press the engine start/stop button to select the OFF mode.
10. Disconnect the power window master switch 37P connector.
11. Disconnect power control unit connector C (36P).
12. Check for continuity between power window master switch 37P connector terminals No. 33 and No. 35 and power control unit connector C(36P) terminals No. 17 and No. 16 respectively.

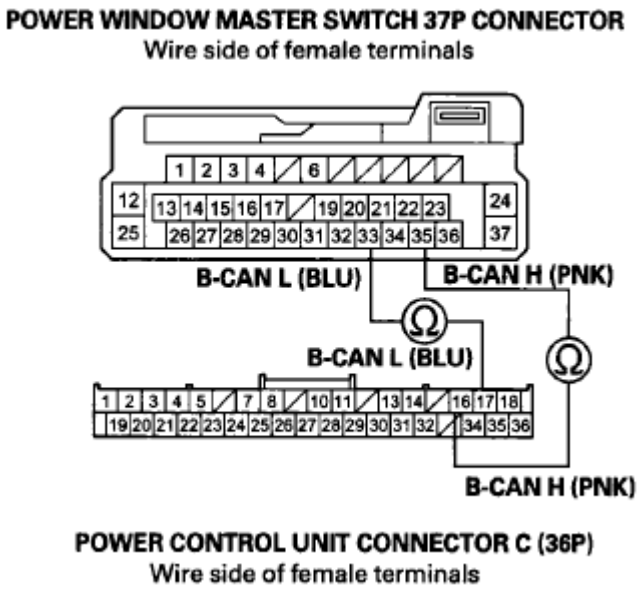


Fig. 53: Checking Continuity Between Power Window Master Switch 37P Connector Terminals And Power Control Unit Connector C(36P) Terminals
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Replace the power window master switch (see **REAR POWER WINDOW SWITCH TEST**).

NO - Repair an open or poor connection in the B- CAN wire between the power control unit and the door multiplex control unit.

DTC B1601: KEYLESS ACCESS CONTROL UNIT INTERNAL (CPU) ERROR; DTC B1602: KEYLESS ACCESS CONTROL UNIT INTERNAL (EEPROM) ERROR

NOTE: If you are troubleshooting multiple DTCs, be sure to follow the instructions in B-CAN System Diagnosis Test Mode A (see TROUBLESHOOTING - B- CAN SYSTEM DIAGNOSIS TEST MODE A).

1. Do the battery terminal disconnection procedure (see **BATTERY TERMINAL DISCONNECTION AND RECONNECTION**).
2. Wait for at least 10 seconds to clear the DTCs.
3. Do the battery terminal reconnection procedure (see **BATTERY TERMINAL DISCONNECTION AND RECONNECTION**).
4. Push the door outer handle door lock button to lock the door.
5. Touch the door outer handle touch sensor to unlock the door.
6. Connect the HDS to the data link connector (DLC).
7. Press the engine start/stop button to select the ON mode according to the instructions on the HDS screen.
8. Check for DTCs with the HDS.

Are DTCs B1601 and/or B1602 indicated?

YES - Replace the keyless access control unit (see **KEYLESS ACCESS CONTROL UNIT**).

NO - Intermittent failure, the system is OK at this time.

DTC B1927: MTR CONT SIGNAL ERROR

NOTE: If you are troubleshooting multiple DTCs, be sure to follow the instructions in B-CAN System Diagnosis Test Mode A (see TROUBLESHOOTING - B- CAN SYSTEM DIAGNOSIS TEST MODE A).

1. Press the engine start/stop button to select the OFF mode.
2. Disconnect the electric steering lock 12P connector.
3. Measure the voltage between body ground and electric steering lock 12P connector terminal No. 6.

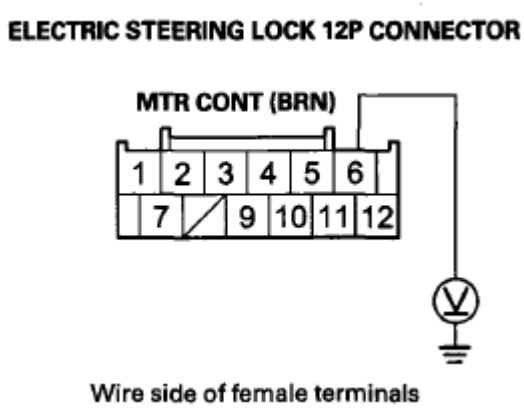


Fig. 54: Measuring Voltage Between Body Ground And Electric Steering Lock 12P Connector Terminal No. 6
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there battery voltage?

YES - Go to step 4.

NO - Go to step 8.

4. Disconnect keyless access control unit connector A (36P).
5. Measure the voltage between body ground and keyless access control unit connector A (36P) terminal No. 27.

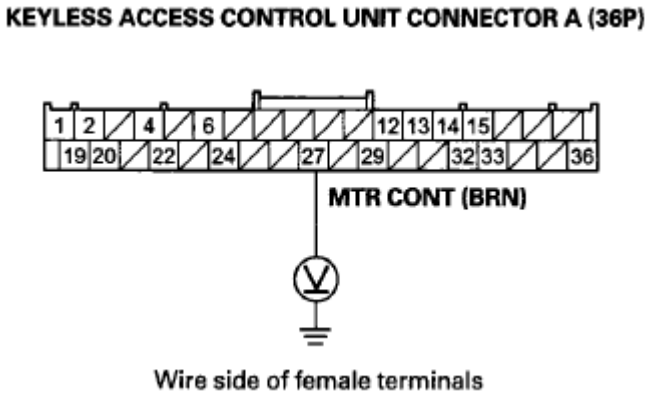


Fig. 55: Measuring Voltage Between Body Ground And Keyless Access Control Unit Connector A (36P) Terminal No
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there battery voltage?

YES - Go to step 6.

NO - Replace the keyless access control unit (see **KEYLESS ACCESS CONTROL UNIT**).

6. Disconnect the remote slot control unit 40P connector.
7. Measure the voltage between body ground and remote slot control unit 40P connector terminal No. 12.

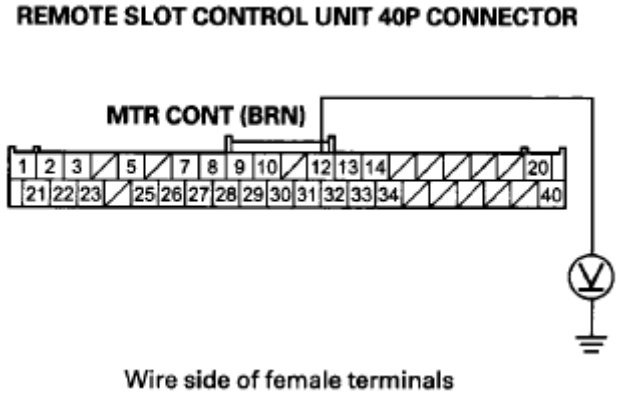


Fig. 56: Measuring Voltage Between Body Ground And Remote Slot Control Unit 40P Connector Terminal No. 12
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there battery voltage?

YES - Repair a short to power in the wire.

NO - Replace the remote slot control unit (see **CONTROL UNIT INPUT TEST**).

8. Reconnect the electric steering lock 12P connector.
9. Disconnect keyless access control unit connector A (36P).
10. Measure the voltage between body ground and keyless access control unit connector A (36P) terminal No. 27.

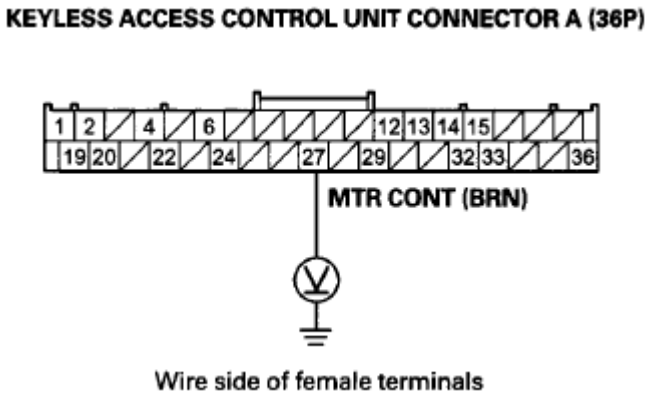


Fig. 57: Measuring Voltage Between Body Ground And Keyless Access Control Unit Connector A (36P) Terminal No. 27
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there battery voltage?

YES - Replace the electric steering lock (see **STEERING LOCK REPLACEMENT**).

NO - Go to step 11.

11. Reconnect keyless access control unit connector A (36P).
12. Clear the DTCs with the HDS.
13. Do this procedure 10 times: Press the engine start/stop button to select the OFF, ACC, ON, and OFF mode.
14. Check for DTCs with the HDS.

Is DTC B1927 indicated?

YES - Substitute a known- good remote slot control unit. If the symptom goes away, replace the original remote slot control unit (see **CONTROL UNIT INPUT TEST**). If not, substitute a known- good keyless access control unit. If the symptom goes away, replace the original keyless access control unit (see **KEYLESS ACCESS CONTROL UNIT**). If not, replace the electric steering lock (see **STEERING LOCK REPLACEMENT**).

NO - Go to step 15.

15. Insert the remote into the remote slot.
16. Do this procedure 10 times: Press the engine start/stop button to select the OFF, ACC, ON, and OFF mode.

17. Check for DTCs with the HDS.

    Is DTC B1927 indicated?

    YES - Substitute a known- good remote slot control unit. If the symptom goes away, replace the original remote slot control unit (see **CONTROL UNIT INPUT TEST**). If not, substitute a known- good keyless access control unit. If the symptom goes away, replace the original keyless access control unit (see **KEYLESS ACCESS CONTROL UNIT**). If not, replace the electric steering lock (see **STEERING LOCK REPLACEMENT**).

    NO - Intermittent failure, the system is OK at this time. Check for loose or poor connections.

DTC B1640: RF UNIT NOT CONNECTED

NOTE: If you are troubleshooting multiple DTCs, be sure to follow the instructions in B-CAN System Diagnosis Test Mode A (see TROUBLESHOOTING - B- CAN SYSTEM DIAGNOSIS TEST MODE A).

1. Clear the DTCs with the HDS.
2. Select the MODE MENU from the HDS, then enter the SELF CHECK.
3. Do the SELF CHECK.
4. Check for DTCs with the HDS.

   Is DTC B1640 indicated?

   YES - Go to step 5.

   NO - Intermittent failure, the system is OK at this time. Check for loose or poor connections.

5. Press the engine start/stop button to select the OFF mode.
6. Disconnect the RF unit 3P connector.
7. Disconnect keyless access control unit connector B (32P).
8. Check for continuity between the following RF unit 3P connector terminals and keyless access control unit connector B (32P) terminals.

RF UNIT	KEYLESS ACCESS CONTROL UNIT CONNECTOR B (32P)
No. 1	No. 3
No. 2	No. 5
No. 3	No. 15

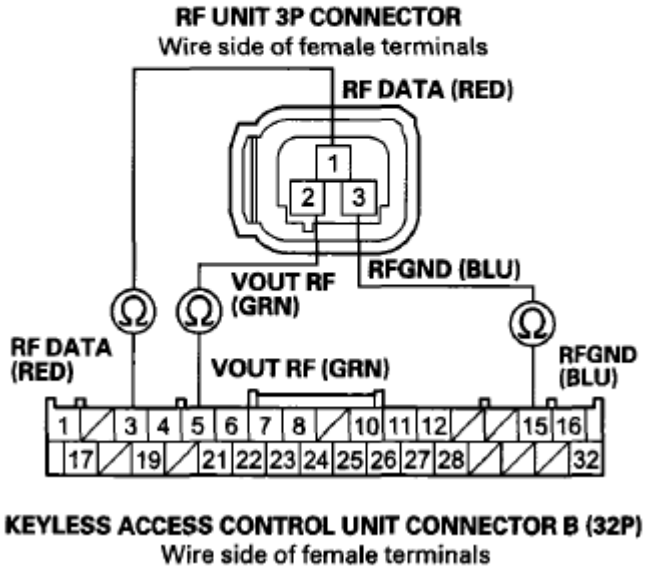


Fig. 58: Checking Continuity Between Following RF Unit 3P Connector Terminals And Keyless Access Control Unit Connector B (32P) Terminals
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 9.

NO - Repair an open or high resistance in the wire.

9. Check for continuity between body ground and RF unit 3P connector terminals No. 1, No. 2, and No. 3 individually.

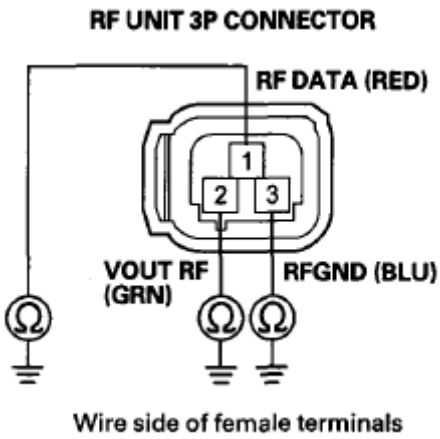


Fig. 59: Checking Continuity Between Body Ground And RF Unit 3P Connector Terminals No. 1, No. 2, And No. 3 Individually
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair a short to ground in the wire.

NO - Substitute a known- good RF unit. If the symptom goes away, replace the original RF unit (see **RF UNIT REPLACEMENT**). If not, replace the keyless access control unit (see **KEYLESS ACCESS CONTROL UNIT**).

DTC B1646: DRIVER'S DOOR LF ANTENNA CIRCUIT OPEN OR SHORT

NOTE: If you are troubleshooting multiple DTCs, be sure to follow the instructions in B-CAN System Diagnosis Test Mode A (see TROUBLESHOOTING - B- CAN SYSTEM DIAGNOSIS TEST MODE A).

1. Clear the DTCs with the HDS.
2. Select the MODE MENU from the HDS, then enter the SELF CHECK.
3. Do the SELF CHECK.
4. Check for DTCs with the HDS.

   Is DTC B1646 indicated?

   YES - Go to step 5.

   NO - Intermittent failure, the system is OK at this time. Check for loose or poor connections.

5. Press the engine start/stop button to select the OFF mode.
6. Disconnect keyless access control unit connector A (36P).
7. Disconnect the driver's door LF antenna 8P connector.

8. Check for continuity between body ground and keyless access control unit connector A (36P) terminals No. 4 and No. 22 individually.

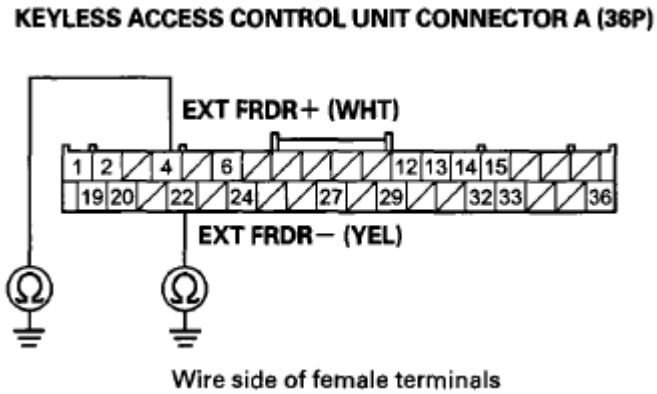


Fig. 60: Checking Continuity Between Body Ground And Keyless Access Control Unit Connector A (36P) Terminals No. 4 And No. 22 Individually
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair a short to ground in the wire.

NO - Go to step 9.

9. Check for continuity between keyless access control unit connector A (36P) terminals No. 4 and No. 22 and driver's door LF antenna 8P connector terminals No. 3 and No. 7 respectively.

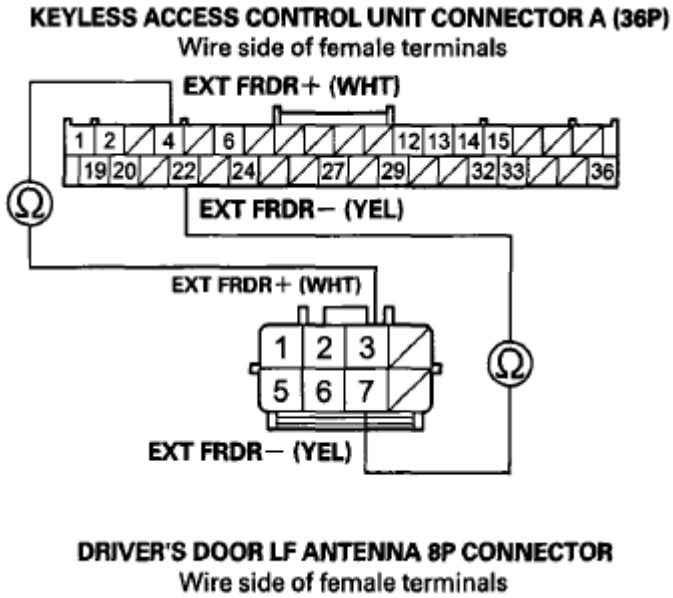


Fig. 61: Checking Continuity Between Keyless Access Control Unit Connector A (36P) Terminals And Driver's Door LF Antenna 8P Connector Terminals

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 10.

NO - Repair an open or high resistance in the wire.

10. Check for continuity between keyless access control unit connector A (36P) terminals No. 4 and No. 22.

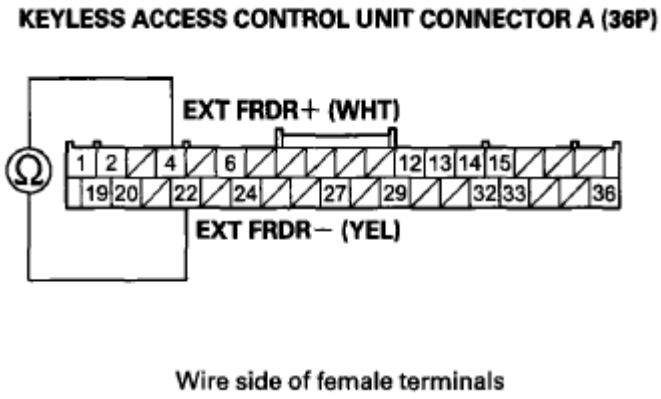


Fig. 62: Checking Continuity Between Keyless Access Control Unit Connector A (36P) Terminals No. 4 And No. 22
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair a short between the wires.

NO - Go to step 11.

11. Reconnect the driver's door LF antenna 8P connector.
12. Measure the resistance between keyless access control unit connector A (36P) terminals No. 4 and No. 22.

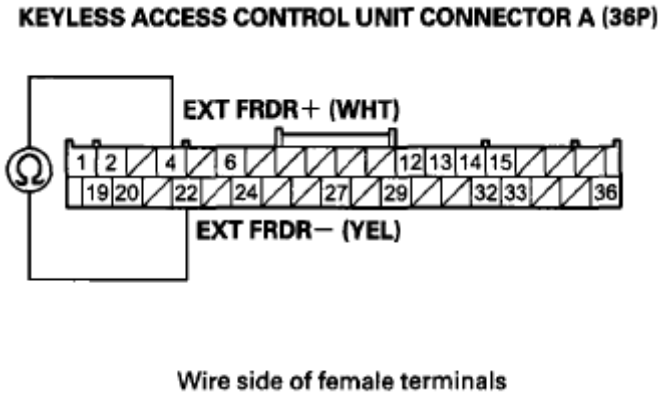


Fig. 63: Measuring Resistance Between Keyless Access Control Unit Connector A (36P) Terminals No. 4 And No. 22
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there 1- 5 ohms?

YES - Replace the keyless access control unit (see **KEYLESS ACCESS CONTROL UNIT**).

NO - Replace the driver's door LF antenna (see **FRONT DOOR OUTER HANDLE REPLACEMENT**).

DTC B1648: PASSENGER'S DOOR LF ANTENNA CIRCUIT OPEN OR SHORT

NOTE: If you are troubleshooting multiple DTCs, be sure to follow the instructions in B-CAN System Diagnosis Test Mode A (see TROUBLESHOOTING - B- CAN SYSTEM DIAGNOSIS TEST MODE A).

1. Clear the DTCs with the HDS.
2. Select the MODE MENU from the HDS, then enter the SELF CHECK.
3. Do the SELF CHECK.
4. Check for DTCs with the HDS.

Is DTC B1648 indicated?

YES - Go to step 5.

NO - Intermittent failure, the system is OK at this time. Check for loose or poor connections.

5. Press the engine start/stop button to select the OFF mode.
6. Disconnect keyless access control unit connector A (36P).
7. Disconnect the passenger's door LF antenna 8P connector.
8. Check for continuity between body ground and keyless access control unit connector A (36P) terminals No. 2 and No. 20 individually.

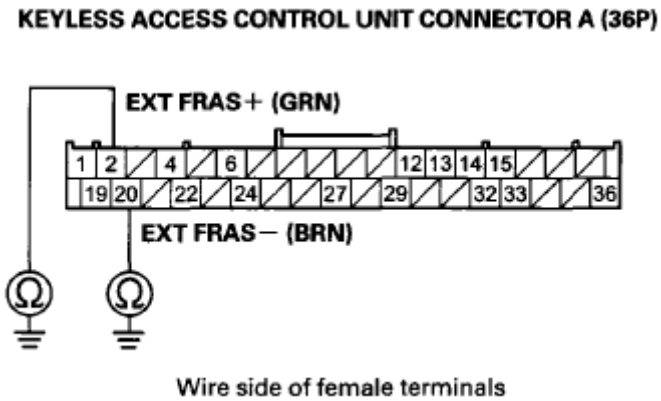


Fig. 64: Checking Continuity Between Body Ground And Keyless Access Control Unit Connector A (36P) Terminals No. 2 And No. 20 Individually
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair a short to ground in the wire.

NO - Go to step 9.

9. Check for continuity between keyless access control unit connector A (36P) terminals No. 2 and No. 20 and passenger's door LF antenna 8P connector terminals No. 3 and No. 7 respectively.

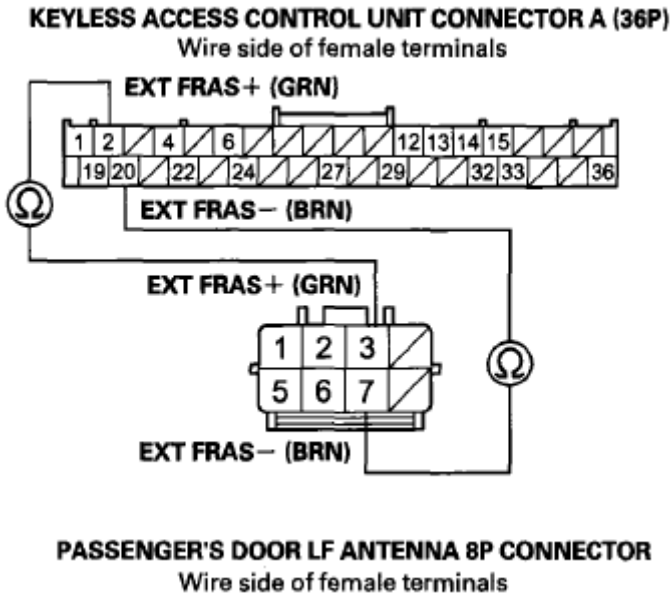


Fig. 65: Checking Continuity Between Keyless Access Control Unit Connector A (36P) Terminals And Passenger's Door LF Antenna 8P Connector Terminals
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 10.

NO - Repair an open or high resistance in the wire.

10. Check for continuity between keyless access control unit connector A (36P) terminals No. 2 and No. 20.

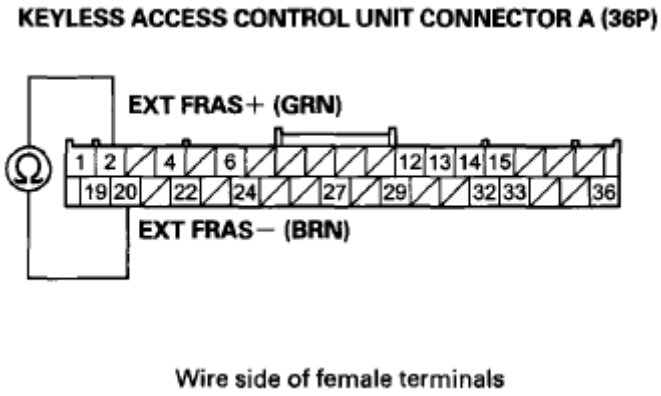


Fig. 66: Checking Continuity Between Keyless Access Control Unit Connector A (36P) Terminals No. 2 And No. 20
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair a short between the wires.

NO - Go to step 11.

11. Reconnect the passenger's door LF antenna 8P connector.
12. Measure the resistance between keyless access control unit connector A (36P) terminals No. 2 and No. 20.

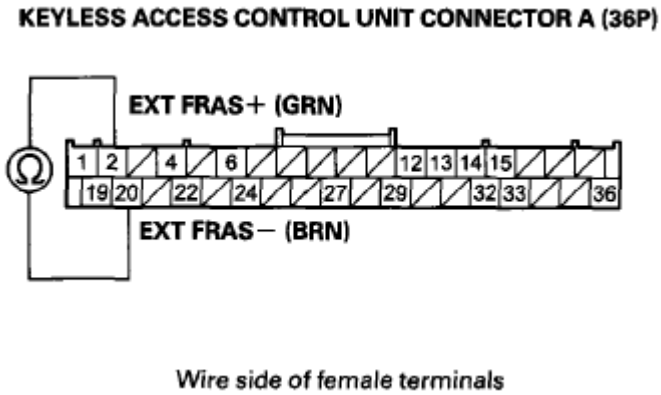


Fig. 67: Measuring Resistance Between Keyless Access Control Unit Connector A (36P) Terminals No. 2 And No. 20
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there 1- 5 ohms?

YES - Replace the keyless access control unit (see **KEYLESS ACCESS CONTROL UNIT**).

NO - Replace the passenger's door LF antenna (see **FRONT DOOR OUTER HANDLE REPLACEMENT**).

DTC B1658: REAR BUMPER LF ANTENNA CIRCUIT OPEN OR SHORT

NOTE: If you are troubleshooting multiple DTCs, be sure to follow the instructions in B-CAN System Diagnosis Test Mode A (see TROUBLESHOOTING - B- CAN SYSTEM DIAGNOSIS TEST MODE A).

1. Clear the DTCs with the HDS.
2. Select the MODE MENU from the HDS, then enter the SELF CHECK.
3. Do the SELF CHECK.
4. Check for DTCs with the HDS.

   Is DTC B1658 indicated?

   YES - Go to step 5.

   NO - Intermittent failure, the system is OK at this time. Check for loose or poor connections.

5. Press the engine start/stop button to select the OFF mode.
6. Disconnect keyless access control unit connector A (36P).
7. Disconnect the rear bumper LF antenna 2P connector.
8. Check for continuity between body ground and keyless access control unit connector A (36P) terminals No. 1 and No. 19 individually.

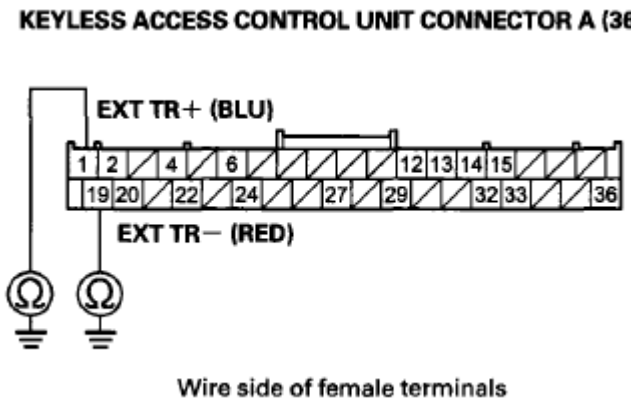


Fig. 68: Checking Continuity Between Body Ground And Keyless Access Control Unit Connector A (36P) Terminals No. 1 And No. 19 Individually
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair a short to ground in the wire.

NO - Go to step 9.

9. Check for continuity between keyless access control unit connector A (36P) terminals No. 1 and No. 19 and rear bumper LF antenna 2P connector terminals No. 1 and No. 2 respectively.

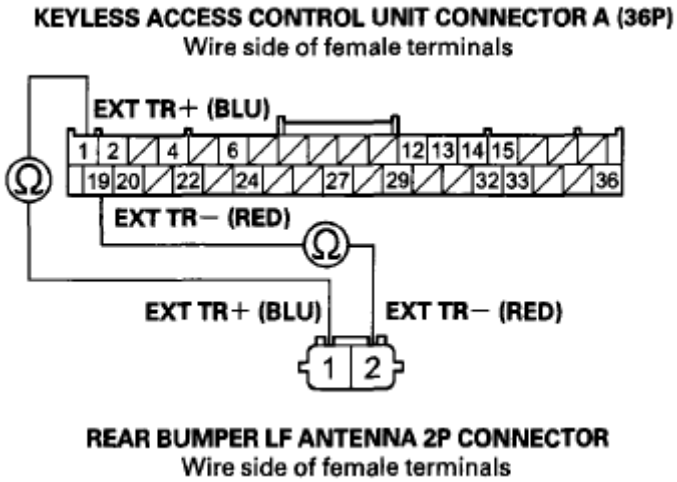


Fig. 69: Checking Continuity Between Keyless Access Control Unit Connector A (36P) Terminals And Rear Bumper LF Antenna 2P Connector Terminals
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 10.

NO - Repair an open or high resistance in the wire.

10. Check for continuity between keyless access control unit connector A (36P) terminals No. 1 and No. 19.

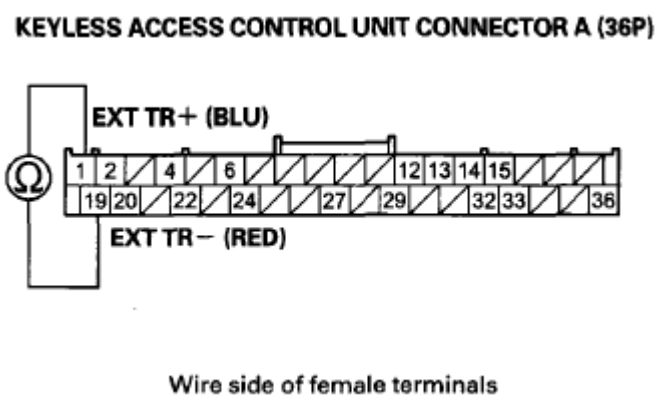


Fig. 70: Checking Continuity Between Keyless Access Control Unit Connector A (36P) Terminals No. 1 And No. 19
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair a short between the wires.

NO - Go to step 11.

11. Reconnect the rear bumper LF antenna 2P connector.
12. Measure the resistance between keyless access control unit connector A (36P) terminals No. 1 and No. 19.

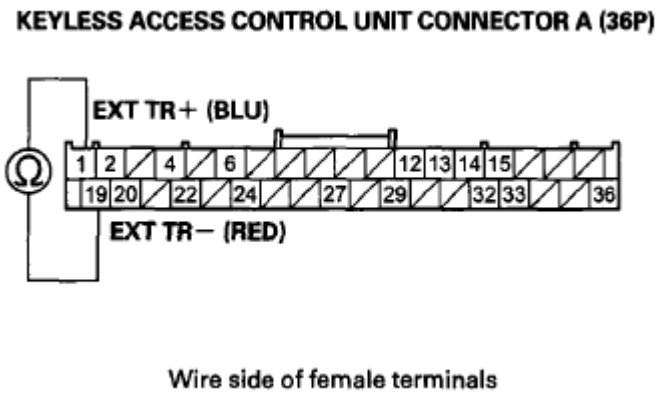


Fig. 71: Measuring Resistance Between Keyless Access Control Unit Connector A (36P) Terminals No. 1 And No. 19
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there 1- 5 ohms?

YES - Replace the keyless access control unit (see **KEYLESS ACCESS CONTROL UNIT**).

NO - Replace the rear bumper LF antenna (see **REAR BUMPER LF ANTENNA REPLACEMENT**).

DTC B1660: FRONT INTERIOR LF ANTENNA CIRCUIT OPEN OR SHORT

NOTE: If you are troubleshooting multiple DTCs, be sure to follow the instructions in B-CAN System Diagnosis Test Mode A (see TROUBLESHOOTING - B- CAN SYSTEM DIAGNOSIS TEST MODE A).

1. Clear the DTCs with the HDS.
2. Select the MODE MENU from the HDS, then enter the SELF CHECK.
3. Do the SELF CHECK.
4. Check for DTCs with the HDS.

Is DTC B1660 indicated?

YES - Go to step 5.

NO - Intermittent failure, the system is OK at this time. Check for loose or poor connections.

5. Press the engine start/stop button to select the OFF mode.
6. Disconnect keyless access control unit connector A (36P).
7. Disconnect the front interior LF antenna 2P connector.
8. Check for continuity between body ground and keyless access control unit connector A (36P) terminals No. 14 and No. 15 individually.

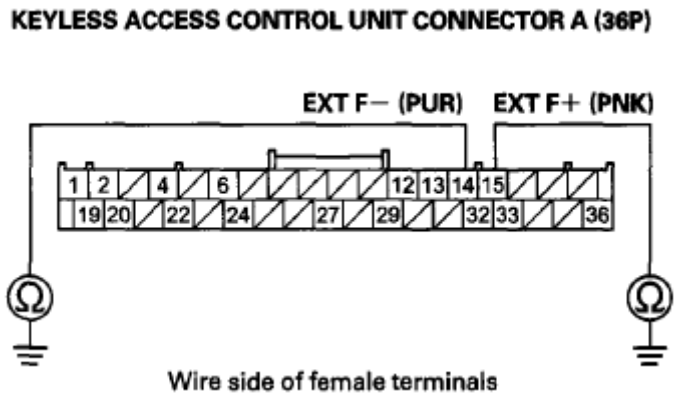


Fig. 72: Checking Continuity Between Body Ground And Keyless Access Control Unit Connector A (36P) Terminals No. 14 And No. 15 Individually
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair a short to ground in the wire.

NO - Go to step 9.

9. Check for continuity between keyless access control unit connector A (36P) terminals No. 14 and No. 15 and front interior LF antenna 2P connector terminals No. 2 and No. 1 respectively.

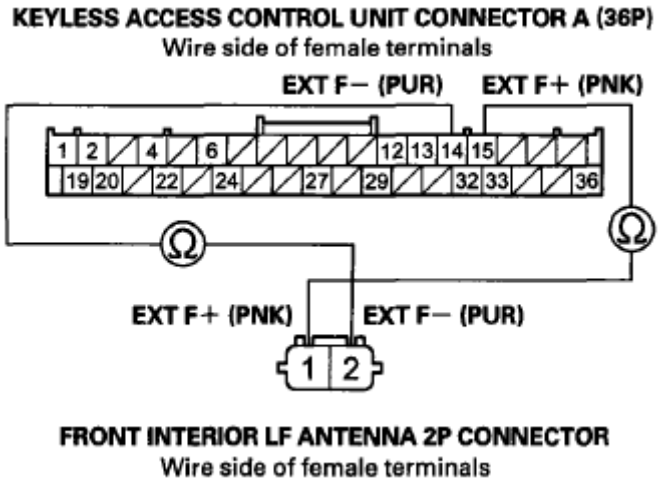


Fig. 73: Checking Continuity Between Keyless Access Control Unit Connector A (36P) Terminals

And Front Interior LF Antenna 2P Connector Terminals
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 10.

NO - Repair an open or high resistance in the wire.

10. Check for continuity between keyless access control unit connector A (36P) terminals No. 14 and No. 15.

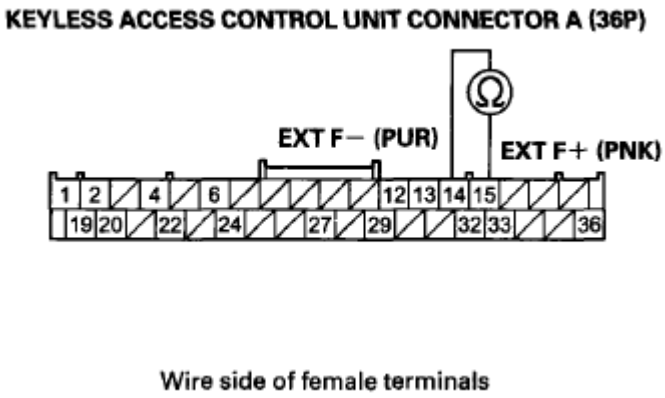


Fig. 74: Checking Continuity Between Keyless Access Control Unit Connector A (36P) Terminals No. 14 And No. 15
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair a short between the wires.

NO - Go to step 11.

11. Reconnect the front interior LF antenna 2P connector.
12. Measure the resistance between keyless access control unit connector A (36P) terminals No. 14 and No. 15.

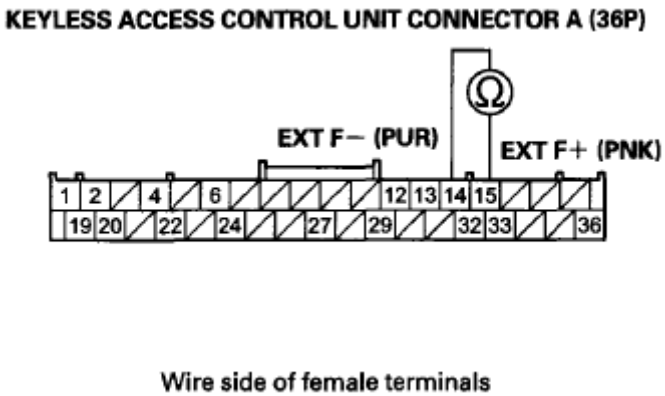


Fig. 75: Measuring Resistance Between Keyless Access Control Unit Connector A (36P) Terminals No. 14 And No. 15
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there 1- 5 ohms?

YES - Replace the keyless access control unit (see **KEYLESS ACCESS CONTROL UNIT**).

NO - Replace the front interior LF antenna (see **FRONT INTERIOR LF ANTENNA REPLACEMENT**).

DTC B1664: REAR INTERIOR LF ANTENNA CIRCUIT OPEN OR SHORT

NOTE: If you are troubleshooting multiple DTCs, be sure to follow the instructions in B-CAN System Diagnosis Test Mode A (see TROUBLESHOOTING - B- CAN SYSTEM DIAGNOSIS TEST MODE A).

1. Clear the DTCs with the HDS.
2. Select the MODE MENU from the HDS, then enter the SELF CHECK.
3. Do the SELF CHECK.
4. Check for DTCs with the HDS.

   Is DTC B1664 indicated?

   YES - Go to step 5.

   NO - Intermittent failure, the system is OK at this time. Check for loose or poor connections.

5. Press the engine start/stop button to select the OFF mode.
6. Disconnect keyless access control unit connector A (36P).
7. Disconnect the rear interior LF antenna 2P connector.
8. Check for continuity between body ground and keyless access control unit connector A (36P) terminals No. 12 and No. 13 individually.

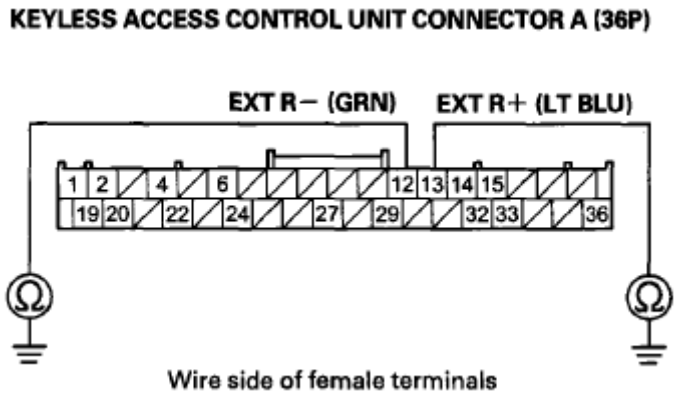


Fig. 76: Checking Continuity Between Body Ground And Keyless Access Control Unit Connector A (36P) Terminals No. 12 And No. 13 Individually
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair a short to ground in the wire.

NO - Go to step 9.

9. Check for continuity between keyless access control unit connector A (36P) terminals No. 12 and No. 13 and rear interior LF antenna 2P connector terminals No. 2 and No. 1 respectively.

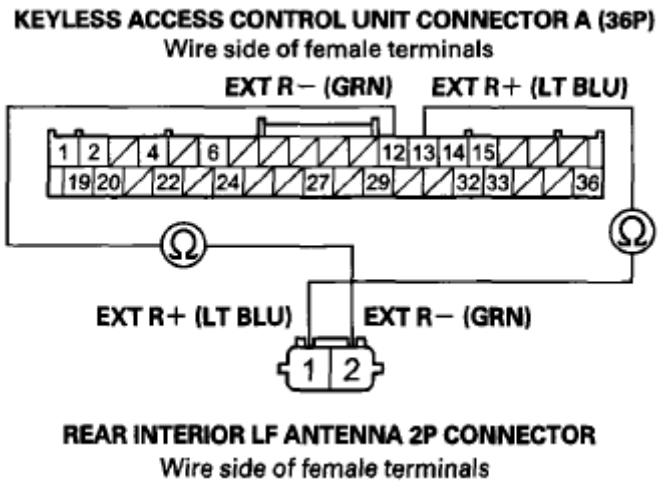


Fig. 77: Checking Continuity Between Keyless Access Control Unit Connector A (36P) Terminals And Rear Interior LF Antenna 2P Connector Terminals
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 10.

NO - Repair an open or high resistance in the wire.

10. Check for continuity between keyless access control unit connector A (36P) terminals No. 12 and No. 13.

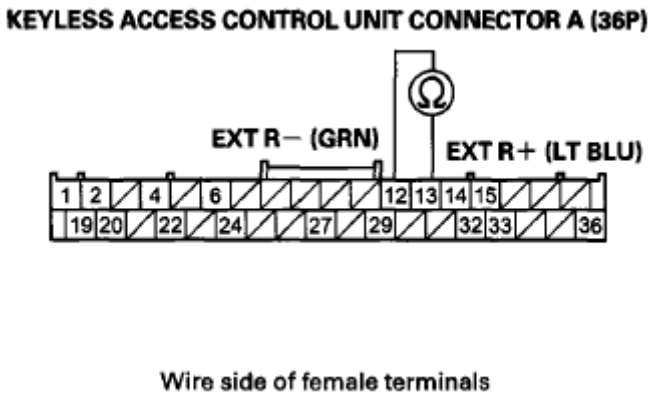


Fig. 78: Checking Continuity Between Keyless Access Control Unit Connector A (36P) Terminals No. 12 And No. 13
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair a short between the wires.

NO - Go to step 11.

11. Reconnect the rear interior LF antenna 2P connector.
12. Measure the resistance between keyless access control unit connector A (36P) terminals No. 12 and No. 13.

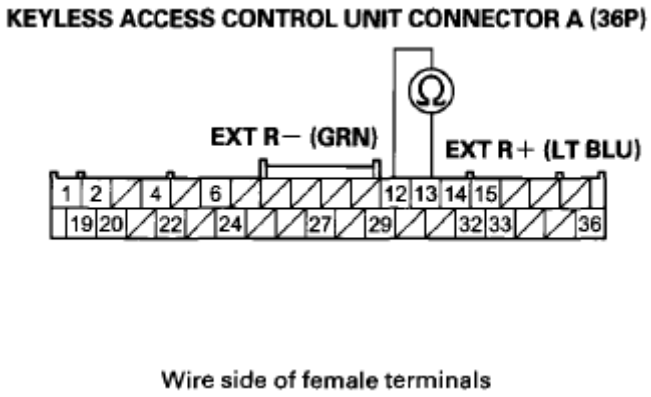


Fig. 79: Measuring Resistance Between Keyless Access Control Unit Connector A (36P) Terminals No. 12 And No. 13
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there 1- 5 ohms?

YES - Replace the keyless access control unit (see **KEYLESS ACCESS CONTROL UNIT**).

NO - Replace the rear interior LF antenna (see **REAR INTERIOR LF ANTENNA REPLACEMENT**).

DTC B1668: REAR SHELF LF ANTENNA CIRCUIT OPEN OR SHORT

NOTE: If you are troubleshooting multiple DTCs, be sure to follow the instructions in B-CAN System Diagnosis Test Mode A (see TROUBLESHOOTING - B- CAN SYSTEM DIAGNOSIS TEST MODE A).

1. Clear the DTCs with the HDS.
2. Select the MODE MENU from the HDS, then enter the SELF CHECK.
3. Do the SELF CHECK.
4. Check for DTCs with the HDS.

   Is DTC B1668 indicated?

   YES - Go to step 5.

   NO - Intermittent failure, the system is OK at this time. Check for loose or poor connections.

5. Press the engine start/stop button to select the OFF mode.
6. Disconnect keyless access control unit connector A (36P).
7. Disconnect the rear shelf LF antenna 2P connector.
8. Check for continuity between body ground and keyless access control unit connector A (36P) terminals No. 6 and No. 24 individually.

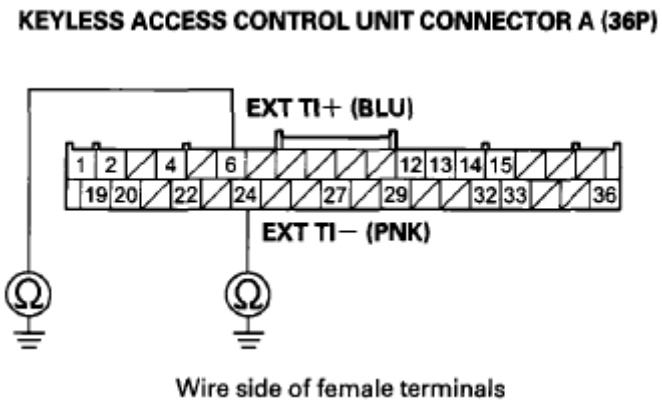


Fig. 80: Checking Continuity Between Body Ground And Keyless Access Control Unit Connector A (36P) Terminals No. 6 And No. 24 Individually
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair a short to ground in the wire.

NO - Go to step 9.

9. Check for continuity between keyless access control unit connector A (36P) terminals No. 6 and No. 24 and rear shelf LF antenna 2P connector terminals No. 1 and No. 2 respectively.

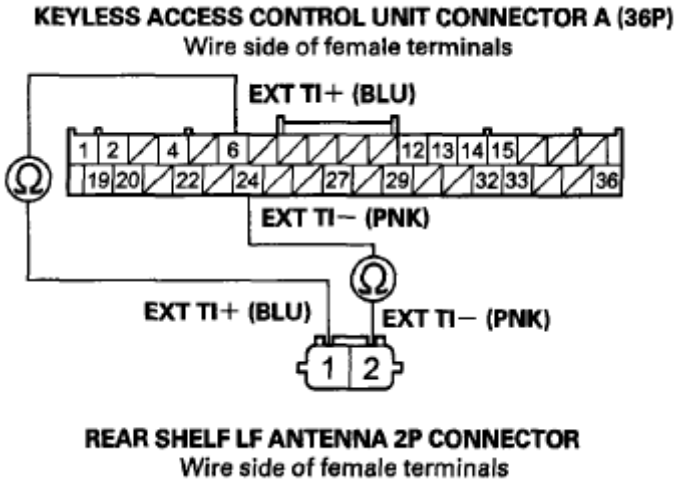


Fig. 81: Checking Continuity Between Keyless Access Control Unit Connector A (36P) Terminals And Rear Shelf LF Antenna 2P Connector Terminals
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 10.

NO - Repair an open or high resistance in the wire.

10. Check for continuity between keyless access control unit connector A (36P) terminals No. 6 and No. 24.

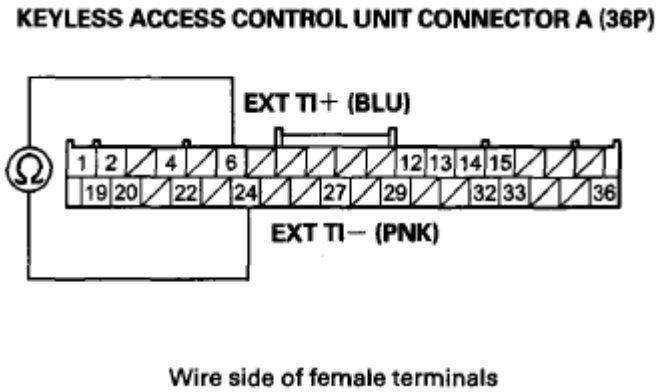


Fig. 82: Checking Continuity Between Keyless Access Control Unit Connector A (36P) Terminals No. 6 And No. 24

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair a short between the wires.

NO - Go to step 11.

11. Reconnect the rear shelf LF antenna 2P connector.
12. Measure the resistance between keyless access control unit connector A (36P) terminals No. 6 and No. 24.

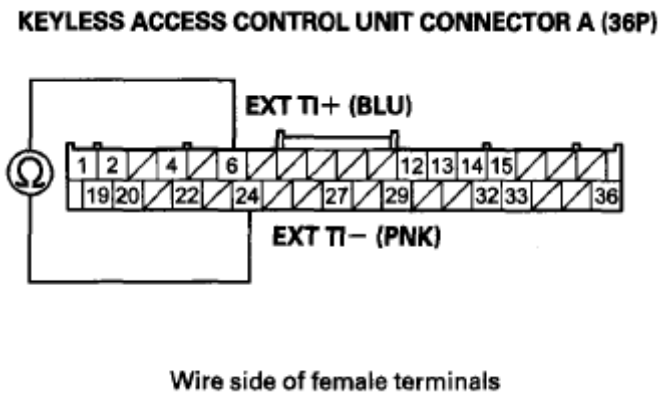


Fig. 83: Measuring Resistance Between Keyless Access Control Unit Connector A (36P) Terminals No. 6 And No. 24
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there 1- 5 ohms?

YES - Replace the keyless access control unit (see **KEYLESS ACCESS CONTROL UNIT**).

NO - Replace the rear shelf LF antenna (see **REAR SHELF LF ANTENNA REPLACEMENT**).

DTC U0155: KEYLESS ACCESS CONTROL UNIT LOST COMMUNICATION WITH GAUGE CONTROL MODULE

NOTE: If you are troubleshooting multiple DTCs, be sure to follow the instructions in B-CAN System Diagnosis Test Mode A (see TROUBLESHOOTING - B- CAN SYSTEM DIAGNOSIS TEST MODE A).

1. Clear the DTCs with the HDS.
2. Press the engine start/stop button to select the OFF, ACC, and ON mode.
3. Wait for at least 6 seconds.
4. Check for DTCs with the HDS.

Is DTC U0155 indicated?

YES - Go to step 5.

NO - Intermittent failure, the system is OK at this time. Check for loose or poor connections between the keyless access control unit and the gauge control module.

5. From the BODY ELECTRICAL SYSTEM SELECT menu, select B- CAN CONTROL UNITS INFORMATION, and then select CHECK CONNECTED CONTROL UNITS.

   Is the gauge control module detected?

   YES - Go to step 9.

   NO - Go to step 6.

6. Measure the voltage between body ground and gauge control module 32P connector terminals No. 15 and No. 16 individually.

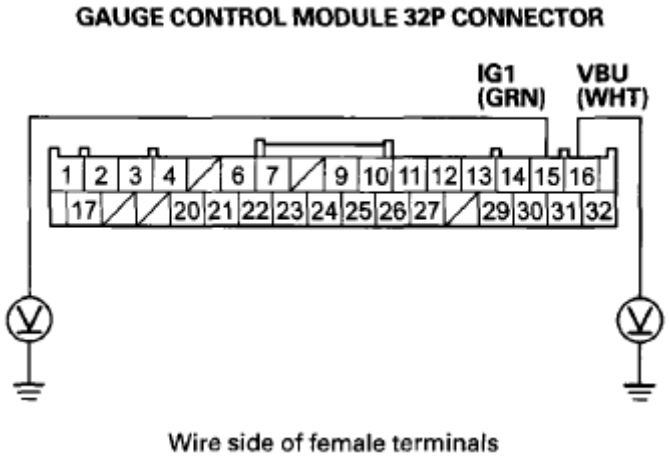


Fig. 84: Measuring Voltage Between Body Ground And Gauge Control Module 32P Connector Terminals No. 15 And No. 16 Individually With Connector End View
Courtesy of AMERICAN HONDA MOTOR CO., INC.

   Is there battery voltage?

   YES - Go to step 8.

   NO - Go to step 7.

7. Check the No. 15(10 A) fuse in the under- hood fuse/relay box and the No. 12 (7.5 A) fuse in the driver's under- dash fuse/relay box.

   Are the fuses OK?

YES - Repair an open or high resistance in the No. 15 (10 A) and/or No. 12 (7.5 A) fuse circuit.

NO - Replace the fuse(s). If the fuse blows again, repair a short to ground in the No. 15(10 A) and/or No. 12 (7.5 A) fuse circuit.

8. Measure the voltage between body ground and gauge control module 32P connector terminals No. 1 and No. 17 individually.

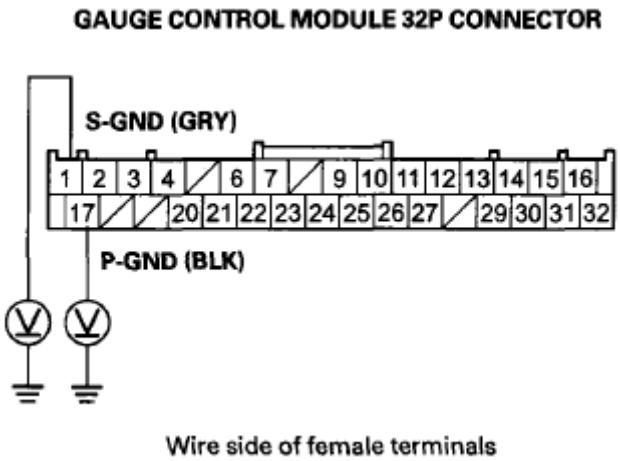


Fig. 85: Measuring Voltage Between Body Ground And Gauge Control Module 32P Connector Terminals No. 1 And No. 17 Individually
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there less than 0.2 V?

YES - Go to step 9.

NO - Repair an open or high resistance in the ground wire or poor ground (G401) and/or (G402).

9. Press the engine start/stop button to select the OFF mode.
10. Disconnect keyless access control unit connector B (32P).
11. Disconnect the gauge control module 32P connector.
12. Check for continuity between gauge control module 32P connector terminals No. 29 and No. 30 and keyless access control unit connector B (32P) terminals No. 7 and No. 8 respectively.

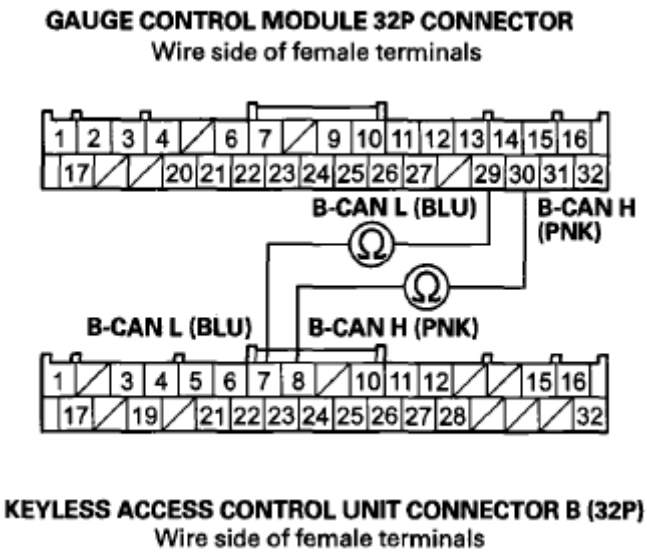


Fig. 86: Checking Continuity Between Gauge Control Module 32P Connector Terminals And Keyless Access Control Unit Connector B (32P) Terminals
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Replace the gauge control module (see **GAUGE CONTROL MODULE REPLACEMENT**).

NO - Repair an open or poor connection in the B- CAN wire between the keyless access control unit and the gauge control module.

DTC U0199: KEYLESS ACCESS CONTROL UNIT LOST COMMUNICATION WITH DOOR MULTIPLEX CONTROL UNIT

NOTE: If you are troubleshooting multiple DTCs, be sure to follow the instructions in B-CAN System Diagnosis Test Mode A (see TROUBLESHOOTING - B- CAN SYSTEM DIAGNOSIS TEST MODE A).

1. Clear the DTCs with the HDS.
2. Press the engine start/stop button to select the OFF, ACC, and ON mode.
3. Wait for at least 6 seconds.
4. Check for DTCs with the HDS.

Is DTC U0199 indicated?

YES - Go to step 5.

NO - Intermittent failure, the system is OK at this time. Check for loose or poor connections between the keyless access control unit and the door multiplex control unit.

5. From the BODY ELECTRICAL SYSTEM SELECT menu, select B- CAN CONTROL UNITS INFORMATION, and then select CHECK CONNECTED CONTROL UNITS.

   Is the power window unit detected?

   YES - Go to step 9.

   NO - Go to step 6.

6. Measure the voltage between body ground and power window master switch 37P connector terminal No. 13.

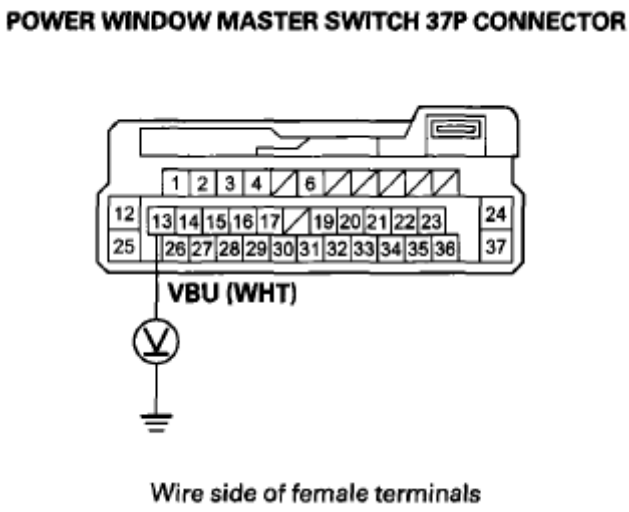


Fig. 87: Measuring Voltage Between Body Ground And Power Window Master Switch 37P Connector Terminal No. 13 With Connector End View
Courtesy of AMERICAN HONDA MOTOR CO., INC.

   Is there battery voltage?

   YES - Go to step 8.

   NO - Go to step 7.

7. Check the No. 15(10 A) fuse in the under- hood fuse/relay box.

   Is the fuse OK?

   YES - Repair an open or high resistance in the No. 15 (10 A) fuse circuit.

   NO - Replace the fuse. If the fuse blows again, repair a short to ground in the No. 15 (10 A) fuse circuit.

8. Measure the voltage between body ground and power window master switch 37P connector terminals No. 32 and No. 37 individually.

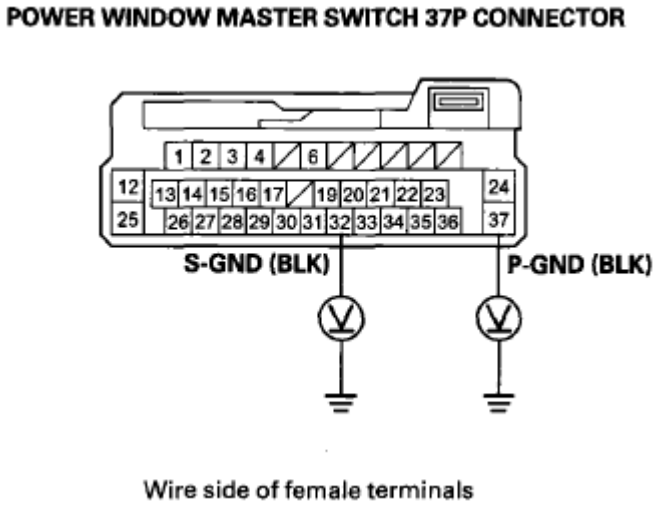


Fig. 88: Measuring Voltage Between Body Ground And Power Window Master Switch 37P Connector Terminals No. 32 And No. 37 Individually
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there less than 0.2 V?

YES - Go to step 9.

NO - Repair an open or high resistance in the ground wire or poor ground (G401) and/or (G402).

9. Press the engine start/stop button to select the OFF mode.
10. Disconnect the power window master switch 37P connector.
11. Disconnect power tailgate control unit connector B (32P).
12. Check for continuity between power window master switch 37P connector terminals No. 33 and No. 35 and keyless access control unit connector B (32P) terminals No. 7 and No. 6 respectively.

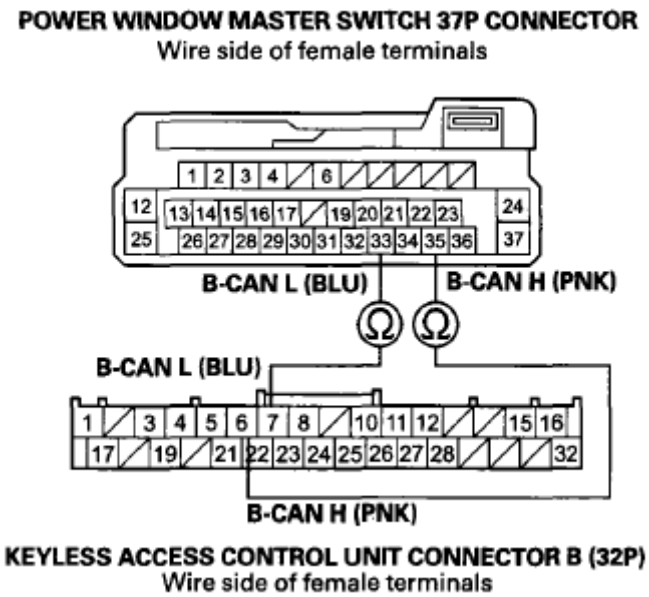


Fig. 89: Checking Continuity Between Power Window Master Switch 37P Connector Terminals And Keyless Access Control Unit Connector B (32P) Terminals
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Replace the power window master switch (see **REAR POWER WINDOW SWITCH TEST**).

NO - Repair an open or poor connection in the B- CAN wire between the keyless access control unit and the door multiplex control unit.

DTC U1282: KEYLESS ACCESS CONTROL UNIT LOST COMMUNICATION WITH DRIVER'S MICU

NOTE: If you are troubleshooting multiple DTCs, be sure to follow the instructions in B-CAN System Diagnosis Test Mode A (see TROUBLESHOOTING - B- CAN SYSTEM DIAGNOSIS TEST MODE A).

1. Clear the DTCs with the HDS.
2. Press the engine start/stop button to select the OFF, ACC, and ON mode.
3. Wait for 6 seconds or more.
4. Check for DTCs with the HDS.

Is DTC U1282 indicated?

YES - Go to the driver's MICU input test, and do all power, ground, and communication input tests (see **MICU INPUT TEST**). If the tests prove OK, replace the driver's under- dash fuse/relay box (see **DRIVER'S UNDER- DASH FUSE/RELAY BOX (MICU) REMOVAL AND INSTALLATION**). If the DTC is still present, replace the keyless access control unit (see **KEYLESS ACCESS CONTROL**

UNIT).

NO - Intermittent failure, the system is OK at this time. Check for loose or poor connections between the keyless access control unit and the driver's MICU.

DTC U1283: KEYLESS ACCESS CONTROL UNIT LOST COMMUNICATION WITH PASSENGER'S MICU

NOTE: If you are troubleshooting multiple DTCs, be sure to follow the instructions in B-CAN System Diagnosis Test Mode A (see TROUBLESHOOTING - B- CAN SYSTEM DIAGNOSIS TEST MODE A).

1. Clear the DTCs with the HDS.
2. Press the engine start/stop button to select the OFF, ACC, and ON mode.
3. Wait for at least 6 seconds.
4. Check for DTCs with the HDS.

   Is DTC U01283 indicated?

   YES - Go to step 5.

   NO - Intermittent failure, the system is OK at this time. Check for loose or poor connections between the keyless access control unit and the passenger's MICU.

5. From the BODY ELECTRICAL SYSTEM SELECT menu, select B- CAN CONTROL UNITS INFORMATION, and then select CHECK CONNECTED CONTROL UNITS.

   Is the passenger's MICU detected?

   YES - Go to step 9.

   NO - Go to step 6.

6. Measure the voltage between body ground and passenger's under- dash fuse/relay box connector A (38P) terminals No. 14 and No. 35 individually.

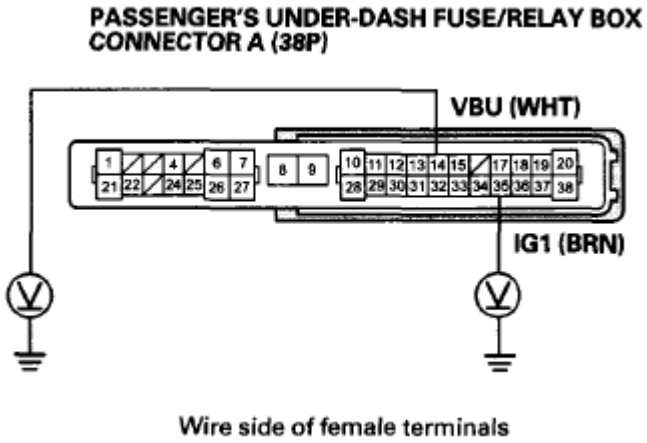


Fig. 90: Measuring Voltage Between Body Ground And Passenger's Under- Dash Fuse/Relay Box Connector A (38P) Terminals No. 14 And No. 35 Individually With Connector End View
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there battery voltage?

YES - Go to step 8.

NO - Go to step 7.

7. Check the No. 15 (10 A) fuse in the under- hood fuse/relay box and the No. 12 (7.5 A) fuse in the driver's under- dash fuse/relay box.

   Are the fuses OK?

   YES - Repair an open or high resistance in the No. 15 (10 A) and/or No. 12 (7.5 A) fuse circuit.

   NO - Replace the fuse(s). If the fuse blows again, repair a short to ground in the No. 15(10 A) and/or No. 12 (7.5 A) fuse circuit.

8. Measure the voltage between body ground and passenger's under- dash fuse/relay box connector A (38P) and E (18P) terminals as shown.

Passenger's under- dash fuse/relay box connector	
A36	Body ground
A37	
E15	

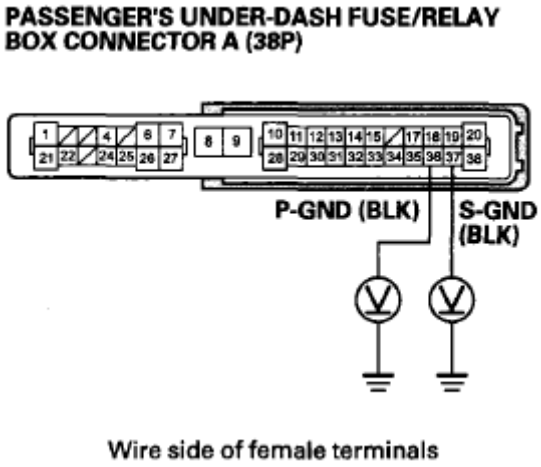


Fig. 91: Measuring Voltage Between Body Ground And Passenger's Under- Dash Fuse/Relay Box Connector A (38P) Terminals
Courtesy of AMERICAN HONDA MOTOR CO., INC.

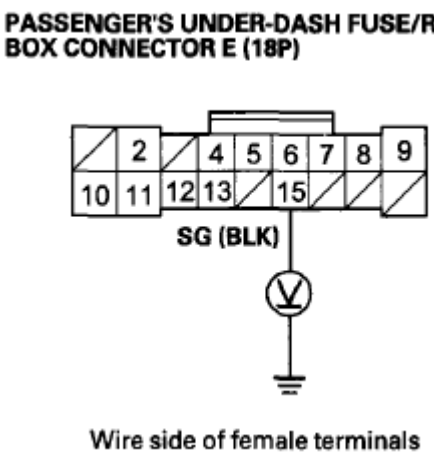


Fig. 92: Measuring Voltage Between Body Ground And Passenger's Under- Dash Fuse/Relay Box Connector And E (18P) Terminals With Connector End View
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there less than 0.2 V?

YES - Go to step 9.

NO - Repair an open or high resistance in the ground wire or poor ground (G203), (G401) and/or (G405).

9. Press the engine start/stop button to select the OFF mode.
10. Disconnect keyless access control unit connector B (32P).
11. Disconnect passenger's under- dash fuse/relay box connector A (38P).
12. Check for continuity between passenger's under- dash fuse/relay box connector A (38P) terminals No. 11 and No. 29 and keyless access control unit connector B (32P) terminals No. 8 and No. 7 respectively.

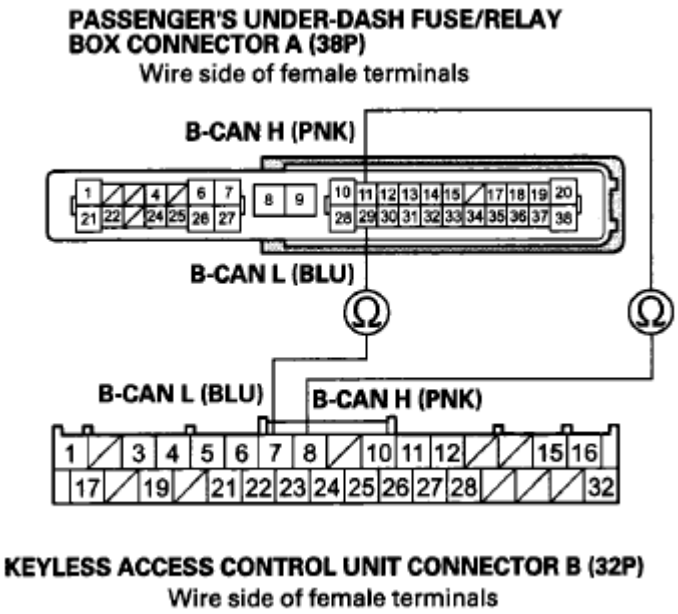


Fig. 93: Checking Continuity Between Passenger's Under- Dash Fuse/Relay Box Connector A (38P) Terminals And Keyless Access Control Unit Connector B (32P) Terminals
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Replace the keyless access control unit (see **KEYLESS ACCESS CONTROL UNIT**).

NO - An open or poor connection in the B- CAN wire between the keyless access control unit and the passenger's MICU.

DTC B1902: REMOTE SLOT CONTROL UNIT INTERNAL ERROR (EEPROM ERROR)

NOTE: If you are troubleshooting multiple DTCs, be sure to follow the instructions in B-CAN System Diagnosis Test Mode A (see TROUBLESHOOTING - B- CAN SYSTEM DIAGNOSIS TEST MODE A).

1. Do the battery terminal disconnect procedure (see **BATTERY TERMINAL DISCONNECTION AND RECONNECTION**).
2. Wait for at least 10 seconds to clear the DTCs.
3. Do the battery terminal reconnection procedure (see **BATTERY TERMINAL DISCONNECTION AND RECONNECTION**).
4. Push the door outer handle lock button to lock the door.
5. Touch the door outer handle touch sensor to unlock the door.
6. Connect the HDS to the data link connector (DLC).
7. Press the engine start/stop button to select the ON mode according to the instructions on the HDS screen.
8. Check for DTCs with the HDS.

Is DTC B1902 indicated?

YES - Replace the remote slot control unit (see **CONTROL UNIT INPUT TEST**).

NO - Intermittent failure, the system is OK at this time.

DTC B1926: REMOTE SLOT ANTENNA OPEN OR SHORT

NOTE: If you are troubleshooting multiple DTCs, be sure to follow the instructions in B-CAN System Diagnosis Test Mode A (see TROUBLESHOOTING - B- CAN SYSTEM DIAGNOSIS TEST MODE A).

1. Clear the DTCs with the HDS.
2. Insert the remote into the remote slot.
3. Do the procedure 10 times: Press the engine start/stop button to select the OFF, ACC, ON, and OFF mode.
4. Select the ONE-PUSH START from the SYSTEM SELECTION MENU with the HDS.
5. Select the SLOT UNIT and check for DTCs with the HDS.

Is DTC B1926 indicated?

YES - Replace the remote slot (see **REMOTE SLOT TEST/REPLACEMENT**).

NO - Intermittent failure, the system is OK at this time. Check for loose or poor connections.

DTC B1930: REMOTE SLOT CONTROL UNIT LOCK/ UNLOCK ERROR

NOTE: If you are troubleshooting multiple DTCs, be sure to follow the instructions in B-CAN System Diagnosis Test Mode A (see TROUBLESHOOTING - B- CAN SYSTEM DIAGNOSIS TEST MODE A).

1. Clear the DTCs with the HDS.
2. Turn the keyless access system mode switch OFF.
3. Insert the remote into the remote slot.
4. Do the procedure 10 times: Press the engine start/stop button to select the OFF, ACC, ON, and OFF mode.
5. Select the ONE-PUSH START from the SYSTEM SELECTION MENU with the HDS.
6. Select the SLOT UNIT and check for DTCs with the HDS.

Is DTC B1930 indicated?

YES - Go to step 7.

NO - Intermittent failure, the system is OK at this time. Check for loose or poor connections.

7. Press the engine start/stop button to select the OFF mode.
8. Disconnect the remote slot control unit 40P connector.
9. Disconnect the remote slot 16P connector.
10. Check for continuity between body ground and remote slot control unit 40P connector terminals No. 5 and No. 25 individually.

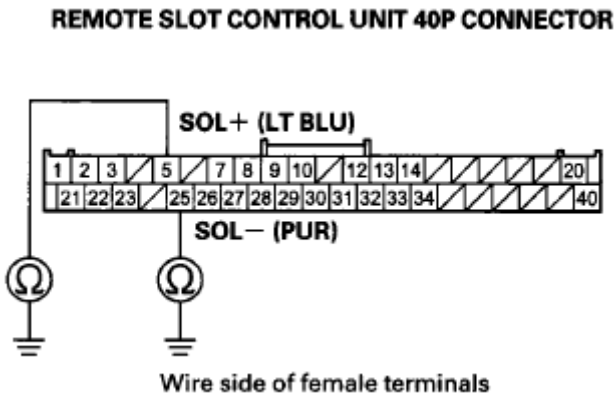


Fig. 94: Checking Continuity Between Body Ground And Remote Slot Control Unit 40P Connector Terminals No. 5 And No. 25 Individually With Connector End View
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair a short to ground in the wire.

NO - Go to step 11.

11. Check for continuity between remote slot control unit 40P connector terminals No. 5 and No. 25 and remote slot 16P connector terminals No. 16 and No. 8 respectively.

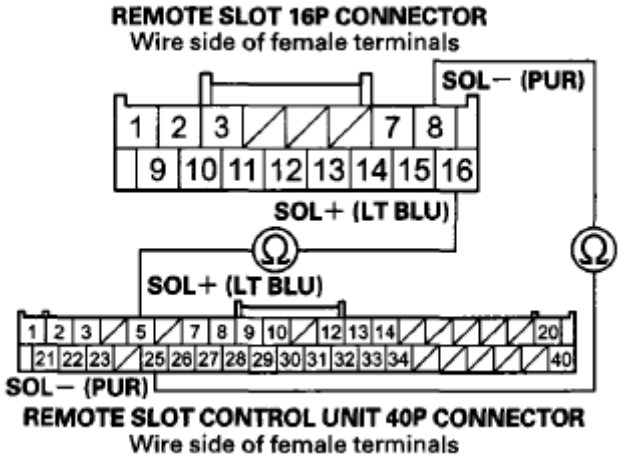


Fig. 95: Checking Continuity Between Remote Slot Control Unit 40P Connector Terminals And Remote Slot 16P Connector Terminals With Connector End View

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 12.

NO - Repair an open or high resistance in the wire.

12. Check for continuity between body ground and remote slot 16P connector terminal No. 13.

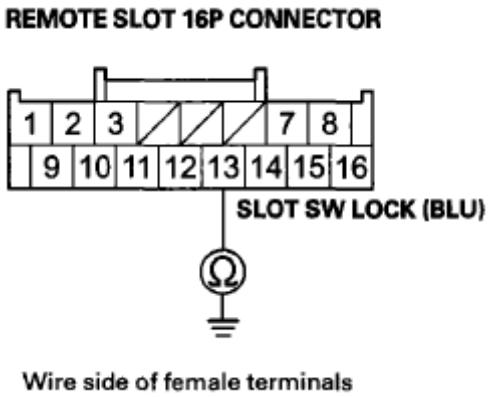


Fig. 96: Checking Continuity Between Body Ground And Remote Slot 16P Connector Terminal No. 13 With Connector End View
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair a short to ground in the wire.

NO - Go to step 13.

13. Check for continuity between remote slot control unit 40P connector terminal No. 8 and remote slot 16P connector terminal No. 13.

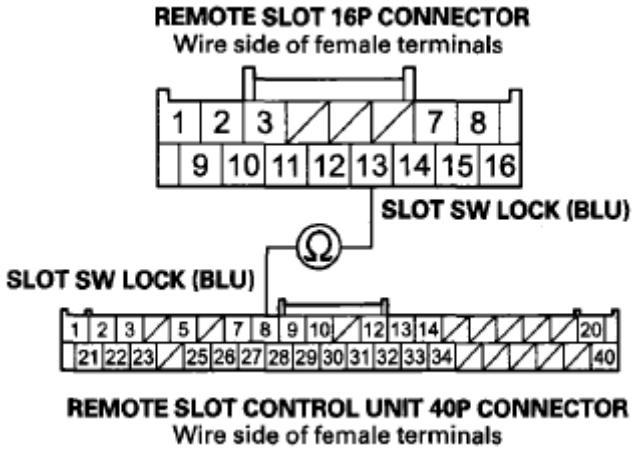


Fig. 97: Checking Continuity Between Remote Slot Control Unit 40P Connector Terminal No. 8 And Remote Slot 16P Connector Terminal No. 13
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 14.

NO - Repair an open or high resistance in the wire.

14. Check for continuity between body ground and remote slot 16P connector terminals No. 7 and No. 15 individually.

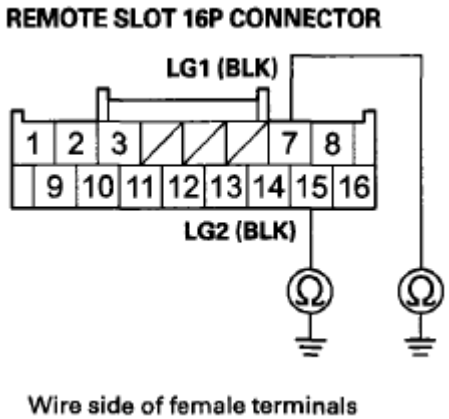


Fig. 98: Checking Continuity Between Body Ground And Remote Slot 16P Connector Terminals No. 7 And No. 15 Individually
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Check for loose or poor connections at the remote slot control unit and the remote slot. If the connections are OK, substitute a known- good remote slot. If the symptom goes away, replace the

original remote slot (see **REMOTE SLOT TEST/REPLACEMENT**). If not, replace the remote slot control unit (see **CONTROL UNIT INPUT TEST**).

NO - Repair an open or high resistance in the wire or poor ground (G403).

DTC B1931: REMOTE SLOT CONTROL UNIT NO RESPONSE

NOTE: If you are troubleshooting multiple DTCs, be sure to follow the instructions in B-CAN System Diagnosis Test Mode A (see TROUBLESHOOTING - B- CAN SYSTEM DIAGNOSIS TEST MODE A).

1. Clear the DTCs with the HDS.
2. Turn the keyless access system mode switch OFF.
3. Insert the remote into the remote slot.
4. Do the procedure 10 times: Press the engine start/stop button to select the OFF, ACC, ON, and OFF mode.
5. Select the ONE-PUSH START from the SYSTEM SELECTION MENU with the HDS.
6. Select the SLOT UNIT and check for DTCs with the HDS.

   Is DTC B1931 indicated?

   YES - Go to step 7.

   NO - Intermittent failure, the system is OK at this time. Check for loose or poor connections.

7. Press the engine start/stop button to select the OFF mode.
8. Check for loose connections in the remote slot 16P connector.

   Is the connections OK?

   YES - Go to step 9.

   NO - Replace the faulty connections, and then recheck the system.

9. Measure the voltage between body ground and the remote slot 16P connector terminal No. 1.

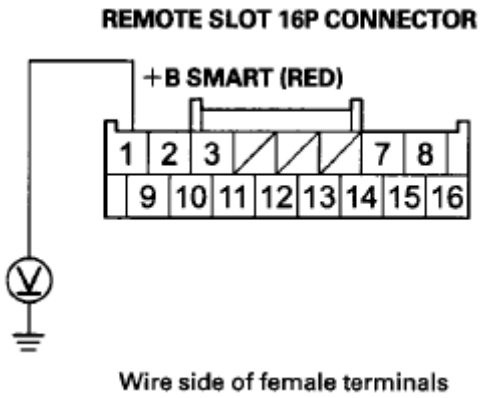


Fig. 99: Measuring Voltage Between Body Ground And Remote Slot 16P Connector Terminal No. 1
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there battery voltage?

YES - Go to step 10.

NO - Check for blown No. 12 (10 A) fuse in the passenger's under- dash fuse/relay box and an open or a short to ground in the wire. If the fuse and wire are OK, replace the remote slot (see **REMOTE SLOT TEST/REPLACEMENT**).

10. Disconnect the remote slot 16P connector.
11. Check for continuity between body ground and remote slot 16P connector terminals No. 7 and No. 15 individually.

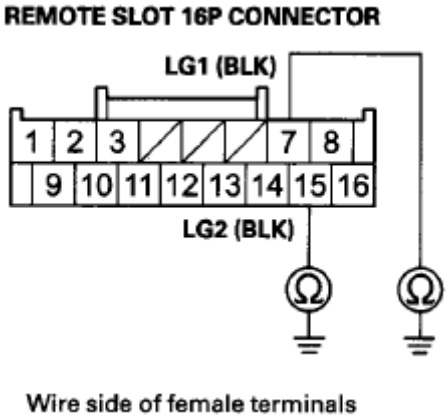


Fig. 100: Checking Continuity Between Body Ground And Remote Slot 16P Connector Terminals No. 7 And No. 15 Individually
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 12.

NO - Repair an open or high resistance in the wire or poor ground (G403).

12. Reconnect the remote slot 16P connector.
13. Press the engine start/stop button to select the ON mode.
14. Measure the voltage between body ground and remote slot 16P connector terminal No. 11.

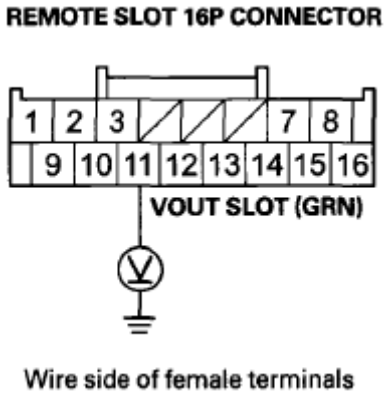


Fig. 101: Measuring Voltage Between Body Ground And Remote Slot 16P Connector Terminal No. 11
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there battery voltage?

YES - Go to step 18.

NO - Go to step 15.

15. Press the engine start/stop button to select the OFF mode.
16. Disconnect the remote slot control unit 40P connector.
17. Check for continuity between body ground and remote slot 16P connector terminal No. 11.

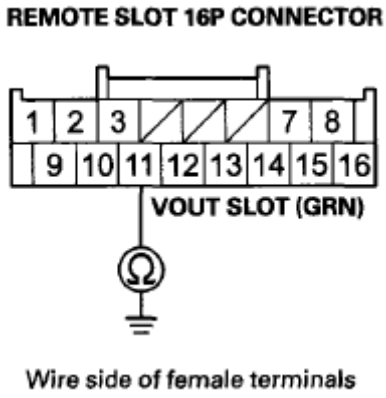


Fig. 102: Checking Continuity Between Body Ground And Remote Slot 16P Connector Terminal No. 11
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair a short to ground in the wire.

NO - Substitute a known- good remote slot. If the symptom goes away, replace the original remote slot (see **REMOTE SLOT TEST/REPLACEMENT**). If not, replace the remote slot control unit (see **CONTROL UNIT INPUT TEST**).

18. Press the engine start/stop button to select the OFF mode.
19. Disconnect the remote slot control unit 40P connector.
20. Disconnect the remote slot 16P connector.
21. Check for continuity between body ground and remote slot 16P connector terminals No. 2 and No. 9 individually.

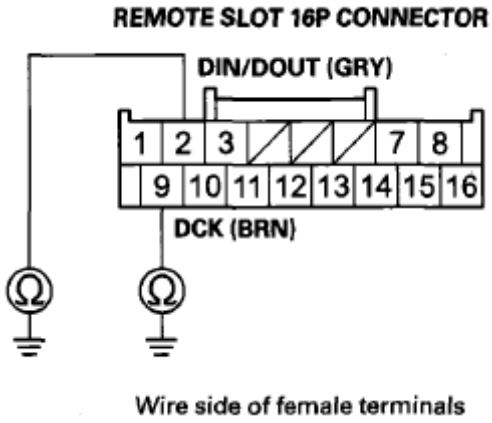


Fig. 103: Checking Continuity Between Body Ground And Remote Slot 16P Connector Terminals No. 2 And No. 9 Individually
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair a short to ground in the wire.

NO - Go to step 22.

22. Check for continuity between remote slot control unit 40P connector terminals No. 9, No. 29, arid No. 28, and remote slot 16P connector terminals No. 2, No. 9, and No. 11 respectively.

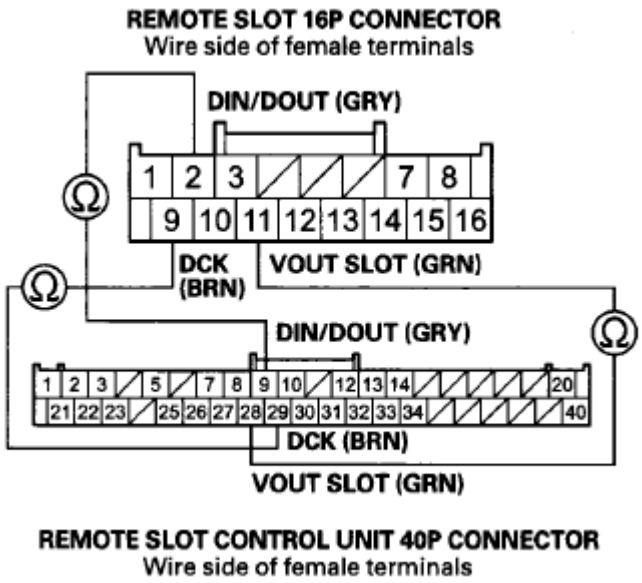


Fig. 104: Checking Continuity Between Remote Slot Control Unit 40P Connector Terminals And Remote Slot 16P Connector Terminals
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Substitute a known- good remote slot. If the symptom goes away, replace the original remote slot (see **REMOTE SLOT TEST/REPLACEMENT**). If not, replace the remote slot control unit (see **CONTROL UNIT INPUT TEST**).

NO - Repair an open or high resistance in the wire.

DTC U0155: REMOTE SLOT CONTROL UNIT LOST COMMUNICATION WITH GAUGE CONTROL MODULE

NOTE: If you are troubleshooting multiple DTCs, be sure to follow the instructions in B-CAN System Diagnosis Test Mode A (see TROUBLESHOOTING - B- CAN SYSTEM DIAGNOSIS TEST MODE A).

1. Clear the DTCs with the HDS.
2. Press the engine start/stop button to select the OFF, ACC, and ON mode.
3. Wait for at least 6 seconds.
4. Check for DTCs with the HDS.

Is DTC U0155 indicated?

YES - Go to step 5.

NO - Intermittent failure, the system is OK at this time. Check for loose or poor connections between the

remote slot control unit and the gauge control module.

5. From the BODY ELECTRICAL SYSTEM SELECT menu, select B- CAN CONTROL UNITS INFORMATION, and then select CHECK CONNECTED CONTROL UNITS.

   Is the gauge control module detected?

   YES - Go to step 9.

   NO - Go to step 6.

6. Measure the voltage between body ground and gauge control module 32P connector terminals No. 15 and No. 16 individually.

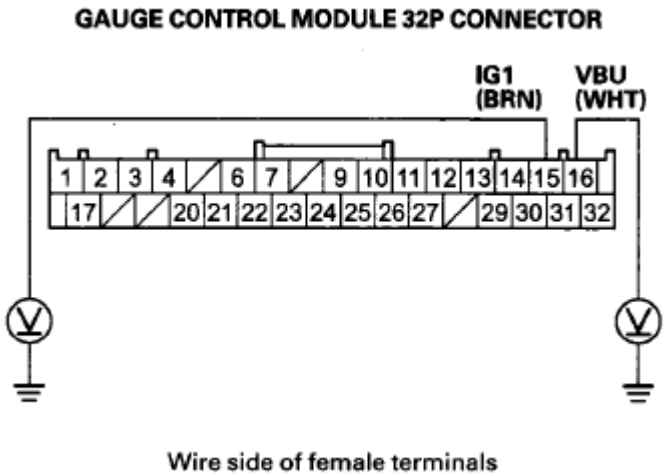


Fig. 105: Measuring Voltage Between Body Ground And Gauge Control Module 32P Connector Terminals No. 15 And No. 16 Individually
Courtesy of AMERICAN HONDA MOTOR CO., INC.

   Is there battery voltage?

   YES - Go to step 8.

   NO - Go to step 7.

7. Check the No. 15 (10 A) fuse in the under- hood fuse/relay box and the No. 12 (7.5 A) fuse in the driver's under- dash fuse/relay box.

   Are the fuses OK?

   YES - Repair an open or high resistance in the No. 15 (10 A) and/or No. 12 (7.5 A) fuse circuit.

   NO - Replace the fuse(s). If the fuse blows again, repair a short to ground in the No. 15(10 A) and/or No. 12 (7.5 A) fuse circuit.

8. Measure the voltage between body ground and gauge control module 32P connector terminals No. 1 and No. 17 individually.

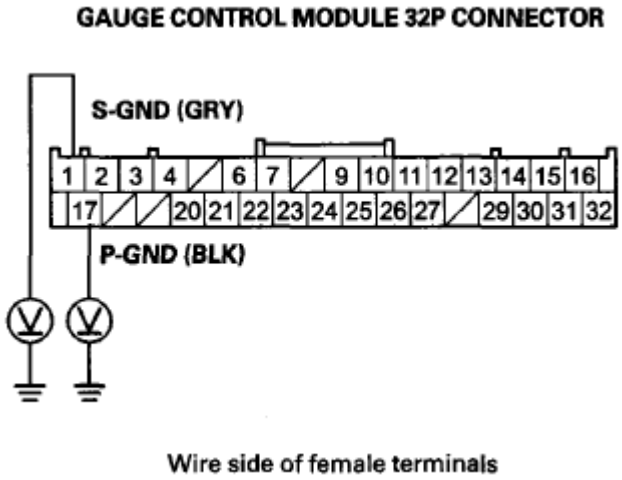


Fig. 106: Measuring Voltage Between Body Ground And Gauge Control Module 32P Connector Terminals No. 1 And No. 17 Individually
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there less than 0.2 V?

YES - Go to step 9.

NO - Repair an open or high resistance in the ground wire or poor ground (G401) and/or (G402).

9. Press the engine start/stop button to select the OFF mode.
10. Disconnect the remote slot control unit 40P connector.
11. Disconnect the gauge control module 32P connector.
12. Check for continuity between gauge control module 32P connector terminals No. 29 and No. 30 and remote slot control unit 40P connector terminals No. 23 and No. 3 respectively.

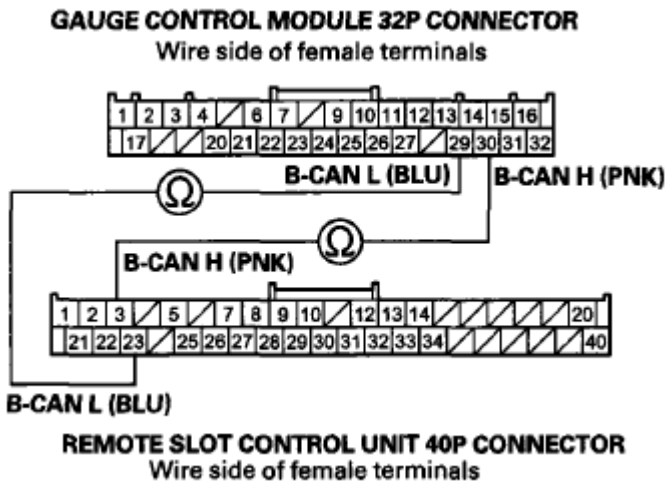


Fig. 107: Checking Continuity Between Gauge Control Module 32P Connector Terminals And Remote Slot Control Unit 40P Connector Terminals
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Replace the gauge control module (see **GAUGE CONTROL MODULE REPLACEMENT**).

NO - Repair an open or poor connection in the B- CAN wire between the remote slot control unit and the gauge control module.

SYMPTOM TROUBLESHOOTING INFORMATION

1. Symptom troubleshooting by the immobilizer indicator.

   The immobilizer and keyless access system condition can be checked by the immobilizer indicator lighting pattern.

   Normal operation:

   When pressing the engine start/stop button to select the ON mode and the immobilizer code is identified, the immobilizer indicator quickly flashes once.

   Immobilizer code is not identified:

   When pressing the engine start/stop button to select the ON mode when the immobilizer code has not been identified, the immobilizer indicator will come on for 2 seconds, then blinks until the OFF mode is selected. The state of the keyless registration and the S- NET line can be checked by doing a system check and status log checks with the HDS.

   When in the OFF mode, the immobilizer indicator will blink 10 times to signal that until has reset correctly, the immobilizer indicator will remain off.

Immobilizer indicator does not come on:

If the immobilizer indicator does not come on after pressing the engine start/stop button to select the ON mode, there is an open or short in the F- CAN lines between the ECM/PCM and the gauge control module. Watch the malfunction indicator lamp (MIL). If the MIL stays on, go to the PGM- FI system troubleshooting (see **MIL CIRCUIT TROUBLESHOOTING**).

Immobilizer indicator does not go off:

If the immobilizer indicator does not go off after pressing the engine start/stop button to select the ON mode, do the gauge control module self- diagnostic function procedures (see **SELF- DIAGNOSTIC FUNCTION**). If the indicator drive circuit is OK, do the SYSTEM CHECK and STATUS LOG CHECK procedures with the HDS.

2. General check before troubleshooting.

   Before troubleshooting the keyless access system, check the following items and solve any applicable issues.

   - Check the No. 3- 1 (IG MAIN) (50 A) fuse and the No. 15 (10 A) fuse in the under- hood fuse/relay box.
   - Check the No. 9 (20 A) fuse in the driver's under- dash fuse/relay box.
   - Check for poor connection at the power control unit and the keyless access control unit.
   - Check for DTCs with the HDS, if there is a DTC indicated, troubleshoot the DTC first.
   - Before testing, troubleshoot the keyless access system first using SELF CHECK, and if any malfunction is found, troubleshoot it first.
   - Make sure the remote is not in a purse with coins, wrapped with any metallic material, placed near a mobile phone or computer.
   - Make sure the vehicle battery is fully charged.
   - Make sure the remote batteries are not low; if they are, replace the battery.
   - Make sure a different remote is not being used; only use an Acura- approved remote.
   - Make sure the remote is not attached to a key ring or key case, if it is, remove the key from it.
   - Make sure aftermarket accessories are not installed; remove any aftermarket accessories.
   - Make sure aftermarket accessories are not connected to the S- NET line: disconnect any aftermarket accessories from the S- NET line.
   - Make sure there is no electrical interference nearby: avoid areas with electrical interference.

3. System Checks.

   If a System Check 1 or 2 result is indicated on the display of the HDS, troubleshoot the items based on these Check tables.

SYSTEM CHECK 1 (KEYLESS ACCESS CONTROL UNIT)

System Check No.	Possible cause	Check items

A- 1 A- 2 A- 3 G- 4	• Remote is mismatched • RF unit failure • LF interior antenna failure • Remote is not registered	• Remote test • RF unit test • LF interior antenna test • Register the remote
B- 1 B- 2 G- 1	• ECM/PCM is replaced • No communication between Keyless Access Control Unit and ECM/PCM • Open in the IG1 line • Keyless Access Control Unit is replaced	• Register the ECM/PCM • Check ECM/PCM • Check harness • Register the Keyless Access Control Unit
C- 1 C- 2 G- 2	• MICU (Imoes unit) is replaced • Communication error between Keyless Access Control Unit and MICU • Open in the IG1 line • Keyless Access Control Unit is replaced • Remote Slot Control Unit is replaced	• Register the Keyless Access Control Unit • Check MICU • Check harness
G- 5	• Power Control Unit is replaced • Electric Steering Lock is replaced • Keyless Access Control Unit is replaced	• Register the Power Control Unit • Check for an open or short in the wire IGN TRX lines

SYSTEM CHECK 2 (KEYLESS ACCESS CONTROL UNIT)

System Check No.	Possible cause	Check items
C- 3 C- 4	• Power Control Unit is replaced • Electric Steering Lock is replaced • Keyless Access Control Unit is replaced	• Register the Power Control Unit • Check for an open or short in the wire IGN TRX lines
D- 1 D- 2 D- 3	• S- NET line is short • No communication between Keyless Access Control Unit and MICU (Imoes unit) • No communication between Keyless Access Control Unit and ECM/PCM	• Check harness • Check MICU • Check ECM/PCM
D- 4 D- 5	IGN TRX line trouble	Check IGN TRX line
E- 1 E- 2 E- 3 E- 4 E- 5	Remote Slot Control Unit is not registered	Register the Remote Slot Control Unit
F- 1		

F- 2 F- 3 F- 4 F- 5	Special Mode	Press the engine start/stop button to select the ON mode and then select the OFF mode with a registered remote

SYSTEM CHECK (REMOTE SLOT CONTROL UNIT)

System Check No.	Possible cause	Check items
A- 1 A- 2 A- 3	• Remote is mismatched • Remote Slot failure • Remote is not registered	• Register the remote • Check Remote Slot
B- 1 B- 2	• ECM/PCM is replaced • Communication error between Remote Slot Control Unit and ECM/PCM	• Register the ECM/PCM • Check ECM/PCM
C- 1 C- 2	• MICU is replaced • Communication error between Remote Slot Control Unit and MICU • Open in the IG1 line	• Register the Remote Slot Control Unit • Check MICU • Check harness
D- 1 D- 2 D- 3	• S- NET line short • No communication between Remote Slot Control Unit and MICU • No communication between Remote Slot Control Unit and ECM/PCM	• Check harness • Check MICU • Check ECM/PCM

4. Status Log.

If the symptom does not occur again during the symptom check, check the Status Log with the HDS, and troubleshoot the items based on this table:

Check the status log count. Troubleshoot the status log number with the highest count first. If no counts are listed, the keyless access system is OK. Continue with normal symptom troubleshooting.

STATUS LOG (KEYLESS ACCESS CONTROL UNIT)

Status Log No.	Possible cause
B- 1 B- 2	• ECM/PCM was not registered correctly. • Keyless Access Control Unit was registered correctly • Poor connections or loose terminals between Keyless Access Control Unit and ECM/PCM • Poor connections or loose terminals in the IG1 line • Low Battery voltage

	• Electrical noise
C- 1 C- 2	• Communication error between Keyless Access Control Unit and MICU • Poor connections or loose terminals in the IG1 line • Keyless Access Control Unit was not registered • Low Battery voltage • Electrical noise
D- 1 D- 2 D- 3	• Poor connections or loose terminals between Keyless Access Control Unit and MICU (Imoes unit) • Poor connections or loose terminals between Keyless Access Control Unit and ECM/PCM • Low Battery voltage • Electrical noise • Blown fuse

STATUS LOG (REMOTE SLOT CONTROL UNIT)

Status Log No.	Possible cause
A- 1 A- 2 A- 3	• Remote was not registered correctly • Remote Slot failure
B- 1 B- 2	• ECM/PCM was not registered correctly • Communication error between Remote Slot Control Unit and ECM/PCM • Low Battery voltage • Electrical noise
C- 1 C- 2	• Remote Slot Control Unit was not registered correctly • Communication error between Remote Slot Control Unit and MICU • Poor connections or loose terminals in the IG1 line • Low Battery voltage • Electrical noise
D- 1 D- 2 D- 3	• Poor connections or loose terminals between Remote Slot Control Unit and MICU (Imoes unit) • Poor connections or loose terminals between Remote Slot Control Unit and ECM/PCM • S- NET line short • Low Battery voltage • Electrical noise • Blown fuse

SYMPTOM TROUBLESHOOTING INDEX

Symptom	Diagnostic procedure	Also check for
Cannot select ON mode with keyless access or with the remote in the remote slot	Symptom Troubleshooting (see **SYMPTOM TROUBLESHOOTING**)	• No. 3- 1 (IG MAIN) (50 A) and No. 15(10 A) fuses in the under- hood fuse/relay box • No. 9 (20 A) fuse in the driver's under- dash fuse/relay box • Poor connections at the power control unit • Gauge control module • Power control unit • Electric steering lock • Engine start/stop switch • SS1 (+) line open/power short/ground short • SS2 (-) line open/short • B- CAN communication line • F- CAN communication line • ESL SW B, C, D lines open/short • MTRCONT line open/short • IGN TRX line open/short • Not registered • Harness/connections
Cannot select ON mode with keyless access, but can select ON mode with the remote in the remote slot	Symptom Troubleshooting (see **CANNOT SELECT ON MODE WITH KEYLESS ACCESS, BUT CAN SELECT ON MODE WITH THE REMOTE IN THE REMOTE SLOT**)	• Keyless access control unit • Keyless access system mode switch • Remote slot • RF unit • LF antenna • Remote • Low or weak remote battery • MTR CONT line open/short • IGN TRX line open/short

		• ESLID mismatch • Not registered • Harness/connections
Cannot select ON mode with the remote in the remote slot, but can select ON mode with the remote removed	Symptom Troubleshooting (see **CANNOT SELECT ON MODE WITH THE REMOTE IN THE REMOTE SLOT, BUT CAN SELECT ON MODE WITH THE REMOTE REMOVED**)	• Keyless access control unit • Remote slot control unit • Remote slot • MTR CONT line power short • ESLID mismatch • Not registered • Harness/connections
The engine cranks but will not start with keyless access or with the remote in the remote slot	Symptom Troubleshooting (see **THE ENGINE CRANKS BUT WILL NOT START WITH KEYLESS ACCESS OR WITH THE REMOTE IN THE REMOTE SLOT**)	• No power to ECM/PCM • No power to driver's MICU • ESL SW B line open • Electric steering lock • Harness/fuses
The engine cranks but will not start with keyless access	Symptom Troubleshooting (see **THE ENGINE CRANKS BUT WILL NOT START WITH KEYLESS ACCESS**)	• S- net line open/short • ESL SW B line open • IMOCD mismatch • IMOES mismatch
The engine cranks but will not start with the remote in the remote slot	Symptom Troubleshooting (see **THE ENGINE CRANKS BUT WILL NOT START WITH THE REMOTE IN THE REMOTE SLOT**)	• S- net line open/short • ESL SW B line open • IMOCD mismatch • IMOES mismatch
All the doors and the trunk will not lock and unlock	Symptom Troubleshooting (see **ALL THE DOORS AND THE TRUNK WILL NOT LOCK AND UNLOCK**)	• Keyless access control unit • RF unit • LF antenna • Keyless access system mode switch • Driver's door lock knob switch • Door outer handle touch sensor/lock switch • Door lock actuators • Remote

		• Low or weak remote battery • Not registered
The doors will not unlock (lock is normal) with keyless access or with the remote buttons, or the doors will not lock (unlock is normal) with keyless access or with the remote buttons	Symptom Troubleshooting (see **THE DOORS WILL NOT UNLOCK (LOCK IS NORMAL) WITH KEYLESS ACCESS OR WITH THE REMOTE BUTTONS, OR THE DOORS WILL NOT LOCK (UNLOCK IS NORMAL) WITH KEYLESS ACCESS OR WITH THE REMOTE BUTTONS**)	• Driver's MICU • Remote • Door outer handle touch sensor/lock switch • Door switches
Keyless access indicator does not go off or does not come on	Symptom Troubleshooting (see **KEYLESS ACCESS INDICATOR DOES NOT GO OFF OR DOES NOT COME ON**)	• Gauge control module • Keyless access control unit • Power control unit • Remote slot control unit
Immobilizer indicator does not go off or does not come on	Symptom Troubleshooting (see **IMMOBILIZER INDICATOR DOES NOT GO OFF OR DOES NOT COME ON**)	• Gauge control module • Keyless access control unit • ECM/PCM
The key- in reminder does not sound	Symptom Troubleshooting (see **THE KEY- IN REMINDER DOES NOT SOUND**)	• Gauge control module • Driver's door switch • Keyless access control unit • Driver's MICU • PCUKEY line open • Harness
The key- in reminder sounds when the remote is removed from the remote slot and door is open	Symptom Troubleshooting (see **THE KEY- IN REMINDER SOUNDS WHEN THE REMOTE IS REMOVED FROM THE REMOTE SLOT AND DOOR IS OPEN**)	• Remote slot • Driver's MICU • Power control unit • Engine start/stop switch • Harness
Engine does not crank (power supply is normal)	• Check the brake pedal position switch (A/T) (see **BRAKE PEDAL POSITION SWITCH TEST**) • Check the clutch pedal position switch A (M/T) (see **CLUTCH PEDAL POSITION SWITCH A TEST**) • Check the power control unit (see	• Power control unit • STS line open/short • Brake pedal position switch (A/T) • Brake light line open/short (A/T) • Clutch pedal position switch A (M/T)

	CONTROL UNIT INPUT TEST)	• CLUTCH line open/short (M/T)
Engine start/stop switch does not work	Check for DTCs. If any DTC is indicated, go to the **DTC TROUBLESHOOTING**	• Power control unit • Engine start/stop switch • SS1 (+) line open/short • SS2 (-) line open/short • Harness
The mode changes between ACC and ON, but it does not change to OFF (A/T)	• Check the transmission range switch (see **TRANSMISSION RANGE SWITCH TEST**) • Check the power control unit (see **CONTROL UNIT INPUT TEST**)	• AT- P line short • Transmission range switch • Power control unit • Park Pin Switch
The mode changes between ACC and ON, but it is difficult to change to OFF	• Check the power control unit (see **CONTROL UNIT INPUT TEST**) • Check the keyless access control unit (see **KEYLESS ACCESS CONTROL UNIT**) • Check the remote slot control unit (see **CONTROL UNIT INPUT TEST**) • Check the gauge control module (see **GAUGE CONTROL MODULE INPUT TEST**)	• Gauge control module • Keyless access control unit • Remote slot control unit • Power control unit • ECM/PCM • B- CAN communication line open/short • F- CAN communication line open/short • Speed signal line open
Remote cannot be removed from the remote slot	Check the park pin switch (A/T) (see **KEY INTERLOCK SOLENOID TEST**)	• Remote slot • Park pin switch (A/T) • P- PIN line short (A/T)
Remote will not go into the remote slot	Symptom Troubleshooting (see **REMOTE WILL NOT GO INTO THE REMOTE SLOT**)	Damaged remote casing
The doors will not unlock or lock with the remote, but will unlock	Symptom Troubleshooting (see **THE DOORS WILL NOT UNLOCK OR LOCK WITH THE REMOTE, BUT WILL UNLOCK OR**	• Remote battery dead • Remote • Driver's MICU • RF unit • Remote slot • Power control unit • SLOT SW HALF/FULL/FULL2 lines short • PCUKEY line short

or lock with the door outer handles	**LOCK WITH THE DOOR OUTER HANDLES**)	• SS1 (+) line short • SS2 (-) line short • IG1A line short • ACC line short • B- CAN communication line open/short • Not registered • Harness/fuses
The doors will not unlock or lock with the door outer handle touch sensor or lock switch, but will unlock or lock with the remote	Symptom Troubleshooting (see **THE DOORS WILL NOT UNLOCK OR LOCK WITH THE DOOR OUTER HANDLE TOUCH SENSOR OR LOCK SWITCH, BUT WILL UNLOCK OR LOCK WITH THE REMOTE**)	• Door outer handles • Keyless access system mode switch • Keyless access control unit • Remote • LF antenna • Driver's MICU • RF unit • Not registered • Harness/fuses

SYMPTOM TROUBLESHOOTING

CANNOT SELECT ON MODE WITH KEYLESS ACCESS OR WITH THE REMOTE IN THE REMOTE SLOT

1. Check the following fuses:
   - No. 3- 1 (IG MAIN) (50 A) and No. 15 (10 A) in the under- hood fuse/relay box
   - No. 9 (20 A) in the driver's under- dash fuse relay/box
   - No. 12 (10 A) in the passenger's under- dash fuse/relay box

   Are the fuses OK?

   YES - Go to step 2.

   NO - Replace the fuse(s). If the fuse blows again, repair the short to ground on the fuse circuit(s).

2. Turn the keyless access system mode switch ON.
3. Insert the remote into the remote slot.
4. Press the engine start/stop button to select the ON mode while turning the steering wheel to the left and to the right.

Does the system change to ON mode?

YES - The system is OK at this time.

NO - Go to step 5.

5. Repeat step 4 at least 10 times.

   Does the system change to ON mode?

   YES - The system is OK at this time.

   NO - Go to step 6.

6. Remove the remote from the remote slot.
7. Press the engine start/stop button to select the ON mode while turning the steering wheel to the left and to the right.

   Does the system change to ON mode?

   YES - The system is OK at this time.

   NO - Go to step 8.

8. Repeat step 7 at least 10 times.

   Does the system change to ON mode?

   YES - The system is OK at this time.

   NO - Go to step 9.

9. Connect the HDS to the data link connector (DLC), and boot the HDS.
10. Select model on the HDS screen.
11. When prompted by the HDS, select YES when asked if the vehicle has keyless access system, then press and hold the engine start/stop button for 120 seconds. This selects the forced ON mode.

    Does the system change to forced ON mode?

    YES - Go to step 12.

    NO - If the screen displays a DTC is stored, go to step 46. If the screen displays "Cannot detect ENGINE START/STOP button signal," go to step 18.

12. Check for PCU DTCs with the HDS.

Are any DTCs indicated?

YES - Troubleshoot the PCU DTCs.

NO - Go to step 13.

13. Check for KEYLESS ACCESS CONTROL UNIT communication with the HDS.

    Is there communication?

    YES - Go to step 14.

    NO - Do the keyless access control unit input test (see **KEYLESS ACCESS CONTROL UNIT**).

14. Check for KEYLESS ACCESS CONTROL UNIT DTCs with the HDS.

    Are any DTCs indicated?

    YES - Troubleshoot the KEYLESS ACCESS CONTROL UNIT DTCs.

    NO - Go to step 15.

15. Check for REMOTE SLOT CONTROL UNIT communication with the HDS.

    Is there communication?

    YES - Go to step 16.

    NO - Do the remote slot control unit input test (see **CONTROL UNIT INPUT TEST**).

16. Check for REMOTE SLOT CONTROL UNIT DTCs with the HDS.

    Are any DTCs indicated?

    YES - Troubleshoot the REMOTE SLOT CONTROL UNIT DTCs.

    NO - Go to step 17.

17. Do the remote test (see **REMOTE TEST**).

    Is the remote OK?

    YES - Go to step 47.

    NO - Substitute a known- good remote and recheck. If the symptom goes away, replace the original remote, then register all the remotes (see **WHEN REPLACING THE REMOTE SLOT CONTROL UNIT/KEYLESS ACCESS CONTROL UNIT/ECM/PCM/DRIVER'S MICU OR**

REGISTRATION OF THE REMOTE(S)).

18. Check for loose or poor connections at the power control unit.

    Are the connections OK?

    YES - Go to step 19.

    NO - Repair the connections, and retest.

19. Do the engine start/stop switch test (see **ENGINE START/STOP SWITCH TEST/REPLACEMENT**).

    Is the engine start/stop switch OK?

    YES - Go to step 20.

    NO - Replace the engine start/stop switch (see **ENGINE START/STOP SWITCH TEST/REPLACEMENT**).

20. Disconnect the engine start/stop switch 10P connector.
21. Disconnect power control unit connector C (36P).
22. Check for continuity between engine start/stop switch 10P connector terminals No. 2 and No. 5, and power control unit connector C (36P) terminals No. 8 and No. 7 respectively.

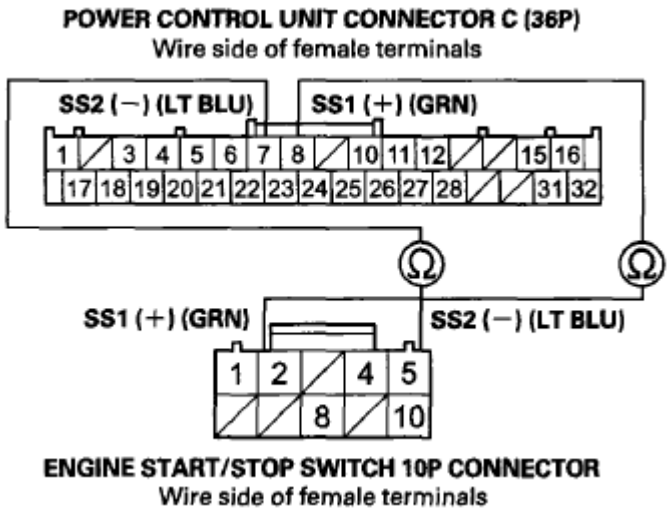


Fig. 108: Checking Continuity Between Engine Start/Stop Switch 10P Connector Terminals And Power Control Unit Connector C (36P) Terminals With Connector End View
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 23.

NO - Repair an open or high resistance in the wire.

23. Measure the voltage between body ground and engine start/stop switch 10P connector terminal No. 1.

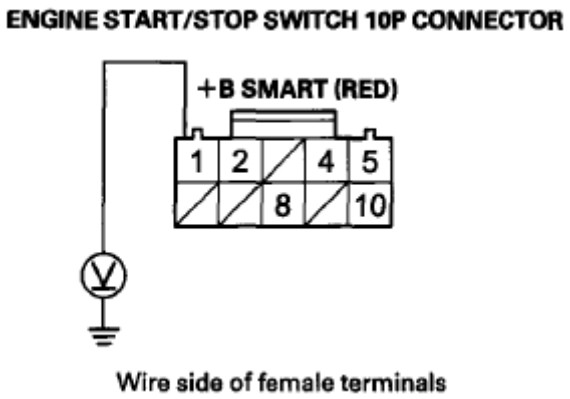


Fig. 109: Measuring Voltage Between Body Ground And Engine Start/Stop Switch 10P Connector Terminal No. 1
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there battery voltage?

YES - Go to step 24.

NO - Repair an open or high resistance in the wire.

24. Check for continuity between body ground and engine start/stop switch 10P connector terminal No. 4.

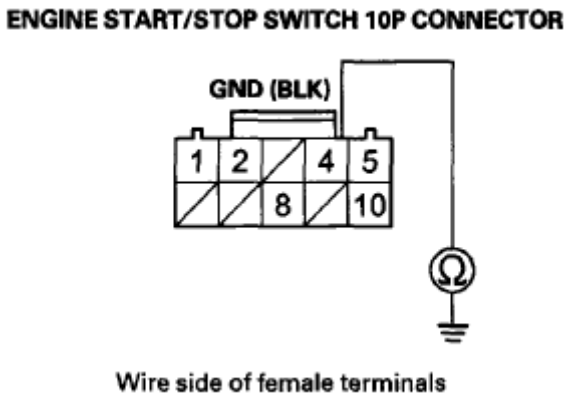


Fig. 110: Checking Continuity Between Body Ground And Engine Start/Stop Switch 10P Connector Terminal No. 4
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 25.

NO - Repair an open or high resistance in the wire or poor ground (G405).

25. Disconnect power control unit connector A (1P).
26. Measure the voltage between body ground and power control unit connector A (1P) and C (36P) terminals as shown.

Power control unit connector	
A1	Body ground
C1	
C20	

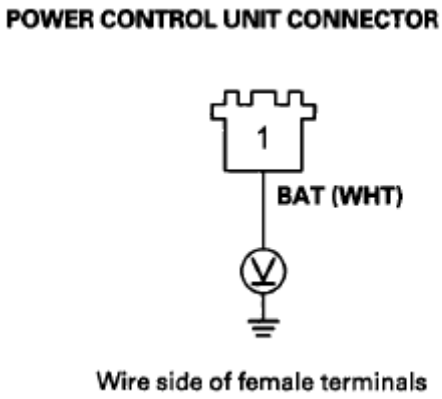


Fig. 111: Measuring Voltage Between Body Ground And Power Control Unit Connector A (1P) Terminals With Connector End View
Courtesy of AMERICAN HONDA MOTOR CO., INC.

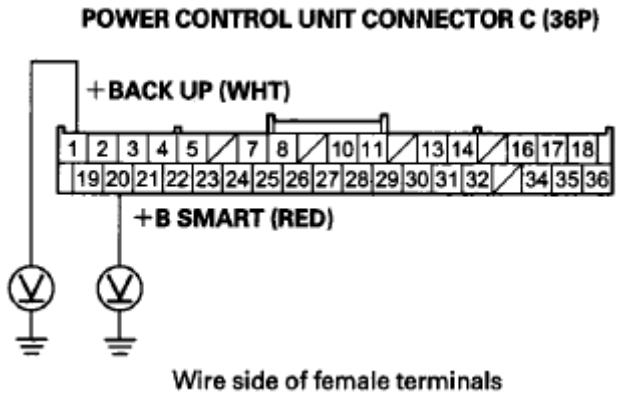


Fig. 112: Measuring Voltage Between Body Ground And Power Control Unit Connector And C (36P) Terminals
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there battery voltage?

YES - Go to step 27.

NO - Repair an open or high resistance in the wire.

27. Check for continuity between body ground and power control unit connector C (36P) terminals No. 18 and No. 36 individually.

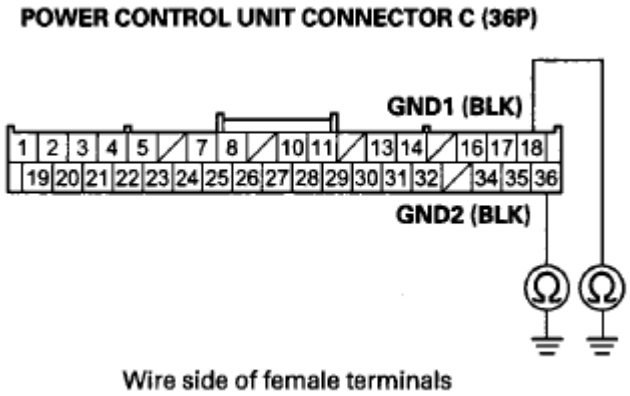


Fig. 113: Checking Continuity Between Body Ground And Power Control Unit Connector C (36P) Terminals No. 18 And No. 36 Individually
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 28.

NO - Repair an open or high resistance in the wire or poor ground (G402).

28. Disconnect the electric steering lock 12P connector.
29. Check for continuity between electric steering lock 12P connector terminals and power control unit connector C (36P) terminals as shown.

Power control unit connector C (36P)	Electric steering lock 12P connector
2 (PNK)	1 (PNK)
13 (PUR)	2 (PUR)
29 (LT BLU)	10 (LT BLU)
30 (ORN)	9 (ORN)
31 (GRN)	5 (GRN)
32 (BLU)	3 (BLU)

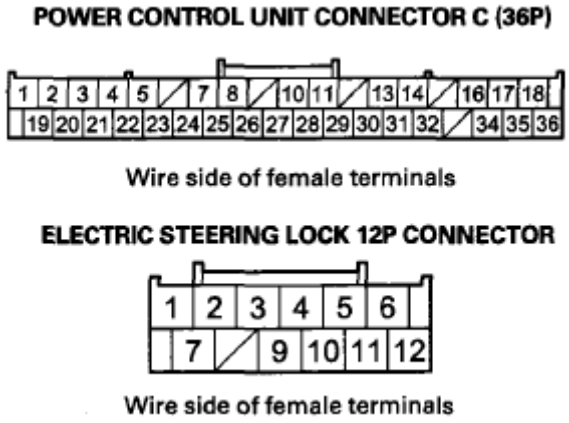


Fig. 114: Checking Continuity Between Electric Steering Lock 12P Connector Terminals And Power Control Unit Connector C (36P) Terminals
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 30.

NO - Repair an open or high resistance in the wire.

30. Disconnect keyless access control unit connector B (32P).
31. Disconnect the remote slot control unit 40P connector.
32. Check for continuity between body ground and electric steering lock 12P connector terminals as shown.

Electric steering lock 12P connector	
1	Body ground
2	
3	
5	
9	
10	

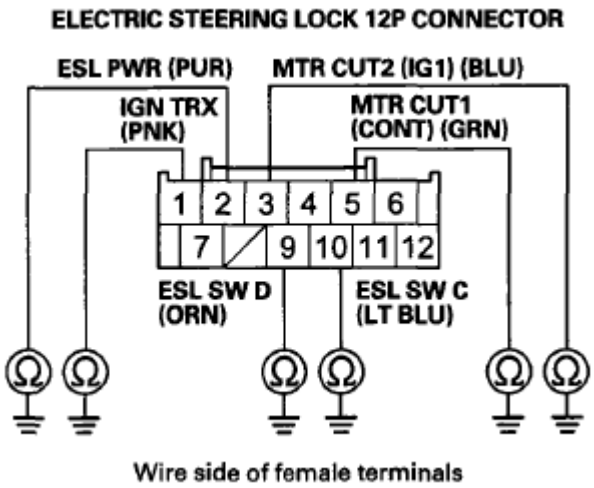


Fig. 115: Checking Continuity Between Body Ground And Electric Steering Lock 12P Connector Terminals
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair a short to ground in the wire.

NO - Go to step 33.

33. Measure the voltage between body ground and electric steering lock 12P connector terminal No. 4.

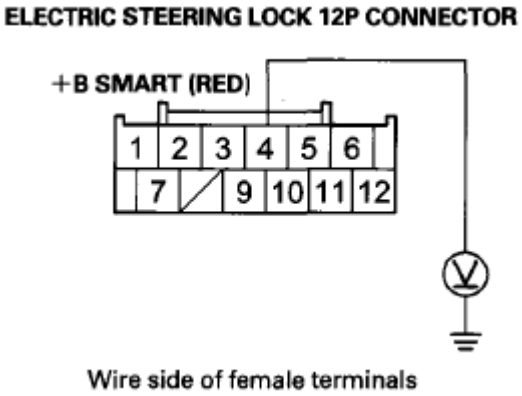


Fig. 116: Measuring Voltage Between Body Ground And Electric Steering Lock 12P Connector Terminal No. 4
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there battery voltage?

YES - Go to step 34.

NO - Repair an open or high resistance in the wire.

34. Check for continuity between body ground and electric steering lock 12P connector terminal No. 12.

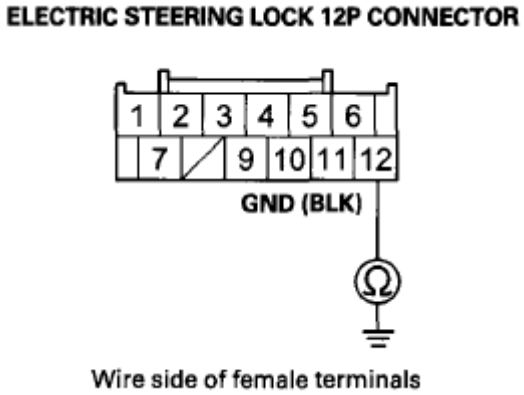


Fig. 117: Checking Continuity Between Body Ground And Electric Steering Lock 12P Connector Terminal No. 12
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 35.

NO - Repair an open or high resistance in the wire or poor ground (G405).

35. Disconnect keyless access control unit connector A (36P).
36. Check for continuity between keyless access control unit connector A (36P) and B (32P) terminals and electric steering lock 12P connector terminals as shown.

Keyless access control unit connector	Electric steering lock 12P connector
B6	1
A27	6

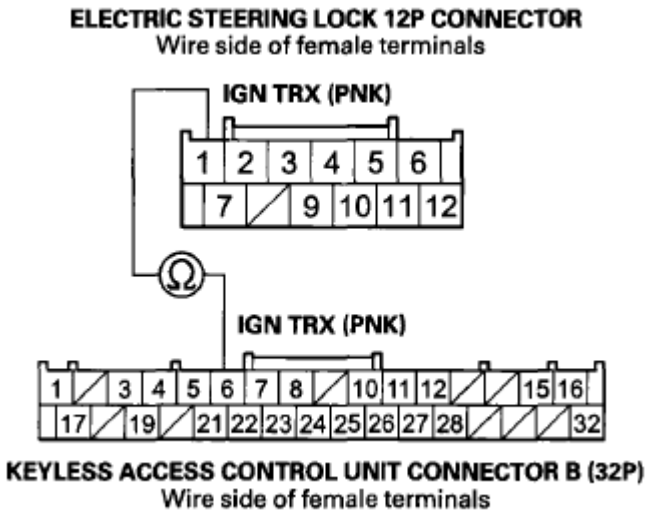


Fig. 118: Checking Continuity Between Keyless Access Control Unit Connector B (32P) Terminals And Electric Steering Lock 12P Connector Terminals
Courtesy of AMERICAN HONDA MOTOR CO., INC.

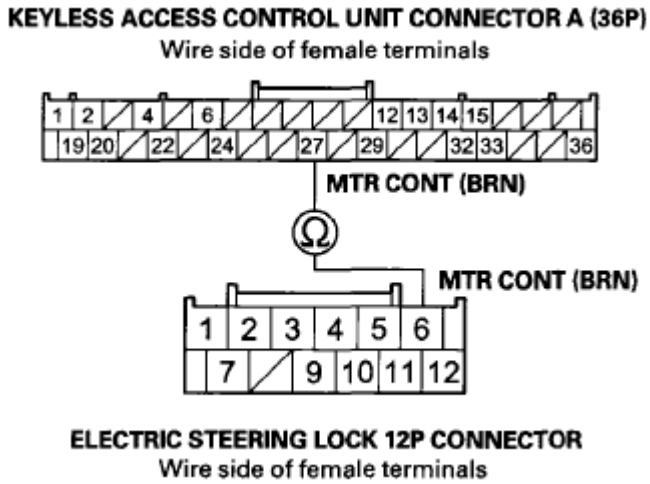


Fig. 119: Checking Continuity Between Keyless Access Control Unit Connector A (36P) And Electric Steering Lock 12P Connector Terminals
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 37.

NO - Repair an open or high resistance in the wire.

37. Check for continuity between body ground and electric steering lock 12P connector terminal No. 6.

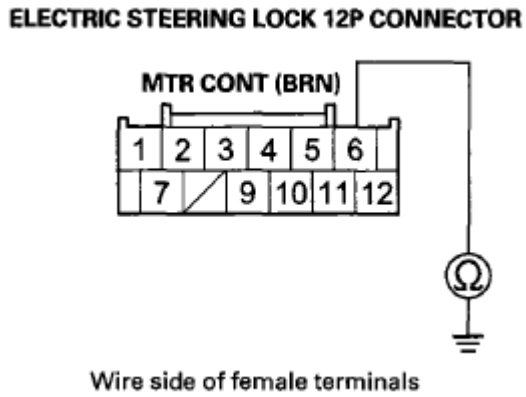


Fig. 120: Checking Continuity Between Body Ground And Electric Steering Lock 12P Connector Terminal No. 6
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair a short to ground in the wire.

NO - Go to step 38.

38. Check for continuity between electric steering lock 12P connector terminals No. 1 and No. 6 and remote slot control unit 40P connector terminals No. 32 and No. 12 respectively.

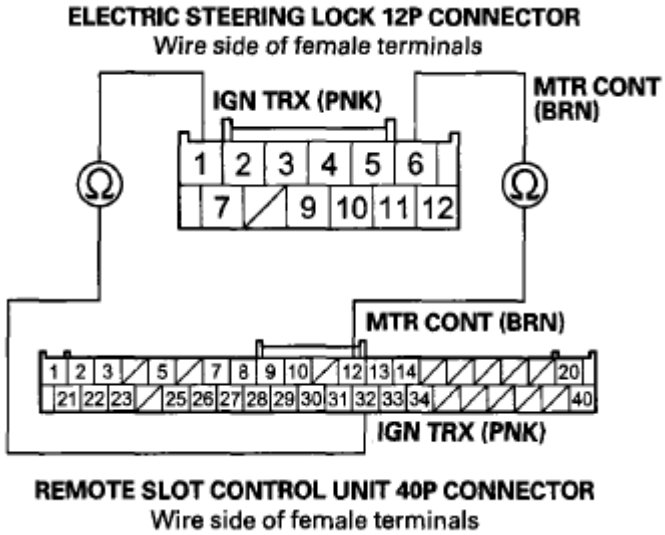


Fig. 121: Checking Continuity Between Electric Steering Lock 12P Connector Terminals And Remote Slot Control Unit 40P Connector Terminals
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 39.

NO - Repair an open or high resistance in the wire.

39. Measure the voltage between body ground and remote slot control unit 40P connector terminals No. 1 and No. 2 individually.

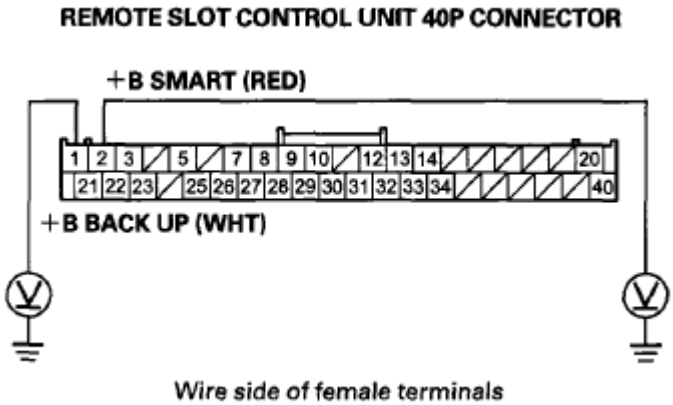


Fig. 122: Measuring Voltage Between Body Ground And Remote Slot Control Unit 40P Connector Terminals No. 1 And No. 2 Individually
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there battery voltage?

YES - Go to step 40.

NO - Repair an open or high resistance in the wire.

40. Check for continuity between body ground and remote slot control unit 40P connector terminals No. 20 and No. 40 individually.

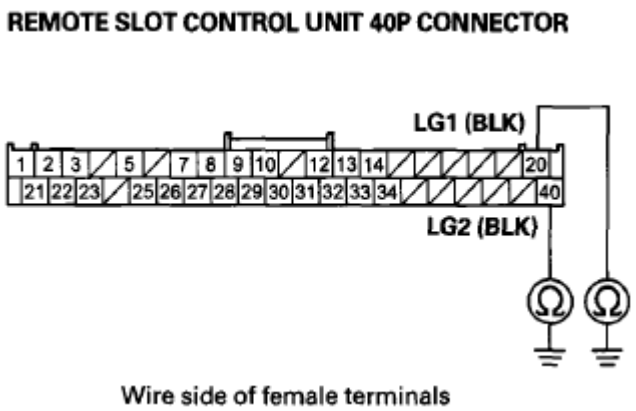


Fig. 123: Checking Continuity Between Body Ground And Remote Slot Control Unit 40P Connector Terminals No. 20 And No. 40 Individually
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 41.

NO - Repair an open or high resistance in the wire or poor ground (G405).

41. Check for continuity between remote slot control unit 40P connector terminals No. 10 and No. 13 and engine start/stop switch 10P connector terminals No. 2 and No. 5 respectively.

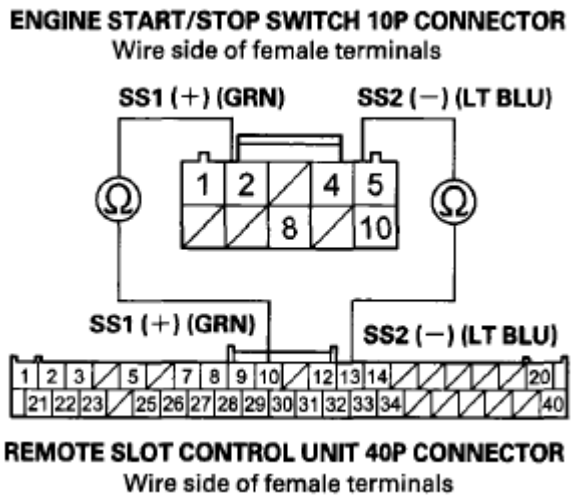


Fig. 124: Checking Continuity Between Remote Slot Control Unit 40P Connector Terminals And Engine Start/Stop Switch 10P Connector Terminals
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 42.

NO - Repair an open or high resistance in the wire.

42. Measure the voltage between body ground and keyless access control unit connector B (32P) terminal No. 1.

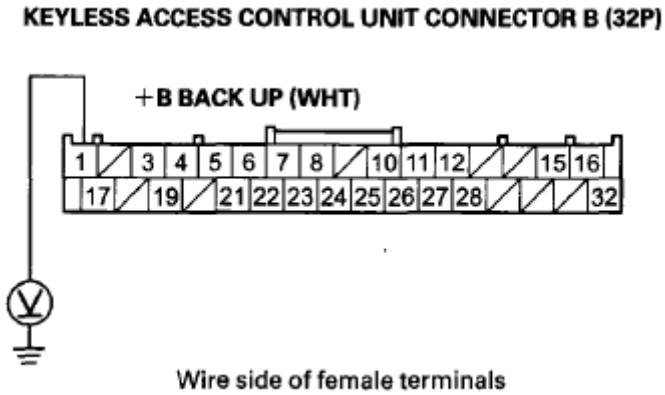


Fig. 125: Measuring Voltage Between Body Ground And Keyless Access Control Unit Connector B (32P) Terminal No. 1
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there battery voltage?

YES - Go to step 43.

NO - Repair an open or high resistance in the wire.

43. Check for continuity between body ground and keyless access control unit connectors A (36P) and B (32P) terminals as shown.

Keyless access control unit connector	
A36	Body ground
B32	

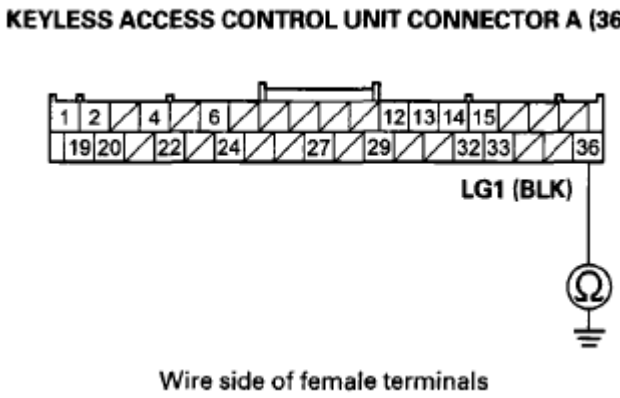


Fig. 126: Checking Continuity Between Body Ground And Keyless Access Control Unit Connectors A (36P) Terminals
Courtesy of AMERICAN HONDA MOTOR CO., INC.

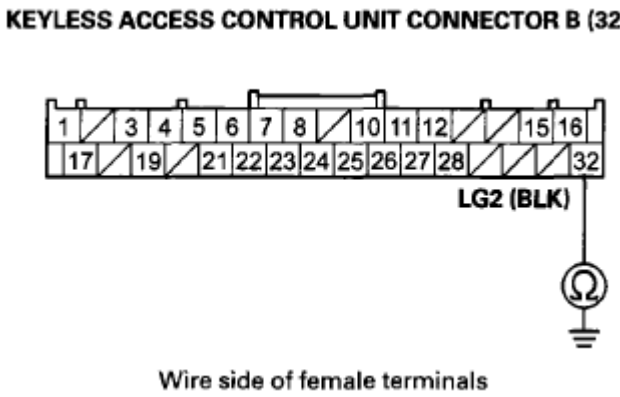


Fig. 127: Checking Continuity Between Body Ground And Keyless Access Control Unit Connectors And B (32P) Terminals
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 44.

NO - Repair an open or high resistance in the wire or poor ground (G402).

44. Disconnect keyless access control unit connector C (5P).
45. Check for continuity between keyless access control unit connectors B (32P) and C (5P) terminals and engine start/stop switch 10P connector terminals as shown.

Keyless access control unit connector	Engine start/stop switch 10P connector
B12	5
C5	2

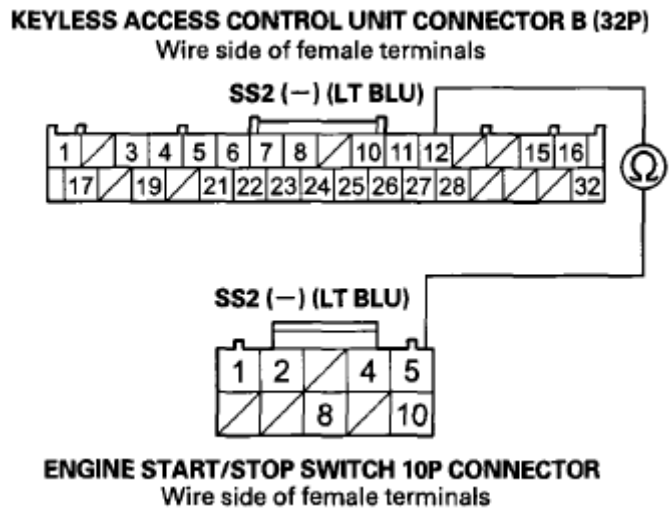


Fig. 128: Checking Continuity Between Keyless Access Control Unit Connectors B (32P) Terminals And Engine Start/Stop Switch 10P Connector Terminals
Courtesy of AMERICAN HONDA MOTOR CO., INC.

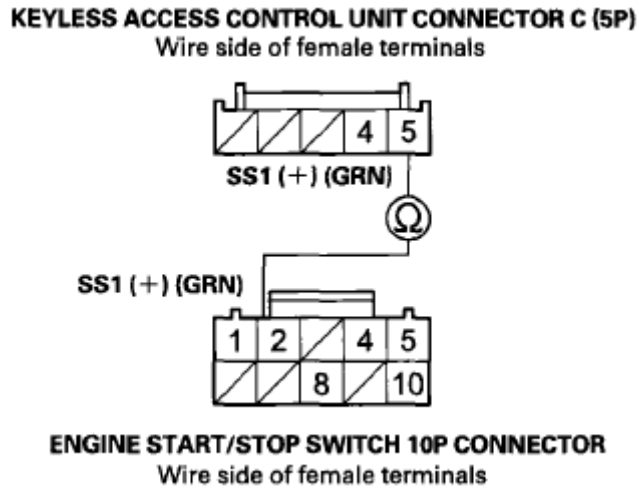


Fig. 129: Checking Continuity Between Keyless Access Control Unit Connectors And C (5P) Terminals And Engine Start/Stop Switch 10P Connector Terminals With Connector End View
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Substitute a known- good power control unit. If the symptom goes away, replace the original power control unit (see **CONTROL UNIT INPUT TEST**). If not, replace the electric steering lock (see **STEERING LOCK REPLACEMENT**).

NO - Repair an open or high resistance in the wire.

46. Select DTC from the INSPECTION MODE MENU with the HDS, then check for PCU DTCs with the HDS.

    Are any DTCs indicated?

    YES - Troubleshoot the PCU DTCs.

    NO - Go to step 25.

47. Press the engine start/stop button to select the OFF mode.
48. Remove all the remotes from inside the vehicle. Place the remotes more than 5 feet away from the vehicle.
49. Disconnect the electric steering lock 12P connector.
50. Reboot the HDS without pressing the engine start/stop button.
51. Select REGISTRATION from the ONE-PUSH START system select menu with the HDS, then select REPLACE PCU.
52. Reconnect the electric steering lock 12P connector.
53. Do the registration of PCU according to the instructions on the HDS screen.
54. Take the remote into the vehicle, and clear the PCU DTCs with the HDS.
55. Recheck the system.

    Is a system normal?

    YES - System is OK at this time.

    NO - Repeat steps 47 to 55, and recheck the system.

CANNOT SELECT ON MODE WITH KEYLESS ACCESS, BUT CAN SELECT ON MODE WITH THE REMOTE IN THE REMOTE SLOT

1. Turn the keyless access system mode switch ON.
2. Remove the remote from the remote slot.
3. Push the LOCK and the UNLOCK buttons of the remote, and check if the LED on the remote comes on.

   Does the LED come on?

   YES - Go to step 4.

   NO - Replace the remote battery and recheck the system. If the symptom does not go away, replace the

remote.

4. Press the engine start/stop button to select the ON mode while turning the steering wheel to the left and to the right.

   Does the system change to ON mode?

   YES - The system is OK at this time.

   NO - Go to step 5.

5. Repeat step 4 at least 10 times.

   Does the system change to ON mode?

   YES - The system is OK at this time.

   NO - Go to step 6.

6. Insert the remote into the remote slot.
7. Press the engine start/stop button to select the ON mode while turning the steering wheel to the left and to the right.
8. Connect the HDS to the data link connector (DLC).
9. Select KEYLESS ACCESS CONTROL UNIT from the ONE-PUSH START system select menu with the HDS, and enter SELF CHECK.

   Does the system communicate with the HDS?

   YES - Go to step 10.

   NO - Do the DLC circuit troubleshooting (see **DLC CIRCUIT TROUBLESHOOTING**), and recheck the system. If the symptom does not go away, do the keyless access control unit input test (see **KEYLESS ACCESS CONTROL UNIT**).

10. Check for KEYLESS ACCESS CONTROL UNIT DTCs with the HDS.

    Are any DTCs indicated?

    YES - Troubleshoot the KEYLESS ACCESS CONTROL UNIT DTCs.

    NO - Go to step 11.

11. Check for PCU DTCs with the HDS

    Are any DTCs indicated?

YES - Troubleshoot the PCU DTCs.

NO - Go to step 12.

12. Check for REMOTE SLOT CONTROL UNIT DTCs with the HDS.

    Are any DTCs indicated?

    YES - Troubleshoot the REMOTE SLOT CONTROL UNIT DTCs.

    NO - Go to step 13.

13. Select HISTORY CLEAR from the KEYLESS ACCESS CONTROL UNIT MODE MENU with the HDS.
14. Press the engine start/stop button to select the OFF mode.
15. Remove the remote from the remote slot, then insert the remote into the remote slot.
16. Turn the keyless access system mode switch OFF, then turn the keyless access system mode switch ON.
17. Press the engine start/stop button to select the ON mode.
18. Select HISTORY DATA from the KEYLESS ACCESS CONTROL UNIT mode menu with the HDS.

    HISTORY DATA

ENGINE START/STOP SWITCH 1 (+)	ON
ENGINE START/STOP SWITCH 2 (-)	ON
Keyless access system mode SW	ON
SLOT SWITCH FULL	ON
SLOT SWITCH HALF	ON
SLOT SWITCH FULL2	ON

    Is all the information ON?

    YES - Go to step 19.

    NO - Go to the **KEYLESS ACCESS CONTROL UNIT INPUT TEST** (see).

19. Turn the keyless access system mode switch OFF.
20. Press the engine start/stop button to select the OFF mode.
21. Remove the remote from the remote slot.
22. Disconnect the electric steering lock 12P connector.
23. Reboot the HDS.
24. Press the engine start/stop button to enter PCU inspection menu according to the instruction on the HDS screen.
25. Reconnect the electric steering lock 12P connector.
26. Select PCU from the ONE-PUSH START system select menu with the HDS, and enter DATA LIST.

27. Check each keyless access system mode switch and remote slot value with the DATA LIST menu.

NOTE: When the keyless access system mode switch is OFF, the HDS value is ON; this is normal.

PRESS AND HOLD ENGINE START/STOP BUTTON

Data List	Value
KEYLESS ACCESS SYSTEM MODE SW	ON
SLOT SWITCH FULL2	OFF
SLOT SWITCH HALF	OFF

Are all data list values correct?

YES - Go to step 28.

NO - Go to the **POWER CONTROL UNIT INPUT TEST** (see).

28. Insert the remote into the remote slot.
29. Turn the keyless access system mode switch ON.
30. Press the engine start/stop button to select the ON mode.
31. Check each remote slot and keyless access system mode switch value with the DATA LIST menu.

NOTE: When the keyless access system mode switch is ON, the HDS value is OFF; this is normal.

Data List	Value
KEYLESS ACCESS SYSTEM MODE SW	OFF
SLOT SWITCH FULL2	ON
SLOT SWITCH HALF	ON

Are all data list values correct?

YES - Go to step 32.

NO - Go to the **POWER CONTROL UNIT INPUT TEST** (see).

32. Reboot the HDS.
33. Select KEYLESS TRANSMITTER from the BODY ELECTRICAL SYSTEM SELECT menu, then select INSPECTION, then KEYLESS CHECK.
34. Do the KEYLESS CHECK with the HDS using the remote.

Is KEYLESS ENTRY TRANSMITTER CODE IS RECEIVED indicated?

YES - Go to step 35.

NO - Go to step 45.

35. Do the KEYLESS CHECK with the HDS using the remote.

    Is DIFFERENT KEYLESS ENTRY TRANSMITTER CODE RECEIVED indicated?

    YES - Register all the remotes, and recheck.

    NO - Go to step 36.

36. Press the engine start/stop button to select the OFF mode.
37. Disconnect keyless access control unit connector B (32P).
38. Disconnect power control unit connector C (36P).
39. Check for continuity between keyless access control unit connector B (32P) terminal No. 6 and power control unit connector C (36P) terminal No. 2.

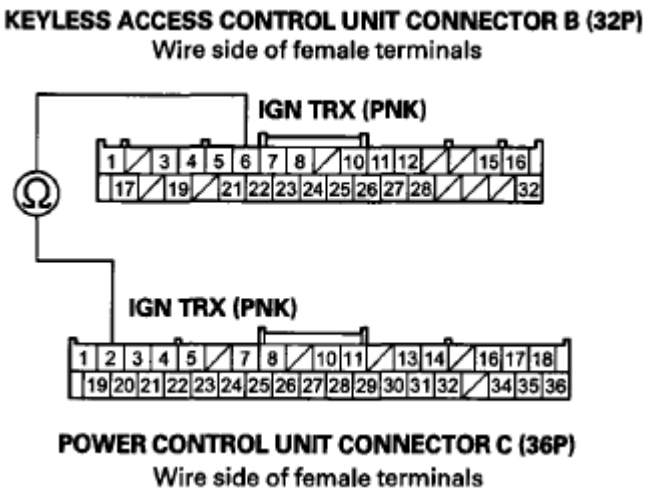


Fig. 130: Checking Continuity Between Keyless Access Control Unit Connector B (32P) Terminal No. 6 And Power Control Unit Connector C (36P) Terminal No. 2
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 40.

NO - Repair an open or high resistance in the wire, and recheck the system.

40. Disconnect the electric steering lock 12P connector.
41. Disconnect keyless access control unit connector A (36P).
42. Check for continuity between keyless access control unit connector A (36P) terminal No. 27 and electric steering lock 12P connector terminal No. 6.

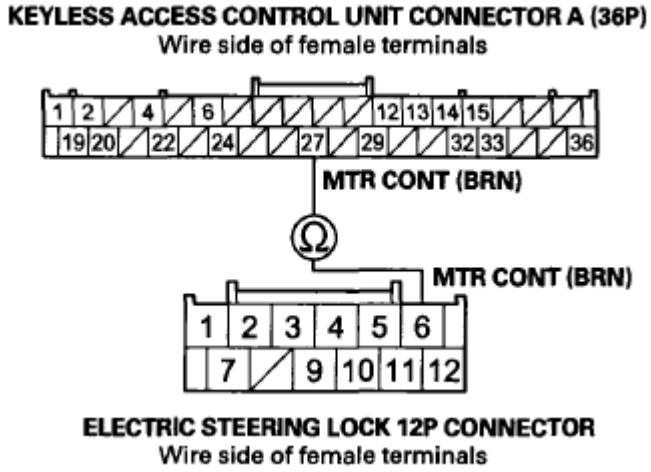


Fig. 131: Checking Continuity Between Keyless Access Control Unit Connector A (36P) Terminal No. 27 And Electric Steering Lock 12P Connector Terminal No. 6
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 43.

NO - Repair an open or high resistance in the wire.

43. Measure the voltage between body ground and keyless access control unit connector B (32P) terminal No. 17.

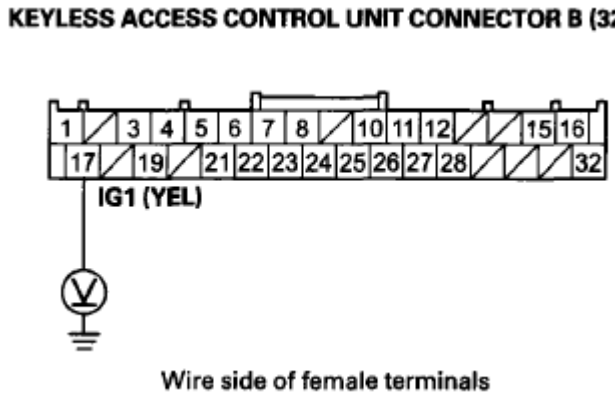


Fig. 132: Measuring Voltage Between Body Ground And Keyless Access Control Unit Connector B (32P) Terminal No. 17
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there voltage?

YES - Repair a short to power in the wire.

NO - Go to step 44.

44. Substitute a known- good remote, then recheck the system.

    Did the symptom go away?

    YES - Replace the original remote.

    NO - Substitute a known- good keyless access control unit. If the symptom goes away, replace the original keyless access control unit (see **KEYLESS ACCESS CONTROL UNIT**). If not, replace the RF unit (see **RF UNIT REPLACEMENT**).

45. Substitute a known- good RF unit (see **RF UNIT REPLACEMENT**), then recheck the system.

    Did the symptom go away?

    YES - Replace the original RF unit (see **RF UNIT REPLACEMENT**).

    NO - Substitute a known- good remote. If the symptom goes away, replace the original remote. If not, replace the keyless access control unit (see **KEYLESS ACCESS CONTROL UNIT**).

CANNOT SELECT ON MODE WITH THE REMOTE IN THE REMOTE SLOT, BUT CAN SELECT ON MODE WITH THE REMOTE REMOVED

1. Turn the keyless access system mode switch OFF.
2. Insert the remote into the remote slot.
3. Press the engine start/stop button to select the ON mode while turning the steering wheel to the left and to the right.

   Does the system change to ON mode?

   YES - The system is OK at this time.

   NO - Go to step 4.

4. Repeat step 3 at least 10 times.

   Does the system change to ON mode?

   YES - The system is OK at this time.

   NO - Go to step 5.

5. Remove the remote from the remote slot.
6. Turn the keyless access system mode switch ON.
7. Press the engine start/stop button to select the ON mode.
8. Connect the HDS to the data link connector (DLC).

9. Select REMOTE SLOT CONTROL UNIT from the ONE-PUSH START system select menu.

   Does the system communicate with the HDS?

   YES - Go to step 10.

   NO - Do the DLC circuit troubleshooting (see **DLC CIRCUIT TROUBLESHOOTING**), and recheck the system. If the symptom does not go away, do the remote slot control unit input test (see **CONTROL UNIT INPUT TEST**).

10. Check for REMOTE SLOT CONTROL UNIT DTCs with the HDS.

    Are any DTCs indicated?

    YES - Troubleshoot the REMOTE SLOT CONTROL UNIT DTCs.

    NO - Go to step 11.

11. Select KEYLESS ACCESS CONTROL UNIT from the ONE-PUSH START system select menu, and enter the SELF CHECK.
12. Select KEYLESS ACCESS CONTROL UNIT from the ONE-PUSH START system select menu, and check for KEYLESS ACCESS CONTROL UNIT DTCs with the HDS.

    Are any DTCs indicated?

    YES - Troubleshoot the KEYLESS ACCESS CONTROL UNIT DTCs.

    NO - Go to step 13.

13. Check for PCU DTCs with the HDS.

    Are any DTCs indicated?

    YES - Troubleshoot the PCU DTCs.

    NO - Go to step 14.

14. Select REMOTE SLOT CONTROL UNIT from the ONE-PUSH START system select menu with the HDS, and enter DATA LIST.
15. Check each REMOTE SLOT CONTROL UNIT value with the DATA LIST menu.

Data List	Value
ENGINE START/STOP SWITCH 1 (+)	OFF
ENGINE START/STOP SWITCH 2 (-)	OFF
SLOT SWITCH FULL	OFF

SLOT SWITCH HALF	OFF
SLOT SWITCH FULL2	OFF

Are all data list values correct?

YES - Go to step 16.

NO - Go to the **REMOTE SLOT CONTROL UNIT INPUT TEST** (see).

16. Insert the remote into the remote slot.
17. Check each REMOTE SLOT CONTROL UNIT value with the DATA LIST menu.

Data List	Value
SLOT SWITCH FULL	ON
SLOT SWITCH HALF	ON
SLOT SWITCH FULL2	ON
+ B SMART	ON
+ B BACKUP	ON

Are all data list values correct?

YES - Go to step 18.

NO - Do the remote slot control unit input test (see **CONTROL UNIT INPUT TEST**).

18. Press the engine start/stop button to select the OFF mode.
19. Disconnect the remote slot control unit 40P connector.
20. Disconnect the engine start/stop switch 10P connector.
21. Check for continuity between engine start/stop switch 10P connector terminals No. 2 and No. 5, and remote slot control unit connector 40P terminals No. 10 and No. 13 respectively.

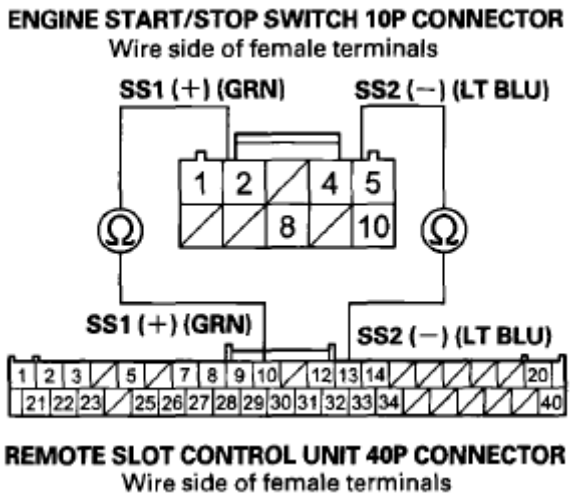


Fig. 133: Checking Continuity Between Engine Start/Stop Switch 10P Connector Terminals And Remote Slot Control Unit Connector 40P Terminals
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 22.

NO - Repair an open or high resistance in the wire.

22. Disconnect the electric steering lock 12P connector.
23. Check for continuity between electric steering lock 12P connector terminals No. 1 and No. 6, and remote slot control unit 40P connector terminals No. 32 and No. 12 respectively.

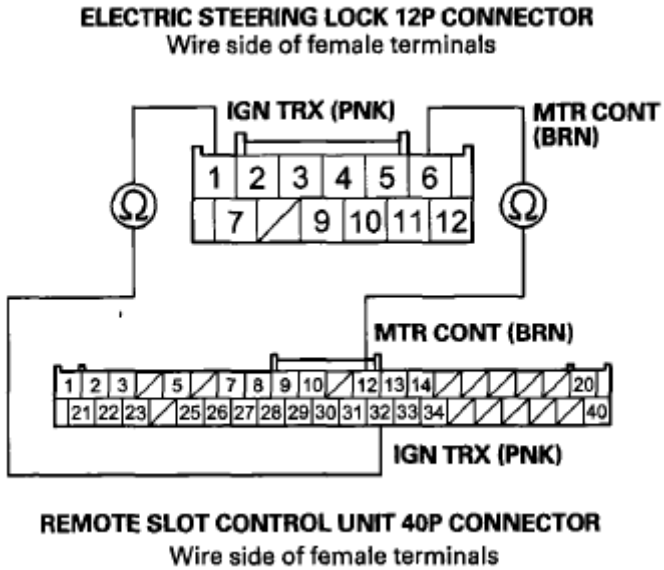


Fig. 134: Checking Continuity Between Electric Steering Lock 12P Connector Terminals And Remote Slot Control Unit 40P Connector Terminals

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 24.

NO - Repair an open or high resistance in the wire.

24. Disconnect the remote slot 16P connector.
25. Check for continuity between remote slot control unit 40P connector terminals and remote slot 16P connector terminals as shown.

Remote slot control unit 40P connector	Remote slot 16P connector
9 (GRY)	2 (GRY)
28(GRN)	11 (GRN)
29 (BRN)	9 (BRN)

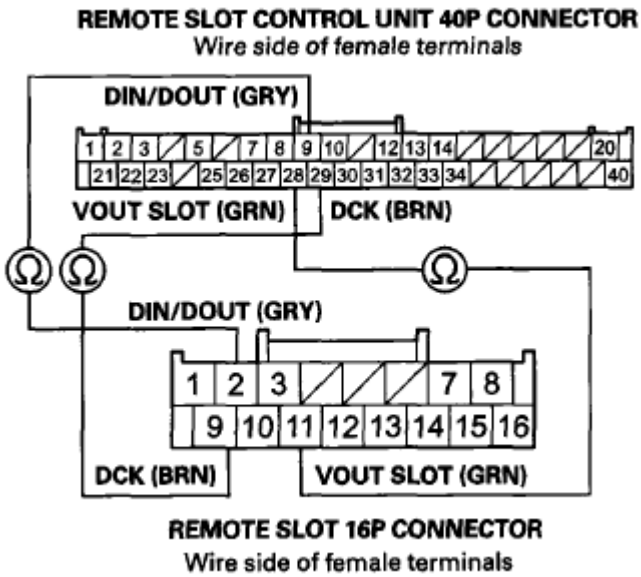


Fig. 135: Checking Continuity Between Remote Slot Control Unit 40P Connector Terminals And Remote Slot 16P Connector Terminals
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 26.

NO - Repair an open or high resistance in the wire.

26. Measure the voltage between body ground and remote slot 16P connector terminal No. 1.

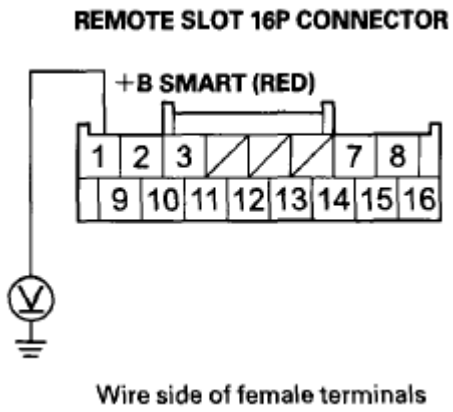


Fig. 136: Measuring Voltage Between Body Ground And Remote Slot 16P Connector Terminal No. 1
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there battery voltage?

YES - Go to step 27.

NO - Repair No. 12 (10 A) fuse in the passenger's under- dash fuse/relay box, or repair an open or high resistance in the wire.

27. Check for continuity between body ground and remote slot 16P connector terminals No. 7 and No. 15 individually.

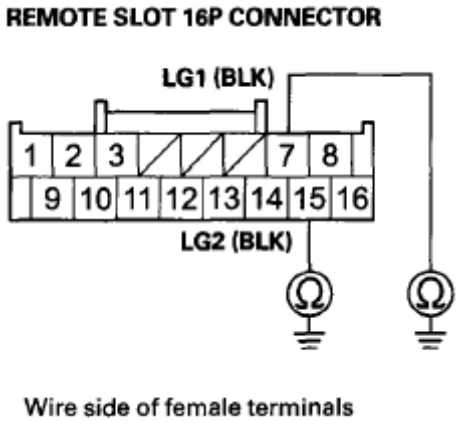


Fig. 137: Checking Continuity Between Body Ground And Remote Slot 16P Connector Terminals No. 7 And No. 15 Individually
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 28.

NO - Repair an open or high resistance in the wire or poor ground (G403).

28. Reconnect these items:
    - Remote slot control unit 40P connector
    - Engine start/stop switch 10P connector
    - Electric steering lock 12P connector
    - Remote slot 16P connector
29. Remove the remote from the remote slot.
30. Connect the HDS to the data link connector (DLC).
31. Press the engine start/stop button to select the ON mode.
32. Select PCU from the ONE-PUSH START system select menu with the HDS, and enter DATA LIST.
33. Wait for at least 10 seconds.
34. Check each PCU value with the DATA LIST menu.

Data List	Value
SLOT SWITCH FULL	OFF
SLOT SWITCH HALF	OFF

Are all data list values correct?

YES - Go to step 35.

NO - Go to the **POWER CONTROL UNIT INPUT TEST** (see).

35. Insert the remote into the remote slot.
36. Wait for at least 10 seconds.
37. Check each PCU value with the DATA LIST menu.

Data List	Value
SLOT SWITCH FULL	ON
SLOT SWITCH HALF	ON

Are all data list values correct?

YES - Go to step 38.

NO - Go to the **POWER CONTROL UNIT INPUT TEST** (see).

38. Press the engine start/stop button to select the OFF mode.
39. Remove all the remotes from inside the vehicle. Place the remotes more than 5 feet away from the vehicle.
40. Disconnect the electric steering lock 12P connector.
41. Reboot the HDS without pressing the engine start/stop button.
42. Select REGISTRATION from the ONE-PUSH START system select menu with the HDS, and enter

REPLACE PCU.

43. Reconnect the electric steering lock 12P connector.
44. Do the registration of PCU according to the instructions on the HDS screen.
45. Take the remote into the vehicle, and press the engine start/stop button to select the ON mode.
46. Clear the PCU DTCs with the HDS.
47. Press the engine start/stop button to select the OFF mode.
48. Insert the remote into the remote slot.
49. Press the engine start/stop button to select the ON mode.
50. Recheck the system.

    Is the system normal?

    YES - System is OK at this time.

    NO - Go to step 51.

51. Substitute a known- good remote slot (see **REMOTE SLOT TEST/REPLACEMENT**), then recheck the system.

    Did the symptom go away?

    YES - Replace the original remote slot (see **REMOTE SLOT TEST/REPLACEMENT**).

    NO - Substitute a known- good remote. If the symptom goes away, replace the original remote. If not, replace the remote slot control unit (see **CONTROL UNIT INPUT TEST**).

THE ENGINE CRANKS BUT WILL NOT START WITH KEYLESS ACCESS OR WITH THE REMOTE IN THE REMOTE SLOT

1. Turn the keyless access system mode switch OFF.
2. Insert the remote into the remote slot.
3. Press the engine start/stop button to select the ON mode.
4. Check the immobilizer indicator.

   Is the immobilizer indicator blinking?

   YES - Go to step 5.

   NO - Go to step 20.

5. Connect the HDS to the data link connector (DLC).
6. Select REMOTE SLOT CONTROL UNIT from the ONE-PUSH START system select menu with the HDS, and enter SYSTEM INFORMATION.
7. Do the SYSTEM CHECK with the HDS.

Is N- 1 OK indicated?

YES - Go to step 8.

NO - Troubleshooting the keyless access system according to the result of the SYSTEM CHECK (see **SYMPTOM TROUBLESHOOTING INFORMATION**).

8. Select REMOTE SLOT CONTROL UNIT from the ONE-PUSH START system select menu with the HDS, and enter DATA LIST.
9. Check the ESL SW B in the DATA LIST.

Is the information indicator ON?

YES - Go to step 10.

NO - Go to step 23.

10. Press the engine start/stop button to select the OFF mode.
11. Remove the remote from the remote slot.
12. Turn the keyless access system mode switch ON.
13. Press the engine start/stop button to select the ON mode.
14. Check the immobilizer indicator.

Is the immobilizer indicator blinking?

YES - Go to step 15.

NO - Go to step 20.

15. Select KEYLESS ACCESS CONTROL UNIT from the ONE-PUSH START system select menu with the HDS, and enter KEYLESS ACCESS CONTROL INFORMATION.
16. Do the SYSTEM CHECK 1 with the HDS.

Is N- 1 OK indicated?

YES - Go to step 17.

NO - Troubleshoot the keyless access system according to the result of the SYSTEM CHECK 1 (see **SYMPTOM TROUBLESHOOTING INFORMATION**).

17. Do the SYSTEM CHECK 2 with the HDS.

Is N- 2 OK indicated?

YES - Go to step 18.

NO - Troubleshoot the keyless access system according to the result of the SYSTEM CHECK 2 (see **SYMPTOM TROUBLESHOOTING INFORMATION**).

18. Select KEYLESS ACCESS CONTROL UNIT from the ONE-PUSH START system select menu with the HDS, and enter DATA LIST.
19. Check the ESL SW B in the DATA LIST.

    Is the indicator ON?

    YES - Go to the PGM- FI system symptom troubleshooting (see **SYMPTOM TROUBLESHOOTING INDEX**).

    NO - Go to step 29.

20. Check the immobilizer indicator.

    Does the indicator come on?

    YES - Go to the PGM- FI system symptom troubleshooting (see **SYMPTOM TROUBLESHOOTING INDEX**).

    NO - Go to step 21.

21. Select GAUGES from the BODY ELECTRICAL SYSTEM SELECT menu with the HDS.
22. Select FUNCTIONAL TESTS from the TEST MODE menu with the HDS, and enter SELF TEST.

    Does the immobilizer indicator come on?

    YES - Go to the PGM- FI system symptom troubleshooting (see **SYMPTOM TROUBLESHOOTING INDEX**).

    NO - Replace the gauge control module (see **GAUGE CONTROL MODULE REPLACEMENT**).

23. Select KEYLESS ACCESS CONTROL UNIT from the ONE-PUSH START system select menu with the HDS, and enter DATA LIST.
24. Check the ESL SW B in the DATA LIST.

    Is the indicator ON?

    YES - Go to step 25.

    NO - Go to step 33.

25. Press the engine start/stop button to select the OFF mode.
26. Disconnect the remote slot control unit 40P connector.
27. Disconnect the electric steering lock 12P connector.

28. Check for continuity between electric steering lock 12P connector terminal No. 11 and remote slot control unit 40P connector terminal No. 30.

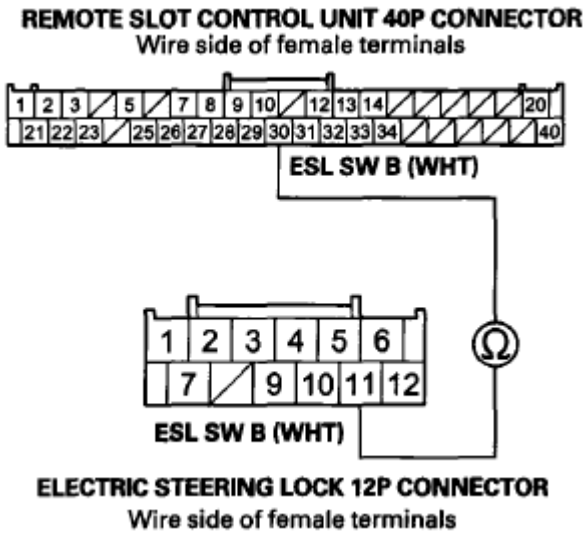


Fig. 138: Checking Continuity Between Electric Steering Lock 12P Connector Terminal No. 11 And Remote Slot Control Unit 40P Connector Terminal No. 30
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Replace the remote slot control unit (see **CONTROL UNIT INPUT TEST**).

NO - Repair an open or high resistance in the wire.

29. Press the engine start/stop button to select the OFF mode.
30. Disconnect keyless access control unit connector C (5P).
31. Disconnect the electric steering lock 12P connector.
32. Check for continuity between electric steering lock 12P connector terminal No. 11 and keyless access control unit connector C (5P) terminal No. 4.

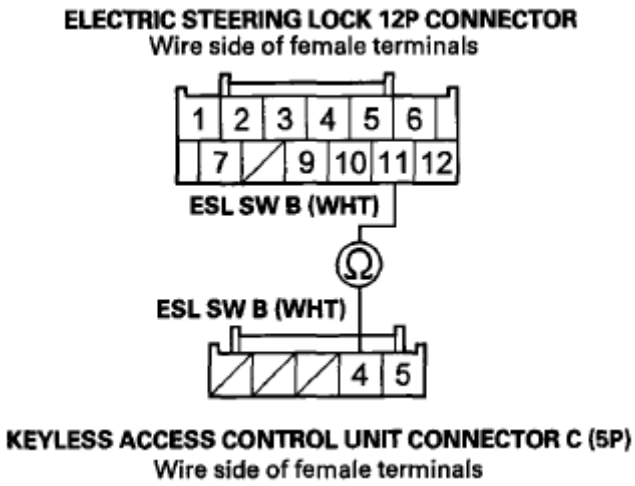


Fig. 139: Checking Continuity Between Electric Steering Lock 12P Connector Terminal No. 11 And Keyless Access Control Unit Connector C (5P) Terminal No. 4
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Replace the keyless access control unit (see **KEYLESS ACCESS CONTROL UNIT**).

NO - Repair an open or high resistance in the wire.

33. Press the engine start/stop button to select the OFF mode.
34. Disconnect the remote slot control unit 40P connector.
35. Disconnect the electric steering lock 12P connector.
36. Check for continuity between electric steering lock 12P connector terminal No. 11 and remote slot control unit 40P connector terminal No. 30.

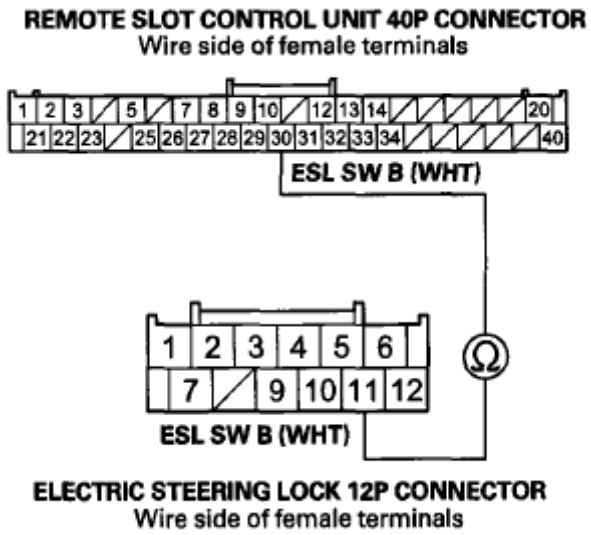


Fig. 140: Checking Continuity Between Electric Steering Lock 12P Connector Terminal No. 11 And

Remote Slot Control Unit 40P Connector Terminal No. 30
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Replace the remote slot control unit (see **CONTROL UNIT INPUT TEST**).

NO - Repair an open or high resistance in the wire.

THE ENGINE CRANKS BUT WILL NOT START WITH KEYLESS ACCESS

1. Turn the keyless access system mode switch ON.
2. Remove the remote from the remote slot.
3. Press the engine start/stop button to select the ON mode.
4. Check the immobilizer indicator.

   Is the immobilizer indicator blinking?

   YES - Go to step 5.

   NO - Go to step 15.

5. Connect the HDS to the data link connector (DLC).
6. Select KEYLESS ACCESS CONTROL UNIT from the ONE-PUSH START system select menu with the HDS, and enter SYSTEM INFORMATION.
7. Do the SYSTEM CHECK 1 with the HDS.

   Is N- 1 OK indicated?

   YES - Go to step 8.

   NO - Troubleshooting the keyless access system according to the result of the SYSTEM CHECK 1 (see **SYMPTOM TROUBLESHOOTING INFORMATION**).

8. Do the SYSTEM CHECK 2 with the HDS.

   Is N- 2 OK indicated?

   YES - Go to step 9.

   NO - Troubleshoot the keyless access system according to the result of the SYSTEM CHECK 2 (see **SYMPTOM TROUBLESHOOTING INFORMATION**).

9. Select KEYLESS ACCESS CONTROL UNIT from the ONE-PUSH START system select menu with the HDS, and enter DATA LIST.
10. Check the ESL SW B in the DATA LIST.

Is the indicator ON?

YES - Substitute a known- good ECM/PCM (see **SUBSTITUTING THE ECM/PCM**) and recheck. If the symptom goes away, replace the original ECM/PCM (see **ECM/PCM REPLACEMENT**). If not, replace the keyless access control unit (see **KEYLESS ACCESS CONTROL UNIT**).

NO - Go to step 11.

11. Press the engine start/stop button to select the OFF mode.
12. Disconnect keyless access control unit connector C (5P).
13. Disconnect the electric steering lock 12P connector.
14. Check for continuity between electric steering lock 12P connector terminal No. 11 and keyless access control unit connector C (5P) terminal No. 4.

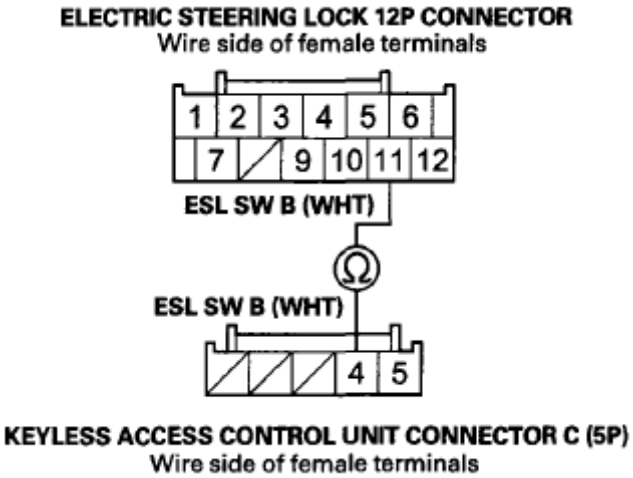


Fig. 141: Checking Continuity Between Electric Steering Lock 12P Connector Terminal No. 11 And Keyless Access Control Unit Connector C (5P) Terminal No. 4
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Replace the keyless access control unit (see **CONTROL UNIT INPUT TEST**).

NO - Repair an open or high resistance in the wire.

15. Check the immobilizer indicator.

Does the indicator come on?

YES - Go to the PGM- FI system symptom troubleshooting (see **SYMPTOM TROUBLESHOOTING INDEX**).

NO - Go to step 16.

16. Select GAUGES from the BODY ELECTRICAL SYSTEM SELECT menu with the HDS.
17. Select FUNCTIONAL TESTS from the TEST MODE menu with the HDS, and enter SELF TEST.

    Does the immobilizer indicator come on?

    YES - Go to the PGM- FI system symptom troubleshooting (see **SYMPTOM TROUBLESHOOTING INDEX**).

    NO - Replace the gauge control module (see **GAUGE CONTROL MODULE REPLACEMENT**).

THE ENGINE CRANKS BUT WILL NOT START WITH THE REMOTE IN THE REMOTE SLOT

1. Turn the keyless access system mode switch OFF.
2. Insert the remote into the remote slot.
3. Press the engine start/stop button to select the ON mode.
4. Check the immobilizer indicator.

   Does the indicator blink once, then stay off?

   YES - Go to the PGM- FI system symptom troubleshooting (see **SYMPTOM TROUBLESHOOTING INDEX**).

   NO - Go to step 5.

5. Check the immobilizer indicator.

   Is the immobilizer indicator blinking?

   YES - Go to step 6.

   NO - Go to step 15.

6. Connect the HDS to the data link connector (DLC).
7. Select REMOTE SLOT CONTROL UNIT from the ONE-PUSH START system select menu with the HDS, and enter SYSTEM INFORMATION.
8. Do the SYSTEM CHECK with the HDS.

   Is N- 1 OK indicated?

   YES - Go to step 9.

   NO - Troubleshooting the keyless access system according to the result of the SYSTEM CHECK (see **SYMPTOM TROUBLESHOOTING INFORMATION**).

9. Select REMOTE SLOT CONTROL UNIT from the ONE-PUSH START system select menu with the

HDS, and enter DATA LIST.

10. Check the ESL SW B in the DATA LIST.

    Is the indicator ON?

    YES - Substitute a known- good ECM/PCM (see **SUBSTITUTING THE ECM/PCM**) and recheck. If the symptom goes away, replace the original ECM/PCM (see **ECM/PCM REPLACEMENT**). If not, replace the remote slot control unit (see **CONTROL UNIT INPUT TEST**).

    NO - Go to step 11.

11. Press the engine start/stop button to select the OFF mode.
12. Disconnect the remote slot control unit 40P connector.
13. Disconnect the electric steering lock 12P connector.
14. Check for continuity between electric steering lock 12P connector terminal No. 11 and remote slot control unit 40P connector terminal No. 30.

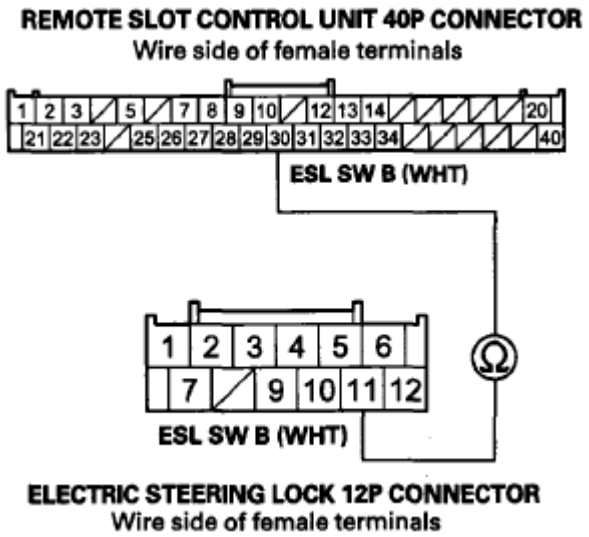


Fig. 142: Checking Continuity Between Electric Steering Lock 12P Connector Terminal No. 11 And Remote Slot Control Unit 40P Connector Terminal No. 30
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Replace the remote slot control unit (see **CONTROL UNIT INPUT TEST**).

NO - Repair an open or high resistance in the wire.

15. Select GAUGES from the BODY ELECTRICAL SYSTEM SELECT menu with the HDS.
16. Select FUNCTIONAL TESTS from the TEST MODE menu with the HDS, and enter SELF TEST.

Does the immobilizer indicator come on?

YES - Go to the PGM- FI system symptom troubleshooting (see **SYMPTOM TROUBLESHOOTING INDEX**).

NO - Replace the gauge control module (see **GAUGE CONTROL MODULE REPLACEMENT**), and recheck.

ALL THE DOORS AND THE TRUNK WILL NOT LOCK AND UNLOCK

1. Insert the remote into the remote slot.

   Does the remote go in?

   YES - Go to step 2.

   NO - Go to keyless access symptom troubleshooting "**REMOTE WILL NOT GO INTO THE REMOTE SLOT**" (see).

2. Remove the remote from the remote slot, and close all doors.
3. Push the LOCK and the UNLOCK buttons of the remote, and check if the LED on the remote comes on.

   Does the LED come on?

   YES - Go to step 4.

   NO - Replace the remote battery and recheck the system. If the symptom does not go away, replace the remote.

4. Lock and unlock the driver's door with the driver's door lock switch.

   Do the door lock actuators work normally?

   YES - Go to step 5.

   NO - Check the B- CAN system DTCs. If not, check the door lock system.

5. Lock and unlock the front passenger's door with the front passenger's door lock switch.

   Do the door lock actuators work normally?

   YES - Go to step 6.

   NO - Check the B- CAN system DTCs. If not, check the door lock system.

6. Push the UNLOCK button of the remote at least 10 times.

Do the actuators operate?

YES - Intermittent failure, the system is OK at this time.

NO - Go to step 7.

7. Open the driver's door.

   Does the key- in reminder sound?

   YES - Go to the keyless access system symptom troubleshooting "**THE KEY- IN REMINDER SOUNDS WHEN THE REMOTE IS REMOVED FROM THE REMOTE SLOT AND DOOR IS OPEN**" (see).

   NO - Go to step 8.

8. Turn the keyless access system mode switch ON.
9. Press the engine start/stop button to select the ON mode.

   Does the system change to ON mode?

   YES - Go to step 12.

   NO - Go to step 10.

10. Insert the remote into the remote slot.
11. Press the engine start/stop button to select the ON mode.

    Does the system change to ON mode?

    YES - Go to the keyless access system symptom troubleshooting "**CANNOT SELECT ON MODE WITH KEYLESS ACCESS, BUT CAN SELECT ON MODE WITH THE REMOTE IN THE REMOTE SLOT**".

    NO - Go to the keyless access system symptom troubleshooting "**CANNOT SELECT ON MODE WITH KEYLESS ACCESS OR WITH THE REMOTE IN THE REMOTE SLOT**".

12. Connect the HDS to the data link connector (DLC).
13. Check for DTCs with the HDS.

    Are any DTCs indicated?

    YES - Go to the indicated **DTCS TROUBLESHOOTING**.

    NO - Go to step 14.

14. Select KEYLESS ACCESS CONTROL UNIT from the ONE-PUSH START system select menu with the HDS, and enter HISTORY CLEAR.
15. Select HISTORY DATA with the HDS.
16. Insert the remote into the remote slot, then check the HISTORY DATA.

HISTORY DATA

SLOT SWITCH FULL	OK
SLOT SWITCH HALF	OK
SLOT SWITCH FULL2	OK

Is all the information OK?

YES - Go to step 17.

NO - Go to step 19.

17. Select KEYLESS ACCESS CONTROL UNIT from the ONE-PUSH START system select menu with the HDS, then enter SELF CHECK.
18. Select KEYLESS ACCESS CONTROL UNIT from the ONE-PUSH START system select menu, and check for KEYLESS ACCESS CONTROL UNIT DTCs with the HDS.

Are any DTCs indicated?

YES - Troubleshoot the KEYLESS ACCESS CONTROL UNIT DTCs.

NO - Go to the driver's MICU input test, and do all power, ground, and communication input tests (see **MICU INPUT TEST**). If the tests prove OK, replace the driver's under- dash fuse/relay box (see **DRIVER'S UNDER- DASH FUSE/RELAY BOX (MICU) REMOVAL AND INSTALLATION**).

19. Press the engine start/stop button to select the OFF mode.
20. Remove the remote from the remote slot.
21. Disconnect the remote slot 16P connector.
22. Close all doors.
23. Push the UNLOCK button of the remote.

Do the door lock actuators work normally?

YES - Replace the remote slot (see **REMOTE SLOT TEST/REPLACEMENT**).

NO - Replace the keyless access control unit (see **CONTROL UNIT INPUT TEST**).

THE DOORS WILL NOT UNLOCK OR LOCK WITH THE REMOTE, BUT WILL UNLOCK OR LOCK WITH THE DOOR OUTER HANDLES

1. Remove the remote from the remote slot, and close all doors.

2. Push the UNLOCK button of the remote, at least 10 times.

   Do the door lock actuators work normally?

   YES - Intermittent failure, the system is OK at this time.

   NO - Go to step 3.

3. Open the driver's door.

   Does the key- In reminder sound?

   YES - Go to keyless access symptom troubleshooting "**KEY- IN REMINDER SOUNDS IS REMOVED FROM THE REMOTE SLOT AND DOOR IS OPEN**".

   NO - Go to step 4.

4. Turn the keyless access system mode switch ON.
5. Press the engine start/stop button to select the ON mode.

   Does the system change to ON mode?

   YES - Go to step 8.

   NO - Go to step 6.

6. Insert the remote into the remote slot.
7. Press the engine start/stop button to select the ON mode.

   Does the system change to ON mode?

   YES - Go to the keyless access system symptom troubleshooting "**CANNOT SELECT ON MODE WITH KEYLESS ACCESS, BUT CAN SELECT ON MODE WITH THE REMOTE IN THE REMOTE SLOT**".

   NO - Go to the keyless access system symptom troubleshooting "**CANNOT SELECT ON MODE WITH KEYLESS ACCESS OR WITH THE REMOTE IN THE REMOTE SLOT**".

8. Connect the HDS to the data link connector (DLC).
9. Check for DTCs with the HDS.

   Are any DTCs indicated?

   YES - Go to the indicated **DTCS TROUBLESHOOTING**.

   NO - Go to step 10.

10. Select KEYLESS ACCESS CONTROL UNIT from the ONE-PUSH START system select menu with the HDS, and enter HISTORY CLEAR.
11. Select HISTORY DATA with the HDS.
12. Insert the remote into the remote slot, then check the HISTORY DATA.

HISTORY DATA

SLOT SWITCH FULL	OK
SLOT SWITCH HALF	OK
SLOT SWITCH FULL2	OK

Is all the information OK?

YES - Go to step 13.

NO - Go to step 20.

13. Select KEYLESS ACCESS CONTROL UNIT from the ONE-PUSH START system select menu with the HDS, then enter SELF CHECK.
14. Select KEYLESS ACCESS CONTROL UNIT from the ONE-PUSH START system select menu, and check for KEYLESS ACCESS CONTROL UNIT DTCs.

Are any DTCs indicated?

YES - Troubleshoot the KEYLESS ACCESS CONTROL UNIT DTCs.

NO - Go to step 15.

15. Select KEYLESS TRANSMITTER from the BODY ELECTRICAL SYSTEM SELECT menu, then select INSPECTION, then KEYLESS CHECK.
16. Do the KEYLESS CHECK with the HDS using the remote.

Is DIFFERENT KEYLESS ENTRY TRANSMITTER CODE RECEIVED indicated?

YES - Register all the remotes, and recheck.

NO - Go to step 17.

17. Do the KEYLESS CHECK with the HDS using the remote.

Is DIFFERENT KEYLESS ENTRY TRANSMITTER CODE RECEIVED indicated?

YES - Go to step 18.

NO - Register the remote, and recheck. If the symptom does not go away, replace the remote.

18. Press the engine start/stop button to select the OFF mode, and close all doors.
19. Lock and unlock the driver's door of the driver's door lock switch, and lock and unlock the front passenger's door of the front passenger's door lock switch.

    Do the door lock actuators work normally?

    YES - Go to the driver's MICU input test, and do all power, ground, and communication input tests (see **MICU INPUT TEST**). If the tests prove OK, replace the driver's under- dash fuse/relay box (see **DRIVER'S UNDER- DASH FUSE/RELAY BOX (MICU) REMOVAL AND INSTALLATION**).

    NO - Check the B- CAN system DTCs. If not, check the door lock system.

20. Press the engine start/stop button to select the OFF mode.
21. Remove the remote from the remote slot.
22. Disconnect the remote slot 16P connector.
23. Close all doors, and push the UNLOCK button of the remote.

    Do the door lock actuators work normally?

    YES - Replace the remote slot (see **REMOTE SLOT TEST/REPLACEMENT**).

    NO - Replace the keyless access control unit (see **CONTROL UNIT INPUT TEST**).

THE DOORS WILL NOT UNLOCK OR LOCK WITH THE DOOR OUTER HANDLE TOUCH SENSOR OR LOCK SWITCH, BUT WILL UNLOCK OR LOCK WITH THE REMOTE

1. Turn the keyless access system mode switch ON.
2. Remove the remote from the remote slot.
3. Press the engine start/stop button to select the ON mode.

    Does the system change to ON mode?

    YES - Go to step 4.

    NO - Go to the keyless access system symptom troubleshooting "**CANNOT SELECT ON MODE WITH KEYLESS ACCESS, BUT CAN SELECT ON MODE WITH THE REMOTE IN THE REMOTE SLOT**".

4. Connect the HDS to the data link connector (DLC).
5. Select KEYLESS ACCESS CONTROL UNIT from the ONE-PUSH START system select menu with the HDS, then enter SELF CHECK.
6. Select KEYLESS ACCESS CONTROL UNIT from the ONE-PUSH START system select menu, and check for KEYLESS ACCESS CONTROL UNIT DTCs with the HDS.

    Are any DTCs indicated?

YES - Troubleshoot the KEYLESS ACCESS CONTROL UNIT DTCs.

NO - Go to step 7.

7. Select KEYLESS ACCESS CONTROL UNIT from the ONE-PUSH START system select menu with the HDS, and enter HISTORY CLEAR.
8. Select HISTORY DATA with the HDS.
9. Touch the driver's and the front passenger's door outer handle touch sensors, then check the HISTORY DATA.

HISTORY DATA

DRIVER DOOR UNLOCK SWITCH	OK
FRONT PASSENGER DOOR UNLOCK SWITCH	OK

Is all the information OK?

YES - Go to step 10.

NO - Go to step 13.

10. Push the driver's and the front passenger's door outer handle lock buttons, then check the HISTORY DATA.

HISTORY DATA

DRIVER DOOR UNLOCK SWITCH	OK
FRONT PASSENGER DOOR LOCK SWITCH	OK

Is all the information OK?

YES - Go to step 11.

NO - Go to step 18.

11. Press the engine start/stop button to select the OFF mode, and close all doors.
12. Lock and unlock the driver's door with the driver's door lock switch, and lock and unlock the front passenger's door with the front passenger's door lock switch.

Do the door lock actuators work normally?

YES - Go to the driver's MICU input test, and do all power, ground, and communication input tests (see **MICU INPUT TEST**). If the tests prove OK, replace the driver's under- dash fuse/relay box (see **DRIVER'S UNDER- DASH FUSE/RELAY BOX (MICU) REMOVAL AND INSTALLATION**).

NO - Check the B- CAN system DTCs. If not, check the door lock system.

13. Disconnect the faulty door outer handle touch sensor 8P connector.

14. Measure the voltage between driver's (or front passenger's)* door outer handle touch sensor 8P connector terminals No. 1 and No. 5.

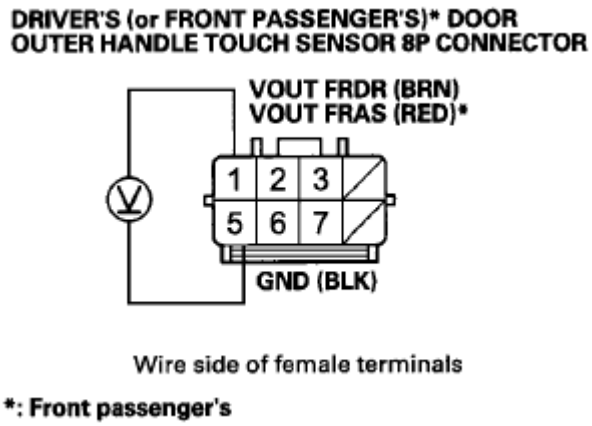


Fig. 143: Measuring Voltage Between Driver's (Or Front Passenger's) Door Outer Handle Touch Sensor 8P Connector Terminals No. 1 And No. 5 With Connector End View
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there battery voltage?

YES - Go to step 15.

NO - Go to step 23.

15. Select KEYLESS ACCESS CONTROL UNIT from the ONE-PUSH START system select menu with the HDS, and enter HISTORY CLEAR.
16. Connect driver's (or front passenger's)* door outer handle touch sensor 8P connector terminals No. 6 to body ground with a jumper wire.

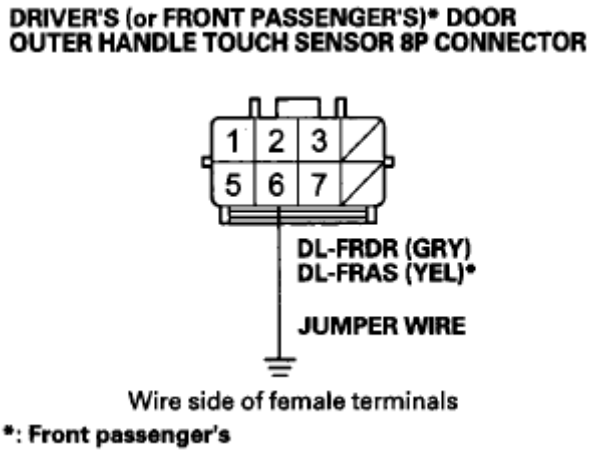


Fig. 144: Connecting Driver's (Or Front Passenger's) Door Outer Handle Touch Sensor 8P Connector Terminals No. 6 To Body Ground With Jumper Wire
Courtesy of AMERICAN HONDA MOTOR CO., INC.

17. Check the HISTORY DATA with the HDS.

HISTORY DATA

DRIVER DOOR UNLOCK SWITCH	OK
FRONT PASSENGER DOOR UNLOCK SWITCH	OK

Is all the information OK?

YES - Replace the faulty door outer handle (see **FRONT DOOR OUTER HANDLE REPLACEMENT**).

NO - Go to step 29.

18. Disconnect the faulty door outer handle touch sensor 8P connector.
19. Measure the voltage between driver's (or front passenger's)* door outer handle touch sensor 8P connector terminals No. 1 and No. 5.

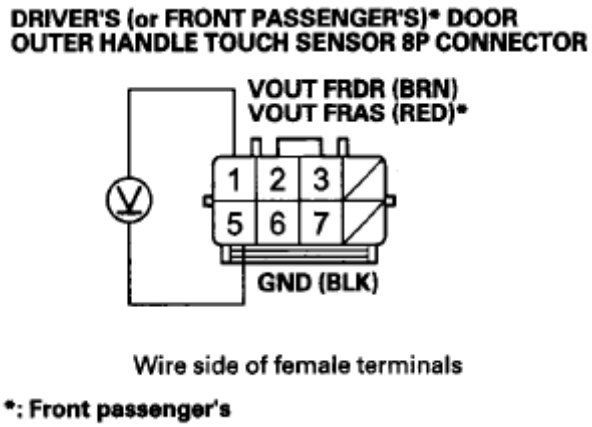


Fig. 145: Measuring Voltage Between Driver's (Or Front Passenger's) Door Outer Handle Touch Sensor 8P Connector Terminals No. 1 And No. 5
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there battery voltage?

YES - Go to step 20.

NO - Go to step 23.

20. Select KEYLESS ACCESS CONTROL UNIT from the ONE-PUSH START system select menu with the HDS, and enter HISTORY CLEAR.
21. Connect driver's (or front passenger's)* door outer handle touch sensor 8P connector terminals No. 6 to body ground with a jumper wire.

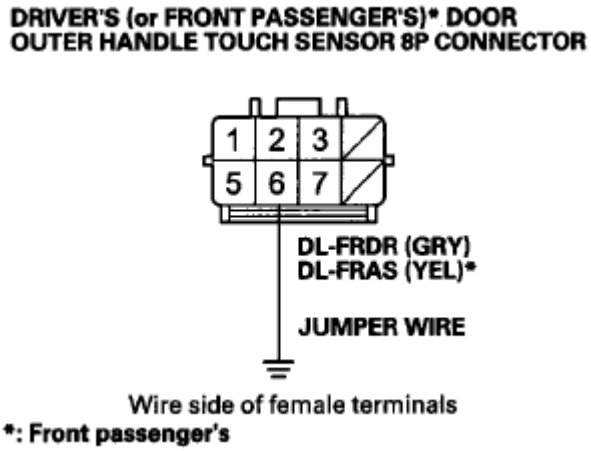


Fig. 146: Connecting Driver's (Or Front Passenger's) Door Outer Handle Touch Sensor 8P Connector Terminals No. 6 To Body Ground With Jumper Wire
Courtesy of AMERICAN HONDA MOTOR CO., INC.

22. Check the HISTORY DATA with the HDS.

HISTORY DATA

DRIVER DOOR LOCK SWITCH	OK
FRONT PASSENGER DOOR LOCK SWITCH	OK

Is all the information OK?

YES - Replace the faulty door outer handle (see **FRONT DOOR OUTER HANDLE REPLACEMENT**).

NO - Go to step 33.

23. Check for continuity between body ground and driver's (or front passenger's)* door outer handle touch sensor 8P connector terminal No. 5.

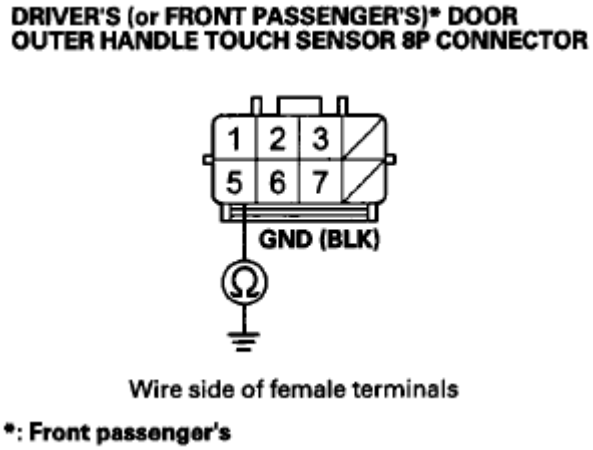


Fig. 147: Checking Continuity Between Body Ground And Driver's (Or Front Passenger's) Door Outer Handle Touch Sensor 8P Connector Terminal No. 5
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 24.

NO - Repair an open or high resistance in the wire or poor ground (G401: driver's, G405: front passenger's).

24. Disconnect keyless access control unit connector A (36P).
25. Check for continuity between keyless access control unit connector A (36P) terminals and driver's (or front passenger's)* door outer handle touch sensor 8P connector terminals as shown.

Keyless access control unit connector	Door outer handle touch sensor 8P connector
A32 (driver's)	1 (driver's)
A29 (front passenger's)	1 (front passenger's)

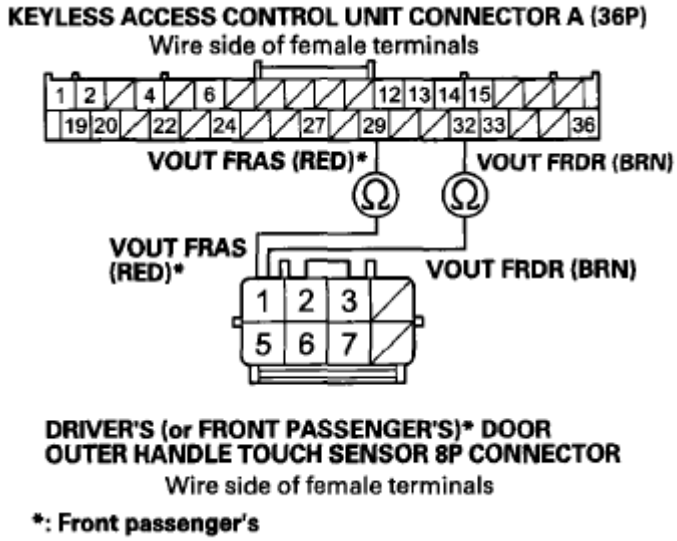


Fig. 148: Checking Continuity Between Keyless Access Control Unit Connector A (36P) Terminals And Driver's (Or Front Passenger's) Door Outer Handle Touch Sensor 8P Connector Terminals
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 26.

NO - Repair an open or high resistance in the wire.

26. Check for continuity between body ground and driver's (or front passenger's)* door outer handle touch sensor 8P connector terminals No. 1 and No. 5.

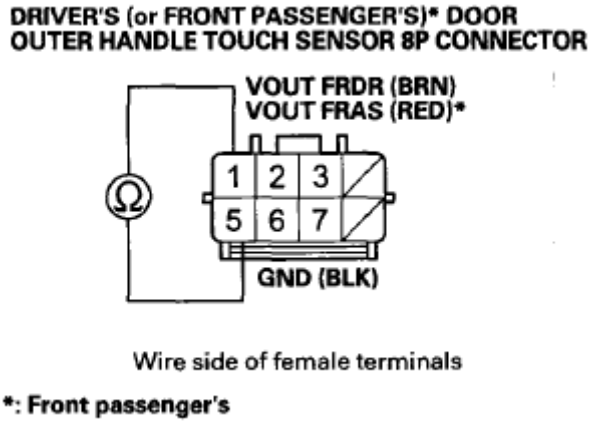


Fig. 149: Checking Continuity Between Body Ground And Driver's (Or Front Passenger's) Door Outer Handle Touch Sensor 8P Connector Terminals No. 1 And No. 5
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair a short to ground in the wire.

NO - Go to step 27.

27. Disconnect keyless access control unit connector B (32P).
28. Measure the voltage between body ground and keyless access control unit connector B (32P) terminal No. 1.

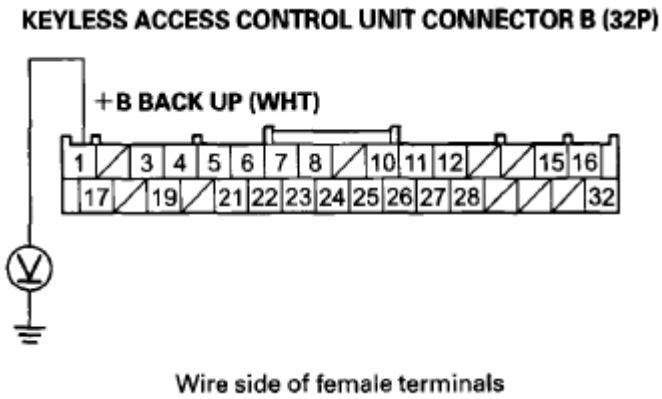


Fig. 150: Measuring Voltage Between Body Ground And Keyless Access Control Unit Connector B (32P) Terminal No. 1
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there battery voltage?

YES - Replace the keyless access control unit (see **CONTROL UNIT INPUT TEST**).

NO - Check the No. 15 (10 A) fuse in the under- hood fuse/relay box. If the fuse is OK, repair an open or

high resistance in the wire.

29. Disconnect keyless access control unit connector B (32P).
30. Disconnect the faulty door outer handle touch sensor 8P connector.
31. Check for continuity between keyless access control unit connector B (32P) terminals and driver's (or front passenger's)* door outer handle touch sensor 8P connector terminals as shown.

Keyless access control unit connector	Door outer handle touch sensor 8P connector
B25 (driver's)	2 (driver's)
B22 (front passenger's)	2 (front passenger's)

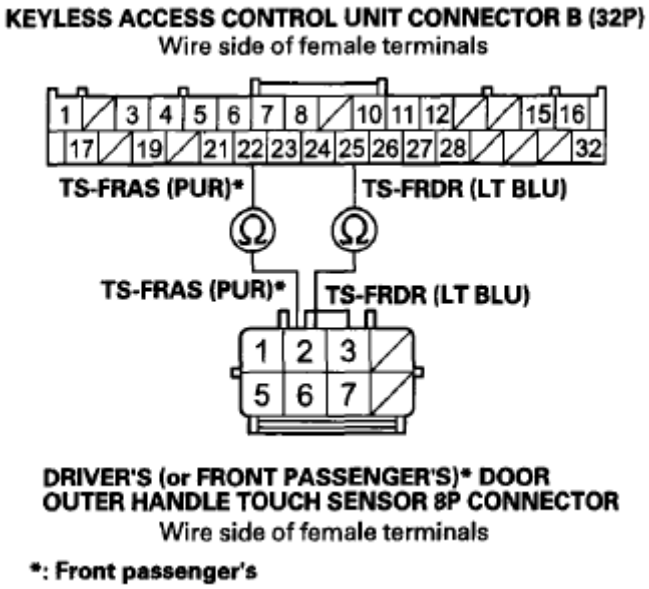


Fig. 151: Checking Continuity Between Keyless Access Control Unit Connector B (32P) Terminals And Driver's (Or Front Passenger's) Door Outer Handle Touch Sensor 8P Connector Terminals
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 32.

NO - Repair an open or high resistance in the wire.

32. Measure the voltage between body ground and keyless access control unit connector B (32P) terminal No. 1.

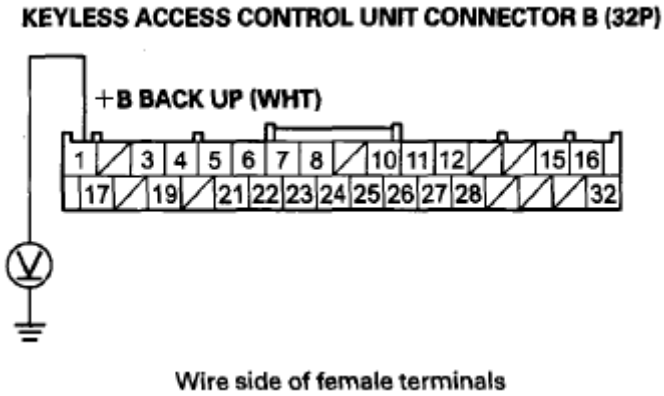


Fig. 152: Measuring Voltage Between Body Ground And Keyless Access Control Unit Connector B (32P) Terminal No. 1
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there battery voltage?

YES - Replace the keyless access control unit (see **CONTROL UNIT INPUT TEST**).

NO - Check the No. 15 (10 A) fuse in the under- hood fuse/relay box. If the fuse is OK, repair an open or high resistance in the wire.

33. Remove the jumper wire from the touch sensor.
34. Disconnect keyless access control unit connector B (32P).
35. Check for continuity between keyless access control unit connector B (32P) terminals and driver's (or front passenger's)* door outer handle touch sensor 8P connector terminals as shown.

Keyless access control unit connector	Door outer handle touch sensor 8P connector
B26 (driver's)	6 (driver's)
B23 (front passenger's)	6 (front passenger's)

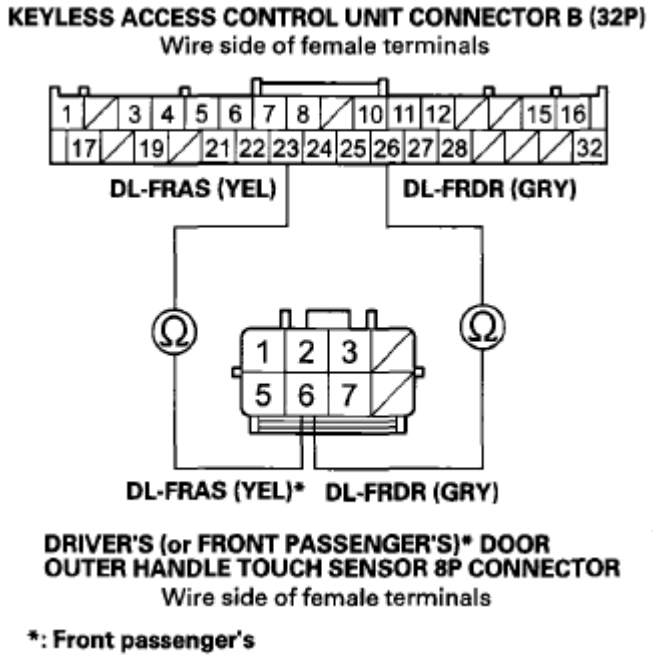


Fig. 153: Checking Continuity Between Keyless Access Control Unit Connector B (32P) Terminals And Driver's (Or Front Passenger's) Door Outer Handle Touch Sensor 8P Connector Terminals
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 36.

NO - Repair an open or high resistance in the wire.

36. Measure the voltage between body ground and keyless access control unit connector B (32P) terminal No. 1.

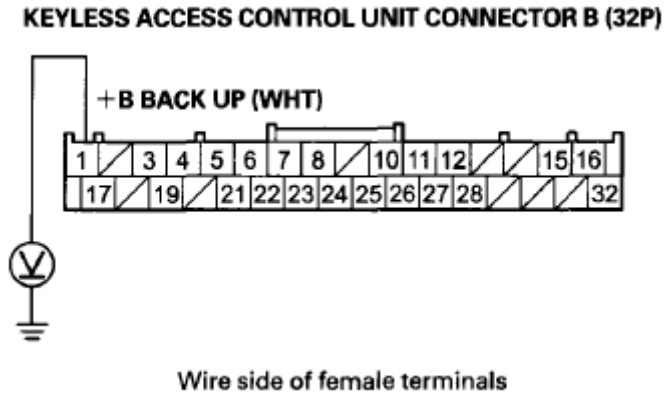


Fig. 154: Measuring Voltage Between Body Ground And Keyless Access Control Unit Connector B (32P) Terminal No. 1
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there battery voltage?

YES - Replace the keyless access control unit (see **CONTROL UNIT INPUT TEST**).

NO - Check the No. 15 (10 A) fuse in the under- hood fuse/relay box. If the fuse is OK, repair an open or high resistance in the wire.

THE DOORS WILL NOT UNLOCK (LOCK IS NORMAL) WITH KEYLESS ACCESS OR WITH THE REMOTE BUTTONS, OR THE DOORS WILL NOT LOCK (UNLOCK IS NORMAL) WITH KEYLESS ACCESS OR WITH THE REMOTE BUTTONS

The doors will not unlock under the following conditions:

- When the remote is far from the vehicle.
- When the operation is made without the remote.
- When the remote is inserted into the remote slot.
- When the doors are already unlocked.
- When the vehicle speed signal is detected.

The doors will not lock under the following conditions:

- When the remote is far from the vehicle.
- When the operation is made without the remote.
- When the remote is inserted into the remote slot.
- When the doors are already open.
- When the vehicle is in ACC or ON modes.

1. Select HISTORY CLEAR from the ONE-PUSH START system select menu with the HDS.
2. Select HISTORY DATA from the ONE-PUSH START system select menu with the HDS.
3. Touch the each door outer handle touch sensor and push the lock button, then check the HISTORY DATA.

HISTORY DATA

DRIVER DOOR UNLOCK SWITCH	OK
DRIVER DOOR LOCK SWITCH	OK
FRONT PASSENGER DOOR UNLOCK SWITCH	OK
FRONT PASSENGER DOOR LOCK SWITCH	OK

Is all the information OK?

YES - Go to step 4.

NO - Go to the **TOUCH SENSOR CIRCUIT TROUBLESHOOTING**.

4. Remove the remote from the remote slot, get out of the vehicle with the remote, and close all doors.
5. Push the UNLOCK button of the remote at least 10 times.

   Do the door lock actuators work normally?

   YES - Go to step 6.

   NO - Go to step 10.

6. Push the LOCK button of the remote at least 10 times.

   Do the door lock actuators work normally?

   YES - Intermittent failure, the system is OK at this time.

   NO - Go to step 7.

7. Push the LOCK and the UNLOCK buttons of the remote, and check if the LED come on.

   Does the LED come on?

   YES - Go to step 8.

   NO - Replace the remote battery and recheck the system. If the symptom does not go away, replace the remote.

8. Select DOOR LOCKS from the BODY ELECTRICAL SYSTEM SELECT menu with the HDS.
9. Check each door switch value with the DATA LIST menu.

   WITH ALL DOORS CLOSED

Data List	Value
Driver's door switch	OFF
Front passenger's door switch	OFF
Left rear door switch	OFF
Right rear door switch	OFF

   Are all data list values correct?

   YES - Replace the driver's under- dash fuse/relay box (see **DRIVER'S UNDER- DASH FUSE/RELAY BOX (MICU) REMOVAL AND INSTALLATION**).

   NO - Check the each door switch circuit and recheck.

10. Push the LOCK button of the remote at least 10 times.

Do the door lock actuators work normally?

YES - Go to step 11.

NO - Go to the keyless access system symptom troubleshooting "**ALL THE DOORS AND THE TRUNK WILL NOT LOCK AND UNLOCK**".

11. Push the LOCK and the UNLOCK buttons of the remote, and check if the LED come on.

    Does the LED come on?

    YES - Replace the keyless access control unit (see **CONTROL UNIT INPUT TEST**).

    NO - Replace the remote battery and recheck the system. If the symptom not goes away, replace the remote.

KEYLESS ACCESS INDICATOR DOES NOT GO OFF OR DOES NOT COME ON

1. Press the engine start/stop button to select the OFF mode.
2. Press the engine start/stop button to select the ON mode.
3. Check the keyless access indicator.

   Does the keyless access indicator come on for 2 seconds?

   YES - Go to step 4.

   NO - Go the indicator drive circuit check (see **SELF- DIAGNOSTIC FUNCTION**). If the indicator does not come on, replace the gauge control module (see **GAUGE CONTROL MODULE REPLACEMENT**).

4. Check the immobilizer indicator.

   Does the indicator blink once, then stay off?

   YES - Intermittent failure, the system is OK at this time.

   NO - Go to step 5.

5. Check for DTCs in the PCU, SLOT UNIT and KEYLESS ACCESS CONTROL UNIT with the HDS.

   Are there any DTCs?

   YES - Go to the indicated **DTCS TROUBLESHOOTING**.

   NO - Go to step 6.

6. Press the engine start/stop button to select the OFF mode.

7. Disconnect keyless access control unit connector B (32P).
8. Wait for at least 30 seconds.
9. Press the engine start/stop button to select the ON mode.

Does the keyless access indicator go off?

YES - Go to step 10.

NO - Replace the keyless access control unit (see **CONTROL UNIT INPUT TEST**).

10. Press the engine start/stop button to select the OFF mode.
11. Reconnect keyless access control unit connector B (32P).
12. Disconnect the remote slot control unit 40P connector.
13. Wait for at least 30 seconds.
14. Press the engine start/stop button to select the ON mode.

Does the keyless access indicator go off?

YES - Go to step 15.

NO - Replace the remote slot control unit (see **CONTROL UNIT INPUT TEST**).

15. Press the engine start/stop button to select the OFF mode.
16. Reconnect the remote slot control unit 40P connector.
17. Disconnect power control unit connector C (36P).
18. Wait for at least 30 seconds.
19. Press the engine start/stop button to select the ON mode.

Does the keyless access indicator go off?

YES - Replace the gauge control module (see **GAUGE CONTROL MODULE REPLACEMENT**).

NO - Replace the power control unit (see **CONTROL UNIT INPUT TEST**).

IMMOBILIZER INDICATOR DOES NOT GO OFF OR DOES NOT COME ON

1. Press the engine start/stop button to select the OFF mode.
2. Press the engine start/stop button to select the ON mode.
3. Check the immobilizer indicator.

Does the immobilizer indicator come on?

YES - Go to step 4.

NO - Go to step 9.

4. Check the immobilizer indicator.

   Does the indicator come on, then go off?

   YES - Go to step 5.

   NO - Go to step 10.

5. Press the engine start/stop button to select the OFF mode.
6. Insert the remote into the remote slot.
7. Press the engine start/stop button to select the ON mode.
8. Check the immobilizer indicator.

   Does the indicator blink once, then stay off?

   YES - Intermittent failure, the system is OK at this time.

   NO - Go to step 12.

9. Check the malfunction indicator lamp (MIL).

   Does the indicator come on?

   YES - Troubleshooting the ECM/PCM DTCs.

   NO - Replace the gauge control module (see **GAUGE CONTROL MODULE REPLACEMENT**).

10. Select KEYLESS ACCESS CONTROL UNIT from the ONE-PUSH START system select menu with HDS, and enter KEYLESS ACCESS CONTROL UNIT INFORMATION.
11. Do the SYSTEM CHECK 1 and 2 with the HDS.

    Is N- 1 OK indicated?

    YES - Replace the gauge control module (see **GAUGE CONTROL MODULE REPLACEMENT**).

    NO - Troubleshoot the keyless access system according to the result of the SYSTEM CHECK 1 and 2 (see **SYMPTOM TROUBLESHOOTING INFORMATION**).

12. Select REMOTE SLOT CONTROL UNIT from the ONE-PUSH START system select menu with HDS, and enter KEYLESS ACCESS CONTROL UNIT INFORMATION.
13. Do the SYSTEM CHECK with the HDS.

    Is N- 1 OK indicated?

YES - Replace the gauge control module (see **GAUGE CONTROL MODULE REPLACEMENT**).

NO - Troubleshoot the keyless access system according to the result of the SYSTEM CHECK (see **SYMPTOM TROUBLESHOOTING INFORMATION**).

THE KEY- IN REMINDER DOES NOT SOUND

1. Turn the interior light switch to DOOR position.
2. Open the driver's door.

   Does the individual map lights come on?

   YES - Go to step 3.

   NO - Faulty driver's door switch and/or open in the wire.

3. Select GAUGES from the BODY ELECTRICAL SYSTEM SELECT menu with the HDS.
4. Select FUNCTIONAL TESTS from the TEST MODE menu with the HDS, and enter SELF TEST.

   Does the key- in reminder sound?

   YES - Go to step 5.

   NO - Replace the gauge control module (see **GAUGE CONTROL MODULE REPLACEMENT**).

5. Open the driver's door.
6. Connect power control unit connector C (36P) terminal No. 14 to body ground with a jumper wire.

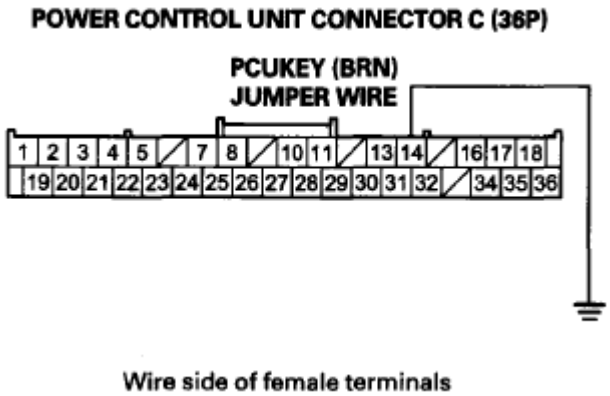


Fig. 155: Connecting Power Control Unit Connector C (36P) Terminal No. 14 To Body Ground With Jumper Wire
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Does the key- in reminder sound?

YES - Replace the power control unit (see **CONTROL UNIT INPUT TEST**).

NO - Go to step 7.

7. Press the engine start/stop button to select the OFF mode.
8. Remove the jumper wire.
9. Disconnect power control unit connector C (36P).
10. Disconnect driver's under- dash fuse/relay box connector Q (20P).
11. Check for continuity between driver's under- dash fuse/relay box connector Q (20P) terminal No. 18 and power control unit connector C (36P) terminal No. 14.

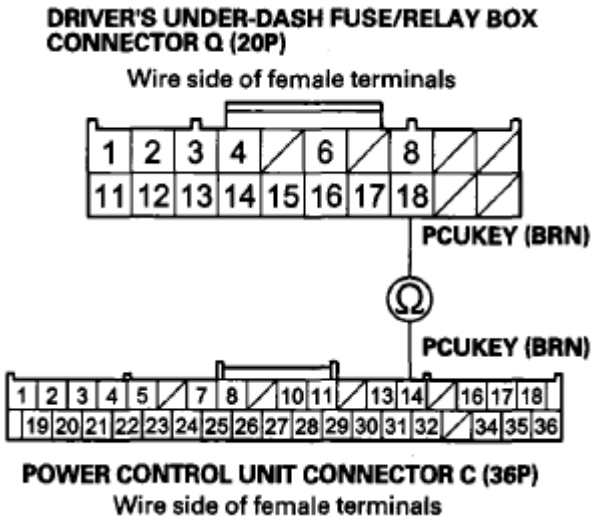


Fig. 156: Checking Continuity Between Driver's Under- Dash Fuse/Relay Box Connector Q (20P) Terminal No. 18 And Power Control Unit Connector C (36P) Terminal No. 14 With Connector End View
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Faulty driver's MICU; replace the under- dash fuse/relay box (see **DRIVER'S UNDER- DASH FUSE/RELAY BOX (MICU) REMOVAL AND INSTALLATION**).

NO - Repair an open or high resistance in the wire.

THE KEY- IN REMINDER SOUNDS WHEN THE REMOTE IS REMOVED FROM THE REMOTE SLOT AND DOOR IS OPEN

1. Insert the remote into the remote slot.

Does the remote go into the slot?

YES - Go to step 2.

NO - Go to symptom troubleshooting "**REMOTE WILL NOT GO INTO THE REMOTE SLOT**".

2. Select PCU from the ONE-PUSH START system select menu, and check for DTCs with HDS.

   Are there any DTCs?

   YES - Go to the indicated **DTCS TROUBLESHOOTING**.

   NO - Go to step 3.

3. Select PCU from the ONE-PUSH START system select menu with the HDS, and enter DATA LIST.
4. Check each remote slot value with the DATA LIST menu.

   WITH REMOTE IN REMOTE SLOT

Data List	Value
SLOT SWITCH HALF	OFF
SLOT SWITCH FULL	OFF
SLOT SWITCH FULL 2	OFF

   Are all data list values correct?

   YES - Go to step 5.

   NO - Go to step 22.

5. Press the engine start/stop button to select the OFF mode.
6. Disconnect power control unit connector C (36P).
7. Disconnect driver's under- dash fuse/relay box connector Q (20P).
8. Check for continuity between body ground and power control unit connector C (36P) terminal No. 14.

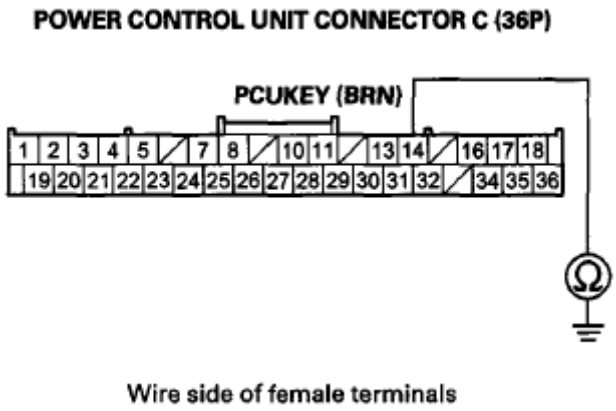


Fig. 157: Checking Continuity Between Body Ground And Power Control Unit Connector C (36P) Terminal No. 14
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair a short to ground in the wire.

NO - Go to step 9.

9. Check for continuity between driver's under- dash fuse/relay box connector Q (20P) terminal No. 18 and power control unit connector C (36P) terminal No. 14.

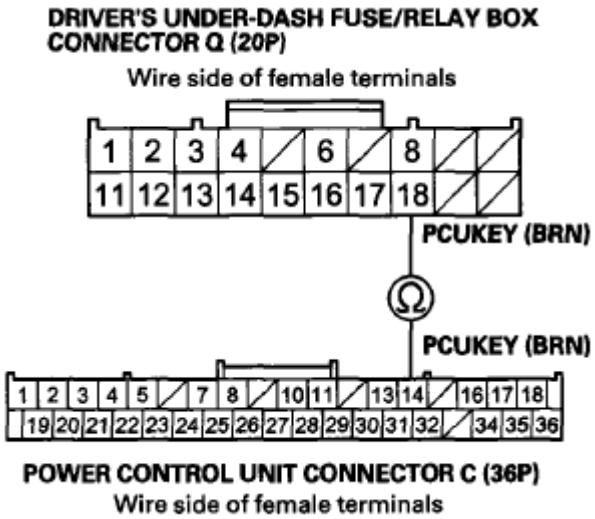


Fig. 158: Checking Continuity Between Driver's Under- Dash Fuse/Relay Box Connector Q (20P) Terminal No. 18 And Power Control Unit Connector C (36P) Terminal No. 14
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 10.

NO - Repair an open or high resistance in the wire.

10. Reconnect driver's under- dash fuse/relay box connector Q(20P).
11. Measure the voltage between body ground and driver's under- dash fuse/relay box connector Q (20P) terminal No. 18.

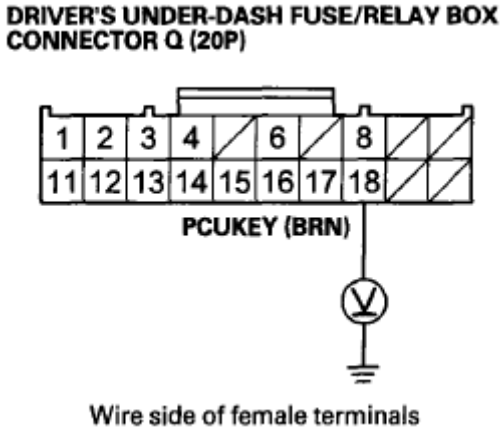


Fig. 159: Measuring Voltage Between Body Ground And Driver's Under- Dash Fuse/Relay Box Connector Q (20P) Terminal No. 18
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there battery voltage?

YES - Go to step 12.

NO - Faulty driver's MICU; replace the driver's under- dash fuse/relay box (see **DRIVER'S UNDER-DASH FUSE/RELAY BOX (MICU) REMOVAL AND INSTALLATION**).

12. Reconnect power control unit connector C (36P).
13. Press the engine start/stop button to select the ON mode.
14. Select PCU from the ONE-PUSH START system select menu with the HDS, and enter FUNCTION TESTS.
15. Connect the voltmeter to body ground and to power control unit connector C (36P) terminal No. 14.

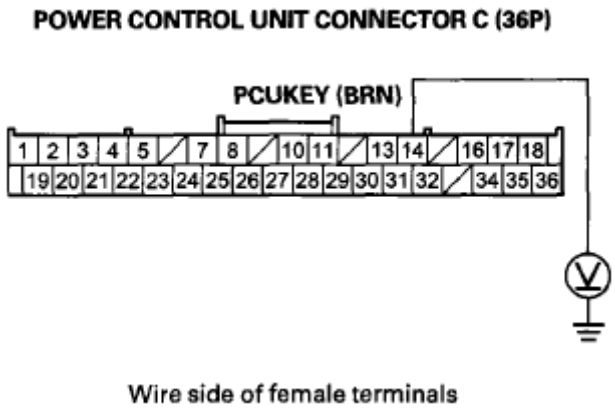


Fig. 160: Connecting Voltmeter To Body Ground And To Power Control Unit Connector C (36P) Terminal No. 14
Courtesy of AMERICAN HONDA MOTOR CO., INC.

16. Select DRLOCKSWOUT with the HDS.

Does the voltage change from about 12 to 0 V?

YES - Go to step 16.

NO - Replace the power control unit (see **CONTROL UNIT INPUT TEST**).

17. Press the engine start/stop button to select the OFF mode.
18. Disconnect power control unit connector C (36P).
19. Measure the voltage between body ground and power control unit connector C (36P) terminal No. 8.

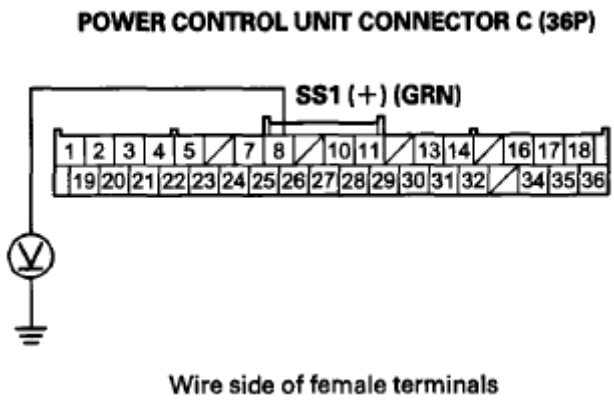


Fig. 161: Measuring Voltage Between Body Ground And Power Control Unit Connector C (36P) Terminal No. 8
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there about 0 V?

YES - Reconnect the connectors and recheck the system. If the symptom does not go away, replace the power control unit (see **CONTROL UNIT INPUT TEST**).

NO - Go to step 20.

20. Disconnect the engine start/stop switch 10P connector.
21. Do the engine start/stop switch test (see **ENGINE START/STOP SWITCH TEST/REPLACEMENT**).

Is the engine start/stop switch OK?

YES - Repair an open or high resistance in the wire.

NO - Replace the engine start/stop switch (see **ENGINE START/STOP SWITCH TEST/REPLACEMENT**).

22. Press the engine start/stop button to select the OFF mode.
23. Disconnect these items:

- Remote slot control unit 40P connector
- Remote slot 16P connector
- Power control unit connector C (36P)
- Keyless access control unit connectors A (36P) and B (32P)

24. Check for continuity between body ground and power control unit connector C (36P) terminals No. 26 and No. 27 individually.

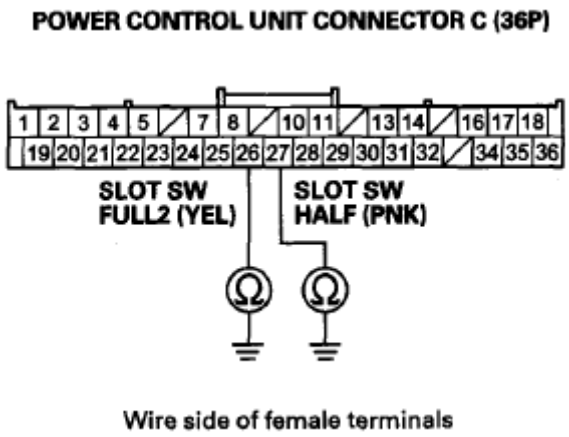


Fig. 162: Checking Continuity Between Body Ground And Power Control Unit Connector C (36P) Terminals No. 26 And No. 27 Individually
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair a short to ground in the wire.

NO - Go to step 25.

25. Check for continuity between keyless access control unit connector A (36P) terminal, B (32P) terminals and the remote slot 16P connector terminals as shown.

Keyless access control unit connector	Remote slot 16P connector
A33	12
B16	3
B27	14

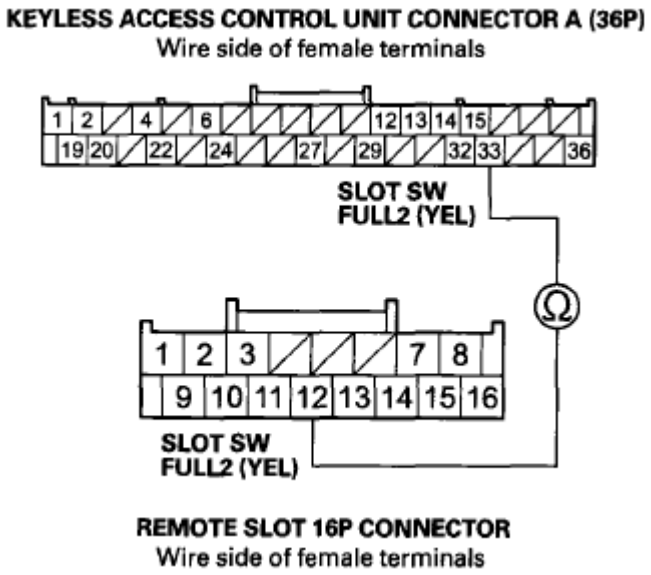


Fig. 163: Checking Continuity Between Keyless Access Control Unit Connector A (36P) Terminal And Remote Slot 16P Connector Terminals
Courtesy of AMERICAN HONDA MOTOR CO., INC.

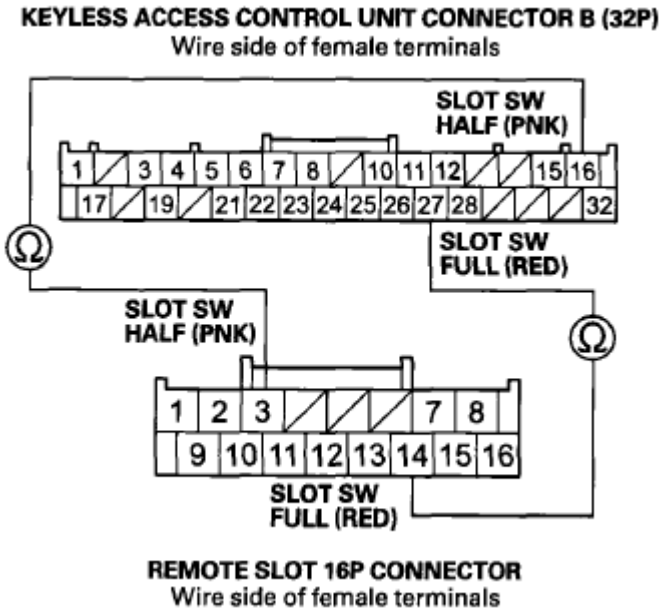


Fig. 164: Checking Continuity Between Keyless Access Control Unit Connector B (32P) Terminals And Remote Slot 16P Connector Terminals
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Replace the remote slot (see **REMOTE SLOT TEST/REPLACEMENT**).

NO - Repair an open or high resistance in the wire.

REMOTE WILL NOT GO INTO THE REMOTE SLOT

NOTE: Take care not to scratch the remote slot.

1. Press the engine start/stop button to select the OFF mode.
2. Open the driver's door and check for the key- in reminder.
   - If the key- in reminder sounds, go to step 3.
   - If the key- in reminder does not sound, replace the remote slot (see **REMOTE SLOT TEST/REPLACEMENT**).
3. Press the unlock button on the remote to unlock the doors.
   - If the door lock actuators work, replace the remote slot (see **REMOTE SLOT TEST/REPLACEMENT**).
   - If the door lock actuators do not work, go to step 4.
4. Create a measuring gauge by placing a piece of masking tape about 45 mm (1.8 in) from the tip of a 6 inch long 1/4 inch drive extension. Make two lines on the tape; one at 32 mm (1.3 in) and one at 40 mm (1.6 in).

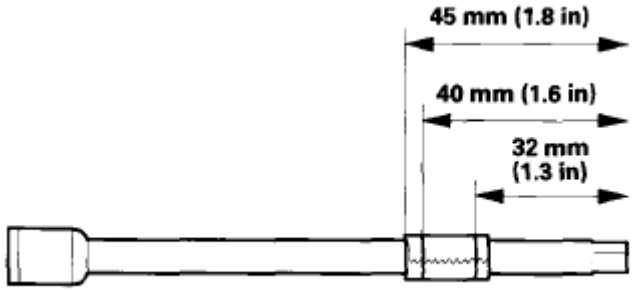


Fig. 165: Identifying Masking Tape, 6 Inch Drive Extension & Lines
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Check the position of the remote carriage in the remote slot. Lift up the flap (A) of the remote slot, then slide the gauge into the center of the remote slot, and note which line on the tape lines- up with the remote slot rim.
   - If the remote carriage is at the 40 mm (1.6 in) line, go to step 6.
   - If the remote carriage is at the 32 mm (1.3 in) line, replace the remote slot (see **REMOTE SLOT TEST/REPLACEMENT**).

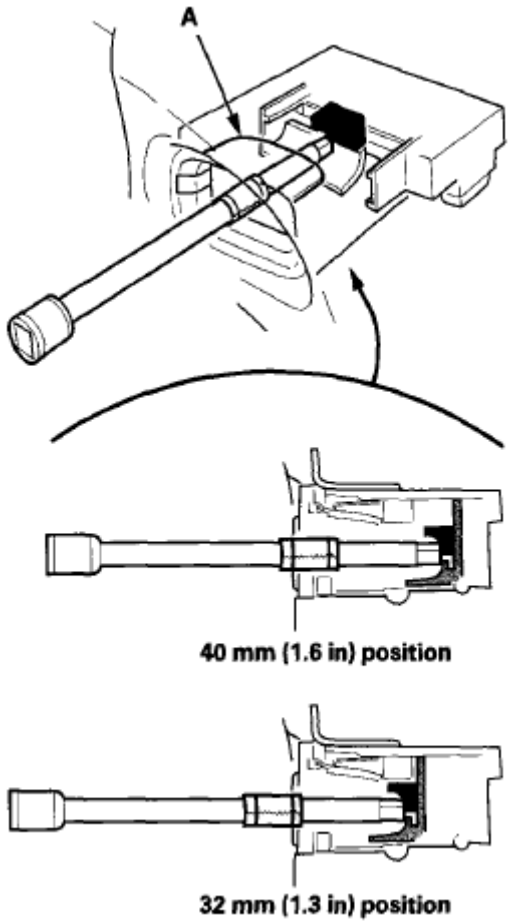


Fig. 166: Checking Position Of Remote Carriage In Remote Slot
Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Wrap electrical tape (A) around the tips of a long nose locking pliers (Vise Grip tool number 4LN, or equivalent), then set the tips when closed to 15 mm (0.6 in).

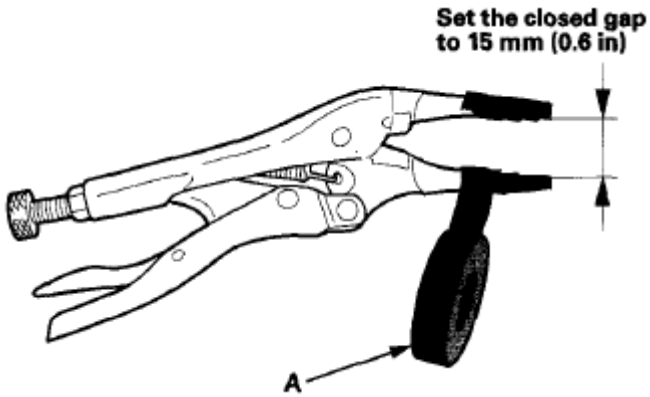


Fig. 167: Wrapping Electrical Tape Around Tips Of Long Nose Locking Pliers
Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Lift up the flap (A) of the remote slot, then carefully grasp the upper center section of the remote carriage (B) with the pliers, and gently pull to slide the carriage outward.

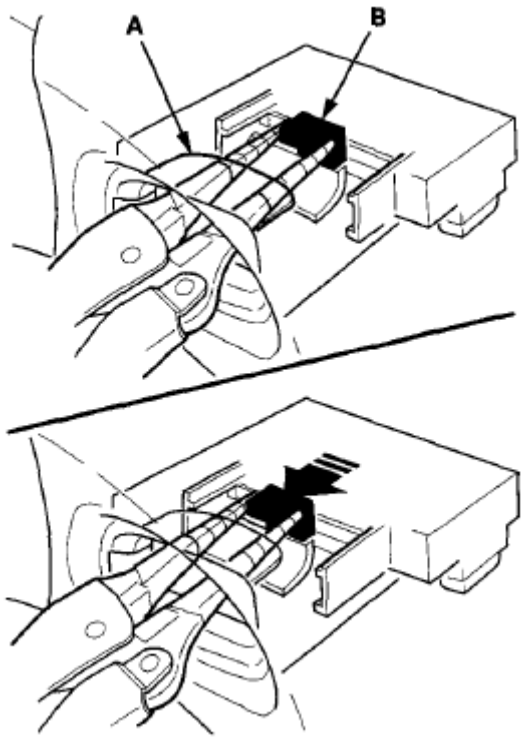


Fig. 168: Sliding Carriage Outward Using Pliers
Courtesy of AMERICAN HONDA MOTOR CO., INC.

8. Check the operation of the remote slot:
   - Insert the remote into the remote slot.
   - Press the engine start/stop button to select the ACC mode. The remote slot should click, locking the remote in place. If it does not click or lock the remote in place, replace the remote slot (see **REMOTE SLOT TEST/REPLACEMENT**).
   - Press the engine start/stop button to select the OFF mode. The remote slot should click again unlocking the remote. If it does not click or unlock the remote, replace the remote slot (see **REMOTE SLOT TEST/REPLACEMENT**).

KEYLESS BUZZER CIRCUIT TROUBLESHOOTING

1. Connect the HDS to the data link connector (DLC).
2. Press the engine start/stop button to select the ON mode.
3. Check the "CUSTOMIZE SETUP" information on the multi- information display.

Does the keyless buzzer (KEYLESS LOCK ACKNOWLEDGMENT) information indicate off?

YES - Change to ON.

NO - Go to step 4.

4. Press the engine start/stop button to select the OFF mode.
5. Disconnect the keyless buzzer 2P connector.
6. Check for continuity between body ground and keyless buzzer 2P connector terminal No. 1.

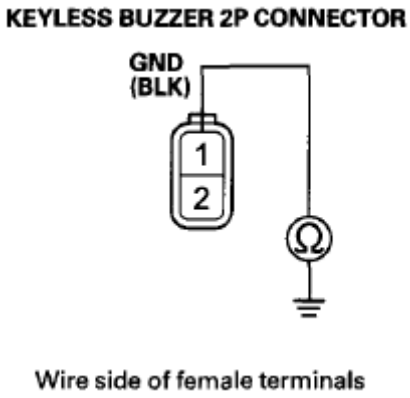


Fig. 169: Checking Continuity Between Body Ground And Keyless Buzzer 2P Connector Terminal No. 1 With Connector End View
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 7.

NO - Repair an open or high resistance in the wire or poor ground (G603).

7. Disconnect passenger's under- dash fuse/relay box connector A (38P).
8. Connect keyless buzzer 2P connector terminal No. 2 to body ground with a jumper wire.

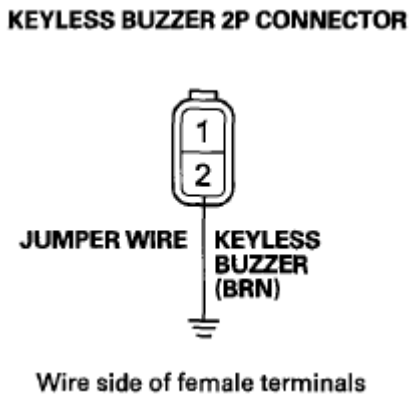


Fig. 170: Connecting Keyless Buzzer 2P Connector Terminal No. 2 To Body Ground With Jumper Wire
Courtesy of AMERICAN HONDA MOTOR CO., INC.

9. Check for continuity between body ground and passenger's under- dash fuse/relay box connector A (38P) terminal No. 24.

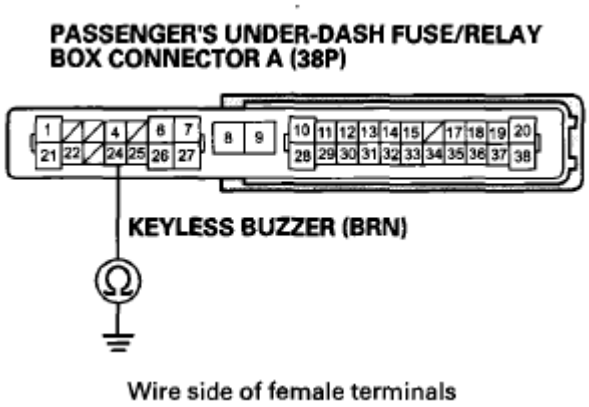


Fig. 171: Checking Continuity Between Body Ground And Passenger's Under- Dash Fuse/Relay Box Connector A (38P) Terminal No. 24
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 10.

NO - Repair an open or high resistance in the wire.

10. Remove the jumper wire.
11. Check for continuity between body ground and passenger's under- dash fuse/relay box connector A (38P) terminal No. 24.

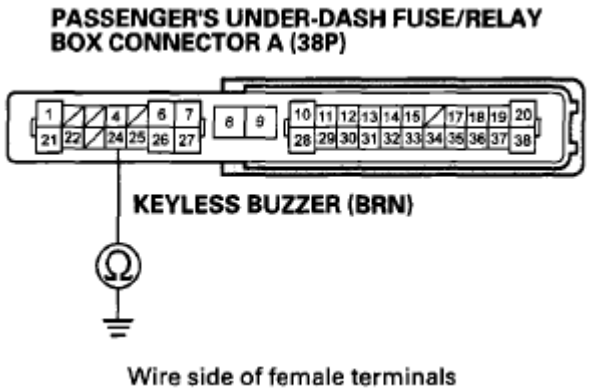


Fig. 172: Checking Continuity Between Body Ground And Passenger's Under- Dash Fuse/Relay Box Connector A (38P) Terminal No. 24
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair a short to ground in the wire.

NO - Substitute a known- good keyless access control unit (see **CONTROL UNIT INPUT TEST**), and recheck. If there is still a malfunction, the passenger's MICU must be faulty, replace the passenger's under- dash fuse/relay box (see **PASSENGER'S UNDER- DASH FUSE/RELAY BOX (MICU) REMOVAL AND INSTALLATION**).

TOUCH SENSOR CIRCUIT TROUBLESHOOTING

1. Connect the HDS to the data link connector (DLC).
2. Press the engine start/stop button to select the ON mode.
3. Clear the freeze data with the HDS.
4. Select the HISTORY DATA, and record the ON/OFF information for the following touch sensors:

   NOTE: When the freeze data is cleared, the information indicates "NOT CONFIRMED".

   - DRIVER DOOR UNLOCK SWITCH
   - DRIVER DOOR LOCK SWITCH
   - FRONT PASSENGER DOOR UNLOCK SWITCH
   - FRONT PASSENGER DOOR LOCK SWITCH
5. Press the engine start/stop button to select the OFF mode.
6. Get out of the vehicle with the remote, and press the driver's or front passenger's door outer handle touch sensor and lock switch.
7. Check the ON/OFF information.

   Is all the information changed from OFF to ON?

   YES - The system is OK at this time.

   NO - Go to step 8.

8. Disconnect the faulty outer handle touch sensor 8P connector.
9. Check for continuity between body ground and outer handle touch sensor 8P connector terminal No. 5.

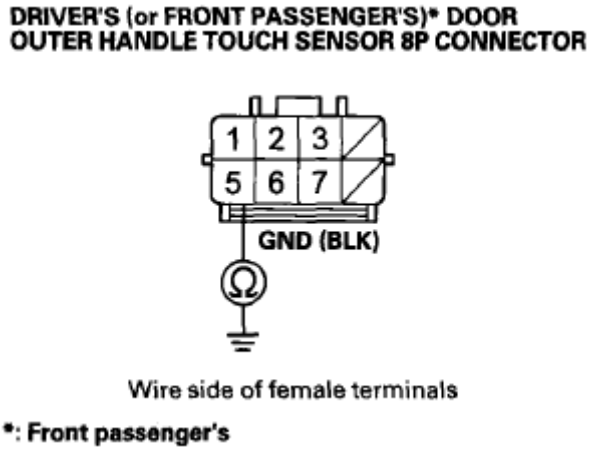


Fig. 173: Checking Continuity Between Body Ground And Outer Handle Touch Sensor 8P Connector Terminal No. 5
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 10.

NO - Repair an open or high resistance in the wire or poor ground (G401: driver's, G405: passenger's).

10. Measure the voltage between body ground and outer handle touch sensor 8P connector terminal No, 1.

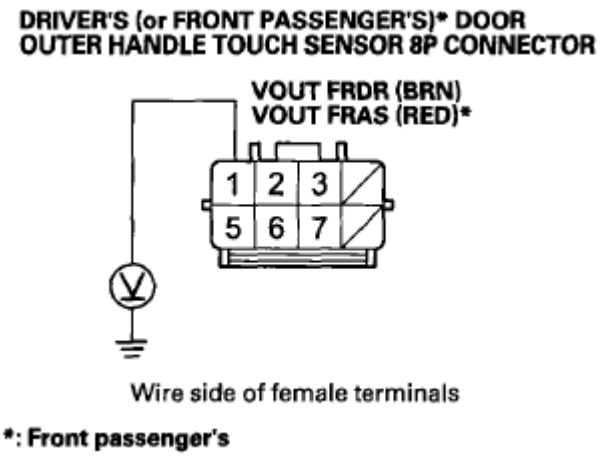


Fig. 174: Measuring Voltage Between Body Ground And Outer Handle Touch Sensor 8P Connector Terminal No. 1
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there battery voltage?

YES - Go to step 11.

NO - Go to step 16.

11. Disconnect keyless access control unit connector B (32P).
12. Connect the driver's (or front passenger's)* door outer handle touch sensor 8P connector terminal No. 2 to body ground with a jumper wire.

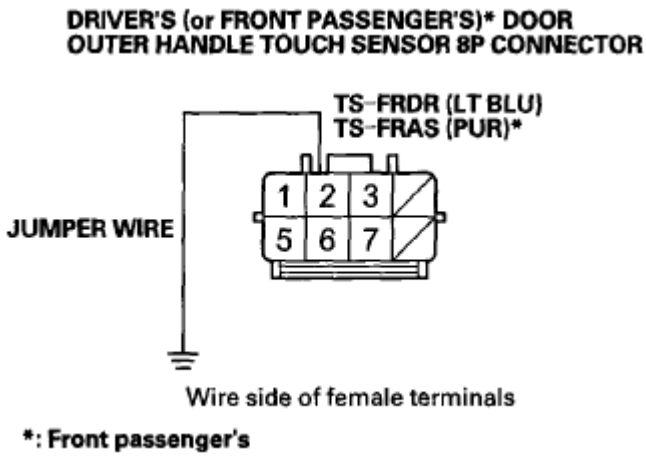


Fig. 175: Connecting Driver's (Or Front Passenger's) Door Outer Handle Touch Sensor 8P Connector Terminal No. 2 To Body Ground With Jumper Wire
Courtesy of AMERICAN HONDA MOTOR CO., INC.

13. Check for continuity between keyless access control unit connector B (32P) terminal No. 22 and body ground (for front passenger's door touch sensor) or between keyless access control unit connector B (32P) terminal No. 25 and body ground (for driver's door touch sensor) individually.

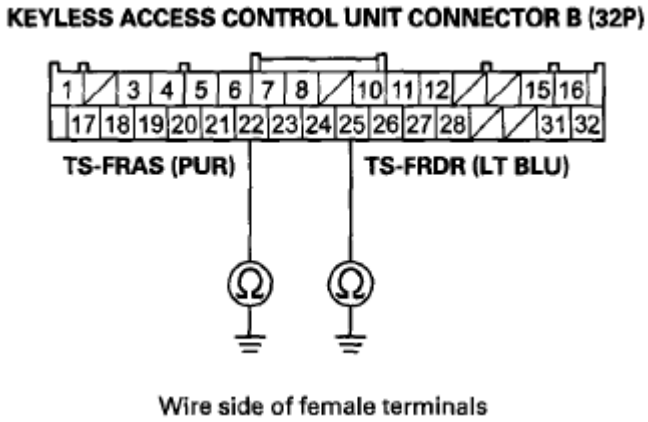


Fig. 176: Checking Continuity Between Keyless Access Control Unit Connector B (32P) Terminal No. 22, No. 25 And Body Ground Individually
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 14.

NO - Repair an open or high resistance in the wire.

14. Remove the jumper wire.
15. Check for continuity between keyless access control unit connector B (32P) terminal No. 22 and body ground (for front passenger's door touch sensor), or between keyless access control unit connector B (32P) terminal No. 25 and body ground (for driver's door touch sensor) individually.

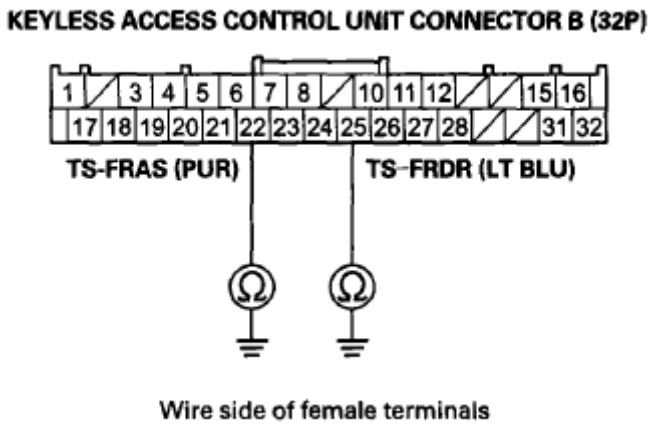


Fig. 177: Checking Continuity Between Keyless Access Control Unit Connector B (32P) Terminal No. 22, No. 25 And Body Ground Individually
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair a short to ground in the wire.

NO - Substitute a known- good touch sensor, and recheck. If there is still a malfunction, replace the keyless access control unit (see **CONTROL UNIT INPUT TEST**).

16. Measure the voltage between keyless access control unit connector A (36P) terminal No. 32 and body ground (for driver's door touch sensor), or between keyless access control unit connector A (36P) terminal No. 29 and body ground (for front passenger's door touch sensor) individually.

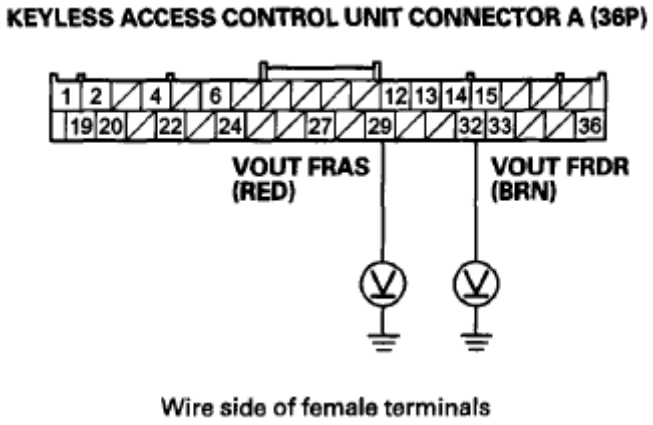


Fig. 178: Measuring Voltage Between Keyless Access Control Unit Connector A (36P) Terminal No. 32, No. 29 And Body Ground Individually
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there battery voltage?

YES - Repair an open or high resistance in the wire.

NO - Blown No. 15 (10 A) fuse in the under- hood fuse/relay box. If fuse is OK, do the keyless access control unit input test and power input tests (see **CONTROL UNIT INPUT TEST**).

DOOR AND TRUNK LF ANTENNA TEST

NOTE: Before testing, check for DTCs, If any DTCs are indicated, troubleshoot the indicated DTCs first.

1. Connect the HDS to the data link connector (DLC).
2. Press the engine start/stop button to select the ON mode.
3. Select the ONE-PUSH START from the SYSTEM SELECTION MENU with the HDS.
4. Select the SELF CHECK and if any malfunction is found, troubleshoot it first.
5. Select the FUNCTIONAL TESTS, and do the antenna driving test by checking the transmitting areas (A) between the LF antenna and the remote.

LF Antenna Location	HDS Indication (Function Test)
Driver's door LF antenna	Driver Antenna Driving
Front passenger's door LF antenna	Front Passenger Antenna Driving
Rear bumper LF antenna	Trunk/Tailgate Driver Antenna Driving

NOTE:

- **Check the LF antennas one at a time; function Test cannot operate at the same time.**
- **Test the transmitting area at about 30 cm (35, 4 in) height from the ground.**
- **The LED will blink when the remote is within the shaded areas.**

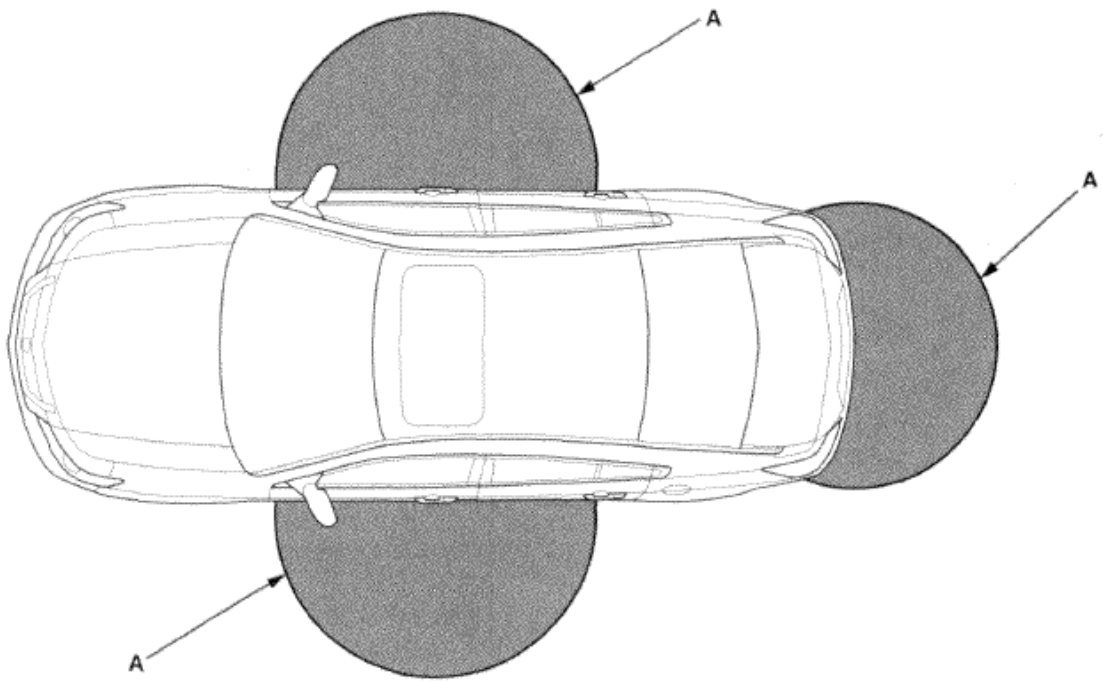


Fig. 179: Testing Door And Trunk LF Antenna
Courtesy of AMERICAN HONDA MOTOR CO., INC.

INTERIOR LF ANTENNA TEST

NOTE: Before testing, check for DTCs, if any DTCs are indicated, troubleshoot the indicated DTCs first.

1. Connect the HDS to the data link connector (DLC).
2. Press the engine start/stop button to select the ON mode.
3. Select the ONE-PUSH START from the SYSTEM SELECTION MENU with the HDS.
4. Select the SELF CHECK and if any malfunction is found, troubleshoot it first.
5. Select the FUNCTIONAL TESTS, and do the antenna driving test by checking the transmitting area (A) between the LF antenna and the remote (except on the dashboard, in the glove box, door pockets, console box, and other enclosed areas).

LF Antenna Location	HDS Indication (Function Test)
Front Interior LF antenna	Front Interior Antenna Driving
Rear Interior LF antenna	Rear Interior Antenna Driving
Trunk interior/Rear shelf LF antenna	Trunk interior/Rear shelf LF Antenna Driving

NOTE: Check the LF antennas one at a time; function Test cannot operate at the same time.

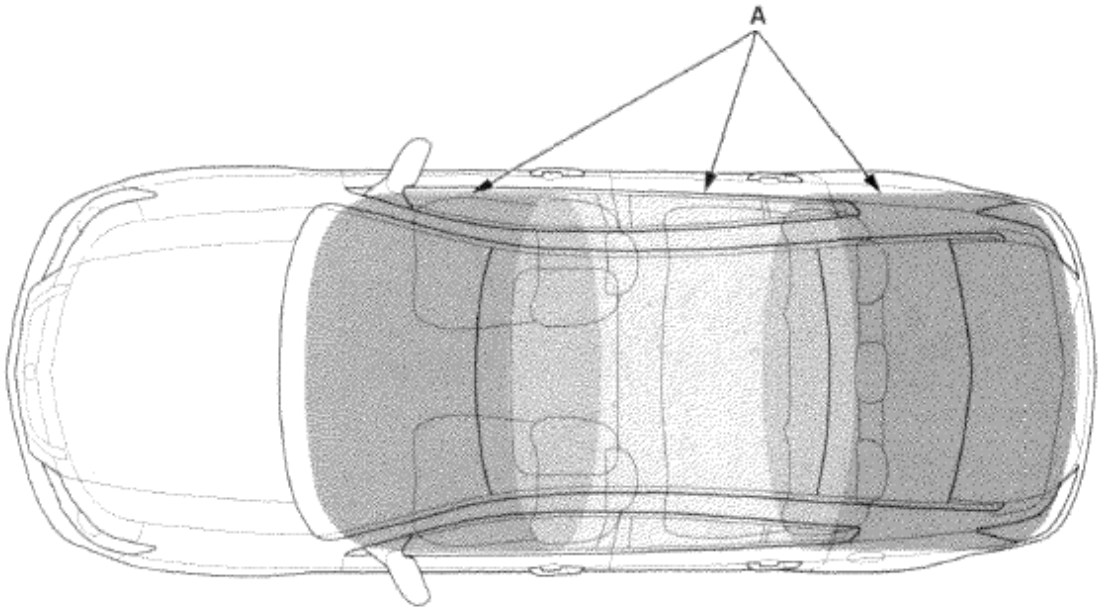


Fig. 180: Testing Interior LF Antenna
Courtesy of AMERICAN HONDA MOTOR CO., INC.

CONTROL UNIT INPUT TEST

KEYLESS ACCESS CONTROL UNIT

NOTE:

- **Before doing the input tests, check the B- CAN DTCs. If any DTC is indicated, troubleshoot the indicated DTC first.**
- **If you are troubleshooting multiple DTCs, be sure to follow the instructions in B- CAN System Diagnosis Test Mode A (see TROUBLESHOOTING - B-CAN SYSTEM DIAGNOSIS TEST MODE A).**

1. Press the engine start/stop button to select the OFF mode.
2. Remove the driver's dashboard undercover (see **DRIVER'S DASHBOARD UNDERCOVER REMOVAL/INSTALLATION**).
3. Disconnect the connectors (A) from the keyless access control unit (B).

NOTE: All connector views are wire side of female terminals.

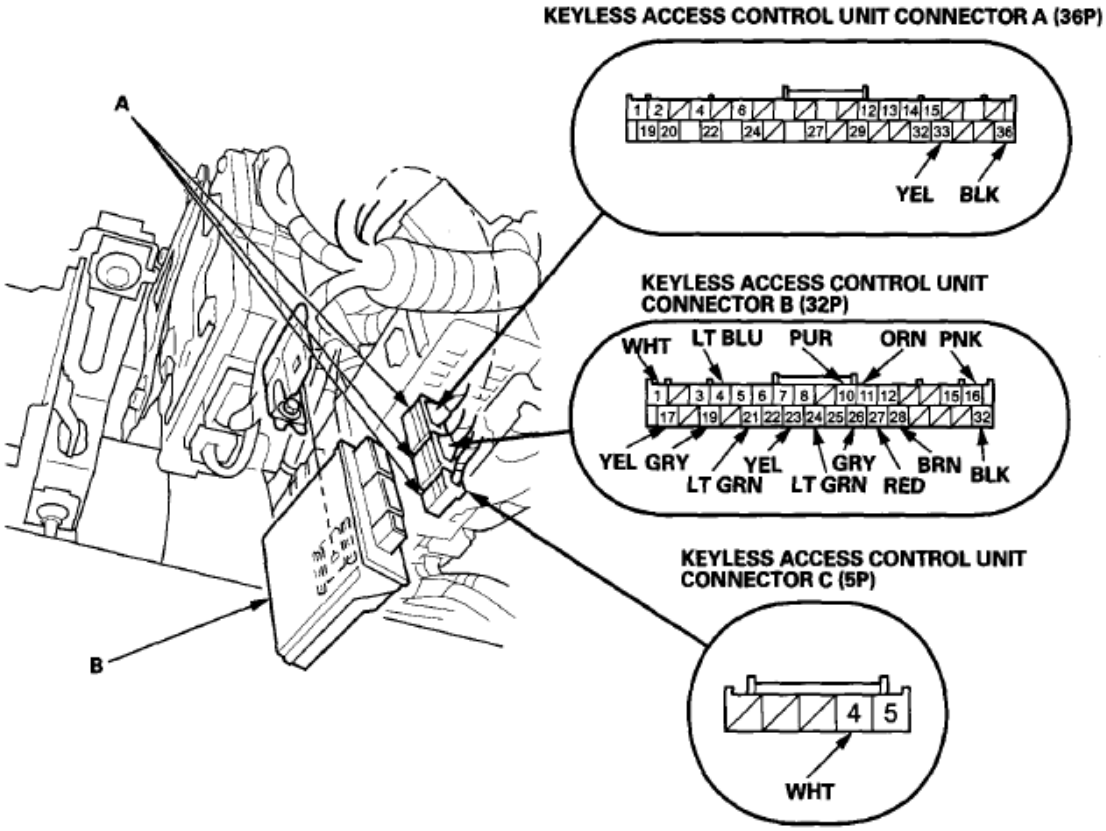


Fig. 181: Identifying Keyless Access Control Unit And Connectors
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. inspect the connector and socket terminals to be sure they are all making good contact.
   - If the terminals are bent, loose or corroded, repair them as necessary, and recheck the system.
   - If the terminals look OK, go to step 5.
5. With the connectors still disconnected, do the following input tests:
   - If any test indicates a problem, find and correct the cause, then recheck the system.
   - If all the input tests prove OK, go to step 6.

Cavity	Wire	Test condition	Test: Desired result	Possible cause if desired result is not obtained
B4	LT BLU	Under all conditions	Check for continuity between terminal B4 and data link connector (DLC) terminal No. 7: There should be continuity.	An open in the K- LINE wire
			Check for continuity between terminal B4 and body ground: There should be no continuity.	A short to ground in the wire
			Check for continuity between	

B11	ORN	Under all conditions	terminal B11 and data link connector (DLC) terminal No. 9: There should be continuity.	An open or high resistance in the wire
			Check for continuity between terminal B11 and body ground: There should be no continuity.	A short to ground in the wire
B21	LT GRN	Disconnect the remote slot control unit 40P connector and driver's under- dash fuse/relay box connector Q (20P). Jump the SCS line with the HDS, disconnect ECM/PCM connector A (49P)	Check for continuity between terminal B21 and remote slot control unit 40P connector terminal No. 14: There should be continuity.	An open in the S- NET wire
			Check for continuity between terminal B21 and driver's under- dash fuse/relay box connector Q (20P) terminal No. 15: There should be continuity.	
			Check for continuity between terminal B21 and ECM/PCM connector A (49P) terminal No. 46: There should be continuity.	
			Check for continuity between terminal B21 and body ground: There should be no continuity.	A short to ground in the wire
B27	RED	Disconnect the remote slot control unit 40P connector and the remote slot 16P connector	Check for continuity between terminal B27 and remote slot control unit 40P connector terminal No. 27: There should be continuity.	An open or high resistance in the wire
			Check for continuity between terminal B27 and remote slot 16P connector terminal No. 14: There should be continuity.	
			Check for continuity between terminal B27 and body ground: There should be no continuity.	A short to ground in the wire

6. Reconnect the connectors to the keyless access control unit, and do the following input tests:
   - If any test indicates a problem, find and correct the cause, then recheck the system.
   - If all the input tests prove OK, go to step 7.

Cavity	Wire	Test condition	Test: Desired result	Possible cause if desired result is not obtained
B1	WHT	Under all conditions	Measure the voltage to ground: There should be battery voltage.	• Blown No. 15 (10 A) fuse in the under- hood fuse/relay box • An open or high resistance in the wire
B10	PUR	Power mode ACC	Measure the voltage to ground: There should be battery voltage.	• Blown No. 18 (7.5 A) fuse in the driver's under- dash fuse/relay box • An open or high resistance in the wire
B17	YEL	Power mode ON	Measure the voltage to ground: There should be battery voltage.	• Blown No. 9 (20 A) fuse in the driver's under- dash fuse/relay box • An open or high resistance in the wire
A36	BLK	In all power modes	Measure the voltage to ground: There should be less than 0.2 V.	• Poor ground (G402) • An open or high resistance in the ground wire
B32	BLK	In all power modes	Measure the voltage to ground: There should be less than 0.2 V.	• Poor ground (G402) • An open or high resistance in the ground wire
C4	WHT	Electric steering lock (LOCK)	Measure the voltage to ground: There should be about 5 V.	• Faulty electric steering lock control unit • A short to ground in the wire
		Electric steering lock (UNLOCK)	Measure the voltage to ground: There should be less than 0.2 V.	• Faulty electric steering lock control unit • An open or high resistance in the wire
B19	GRY	Keyless access system mode switch OFF	Measure the voltage to ground: There should be less than 0.2 V.	• Faulty keyless access system mode switch • Poor ground (G501) or an open in the ground wire • An open or high resistance in the wire
		Keyless access system mode switch ON	Measure the voltage to ground: There should be battery voltage.	• Faulty keyless access system mode switch • A short to ground in the wire

B23	YEL	Front passenger's door outer handle lock switch pushed	Measure the voltage to ground: There should be less than 0.2 V.	• Faulty front passenger's door outer handle • Poor ground (G405) or an open in the ground wire • An open or high resistance in the wire
		Front passenger's door outer handle lock switch released	Measure the voltage to ground: There should be battery voltage.	• Faulty front passenger's door outer handle • A short to ground in the wire
B26	GRY	Driver's door outer handle lock switch pushed	Measure the voltage to ground: There should be less than 0.2 V.	• Faulty driver's door outer handle • Poor ground (G401) or an open in the ground wire • An open or high resistance in the wire
		Driver's door outer handle lock switch released	Measure the voltage to ground: There should be battery voltage.	• Faulty driver's door outer handle • A short to ground in the wire
B24	LT GRN	Power mode ON, parking brake lever pulled	Measure the voltage to ground: There should be less than 0.2 V.	• Faulty parking brake switch • An open or high resistance in the wire
		Power mode ON, parking brake lever released	Measure the voltage to ground: There should be about 5 V.	• Faulty parking brake switch • A short to ground in the wire
B28	BRN	Trunk lid spoiler switch pushed	Measure the voltage to ground: There should be less than 0.2 V.	• Faulty driver's under- dash fuse/relay box • Faulty trunk lid spoiler switch • Poor ground (G603) or an open in the ground wire • An open or high resistance in the wire
		Trunk lid spoiler switch released	Measure the voltage to ground: There should be about 5 V.	• Faulty driver's under- dash fuse/relay box • Faulty trunk lid spoiler switch • A short to ground in the

				wire
A33	YEL	Insert the remote into the remote slot	Measure the voltage to ground: There should be less than 0.2 V.	• Faulty remote slot • Poor ground (G403) or an open in the ground wire • An open or high resistance in the wire
B16	PNK	Insert the remote into the remote slot	Measure the voltage to ground: There should be less than 0.2 V.	• Faulty remote slot • Poor ground (G403) or an open in the ground wire • An open or high resistance in the wire

Power Control Unit

7. Press the engine start/stop button to select the OFF mode.
8. Remove the driver's dashboard undercover (see **DRIVER'S DASHBOARD UNDERCOVER REMOVAL/INSTALLATION**).
9. Disconnect the connectors (A) from the power control unit (B).

NOTE: All connector views are wire side of female terminals.

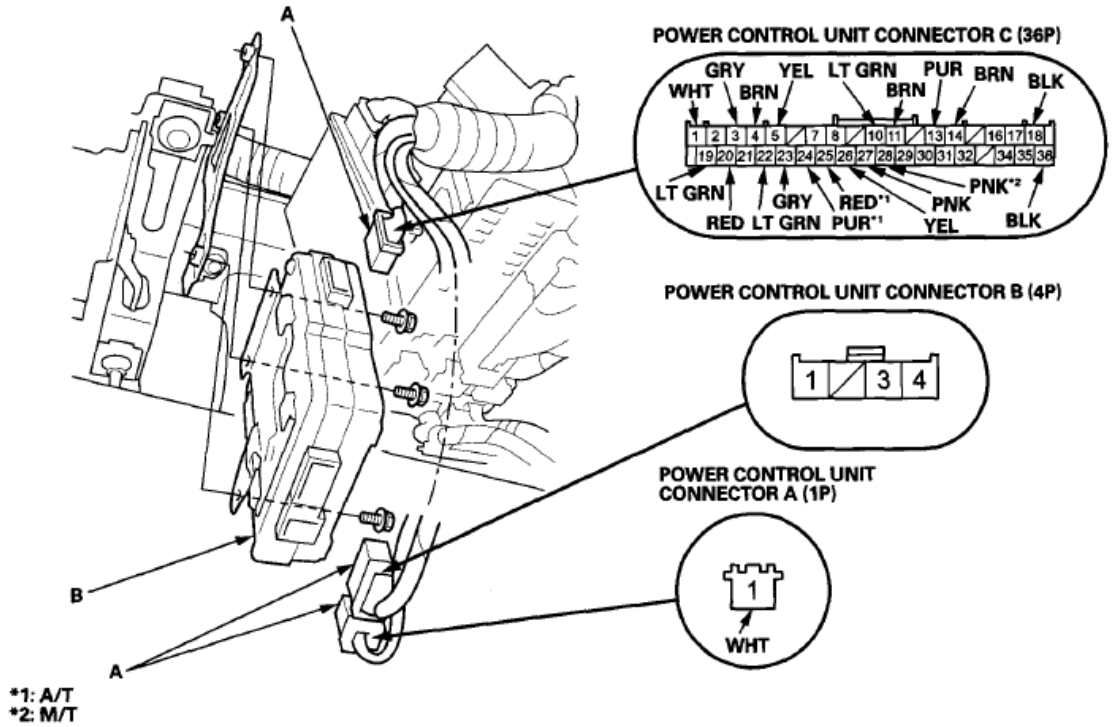


Fig. 182: Identifying Power Control Unit And Connectors
Courtesy of AMERICAN HONDA MOTOR CO., INC.

10. Inspect the connector and the socket terminals to be sure they are all making good contact.
    - If the terminals are bent, loose or corroded, repair them as necessary, and recheck the system.
    - If the terminals look OK, go to step 11.
11. With the connectors still disconnected, do the following input tests:
    - If any test indicates a problem, find and correct the cause, then recheck the system.
    - If all the input tests prove OK, go to step 12.

Cavity	Wire	Test condition	Test: Desired result	Possible cause if desired result is not obtained
C3	GRY	Under all conditions	Check for continuity between terminal C3 and data link connector (DLC) terminal No. 1: There should be continuity.	An open in the DIAG-H wire
			Check for continuity between terminal C3 and body ground: There should be no continuity.	A short to ground in the wire

12. Reconnect the connectors to the power control unit, and do the following input tests:
    - If any test indicates a problem, find and correct the cause, then recheck the system.
    - If all the input tests prove OK, go to step 13.

Cavity	Wire	Test condition	Test: Desired result	Possible cause if desired result is not obtained
A1	WHT	Under all conditions	Measure the voltage to ground: There should be battery voltage.	• Blown No. 3- 1 (IG MAIN) (50 A) fuse in the under- hood fuse/relay box • An open or high resistance in the wire
C1	WHT	Under all conditions	Measure the voltage to ground: There should be battery voltage.	• Blown No. 15 (10 A) fuse in the under- hood fuse/relay box • An open or high resistance in the wire
C20	RED	Under all conditions	Measure the voltage to ground: There should be battery voltage.	• Blown No. 12 (10 A) fuse in the passenger's under-dash fuse/relay box • An open or high resistance in the wire
C18	BLK	In all power modes	Measure the voltage to ground: There should be less than 0.2 V.	• Poor ground (G402) • An open or high resistance in the ground wire
		In all power	Measure the voltage to	• Poor ground (G402)

C36	BLK	modes	ground: There should be less than 0.2 V.	• An open or high resistance in the ground wire
C11	BRN	Power mode ACC	Measure the voltage to ground: There should be battery voltage.	• Faulty power control unit • Faulty driver's under- dash fuse/relay box • A short to ground in the wire
C10	LT GRN	Power mode START	Measure the voltage to ground: There should be battery voltage.	• Faulty ECM/PCM • Faulty power control unit • A short to ground in the wire
C4	BRN	Under all conditions	Connect to ground with a jumper wire: The engine start/stop switch light should come on.	• Blown No. 12 (10 A) fuse in the passenger's under-dash fuse/relay box • Faulty engine start/stop switch • An open or high resistance in the wire
C5	YEL	Under all conditions	Connect to ground with a jumper wire: The engine start/stop switch indicator should come on.	• Blown No. 12 (10 A) fuse in the passenger's under-dash fuse/relay box • Faulty engine start/stop switch • An open or high resistance in the wire
C13	PUR	Power mode ON	Measure the voltage to ground: There should be battery voltage.	• Power control unit • A short to ground in the wire
C14	BRN	Under all conditions	Measure the voltage to ground: There should be battery voltage.	• Faulty driver's MICU • An open or high resistance in the wire • A short to ground in the wire
C19	LT GRN	Brake pedal pressed	Measure the voltage to ground: There should be battery voltage.	• Blown No. 10 (20 A) fuse in the under- hood fuse/relay box • Faulty brake pedal position switch • An open or high resistance in the wire • A short to ground in the

				wire
C22	LT GRN	Power mode ON, parking brake lever pulled	Measure the voltage to ground: There should be less than 0.2 V.	• Faulty parking brake switch • An open or high resistance in the wire
		Power mode ON, parking brake lever released	Measure the voltage to ground: There should be about 5 V.	• Faulty parking brake switch • A short to ground in the wire
C23	GRY	Keyless access system mode switch OFF	Measure the voltage to ground: There should be less than 0.2 V.	• Faulty keyless access system mode switch • Poor ground (G501) or an open in the ground wire • An open or high resistance in the wire
		Keyless access system mode switch ON	Measure the voltage to ground: There should be battery voltage.	• Faulty keyless access system mode switch • A short to ground in the wire
C24 (A/T)	PUR	Shift lever out of P position	Measure the voltage to ground: There should be less than 0.2 V.	• Faulty park pin switch • Poor ground (G403) or an open in the ground wire • An open or high resistance in the wire
		Shift lever in P position	Measure the voltage to ground: There should be battery voltage.	• Faulty park pin switch • A short to ground in the wire
C25 (A/T)	RED	Shift lever in P position	Measure the voltage to ground: There should be less than 0.2 V.	• Faulty transmission range switch • Poor ground (G101) or an open in the ground wire • An open or high resistance in the wire
		Shift lever out of P position	Measure the voltage to ground: There should be battery voltage.	• Faulty transmission range switch • A short to ground in the wire
C26	YEL	Insert the remote into the remote slot	Measure the voltage to ground: There should be less than 0.2 V.	• Faulty remote slot • Poor ground (G403) or an open in the ground wire

				• An open or high resistance in the wire
C27	PNK	Insert the remote into the remote slot	Measure the voltage to ground: There should be less than 0.2 V.	• Faulty remote slot • Poor ground (G403) or an open in the ground wire • An open or high resistance in the wire
C28 (M/T)	PNK	Power mode ON, clutch pedal pressed.	Measure the voltage to ground: There should be less than 0.2 V.	• Faulty clutch pedal position switch A • Poor ground (G301) or an open in the ground wire • An open or high resistance in the wire
		Power mode ON, clutch pedal released.	Measure the voltage to ground: There should be battery voltage.	• Faulty clutch pedal position switch A • A short to ground in the wire

Electric Steering Lock

NOTE: SRS components are located in this area. Review the SRS component locations (see COMPONENT LOCATION INDEX), and precautions and procedures (see PRECAUTIONS AND PROCEDURES) before doing repairs or servicing.

13. Press the engine start/stop button to select the OFF mode.
14. Remove the column covers (see **SIDE DEFOGGER VENT TRIM REMOVAL/INSTALLATION**).
15. Disconnect the connector (A) from the electric steering lock (B).

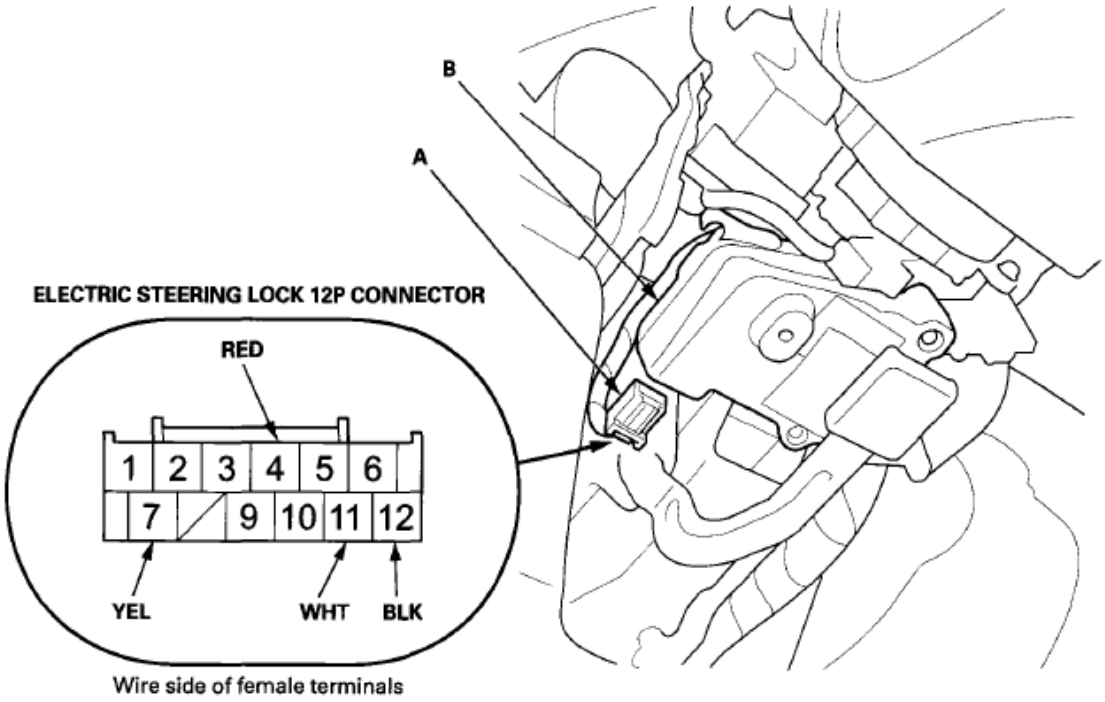


Fig. 183: Identifying Electric Steering Lock And Connectors
Courtesy of AMERICAN HONDA MOTOR CO., INC.

16. Inspect the connector and socket terminals to be sure they are all making good contact.
    - If the terminals are bent, loose or corroded, repair them as necessary, and recheck the system.
    - If the terminals look OK, go to step 17.
17. Reconnect the connector to the electric steering lock, and do the following input tests:
    - If any test indicates a problem, find and correct the cause, then recheck the system.
    - If all the input tests prove OK, go to step 18.

Cavity	Wire	Test condition	Test: Desired result	Possible cause if desired result is not obtained
4	RED	Under all conditions	Measure the voltage to ground: There should be battery voltage.	• Blown No. 12 (10 A) fuse in the passenger's under- dash fuse/relay box • An open or high resistance in the wire
7	YEL	Power mode ON	Measure the voltage to ground: There should be battery voltage.	• Blown No. 9 (20 A) fuse in the driver's under- dash fuse/relay box • An open or high resistance in the wire
12	BLK	In all power modes	Measure the voltage to ground: There should be	• Poor ground (G405) • An open or high resistance in

			less than 0.2 V.	the ground wire
11	WHT	Electric steering lock (LOCK) Electric steering lock (UNLOCK)	Measure the voltage to ground: There should be about 5 V. Measure the voltage to ground: There should be less than 0.2 V.	• Faulty electric steering lock control unit • A short to ground in the wire • Faulty electric steering lock control unit • An open or high resistance in the wire

Remote Slot Control Unit

18. Press the engine start/stop button to select the OFF mode.
19. Remove the glove box (see **GLOVE BOX REMOVAL/INSTALLATION**).
20. Disconnect the connector (A) from the remote slot control unit (B).

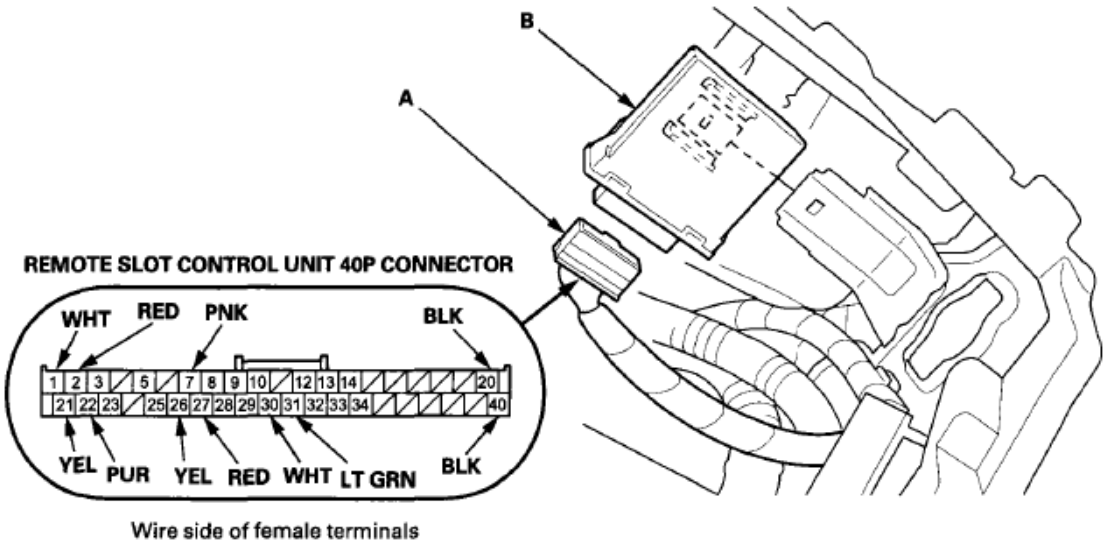


Fig. 184: Identifying Remote Slot Control Unit And Connectors
Courtesy of AMERICAN HONDA MOTOR CO., INC.

21. Inspect the connector and the socket terminals to be sure they are all making good contact.
    - If the terminals are bent, loose or corroded, repair them as necessary, and recheck the system.
    - If the terminals look OK, go to step 22.
22. With the connector still disconnected, do the following input tests:
    - If any test indicates a problem, find and correct the cause, then recheck the system.
    - If all the input tests prove OK, go to step 23.

Cavity	Wire	Test condition	Test: Desired result	Possible cause if desired result is not obtained

27	RED	Disconnect the remote slot 16P connector and keyless access control unit connector B (32P)	Check for continuity between terminal No. 27 and remote slot 16P connector terminal No. 14: There should be continuity.	An open or high resistance in the wire
			Check for continuity between terminal No. 27 and keyless access control unit connector B (32P) terminal No. 27: There should be continuity.	
			Check for continuity between terminal No. 27 and body ground: There should be no continuity.	A short to ground in the wire

23. Reconnect the connector to the remote slot control unit, and do the following input tests:
    - If any test indicates a problem, find and correct the cause, then recheck the system.
    - If all the input tests prove OK, go to step 24.

Cavity	Wire	Test condition	Test: Desired result	Possible cause if desired result is not obtained
1	WHT	Under all conditions	Measure the voltage to ground: There should be battery voltage.	• Blown No. 15 (10 A) fuse in the under- hood fuse/relay box • An open or high resistance in the wire
2	RED	Under all conditions	Measure the voltage to ground: There should be battery voltage.	• Blown No. 12 (10 A) fuse in the passenger's under- dash fuse/relay box • An open or high resistance in the wire
21	YEL	Power mode ON	Measure the voltage to ground: There should be battery voltage.	• Blown No. 9 (20 A) fuse in the driver's under- dash fuse/relay box • An open or high resistance in the wire
22	PUR	Power mode ACC	Measure the voltage to ground: There should be battery voltage.	• Blown No. 18 (7.5 A) fuse in the driver's under- dash fuse/relay box • An open or high resistance in the wire
20	BLK	In all power modes	Measure the voltage to ground: There should be less than 0.2 V.	• Poor ground (G405) • An open or high resistance in the ground wire

40	BLK	In all power modes	Measure the voltage to ground: There should be less than 0.2 V.	• Poor ground (G405) • An open or high resistance in the ground wire
7	PNK	Insert the remote into the remote slot	Measure the voltage to ground: There should be less than 0.2 V.	• Faulty remote slot • Poor ground (G403) or an open in the ground wire • An open or high resistance in the wire
26	YEL	Insert the remote into the remote slot	Measure the voltage to ground: There should be less than 0.2 V.	• Faulty remote slot • Poor ground (G403) or an open in the ground wire • An open or high resistance in the wire
30	WHT	Electric steering lock (LOCK) Electric steering lock (UNLOCK)	Measure the voltage to ground: There should be about 5 V. Measure the voltage to ground: There should be less than 0.2 V.	• Faulty electric steering lock control unit • A short to ground in the wire • Faulty electric steering lock control unit • An open or high resistance in the wire
31	LT GRN	Power mode ON, parking brake lever pulled Power mode ON, parking brake lever released	Measure the voltage to ground: There should be less than 0.2 V. Measure the voltage to ground: There should be about 5 V.	• Faulty parking brake switch • An open or high resistance in the wire • Faulty parking brake switch • A short to ground in the wire

24. If multiple failures are found on more than one control unit, replace the keyless access control unit. If input failures are related to a particular control unit, replace the control unit.

RF UNIT REPLACEMENT

1. Remove the center console panel (see **CENTER CONSOLE PANEL REMOVAL/INSTALLATION**).
2. Disconnect the 3P connector (A) from RF unit (B) and remove the harness clip (C).

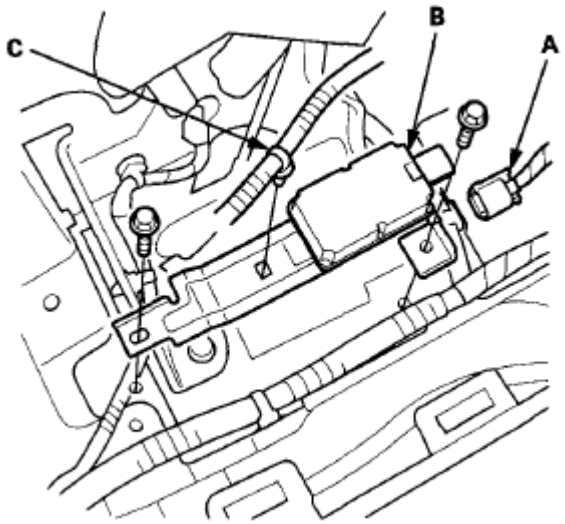


Fig. 185: Identifying 3P Connector, RF Unit And Harness Clip
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Remove the two bolts and RF unit.
4. Install the unit in the reverse order of removal.

FRONT INTERIOR LF ANTENNA REPLACEMENT

1. Remove the center console panel (see **CENTER CONSOLE PANEL REMOVAL/INSTALLATION**).
2. Disconnect the 2P connector (A) from the front interior LF antenna (B).

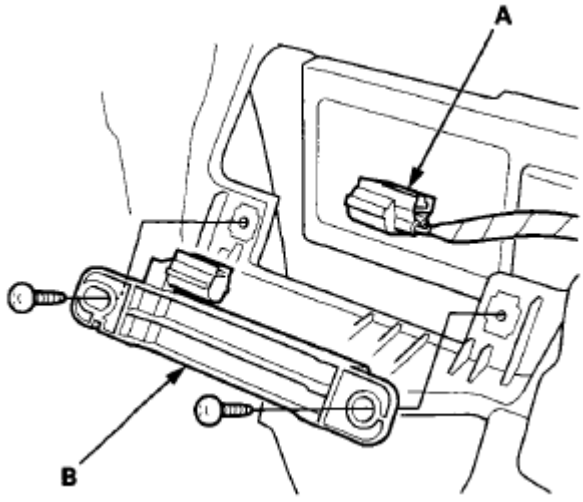


Fig. 186: Identifying 2P Connector And Front Interior LF Antenna
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Remove the two screws from the front interior LF antenna.

4. Install the antenna in the reverse order of removal.

REAR INTERIOR LF ANTENNA REPLACEMENT

1. Remove the rear seat cushion (see **REAR SEAT REMOVAL/INSTALLATION**).
2. Pull out the carpet as needed.
3. Disconnect the 2P connector (A) from the rear interior LF antenna (B).

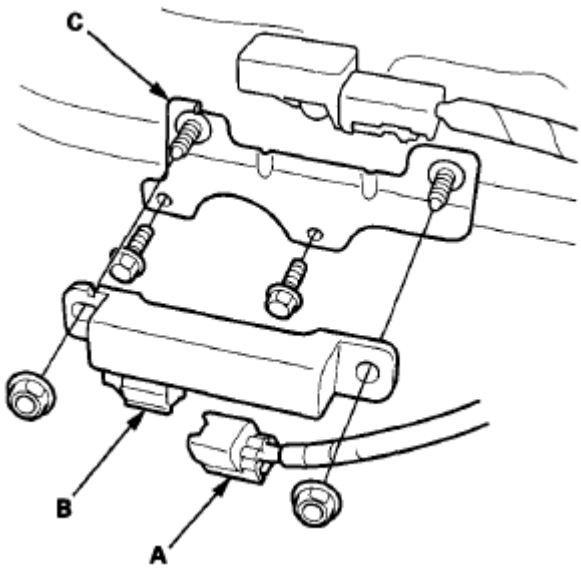


Fig. 187: Identifying 2P Connector And Rear Interior LF Antenna
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Remove the two nuts and the rear interior LF antenna.
5. If necessary, remove the two bolts and replace the bracket (C).
6. Install the antenna in the reverse order of removal.

REAR SHELF LF ANTENNA REPLACEMENT

1. Remove the trunk upper trim panel (see **TRIM REMOVAL/INSTALLATION - TRUNK LID**).
2. Disconnect the 2P connector (A) from the rear shelf LF antenna (B).

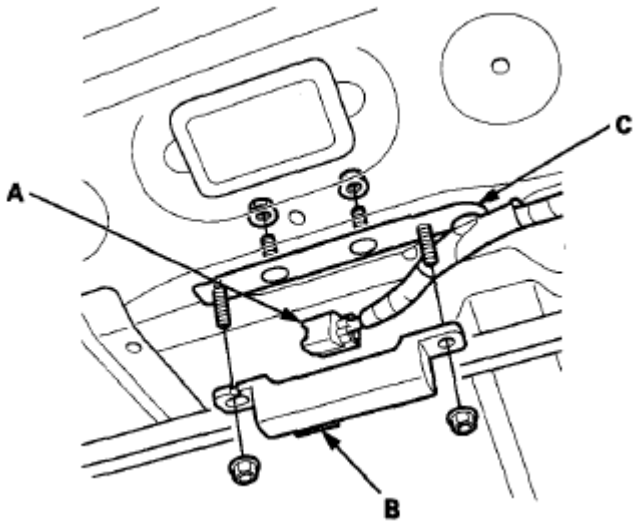


Fig. 188: Identifying 2P Connector And Rear Shelf LF Antenna And Bracket
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Remove the two nuts and the rear shelf LF antenna.
4. If necessary, remove the rear shelf (see **TRIM REMOVAL/INSTALLATION - REAR SHELF AREA**).
5. If necessary, remove the two nuts and replace the bracket (C).
6. Install the antenna in the reverse order of removal.

REAR BUMPER LF ANTENNA REPLACEMENT

1. Remove the rear bumper (see **LOWER FRONT BUMPER GRILLE REPLACEMENT**).
2. Disconnect the 2P connector (A) from the rear bumper LF antenna (B) and remove the harness clip (C).

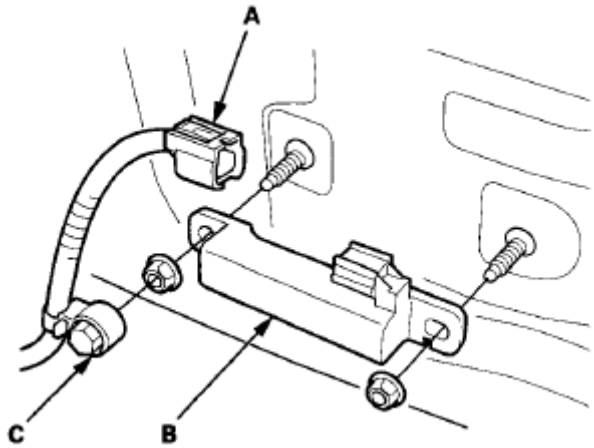


Fig. 189: Identifying 2P Connector, Rear Bumper LF Antenna And Harness Clip
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Remove the two nuts and the rear bumper LF antenna.
4. Install the antenna in the reverse order of removal.

ENGINE START/STOP SWITCH TEST/REPLACEMENT

1. Remove the driver's center trim (see **DASHBOARD CENTER TRIM REMOVAL/INSTALLATION**).
2. Disconnect the 10P connector (A) from the engine start/stop switch (B).

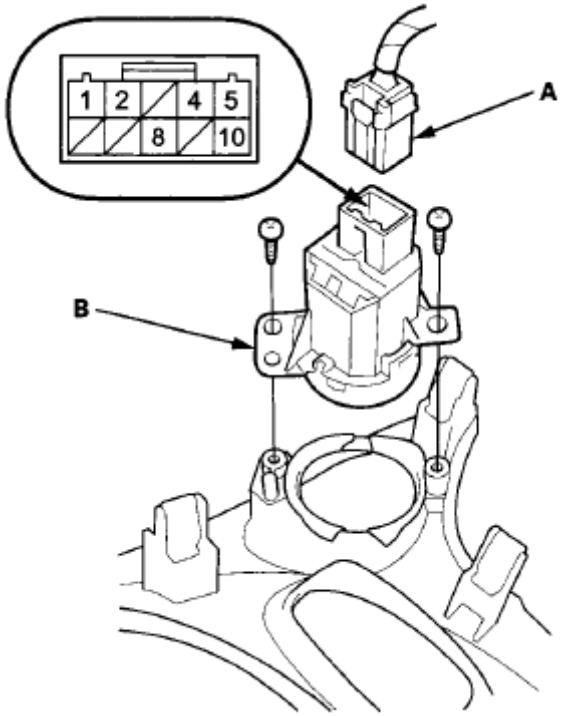


Fig. 190: Identifying 10P Connector And Engine Start/Stop Switch
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Remove the two screws, and the engine start/stop switch.
4. Check for continuity between the terminals in each switch position according to the table.

NOTE:

- **Make sure the correct test lead (+ or -) is placed on the terminal.**
- **When checking for continuity across the diode, use the diode setting on the digital volt/ohm meter to check the diode bias.**
- **Be careful of this characteristic; a diode is one that conducts fully in one direction (forward) and not at all in the opposite direction (reverse).**

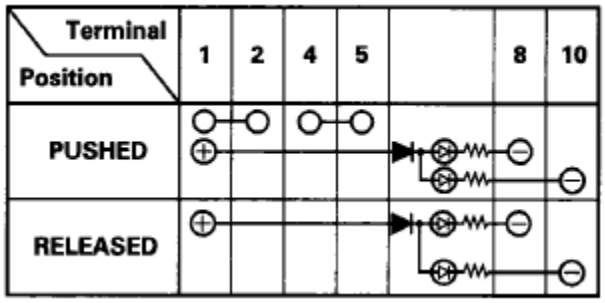


Fig. 191: Engine Start/Stop Switch Continuity Reference Chart
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Install the switch in the reverse order of removal.

REMOTE SLOT TEST/REPLACEMENT

1. Remove the column covers (see **SIDE DEFOGGER VENT TRIM REMOVAL/INSTALLATION**).
2. Remove the driver's center trim (see **DASHBOARD CENTER TRIM REMOVAL/INSTALLATION**).
3. Remove the two screws, then pull out the remote slot (A).

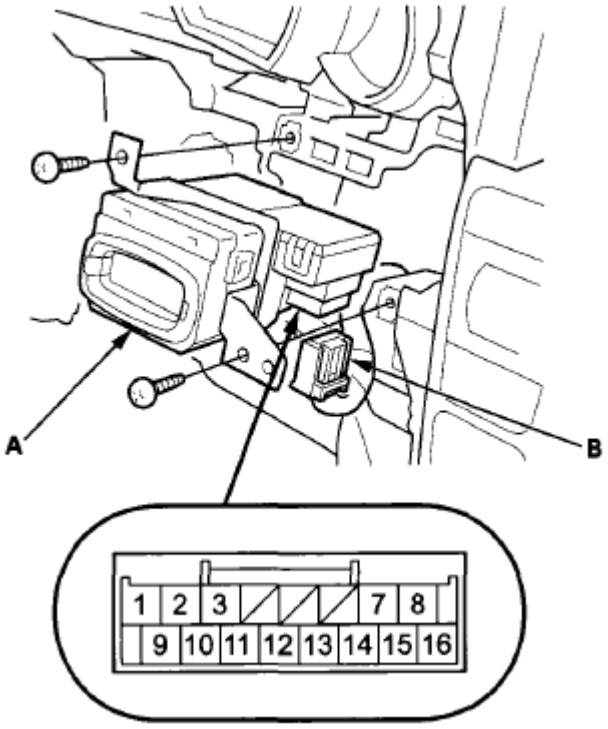


Fig. 192: Identifying Remote Slot And 16P Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Disconnect the 16P connector (B) from the remote slot.

5. Check for continuity between the terminals in each slot state according to the table.

NOTE:

- **Make sure the correct test lead (+ or -) is placed on the terminal.**
- **When checking for continuity across the diode, use the diode setting on the digital volt/ohm meter to check the diode bias.**
- **Be careful of this characteristic; a diode is one that conducts fully in one direction (forward) and not at all in the opposite direction (reverse).**

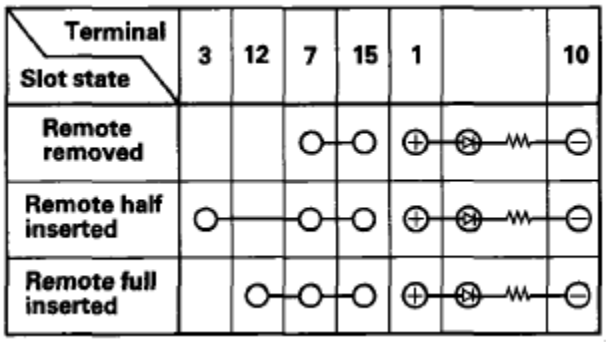


Fig. 193: Identifying Continuity Reference Chart For Terminals In Slot State
Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. If the continuity is not as specified, replace the remote slot.
7. Insert the remote into the remote slot.
8. Connect the positive battery terminal to remote slot connector terminal No. 16, and the negative battery terminal to terminal No. 8. Check that the remote cannot be removed from the remote slot. Connect the positive battery terminal to remote slot connector terminal No. 8, and the negative battery terminal to terminal No. 16. Check that the remote can be removed from the remote slot.

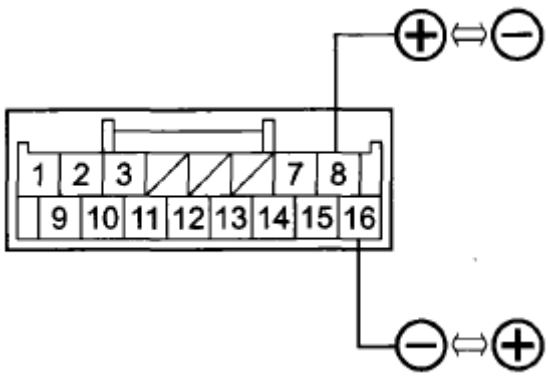


Fig. 194: Connecting Positive Battery Terminal To Remote Slot Connector Terminal No. 16 And Negative Battery Terminal To Terminal No. 8 And Vice- Versa
Courtesy of AMERICAN HONDA MOTOR CO., INC.

9. If the remote interlock solenoid works improperly, replace the remote slot.
10. Install the remote slot in the reverse order of removal.

KEYLESS ACCESS SYSTEM MODE SWITCH TEST/REPLACEMENT

1. Remove the glove box (see **GLOVE BOX REMOVAL/INSTALLATION**).
2. Disconnect the 2P connector (A) from the keyless access system mode switch (B).

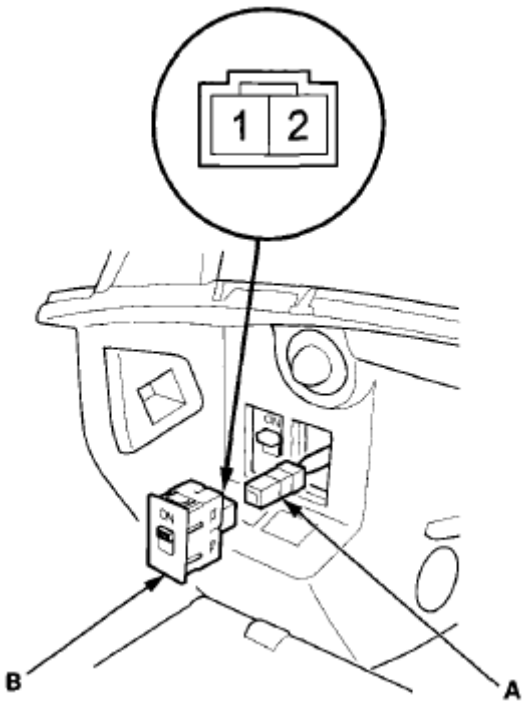


Fig. 195: Identifying 2P Connector And Keyless Access System Mode Switch
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Push out the keyless access system mode switch from the glove box.
4. Check for continuity between the terminals in each switch position according to the table.

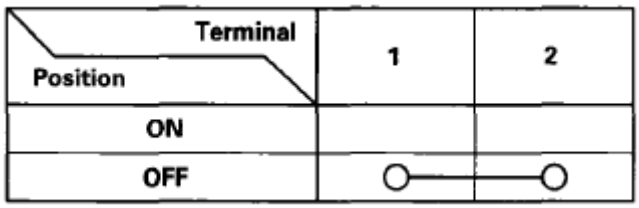


Fig. 196: Keyless Access System Mode Switch Continuity Reference Chart
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. If the continuity is not as specified, replace the switch.
6. Install the switch in the reverse order of removal.

REMOTE TEST

WITH KEYLESS ACCESS SYSTEM

NOTE:

- **If the doors unlock or lock with the remote, but the LED on the remote does not come on, the LED is faulty; replace the remote.**
- **If any door is open, you cannot lock the doors with the remote.**
- **If you unlocked the doors with the remote, but do not open any of the doors within 30 seconds, the doors relock automatically.**
- **The doors do not lock with the transmitter if the power mode is in ACC.**

WITH HDS

1. Press the lock or unlock button at least 10 times to reset the remote.
   - If the locks work, the remote is OK.
   - If any of the remote buttons do not work, replace the remote, then register the remote (see **WHEN REPLACING THE REMOTE SLOT CONTROL UNIT/KEYLESS ACCESS CONTROL UNIT/ECM/PCM/DRIVER'S MICU OR REGISTRATION OF THE REMOTE(S)**).
   - If the locks do not work, go to step 2.
2. Connect the HDS to the data link connector (DLC).
3. Select KEYLESS TRANSMITTER from the BODY ELECTRICAL SYSTEM SELECT menu, then select INSPECTION, then KEYLESS CHECK.
4. Press the lock, unlock, or panic button and check the response on the screen of the HDS.

   NOTE: The door lock actuators may or may not cycle when receiving input from the remote.

   - If KEYLESS ENTRY TRANSMITTER CODE IS RECEIVED is indicated, the remote is OK.
   - If DIFFERENT KEYLESS ENTRY TRANSMITTER CODE IS RECEIVED is indicated, the remote is not registered to the vehicle. If necessary, register the remote (see **WHEN REPLACING THE REMOTE SLOT CONTROL UNIT/KEYLESS ACCESS CONTROL UNIT/ECM/PCM/DRIVER'S MICU OR REGISTRATION OF THE REMOTE(S)**).
   - If KEYLESS ENTRY TRANSMITTER CODE IS NOT RECEIVED is indicated, go to step 5.
5. Open the remote, and check for water damage.
   - If you find any water damage, replace the remote, then register it (see **WHEN REPLACING THE REMOTE SLOT CONTROL UNIT/KEYLESS ACCESS CONTROL UNIT/ECM/PCM/DRIVER'S MICU OR REGISTRATION OF THE REMOTE(S)**).
   - If there is no water damage, go to step 6.
6. Replace the remote battery (A) with a new one (CR2032), and press the lock or unlock button and check the response on the screen of the HDS.
   - If KEYLESS ENTRY TRANSMITTER CODE IS RECEIVED is indicated, the remote is OK.
   - If KEYLESS ENTRY TRANSMITTER CODE IS NOT RECEIVED is indicated, go to step 7.

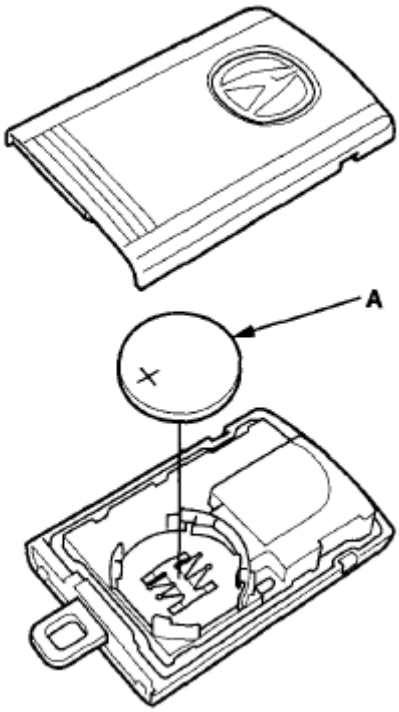


Fig. 197: Identifying Remote Battery
Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Use a different known- good remote assembly and repeat steps 3 and 4.

NOTE: The remote does not need to be programmed to the vehicle for this test.

- If (DIFFERENT) KEYLESS ENTRY TRANSMITTER CODE IS RECEIVED is indicated, replace the remote and do the keyless access system registration (see **KEYLESS ACCESS SYSTEM REGISTRATION**).
- If KEYLESS ENTRY TRANSMITTER CODE IS NOT RECEIVED is indicated, the keyless access control unit is faulty, replace it and do the keyless access system registration (see **KEYLESS ACCESS SYSTEM REGISTRATION**).

NOTE: The remote is combined with the immobilizer transponder, so when the transponder is registered by the HDS, the remote programming is completed automatically.

WITHOUT HDS

1. Open the remote, and check for water damage.
   - If you find any water damage, replace the remote.
   - If there is no water damage, go to step 2.
2. Replace the remote battery (A) with a new one (CR2032), and try to lock and unlock the doors with the remote by pressing the lock or unlock button at least 10 times.

- If the doors lock and unlock, the remote is OK.
- If the doors do not lock and unlock, go to step 3.

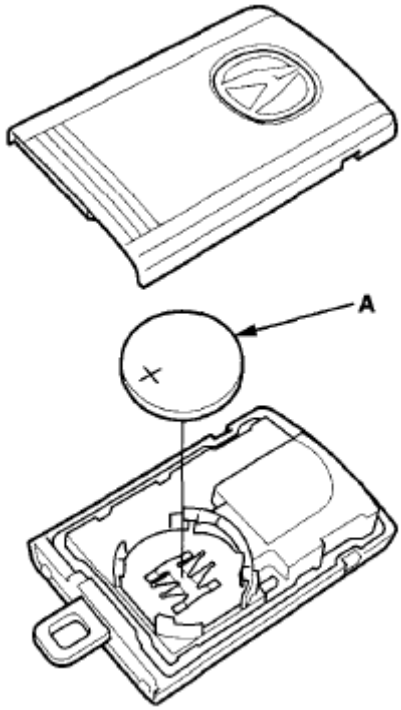


Fig. 198: Identifying Remote Battery
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Reprogram the remote with the HDS, then try to lock and unlock the doors.
   - If the doors lock and unlock, the remote is OK.
   - If the doors do not lock and unlock, try and program to another vehicle.
     - If the remote programs to another vehicle, go to B- CAN System Diagnosis Test Mode A (see **TROUBLESHOOTING - B- CAN SYSTEM DIAGNOSIS TEST MODE A**).
     - If the remote will not program to another vehicle, replace it.

KEYLESS ACCESS SYSTEM REGISTRATION

NOTE:

- **Check for aftermarket electrical equipment that can cause problems with keyless access operation.**
- **While doing the registration, keep the remote away from computers.**
- **While doing the registration, make sure the doors are closed.**
- **Programming the remote also programs the keyless transmitter.**
- **The keyless access control unit can store up to six remotes.**

WHEN REPLACING THE REMOTE SLOT CONTROL UNIT/KEYLESS ACCESS CONTROL

UNIT/ECM/PCM/DRIVER'S MICU OR REGISTRATION OF THE REMOTE(S)

1. When the replacing keyless access control unit, insert the remote into the remote slot.
2. Connect the HDS to the data link connector (DLC).
3. When all remotes are lost, select the ON mode according to the instructions on the HDS screen, then go to step 5.
4. Press the engine start/stop button to select the ON mode.
5. Select ONE-PUSH START from the SYSTEM SELECTION MENU, then enter REGISTRATION mode.
6. Select the appropriate unit or KEYS, and do the registration according to the instructions on the HDS screen.
7. Press the engine start/stop button to select the OFF mode, and verify that the system works normally with all remotes.

WHEN REPLACING THE POWER CONTROL UNIT OR THE ELECTRIC STEERING CONTROL UNIT

1. Connect the HDS to the data link connector (DLC).
2. Do the registration according to the instructions on the HDS screen.
3. After registration, verify that the system works normally with all remotes.

2012 ACCESSORIES & EQUIPMENT

Mirrors - TL

COMPONENT LOCATION INDEX

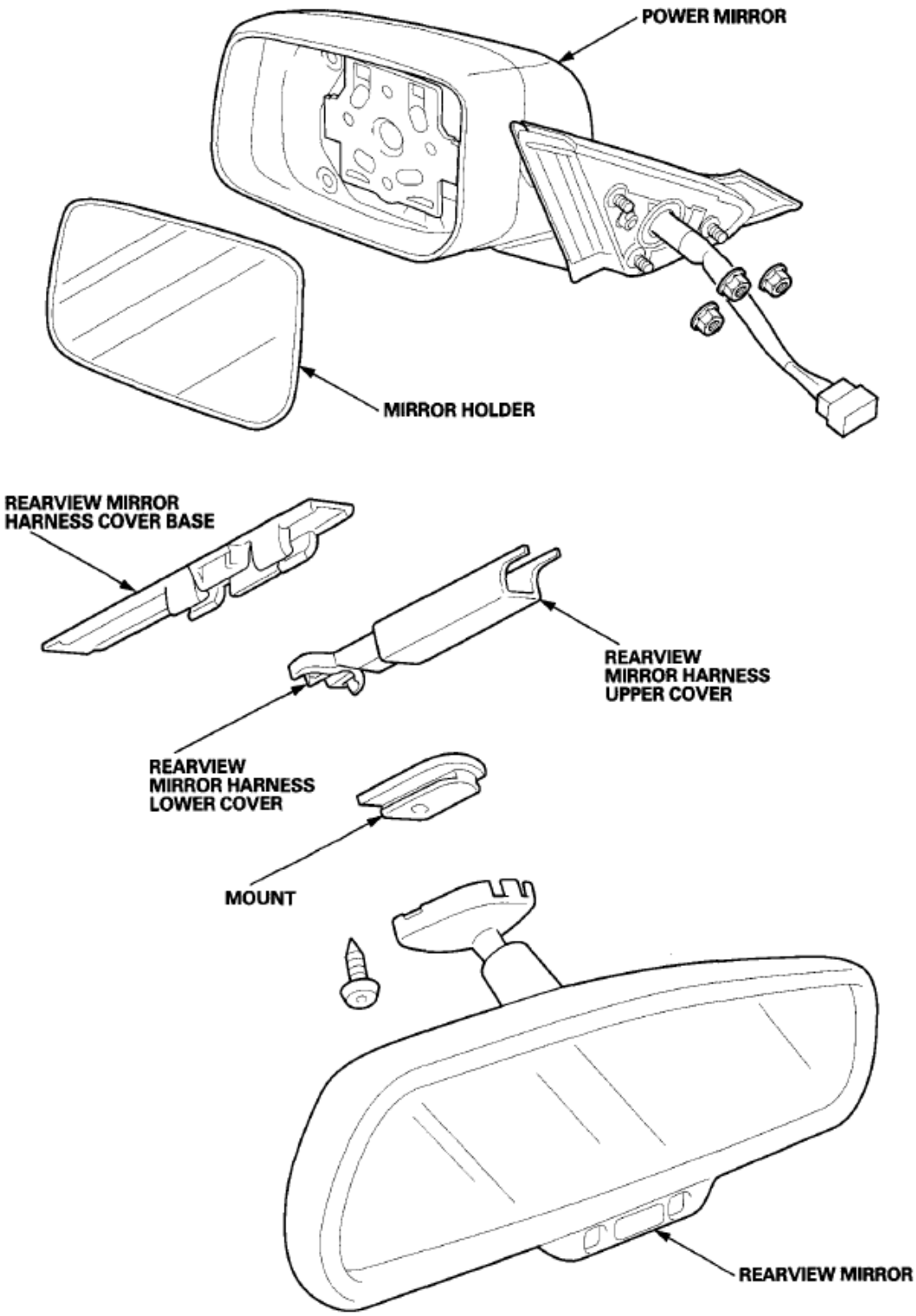


Fig. 1: Mirrors Components Location
Courtesy of AMERICAN HONDA MOTOR CO., INC.

POWER MIRROR REPLACEMENT

NOTE: Take care not to scratch the door.

1. Remove the front door sash inner trim (see **FRONT DOOR SASH INNER TRIM REPLACEMENT**).
2. Disconnect the power mirror connector (A).

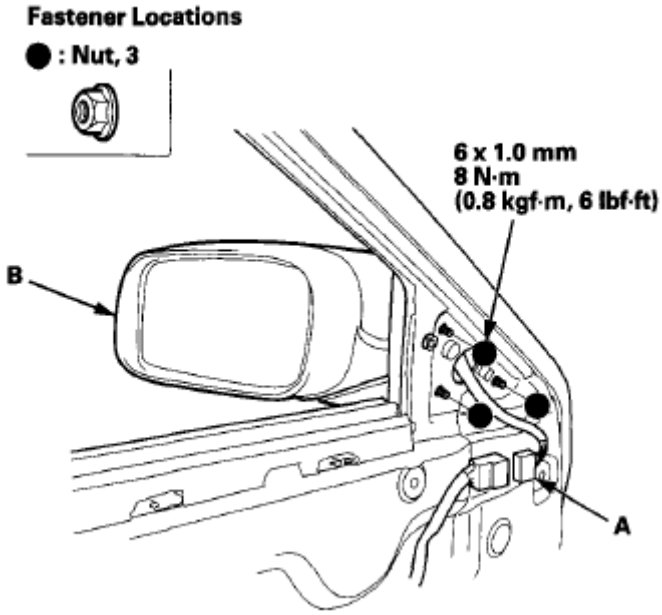


Fig. 2: Identifying Power Mirror And Power Mirror Connector With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. While holding the power mirror (B), remove the nuts securing the mirror.
4. Release the catch (A) from the hole in the door, then remove the power mirror (B).

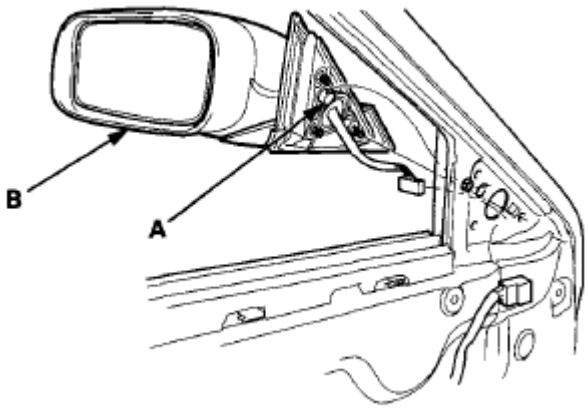


Fig. 3: Identifying Catch And Power Mirror
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Install the mirror in the reverse order of removal, and note these items:
   - Make sure the connector is plugged in properly.

- Make sure the power mirror operate properly.

MIRROR HOLDER REPLACEMENT

NOTE:

- **Put on gloves to protect your hands.**
- **When prying with a flat-tip screwdriver, wrap it with protective tape to prevent damage.**

1. Carefully push on the top edge of the mirror holder (A) by hand.

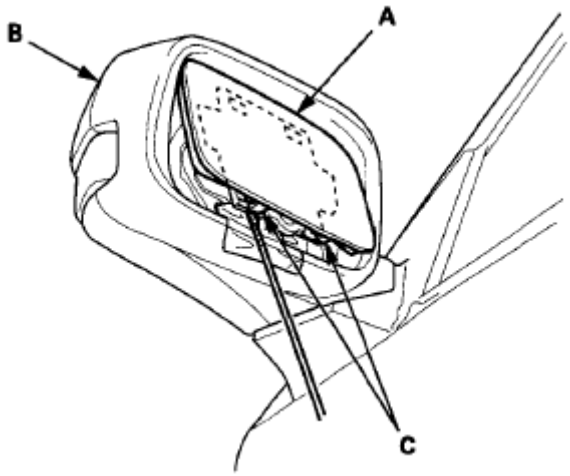


Fig. 4: Identifying Mirror Holder, Mirror Housing And Bottom Clips
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Put a shop towel in the opening between the bottom edge of the mirror holder and the mirror housing (B) to prevent scratches. Insert a flat-tip screwdriver under the mirror holder, and detach the bottom clips (C).
3. Carefully pull out the bottom edge of the mirror holder (A) to separate the adhesive (B), and then release the side clips (C).

NOTE: In cold weather, gently warm the mirror holder to at least 68°F (20°C) before removing it.

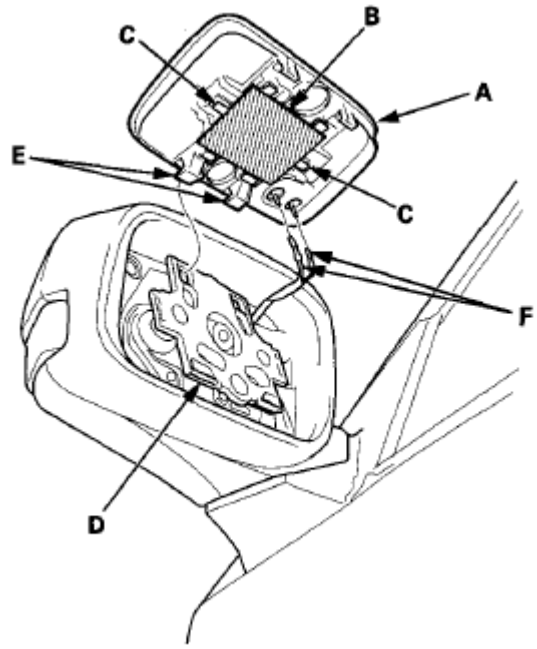


Fig. 5: Identifying Mirror Holder, Adhesive, Side Clips, Inner Holder, Hooks And Mirror Defogger Connectors
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Separate the mirror holder from the inner holder (D) on the actuator by releasing the hooks (E), and disconnect the mirror defogger connectors (F).
5. Before reinstalling the mirror holder to the inner holder (A) on the actuator, check the actuator rods (B) and the actuator boots (C).

NOTE: Make sure each actuator rod is inserted into the actuator securely, and each actuator boot is fully seated on the actuator.

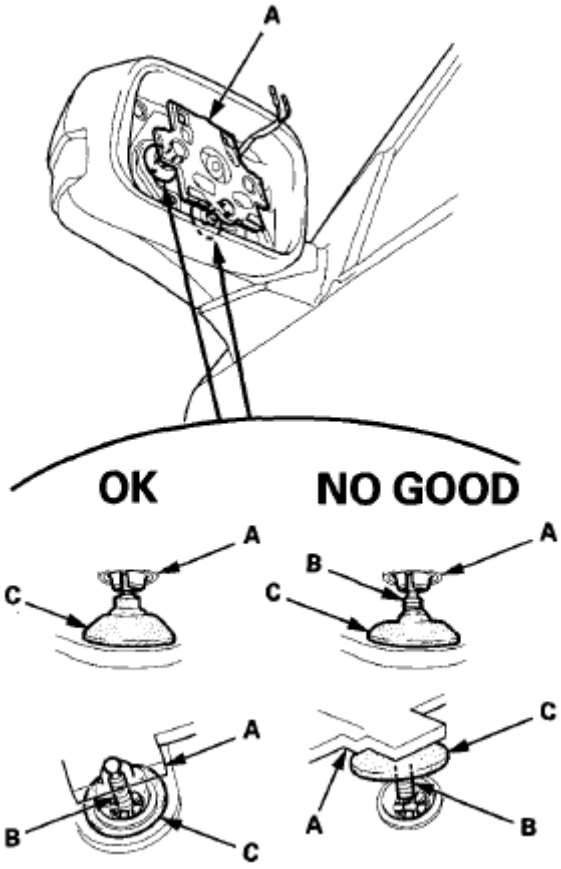


Fig. 6: Identifying Inner Holder, Actuator Rods And Actuator Boots
Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Reconnect the mirror defogger connectors.
7. Reattach the hooks on the mirror holder to the actuator, then position the mirror holder on the actuator. Carefully push on the clip areas of the mirror holder until the mirror holder locks into place.
8. Check the actuator operation.

REARVIEW MIRROR REPLACEMENT

1. Slide the rearview mirror harness upper cover (A) forward to release it from the headliner (B). Pry out the rearview mirror harness lower cover (C) to release the hooks (D), then slide the lower cover rearward, and remove the lower cover by releasing the hooks (E) on the rearview mirror harness cover base (F).

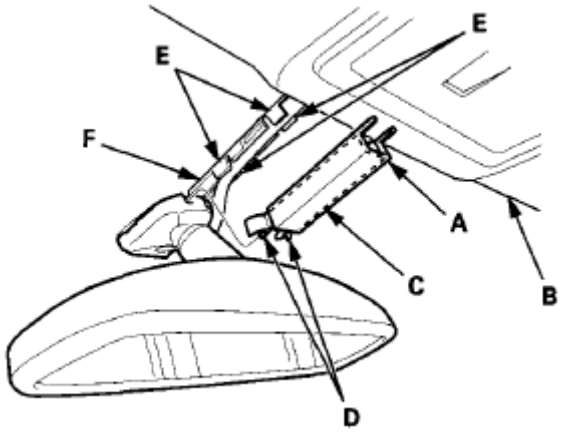


Fig. 7: Identifying Mirror Harness Lower And Upper Cover, Headliner, Hooks And Rearview Mirror Harness Cover Base
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Disconnect the rearview mirror connector (A).

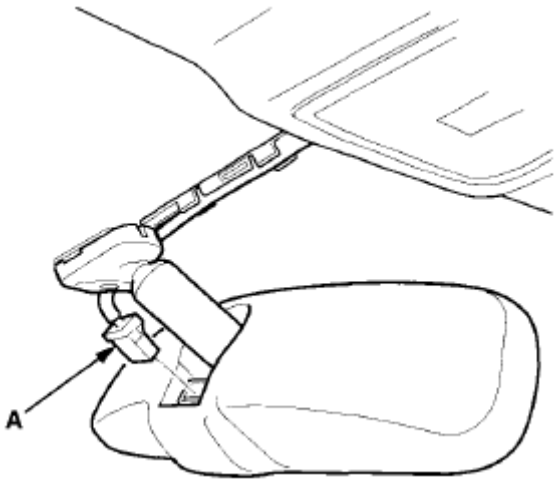


Fig. 8: Identifying Rearview Mirror Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Loosen the TORX screw with a TORX T20 bit, then slide the rearview mirror (A) rearward and off the mount (B).

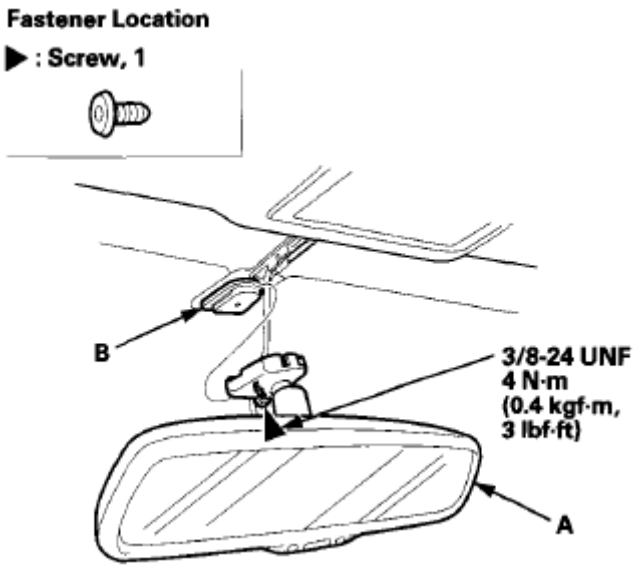


Fig. 9: Identifying Rearview Mirror And Mount With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Install the mirror in the reverse order of removal, and note these items:
   - Before installing the mirror, remove the TORX screw, and apply medium strength liquid thread lock to it.
   - Make sure the connector is plugged in properly.
   - Push the hooks into place securely.

2012 ACCESSORIES & EQUIPMENT

Multiplex Integrated Control System - TL

COMPONENT LOCATION INDEX

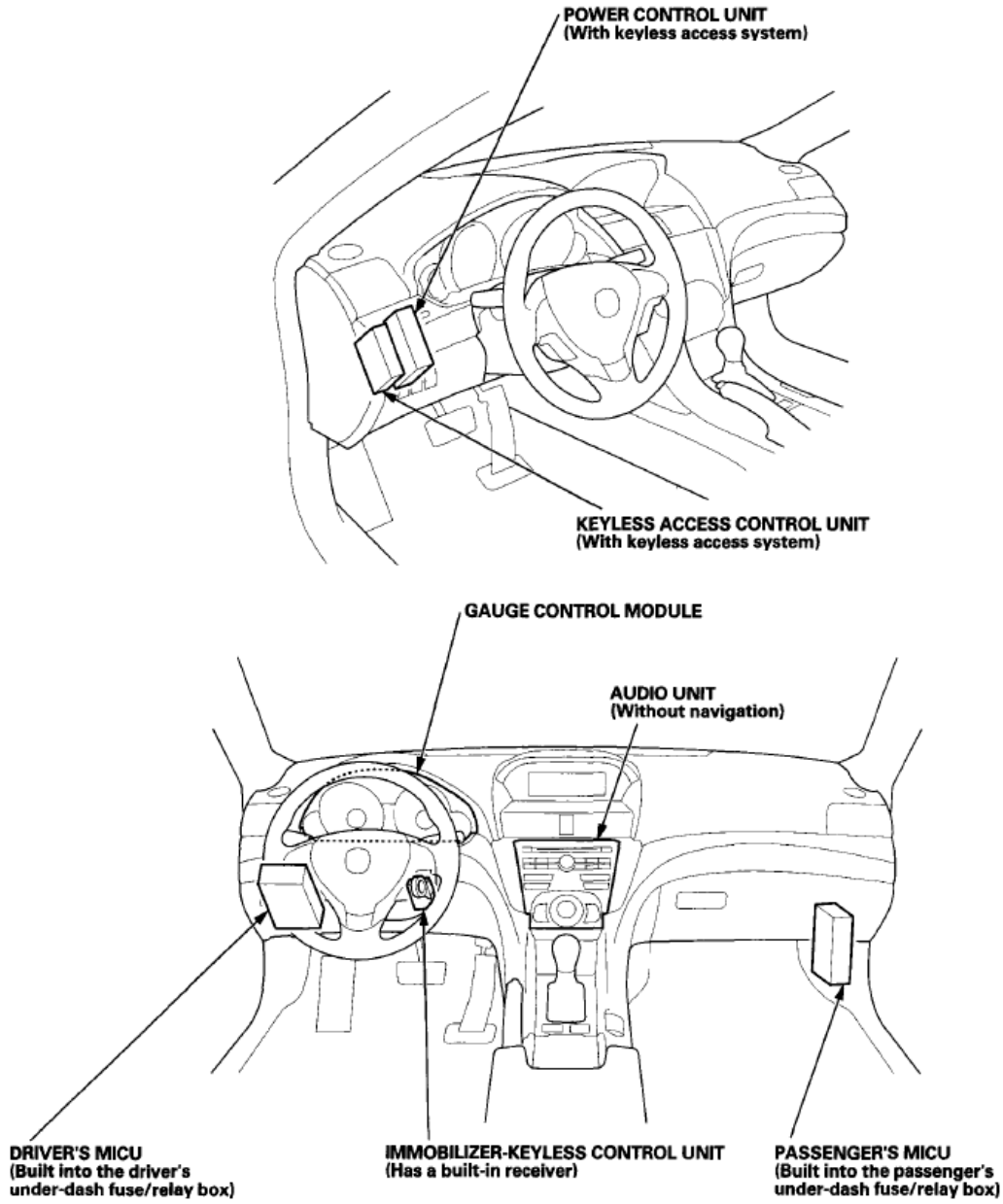


Fig. 1: Multiplex Integrated Control System Components Location (1 Of 4)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

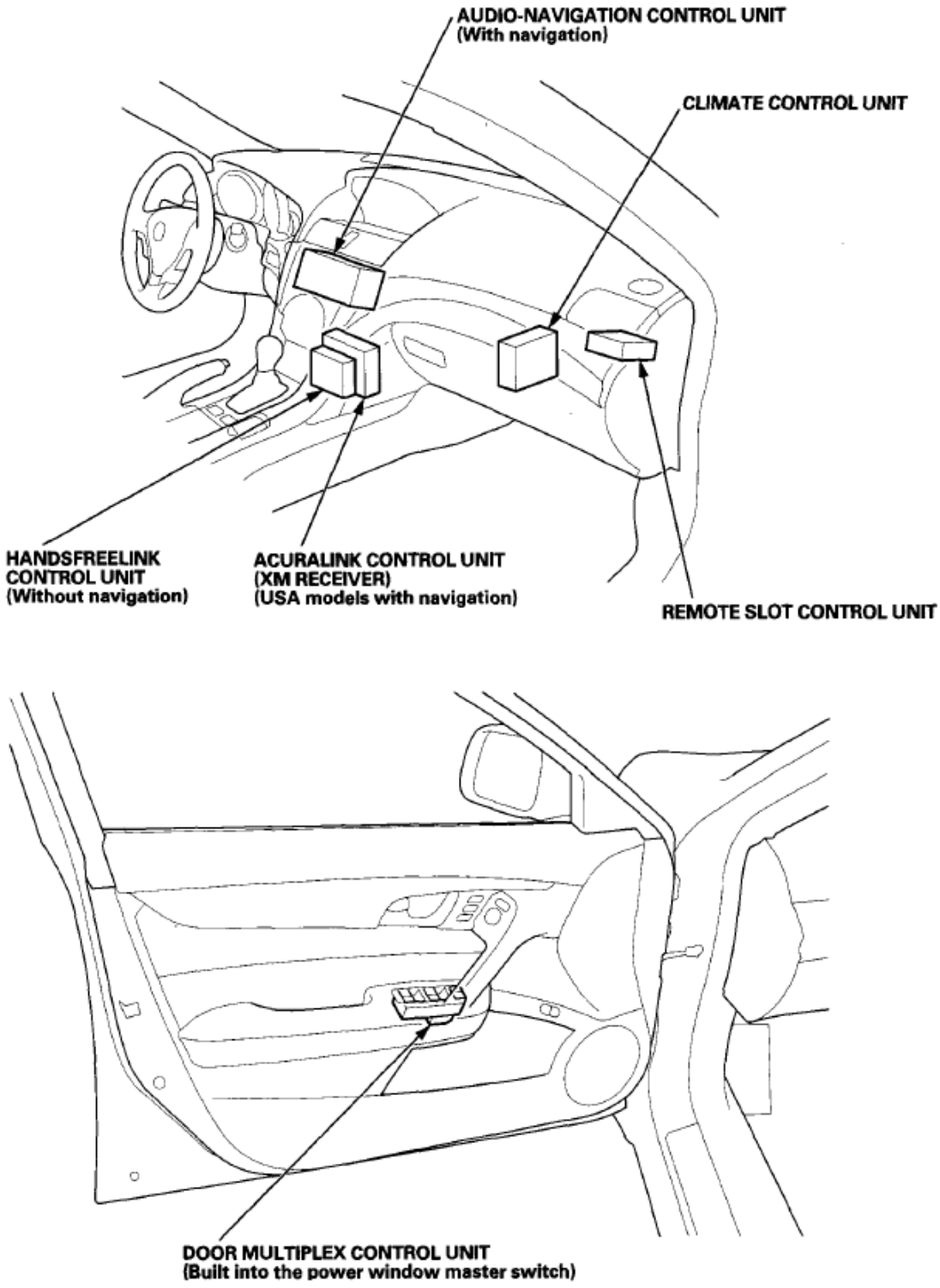


Fig. 2: Multiplex Integrated Control System Components Location (2 Of 4)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

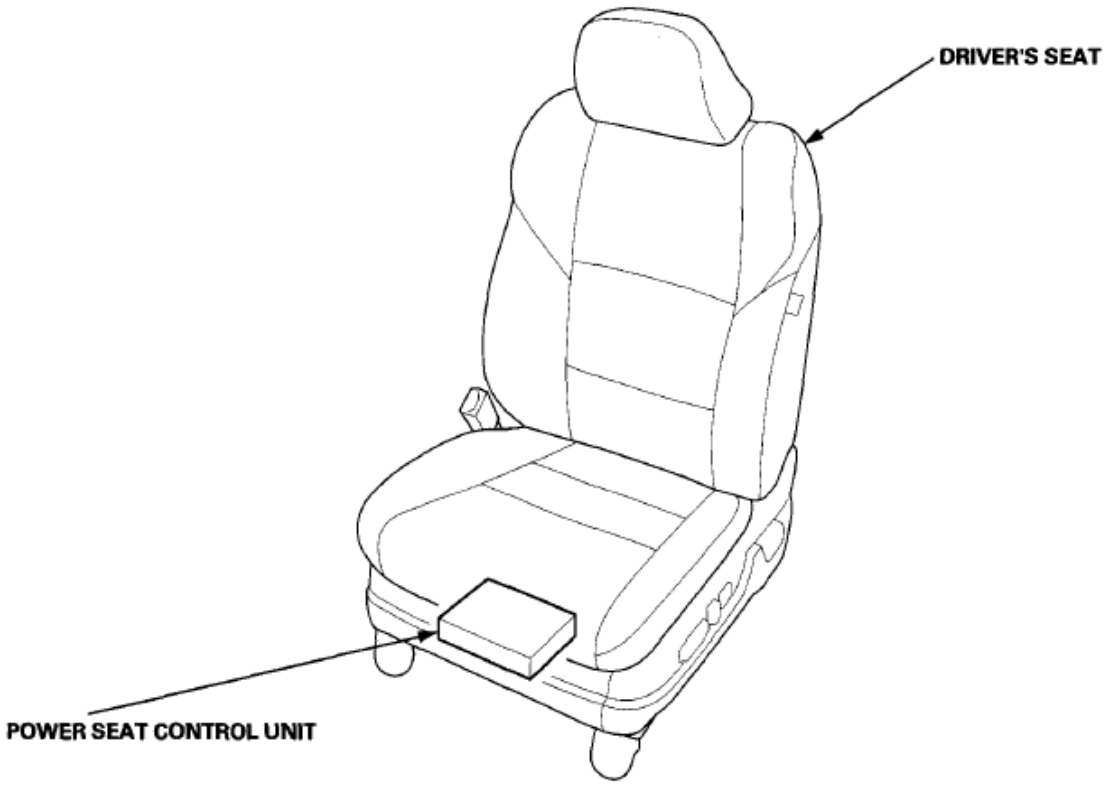


Fig. 3: Multiplex Integrated Control System Components Location (3 Of 4)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

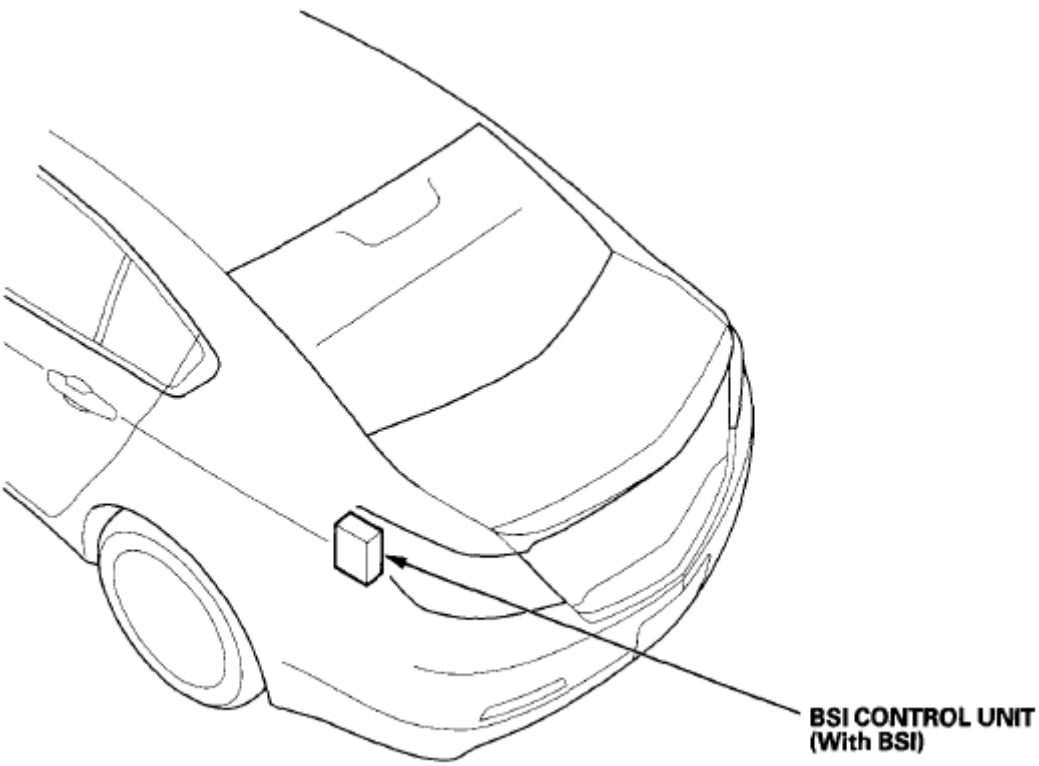


Fig. 4: Multiplex Integrated Control System Components Location (4 Of 4)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

GENERAL TROUBLESHOOTING INFORMATION

TROUBLESHOOTING CAN CIRCUIT RELATED PROBLEMS

NOTE: Check the ECM/PCM for DTCs and troubleshoot ECM/PCM (see GENERAL TROUBLESHOOTING INFORMATION) or F-CAN loss of communication errors first.

USING THE HDS (PREFERRED METHOD)

Connect the HDS to the Data Link Connector (DLC).

NOTE: There are two ways to read B-CAN code with the HDS.

First method; On the HDS, first select BODY ELECTRICAL, then select the subsystem that relates to the problem (for example: door locks, keyless, security, etc.), and then last, select the DTCs.

Second method; Ground the SCS circuit with the HDS, then read the DTCs displayed in the multi-information display (MID) in the gauge control module, then go to **B-CAN SYSTEM DIAGNOSIS TEST MODE A**.

USING THE B-CAN SYSTEM DIAGNOSIS TEST MODE 1 (USE ONLY IF THE HDS IS

UNAVAILABLE)

1. Check for communication circuit problems using the B-CAN System Diagnostic Test Mode 1 (see **TROUBLESHOOTING - B-CAN SYSTEM DIAGNOSIS TEST MODE 1 AND TEST MODE 2 (WITHOUT THE HDS)**).
2. Check for DTCs.
3. If multiple DTCs are stored, sort them, and then troubleshoot the DTCs in this order:
    1. Battery voltage DTCs
    2. Internal error DTCs
    3. Loss of communication DTCs

    NOTE: If DTC U1280 is stored, troubleshoot DTC U1280 first (see DTC U1280: COMMUNICATION BUS LINE ERROR (BUS-OFF)).

    4. Signal error DTCs
4. If no DTCs are retrieved, use the B-CAN System Diagnostic Test Mode 2 to check all inputs related to the failure (see **TROUBLESHOOTING - B-CAN SYSTEM DIAGNOSIS TEST MODE 1 AND TEST MODE 2 (WITHOUT THE HDS)**).

HOW TO DISPLAY DTCS ON THE MID OF THE GAUGE CONTROL MODULE

Enter the B-CAN System Diagnosis Test Mode 1 (see **TROUBLESHOOTING - B-CAN SYSTEM DIAGNOSIS TEST MODE 1 AND TEST MODE 2 (WITHOUT THE HDS)**). While in Test Mode 1, with normal communication between the MICU and gauge control module, the DTCs which have been detected and stored individually by various B-CAN (Body-Controller Area Network) units are shown one by one on the multi-information display. To scroll through the DTCs, press the SEL/RESET button.

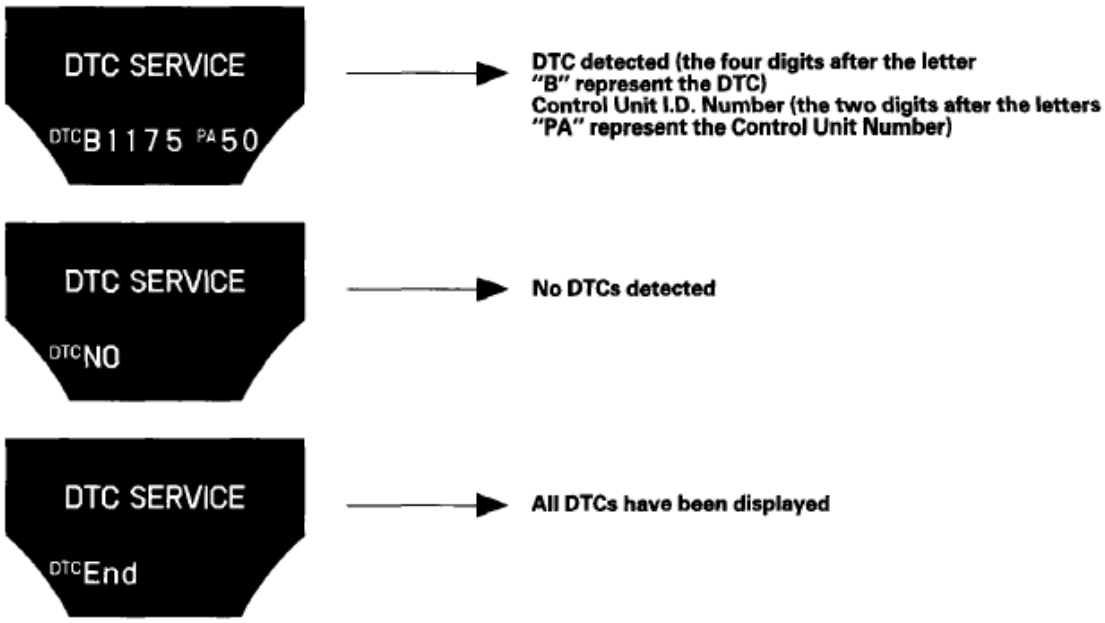


Fig. 5: Display DTCs On MID Of Gauge Control Module
Courtesy of AMERICAN HONDA MOTOR CO., INC.

The control unit that has stored the code can be identified by the number shown after the letters "PA" on the multi-information display (MID).

Control Unit	Control Unit I.D. Number
Driver's MICU	13
Passenger's MICU	14
Power control unit (With keyless access system)	15
Door multiplex control unit	30
Gauge control module	50
Climate control unit	51
Keyless access control unit (With keyless access system)	90
HandsFreeLink control unit (Without navigation)	94
Power seat control unit	95
Immobilizer-keyless control unit (Without keyless access system)	96
Remote slot control unit (With keyless access system)	96
AcuraLink control unit (XM receiver) (USA models with navigation)	97
BSI control unit (With BSI)	9F

HOW TO CLEAR DTCS

1. Enter the B-CAN System Diagnosis Test Mode 1 (see **TROUBLESHOOTING - B-CAN SYSTEM DIAGNOSIS TEST MODE 1 AND TEST MODE 2 (WITHOUT THE HDS)**).
2. While in Test Mode 1, press and hold down the SEL/RESET button for at least 10 seconds to clear the DTCs.

LOSS OF COMMUNICATION DTC CROSS-REFERENCE CHART

When an ECU on the CAN circuit is unable to communicate with the other ECUs on the B-CAN and F-CAN circuits, the other control units set loss of communication DTCs. Use this chart to find the control unit that is not communicating with the other control units on the CAN circuits.

1. Find the Transmitting Control Unit that is in the same row as all of the loss of communication DTCs retrieved.
2. Do the input test for the transmitting control unit.

BUS OFF AND INTERNAL ERROR CODES

DTC type	Related Unit									
	Driver's MICU	Passenger's MICU	Gauge Control Module	Door Multiplex Control Unit	Immobilizer-Keyless Control Unit	Power Control Unit	Keyless Access Control Unit	Remote Slot Control Unit	Climate Control Unit	H C

BUS OFF	U1280	U1280	U1280	U1280	U1280	U1280	U1280	U1280	U1280	
ECU (EEPROM) Error	B10A2	B11A2	B1152		B1902	B12A1	B1602	B1902		

LOSS OF COMMUNICATION

Transmitting Control Unit	Receiving Unit/Loss of Communication DTC								
	Driver's MICU	Passenger's MICU	Gauge Control Module	Door Multiplex Control Unit	Immobilizer-Keyless Control Unit	Power Control Unit	Keyless Access Control Unit	Remote Slot Control Unit	Climate Control Unit
Driver's MICU	TX	U1282	U1282	U1282	U1282		U1282		
Passenger's MICU	U1283	TX	U1283	U1283			U1283		
Gauge Control Module	U0155	U0155	TX	U0155	U0155	U0155	U0155	U0155	U0155
Door Multiplex Control Unit	U0199		U0199	TX	U0199	U0199	U0199	U0199	
Power Control Unit			U128B			TX			
Keyless Access Control Unit			U1286				TX		
Remote Slot Control Unit			U1289					TX	
Climate Control Unit			U0164	U0164					TX
ECM/PCM			U0100						
SRS Unit			U0151						
VSA Modulator-Control Unit			U0122						
TPMS Control Unit			U0127						
EPS Control Unit			U0131						
BSI Control Unit			U128F						

TX: Transmitting unit does not set a loss of communication DTC.

DTC TROUBLESHOOTING INDEX

NOTE: Record all DTCs, and sort them by DTC type using the following DTC troubleshooting indexes, then troubleshoot the DTC(s) in this order:

- Battery voltage DTCs
- Internal error DTCs
- Loss of communication DTCs
- Signal error DTCs

DRIVER'S MICU

DTC	Description	DTC Type
B1036	Driver's MICU IG1 line input error	Signal error
B1077	Wiper auto-stop (As) signal circuit malfunction	Signal error
B10A2	Driver's MICU internal (EEPROM) error	Internal error
B10CF	Left daytime running lights circuit malfunction	Signal error
B1275	Headlight switch OFF position circuit malfunction	Signal error
B1276	Headlight light switch PARKING position circuit malfunction	Signal error
B1277	Headlight AUTO position circuit malfunction	Signal error
B1278	Headlight ON position circuit malfunction	Signal error
B1279	Dimmer switch circuit malfunction	Signal error
B1280	Turn signal switch circuit malfunction	Signal error
B1281	Front wiper MIST position circuit malfunction	Signal error
B1282	Front wiper INT (AUTO) position circuit malfunction	Signal error
B1283	Front wiper LOW position circuit malfunction	Signal error
B1284	Front wiper HIGH position circuit malfunction	Signal error
U0155	Driver's MICU lost communication with gauge control module	Loss of communication
U0199	Driver's MICU lost communication with door multiplex control unit	Loss of communication
U1280	Communication bus line error (BUS-OFF)	Loss of communication
U1283	Driver's MICU lost communication with passenger's MICU	Loss of communication

PASSENGER'S MICU

DTC	Description	DTC Type
B11A2	Passenger's MICU internal (EEPROM) error	Internal error
B11C7	Passenger's MICU IG1 line input error	Signal error
B11CF	Right daytime running lights circuit malfunction	Signal error
B1575	Auto lighting sensor malfunction	Signal error
U0155	Passenger's MICU lost communication with gauge control module	Loss of communication
U1280	Communication bus line error (BUS-OFF)	Loss of communication
U1282	Passenger's MICU lost communication with driver's MICU	Loss of communication

DOOR MULTIPLEX CONTROL UNIT

DTC	Description	DTC Type
B1125	Driver's power window motor A pulse malfunction	Signal error
B1126	Driver's power window motor B pulse malfunction	Signal error
B1127	Driver's door key cylinder switch malfunction	Signal error
B1128	Driver's door lock switch malfunction	Signal error
B1129	Driver's door lock knob switch malfunction	Signal error
B1130	Front passenger's power window motor A-pulse malfunction	Signal error
B1131	Front passenger's power window motor B-pulse malfunction	Signal error
B1140	Driver's power window position detect circuit malfunction	Signal error
B1142	Door multiplex control unit lost communication with other unit (UART communication error)	Loss of communication
B1145	Front passenger's power window position detect circuit malfunction	Loss of communication
U0155	Door multiplex control unit lost communication with gauge control module	Loss of communication
U0164	Door multiplex control unit lost	Loss of communication

	communication with climate control unit	
U1280	Communication bus line error (BUS-OFF)	Loss of communication
U1282	Door multiplex control unit lost communication with driver's MICU	Loss of communication
U1283	Door multiplex control unit lost communication with passenger's MICU	Loss of communication

IMMOBILIZER-KEYLESS CONTROL UNIT

DTC	Description	DTC Type
U0155	Immobilizer-keyless control unit lost communication with gauge control module	Loss of communication
U0199	Immobilizer-keyless control unit lost communication with door multiplex control unit	Loss of communication
U1280	Communication bus line error (BUS-OFF)	Loss of communication
U1282	Immobilizer-keyless control unit lost communication with driver's MICU	Loss of communication

GAUGE CONTROL MODULE

DTC	Description	DTC Type
B1152	Gauge control module internal (EEPROM) error	Internal error
B1175	Fuel level sensor (Fuel gauge sending unit) circuit malfunction	Signal error
B1176	Fuel level sensor (Fuel gauge sending unit) circuit short	Signal error
B1192	Gauge control module lost communication with battery sensor (UART line)	Loss of communication
U0029	F-CAN communication line error (BUS OFF)	Loss of communication
U0100	Gauge control module lost communication with ECM/PCM	Loss of communication
U0122	Gauge control module lost communication with VSA modulator-control unit (VSA message)	Loss of communication
U0127	Gauge control module lost communication with the TPMS	Loss of communication

	control unit (TPMS message)	
U0131	Gauge control module lost communication with EPS control unit (EPS message)	Loss of communication
U0151	Gauge control module lost communication with SRS unit (SRS message)	Loss of communication
U0164	Gauge control module lost communication with climate control unit	Loss of communication
U0199	Gauge control module lost communication with door multiplex control unit	Loss of communication
U1280	Communication bus line error (BUS-OFF)	Loss of communication
U1282	Gauge control module lost communication with driver's MICU	Loss of communication
U1283	Gauge control module lost communication with passenger's MICU	Loss of communication
U1286	Gauge control module lost communication with keyless access control unit	Loss of communication
U1289	Gauge control module lost communication with remote slot control unit	Loss of communication
U128B	Gauge control module lost communication with power control unit	Loss of communication
U128F	Gauge control module lost communication with BSI control unit (BSI message)	Loss of communication

HANDSFREELINK CONTROL UNIT

DTC	Description	DTC Type
B1775	Microphone input/output shorted to power or open (with navigation)	Signal error
	Microphone input/output shorted to power or open (without navigation)	Signal error
B1776	Microphone input/output shorted to ground (with navigation)	Signal error
	Microphone input/output shorted to ground (without navigation)	Signal error
B1779	HandsFreeLink steering wheel switch failure (with navigation)	Signal error

	HandsFreeLink steering wheel switch failure (without navigation)	Signal error
B1780	HandsFreeLink steering wheel switch line short (with navigation)	Signal error
	HandsFreeLink steering wheel switch line short (without navigation)	Signal error
B1792	HandsFreeLink control unit error (with navigation)	Signal error
	HandsFreeLink control unit error (without navigation)	Signal error
U1280	Communication bus line error (BUS-OFF)	Loss of communication

CLIMATE CONTROL UNIT

DTC	Description	DTC Type
U1280	Communication bus line error (BUS-OFF)	Loss of communication
U0155	Lost communication with gauge control module (climate control unit)	Loss of communication
B1215	An open or short in the recirculation control motor circuit	Signal error
B1225	An open in the in-car temperature sensor circuit	Signal error
B1226	A short in the in-car temperature sensor circuit	Signal error
B1227	An open in the outside air temperature sensor circuit	Signal error
B1228	A short in the outside air temperature sensor circuit	Signal error
B1229	An open in the sunlight sensor circuit	Signal error
B1230	A short in the sunlight sensor circuit	Signal error
B1231	An open in the evaporator temperature sensor circuit	Signal error
B1232	A short in the evaporator temperature sensor circuit	Signal error
B1233	An open in the air mix control motor circuit (driver's)	Signal error
B1234	A short in the air mix control motor circuit (driver's)	Signal error
B1235	A problem in the air mix control motor circuit, linkage, door, or	Signal error

	motor (driver's)	
B1236	An open in the passenger's air mix control motor circuit	Signal error
B1237	A short in the passenger's air mix control motor circuit	Signal error
B1238	A problem in the passenger's air mix control linkage, door, or motor	Signal error
B1239	An open or short in the mode control motor circuit (driver's)	Signal error
B1240	A problem in the mode control motor circuit, linkage, doors, or motor (driver's)	Signal error
B1241	A problem in the blower motor circuit	Signal error
B1242	An open or short in the passenger's mode control motor circuit	Signal error
B1243	A problem in the passenger's mode control motor circuit, linkage, doors, or motor	Signal error
B2967	An open in the humidity sensor circuit	Signal error
B2968	A short in the humidity sensor circuit	Signal error
B2969	Climate control unit lost communication with driver's MICU (WIPSW message)	Signal error
B2979	An open in the A/C pressure sensor circuit	Signal error
B2980	A short in the A/C pressure sensor circuit	Signal error
B2983	A problem in the recirculation control motor circuit, linkage, door, or motor	Signal error

ACURALINK CONTROL UNIT

DTC	Description	DTC Type
B2240	XM antenna error	Internal error
U0100	F-CAN lost communication with ECM/PCM	Loss of communication
U0155	Gauge control module lost F-CAN communication with AcuraLink control unit (XM receiver)	Loss of communication
U1280	Communication bus line error (BUS-OFF)	Loss of communication

U128D	AcuraLink control unit (XM receiver) lost B-CAN communication with gauge control module	Loss of communication

POWER SEAT CONTROL UNIT

DTC	Description	DTC Type
B1802	Power seat control unit failure	Internal error
B1825	Power seat slide motor pulse error	Signal error
B1826	Power seat front up-down motor pulse error	Signal error
B1827	Power seat rear up-down motor pulse error	Signal error
B1828	Power seat recline motor pulse error	Signal error
B1829	A/T-P signal and VSP signal mismatch	Signal error
B1830	Left mirror position sensor open	Signal error
B1832	Right mirror position sensor open	Signal error
B1836	Power seat position sensor circuit short	Signal error
B1837	Memory position calling timeout	Signal error
B1843	UART communication error	Signal error
B1844	Power seat slide switch circuit malfunction	Signal error
B1845	Power seat recline switch circuit malfunction	Signal error
B1846	Power seat front up-down switch circuit malfunction	Signal error
B1847	Power seat rear up-down switch circuit malfunction	Signal error
U0155	Power seat control unit lost communication with gauge control module	Loss of communication
U0199	Power seat control unit lost communication with door multiplex control unit	Loss of communication
U1280	Communication bus line error (BUS-OFF)	Loss of communication
U1282	Power seat control unit lost communication with driver's MICU	Loss of communication

POWER CONTROL UNIT

DTC	Description	DTC Type
B12A1	Power control unit internal (CPU)	Internal error

	error	
B12C5	Engine start/stop switch failure	Internal error
B12C6	Electric steering lock switch C/D monitor circuit failure	Internal error
B12C7	Electric steering lock motor circuit failure	Internal error
B12D0	Power control unit IG1A circuit error	Internal error
B12D1	Power control unit IG1B circuit error	Internal error
B12D2	Power control unit IG2 circuit error	Internal error
B12D3	Power control unit IG latch circuit error	Internal error
B12E0	Electric steering lock switch internal error	Internal error
B12E1	Electric steering lock motor internal error	Internal error
B12E2	Electric steering lock low level failure of MTRCUT1	Signal error
B12E3	Electric steering lock high level failure of MTRCUT1	Signal error
B12E4	Electric steering lock high level failure of MTRCUT2	Signal error
B12F0	Power control unit lost communication with electric steering lock	Loss of communication
B12F1	Power control unit lost communication with remote slot control unit	Loss of communication
B12F2	Power control unit lost communication with keyless access control unit	Loss of communication
U0155	Power control unit lost communication with gauge control module	Loss of communication
U0199	Power control unit lost communication with door multiplex control unit	Loss of communication
U1280	Communication bus line error (BUS-OFF)	Loss of communication

REMOTE SLOT CONTROL UNIT

DTC	Description	DTC Type
B1902	Remote slot control unit internal	Internal error

	error (EEPROM error)	
B1926	Remote slot antenna open or short	Internal error
B1927	MTRCONT signal error	Signal error
B1930	Remote slot control unit LOCK/UNLOCK error	Signal error
B1931	Remote slot control unit no response	Signal error
U0155	Remote slot control unit lost communication with gauge control module	Loss of communication
U1280	Communication bus line error (BUS-OFF)	Loss of communication

KEYLESS ACCESS CONTROL UNIT

DTC	Description	DTC Type
B1601	Keyless access control unit internal (CPU) error	Internal error
B1602	Keyless access control unit internal (EEPROM) error	Internal error
B1640	RF unit not connected	Signal error
B1646	Driver's door LF antenna circuit open or short	Signal error
B1648	Passenger's door LF antenna circuit open or short	Signal error
B1658	Rear bumper LF antenna circuit open or short	Signal error
B1660	Front interior LF antenna circuit open or short	Signal error
B1664	Rear interior LF antenna circuit open or short	Signal error
B1668	Rear shelf LF antenna circuit open or short	Signal error
U0155	Keyless access control unit lost communication with gauge control module	Loss of communication
U0199	Keyless access control unit lost communication with door multiplex control unit	Loss of communication
U1280	Communication bus line error (BUS-OFF)	Loss of communication
U1282	Keyless access control unit lost communication with driver's MICU	Loss of communication
U1283	Keyless access control unit lost communication with passenger's MICU	Loss of communication

BSI CONTROL UNIT

DTC	Description	DTC Type
B18A1	BSI control unit internal circuit error	Internal error
B18A5	Left BSI radar unit temperature high	Signal error
B18A6	Right BSI radar unit temperature high	Signal error
B18A7	Left BSI radar unit voltage input low	Signal error
B18A8	Right BSI radar unit voltage input low	Signal error
B18A9	Left BSI radar unit voltage input high	Signal error
B18AA	Right BSI radar unit voltage input high	Signal error
B18AF	Left BSI radar unit internal circuit error	Internal error
B18B1	Right BSI radar unit internal circuit error	Internal error
B18B4	Left BSI radar unit dirty	Signal error
B18B5	Right BSI radar unit dirty	Signal error
B18B6	Lost communication with left BSI radar unit	Loss of communication
B18B7	Lost communication with right BSI radar unit	Loss of communication
B18B8	Left BSI radar unit azimuth off alignment	Signal error
B18B9	Right BSI radar unit azimuth off alignment	Signal error
B18BA	Left BSI radar unit version incorrect	Signal error
B18BB	Right BSI radar unit version incorrect	Signal error
B18BC	BSI radar units communication error	Signal error
B18BD	BSI control unit voltage input high	Signal error
B18BE	BSI control unit voltage input low	Signal error
B18C2	Left BSI alert indicator output error	Signal error
B18CF	Right BSI alert indicator output error	Signal error
U0155	Lost communication with the gauge control module	Loss of communication
U0423	Invalid data received from PCM (vehicle speed data)	Loss of communication
U1280	Communication circuit error (BUS-	Loss of communication

	OFF)	

SYSTEM DESCRIPTION

BODY CONTROLLER AREA NETWORK (B-CAN) AND FAST CONTROLLER AREA NETWORK (F-CAN)

The body controller area network (B-CAN) and the fast controller area network (F-CAN) share information between multiple electronic control units (ECUs). B-CAN communication moves at a slower speed (125 kbps) for convenience related items and for other functions. F-CAN information moves at a faster speed (500 kbps) for "real time" functions such as fuel and emissions data. To allow both systems to share information, the gauge control module translates and relays the information from B-CAN to F-CAN and from F-CAN to B-CAN. This is called the Gateway Function.

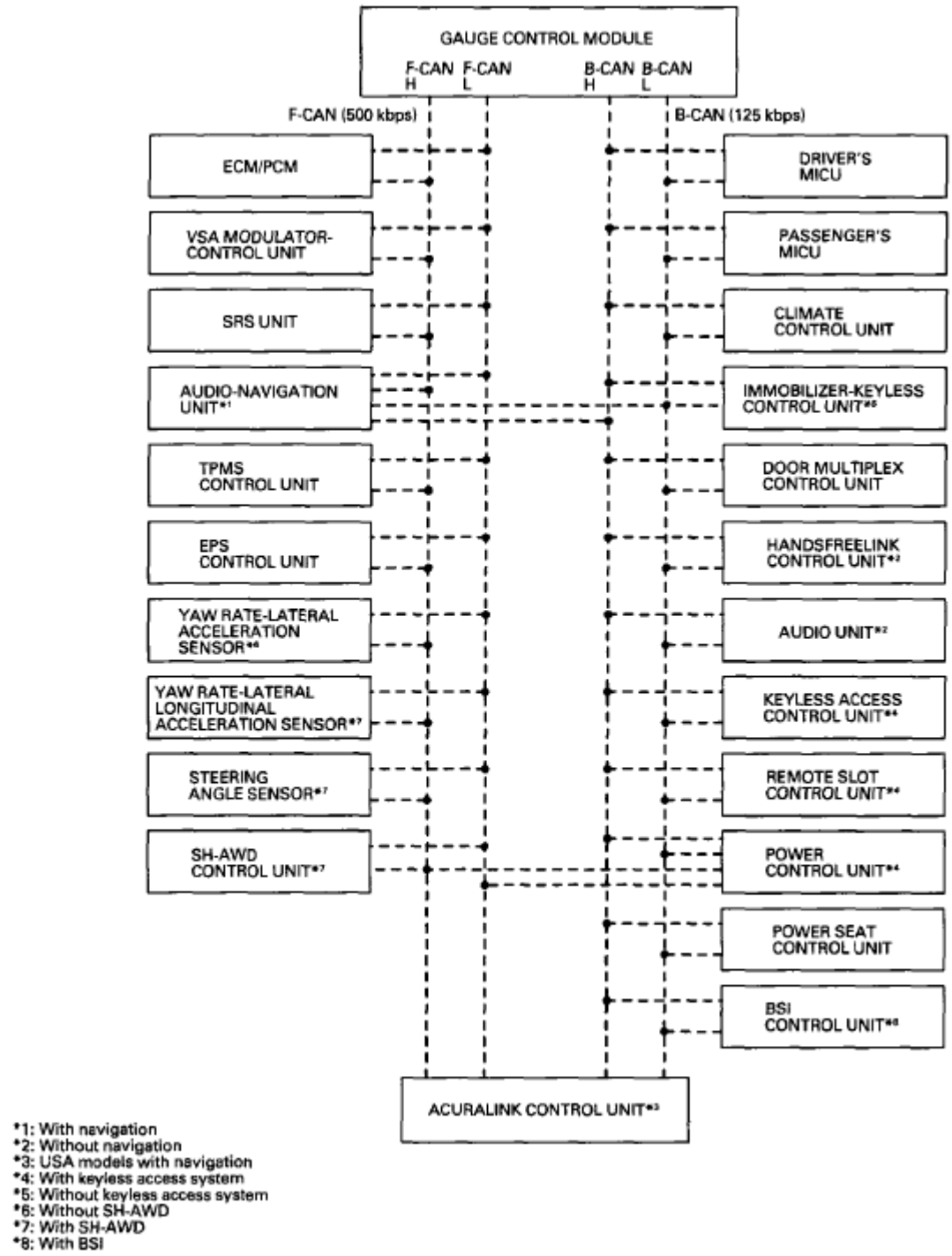


Fig. 6: Body Controller Area Network (B-CAN) And Fast Controller Area Network (F-CAN) System Diagram
Courtesy of AMERICAN HONDA MOTOR CO., INC.

GATEWAY FUNCTION

The gauge control module acts as a gateway to allow both systems to share information. The gauge control

module translates and relays the information from B-CAN to F-CAN and from F-CAN to B-CAN.

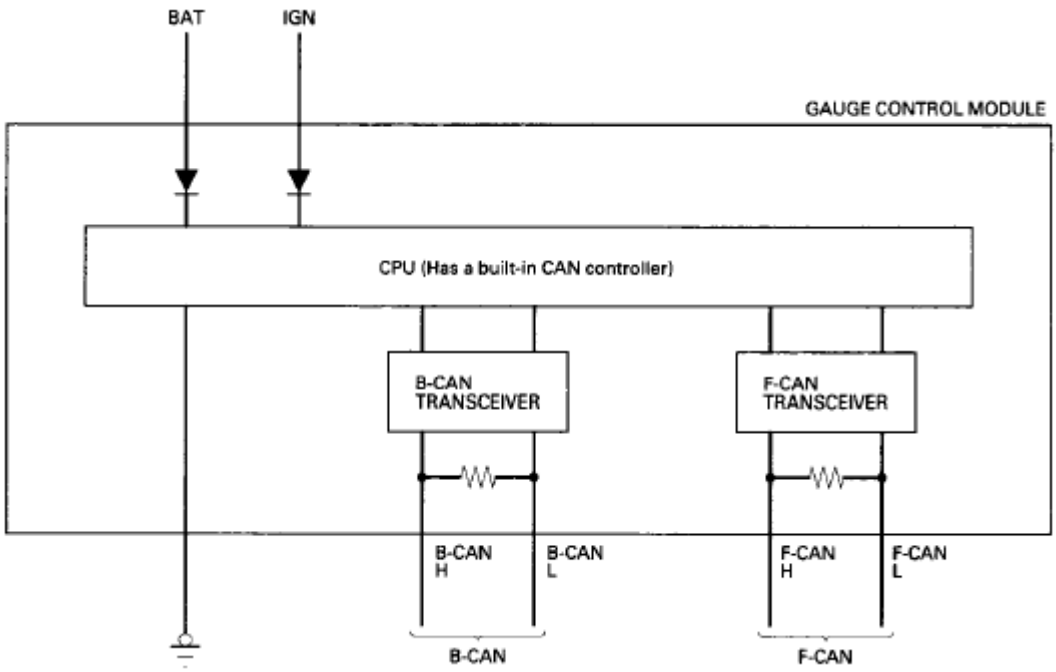


Fig. 7: Gateway Functioning Diagram
Courtesy of AMERICAN HONDA MOTOR CO., INC.

NETWORK "LOSS OF COMMUNICATION" ERROR CHECKING FUNCTION

The ECUs on the CAN circuit send messages to each other. If there are any communication malfunctions on the network, the multi information display (MID) on the gauge control module can indicate the error messages by entering the gauge control module self-diagnostic function (see **SELF-DIAGNOSTIC FUNCTION**).



Fig. 8: Display - Error Messages On Multi Information Display (MID)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

SELF-DIAGNOSTIC FUNCTION (ON-BOARD DIAGNOSIS)

By connecting the HDS to the data link connector (DLC), the HDS can retrieve the diagnostic information from the driver's MICU via a diagnostic line called the K-LINE. The K-LINE is a separate communication line from the CAN lines, but it is connected to most of the CAN related ECUs. The driver's MICU is a gateway between the HDS and B-CAN related ECUs, and sends B-CAN diagnostic information to the HDS. When doing a function test with the HDS, the HDS sends an output signal through the K-LINE to the driver's MICU. The

driver's MICU either relays the request to another ECU, or commands the function itself.

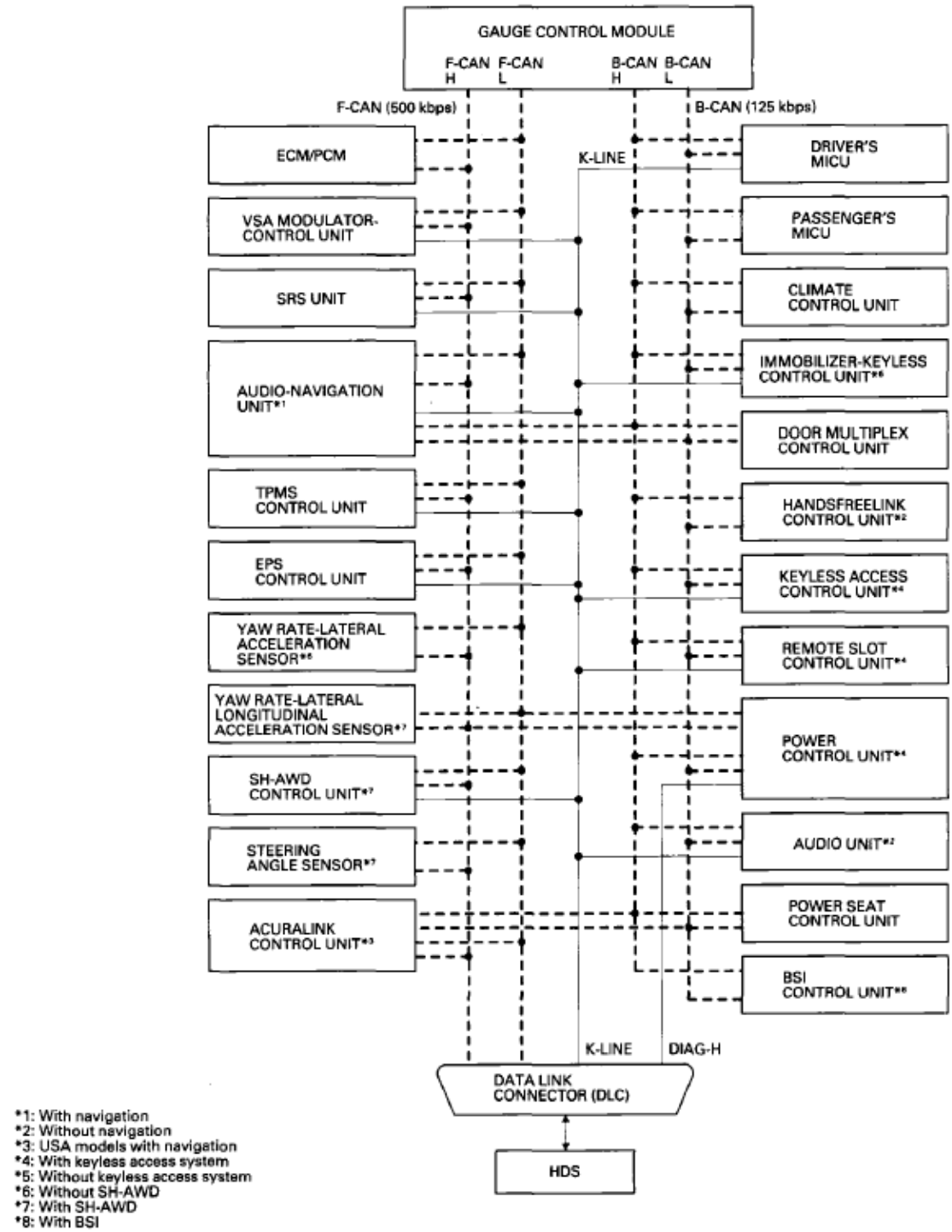


Fig. 9: Self-Diagnostic Functioning (On-Board Diagnosis) System Diagram
Courtesy of AMERICAN HONDA MOTOR CO., INC.

WAKE-UP AND SLEEP FUNCTION

The multiplex integrated control system has wake-up and sleep functions to decrease parasitic draw on the battery when the ignition switch is at LOCK (0), or the engine start/stop button has been pressed to select the OFF mode.

- In the sleep mode, the multiplex integrated control system stops functioning (communication and CPU control) when it is not necessary for the system to operate.
- As soon as any operation is requested (for example, a door is unlocked), the related control units in sleep mode immediately wake up and begin to function.
- When the ignition switch is turned to LOCK (0), or the engine start/stop button is pressed to select the OFF mode, and the driver's door is opened, then closed, there is a delay of about 40 seconds before the control unit goes from wake-up mode to sleep mode.
- The sleep mode function if any door is open or will not occur if a key is in the ignition switch.
- Electrical draw is reduced from 200 mA to less than 35 mA when in sleep mode.

NOTE: Sleep and Wake-Up Mode Test (see SLEEP AND WAKE-UP MODE TEST).

FAIL-SAFE FUNCTION

To prevent improper operation, the MICUs have a fail-safe function. In the fail-safe mode, the output signal is fixed when any part of the system malfunctions (for example, a faulty control unit or communication line).

Each control unit has a hardware fail-safe function that fixes the output signal when there is a CPU malfunction, and a software fail-safe function that ignores the signal from a malfunctioning control unit, which allows the system to continue operating normally.

HARDWARE FAIL-SAFE CONTROL

Fail-safe function

When a CPU problem or an abnormal power supply voltage is detected, the MICUs move to the hardware fail-safe mode, and each system output load is set to the pre-programmed fail-safe value.

SOFTWARE FAIL-SAFE CONTROL

When any of the data from the B-CAN circuit cannot be received within a specified time, or an unusual combination of data is recognized, the MICUs move to the software fail-safe mode. The data that was not received is forced to a pre-programmed value.

DRIVER'S MICU

Power Supply Voltage Monitoring Function

The driver's MICU monitors the power supply voltage (back-up voltage). If the voltage drops below 10 V, the driver's MICU does not store DTCs.

	Input	Output

Driver's MICU	Battery voltage (VBU)	
B-CAN		MICU (Under 10 V) message

Entry Lights Control System (Ceiling Lights, Map Lights, Ignition Key Light)*

The driver's MICU controls the interior lights and ignition key light ON/OFF based on input signals from each switch.

	Input	Output
Driver's MICU	IG1 power supply Ignition key switch Driver's door switch Left rear door switch	Interior lights Ignition key light
B-CAN	Keyless LOCK/UNLOCK signal Keyless access signal Right rear door switch Driver's door lock knob switch (LOCK/UNLOCK) Front passenger's door switch	

*: This system can be customized in the multi-information display (MID) to suit the client's needs. For more information about customizing system options, refer to the Owner's Manual.

Trunk Light

The driver's MICU controls the trunk light based on input from the trunk lid latch switch.

	Input	Output
Driver's MICU	IG1 power supply Trunk lid latch switch	Trunk light
B-CAN	Light cut signal	

Collision Detection Signal (CDS)

The driver's MICU controls the door lock actuators based on IG1 and SRS (CDS) inputs.

	Input	Output
Driver's MICU	IG1 power supply	Door lock actuators (UNLOCK)
B-CAN	CDS signal	Door lock actuators (UNLOCK)

Key Interlock (A/T)

The driver's MICU controls the key interlock solenoid based on ignition switch ACCESSORY (I) position, the transmission range switch P position, and the park pin switch inputs.

	Input	Output

Driver's MICU	Ignition switch (ACC) Transmission range switch (P) position Park pin switch	Key interlock solenoid

Rear Window Defogger Timer Operation

The driver's MICU controls the rear window defogger timer based on ignition switch and rear window defogger switch inputs.

	Input	Output
Driver's MICU	IG1 power supply	Rear window defogger relay
B-CAN	Rear window defogger switch	

Combination Light Switch

The driver's MICU controls the lighting system based on inputs from the combination light switch.

	Input	Output
Driver's MICU	Combination light switch (OFF) Combination light switch (ON) Combination light switch (AUTO) Combination light switch (PARKING) Combination light switch (PASSING) Combination light switch (DIMMER)	Parking light Headlight (high beam, low beam, passing) Taillights Headlight (AUTO)
B-CAN		Parking light Headlight (high beam, low beam, passing) Taillights Headlight (AUTO)

Daytime Running Lights

The driver's MICU controls the headlights as daytime running lights based on inputs from each switch.

	Input	Output
Driver's MICU	IG2 power supply	Left headlight (high beam)
B-CAN	Parking brake signal Auto headlight LO off signal IG1 meter signal	Headlight (high beam) DRL messages

Fog Lights

The driver's MICU controls fog lights based on inputs from the fog light switch.

	Input	Output
Driver's MICU	Fog light switch Combination light switch	Left fog light

B-CAN		Fog light signal

Headlight Auto OFF Function*

The driver's MICU controls the lighting system based on inputs from each switch.

	Input	Output
Driver's MICU	IG1 power supply Ignition key switch Driver's door switch	Left headlight (high beam, low beam) Taillights
B-CAN	Driver's door lock knob switch Keyless access signal Auto light off signals	Headlight off signal

*: This system can be customized in the multi-information display (MID) to suit the client's needs. For more information about customizing system options, refer to the Owner's Manual.

Turn Signal/Hazard Warning Lights

The driver's MICU controls the turn signal/hazard warning lights based on inputs from the turn signal switch and the hazard warning switch.

	Input	Output
Driver's MICU	IG1 power supply Turn signal switch (left) Turn signal switch (right) Hazard warning switch	Turn signal lights (left) Turn signal lights (right)
B-CAN		HAZARDSW message TURNLRLY message TURNRRLY message TURNRSW message TURNLSW message

Courtesy Light (Driver's Side)

The driver's MICU controls the driver's lights based on input from the driver's door switches.

	Input	Output
Driver's MICU	IG1 power supply Driver's door switch	Driver's door courtesy light
B-CAN	Light cut signal	

Wiper

The driver's MICU controls the wiper based on inputs from each switch.

	Input	Output
Driver's MICU	IG1 power supply Brake pedal position switch Transmission range switch P position (A/T) Wiper switch (INT & LO) Wiper switch (HI & LO) Wiper switch (MIST) Wiper switch (AS) Wiper switch intermittent dwell time controller	Windshield wiper intermittent relay Windshield wiper motor high/low relay
B-CAN	Parking brake signal (A/T) IG1 meter signal (A/T) Washer signal Keyless access signal Vehicle speed pulse signal	WIPSW messages

Driver's Power Window Relay

The driver's MICU controls the power windows based on inputs from each switch.

	Input	Output
Driver's MICU	IG1 power supply	Power window relay (left rear)
B-CAN	Power window relay signal (left rear) Power window timer signal	

Keyless Answer Back*

The driver's MICU controls the lighting system and horns based on keyless signals sent by B-CAN.

	Input	Output
Driver's MICU		Parking light Taillights Horns
B-CAN	KEYLESS DOOR LOCK signal	

*: This system can be customized in the multi-information display (MID) to suit the client's needs. For more information about customizing system options, refer to the Owner's Manual.

Security Answer Back*

The driver's MICU controls the lighting system and horns based on keyless signals sent by B-CAN.

	Input	Output
Driver's MICU		Parking light Taillights Horns
B-CAN	KEYLESS DOOR LOCK signal	Answer back buzzer message

*: This system can be customized in the multi-information display (MID) to suit the client's needs. For more information about customizing system options, refer to the Owner's Manual.

Answer Back Response Operation

The driver's MICU controls the lighting system and horns based on keyless signals sent by B-CAN.

	Input	Output
Driver's MICU		Parking light Taillights Horns
B-CAN	ANSWER BACK signal (HORN) ANSWER BACK signal (PARKING LIGHT) ANSWER BACK signal (H/L LO)	Taillight relay Horn relay

Power Door Locks*

The driver's MICU controls the door lock actuators based on the inputs from each switch.

	Input	Output
Driver's MICU	IG1 power supply Ignition key switch Driver's door switch Left rear door switch Trunk lid latch switch	Driver's door lock actuator (UNLOCK) Door lock actuators (LOCK) Door lock actuators (UNLOCK) Trunk lid release actuator Fuel lid actuator
B-CAN	Driver's door lock switch (LOCK/UNLOCK) Driver's door key cylinder switch (LOCK/UNLOCK) Driver's door lock knob switch (LOCK/UNLOCK) Front passenger's door lock switch (LOCK/UNLOCK) Front passenger's door switch Right rear door switch Keyless access signal	Door lock signal (LOCK) Door lock signal (UNLOCK)

*: This system can be customized in the multi-information display (MID) to suit the client's needs. For more information about customizing system options, refer to the Owner's Manual.

Door Lock Response Operation

The driver's MICU controls the door lock actuators LOCK, UNLOCK, DRIVER'S UNLOCK, TRUNK UNLOCK based on B-CAN door lock switch signals.

	Input	Output
		Driver's door lock actuator (UNLOCK)

Driver's MICU		Door lock actuators (LOCK) Door lock actuators (UNLOCK) Trunk lid release actuator
B-CAN	Door lock switch signals	

Keyless Entry System*

The driver's MICU controls the door lock actuators based on the input signals from each switch.

	Input	Output
Driver's MICU	IG1 power supply Ignition key switch Driver's door switch Left rear door switch Trunk lid opener main switch	Driver's door lock actuator (UNLOCK) Door lock actuators (LOCK) Door lock actuators (UNLOCK) Trunk lid release actuator
B-CAN	Front passenger's door switch Right rear door switch Driver's door lock knob switch (LOCK) Driver's door lock switch (LOCK/UNLOCK) Driver's door key cylinder switch (LOCK/UNLOCK) Front passenger's door lock switch (LOCK/UNLOCK) Keyless access signal Keyless LOCK/UNLOCK signal	Door lock signal (LOCK) Door lock signal (UNLOCK) Relock signal

*: This system can be customized in the multi-information display (MID) to suit the client's needs. For more information about customizing system options, refer to the Owner's Manual.

Keyless PANIC Operation

The driver's MICU controls the keyless PANIC operation based on keyless signals sent by B-CAN data.

	Input	Output
Driver's MICU		Headlight (low beam) Parking light Taillights Horns
B-CAN	PANIC signals	Headlight (low beam) signal Parking light signal Taillights signal

Auto Power Door Locks (LOCK Operation)*

The driver's MICU controls the door lock actuators based on inputs from each switch.

	Input	Output
Driver's MICU	IG1 power supply Transmission range switch (P position) Driver's door switch Left rear door switch Trunk lid latch switch Left rear door lock knob switch (LOCK) Brake pedal position switch	Door lock actuators (LOCK)
B-CAN	Front passenger's door switch Right rear door switch Driver's door lock knob switch (LOCK) Front passenger's door lock knob switch (LOCK) Right rear door lock knob switch (LOCK) Vehicle speed signal Engine speed signal	Door lock signal (LOCK)

*: This system can be customized in the multi-information display (MID) to suit the client's needs. For more information about customizing system options, refer to the Owner's Manual.

Auto Power Door Locks (UNLOCK Operation)*

The driver's MICU controls the door lock actuators based on inputs from each switch.

	Input	Output
Driver's MICU	IG1 power supply Transmission range switch (P position) Driver's door switch Left rear door switch Trunk lid latch switch Brake pedal position switch Left rear door lock knob switch (UNLOCK)	Driver's door lock actuators (UNLOCK) Door lock actuators (UNLOCK)
B-CAN	Front passenger's door switch Right rear door switch Driver's door lock knob switch (UNLOCK) Front passenger's door lock knob switch (UNLOCK) Right rear door lock knob switch (UNLOCK)	Door lock signal (UNLOCK) Door lock signal (LOCK)

*: This system can be customized in the multi-information display (MID) to suit the client's needs. For more information about customizing system options, refer to the Owner's Manual.

Security Alarm System

The driver's MICU controls the lighting system and horns based on inputs from each switch and B-CAN data.

	Input	Output
	IG1 power supply	

Driver's MICU	Ignition key switch Driver's door switch Left rear door switch Trunk lid latch switch Left rear door lock knob switch (UNLOCK) Security hood switch	Headlights (low beam) Parking light Taillights Horns
B-CAN	Audio switch Front passenger's door switch Right rear door switch Driver's door key cylinder switch (LOCK/UNLOCK) Driver's door lock knob switch (UNLOCK) Front passenger's door lock knob switch (UNLOCK) Right rear door lock knob switch (UNLOCK) Keyless LOCK/UNLOCK signal DOOR LOCK signal	Driver's MICU (SET 1) message Driver's MICU (SET 2) message ALARM (ACTION) message Headlight (low beam) signal Parking light signal Taillights signal

PASSENGER'S MICU

Power Supply Voltage Monitoring Function

The passenger's MICU monitors the power supply voltage (back-up voltage). If the voltage drops below 10 V, the passenger's MICU does not store DTCs.

	Input	Output
Passenger's MICU	Battery voltage (VBU)	

Courtesy Light (Passenger's Side)

The passenger's MICU controls the front passenger lights is based on input from the front passenger door switch.

	Input	Output
Passenger's MICU	IG1 power supply Front passenger's door switch	Front passenger's door courtesy light
B-CAN	Light cut signal	

Power Door Locks (LOCK)*

The passenger's MICU controls the front passenger's side door lock actuators based on inputs from the driver's MICU.

	Input	Output
Passenger's MICU		Door lock actuators (LOCK)
B-CAN	Door lock (LOCK) signal	

*: This system can be customized in the multi-information display (MID) to suit the client's needs. For more information about customizing system options, refer to the Owner's Manual.

Power Door Locks (UNLOCK)*

The passenger's MICU controls the front passenger's side door lock actuators based on inputs from the driver's MICU.

	Input	Output
Passenger's MICU		Door lock actuators (UNLOCK)
B-CAN	Door lock (UNLOCK) signal	

*: This system can be customized in the multi-information display (MID) to suit the client's needs. For more information about customizing system options, refer to the Owner's Manual.

Exterior Lights

The passenger's MICU controls the front passenger's side headlight, and parking lights based on inputs from the driver's MICU.

	Input	Output
Passenger's MICU		Parking light Headlight (high beam, low beam) Passenger's DRL (low beam) Passenger's fog light
B-CAN	Parking light signal Headlight (high beam, low beam passing) signal DRL signal Fog light signal	Passenger's DRL signal

Automatic Lighting*

The passenger's MICU controls the headlights and the parking lights based on inputs from the automatic lighting sensor.

	Input	Output
Passenger's MICU	IG1 power supply Automatic lighting sensor (SIO) signal	Headlight back-up signal
B-CAN	IG1 power supply signal Lighting switch signal Vehicle speed signal	AUTOLT signals

*: This system can be customized in the multi-information display (MID) to suit the client's needs. For more information about customizing system options, refer to the Owner's Manual.

Fog Lights

The passenger's MICU controls fog lights based on inputs from the fog light switch.

	Input	Output
Passenger's MICU		Right fog light
B-CAN	Fog light signal	

Washer Operation

The passenger's MICU controls the washer motor based on inputs from the wiper switch.

	Input	Output
Passenger's MICU	IG1 power supply Headlight washer switch (with headlight washer)	Windshield washer motor Headlight washer motor (with headlight washer)
B-CAN	Wiper switch signals	

Keyless Buzzer Operation

The passenger's MICU controls the keyless buzzer based on inputs from the answer back signals.

	Input	Output
Passenger's MICU		Keyless buzzer
B-CAN	Answer back signals	

HDS INPUTS AND FUNCTION TESTS

Certain inputs happen so quickly that the Data List on the HDS cannot update fast enough. Hold the switch that is being tested while monitoring the Data List. This should give the HDS time to update the signal on the Data List.

Because the HDS software is updated to support the release of newer vehicles, it is not uncommon to see system function tests that are not supported.

Make sure that the most current HDS software is loaded.

INPUT

System Menu	Data List	Data List Indication
	Autolight Sensor Input Voltage	V
	Autolight Sensor Malfunction Detection Voltage Max	V
	Autolight Sensor Malfunction Detection Voltage Min	V
	Autolight Small Command	OFF/ON
	Autolight Headlight Command	OFF/ON
	Autolight Warning Command	OFF/ON
	Autolight Headlight Backup Line Command	OFF/ON

Lighting	Headlight Command	OFF/ON
	Headlight High Beam Command	OFF/ON
	Parking Light Command	OFF/ON
	Fog Light Command	OFF/ON
	DRL Command	OFF/ON
	Passenger's Courtesy Light Command	OFF/ON
	Driver's Door Switch	OFF/ON
	Hazard Switch	OFF/ON
	Headlight Switch (OFF)	OFF/ON
	Headlight Switch (PARKING)	OFF/ON
	Headlight Switch (HEADLIGHT)	OFF/ON
	Headlight Switch (AUTO)	OFF/ON
	Headlight Switch (High Beam)	OFF/ON
	Headlight Switch (PASSING)	OFF/ON
	Turn Signal Switch (LEFT)	OFF/ON
	Turn Signal Switch (RIGHT)	OFF/ON
	Fog Light Switch	OFF/ON
	Ignition Key Cylinder Light Command	OFF/ON
	Interior Light Command	OFF/ON
	Left Turn Signal Command	OFF/ON
	Right Turn Signal Command	OFF/ON
	Cargo Light Command	OFF/ON
	Map Light OFF Command	OFF/ON
	Headlight Command	OFF/ON
	Headlight High Beam Command	OFF/ON
	Parking Light Command	OFF/ON
	Fog Light Command	OFF/ON
	DRL Command	OFF/ON
	Driver's Courtesy Light Command	OFF/ON
	Brake Pedal Position Switch	OFF/ON
Wiper	Windshield Washer Motor Command	OFF/ON
	Windshield Wiper Switch (LOW)	OFF/ON
	Windshield Wiper Switch (HIGH)	OFF/ON
	Windshield Wiper Switch (MIST)	OFF/ON
	Windshield Wiper Switch (INT)	OFF/ON
	Windshield Washer Switch	OFF/ON
	Windshield Wiper Motor PARK Switch	OFF/ON
	Windshield Wiper Motor HI Command	OFF/ON
	Windshield Wiper Motor Lo Command	OFF/ON
	Windshield Washer Motor Command	OFF/ON
	Front Passenger's Door Switch	OFF/ON

Keyless Transmitter	Passenger's Rear Door Switch	OFF/ON
	Passenger's Rear Door Lock Knob Sw. (UNLOCK)	OFF/ON
	Door Lock Command	OFF/ON
	Door UNLOCK Command	OFF/ON
	Keyless Buzzer Command	OFF/ON
	Driver's Door Switch	OFF/ON
	Driver's Rear Door Switch	OFF/ON
	Trunk Lid/Tailgate Switch	OFF/ON
	Driver's Rear Door Lock Knob Switch (UNLOCK)	OFF/ON
	Trunk Key Cylinder (UNLOCK)	OFF/ON
	Trunk Handle Sw.	OFF/ON
	Trunk Main Switch	OFF/ON
	Door Lock Command	OFF/ON
	Driver's Door UNLOCK Command	OFF/ON
	Trunk Lid Release Command	OFF/ON
	Driver's Door Key Cylinder Switch (LOCK)	OFF/ON
	Driver's Door Key Cylinder Switch (UNLOCK)	OFF/ON
	Driver's Door Lock Switch (LOCK)	OFF/ON
	Driver's Door Lock Switch (UNLOCK)	OFF/ON
	Driver's Door Lock Knob Switch (LOCK)	OFF/ON
	Driver's Door Lock Knob Switch (UNLOCK)	OFF/ON
Door Locks	Front Passenger's Door Switch	OFF/ON
	Passenger's Rear Door Switch	OFF/ON
	Passenger's Rear Door Lock Knob Sw. (UNLOCK)	OFF/ON
	Door LOCK Command	OFF/ON
	Door UNLOCK Command	OFF/ON
	Driver's Door Switch	OFF/ON
	Driver's Door UNLOCK Command	OFF/ON
	Driver's Door Key Cylinder Switch (LOCK)	OFF/ON
	Driver's Door Key Cylinder Switch (UNLOCK)	OFF/ON
	Driver's Door Lock Switch (LOCK)	OFF/ON
	Driver's Door Lock Switch (UNLOCK)	OFF/ON
	Driver's Door Lock Knob Switch (LOCK)	OFF/ON
	Driver's Door Lock Knob Switch (UNLOCK)	OFF/ON
	Cruise Control Main Switch (ACC Switch)	OFF/ON
	Cruise Control Set Sw.	OFF/ON
	Cruise Control Resume Sw.	OFF/ON
	Washer Fluid Level Switch	OFF/ON
	VSA/TCS Off Switch	OFF/ON

Gauges	Parking Brake Switch	OFF/ON
	Brake Fluid Level Switch	OFF/ON
	Illumination Plus Switch	OFF/ON
	Illumination Minus Switch	OFF/ON
	INFO Previous Switch	OFF/ON
	INFO Next Switch	OFF/ON
	Fuel Sending Unit Input 2	V
	Fuel Sending Unit Input 1	V
	VSA/TCS Active Indicator	OFF/ON
	VSA/TCS Indicator (Warning)	OFF/ON
	ABS Indicator	OFF/ON
	EBD Indicator (Electronic Brake Distribution)	OFF/ON
	Cruise Control Main Switch Indicator	OFF/ON
	MIL Indicator	OFF/ON
	Washer Fluid Level Indicator (Canada)	OFF/ON
	DRL Indicator	OFF/ON
	Low Oil Pressure Indicator	OFF/ON
	Charging System Indicator	OFF/ON
	Cruise Main Switch ON Indicator	OFF/ON
	Maintenance Required Indicator	OFF/ON
	Maintenance Minder Indicator	OFF/ON
	High Beam Indicator	OFF/ON
	Parking Light ON Indicator	OFF/ON
	Low Fuel Warning Indicator	OFF/ON
	Security Indicator	OFF/ON
	Fog light Indicator	OFF/ON
	Master Warning Indicator	OFF/ON
	Seat Belt Indicator	OFF/ON
	Tire Pressure Warning Indicator	OFF/ON
	SH-AWD Indicator	OFF/ON
	Keyless Access "No Keyless Remote" Warning	OFF/ON
	Keyless Remote Battery Charge Warning	OFF/ON
	Keyless Remote Battery Level	OFF/ON
	Open Door Indicator	OFF/ON
	Differential Oil Temp Indicator	OFF/ON
	Maintenance Minder Change Oil Indicator	OFF/ON
	Fuel Fill Cap Caution	OFF/ON
	A/T Indicator	OFF/ON
	SRS Indicator	OFF/ON
	Side Airbag Cutoff Indicator	OFF/ON
	Keyless Access Indicator	OFF/ON

	EPS/ECPS Indicator	OFF/ON
	Starter Relay Indicator	OFF/ON
	Trunk Open Indicator	OFF/ON
	Speed Indicator (km/h) Command	0 km/h
	Speed Indicator (mph) Command	0 mph
	Driver's Seat Belt Buckle Switch	OFF/ON
	A/T Gear Position Switch (R)	OFF/ON
	A/T Gear Position Switch (P)	OFF/ON
Security	Front Passenger's Door Switch	OFF/ON
	Passenger's Rear Door Switch	OFF/ON
	Passenger's Rear Door Lock Knob Sw. (UNLOCK)	OFF/ON
	Door Lock Command	OFF/ON
	Door UNLOCK Command	OFF/ON
	Headlight Command	OFF/ON
	Headlight High Beam Command	OFF/ON
	Parking Light Command	OFF/ON
	Ignition Key Cylinder Switch	OFF/ON
	Driver's Door Switch	OFF/ON
	Driver's Rear Door Switch	OFF/ON
	Trunk Lid/Tailgate Switch	OFF/ON
	Driver's Rear Door Lock Knob Switch (UNLOCK)	OFF/ON
	Trunk Key Cylinder (UNLOCK)	OFF/ON
	Trunk Handle Sw.	OFF/ON
	Hazard Switch	OFF/ON
	Security Hood Switch	OFF/ON
	Door Lock Command	OFF/ON
	Door Unlock Command	OFF/ON
	Driver's Door UNLOCK Command	OFF/ON
	Trunk Lid Release Command	OFF/ON
	Headlight Command	OFF/ON
	Headlight High Beam Command	OFF/ON
	Parking Light Command	OFF/ON
	Horn Command	OFF/ON
	Driver's Door Key Cylinder Switch (LOCK)	OFF/ON
	Driver's Door Key Cylinder Switch (UNLOCK)	OFF/ON
	Driver's Door Lock Switch (LOCK)	OFF/ON
	Driver's Door Lock Switch (UNLOCK)	OFF/ON
	Driver's Door Lock Knob Switch (LOCK)	OFF/ON
	Driver's Door Lock Knob Switch (UNLOCK)	OFF/ON

Power Seat/Power Mirror	Slide Switch (Forward)	OFF/ON
	Slide Switch (Backward)	OFF/ON
	Recline Switch (Forward)	OFF/ON
	Recline Switch (Backward)	OFF/ON
	Rear Up-Down Switch (Down)	OFF/ON
	Front Up-Down Switch (Up)	OFF/ON
	Rear Up-Down Switch (Up)	OFF/ON
	Ignition Switch for Power Seat Control	OFF/ON
	Slide Switch	OFF/ON
	Front UP-DOWN Sensor	OFF/ON
	Recline Sensor	OFF/ON
	Rear UP-DOWN Sensor	OFF/ON
	Slide Motor Command	OFF/ON
	Recline Motor Command	OFF/ON
	Front Height Motor Command	OFF/ON
	Rear Height Motor Command	OFF/ON
	Power Seat Buzzer Command	OFF/ON
	ATP Switch	OFF/ON
	Seat MEMO Switch	OFF/ON
	Driver 1 Position Switch	OFF/ON
	Driver 2 Position Switch	OFF/ON
Power Windows	Front Passenger's Door Switch	OFF/ON
	Power Window Timer Command	OFF/ON
	Driver's Door Switch	OFF/ON
	P/W Main Switch	OFF/ON
	P/W Master Switch (Driver's Window AUTO)	OFF/ON
	P/W Master Switch (Driver's Window UP)	OFF/ON
	P/W Master Switch (Driver's Window DOWN)	OFF/ON
	P/W Master Sw. (Front Passenger's Window UP)	OFF/ON
	P/W Master Sw. (Front Passenger's Window DOWN)	OFF/ON
	P/W Master Switch (Left Rear Window UP)	OFF/ON
	P/W Master Switch (Left Rear Window DOWN)	OFF/ON
	P/W Master Sw. (Right Rear Window UP)	OFF/ON
	P/W Master Sw. (Right Rear Window Down)	OFF/ON
	P/W Master Sw. (Passenger's Window AUTO)	OFF/ON
	Driver's P/W Motor Pulse A	NONE/DETECT
	Driver's P/W Motor Pulse B	NONE/DETECT
	Driver's P/W Motor Command	OFF/ON
	CONTROLLED POWER STATUS	ON (STOP)
	+ B BACK UP	V

PCU	+ B SMART	V
	IG1a	V
	IG1b	V
	IG2	V
	STRQ	V
	Electrical Steering Lock POWER	V
	MTR CUT 1	V
	MTRCUT2	V
	START STOP SWITCH HIGH SIDE	OFF/ON
	START STOP SWITCH LOW SIDE	OFF/ON
	FOOT BRAKE	OFF/ON
	PARKING BRAKE	OFF/ON
	SLOT SWITCH HALF INSERT	OFF/ON
	SLOT SWITCH FULL INSERT	OFF/ON
	SMART SYSTEM MODE SWITCH	OFF/ON
	SCS	OPEN/SHORT
	Electrical Steering Lock SWITCH C	OFF/ON
	Electrical Steering Lock SWITCH D	OFF/ON
	AT SHIFT POSITION P	OFF/ON
	AT SHIFT POSITION P-PIN	OFF/ON
	CLUTCH SWITCH	OFF/ON
	DRIVER DOOR KEY CYLINDER UNLOCK SWITCH	OFF/ON
	DRIVER DOOR KEY CYLINDER LOCK SWITCH	OFF/ON
	DRIVER DOOR SILICON LOCK SWITCH	OFF/ON
	LEFT FRONT WHEEL SPEED (B-CAN)	VALUE
	RIGHT FRONT WHEEL SPEED (B-CAN)	VALUE
	LEFT REAR WHEEL SPEED (B-CAN)	VALUE
	RIGHT REAR WHEEL SPEED (B-CAN)	VALUE
	WHEEL SPEED ALIVE COUNTER (B-CAN)	VALUE
	WHEEL SPEED CHECK SUM (B-CAN)	VALUE
	METER DECREASE IN LIGHTS CANCELLATION	NORMAL/CANCEL
	ILLUMINATION STATUS	OFF/ON
	ILLUMINATION BRIGHTNESS STEP	VALUE
	METER WELCOME ILLUMINATION STATUS	VALUE
	ILLUMINATION BRIGHTNESS STEP MAX VALUE	VALUE
	VEHICLE SPEED (F-CAN)	VALUE
	EAT CAN ALIVE COUNTER	NORMAL/FAILED

	EAT CAN CHECK SUM	NORMAL/FAILED
	LEFT FRONT WHEEL SPEED (F-CAN)	VALUE
	RIGHT FRONT WHEEL SPEED (F-CAN)	VALUE
	LEFT REAR WHEEL SPEED (F-CAN)	VALUE
	RIGHT REAR WHEEL SPEED (F-CAN)	VALUE
	ABS/VSA CAN ALIVE COUNTER	NORMAL/FAILED
	ABS/VSA CAN CHECK SUM	NORMAL/FAILED
	ENGINE RUN STATUS	RUN/NOT START
	STARTER RELAY DRIVE STATUS	OFF/ON
	ECM/PCM CAN ALIVE COUNTER	NORMAL/FAILED
	ECM/PCM CAN CHECK SUM	NORMAL/FAILED
REMOTE SLOT CONTROL UNIT	ENGINE START/STOP SWITCH 2 -	OFF/ON
	PARKING BRAKE	OFF/ON
	SLOT SWITCH FULL	OFF/ON
	SLOT SWITCH HALF	OFF/ON
	SLOT SWITCH LOCK	OFF/ON
	SLOT SWITCH FULL 2	OFF/ON
	ENGINE START/STOP SWITCH 1 +	OFF/ON
	Electrical Steering Lock Switch B	OFF/ON
	ACC	OFF/ON
	IG1	OFF/ON
	+ B SMART	OFF/ON
	+B BACKUP	OFF/ON
KEYLESS ACCESS CONTROL UNIT	IGNITION 1 POSITION SWITCH	OFF/ON
	ACC POSITION SWITCH	OFF/ON
	PARKING BRAKE SWITCH	OFF/ON
	SCS	OPEN/SHORT
	IGNITION CONTROL SIGNAL	OFF/ON
	KNOB BLOCK SOLENOID	LOCK/UNLOCK
	ENGINE START/STOP SWITCH 2 -	OFF/ON
	ENGINE START/STOP SWITCH 1 +	OFF/ON
	Electrical Steering Lock Switch B	OFF/ON

FUNCTION TEST

System Menu	HDS Description	Note
HVAC/Climate Control	Climate Control Unit Self Test	Outputs for 60 Seconds
	Rear Defogger	Operate the Rear Defogger Relay for 60 seconds
	Slide Motor	Drives to Full Forward Position
		Drives to Full Backward Position
	Front Up-Down Motor	Drives to Full Up Position

Power Seat/Power Mirror		Drives to Full Down Position
	Rear Up-Down Motor	Drives to Full Up Position
		Drives to Full Down Position
	Recline Motor	Drives to Full Forward Position
		Drives to Full Backward Position
	Memory Buzzer	Operates Buzzer for 5 Seconds
Keyless Transmitter	Trunk Lid/Tailgate Release Command	Unlocks Trunk
Lighting	Interior Light Command	Illuminates Interior Lights for 30 seconds
	Hazard Flasher	Hazard Flasher Lights for 5 Seconds
	Left Turn Signal Command	Blinks Left Turn Signal for 5 Seconds
		Blinks Left Turn Signal for 15 Seconds
	Right Turn Signal Command	Blinks Right Turn Signal for 5 Seconds
		Blinks Right Turn Signal for 15 Seconds
	Headlight Command	Operates Headlight (Low) for 15 Seconds
		ON
		OFF
	Headlight High Beam Command	Operates Headlight (High) for 15 Seconds
		ON
		ON for Daytime Running Light (KA/KC)
		OFF
	Front Fog Light	Operates a Relay of Front Fog Light for 15 Seconds
	Courtesy Light (DR)	Illuminates for 30 Seconds
	Parking Lights Command	Operates Parking Light for 15 Seconds
	Courtesy LT RD	Outputs for 30 Seconds
	Courtesy LT RA	Outputs for 30 seconds
Doors Locks	Locks All Doors	Outputs LOCK signal 1 time (0.6 sec.) to all door
	UNLOCK Driver's Side Door	Outputs UNLOCK signal 1 time (0.6 sec.) to driver side door
	UNLOCK All Doors	Outputs UNLOCK signal 1 time (0.6 sec.) to all door
Power Windows	Driver's Window Up	Drives for 3 Seconds
	Driver's Window Down	Drives for 3 Seconds
	Front Passenger's Window Up	Drives for 3 Seconds
	Front Passenger's Window Down	Drives for 3 Seconds
	Left Rear window Up	Drives for 3 Seconds
	Left Rear window Down	Drives for 3 Seconds

	Right Rear Window Up	Drives for 3 Seconds
	Right Rear Window Down	Drives for 3 Seconds
	Power Window Relay Command	Drives for 5 Seconds
Security	Horn Command	Operates Horn for 1 Seconds
Wiper	Windshield Washer Command	Operates Front Washer for 5 Seconds
	Windshield Wiper Motor (Low)	Operates Front Wiper for 5 Seconds (Low Speed)
	Windshield Wiper Motor (High)	Operates Front Wiper for 5 Seconds (High Speed)
Keyless Access	Immobilizer Indicator Driving	
	Keyless Access Indicator Driving	
	Keyless Access Remote Indication	
	KEYLESS ACCESS REMOTE BATT Indication	
	Interior Buzzer Driving	
	Exterior Buzzer Driving	
	(IGNITION) Key Switch Driving	
	IMOCONT Driving	
	IGNCONT Driving	
	S-net Line (IMOCD Terminal) Driving	
	IGNTRX Line Driving	
	RF1 RXVCC Driving	
	RF2 RXVCC Driving	
	RF1 TXVCC Driving	
	RF2 TXVCC Driving	
	Driver (Door) Antenna Driving	
	Front Passenger (Door) Antenna Driving	
	Driver Side Rear (Door) Antenna Driving	
	Passenger Side Rear (Door) Antenna Driving	
	Driver Side Glass Antenna Driving	
	Passenger Side Glass Antenna Driving	
	Trunk/Tailgate/Rear Bumper Antenna Driving	
	Front Interior Antenna Driving	
	Middle Interior Antenna Driving	
	Rear Interior Antenna Driving	
	Rear Interior Tray Antenna Driving	
	Trunk/Rear Shelf Antenna Driving	
	Driver (Door) Antenna L DC Output	

Control Unit	Front Passenger (Door) Antenna L DC Output	
	Driver Side Rear (Door) Antenna L DC Output	
	Passenger Side Rear (Door) Antenna L DC Output	
	Driver Side Glass Antenna L DC Output	
	Passenger Side Glass Antenna L DC Output	
	Trunk/Tailgate/Rear Bumper Antenna L DC Output	
	Front Interior Antenna L DC Output	
	Middle Interior Antenna L DC Output	
	Rear Interior Antenna L DC Output	
	Rear Interior Tray Antenna L DC Output	
	Trunk/Rear Shelf Antenna L DC Output	
	RF1 TXD DC Output	
	RF2 TXD DC Output	
	[DO NOT HAVE KEYLESS REMOTE] Indication	
	Exterior Buzzer Driving (Short Time)	
	Door Lock Driving	
	Door Unlock Driving	
	Auto lock Cancel Switch Indicator Driving	
	Keyless Remote-Customize Link To Driver 1 Driving	
	Keyless Remote-Customize Link To Driver 2 Driving	
	Keyless Remote Slot Antenna Driving	
	Keyless Remote Slot Antenna DC Output	

TROUBLESHOOTING - B-CAN SYSTEM DIAGNOSIS TEST MODE A

Check the ECM/PCM for DTCs and troubleshoot ECM/PCM (see **GENERAL TROUBLESHOOTING INFORMATION**) or F-CAN loss of communication errors first, then do this diagnosis if the symptom is related to the B-CAN system.

1. Compare the symptom with this list of B-CAN related systems:
    - Gauge control module

- Exterior lights
- Turn signals
- Entry light control
- Interior lights
- Safety indicators
- Horns (security and panic)
- Beepers (key-in, seat belt, lights-on, and parking brake)
- Power window/moonroof timer
- Wiper/washer
- Security
- Keyless entry
- Power door locks
- Key interlock
- Dashlights brightness
- Immobilizer
- Daytime running lights
- Driving position memory system
- XM radio
- AcuraLink
- HandsFreeLink
- Climate control
- Keyless access control
- BSI system

Is the symptom related to the B-CAN system?

YES - Go to step 2.

NO - Go to the system troubleshooting for the system with the symptom.

2. Connect the HDS to the data link connector (DLC) (A), then turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.

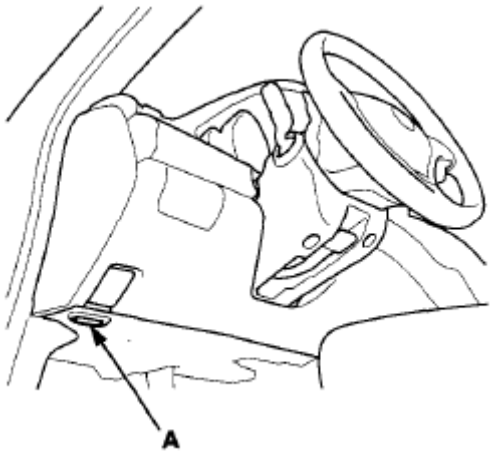


Fig. 10: Identifying Data Link Connector (DLC)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. From the BODY ELECTRICAL SYSTEM SELECT menu, select B-CAN CONTROL UNITS INFORMATION, and then select CHECK CONNECTED CONTROL UNITS listed to see if the following control units are communicating with the HDS.
   - Driver's MICU
   - Passenger's MICU
   - Door multiplex control unit (HDS name: Power Window Unit)
   - Gauge control module
   - Immobilizer-keyless control unit
   - Climate control unit
   - HandsFreeLink control unit
   - Power seat control unit (HDS name: Memory seat control unit)
   - AcuraLink control unit (XM receiver) (HDS name: HIP (Honda Information Platform) Unit)
   - Keyless access control unit (HDS name: Keyless access ECM)
   - BSI control unit

   NOTE:
   - **If a unit is communicating with the HDS, DETECT is displayed.**
   - **If a unit is not communicating or the vehicle is not equipped, "NOT AVAILABLE" is displayed.**
   - **The HDS only checks the status one time when BODY ELECTRICAL is selected. To recheck the status after repair, reboot the HDS.**

   Are all control units communicating with the HDS?

   YES - Go to step 4.

   NO - If any of the control units are not communicating, go to **B-CAN SYSTEM DIAGNOSIS TEST**

MODE B. If all units are not communicating or only the driver's MICU is communicating, go to **DTC U1280 TROUBLESHOOTING**.

4. Select the system that has the problem from the BODY ELECTRICAL SYSTEM SELECT menu, then select DTCs.

   Are any DTCs indicated?

   YES - Go to step 5.

   NO - If the problem is related to one of the following items, and the system that is malfunctioning does not stop or turn off, go to **B-CAN SYSTEM DIAGNOSIS TEST MODE C**. If the problem is related to one of the following items and the system that is malfunctioning does not run or turn on, go to **B-CAN SYSTEM DIAGNOSIS TEST MODE D**.

   - Exterior lights
   - Turn signals
   - Entry light control
   - Interior lights
   - Horns (security and panic)
   - Wiper/washer
   - Power window
   - Power door locks

   If the problem is related to one of the following items, go to the troubleshooting for that individual system.

   - Gauge control module
   - Safety indicators
   - Beepers (key-in, seat belt, lights-on, and parking brake)
   - Security
   - Keyless entry
   - Key interlock
   - Dashlights brightness
   - Navigation system (if equipped)
   - HandsFreeLink
   - Immobilizer
   - Driving position memory system
   - Rear window defogger (climate control)
   - Climate control
   - Keyless access control
   - BSI system

5. Record all DTCs, and sort them by DTC type.
6. Troubleshoot the DTC(s) in this order:
   - Battery voltage DTCs.
   - Internal error DTCs.
   - Loss of communication DTCs.
   - Signal error DTCs.

TROUBLESHOOTING - B-CAN SYSTEM DIAGNOSIS TEST MODE B

Do this diagnosis if any of the control units are not communicating (NOT AVAILABLE is displayed on the HDS) as found by the B-CAN System Diagnosis Test Mode A (see **TROUBLESHOOTING - B-CAN SYSTEM DIAGNOSIS TEST MODE A**).

1. Using the HDS, select the system that has the symptom from the BODY ELECTRICAL SYSTEM SELECT menu.
2. Select the DTCs, and then check for loss of communication DTCs.

   Are any loss of communication DTCs indicated?

   YES - Go to step 3.

   NO - Faulty driver's MICU; replace the driver's under-dash fuse/relay box (see **DRIVER'S UNDER-DASH FUSE/RELAY BOX (MICU) REMOVAL AND INSTALLATION**).

3. Do the power, ground, and communication part of the input test for the unit(s) not communicating with the HDS.

Unit not communicating
Driver's MICU (see **MICU INPUT TEST**)
Gauge control module (see **GAUGE CONTROL MODULE INPUT TEST**)
Power control unit (see **RF UNIT REPLACEMENT**)
Keyless access control unit (see **CONTROL UNIT INPUT TEST**)
Remote slot control unit (see **RF UNIT REPLACEMENT**)
Immobilizer-keyless control unit (see **IMMOBILIZER-KEYLESS CONTROL UNIT INPUT TEST**)
Passenger's MICU (see **DTC U1283: DRIVER'S MICU LOST COMMUNICATION WITH PASSENGER'S MICU**)
Door multiplex control unit (see **POWER WINDOW MASTER SWITCH INPUT TEST**)
Climate control unit (see **CLIMATE CONTROL POWER AND GROUND CIRCUIT TROUBLESHOOTING**)
Audio-navigation unit (see **NAVIGATION UNIT CONNECTOR FOR INPUTS AND OUTPUTS**)
Power seat control unit (see **POWER SEAT CONTROL UNIT INPUT TEST/REPLACEMENT**)
AcuraLink control unit (see **ACURALINK CONTROL UNIT (XM RECEIVER) CONNECTOR**

FOR INPUTS AND OUTPUTS)
HandsFreeLink control unit (see **CONTROL UNIT INPUT TEST**)
BSI control unit (see **BLIND SPOT INFORMATION SYSTEM (BSI) CONTROL UNIT INPUTS AND OUTPUTS**)

TROUBLESHOOTING - B-CAN SYSTEM DIAGNOSIS TEST MODE C

Do this diagnosis if a component that is controlled by the B-CAN system does not stop or turn off.

NOTE:

- **If the component does not turn on, go to B-CAN SYSTEM DIAGNOSIS TEST MODE D.**
- **See the B-CAN system unit input/output index for a list of input and output devices and the control units that monitor the input and control the output devices (see HDS INPUTS AND FUNCTION TESTS).**

1. Check for DTCs by selecting the MODE MENU from the HDS.

   Are any DTCs indicated?

   YES - Go to **B-CAN SYSTEM DIAGNOSIS TEST MODE A** (see).

   NO - Go to step 2.

2. Turn off the switch that controls the malfunctioning component.
3. Select the applicable system from the system MODE MENU, then select DATA LIST, and check the input of the switch that controls the component.

   Does the HDS indicate the switch is OFF?

   YES - Go to step 4.

   NO - Go to step 6.

4. In the DATA LIST, check the output signal of the malfunctioning component.

   Is the output signal OFF?

   YES - Go to step 5.

   NO - Replace the control unit that controls the device that will not turn OFF.

5. Check the relay that does not stop or turn off, if applicable, then check for a short in the wire between the relay and the component, the relay and control unit, or the component and control unit.

   Are the relay and the wire harness OK?

YES - Replace the control unit that controls the component that will not stop or turn OFF.

NO - Replace the relay or repair/replace the wire harness.

6. Check the switch, then check for a short in the wire between the switch and the control unit that monitors the switch.

   Are the switch and wire harness OK?

   YES - Replace the control unit that monitors the switch.

   NO - Replace the switch, or repair/replace the wire harness.

TROUBLESHOOTING - B-CAN SYSTEM DIAGNOSIS TEST MODE D

Do this diagnosis if a component that is controlled by the B-CAN system does not run or come on.

NOTE:

- **If the component does not turn off or stop, go to B-CAN SYSTEM DIAGNOSIS TEST MODE C.**
- **See the B-CAN system unit input/output index for a list of input and output devices and the control units that monitor the input and control the output devices (see HDS INPUTS AND FUNCTION TESTS).**

1. Check the fuse of the malfunctioning output device.

   Is the fuse OK?

   YES - Go to step 2.

   NO - Replace the fuse. If the fuse blows again, repair a short to ground on the fuse circuit of the malfunctioning device.

2. Check for DTCs by selecting the MODE MENU from the HDS.

   Are any DTCs indicated?

   YES - Go to **B-CAN SYSTEM DIAGNOSIS TEST MODE A**.

   NO - Go to step 3.

3. Turn ON the switch that controls the malfunctioning component.
4. Select the applicable system from the system MODE MENU, then select DATA LIST, and check output signal for the malfunctioning component.

   Is there an output signal?

YES - Go to step 5.

NO - Go to step 9.

5. Check the relay and ground, then check for an open or a short in the circuit for the malfunctioning component.

   Is the relay and the circuit OK?

   YES - Go to step 6.

   NO - Replace the relay or repair the wire circuit.

6. Do the function test for the malfunctioning component.

   Does the output device pass the function test?

   YES - Go to step 7.

   NO - Replace the component.

7. With the malfunctioning output device connected, connect a voltmeter between the malfunctioning output device and body ground on the wire that the control unit uses to control the output device circuit.
8. Select FUNCTIONAL TEST from the MODE MENU, and do the forced operation test of the malfunctioning component.

   Is there a change in voltage (12 V to 0 V or 0 V to 12 V)?

   YES - Inspect the ground for the component. If OK, replace the component.

   NO - Replace the control unit that controls the malfunctioning component.

9. Select DATA LIST from the system MODE MENU, and make sure the switch signal input for the malfunctioning system indicates a change when operated.

   Does the switch input indicate ON when the switch is ON?

   YES - Replace the control unit that controls the malfunctioning component.

   NO - Go to step 10.

10. Check the switch and its ground (if applicable), then check for an open or a short in the wire between the switch and the control unit that monitors it.

    Is the switch and the wire harness OK?

    YES - Replace the control unit that monitors the switch.

NO - Replace the switch, or repair/replace the wire harness.

TROUBLESHOOTING - B-CAN SYSTEM DIAGNOSIS TEST MODE 1 AND TEST MODE 2 (WITHOUT THE HDS)

Special Tools Required

MPCS (MCIC) Service Connector 07WAZ-001010A

Test Mode 1

Check the ECM/PCM for DTCs and troubleshoot ECM/PCM (see **GENERAL TROUBLESHOOTING INFORMATION**) or F-CAN loss of communication errors first, then do this diagnosis if the HDS is not available.

1. Check the No. 15(10 A) fuse in the under-hood fuse/relay box and the No. 12 (7.5 A) fuse in the driver's under-dash fuse/relay box.

   Are the fuses OK?

   YES - Go to step 2.

   NO - Replace the fuses. If the fuse blows again, repair the short to ground on the fuse circuit(s).

2. Remove the driver's dashboard undercover (see **DRIVER'S DASHBOARD UNDERCOVER REMOVAL/INSTALLATION**).
3. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode, and move the interior lights switch to the DOOR position.
4. Connect the MPCS service connector (A) to the MICU service check connector socket (B) in the driver's under-dash fuse/relay box.

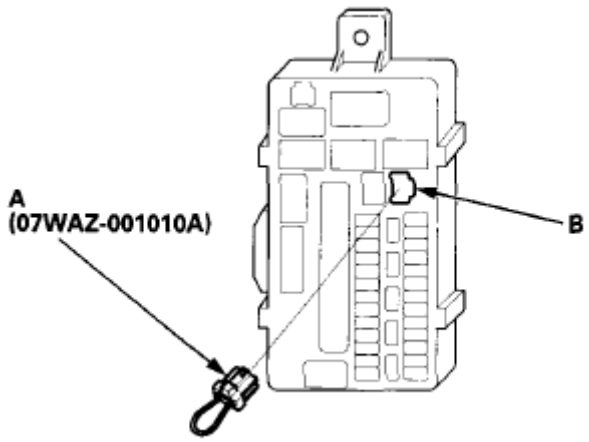


Fig. 11: Connecting MPCS Service Connector To MICU Service Check Connector Socket In Driver's Under-Dash Fuse/Relay Box

Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Wait 5 seconds, and watch the front individual map lights and rear individual map lights. When the front individual map lights and rear individual map lights flash quickly once and then goes off, the system is in Test Mode 1.
6. Check for B-CAN DTCs indicated by the multi-information display (MID) on the gauge control module while still in Test Mode 1. Press the SEL/RESET button to display the next code. After you get to the last code, the display shows END. If no DTCs are stored, the display will read NO (see **HOW TO DISPLAY DTCS ON THE MID OF THE GAUGE CONTROL MODULE**).

NOTE: If the test times out, remove the MPCS service connector, turn the ignition switch to LOCK (0), and repeat steps 3 and 4.

Are any DTCs indicated?

YES - Go to step 7.

NO - Go to step 9.

7. Record all DTCs and troubleshoot them in this order:
   - Battery voltage DTCs
   - Internal error DTCs
   - Loss of communication DTCs
   - Signal error DTCs
8. Clear the DTCs by pressing and holding the SEL/RESET button for about 10 seconds.
9. You will hear a beep to confirm the codes have been cleared. Operate the devices that failed, and recheck for codes.

Test Mode 2

10. Remove the MPCS service connector from the driver's under-dash fuse/relay box MICU service check connector socket for 5-10 seconds, then re-insert it to enter Mode 2. When the system enters Mode 2, the front individual map lights and rear individual map lights flash two times quickly and then goes off.

NOTE: If the MPCS service connector is disconnected for too short or too long of a time, or if the ignition switch is turned to LOCK (0), or if the vehicle is in OFF mode, the systems returns to Test Mode 1.

11. The following tables list the circuits that can be checked in Test Mode 2. Operate the switch that is most closely related to the problem. If the circuit is OK, the front individual map lights and rear individual map lights blink once. If the circuit is faulty, there is no indication.

DRIVER'S MICU

Item

Brake pedal position switch (ON)
Driver's door switch
Left rear door switch
Trunk lid latch switch
Fog light switch
Left rear door lock knob switch (UNLOCK)
Wiper switch (HI/LO)
Wiper switch (INT/LO)
Wiper switch (MIST)
Washer switch
Wiper intermittent dwell time controller
Turn signal switch (LEFT)
Turn signal switch (RIGHT)
Hazard warning switch (ON)
Headlight switch (AUTO)
Headlight switch (ON)
Headlight switch (OFF)
Lighting switch (ON)
Dimmer switch (ON)
Passing switch (ON)
Trunk lid opener main switch
Trunk lid outer handle switch
Transmission range switch (P) (A/T)
Ignition key switch
Security hood switch
Windshield wiper motor park position (Auto stop)
Driver's seat heater switch (LO)
Driver's seat heater switch (HI)
Rear defogger switch

PASSENGER'S MICU

Item
Front passenger's door switch
Right rear door switch
Right rear door lock knob switch (UNLOCK)
Audio unit
Front passenger's seat heater switch (LO)
Front passenger's seat heater switch (HI)

DOOR MULTIPLEX CONTROL UNIT

Item

Driver's door lock switch (UNLOCK)
Driver's door lock switch (LOCK)
Driver's door lock knob switch (UNLOCK)
Driver's door lock knob switch (LOCK)
Driver's door key cylinder switch (UNLOCK)(1)
Driver's door key cylinder switch (LOCK)(1)
(1) A second key is necessary to check the key cylinder inputs. Be sure to rotate the key cylinder switch two times to each position (lock and lock, unlock and unlock) to ensure the door lock knob switch is in the appropriate position.

FRONT PASSENGER'S POWER WINDOW SWITCH

Item
Front passenger's door lock switch (UNLOCK)
Front passenger's door lock switch (LOCK)
Front passenger's door lock knob switch (UNLOCK)

POWER SEAT CONTROL UNIT

Item
Transmission range switch (P) (A/T)
Parking brake switch (M/T)
Slide switch (Forward)
Slide switch (Backward)
Recline switch (Forward)
Recline switch (Backward)
Front UP-DOWN switch (Up)
Front UP-DOWN switch (Down)
Rear UP-DOWN switch (Up)
Rear UP-DOWN switch (Down)

Do the front individual map lights and rear individual map lights work properly in all switch positions?

YES - Go to function and input test for the system related to the failure.

NO - Repair the open, or short, or replace the faulty switch.

SLEEP AND WAKE-UP MODE TEST

1. Shift to the sleep mode:

   Close all doors. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode, remove the key without keyless access system, then open and close the driver's door. If the MICU receives no signals from the inputs listed below, it will go into sleep mode in less than 50 seconds.

- IG1 power supply
- IG2 power supply
- B-CAN data
- Trunk lid latch switch (Trunk lid closed) (OFF)
- Hazard warning switch (OFF)

2. Confirm the sleep mode:

NOTE: Check the official Honda service website for more service information about parasitic draw at the battery.

Check the parasitic draw at the battery while shifting into the sleep mode; amperage should change from about 200 mA to less than 35 mA in less than 50 seconds.

3. Shift to the wake-up mode:

When the ignition switch is turned to ON (II), or the vehicle is in ON mode. The driver's MICU, the passenger's MICU, the gauge control module, the immobilizer-keyless control unit, and the ECM/PCM wake-up at the same time without "talking" to each other through the communication lines. When any switch in the multiplex integrated control system is turned on, it wakes up its related control unit which, in turn, wakes up the other units. After confirming the sleep mode, look in the following table for the switch most related to the problem. Operate that switch and see if its control unit wakes up.

NOTE: If any control unit is faulty and does not wake up, several circuits in the system malfunction at the same time. Below is a list of the switches and input signals that wake them up.

- IG1 power supply
- IG2 power supply
- B-CAN data
- Driver's door switch (door open)
- Left rear door switch (door open)
- Trunk lid latch switch (Trunk lid open)
- Left rear door lock knob switch
- Security hood switch (hood open)
- Hazard warning switch (ON)
- Combination light switch (Parking, Headlight, Dimmer, Passing ON)
- Ignition key switch (key inserted)
- Trunk lid opener main switch (ON)
- Driver's door key cylinder switch (LOCK/UNLOCK)
- Passenger's rear door lock knob switch (UNLOCK)
- Front passenger's door lock knob switch (UNLOCK)

- Driver's door lock switch (LOCK/UNLOCK)
- Front passenger's door lock switch (LOCK/UNLOCK)
- Front passenger's door switch (door open)
- Passenger's rear door switch (door open)
- Trunk release switch (ON)

CIRCUIT DIAGRAM

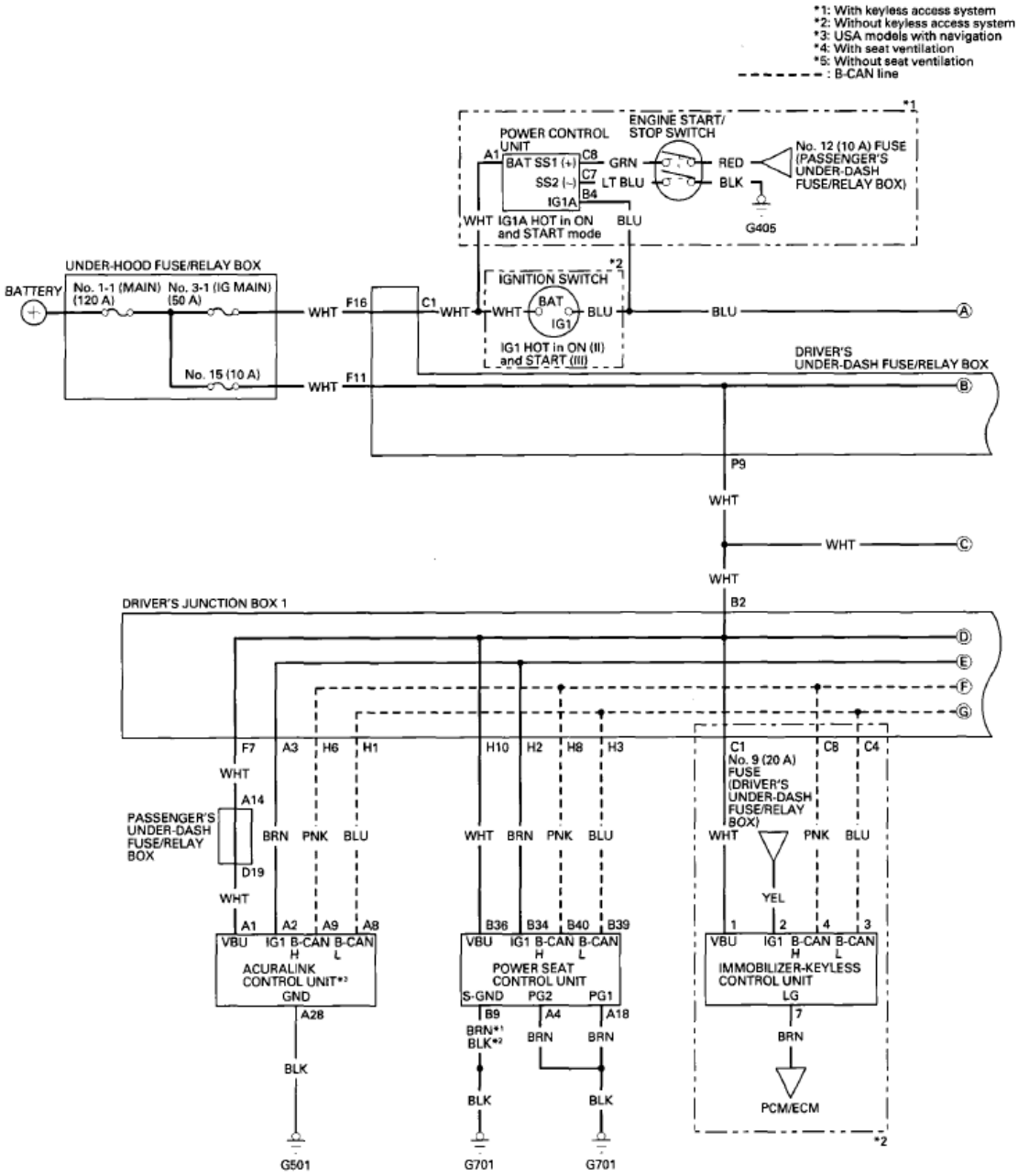


Fig. 12: Multiplex Integrated Control System - Circuit Diagram (1 Of 4)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

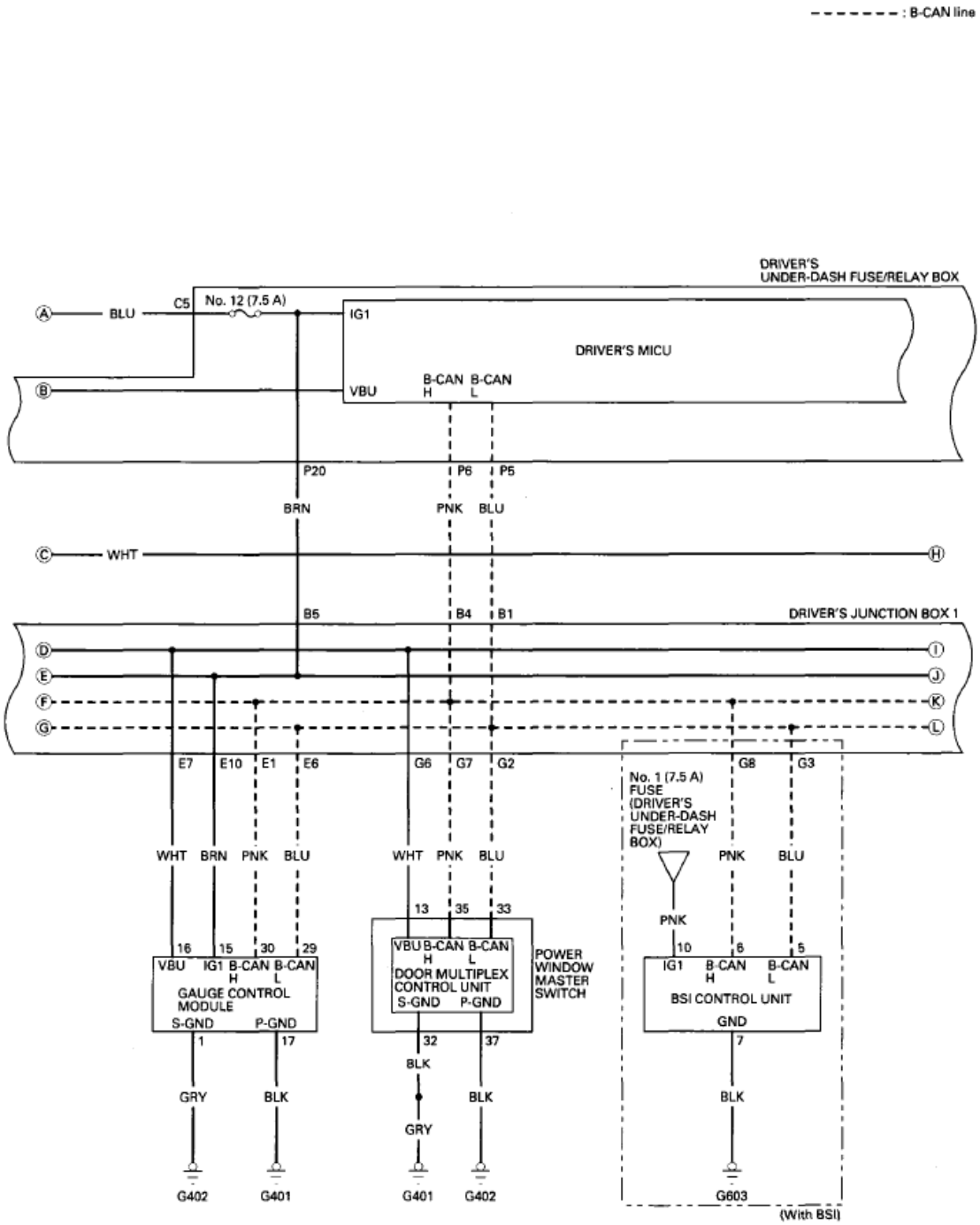


Fig. 13: Multiplex Integrated Control System - Circuit Diagram (2 Of 4)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

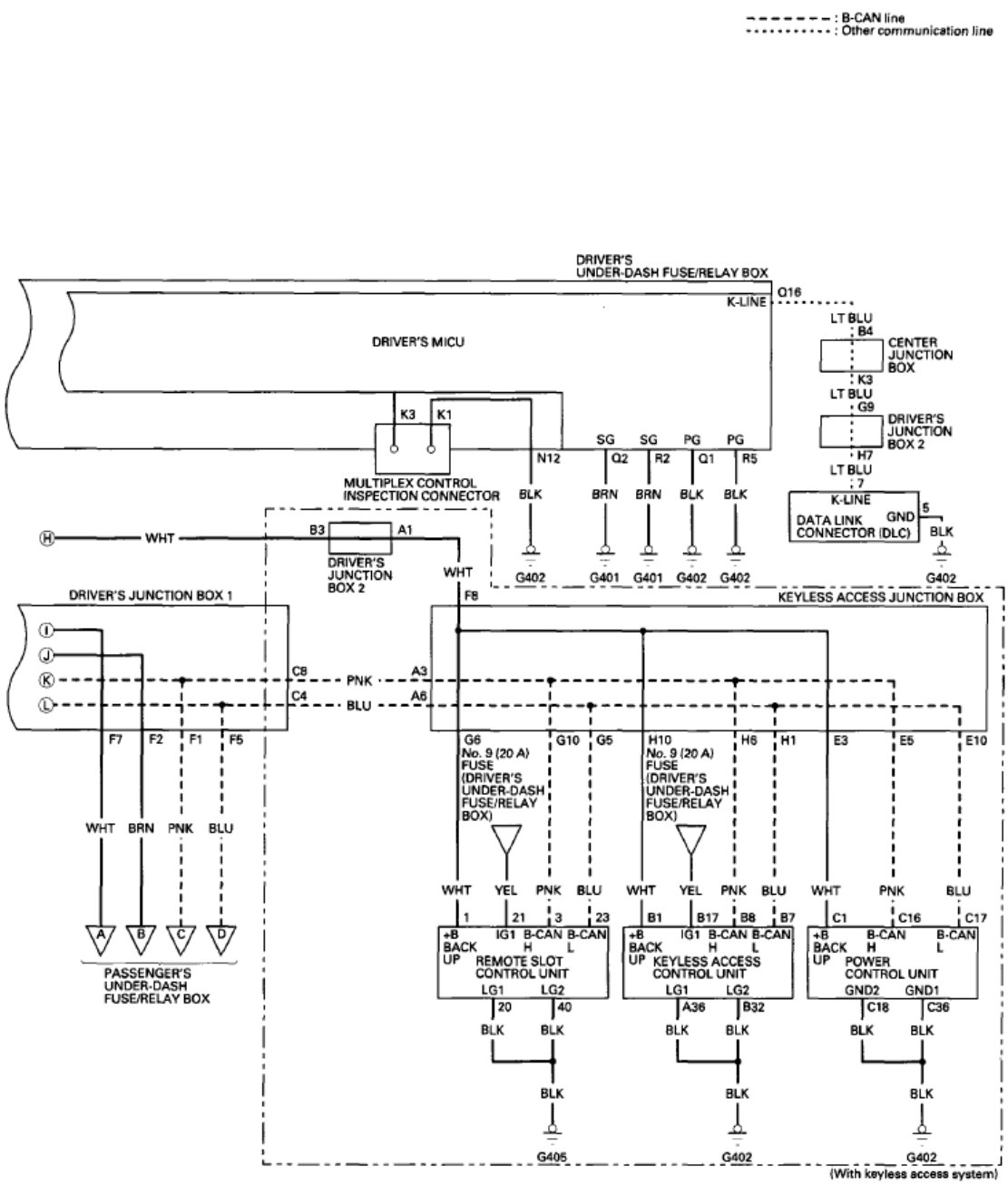


Fig. 14: Multiplex Integrated Control System - Circuit Diagram (3 Of 4)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

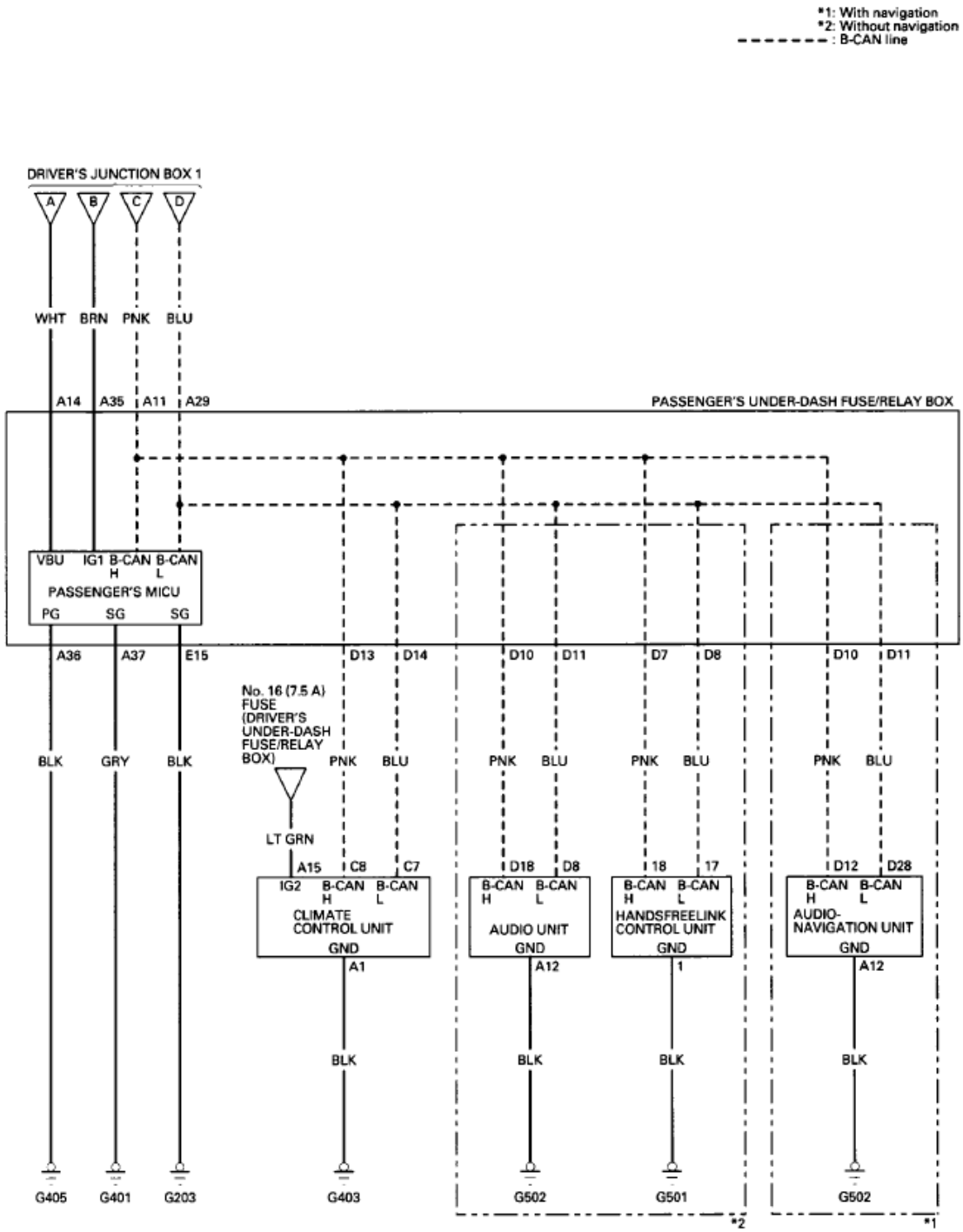


Fig. 15: Multiplex Integrated Control System - Circuit Diagram (4 Of 4)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

DTC TROUBLESHOOTING

DTC B10A2: DRIVER'S MICU INTERNAL (EEPROM) ERROR

NOTE: **If you are troubleshooting multiple DTCs, be sure to follow the instructions in B-CAN System Diagnosis Test Mode A (see TROUBLESHOOTING - B-CAN SYSTEM DIAGNOSIS TEST MODE A).**

1. Clear the DTCs with the HDS.
2. Turn the ignition switch to LOCK (0) and then back to ON (II), or press the engine start/stop button to select the OFF mode and then the ON mode.
3. Check for DTCs with the HDS.

   Is DTC B10A2 indicated?

   YES - Faulty driver's MICU; replace the driver's under-dash fuse/relay box (see **DRIVER'S UNDER-DASH FUSE/RELAY BOX (MICU) REMOVAL AND INSTALLATION**).

   NO - Intermittent failure, the system is OK at this time.

DTC B11A2: PASSENGER'S MICU INTERNAL (EEPROM) ERROR

NOTE: **If you are troubleshooting multiple DTCs, be sure to follow the instructions in B-CAN System Diagnosis Test Mode A (see TROUBLESHOOTING - B-CAN SYSTEM DIAGNOSIS TEST MODE A).**

1. Clear the DTCs with the HDS.
2. Turn the ignition switch to LOCK (0) and then back to ON (II), or press the engine start/stop button to select the OFF mode and then the ON mode.
3. Check for DTCs with the HDS.

   Is DTC B11A2 indicated?

   YES - Faulty passenger's MICU; replace the passenger's under-dash fuse/relay box (see **PASSENGER'S UNDER-DASH FUSE/RELAY BOX (MICU) REMOVAL AND INSTALLATION**).

   NO - Intermittent failure, the system is OK at this time.

DTC B1036: DRIVER'S MICU IG1 LINE INPUT ERROR

NOTE:

- **If you are troubleshooting multiple DTCs, be sure to follow the instructions in B-CAN System Diagnosis Test Mode A (see TROUBLESHOOTING - B-CAN SYSTEM DIAGNOSIS TEST MODE A).**
- **Before troubleshooting, make sure the No. 12 (7.5 A) fuse in the driver's under-dash fuse/relay box is OK.**

1. Clear the DTCs with the HDS.
2. Turn the ignition switch to LOCK (0) and then back to ON (II), or press the engine start/stop button to

select the OFF mode and then the ON mode.

3. Wait for at least 6 seconds.
4. Check for DTCs with the HDS.

   Is DTC B1036 indicated?

   YES - Go to step 5.

   NO - Intermittent failure, the system is OK at this time. Check for loose or poor connections at the driver's under-dash fuse/relay box connector C (5P). If the connections are good, check the battery condition (see **BATTERY TEST**) and the charging system.

5. Measure the voltage between gauge control module 32P connector terminals No. 15 and body ground.

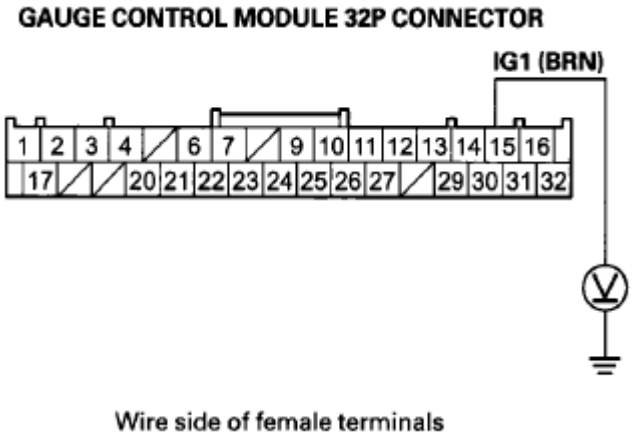


Fig. 16: Measuring Voltage Between Gauge Control Module 32P Connector Terminals No. 15 And Body Ground With Connector End View
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there battery voltage?

YES - Faulty driver's MICU; replace the driver's under-dash fuse/relay box (see **DRIVER'S UNDER-DASH FUSE/RELAY BOX (MICU) REMOVAL AND INSTALLATION**).

NO - Repair an open or high resistance in the wire between the driver's under-dash fuse/relay box and the gauge control module.

DTC B11C7: PASSENGER'S MICU IG1 LINE INPUT ERROR

NOTE:

- **If you are troubleshooting multiple DTCs, be sure to follow the instructions in B-CAN System Diagnosis Test Mode A (see TROUBLESHOOTING - B-CAN SYSTEM DIAGNOSIS TEST MODE A).**
- **Before troubleshooting, make sure the No. 12 (7.5 A) fuse in the driver's under-dash fuse/relay box is OK.**

1. Clear the DTCs with the HDS.
2. Turn the ignition switch to LOCK (0) and then back to ON (II), or press the engine start/stop button to select the OFF mode and then the ON mode.
3. Wait for at least 6 seconds.
4. Check for DTCs with the HDS.

   Is DTC B11C7 indicated?

   YES - Go to step 5.

   NO - Intermittent failure, the system is OK at this time. Check for loose or poor connections. If the connections are good, check the battery condition (see **BATTERY TEST**) and the charging system.

5. Check the DTCs with the HDS.

   Is DTC B11C7 indicated with DTC U1282?

   YES - Go to **DTC U1282 TROUBLESHOOTING**.

   NO - Go to step 6.

6. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
7. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
8. Measure the voltage between the passenger's under-dash fuse/relay box connector A (38P) terminal No. 35 and body ground.

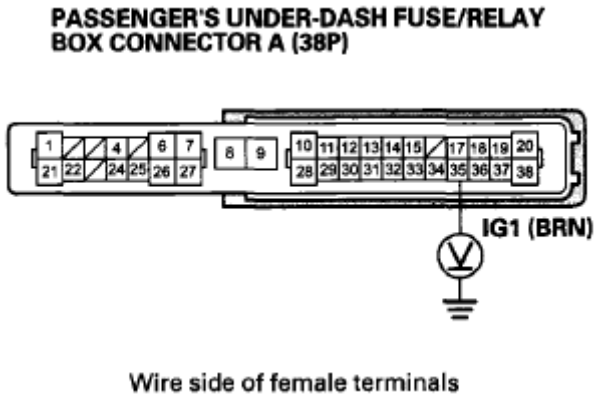


Fig. 17: Measuring Voltage Between Passenger's Under-Dash Fuse/Relay Box Connector A (38P) Terminal No. 35 And Body Ground With Connector End View
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there battery voltage?

YES - Faulty passenger's MICU; replace passenger's under-dash fuse/relay box (see **PASSENGER'S UNDER-DASH FUSE/RELAY BOX (MICU) REMOVAL AND INSTALLATION**).

NO - Repair an open or high resistance in the wire between the passenger's under-dash fuse/relay box and the driver's under-dash fuse/relay box.

DTC U0155: DRIVER'S MICU LOST COMMUNICATION WITH GAUGE CONTROL MODULE

NOTE: If you are troubleshooting multiple DTCs, be sure to follow the instructions in B-CAN System Diagnosis Test Mode A (see TROUBLESHOOTING - B-CAN SYSTEM DIAGNOSIS TEST MODE A).

1. Clear the DTCs with the HDS.
2. Turn the ignition switch to LOCK (0) and then back to ON (II), or press the engine start/stop button to select the OFF mode and then the ON mode.
3. Wait for at least 6 seconds.
4. Check for DTCs with the HDS.

   Is DTC U0155 indicated?

   YES - Go to step 5.

   NO - Intermittent failure, the system is OK at this time. Check for loose or poor connections between the driver's MICU and the gauge control module.

5. Measure the voltage between body ground and gauge control module 32P connector terminals No. 15 and No. 16 individually.

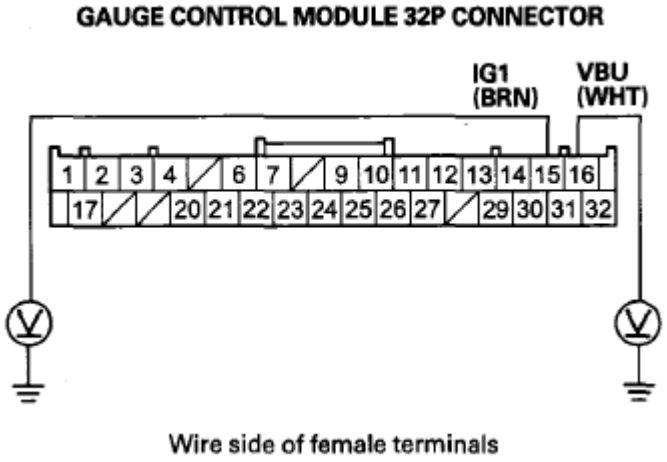


Fig. 18: Measuring Voltage Between Body Ground And Gauge Control Module 32P Connector Terminals No. 15 And No. 16 Individually
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there battery voltage?

YES - Go to step 7.

NO - Go to step 6.

6. Check the No. 15 (10 A) fuse in the under-hood fuse/relay box and the No. 12 (7.5 A) fuse in the driver's under-dash fuse/relay box.

   Are the fuses OK?

   YES - Repair an open or high resistance in the No. 15 (10 A) and/or No. 12 (7.5 A) fuse circuit.

   NO - Replace the fuse(s). If the fuse blows again, repair a short to ground in the No. 15 (10 A) and/or No. 12 (7.5 A) fuse circuit.

7. Measure the voltage between body ground and gauge control module 32P connector terminals No. 1 and No. 17 individually.

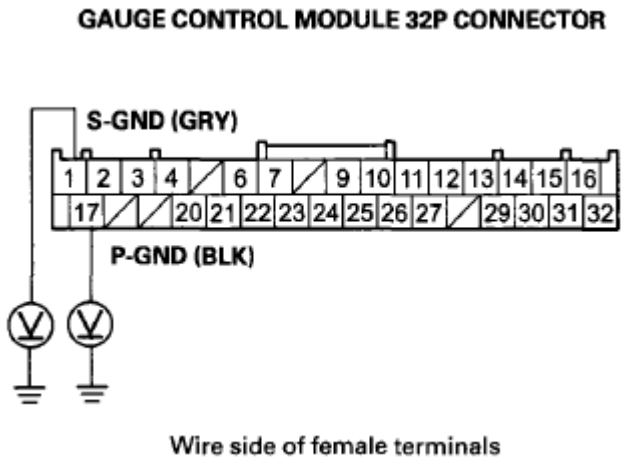


Fig. 19: Measuring Voltage Between Body Ground And Gauge Control Module 32P Connector Terminals No. 1 And No. 17 Individually
Courtesy of AMERICAN HONDA MOTOR CO., INC.

   Is there less than 0.2 V?

   YES - Go to step 8.

   NO - Repair an open or high resistance in the ground wire or poor ground (G401) and/or (G402).

8. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
9. Disconnect driver's under-dash fuse/relay box connector P (20P).
10. Disconnect the gauge control module 32P connector.
11. Check for continuity between gauge control module 32P connector terminals No. 29 and No. 30 and driver's under-dash fuse/relay box connector P (20P) terminals No. 5 and No. 6 respectively.

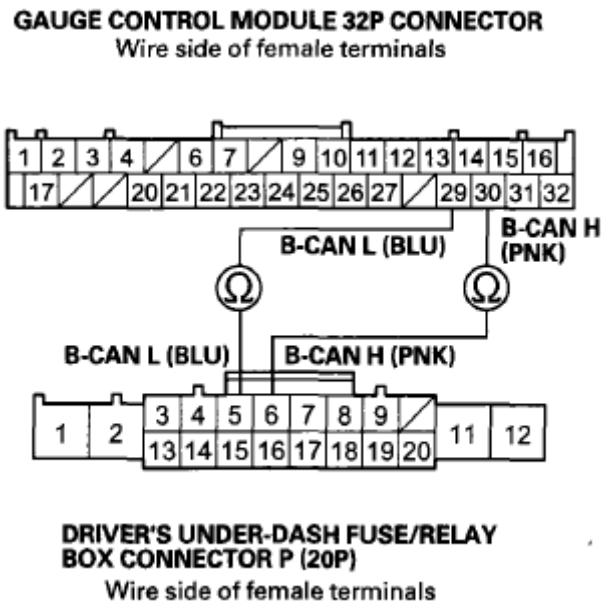


Fig. 20: Checking Continuity Between Gauge Control Module 32P Connector Terminals And Driver's Under-Dash Fuse/Relay Box Connector P (20P) Terminals
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Replace the gauge control module (see **GAUGE CONTROL MODULE REPLACEMENT**).

NO - Repair an open or poor connection in the B-CAN wire between the driver's MICU and the gauge control module.

DTC U0155: PASSENGER'S MICU LOST COMMUNICATION WITH GAUGE CONTROL MODULE

NOTE: If you are troubleshooting multiple DTCs, be sure to follow the instructions in B-CAN System Diagnosis Test Mode A (see TROUBLESHOOTING - B-CAN SYSTEM DIAGNOSIS TEST MODE A).

1. Clear the DTCs with the HDS.
2. Turn the ignition switch to LOCK (0) and then back to ON (II), or press the engine start/stop button to select the OFF mode and then the ON mode.
3. Wait for at least 6 seconds.
4. Check for DTCs with the HDS.

Is DTC U0155 indicated?

YES - Go to step 5.

NO - Intermittent failure, the system is OK at this time. Check for loose or poor connections between the passenger's MICU and the gauge control module.

5. From the BODY ELECTRICAL SYSTEM SELECT menu, select B-CAN CONTROL UNITS INFORMATION, and then select CHECK CONNECTED CONTROL UNITS.

   Is the gauge control module detected?

   YES - Go to step 9.

   NO - Go to step 6.

6. Measure the voltage between body ground and gauge control module 32P connector terminals No. 15 and No. 16 individually.

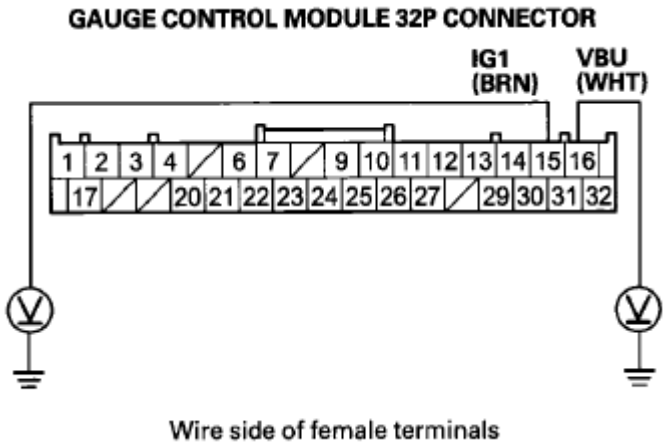


Fig. 21: Measuring Voltage Between Body Ground And Gauge Control Module 32P Connector Terminals No. 15 And No. 16 Individually
Courtesy of AMERICAN HONDA MOTOR CO., INC.

   Is there battery voltage?

   YES - Go to step 8.

   NO - Go to step 7.

7. Check the No. 15 (10 A) fuse in the under-hood fuse/relay box and the No. 12 (7.5 A) fuse in the driver's under-dash fuse/relay box.

   Are the fuses OK?

   YES - Repair an open or high resistance in the No. 15 (10 A) and/or No. 12 (7.5 A) fuse circuit.

   NO - Replace the fuse(s). If the fuse blows again, repair a short to ground in the No. 15(10 A) and/or No. 12 (7.5 A) fuse circuit.

8. Measure the voltage between body ground and gauge control module 32P connector terminals No. 1 and No. 17 individually.

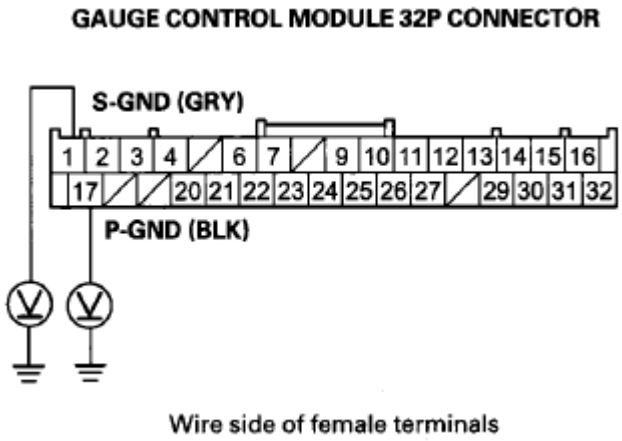


Fig. 22: Measuring Voltage Between Body Ground And Gauge Control Module 32P Connector Terminals No. 1 And No. 17 Individually
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there less than 0.2 V?

YES - Go to step 9.

NO - Repair an open or high resistance in the ground wire or poor ground (G401) and/or (G402).

9. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
10. Disconnect passenger's under-dash fuse/relay box connector A (38P).
11. Disconnect the gauge control module 32P connector.
12. Check for continuity between gauge control module 32P connector terminals No. 29 and No. 30 and passenger's under-dash fuse/relay box connector A (38P) terminals No. 29 and No. 11 respectively.

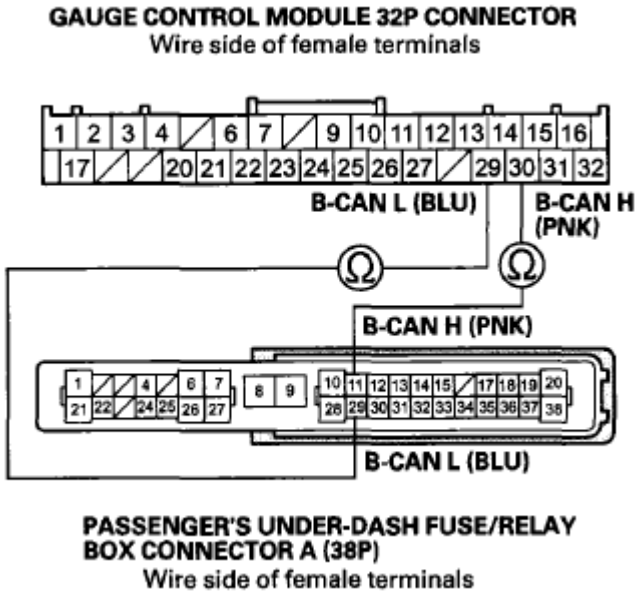


Fig. 23: Checking Continuity Between Gauge Control Module 32P Connector Terminals And Passenger'S Under-Dash Fuse/Relay Box Connector A (38P) Terminals
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Replace the gauge control module (see **GAUGE CONTROL MODULE REPLACEMENT**).

NO - Repair an open or poor connection in the B-CAN wire between the passenger's MICU and the gauge control module.

DTC U0199: DRIVER'S MICU LOST COMMUNICATION WITH DOOR MULTIPLEX CONTROL UNIT

NOTE: If you are troubleshooting multiple DTCs, be sure to follow the instructions in B-CAN System Diagnosis Test Mode A (see TROUBLESHOOTING - B-CAN SYSTEM DIAGNOSIS TEST MODE A).

1. Clear the DTCs with the HDS.
2. Turn the ignition switch to LOCK (0) and then back to ON (II), or press the engine start/stop button to select the OFF mode and then the ON mode.
3. Wait for at least 6 seconds.
4. Check for DTCs with the HDS.

   Is DTC U0199 indicated?

   YES - Go to step 5.

   NO - Intermittent failure, the system is OK at this time. Check for loose or poor connections between the driver's MICU and the door multiplex control unit.

5. Measure the voltage between body ground and power window master switch 37P connector terminal No. 13.

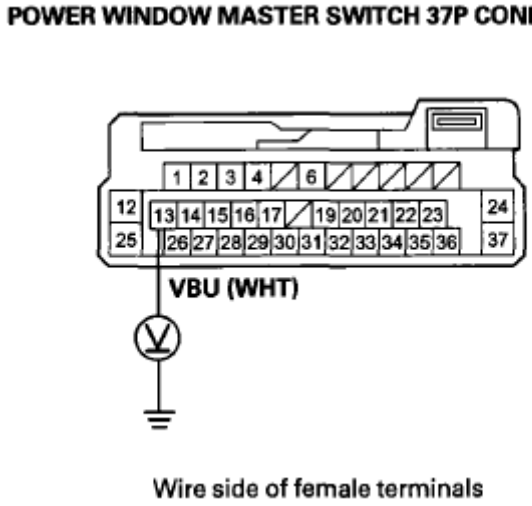


Fig. 24: Measuring Voltage Between Body Ground And Power Window Master Switch 37P Connector Terminal No. 13 With Connector End View
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there battery voltage?

YES - Go to step 7.

NO - Go to step 6.

6. Check the No. 15(10 A) fuse in the under-hood fuse/relay box.

   Is the fuse OK?

   YES - Repair an open or high resistance in the No. 15 (10 A) fuse circuit.

   NO - Replace the fuse. If the fuse blows again, repair a short to ground in the No. 15(10 A) fuse circuit.

7. Measure the voltage between body ground and power window master switch 37P connector terminals No. 32 and No. 37 individually.

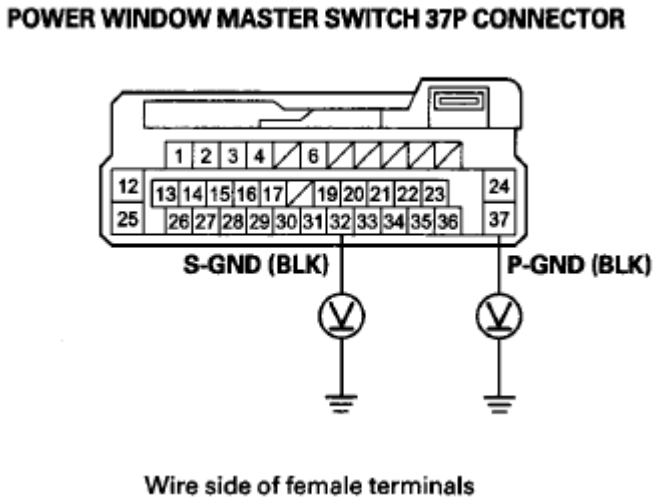


Fig. 25: Measuring Voltage Between Body Ground And Power Window Master Switch 37P Connector Terminals No. 32 And No. 37 Individually
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there less than 0.2 V?

YES - Go to step 8.

NO - Repair an open or high resistance in the ground wire or poor ground (G401) and/or (G402).

8. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
9. Disconnect driver's under-dash fuse/relay box connector P (20P).
10. Disconnect the power window master switch 37P connector.
11. Check for continuity between power window master switch 37P connector terminals No. 33 and No. 35 and driver's under-dash fuse/relay box connector P (20P) terminals No. 5 and No. 6 respectively.

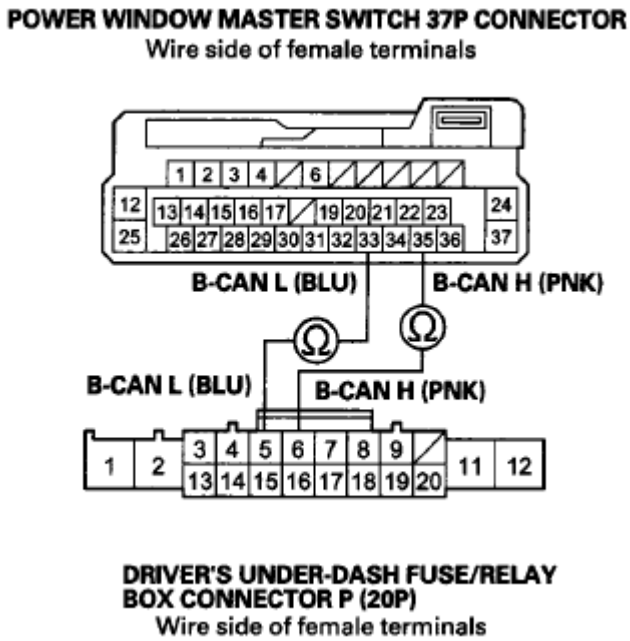


Fig. 26: Checking Continuity Between Power Window Master Switch 37P Connector Terminals And Driver's Under-Dash Fuse/Relay Box Connector P (20P) Terminals
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Replace the power window master switch (see **REAR POWER WINDOW SWITCH TEST**).

NO - Repair an open or poor connection in the B-CAN wire between the driver's MICU and the door multiplex control unit.

DTC U1280: COMMUNICATION BUS LINE ERROR (BUS-OFF)

NOTE: If you are troubleshooting multiple DTCs, be sure to follow the instructions in B-CAN System Diagnosis Test Mode A (see TROUBLESHOOTING - B-CAN SYSTEM DIAGNOSIS TEST MODE A).

1. Clear the DTCs with the HDS.
2. Turn the ignition switch to LOCK (0) and then back to ON (II), or press the engine start/stop button to select the OFF mode and then the ON mode.
3. Wait for at least 6 seconds.
4. Check for DTCs with the HDS.

Is DTC U1280 indicated?

YES - Go to step 5.

NO - Intermittent failure, the system is OK at this time. Check for loose or poor connections, or

worn/shorted wires. If the connections are good, check the battery condition (see **BATTERY TEST**) and the charging system.

5. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
6. Disconnect the appropriate connector at each control unit in the table one at a time. Clear the DTC, then recheck for DTCs after each unit is disconnected.

Control Unit	Connector
Passenger's MICU	Passenger's under-dash fuse/relay box connector A (38P)
Door multiplex control unit	Power window master switch 37P connector
Gauge control module	32P connector
Immobilizer-keyless control unit(1)	7P connector
Power control unit(2)	Connector C (36P)
Keyless access control unit(2)	Connector B (32P)
Remote slot control unit(2)	40P connector
Audio-navigation control unit(4)	Connector D (20P)
Audio unit(3)	Connector D (20P)
Climate control unit	Connector C (20P)
Power seat control unit	Connector B (40P)
HandsFreeLink control unit(3)	28P connector
AcuraLink control unit(5)	Connector A (32P)
BSI control unit(6)	16P connector
(1) Without keyless access system (2) With keyless access system (3) Without navigation (4) With navigation (5) USA models with navigation (6) With BSI	

Is DTC U1280 indicated with each individual unit disconnected?

YES - Leave the connectors disconnected, and go to step 7.

NO - Go to the input test (or circuit troubleshooting) for the control unit that was disconnected when DTC U1280 did not reset, and perform all power and ground input tests. If the tests prove OK, replace that unit.

- Passenger's MICU input test (see **DTC U1283: DRIVER'S MICU LOST COMMUNICATION WITH PASSENGER'S MICU**)

- Door multiplex control unit (power window master switch) input test (see **POWER WINDOW MASTER SWITCH INPUT TEST**)
- Gauge control module input test (see **GAUGE CONTROL MODULE INPUT TEST**)
- Power control unit input test (see **RF UNIT REPLACEMENT**)
- Keyless access control unit input test (see **CONTROL UNIT INPUT TEST**)
- Remote slot control unit input test (see **RF UNIT REPLACEMENT**)
- Immobilizer-keyless control unit input test (see **IMMOBILIZER-KEYLESS CONTROL UNIT INPUT TEST**)
- Climate control unit power and ground circuit troubleshooting (see **CLIMATE CONTROL POWER AND GROUND CIRCUIT TROUBLESHOOTING**)
- Power seat control unit input test (see **POWER SEAT CONTROL UNIT INPUT TEST/REPLACEMENT**)
- HandsFreeLink control unit input test (see **CONTROL UNIT INPUT TEST**)
- AcuraLink control unit input test (see **ACURALINK CONTROL UNIT (XM RECEIVER) CONNECTOR FOR INPUTS AND OUTPUTS**)
- Audio unit input test (see **AUDIO UNIT CONNECTOR FOR INPUTS AND OUTPUTS (WITH NAVIGATION)**)
- Audio-navigation unit input test (see **NAVIGATION UNIT CONNECTOR FOR INPUTS AND OUTPUTS**)
- BSI control unit input test (see **BLIND SPOT INFORMATION SYSTEM (BSI) CONTROL UNIT INPUTS AND OUTPUTS**).

7. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
8. Remove the driver's dashboard undercover (see **DRIVER'S DASHBOARD UNDERCOVER REMOVAL/INSTALLATION**).
9. Disconnect driver's under-dash fuse/relay box connector P (20P).
10. Check for continuity between driver's under-dash fuse/relay box connector P (20P) terminals No. 5 and No. 6.

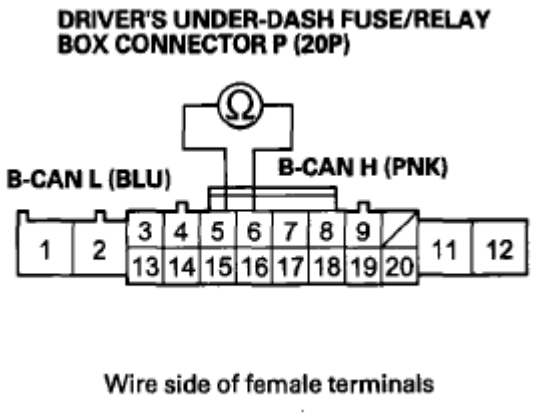


Fig. 27: Checking Continuity Between Driver's Under-Dash Fuse/Relay Box Connector P (20P) Terminals No. 5 And No. 6 With Connector End View
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair a short in the B-CAN wires.

NO - Go to step 11.

11. Check for continuity between body ground and driver's under-dash fuse/relay box connector P (20P) terminals No. 5 and No. 6 individually.

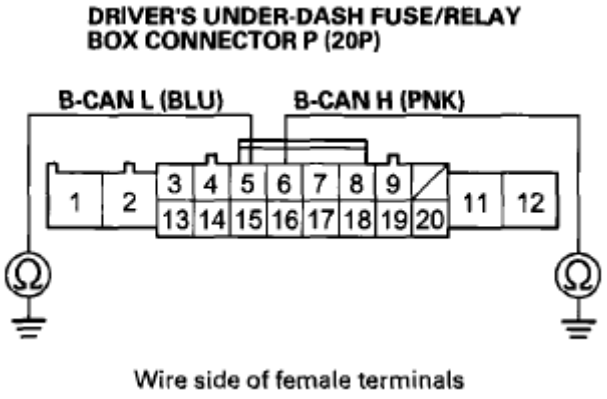


Fig. 28: Checking Continuity Between Body Ground And Driver's Under-Dash Fuse/Relay Box Connector P (20P) Terminals No. 5 And No. 6 Individually
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair a short to ground in the wire(s).

NO - Go to step 12.

12. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
13. Measure the voltage between body ground and driver's under-dash fuse/relay box connector P (20P) terminals No. 5 and No. 6 individually.

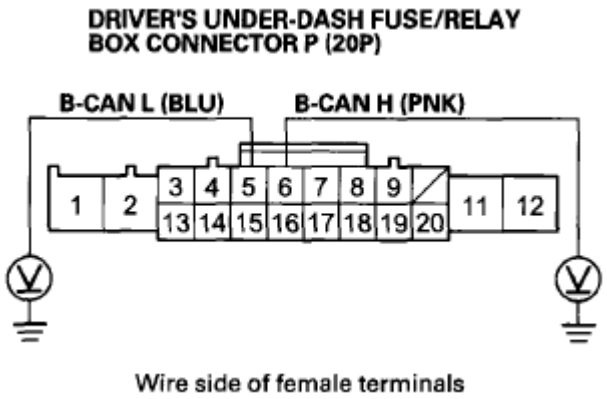


Fig. 29: Measuring Voltage Between Body Ground And Driver's Under-Dash Fuse/Relay Box Connector P (20P) Terminals No. 5 And No. 6 Individually
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there voltage?

YES - Repair a short to power in the wire(s).

NO - Faulty driver's MICU; replace the driver's under-dash fuse/relay box (see **DRIVER'S UNDER-DASH FUSE/RELAY BOX (MICU) REMOVAL AND INSTALLATION**).

DTC U1282: PASSENGER'S MICU LOST COMMUNICATION WITH DRIVER'S MICU

NOTE: If you are troubleshooting multiple DTCs, be sure to follow the instructions in B-CAN System Diagnosis Test Mode A (see TROUBLESHOOTING - B-CAN SYSTEM DIAGNOSIS TEST MODE A).

1. Clear the DTCs with the HDS.
2. Turn the ignition switch to LOCK (0) and then back to ON (II), or press the engine start/stop button to select the OFF mode and then the ON mode.
3. Wait for at least 6 seconds.
4. Check for DTCs with the HDS.

Is DTC U1282 indicated?

YES - Faulty passenger's MICU; replace the passenger's under-dash fuse/relay box (see **PASSENGER'S UNDER-DASH FUSE/RELAY BOX (MICU) REMOVAL AND INSTALLATION**).

NO - Intermittent failure, the system is OK at this time. Check for loose or poor connections between the Passenger's MICU and the driver's MICU.

DTC U1283: DRIVER'S MICU LOST COMMUNICATION WITH PASSENGER'S MICU

NOTE: If you are troubleshooting multiple DTCs, be sure to follow the instructions in B-CAN System Diagnosis Test Mode A (see TROUBLESHOOTING - B-CAN SYSTEM DIAGNOSIS TEST MODE A).

1. Clear the DTCs with the HDS.
2. Turn the ignition switch to LOCK (0) and then back to ON (II), or press the engine start/stop button to select the OFF mode and then the ON mode.
3. Wait for at least 6 seconds.
4. Check for DTCs with the HDS.

Is DTC U1283 indicated?

YES - Go to step 5.

NO - Intermittent failure, the system is OK at this time. Check for loose or poor connections between the driver's MICU and the passenger's MICU.

5. Measure the voltage between body ground and passenger's under-dash fuse/relay box connector A (38P) terminals No. 14 and No. 35 individually.

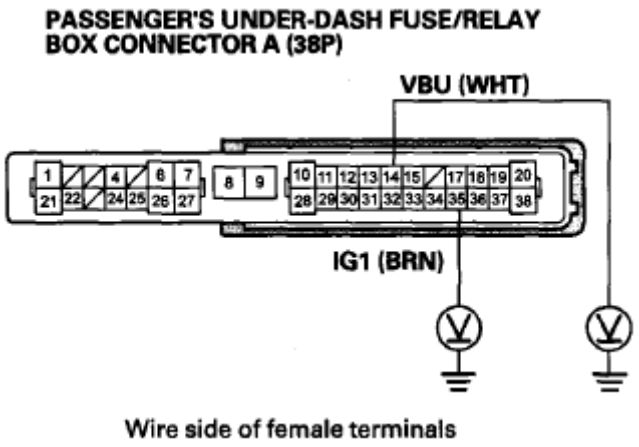


Fig. 30: Measuring Voltage Between Body Ground And Passenger's Under-Dash Fuse/Relay Box Connector A (38P) Terminals No. 14 And No. 35 Individually
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there battery voltage?

YES - Go to step 7.

NO - Go to step 6.

6. Check the No. 15 (10 A) fuse in the under-hood fuse/relay box and the No. 12 (7.5 A) fuse in the driver's under-dash fuse/relay box.

Are the fuses OK?

YES - Repair an open or high resistance in the No. 15 (10 A) and/or No. 12 (7.5 A) fuse circuit.

NO - Replace the fuse(s). If the fuse blows again, repair a short to ground in the No. 15(10 A) and/or No. 12 (7.5 A) fuse circuit.

7. Measure the voltage between body ground and passenger's under-dash fuse/relay box connector A (38P) and E (18P) terminals as shown.

Passenger's under-dash fuse/relay box connector	
A36	Body ground
A37	

E15	

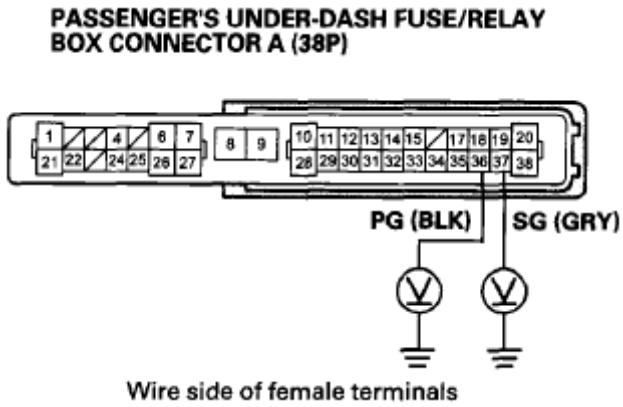


Fig. 31: Measuring Voltage Between Body Ground And Passenger's Under-Dash Fuse/Relay Box Connector A (38P) Terminals
Courtesy of AMERICAN HONDA MOTOR CO., INC.

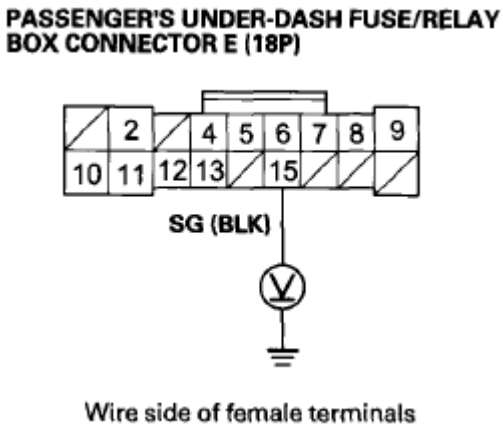


Fig. 32: Measuring Voltage Between Body Ground And Passenger's Under-Dash Fuse/Relay Box Connector And E (18P) Terminals With Connector End View
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there less than 0.2 V?

YES - Go to step 8.

NO - Repair an open or high resistance in the ground wire or poor ground (G203), (G401), and/or (G405).

8. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
9. Disconnect passenger's under-dash fuse/relay box connector A (38P).
10. Disconnect the power window master switch 37P connector.
11. Check for continuity between passenger's under-dash fuse/relay box connector A (38P) terminals No. 11 and No. 29 and driver's under-dash fuse/relay box connector P (20P) terminals No. 6 and No. 5

respectively.

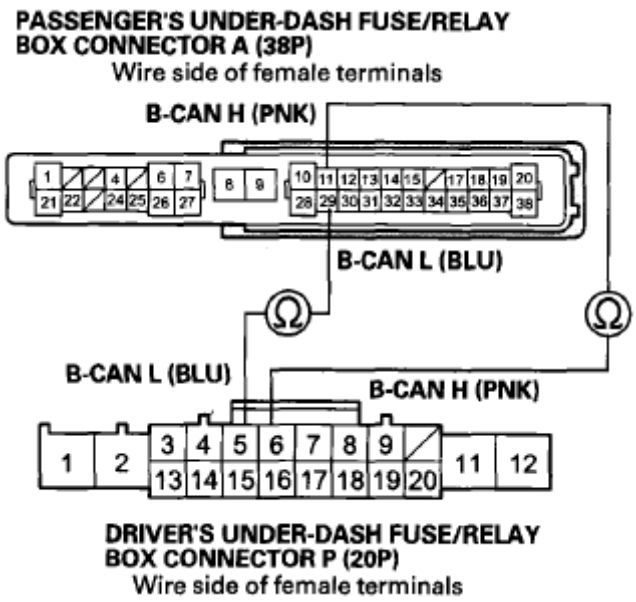


Fig. 33: Checking Continuity Between Passenger's Under-Dash Fuse/Relay Box Connector A (38P) Terminals And Driver's Under-Dash Fuse/Relay Box Connector P (20P) Terminals
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Faulty driver's MICU; replace the driver's under-dash fuse/relay box (see **DRIVER'S UNDER-DASH FUSE/RELAY BOX (MICU) REMOVAL AND INSTALLATION**).

NO - Repair an open or poor connection in the B-CAN wire between the driver's MICU and the passenger's MICU.

MICU INPUT TEST

NOTE: Before testing, troubleshoot the multiplex integrated control system first, using B-CAN System Diagnosis Test Mode A (see TROUBLESHOOTING - B-CAN SYSTEM DIAGNOSIS TEST MODE A).

Driver's MICU

1. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
2. Remove the driver's dashboard undercover (see **DRIVER'S DASHBOARD UNDERCOVER REMOVAL/INSTALLATION**).
3. Disconnect driver's under-dash fuse/relay box connectors F, N, P, Q, and R.

NOTE: All connector views are wire side of female terminals.

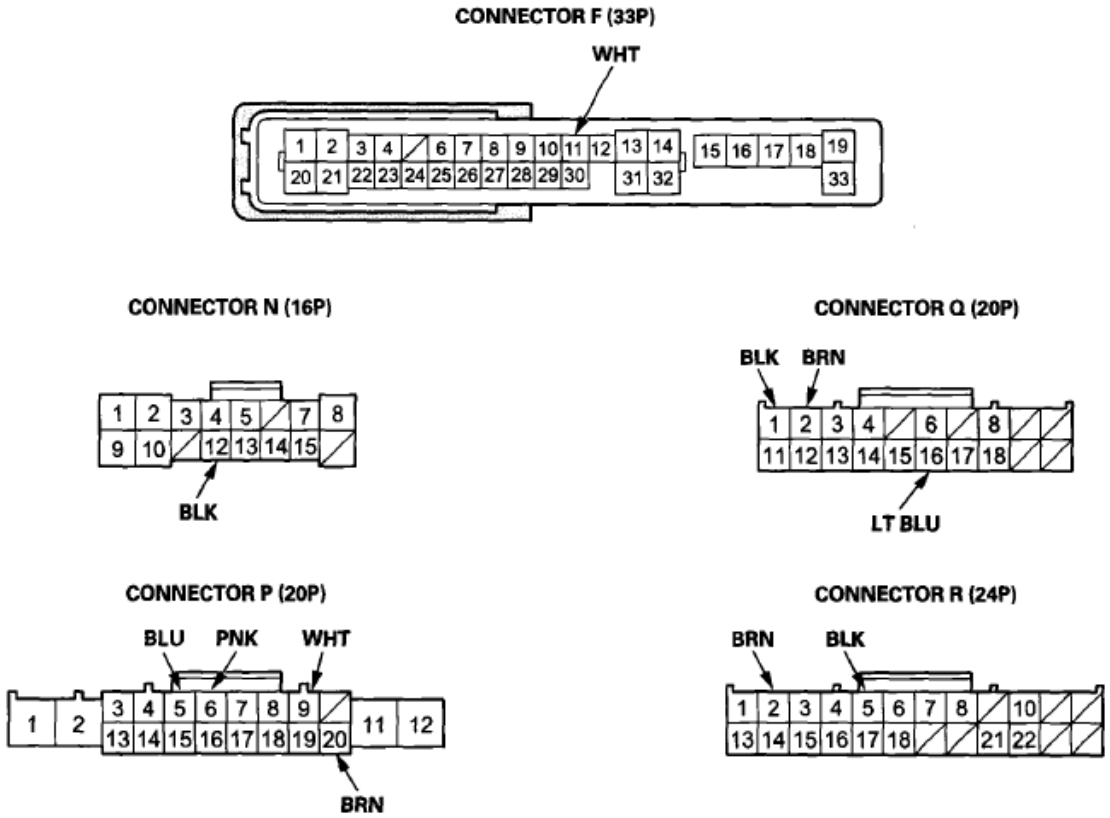


Fig. 34: Identifying Driver's MICU F (33P), N(16P), Q (20P), P (20P) & R (24P) Connector End Views
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Inspect the connector and socket terminals to be sure they are all making good contact.
   - If the terminals are bent, loose or corroded, repair them as necessary, and recheck the system.
   - If the terminals look OK, go to step 5.
5. With the connectors still disconnected, do the following input tests:
   - If any test indicates a problem, find and correct the cause, then recheck the system.
   - If all the input tests prove OK, go to step 6.

Cavity	Wire	Test condition	Test: Desired result	Possible cause if desired result is not obtained
P5(1)	BLU	Power control unit connector C (36P) disconnected	Check for continuity between terminal P5 and power control unit connector C (36P) terminal No. 17: There should be continuity.	An open in the B-CAN wire
P6(1)	PNK		Check for continuity between terminal P6 and power control unit connector C (36P) terminal No. 16: There should be continuity.	An open in the B-CAN wire

P5(1)	BLU	Keyless access control unit connector B (32P) disconnected	Check for continuity between terminal P5 and keyless access control unit connector B (32P) terminal No. 7: There should be continuity.	An open in the B-CAN wire
P6(1)	PNK		Check for continuity between terminal P6 and keyless access control unit connector B (32P) terminal No. 8: There should be continuity.	An open in the B-CAN wire
P5(1)	BLU	Remote slot control unit 40P connector disconnected	Check for continuity between terminal P5 and remote slot control unit 40P connector terminal No. 23: There should be continuity.	An open in the B-CAN wire
P6(1)	PNK		Check for continuity between terminal P6 and remote slot control unit 40P connector terminal No. 3: There should be continuity.	An open in the B-CAN wire
P5(2)	BLU	Immobilizer-keyless control unit 7P connector disconnected	Check for continuity between terminal P5 and immobilizer-keyless control unit 7P connector terminal No. 3: There should be continuity.	An open in the B-CAN wire
P6(2)	PNK		Check for continuity between terminal P6 and immobilizer-keyless control unit 7P connector terminal No. 4: There should be continuity.	An open in the B-CAN wire
P5	BLU	Gauge control module 32P connector disconnected	Check for continuity between terminal P5 and gauge control module 32P connector terminal No. 29: There should be continuity.	An open in the B-CAN wire
P6	PNK		Check for continuity between terminal P6 and gauge control module 32P connector terminal No. 30: There should be continuity.	An open in the B-CAN wire
P5	BLU	Power window master switch 37P connector disconnected	Check for continuity between terminal P5 and power window master switch 37P connector terminal No. 33: There should be continuity.	An open in the B-CAN wire
P6	PNK		Check for continuity between terminal P6 and power window master switch 37P connector terminal No. 35: There should be continuity.	An open in the B-CAN wire
P5	BLU	Passenger's under-dash fuse/relay box connector A (38P) disconnected	Check for continuity between terminal P5 and passenger's under-dash fuse/relay box connector A (38P) terminal No. 29: There should be continuity.	An open in the B-CAN wire
P6	PNK		Check for continuity between terminal P6 and passenger's under-dash fuse/relay	An open in the

			box connector A (38P) terminal No. 11 : There should be continuity.	B-CAN wire
P5	BLU	Climate control unit connector C (20P) disconnected	Check for continuity between terminal P5 and climate control unit connector C (20P) terminal No. 7: There should be continuity.	An open in the B-CAN wire
P6	PNK		Check for continuity between terminal P6 and climate control unit connector C (20P) terminal No. 8: There should be continuity.	An open in the B-CAN wire
P5(3)	BLU	Audio-navigation unit connector D (20P) disconnected	Check for continuity between terminal P5 and audio-navigation unit connector D (20P) terminal No. 28: There should be continuity.	An open in the B-CAN wire
P6(3)	PNK		Check for continuity between terminal P6 and audio-navigation unit connector D (20P) terminal No. 12: There should be continuity.	An open in the B-CAN wire
P5(4)	BLU	Audio unit connector D (20P) disconnected	Check for continuity between terminal P5 and audio unit connector D (20P) terminal No. 8: There should be continuity.	An open in the B-CAN wire
P6(4)	PNK		Check for continuity between terminal P6 and audio unit connector D (20P) terminal No. 18: There should be continuity.	An open in the B-CAN wire
P5	BLU	Power seat control unit connector B (40P) disconnected	Check for continuity between terminal P5 and power seat control unit connector B (40P) terminal No. 39: There should be continuity.	An open in the B-CAN wire
P6	PNK		Check for continuity between terminal P6 and power seat control unit connector B (40P) terminal No. 40: There should be continuity.	An open in the B-CAN wire
P5(4)	BLU	HandsFreeLink control unit 28P connector disconnected	Check for continuity between terminal P5 and HandsFreeLink control unit 28P connector terminal No. 17: There should be continuity.	An open in the B-CAN wire
P6(4)	PNK		Check for continuity between terminal P6 and HandsFreeLink control unit 28P connector terminal No. 18: There should be continuity.	An open in the B-CAN wire
P5(5)	BLU	AcuraLink control unit	Check for continuity between terminal P5 and AcuraLink control unit connector A (32P) terminal No. 8: There should be continuity.	An open in the B-CAN wire

P6(5)	PNK	connector A (32P) disconnected	Check for continuity between terminal P6 and AcuraLink control unit connector A (32P) terminal No. 9: There should be continuity.	An open in the B-CAN wire
P5(6)	BLU	BSI control unit 16P connector disconnected	Check for continuity between terminal P5 and BSI control unit 16P connector terminal No. 5: There should be continuity.	An open in the B-CAN wire
P6(6)	PNK		Check for continuity between terminal P6 and BSI control unit 16P connector terminal No. 6: There should be continuity.	An open in the B-CAN wire
Q16	LT BLU	Under all conditions	Check for continuity between terminal Q16 and data link connector (DLC) terminal No. 7: There should be continuity.	An open in the K-LINE wire

(1) With keyless access system

(2) Without keyless access system

(3) With navigation

(4) Without navigation

(5) USA models with AcuraLink

(6) With BSI

6. Reconnect the connectors to the driver's under-dash fuse/relay box, and do the following input tests:
   - If any test indicates a problem, find and correct the cause, then recheck the system.
   - If all the input tests prove OK, go to step 7.

NOTE: These are power and ground tests for the multiplex integrated control unit.

Cavity	Wire	Test condition	Test: Desired result	Possible cause if desired result is not obtained
F11	WHT	Under all conditions	Measure the voltage to ground: There should be battery voltage.	• Blown No. 15(10 A) fuse in the under-hood fuse/relay box • An open or high resistance in the wire
P9	WHT	Under all conditions	Measure the voltage to ground: There should be	• Blown No. 15 (10 A) fuse in the under-hood fuse/relay box • Faulty driver's under-dash

			battery voltage.	fuse/relay box • An open or high resistance in the wire
P20	BRN	Ignition switch ON (II), or power mode ON	Measure the voltage to ground: There should be battery voltage.	• Blown No. 12 (7.5 A) fuse in the driver's under- dash fuse/relay box • Faulty driver's under-dash fuse/relay box • An open or high resistance in the wire
N12	BLK	In all ignition switch positions or all power modes	Measure the voltage to ground: There should be less than 0.2 V.	• Poor ground (G402) • An open or high resistance in the ground wire
Q1	BLK	In all ignition switch positions or all power modes	Measure the voltage to ground: There should be less than 0.2 V.	• Poor ground(G402) • An open or high resistance in the ground wire
Q2	BRN	In all ignition switch positions or all power modes	Measure the voltage to ground: There should be less than 0.2 V.	• Poor ground (G401) • An open or high resistance in the ground wire
R2	BRN	In all ignition switch positions or all power modes	Measure the voltage to ground: There should be less than 0.2 V.	• Poor ground (G401) • An open or high resistance in the ground wire
R5	BLK	In all ignition switch positions or ail power modes	Measure the voltage to ground: There should be less than 0.2 V.	• Poor ground (G402) • An open or high resistance in the ground wire

Passenger's MICU

7. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
8. Remove the passenger's kick panel (see **TRIM REMOVAL/INSTALLATION - DOOR AREAS**).
9. Disconnect passenger's under-dash fuse/relay box connectors A and E.

NOTE: All connector views are wire side of female terminals.

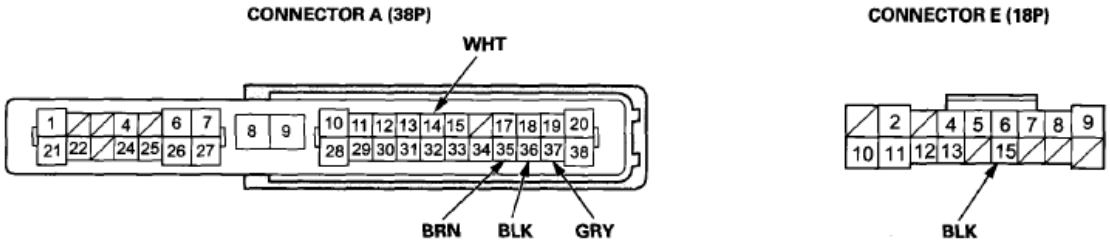


Fig. 35: Identifying Passenger's MICU A (38P) & E (18P) Connector End Views
Courtesy of AMERICAN HONDA MOTOR CO., INC.

10. Inspect the connector and socket terminals to be sure they are all making good contact.
    - If the terminals are bent, loose or corroded, repair them as necessary, and recheck the system.
    - If the terminals look OK, go to step 11.
11. Reconnect the connectors to the passenger's under-dash fuse/relay box, turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode, and do the following input tests:
    - If any test indicates a problem, find and correct the cause, then recheck the system.
    - If all the input tests prove OK, go to step 12.

Cavity	Wire	Test condition	Test: Desired result	Possible cause if desired result is not obtained
A14	WHT	Under all conditions	Measure the voltage to ground: There should be battery voltage.	• Blown No. 15 (10 A) fuse in the under-hood fuse/relay box • Faulty driver's under-dash fuse/relay box • An open or high resistance in the wire
A35	BRN	Ignition switch ON (II), or power mode ON	Measure the voltage to ground: There should be battery voltage.	• Blown No. 12 (7.5 A) fuse in the driver's under-dash fuse/relay box • Faulty driver's under-dash fuse/relay box • An open or high resistance in the wire
A36	BLK	In all ignition switch positions or all power modes	Measure the voltage to ground: There should be less than 0.2 V.	• Poor ground (G405) • An open or high resistance in the ground wire
A37	GRY	In all ignition switch positions or all power modes	Measure the voltage to ground: There should be less than 0.2 V.	• Poor ground(G401) • An open or high resistance in the ground wire
E15	BLK	In all ignition switch positions or all power modes	Measure the voltage to ground: There should be less than 0.2 V.	• Poor ground (G203) • An open or high resistance in the ground wire

12. If multiple failures are found on more than one control unit, replace the driver's under-dash fuse/relay box (includes the driver's MICU) (see **DRIVER'S UNDER-DASH FUSE/RELAY BOX (MICU) REMOVAL AND INSTALLATION**). If input failures are related to a particular control unit, replace the control unit.

2012 ACCESSORIES & EQUIPMENT

Navigation System - TL

COMPONENT LOCATION INDEX

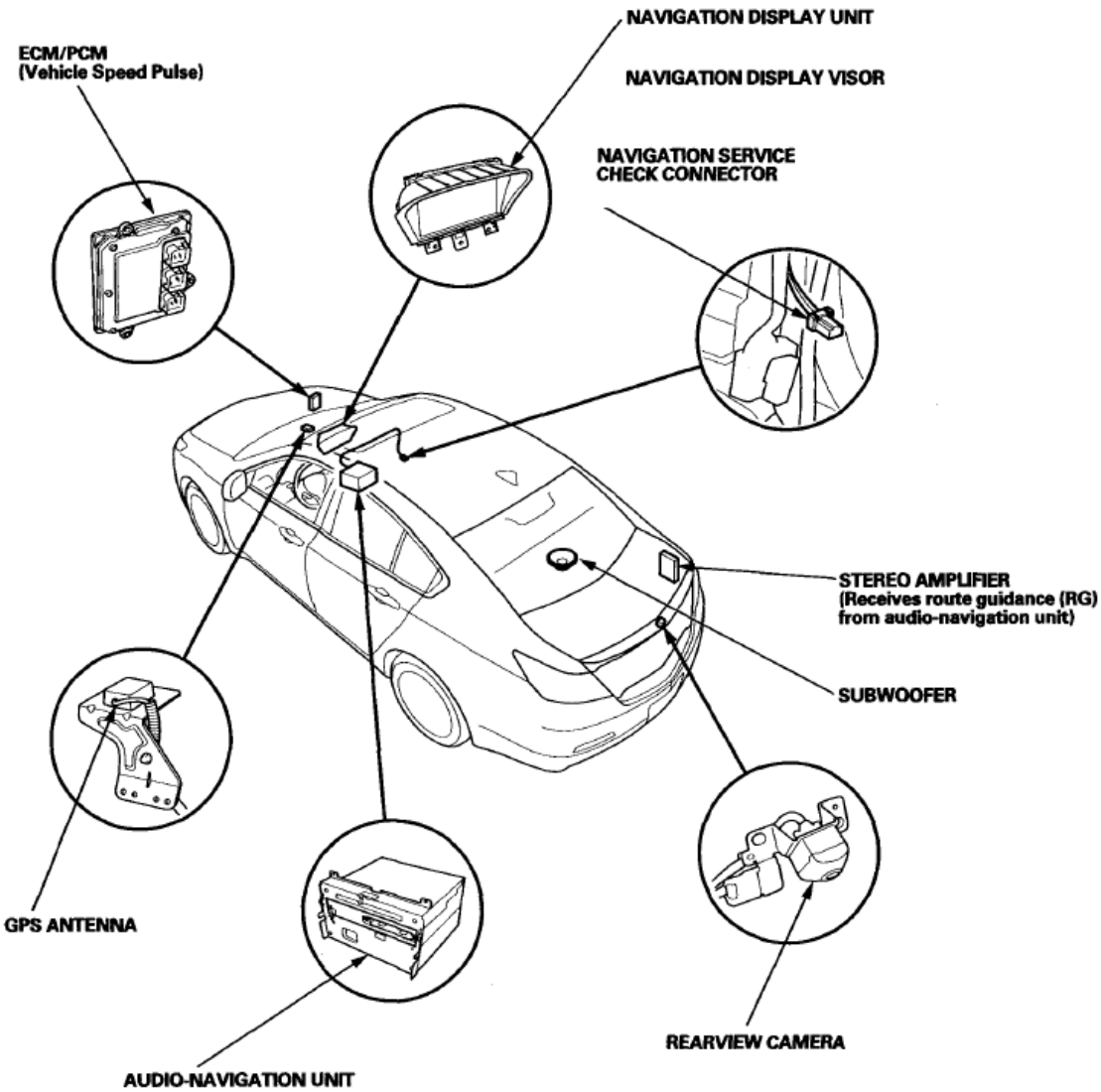


Fig. 1: Navigation System Components Location (1 Of 2)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

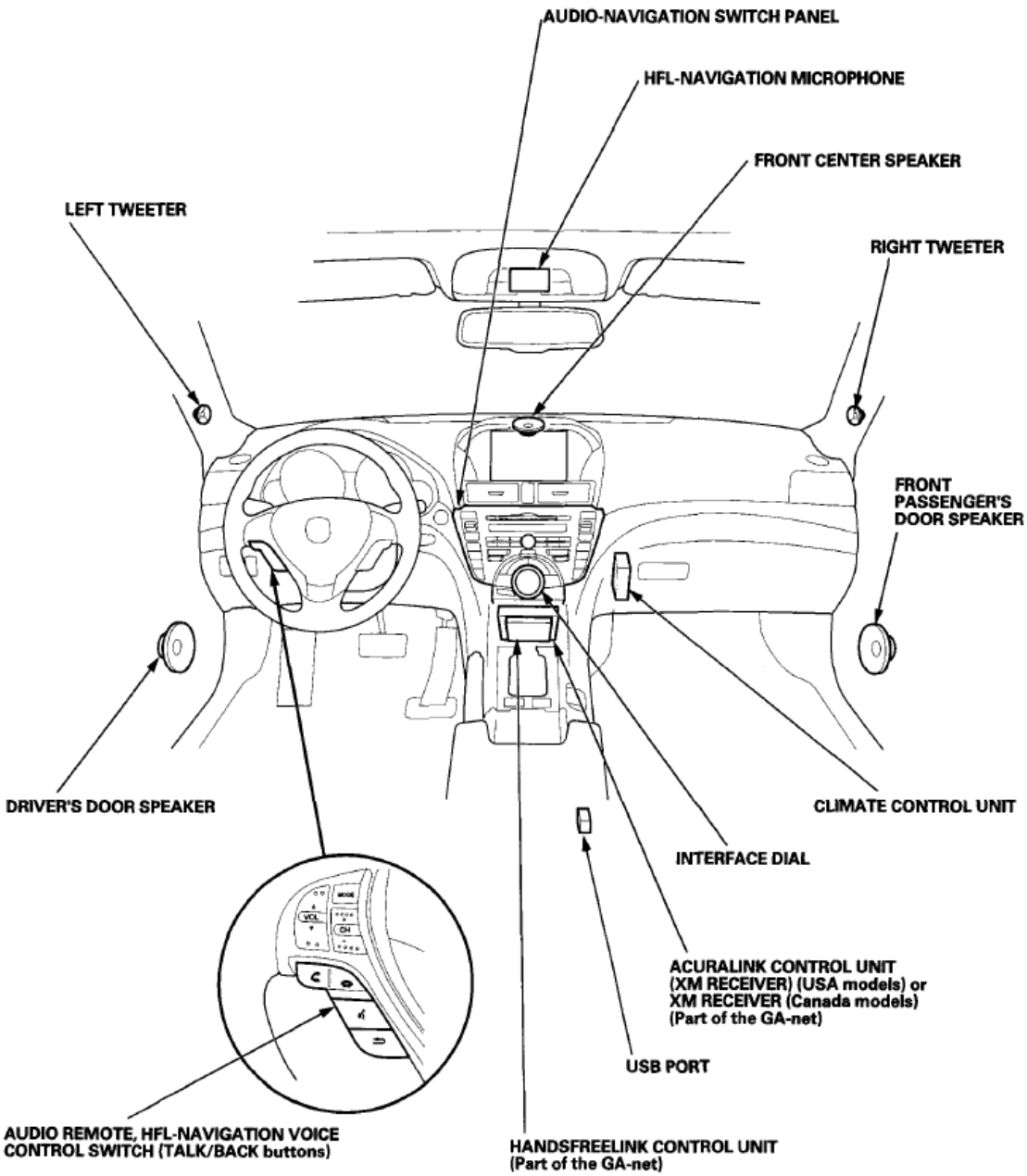


Fig. 2: Navigation System Components Location (2 Of 2)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

GENERAL TROUBLESHOOTING INFORMATION

GENERAL OPERATION

Refer to the Navigation Manual for the navigation system operating procedures.

ANTI-THEFT FEATURE

The navigation system has a coded theft protection circuit. Make sure you have the anti-theft security code before:

- Disconnecting the battery.
- Disconnecting the audio-navigation unit connector A (24P).
- Removing the No. 15(10 A) fuse from the under-hood fuse/relay box.

After service, reconnect power to the audio-navigation unit, and turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode. Enter the 5-digit anti-theft security code.

If the code card is lost or unavailable, you can get the code from the iN using the navigation system serial number. The system serial number can easily be obtained without removing the audio-navigation unit. To get the serial number and the code, do the following:

- Press and hold the DEST/ROUTE, the MAP/GUIDE, and the CANCEL buttons at the same time.
- At the select diagnosis items screen, select Detail Information&Setting, select Unit Check, then Navi ECU. The system runs a brief diagnosis, then the audio-navigation unit serial number is displayed on the screen.
- Use the Anti-theft code inquiry option on the iN to look up the 5-digit anti-theft code. The iN may display more than one code for a given serial number. This is because serial numbers are not unique. You may have to try more than one 5-digit code. If no code is shown, or if the code(s) given do not work in the audio-navigation unit, contact the Automobile Warranty department.

Alternatively, you can find the serial number on the upper label which is located on the audio-navigation unit in the dash.

The HDD and audio-navigation unit are mated to each other and can only be mated to a new unit. If someone tried to put a stolen HDD in another audio-navigation unit, or insert their HDD in a stolen audio-navigation unit, the two components cannot mate and a HDD read error appears on the display.

When replacing the audio-navigation unit, be sure to give the client the new anti-theft security code.

SYMPTOM DIAGNOSIS

Certain circumstances and system limitations may result in occasional vehicle positioning errors. Some clients may think this indicates a problem with the navigation system when, in fact, the system is normal. Keep the following items in mind when interviewing clients about symptoms of the navigation system.

SELF-INERTIAL NAVIGATION LIMITATIONS

The limitations of the self-inertial portion of the navigation system (the yaw rate sensor and the vehicle speed pulse) can cause discrepancies between the vehicle's actual position and the indicated vehicle's position (GPS vehicle position).

The following circumstances may cause vehicle positioning errors:

- Moving the vehicle with the engine stopped and the vehicle stopped, such as by ferry or tow truck, or if the vehicle is spun on a turn table.
- Tire slippage, changes in tire rolling diameters, and some driving situations may cause discrepancies in travel distances. Examples of this include:
  - Continuous tire slippage on a slippery surface
  - Driving with snow chains mounted
  - Abnormal tire pressure
  - Incorrect tire size
  - Frequent lane changes across a wide highway
  - Continuous driving on a straight or gently curving highway
  - Very bumpy roads
- Tolerances in the system and map inaccuracies sometimes limit how precisely the vehicle's position is indicated. Examples of this include:
  - Driving on roads not shown on the map (map matching is not possible)
  - Driving on a road that winds in one direction, such as a loop bridge, an interchange, or a spiral parking garage
  - Driving on a road with a series of sharp hair-pin turns
  - Driving near a gradual highway exit or transition
  - Driving on one of two close parallel roads
  - Making many 90 degree turns

GLOBAL POSITIONING SYSTEM (GPS) LIMITATIONS

The GPS cannot detect the vehicle's position or elevation during the following instances:

- For the first 5 to 10 minutes after reconnecting the battery (this process can take as long as 45 minutes).
- When the satellite signals are blocked by tall buildings, mountains, tunnels, large trees, inside parking structures or large trucks.
- When the GPS antenna is blocked by metallic window tinting or by an object placed above it in the vehicle. The GPS antenna requires a clear unobstructed view of the sky.
- When there is no satellite signal output (signal output is sometimes stopped for satellite servicing).
- When the satellite signals are blocked by the operation of some electronic aftermarket accessories including, but not limited to non-OEM in-dash entertainment units (amp, CD players/changers, radar detectors, theft recovery systems, etc.) and cell phones placed near the navigation system.

The accuracy of the GPS is reduced during these instances:

- Metallic window tinting above the GPS antenna.
- When only three or less satellite signals are received (Four satellite signals are required for accurate positioning).
- When driving near high tension power lines.
- When the satellite signals are blocked by the operation of some electronic aftermarket accessories

including, but not limited to non-OEM in-dash entertainment units (amp, CD players/changers, radar detectors, theft recovery systems, etc.) and cell phones placed near the navigation system.

- When the satellite control centers are experiencing problems.

MUTING LOGIC

Whenever the navigation system is giving guidance, outputs of all the speakers except the center speaker are decreased. When the voice control system is being used, all of the speakers are muted. If the AcuraLink or HandsFreeLink is in use, the voice control system is unavailable and a message appears onscreen.

LCD UNIT LIMITATIONS

NOTE: The screen is not touch sensitive. Use the interface dial and buttons to select items on the screen.

- In cold temperatures, the display may stay dark for the first minute until it warms up.
- When the display is too hot because of direct summer sunlight, it will remain dark until the temperature drops (you may see an error message displayed stating this fact).
- When the humidity is high and the interior temperature is low, the display may appear cloudy. The display will clear up after some use.
- Fingerprints on the screen may be noticeable. Clean the screen with a soft, damp cloth. You may use a mild cleaner intended for eye glasses or computer screens. To avoid scratching the panel, do not rub too hard or use abrasive cleaners or shop towels.

SYMPTOM DUPLICATION

- When the symptom can be duplicated, verify that it is not a characteristic of the system. Review the Navigation System Manual and compare it to a known-good vehicle (with the same software and database), under the same conditions. If the symptom is not the same as the known-good vehicle, follow the self-diagnostic procedures and the appropriate troubleshooting procedures.
- When the symptom does not reappear or only reappears intermittently, ask the client about the conditions when the symptom occurred.
    - Always ask the client to demonstrate the problem
    - Try to establish possible user error or misunderstanding of the system
    - Try to establish if outside interference may have been the cause
    - Try to duplication the symptom under the same conditions the client experienced
    - Vibration, temperature extremes, and moisture (dew, humidity) are factors that are difficult to duplicate
    - Inspect the vehicle for after-market electronic devices (amp, CD players/changers, radar detectors, theft recovery systems, etc.) that may be hidden

NOTE: When troubleshooting navigation system problems, ensure that the known-good vehicle is the same software version year and model as the vehicle being serviced. Mixing incompatible navigation systems or other

system components can delay the troubleshooting process by creating symptoms or issues unrelated to the original problem.

AUDIO-NAVIGATION UNIT AND HDD SERVICE PRECAUTIONS

Contrary to previous generations of navigation units, the audio-navigation unit and the HDD cannot be substituted separately. You can substitute a combined audio-navigation unit and HDD with a known-good combined audio-navigation unit and HDD. When the audio-navigation unit and HDD are connected to a vehicle, and powered up for the first time, the audio-navigation unit and HDD go through a mating process where the HDD writes the audio-navigation unit's serial number to its memory. The audio-navigation unit and HDD are available separately.

When you get a replacement audio-navigation unit, the unit arrives able to mate one time to a HDD. When you connect the audio-navigation unit to the HDD and power it up for the first time, the two components are mated. Once the audio-navigation unit is mated, it does not accept an HDD that is already mated to another audio-navigation unit. It does accept a new HDD.

The HDD is removable from the audio-navigation unit. If the audio-navigation unit is replaced, install the original HDD into the new audio-navigation unit. When you transfer the HDD, all the client's settings, music, and photographs are transferred.

The HDD is able to mate more than once, allowing you to transfer the HDD with the client's information to a new audio-navigation unit. The HDD must mate to a new audio-navigation unit. It cannot mate to an audio-navigation unit that has been mated to another HDD.

If you need to replace the HDD, there is no way to transfer client data, music, or pictures to a new HDD. Explain to your client that their music and personal information is not transferable. The navigation system has the save users memory function available, but Acura does not recommend using it. If the HDD is OK, install it in the new audio-navigation unit and it will automatically transfer all the client's information and settings.

If you need to replace the HDD, you can try to back-up the navigation data (if possible) and transfer it to the new HDD. See **save users memory**. The save users memory function only copies client settings and phone information. There is no way to copy or transfer music and photographs that are saved on the HDD to a new HDD. Explain to your client that this information is not transferable and will be lost.

- When the battery is disconnected, the internal GPS clock resets to 0:00. The clock resets to the correct time after the system finishes GPS initialization.
- Before disconnecting the battery, make sure you have the anti-theft code for the navigation system. Also obtain any PGM-FI or A/T DTCs and freeze frame date (which are lost when the ECM/PCM loses power).
- After reconnecting the battery, you have to wait to get the initial signal from the satellite. It will take from 5 to 45 minutes.
- Adjust the setup clock settings (time zone and daylight savings) in the navigation system.
- Before returning the vehicle to the client, enter the anti-theft code for the navigation system.
- Install any discs that were removed.

SYSTEM INITIALIZATION

If the navigation system loses power (like the battery was disconnected), the navigation system requires initialization. Once completed, your system is ready to use.

This initialization requires the following:

- Entering the 5-digit anti-theft security code to unlock the system.
- GPS initialization (may not be needed depending of the length of time the system was without power).
- Map matching aligns the GPS to a location on the map.

ENTERING THE SECURITY CODE

Any time the navigation system loses power, you need to enter the 5-digit anti-theft code on the navigation system display. This 5-digit code is located on a small code card that was given to the client. Enter the 5-digit code.

If the anti-theft code is missing, get the serial number from the audio-navigation unit and use the iN to look it up. You do not need to remove the audio-navigation unit. See **Anti-Theft Feature**.

When replacing the audio-navigation unit, make sure you give the client the new anti-theft security code.

GPS INITIALIZATION

NOTE: You must park the vehicle outside with a clear view of the sky.

Depending on the length of time the battery was disconnected, your system may require GPS initialization. If it does, the CSF screen appears:

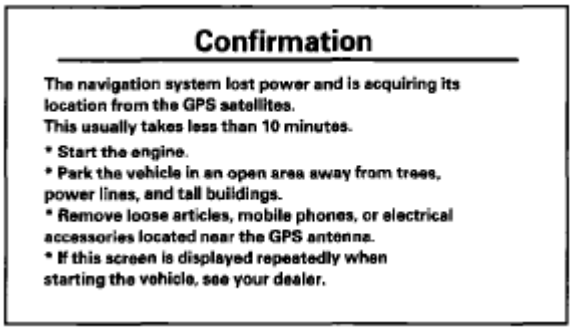


Fig. 3: Display - GPS Initialization Confirmation Message
Courtesy of AMERICAN HONDA MOTOR CO., INC.

If this procedure is not necessary, the system proceeds directly to the Disclaimer screen. During initialization, the system searches for all available GPS satellites, and obtains their orbital information. During this procedure the vehicle should be out in the open with a clear view of the sky.

If the navigation system finds the satellites properly, the CSF screen changes to the Disclaimer screen. If within 10 minutes the system fails to locate a sufficient number of satellites to locate your position, the confirmation screen appears.

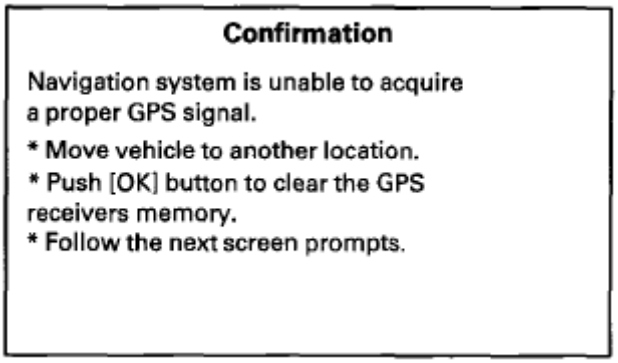


Fig. 4: Display - Navigation System Confirmation Message
Courtesy of AMERICAN HONDA MOTOR CO., INC.

If this screen appears, turn off the engine, then restart the vehicle and move it to a different location. If the Disclaimer screen appears, the GPS initialization is complete.

NOTE:

- **The average acquiring time is less than 10 minutes, but it can take as long as 45 minutes.**
- **If the system is still unable to acquire a signal, follow the instructions on the screen. If this screen appears again, go to GPS icon is white or not shown troubleshooting.**
- **Skip a CSF screen by pressing the DEST/ROUTE and the INFO buttons at the same time and can move to a System Link screen.**

MAP MATCHING

This part of the initialization matches the GPS coordinates with a road on the map screen. To do this part of the procedure, make sure that the navigation system displays a map, and drive the vehicle on a mapped road shown on the map screen. Do not enter a destination at this time. When the name of the current road you are driving on appears at the bottom of the screen, the entire procedure is complete. Your system is now ready to use.

ORDERING AN UPDATE NAVIGATION DVD

If the client wants to purchase a yearly update for their HDD, you have two ways to purchase one. You can either call 888-549-3798, or order on-line at www.acuranavi.com.

When clients order an update DVD, they need:

- VIN
- Device number (found on the INFO screen)
- Credit card

Update DVDs are available for purchase usually in the fall of each year. They may contain the following:

- Enhanced maps and points of interest (POI) coverage
- Fixes for minor software bugs
- Additional features

The update DVD is mailed to the client along with the password.

When the client receives the update DVD, insert the disc into the CD/DVD player. The client is prompted to enter the password that is shipped with the update DVD. The navigation system automatically updates the HDD.

NOTE: The update DVD is designed to update the vehicle with the submitted VIN. If a client has more than one vehicle that needs updating, they need to order a separate update DVD for that vehicle.

Acura tracks the map software version purchased for the VIN. If you need to replace the HDD, the new HDD comes with the latest map version that the client loaded on the HDD.

Never promise your client future free updates. There are no free programs for updating the navigation HDD. Update DVDs are generally available for purchase each fall. The online DVD order site provides information when an update is available.

LEVER-LOCKED CONNECTOR

Disconnecting

To disconnect the connector, pull the lever (A) while pushing the lock tab (B) down, then pull the connector (C).

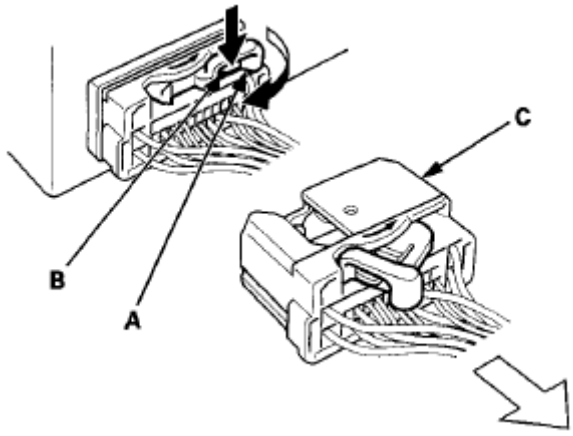


Fig. 5: Disconnecting Lever-Locked Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Connecting

To connect the connector, push the connector into the connector sleeve (A). As the connector is pressed in, the lever (B) moves to the locked position.

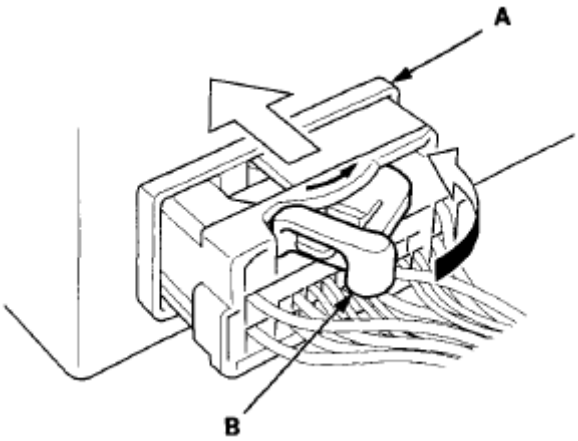


Fig. 6: Connecting Lever-Locked Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

HOW TO ANSWER CLIENT QUESTIONS ABOUT NAVIGATION COVERAGE

Some clients may ask questions regarding a city, address, or POI (point of interest) covered by the navigation system. It is better to verify a coverage question on an actual vehicle than to disappoint your client by promising coverage that may be incomplete or missing in their area. The following suggestions can be used to answer coverage inquiries from your client.

Is my address covered by the navigation system?

Using a current production vehicle (of the same model), and enter the client's address (street first) to see if their area is covered. Always enter the street first, because sometimes their city may be included in a neighboring township, or under some larger metropolitan city name. If the address is shown in a later year vehicle, but not your client's vehicle, you might recommend that your client purchase an update.

Is my city covered by the navigation system?

For general questions about whether a city is covered, view the map coverage link on the DVD order site. On the site, select a year, and select a model, then click on the Coverage link. You then select a state or province, and the cities are listed. This does not guarantee that the client's road or address is in the system. Verifying on an actual production vehicle is always the best guarantee that your information is accurate.

The gas station on my corner is now a restaurant, Why is it still Incorrect in the navigation system?

For POI-related client questions, explain that businesses are constantly moving, and there can be a considerable lag in updating the millions of POIs in the system. The database is updated annually, and the best way to the verify whether the POI is accurate is verify the inquiry on a current production vehicle.

Answers to these and other questions regarding coverage can be found in these locations;

- In the Frequently Asked Questions section of the Navigation Manual.
- At the online DVD order site, by clicking on the FAQs link.

How do I find the local address of a business that Is part of a national chain (for example, Starbucks)?

There are three ways to find the local address to businesses:

- If you know the phone number of the business, select Phone Number and enter the 10 digit phone number (area code plus seven digit number).
- Select Category, then Restaurant, Enter the keyword Star. The resulting list Includes all restaurants that have the letters Star anywhere in the name.
- Select Name and enter Starbucks, For more common business names, like McDonalds, you may have to search through a list that includes other businesses like McDonalds Welding, McDonalds Automotive, etc.

Why are some features different or missing compared to my previous Acura vehicle?

Hardware and software continually go through updates and improvements. Features may change or disappear overtime based on the navigation system development.

HOW TO CHECK ERROR HISTORY (NAVIGATION DTCS)

NOTE: The navigation DTCs cannot be retrieved with the HDS.

The Error History feature is to record intermittent navigation issues that occur while the client is using the system. Sometimes the client complaint cannot be duplicated. The error history may record the information needed to diagnose the problem. To check the error history.

1. Start the engine.
2. Press and hold the DEST/ROUTE, the MAP/GUIDE, and the CANCEL buttons for 3 seconds, or connect the SCS service connector to the navigation service check connector located by the **front passenger's kick panel**.
3. When the Select Diagnosis Items menu is displayed, select the Self-Diagnosis Mode.

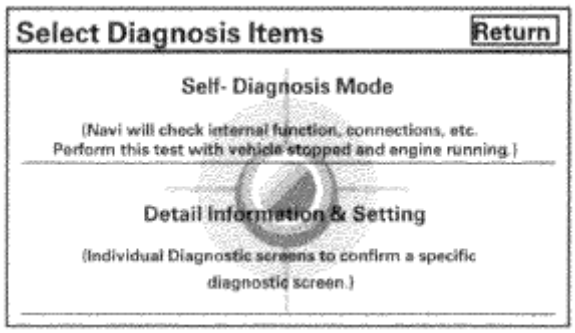


Fig. 7: Display - Self-Diagnosis Mode

Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. When the audio-navigation unit has hard error codes, the Error History icon appears yellow when the Self-Diagnosis Mode (System Link) screen is displayed. When no hard error codes are stored, the icon appears gray. To view the errors with their navigation DTC, select the Error History icon.

USA models

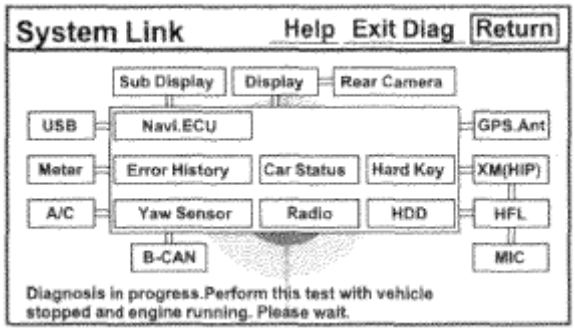


Fig. 8: Display - Self-Diagnosis Mode System Link (USA Models)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Canada models

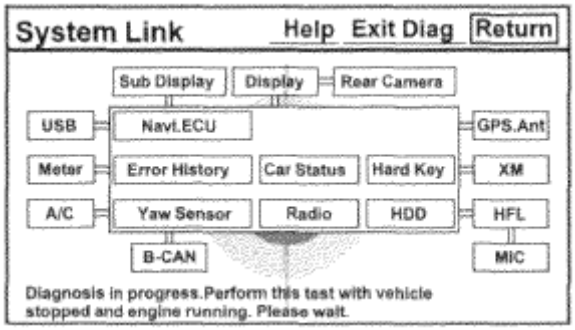


Fig. 9: Display - Self-Diagnosis Mode System Link (Canada Models)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Select Hard Error in the Error History main menu.

NOTE: Soft Error is for factory use only.

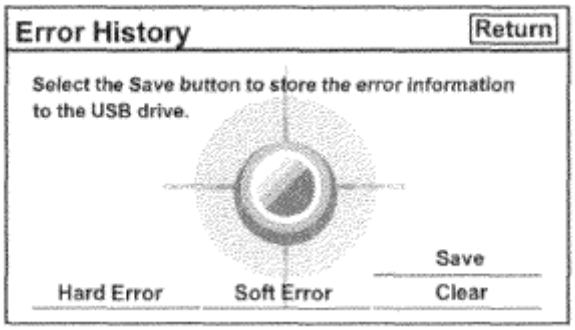


Fig. 10: Display - Error History Main Menu
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Hardware Error History

6. The Hard Error screen displays the following information for each error:
   - The navigation DTC for the error.
   - A brief description of the navigation DTC.
   - The date and time when the error occurred.

NOTE:

- **To see additional errors, use the interface dial to select UP or DOWN.**
- **Select Clear to delete the error history. The Save feature is for factory use only.**
- **Write down the navigation DTCs and error history before deleting.**

7. Use the navigation DTC Troubleshooting table to troubleshoot the error.

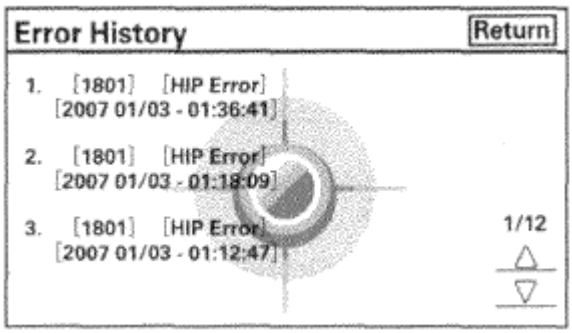


Fig. 11: Display - Error History
Courtesy of AMERICAN HONDA MOTOR CO., INC.

8. Select Return to exit the Error History main menu.

Software Error (Soft error) History

Software errors are not available. They are for factory use only.

HOW TO CLEAR ERROR HISTORY

1. Do the steps in How to check Error History.
2. Select Clear in the Error History main menu.

NOTE:

- **By selecting Clear, all software and hardware errors stored in history are erased at the same time.**
- **Save is for factory use only.**
- **Write down the navigation DTCs and error history before deleting.**

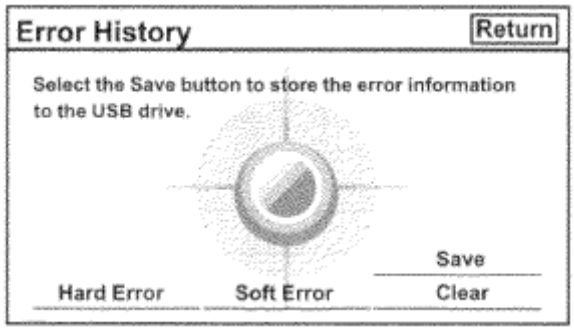


Fig. 12: Display - Error History
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. After selecting Clear, then selecting Yes on the confirmation screen.

Hard error history clear/Soft error history clear (Soft errors are for factory use only)

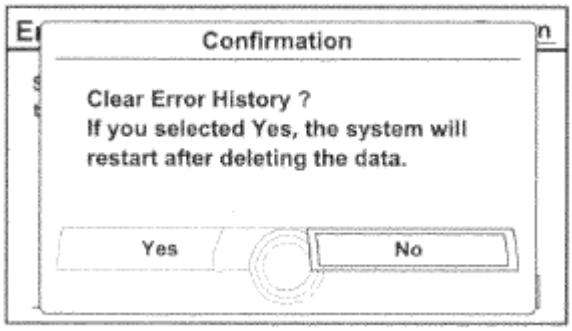


Fig. 13: Display - Clear Error History Confirmation Message
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. The notification screen appears and both Hard Error history and Soft Error history are cleared at the same time. The system returns to the Error History main menu automatically.

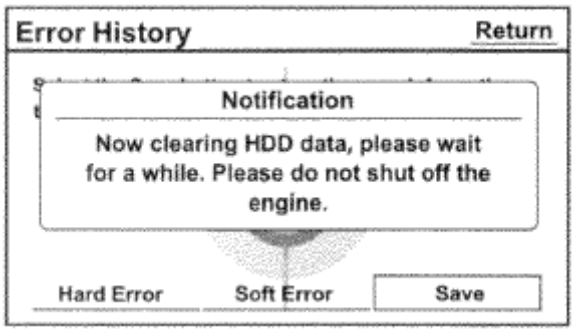


Fig. 14: Display - Clearing HDD Data Notification Screen
Courtesy of AMERICAN HONDA MOTOR CO., INC.

AUDIO-NAVIGATION UNIT AND HDD REPLACEMENT TROUBLESHOOTING

To protect client information and data from theft, the audio-navigation unit and the HDD have a passcode that prevents the HDD from being accessed by any audio-navigation unit. When the HDD is first installed in an audio-navigation unit, and the ignition switch is turned to ON (II), or the engine start/stop button is pressed to select the ON mode, the HDD writes the passcode from the audio-navigation unit to its memory, which is also known as mating. Every time the ignition switch is turned to ON (II), or the engine start/stop button is pressed to select the ON mode, the audio-navigation unit and HDD confirm the passcode against the other component. If the audio-navigation unit has a different passcode than the HDD, the audio-navigation unit cannot access the HDD.

When you order a new audio-navigation unit, it arrives able to mate one time to a new or previously mated HDD. When you mate the two components, the new audio-navigation unit overwrites the HDD's original passcode with the new one. If you try to install the HDD back into the original audio-navigation unit, the passcode is different, and the audio-navigation unit cannot mate to the HDD.

When you order a new HDD, it arrives able to mate to a new or a previously mated audio-navigation unit. Once the HDD is mated, it then can only mate with a new audio-navigation unit.

For more information, refer to **audio-navigation unit and HDD service precautions**. The outline of the audio-navigation unit and the HDD replacement and substitution is shown in the following table.

NOTE:

- **Original units are known-good units that have been mated at least one time, and new units have never been mated.**
- **You can substitute a mated audio-navigation unit and HDD into another vehicle, but you cannot substitute known-good components individually.**

Audio-Navigation Unit	HDD	Result
New	New	OK
Original	New	OK
New	Original	OK
Original	An audio-navigation unit mated to a different HDD	NG

An audio-navigation unit mated to a different HDD	Original	NG

DTC TROUBLESHOOTING INDEX

DTC	Description	Circuit	Failure Detection	Also Check for
1102	**USB Diag**	USB	USB circuit malfunction.	Low or weak battery voltage
1203	**DVD Temp Error**	DVD drive	Audio-navigation unit temperature above the upper limit or below the limit. Failure in audio-navigation unit fan circuit.	• Low or weak battery voltage • High or Low dash temperature
1301	**GPS Antenna Error**	GPS Antenna	GPS antenna circuit malfunction.	Low or weak battery voltage
1302	**GPS Receiver Error 1**	GPS Receiver	GPS antenna circuit malfunction. Audio-navigation unit internal GPS receiver malfunction.	Low or weak battery voltage
1303	**GPS Receiver Error 2**	GPS Receiver	Audio-navigation unit internal GPS receiver malfunction.	Low or weak battery voltage
1304	**Gyro Error 1**	Gyro	Audio-navigation unit internal gyro malfunction.	Low or weak battery voltage
1305	**Gyro Error 2: ECU Temp XX °C**	Gyro	Audio-navigation unit internal gyro malfunction.	• Low or weak battery voltage • Excessively high or low passenger compartment temperature • Blocked audio-navigation unit cooling fan
1306	**Vehicle Speed Pulse**	Vehicle Speed Pulse	VSP circuit malfunction.	F-CAN DTCs
1402	**Audio Error 2**	CD	Mechanical malfunction in the audio disc changer.	Low or weak battery voltage
1403	**Audio Error 3 (Display Error)**	Display	Mechanical malfunction with navigation display unit.	Low or weak battery voltage

1404	**Audio Error 4 (DVD Error)**	DVD	Mechanical malfunction in the CD-DVD player (audio unit)	Low or weak battery voltage
1405	**Audio Error 5 (HDD Error)**	HDD	Mechanical malfunction in the HDD.	Low or weak battery voltage
1409	**Audio Error 9 (XM Error)**	XM	XM antenna/circuit malfunction.	Low or weak battery voltage
1501	**Aircon Error**	Aircon	Communication error between climate control unit and audio-navigation unit (open/short).	• Low or weak battery voltage • B-CAN DTCs • F-CAN DTCs
1701	**R-Camera Error**	Rear Camera	Communication error between rearview camera and navigation display unit (open/short).	Rearview camera connector disconnected
1801	**HIP Error**	HIP	HIP communication error, open the wire, or AcuraLink control unit (XM receiver) disconnected, or a AcuraLink control unit (XM receiver) malfunction.	B-CAN DTCs
2601	**Display Diag: Connect**	Display	GA-NET bus circuit malfunction (open/short).	
2602	**Display Diag: ROM**	Display	Navigation display unit internal malfunction.	
2603	**Display Diag: RAM**	Display	Navigation display unit internal malfunction.	
2607	**XM Diag**	XM	GA-NET bus circuit malfunction (open/short). XM antenna circuit malfunction.	
2608	**R-Camera Diag**	Rear Camera	Rearview camera internal malfunction.	
2610	**DRAM Diag**	ECU DRAM	Audio-navigation unit internal DRAM malfunction.	

2611	**HDD Diag**	HDD	HDD internal malfunction.	Low or weak battery voltage
2612	**Sub Display Diag**	Subdisplay	Subdisplay bus circuit malfunction (open/short).	Low or weak battery voltage
2701	**GPS Diag: Antenna**	GPS	GPS antenna malfunction.	
2702	**GPS Diag: Receiver in Navi ECU**	GPS	GPS antenna malfunction.	
2703	**Aircon Diag**	Aircon	Communication error between climate control unit and audio-navigation unit (open/short).	• Low or weak battery voltage • B-CAN DTCs • F-CAN DTCs
2704	**HIP Diag (AcuraLink)**	HIP	HIP/HFL COMM 1 thru HIP/HFL COMM 4 bus circuit malfunction (open/short).	B-CAN DTCs
2705	**HFL Diag**	HFL	HandsFreeLink control unit internal malfunction.	HFL DTCs
2706	**Gyro Diag: ECU Temp XX°C**	Gyro	Audio-navigation unit internal malfunction.	• Excessively high or low passenger compartment temperature • Blocked audio-navigation unit cooling fan
2707	**Mic Diag**	Mic	Mic circuit malfunction (open/short).	

SYMPTOM TROUBLESHOOTING INDEX

Symptom	Diagnostic Procedure	Also Check for
Navigation system stays on the GPS initialization screen	**System Initialization**.	• Audio-navigation unit • Internal defect in GPS antenna • GPS antenna/cable is disconnected or damaged • Aftermarket metallic window tint

		• Software not up to date • Harness/fuses/switches
Vehicle position icon constantly leaves road, moves erratically, or is displayed very far from actual vehicle position	**Symptom Troubleshooting**.	• Audio-navigation unit • Internal defect in GPS antenna • GPS antenna/cable • Aftermarket metallic window tint • ECM/PCM (vehicle speed pulse) • Harness/fuses/switches
System always comes up in in-line diagnostic mode	**Factory diagnostic screen In Line Diag**.	
Navigation system does not accept security code	**Symptom Troubleshooting**.	Anti-theft code not matching
Navigation frequently asks for anti-theft code and/or needs GPS initialization	**Symptom Troubleshooting**.	• Loss of voltage or poor ground (G651) • Audio-navigation unit • Software not up to date • Low battery voltage • Harness/fuses/switches
GPS icon is white or not shown	Symptom Troubleshooting (see **Symptom Troubleshooting**).	• Audio-navigation unit • Internal defect in GPS antenna • Aftermarket accessories connected to the system • GPS antenna/cable • Aftermarket metallic window tint • Harness/fuses/switches
Vehicle position icon wanders across the map when driving (does not follow a displayed road) or map vehicle ICON spins	Symptom Troubleshooting (see **Symptom Troubleshooting**).	• Audio-navigation unit • GPS antenna/cable • Aftermarket metallic window tint • ECM/PCM (vehicle speed pulse) • Internal defect in GPS antenna
		• Software not up to date

No picture is displayed	Symptom Troubleshooting (see **Symptom Troubleshooting**).	• Audio-navigation unit • Navigation display unit • Harness/fuses/switches
Picture has lines, rolls, or is blurry	Symptom Troubleshooting (see **Symptom Troubleshooting**).	• Aftermarket accessories connected to the system • Audio-navigation unit • Navigation display unit • Harness/fuses/switches
Picture is missing a color or tone or is an odd color	Symptom Troubleshooting (see **Symptom Troubleshooting**).	• Software not up to date • Audio-navigation unit • Navigation display unit • Aftermarket accessories connected to the system • Harness/fuses/switches
Traffic or Weather information is not shown on map screen	Symptom Troubleshooting (see **Symptom Troubleshooting**).	• AcuraLink (XM) • Audio-navigation unit • Low or weak battery • Harness • Client account status • Area outage • Area not covered
Display day/night mode does not work or does not work properly	Symptom Troubleshooting (see **Symptom Troubleshooting**).	• Audio-navigation unit • The gauge brightness level is set to High in day or night mode • Navigation display unit • Gauge control module (CAN) • The navigation display brightness is not set to Auto mode • Harness/fuses/switches
System locks up or freezes constantly	Symptom Troubleshooting (see **Symptom Troubleshooting**).	• Audio-navigation unit • Software not up to date • Harness/fuses/switches
Voice guidance cannot be heard, is broken up,	Symptom Troubleshooting (see **Symptom**	• Volume or voice feedback setting (see Navigation Manual)

or there is static	**Troubleshooting**).	• Audio-navigation unit • Stereo amplifier • Harness/fuses/switches
Voice control does not work/respond	Symptom Troubleshooting (see **Symptom Troubleshooting**).	• Audio-navigation unit • Microphone • Harness/switches • HandsFreeLink control unit
Navigation cannot control HVAC by voice command	Symptom Troubleshooting (see **Symptom Troubleshooting**).	• Software not up to date • Harness/fuses/switches • Wrong audio-navigation unit (model code) • B-CAN DTCs
Navigation cannot control XM radio	Symptom Troubleshooting (see **Symptom Troubleshooting**).	• Software not up to date • Audio-navigation unit • AcuraLink control unit (XM receiver) (USA models) or XM receiver (Canada models) • Harness
Navigation cannot control audio system	Symptom Troubleshooting (see **Symptom Troubleshooting**).	• Audio-navigation unit • Harness • Software not up to date
Interface dial buttons do not work	Symptom Troubleshooting (see **Symptom Troubleshooting**).	• Audio-navigation unit • Navigation display unit • Interface dial • Harness/fuses/switches
Today's Destinations button is dim and not selectable in the Enter destination by screen (grayed-out)	The client has not entered a group of locations for Today's Destinations. This is normal. The button is only selectable if the client is using this function	See Navigation Manual
Previous Destinations button is dim and not selectable in the Enter destination by screen (grayed-out)	The vehicle may be new, or the client deleted the destination. Without a stored previous destination, the system cannot route to a previous destination. Enter a destination, and allow the system to route to it. After the trip, the Previous Destinations button will be selectable	
Address cannot be found	• Verify proper operation and system limitations using the Navigation	• Database limitations (address

or system gives poor routing	Manual • See **How to Answer Client Questions about Navigation Coverage**.	not in database) • Software not up to date • Older database
Rearview camera image does not come on or work properly	Symptom Troubleshooting (see **Symptom Troubleshooting**).	• Check software for latest up-dates • No backup signal • Wrong disc installed in navigation unit
The map will not display the Southern portion of the U.S. or the Northern parts of Canada	North American coverage is different for U.S./Canada markets. See the **Version diagnostic screen** for details on coverage differences	Software not up to date
Navigation display stays on with the ignition switch in LOCK (0), or in the OFF mode	Symptom Troubleshooting (see **Symptom Troubleshooting**).	• Harness/fuses/switches • Aftermarket accessories connected to the system
Navigation system will not go beyond the disclaimer screen and displays the OK button	Also see **Interface dial buttons do not work**	• Software not up to date • Audio-navigation unit
The navigation anti-theft code card is lost or missing	See **Anti-Theft Feature**.	
The vehicle icon lags behind when the vehicle turns	See **Self-Inertial Navigation Limitations**	• Aftermarket accessories connected to the system • GPS antenna/cable • Aftermarket metallic window tint
Navigation screen is darker than normal or takes time to brighten when it is cold	See **LCD Unit Limitations**	Compare to a known-good vehicle
The navigation clock is off by 1 to 3 hours after replacing the navigation unit	See **Service Precautions**	• Do **Map Matching**. • GPS antenna/cable • Aftermarket metallic window tint • Check and adjust the clock settings • Check the keyless remote linking
		• Software not up to date

Time is not correct	Reset Time Adjustment in set-up See **Service Precautions**.	• Reset Time Adjustment in set-up • A defective GPS receiver in the audio-navigation unit
A POI cannot be found	See **How to Answer Client Questions about Navigation Coverage**.	• Software not up to date • The database may be out of date. Confirm the POI exists in a current production vehicle
A specific city cannot be found	See **How to Answer Client Questions about Navigation Coverage**.	• Software not up to date • The database may be out of date. Confirm the address exists in a current production vehicle
Error messages are displayed	See **Error Message Table**.	• Software not up to date • The database may be out of date. Confirm the address exists in a current production vehicle

SYSTEM DESCRIPTION

OVERVIEW

The navigation system is a highly-sophisticated, hybrid locating system that uses satellites and a map database to show you where you are and to help guide you to a desired destination.

The navigation system receives signals from the global positioning system (GPS), a network of 24 satellites in orbit around the earth. By receiving signals from several of these satellites, the navigation system can determine the latitude, longitude, and elevation of the vehicle. In addition, signals from the system's yaw rate sensor and the ECM/PCM (vehicle speed pulse) enable the system to keep track of the vehicle's direction and speed of travel.

This hybrid system has advantages over a system that is either entirely self-contained or one that relies totally on the GPS. For example, the self-contained portion of the system can keep track of vehicle position even when satellite signals cannot be received. When the navigation system is on, the GPS can keep track of the vehicle position even when the vehicle is transported by ferry.

The navigation system applies all location, direction, and speed information to maps and calculates a route to the destination entered. As you drive to that destination, the system provides both visual and audio guidance.

This navigation system also has voice recognition that allows voice control of most of the navigation functions. The TALK and BACK buttons on the steering wheel activate the voice control. The voice control also allows control of the audio and climate functions.

The illumination signal (headlights ON) is used by the audio-navigation unit to automatically switch the display between Night and Day brightness modes. When the gauge control module brightness control is set to full brightness, the navigation system stays in the day mode, even with the headlights on.

The GA-Net II communication bus passes information back and forth between the navigation display, the audio-navigation unit, AcuraLink control unit (XM receiver), and the audio system. The information passed on this bus is audio settings directed by the audio-navigation unit.

For USA models, the Comm. Bus connects the HFL, XM (HIP) (AcuraLink), and audio-navigation units. This bus supports these functions:

- The audio-navigation unit receives traffic, weather, and AcuraLink message information from the AcuraLink Control unit (XM receiver).
- If a POI phone number is available, the audio-navigation unit sends the phone number (on the Calculate route to screen) to the HandsFreeLink control unit for dialing.
- If vehicle problems are detected, and the client's cellular contract includes data service (the vehicle must also have an approved blue tooth phone paired and configured correctly), then the AcuraLink control unit (XM receiver) can send vehicle data to the HandsFreeLink control unit for transmitting back to the AcuraLink servers.
- The AcuraLink server can pass additional problem details back through the HandsFreeLink control unit, to the AcuraLink control unit (XM receiver), and finally to the audio-navigation unit for display.

HDD NAVIGATION SYSTEM

The Acura TL uses a hard disc drive (HDD). The HDD system improves route calculation and POI searching time, as well as these additional functions:

- Ripping music to the HDD with on-board CD database (CDDB) information provided by Gracenote.
- Clients can save their personal pictures to the HDD and use the images as wallpaper when they are not using the navigation system.
- Seethe Owner's Manual or the Navigation Manual for more information.

HDD updates include the latest map info, POI DB, and CDDB information. The yearly update is available on DVD that is loaded onto the HDD. When you order a reman unit, the latest software is loaded onto the HDD.

If a client wants to order an update, see **ordering an update navigation DVD**.

The Gracenote CDDB is updated quarterly. Clients can visit www.acura.com and download the latest update.

The HDD shuts down to protect itself from damage:

- If the audio-navigation unit internal temperature is 183°F (84°C) or higher.
- If the atmospheric pressure below about 9 psi (62.29 kPa). The atmospheric pressure signal from ECM/PCM via F-CAN.

Warning of the temperature and the atmospheric pressure is displayed on the navigation screen as an error

message.

USB Adapter

The USB module is built into the audio-navigation unit. Clients can load images (which can be used as wallpaper), music, and the CDDB. Not all USB devices and devices functions work with the USB port. Please see the Owner's Manual for more information.

Rearview Camera

The rearview camera image now includes yellow guidelines to help give the client a way to estimate the distance behind the bumper.

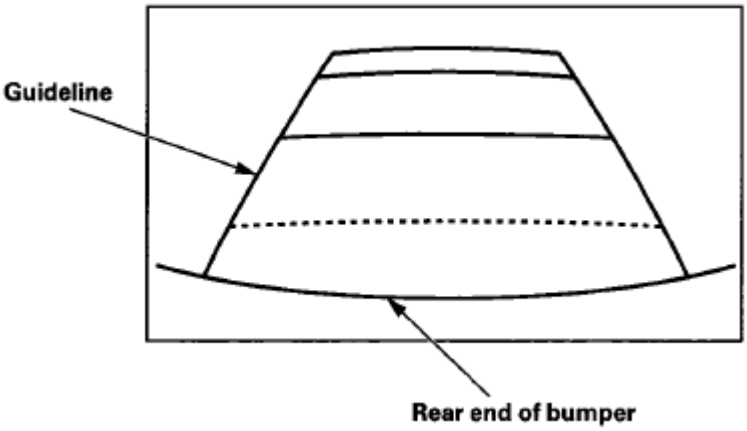


Fig. 15: Display - Rearview Camera Image
Courtesy of AMERICAN HONDA MOTOR CO., INC.

USA models

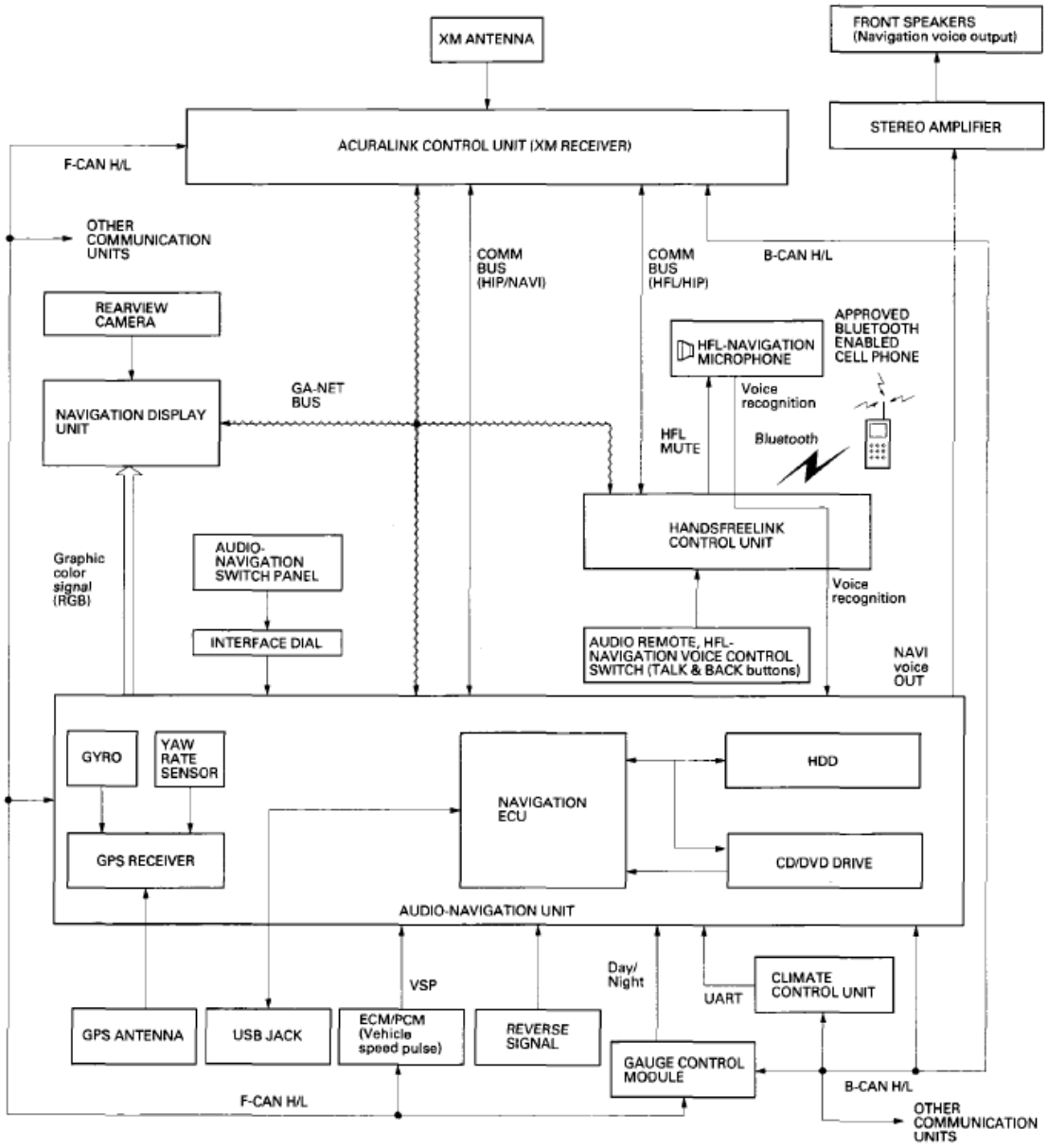


Fig. 16: HDD Navigation System Diagram - USA Models
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Canada models

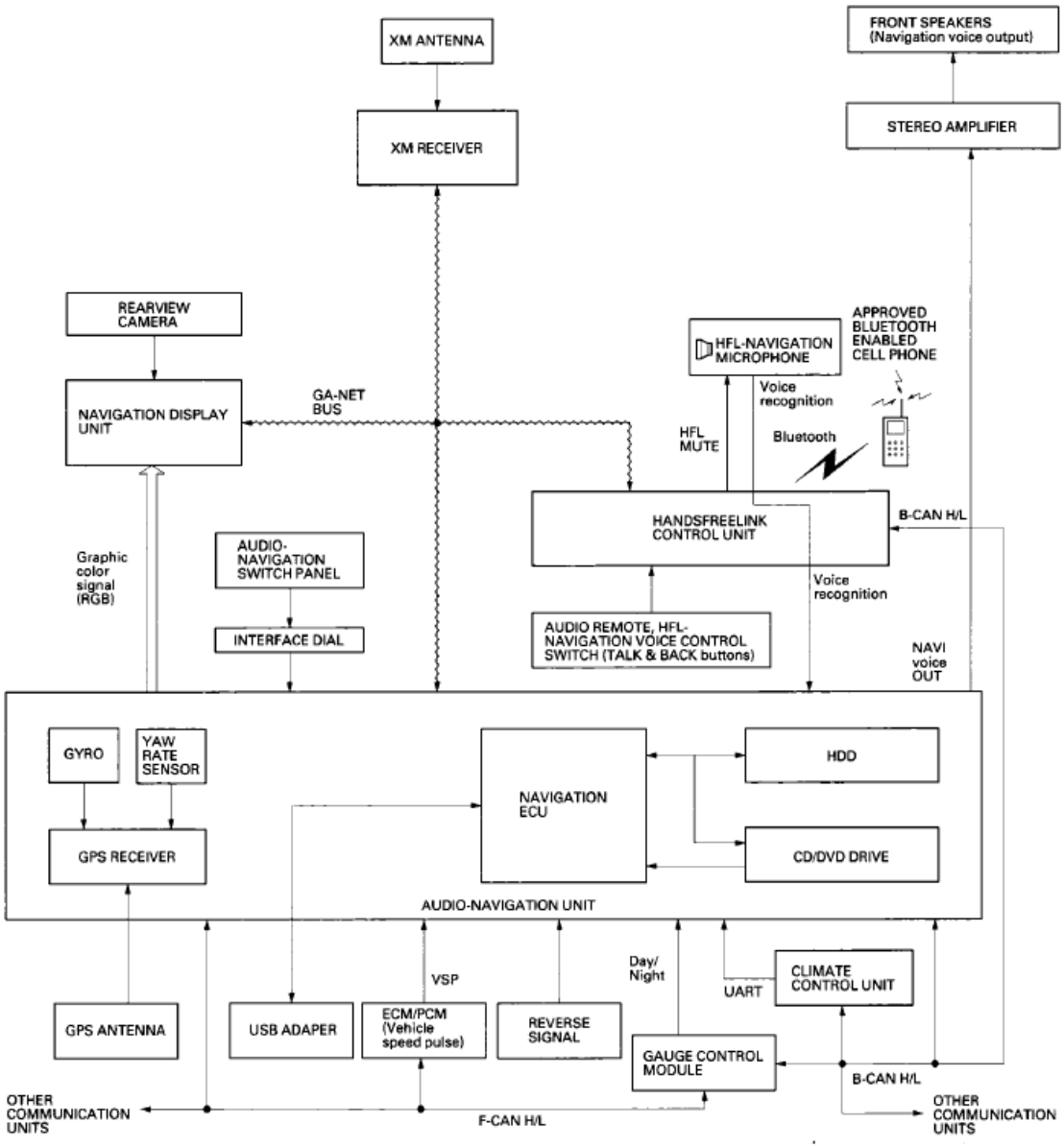


Fig. 17: HDD Navigation System Diagram - Canada Models
Courtesy of AMERICAN HONDA MOTOR CO., INC.

NAVIGATION FUNCTION

The navigation system is composed of the audio-navigation unit, the ECM/PCM (vehicle speed pulse), the AcuraLink control unit (XM receiver) (traffic and weather information), the HandsFreeLink control unit (to send a POI phone number or place a call), the GPS antenna, the microphone, the voice control switch, the navigation display unit, and the interface dial.

Function Diagram

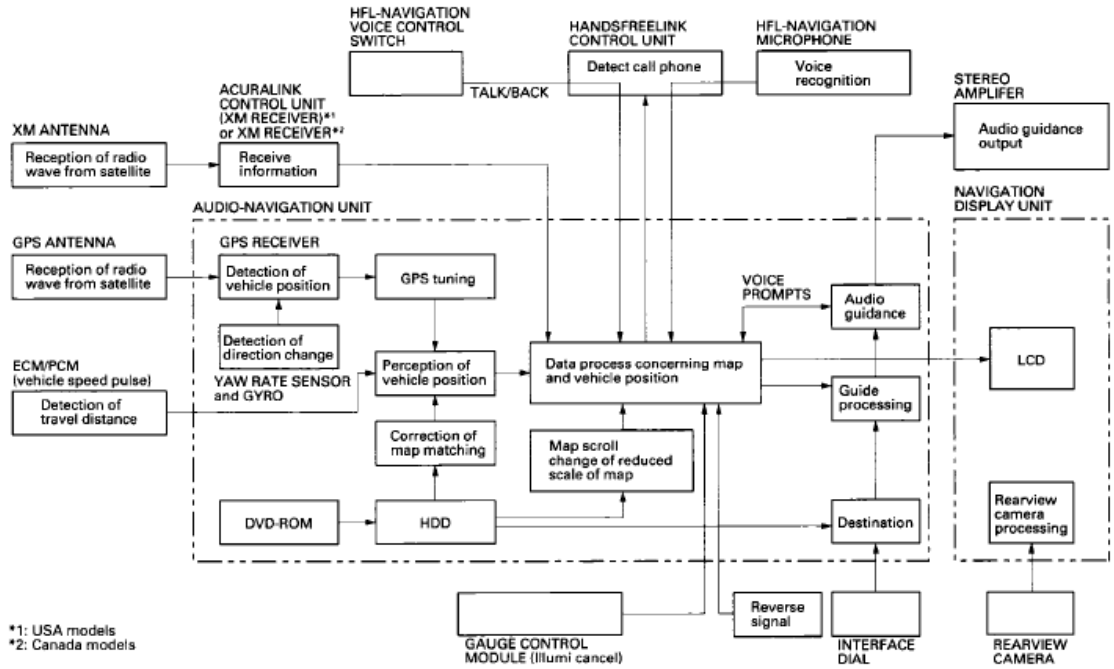


Fig. 18: Navigation Function Diagram
Courtesy of AMERICAN HONDA MOTOR CO., INC.

GA-Net Bus Configuration

The GA-Net bus passes audio and navigation commands throughout the navigation and audio components. These commands include navigation audio/XM/USB/Bluetooth audio selections by voice, and XM station and music title names. Because the entire bus is interconnected between components, an open or short in the GA-Net bus harness may cause any or all of these functions to become inoperative.

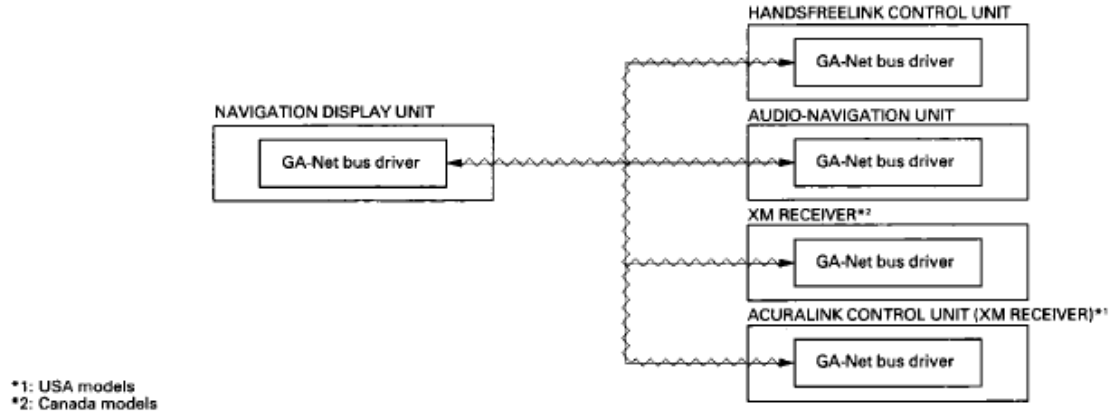


Fig. 19: GA-Net Bus Configuration Diagram
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Vehicle Speed Pulse

The vehicle speed pulse is sent by the ECM/PCM. The ECM/PCM receives a signal from the output shaft

(countershaft) speed sensor, then processes the signal and transmits it to the speedometer and other systems.

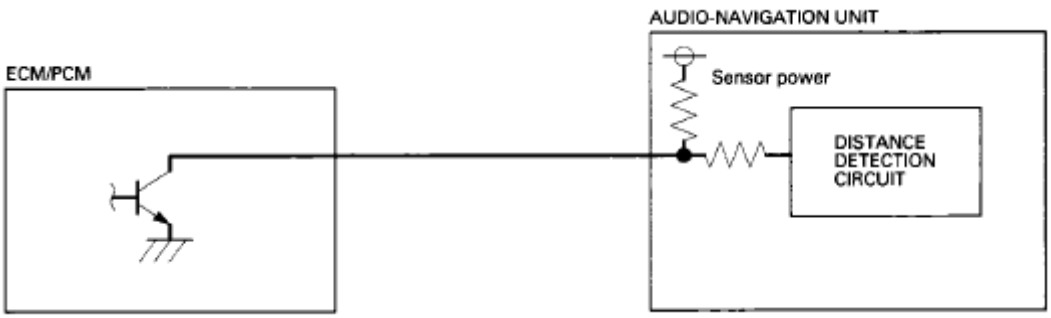


Fig. 20: Vehicle Speed Pulse Communication Diagram
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Yaw Rate Sensor

The yaw rate sensor (located in the audio-navigation unit) detects the direction change (angular speed) of the vehicle. The sensor is an oscillation gyro built into the audio-navigation unit.

Sensor Element Structure

The sensor element is shaped like a tuning fork, and it consists of the piezoelectric parts, the metal block, and the support pin. There are four piezoelectric parts: one to drive the oscillators, one to monitor and maintain the oscillation at a regular frequency, and two to detect angular velocity. The two oscillators, which have a 90-degree twist in the center, are connected at the bottom by the metal block and supported by the support pin. A detection piezoelectric part is attached to the top of each oscillator. The driving piezoelectric part is attached to the bottom of one oscillator, and the monitoring piezoelectric part is attached to the bottom of the other oscillator.

Oscillation Gyro Principles

The piezoelectric parts have electric/mechanical transfer characteristics. They bend vertically when voltage is applied to both sides of the parts, and voltage is generated between both sides of the piezoelectric parts when they are bent by an external force. The oscillation gyro functions by utilizing this characteristic of the piezoelectric parts and Coriolis force. (Coriolis force deflects moving objects as a result of the earth's rotation.) In the oscillation gyro, this force moves the sensor element when angular velocity is applied.

Operation

1. The driving piezoelectric part oscillates the oscillator by repeatedly bending and returning when an AC voltage of 6 kHz is applied to the part. The monitoring-side oscillator resonates because it is connected to the driving-side oscillator by the metal block.
2. The monitoring piezoelectric part bends in proportion to the oscillation and outputs voltage (the monitor signal). The navigation unit control circuit controls the drive signal to stabilize the monitor signal.
3. When the vehicle is stopped, the detecting piezoelectric parts oscillate right and left with the oscillators, but no signal is output because the parts are not bent (no angular force).
4. When the vehicle turns to the right, the sensor element moves in a circular motion with the right oscillator

bending forward and the left oscillator bending rearward. The amount of forward/rearward bend varies according to the angular velocity of the vehicle.

5. The detecting piezoelectric parts output voltage (the yaw rate signal) according to the amount of bend. The amount of vehicle direction change is determined by measuring this voltage.

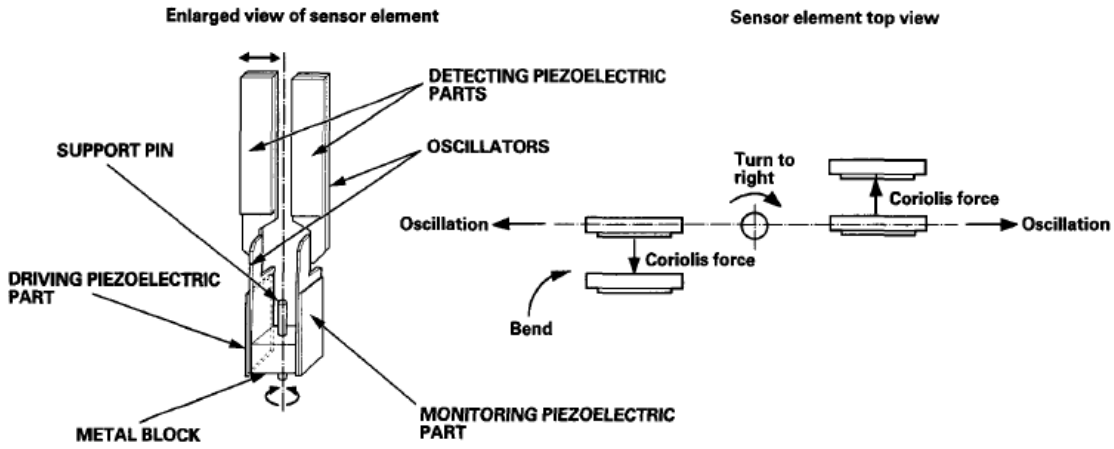


Fig. 21: Oscillation Gyro Operation Diagram
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Global Positioning System (GPS)

The global positioning system (GPS) enables the navigation system to determine the current position of the vehicle by using the signals transmitted from the satellites in orbit around the earth. The satellites transmit the satellite identification signal, orbit information, transmission time signal, and other information. When the GPS receiver receives a signal from four or more satellites simultaneously, it calculates the current position of the vehicle based on the distance to each satellite and the satellite's position in its respective orbit.

Position Detection Image with GPS Satellite

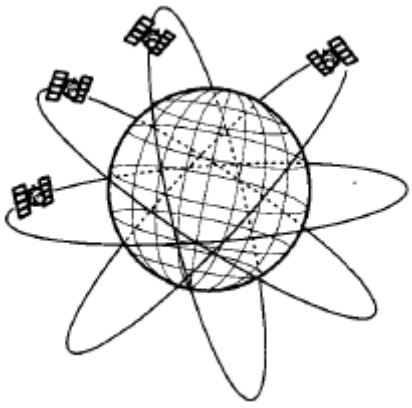


Fig. 22: Overview Of Global Positioning System (GPS) (1 Of 2)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

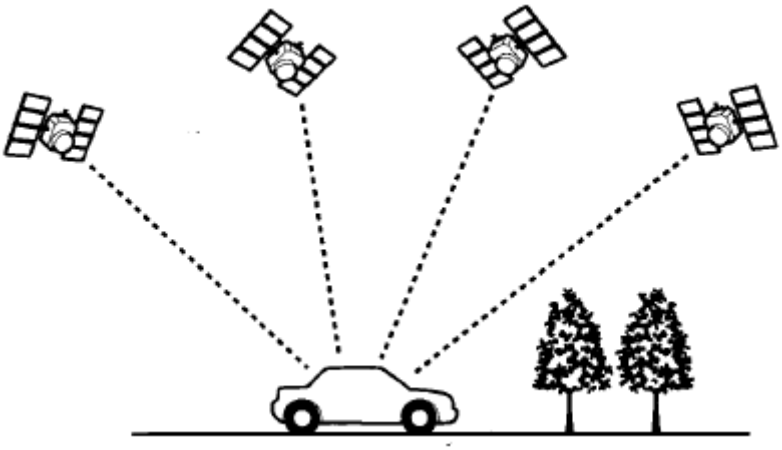


Fig. 23: Overview Of Global Positioning System (GPS) (2 Of 2)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

NOTE: Four satellites on each of 6 orbits.

Precision of GPS

The precision of the GPS varies according to the number of satellites from which signals are received and the view of the sky. The accuracy is indicated by the color of the GPS icon shown on the display.

GPS Icon Color	Number of Satellites	Condition	Description
No GPS icon	None	Faulty reception	The GPS can't be utilized due to a faulty GPS receiver, open in the wire, or other fault or interference.
	2 or less	Impossible to detect vehicle position	GPS function is normal. The satellite signals received by the GPS are too few to detect the vehicle position.
White GPS icon	3	Vehicle position detectable in 2 dimensions	The longitude and latitude of the vehicle position can be detected (less precise than detection in three dimensions).
Green GPS icon	4 or more	Vehicle position detectable in 3 dimensions (elevation displayed)	The longitude, latitude and the altitude of the vehicle position can be detected (more precise than detection in two dimensions).

GPS Antenna

The GPS antenna amplifies and transmits the signals received from the satellites to the GPS receiver.

GPS Receiver and Clock

The GPS receiver is built into the audio-navigation unit. It calculates the vehicle position by receiving the signal

from the GPS antenna. The current time, vehicle position and signal reception condition is transmitted from the GPS receiver to the audio-navigation unit to adjust vehicle position and the clock in the audio-navigation switch panel display.

Audio-Navigation Unit

The audio-navigation unit calculates the vehicle position and guides you to the destination. The unit performs map matching correction, GPS correction, and distance tuning. It also controls the menu functions and the HDD, and interprets voice commands. With control of all these items, the audio-navigation unit makes the navigation picture signal, then it transmits the signal to the navigation display unit.

Calculation of Vehicle Position

The audio-navigation unit calculates the vehicle position (the driving direction and the current position) by receiving the directional change signals from the yaw rate sensor and the travel distance signals from vehicle speed pulse (VSP) signal of the ECM/PCM.

Map Matching Tuning

The map matching tuning is accomplished by indicating the vehicle position on the roads on the map. The map data transmitted from the HDD is checked against the vehicle position data, and the vehicle position is indicated on the nearest road. Map matching tuning does not occur when the vehicle travels on a road not shown on the map, or when the vehicle position is far away from a road on the map.

GPS Tuning

The GPS tuning is accomplished by indicating the vehicle position as the GPS's vehicle position. The audio-navigation unit compares its calculated vehicle position data with the GPS vehicle position data. If there is large difference between the two, the indicated vehicle position is adjusted to the GPS vehicle position.

Distance Tuning

The distance tuning reduces the difference between the travel distance signal from the VSP and the distance data on the map. The audio-navigation unit compares its calculated vehicle position data with the GPS vehicle position data. The audio-navigation unit then decreases the tuning value when the vehicle position is always ahead of the GPS vehicle position, and it increases the tuning value when the vehicle position is always behind the GPS vehicle position.

Traffic Information

The Acura navigation system's real-time traffic feature helps you avoid traffic delays by providing up to the minute traffic information in many metropolitan areas across the contiguous USA. Color coded freeways appear on the navigation screen, displaying current traffic flow, and/or the locations of accidents and traffic conditions affected by construction and weather. Real-time traffic data services are offered on a subscription basis for a nominal fee following the 90-day free trial period.

Weather Information

The Acura navigation system's weather information option allows you to view the weather forecast, warning list, and warning map. The weather information is available in a subscription basis for a fee following the 90-day free trial period.

Dynamic Route Guidance

The audio-navigation unit can calculate different routes to a selected destination. You have five options:

- Direct Route- Calculate a route that is the most direct.
- Easy Route- Calculate a route that minimizes the number of turns needed.
- Minimize Freeways- Calculate a route that avoids freeway travel. If that is not possible, keep the amount of freeway travel to a minimum. This is not selectable (button grayed out) for trips greater than 100 miles.
- Minimize Toll Roads- Calculate a route that avoids, or minimizes travel on toll roads. This is not selectable (button grayed out) for trips greater than 100 miles.
- Maximize Freeways- Calculate a route that uses freeways as much as possible.

Audio Guidance

The audio-navigation unit transmits audio driving instructions before entering an intersection or passing a junction. The audio instructions come through the stereo amplifier to the front speakers.

NOTE: The front speakers are muted whenever the navigation system is giving guidance commands, and all of the speakers when the voice control system is being used.

Muting Signal Logic

The audio muting logic is orchestrated by the audio-navigation unit. The audio-navigation unit determines what audio source has priority to use the speakers.

The priority of the audio sources is as follows:

HFL has the highest priority, followed by navigation, and finally the radio/CD-DVD player. The priority is passed by HFL to the audio-navigation unit by dedicated mute wires. The navigation mute signal is passed to the stereo amplifier.

The audio-navigation unit temporarily disables the voice control buttons, but allows guidance to be heard. In addition, the audio-navigation unit suppresses the output from the audio system, the XM receiver, the disc player, or other audio accessories.

When the navigation system sends out a voice route guidance command, the audio front speaker is muted, and the navigation voice is heard in the front speakers.

When the navigation voice control system is in use, all of the speakers are muted, and the navigation voice prompts are heard from the front speakers.

Solar Angle

The climate control unit uses the sun's angle, along with the sunlight sensor to control the driver/passenger A/C airflow.

Off Road Tracking (bread-crumbs)

Off road tracking dots that can be followed on the map retrace your route back to a mapped (digitized) road.

Clock and Time Zone

The clock set up allows you to set daylight savings time, auto time zone and time adjustment.

Control Interface

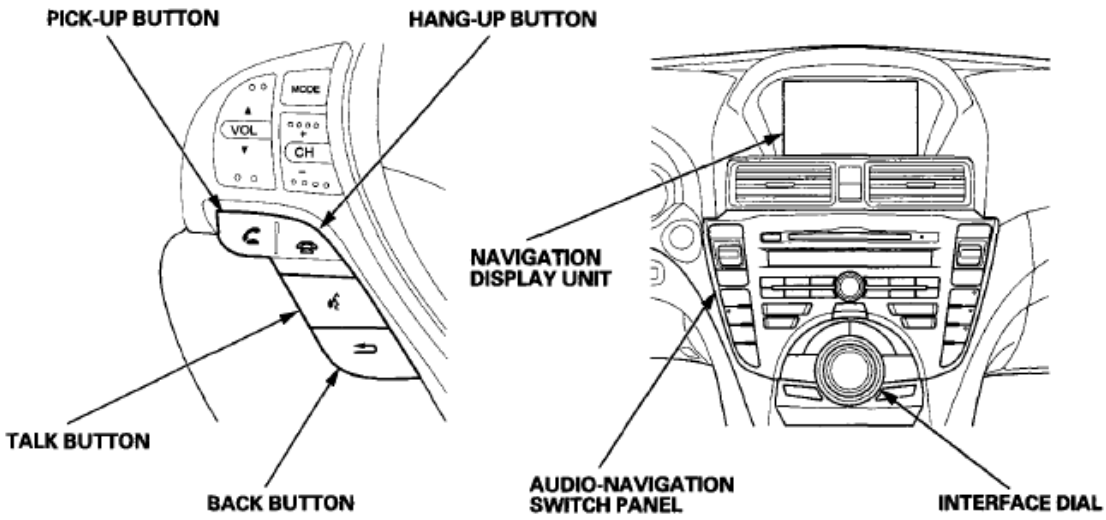


Fig. 24: Identifying Control Interface Components Location
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Navigation Display Unit

The display unit uses a liquid crystal display (LCD). The LCD is an 8-inch diagonal, thin film transistor (TFT), strip type with 336, 960 picture elements. The color film and fluorescent light are laid out on the back of the liquid crystal film.

NOTE: If the navigation volume and/or voice feedback is turned off, this feature is disabled.

TALK Button

Activates the voice control system in the audio-navigation unit to accept voice commands.

BACK Button

Returns the display to the previous screen (similar function as the CANCEL button).

Audio Remote, HFL-Navigation Voice Control Switch

The navigation voice control switch is combined with the audio remote switch and the HFL switch. Navigation TALK/BACK commands are sent to the audio-navigation unit via the HandsFreeLink control unit using the GA-net bus.

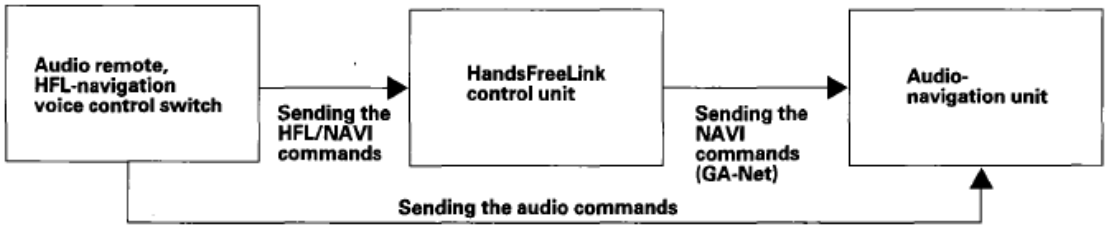


Fig. 25: Audio Remote, HFL-Navigation Voice Control Switch Communication Diagram
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Audio-Navigation Switch Panel

- The navigation hard buttons and interface dial are used to input commands.
- The display mode button switches the display between Day mode, Night mode, and off.

NOTE: When you activate this button, the navigation auto dimming is turned off until you turn the ignition switch to LOCK (0) or press the engine start/stop button to select OFF mode.

- The audio button displays the audio system information.

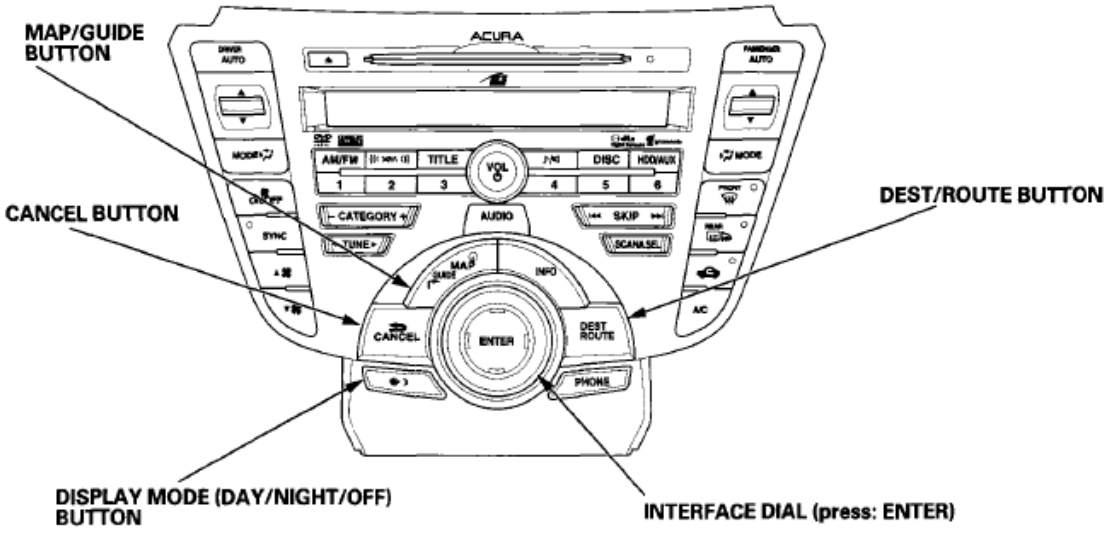


Fig. 26: Audio-Navigation Switch Panel Components Location
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Microphone (HFL-navigation)

Receives voice commands and transmits them to the audio-navigation unit or HandsFreeLink control unit. The microphone unit consist of two microphones. The microphones detects the driver's voice and passenger's voice separately.

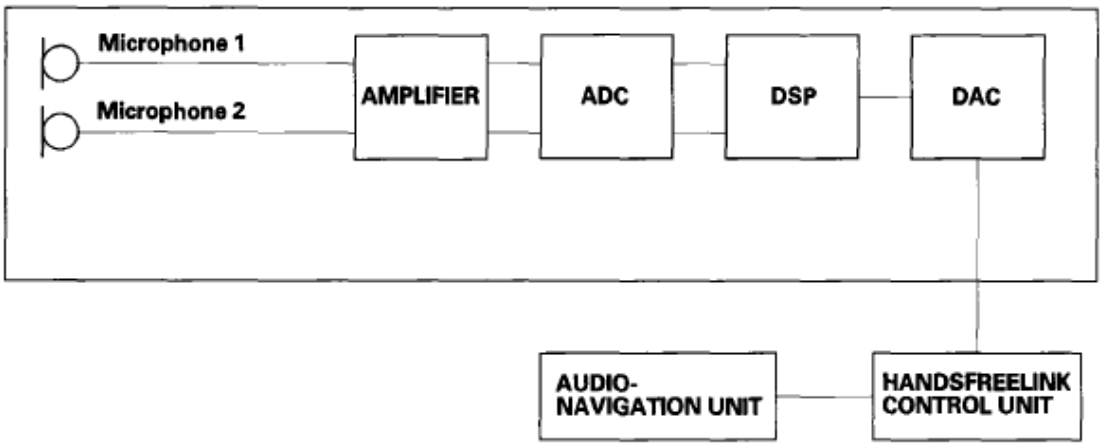


Fig. 27: Microphone (HFL-Navigation) Communication Diagram
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Glossary

The following is a glossary of terms pertaining to the navigation system.

NOTE: All items may not apply to this vehicle. See the Navigation Manual for more information.

Item	Definition
AcuraLink	This device receives information from the XM satellites and passes XM audio information to the audio unit. In addition, traffic and weather information is sent to the navigation unit.
ANC (Active Noise Cancellation)	See audio information.
Address Book	The HFL system can import a copy of the phone book from and approved HFL compatible phone and display the imported phone book on the navigation screen as the address book. See the Navigation Manual for more information.
B-CAN	Body CAN Bus (see CAN)
Bluetooth	Bluetooth is a short-range wireless technology intended to replace cables connecting portable devices (like cell phones) to the audio system (Bluetooth audio) or the HFL (Hands free phone use).
Bluetooth audio	See audio information.
Bread-crumbs (White dots)	Off road tracking dots that can be followed on the map to retrace your route back to a mapped (digitized) road. This function can be turned on/off in Setup screen 1.
CAN	Controller Area Network. This communication network allows processors in the vehicle to send/receive information. The fuel pulses used by the MID trip computer are received from the ECM/PCM using the F-CAN (Fast Controller Area Network)

	bus.
CPU	Central Processing Unit. The main device within the navigation unit that coordinates the rest of the electronic functions.
CSS	Output shaft (Countershaft) Speed Sensor. This sensor reads the output shaft speed at the transmission and provides a speed pulse to the ECM/PCM.
Database	This consists of the Map data, and the POI (Points Of Interest) data stored on the HDD.
DBW	Drive By Wire. Allows electrical control of the throttle without the need of a mechanical linkage.
DCA	Detailed Coverage Area. Main metropolitan areas in the Lower 48 states, and Canada are mapped to this level. See the Navigation Manual for a list of these areas.
DTC	Diagnostic Trouble Codes. Use the HDS tablet to obtain, and troubleshoot the cause of these codes.
Dead Reckoning	The use of the speed signal, and yaw rate sensor to position the vehicle on the map even when tall buildings, or driving in a tunnel obscures the GPS signal.
Digitized Road	A road that appears on the navigation screen. The road name will appear at the bottom of the navigation screen. If the user drives off road the navigation system displays "Not on a digitized road", and after 1/2 mile, the breadcrumbs appear.
Disclaimer Screen	Screen containing cautionary information. It is meant to be read carefully, and acknowledged by the client when using the navigation system.
DVD or DVD-ROM	Digital Versatile Disc. The navigation program and database resides on this disc. See the Navigation Manual for information on how to order a replacement or an navigation update DVD.
Dynamic Route Guidance	Uses real-time traffic to change your driving route to help avoid extended traffic delays and incidents. Requires a data package subscription.
ECM	Engine Control Module. Typically referred to as the ECM.
FAQ	Frequently Asked Questions. See the Navigation Manual for a list of the client FAQs, and troubleshooting information.
F-CAN	Fast CAN Bus (see CAN)
GA-Net	The GA-Net allows the audio unit to communicate with all the audio and navigation components in a vehicle. If there is an open in the GA-Net, components or the entire audio and navigation system may appear inoperative.
GPS	Global Positioning System. A network of 24 satellites in orbit around the earth. The navigation system can simultaneously receive signals from up to 12 satellites to accurately position the vehicle on the map.
HDD	Hard disc drive. The navigation does not use a DVD, but uses a hard drive to contain the navigation software. Can be updated with a CD or DVD that is inserted into the audio disc slot.
HDS	Honda Diagnostic System. A hand held tablet PC used for in diagnosing vehicle problems. This device can be used to obtain DTC codes for diagnosis of the navigation system and CAN related problems.
HIP (AcuraLink)	This device receives information from the XM satellites and passes XM audio information to the audio unit. In addition, traffic and weather information is sent to the navigation unit.
	HandsFreeLink uses Bluetooth technology as a wireless link between it and an

HFL	approved Bluetooth compatible cell phone. See the vehicle Owner's Manual or Quick Start Guide for more information.
HFT	Hands Free Telephone-see HFL.
H/U	Head Unit. The navigation system display assembly in the dash.
Initialization	This refers to the period needed to re-acquire the GPS satellite orbital information whenever the navigation system power has been disconnected. This can take from 10 to 45 minutes.
Interface Dial	This control device consists of a rotating knob and the buttons surrounding it. This device allows control of the navigation, audio, and climate functions displayed on the screen.
Jog Dial	See interface dial.
LCD	Liquid Crystal Display (the navigation screen)
Map Matching	The received GPS information allows the navigation system to position the vehicle on the map. Map matching has occurred if the map screen displays the current street name in the bottom-shaded area.
Mated	The process where the audio-navigation unit electronically writes its passcode to the HDD.
Mic	Abbreviation for the microphone used for receiving voice commands. The active noise cancellation unit may also use it to check its tuning (if equipped). It is located near the map light in the ceiling.
MID	Multi-Information Display
MP3 music files	MP3 is an audio coding formal. MP3 is a popular audio compression format on the internet and computers. CDs and PC cards MP3 files can be played on some vehicle audio systems.
MW	Maneuver Window. While on-route to a destination, this window displays information about the next maneuver.
Navi	Abbreviation for the Navigation System.
Off-Road Tracking	See Breadcrumbs.
Off Route	This occurs when the user leaves mapped roads. Off road tracking dots (breadcrumbs) are displayed if the option is enabled in the setup menu. The user can use them to return to a mapped road. The bottom of the navigation screen displays "Not on a digitized road".
Outlying Areas	These are rural areas that typically have only their main roads mapped. All other roads are shown in light brown for reference only, since they have not been verified.
Paired	Linking your cell phone to the HFL.
PC Card Slot	The PC card (PCMCIA, type II) slot is for factory use only. Make sure that the sliding door is closed at all items, if opened, an error message is displayed on the screen (if equipped).
PCM	Powertrain Control Module. This unit supplies the navigation system speed signal, and charge signal via the F-CAN network. Also referred to as ECM.
PCMCIA	A computer industry defined term referring to the PC card slot standard.
PIN	Personal Identification Number, a random 4 digit number created by the client to protect personal information.
POI	Point Of Interest. These are the businesses, schools, etc. found under the places

	option on the main menu.
Polygon	Colored areas on the map screen denoting parks, schools, etc. Refer to the Navigation Manual "Driving to Your Destination" for a list of the assigned colors.
QWERTY	Keyboard layout resembling the typewriter keys. The keyboard layout can be changed to an alphabetical layout in the Setup mode.
SCS service connector	The service check signal 2-pin connector used to put the navigation system into the diagnostic mode.
Security Code	Code needed to activate the navigation system. You can get the security code from the iN by entering the navigation unit serial number. You can find the serial number on the diagnostic screens (Unit Check, Navi ECU) or on the underside of the navigation unit.
Touch Screen Buttons or Touch Sensor	Navigation display panel has 2 layers of clear film on the screen panel. If you touch the screen panel, the film layers engage and the display unit detects the touch point.
Tuning	A continual update of internal navigation system scaling factors. See the individual sensor tuning discussions under either System Description, or **System Diagnostic Mode**.
Unverified Streets	These streets have not been verified for turn restrictions, one-way, etc. They appear light brown on the map. You can enter address destinations in these areas, but depending on your Unverified Routing choice in setup, voice guidance may end at the last verified street closest to your destination.
USB adapter	Allows the client to play data such as input audio recording from portable audio devices (such as i-Pod) or data from USB flash memory.
Verified Streets	These streets consist of the detailed metropolitan coverage areas, and all other inter-town connection roads. These roads are shown in black on the map.
VP	Vehicle Position. When in map mode, this circular icon shows the vehicle position on the map. Touch this icon to show the latitude, longitude, and elevation of your current position.
VR	Voice Recognition. This allows voice control of many of the navigation functions. The hardware consists of the microphone, voice control switch (Talk/Back buttons), and the front speakers. See the overview for more information.
VSP	Vehicle Speed Pulse. This pulse signal coming from the ECM/PCM (via the CSS) is used to update the Vehicle position on the map. These pulses do not indicate direction (forward or backward). When in reverse, the navigation receives a signal and directs the VP to move backwards on the map.
Weather Information	The navigation system receives and displays weather information.
XM	This device receives information from the XM satellites and passes XM audio information to the audio unit. In addition, traffic and weather information is sent to the navigation unit (see AcuraLink).
Yaw Rate Sensor	This device is located in the navigation unit and senses the side-to-side twisting force generated when the vehicle turns. See a detailed description of how this sensor works.

Diagnostic System Diagram

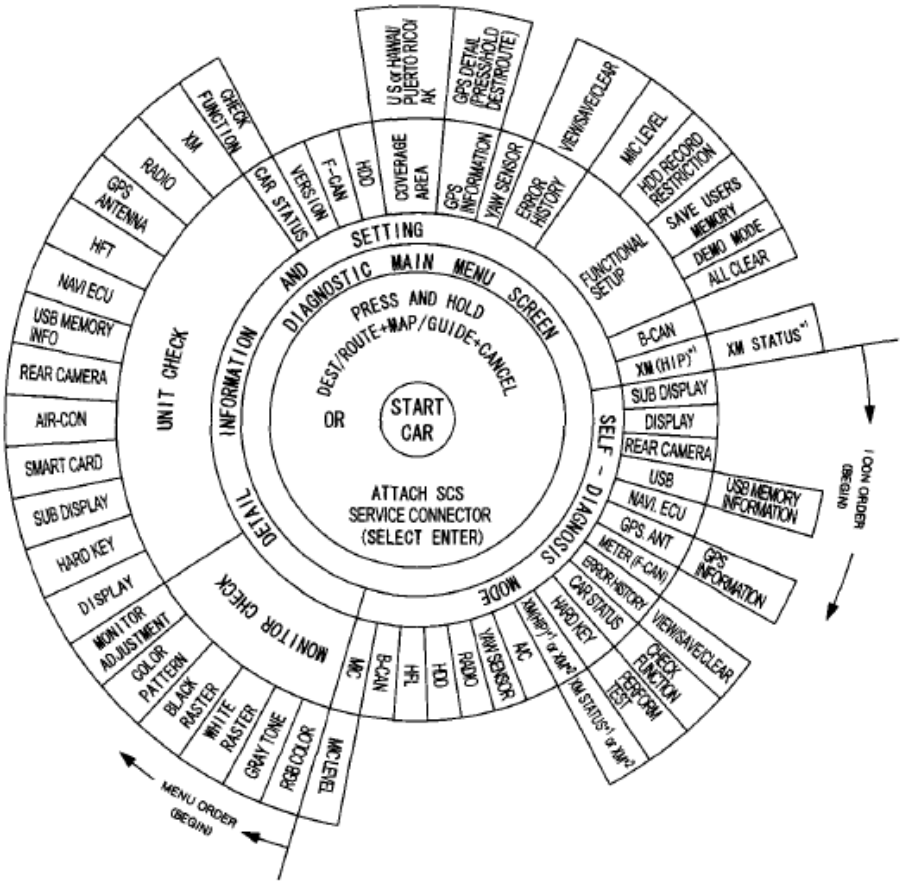
This diagram below shows all of the navigation diagnostic features available for system troubleshooting. The diagram starts at the center, and works outward in layers.

Access to the diagnostic features begins by starting the vehicle. This is necessary so the system can check the other systems connected by various busses. After starting the vehicle you can enter the diagnostic mode either by pressing and holding the DEST/ROUTE, the MAP/GUIDE, and the CANCEL buttons, or by connecting the 2-PIN SCS service connector.

The main menu screen allows 2 checking modes - one automatic, and one manual:

- The automatic diagnostic check starts when you select SELF-DIAGNOSIS MODE. The system runs for several seconds, and reports any issues with Red icons. Rotate the interface dial and select the icon you wish obtain the problem details.
- The manual diagnostic check is selected from the main menu by selecting DETAIL INFORMATION AND SETTING. The traditional diagnostic menu is displayed. This allows you to obtain additional details as instructed in the troubleshooting procedures.

NOTE: Do not clear or change settings unless specified by either the troubleshooting procedures or by the factory.



*1: USA models
*2: Canada models

Fig. 28: Navigation Diagnostic Features For Troubleshooting
Courtesy of AMERICAN HONDA MOTOR CO., INC.

NAVIGATION UNIT CONNECTOR FOR INPUTS AND OUTPUTS

NOTE: **Refer to the audio system information for the connectors C, E, and F inputs and outputs (see AUDIO UNIT CONNECTOR FOR INPUTS AND OUTPUTS (WITH NAVIGATION)).**

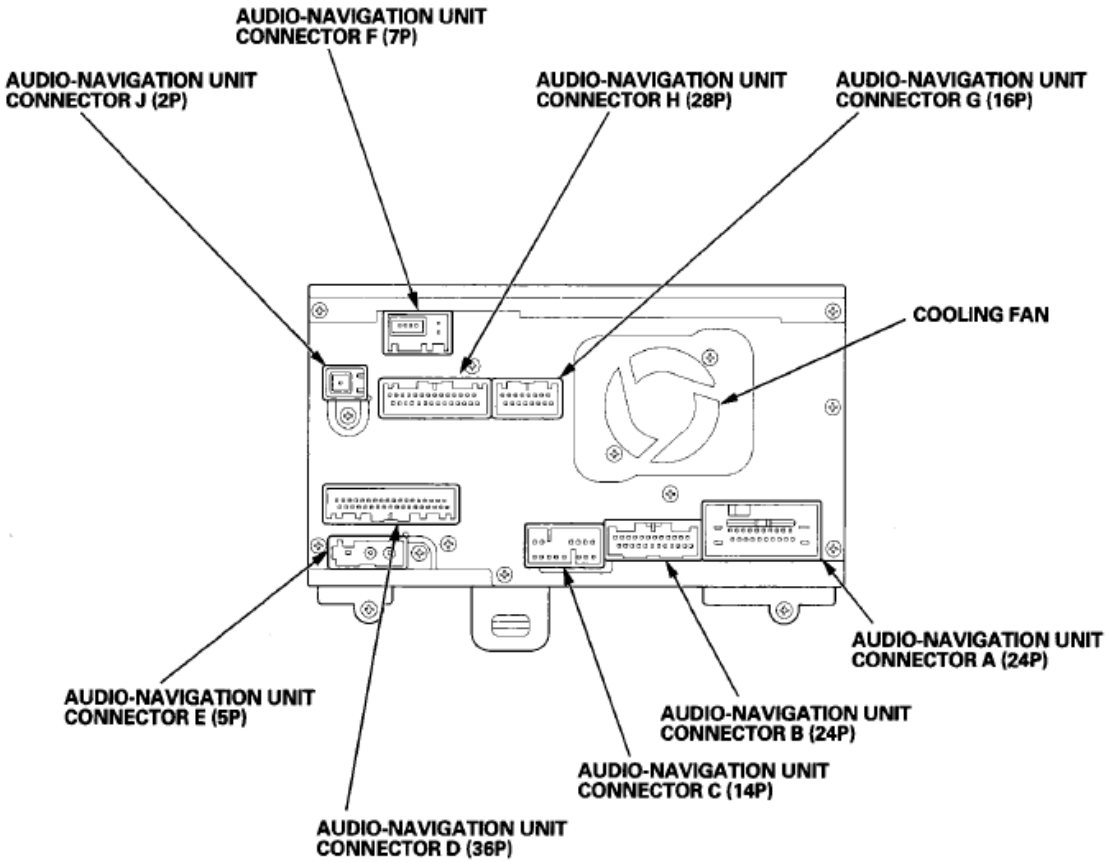


Fig. 29: Identifying Navigation Unit Connectors For Inputs & Outputs
Courtesy of AMERICAN HONDA MOTOR CO., INC.

AUDIO-NAVIGATION UNIT CONNECTOR A (24P)

NOTE: **Refer to the audio system information for the terminals inputs and outputs not shown (see AUDIO-NAVIGATION UNIT CONNECTOR A (24P)).**

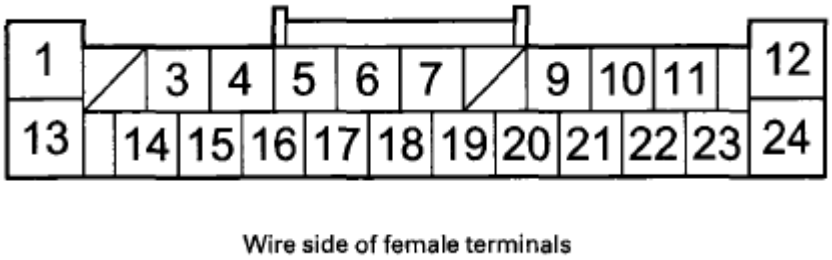


Fig. 30: Audio-Navigation Unit A (24P) Connector End View
Courtesy of AMERICAN HONDA MOTOR CO., INC.

AUDIO-NAVIGATION UNIT CONNECTOR A (24P)

Cavity	Wire Color	Terminal Name	Description	Voltage (about)	Symptom

A4	WHT	SCTY2	Security signal from navigation display unit	0 V	If open: The security system sets, and does not trip when screen is removed. If short to ground: The security system sets, and does not trip when screen is removed.
A12	BLK	GND (Ground)	Ground for audio-navigation unit (G502)	0 V	If open: No effect on system. If short to ground: No effect on system.
A13	PNK	NAVI ILL+ (Illumination positive)	Parking light on signal	Lights on: battery voltage, Lights off: 0 V	If open: When brightness=Auto, night mode for the display is inoperative when lights on. If short to ground: No effect on system.
A14	PUR	ACC (Accessory)	Power source for accessories	Battery voltage at ACCESSORY (I) or ACC mode	If open: Display picture goes out (display back light still on). If short to ground: Blows fuse No. 18 (7.5 A) in the driver's under-dash fuse/relay box.
A15	BLU	VSP (Vehicle speed pulse)	Vehicle speed pulse signal from ECM/PCM	0- 5 V pulses average 2.5 V (Depending on bus traffic)	If open: No vehicle speed pulse. Diagnostic screen Car Status, VSP=0. If short to ground: No vehicle speed pulses. Diagnostic screen Car Status, VSP=0.
A24	WHT	+ B (+ B Power source)	Continuous power source	Battery voltage	If open: Display picture goes out (display back light still on). **NOTE:** **System reboots to enter code screen. If short to ground: Blows fuse No. 15(10 A) in the under-hood fuse/relay box.**

AUDIO-NAVIGATION UNIT CONNECTOR B (24P)

NOTE: Refer to the audio system information for the terminals inputs and outputs not shown (see AUDIO-NAVIGATION UNIT CONNECTOR B (24P)).

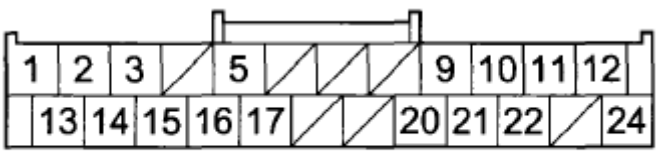


Fig. 31: Audio-Navigation Unit B (24P) Connector End View

Courtesy of AMERICAN HONDA MOTOR CO., INC.

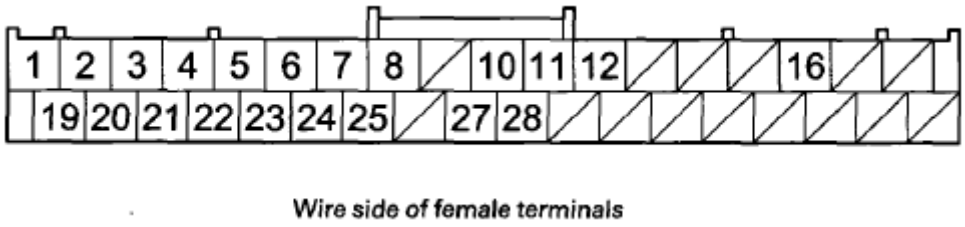
AUDIO-NAVIGATION UNIT CONNECTOR B (24P)

Cavity	Wire Color	Terminal Name	Description	Voltage (about)	Symptom
B20	WHT	RG L+(Route guidance positive)	Audio signal of voice guidance, and Voice Recognition (VR) prompts	Audio signal 0.004-0.04 V	If open: If voice activated, speakers buzz; if voice off, no effect. If short to ground: If voice activated, speakers buzz; if voice off, no effect.
B21	GRY(1)	RG L SH (Route guidance shield)	Shield for terminals No. 20 and No. 22	0 V	If open: No effect on voice output. If short to ground: No effect on voice output.
B22	BLK	RG L GND (Route guidance ground)	Ground for voice guidance, and Voice Recognition (VR) prompts	0 V	If open: If voice activated, speakers buzz; if voice off, no effect. If short to ground: If voice activated, speakers buzz; if voice off, no effect.

(1) The shielded wires have a heat-shrink tube insulating the outside of the wire. The color of the insulating tube, typically black or dark gray, may not match the color of the wire listed on the circuit diagram.

AUDIO-NAVIGATION UNIT CONNECTOR D (36P)

NOTE: Refer to the audio system information for the terminals inputs and outputs not shown (see AUDIO-NAVIGATION UNIT CONNECTOR D (36P)).



Wire side of female terminals

Fig. 32: Audio-Navigation Unit D (36P) Connector End View
Courtesy of AMERICAN HONDA MOTOR CO., INC.

AUDIO-NAVIGATION UNIT CONNECTOR D (36P)

Cavity	Wire Color	Terminal Name	Description	Voltage (about)	Symptom
D10	ORN	NAVI SI (Air conditioner serial in)	Communication signal for climate control unit	- -	If open/short: HVAC will not respond to navigation commands.

D11	PUR	NAVI SO (Air conditioner serial out)	Communication signal for climate control unit	- -	If open/short: HVAC will not respond to navigation commands.
D16	PNK	NAVI ILL+ (Illumination positive)	Parking light on signal	Lights on: battery voltage, Lights off: 0 V	If open: When brightness=Auto, night mode for the display is inoperative when lights on. If short to ground: No effect on system.
D27	BRN	NAVI CLK (Air conditioner clock)	Check signal for climate control unit	- -	If open/short: HVAC will not respond to navigation commands.

AUDIO-NAVIGATION UNIT CONNECTOR G (16P)

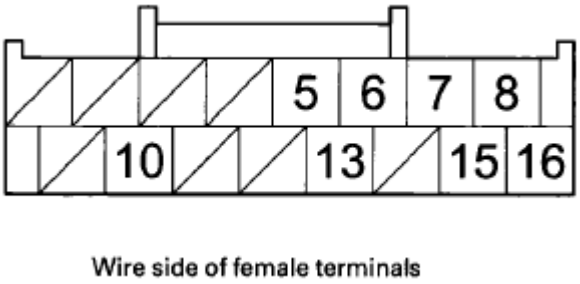


Fig. 33: Audio-Navigation Unit G (16P) Connector End View
Courtesy of AMERICAN HONDA MOTOR CO., INC.

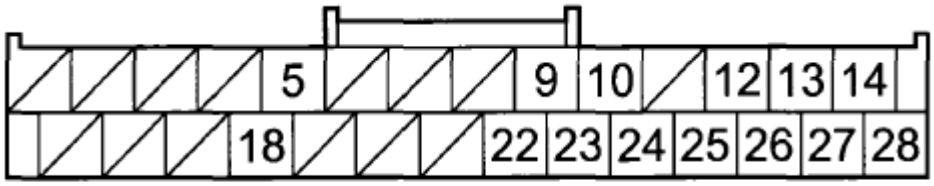
AUDIO-NAVIGATION UNIT CONNECTOR G (16P)

Cavity	Wire Color	Terminal Name	Description	Voltage (about)	Symptom
G5	GRN	RGB GND (Ground signal)	Ground for color signal	0 V	If open: No effect on system. If short to ground: No effect on system.
G6	YEL	B-SIG (Blue signal)	Blue color signal	0.2 V AC average in RGB color diagnostic mode	If open: Blue color missing (see RGB Color diagnosis under **Monitor Check**). If short to ground: Blue color missing (see RGB Color diagnosis under **Monitor Check**).
G7	RED	G-SIG (Green signal)	Green color signal	0.7 V AC average in RGB color diagnostic mode	If open: Green color missing (see RGB Color diagnosis under **Monitor Check**). If short to ground: Green color missing (see RGB Color diagnosis under **Monitor Check**).
		R-SIG (Red		0.7 V AC	If open: Red color missing (see RGB Color diagnosis under **Monitor Check**). If short to

G8	WHT	signal)	Red color signal	average	ground: Red color missing (see RGB Color diagnosis under **Monitor Check**).
G10	BRN	BACK LT- (Back light or reverse signal)	Reverse signal of select lever from reverse relay	In reverse, battery voltage: Otherwise 0 V	If open: Navigation never sees reverse. If short to ground: Blows fuse No. 5 (7.5 A) in the driver's under-dash fuse/relay box. Diagnostic screen Car Status, Back=0.
G13	GRY (1)	SIG SH (Shield signal)	Shield for terminals No. 5, No. 6, No. 7, No. 8, No. 15, and No. 16	0 V	If open: No effect on system. If short to ground: No change to display.
G15	BLU	YS	Overlay control signal	1.0V AC average	If open: No change to display. If short to ground: No change to display.
G16	BRN	C-SIG (Composite signal)	Composite video (vertical/horizontal) Synchronizing signal	0.2 V AC average in RGB color diagnostic mode	If open: Picture rolls horizontally, colors still visible. If short to ground: Picture rolls horizontally, colors still visible.

(1) The shielded wires have a heat-shrink tube insulating the outside of the wire. The color of the insulating tube, typically black or dark gray, may not match the color of the wire listed on the circuit diagram.

AUDIO-NAVIGATION UNIT CONNECTOR H (28P)



Wire side of female terminals

Fig. 34: Audio-Navigation Unit H (28P) Connector End View
Courtesy of AMERICAN HONDA MOTOR CO., INC.

AUDIO-NAVIGATION UNIT CONNECTOR H (28P)

Cavity	Wire Color	Terminal Name	Description	Voltage (about)	Symptom
H5	YEL	DIAG- (Diagnostic negative)	Ground for service check signal	0 V	If open: The system will not go into diagnostic mode when using the SCS service connector. If short to ground: No effect on system.
					Solid red HFL icon in Navi

H9(2)	BLK	NAVI COMM4 (HFL communication 4)	Communication signal for HFL	4.5 V DC	System Link. Phone icon in the Route To screen is grayed out.
H10(2)	RED	NAVI COMM2 (HFL communication 2)	Communication signal for HFL	4.5 V DC	HFL icon in Navi System Link changes between red and green. Phone icon in the Route To screen is grayed out.
H12	WHT	F-CAN H (F-CAN high)	F-CAN bus communication	Pulses 2.5- 6 V average 2.5 V (depends on F-CAN communication traffic)	If open: 1. System Link Meter shown as red. 2. F-CAN System Link = NG. 3. Car status IGNITION = 0. If short: Same diagnostic conditions as when open, and also sets U0029 (F-CAN BUS OFF).
H13	GRY (1)	JOG SH (Interface dial Shield jog)	Shield for terminal No. 26	- -	- -
H14	GRY (1)	MIC SIG SH (HFL mic signal shield)	Shield for terminals No. 27 and No. 28	0 V	If open: No effect on voice control. If short to ground: No effect on voice control.

(1) The shielded wires have a heat-shrink tube insulating the outside of the wire. The color of the insulating tube, typically black or dark gray, may not match the color of the wire listed on the circuit diagram.

(2) USA models

AUDIO-NAVIGATION UNIT CONNECTOR H (28P)

Cavity	Wire Color	Terminal Name	Description	Voltage (about)	Symptom
H18	RED	DIAG + (Diagnostic positive)	Service check signal for navigation system	5- 6V	If open: No effect on system. If short to ground: System goes into diagnostic mode at ACC or ON mode.
H22(2)	GRN	NAVI COMM3 (HFL communication 3)	Communication signal for HFL	5 V DC	Solid red HFL icon in Navi System Link. Phone icon in the Route To screen is grayed out.
		NAVI COM Ml			HFL icon in Navi System

H23(2)	WHT	(HFL communication 1)	Communication signal for HFL	5 V DC	Link changes between red and green. Phone icon in the Route To screen is grayed out.
H24(2)	GRY (1)	NAVI COMM SH (shield HFL)	Shield for terminals No. 9, No. 10, No. 22, and No. 23	0 V	- -
H25	BLK	F-CAN L (F-CAN low)	F-CAN bus communication	Pulses 2.5- 6 V average 2.5 V (depends on F-CAN communication traffic)	If open: 1. System Link Meter shown as red. 2. F-CAN System Link = NG. 3. Car status IGNITION = 0. If short: Same diagnostic conditions as when open, and also sets U0029 (F-CAN BUS OFF).
H26	BLU	JOG (Interface dial Jog)	Interface dial operation signal	0- 5 V pulses	If open: You cannot operate navigation system. If short to ground: You cannot operate navigation system.
H27	RED	MIC SIG-(HFL mic signal negative)	Ground for microphone signal	0 V	If open: microphone signal shown as red in diagnostics: System Link and Functional Setup Mic Level. If short to ground: No effect on voice recognition.
H28	GRN	MIC SIG + (HFL mic signal positive)	Microphone output signal positive	4- 5 V (TALK button pressed)	If open: microphone signal shown as red in diagnostic screens: System Link and Functional Setup Mic Level. If short to ground: microphone signal shown as red in diagnostic screens: System Link and Functional Setup Mic Level.

(1) The shielded wires have a heat-shrink tube insulating the outside of the wire. The color of the insulating tube, typically black or dark gray, may not match the color of the wire listed on the circuit diagram.

(2) USA models

AUDIO-NAVIGATION UNIT CONNECTOR J (2P)

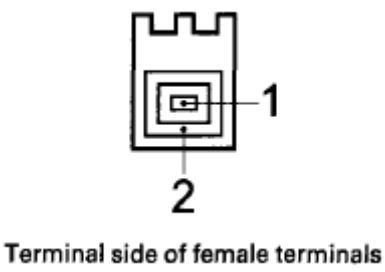


Fig. 35: Audio-Navigation Unit J (2P) Connector End View
Courtesy of AMERICAN HONDA MOTOR CO., INC.

AUDIO-NAVIGATION UNIT CONNECTOR J (2P)

Cavity	Wire Color	Terminal Name	Description	Voltage (about)	Symptom
J1	- -	GPS SIG	GPS signal	5V	If open: GPS icon on screen is not shown. System Link screen GPS Ant. shown as red. If short to body ground: Same as open.
J2	- -	GPS SH GND	Ground for GPS signal	0 V	If open: GPS icon on screen is not shown, System Link screen GPS Ant. shown as red. If short to body ground: No effect on system.

Navigation Display Unit Connector for Inputs and Outputs

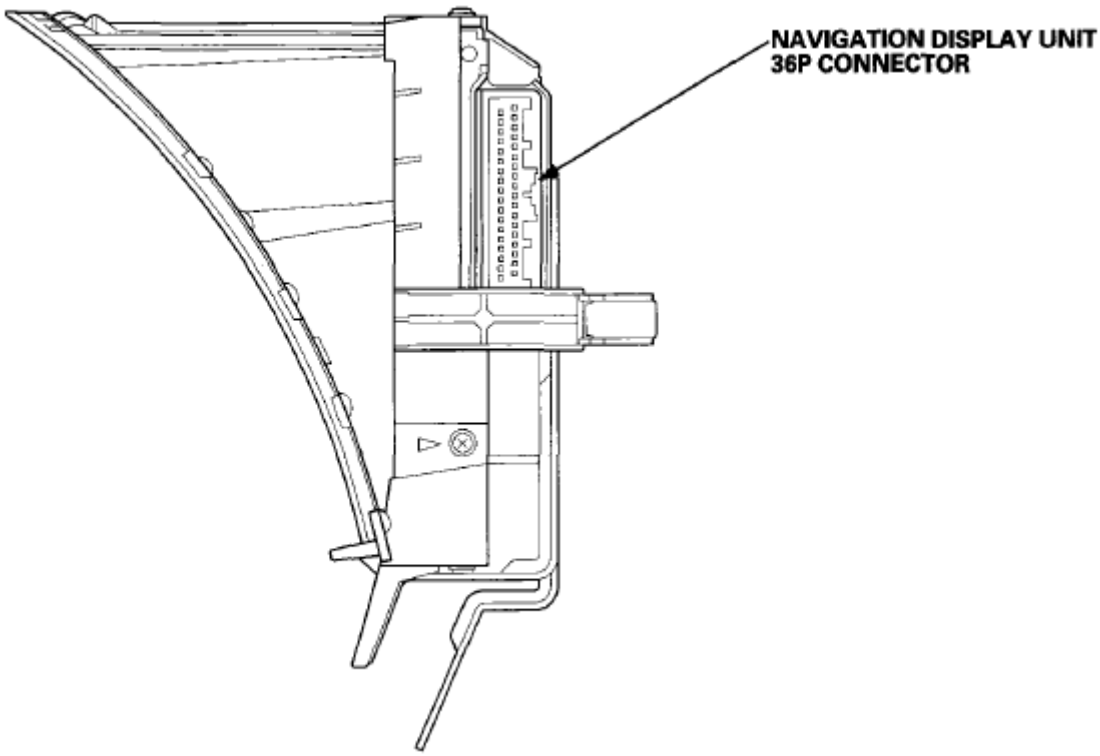


Fig. 36: Identifying Navigation Display Unit 36P Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

NAVIGATION DISPLAY UNIT 36P CONNECTOR

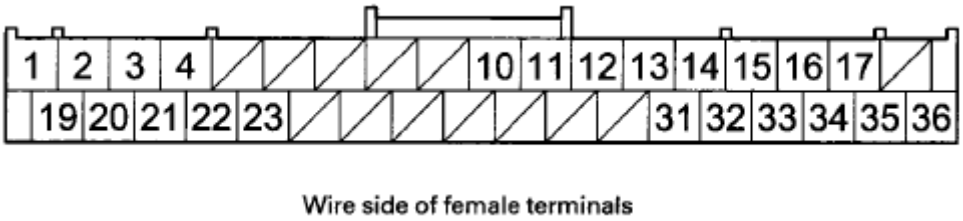


Fig. 37: Navigation Display Unit 36P Connector End View
Courtesy of AMERICAN HONDA MOTOR CO., INC.

NAVIGATION DISPLAY UNIT 36P CONNECTOR

Cavity	Wire Color	Terminal Name	Description	Voltage (about)	Symptom
1	WHT	+ B (+ B power source)	Continuous power source	Battery voltage	If open: Screen completely off (no backlight visible). If short to ground: Blows fuse No. 15(10 A) in the under-hood fuse/relay box.
2	PUR	ACC (Accessory)	Power source for accessory	Battery voltage at ACCESSORY (I) or ACC mode	If open: Display and buttons do not work. If short to ground: Blows fuse No. 18 (7.5 A) in the driver's under-dash fuse/relay box.
3	BLK	GND(RC) (Ground camera)	Ground for rearview camera	0 V	If open: No change to rearview camera image. If short to ground: No change to rearview camera image.
4	WHT	CAMERA V (VCC supply)	Power source for rearview camera	8V	If open: When put into reverse, the navigation screen goes black (backlight still operates) If short to ground: When put into reverse, the navigation screen goes black (backlight still operates).
10	WHT	SCTY2	Security signal to audio-navigation unit	0 V	If open: The security system sets, and does not trip when navigation display unit is removed. If short to ground: The security system sets, and does not trip when navigation display unit is removed.
11	BRN	SCTY1	Security signal from passenger's MICU	0 V	If open: The security system sets, and does not trip when navigation display unit is removed. If short to ground: The security system sets, and does not trip when navigation display unit is removed.

12	GRN	RGB GND (Ground signal)	Ground for color signal	0 V	If open: No effect on system. If short to ground: No effect on system.
13	BLU	YS (overlay signal)	Overlay control signal	1.0 V AC average	If open: No change to display. If short to ground: No change to display.
14	WHT	R-SIG (Red signal)	Red color signal	0.7 V AC	If open: Red color missing (see RGB Color diagnosis under **Monitor Check**). If short to ground: Red color missing (see RGB Color diagnosis under **Monitor Check**).
15	RED	G-SIG (Green signal)	Green color signal	0.7 V AC	If open: Green color missing (see RGB Color diagnosis under **Monitor Check**). If short to ground: Green color missing (see RGB Color diagnosis under **Monitor Check**).
16	YEL	B-SIG (Blue signal)	Blue color signal	0- 1 V AC	If open: Blue color missing (see RGB Color diagnosis under **Monitor Check**). If short to ground: Blue color missing (see RGB Color diagnosis under **Monitor Check**).
(1) The shielded wires have a heat-shrink tube insulating the outside of the wire. The color of the insulating tube, typically black or dark gray, may not match the color of the wire listed on the circuit diagram.					

NAVIGATION DISPLAY UNIT 36P CONNECTOR

Cavity	Wire Color	Terminal Name	Description	Voltage (about)	Symptom
17	BRN	C-SIG (Composite signal)	Composite video (vertical/horizontal) synchronizing signal	0.3 V AC	If open: Picture rolls horizontally, colors still visible. If short to ground: Picture rolls horizontally, colors still visible.
19	BLK	GND (Ground)	Ground for navigation display unit(G501)	0 V	If open: No change to display. If short to ground: No effect on system.
20	RED	VCC GND (Ground camera)	Ground for camera signal	0 V	If open: No change to rearview camera image. If short to ground: No change to rearview camera image.
21	GRN	CAMERA VCC (Video camera)	Video signal for rearview camera	0.3 V	If open: No change to rearview camera image. If short to ground: No change to rearview camera image.
22	GRY*	CAMERA SH (Shield camera)	Shield for terminals No. 3, No. 4, No. 20, No. 21, and No. 23	0 V	If open: No effect on system. If short to ground: No effect on system.

23	BRN	CAMERA ADPT (Adaptive camera)	Control signal for rearview camera	0 V	If open: No change to rearview camera image. If short to ground: No change to rearview camera image.
31	GRY*	GA-NET BUS SH (Shield GA-NET bus)	Shield for terminals No. 32, No. 33	0 V	If open: No effect on system. If short to ground: No effect on system.
32	PNK	GA-NET BUS + (GA-NET bus positive)	Data bus+ GA-Net	0- 5 V pulses average 2.5 V (depends on bus traffic)	If open: System Link screen Display shown as red. If short to ground: GA-Net related system do not work.
33	BLU	GA-NET BUS- (GA-NET bus negative)	Data bus- GA-Net	0 - 5 V pulses average 2.5 V (depends on bus traffic)	If open: System Link screen Display shown as red. If short to ground: GA-Net related system do not work.
34	GRY (1)	SIG SH (Shield signal)	Shield for terminals No. 12, No. 13, No. 14, No. 15, No. 16 and No. 17	0 V	If open: No effect on system. If short to ground: No effect on system.
35	BRN	BACK LT- (Back light or reverse signal)	Reverse signal of select lever from reverse relay circuit	In reverse, battery voltage: Otherwise 0 V	If open: No change to rearview camera image. If short to ground: No change to rearview camera image.
36	PNK	NAVI ILL+ (Illumination positive)	Parking light on signal from dash and console lights	Battery voltage if lights on: otherwise 0 V	If open: When brightness=Auto, night mode for the display is inoperative when lights on. If short to ground: When brightness=Auto, night mode for the display is inoperative when lights on.

(1) The shielded wires have a heat-shrink tube insulating the outside of the wire. The color of the insulating tube, typically black or dark gray, may not match the color of the wire listed on the circuit diagram.

Interface Dial Connector for Inputs and Outputs

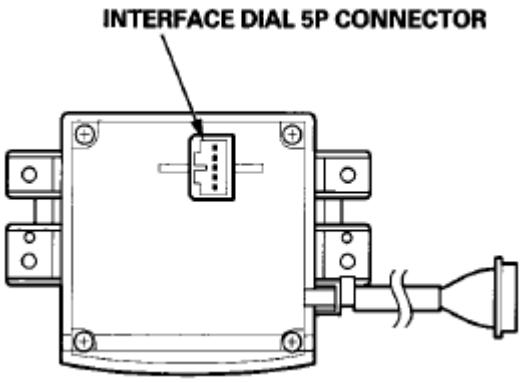


Fig. 38: Identifying Interface Dial 5P Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

INTERFACE DIAL 5P CONNECTOR

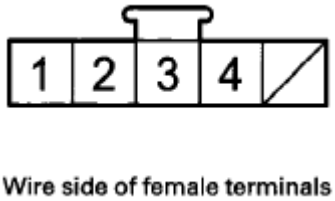


Fig. 39: Interface Dial 5P Connector End View
Courtesy of AMERICAN HONDA MOTOR CO., INC.

INTERFACE DIAL 5P CONNECTOR

Cavity	Wire Color	Terminal Name	Description	Voltage (about)	Symptom
1	BLU	JOG (jog)	Interface dial operation signal	0- 5 V pulses	If open: You can not operate the navigation system. If short to ground: You can not operate the navigation system.
2	GRY (1)	JOG SH (Shield jog)	Shield for terminal No. 1	- -	- -
3	BLK	GND (Ground)	Ground for interface dial (G501)	0 V	If open: You can not operate the navigation system. If short to ground: You can not operate the navigation system.
4	PUR	ACC (Accessory)	Power source for interface dial	Battery voltage at ACCESSORY (I) or ACC mode	If open: You can not operate the navigation system. If short to ground: Blows fuse No. 18 (7.5 A) in the driver's under-dash fuse/relay box.

(1) The shielded wires have a heat-shrink tube insulating the outside of the wire. The color of the insulating tube, typically black or dark gray, may not match the color of the wire listed on the circuit

diagram.

HFL-Navigation Microphone Connector for Inputs and Outputs

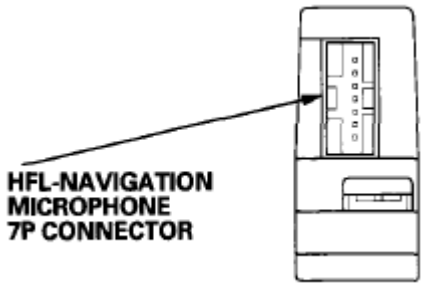


Fig. 40: Identifying HFL-Navigation Microphone 7P Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

HFL-NAVIGATION MICROPHONE 7P CONNECTOR

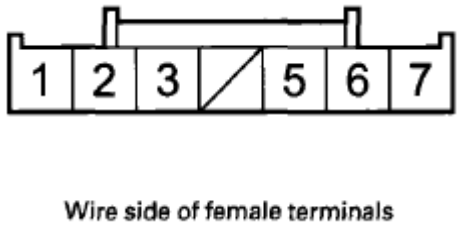


Fig. 41: HFL-Navigation Microphone 7P Connector End View
Courtesy of AMERICAN HONDA MOTOR CO., INC.

HFL-NAVIGATION MICROPHONE 7P CONNECTOR

Cavity	Wire Color	Terminal Name	Description	Voltage (about)	Symptom
1	BLK	GND (Ground)	Ground for HFL-navigation microphone (G401)	0 V	If open: You can not operate voice recognition. If short to ground: No effect on voice recognition.
2	BLU	MIC- (HFL mic signal negative)	Ground for microphone signal	0 V	If open: System Link screen Mic shown as red. Functional Setup Mic Level does not operate. If short to ground: No effect on voice recognition.
3	PNK	MIC+(HFL mic signal positive)	Microphone output signal positive	8V	If open: System Link screen Mic shown as red. Functional Setup Mic Level does not operate. If short to ground: System Link screen Mic shown as red. Functional Setup Mic Level does not operate.

5	PUR	HFL MUTE	HFL MUTE signal	0- 9V	If open: You can not operate HFL sound. If short to ground: You can not operate HFL sound.
6	PUR	ACC (Accessory)	Power source for accessory	Battery voltage at ACCESSORY (I) or ACC mode	If open: You can not operate voice control. If short to ground: Blows fuse No. 18 (7.5 A) in the driver's under-dash fuse/relay box.
7	WHT	+ B(+ B Power source)	Continuous power source	Battery voltage	If open: You can not operate voice control. If short to ground: Blows fuse No. 15(10 A) in the under-hood fuse/relay box.

Rearview Camera Connector for Inputs and Outputs

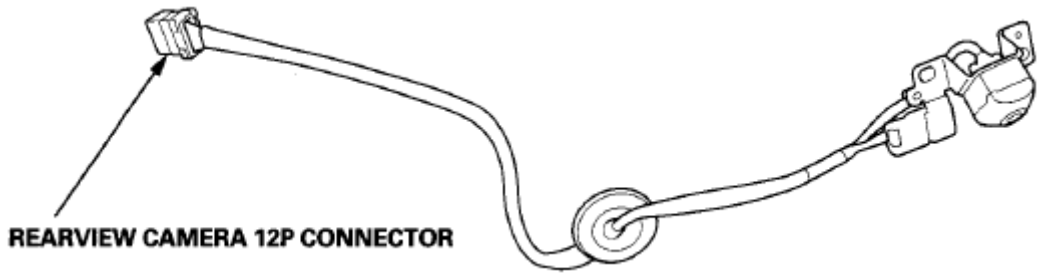
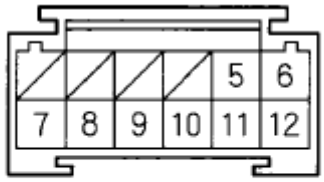


Fig. 42: Identifying Rearview Camera 12P Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

REARVIEW CAMERA 12P CONNECTOR



Terminal side of male terminals

Fig. 43: Rearview Camera 12P Connector End View
Courtesy of AMERICAN HONDA MOTOR CO., INC.

REARVIEW CAMERA 12P CONNECTOR

Cavity	Wire Color	Terminal Name	Description	Voltage (about)	Symptom
7	BRN	CAMERA ADPT (Adaptive camera)	Control signal for rearview camera	0 V	If open: No change to rearview camera image. If short to ground: No change to rearview camera image.

8	GRY (1)	CAMERA SH (Shield camera)	Shield for terminals No. 7, No. 9, No. 10, No. 11, and No. 12	0 V	If open: No change to rearview camera image. If short to ground: No effect on system.
9	WHT	CAMERA V (Video camera)	Video signal for rearview camera	0.3 V	If open: No change to rearview camera image. If short to ground: No change to rearview camera image.
10	RED	VCC GND (Ground camera)	Ground for camera signal	0 V	If open: No change to rearview camera image. If short to ground: No change to rearview camera image.
11	BLK	GND (RC) (Ground)	Ground for rearview camera	0 V	If open: No change to rearview camera image. If short to ground: No change to rearview camera image.
12	GRN	CAMERA VCC (VCC supply)	Power source for rearview camera	8V	If open: No rearview camera image. If short to ground: When put into reverse, the navigation screen goes black (display backlight still operative).

(1) The shielded wires have a heat-shrink tube insulating the outside of the wire. The color of the insulating tube, typically black or dark gray, may not match the color of the wire listed on the circuit diagram.

CIRCUIT DIAGRAM

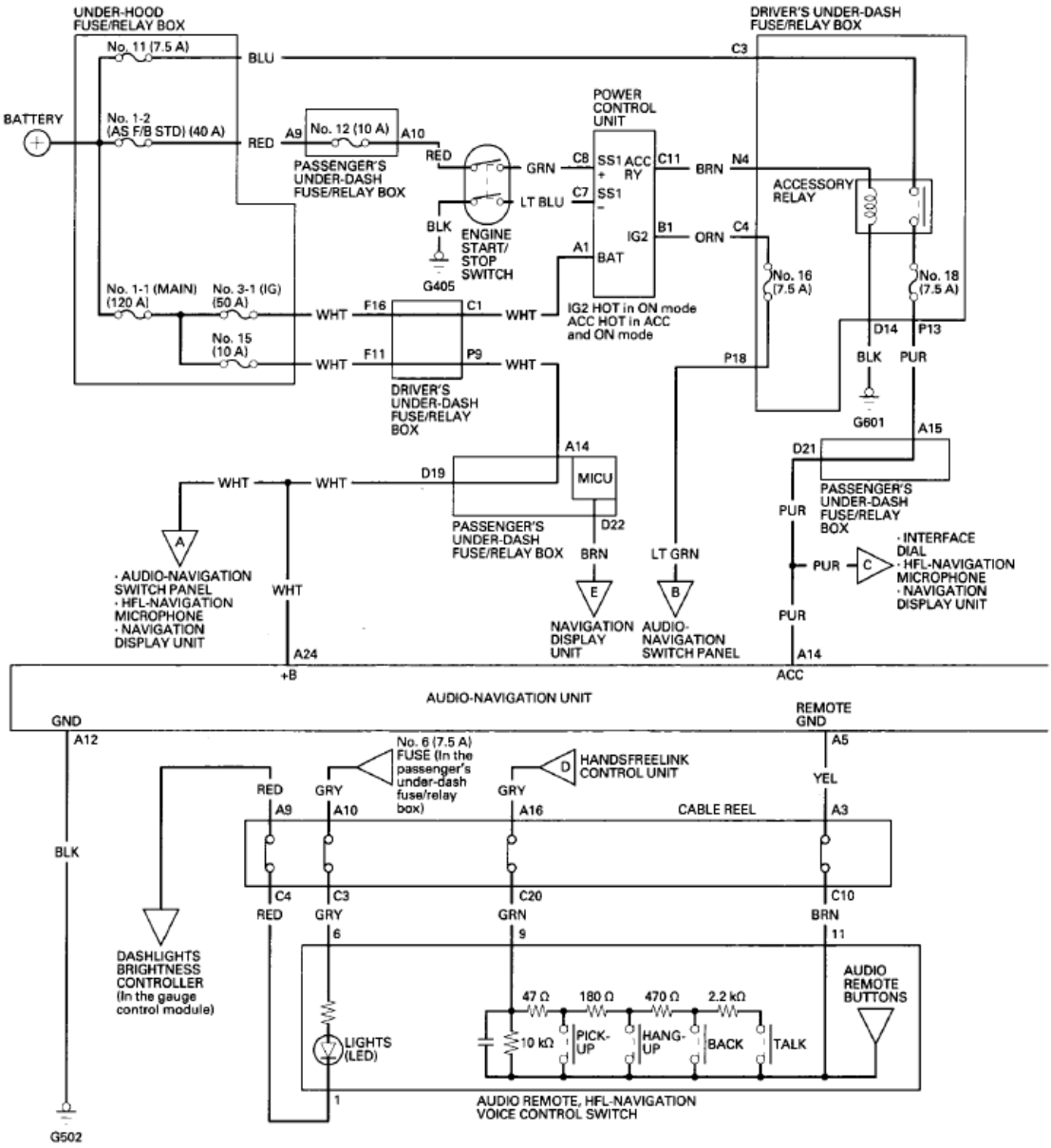


Fig. 44: Navigation System - Circuit Diagram (1 Of 6)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

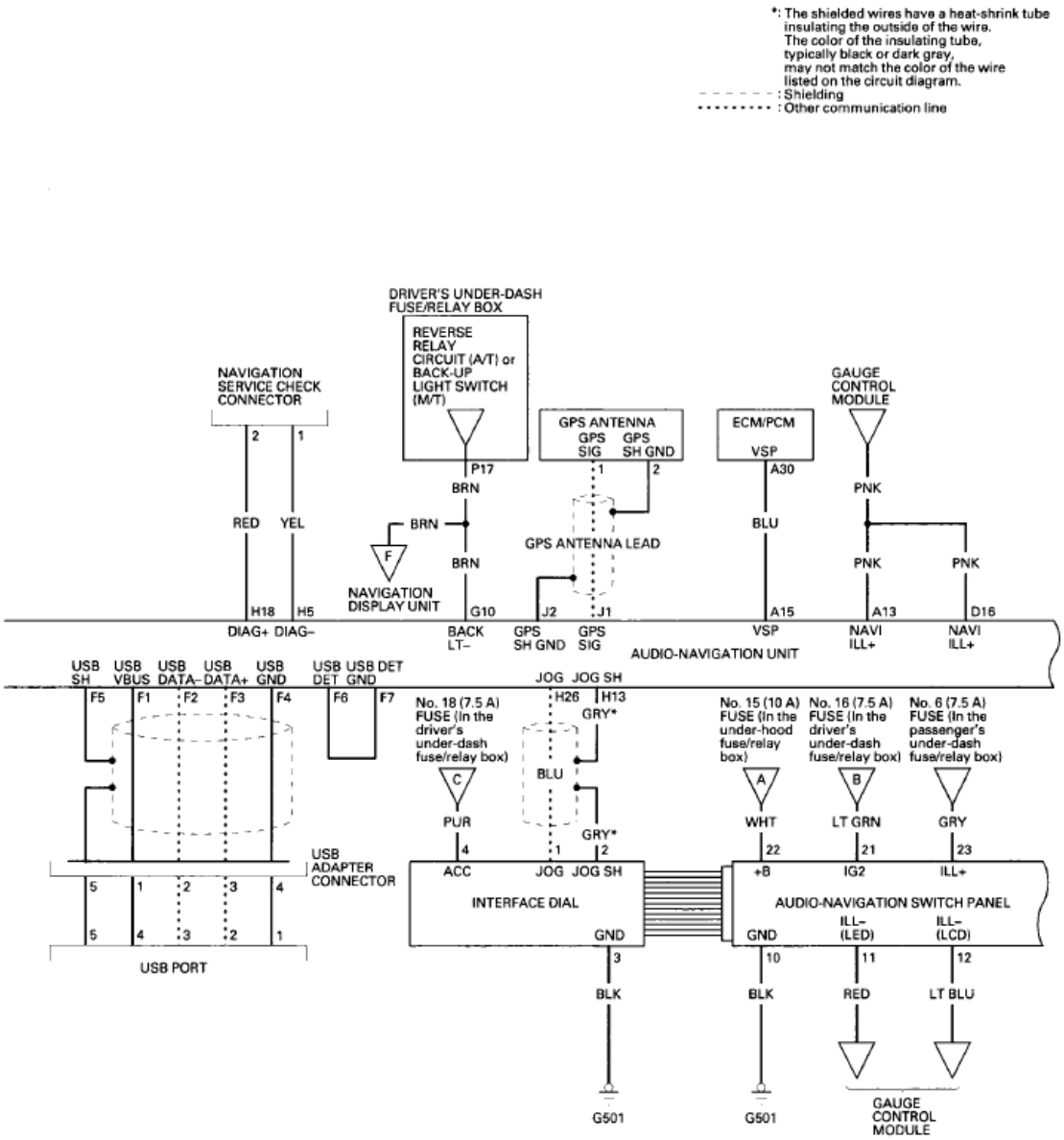


Fig. 45: Navigation System - Circuit Diagram (2 Of 6)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

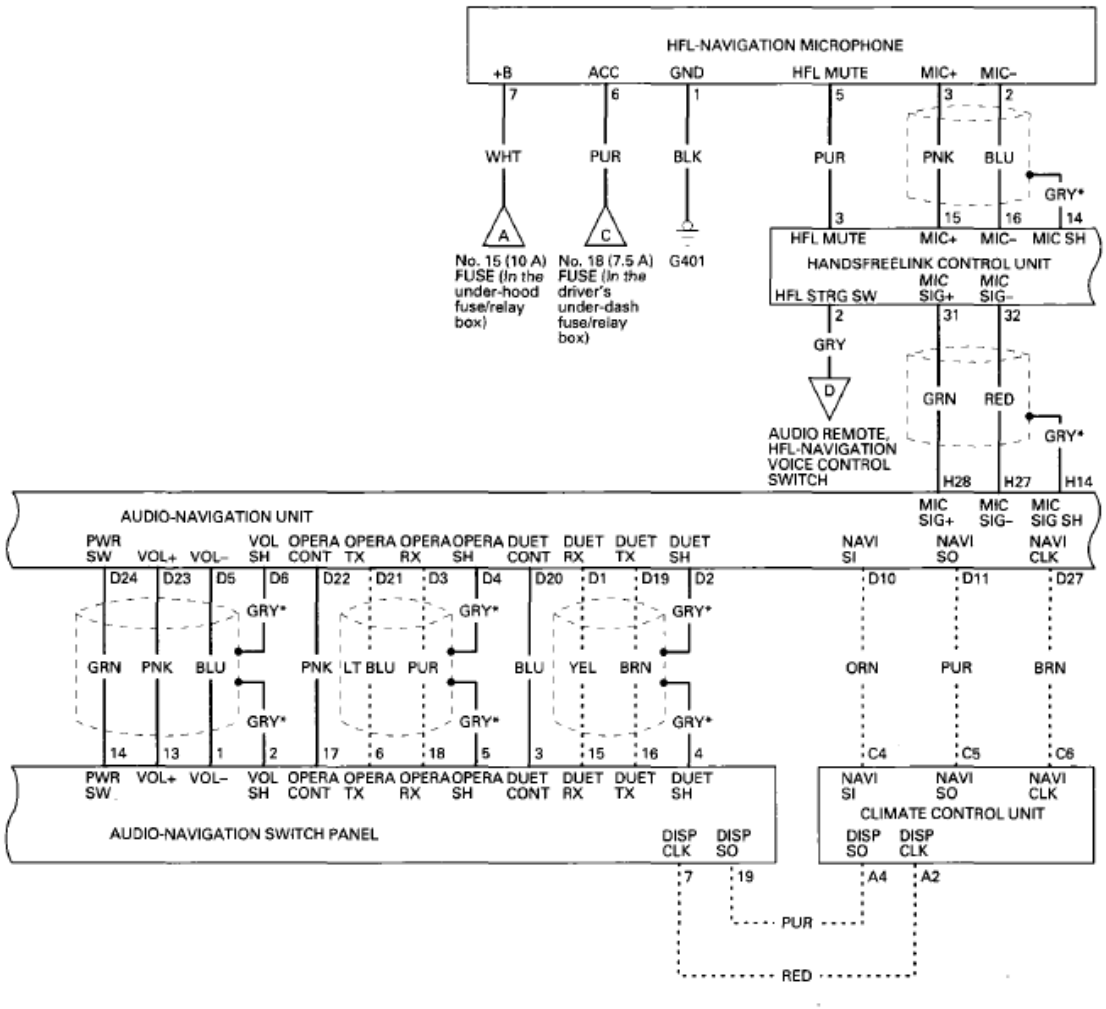


Fig. 46: Navigation System - Circuit Diagram (3 Of 6)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

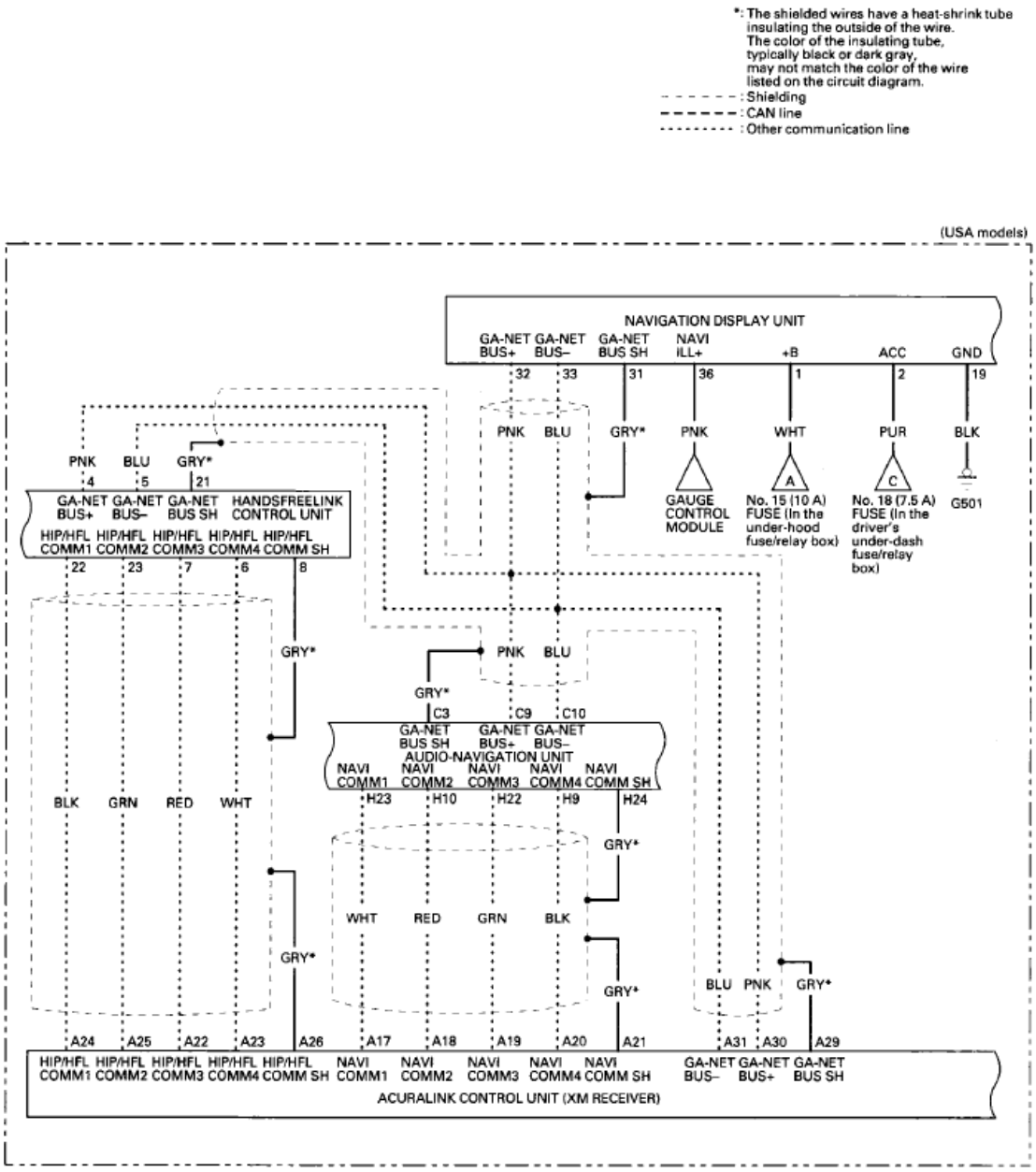


Fig. 47: Navigation System - Circuit Diagram (4 Of 6)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

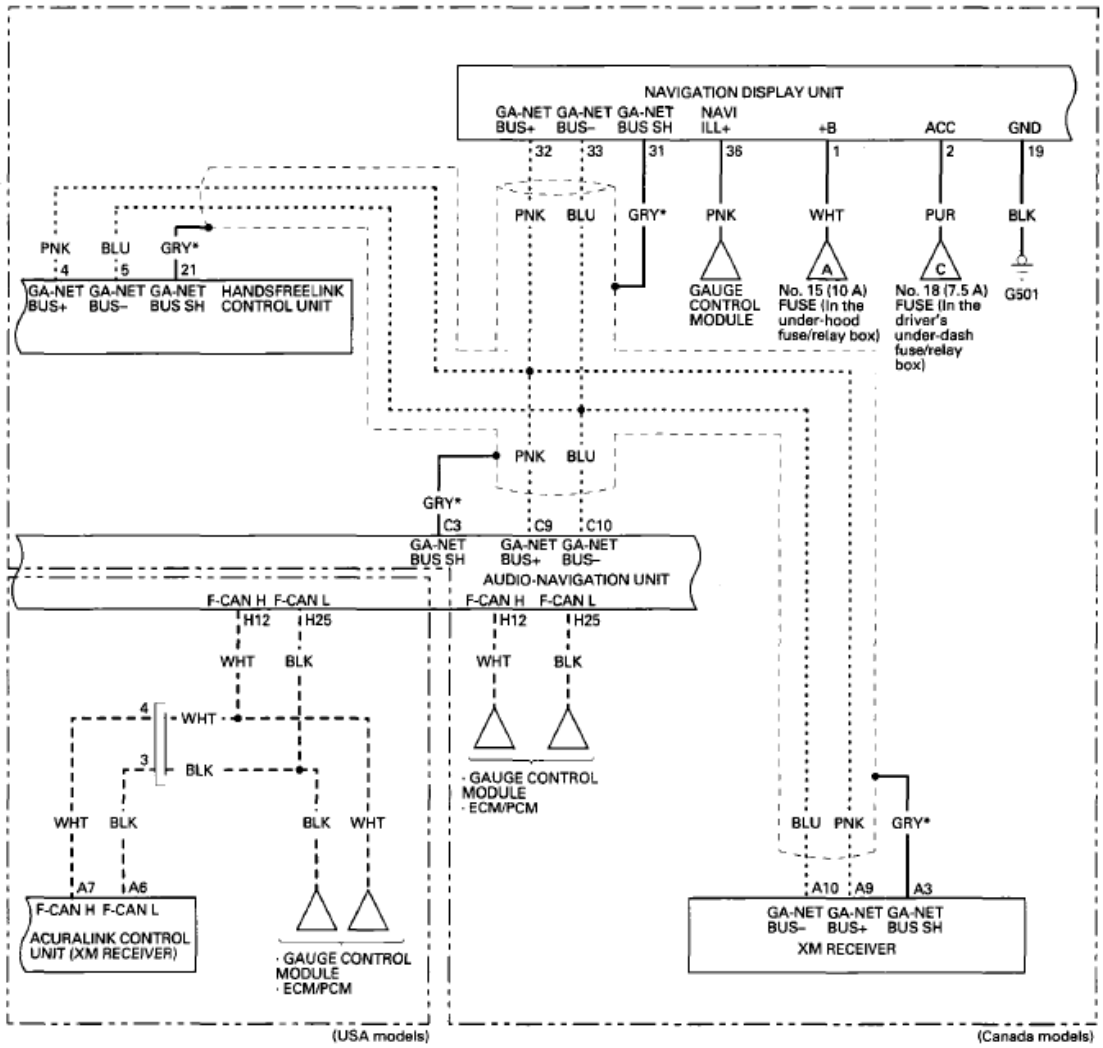


Fig. 48: Navigation System - Circuit Diagram (5 Of 6)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

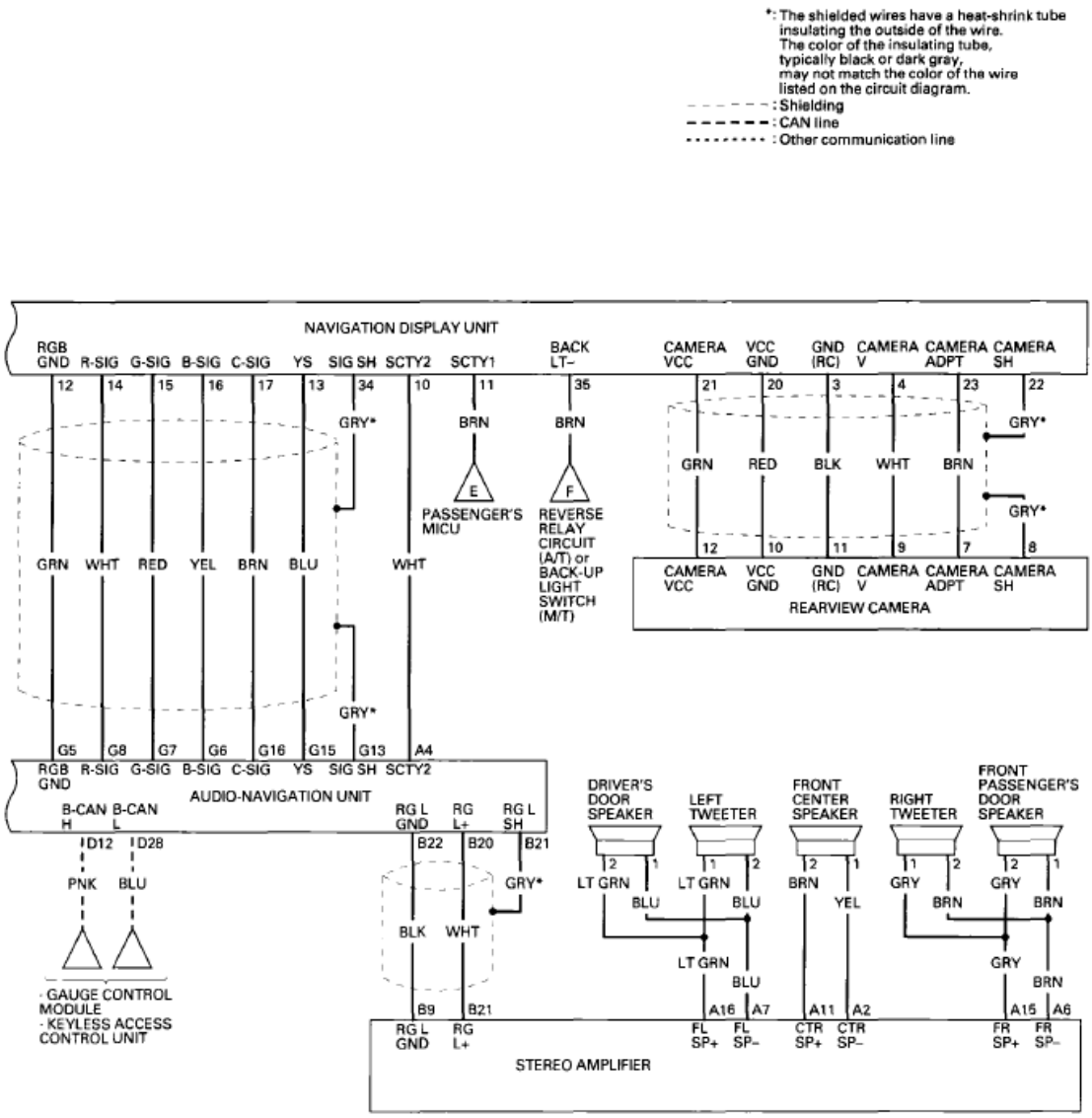


Fig. 49: Navigation System - Circuit Diagram (6 Of 6)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

SYSTEM DIAGNOSTIC MODE

START-UP PROCEDURE AND DIAGNOSTIC MENU

There are two ways to enter the diagnostic mode:

Mode 1:

Start the vehicle, and at the disclaimer screen use the navigation display hard buttons:

Press and hold the DEST/ROUTE, the MAP/GUIDE, and the CANCEL buttons for about 3 seconds. The display screen goes directly to the Select Diagnosis Items menu shown.

- Self-Diagnosis Mode (runs the automatic diagnosis of the navigation system)
- Detail Information&Setting (Can help you to manually diagnose the navigation system)

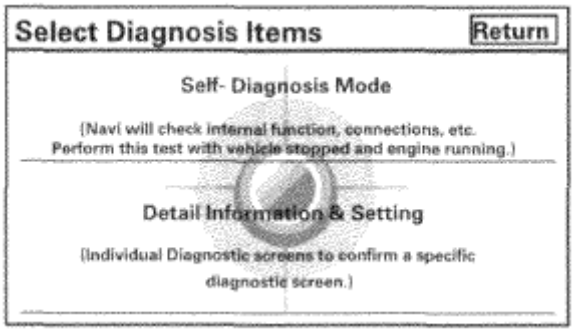


Fig. 50: Display - Detail Information And Setting Screen
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Mode 2:

Start the vehicle. When the globe screen appears, connect the **SCS service connector** to the navigation service check connector located by passenger's Under-dash fuse/relay box. The screen changes to the System Link screen, and automatically begins running the self diagnosis. See the System Link information for more details.

NOTE: When finished troubleshooting, make sure to remove the SCS service connector.

USA models

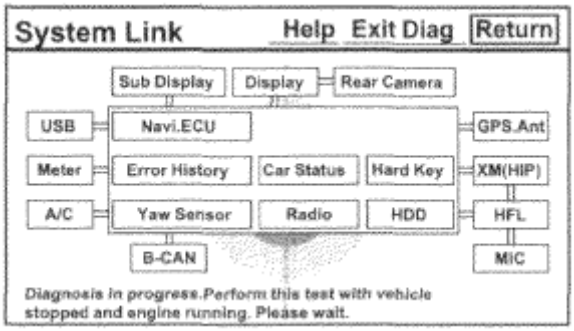


Fig. 51: Display - System Link Screen (USA Models)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Canada models

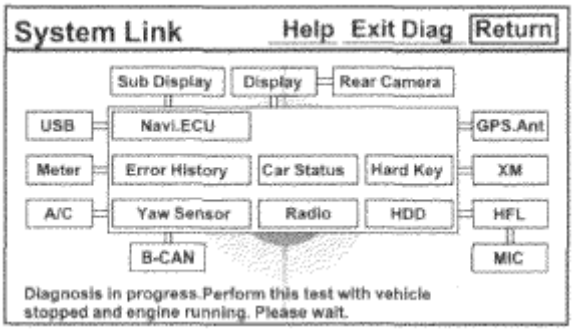


Fig. 52: Display - System Link Screen (Canada Models)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

SYSTEM LINK

1. Enter this screen by connecting the SCS service connector or by selecting Self-Diagnosis Mode from the navigation screen main menu. The message at the bottom of the screen flashes indicating the diagnostic is running.

NOTE:

- **The system cannot complete a full diagnosis unless the engine is running.**
- **DTC 1801 can be stored when the ignition switch is in ACCESSORY (I), or press the engine start/stop button to select the ACC mode. With the ignition switch is in ACCESSORY (I), or press the engine start/stop button to select the ACC mode, the AcuraLink is turned off and the audio-navigation unit loses communication and stores DTCs. Therefore, there is a possibility that the system is normal even though DTC 1801 is stored. Check System Link with the engine running, and if it appears normal, the system is OK at this time.**

USA models

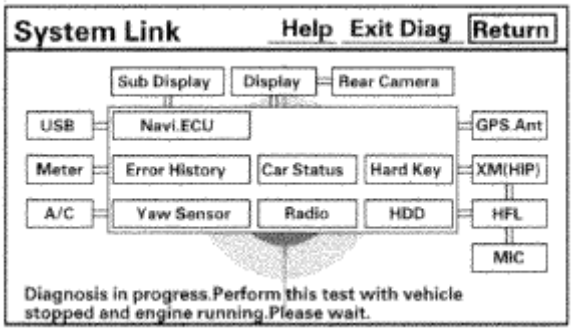


Fig. 53: Display - System Link Screen (USA Models)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Canada models

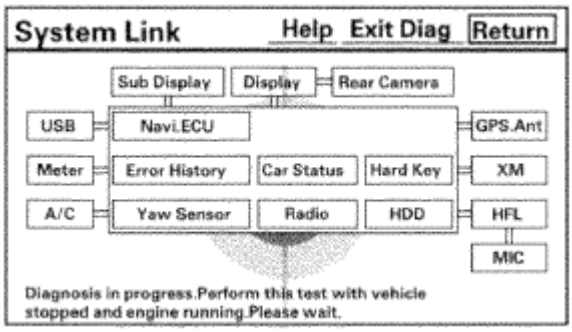


Fig. 54: Display - System Link Screen (Canada Models)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Rotate the interface dial to select the icon you want to diagnose. Push in the selector to see the details of that diagnostic function.

The System Link function runs automatically and displays a flashing message at the bottom of the screen reminding you to have the engine running for the test. The diagnostic tests the following:

- Most of the wires connecting the navigation components are shown in the block diagram.
- The results from the various components shown in the block diagram.
- The audio-navigation unit tests the microphone by listening to the bong sound produced by the audio-navigation unit from the speakers when the diagnosis is started. This requires that the audio system be operating normally.

When the diagnosis finishes, the icons turn different colors based on their test status. The color definitions are shown below and can also be seen by selecting Help on the System Link screen.

The indication on the screen may not change until you exit and reenter the Self-Diagnosis mode. In some cases, you may have to restart the engine for the indication to change. After you repair the affected component or harness, repeat this diagnosis.

Each icon color is explained in the table.

Icon Colors	Description
Green	The system ran a diagnosis and the results are OK.
Red	Errors that require replacement of hardware or harness. Examples are connection error or memory diagnosis errors. Troubleshoot for navigation DTCs.
Yellow	Errors that do not require hardware replacement, such as leaving the vehicle in ACCESSORY (1) or ACC mode, or because of a missing accessory.
White	The diagnosis is running. The screen functions are locked out while the diagnosis runs.
Gray	The system cannot automatically check this function. You have to select the diagnosis item and manually do additional testing, like checking the navigation buttons in the Hard Key test. When you complete the Hard Key test and return to the System Link menu, the gray icon turns green.

NOTE: By selecting the HELP icon, you can see a description for each color.

ICON COLOR INFORMATION

Icon	Icon Color				
	GREEN	RED	YELLOW	WHITE	GRAY
Display	Result of "Connection" under the Display diagnosis menu is OK.	Result of "Connection" under the Display diagnosis menu is NG.	- -	Executing (Not completed)	- -
Radio	Result of "Connection" under the Radio diagnosis menu is OK.	Result of "Connection" under the Radio diagnosis menu is NG.	- -	Executing (Not completed)	- -
XM (HIP)(1)	Result of AcuraLink control unit and Audio-navigation unit connection is OK.	Result of AcuraLink control unit and Audio-navigation unit connection is NG.	- -	Executing (Not completed)	- -
XM	Result of "Connection" under the XM diagnosis menu is OK.	Result of "Connection" under the XM diagnosis menu is NG.	- -	Executing (Not completed)	- -
GPS Ant.	All result of "Antenna" and "Receiver in NAVI ECU" is OK.	Any result of "Antenna" and "Receiver in NAVI ECU" is NG.	- -	Executing (Not completed)	- -
Rear-Camera	Result of "Connection" under the Rear-Camera diagnosis menu is OK.	Result of "Connection" under the Rear-Camera diagnosis menu is NG.	- -	Executing (Not completed)	- -
A/C	Result of "Connection" under the Aircon diagnosis menu is OK while "Ignition" is ON.	Result of "Connection" under the Aircon diagnosis menu is NG while "Ignition" is ON.	While "Ignition" is OFF.	Executing (Not completed)	- -
Meter	All result of F-CAN related units are OK.	Any result of F-CAN related units are NG.	- -	Executing (Not completed)	- -
HFL	All result of "GA-NET", "DESIP", and "HFL" under the HFT diagnosis menu is OK, and all "HFL Parts Number", "HFL S/W Version" are available.	Any result of "GA-NET", "DESIP", and "HFL" under the HFT diagnosis menu is NG, and any of "HFL Parts Number", "HFL S/W Version" are unavailable.	- -	Executing (Not completed)	- -
Mic	The microphone detects the sound "Pi-Pi-Pon" at the System Link menu.	The microphone could not detect the sound "Pi-Pi-Pon" at the System Link menu.	- -	Executing (Not completed)	- -
	Both V-RAM and D-RAM are OK, and all	Either the V-RAM or D-RAM is NG, or any of		Executing	

NAVI ECU	"Program Flash", "Serial No.", "Model" are available, and the DVD lid is closed.	the "Program Flash", "Serial No.", "Model" is unavailable.	- -	(Not completed)	- -
Hard Key	All buttons are pressed and are detected under Hard key menu.	All buttons are not pressed or pressed but not detected under Hard key menu, or exit from Hard key menu without the button not detected.	- -	- -	Until changing to "Hard key" menu.
Error History	- -	- -	"Hard Error" or "Soft Error" is detected under Error History menu.	Executing (Not completed)	"Hard Error" or "Soft Error" is not detected under "Error History" menu.
HDD	Result of the HDD diagnosis menu is OK.	Result of the HDD diagnosis menu is NG.	- -	Executing (Not completed)	- -
Yaw Sensor	Result of the Yaw Sensor diagnosis menu is OK.	Result of the Yaw Sensor diagnosis menu is NG.	Result of the "Zero Point Output" under the Yaw Sensor diagnosis menu is NO CHECK.	Executing (Not completed)	- -
Car Status	- -	- -	- -	- -	Check these systems manually.
Sub Display	Result of Connection under the Sub Display diagnosis menu is OK.	Result of Connection under the Sub Display diagnosis menu is NG.	- -	Executing (Not completed)	- -
USB	Audio-navigation unit connector F (7P) is connected.	Audio-navigation unit connector F (7P) is disconnected.	- -	Executing (Not completed)	- -
B-CAN	All result of B-CAN related units are OK.	All result of B-CAN related units are NG.	- -	Executing (Not completed)	- -
(1) USA models					

FACTORY DIAGNOSTIC SCREEN IN LINE DIAG

NOTE: If the vehicle left the factory in the factory diagnostic mode, or if the audio-navigation unit is replaced, you will see this screen every time you turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.

When the audio-navigation unit is powered up for the first time at the factory or sometimes a remanufactured audio-navigation unit is installed, the factory diagnosis screen (In Line Diag) appears. Normally the factory does the steps necessary to verify proper operation and terminate the factory diagnostic. until the proper confirmation sequence is done, the screen appears every time the vehicle is started.

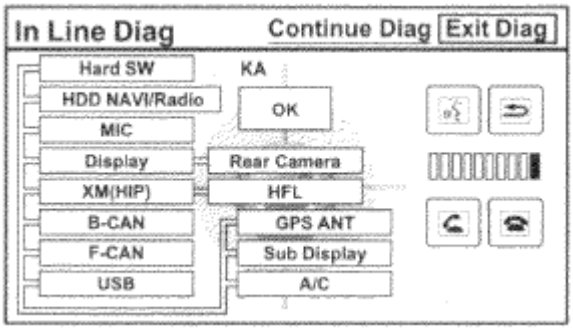


Fig. 55: Display - In Line Diag Screen
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Follow the steps to prevent the screen from showing up in the future:

- Press and hold the DEST/ROUTE, the MAP/GUIDE, and the CANCEL buttons at the same time until the Select diagnosis menu screen comes up. Then release the buttons.
- Press and hold the MAP/GUIDE button until the In line Diag CSF Setting screen appears.
- Set the In Diag Setting to Complete, and make sure the CSF setting is ON, then select Return twice to exit the diagnostic mode.

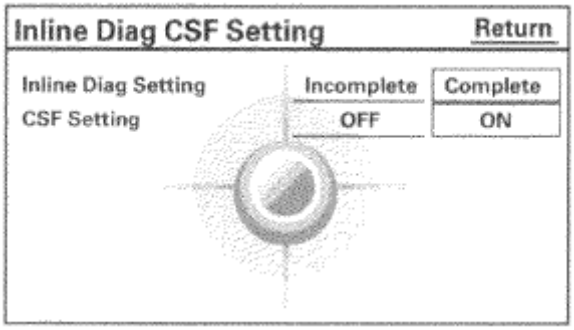


Fig. 56: Display - In Line Diag CSF Setting Screen
Courtesy of AMERICAN HONDA MOTOR CO., INC.

DETAILED INFORMATION & SETTING

These sections allow you to run a specific diagnosis and allows additional setting choices for some screens that are not shown when selecting an icon from the System Link screen.

When you select the Detail Information&Setting menu, the main diagnosis menu is displayed.

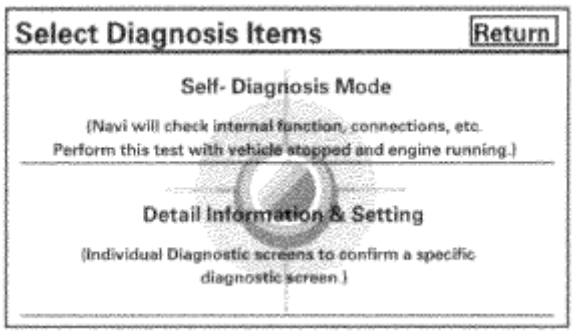


Fig. 57: Display - Select Diagnosis Items Screen
Courtesy of AMERICAN HONDA MOTOR CO., INC.

After the display changes to the Diagnostic Menu, select the item you want to check, and the test begins. To return to the previous screen, select Return.

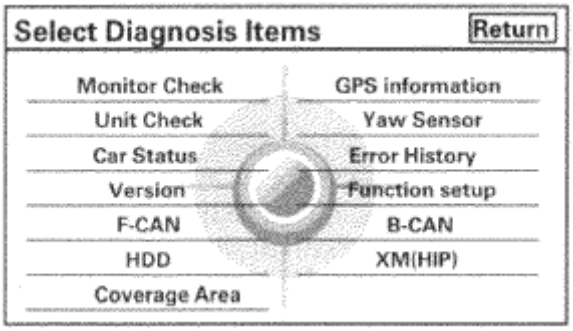


Fig. 58: Display - Diagnostic Menu Screen
Courtesy of AMERICAN HONDA MOTOR CO., INC.

MONITOR CHECK

Overview of navigation display unit

- The navigation display unit communicates with the audio-navigation unit over its own GA-Net bus. Information sent by the audio-navigation unit to the navigation display unit includes commands to control the LCD back light.
- The security system protects the navigation display unit by daisy-chaining the security signal through the components.

These screens allow you to troubleshoot the navigation display unit. Select the item you want to troubleshoot, and follow the diagnostic instructions.

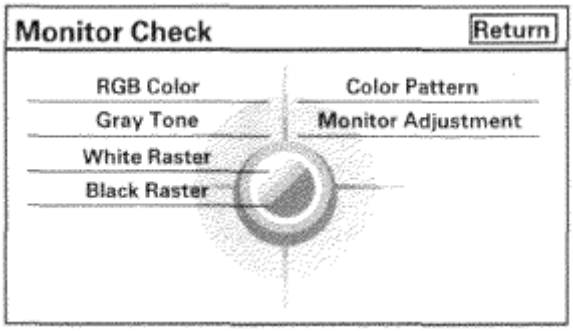


Fig. 59: Display - Monitor Check Screen
Courtesy of AMERICAN HONDA MOTOR CO., INC.

RGB

This screen verifies that the display unit is receiving the video (R, G, B and Composite sync) signals properly. The three primary colors should all appear without distortion. The combination of all three should produce a central white section. If any of the **colors are missing, troubleshoot for the color signal**. If the picture has lines in it or scrolls horizontally, or vertically, troubleshoot for a **Composite sync problem**.

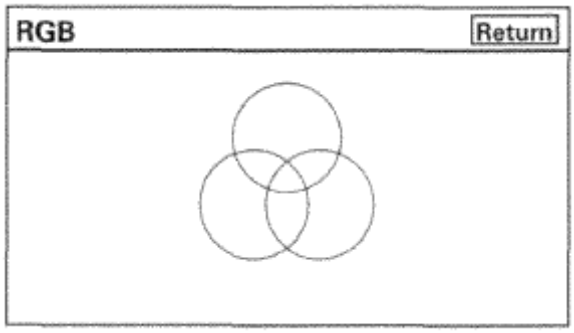


Fig. 60: Display - RGB Screen
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Gray Tone

This screen checks problems with contrast. You should be able to see the changes from bar to bar across the scale. It is normal for the two bars on either side to appear the same. If you can't see changes from bar to bar, replace the **navigation display** unit.

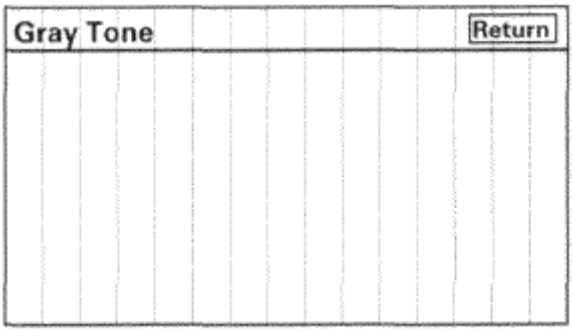


Fig. 61: Display - Gray Tone Screen
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Black Raster

This screen checks for pixels that may be stuck on. The entire display must be black. If pixels are stuck on, replace the **navigation display unit**.



Fig. 62: Display - Black Raster Screen
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Color Pattern

The screen shows the colors being used for the map and menu screens. This is for factory use only. To check the color signal, use the RGB Color diagnosis.

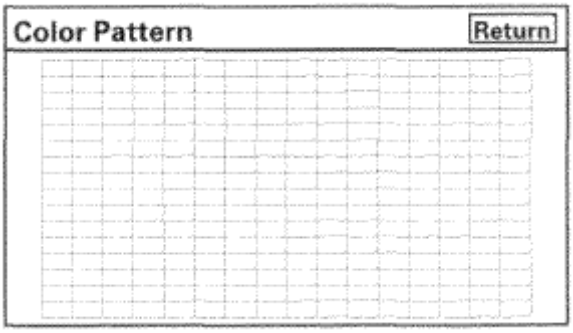


Fig. 63: Display - Color Pattern Screen

Courtesy of AMERICAN HONDA MOTOR CO., INC.

White Raster

This screen checks for pixels that may be dead (off). The entire display must be white. If there are dead pixels, replace the **navigation display unit**.

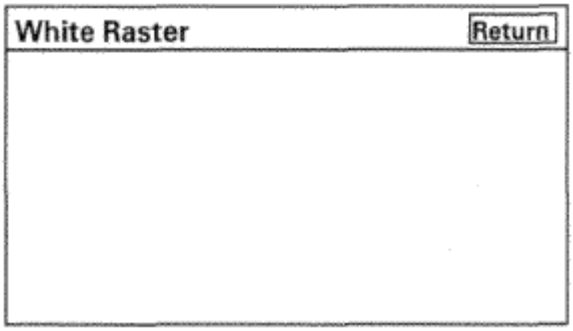


Fig. 64: Display - White Raster Screen
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Monitor Adjustment

This screen allows you to adjust the navigation display or the rear view camera guide line. Select the item you want to adjust.

- Navi: This allows you to center the navigation display.
- Rear Camera: This allows you to adjust the rearview camera guide lines.

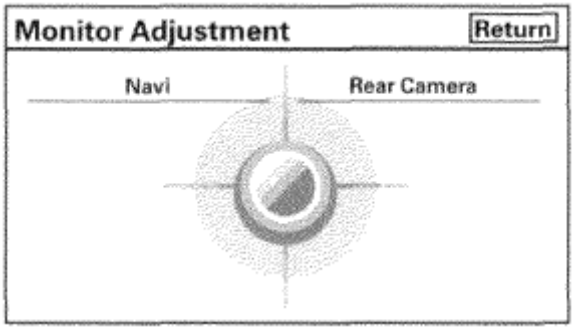


Fig. 65: Display - Monitor Adjustment Screen
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Navi

If you selected the Navi, use the interface dial to move the picture up/down or left/right. Do not adjust the monitor position unless directed by a service bulletin. The Default button resets the display position to factory specifications.

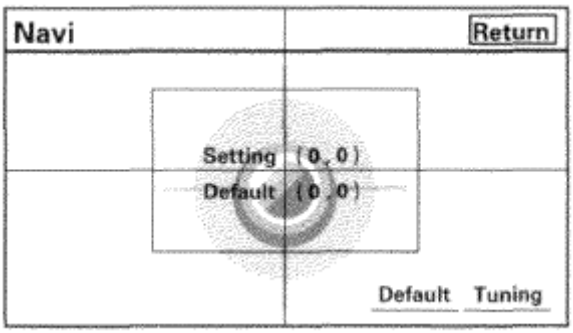


Fig. 66: Display - Navi Screen
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Rear Camera

If you selected the rear camera, the rearview camera image appears. If you need to adjust the guide line, select Turning and adjust the guide line with the interface dial. The Default button resets the guide line position to factory specifications.

If the client starts the vehicle, and immediately shifts into R position, the camera Image appears within 1 second, but the guidelines may take up to 7 seconds to appear. This is normal.

The rearview camera is connected to the audio-navigation unit via the navigation display unit. The audio-navigation unit must boot up (7 seconds) before it can display the guidelines.

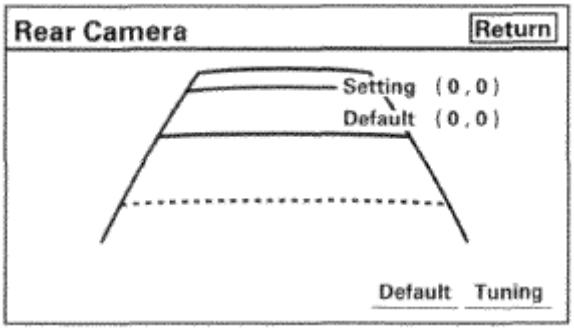


Fig. 67: Display - Rearview Camera Image
Courtesy of AMERICAN HONDA MOTOR CO., INC.

UNIT CHECK (QUICK CHECK)

Some of the tests and screens that are displayed under the Unit Check are different from the more detailed checks listed in other areas.

To start the test, select the item you want to check.

- Display
- Hard Key

- Sub Display
- Smart Card
- Air-con
- Rear Camera
- USB Memory Info
- Navi ECU
- HFT (HFL)
- GPS Antenna
- Radio
- XM

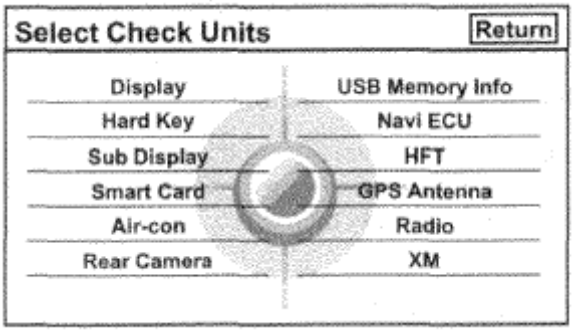


Fig. 68: Display - Unit Check Screen
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Display

This diagnosis does additional checks on the GA-Net bus between the audio-navigation unit and the navigation display unit. This test also checks the internal electronic functions.

- When Connection is NG, first check for loose terminals at the audio-navigation unit and the navigation display unit connections. Next check for an open or short in the communication line between the audio-navigation unit and the navigation display unit If the line has an open or short, replace the affected shielded harness.
- If ROM or RAM is NG, replace the navigation display unit.
- The version represents the software version in the display.

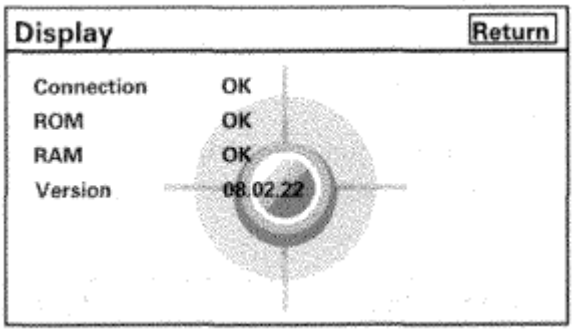


Fig. 69: Display - Display Screen
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Hard Key

This diagnosis tests the interface dial, the navigation buttons that surround it, and the audio remote switch. For this model, the interface dial and buttons use the serial bus for communications.

To complete the test, touch each button on the vehicle's control panel, and move the interface dial to each indicated position. As each function is tested, the corresponding button on the display should highlight.

To exit, push in and hold the ENTER.

NOTE: You cannot use the onscreen return button to exit this function

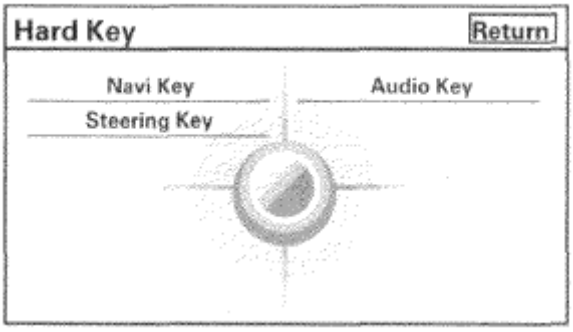


Fig. 70: Display - Hard Key Screen
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Select Navi Key

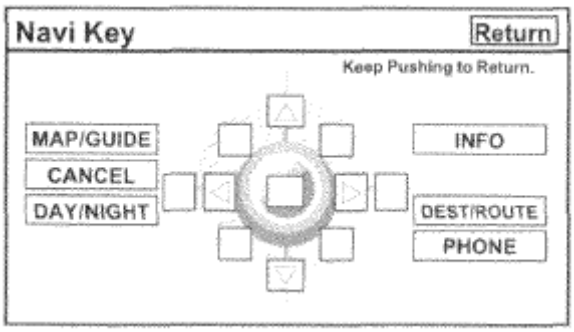


Fig. 71: Display - Navi Key Screen
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Select AUDIO Key

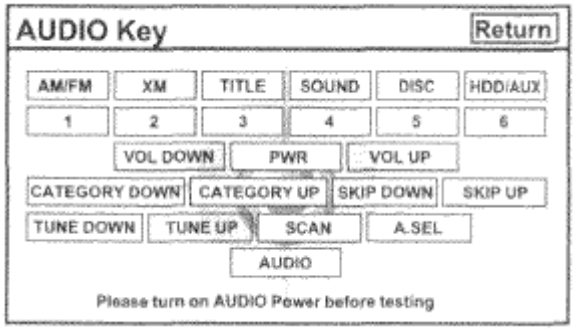


Fig. 72: Display - Audio Key Screen
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Select Steering Key

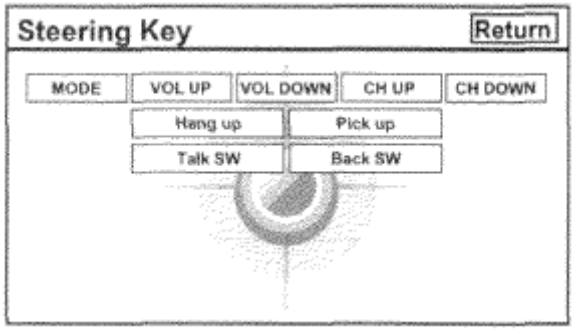


Fig. 73: Display - Steering Key Screen
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Sub Display

This diagnosis tests the internal connection between the audio-navigation switch panel and the audio-HVAC subdisplay. If Connection is NG, check the serial bus line between the audio-navigation switch panel and the

audio-navigation unit.

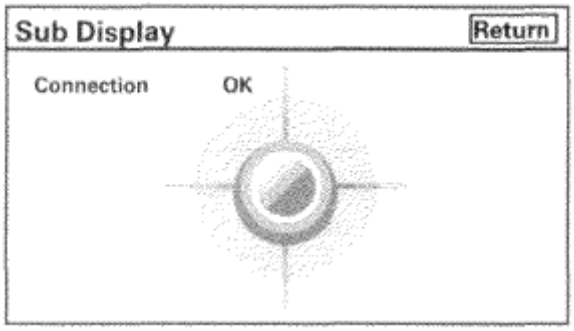


Fig. 74: Display - Sub Display Screen
Courtesy of AMERICAN HONDA MOTOR CO., INC.

XM

- This diagnosis tests the GA-Net Bus line to the XM receiver.
- When Connection is NG, check the connection between the XM receiver and the audio-navigation unit.

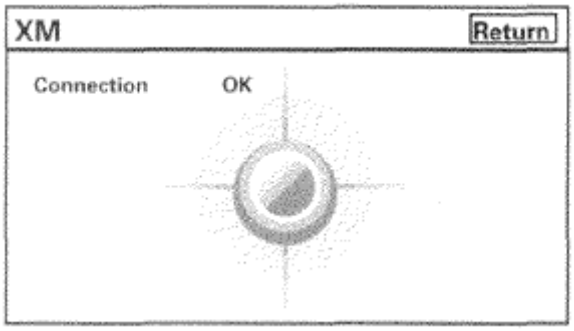


Fig. 75: Display - XM Screen
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Aircon

This diagnosis tests the climate bus connection (AC-SI and AC-SO) between the audio-navigation unit and climate control unit. This test does not check the system components, only the connections. Make sure the engine is running for this test.

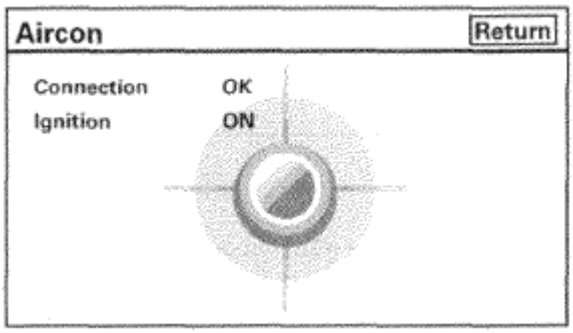


Fig. 76: Display - Aircon Screen
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Rear Camera

- This diagnosis tests whether the rearview camera is connected to the navigation display unit.
- When Connection is NG, check the rearview camera signal line.

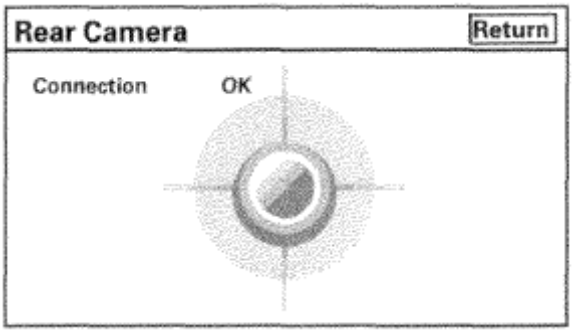


Fig. 77: Display - Rear Camera Screen
Courtesy of AMERICAN HONDA MOTOR CO., INC.

USB Memory Information

If the USB memory is connected to the USB port, the screen displays the USB memory size, the Product ID, Vender ID, and connection status.

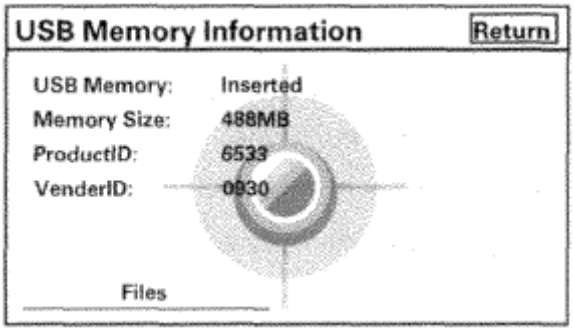


Fig. 78: Display - USB Memory Size

Courtesy of AMERICAN HONDA MOTOR CO., INC.

When you select files, the USB memory file information is displayed.

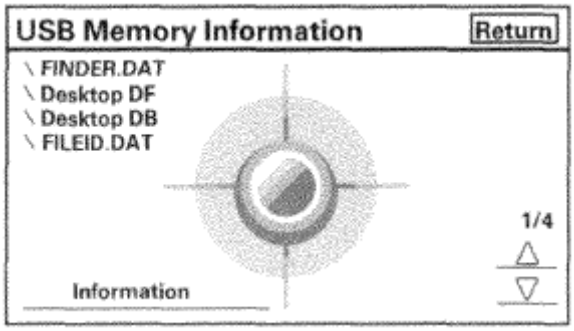


Fig. 79: Display - USB Memory Information Screen
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Navi ECU

This screen looks for problems in the audio-navigation unit. When you initiate this diagnosis, the audio-navigation unit may delay up to a minute while the diagnosis runs.

- If D-RAM is NG, replace the audio-navigation unit.
- Program Version: if displayed, this value represents the version of the navigation software on the audio-navigation unit HDD.
- Serial No, should be the same as the serial number found on the underside of the audio-navigation unit. You need this number to obtain the security code from the iN system.
- If Flash is NG, replace the audio-navigation unit.

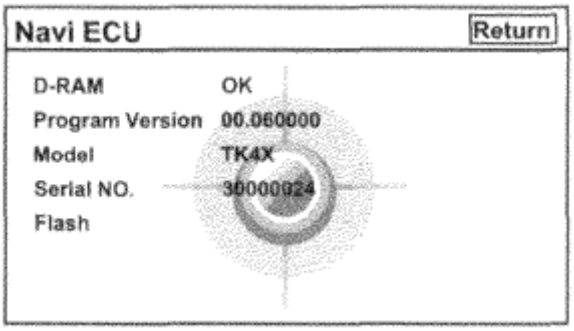


Fig. 80: Display - Navi ECU Screen
Courtesy of AMERICAN HONDA MOTOR CO., INC.

HFT (HFL)

This diagnosis tests first whether the HandsFreeLink control unit is connecting to the audio-navigation unit.

- If GA-NET is NG, go to HandsFreeLink control unit Input Test (see **CONTROL UNIT INPUT TEST**).

- If HFL Part Number and HFL S/W Version are not shown, go to HandsFreeLink control unit Input Test (see **CONTROL UNIT INPUT TEST**).
- If DESIP (USA models) is NG, go to navigation **DTC 2705 (HFL Diag)** troubleshooting.

Then check the HandsFreeLink control unit status. If the HFL shows any DTC(s), go to the indicated HFL DTC troubleshooting.

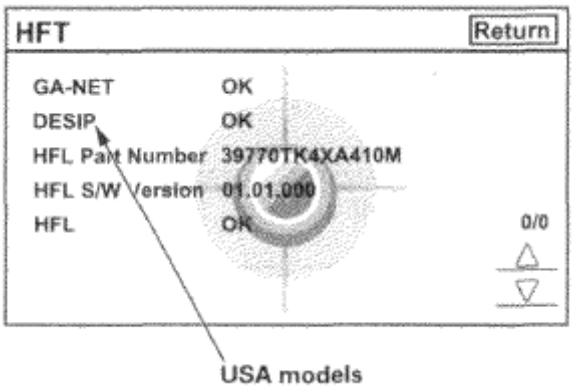


Fig. 81: Display - HFT Screen
Courtesy of AMERICAN HONDA MOTOR CO., INC.

GPS

This diagnosis tests the GPS antenna connection and the GPS receiver condition.

- If Antenna is NG, then check the entire GPS antenna wire from the audio-navigation unit to the antenna, If the wire is crushed or damaged, try a known-good antenna. If this diagnostic reads OK, then order a new GPS antenna. If the diagnostic still reads NG (Antenna), then replace the audio-navigation unit.
- Select information to see the GPS satellite details.

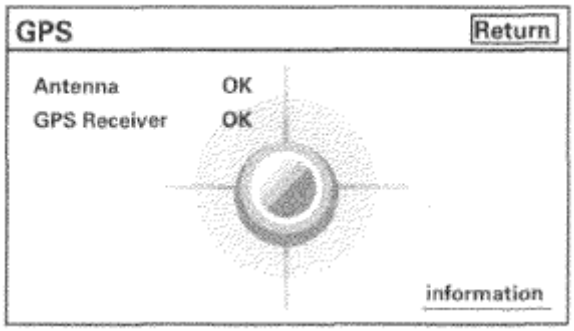


Fig. 82: Display - GPS Screen
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Radio

This diagnosis tests the audio-navigation unit internal radio tuner and CD/DVD player. If Connection is NG,

replace the audio-navigation unit.

NOTE: If the XM link appears red, but the radio link appears green in the navigation system link, refer to audio system symptom troubleshooting.

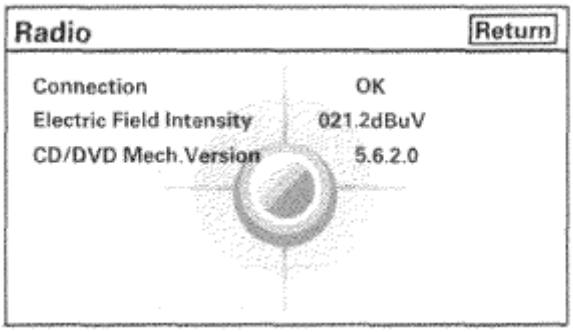


Fig. 83: Display - Radio Screen
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Smart Card

If the remotes are linked to the vehicle, you can check the remote condition on this screen.

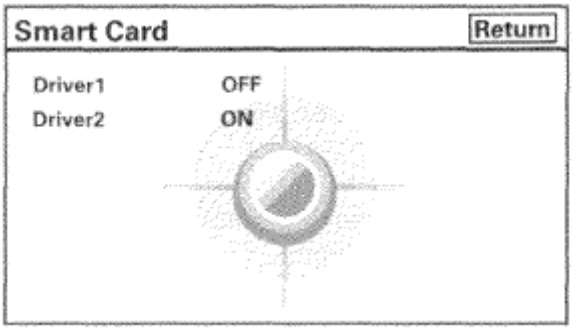


Fig. 84: Display - Smart Card Screen
Courtesy of AMERICAN HONDA MOTOR CO., INC.

CAR STATUS

Use this screen to confirm that the audio-navigation unit is properly receiving input signals. Signals equal to (0) are OFF, and signals equal to (1) are ON. If the value on the display does not match the actual vehicle status, check the wire carrying the signal.

- VSP-Vehicle Speed Pulse from ECM/PCM (Audio-navigation unit connector A (24P) terminal No. 15)
  a. OFF (0) when the vehicle is not moving
  b. ON (1) when the vehicle is moving

The VSP comes from the ECM/PCM as a dedicated signal. Internally, the audio-navigation unit compares the

actual VP on the map against street data to adjust the pulse to speed scaling factor. As this scaling factor becomes more accurate, the Level gradually increases from 0 to 10.

- BACK-Reverse indication front reverse relay circuit or back-up light switch (Audio-navigation unit connector G (16P) terminal No. 10)
  a. OFF (0) when the shift lever is in any position other than reverse
  b. ON (1) when the shift lever is in reverse

The Back signal is used by the audio-navigation unit to allow the map screen to show the VP moving backwards when in reverse. This signal is needed because the Speed Pulse has no direction indication.

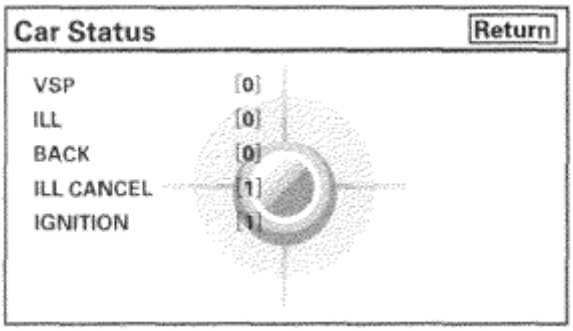


Fig. 85: Display - Car Status Screen
Courtesy of AMERICAN HONDA MOTOR CO., INC.

- IGNITION-Ignition switch position indication (Audio-navigation unit connector H (28P) terminals No. 12 and No. 15)

  Detects if the engine is running is running using information provided over the F-CAN bus.

  a. OFF (0) when the ignition switch is in ACCESSORY (I), or press the engine start/stop button to select the ACC mode.
  b. ON (1) when the ignition switch is in ON (II), or press the engine start/stop button to select the ON mode.

- ILL-Illumination Indication (Audio-navigation unit connector A (24P) terminal No. 13)
  a. OFF (0) when parking lights, or headlights are off
  b. ON (1) when parking lights, or headlights are on

The navigation uses the signal to determine whether to put the navigation screen into the Day or Night brightness mode. (Setup screen 1)

ILL CANCEL

This item detects whether the illumination cancel function is in use.

a. OFF (0) if illumination cancel is not selected

b. ON (1) if Illumination cancel is activated

The illumination cancel function is activated by increasing the dash brightness to MAX, This 'information is passed from the gauge control module to the audio-navigation unit.

NOTE: This setting is unaffected by the display mode button (see ERROR CODE: XM NO SIGNAL OR XM LOADING IS DISPLAYED (WITHOUT NAVIGATION)).

VERSION

This screen displays the current version information for the navigation system software. In addition, this screen allows the loading of updated software if directed by the factory, or instructed by a Service Bulletin, Software may be loaded from a DVD.

- System Version: Displays the version of the audio/navigation software.
- Model: For this model, the field should begin with TK4.
- Host uCom, Slave uCom, and Duet uCom are ail for factory use.
- Download: Do not touch unless instructed by the factory or any other official Honda service information (like a service bulletin).

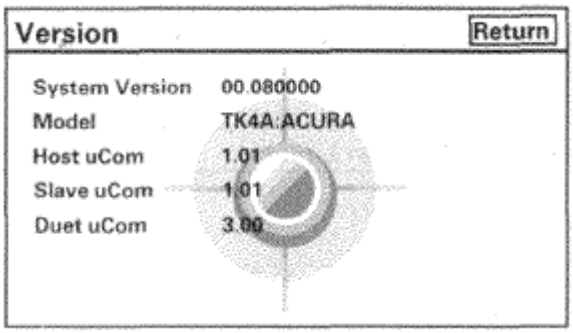


Fig. 86: Display - Version Screen
Courtesy of AMERICAN HONDA MOTOR CO., INC.

F-CAN SYSTEM LINK

F-CAN (Fast Controller Area Network) passes information between processors on the network, for example, the F-CAN network passes trip computer information between the gauge and the audio-navigation unit for the trip computer function. The F-CAN network uses a communication protocol that transmits data at 500 Kbps.

- This diagnosis must have the engine running.
- if the F-CAN shows "ERROR ACTIVE", an error is not detected between F-CAN bus and the navigation unit If any error is detected, check for diagnostic trouble codes (DTCs) for the F-CAN with the HDS (Honda Diagnostic System), The data displayed in the ID boxes is for factory use only.
- For more details on troubleshooting the F-CAN, refer to the multiplex integrated control system and the PGM-FI system.

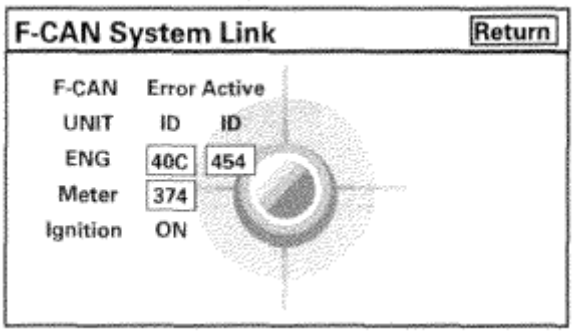


Fig. 87: Display - F-CAN System Link Screen
Courtesy of AMERICAN HONDA MOTOR CO., INC.

HDD

This diagnosis tests for problems with the navigation HDD.

- If Error Detail is reading Low Temp, check the temperature around the audio-navigation unit.
- If Error Detail is reading Write Error, replace the HDD, If the symptom does not go away, replace the audio-navigation unit.

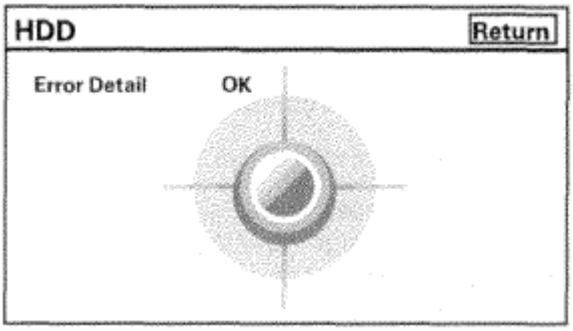


Fig. 88: Display - HDD Screen
Courtesy of AMERICAN HONDA MOTOR CO., INC.

COVERAGE AREA

This screen allows the dealer to select the area that applies to the location of the vehicle. The choices are US (continental) or Hawaii/Puerto Rico/AK. The default is US. Select the choice (the system may reboot), exit the diagnostic mode, turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode, and restart the vehicle.

NOTE: This function is designed to operate only when the vehicle is physically located in the coverage area you select.

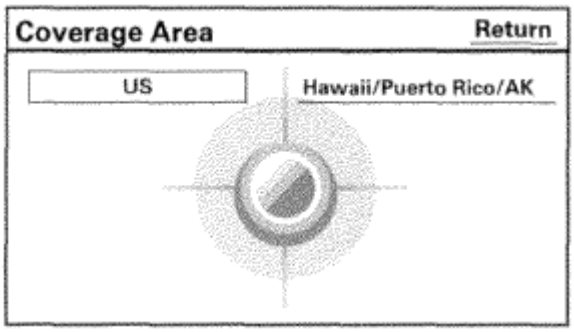


Fig. 89: Display - Coverage Area Screen
Courtesy of AMERICAN HONDA MOTOR CO., INC.

GPS INFORMATION

This screen shows the current status of GPS reception. The circular diagram shows the current location of the GPS satellites (yellow numbers) as they would appear In the sky. The outer circle represents the horizon (0 degrees elevation). The middle and inner circles represents 30 and 60 degrees respectively. The very center of the diagram (90 degrees elevation) is directly overhead. Nearby obstructions, like tail buildings will block satellites in that direction. That is why it is necessary to be in an open area to effectively troubleshoot GPS reception issues. The satellite numbers shown on the diagram correspond to the PRN number in the GPS Details screen. There are always at least 24 active GPS satellites in orbit. Because satellites fail, and have to be removed from service, spares are always parked in orbit, ready to be activated. This is why the PRN (satellite ID number) can be greater than 24.

NOTE: When you use this screen for troubleshooting, park the vehicle outside, away from buildings, tail trees, and high-tension wires for at least 10 minutes with the engine running.

- The Number of Satellites box shows the number of acquired satellites (maximum of 12). It should contain three or more icons. If not, go to **GPS icon is white or not shown troubleshooting**.
- The Current Position shows latitude, longitude, and elevation (in feet). If there are less than four satellites, the elevation can be grossly inaccurate.
- The Date/Time field shows the current date, and also a time that includes daylight savings and other offsets entered by the client in Setup screen 2 Adjust Time Zone/Clock.

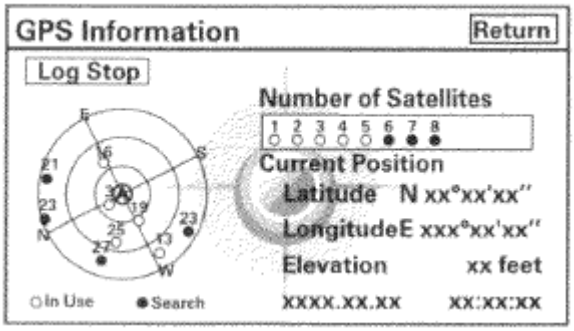


Fig. 90: Display - GPS Information Screen
Courtesy of AMERICAN HONDA MOTOR CO., INC.

NOTE: Pressing the MAP/GUIDE button displays the satellite number on each circle.

GPS DETAIL

By pressing and holding the DEST/ROUTE button for 2 seconds, a GPS Detail screen appears. This screen displays real time incoming satellite positional data when the vehicle is outside in the open. The information shown on this screen is for factory use.

NOTE: The data shown is an example only.

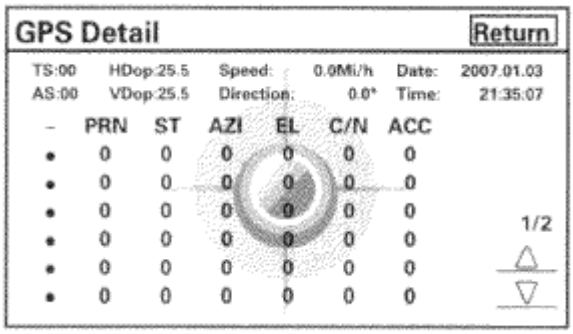


Fig. 91: Display - GPS Detail Screen
Courtesy of AMERICAN HONDA MOTOR CO., INC.

- The box TS/AS and H Dop (horizontal dilution of precision)/V Dop (vertical dilution of precision) is for factory use.
- The Speed and Direction information is updated in real time when driving.
- The Pate/Time Information is the same as in Setup screen 2 Adjust Time Zone/Clock.
- If the 3D icon is shown above the yellow dots, this implies that at least four satellites are available for map positioning, and the GPS Indicator on the map screen will be green. Seethe Global Positioning System detailed explanation in the System Description.
- If the row of data in the table below begins with a yellow clot, the AZI and EL fields can be used to locate each satellite on the circular GPS diagram (see prior screen).

The table of values shown define the terms at the top of the columns in the GPS Detail screen.

Column	Description	Problem Indication
3D	Active satellites (Yellow Dot)	If 3D or 2D is missing when the vehicle is parked outside, go to **GPS icon is white or not shown** troubleshooting.
PRN	The satellite ID number	
	The status: 0 = Cannot view or searching 2 = Tracking	

ST	4 = Acquiring (It is not being used for positioning) 8 = Acquiring (It is being used for positioning)	If all 0, go to **GPS icon is white or not shown** troubleshooting.
AZI	Azimuth, the angle (0 - 360) clockwise from north	
EL	Elevation from the horizon (90 deg is overhead)	
C/N	Receiver sensitivity	Normal signal: 49-52 No signal: 27-33
ACC	Satellite accuracy	
^ 1/2 or 2/2 ˇ	Shows view of all satellites in two screen views 1/2 or 2/2	

YAW SENSOR

This diagnosis gives a quick test of the yaw sensor functionality based on the two voltages Sensor and Offset.

- This diagnosis must be done while the vehicle is stopped.
- If ZeroPoint Output is reading NG, replace the **audio-navigation unit**.

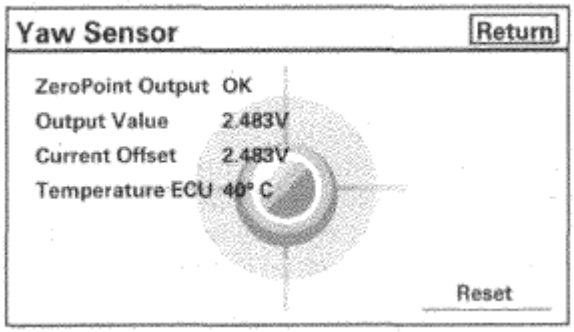


Fig. 92: Display - Yaw Sensor Screen
Courtesy of AMERICAN HONDA MOTOR CO., INC.

ERROR HISTORY

If you select Hard Error or Soft Error, you can see the error information. Refer to **How to Check for Error History** to use this diagnosis.

you can save the error history by connecting a USB device to the USB adapter, then select save to copy the information to the USB memory.

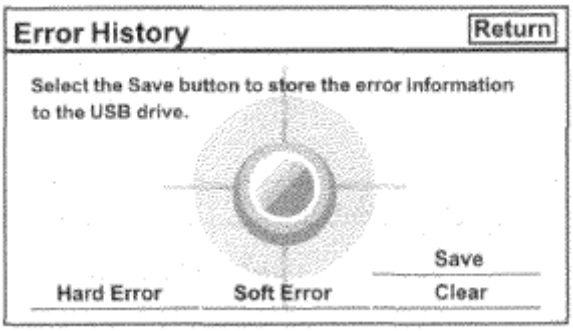


Fig. 93: Display - Error History Screen
Courtesy of AMERICAN HONDA MOTOR CO., INC.

FUNCTIONAL SETUP

Select the item you want to check.

- Mic Level
- HDD Record Restriction
- Save Users Memory
- Demo Mode
- All Clear

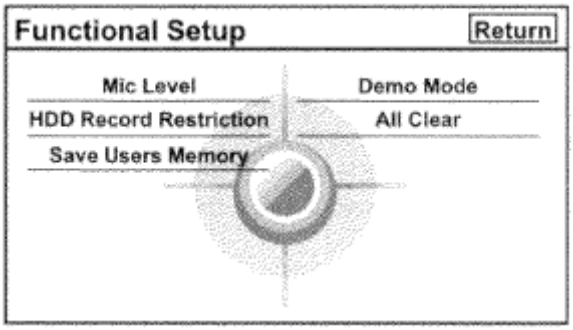


Fig. 94: Display - Functional Setup Screen
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Mic Level

This diagnosis allows you to independently test the microphone and the TALK and BACK buttons. The TALK button is used to activate the voice control system. The microphone is located near the map light in the roof console. The microphones can now isolate the driver's voice even when there is noise or other conversations in the vehicle. To properly check the microphones, make sure you are sitting in the driver's seat.

- Press the TALK, button on the steering wheel, wait until you hear a beep, and in a normal voice say "testing". The TALK icon (A) on the screen should momentarily turn green, and the text Now Recording!! should appear. If the TALK icon does not turn green, check the wiring from the voice control

switch to the HandsFreeLink control unit, If there is no Mic Level (B) movement when you speak, then you should check the wiring from the microphone to the audio-navigation unit (via the HandsFreeLink control unit). If the wires are OK, the microphone must be faulty; replace the **microphone**.

- Press the BACK button on the steering wheel. The BACK icon (C) on the screen should momentarily turn green. If it does not briefly turn green, check the wiring from the steering wheel BACK button to the HandsFreeLink control unit.

NOTE: The mic level should reach the 6th bar.

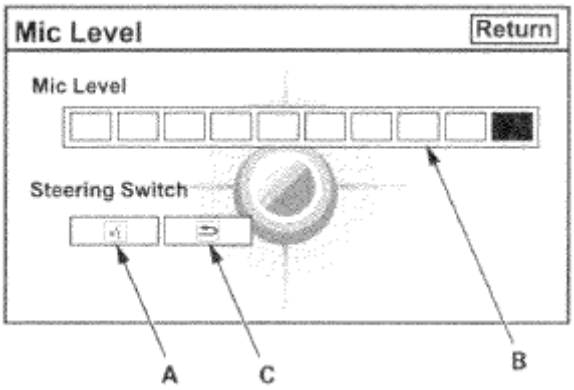


Fig. 95: Display - Mic Level Screen
Courtesy of AMERICAN HONDA MOTOR CO., INC.

HDD Record Restriction

Setting ON OFF for recording the audio files to HDD, Refer to the Owner's Manual for more information about recording music to the HDD.

HDD Recording OFF

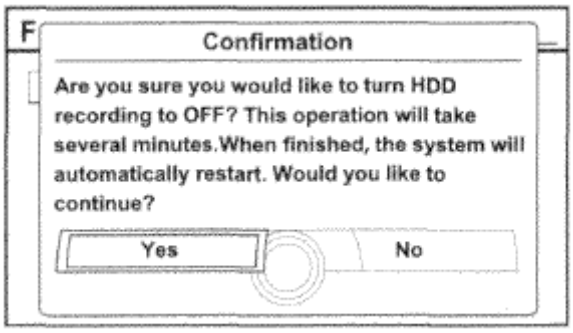


Fig. 96: Display - HDD Recording OFF Confirmation Message
Courtesy of AMERICAN HONDA MOTOR CO., INC.

HDD Recording ON

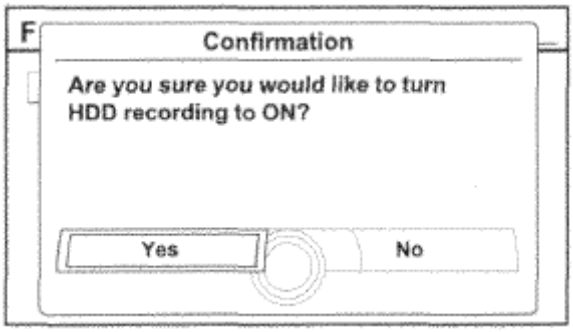


Fig. 97: Display - HDD Recording ON Confirmation Message
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Save Users Memory

NOTE: If the HDD is good, transfer it to the new audio-navigation unit. If the HDD is NG, try this procedure to see if you can recover some information can be recovered.

When replacing the audio-navigation unit, this function allows the dealer to transfer the client's personal data to the new audio-navigation unit The transferred information includes their Setup settings, and personal addresses. The dealer inserts a USB memory device into the USB adapter, and then selects the Save Users Memory function. The two functions In this diagnostic screen are EXPORT and IMPORT. EXPORT saves the client's data to the USB memory device, and IMPORT moves the USB memory device files to the new audio-navigation unit.

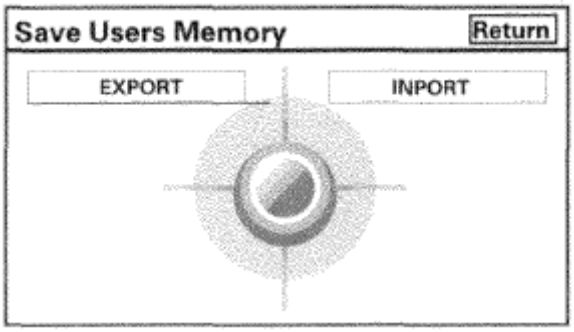


Fig. 98: Display - Save Users Memory Screen
Courtesy of AMERICAN HONDA MOTOR CO., INC.

1. Select EXPORT button to move the client's data from the original audio-navigation unit to the USB memory. Select YES on the Export User Data Confirmation screen. The process takes only a couple of seconds. The system stores.DAT files on the USB memory.

NOTE: If the EXPORT button is grayed out, check the USB adaptor connector.

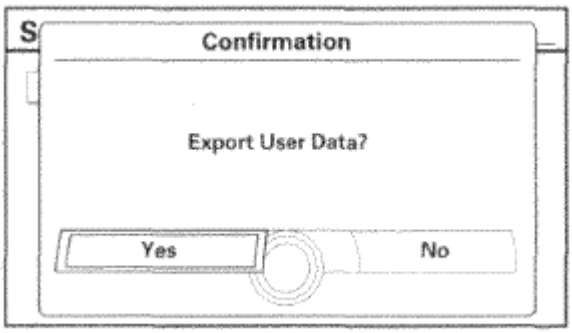


Fig. 99: Display - Export User Data Confirmation Screen
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. After replacing the new audio-navigation unit, allow the system to boot up. Insert the USB memory device into the USB adapter and enter the Save Users Memory in the navigation system diagnostic mode.
3. Select the IMPORT button to move the two files stored by the Export process from the USB memory device to the new audio-navigation unit. Select YES on the Import User Data Confirmation screen, When the transfer is finished (a few seconds) the system automatically reboots. After the system reboots, remove the USB memory device from the USB adapter.

NOTE: If the IMPORT button is grayed out check if the Model and the Program Flash shown on the Version screen are the same.

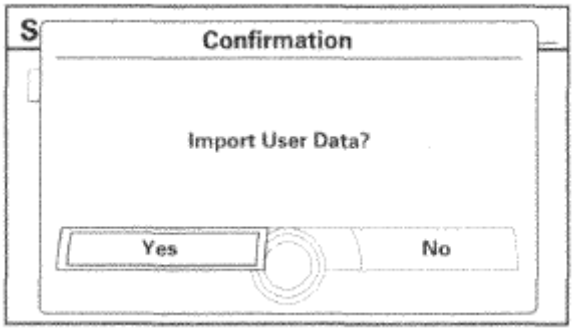


Fig. 100: Display - Import User Data Confirmation Screen
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Demo Mode

This screen is for factory use only, and should always be set to OFF. Occasionally the Demo setting is turned ON when vehicles are used at Auto Shows or similar events. Turning this feature on allows the navigation system to automatically follow a route to a destination when the vehicle is stationary. The Speed changes the speed of the demo mode.

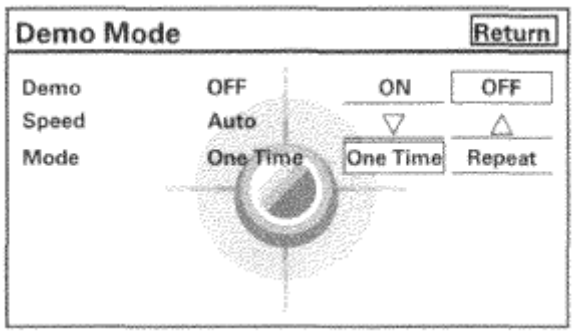


Fig. 101: Display - Demo Mode Screen
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Clear All

The clear all function deletes all recorded music, images, cell phone information, previous destinations, and the phonebook from the HDD.

When Clear All is selected, the system restarts after performing the Clear All process. After the restart, a normal start-up process occurs and needs GPS initialization.

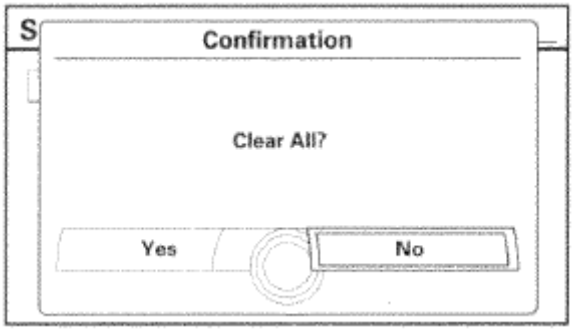


Fig. 102: Display - Clear All Confirmation Screen
Courtesy of AMERICAN HONDA MOTOR CO., INC.

If you select YES, the second confirmation screen appears.

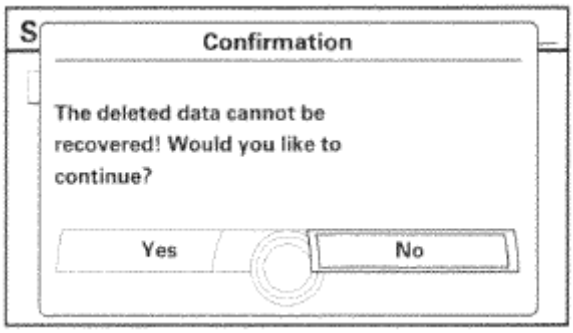


Fig. 103: Display - Clear All, Second Confirmation Screen

Courtesy of AMERICAN HONDA MOTOR CO., INC.

B-CAN SYSTEM LINK

This diagnosis tests whether the audio-navigation unit is receiving B-CAN data properly.

B-CAN (Body Controller Area Network) passes information between processors on the network. The B-CAN network uses a communication protocol that transmits data at 125 Kbps.

If any icons are red, check for B-CAN DTCs with the HDS.

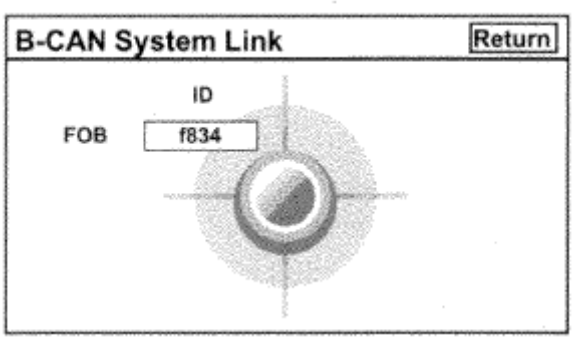


Fig. 104: Display - B-CAN System Link Screen
Courtesy of AMERICAN HONDA MOTOR CO., INC.

XM (HIP) SYSTEM LINK

This diagnosis tests the connections between the AcuraLink control unit (XM receiver) and the communication lines. Refer to the AcuraLink Self-Diagnostic Function (see **DTC TROUBLESHOOTING**).

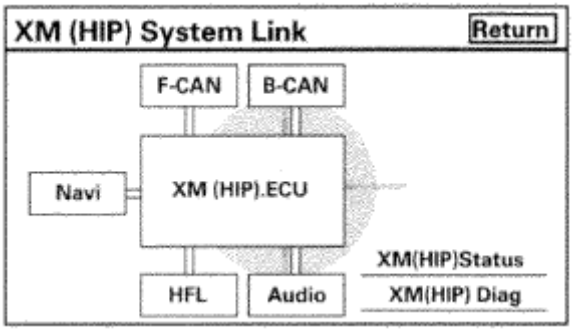


Fig. 105: Display - XM (HIP) System Link Screen
Courtesy of AMERICAN HONDA MOTOR CO., INC.

KM STATUS

When you select XM (HIP) Status in the XM (HIP) System Link, the XM Status screen is displayed.

You can check the XM status in this screen.

Items	Condition Indicated
XM reception	• Receiving • Check Antenna • No Signal • Loading • Expired
Traffic Signal Reception	• Receiving • Check Antenna • No Signal • Loading • Expired
Traffic Indicator	• TRF (green icon): Traffic information is available. • TRF (white icon): Flow or incident data is not available. • TRF (red icon): No traffic available (flow and incident).
Traffic Data	• OK • Invalid
Traffic Last Update	Last update time and date indicated.
Weather Signal Reception	• Receiving • Check Antenna • No Signal • Loading • Expired
Weather Data	• OK • Invalid
Weather Last Update	Last update time and date indicated.

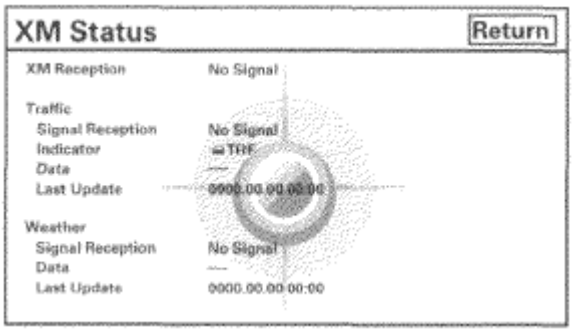


Fig. 106: Display - XM Status Screen
Courtesy of AMERICAN HONDA MOTOR CO., INC.

ERROR MESSAGE TABLE

Screen Error Message	Solution
Cannot access the HDD due to excessive heat. Please wait until the system cools down.	This message appears briefly when the audio-navigation unit temperature is too high, and then the display turns off until the temperature cools down. The system turns back on when the audio-navigation unit cools down.
Cannot write to the HDD due to the low temperature. Please wait until the system warms up.	The temperature is too low and the audio-navigation unit has difficulties reading the HDD. The system starts up when the temperature warms up.
Cannot access the HDD due to low atmospheric pressure. Navigation and HDD audio functions are disabled. The system will restart when atmospheric pressure is OK.	The atmospheric pressure is below 9 psi (62.29 kPa). This message appears, and after a few seconds, the system shuts down automatically. When the atmospheric pressure returns to a normal, the system reboots.
Cannot access HDD. Please contact your dealer.	This message appears when the system detects the HDD is not connected or there is a HDD connecting error. If the audio-navigation unit was replaced, make sure the HDD was transferred to the new unit. The HDD data management area (file system) is damaged or the password is incorrect. Check any official Honda service website for more service information about the navigation system.
The HDD is not connected. Please check the connection.	
There is no application program. Please visit your dealer when possible.	This message appears when the HDD generation and application program version are not interactive and an application program cannot start up. Check any official Honda service website for more service information about the navigation system.
The display temperature is too high! For protection, the display will shut down.	This message appears briefly when the display temperature is too high, and then the display turns off until the temperature cools down. The system turns back on when the display cools down.

DTC TROUBLESHOOTING

DTC 1102: USB DIAG

NOTE:

- **Check the vehicle battery condition first (see BATTERY TEST).**
- **This navigation DTC sets when a problem is detected with the USB.**
- **Before you troubleshoot, make sure to follow the General Troubleshooting Information.**

1. Connect the USB device to the USB port.
2. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
3. Go into the System Diagnostic Mode, and use the **USB Memory** info to check the USB device status.

Is the USB device information displayed?

YES - Intermittent failure, the system is OK at this time. •

NO - Go to step 4.

4. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
5. Disconnect the USB device, then reconnect it.
6. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
7. Go into the System Diagnostic Mode, and use the **USB Memory info** to check the USB device status.

Is the USB device information displayed?

YES - Intermittent failure, the system is OK at this time. Check for loose or poor connection at USB device. •

NO - Go to step 8.

8. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
9. Disconnect the USB device, then connect a known-good USB device to the USB port.
10. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
11. Go into the System Diagnostic Mode, and use the **USB Memory info** to check the USB device status.

Is the USB device information displayed?

YES - Original USB device is faulty. •

NO - Go to step 12.

12. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
13. Make sure the USB device, the USB port, and audio-navigation unit connector F (7P) are properly connected.

Are the connectors properly connected?

YES - Go to step 14.

NO - Reconnect the connectors, and recheck. •

14. Disconnect the USB device.
15. Disconnect audio-navigation unit connector F (7P).
16. Check for continuity between audio-navigation unit connector F (7P) and the USB port 5P connector according to the table.

	Audio-navigation unit connector	USB port connector
USB VBUS	F1	4

USB DATA-	F2	3
USB DATA+	F3	2
USB GND	F4	1
USB SH	F5	5

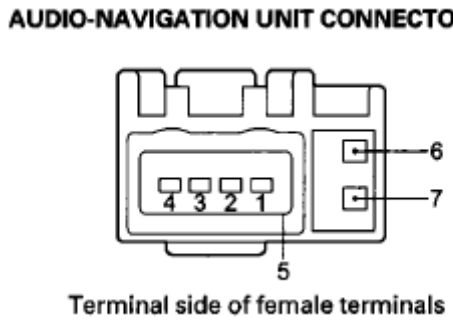


Fig. 107: Checking Continuity Between Audio-Navigation Unit Connector F (7P)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

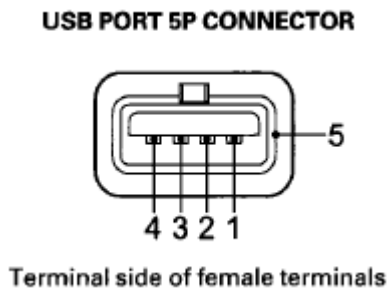


Fig. 108: Checking Continuity Between USB Port 5P Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Replace the **audio-navigation unit**. •

NO - There is an open in the wire(s) between the audio-navigation unit and the USB port. Replace the affected shielded harness. •

DTC 1203: DVD TEMP ERROR

NOTE:

- **Check the vehicle battery condition first (see BATTERY TEST).**
- **This navigation DTC sets when the internal temperature of the ECU falls below - 4°F (- 20°C) or above 158°F (70°C). The unit is designed to shut down to protect the ECU. This is usually caused by exterior temperatures. Do the troubleshooting when the unit is within the allowable temperature range.**
- **Before you troubleshoot, make sure to follow the General Troubleshooting**

Information.

1. Check that the temperature is between - 4°F (- 20°C), below 158°F (70°C) in dash.
2. Clear the **hard error code**.
3. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode, then back to ON (II), or press the engine start/stop button to select the ON mode.
4. Check for the **hard error code**.

   Is DTC 1203 indicated?

   YES - Replace the **audio-navigation unit**. •

   NO - Go to step 5.

5. Check the audio-navigation unit cooling fan on the back of the audio-navigation unit to see if it is blocked.

   Is the fan blocked?

   YES - Clean or clear the audio-navigation unit cooling fan, and recheck. •

   NO - Intermittent failure, the system is OK at this time. If the vehicle repeatedly comes back with the navigation DTC, replace the **audio-navigation unit**. •

DTC 1301: GPS ANTENNA ERROR

NOTE:

- **Check the vehicle battery condition first (see BATTERY TEST).**
- **This navigation DTC sets when there is poor connectors or loose terminals at the GPS antenna connector or an open in GPS antenna lead.**
- **Before you troubleshoot, make sure to follow the General Troubleshooting Information.**
- **Make sure the vehicle is parked outside, away from buildings.**
- **Aftermarket metallic window tint or electronic devices located near the audio-navigation unit or the GPS antenna can potentially interfere with the operation of the navigation system.**

1. Clear the **hard error code**.
2. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode, then back to ON (II), or press the engine start/stop button to select the ON mode.
3. Check for the **hard error code**.

   Is DTC 1301 indicated?

   YES - Go to step 4.

NO - Intermittent failure, the system is OK at this time. •

4. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
5. Check for poor connections or loose terminals at the audio-navigation unit connector J (2P).
6. Clear the **hard error code**.
7. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode, then back to ON (II), or press the engine start/stop button to select the ON mode.
8. Check for the **hard error code**.

Is DTC 1301 indicated?

YES - Replace the **GPS Antenna**, then recheck. If the DTC continues to set, replace the **audio-navigation unit**. •

NO - Intermittent failure, the system is OK at this time. If the vehicle repeatedly comes back with the navigation DTC, replace the **audio-navigation unit**. •

DTC 1302: GPS RECEIVER ERROR 1

NOTE:

- **Check the vehicle battery condition first (see BATTERY TEST).**
- **This navigation DTC sets when there is an internal GPS receiver problem.**
- **Before you troubleshoot, make sure to follow the General Troubleshooting Information.**
- **Make sure the vehicle is parked outside, away from buildings.**
- **Aftermarket metallic window tint or electronic devices located near the audio-navigation unit or GPS antenna can potentially interfere with the operation of the navigation system.**

1. Clear the **hard error code**.
2. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode, then back to ON (II), or press the engine start/stop button to select the ON mode.
3. Check for the **hard error code**.

Is DTC 1302 indicated?

YES - Go to step 4.

NO - Intermittent failure, the system is OK at this time. If the unit repeatedly comes back with the navigation DTC, replace the **audio-navigation unit**. •

4. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
5. Disconnect and reconnect audio-navigation unit connector J (2P).
6. Clear the **hard error code**.

7. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode, then back to ON (II), or press the engine start/stop button to select the ON mode.
8. Check for the **hard error code**.

   Is DTC 1302 indicated?

   YES - Replace the **GPS Antenna**, then recheck. If the navigation DTC continues to set, replace the **audio-navigation unit**. •

   NO - Intermittent failure, the system is OK at this time. If the vehicle repeatedly comes back with the navigation DTC, replace the **audio-navigation unit**. •

DTC 1303: GPS RECEIVER ERROR 2

NOTE:

- **Check the vehicle battery condition first (see BATTERY TEST).**
- **This navigation DTC sets when there is an internal GPS receiver problem.**
- **Before you troubleshoot, make sure to follow the General Troubleshooting Information.**
- **Make sure the vehicle is parked outside, away from buildings.**
- **Aftermarket metallic window tint or electronic devices located near the audio-navigation unit or GPS antenna can potentially interfere with the operation of the navigation system.**

1. Clear the **hard error code**.
2. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode, then back to ON (II), or the ON mode.
3. Check for the **hard error code**.

   Is DTC 1303 indicated?

   YES - Replace the **audio-navigation unit**. •

   NO - Intermittent failure, the system is OK at this time. If the vehicle repeatedly comes back with the navigation DTC, replace the **audio-navigation unit**. •

DTC 1304: GYRO ERROR 1

NOTE:

- **Check the vehicle battery condition first (see BATTERY TEST).**
- **This navigation DTC sets when there is a problem with the internal yaw rate sensor.**
- **Before you troubleshoot, make sure to follow the General Troubleshooting Information.**
- **Make sure the vehicle is parked outside, away from buildings.**

- **Aftermarket metallic window tint or electronic devices located near the audio-navigation unit or GPS antenna can potentially interfere with the operation of the navigation system.**

1. Clear the **hard error code**.
2. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode, then back to ON (II), or the ON mode.
3. Check for the **hard error code**.

Is DTC 1304 indicated?

YES - Replace the **audio-navigation unit**. •

NO - Intermittent failure, the system is OK at this time. If the vehicle repeatedly comes back with the navigation DTC, replace the **audio-navigation unit**. •

DTC 1305: GYRO ERROR 2

NOTE:

- **Check the vehicle battery condition first (see BATTERY TEST).**
- **This navigation DTC sets when there is a problem with the internal yaw rate sensor.**
- **Before you troubleshoot, make sure to follow the General Troubleshooting Information.**

1. Check that the passenger compartment temperature is between - 4°F (- 20°C) and 158°F (70°C).
2. Clear the **hard error code**.
3. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode, then back to ON (II), or the ON mode.
4. Check for the **hard error code**.

Is DTC 1305 Indicated?

YES - Replace the **audio-navigation unit**. •

NO - Intermittent failure, the system is OK at this time. If the vehicle repeatedly comes back with the navigation DTC, replace the **audio-navigation unit**. •

DTC 1306: VEHICLE SPEED PULSE

NOTE:

- **Check the vehicle battery condition first (see BATTERY TEST).**
- **This navigation DTC sets when there is a problem with the VSP circuit.**
- **Check any official Honda service website for more service information about the navigation system.**

- **Before you troubleshoot, make sure to follow the General Troubleshooting Information.**
- **This navigation DTC may be caused by electrical interference. Check for aftermarket devices installed in the vehicle.**

1. Check the MIL on the gauge.

   Is the MIL on?

   YES - Go to the PGM-FI system's general troubleshooting information (see **GENERAL TROUBLESHOOTING INFORMATION**). •

   NO - Go to step 2.

2. Clear the **hard error code**.
3. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode, then start the engine.
4. Check for the **hard error code**.

   Is DTC 1306 indicated?

   YES - Go to step 5.

   NO - Intermittent failure, the system is OK at this time. •

5. Go into the System Diagnostic Mode, and select the **Self-Diagnosis Mode**.
6. Select the **Car Status** in the System Link to check the vehicle speed pulse.
7. With the help of an assistant drive the vehicle and watch the VSP signal.

   Does the VSP signal change from [0] (stopped) to [1] (driving) as you drive?

   YES - Replace the **audio-navigation unit**. •

   NO - Go to step 8.

8. Raise the vehicle on a lift, and rotate the tires while measuring the voltage between audio-navigation unit connector A (24P) terminal No. 15 and body ground.

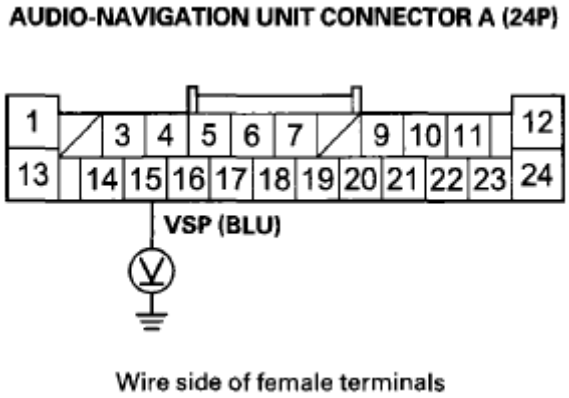


Fig. 109: Measuring Voltage Between Audio-Navigation Unit Connector A (24P) Terminal No. 15 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Does the voltage change from 0 V to 5 V?

YES - Replace the **audio-navigation unit**. •

NO - Go to step 9.

9. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
10. Disconnect audio-navigation unit connector A (24P).

NOTE: Eject all the disc(s) before disconnecting the audio-navigation unit to prevent damaging the CD/DVD player's load mechanism.

11. Jump the SCS line with the HDS.
12. Disconnect ECM/PCM connector A (49P).
13. Check for continuity between audio-navigation unit connector A (24P) terminal No. 15 and body ground.

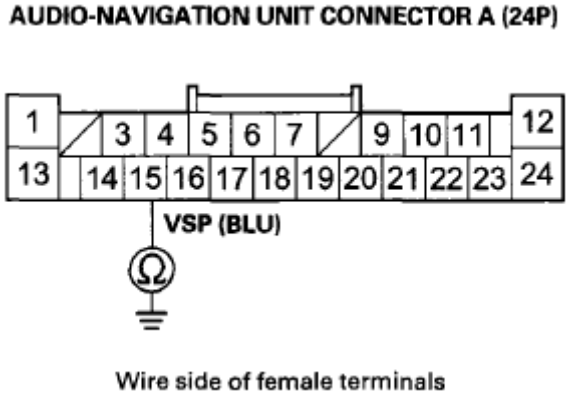


Fig. 110: Checking Continuity Between Audio-Navigation Unit Connector A (24P) Terminal No. 15 And Body Ground

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair a short to body ground in the wire between the audio-navigation unit and the ECM/PCM, and recheck. •

NO - Go to step 14.

14. Check for continuity between audio-navigation unit connector A (24P) terminal No. 15 and ECM/PCM connector A (49P) terminal No. 30.

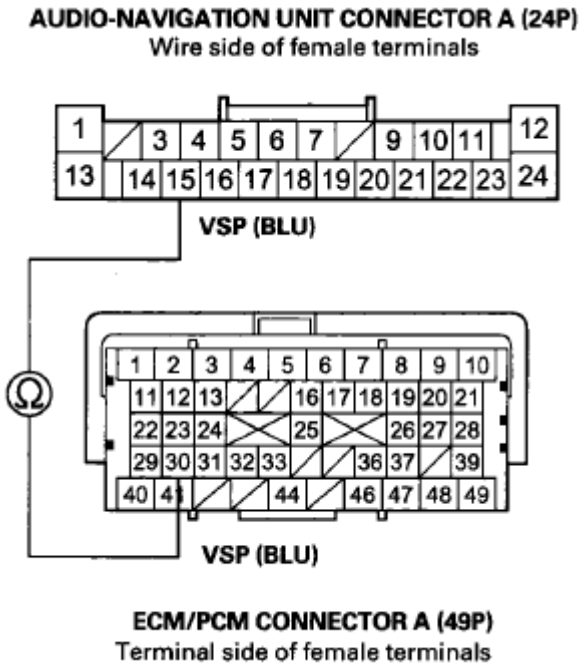


Fig. 111: Checking Continuity Between Audio-Navigation Unit Connector A (24P) Terminal No. 15 And ECM/PCM Connector A (49P) Terminal No. 30
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Update the ECM/PCM (see **ECM/PCM UPDATE**), if it does not have the latest software, or substitute a known-good ECM/PCM (see **SUBSTITUTING THE ECM/PCM**), then reconnect all of the connectors, and recheck. If the symptom/indication goes away, replace the original ECM/PCM (see **ECM/PCM REPLACEMENT**). •

NO - Repair an open in the wire between the audio-navigation unit and the ECM/PCM, and recheck. •

DTC 1402: AUDIO ERROR 2

NOTE:

- **Check the vehicle battery condition first (see BATTERY TEST).**
- **This navigation DTC sets when the audio-navigation unit detects a mechanical malfunction in the CD/DVD player.**
- **Before you troubleshoot, make sure to follow the General Troubleshooting Information.**

1. Clear the **hard error code**.
2. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode, then back to ON (II), or the ON mode.
3. Check for the **hard error code**.

Is DTC 1402 indicated?

YES - Check if the audio system functions are working properly. If any problems are found, go to affected troubleshooting in audio information. •

NO - Intermittent failure, the system is OK at this time. •

DTC 1403: AUDIO ERROR 3 (DISPLAY ERROR)

NOTE:

- **Check the vehicle battery condition first (see BATTERY TEST).**
- **This navigation DTC sets when a mechanical malfunction in the navigation display is detected.**
- **Before you troubleshoot, make sure to follow the General Troubleshooting Information.**

1. Clear the **hard error code**.
2. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode, then back to ON (II), or the ON mode.
3. Check for the **hard error code**.

Is DTC 1403 indicated?

YES - Replace the navigation display unit. •

NO - Intermittent failure, the system is OK at this time. •

DTC 1404: AUDIO ERROR 4 (DVD ERROR)

NOTE:

- **Check the vehicle battery condition first (see BATTERY TEST).**
- **This navigation DTC sets when there is a problem with the DVD player.**
- **Before you troubleshoot, make sure to follow the General Troubleshooting Information.**

1. Clear the **hard error code**.
2. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode, then back to ON (II), or the ON mode.
3. Check for the **hard error code**.

Is DTC 1404 indicated?

YES - Replace the **audio-navigation unit**. •

NO - Intermittent failure, the system is OK at this time. •

DTC 1405: AUDIO ERROR 5 (HDD ERROR)

NOTE:

- **Check the vehicle battery condition first (see BATTERY TEST).**
- **This navigation DTC sets when the internal temperature of the HDD rises above 158°F (70°C). The unit is designed to shut down to protect the HDD. This could be caused by an inoperative audio-navigation unit cooling fan or if the vehicle cabin temperature exceeds the maximum. Do the troubleshooting when the audio-navigation unit is within the allowable temperature range.**
- **Before you troubleshoot, make sure to follow the General Troubleshooting Information.**

1. Clear the **hard error code**.
2. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode, then back to ON (II), or the ON mode.
3. Check for the **hard error code**.

Is DTC 1405 indicated?

YES - Replace the **audio-navigation unit**. •

NO - Intermittent failure, the system is OK at this time. •

DTC 1409: AUDIO ERROR 9 (XM ERROR)

NOTE:

- **Check the vehicle battery condition first (see BATTERY TEST).**
- **This navigation DTC sets when a problem is detected in the XM antenna connection.**
- **Before you troubleshoot, make sure to follow the General Troubleshooting Information.**

1. Clear the **hard error code**.

2. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode, then back to ON (II), or the ON mode.
3. Check for the **hard error code**.

   Is DTC 1409 indicated?

   YES - Check for poor connections or loose terminals at the XM antenna, if they are OK, do the diagnosis for the XM antenna in the audio system. •

   NO - Intermittent failure, the system is OK at this time. •

DTC 1501: AIRCON ERROR; DTC 2703: AIRCON DIAG

NOTE:

- **Check the vehicle battery condition first (see BATTERY TEST).**
- **These navigation DTCs sets when a communication error between the climate control unit and the audio-navigation unit (open or short) is detected.**
- **Check for B-CAN DTCs and resolve them before troubleshooting.**
- **Before you troubleshoot, make sure to follow the General Troubleshooting Information.**

1. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode, then back to ON (II), or the ON mode.
2. Go into the System Diagnostic Mode, and select the Self-Diagnosis Mode in the **Select Diagnosis Items menu**.
3. Check the System Link.

   Is the Aircon icon red?

   YES - Go to step 4.

   NO - Intermittent failure, the system is OK at this time. •

4. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
5. Disconnect audio-navigation unit connector D (36P).
6. Connect audio-navigation unit connector D (36P) terminals No. 10 and No. 11 with a jumper wire, then connect terminals No. 10 and No. 27 with a jumper wire.

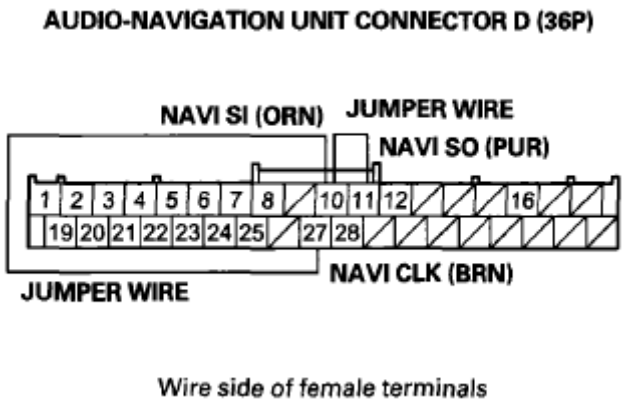


Fig. 112: Connecting Audio-Navigation Unit Connector D (36P) Terminals With Jumper Wire
Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
8. Press and hold the AUTO button, then press and hold the ON/OFF button.

   Are both HEAT/VENT indicators solid with the remaining icons blinking?

   YES - Replace the **audio-navigation unit**. •

   NO - Go to step 9.

9. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode, then disconnect the jumper wires.
10. Disconnect the jumper wires.
11. Disconnect climate control unit connecter C (20P).
12. Connect climate control unit connector C (20P) terminals No. 4 and No. 5 with a jumper wire, then connect terminals No. 5 and No. 6 with a jumper wire.

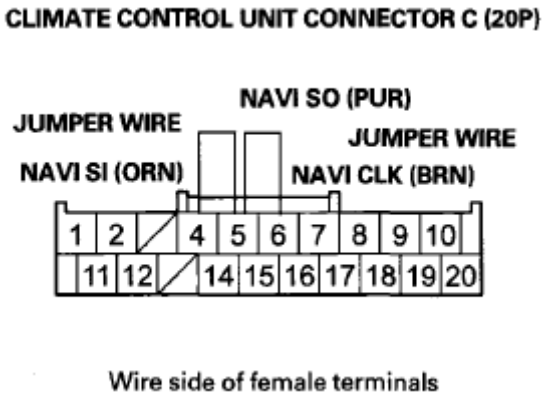


Fig. 113: Connecting Climate Control Unit Connector C (20P) Terminals With Jumper Wire
Courtesy of AMERICAN HONDA MOTOR CO., INC.

13. Check for continuity between audio-navigation unit connector D (36P) terminals No. 10 and No. 11, and

between terminals No. 10 and No. 27.

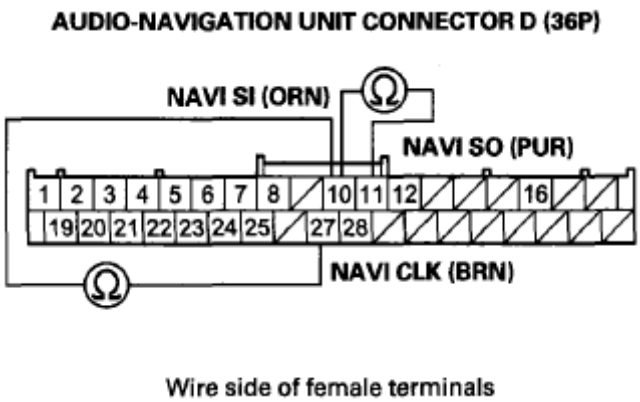


Fig. 114: Checking Continuity Between Audio-Navigation Unit Connector D (36P) Terminals And Between Terminals
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 14.

NO - Repair an open in the wire(s) between the audio-navigation unit and the climate control unit. •

14. Disconnect the jumper wires.
15. Check for continuity between body ground and audio-navigation unit connector D (36P) terminals No. 10, No. 11, and No. 27 individually.

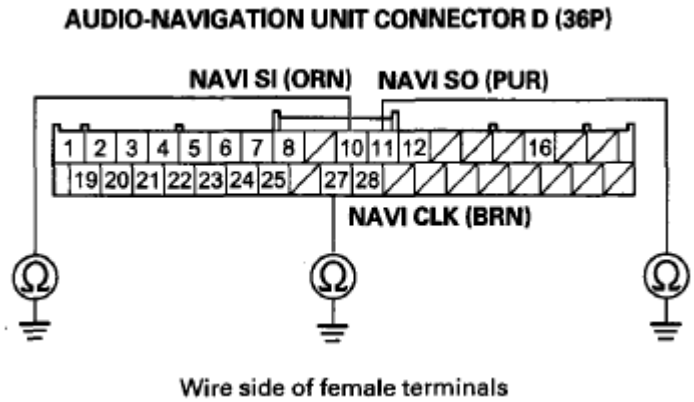


Fig. 115: Checking Continuity Between Body Ground And Audio-Navigation Unit Connector D (36P) Terminals Individually
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Are there continuity?

YES - Repair a short to body ground in the wire(s) between the audio-navigation unit and the climate

control unit. •

NO - Go to step 16.

16. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
17. Measure the voltage between body ground and audio-navigation unit connector D (36P) terminals No. 10, No. 11, and No. 27 individually.

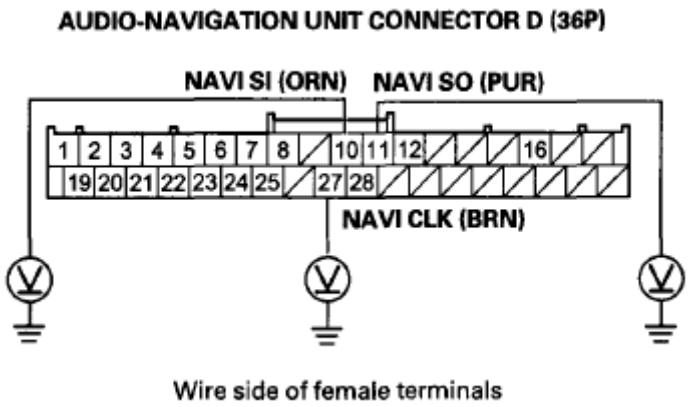


Fig. 116: Measuring Voltage Between Body Ground And Audio-Navigation Unit Connector D (36P) Terminals Individually
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is the voltage above 0.2 V?

YES - Repair a short to power in the wire(s) between the audio-navigation unit and the climate control unit. •

NO - Replace the climate control unit (see **EVAPORATOR TEMPERATURE SENSOR REPLACEMENT**). •

DTC 1701: R- CAMERA ERROR; DTC 2608: R- CAMERA DIAG

NOTE:

- **Check the vehicle battery condition first (see BATTERY TEST).**
- **These navigation DTCs sets when a mechanical malfunction in the navigation display is detected, or when a communication error between the rearview camera and the navigation display unit (open or short) is detected.**
- **Before you troubleshoot, make sure to follow the General Troubleshooting Information.**

1. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode, then back to ON (II), or the ON mode.
2. Go into the System Diagnostic Mode, and select the Self-Diagnosis Mode in the **Select Diagnosis Items menu**.

3. Check the System Link.

   Is the Rear- camera icon red?

   YES - Go to step 4.

   NO - Intermittent failure, the system is OK at this time. •

4. Check for poor connection or loose terminals at the rearview camera 12P connector.

   Are the connection or terminals OK?

   YES - Go to step 5.

   NO - Repair the poor connection or loose terminals, and recheck. •

5. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
6. Disconnect the rearview camera 12P connector.
7. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
8. Measure the voltage between rearview camera 12P connector terminal No. 7 and body ground.

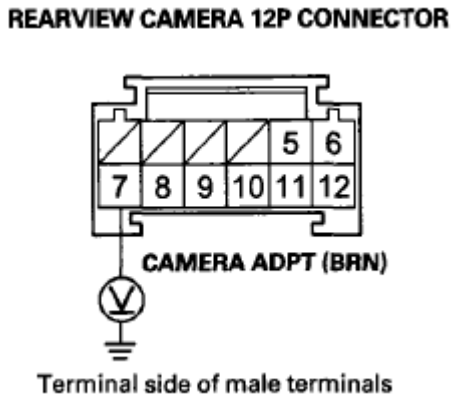


Fig. 117: Measuring Voltage Between Rearview Camera 12P Connector Terminal No. 7 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

   Is there about 3.0 V?

   YES - Replace the **rearview camera**. •

   NO - Go to step 9.

9. Measure the voltage between navigation display unit 36P connector terminal No. 23 and body ground.

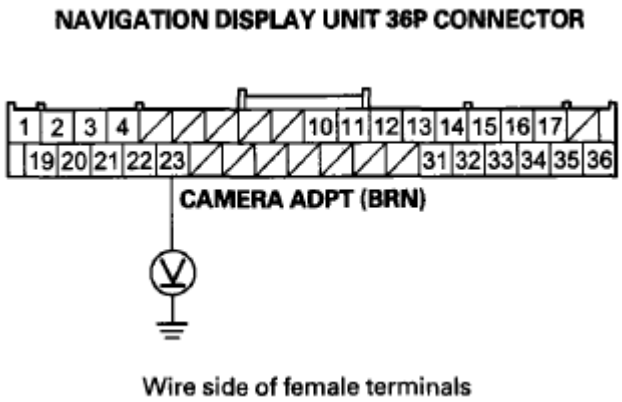


Fig. 118: Measuring Voltage Between Navigation Display Unit 36P Connector Terminal No. 23 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there about 3.0 V?

YES - Repair an open in the wire between the navigation display unit and the rearview camera. •

NO - Replace the **navigation display unit**. •

DTC 1801: HIP ERROR

USA models

NOTE:

- **Check the vehicle battery condition first (see BATTERY TEST).**
- **This navigation DTC sets when a problem (open or short) is detected in the COMM BUS.**
- **Before you troubleshoot, make sure to follow the General Troubleshooting Information.**
- **Check for and resolve any B-CAN DTCs before troubleshooting.**
- **Check any official Honda service website for any service information about the AcuraLink or software updates.**

1. Clear the **hard error code**.
2. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode, then back to ON (II), or the ON mode.
3. Check for the **hard error code**.

Is DTC 1801 indicated?

YES - Go to step 4.

NO - Intermittent failure, the system is OK at this time. •

4. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
5. Check for poor connections or loose terminals at AcuraLink control unit (XM receiver) connector A (32P), and audio-navigation unit connector H (28P).

   Are the connections or terminals OK?

   YES - Go to step 6.

   NO - Repair poor connections or loose terminals, and recheck. •

6. Connect the HDS to the DLC (see **GENERAL TROUBLESHOOTING INFORMATION**).
7. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
8. Check for XM (HIP) communication with the HDS.

   Does the XM (HIP) communicate with the HDS?

   YES - Go to step 9.

   NO - Go to AcuraLink troubleshooting. •

9. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
10. Disconnect AcuraLink control unit (XM receiver) connector A (32P) and audio-navigation unit connector H (28P).
11. Check for continuity between the terminals of AcuraLink control unit (XM receiver) connector A (32P) according to the table.

From terminal	To terminals
A21 (GRY)	A 17 (WHT), A 18 (RED), A 19 (GRN), A 20 (BLK)

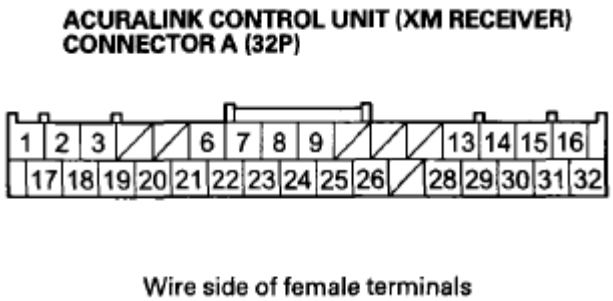


Fig. 119: Checking Continuity Between Terminals Of AcuraLink Control Unit (XM Receiver) Connector A (32P)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity between any of terminals?

YES - There is a short in the wires between the AcuraLink control unit (XM receiver) and the audio-

navigation unit. Replace the affected shielded harness. •

NO - Go to step 12.

12. Check for continuity between body ground and AcuraLink control unit (XM receiver) connector A (32P) terminals No. 17, No. 18, No. 19, and No. 20 individually.

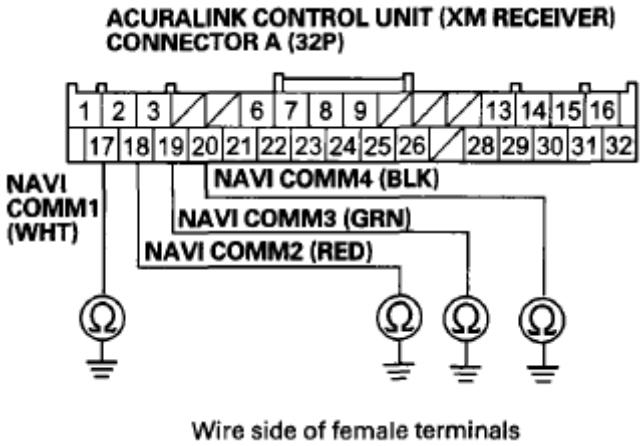


Fig. 120: Checking Continuity Between Body Ground And AcuraLink Control Unit (XM Receiver) Connector A (32P) Terminals Individually
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - There is a short to body ground in the wire(s) between the AcuraLink control unit (XM receiver) and the audio-navigation unit. Replace the affected shielded harness. •

NO - Go to step 13.

13. Connect AcuraLink control unit (XM receiver) connector A (32P) terminals No. 17, No. 18, No. 19, and No. 20 to body ground with jumper wires.

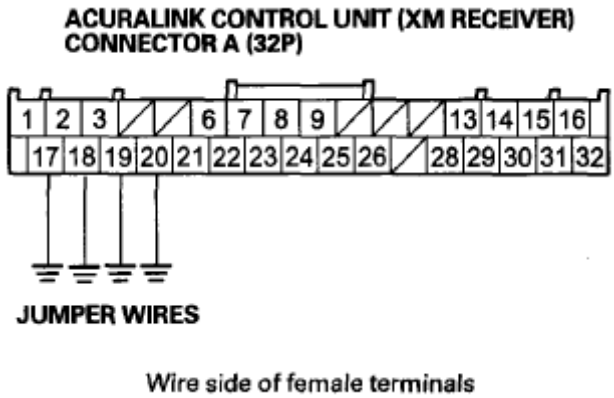


Fig. 121: Connecting AcuraLink Control Unit (XM Receiver) Connector A (32P) Terminals To

Body Ground With Jumper Wires
Courtesy of AMERICAN HONDA MOTOR CO., INC.

14. Check for continuity between body ground and audio-navigation unit connector H (28P) terminals No. 9, No. 10, No. 22, and No. 23 individually.

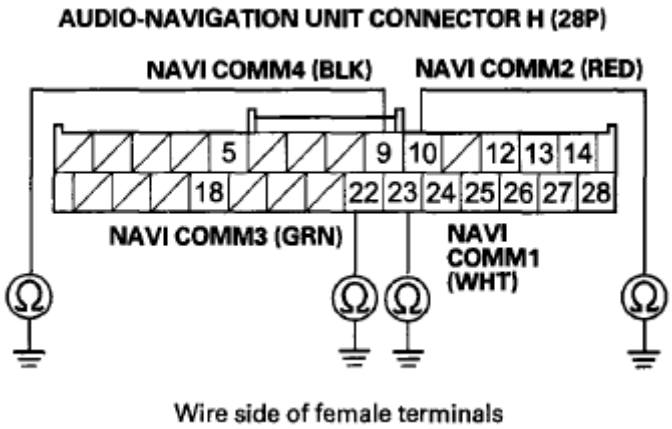


Fig. 122: Checking Continuity Between Body Ground And Audio-Navigation Unit Connector H (28P) Terminals Individually
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Replace the **audio-navigation unit**. •

NO - There is an open in the wire(s) between the AcuraLink control unit (XM receiver) and the audio-navigation unit. Replace the affected shielded harness. •

DTC 2601: DISPLAY DIAG: CONNECT

NOTE:

- **Check the vehicle battery condition first (see BATTERY TEST).**
- **This navigation DTC sets when a mechanical malfunction in the navigation display unit is detected.**
- **Before you troubleshoot, make sure to follow the General Troubleshooting Information.**

1. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
2. Go into the System Diagnostic Mode, and select the Self-Diagnosis Mode in the **Select Diagnosis Items menu**.
3. Check the System Link.

Is the Display icon red?

YES - Go to step 4.

NO - Intermittent failure, the system is OK at this time. •

4. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
5. Check for poor connections or loose terminals at these items:
   - Audio-navigation unit connector C(14P)
   - HandsFreeLink control unit 32P connector
   - AcuraLink control unit (XM receiver) connector A (32P) (USA models)
   - XM receiver connector A (14P) (Canada models)

   Are the connections OK?

   YES - Go to step 6.

   NO - Repair poor connections or loose terminals, and recheck. •

6. Disconnect audio-navigation unit connector C (14P) and the navigation display unit 36P connector.
7. Connect audio-navigation unit connector C (14P) terminals No. 9 and No. 10 with a jumper wire.

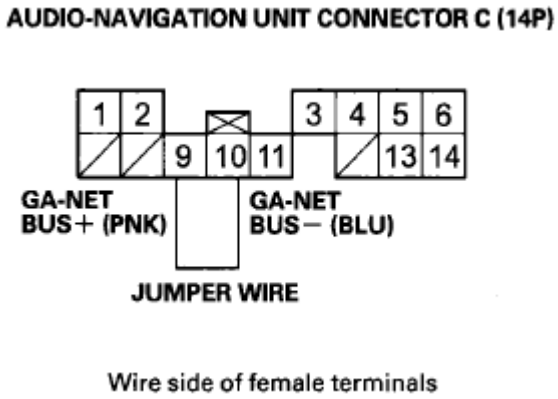


Fig. 123: Connecting Audio-Navigation Unit Connector C (14P) Terminals No. 9 And No. 10 With Jumper Wire
Courtesy of AMERICAN HONDA MOTOR CO., INC.

8. Check for continuity between navigation display unit 36P connector terminals No. 32 and No. 33.

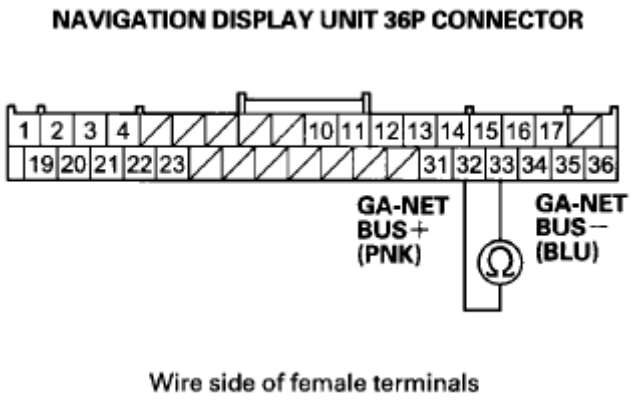


Fig. 124: Checking Continuity Between Navigation Display Unit 36P Connector Terminals No. 32 And No. 33
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 9.

NO - There is an open in the wire(s) between the navigation display unit and the audio-navigation unit. Replace the affected shielded harness. •

9. Disconnect the jumper wires.
10. Disconnect these items:
    - HandsFreeLink control unit 32P connector
    - AcuraLink control unit connector A (32P) (USA models)
    - XM receiver connector A (14P) (Canada models)
11. Check for continuity between navigation display unit 36P connector terminals No. 32 and No. 33.

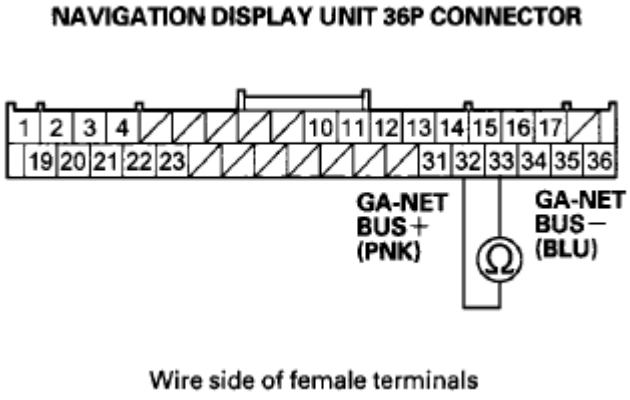


Fig. 125: Checking Continuity Between Navigation Display Unit 36P Connector Terminals No. 32 And No. 33
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - There is a short in the wires between the navigation display unit and the audio-navigation unit. Replace the affected shielded harness. •

NO - Go to step 12.

12. Check for continuity between body ground and navigation display unit 36P connector terminals No. 32 and No. 33 individually.

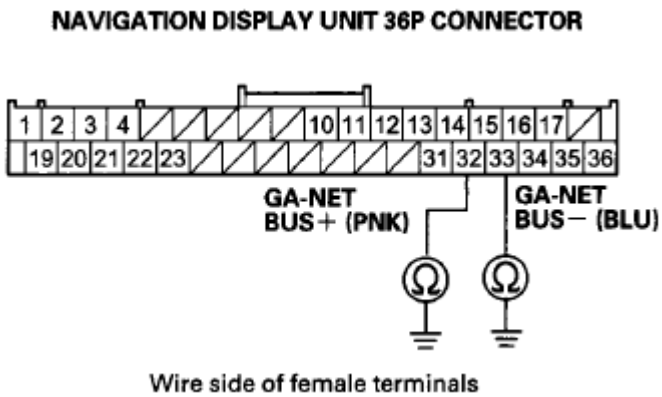


Fig. 126: Checking Continuity Between Body Ground And Navigation Display Unit 36P Connector Terminals No. 32 And No. 33 Individually
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - There is a short to body ground in the wire(s) between the navigation display unit and the audio-navigation unit. Replace the affected shielded harness. •

NO - Go to step 13.

13. Check for continuity between the terminals of the navigation display unit 36P connector according to the table.

From terminal	To terminals
31 (GRY)	32 (PNK), 33 (BLU)

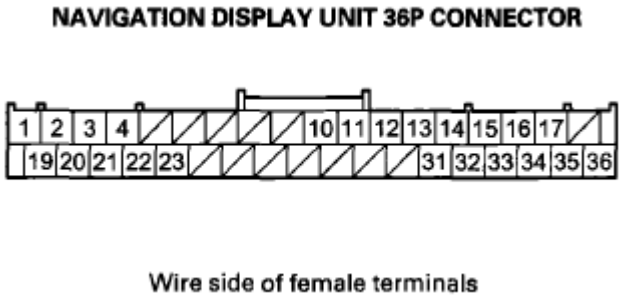


Fig. 127: Checking Continuity Between Terminals Of Navigation Display Unit 36P Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity between any of the terminals?

YES - There is a short in wires between the navigation display unit and the audio-navigation unit. Replace the affected shielded harness. •

NO - Go to step 14.

14. Reconnect the all connectors, then turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
15. Go into the System Diagnostic Mode, and select the Self-Diagnosis Mode in the **Select Diagnosis Items menu**.
16. Check the System Link.

    Is the Display icon red?

    YES - Go to step 17.

    NO - Intermittent failure, the system is OK at this time. •

17. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
18. Disconnect AcuraLink control unit (XM receiver connector A (32P) (USA models) or XM receiver connector A (14P) (Canada models).
19. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
20. Go into the System Diagnostic Mode, and Select the Self-Diagnosis Mode in the **Select Diagnosis Items menu**.
21. Check the System Link.

    Is the Display icon red?

    YES - Go to step 22.

    NO - Replace the AcuraLink control unit (XM receiver) (see **AcuraLink CONTROL UNIT (XM RECEIVER) REMOVAL/INSTALLATION**) or the XM receiver (see **AcuraLink CONTROL UNIT (XM RECEIVER) REMOVAL/INSTALLATION**). •

22. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
23. Remove the center console panel (see **CENTER CONSOLE PANEL REMOVAL/INSTALLATION**).
24. Disconnect the HandsFreeLink control unit 32P connector (see step 2 in **HANDSFREELINK CONTROL UNIT REMOVAL/INSTALLATION**).
25. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
26. Go into the System Diagnostic Mode, and Select the Self-Diagnosis Mode in the **Select Diagnosis Items Menu**.
27. Check the System Link.

    Is the Display icon red?

    YES - Go to step 28.

    NO - Replace the HandsFreeLink control unit (see **HFL SWITCH TEST**). •

28. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
29. Substitute a know-good navigation display unit.
30. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
31. Go into the System Diagnostic Mode, and Select the Self-Diagnosis Mode in the **Select Diagnosis Items menu**.
32. Check the System Link.

    Is the Display icon red?

    YES - Replace the **audio-navigation unit**. •

    NO - Replace the original **navigation display unit**. •

DTC 2602: DISPLAY DIAG: ROM

NOTE:

- **Check the vehicle battery condition first (see BATTERY TEST).**
- **This navigation DTC sets when a malfunction is detected in the navigation display unit.**
- **Before you troubleshoot, make sure to follow the General Troubleshooting Information.**

1. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode, then back to ON (II), or the ON mode.
2. Go into the System Diagnostic Mode, and select the Self-Diagnosis Mode in the **Select Diagnosis Items menu**.
3. Select the Display in the System Link.

Is the ROM NG?

YES - Replace the **navigation display unit**. •

NO - Intermittent failure, the system is OK at this time. If the vehicle repeatedly comes back with the navigation DTC, replace the **navigation display unit**. •

DTC 2603: DISPLAY DIAG: RAM

NOTE:

- **Check the vehicle battery condition first (see BATTERY TEST).**
- **This navigation DTC sets when a malfunction is detected in the navigation display unit.**
- **Before you troubleshoot, make sure to follow the General Troubleshooting Information.**

1. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode, then back to ON (II), or the ON mode.
2. Go into the System Diagnostic Mode, and select the Self-Diagnosis Mode in the **Select Diagnosis Items menu**.
3. Select the Display in the System Link.

Is the RAM NG?

YES - Replace the **navigation display unit**. •

NO - Intermittent failure, the system is OK at this time. If the vehicle repeatedly comes back with the navigation DTC, replace the **navigation display unit**. •

DTC 2607: XM DIAG

USA models

NOTE:

- **Check the vehicle battery condition first (see BATTERY TEST).**
- **This navigation DTC sets when a problem (open or short) is detected in the GA-Net BUS.**
- **Before you troubleshoot, make sure to follow the General Troubleshooting Information.**

1. Clear the **hard error code**.
2. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode, then back to ON (II), or the ON mode.
3. Check for the **hard error code**.

Is DTC 2601 indicated?

YES - Do the DTC 2601 troubleshooting.

NO - Go to step 4.

4. Go into the System Diagnostic Mode, and select the Self-Diagnosis Mode in the **Select Diagnosis Items menu**.
5. Check the System Link.

   Is the XM (HIP) icon red?

   YES - Go to step 6.

   NO - Intermittent failure, the system is OK at this time. •

6. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
7. Check for poor connections or loose terminals at these items:
   - Audio-navigation unit connector C (14P)
   - AcuraLink control unit (XM receiver) connector A (32P) and B (2P)

   Are the connections OK?

   YES - Go to step 8.

   NO - Repair poor connections or loose terminals. •

8. Disconnect these items:
   - Audio-navigation unit connector C (14P)
   - AcuraLink control unit (XM receiver) connector A (32P)
9. Connect AcuraLink control unit (XM receiver) connector A (32P) terminals No. 30 and No. 31 with a jumper wire.

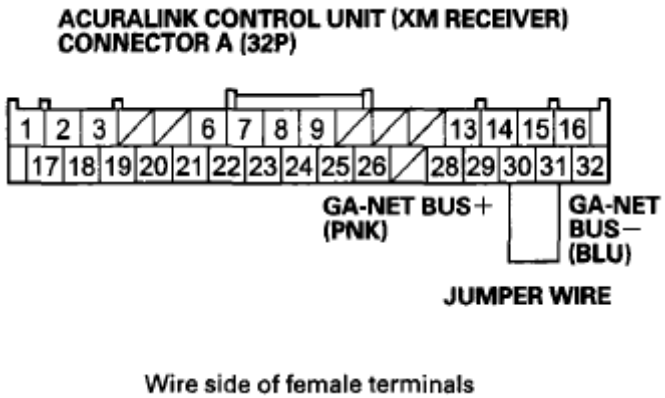


Fig. 128: Connecting AcuraLink Control Unit (XM Receiver) Connector A (32P) Terminals No. 30 And No. 31 With Jumper Wire
Courtesy of AMERICAN HONDA MOTOR CO., INC.

10. Check for continuity between audio-navigation unit connector C (14P) terminals No. 9 and No. 10.

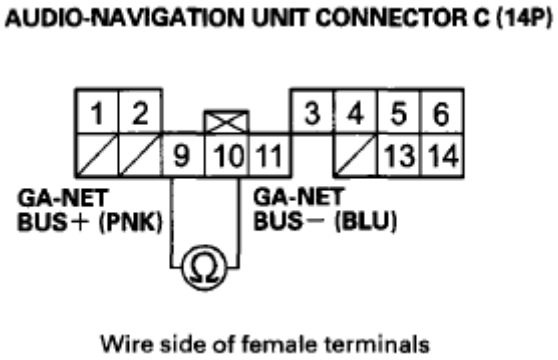


Fig. 129: Checking Continuity Between Audio-Navigation Unit Connector C (14P) Terminals No. 9 And No. 10
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Replace the AcuraLink control unit (XM receiver) (see **AcuraLink CONTROL UNIT (XM RECEIVER) REMOVAL/INSTALLATION**). •

NO - There is an open in the wire(s) between the AcuraLink control unit (XM receiver) and the audio-navigation unit. Replace the affected shielded harness. •

DTC 2607: XM DIAG

Canada models

NOTE:

- **Check the vehicle battery condition first (see BATTERY TEST).**
- **This navigation DTC sets when a problem (open or short) is detected in the GA-Net BUS.**
- **Before you troubleshoot, make sure to follow the General Troubleshooting Information.**

1. Clear the **hard error code**.
2. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode, then back to ON (II), or the ON mode.
3. Check for the **hard error code**.

Is DTC 2601 indicated?

YES - Do the DTC 2601 troubleshooting.

NO - Go to step 4.

4. Go into the System Diagnostic Mode, and select the Self-Diagnosis Mode in the **Select Diagnosis Items menu**.
5. Check the System Link.

   Is the XM icon red?

   YES - Go to step 6.

   NO - Intermittent failure, the system is OK at this time. •

6. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
7. Check for poor connections or loose terminals at these items:
   - Audio-navigation unit connector C (14P)
   - XM receiver connector A (14P) and B (2P)

   Are the connections OK?

   YES - Go to step 8.

   NO - Repair poor connections or loose terminals. •

8. Disconnect these items:
   - Audio-navigation unit connector C (14P)
   - XM receiver connector A (14P)
9. Connect XM receiver connector A (14P) terminals No. 9 and No. 10 with a jumper wire.

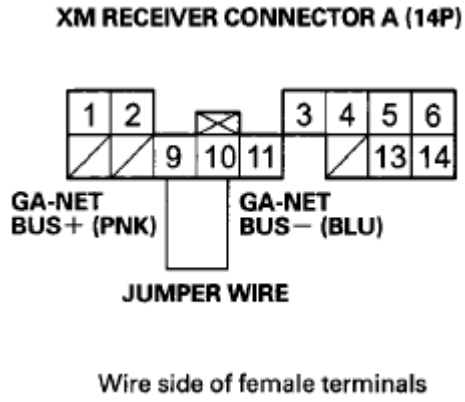


Fig. 130: Connecting XM Receiver Connector A (14P) Terminals No. 9 And No. 10 With Jumper Wire
Courtesy of AMERICAN HONDA MOTOR CO., INC.

10. Check for continuity between audio-navigation unit connector C (14P) terminals No. 9 and No. 10.

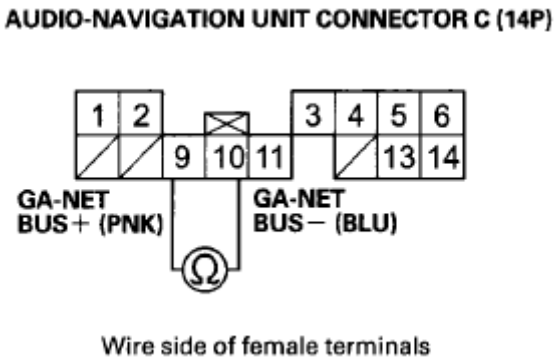


Fig. 131: Checking Continuity Between Audio-Navigation Unit Connector C (14P) Terminals No. 9 And No. 10
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Replace the XM receiver (see **AcuraLink CONTROL UNIT (XM RECEIVER) REMOVAL/INSTALLATION**). •

NO - There is an open in the wire(s) between the XM receiver and the audio-navigation unit. Replace the affected shielded harness. •

DTC 2610: DRAM DIAG

NOTE:

- **Check the vehicle battery condition first (see BATTERY TEST).**
- **This navigation DTC sets when a problem with the audio-navigation unit internal DRAM is detected.**
- **Before you troubleshoot, make sure to follow the General Troubleshooting Information.**

1. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode, then back to ON (II), or the ON mode.
2. Go into the System Diagnostic Mode, and select the Self-Diagnosis Mode in the **Select Diagnosis Items menu**.
3. Select the Navi ECU in the System Link.

Is D-RAM OK indicated?

YES - Intermittent failure, the system is OK at this time. If the vehicle repeatedly comes back with the navigation DTC, replace the **audio-navigation unit**. •

NO - Replace the **audio-navigation unit**. •

DTC 2611: HDD DIAG

NOTE:

- **Check the vehicle battery condition first (see BATTERY TEST).**
- **This navigation DTC sets when there is a problem with the HDD.**
- **Before you troubleshoot, make sure to follow the General Troubleshooting Information.**

1. Check that the passenger compartment temperature is between - 4°F (- 20°C) and 158°F (70°C).
2. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode, then back to ON (II), or the ON mode.
3. Go into the System Diagnostic Mode, and select the Self-Diagnosis Mode in the **Select Diagnosis Items menu**.
4. Select the HDD in the System Link.

   Is HDD OK indicated?

   YES - Intermittent failure, the system is OK at this time. •

   NO - Go to step 5.

5. Check the HDD diagnosis.

   Is the Low Temp Indicated?

   YES - Replace the **HDD**, and recheck. If the vehicle repeatedly comes back with the navigation DTC, replace the **audio-navigation unit**. •

   NO - Replace the **audio-navigation unit**. •

DTC 2612: SUB DISPLAY DIAG

NOTE:

- **Check the vehicle battery condition first (see BATTERY TEST).**
- **This navigation DTC sets when there is a problem with the audio-HVAC subdisplay.**
- **Before you troubleshoot, make sure to follow the General Troubleshooting Information.**

1. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode, then back to ON (II) or the ON mode.
2. Go into the System Diagnostic Mode, and select the Self-Diagnosis Mode in the **Select Diagnosis Items menu**.
3. Check the System Link.

   Is the Sub Display icon red?

   YES - Go to step 4.

NO - Intermittent failure, the system is OK at this time. •

4. Check that the audio system information is displaying properly.

   Is the audio information displayed?

   YES - Replace the **audio-navigation unit**. •

   NO - Go to Audio system information does not display on the audio-navigation switch panel display troubleshooting (see **AUDIO-NAVIGATION SWITCH PANEL BUTTON ILLUMINATION DOES NOT WORK (WITH NAVIGATION)**). •

DTC 2701: GPS DIAG: ANTENNA

NOTE:

- **Check the vehicle battery condition first (see BATTERY TEST).**
- **This navigation DTC sets when a problem is detected in the GPS antenna.**
- **Before you troubleshoot, make sure to follow the General Troubleshooting Information.**
- **Make sure the vehicle is parked outside, away from buildings.**
- **Check for electronic aftermarket accessories (possibly hidden) mounted near the GPS antenna or the audio-navigation unit.**
- **Check for aftermarket metallic window tint.**

1. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode, then back to ON (II), or the ON mode.
2. Go into the System Diagnostic Mode, and select the Self-Diagnosis Mode in the **Select Diagnosis Items menu**.
3. Select the GPS Ant. in the System Link.

   Is Antenna OK indicated?

   YES - Intermittent failure, the system is OK at this time. •

   NO - Go to step 4.

4. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
5. Check for poor connections at audio-navigation unit connector J (2P).

   Is the connection OK?

   YES - Replace the GPS antenna. •

   NO - Repair poor connection. •

DTC 2702: GPS DIAG: RECEIVER IN NAVI ECU

NOTE:

- **Check the vehicle battery condition first (see BATTERY TEST).**
- **This navigation DTC sets when a problem is detected in the GPS antenna.**
- **Before you troubleshoot, make sure to follow the General Troubleshooting Information.**
- **Make sure the vehicle is parked outside, away from buildings.**
- **Check for electronic aftermarket accessories (possibly hidden) mounted near the GPS antenna or the audio-navigation unit.**
- **Check for aftermarket metallic window tint.**

1. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode, then back to ON (II), or the ON mode.
2. Go into the System Diagnostic Mode, and select the Self-Diagnosis Mode in the **Select Diagnosis Items menu**.
3. Select the GPS Ant. in the System Link.

   Is Receiver in Navi ECU OK indicated?

   YES - Intermittent failure, the system is OK at this time. If the vehicle repeatedly comes back with the navigation DTC, replace the **audio-navigation unit**. •

   NO - Replace the **audio-navigation unit**. •

DTC 2704: HIP DIAG (ACURALINK)

USA models

NOTE:

- **Check the vehicle battery condition first (see BATTERY TEST).**
- **This navigation DTC sets when a NG is indicated in the XM (HIP) diagnosis.**
- **Check for, and resolve any B-CAN DTCs before doing this troubleshooting.**
- **Before you troubleshoot, make sure to follow the General Troubleshooting Information.**

1. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode, then back to ON (II), or the ON mode.
2. Go into the System Diagnostic Mode, and select the Self-Diagnosis Mode in the **Select Diagnosis Items menu**.
3. Check the System Link.

   Is the XM (HIP) icon red?

   YES - Do the AcuraLink Self-Diagnostic Function (see **SELF-DIAGNOSTIC FUNCTION**). •

NO - Do the **DTC 1801** troubleshooting. •

DTC 2705: HFL DIAG

USA models

NOTE:

- **Check the vehicle battery condition first (see BATTERY TEST).**
- **This navigation DTC sets when NG is indicated in the HFT diagnosis.**
- **Before you troubleshoot, make sure to follow the General Troubleshooting Information.**

1. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode, then back to ON (II), or the ON mode.
2. Go into the System Diagnostic Mode, and select the Self-Diagnosis Mode in the **Select Diagnosis Items menu**.
3. Check the System Link.

   Is the XM (HIP) icon red?

   YES - Go to **DTC 2704** Troubleshooting. •

   NO - Go to step 4.

4. Go into the System Diagnostic Mode, and select the Self-Diagnosis Mode in the **Select Diagnosis Items menu**.
5. Check the System Link.

   Is the HFL icon red?

   YES - Go to step 6.

   NO - Intermittent failure, the system is OK at this time. •

6. Select the HFT in the System Link, and check for HFL DTCs.

   Are there any HFL DTCs indicated?

   YES - Repair the indicated HFL DTC(s). •

   NO - Go to step 7.

7. Check the HFT diagnosis.

   Is DESIP NG indicated?

YES - Go to step 8.

NO - Replace the **audio-navigation unit**. •

8. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
9. Remove the center console panel (see **CENTER CONSOLE PANEL REMOVAL/INSTALLATION**).
10. Disconnect the HandsFreeLink control unit 32P connector, and AcuraLink control unit (XM receiver) connector A (32P).
11. Check for continuity between the terminals of HandsFreeLink control unit 32P connector according to the table.

From terminal	To terminals
8 (GRY)	6 (WHT), 7 (RED), 22 (BLK), 23 (GRN)

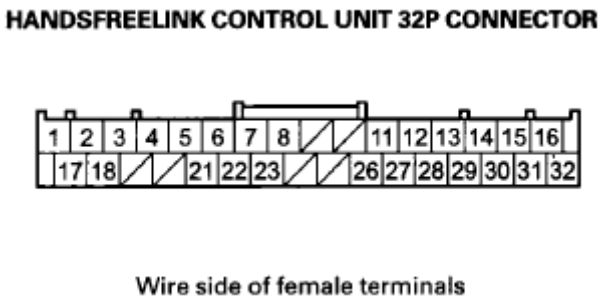


Fig. 132: Checking Continuity Between Terminals Of HandsFreeLink Control Unit 32P Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity between any of the terminals?

YES - There is a short in the wires between the HandsFreeLink control unit and the audio-navigation unit. Replace the affected shielded harness. •

NO - Go to step 12.

12. Check for continuity between body ground and HandsFreeLink control unit 32P connector terminals No. 6, No. 7, No. 22, and No. 23 individually.

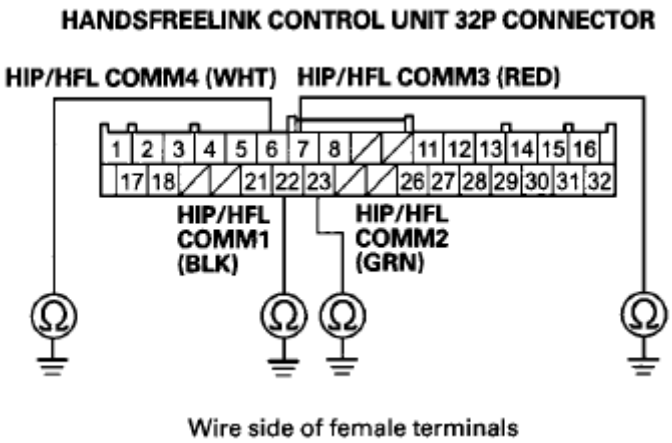


Fig. 133: Checking Continuity Between Body Ground And HandsFreeLink Control Unit 32P Connector Terminals Individually
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - There is a short to body ground in the wire(s) between the HandsFreeLink control unit and the AcuraLink control unit (XM receiver). Replace the affected shielded harness. •

NO - Go to step 13.

13. Connect HandsFreeLink control unit 32P connector terminals No. 6, No. 7, No. 22, and No. 23 to body ground with jumper wires.

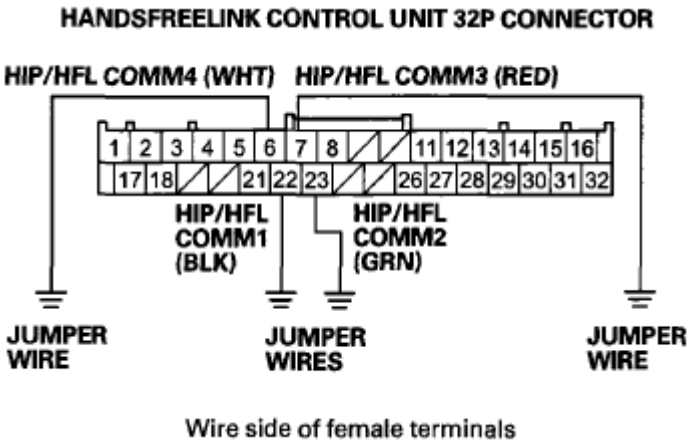


Fig. 134: Connecting HandsFreeLink Control Unit 32P Connector Terminals To Body Ground With Jumper Wires
Courtesy of AMERICAN HONDA MOTOR CO., INC.

14. Check for continuity between body ground and AcuraLink control unit (XM receiver) connector A (32P) terminals No. 22, No. 23, No. 24, and No. 25 individually.

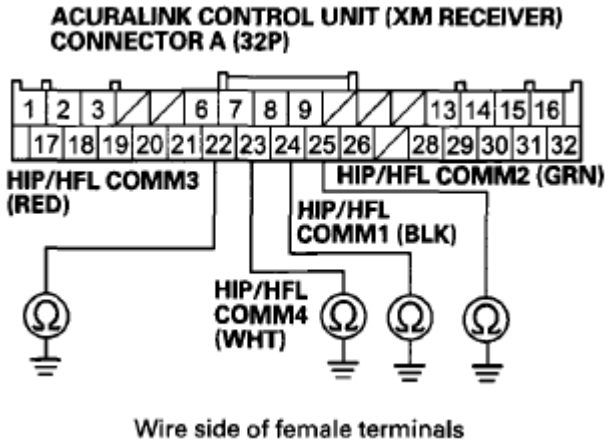


Fig. 135: Checking Continuity Between Body Ground And AcuraLink Control Unit (XM Receiver) Connector A (32P) Terminals Individually
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Replace the HandsFreeLink control unit (see **HFL SWITCH TEST**). •

NO - There is an open in the wire(s) between the HandsFreeLink control unit and the AcuraLink control unit (XM receiver). Replace the affected shielded harness. •

DTC 2705: HFL DIAG

Canada models

NOTE:

- **Check the vehicle battery condition first (see BATTERY TEST).**
- **This navigation DTC sets when NG is indicated in the HFT diagnosis.**
- **Before you troubleshoot, make sure to follow the General Troubleshooting Information.**

1. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode, then back to ON (II), or the ON mode.
2. Go into the System Diagnostic Mode, and select the Self-Diagnosis Mode in the **Select Diagnosis Items menu**.
3. Check the System Link.

Is the HFL icon red?

YES - Go to step 4.

NO - Intermittent failure, the system is OK at this time. •

4. Select the HFT in the System Link, and check for HFL DTCs.

   Are there any HFL DTCs indicated?

   YES - Repair the indicated HFL DTC(s). •

   NO - Replace the **audio-navigation unit**. •

DTC 2706: GYRO DIAG : ECU TEMP XX °C

NOTE:

- **Check the vehicle battery condition first (see BATTERY TEST).**
- **This navigation DTC sets when the audio-navigation unit yaw rate sensor's temperature is out of its specified range.**
- **Before you troubleshoot, make sure to follow the General Troubleshooting Information.**
- **Do this test only when the passenger compartment temperature is between - 4°F (- 20°C) and 158°F (70°C).**

1. Clear the **hard error code**.
2. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode, then back to ON (II), or the ON mode.
3. Check for the **hard error code**.

   Is DTC 2706 indicated?

   YES - Replace the **audio-navigation unit**. •

   NO - Go to step 4.

4. Check the audio-navigation unit cooling fan on the back of the audio-navigation unit to see if it is blocked.

   Is the fan blocked?

   YES - Clean or clear the audio-navigation unit cooling fan, and recheck. •

   NO - Intermittent failure, the system is OK at this time. If the vehicle repeatedly comes back with the navigation DTC, replace the **audio-navigation unit**. •

DTC 2707: MIC DIAG

NOTE:

- **Check the vehicle battery condition first (see BATTERY TEST).**
- **This navigation DTC sets when a problem is detected in the microphone circuit.**

- **Before you troubleshoot, make sure to follow the General Troubleshooting Information.**

1. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode, then back to ON (II), or the ON mode.
2. Go into the System Diagnostic Mode, and select the Self-Diagnosis Mode in the **Select Diagnosis Items menu**.
3. Select the System Link.

   Is the Mic icon red?

   YES - Go to step 4.

   NO - Intermittent failure, the system is OK at this time. •

4. Select the HFT in the System Link, and check for HFL DTCs.

   Are there any HFL DTCs indicated?

   YES - Repair the indicated HFL DTC(s). •

   NO - Go to step 5.

5. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
6. Check for poor connections or loose terminals at these items:
   - Audio-navigation unit connector H (28P)
   - HandsFreeLink control unit 32P connector
   - HFL-navigation microphone 7P connector

   Are the connections or terminals OK?

   YES - Go to step 7.

   NO - Repair poor connections or loose terminals, and recheck. •

7. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
8. Measure the voltage between body ground and HFL-navigation microphone 7P connector terminals No. 6 and No. 7 individually.

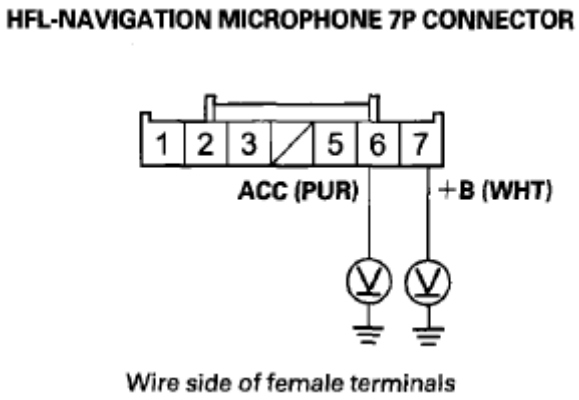


Fig. 136: Measuring Voltage Between Body Ground And HFL-Navigation Microphone 7P Connector Terminals No. 6 And No. 7 Individually
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there battery voltage?

YES - Go to step 9.

NO - If the +B wire does not have voltage, repair an open in the wire between the No. 15 (10 A) fuse under-hood fuse/relay box and the HFL-navigation microphone. If the ACC wire does not have voltage, repair an open in the wire between the No. 18 (7.5 A) fuse in the driver's under-dash fuse/relay box and the HFL-navigation microphone. •

9. Measure the voltage between HFL-navigation microphone 7P connector terminal No. 1 and body ground.

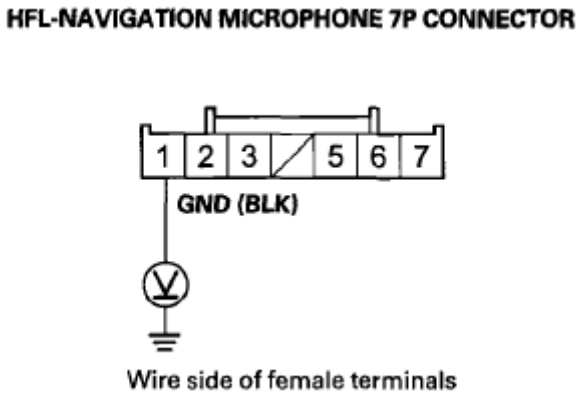


Fig. 137: Measuring Voltage Between HFL-Navigation Microphone 7P Connector Terminal No. 1 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there less than 0.2 V?

YES - Replace the HFL-navigation microphone. •

NO - Repair an open or high resistance in the wire between the HFL-navigation microphone and body

ground (G401) (see **CONNECTOR TO FUSE/RELAY BOX INDEX**). •

SYMPTOM TROUBLESHOOTING

NO PICTURE IS DISPLAYED

NOTE:

- **Check the vehicle battery condition first (see BATTERY TEST).**
- **Check if the Day/Night button has been pressed, and turned off the display (see Navigation Manual for more information).**
- **Check the connectors for poor connections or loose terminals.**
- **Before troubleshooting, make sure you have the anti-theft code.**
- **After troubleshooting, enter the anti-theft code.**
- **Make sure that the latest navigation software is installed.**
- **Check any official Honda service website for more service information about the navigation system.**

1. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
2. Check if the navigation display indicates any error message.

   Is error message displayed?

   YES - Refer to the **Error Message Table**. •

   NO - Go to step 3.

3. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
4. Check the No. 15 (10 A) fuse in the under-hood fuse/relay box and No. 18 (7.5 A) fuse in the driver's under-dash fuse/relay box, and reinstall the fuses if they are OK.

   Are the fuses OK?

   YES - Go to step 5.

   NO - Replace the fuse(s), and recheck. If the fuse(s) blows again, check for a short in the No. 15 (10 A) fuse and/or the No. 18 (7.5 A) fuse circuits. •

5. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
6. Do the **Forced Starting of the Audio-Navigation Unit**.

   Is the diagnosis menu of the picture diagnosis displayed?

   YES - Go to step 14.

   NO - Go to step 7.

7. Shield the navigation display unit from the sun with your hand, and check that the display is back lit (only the back light is on.)

   Can you see the back light?

   YES - Substitute a known-good **audio-navigation unit**, and recheck. If the symptom/indication goes away, replace the original **audio-navigation unit**. If the symptom/indication is still present, replace the **navigation display unit**. •

   NO - Go to step 8.

8. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
9. Connect the HDS to the DLC.
10. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
11. Clear the DTCs with the HDS.
12. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode, then back to ON (II), or the ON mode.
13. Check for DTCs with the HDS.

    Are there any DTCs?

    YES - Troubleshoot the indicated DTC, then recheck. •

    NO - Go to step 17.

14. Clear the **hard error code**.
15. Turn the ignition switch to LOCK(0), or press the engine start/stop button to select the OFF mode, then back to ON (II), or the ON mode.
16. Check for the **hard error code**.

    Is there a hard error code stored?

    YES - Refer to the hard error code troubleshooting. •

    NO - Substitute a known-good **audio-navigation unit**, and recheck. If the symptom/indication goes away, replace the original **audio-navigation unit**. If the symptom/indication is still present, replace the **navigation display unit**. •

17. Measure the voltage between body ground and audio-navigation unit connector A (24P) terminals No. 14 and No. 24 individually.

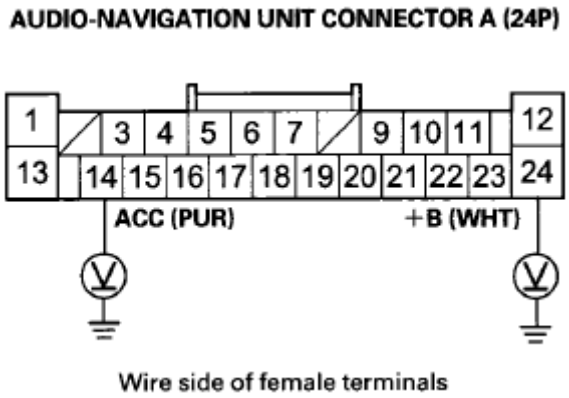


Fig. 138: Measuring Voltage Between Body Ground And Audio-Navigation Unit Connector A (24P) Terminals No. 14 And No. 24 Individually
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there battery voltage?

YES - Go to step 18.

NO - If the +B wire does not have voltage, repair an open in the wire between the under-hood fuse/relay box and the audio-navigation unit. If the ACC wire does not have voltage, repair an open in the wire between the driver's under-dash fuse/relay box and the audio-navigation unit. •

18. Measure the voltage between audio-navigation unit connector A (24P) terminal No. 12 and body ground.

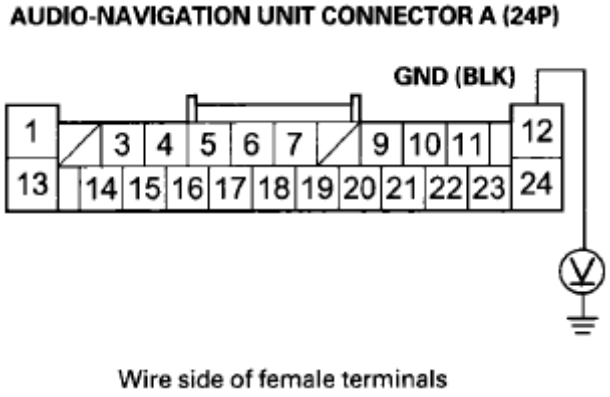


Fig. 139: Measuring Voltage Between Audio-Navigation Unit Connector A (24P) Terminal No. 12 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there less than 0.2 V?

YES - Go to step 19.

NO - Repair an open or high resistance in the wire between the audio-navigation unit and body ground (G502) (see **CONNECTOR TO FUSE/RELAY BOX INDEX**). •

19. Measure the voltage between body ground and navigation display unit 36P connector terminals No. 1 and No. 2 individually.

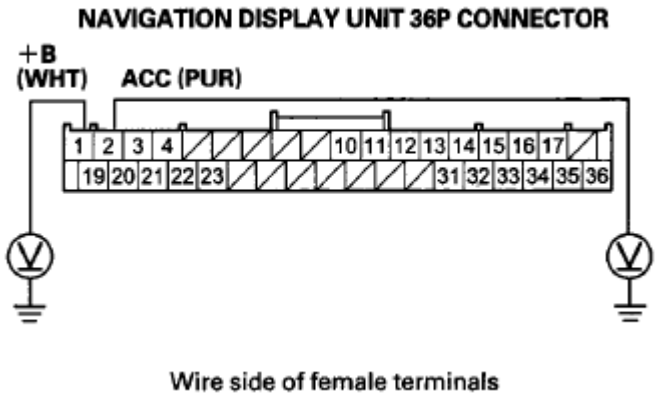


Fig. 140: Measuring Voltage Between Body Ground And Navigation Display Unit 36P Connector Terminals No. 1 And No. 2 Individually
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there battery voltage?

YES - Go to step 20.

NO - If the +B wire does not have voltage, repair an open in the wire between the under-hood fuse/relay box and the navigation display unit. If the ACC wire does not have voltage, repair an open in the wire between the driver's under-dash fuse/relay box and the navigation display unit. •

20. Measure the voltage between navigation display unit 36P connector terminal No. 19 and body ground.

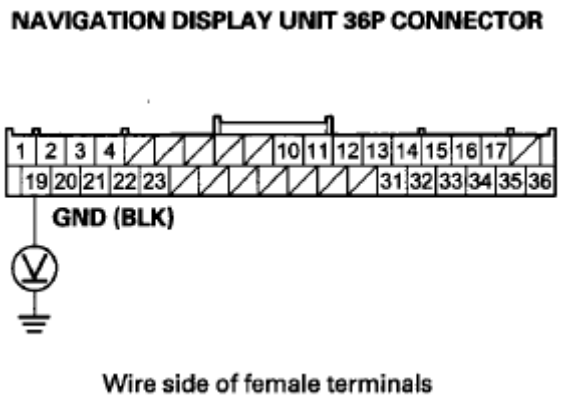


Fig. 141: Measuring Voltage Between Navigation Display Unit 36P Connector Terminal No. 19 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there less than 0.2 V?

YES - Substitute a known-good **navigation display unit**, and recheck. If the symptom/indication goes away, replace the original navigation display unit. If the symptom/indication is still present, replace the **audio-navigation unit**. •

NO - Repair an open or high resistance in the wire between the navigation display unit and body ground (G501) (see **CONNECTOR TO FUSE/RELAY BOX INDEX**). •

VEHICLE POSITION ICON CONSTANTLY LEAVES ROAD, MOVES ERRATICALLY, OR IS DISPLAYED VERY FAR FROM ACTUAL VEHICLE POSITION

NOTE:

- **Check the vehicle battery condition first (see BATTERY TEST).**
- **Check that the GPS antenna is plugged in.**
- **This is not the same condition as when driving off-road (or on a fire or logging road). This condition is caused by a loss of map matching from a bad sensor input. Check for aftermarket metallic window tinting or other objects that can block the GPS signal. Always do the Map Matching (see Map Matching) before proceeding with the troubleshooting.**
- **Make sure that the latest navigation software is installed.**
- **Check any official Honda service website for more service information about the navigation system.**
- **Check the GPS signal reception in an open area.**

1. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
2. Check the GPS icon on the navigation screen.

   Is the GPS icon white?

   YES - Go to **GPS icon is white or not shown** troubleshooting. •

   NO - Go to step 3.

3. Go into the **System Diagnostic Mode**, and use the **Yaw Sensor test** to check the audio-navigation unit internal yaw rate sensor.

   Is the yaw rate sensor OK?

   YES - The condition may be normal. Check to see if the condition occurs in the same place in a known-good vehicle. If it does, the problem could be in the database. Go to step 4.

   NO - Replace the **audio-navigation unit**. •

4. Go into the System Diagnostic Mode, and use the **Car Status test** to check the VSP signal.
5. Drive the vehicle, and watch the VSP signal.

   Does the VSP signal change from [0] (stopped) to [1] (moving) as you drive?

YES - The condition may be normal. Check to see if the condition occurs in the same place in a known-good vehicle. If it does, the problem could be in the database. Go to step 6.

NO - Do the **DTC 1306 (Vehicle Speed Pulse)** troubleshooting. •

6. Substitute a known-good **audio-navigation unit**, and check to see if the problem occurs in the same place.

   Does the problem occur in the same location each time?

   YES - Try to replicate the problem in a known-good vehicle. If the problem can be duplicated, the problem is in the database. Report the problem according to the Navigation Manual under Reporting Errors. •

   NO - Replace the original **audio-navigation unit**. •

PICTURE IS MISSING A COLOR OR TONE OR IS AN ODD COLOR

NOTE:

- **Check the vehicle battery condition first (see BATTERY TEST).**
- **Check the connectors for poor connections or loose terminals.**
- **Make sure that the latest navigation software is installed.**
- **Check any official Honda service website for more service information about the navigation system.**
- **Check the navigation screen settings for brightness, contrast, and black level, and check the color screen for map color and menu color.**
- **Before troubleshooting, make sure you have the anti-theft code.**
- **After troubleshooting, enter the anti-theft code.**
- **Check for aftermarket accessories that may interfere with the navigation system.**

1. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
2. Go into the **System Diagnostic Mode**, and use the RGB Color test under the **Monitor Check**.

   Are the red, green, and blue colored circles shown?

   YES - The system is OK at this time. •

   NO - Go to step 3.

3. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
4. Disconnect audio-navigation unit connector G (16P) and the navigation display unit 36P connector.
5. Check for poor connections or loose terminals at audio-navigation unit connector G (16P) and the navigation display unit 36P connector.

Are the connections or terminals OK?

YES - Go to step 6.

NO - Repair poor connections or loose terminals, and recheck. •

6. Check for continuity between the terminals of audio-navigation unit connector G (16P) according to the table.

From terminal	To terminals
G5 (GRN)	G6 (YEL), G7 (RED), G8 (WHT) G13 (GRY)
G6 (YEL)	G7 (RED), G8 (WHT) G13 (GRY)
G7 (RED)	G8 (WHT) G13 (GRY)
G8 (WHT)	G13 (GRY)

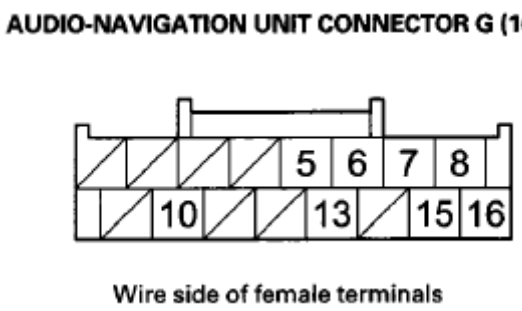


Fig. 142: Checking Continuity Between Terminals Of Audio-Navigation Unit Connector G (16P)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity between any of the terminals?

YES - Go to step 7.

NO - There is a short in the wires between the audio-navigation unit and the navigation display unit. Replace the affected shielded harness. •

7. Check for continuity between audio-navigation unit connector G (16P) and body ground according to the table.

Audio-navigation unit connector	Wire color
G6	YEL
G7	RED
G8	WHT

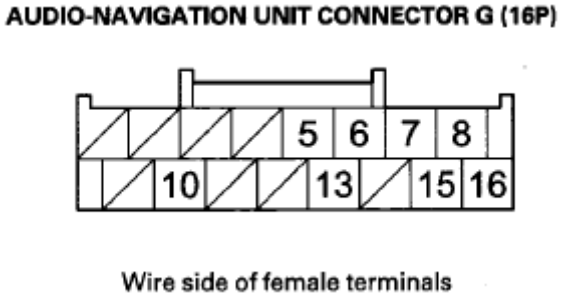


Fig. 143: Checking Continuity Between Audio-Navigation Unit Connector G (16P) And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - There is a short to body ground in the wires between the audio-navigation unit and the navigation display unit. Replace the affected shielded harness. •

NO - Go to step 8.

8. Check for continuity between the appropriate terminals of audio-navigation unit connector G (16P) and the navigation display unit 36P connector based on the missing color(s).

Missing color	Audio-navigation unit connector	Navigation display unit connector	Wire color
Blue	G6	16	YEL
Green	G7	15	RED
Red	G8	14	WHT

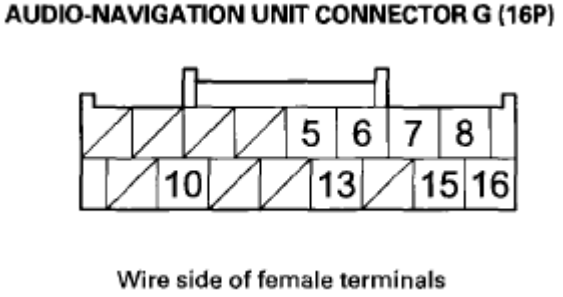


Fig. 144: Checking Continuity Between Appropriate Terminals Of Audio-Navigation Unit Connector G (16P)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

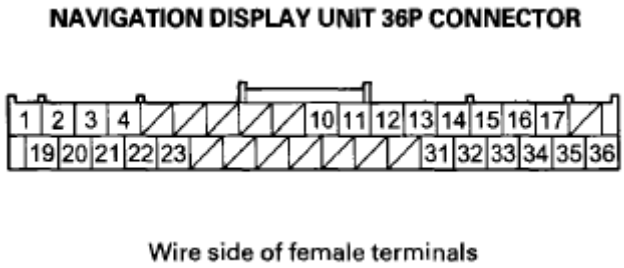


Fig. 145: Checking Continuity Between Appropriate Terminals Of Navigation Display Unit 36P Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - There is an open in the wire(s) between the navigation display unit and the audio-navigation unit. Check for poor connections or loose terminals at the navigation display unit and the audio-navigation unit. If a poor connection or loose terminal is found, replace the affected shielded harness. •

NO - Substitute a known-good **navigation display unit**, then reconnect all of the connectors, and recheck. If the symptom/indication goes away, replace the original **navigation display unit**. If the symptom/indication is still present, replace the **audio-navigation unit**. •

PICTURE HAS LINES, ROLLS, OR IS BLURRY

NOTE:

- **Check the vehicle battery condition first (see BATTERY TEST).**
- **Always compare the screen image to a known-good vehicle. If the screen looks the same, inform the client that it is a characteristic of the system.**
- **Check the connectors for poor connections or loose terminals.**
- **Make sure that the latest navigation software is installed.**
- **Check any official Honda service website for more service information about the navigation system.**
- **Check the navigation screen settings for brightness, contrast, and black level, and check the color screen for map color and menu color.**
- **Before troubleshooting, make sure you have the anti-theft code.**
- **After troubleshooting, enter the anti-theft code.**

1. Check for electronic aftermarket accessories (possibly hidden) mounted near the navigation display unit or the audio-navigation unit.

   Are there any electronic accessories?

   YES - Disable the accessories, and recheck. •

   NO - Go to step 2.

2. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode, and start up the navigation system (screen).

   Is the picture scrolling horizontally (left to right or right to left)?

   YES - Go to step 3.

   NO - Intermittent failure. The system is OK at this time. •

3. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
4. Disconnect audio-navigation unit connector G (16P) and the navigation display unit 36P connector.
5. Check for continuity between audio-navigation unit connector G (16P) terminal No. 16 and body ground.

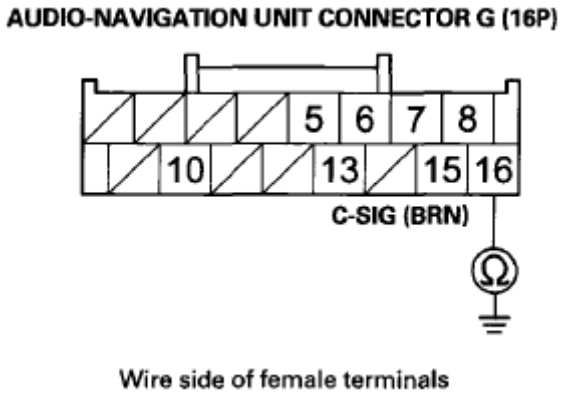


Fig. 146: Checking Continuity Between Audio-Navigation Unit Connector G (16P) Terminal No. 16 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

   Is there continuity?

   YES - There is a short to body ground in the wire between the audio-navigation unit and the navigation display unit. Replace the affected shielded harness. •

   NO - Go to step 6.

6. Check for continuity between the terminals of audio-navigation unit connector G (16P) according to the table.

From terminal	To terminals
G16 (BRN)	G5 (GRN), G6 (YEL), G7 (RED), G8 (WHT), G13 (GRY), G15 (BLU)

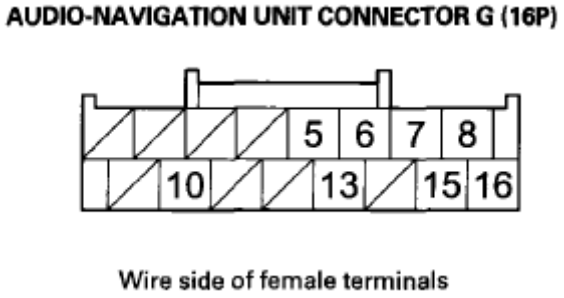


Fig. 147: Checking Continuity Between Terminals Of Audio-Navigation Unit Connector G (16P)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity between any of the terminals?

YES - Go to step 7.

NO - There is a short in the wire(s) between the audio-navigation unit and the navigation display unit. Replace the affected shielded harness. •

7. Check for continuity between audio-navigation unit connector G (16P) terminal No. 16 and navigation display unit 36P connector terminal No. 17.

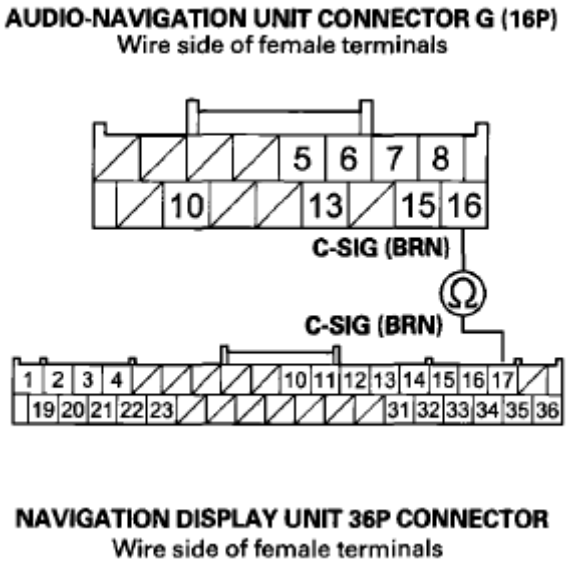


Fig. 148: Checking Continuity Between Audio-Navigation Unit Connector G (16P) Terminal No. 16 And Navigation Display Unit 36P Connector Terminal No. 17
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Substitute a known-good **navigation display unit**, then reconnect all of the connectors, and recheck. If the symptom/indication goes away, replace the original **navigation display unit**. If the symptom/indication is still present, replace the **audio-navigation unit**. •

NO - There is an open in the wire(s) between the audio-navigation unit and the navigation display unit. Replace the affected shielded harness. •

INTERFACE DIAL BUTTONS DO NOT WORK

NOTE:

- **Check the vehicle battery condition first (see BATTERY TEST).**
- **Check the connectors for poor connections or loose terminals.**
- **Check any official Honda service website for more service information about the navigation system.**
- **Before troubleshooting, make sure you have anti-theft code.**
- **After troubleshooting, enter the anti-theft code.**

1. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
2. Go into the **System Diagnostic Mode**, and use the Hard Key test under the **Unit Check**.

   Do the interface dial buttons work properly?

   YES - The system is OK at this time. •

   NO - Go to step 3.

3. Measure the voltage between interface dial 5P connector terminal No. 4 and body ground.

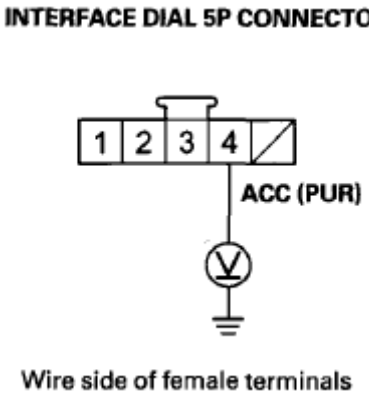


Fig. 149: Measuring Voltage Between Interface Dial 5P Connector Terminal No. 4 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

   Is there battery voltage?

   YES - Go to step 4.

   NO - Repair an open in the wire between the driver's under-dash fuse/relay box and the interface dial. •

4. Measure the voltage between interface dial 5P connector terminal No. 3 and body ground.

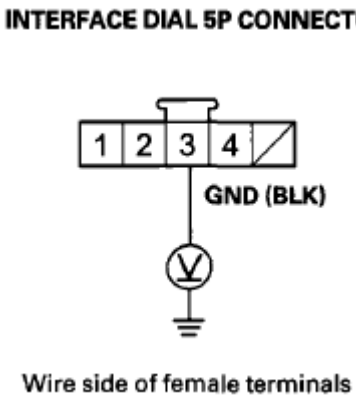


Fig. 150: Measuring Voltage Between Interface Dial 5P Connector Terminal No. 3 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there less than 0.2 V?

YES - Go to step 5.

NO - Repair an open or high resistance in the wire between the interface dial and body ground (G501) (see **CONNECTOR TO FUSE/RELAY BOX INDEX**). •

5. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
6. Disconnect audio-navigation unit connector H (28P).
7. Disconnect the interface dial 5P connector.
8. Check for continuity between audio-navigation unit connector H (28P) terminal No. 26 and interface dial 5P connector terminal No. 1.

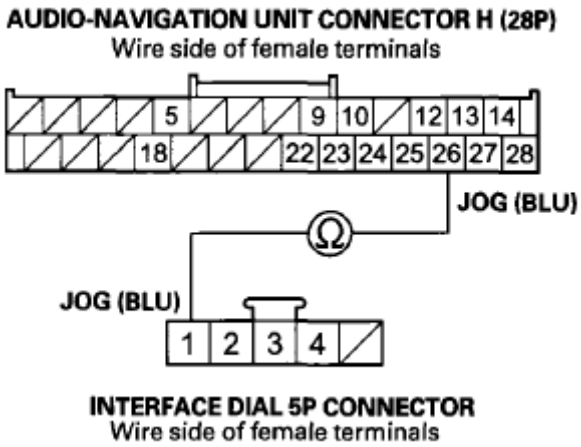


Fig. 151: Checking Continuity Between Audio-Navigation Unit Connector H (28P) Terminal No. 26 And Interface Dial 5P Connector Terminal No. 1
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 9.

NO - There is an open in the wire between the interface dial and the audio-navigation unit. Replace the affected shielded harness. •

9. Check for continuity between audio-navigation unit connector H (28P) terminals No. 13 and No. 26.

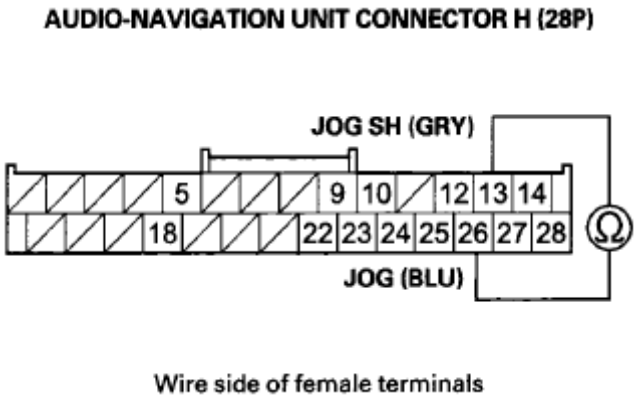


Fig. 152: Checking Continuity Between Audio-Navigation Unit Connector H (28P) Terminals No. 13 And No. 26
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - There is a short in the wires between the audio-navigation unit and the interface dial. Replace the affected shielded harness. •

NO - Substitute a known-good **interface dial**, then reconnect all of the connectors, and recheck. If the symptom/indication goes away, replace the original **interface dial**. If the symptom/indication is still present, replace the **audio-navigation unit**. •

GPS ICON IS WHITE OR NOT SHOWN

NOTE:

- **Check the vehicle battery condition first (see BATTERY TEST).**
- **With good reception, the icon is normally green.**
- **Make sure the GPS antenna is plugged in.**
- **Check for any aftermarket accessories or metallic window tinting that may be interfering with the GPS signal.**
- **Make sure the vehicle is parked outside, away from buildings.**
- **Refer to GPS Information for real-time satellite reception display.**

1. Check for aftermarket metallic window tint on the front window and electronic aftermarket accessories (possibly hidden) mounted near the GPS antenna or the audio-navigation unit.

Is there aftermarket metallic window tint or electronic accessories?

YES - Remove tint or the accessories, and recheck. •

NO - Go to step 2.

2. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
3. Go into the **System Diagnostic Mode**, and use the System Link to check the GPS antenna.

   Is the GPS Ant icon red?

   YES - Check for a kinked, crushed, or disconnected GPS antenna wire. If icon is still red, replace the **GPS antenna**. •

   NO - Check that nothing is blocking the GPS antenna located under the package shelf, and recheck. Substitute a known-good **GPS antenna**, and recheck. If the symptom/indication goes away, replace the original **GPS antenna**. If the symptom/indication is still present, replace the **audio-navigation unit**. •

VOICE GUIDANCE CANNOT BE HEARD, IS BROKEN UP, OR THERE IS STATIC

NOTE:

- **Check the vehicle battery condition first (see BATTERY TEST).**
- **Check the navigation volume level (see Owner's Manual).**
- **Check the connectors for poor connections or loose terminals.**
- **If the hard error code stored, check the hard error code troubleshooting first.**
- **Make sure that the latest navigation software is installed.**
- **Before troubleshooting, make sure you have the anti-theft code.**
- **After troubleshooting, enter the anti-theft code.**

1. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
2. Press the INFO button.
3. Check the volume and voice feedback setting for the navigation system in SETUP screen.

   Is either set to OFF?

   YES - Set the voice feedback to ON, and select an audible level for the volume. •

   NO - Go to step 4.

4. Check the audio system operation.

   Can you hear the audio system?

   YES - Go to step 5.

   NO - Troubleshoot the audio system. •

5. Clear the **hard error code**.
6. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode, then back to ON (II), or the ON mode.
7. Check for the **hard error code**.

   Are there any hard error codes stored?

   YES - Refer to the hard error code troubleshooting. •

   NO - Go to step 8.

8. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
9. Disconnect audio-navigation unit connector B (24P).
10. Disconnect stereo amplifier connector B (28P).
11. Check for continuity between body ground and audio-navigation unit connector B (24P) terminals No. 20 and No. 22 individually.

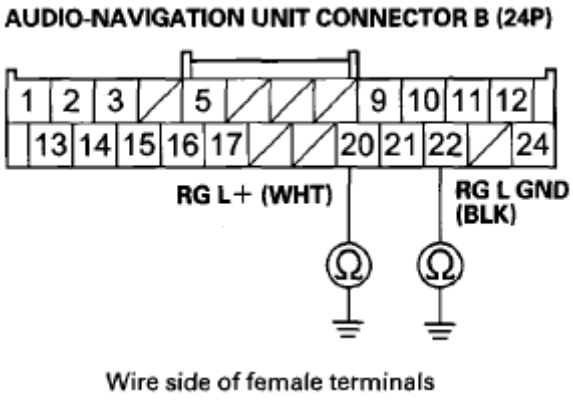


Fig. 153: Checking Continuity Between Body Ground And Audio-Navigation Unit Connector B (24P) Terminals No. 20 And No. 22 Individually
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - There is a short to body ground in the wire(s) between the audio-navigation unit and the stereo amplifier. Replace the affected shielded harness. •

NO - Go to step 12.

12. Check for continuity between the terminals of audio-navigation unit connector B (24P) according to the table.

From terminal	To terminals
B20 (WHT)	B21 (GRY), B22 (BLK)

B21 (GRY)	B22 (BLK)

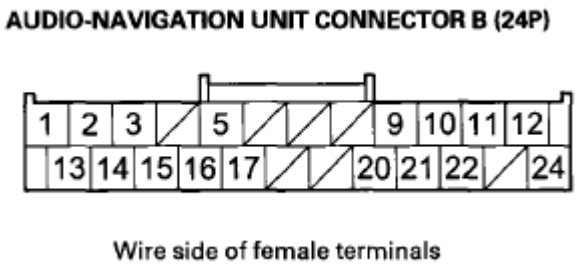


Fig. 154: Checking Continuity Between Terminals Of Audio-Navigation Unit Connector B (24P)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity between any of the terminals?

YES - There is a short in the wires between the audio-navigation unit and the stereo amplifier. Replace the affected shielded harness. •

NO - Go to step 13.

13. Check for continuity between audio-navigation unit connector B (24P) terminals No. 20 and No. 22 and stereo amplifier connector B (28P) terminals No. 21 and No. 9 respectively.

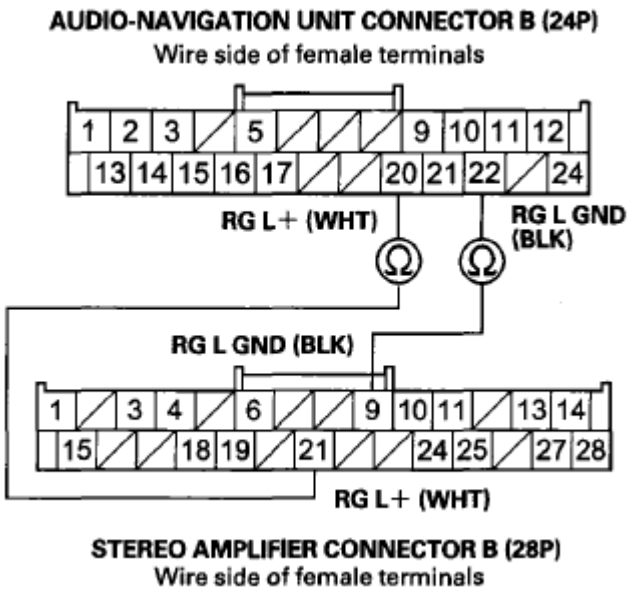


Fig. 155: Checking Continuity Between Audio-Navigation Unit Connector B (24P) Terminals And Stereo Amplifier Connector B (28P) Terminals
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Substitute a known-good stereo amplifier (see **AUDIO-HVAC DISPLAY UNIT**

REMOVAL/INSTALLATION), then reconnect all of the connectors, and recheck. If the symptom/indication goes away, replace the original stereo amplifier (see **AUDIO-HVAC DISPLAY UNIT REMOVAL/INSTALLATION**). If the symptom/indication is still present, replace the **audio-navigation unit**. •

NO - There is an open in the wire between the audio-navigation unit and the stereo amplifier. Replace the affected shielded harness. •

VOICE CONTROL DOES NOT WORK/RESPOND

NOTE:

- **Check the vehicle battery condition first (see BATTERY TEST).**
- **Make sure that the latest navigation software is installed.**
- **Check any official Honda service website for more service information about the navigation system.**
- **Before assuming that a voice complaint is hardware related, ensure that the voice control system is being operated correctly.**
  - **Make sure you are on the correct screen when trying to issue a voice command. For instance, the command "Find the nearest Italian Restaurant" only works on Map screen. (See the Navigation Manual for a complete list of allowed voice commands for the information being displayed)**
  - **Close the windows and moonroof**
  - **Set the fan speed to low (1 or 2)**
  - **Adjust the air flow from the air conditioning vents so that they do not blow against the microphone on the ceiling**
  - **Pause after pressing the navigation TALK button then give a voice command clearly in a natural speaking voice. If the system cannot recognize your command, speak louder**
  - **If you speak a command with something in your mouth, or your voice is too husky, or high pitched, the system may misunderstand your command**
- **Check the connectors for poor connections or loose terminals.**
- **Check for a loose roof console microphone; if it's loose, tighten it.**
- **Before troubleshooting, make sure you have the anti-theft code.**
- **After troubleshooting, enter the anti-theft code.**
- **Determine if the problem only happens to one person, or everyone who uses the system.**
- **If the system only has a problem with one person's voice, this should be considered a system limitation.**

1. Clear the **hard error code**.
2. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode, then back to ON (II), or the ON mode.

3. Check for the **hard error code**.

   Is there a hard error code stored?

   YES - Refer to the hard error code troubleshooting. •

   NO - Go to step 4.

4. Do the **Voice Control Switch Test**.

   Is the switch OK?

   YES - Replace the **audio-navigation unit**. •

   NO - Replace the audio remote, HFL-navigation voice control switch (see **STEERING WHEEL DISASSEMBLY/REASSEMBLY**). •

NAVIGATION CANNOT CONTROL HVAC BY VOICE COMMAND

NOTE:

- **Check the vehicle battery condition first (see BATTERY TEST).**
- **Check the connectors for poor connections or loose terminals.**
- **Check for and resolve all CAN DTCs before troubleshooting the navigation system.**
- **If the hard error code stored, check the hard error code troubleshooting first.**
- **Before troubleshooting, make sure you have the anti-theft code.**
- **After troubleshooting, enter the anti-theft code.**
- **Verify that the correct audio-navigation unit is installed for this model. Go into the System Diagnostic Mode, and use Version.**
- **Make sure that the latest navigation software is installed.**
- **Check any official Honda service website for more service information about the navigation system.**

1. Connect the HDS to the DLC.
2. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
3. Clear the DTCs with the HDS.
4. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode, then back to ON (II), or the ON mode.
5. Check for DTCs with the HDS.

   Are there any DTCs?

   YES - Troubleshoot the indicated DTC, then recheck. •

NO - Go to step 6.

6. Clear the **hard error code**.
7. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode, then back to ON (II), or the ON mode.
8. Check for the **hard error code**.

   Is there a hard error code stored?

   YES - Refer to the hard error code troubleshooting. •

   NO - Substitute and a known-good climate control unit (see **EVAPORATOR TEMPERATURE SENSOR REPLACEMENT**), then reconnect all connectors, and recheck. If the symptom/indication goes away, replace the original climate control unit (see **EVAPORATOR TEMPERATURE SENSOR REPLACEMENT**). If the symptom/indication is still present, replace the **audio-navigation unit**. •

DISPLAY DAY/NIGHT MODE DOES NOT WORK OR DOES NOT WORK PROPERLY

- Turn the headlight on, and check that the dash brightness setting is not set to high.
- Check the connectors for poor connections or loose terminals.
- Always check for and resolve all CAN DTCs before troubleshooting the navigation system.
- Verify that the correct audio-navigation unit is installed for this model. Go into the System Diagnostic Mode, and use **Version**.
- Before troubleshooting, make sure you have the anti-theft code.
- After troubleshooting, enter the anti-theft code.
- Check any official Honda service website for more service information about the navigation system.

1. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
2. Press the Day/Night button to see if the display changes to day and night modes.

   Does the display change today and night modes when pressing the Day/Night button?

   YES - Go to step 3.

   NO - Go to **Interface dial buttons do not work** properly troubleshooting. •

3. Turn the combination lighting switch to the parking light position, and adjust the dash brightness up and down, then to the middle range.

   Does the display change to day and night modes when turning the headlights on and off?

   YES - Intermittent failure. The system is OK at this time. •

   NO - Go to step 4.

4. Turn the combination lighting switch to the off position.
5. Clear the **hard error code**.
6. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode, then back to ON (II), or the ON mode.
7. Check for the **hard error code**.

   Are there hard error codes stored?

   YES - Refer to the hard error code troubleshooting. •

   NO - Go to step 8.

8. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
9. Disconnect the navigation display unit 36P connector.
10. With the combination lighting switch to the parking light position, measure the voltage between navigation display unit 36P connector terminal No. 36 and body ground.

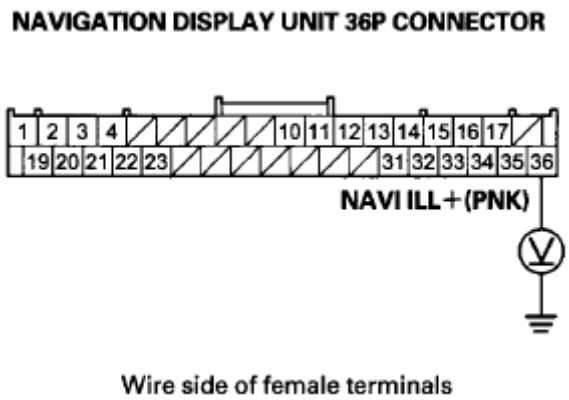


Fig. 156: Measuring Voltage Between Navigation Display Unit 36P Connector Terminal No. 36 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there battery voltage?

YES - Substitute a known-good **navigation display unit**, then reconnect all of the connectors, and recheck. If the symptom/indication goes away, replace the original **navigation display unit**. If the symptom/indication is still present, replace the gauge control module **GAUGE CONTROL MODULE REPLACEMENT** . •

NO - Repair an open or short in the wire between the navigation display unit and the gauge control module. •

SYSTEM LOCKS UP OR FREEZES CONSTANTLY

NOTE:

- **Check the vehicle battery condition first (see BATTERY TEST).**
- **Always check for and resolve all CAN DTCs before troubleshooting the navigation system.**
- **Verify that the correct audio-navigation unit is installed for this model. Go into the System Diagnostic Mode, and use Version.**
- **Make sure that the latest navigation software is installed.**
- **Check any official Honda service website for more service information about the navigation system.**
- **Before troubleshooting, make sure you have the anti-theft code.**
- **After troubleshooting, enter the anti-theft code.**
- **Check the connectors for poor connections or loose terminals.**

1. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.

   Does the system reboot, lock up, or freeze?

   YES - Replace the **audio-navigation unit**. •

   NO - The system is OK at this time. Go into the **System Diagnostic Mode**, and use the **Unit Check diagnosis** to check the audio-navigation unit and the navigation display unit status. If any status are NG, replace the affected units. •

VEHICLE POSITION ICON WANDERS ACROSS THE MAP WHEN DRIVING (DOES NOT FOLLOW A DISPLAYED ROAD) OR MAP VEHICLE ICON SPINS

NOTE:

- **Check the vehicle battery condition first (see BATTERY TEST).**
- **This is not the same condition as when driving off-road (or on a fire or logging road).**
- **This condition is caused by a loss of map matching from a bad sensor input. Check for aftermarket or other objects that can block the GPS signal. Always perform Map Matching before proceeding with the troubleshooting.**
- **Always check for and resolve all CAN DTCs before troubleshooting the navigation system.**
- **Verify that the correct audio-navigation unit is installed for this model. Go into the System Diagnostic Mode, and Go into the System Diagnostic Mode, and use Version.**
- **Check for aftermarket metallic window tinting.**
- **Check any official Honda service website for more service information about the navigation system.**
- **Before troubleshooting, make sure you have the anti-theft code.**
- **After troubleshooting, enter the anti-theft code.**

- **Check the connectors for poor connections or loose terminals.**

1. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
2. Check the GPS icon on the navigation screen.

   Is the GPS icon white or missing?

   YES - Go to **GPS icon is white or not shown** troubleshooting. •

   NO - Go to step 3.

3. Go into the System Diagnostic mode, and use the **Yaw Sensor** diagnosis to check the yaw rate sensor.

   Is the yaw rate sensor OK?

   YES - Go to step 4.

   NO - Replace the **audio-navigation unit**. •

4. Go into the System Diagnostic Mode, and use the **Car Status diagnosis** to check the BACK signal.

   Does the BACK signal change from [0] to [1] when the shift lever position is changed from P or N to R?

   YES - Go to step 5.

   NO - Troubleshoot the back-up light. If OK, go to step 7.

5. Go into the System Diagnostic Mode, and use the **Car Status diagnosis** to check the VSP signal.
6. Drive the vehicle and watch the VSP signal.

   Does the VSP signal change from [0] to [1] as you drive?

   YES - Go to step 7.

   NO - Do the **DTC 1306 (Vehicle Speed Pulse)** troubleshooting. •

7. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
8. Disconnect audio-navigation unit connector G (16P).
9. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
10. Measure the voltage between audio-navigation unit connector G (16P) terminal No. 10 and body ground when the shift lever is in R position.

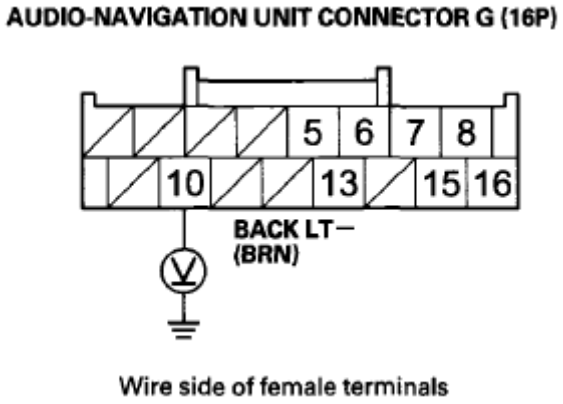


Fig. 157: Measuring Voltage Between Audio-Navigation Unit Connector G (16P) Terminal No. 10 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there battery voltage?

YES - Replace the **audio-navigation unit**. •

NO - Repair an open or high resistance in the wire between the audio-navigation unit and the driver's under-dash fuse/relay box. •

NAVIGATION SYSTEM DOES NOT ACCEPT SECURITY CODE

NOTE:

- **Check the vehicle battery condition first (see BATTERY TEST).**
- **The system will not operate without the 5-digit security (anti-theft) code. Follow the this procedure (after 10 consecutive tries, you must cycle the key to continue trying).**
- **The Navigation System Diagnosis and Core Return Form is available on ISIS, under Job aids, and can be printed out for recording this information. This information will help the reman facility determine what caused the failure.**
- **Always check for and resolve all CAN DTCs before troubleshooting the navigation system.**
- **Check the connectors for poor connections or loose terminals.**
- **Before troubleshooting, make sure you have anti-theft code.**
- **Check any official Honda service website for more service information about the navigation system.**

1. Go into the **System Diagnostic Mode**, and use the Navi ECU under the **Unit Check diagnosis**. A brief diagnostic runs for 20 seconds, and the serial number is displayed.

   Is the serial number displayed?

YES - Go to step 4.

NO - Go to step 2.

2. Remove the **audio-navigation unit**.
3. Check the serial number on the label on the upper side of the audio-navigation unit.

   Is the serial number confirmed on the upper side of the audio-navigation unit?

   YES - Go to step 4.

   NO - Replace the **audio-navigation unit**. •

4. Using the serial number, look up the navigation security code in the Interactive Network (iN) (click: Service, Vehicle Information, Anti-Theft code Inquiry, and then select Navigation from the "product" dropdown box). Enter the serial number.

   Is a 5-digit code displayed on the screen?

   YES - Go to step 5.

   NO - Call the Warranty Department to obtain the code (the telephone number is in the PDI service bulletin). Then go to step 5.

5. Check that the obtained code works to bypass the code screen in the navigation system.

   Does the code work?

   YES - The system is OK at this time. Return the vehicle to the client and give them the anti-theft code. •

   NO - Replace the **audio-navigation unit**, and enter Won't take security code in the Problem description field of the core return form; (as proof, enclose the sticker that contains the Serial number and the Code). •

NAVIGATION DISPLAY STAYS ON WITH THE IGNITION SWITCH IN LOCK (0), OR IN THE OFF MODE

NOTE:

- **Check for aftermarket accessories that may interfere with the navigation system.**
- **Check the connectors for poor connections or loose terminals.**
- **Before troubleshooting, make sure you have the anti-theft code.**
- **After troubleshooting, enter the anti-theft code.**
- **The vehicle may have been used for a show event. Check for a short jumper harness in-line with the audio-navigation unit connector A (24P). If a jumper harness is present, remove it, and return it to Tech Line.**

1. Mare sure turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.

   Does the navigation screen stay on?

   YES - Go to step 2.

   NO - The system is OK at this time. •

2. Measure the voltage between audio-navigation unit connector A (24P) terminal No. 14 and body ground.

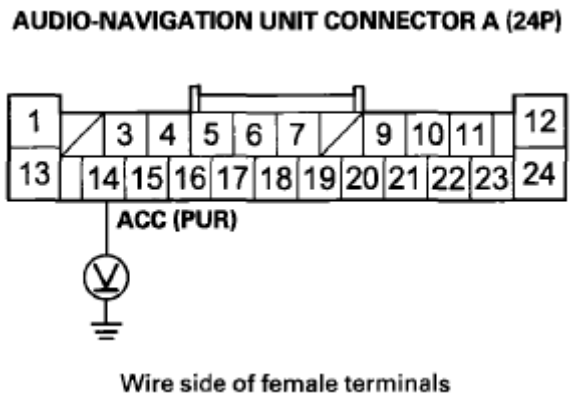


Fig. 158: Measuring Voltage Between Audio-Navigation Unit Connector A (24P) Terminal No. 14 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

   Is there battery voltage?

   YES - Troubleshoot a short to battery voltage on the ACC circuit. •

   NO - Replace the **audio-navigation unit**. •

NAVIGATION CANNOT CONTROL AUDIO SYSTEM

NOTE:

- **Check the vehicle battery condition first (see BATTERY TEST).**
- **Check for and resolve all CAN DTCs before troubleshooting the navigation system.**
- **Verify that the correct navigation unit is installed for this model. Go into the System Diagnostic Mode, and use Version.**
- **Check the connectors for poor connections or loose terminals.**
- **Before troubleshooting, make sure you have the anti-theft code.**
- **After troubleshooting, enter the anti-theft code.**
- **Check any official Honda service website for more service information about the navigation system.**

1. Clear the **hard error code**.
2. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode, then back to ON (II), or the ON mode.
3. Check for the **hard error code**.

   Is there a hard error code stored?

   YES - Refer to the hard error code troubleshooting. •

   NO - Substitute a known-good **audio-navigation unit**, and recheck. If the symptom/indication goes away, replace the original **audio-navigation unit**. •

NAVIGATION CANNOT CONTROL XM RADIO

NOTE:

- **Check the vehicle battery condition first (see BATTERY TEST).**
- **Check any official Honda service website for more service information about the navigation system.**

1. Clear the **hard error code**.
2. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode, then back to ON (II), or the ON mode.
3. Check for the **hard error code**.

   Is there a hard error code stored?

   YES - Refer to the hard error code troubleshooting. •

   NO - Go to step 4.

4. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
5. Substitute a known-good Replace the AcuraLink control unit (XM receiver) (see **AcuraLink CONTROL UNIT (XM RECEIVER) REMOVAL/INSTALLATION**) or XM receiver (see **AcuraLink CONTROL UNIT (XM RECEIVER) REMOVAL/INSTALLATION**).

   Can the navigation system control XM radio functions?

   YES - Replace the original AcuraLink control unit (XM receiver) (see **AcuraLink CONTROL UNIT (XM RECEIVER) REMOVAL/INSTALLATION**) or the XM receiver (see **AcuraLink CONTROL UNIT (XM RECEIVER) REMOVAL/INSTALLATION**). •

   NO - Replace the **audio-navigation unit**. •

NAVIGATION FREQUENTLY ASKS FOR ANTI-THEFT CODE AND/OR NEEDS GPS INITIALIZATION

NOTE:

- **This is often caused by a loss of battery power, a low or poor battery condition, or a poor ground.**
- **Make sure that the latest navigation software is installed.**
- **Check any official Honda service website for more service information about the navigation system.**

1. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
2. Check for poor connections or loose terminals at audio-navigation unit connector A (24P).

   Is the connection OK?

   YES - Repair poor connections or loose terminals, and recheck. •

   NO - Go to step 3.

3. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
4. Measure the voltage between body ground and audio-navigation unit connector A (24P) terminals No. 14 and No. 24 individually.

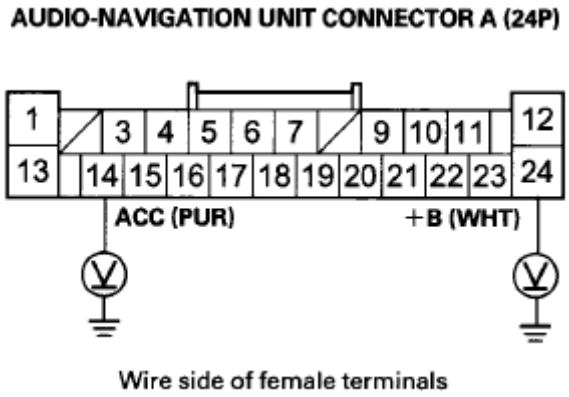


Fig. 159: Measuring Voltage Between Body Ground And Audio-Navigation Unit Connector A (24P) Terminals No. 14 And No. 24 Individually
Courtesy of AMERICAN HONDA MOTOR CO., INC.

   Is there battery voltage?

   YES - Go to step 5.

   NO - If the +B wire does not have voltage, repair an open in the wire between the under-hood fuse/relay box and audio-navigation unit. If the ACC wire does not have voltage, repair an open in the wire between the driver's under-dash fuse/relay box and audio-navigation unit. •

5. Measure the voltage between audio-navigation unit connector A (24P) terminal No. 12 and body ground.

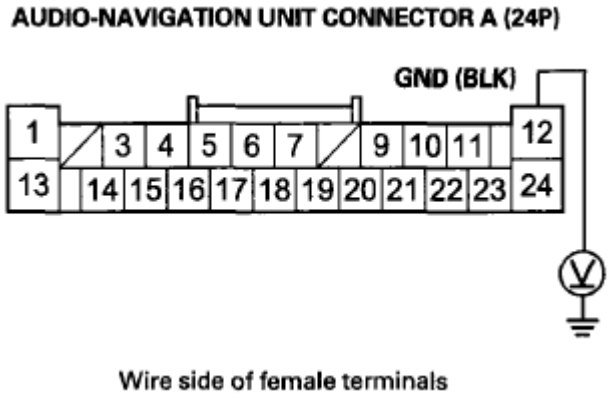


Fig. 160: Measuring Voltage Between Audio-Navigation Unit Connector A (24P) Terminal No. 12 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there less than 0.2 V?

YES - Replace the **audio-navigation unit**. •

NO - Repair an open or high resistance in the wire between audio-navigation unit and body ground (G502) (see **CONNECTOR TO FUSE/RELAY BOX INDEX**). •

REARVIEW CAMERA IMAGE DOES NOT COME ON OR WORK PROPERLY

NOTE:

- **Check the vehicle battery condition first (see BATTERY TEST).**
- **Check the connectors for poor connections or loose terminals.**
- **Check any official Honda service website for more service information about the navigation system.**

1. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.

   Does the Navigation screen come on and show an image when the vehicle is started?

   YES - Go to step 2.

   NO - Go to **No picture is displayed** troubleshooting. •

2. Go into the **System Diagnostic Mode**, and use the **System Link** diagnosis to check the connection between the navigation display unit and the rearview camera.

   Is the Rear camera link on the screen?

   YES - Go to step 3.

   NO - Replace the **audio-navigation unit**. •

3. Check the System Link.

   Is the Rear camera link red on the screen?

   YES - Do the **DTC 1701 (Rear Camera Error)** troubleshooting. •

   NO - Go to step 4.

4. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
5. Disconnect the navigation display unit 36P connector.
6. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
7. Measure the voltage between navigation display unit 36P connector terminal No. 35 and body ground when the shift lever is in R position.

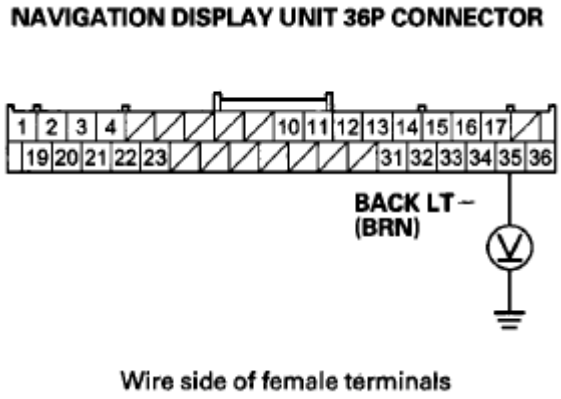


Fig. 161: Measuring Voltage Between Navigation Display Unit 36P Connector Terminal No. 35 & Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

   Is there battery voltage?

   YES - Go to step 8.

   NO - Repair an open or high resistance in the wire between the navigation display unit and the driver's under-dash fuse/relay box. •

8. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
9. Disconnect the rearview camera 12P connector.
10. Check for continuity between the navigation display unit 36P connector and the rearview camera 12P connector according to the table.

Navigation display unit connector	Rearview camera connector	Wire color
3	11	BLK
4	9	WHT

20	10	RED
21	12	GRN
22	8	GRY

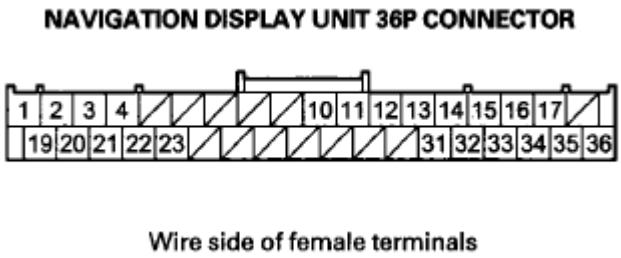


Fig. 162: Checking Continuity Between Navigation Display Unit 36P Connector Terminals
Courtesy of AMERICAN HONDA MOTOR CO., INC.

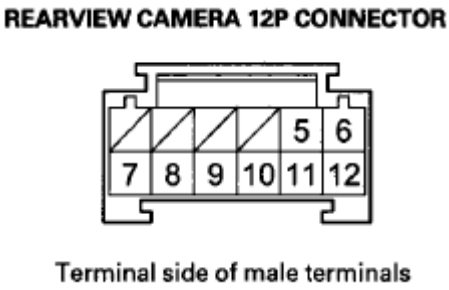


Fig. 163: Checking Continuity Between Rearview Camera 12P Connector Terminals
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 11.

NO - There is an open in the wire(s) between the navigation display unit and the rearview camera. Replace the affected shielded harness. •

11. Check for continuity between the terminals of the navigation display unit 36P connector according to the table.

From terminal	To terminals
3 (BLK)	4 (WHT), 20 (RED), 21 (GRN), 22 (GRY), 23 (BRN)
4 (WHT)	20 (RED), 21 (GRN), 22 (GRY), 23 (BRN)
20 (RED)	21 (GRN), 22 (GRY), 23 (BRN)
21 (GRN)	22 (GRY), 23 (BRN)
22 (GRY)	23 (BRN)

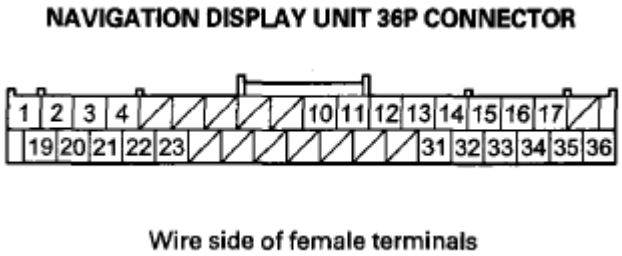


Fig. 164: Checking Continuity Between Terminals Of Navigation Display Unit 36P Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity between any of the terminals?

YES - There is a short in the wires between the navigation display unit and the rearview camera. Replace the affected shielded harness. •

NO - Go to step 12.

12. Check for continuity between the navigation display unit 36P connector and body ground according to the table.

Navigation display unit connector	Wire color
3	BLK
4	WHT
20	RED
21	GRN
22	GRY

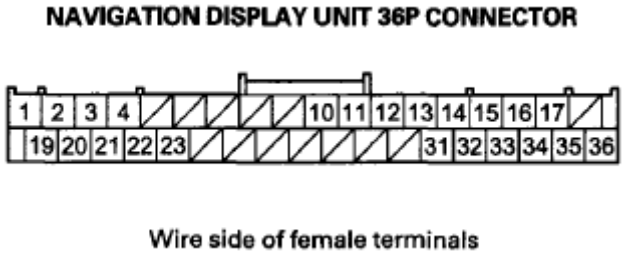


Fig. 165: Checking Continuity Between Navigation Display Unit 36P Connector & Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - There is a short to body ground in the wire(s) between the navigation display unit and the rearview camera. Replace the affected shielded harness. •

NO - Go to step 13.

13. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
14. Measure the voltage between the navigation display unit 36P connector and body ground according to the table.

Navigation display unit connector	Wire color
3	BLK
4	WHT
20	RED
21	GRN
22	GRY

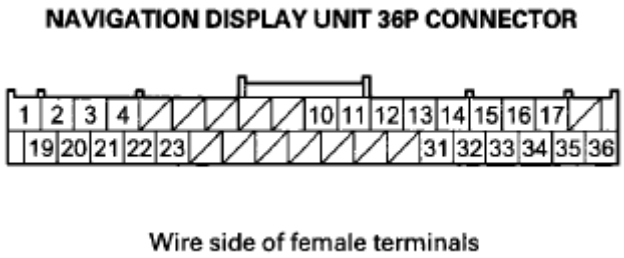


Fig. 166: Measuring Voltage Between Navigation Display Unit 36P Connector & Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there less than 0.2 V?

YES - Go to step 15.

NO - There is a short to power in the wires between the navigation display unit and the rearview camera. Replace the affected shielded harness. •

15. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
16. Reconnect the navigation display unit 36P connector.
17. Substitute a known-good rearview **camera**, and check the rearview camera image in R position.

Is the rearview image OK?

YES - Replace the original rearview **camera**. •

NO - Replace the **navigation display unit**. •

TRAFFIC OR WEATHER INFORMATION IS NOT SHOWN ON MAP SCREEN

If your client complains that traffic and/or weather is not displayed, it could be because a traffic and/or weather setting is not correct.

NOTE:

- **Always check for and resolve all CAN DTCs before troubleshooting the**

navigation system.

- **Check the connectors for poor connections or loose terminals.**
- **Before troubleshooting, get the anti-theft code.**
- **After troubleshooting, enter the anti-theft code.**
- **Check any official Honda service website for more service information about the navigation system.**
- **A marginal battery or poorly performing charging system may cause the AcuraLink control unit (XM receiver) to malfunction.**
- **The vehicle is equipped with an auto start feature that keeps the starter motor engaged, even when you release the ignition switch. Due to the ignition design, if a client releases the ignition switch before the engine starts, the AcuraLink control unit (XM receiver) may receive unusually low voltage. This may cause the XM/HIP to malfunction. When starting the vehicle, press and hold the engine start/stop button until the motor starts.**

1. Test the battery condition (see **BATTERY TEST**).

   Is the battery in good condition?

   YES - Go to step 2.

   NO - Troubleshoot the battery and/or charging system, and recheck. •

2. Park the vehicle outside where you have a clear view of the southern sky.
3. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
4. Check to see if the vehicle is receiving an XM signal. Select Setup, then select more, then select Traffic/Weather.

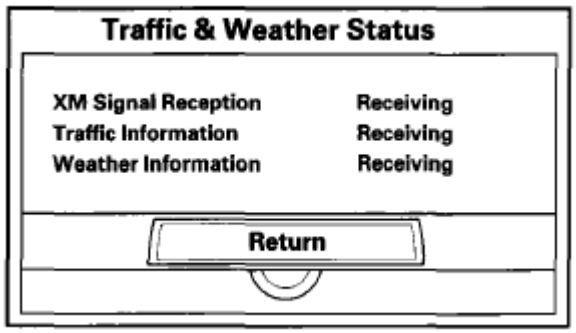


Fig. 167: Display - Traffic And Weather Status Screen
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Make sure that you are receiving the applicable signal that you are troubleshooting. For example, if the client complains that they do not receive real-time traffic and account is Expired, you need to contact XM to confirm the account is active. Refer to the table below for the message status and action.

NOTE: This check confirms the client account, but does not check the XM signal reception. The XM radio continues to tune XM channels 000, 001, 174, or 247, even if the XM account is expired.

Message	Description	Action
Receiving	The system is receiving XM signal, Traffic information and/or weather information.	The system is OK. Go to step 7.
No signal	The signal is not being received.	Make sure you are outside with a clear view of the sky. Go into the **System Diagnostic Mode**, and check the **System Link**.
Expired	The account is expired.	Go to step 6.
Loading	The system is searching for the signal or receiving an update.	Give the system a few minutes to finish loading. If the loading message does not go away, go into the **System Diagnostic Mode**, and check the **System Link**.
Check antenna	There is a problem with the XM antenna.	Check the XM antenna for damage or loose connections, and go into the **System Diagnostic Mode**, check the **System Link**.

6. Make sure the client's XM NavTraffic and/or XM weather information account status is active. These accounts are separate from the regular XM radio subscription, and they have separate fees. For the 2012 Acura TL, real-time traffic and weather are free for the first 3 months.

   To check the XM NavTraffic and XM weather account status:

   - Call XM Radio at 800-852-9696.
   - Make sure you have:
     - The VIN
     - The XM radio ID (shown on channel 000)
   - From the automated phone menu, select tech support.
   - Tell the agent that you are working on an Acura vehicle, and ask them to check the XM NavTraffic and XM weather account(s) status. Have the agent confirm that the XM NavTraffic and XM weather subscription(s) applies to the vehicle VIN you are working on.

   NOTE: A client may own more than one vehicle capable of displaying real-time traffic and XM weather.

   Is the XM NavTraffic and XM weather account(s) status active?

   YES - Go to step 7.

   NO - If the free trial period is expired, return the vehicle to the client, and inform them how to renew their XM NavTraffic and XM weather subscription(s) by calling XM Radio at 800-852-9696. •

If the free trial period has not expired, call XM Radio at 800-852-9696 and reactivate the account for the remainder of the free trial period, then request rapid refresh. To do a rapid refresh:

- Park the vehicle outside, in a clear area, with the engine running.
- Turn the audio system on, and tune to an XM radio channel.
- Wait 30 minutes.

If the vehicle now receives real-time traffic information and/or XM weather, return it to the client, otherwise go to step 7.

7. Make sure the navigation map is set to any scale from 1/20 mile of a mile to 5 miles. If the scale is not set within this range, rotate the interface dial knob, or use the zoom in buttons to adjust the map to proper scale.

NOTE: XM weather is available on all scales.

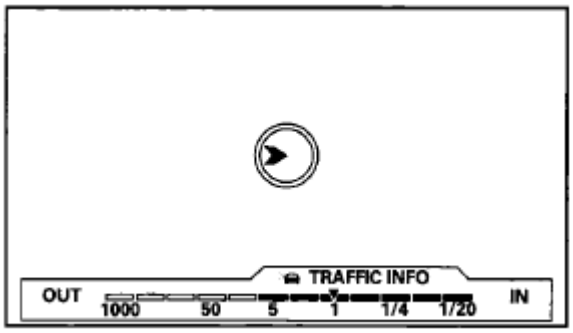


Fig. 168: Display - Traffic Info Screen
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Do you see real-time traffic on the navigation display?

YES - Return the vehicle to the client, and explain the proper settings. •

NO - Go to step 8.

8. Make sure the real-time traffic settings are correct.
   - Press the map/guide button, then select the map menu by pressing in the selector button.
   - Select Show Icon on Map by turning the interface dial, then pressing in the selector button.
   - Select the Traffic icon (A) from the Icon selection bar at the bottom of the navigation display.
   - Select Icon Options (B) by pushing the selector to the right.
   - From the Select Category for Icon settings menu, select the Traffic.
   - Make sure both Traffic Speeds and Traffic Icons are solid blue. If they are not, select Traffic Speeds by pressing in the selector on the Select Traffic Info screen. It should turn solid blue. Turn the interface dial to select Traffic Icons, and press in the selector again. It should turn solid blue. Push the selector to the right (DONE) to complete the process.

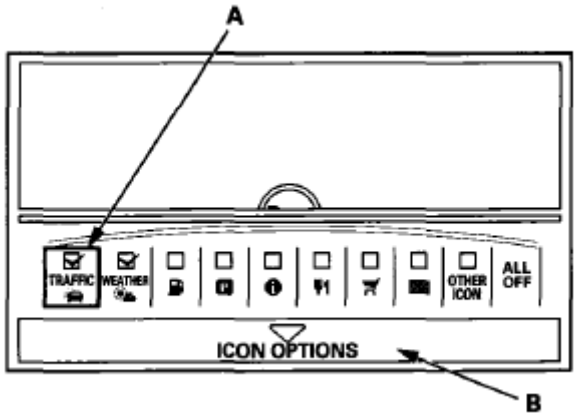


Fig. 169: Display - Icon Options Screen
Courtesy of AMERICAN HONDA MOTOR CO., INC.

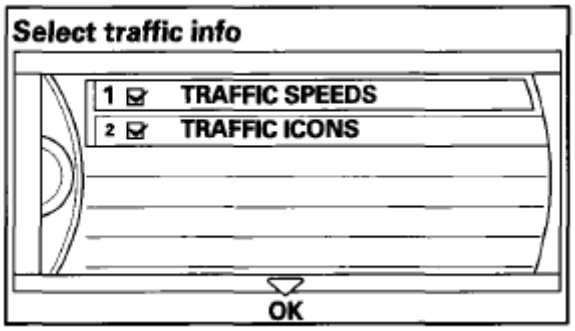


Fig. 170: Display - Traffic Info Screen
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Do you see real-time traffic on the navigation display?

YES - Return the vehicle to the client, and explain the proper settings. •

NO - Go to step 9.

9. Make sure the XM weather settings are correct.
    - From the Show Icon on Map menu, select the Weather icon (A) from the Icon selection bar at the bottom of the navigation display.
    - Select Icon Options (B) by pushing the selector to the right.
    - From the Select Category for Icon settings menu, select the Weather.
    - Make sure both Weather Warning Icons and Weather Icons are solid blue. If they are not, select Weather Warning Icon by pressing in the selector on the Select Weather Info screen. It should turn solid blue. Turn the interface dial to select Weather Icons, and press in the selector again. It should turn solid blue. Push the selector to the right (DONE) to complete the process.

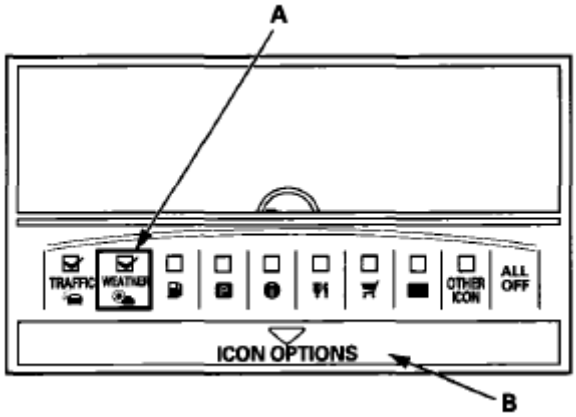


Fig. 171: Display - Icon Options Screen
Courtesy of AMERICAN HONDA MOTOR CO., INC.

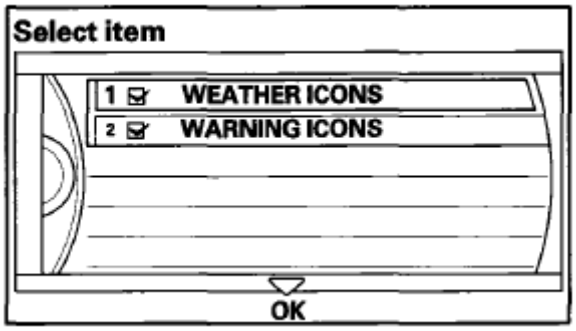


Fig. 172: Display - Weather Info Screen
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Do you see XM weather on the navigation display?

YES - Return the vehicle to the client, and explain the proper settings. •

NO - Go to step 10.

10. Do the diagnostic mode checks:
    - Start the vehicle, and enter the System Diagnostic Mode by pressing and holding the DEST/ROUTE, the MAP/GUIDE, and the CANCEL buttons.
    - Go into the System Diagnostic Mode, and select the Self-Diagnosis Mode, and verify that all the icons are green. If any links/icons are red, refer to the appropriate Diagnostic or Service Information for repair information, then go to step 11.
    - Return to the Detail Information&Setting menu and select XM (HIP), then select XM (HIP) System Link, and verify that the links/icons are green. If any links/icons are red, refer to the appropriate Diagnostic or Service Information for repair information, then go to step 11.
11. Do a VIN status inquiry, updating the AcuraLink control unit software.

Are there any applicable product updates or service bulletins?

YES - Do the applicable product updates and service bulletins, then recheck the vehicle. If real-time traffic does not work, go to step 12.

NO - Go to step 12.

12. Reset the AcuraLink control unit.

NOTE: Make sure you have the anti-theft codes for the navigation system.

To reset the AcuraLink control unit:

- Disconnect AcuraLink control unit (XM receiver) connector B (2P) from the AcuraLink control unit.
- Enter the System Diagnostic Mode, select XM (HIP), then select XM (HIP) ECU.
- Select Data Reset to do the reset.
- When the reset is done, press cancel twice to return to the XM (HIP) diagnostic menu.
- Select Return to fully exit the diagnostic mode.
- Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
- Reconnect AcuraLink control unit (XM receiver) connector B (2P).
- Start the vehicle.
- Enter the anti-theft code.
- Let the navigation system boot, then select one of the traffic scales (5, 1, 1/4, 1/20 miles).
- Park the vehicle outside with a clear view of the southern sky, and verify you are receiving an XM radio signal (see step 4).

Do you see real-time traffic on the navigation display?

YES - Call Acura Client Services to ask for an AcuraLink reactivation. Return the vehicle to the client. •

NO - Go to step 13.

13. Substitute a known-good AcuraLink control unit (XM receiver) (see **AcuraLink CONTROL UNIT (XM RECEIVER) REMOVAL/INSTALLATION**), and recheck the vehicle.

Park the vehicle outside with a clear view of the southern sky, and verify you are receiving an XM radio signal (see step 4).

Do you see real-time traffic on the navigation display?

YES - Replace the original AcuraLink control unit (XM receiver) (see **AcuraLink CONTROL UNIT (XM RECEIVER) REMOVAL/INSTALLATION**). Register the new AcuraLink control unit with XM radio and Acura Client Services. Return the vehicle to the client. •

NO - Substitute a known-good **audio-navigation unit**, and recheck. If the symptom/indication goes

away, replace the original **audio-navigation unit**. •

FORCED STARTING OF THE AUDIO-NAVIGATION UNIT

Special Tools Required

SCS Service Connector 07PAZ-001010A

1. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
2. Remove the right side kick panel (see **TRIM REMOVAL/INSTALLATION - DOOR AREAS**).
3. Connect the SCS service connector (A) to the navigation service check connector (B) located by the passenger's kick panel.

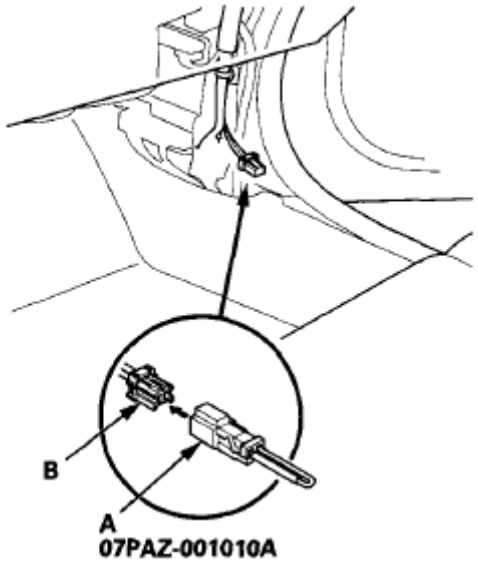


Fig. 173: Identifying SCS Service Connector And Navigation Service Check Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
5. Check that the diagnosis menu for the picture diagnosis starts up, and then changes to the System Link menu.

NOTE: **If the display fails to display the System Link screen, refer to No Picture Is Displayed Troubleshooting.**

HDD REMOVAL/INSTALLATION

NOTE:

- **Check any official Honda service website for more service information about the navigation system.**
- **Static electricity can damage the HDD. Always follow proper handling**

procedures.

- **Always use the anti-static mat (ESD) and wrist strap when removing the HDD. Before you open the audio-navigation unit or handle the replacement HDD, attach the wrist strap around one of your wrists, and attach the alligator clip to the ESD mat.**
- **Make sure you use the screws in the same holes. The HDD can be damaged if the wrong screws are used.**
- **You do not have to peel off the plastic cover to remove the screws or the HDD.**
- **Do not force the HDD. If it does not slide in smoothly, check the alignment of the HDD and the pins. If the pins are bent, replace the HDD.**
- **Make sure the HDD screws are not loose. If they are, the HDD can be damaged.**
- **Handle the HDD by its edges. Do not touch the pins.**

1. Remove the **Audio-Navigation Unit**, and wait at least 1 minute.

NOTE: Disconnect all the connectors when removing the audio-navigation unit to prevent damaging the HDD.

2. Remove the screws (A).

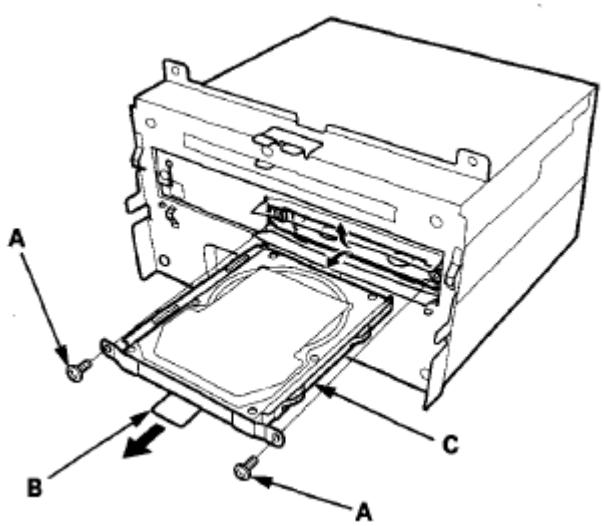


Fig. 174: Identifying Audio-Navigation Unit, HDD & Fasteners
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Lift the plastic tab (B), and use it to pull out the HDD (C).
4. Install the HDD in the reverse order of removal.

NOTE: Make sure the HDD is properly aligned when installing the HDD.

AUDIO-NAVIGATION UNIT REMOVAL/INSTALLATION

NOTE:

- **Put on gloves to protect your hands.**
- **Take care not to scratch the dashboard and related parts.**
- **Lay a shop towel under the parts when working on them to protect the face panel from scratches or other damage.**
- **Eject the disc before removing the audio-navigation unit to prevent damaging the CD/DVD player's load mechanism.**
- **If you are replacing the audio-navigation unit, write down the audio presets (if possible), then enter them into the new audio-navigation unit.**
- **If the HDD is OK, transfer it to the new audio-navigation unit.**
- **If the audio-navigation unit is replaced or disconnected, a Map Matching must be done.**

1. Make sure you have the anti-theft code.
2. Remove the dashboard center trim (see **DASHBOARD CENTER TRIM REMOVAL/INSTALLATION**).
3. Remove the dashboard center vent (see **DASHBOARD CENTER VENT REMOVAL/INSTALLATION**).
4. Carefully remove the bolts (A) and bolts (B), then pull the audio-navigation switch panel (C) out.

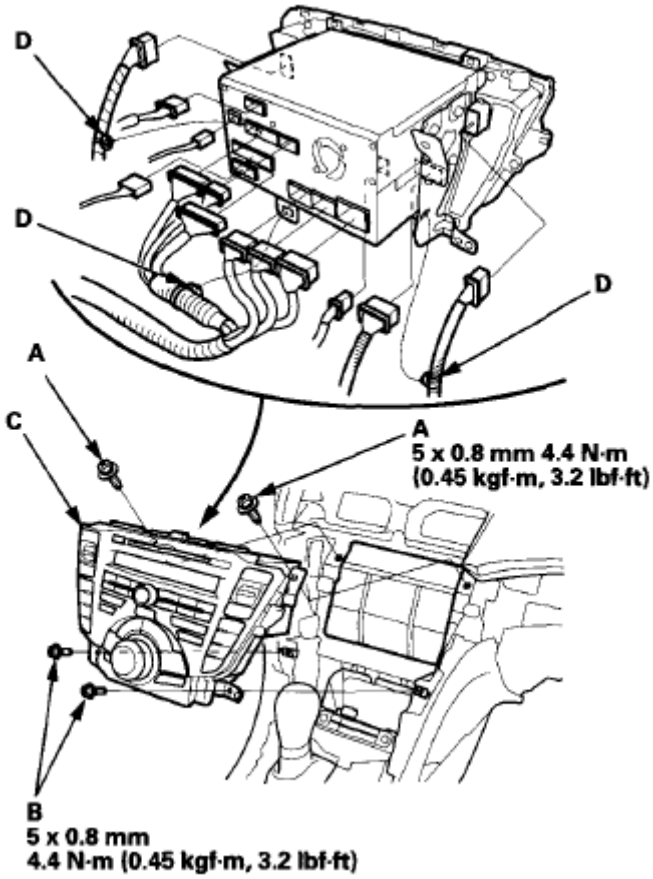


Fig. 175: Identifying Audio-Navigation Switch Panel, Clips And Bolts With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Disconnect the connectors, and detach the clips (D).
6. Remove the climate control switches (see **CLIMATE CONTROL SWITCH REMOVAL/INSTALLATION**).
7. Remove the bolts (A) and the stays (B).

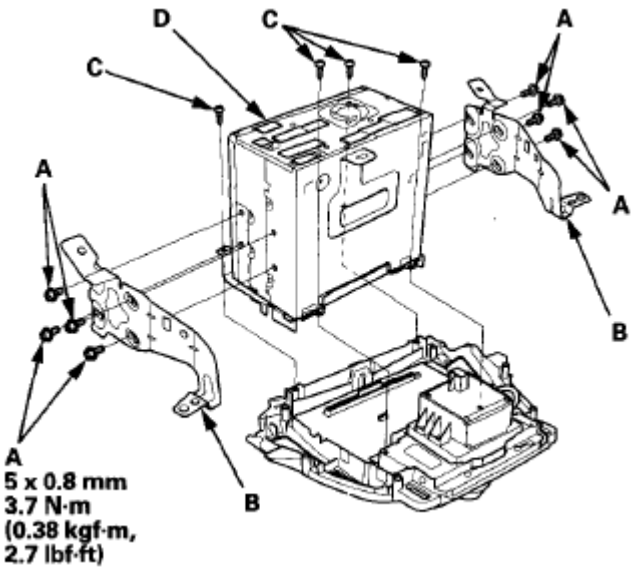


Fig. 176: Identifying Audio-Navigation Unit, Stays, Screws And Bolts With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

8. Remove the screws (C) and the audio-navigation unit (D).

NOTE: If you are replacing the audio-navigation unit, remove the HDD (see HDD Removal/Installation).

9. Install the audio-navigation unit in the reverse order of removal.

NOTE: Check any official Honda service website for more service information about patches for the navigation system. Apply any prescribed patches to the new audio-navigation unit.

10. Enter the new anti-theft code.
11. Park the vehicle outside, and do the **GPS Initialization**.
12. Give the new anti-theft code to the client.

NAVIGATION DISPLAY UNIT REMOVAL/INSTALLATION

NOTE:

- **Put on gloves to protect your hands.**
- **Take care not to scratch the dashboard and related parts.**
- **Lay a shop towel under the parts when working on them to protect the face panel from scratches or other damage.**
- **When prying components, use the handy remover set or equivalent.**

1. Remove the dashboard center vent (see **DASHBOARD CENTER VENT REMOVAL/INSTALLATION**).

2. Remove the screws and bolt (A) from the navigation display unit (B).

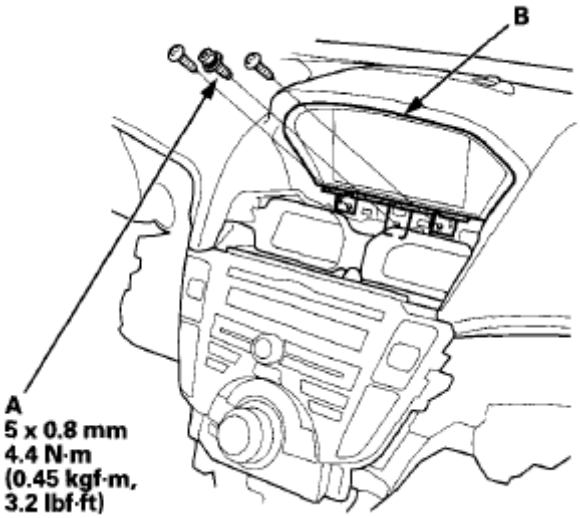


Fig. 177: Identifying Navigation Display Unit And Bolt With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Pull out the navigation display unit. Then disconnect the connector (A) from the navigation display unit.

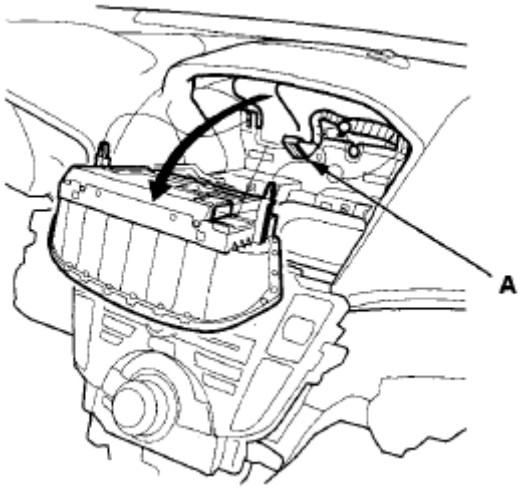


Fig. 178: Identifying Navigation Display Unit & Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Install the navigation display unit in the reverse order of removal.

NAVIGATION DISPLAY VISOR REMOVAL/INSTALLATION

NOTE:

- **Do this procedure in a clean place free from dirt.**
- **Wear latex or vinyl gloves when doing this procedure (Do not use fabric**

gloves).

- **When removing the navigation display visor, do not touch the LCD face.**
- **If there is dirt on the LCD face, clean it using compressed air.**
- **When installing the navigation display visor onto the LCD assembly, be careful not to touch the LCD face.**
- **Check that the navigation display visor and the LCD assembly are properly installed.**
- **Since the LCD assembly and the navigation display visor are installed at an angle, be sure that the screws are properly seated. If not properly seated, tighten the screws.**
- **Check that the navigation display unit assembly has no damage.**

1. Remove the **navigation display unit**.
2. Remove the screws (A) from the LCD assembly (B).

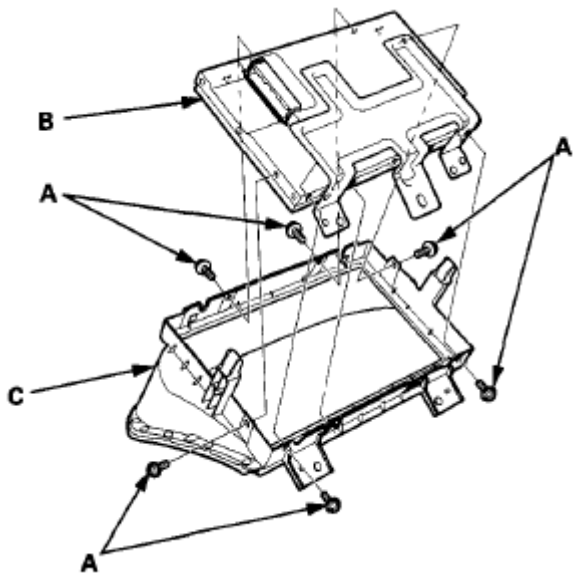


Fig. 179: Identifying LCD Assembly, Display Visor And Screws
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Remove the display visor (C) from the LCD assembly.
4. Install the navigation display visor in the reverse order of removal.

HFL-NAVIGATION MICROPHONE REMOVAL/INSTALLATION

1. Remove the roof console (see **HEADLINER REMOVAL/INSTALLATION**).
2. Remove the screws and the HFL-navigation microphone (A).

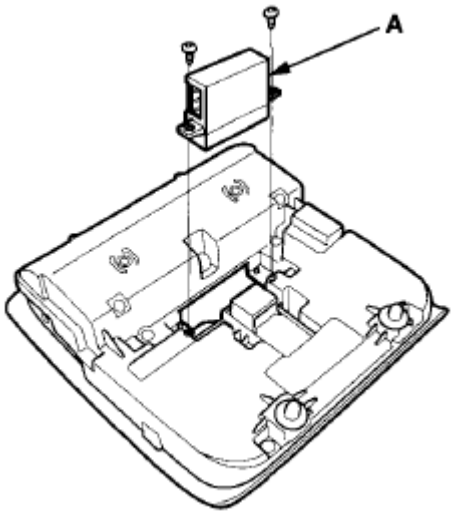


Fig. 180: Identifying HFL-Navigation Microphone
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Install the HFL-navigation microphone in the reverse order of removal.

INTERFACE DIAL REMOVAL/INSTALLATION

NOTE:

- **Put on gloves to protect your hands.**
- **Take care not to scratch the dashboard and related parts.**
- **Lay a shop towel under the parts when working on them to protect the face panel from scratches or other damage.**
- **Eject the disc before removing the audio-navigation unit to prevent damaging the CD/DVD player's load mechanism.**
- **If the audio-navigation unit is replaced or disconnected, a Map Matching must be done.**

1. Remove the audio-navigation switch panel (see **AUDIO-NAVIGATION SWITCH PANEL REMOVAL/INSTALLATION**).
2. Remove the bolts (A) and the stays (B).

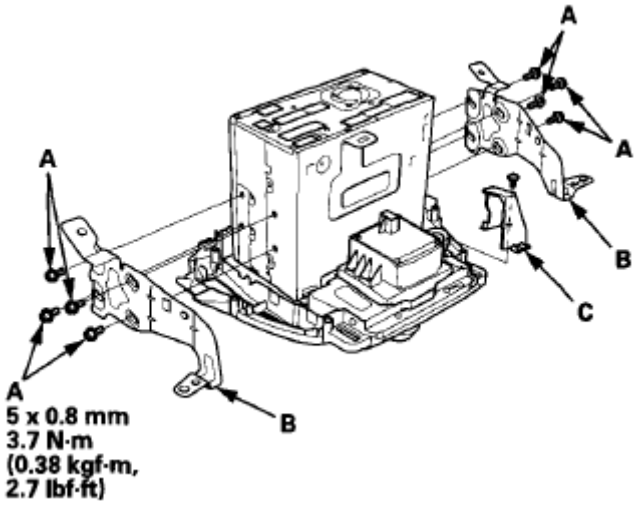


Fig. 181: Identifying Harness Cover, Stays And Bolts With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Remove the screw and the harness cover (C).
4. Disconnect the interface dial 13P connector (A).

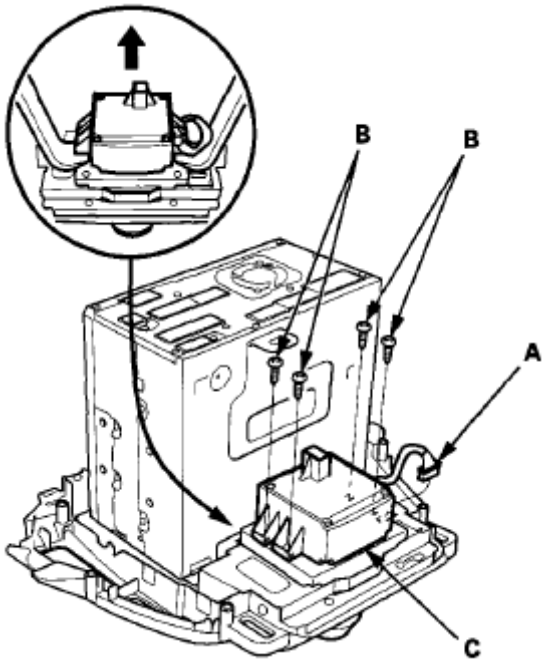


Fig. 182: Disconnecting Interface Dial 13P Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Remove the screws (B), then pry the interface dial (C) away from the audio-navigation switch panel with two KTC trim tools and applying even force as shown.

NOTE: Apply pressure slowly and steady until the knob and dial pops off.

6. Remove the interface dial (A), from the audio-navigation switch panel.

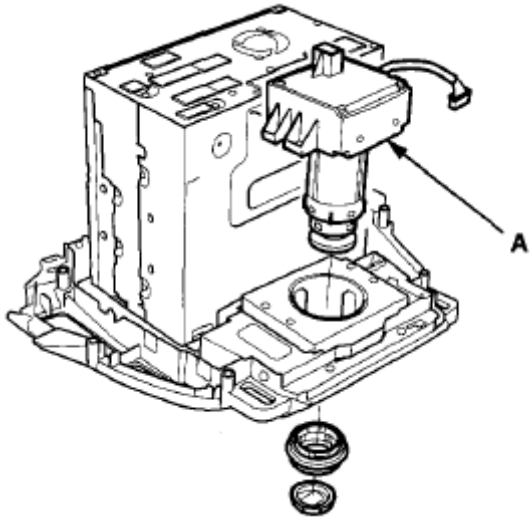


Fig. 183: Identifying Interface Dial
Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Install the interface dial in the reverse order of removal.

NOTE: If the hard buttons do not work, but the jog dial does, recheck the interface dial connector connection.

GPS ANTENNA REMOVAL/INSTALLATION

NOTE:

- **Put on gloves to protect your hands.**
- **Take care not to scratch the dashboard and related parts.**
- **Lay a shop towel under the parts when working on them to protect the face panel from scratches or other damage.**

1. Remove the **navigation display unit**.
2. Remove the dashboard center trim (see **DASHBOARD CENTER TRIM REMOVAL/INSTALLATION**).
3. Pull out the audio-navigation unit (see step 4, and disconnect audio-navigation unit connector J (2P) (A).

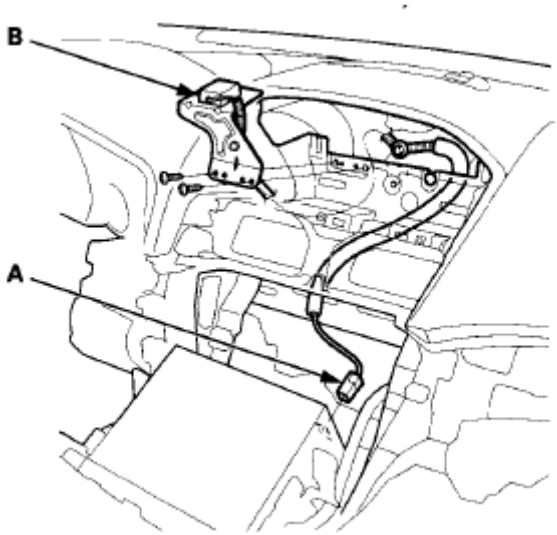


Fig. 184: Identifying GPS Antenna And Audio-Navigation Unit Connector J (2P)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Remove the screws and detach the clip, then remove the GPS antenna (B).
5. Install the GPS antenna in the reverse order of removal.

VOICE CONTROL SWITCH TEST

1. Remove the audio remote, HFL-navigation voice control switch (see **STEERING WHEEL DISASSEMBLY/REASSEMBLY**).
2. Measure the resistance between terminals No. 9 and No. 11 in each switch position according to the table.

VOICE CONTROL SWITCH

Position	Resistance
No button pressed	About 10 kohms
TALK button pressed	About 2.2 kohms
BACK button pressed	About 652 ohms

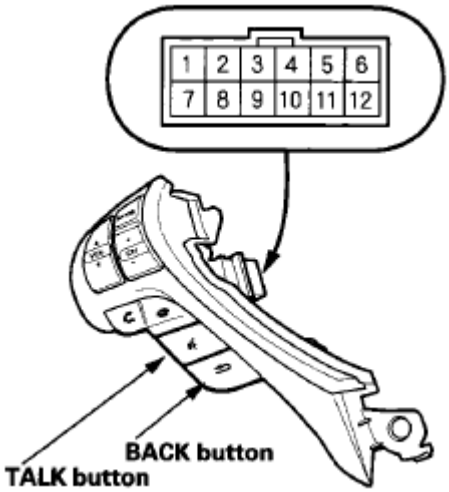


Fig. 185: Identifying Voice Control Switch, Talk & Back Button With Connector End View
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. In the resistance is not as specified, replace the switch (see **STEERING WHEEL DISASSEMBLY/REASSEMBLY**).

REARVIEW CAMERA REMOVAL/INSTALLATION

NOTE:

- **Put on gloves to protect your hands.**
- **Take care not to scratch the trunk lid and related parts.**

1. Remove the trunk lid trim panel (see **TRIM REMOVAL/INSTALLATION - TRUNK AREA**).
2. Disconnect the rearview camera 12P connector (A) and remove the nuts (B).

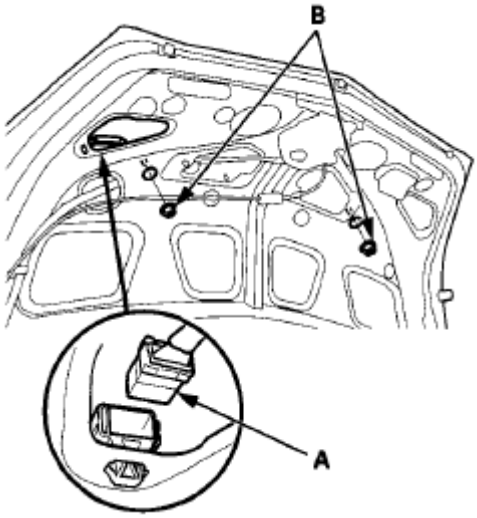


Fig. 186: Identifying Rearview Camera 12P Connector & Nuts
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Pull the rear license trim (A) away from the trunk lid, then remove the grommet (B) from the trunk lid, and carefully pull the connector through the hole in the trunk lid.

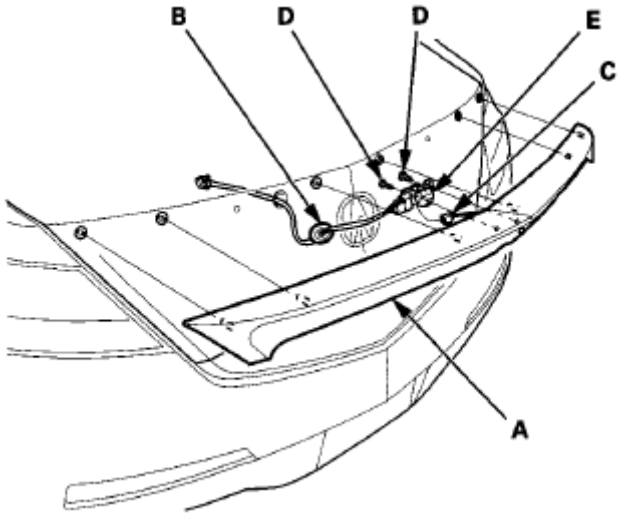


Fig. 187: Identifying Rearview Camera, Rear License Trim, Connector, Grommet And Screws
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Disconnect the connector (C), remove the screws (D) and the rearview camera (E).
5. Install the rearview camera in the reverse order of removal.

2012 ACCESSORIES & EQUIPMENT

Power Lumbar Support - TL

COMPONENT LOCATION INDEX

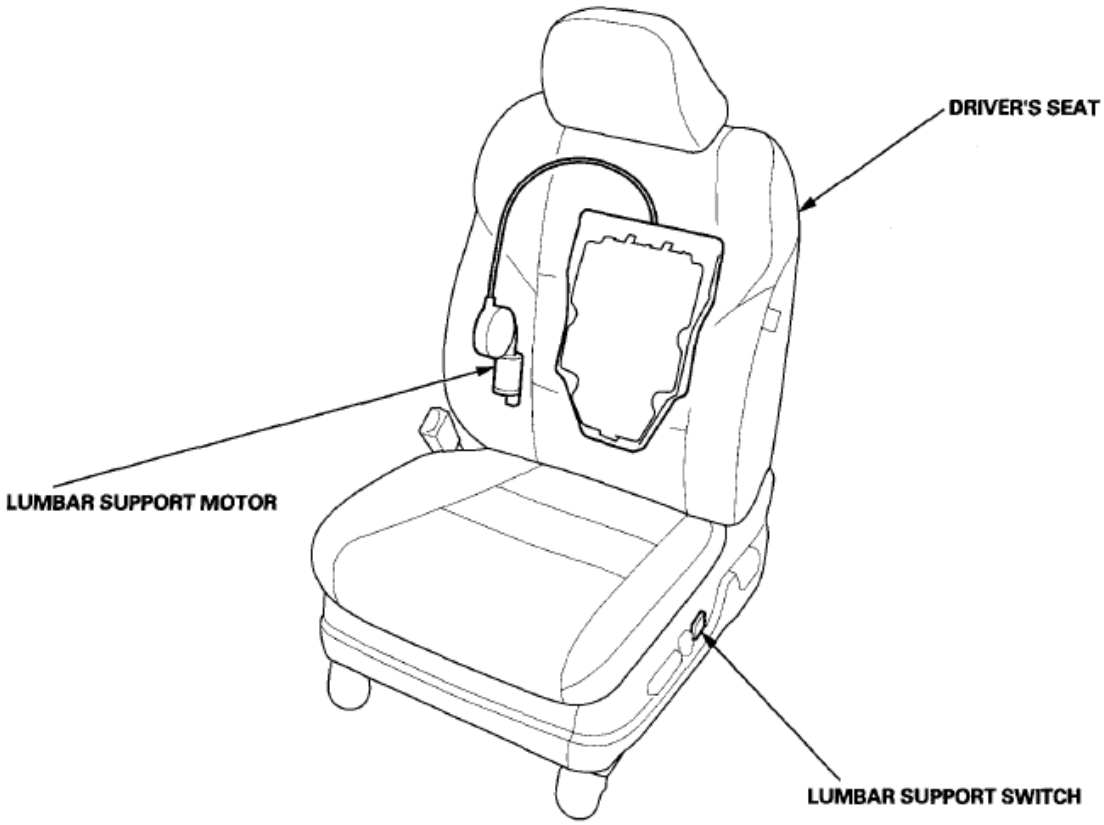


Fig. 1: Power Lumbar Support Components Location
Courtesy of AMERICAN HONDA MOTOR CO., INC.

CIRCUIT DIAGRAM

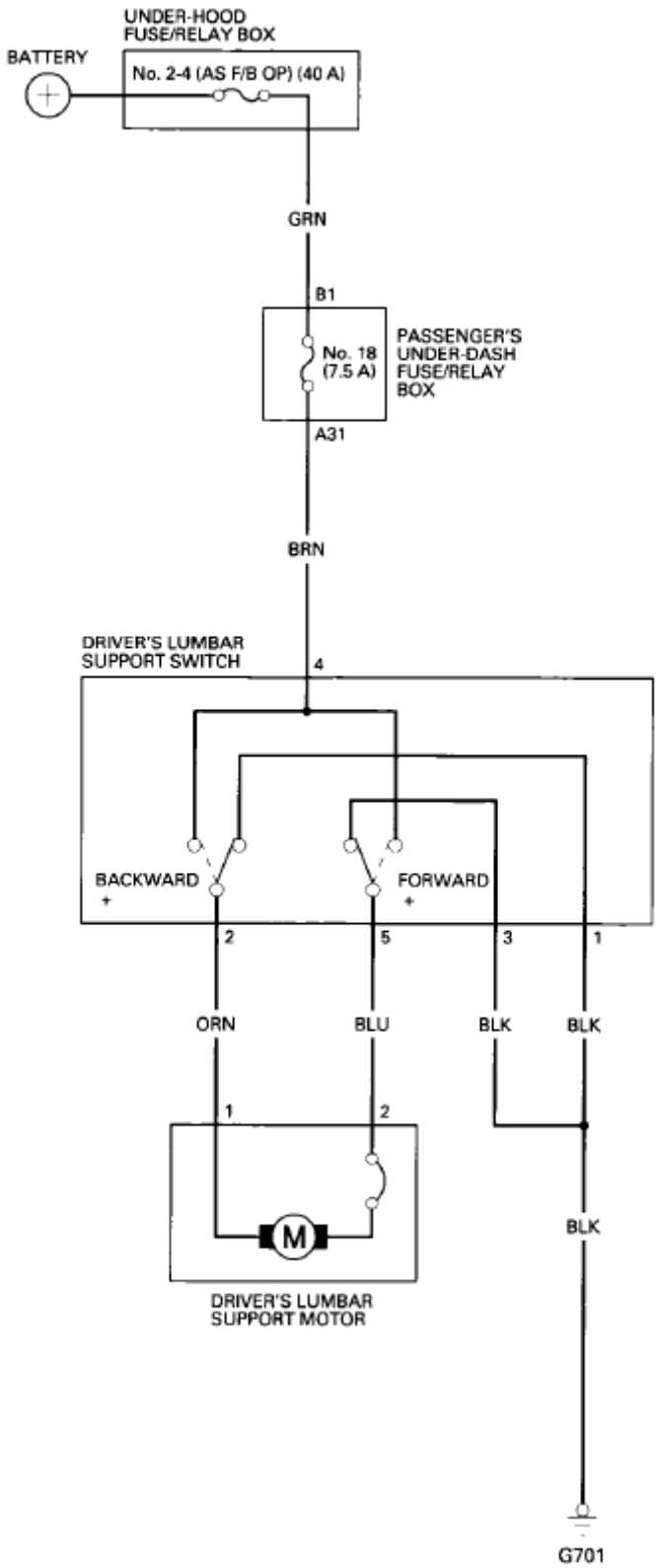


Fig. 2: Power Lumbar Support Circuit Wiring Diagram
Courtesy of AMERICAN HONDA MOTOR CO., INC.

SWITCH TEST/REPLACEMENT

NOTE: SRS components are located in this area. Review the SRS component locations. (See COMPONENT LOCATION INDEX), and precautions and procedures. (See PRECAUTIONS AND PROCEDURES) before doing repairs or servicing.

1. Separate the lumbar support switch cover (A) from the switch (B).

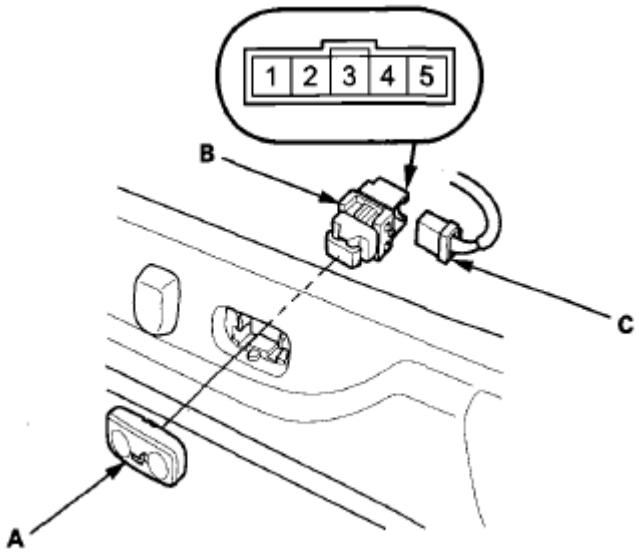


Fig. 3: Identifying Lumbar Support Switch Cover & Switch With Connector End View
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Disconnect the 5P connector (C) from the switch.
3. Check for continuity between the terminals in each switch position according to the table.

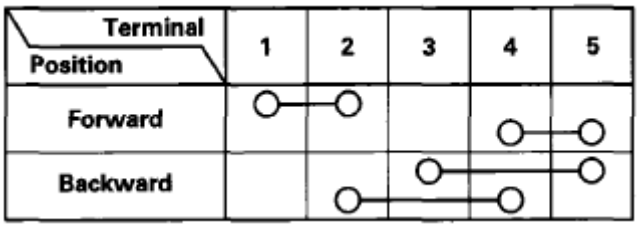


Fig. 4: Identifying Continuity Table
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. If the continuity is not as specified, replace the switch.

MOTOR TEST

NOTE: SRS components are located in this area. Review the SRS component locations.

(See COMPONENT LOCATION INDEX), and precautions and procedures. (See PRECAUTIONS AND PROCEDURES) before doing repairs or servicing.

1. Turn over the driver's seat-back cover/pad as needed.
2. Remove the lumbar support motor cover (A).

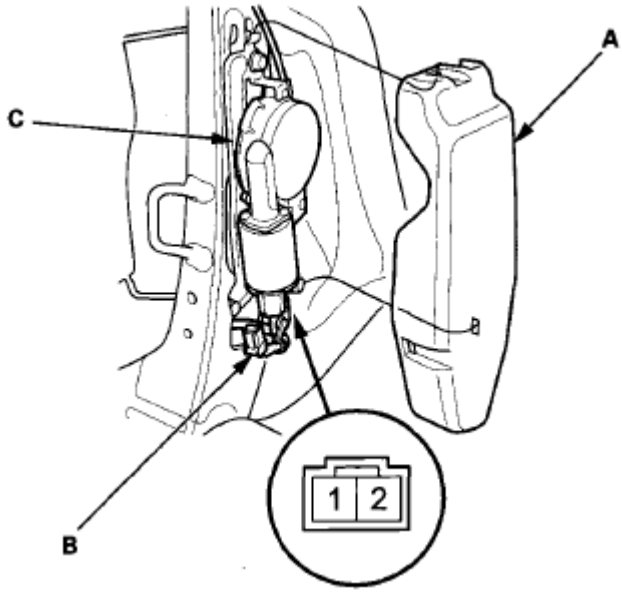


Fig. 5: Identifying Lumbar Support Motor Cover & Lumbar Support Motor With Connector End View
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Disconnect the 2P connector (B) from the lumbar support motor (C).
4. Test the motor by applying battery power and body ground to the terminals.

Terminal / Position	1	2
Forward	⊖	⊕
Backward	⊕	⊖

Fig. 6: Testing Motor By Applying Battery Power And Body Ground To Terminals
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. If the motor does not run or fails to run smoothly, replace it. (See **FRONT SEAT LUMBAR SUPPORT REPLACEMENT**).

2012 ACCESSORIES & EQUIPMENT

Power Mirrors - TL

COMPONENT LOCATION INDEX

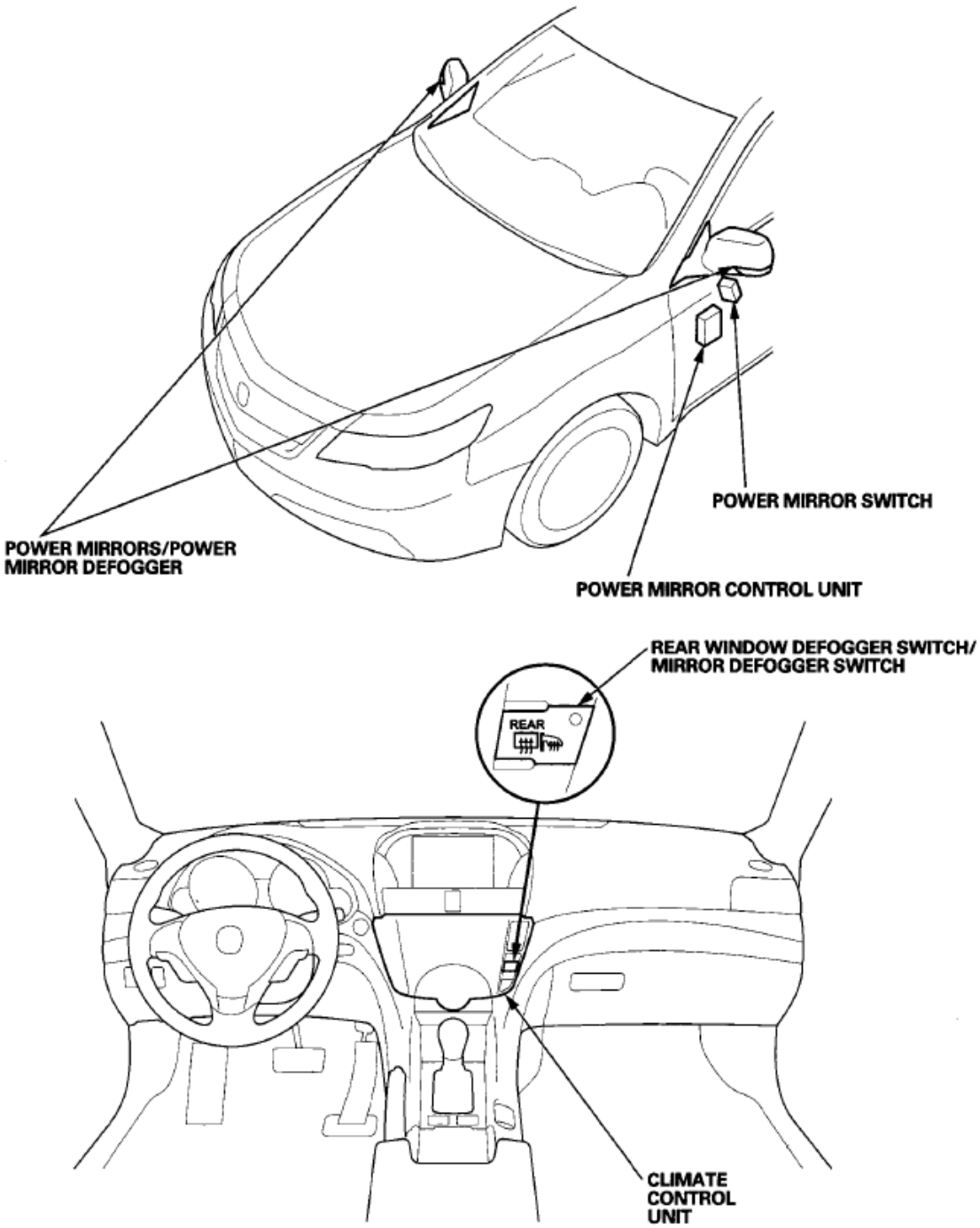


Fig. 1: Power Mirror Component Locations
Courtesy of AMERICAN HONDA MOTOR CO., INC.

SYSTEM DESCRIPTION

POWER MIRROR DEFOGGER AUTO OPERATION FUNCTION

When the outside air temperature is 41°F (5°C) or below and the ignition switch is turned to ON (II) or the vehicle is in ON mode, the left and right power mirror defoggers automatically turn on. The power mirror defogger auto operation function is controlled by the door multiplex control unit.

- When the door multiplex control unit receives a signal that the outside air temperature is 41°F (5°C) or below from the climate control unit, the door multiplex control unit automatically turns on the left and right power mirror defoggers within ten seconds after the ignition switch is turned to ON (II) or the vehicle is in ON mode.
- Power mirror defogger output automatically stops in ten minutes as a result of its timer.
- If the door multiplex control unit receives a rear window defogger/power mirror defogger switch input signal from the climate control unit during power mirror defogger output, the door multiplex control unit shuts off the auto operation function immediately.
- While the power mirror defogger auto operation function is operating, the rear window defogger does not automatically operate.
- The power mirror defogger auto operation function stops temporarily when any power windows operate during power mirror defogger output.

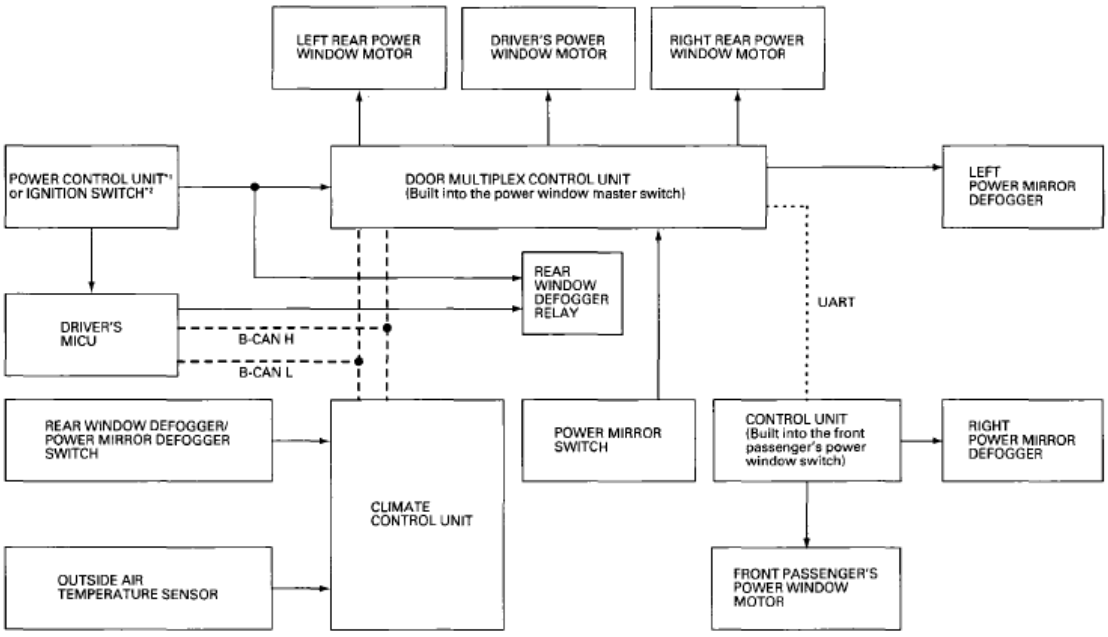


Fig. 2: Power Mirror Defogger - Chart
Courtesy of AMERICAN HONDA MOTOR CO., INC.

POWER MIRROR ACTUATOR TEST

1. Remove the door panel (see **FRONT DOOR PANEL REMOVAL/INSTALLATION**).
2. Disconnect the 16P connector (A) from the door harness (B).

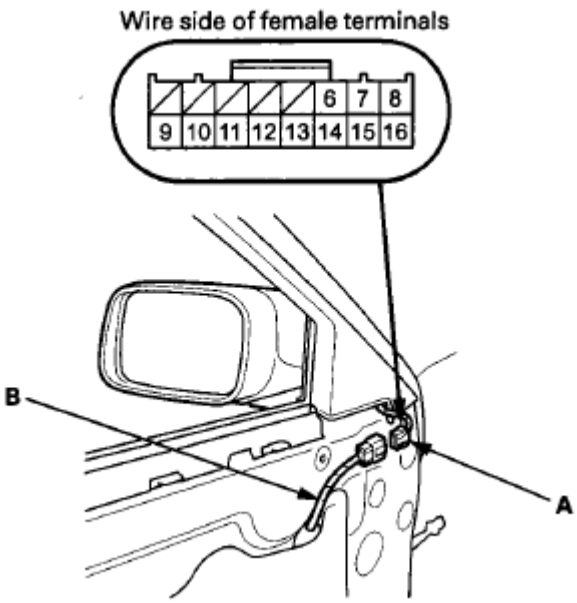


Fig. 3: Identifying 16P Connector End View And Door Harness
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. At the 16P connector, check the actuator operation by connecting power and ground according to the table.

Power mirror actuator

Terminal / Position	14	15	16
TILT UP		⊖	⊕
TILT DOWN		⊕	⊖
SWING LEFT	⊖	⊕	
SWING RIGHT	⊕	⊖	

Fig. 4: Power Mirror Actuator - Reference Chart
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. If the mirror fails to work properly, check for an open in the wire between the connector and the mirror holder. If the wire is OK, replace the mirror actuator (see **POWER MIRROR ACTUATOR REPLACEMENT**).

Defogger Test

5. Check for continuity between terminals No. 11 and No. 12 of the 16P connector. There should be continuity.

6. If there is no continuity, check for an open in the wire between the connector and the mirror holder. If the wire is OK, replace the mirror holder (see **POWER MIRROR REPLACEMENT**).

POWER MIRROR SWITCH TEST/REPLACEMENT

1. Remove the driver's door panel (see **FRONT DOOR PANEL REMOVAL/INSTALLATION**).
2. Remove the screws from the driver's door grip (A) and grip cover (B).

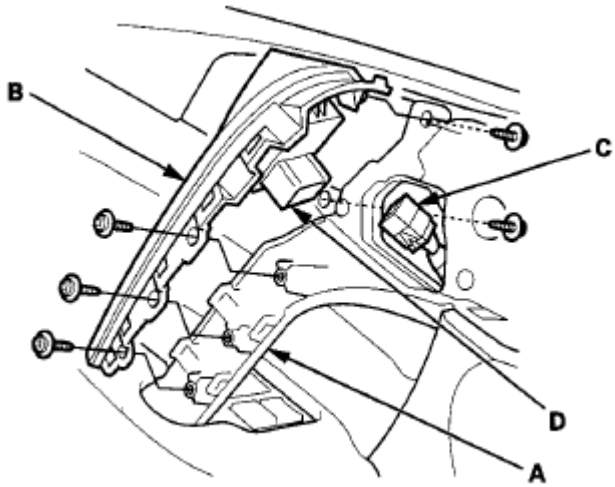


Fig. 5: Identifying Driver's Door Grip And Cover
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Pull out the grip cover slightly from the door grip, then disconnect the 13P connector (C) from the power mirror switch (D).
4. Remove the two screws and the power mirror switch (A) from the grip trim (B).

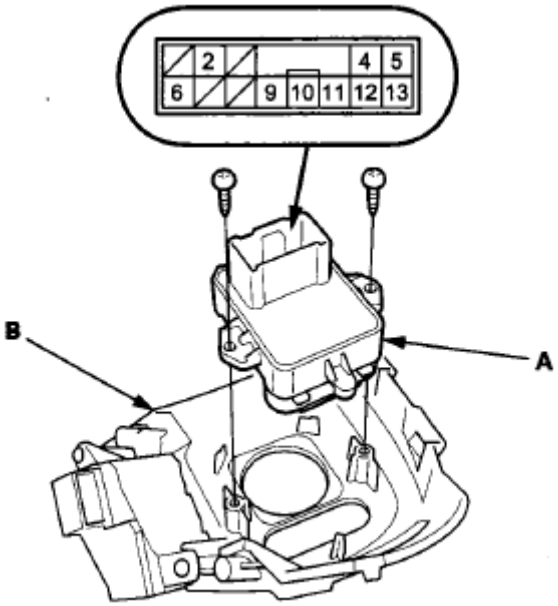


Fig. 6: Identifying Power Mirror Switch And Grip Trim With Connector End View
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Check for continuity between the terminals in each switch position according to the table.

Power mirror switch

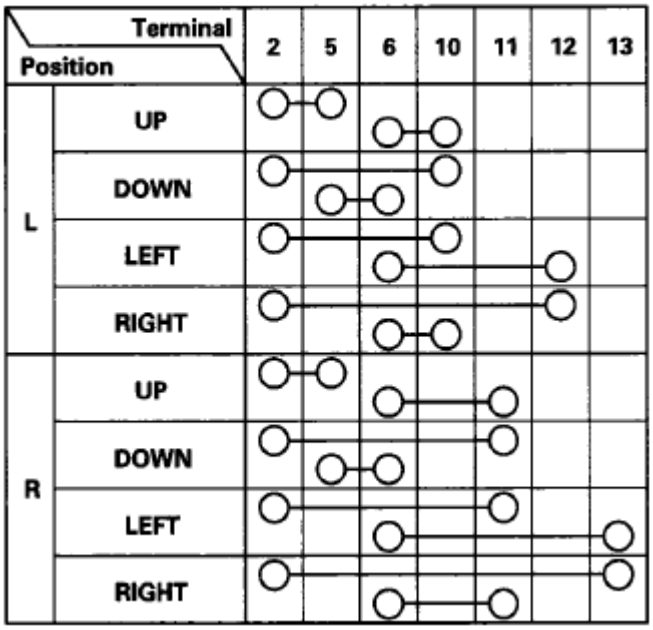


Fig. 7: Power Mirror Switch - Reference Chart
Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. If the continuity is not as specified, replace the power mirror switch.

7. Install the switch in the reverse order of removal.

POWER MIRROR ACTUATOR REPLACEMENT

Removal

1. Remove these items:
   - Mirror holder (see **POWER MIRROR REPLACEMENT**)
   - Power mirror (see **POWER MIRROR REPLACEMENT**)
   - Side turn signal light (see **BULB REPLACEMENT**)
2. Disconnect the power mirror 16P connector from the door harness.
3. Remove the gaskets (A), then remove the screw and cord from the mirror bracket (B).

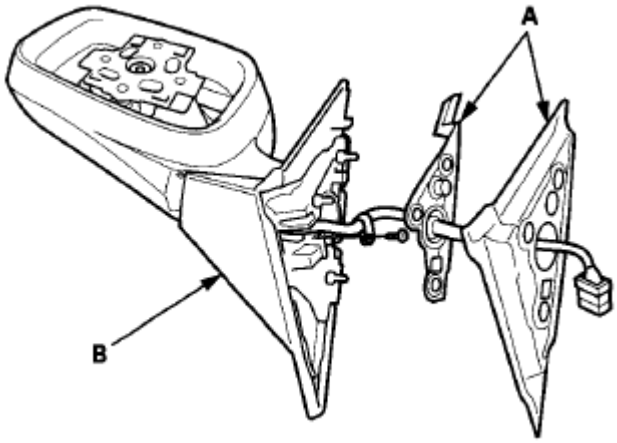


Fig. 8: Identifying Gaskets And Mirror Bracket
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Record the terminal location and wire colors, then cut the mirror actuator wires with the wire cutter.

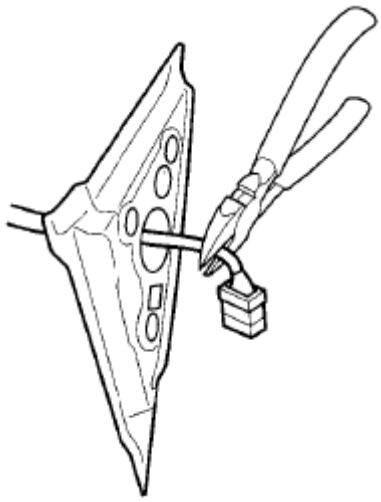


Fig. 9: Cutting Mirror Actuator Wires With Wire Cutter
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Remove the cover (A).

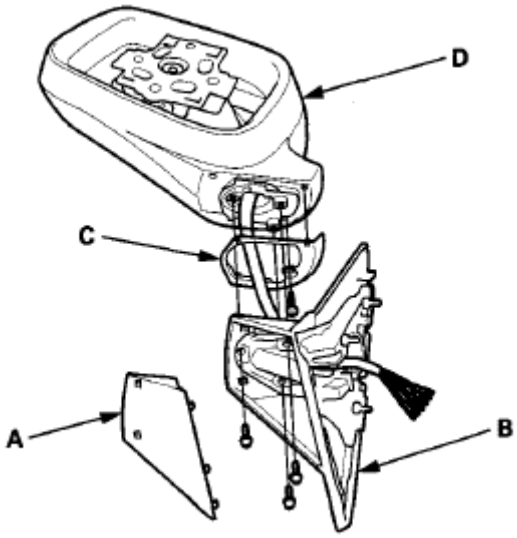


Fig. 10: Identifying Cover, Mirror Bracket, Seal And Housing
Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Remove the three screws, separate the mirror bracket (B), then remove screw, separate the seal (C) from the housing (D).
7. Remove the two screws then remove the visor (A) and the actuator housing (B) from the housing (C).

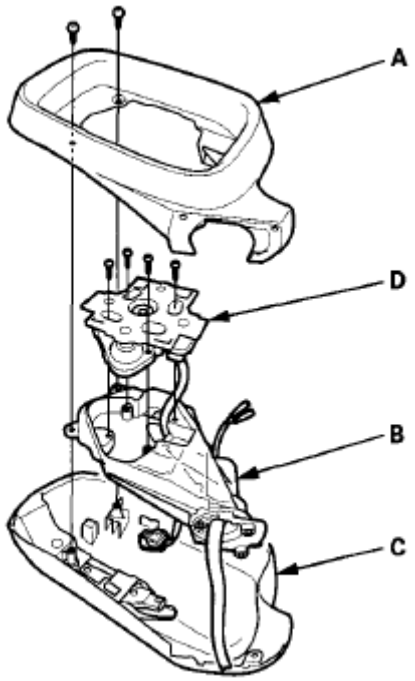


Fig. 11: Identifying Actuator, Housing, Actuator Housing And Visor
Courtesy of AMERICAN HONDA MOTOR CO., INC.

8. Remove the four screws and the actuator (D) from the actuator housing.

Installation

9. Install new actuator to the housing and visor in the reverse order of step 7 and 8.
10. Route the wire harness (A) of a new actuator through the hole in the seal (B), then tighten a screw (C).

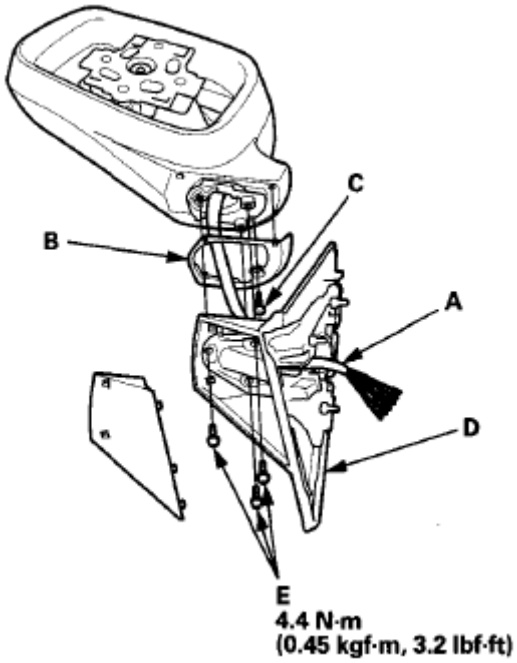


Fig. 12: Identifying Seal, Wire Harness, Bracket And Screw With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

11. Route the wire harness of a new actuator through the hole in the bracket (D).
12. Reassemble the mirror in the reverse order of removal. Apply LOCTITE to the three screws (E) and tighten to 4.4 N.m (0.45 kgf.m, 3.2 lbf.ft).
13. Install the gasket in the reverse order of removal.
14. Insert the mirror actuator wires into the original terminal locations as noted in step 4.

NOTE: Be careful to insert the wires correctly because the wires cannot be removed from the coupler once they are inserted.

15. Reassemble in the reverse order of disassembly.

NOTE: Be careful not to break the mirror when reinstalling it to the actuator.

16. Reinstall the mirror assembly on the door.
17. Operate the power mirror to ensure smooth operation.

2012 ACCESSORIES & EQUIPMENT

Power Seats - TL

COMPONENT LOCATION INDEX

For the driver's power seat, refer to the DRIVER POSITION MEMORY SYSTEM (DPMS)

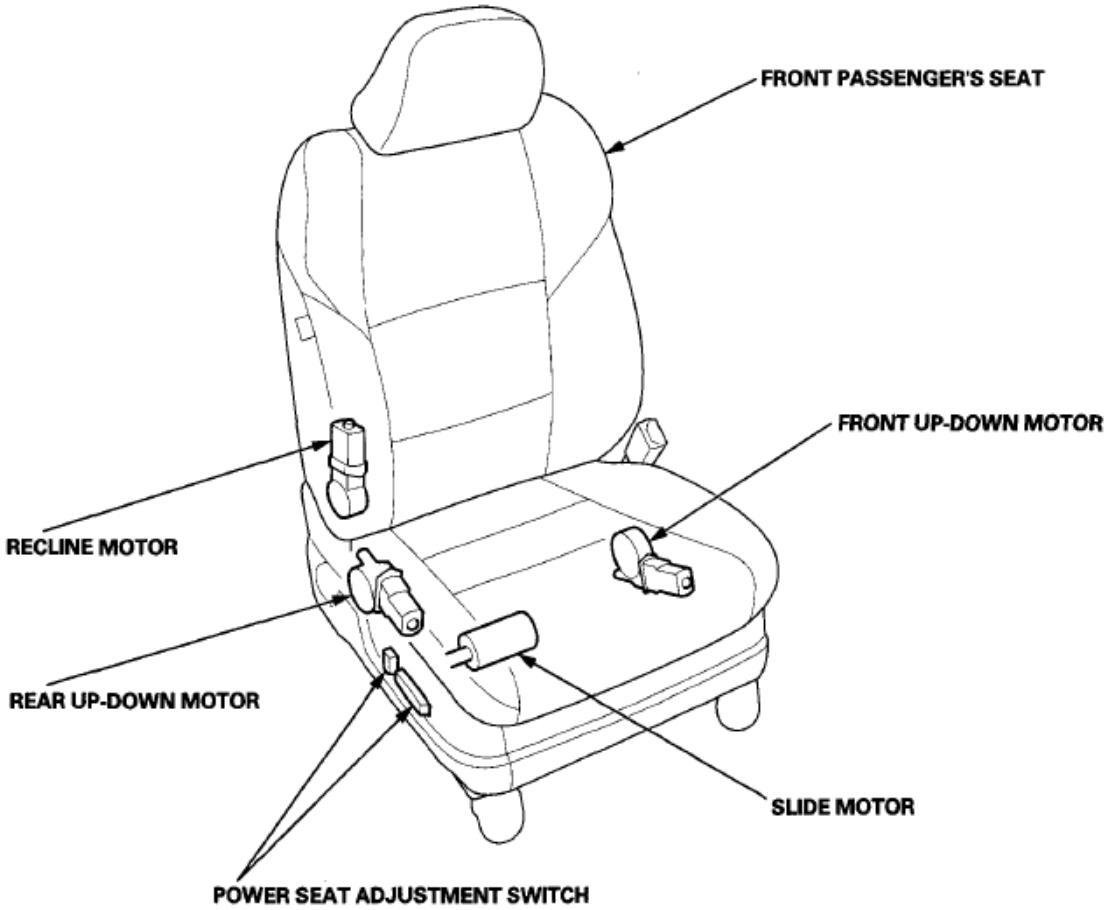


Fig. 1: Power Seats Components Location
Courtesy of AMERICAN HONDA MOTOR CO., INC.

CIRCUIT DIAGRAM - FRONT PASSENGER'S POWER SEAT

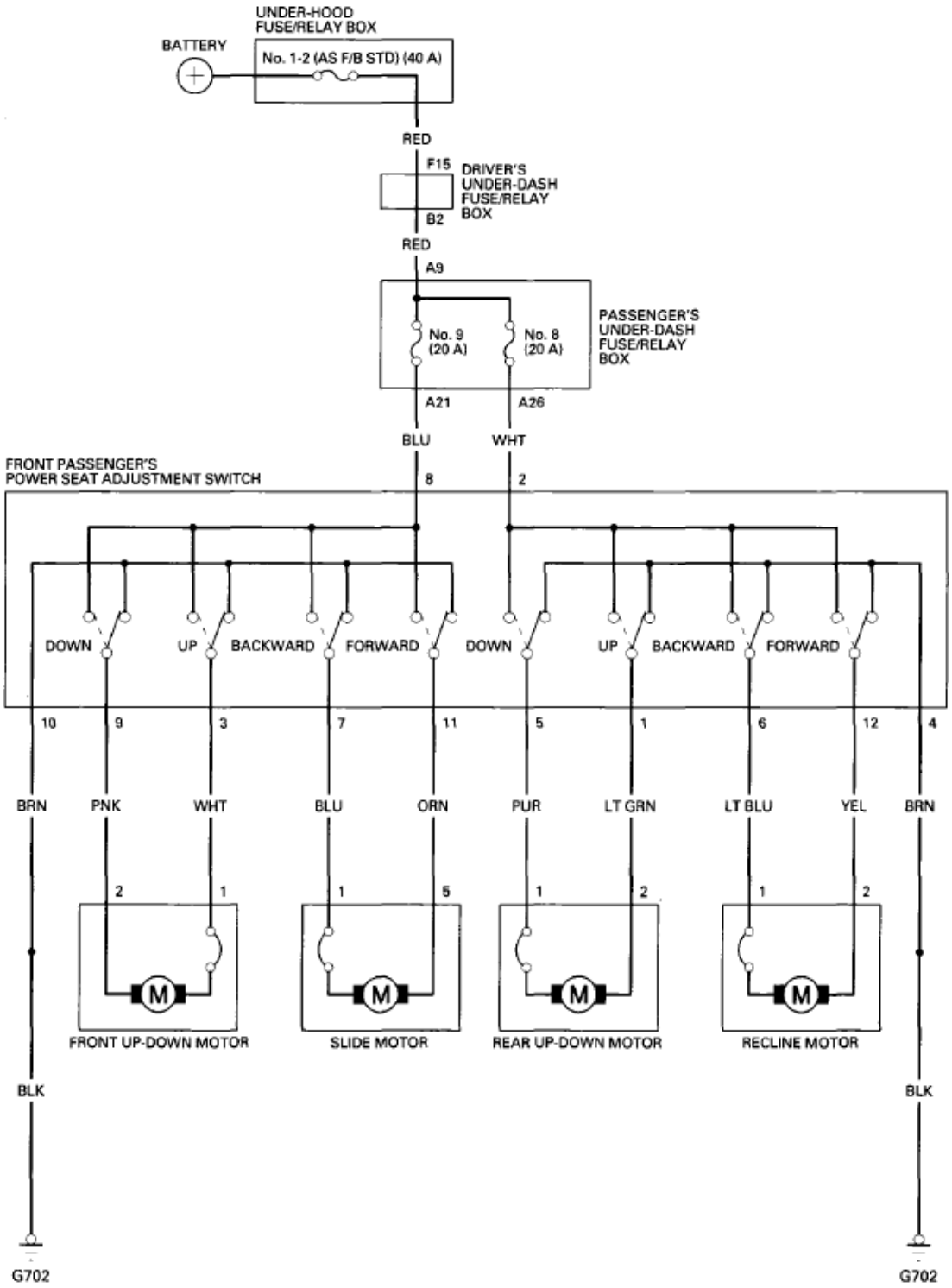


Fig. 2: Passenger's Power Seat - Circuit Diagram
Courtesy of AMERICAN HONDA MOTOR CO., INC.

POWER SEAT ADJUSTMENT SWITCH TEST/REPLACEMENT

FRONT PASSENGER'S SEAT

NOTE: SRS components are located in this area. Review the SRS component locations (see COMPONENT LOCATION INDEX), and precautions and procedures (see PRECAUTIONS AND PROCEDURES) before doing repairs or servicing.

1. Remove the front passenger's seat (see **FRONT SEAT REMOVAL/INSTALLATION**).
2. Remove the power seat adjustment switch knobs (A) and the recline cover from the front passenger's seat (see **FRONT SEAT RECLINE COVER REMOVAL/INSTALLATION**), then remove the two screws and the power seat adjustment switch (B).

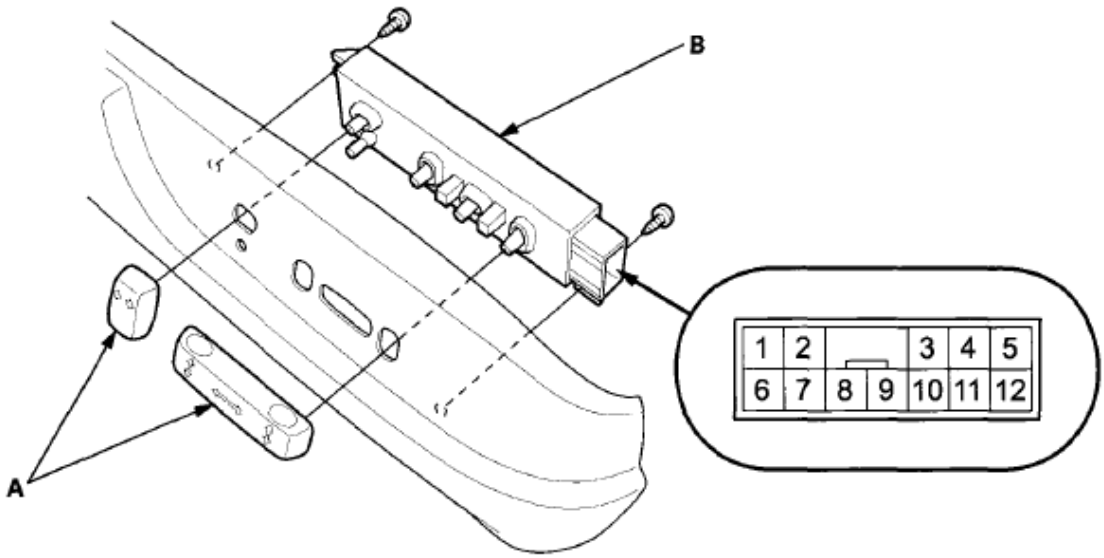


Fig. 3: Identifying Power Seat Adjustment Switch Knobs And Power Seat Adjustment Switch With Connector End View
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Disconnect the 12P connector from the power seat adjustment switch.
4. Reinstall the adjustment switch knobs to the switch.
5. Check for continuity between the terminals in each switch position according to the table.

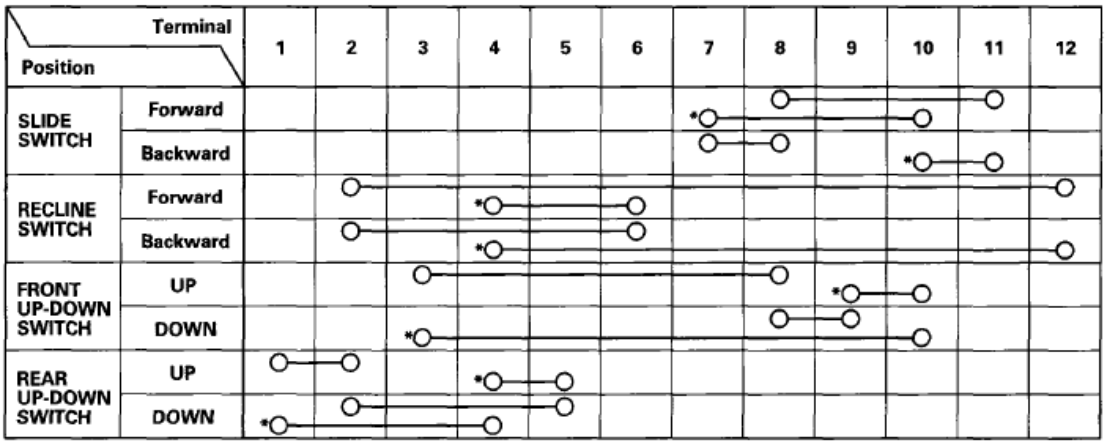


Fig. 4: Identifying Continuity Reference Chart
Courtesy of AMERICAN HONDA MOTOR CO., INC.

*: There is continuity without operating a switch.

6. If the continuity is not as specified, replace the switch.

FRONT PASSENGER'S POWER SEAT MOTOR TEST

NOTE: SRS components are located in this area. Review the SRS component locations (see COMPONENT LOCATION INDEX), and precautions and procedures (see PRECAUTIONS AND PROCEDURES) before doing repairs or servicing.

1. Remove the front passenger's seat (see **FRONT SEAT REMOVAL/INSTALLATION**).
2. Disconnect the connector from each power seat motor.

NOTE: All connectors are terminal side of male terminals.

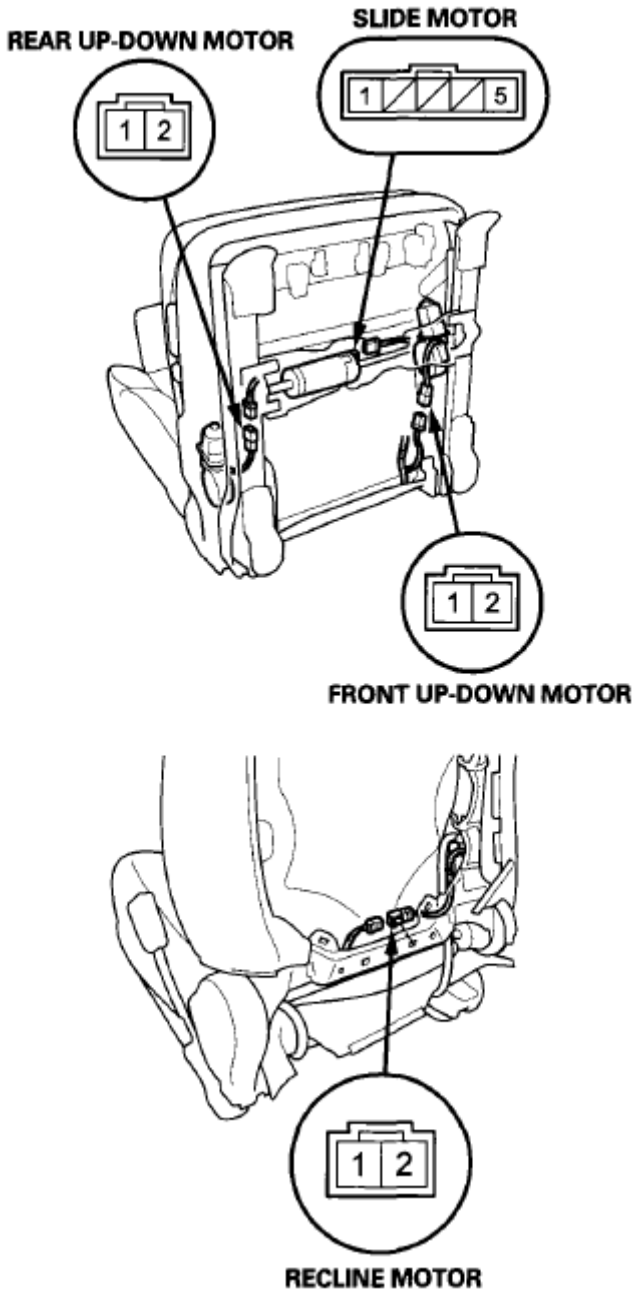


Fig. 5: Identifying Rear And Front Up-Down Motors Terminals, Slide Motor Terminals And Recline Motor With Connector End Views
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Test each motor by connecting power and ground according to the table. When the motor stops running, disconnect battery power immediately.

Position		Terminal 1	Terminal 5
SLIDE MOTOR	Forward	⊖	⊕
	Backward	⊕	⊖

Fig. 6: Testing Slide Motor By Connecting Power And Ground According To Table
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Position		Terminal 1	Terminal 2
RECLINE MOTOR	Forward	⊖	⊕
	Backward	⊕	⊖

Fig. 7: Testing Recline Motor By Connecting Power And Ground According To Table
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Position		Terminal 1	Terminal 2
FRONT UP-DOWN MOTOR	UP	⊕	⊖
	DOWN	⊖	⊕

Fig. 8: Testing Front Up-Down Motor By Connecting Power And Ground According To Table
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Position		Terminal 1	Terminal 2
REAR UP-DOWN MOTOR	UP	⊖	⊕
	DOWN	⊕	⊖

Fig. 9: Testing Rear Up-Down Motor By Connecting Power And Ground According To Table
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. If the motor does not run or fails to run smoothly, replace:
   - Slide motor (see **FRONT SEAT SLIDE MOTOR REPLACEMENT**)
   - Front up-down motor/seat frame (see **FRONT SEAT FRAME REPLACEMENT**)
   - Rear up-down motor/seat frame (see **FRONT SEAT FRAME REPLACEMENT**)
   - Recline motor (see **FRONT SEAT RECLINE MOTOR REPLACEMENT**)

NOTE: **The front and rear up-down motors are part of the seat frame.**

2012 ACCESSORIES & EQUIPMENT

Power Windows - TL

COMPONENT LOCATION INDEX

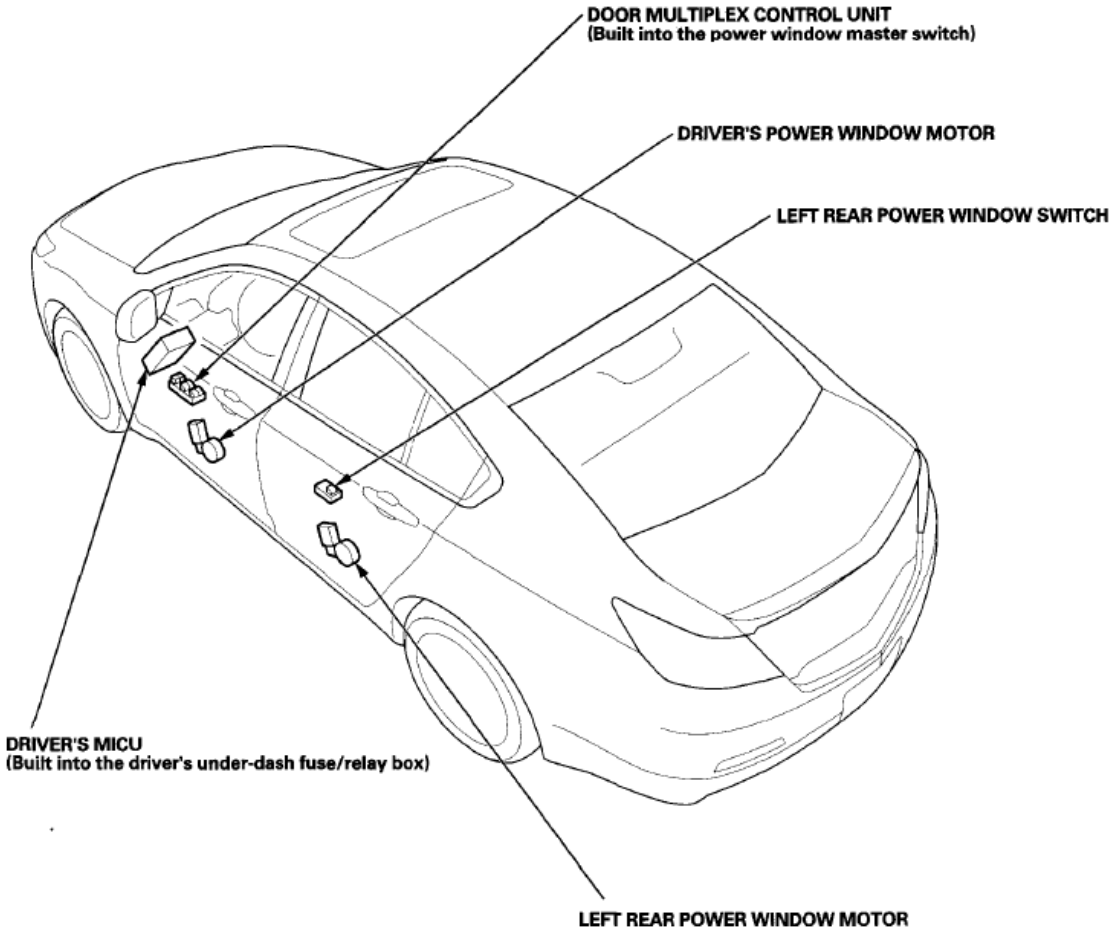


Fig. 1: Power Window Components Location (1 Of 2)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

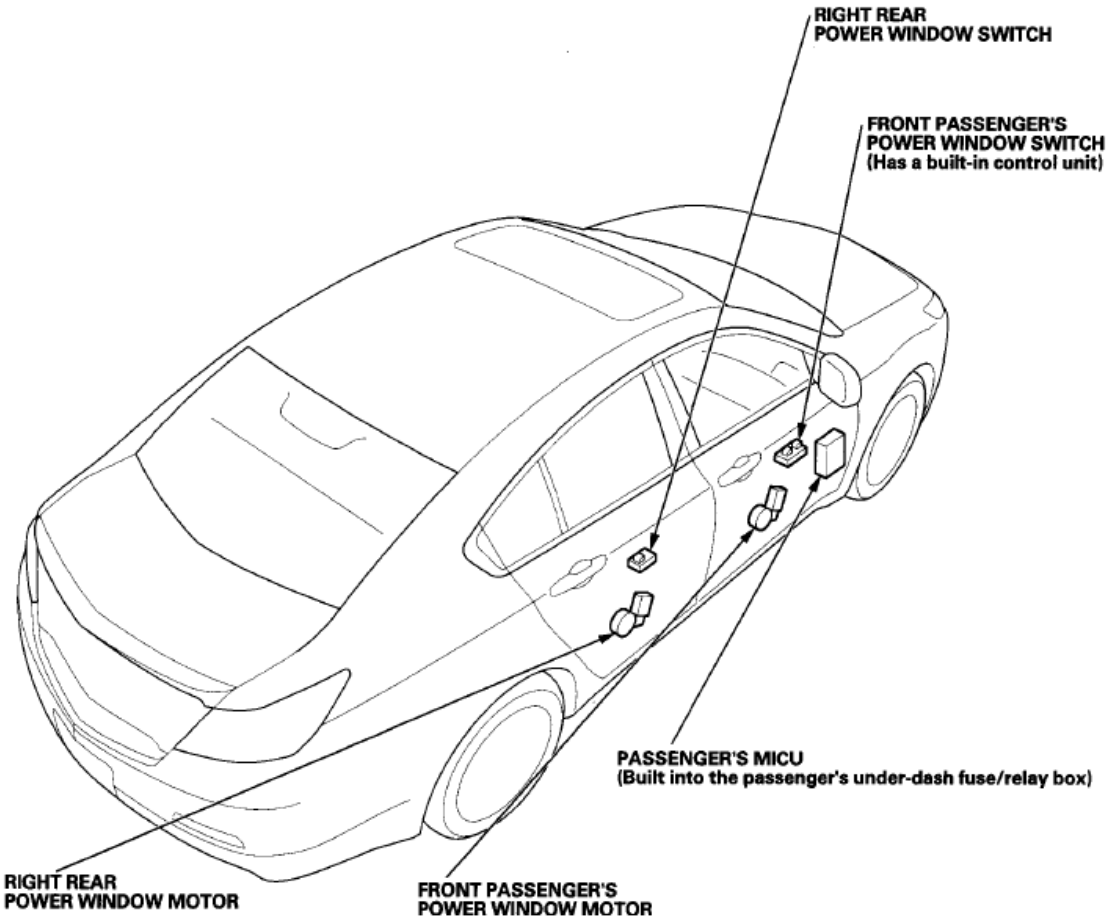


Fig. 2: Power Window Components Location (2 Of 2)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

SYSTEM DESCRIPTION

AUTO REVERSE POWER WINDOW OPERATION

The system is composed of the driver's MICU, the passenger's MICU unit, the door multiplex control unit (built into the power window master switch), the front passenger's power window control unit (built into the front passenger's switch), and the power window motors.

The driver's and front passenger's power window motors incorporate a Hall IC unit (pulser) which generates pulses during the motor's operation and sends pulses to the driver's and passenger's power window control units. As soon as the power window control units detect a change in the pulse frequency from the Hall IC unit (pulser), the power window control units make the power window motor stop and reverse. This prevents pinching your hand or fingers during auto-up operation. The auto reverse function does not work when the power window master switch is held in the closed position.

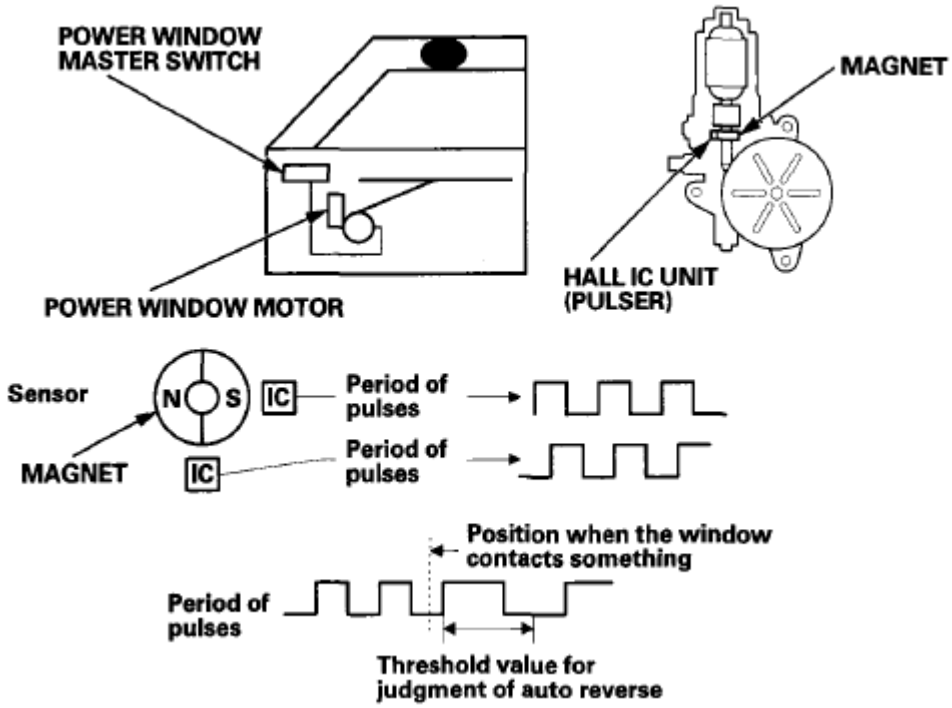


Fig. 3: View Of Auto Reverse Power Window Operation
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Key Cylinder Operation

With the key inserted in the driver's door key cylinder, turn the key twice within 15 seconds and hold it to operate the windows and moonroof (clockwise to open, counterclockwise to close). The windows and moonroof stop moving when the key is released. The auto reverse operation is not active when closing the windows and moonroof with the key cylinder.

Keyless Operation

By pressing and holding the UNLOCK button of the keyless transmitter, or remote twice within 15 seconds, the windows and moonroof open. The windows and moonroof stop moving when the UNLOCK button is released. The windows do not close with the LOCK button.

RESETTING THE POWER WINDOW CONTROL UNIT

Reset the power window control unit after doing any of the following:

- Power window regulator replacement, removal/installation, or repair.
- Power window motor replacement, removal/installation, or repair.
- Glass run channel replacement or removal/installation.
- Front passenger's power window switch replacement or removal/installation.
- Door glass replacement, removal/installation, or repair.
- Power is disconnected from the driver's power window master switch or front passenger's power window

switch while the power window timer is ON.

NOTE: If the front passenger's power window has lost power when the key off timer is ON, it cannot be operated from the driver's switch and must be reset from the front passenger's power window switch.

USING THE HDS

1. Connect the HDS to the data link connector (DLC).
2. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode, then enter the vehicle's VIN and mileage at the prompts.
3. Select BODY ELECTRICAL from the SYSTEM SELECTION MENU.
4. From the BODY ELECTRICAL SYSTEM SELECT menu, select POWER WINDOWS.
5. From the MODE MENU, select ADJUSTMENT.
6. From the ADJUSTMENT MENU, select POWER WINDOW RESET FOR DRIVER SIDE (PASSENGER'S SIDE).
7. Follow the prompts on the screen.
8. Confirm that the power window control unit is reset by using the power window AUTO UP and AUTO DOWN function.

WITHOUT THE HDS

NOTE: Do the reset procedure from the power window switch of the affected window.

1. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
2. Move the power window all the way down by using the power window DOWN switch.
3. Open the driver's or front passenger's door.
4. Do the following four times before going to step 5:

   NOTE: Do each bullet step within 5 seconds of each other.

   - Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
   - Push and hold the power window DOWN switch.
   - Turn the ignition switch to ON (II) or press the engine start/stop button to select the ON mode.
   - Release the power window DOWN switch.
5. Confirm that AUTO UP no longer works. If AUTO UP still works, repeat step 4, paying close attention to the 5 second time limit.
6. Move the power window all the way down using the power window DOWN switch.
7. Pull up and hold the power window UP switch until the power window is all the way up, then continue to hold the switch for several seconds.
8. Confirm that the power window control unit is reset by using the power window AUTO UP and AUTO DOWN function. If the power window still does not work in AUTO, repeat the procedure several times,

paying close attention to the 5 seconds time limit between each bulleted step. If the window still does not work, troubleshoot the power window circuit.

CIRCUIT DIAGRAM

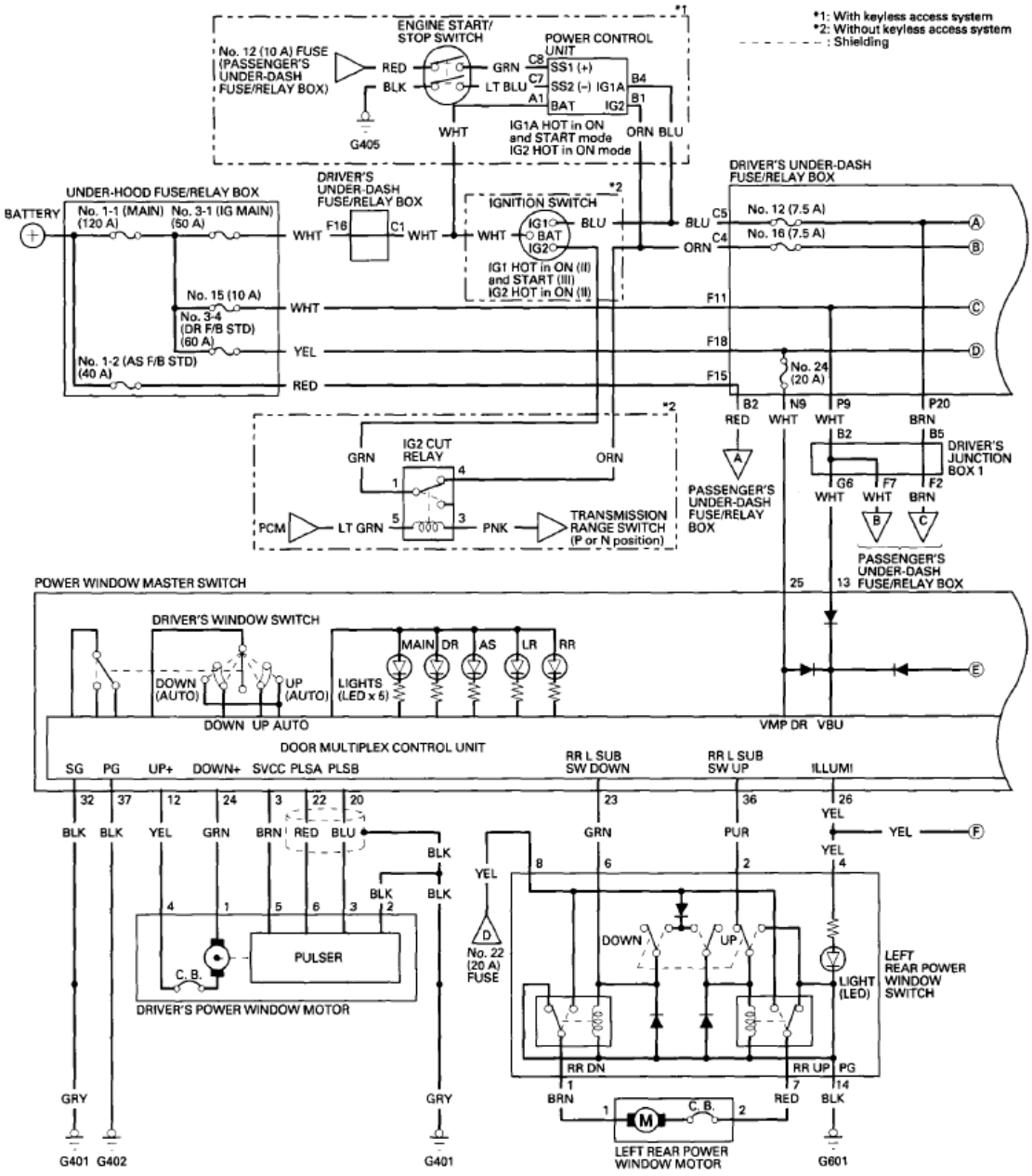


Fig. 4: Power Window - Circuit Diagram (1 Of 3)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

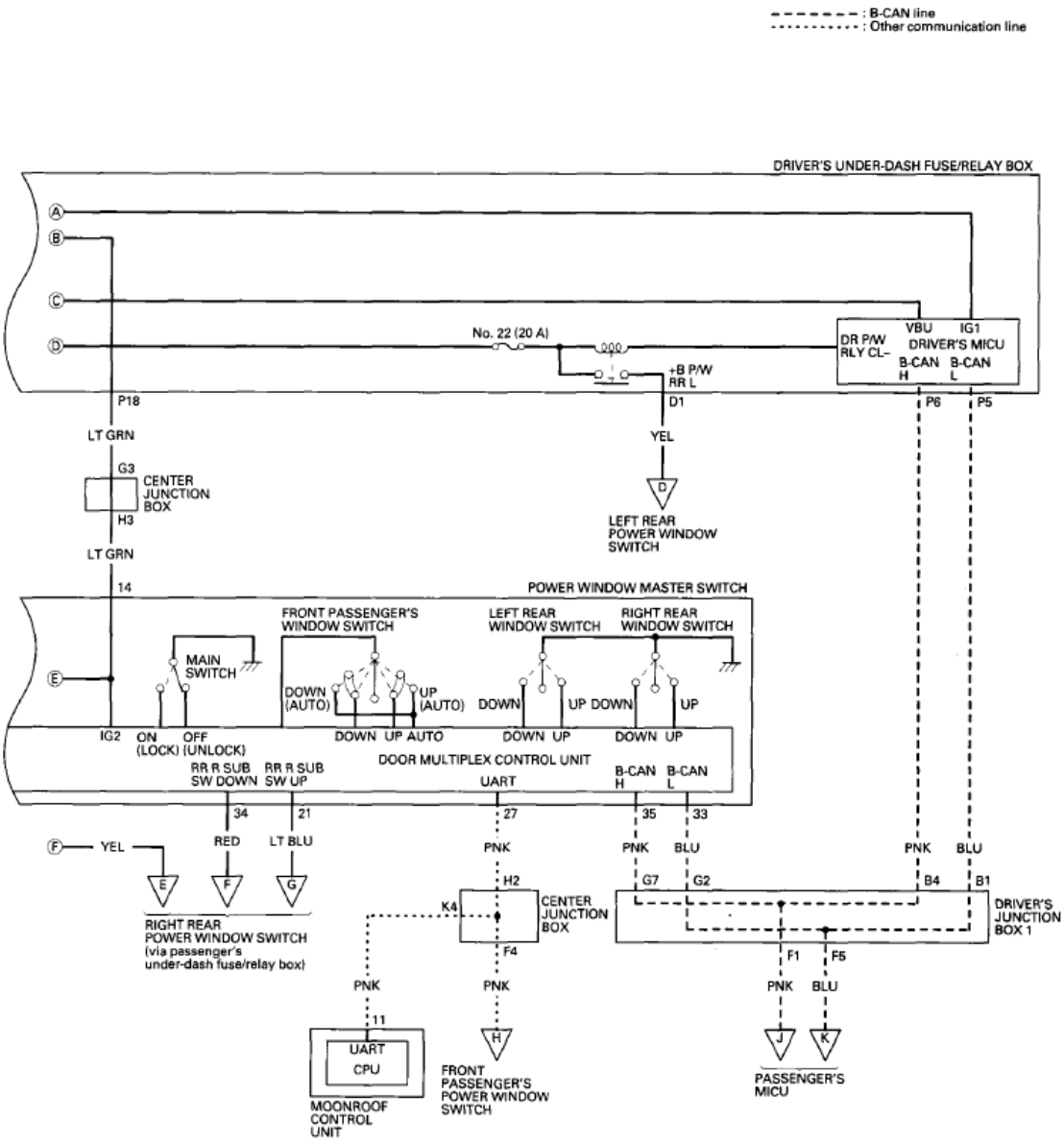


Fig. 5: Power Window - Circuit Diagram (2 Of 3)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

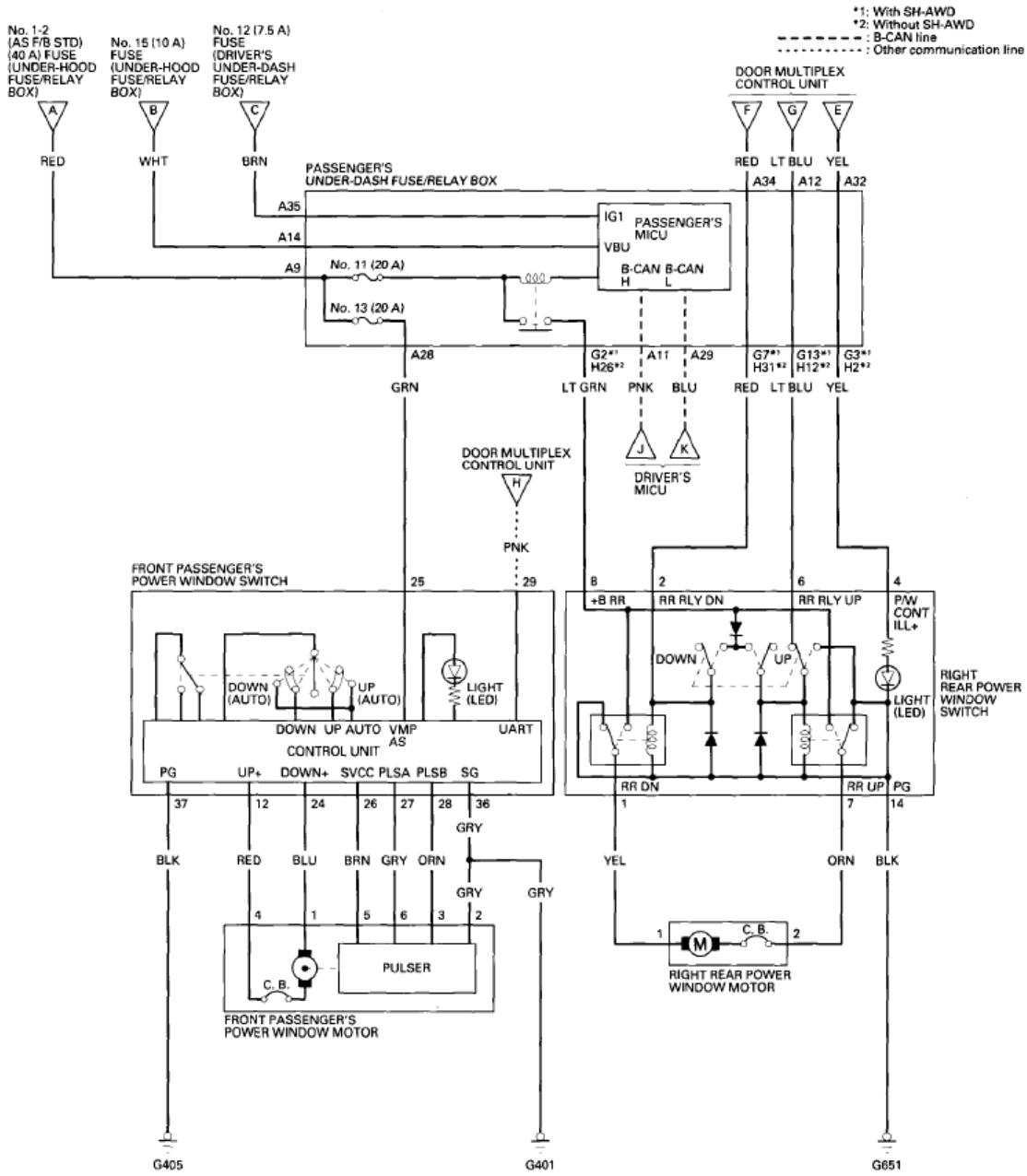


Fig. 6: Power Window - Circuit Diagram (3 Of 3)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

DTC TROUBLESHOOTING

DTC B1125: DRIVER'S POWER WINDOW MOTOR A PULSE MALFUNCTION; DTC B1126: DRIVER'S POWER WINDOW MOTOR B PULSE MALFUNCTION

NOTE: **If you are troubleshooting multiple DTCs, be sure to follow the instructions in B-CAN System Diagnosis Test Mode A (see TROUBLESHOOTING - B-CAN SYSTEM DIAGNOSIS TEST MODE A).**

1. Clear the DTCs with the HDS.
2. Turn the ignition switch to LOCK (0) and then back to ON (II), or press the engine start/stop button to select the OFF mode and then the ON mode.
3. Open and close the driver's power window by using the power window master switch manually.

   Does the window motor operate?

   YES - Go to step 4.

   NO - Test the driver's power window motor (see **DRIVER'S POWER WINDOW MOTOR TEST**). If the motor tests OK, go to step 4.

4. Check for DTCs with the HDS.

   Are DTCs B1125 and/or B1126 indicated?

   YES - Go to step 5.

   NO - Intermittent failure, the system is OK at this time. Check for loose or poor connections.

5. Select the POWER WINDOWS from the BODY ELECTRICAL SYSTEM SELECT menu, and enter DATA LIST.
6. Check the DETECT/NONE information of the DRIVER'S P/W MOTOR PULSE A and PULSE B signal in the DATA LIST.

   Does the information indicator display DETECT while the window is moving, and display NONE when the window is stopped?

   YES - Replace the power window master switch (see **POWER WINDOW MASTER SWITCH REPLACEMENT**).

   NO - Go to step 7.

7. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
8. Disconnect the power window master switch 37P connector.
9. Disconnect the driver's power window motor 6P connector.
10. Check for continuity between power window master switch 37P terminals No. 3, No. 20, and No. 22 and driver's power window motor 6P connector terminals No. 5, No. 3, and No. 6 respectively.

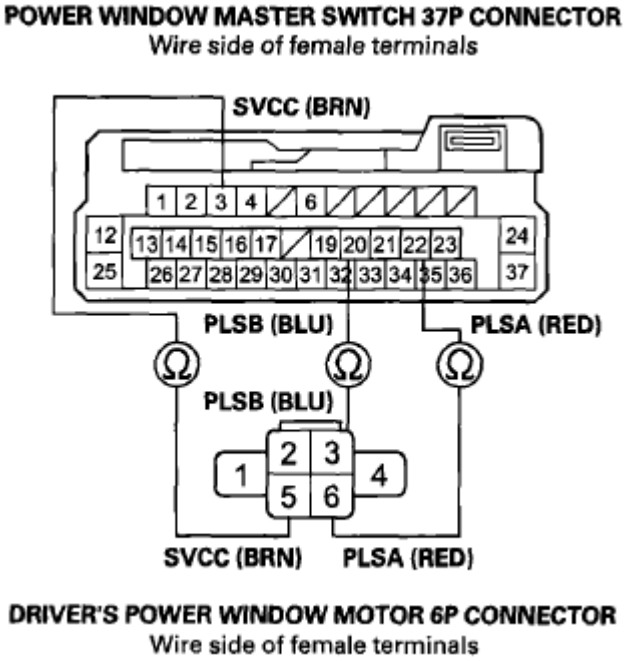


Fig. 7: Checking Continuity Between Power Window Master Switch 37P Connector And Driver's Power Window Motor 6P Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 11.

NO - Repair an open or high resistance in the wire between the door multiplex control unit and the driver's power window motor.

11. Check for continuity between driver's power window motor 6P connector terminals No. 3, No. 5, and No. 6 and body ground individually.

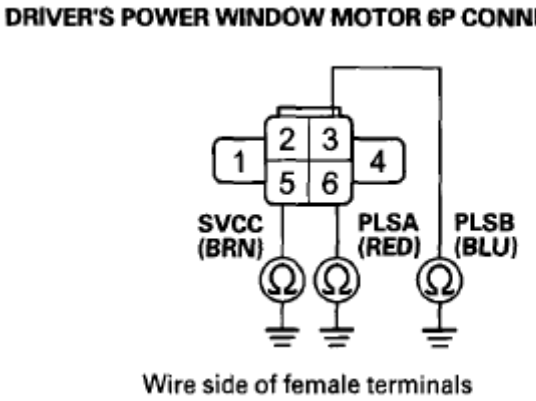


Fig. 8: Checking Continuity Between Driver's Power Window Motor 6P Connector Terminals No. 3, No. 5, And No. 6 And Body Ground

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair a short to ground in the wire.

NO - Go to step 12.

12. Test the driver's power window motor (see **DRIVER'S POWER WINDOW MOTOR TEST**).

    Is the motor OK?

    YES - Replace the power window master switch (see **POWER WINDOW MASTER SWITCH REPLACEMENT**).

    NO - Faulty the driver's power window motor; replace the driver's door regulator (see **FRONT DOOR GLASS AND REGULATOR REPLACEMENT**).

DTC B1130: FRONT PASSENGER'S POWER WINDOW MOTOR A-PULSE MALFUNCTION; DTC B1131: FRONT PASSENGER'S POWER WINDOW MOTOR B-PULSE MALFUNCTION

NOTE: If you are troubleshooting multiple DTCs, be sure to follow the instructions in B-CAN System Diagnosis Test Mode A (see TROUBLESHOOTING - B-CAN SYSTEM DIAGNOSIS TEST MODE A).

1. Clear the DTCs with the HDS.
2. Turn the ignition switch to LOCK (0) and then back to ON (II), or press the engine start/stop button to select the OFF mode and then the ON mode.
3. Open and close the front passenger's power window by using the front passenger's power window switch manually.

   Does the window motor operate?

   YES - Go to step 4.

   NO - Test the front passenger's power window motor (see **FRONT PASSENGER'S POWER WINDOW MOTOR TEST**). If the motor tests OK, go to step 4.

4. Check for DTCs with the HDS.

   Are DTCs B1130 and/or B1131 indicated?

   YES - Go to step 5.

   NO - Intermittent failure, the system is OK at this time. Check for loose or poor connections.

5. Select the POWER WINDOWS from the BODY ELECTRICAL SYSTEM SELECT menu, and enter DATA LIST.
6. Check the DETECT/NONE information of the PASSENGER'S POWER WINDOW MOTOR PULSE A and PULSE B signal in the DATA LIST.

   Does the information indicator display DETECT while the window is moving, and display NONE when the window is stopped?

   YES - Replace the front passenger's power window switch (see **FRONT PASSENGER'S POWER WINDOW SWITCH INPUT TEST**).

   NO - Go to step 7.

7. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
8. Disconnect the front passenger's power window switch 37P connector.
9. Disconnect the front passenger's power window motor 6P connector.

DTC B1140: DRIVER'S POWER WINDOW POSITION DETECT CIRCUIT MALFUNCTION

NOTE:

- **If you are troubleshooting multiple DTCs, be sure to follow the instructions in B-CAN System Diagnosis Test Mode A (see TROUBLESHOOTING - B-CAN SYSTEM DIAGNOSIS TEST MODE A).**
- **Make sure you reset the power window control unit (see RESETTING THE POWER WINDOW CONTROL UNIT) whenever you replace or substitute any power window parts.**

1. Clear the DTCs with the HDS.
2. Turn the ignition switch to LOCK (0) and then back to ON (II), or press the engine start/stop button to select the OFF mode and then the ON mode.
3. Open and close the driver's power window by using the driver's switch manually.
4. Check for DTCs with the HDS.

   Is DTC B1125 or B1126 indicated?

   YES - Troubleshoot DTC B1125 or B1126 (see **DTC B1125: DRIVER'S POWER WINDOW MOTOR A PULSE MALFUNCTION; DTC B1126: DRIVER'S POWER WINDOW MOTOR B PULSE MALFUNCTION**).

   NO - Go to step 5.

5. Reset the power window control unit (see **RESETTING THE POWER WINDOW CONTROL UNIT**).
6. Check for DTCs again with the HDS.

Is DTC B1140 indicated?

YES - Go to step 7.

NO - The system is OK at this time. Check for loose or poor connectors.

7. Substitute a known-good power window master switch.
8. Open and close the driver's power window by using the driver's switch manually.
9. Check for DTCs with the HDS.

Is DTC B1140 indicated?

YES - Faulty the driver's power window motor; replace the driver's door regulator (see **FRONT DOOR GLASS AND REGULATOR REPLACEMENT**).

NO - Faulty door multiplex control unit; replace the power window master switch (see **POWER WINDOW MASTER SWITCH REPLACEMENT**).

DTC B1142: DOOR MULTIPLEX CONTROL UNIT LOST COMMUNICATION WITH OTHER UNIT (UART COMMUNICATION ERROR)

NOTE:

- **If you are troubleshooting multiple DTCs, be sure to follow the instructions in B-CAN System Diagnosis Test Mode A (see TROUBLESHOOTING - B-CAN SYSTEM DIAGNOSIS TEST MODE A).**
- **Before troubleshooting, make sure the No. 12 (7.5 A), No. 16 (7.5 A) and No. 24 (20 A) fuses in the driver's under-dash fuse/relay box are OK.**

1. Clear the DTCs with the HDS.
2. Turn the ignition switch to LOCK (0) and then back to ON (II), or press the engine start/stop button to select the OFF mode and then the ON mode.
3. Open and close all power windows by using the power window master switch.
4. Check for DTCs with the HDS.

Is DTC B1142 indicated?

YES - Go to step 5.

NO - Intermittent failure, the system is OK at this time. Check for loose or poor connections.

5. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
6. Disconnect these items:
   - Disconnect the power window master switch 37P connector.
   - Disconnect the front passenger's power window switch 37P connector.
   - Disconnect the moonroof control unit/motor 14P connector.

7. Check for continuity between power window master switch 37P connector terminal No. 27 and front passenger's power windows switch 37P connector terminal No. 29.

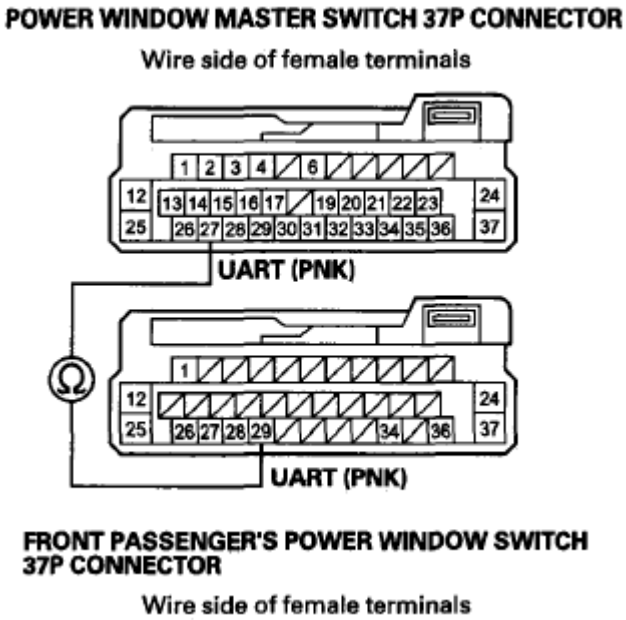


Fig. 9: Checking Continuity Between Power Window Master Switch 37P Connector And Front Passenger's Power Windows Switch 37P Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 8.

NO - Repair an open or high resistance in the wire.

8. Check for continuity between power window master switch 37P connector terminal No. 27 and moonroof control unit 14P connector terminal No. 11.

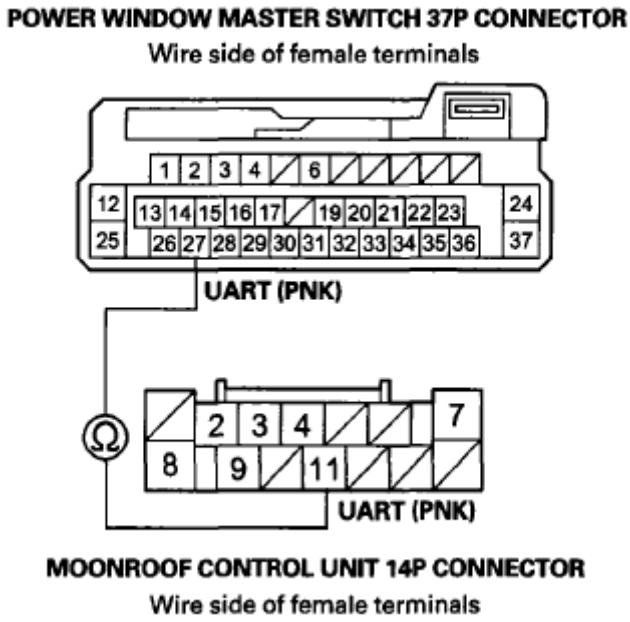


Fig. 10: Checking Continuity Between Power Window Master Switch 37P Connector And Moonroof Control Unit 14P Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 9.

NO - Repair an open or high resistance in the wire.

9. Check for continuity between power window master switch 37P connector terminal No. 27 and body ground.

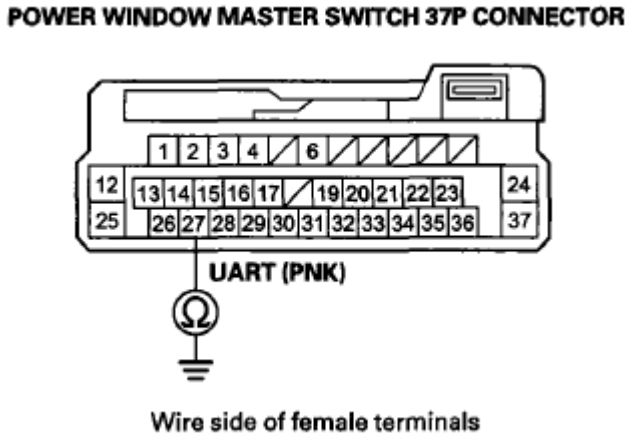


Fig. 11: Checking Continuity Between Power Window Master Switch 37P Connector Terminal No. 27 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair a short to ground in the wire.

NO - Go to step 10.

10. Reconnect the power window master switch 37P connector.
11. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
12. Measure the voltage between power window master switch 37P connector terminal No. 27 and body ground.

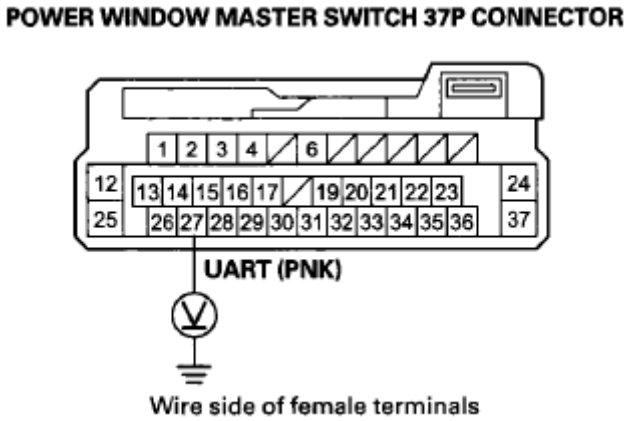


Fig. 12: Measuring Voltage Between Power Window Master Switch 37P Connector Terminal No. 27 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there less than 0.2 V?

YES - Go to the **FRONT PASSENGER'S POWER WINDOW SWITCH INPUT TEST**, and do the power and ground input tests (see **POWER WINDOW MASTER SWITCH INPUT TEST**). If the tests prove OK, substitute a known good front passenger's power window switch. If the DTC goes away, replace the original front passenger's power window switch (see **FRONT PASSENGER'S POWER WINDOW SWITCH REPLACEMENT**). If the DTC is still present, replace the power window master switch (see **POWER WINDOW MASTER SWITCH REPLACEMENT**).

NO - Repair a short to power in the wire.

DTC B1145: FRONT PASSENGER'S POWER WINDOW POSITION DETECT CIRCUIT MALFUNCTION

NOTE:

- **If you are troubleshooting multiple DTCs, be sure to follow the instructions in B-CAN System Diagnosis Test Mode A (see TROUBLESHOOTING - B-CAN SYSTEM DIAGNOSIS TEST MODE A).**
- **Make sure you reset the power window control unit (see RESETTING THE POWER WINDOW CONTROL UNIT) whenever you replace or substitute**

any power window parts.

1. Clear the DTCs with the HDS.
2. Turn the ignition switch to LOCK (0) and then back to ON (II), or press the engine start/stop button to select the OFF mode and then the ON mode.
3. Open and close the front passenger's power window by using the front passenger's switch manually.
4. Check for DTCs with the HDS.

   Is DTC B1130 or B1131 indicated?

   YES - Troubleshoot DTC B1130 or B1131 (see **DTC B1130: FRONT PASSENGER'S POWER WINDOW MOTOR A-PULSE MALFUNCTION; DTC B1131: FRONT PASSENGER'S POWER WINDOW MOTOR B-PULSE MALFUNCTION**).

   NO - Go to step 5.

5. Reset the power window control unit and the front passenger's power window control unit (see **RESETTING THE POWER WINDOW CONTROL UNIT**).
6. Check for DTCs again with the HDS.

   Is DTC B1145 indicated?

   YES - Go to step 7.

   NO - The system has recovered at this time.

7. Substitute a known-good passenger's power window switch.
8. Open and close the front passenger's power window by using the front passenger's switch manually.
9. Check for DTCs with the HDS.

   Is DTC B1145 indicated?

   YES - Faulty the front passenger's power window motor; replace the front passenger's door regulator (see **FRONT DOOR GLASS AND REGULATOR REPLACEMENT**).

   NO - Replace the front passenger's power window switch (see **FRONT PASSENGER'S POWER WINDOW SWITCH REPLACEMENT**).

DTC U0155: DOOR MULTIPLEX CONTROL UNIT LOST COMMUNICATION WITH GAUGE CONTROL MODULE

NOTE: If you are troubleshooting multiple DTCs, be sure to follow the instructions in B-CAN System Diagnosis Test Mode A (see TROUBLESHOOTING - B-CAN SYSTEM DIAGNOSIS TEST MODE A).

1. Clear the DTCs with the HDS.
2. Turn the ignition switch to LOCK (0) and then back to ON (II), or press the engine start/stop button to select the OFF mode and then the ON mode.
3. Wait for at least 6 seconds.
4. Check for DTCs with the HDS.

   Is DTC U0155 indicated?

   YES - Go to step 5.

   NO - Intermittent failure, the system is OK at this time. Check for loose or poor connections between the door multiplex control unit and the gauge control module.

5. From the BODY ELECTRICAL SYSTEM SELECT menu, select B-CAN CONTROL UNITS INFORMATION, and then select CHECK CONNECTED CONTROL UNITS.

   Is the gauge control module detected?

   YES - Go to step 9.

   NO - Go to step 6.

6. Measure the voltage between body ground and gauge control module 32P connector terminals No. 15 and No. 16 individually.

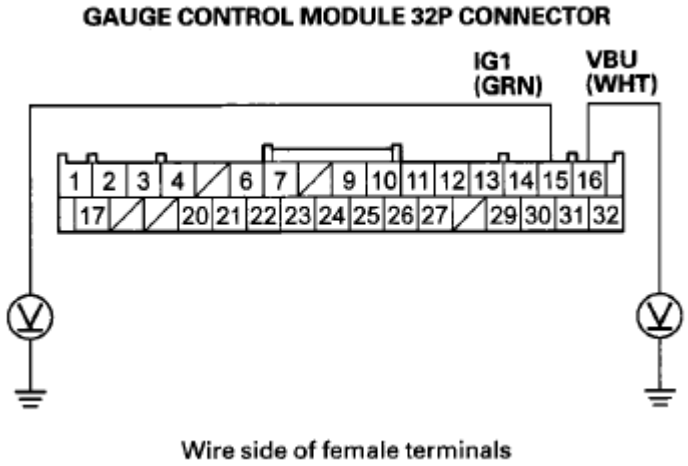


Fig. 13: Measuring Voltage Between Body Ground And Gauge Control Module 32P Connector Terminals No. 15 And No. 16
Courtesy of AMERICAN HONDA MOTOR CO., INC.

   Is there battery voltage?

   YES - Go to step 8.

NO - Go to step 7.

7. Check the No. 15 (10 A) fuse in the under-hood fuse/relay box and the No. 12 (7.5 A) fuse in the driver's under-dash fuse/relay box.

   Are the fuses OK?

   YES - Repair an open or high resistance in the No. 15 (10 A) and/or No. 12 (7.5 A) fuse circuit.

   NO - Replace the fuse(s). If the fuse blows again, repair a short to ground in the No. 15 (10 A) and/or No. 12 (7.5 A) fuse circuit.

8. Measure the voltage between body ground and gauge control module 32P connector terminals No. 1 and No. 17 individually.

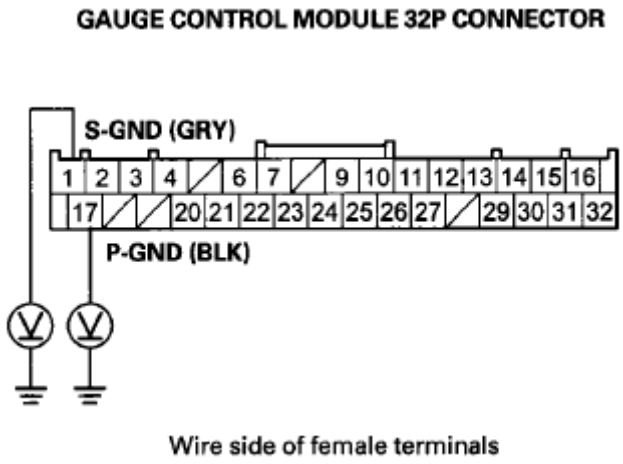


Fig. 14: Measuring Voltage Between Body Ground And Gauge Control Module 32P Connector Terminals No. 1 And No. 17
Courtesy of AMERICAN HONDA MOTOR CO., INC.

   Is there less than 0.2 V?

   YES - Go to step 9.

   NO - Repair an open or high resistance in the ground wire or poor ground (G401) and/or (G402).

9. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
10. Disconnect the gauge control module 32P connector.
11. Disconnect the power window master switch 37P connector.
12. Check for continuity between gauge control module 32P connector terminals No. 29 and No. 30 and power window master switch 37P connector terminals No. 33 and No. 35 respectively.

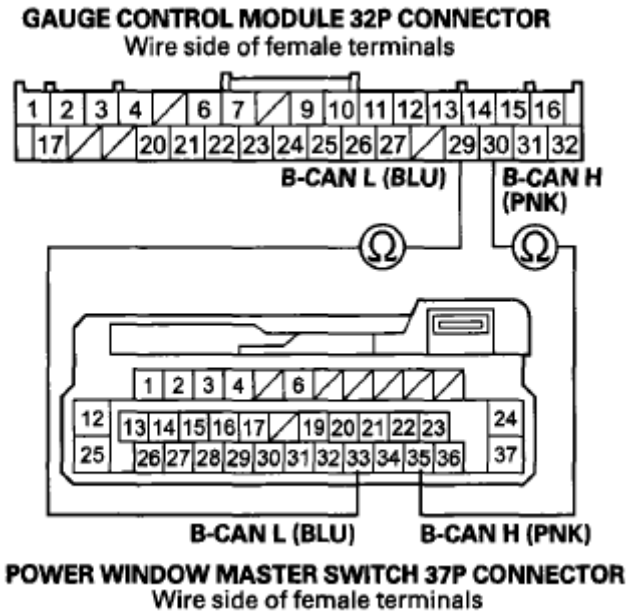


Fig. 15: Checking Continuity Between Gauge Control Module 32P Connector And Power Window Master Switch 37P Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Replace the gauge control module (see **GAUGE CONTROL MODULE REPLACEMENT**).

NO - Repair an open or poor connection in the B-CAN wire between the door multiplex control unit and the gauge control module.

DTC U0164: DOOR MULTIPLEX CONTROL UNIT LOST COMMUNICATION WITH CLIMATE CONTROL UNIT

NOTE: If you are troubleshooting multiple DTCs, be sure to follow the instructions in B-CAN System Diagnosis Test Mode A (see TROUBLESHOOTING - B-CAN SYSTEM DIAGNOSIS TEST MODE A).

1. Clear the DTCs with the HDS.
2. Turn the ignition switch to LOCK (0) and then back to ON (II), or press the engine start/stop button to select the OFF mode and then the ON mode.
3. Wait for at least 6 seconds.
4. Check for DTCs with the HDS.

Is DTC U0155 indicated?

YES - Go to step 5.

NO - Intermittent failure, the system is OK at this time. Check for loose or poor connections between the door multiplex control unit and the climate control unit.

5. From the BODY ELECTRICAL SYSTEM SELECT menu, select B-CAN CONTROL UNITS INFORMATION, and then select CHECK CONNECTED CONTROL UNITS.

   Is the climate control unit detected?

   YES - Go to step 9.

   NO - Go to step 6.

6. Measure the voltage between body ground and climate control unit connector A (32P) terminal No. 15.

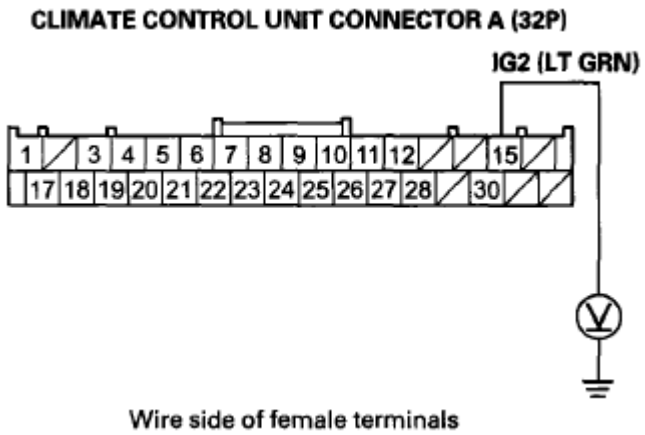


Fig. 16: Measuring Voltage Between Body Ground And Climate Control Unit Connector A (32P) Terminal No. 15
Courtesy of AMERICAN HONDA MOTOR CO., INC.

   Is there battery voltage?

   YES - Go to step 8.

   NO - Go to step 7.

7. Check the No. 16 (7.5 A) fuse in the driver's under-dash fuse/relay box.

   Is the fuse OK?

   YES - Repair an open or high resistance in the No. 16 (7.5 A) fuse circuit.

   NO - Replace the fuse. If the fuse blows again, repair a short to ground in the No. 16(7.5 A) fuse circuit.

8. Measure the voltage between body ground and climate control unit connector A (32P) terminal No. 1.

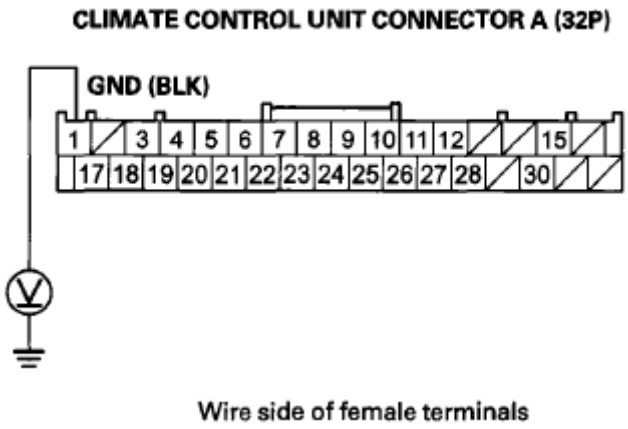


Fig. 17: Measuring Voltage Between Body Ground And Climate Control Unit Connector A (32P) Terminal No. 1
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there less than 0.2 V?

YES - Go to step 9.

NO - Repair an open or high resistance in the ground wire or poor ground (G403).

9. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
10. Disconnect climate control unit connector A (32P).
11. Disconnect the power window master switch 37P connector.
12. Check for continuity between climate control unit connector A (32P) terminals No. 7 and No. 8 and power window master switch 37P connector terminals No. 33 and No. 35 respectively.

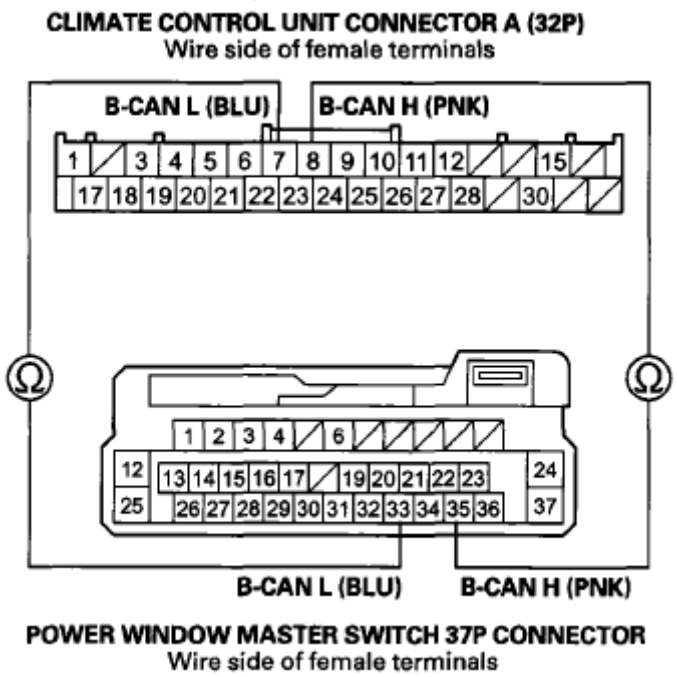


Fig. 18: Checking Continuity Between Climate Control Unit Connector A (32P) And Power Window Master Switch 37P Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Replace the climate control unit (see **EVAPORATOR TEMPERATURE SENSOR REPLACEMENT**).

NO - Repair an open or poor connection in the B-CAN wire between the door multiplex control unit and the climate control unit.

DTC U1282: DOOR MULTIPLEX CONTROL UNIT LOST COMMUNICATION WITH DRIVER'S MICU

NOTE: If you are troubleshooting multiple DTCs, be sure to follow the instructions in B-CAN System Diagnosis Test Mode A (see TROUBLESHOOTING - B-CAN SYSTEM DIAGNOSIS TEST MODE A).

1. Clear the DTCs with the HDS.
2. Turn the ignition switch to LOCK (0) and then back to ON (II), or press the engine start/stop button to select the OFF mode and then the ON mode.
3. Wait for at least 6 seconds.
4. Check for DTCs with the HDS.

Is DTC U1282 indicated?

YES - Replace the power window master switch (see **POWER WINDOW MASTER SWITCH REPLACEMENT**).

NO - Intermittent failure, the system is OK at this time. Check for loose or poor connections between the door multiplex control unit and the driver's MICU.

DTC U1283: DOOR MULTIPLEX CONTROL UNIT LOST COMMUNICATION WITH PASSENGER'S MICU

NOTE: If you are troubleshooting multiple DTCs, be sure to follow the instructions in B-CAN System Diagnosis Test Mode A (see TROUBLESHOOTING - B-CAN SYSTEM DIAGNOSIS TEST MODE A).

1. Clear the DTCs with the HDS.
2. Turn the ignition switch to LOCK (0) and then back to ON (II), or press the engine start/stop button to select the OFF mode and then the ON mode.
3. Wait for at least 6 seconds.
4. Check for DTCs with the HDS.

   Is DTC U0155 indicated?

   YES - Go to step 5.

   NO - Intermittent failure, the system is OK at this time. Check for loose or poor connections between the door multiplex control unit and the passenger's MICU.

5. From the BODY ELECTRICAL SYSTEM SELECT menu, select B-CAN CONTROL UNITS INFORMATION, and then select CHECK CONNECTED CONTROL UNITS.

   Is the passenger's MICU detected?

   YES - Go to step 9.

   NO - Go to step 6.

6. Measure the voltage between body ground and passenger's under-dash fuse/relay box connector A (38P) terminals No. 14 and No. 35 individually.

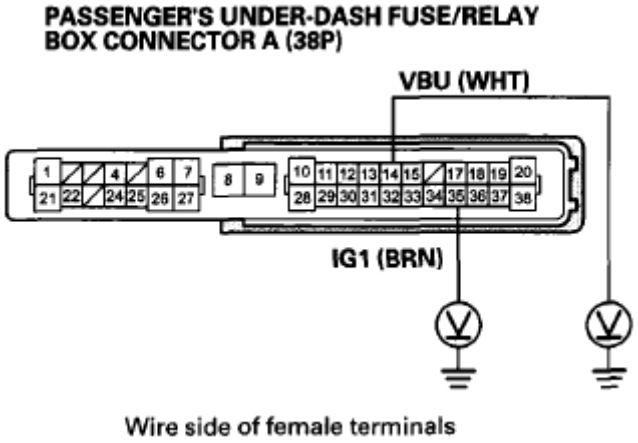


Fig. 19: Measuring Voltage Between Body Ground And Passenger's Under-Dash Fuse/Relay Box Connector A (38P) Terminals No. 14 And No. 35
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there battery voltage?

YES - Go to step 8.

NO - Go to step 7.

7. Check the No. 15 (10 A) fuse in the under-hood fuse/relay box and the No. 12 (7.5 A) fuse in the driver's under-dash fuse/relay box.

   Are the fuses OK?

   YES - Repair an open or high resistance in the No. 15 (10 A) and/or No. 12 (7.5 A) fuse circuit.

   NO - Replace the fuse(s). If the fuse blows again, repair a short to ground in the No. 15 (10 A) and/or No. 12 (7.5 A) fuse circuit.

8. Measure the voltage between body ground and passenger's under-dash fuse/relay box connector A (38P) and E (18P) terminals as shown.

Passenger's under-dash fuse/relay box connector	
A36	Body ground
A37	
E15	

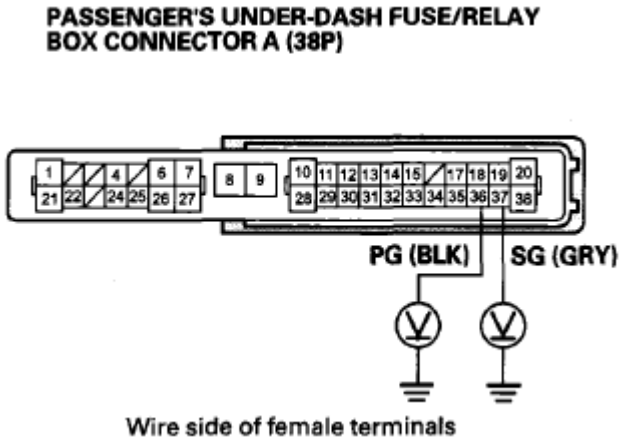


Fig. 20: Measuring Voltage Between Body Ground And Passenger's Under-Dash Fuse/Relay Box Connector A (38P) And E (18P) Terminals
Courtesy of AMERICAN HONDA MOTOR CO., INC.

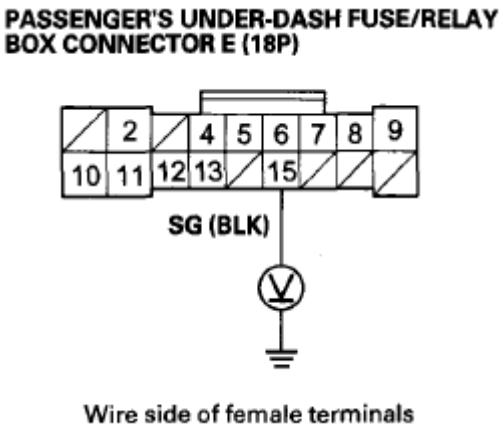


Fig. 21: Measuring Voltage Between Body Ground Passenger's Under-Dash Fuse/Relay Box Connector E (18P) Terminals
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there less than 0.2 V?

YES - Go to step 9.

NO - Repair an open or high resistance in the ground wire or poor ground (G203), (G401), and/or (G405).

9. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
10. Disconnect passenger's under-dash fuse/relay box connector A (38P).
11. Disconnect the power window master switch 37P connector.
12. Check for continuity between passenger's under-dash fuse/relay box connector A (38P) terminals No. 11 and No. 29 and power window master switch 37P connector terminals No. 35 and No. 33 respectively.

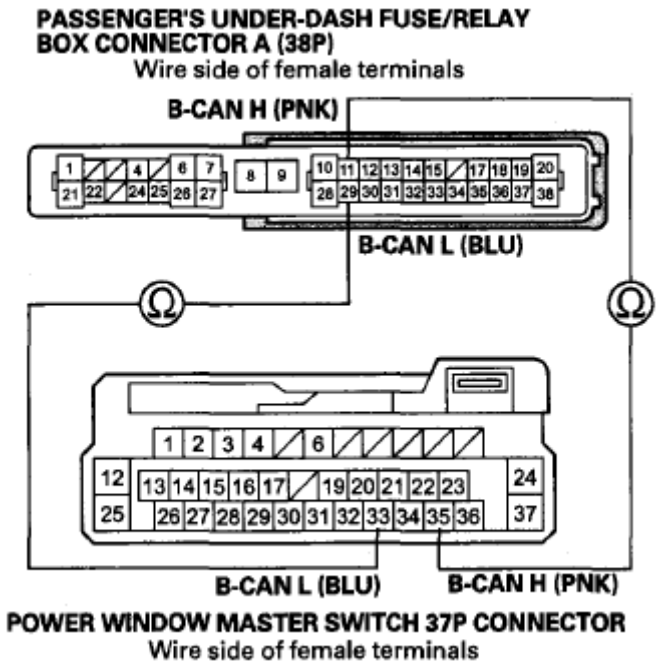


Fig. 22: Checking Continuity Between Passenger's Under-Dash Fuse/Relay Box Connector A (38P) And Power Window Master Switch 37P Connector Terminals
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Replace the power window master switch (see **POWER WINDOW MASTER SWITCH REPLACEMENT**).

NO - Repair an open or poor connection in the B-CAN wire between the door multiplex control unit and the passenger's MICU.

POWER WINDOW MASTER SWITCH INPUT TEST

NOTE: Before testing, troubleshoot the multiplex integrated control unit first, using B-CAN System Diagnosis Test Mode A (see TROUBLESHOOTING - B-CAN SYSTEM DIAGNOSIS TEST MODE A).

1. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
2. Open and close the driver's door, then remove the driver's door panel (see **FRONT DOOR PANEL REMOVAL/INSTALLATION**).
3. Disconnect the power window master switch 37P connector (A) from the power window master switch (B).

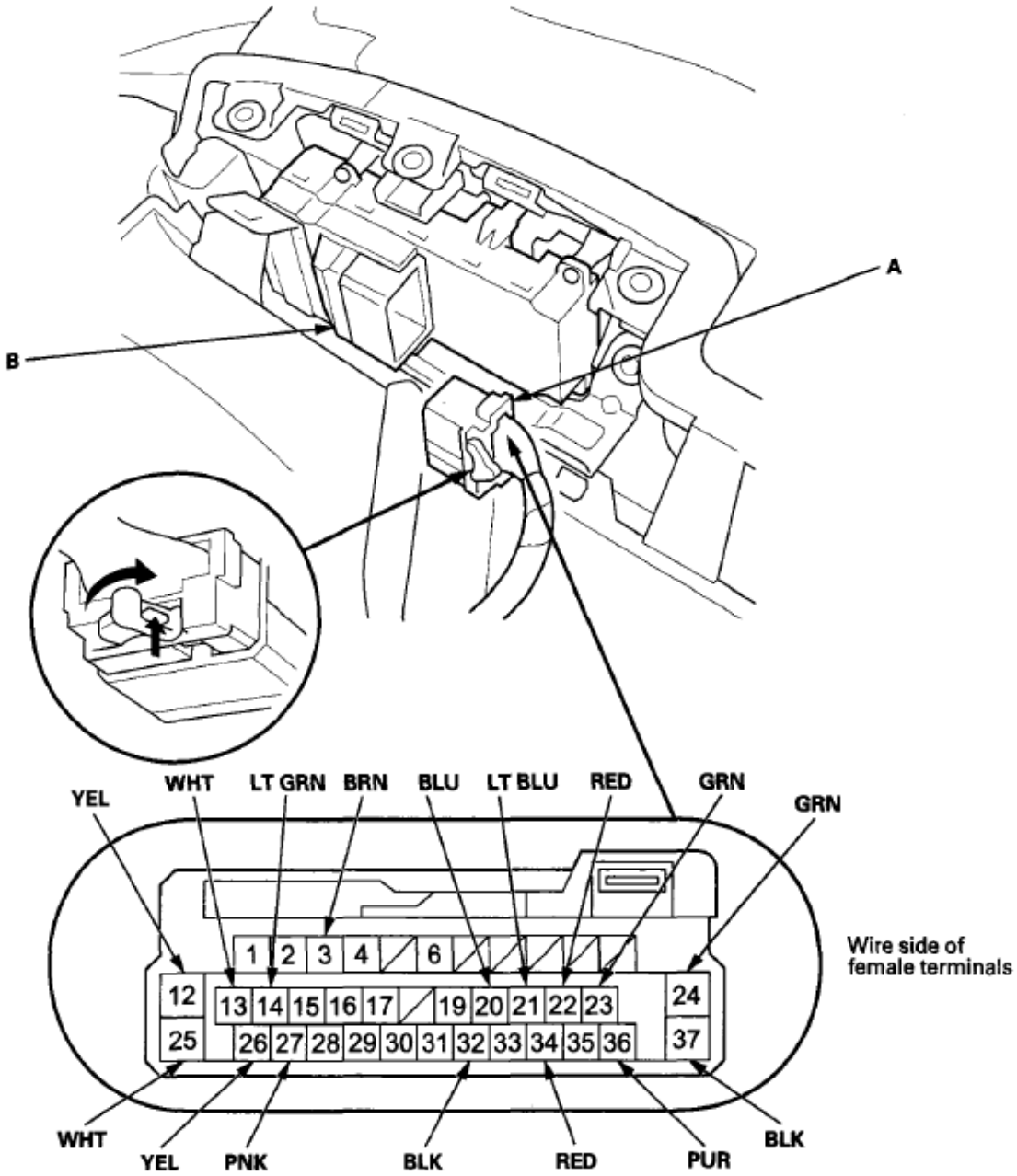


Fig. 23: Disconnecting Power Window Master Switch 37P Connector From Power Window Master Switch
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Inspect the connector and socket terminals to be sure they are all making good contact.
   - If the terminals are bent, loose or corroded, repair them as necessary, and recheck the system.
   - If the terminals look OK, go to step 5.
5. Reconnect the driver's door harness to driver's door subharness.
6. With the power window master switch 37P connector still disconnected from the power window master switch, do the following input tests:

- If any test indicates a problem, find and correct the cause, then recheck the system.
- If all the input tests prove OK, go to step 7.

Cavity	Wire	Test condition	Test: Desired result	Possible cause if desired result is not obtained
12	YEL	Turn the ignition switch ON (II), or power mode ON connect terminals No. 25 and No. 24 (or No. 12), and terminals No. 12 (or No. 24) and No. 37 with jumper wires.	Check driver's power window motor operation: The driver's power window should open (or close).	• Faulty driver's power window motor • An open or high resistance in the wire
24	GRN			
23	GRN	Turn the ignition switch ON (II), or power mode ON connect terminals No. 25 and No. 36 (or No. 23).	Check left rear power window motor operation: The left rear power window should open (or close).	• Faulty left rear power window switch • Faulty left rear power window motor • Poor ground (G601)or an open in the ground wire • An open or high resistance in the wire
36	PUR			
21	LT BLU	Turn the ignition switch ON (II), or power mode ON connect terminals No. 25 and No. 34 (or No. 21).	Check right rear power window motor operation: The right rear power window should open (or close).	• Faulty passenger's under-dash fuse/relay box • Faulty right rear power window switch • Faulty right rear power window motor • Poor ground (G651) or an open in the ground wire • An open or high resistance in the wire
34	RED			
				• Blown No. 24

				(20 A) fuse in the driver's under-dash fuse/relay box • Faulty LED • Faulty left or right rear power window switch • Poor ground (G601 or G651) or an open in the ground wire • A short to ground in the wire • An open or high resistance in the wire
26	YEL	Turn the ignition switch ON (II), or power mode ON connect terminals No. 25 and No. 26 with a jumper wire.	Check left and right rear power window switch lights: The left and right rear power window switch lights should come on.	
27	PNK	Disconnect the front passenger's power window switch 37P connector and moonroof control unit/motor 14P connector	Check for continuity between power window master switch terminal No. 27 and front passenger's power window switch 37P connector terminal No. 29: There should be continuity. Check for continuity to ground: There should be no continuity.	An open in the UART wire A short to ground in the wire

7. Reconnect the connector to the power window master switch, turn the ignition switch, or press the engine start/stop button to select the ON mode, and do the following input tests:
   - If any test indicates a problem, find and correct the cause, then recheck the system.
   - If all the input tests prove OK, the door multiplex control unit is faulty; replace the power window master switch (see **POWER WINDOW MASTER SWITCH REPLACEMENT**).

NOTE: After replacing the power window master switch, reset the power window control unit (see RESETTING THE POWER WINDOW CONTROL UNIT).

Cavity	Wire	Test condition	Test: Desired result	Possible cause if desired result is not obtained
				• Blown No. 15 (10 A) fuse in the under-hood

				fuse/relay box • Faulty driver's under-dash fuse/relay box • An open or high resistance in the wire
13	WHT	Under all conditions	Measure the voltage to ground: There should be battery voltage.	
14	LT GRN	Ignition switch ON (II), or power mode ON	Measure the voltage to ground: There should be battery voltage.	• Blown No. 16 (7.5 A) fuse in the driver's under-dash fuse/relay box • Faulty driver's under-dash fuse/relay box • An open or high resistance in the wire
25	WHT	Under all conditions	Measure the voltage to ground: There should be battery voltage.	• Blown No. 24 (20 A) fuse in the driver's under-dash fuse/relay box • Faulty driver's under-dash fuse/relay box • An open or high resistance in the wire
32	BLK	In all ignition switch positions or all power modes	Measure the voltage to ground: There should be less than 0.2 V.	• Poor ground (G401) • An open or high resistance in the ground wire
37	BLK	In all ignition switch positions or all power modes	Measure the voltage to ground: There should be less than 0.2 V.	• Poor ground (G402) • An open or high resistance in the ground wire
3	BRN	Ignition switch ON (II), or power mode ON	Measure the voltage to ground: There should be at least about 10 V.	• Faulty power window master switch • A short to ground

				in the wire
20	BLU	Ignition switch ON (II), or power mode ON and driver's power window moving up or down	Measure the voltage between terminals No. 20 and No. 37: An analog meter should alternate between 0 V and about 5 V (a digital voltmeter should read about 2.5 V while the window moves).	• Faulty power window master switch • Faulty driver's power window motor • An open or high resistance in the wire • A short to ground in the wire
22	RED	Ignition switch ON (II), or power ON and driver's power window moving up or down	Measure the voltage between the terminals No. 22 and No. 37: An analog meter should alternate between 0 V and about 5 V (a digital voltmeter should read about 2.5 V while the window moves).	• Faulty power window master switch • Faulty driver's power window motor • An open or high resistance in the wire • A short to ground in the wire

FRONT PASSENGER'S POWER WINDOW SWITCH INPUT TEST

1. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
2. Open and close the driver's door, then remove the front passenger's door panel (see **FRONT DOOR PANEL REMOVAL/INSTALLATION**).
3. Disconnect the front passenger's power window switch 37P connector (A) from the front passenger's power window switch (B).

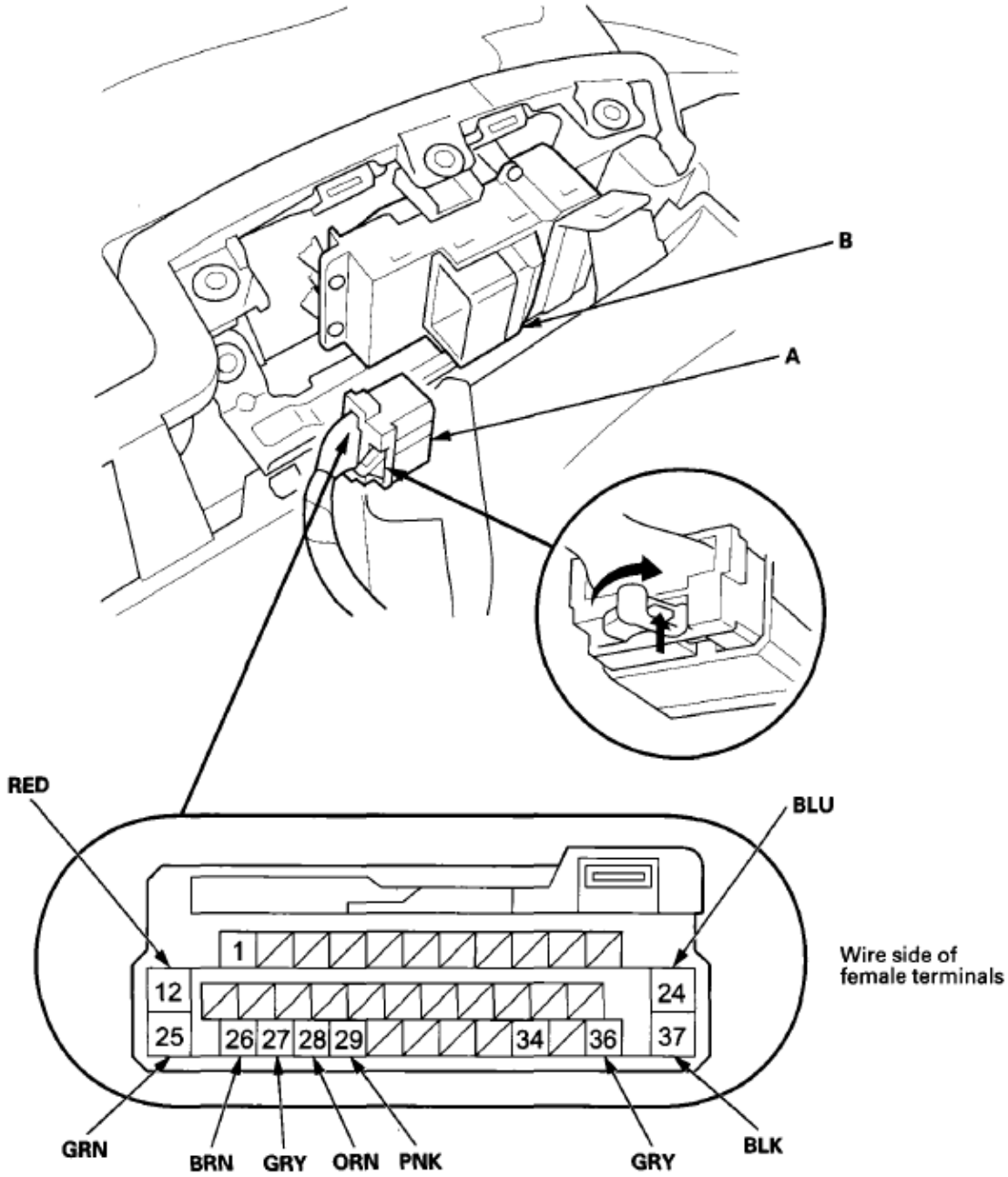


Fig. 24: Disconnecting Front Passenger's Power Window Switch 37P Connector From Front Passenger's Power Window Switch
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Inspect the connector and socket terminals to be sure they are all making good contact.
   - If the terminals are bent, loose or corroded, repair them as necessary, and recheck the system.
   - If the terminals look OK, go to step 5.
5. With the connector still disconnected, do the following input tests:
   - If any test indicates a problem, find and correct the cause, then recheck the system.

- If all the input tests prove OK, go to step 6.

Cavity	Wire	Test condition	Test: Desired result	Possible cause if desired result is not obtained
12	RED	Under all conditions, connect terminals No. 25 and No. 24 (or No. 12), and terminals No. 12 (or No. 24) and No. 37 with jumper wires.	Check front passenger's power window motor operation: The front passenger's power window should open (or close).	• Faulty front passenger's power window motor • An open or high resistance in the wire
24	BLU			
25	GRN	Under all conditions	Measure the voltage to ground: There should be battery voltage.	• Blown No. 13 (20 A) fuse in the passenger's under-dash fuse/relay box • Faulty driver's under-dash fuse/relay box • Faulty passenger's under-dash fuse/relay box • An open or high resistance in the wire
29	PNK	Under all conditions, disconnect the power window master switch 37P connector.	Check for continuity between front passenger's power window switch 37P connector terminal No. 29 and power window master switch 37P connector terminal No. 27: There should be continuity.	An open in the UART wire
36	GRY	Under all conditions, disconnect the front passenger's power window motor 6P connector.	Check for continuity to ground: There should be continuity. Check for continuity between front passenger's power window switch 37P connector terminal No. 36 and front passenger's power window motor 6P connector terminal No. 2: There should be continuity.	• Poor ground (G401) • An open or high resistance in the ground wire An open or high resistance in the ground wire

6. Reconnect the connector to the front passenger's power window switch, turn the ignition to ON(II), or press the engine start/stop button to select the ON mode, and do the following input tests:
   - If any test indicates a problem, find and correct the cause, then recheck the system.
   - If all the input tests prove OK, replace the front passenger's power window switch (see **FRONT PASSENGER'S POWER WINDOW SWITCH REPLACEMENT**).

NOTE: After replacing the front passenger's window switch, reset the power window control unit (see RESETTING THE POWER WINDOW CONTROL UNIT).

Cavity	Wire	Test condition	Test: Desired result	Possible cause if desired result is not obtained
37	BLK	In all ignition switch positions or all power modes	Measure the voltage to ground: There should be less than 0.2 V.	• Poor ground (G405) • An open or high resistance in the ground wire
26	BRN	Ignition switch ON (II), or power mode ON	Measure the voltage to ground: There should be at least about 10 V.	• Faulty front passenger's power window switch • A short to ground in the wire
27	GRY	Ignition switch ON (II), or power mode ON, and front passenger's power window switch moving up or down	Measure the voltage between terminals No. 27 and No. 37: An analog meter should alternate between 0 V and about 5 V (a digital voltmeter should read about 2.5 V while the window moves).	• Faulty front passenger's power window switch • Faulty front passenger's power window motor • An open or high resistance in the wire • A short to ground in the wire
				• Faulty front passenger's power window switch

28	ORN	Ignition switch ON (II), or power mode ON, and front passenger's power window switch moving up or down	Measure the voltage between terminals No. 28 and No. 37: An analog meter should alternate between 0 V and about 5 V (a digital voltmeter should read about 2.5 V while the window moves).	• Faulty front passenger's power window motor • An open or high resistance in the wire • A short to ground in the wire

DRIVER'S POWER WINDOW MOTOR TEST

Motor Test

1. Remove the driver's door panel (see **FRONT DOOR PANEL REMOVAL/INSTALLATION**), and disconnect the driver's door wire harness connectors (A) from the driver's door subharness.

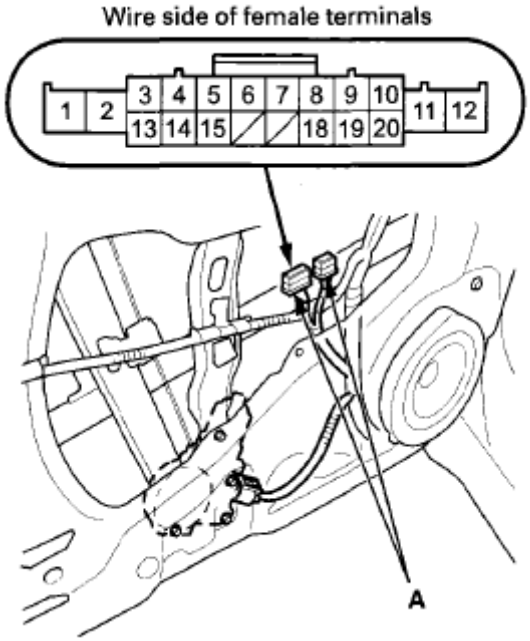


Fig. 25: Identifying Driver's Door Wire Harness Connectors
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. At the driver's door wire harness 20P connector, test the power window motor in each direction by connecting battery power and ground according to the table. When the motor stops running, disconnect one lead immediately.

Direction \ Terminal	2	12
UP	⊖	⊕
DOWN	⊕	⊖

Fig. 26: View Of Power Window Motor Condition
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. If the motor does not run or fails to run smoothly, go to step 4, if the motor runs smoothly, go to step 7.
4. Disconnect the 6P connector (A) from the driver's power window motor (B).

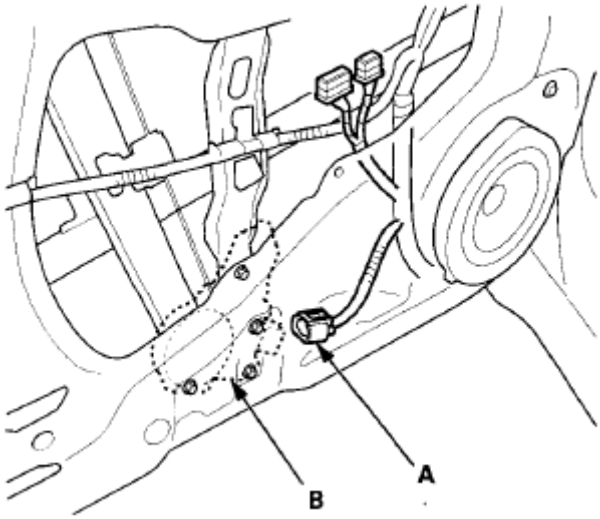


Fig. 27: Identifying 6P Connector And Driver's power Window Motor
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Check for continuity between driver's door harness 28P connector terminals No. 2 and No. 12, and driver's power window motor 6P connector terminals No. 1 and No. 4 respectively. There should be continuity.

DRIVERS DOOR HARNESS 20P CONNECTOR

Terminal No. 2

Terminal No. 12

DRIVER'S POWER WINDOW MOTOR 6P CONNECTOR

Terminal No. 1

Terminal No. 4

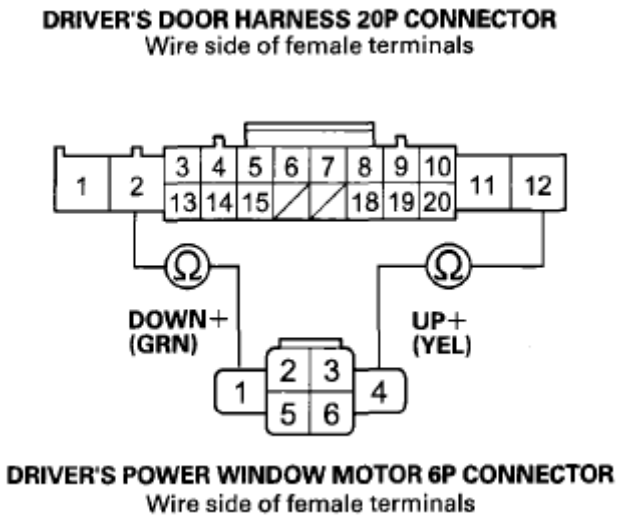


Fig. 28: Checking Continuity Between Driver's Door Harness 28P Connector Terminals And Driver's Power Window Motor 6P Connector Terminals
Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. If there is no continuity, repair an open or high resistance in the wires. If the wire harness is OK, the driver's power window motor is faulty; replace the driver's door regulator (see **FRONT DOOR GLASS AND REGULATOR REPLACEMENT**).

Pulser Test

7. Check for continuity between driver's power window motor 6P connector terminal No. 2 and body ground. There should be continuity.
   - If there is continuity, go to step 8.
   - If there is no continuity, check for an open in the BLK and/or GRY wire or poor ground (G401).

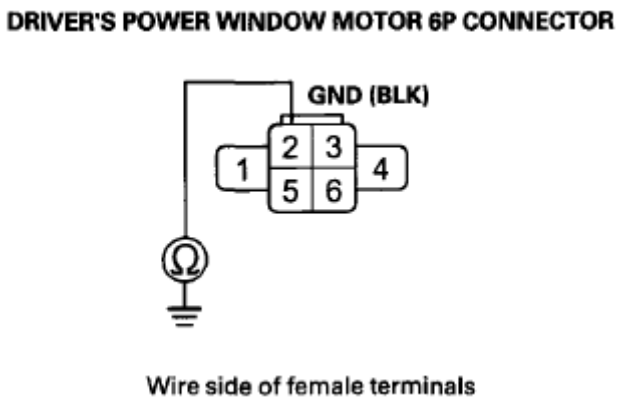


Fig. 29: Checking Open In BLK And/Or GRY Wire Or Poor Ground (Pulser Test)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

8. Do the power window master switch input test terminals No. 3, No. 20, and No. 22 (see **POWER WINDOW MASTER SWITCH INPUT TEST**).

FRONT PASSENGER'S POWER WINDOW MOTOR TEST

Motor Test

1. Remove the front passenger's door panel (see **FRONT DOOR PANEL REMOVAL/INSTALLATION**).
2. Test the front passenger's power window motor in each direction by connecting battery power and ground to the front passenger's power window switch 37P connector (A) according to the table.

Direction \ Terminal	12	24
UP	⊕	⊖
DOWN	⊖	⊕

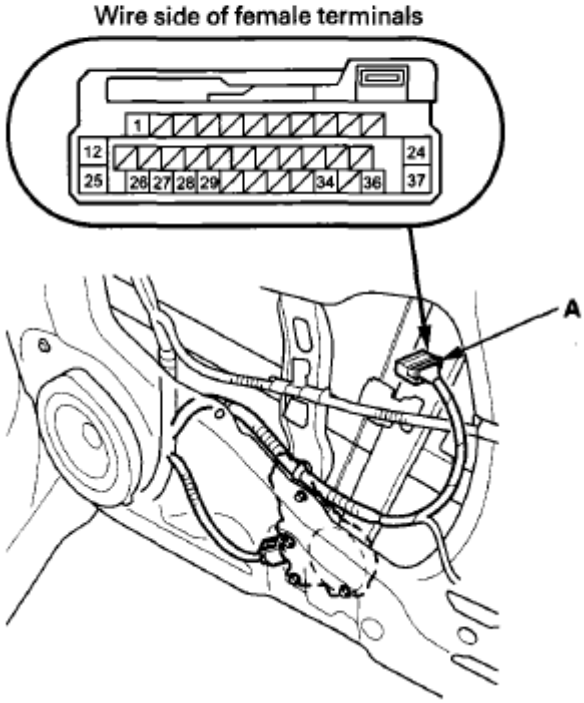


Fig. 30: Identifying Front Passenger's Power Window Switch 37P Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. If the front passenger's power window motor does not run or fails to run smoothly, go to step 4, if the motor runs smoothly, go to step 7.
4. Disconnect the 6P connector (A) from the front passenger's power window motor (B).

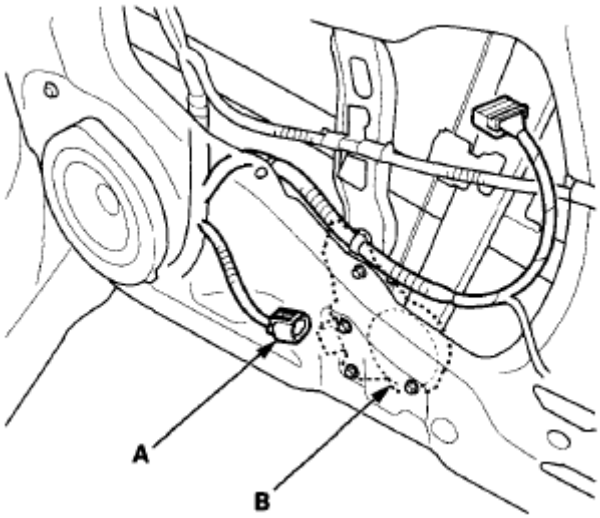


Fig. 31: Identifying 6P Connector And Front Passenger's Power Window Motor
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Check for continuity between front passenger's power window switch 37P connector terminals No. 12 and No. 24, and front passenger's power window motor 6P connector terminals No. 4 and No. 1 respectively. There should be continuity.

   FRONT PASSENGER'S POWER WINDOW SWITCH 37P CONNECTOR

   Terminal No. 12

   Terminal No. 24

   FRONT PASSENGER'S POWER WINDOW MOTOR 6P CONNECTOR

   Terminal No. 4

   Terminal No. 1

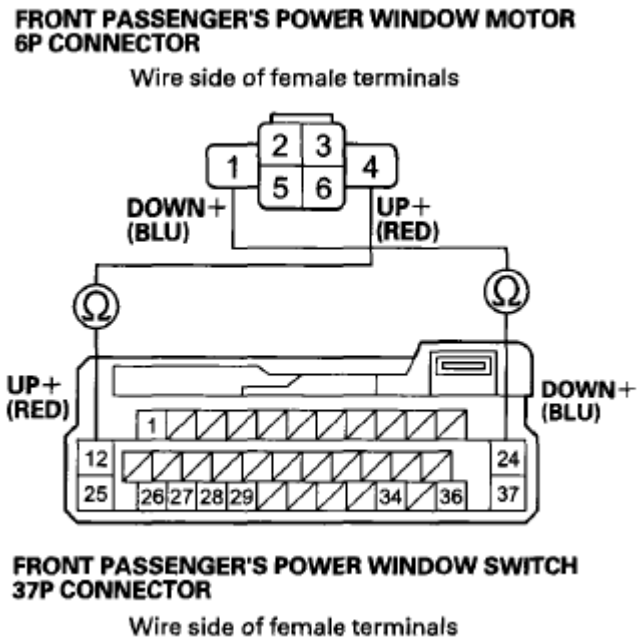


Fig. 32: Checking Continuity Between Front Passenger's Power Window Switch 37P Connector Terminals And Window Motor 6P Connector Terminals
Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. If there is no continuity, repair an open in the wires. If the wire harness is OK, the front passenger's power window motor is faulty; replace the front passenger's door regulator (see **FRONT DOOR GLASS AND REGULATOR REPLACEMENT**).

Hall IC Unit (Pulser) Test

7. Check for continuity between front passenger's power window motor 6P connector terminal No. 2 and body ground. There should be continuity.
   - If there is continuity, go to step 8.
   - If there is no continuity, check for an open in the GRY wire or poor ground (G401).

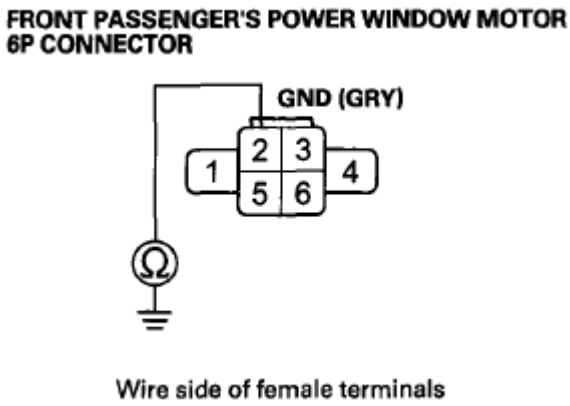


Fig. 33: Checking Continuity Between Front Passenger's Power Window Motor 6P

Connector Terminal No. 2 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

8. Do the front passenger's power window switch input test terminals No. 26, No. 27, and No. 28 (see **FRONT PASSENGER'S POWER WINDOW SWITCH INPUT TEST**).

REAR POWER WINDOW MOTOR TEST

1. Remove the rear door panel (see **REAR DOOR PANEL REMOVAL/INSTALLATION**).
2. Test the rear power window motor in each direction by connecting battery power and ground to the rear power window switch 14P connector (A) according to the table.

Direction \ Terminal	1	7
UP	⊖	⊕
DOWN	⊕	⊖

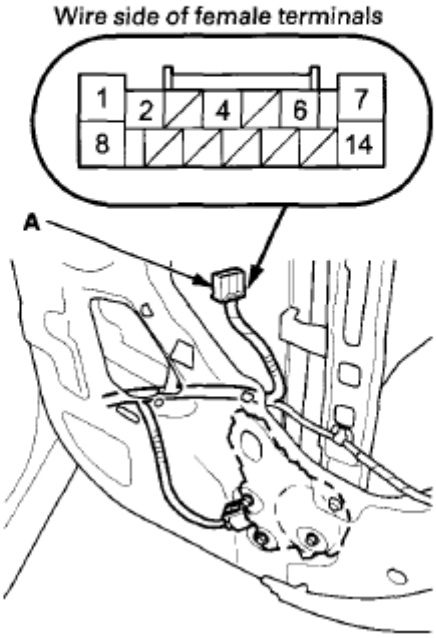


Fig. 34: Identifying Rear Power Window Switch 14P Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. If the motor does not run or fails to run smoothly, go to step 4.
4. Disconnect the 2P connector (A) from the rear power window motor (B).

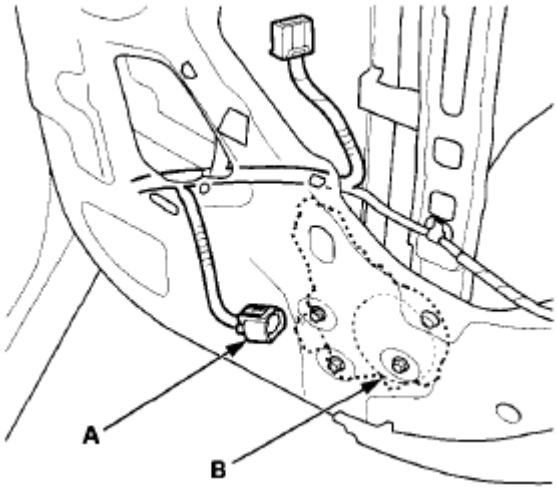


Fig. 35: Identifying 2P Connector And Rear Power Window Motor
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Check for continuity between rear power window switch 14P connector terminals No. 1 and No. 7, and rear power window motor 2P connector terminals No. 1 and No. 2 respectively. There should be continuity.

REAR POWER WINDOW SWITCH 14P CONNECTOR

Terminal No. 1

Terminal No. 7

REAR POWER WINDOW MOTOR 2P CONNECTOR

Terminal No. 1

Terminal No. 2

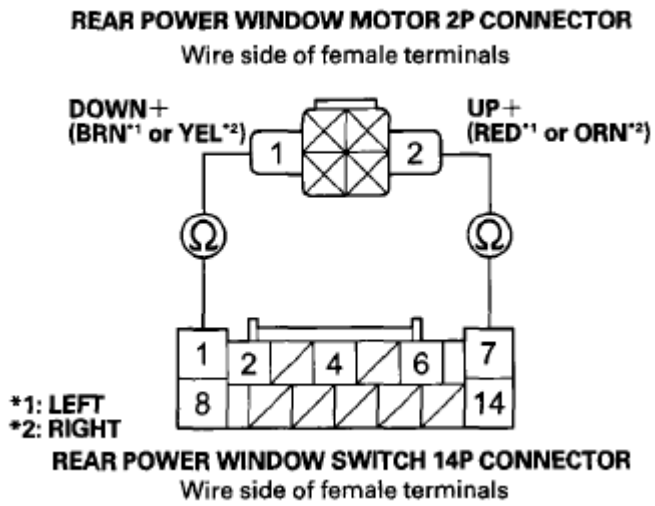


Fig. 36: Checking Continuity Between Rear Power Window Switch 14P Connector Terminals And Motor 2P Connector Terminals
Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. If there is no continuity, repair an open or high resistance in the wires. If the wire harness is OK, the rear power window motor is faulty; replace the rear door regulator (see **REAR DOOR GLASS AND REGULATOR REPLACEMENT**).

REAR POWER WINDOW SWITCH TEST

1. Remove the rear door panel (see **REAR DOOR PANEL REMOVAL/INSTALLATION**), and disconnect the 14P connector from the switch.
2. Check for continuity between the terminal in each position according to the table.
   - When the power is connected to terminal No. 2 and ground is connected to terminal No. 14. There should be continuity between terminals No. 8 and No. 7 [No. 1].
   - When the power is connected to terminal No. 6 and ground is connected to terminal No. 14. There should be continuity between terminals No. 8 and No. 1 [No. 7].
   - When the power is connected to terminal No. 8 and ground is connected to terminal No. 14, then push the rear power window switch to DOWN. There should be continuity between terminals No. 8 and No. 1.
   - When the power is connected to terminal No. 8 and ground is connected to terminal No. 14, then pull the rear power window switch to UP. There should be continuity between terminals No. 8 and No. 7.

   []: Right rear power window switch

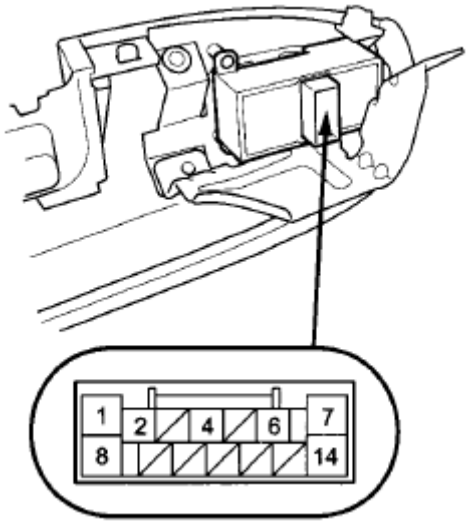


Fig. 37: Identifying Right Rear Power Window Switch
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. If continuity is not as specified, replace the switch (see **FRONT PASSENGER'S POWER WINDOW SWITCH REPLACEMENT**).

POWER WINDOW MASTER SWITCH REPLACEMENT

1. Remove the driver's door armrest (see **FRONT DOOR PANEL REMOVAL/INSTALLATION**).
2. Remove the two screws (A), then remove the bracket (B) from the armrest assembly (C).

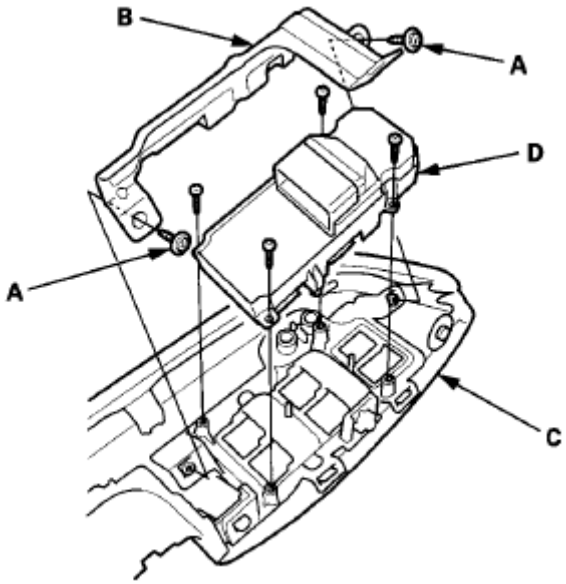


Fig. 38: Identifying Armrest Assembly, Bracket, Screws And Power Window Master Switch
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Remove the four screws and the power window master switch (D).
4. Install the switch in the reverse order of removal.
5. Resetting the power window control unit (see **RESETTING THE POWER WINDOW CONTROL UNIT**).

FRONT PASSENGER'S POWER WINDOW SWITCH REPLACEMENT

1. Remove the passenger's door armrest (see **FRONT DOOR PANEL REMOVAL/INSTALLATION**).
2. Remove the two screws (A), then remove the bracket (B) from the armrest assembly (C).

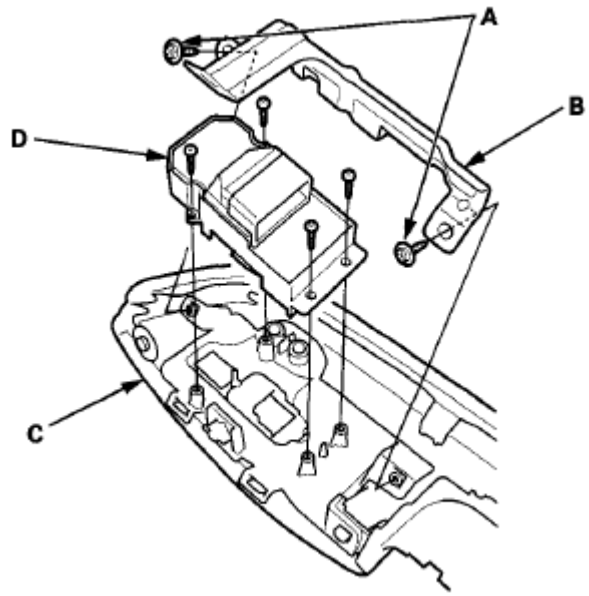


Fig. 39: Identifying Armrest Assembly, Bracket, Screws And Power Window Switch
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Remove the four screws and the front passenger's power window switch (D).
4. Install the switch in the reverse order or removal.
5. Resetting the power window control unit (see **RESETTING THE POWER WINDOW CONTROL UNIT**).

REAR POWER WINDOW SWITCH REPLACEMENT

1. Remove the rear door armrest (see **REAR DOOR PANEL REMOVAL/INSTALLATION**).
2. Remove the three screws and rear power window switch (A) from the armrest assembly (B).

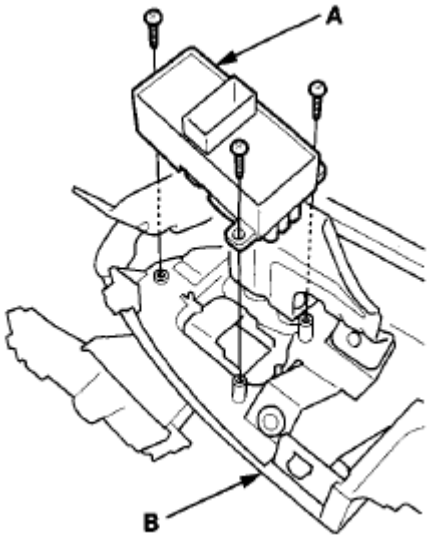


Fig. 40: Identifying Rear Power Window Switch And Armrest Assembly
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Install the switch in the reverse order of removal.

2012 ACCESSORIES & EQUIPMENT

Rear Window Defogger - TL

COMPONENT LOCATION INDEX

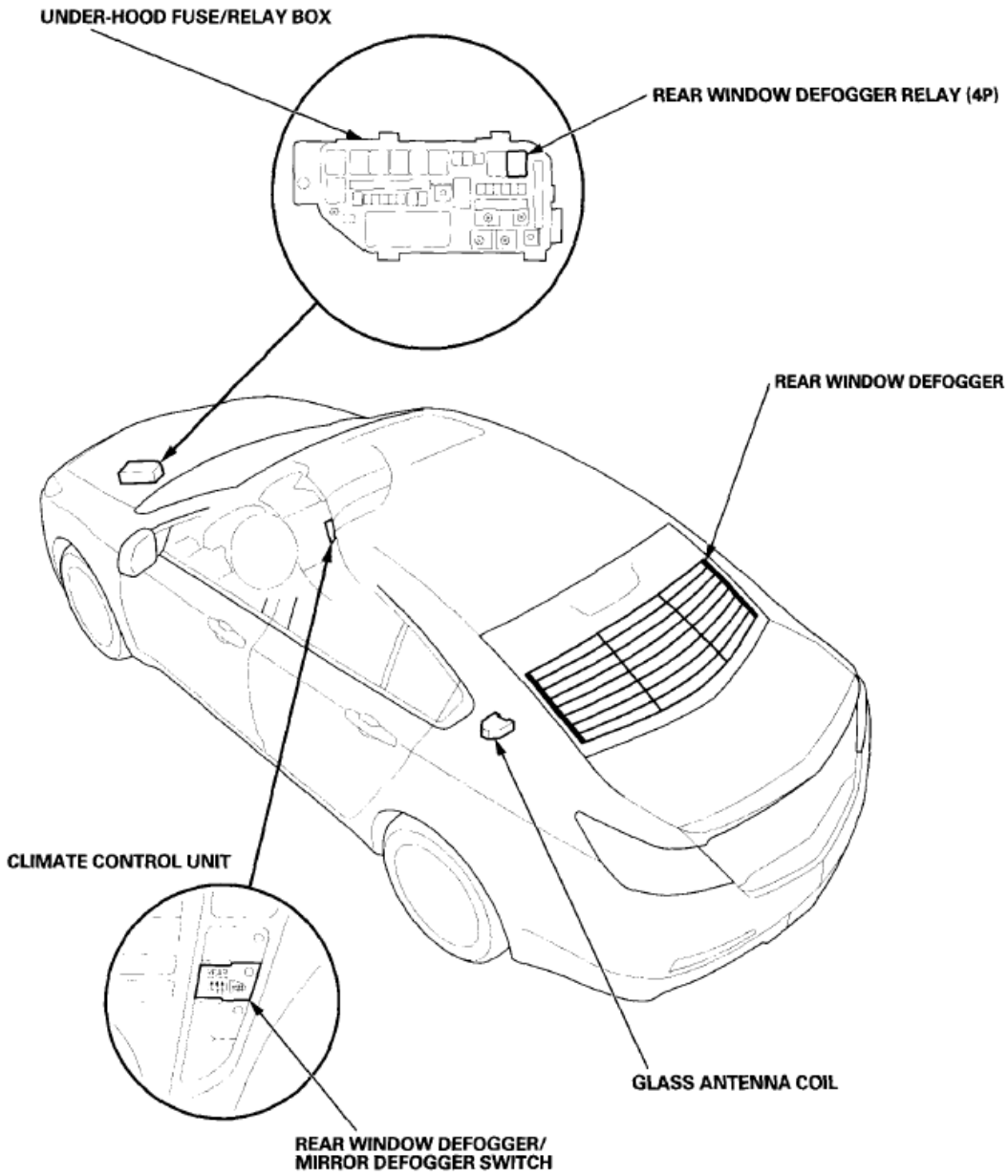


Fig. 1: Rear Window Defogger Components Location
Courtesy of AMERICAN HONDA MOTOR CO., INC.

CIRCUIT DIAGRAM

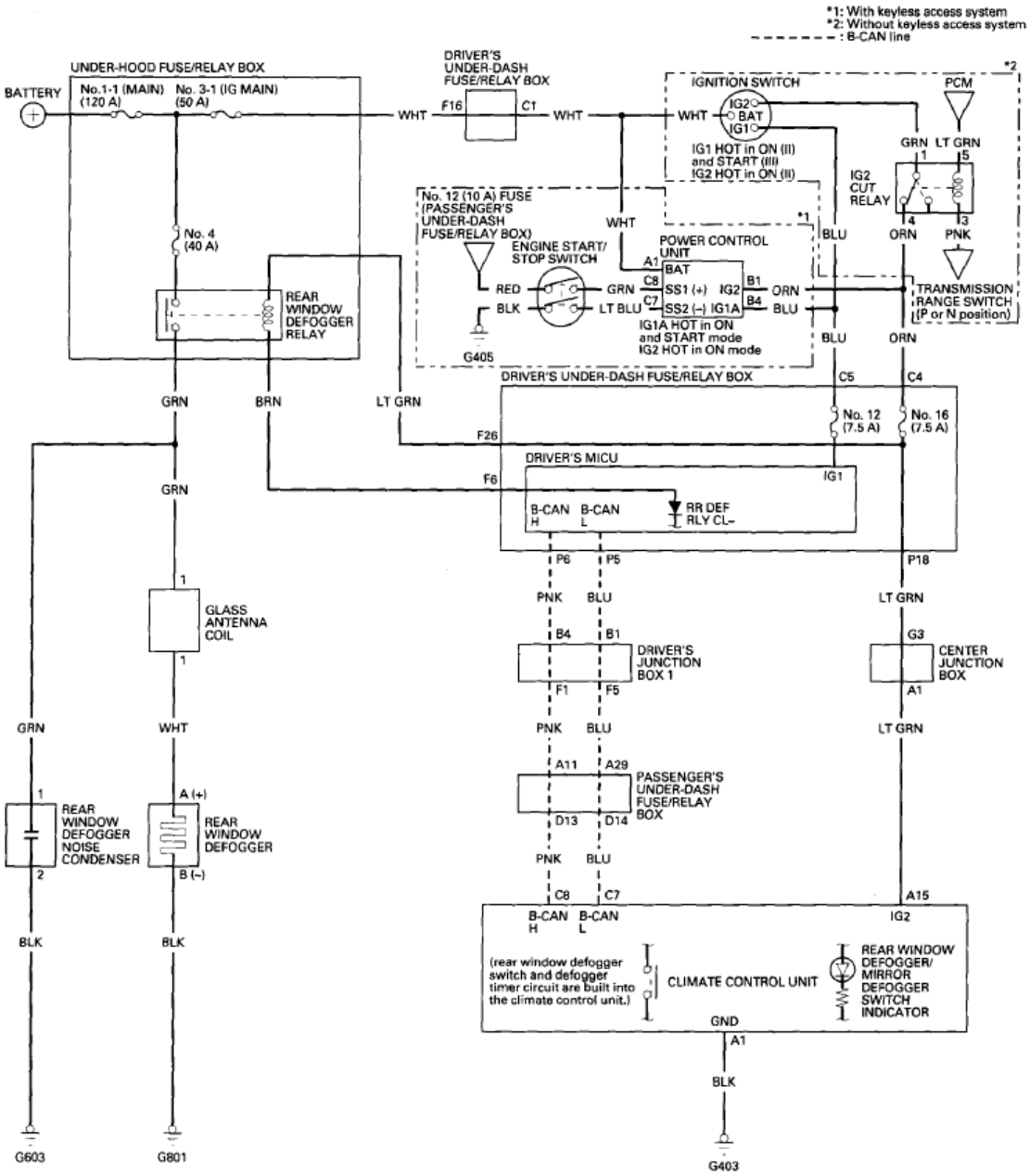


Fig. 2: Rear Window Defogger - Circuit Diagram
Courtesy of AMERICAN HONDA MOTOR CO., INC.

FUNCTION TEST

NOTE:

- **Before testing, make sure the No. 4 (40 A) fuse in the under-hood fuse/relay box and the No. 16 (7.5 A) fuse in the driver's under-dash fuse/relay box are OK.**
- **Aftermarket window tinting should be removed before testing.**
- **When testing the defogger, hold a cup of hot steaming water near the**

glass. The steam can help diagnose a broken or under-performing defogger grid.

- **Be careful not to scratch or damage the defogger wires with the tester probe.**

1. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode, then turn the rear window defogger switch ON.
2. Measure the voltage between rear window defogger A (1P) positive terminal and body ground. There should be battery voltage.
   - If there is no voltage, check for:
     - Faulty rear window defogger relay.
     - Faulty climate control switch.
     - Faulty gauge antenna coil.
     - An open or high resistance in the GRN or WHT wire to the positive terminal.
   - If there is battery voltage, go to step 3.

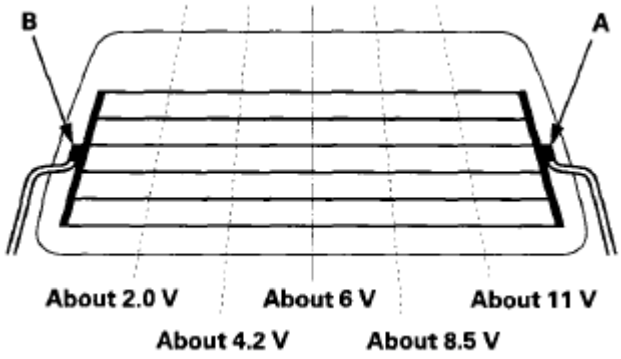


Fig. 3: Identifying Rear Window Defogger A (1P) Positive Terminal And Rear Window Defogger B (1P) Negative Terminal
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Measure the voltage between rear window defogger B (1P) negative terminal and body ground. There should be less than 0.2 V.

   If there is greater than 0.2 V, check for an open in the ground (BLK) wire or poor ground (G801). If there is 0.2 V or less, go to step 4.

4. To avoid damaging the defogger grid, wrap a single strand of bare copper wire or aluminum foil around the voltmeter probe. Use the foil or wire as a contact brush when moving across the defogger grid.

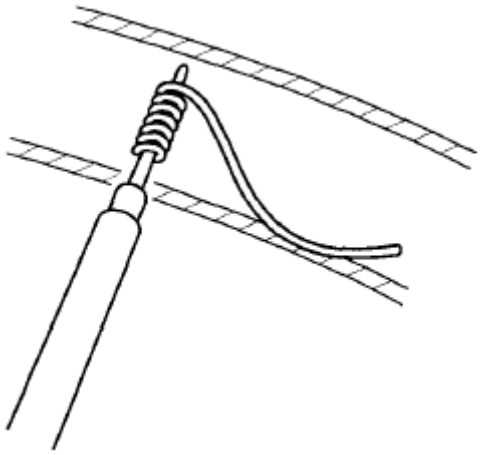


Fig. 4: Wrapping Single Strand Of Bare Copper Wire Or Aluminum Foil Around Voltmeter Probe
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Touch the voltmeter positive probe along each defogger wire, and the negative probe to the negative terminal.

NOTE: Touch the copper wire or aluminum foil wrapped around the probe, not the probe, to avoid damaging the defogger wires.

- If the voltage is as specified, the defogger wire up to that point is OK.
- If the voltage is not as specified, repair the defogger wire.

- If voltage is more than specified at one of the points, there is a break or high resistance toward the negative half of the wire.
- If voltage is less than specified at one of the points, there is a break or high resistance toward the positive half of the wire.

DEFOGGER WIRE REPAIR

NOTE: To make an effective repair, the broken section must be no longer than 25 mm (1.0 in).

1. Lightly rub the area around the broken section (A) with fine steel wool, then clean it with isopropyl alcohol.

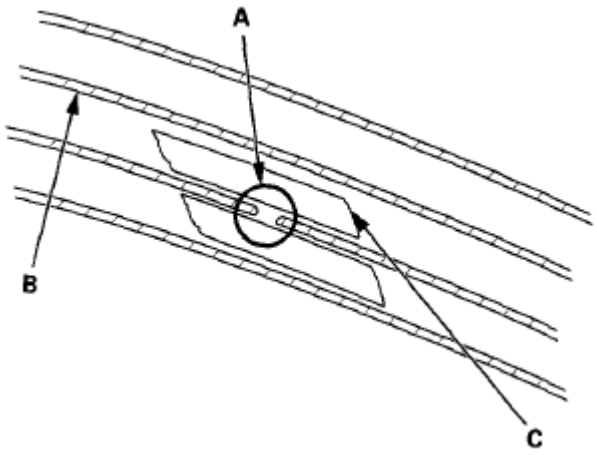


Fig. 5: Identifying Broken Section, Cellphone Tape And Defogger Switch
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Carefully mask above and below the broken portion of the defogger wire (B) with cellophane tape (C).
3. Using a small brush, apply a heavy coat of silver conductive paint (commercially available) (A) extending about 1/8" on both sides of the break. Allow 25 minutes to dry.

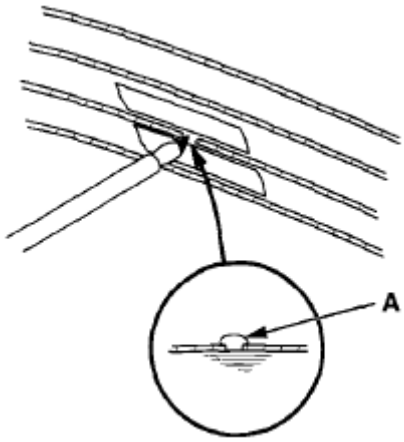


Fig. 6: Identifying Silver Conductive Paint
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Do the function test to confirm that the wire is repaired.
5. Apply a second coat of paint in the same way. Let it dry 3 hours before removing the tape.

GLASS ANTENNA COIL REPLACEMENT

1. Remove the rear shelf (see **TRIM REMOVAL/INSTALLATION - REAR SHELF AREA**).
2. Disconnect the 1P connectors (A) from the glass antenna coil (B).

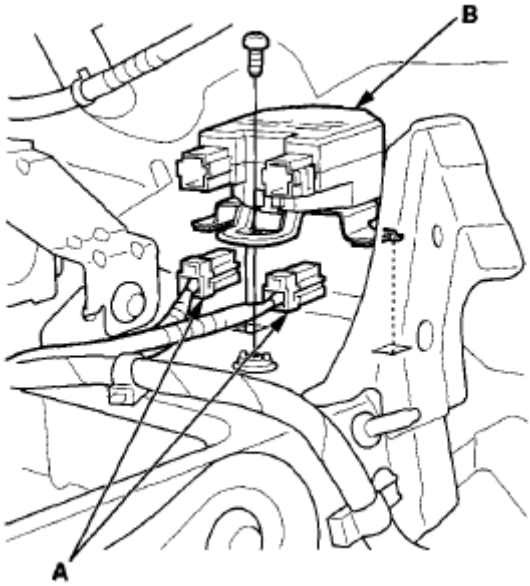


Fig. 7: Identifying 1P Connector And Glass Antenna Coil
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Remove the mounting screw, then remove the glass antenna coil.
4. Install the glass antenna coil in the reverse order of removal.

2012 ACCESSORIES & EQUIPMENT

Reminder Systems - TL

COMPONENT LOCATION INDEX

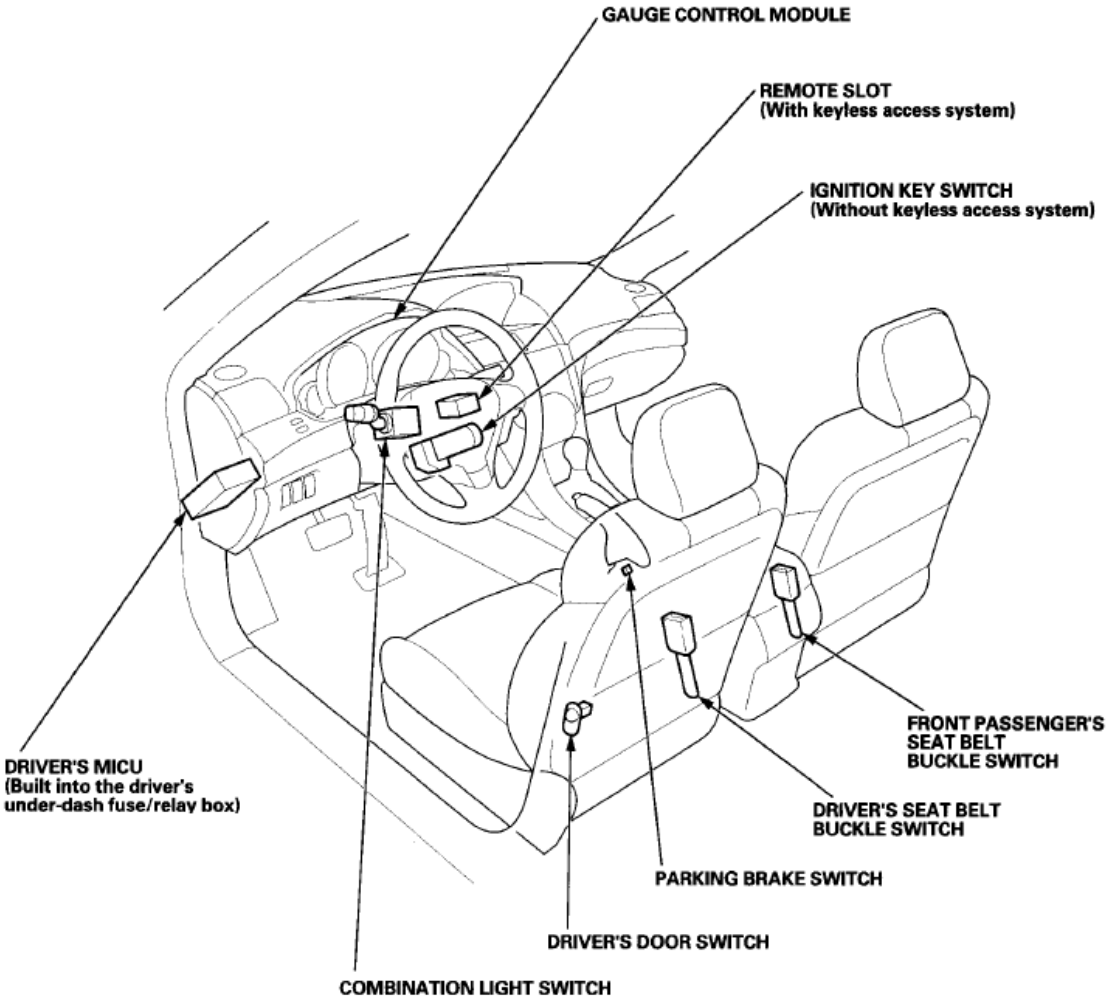


Fig. 1: Reminder System Components Location (1 Of 2)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

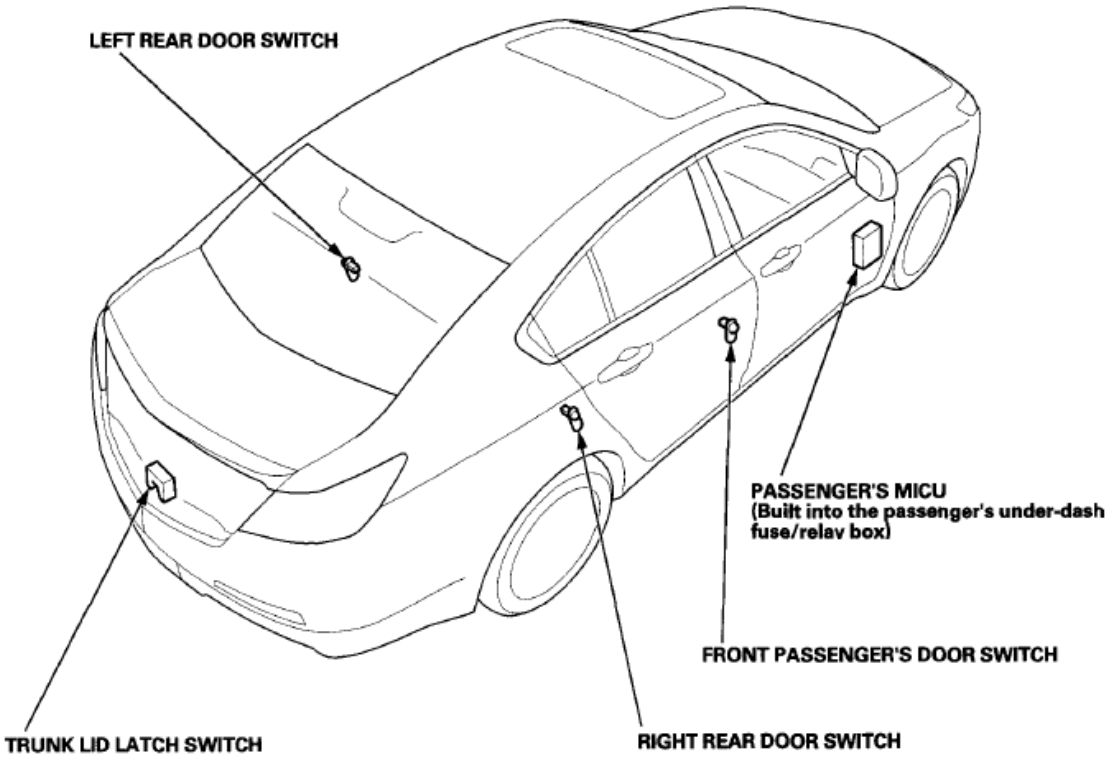


Fig. 2: Reminder System Components Location (2 Of 2)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

CIRCUIT DIAGRAM

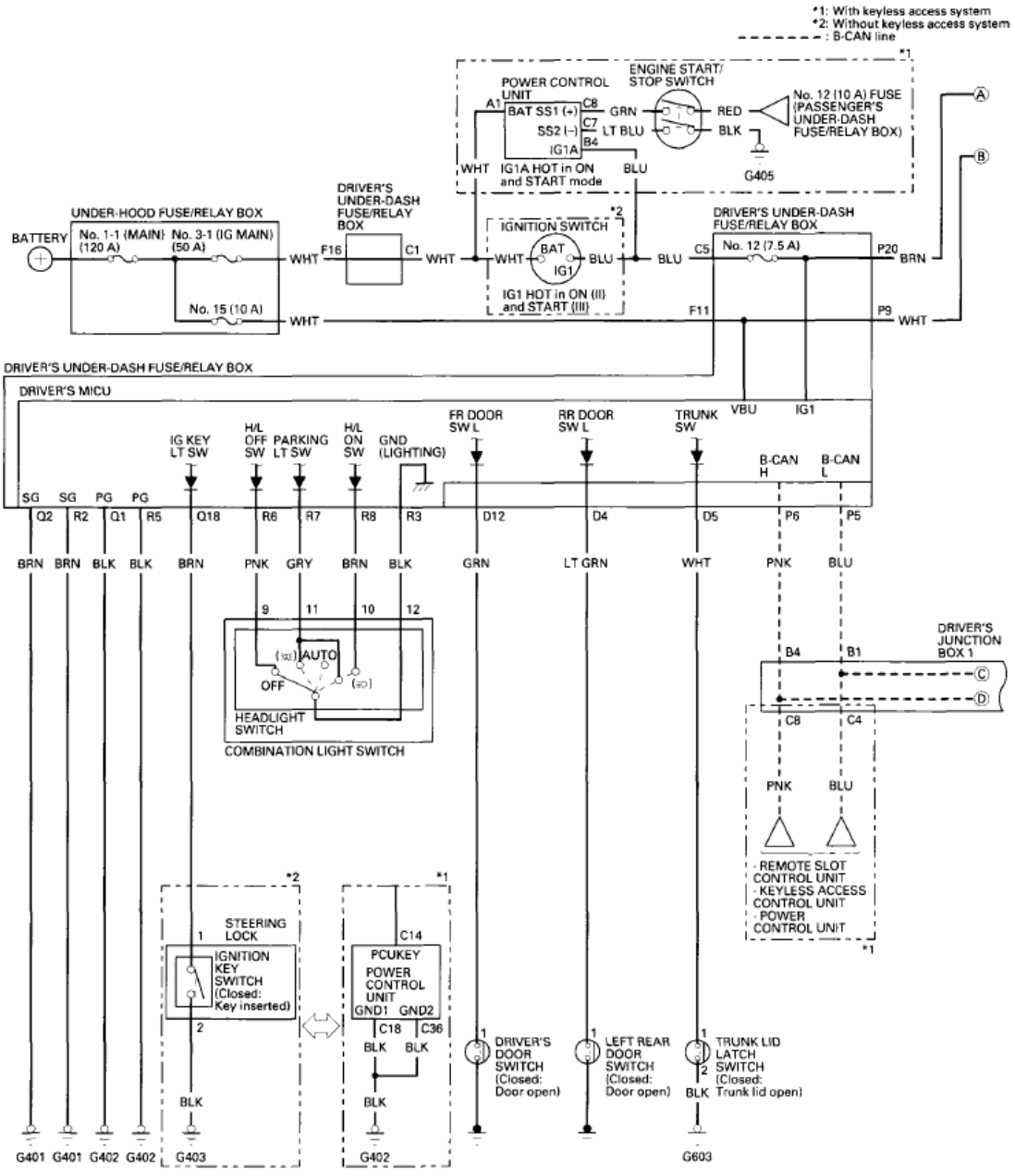


Fig. 3: Reminder System - Circuit Diagram (1 Of 2)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

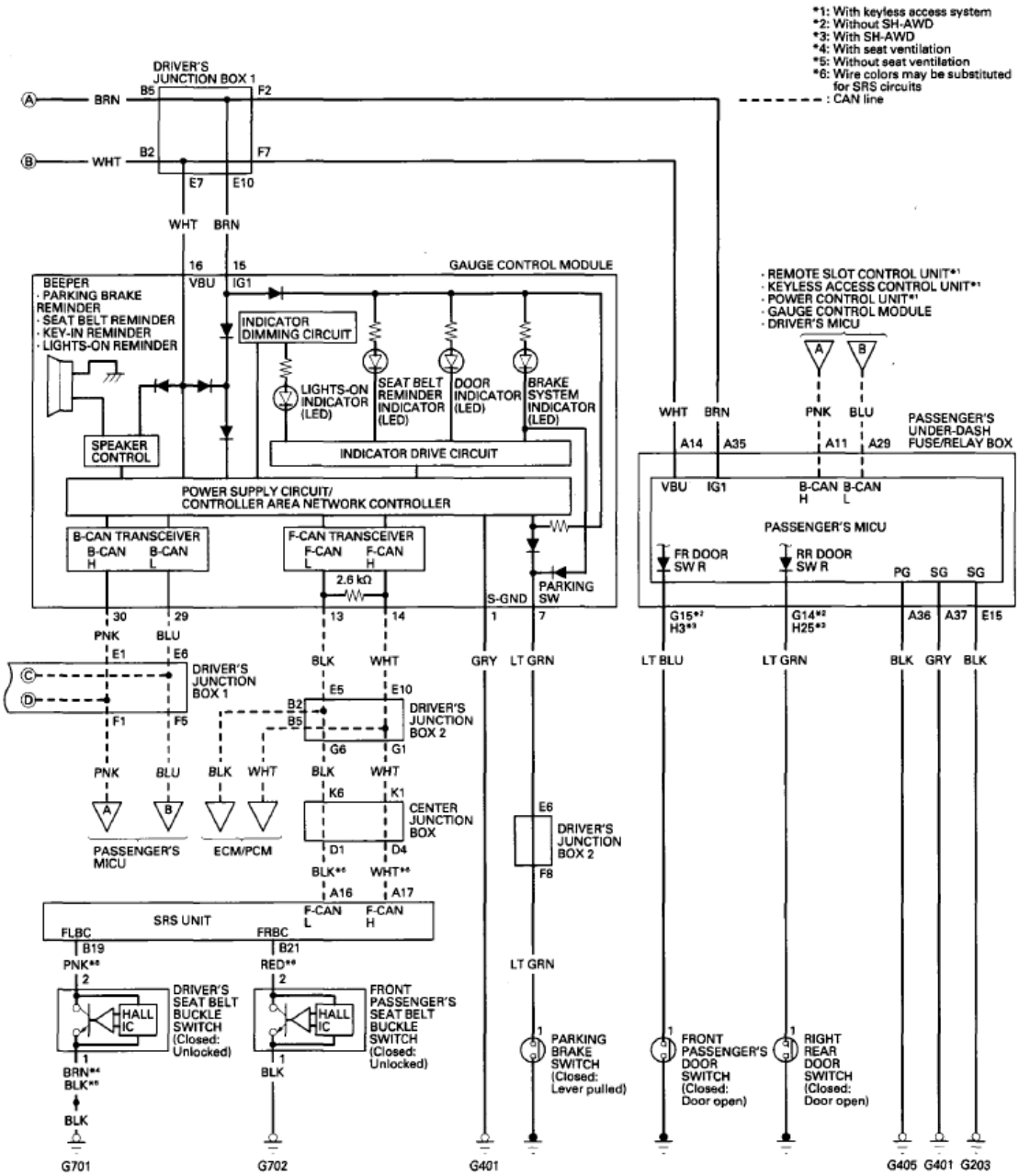


Fig. 4: Reminder System - Circuit Diagram (2 Of 2)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

CONTROL UNIT INPUT TEST

NOTE:

- **Before testing, troubleshoot the multiplex integrated control unit first, using B-CAN System Diagnosis Test Mode A (see TROUBLESHOOTING - B-CAN SYSTEM DIAGNOSIS TEST MODE A).**
- **Before testing, do the gauge control module self-diagnostic function (see SELF-DIAGNOSTIC FUNCTION) to make sure the beeper and the**

indicators in the gauge control module work properly and the F-CAN line are OK.

- **Before doing the input tests, make sure the No. 12 (7.5 A) fuse in the driver's under-dash fuse/relay box is OK.**

Driver's MICU

1. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
2. Remove the driver's dashboard undercover (see **DRIVER'S DASHBOARD UNDERCOVER REMOVAL/INSTALLATION**).
3. Disconnect driver's under-dash fuse/relay box connectors D, Q, and R.

NOTE: All connector views are wire side of female terminals.

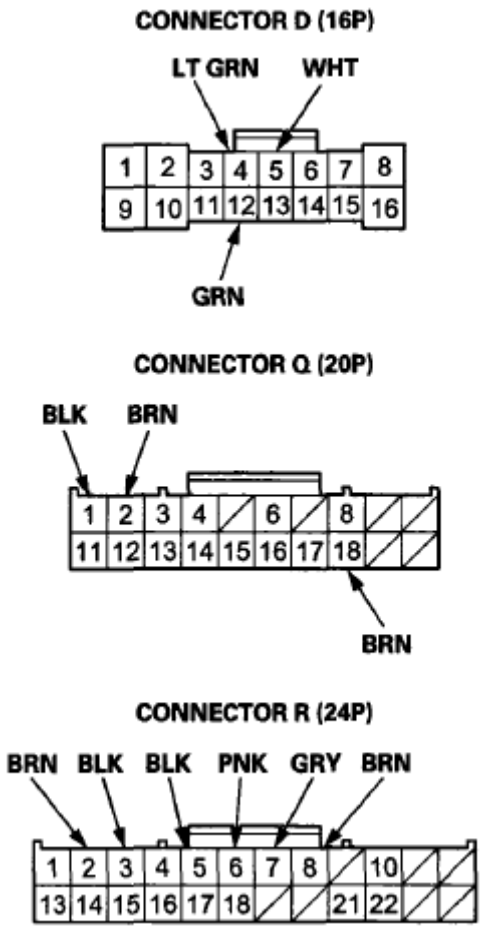


Fig. 5: Identifying Driver's Under-Dash Fuse/Relay Box D (16P), Q (20P) & R (24P) Connector End Views
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Inspect the connector and socket terminals to be sure they are all making good contact.

- If the terminals are bent, loose or corroded, repair them as necessary, and recheck the system.
- If the terminals are OK, go to step 5.

5. Reconnect the connectors, turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode, and do the following input tests:
   - If any test indicates a problem, find and correct the cause, then recheck the system.
   - If all the input tests prove OK, go to step 6.

Cavity	Wire	Test condition	Test: Desired result	Possible cause if desired result is not obtained
Q1	BLK	In all ignition switch positions or all power modes	Measure the voltage to ground: There should be less than 0.2 V.	• Poor ground(G402) • An open or high resistance in the ground wire
Q2	BRN	In all ignition switch positions or all power modes	Measure the voltage to ground: There should be less than 0.2 V.	• Poor ground(G401) • An open or high resistance in the ground wire
R2	BRN	In all ignition switch positions or all power modes	Measure the voltage to ground: There should be less than 0.2 V.	• Poor ground (G401) • An open or high resistance in the ground wire
R5	BLK	In all ignition switch positions or all power modes	Measure the voltage to ground: There should be less than 0.2 V.	• Poor ground (G402) • An open or high resistance in the ground wire
D12	GRN	Driver's door open	Measure the voltage to ground: There should be less than 0.2 V.	• Faulty driver's door switch • Faulty driver's door switch ground • An open or high resistance in the wire
		Driver's door closed	Measure the voltage to ground: There should be about 5 V.	• Faulty driver's door switch • A short to ground in the wire
D4	LT GRN	Left rear door open	Measure the voltage to ground: There should be less than 0.2 V.	• Faulty left rear door switch • Faulty left rear door switch ground • An open or high resistance in the wire

		Left rear door closed	Measure the voltage to ground: There should be about 5 V.	• Faulty left rear door switch • A short to ground in the wire
D5	WHT	Trunk lid open (Remove the trunk light bulb)	Measure the voltage to ground: There should be less than 0.2 V.	• Faulty trunk lid latch switch • Poor ground (G603) or an open in the ground wire • An open or high resistance in the wire
		Trunk lid closed (Remove the trunk light bulb)	Measure the voltage to ground: There should be about 5 V.	• Faulty trunk lid latch switch • A short to ground in the wire
Q18(1)	BRN	Remote key inserted into the Remote slot	Measure the voltage to ground: There should be less than 0.2 V.	• Faulty Remote slot • Faulty power control unit • Poor ground (G402) or an open in the ground wire • An open or high resistance in the wire
		Remote key removed from the Remote slot	Measure the voltage to ground: There should be about 5 V.	• Faulty Remote slot • Faulty power control unit • A short to ground in the wire
Q18(2)	BRN	Ignition key inserted into the ignition switch	Measure the voltage to ground: There should be less than 0.2 V.	• Faulty ignition key switch • Poor ground (G403) or an open in the ground wire • An open or high resistance in the wire
		Ignition switch in LOCK (0) position and ignition key removed from the ignition switch	Measure the voltage to ground: There should be about 5 V.	• Faulty ignition key switch • A short to ground in the wire
		Combination light switch OFF	Measure the voltage between terminals R6 and	• Faulty combination light switch

R6 • R3	PNK • BLK	Combination light switch in any other position than OFF	R3: There should be less than 0.2 V.	• An open or high resistance in the wire
			Measure the voltage between terminals R6 and R3: There should be about 5 V.	• Faulty combination light switch • A short to ground in the wire
R7 • R3	GRY • BLK	Combination light switch (PARKING position) ON	Measure the voltage between terminals R7 and R3: There should be less than 0.2 V.	• Faulty combination light switch • An open or high resistance in the wire
		Combination light switch OFF	Measure the voltage between terminals R7 and R3: There should be about 5 V.	• Faulty combination light switch • A short to ground in the wire
R8 • R3	BRN • BLK	Combination light switch (Headlight position) ON	Measure the voltage between terminals R8 and R3: There should be less than 0.2 V.	• Faulty combination light switch • An open or high resistance in the wire
		Combination light switch OFF	Measure the voltage between terminals R8 and R3: There should be about 5 V.	• Faulty combination light switch • A short to ground in the wire
(1) With keyless access system (2) Without keyless access system				

Passenger's MICU

6. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
7. Remove the passenger's side kick panel (see **TRIM REMOVAL/INSTALLATION - DOOR AREAS**).
8. Disconnect passenger's under-dash fuse/relay box connectors A, E, and G*1 (or H*2).

*1: With SH-AWD

*2: Without SH-AWD

NOTE: All connector views are wire side of female terminals.

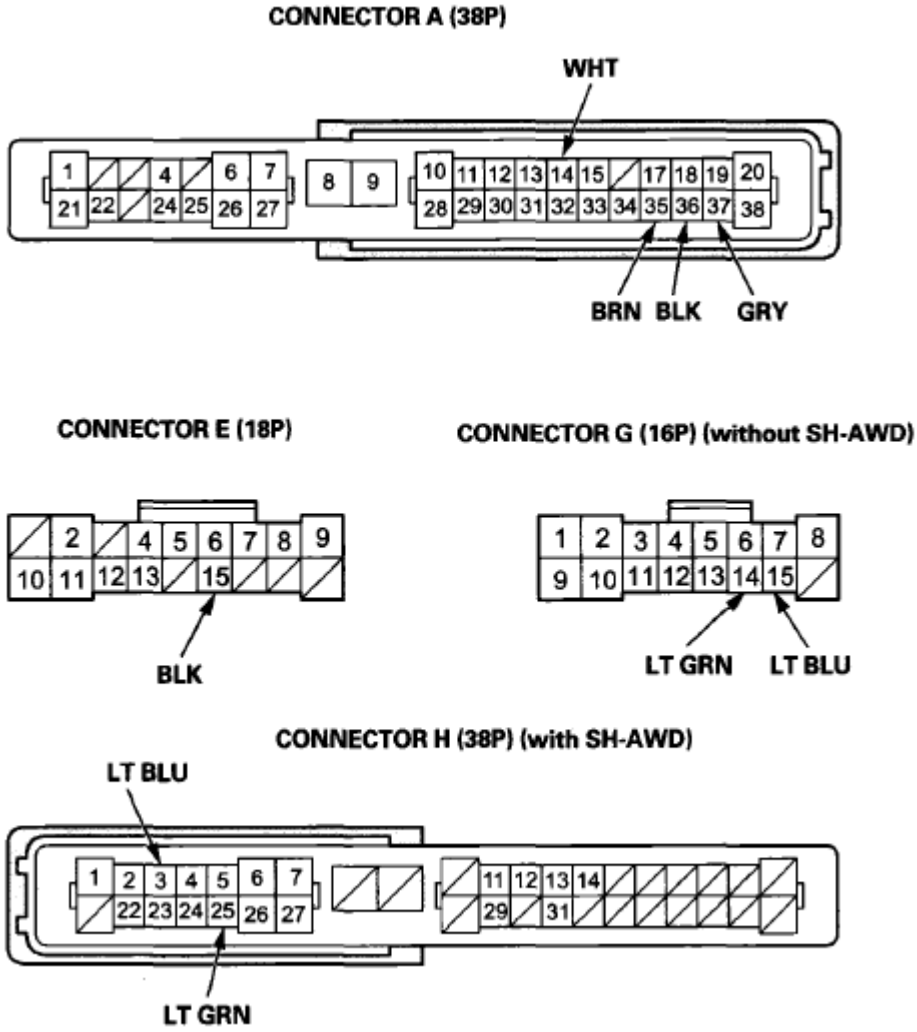


Fig. 6: Identifying Passenger's Under-Dash Fuse/Relay Box A (38P), E (18P), G (16P) (w/o SH-AWD) & H (38P) (w/ SH-AWD) Connector End Views
Courtesy of AMERICAN HONDA MOTOR CO., INC.

9. Inspect the connector and socket terminals to be sure they are all making good contact.
   - If the terminals are bent, loose or corroded, repair them as necessary, and recheck the system.
   - If the terminals look OK, go to step 10.
10. Reconnect the connectors to the passenger's under-dash fuse/relay box, and do the following input tests:
   - If any test indicates a problem, find and correct the cause, then recheck the system.
   - If all the input tests prove OK, go to step 11.

Cavity	Wire	Test condition	Test: Desired result	Possible cause if desired result is not obtained
			Measure the voltage to	• Blown No. 15(10 A) fuse in the under-hood fuse/relay box

A14	WHT	Under all conditions	ground: There should be battery voltage.	• Faulty driver's under-dash fuse/relay box • An open or high resistance in the wire
A35	BRN	Ignition switch ON (II), or power mode ON	Measure the voltage to ground: There should be battery voltage.	• Faulty driver's under-dash fuse/relay box • An open or high resistance in the wire
A36	BLK	In all ignition switch positions or all power modes	Measure the voltage to ground: There should be less than 0.2 V.	• Poor ground (G405) • An open or high resistance in the ground wire
A37	GRY	In all ignition switch positions or all power modes	Measure the voltage to ground: There should be less than 0.2 V.	• Poor ground (G401) • An open or high resistance in the ground wire
E15	BLK	In all ignition switch positions or all power modes	Measure the voltage to ground: There should be less than 0.2 V.	• Poor ground(G203) • An open or high resistance in the ground wire
G15(1) or H3(2)	LT BLU	Front passenger's door open	Measure the voltage to ground: There should be less than 0.2 V.	• Faulty front passenger's door switch • Faulty front passenger's door switch ground • An open or high resistance in the wire
		Front passenger's door closed	Measure the voltage to ground: There should be about 5 V.	• Faulty front passenger's door switch • A short to ground in the wire
G14(1) or H25(2)	LT GRN	Right rear door open	Measure the voltage to ground: There should be less than 0.2 V.	• Faulty right rear door switch • Faulty right rear door switch ground • An open or high resistance in the wire
		Right rear door closed	Measure the voltage to ground: There should be about 5 V.	• Faulty right rear door switch • A short to ground in the wire

(1) Without SH-AWD

(2) With SH-AWD

Gauge Control Module

11. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
12. Remove the gauge control module (see **GAUGE CONTROL MODULE REPLACEMENT**), and disconnect the 32P connector from it.

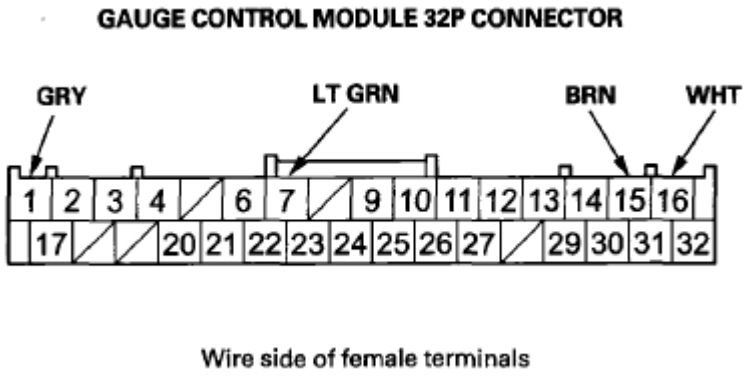


Fig. 7: Identifying Gauge Control Module 32P Connector End View
Courtesy of AMERICAN HONDA MOTOR CO., INC.

13. Inspect the connector and socket terminals to be sure they are all making good contact.
    - If the terminals are bent, loose or corroded, repair them as necessary, and recheck the system.
    - If the terminals are OK, go to step 14.
14. Reconnect the connector to the gauge control module, turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode, and do the following input tests:
    - If any test indicates a problem, find and correct the cause, then recheck the system.
    - If all the input tests prove OK, go to step 15.

Cavity	Wire	Test condition	Test: Desired result	Possible cause if desired result is not obtained
16	WHT	Under all conditions	Measure the voltage to ground: There should be battery voltage.	• Blown No. 15 (10 A) fuse in the under-hood fuse/relay box • Faulty driver's under-dash fuse/relay box • An open or high resistance in the wire
15	BRN	Ignition switch ON (II), or power mode ON	Measure the voltage to ground: There should be battery voltage.	• Faulty driver's under-dash fuse/relay box • Blown No. 12 (7.5 A) fuse in the under-dash fuse/relay box • An open or high resistance in the wire

1	GRY	In all ignition switch positions or all power modes	Measure the voltage to ground: There should be less than 0.2 V.	• Poor ground(G401) • An open or high resistance in the ground wire
7	LT GRN	Parking brake lever pulled	Measure the voltage to ground: There should be less than 0.2 V.	• Faulty parking brake switch • Faulty parking brake switch ground • An open or high resistance in the wire
		Parking brake lever released	Measure the voltage to ground: There should be battery voltage.	• Faulty parking brake switch • A short to ground in the wire

15. Do the Gauge Control Module Self-Diagnostic Function (see **SELF-DIAGNOSTIC FUNCTION**), and check the beeper and the seat belt reminder indicator.
    - If the beeper sounds and the seat belt reminder indicator flashes, go to step 16.
    - If the beeper does not sound or the seat belt reminder indicator does not flash, replace the gauge control module (see **GAUGE CONTROL MODULE REPLACEMENT**).
16. Substitute a known-good gauge control module, and recheck the system.
    - If the symptom is gone, the gauge control module is faulty; replace it (see **GAUGE CONTROL MODULE REPLACEMENT**).
    - If the symptom is still present, the driver's MICU is faulty; replace the driver's under-dash fuse/relay box (see **DRIVER'S UNDER-DASH FUSE/RELAY BOX (MICU) REMOVAL AND INSTALLATION**).

2012 ACCESSORIES & EQUIPMENT

Safety Indicator System - TL

COMPONENT LOCATION INDEX

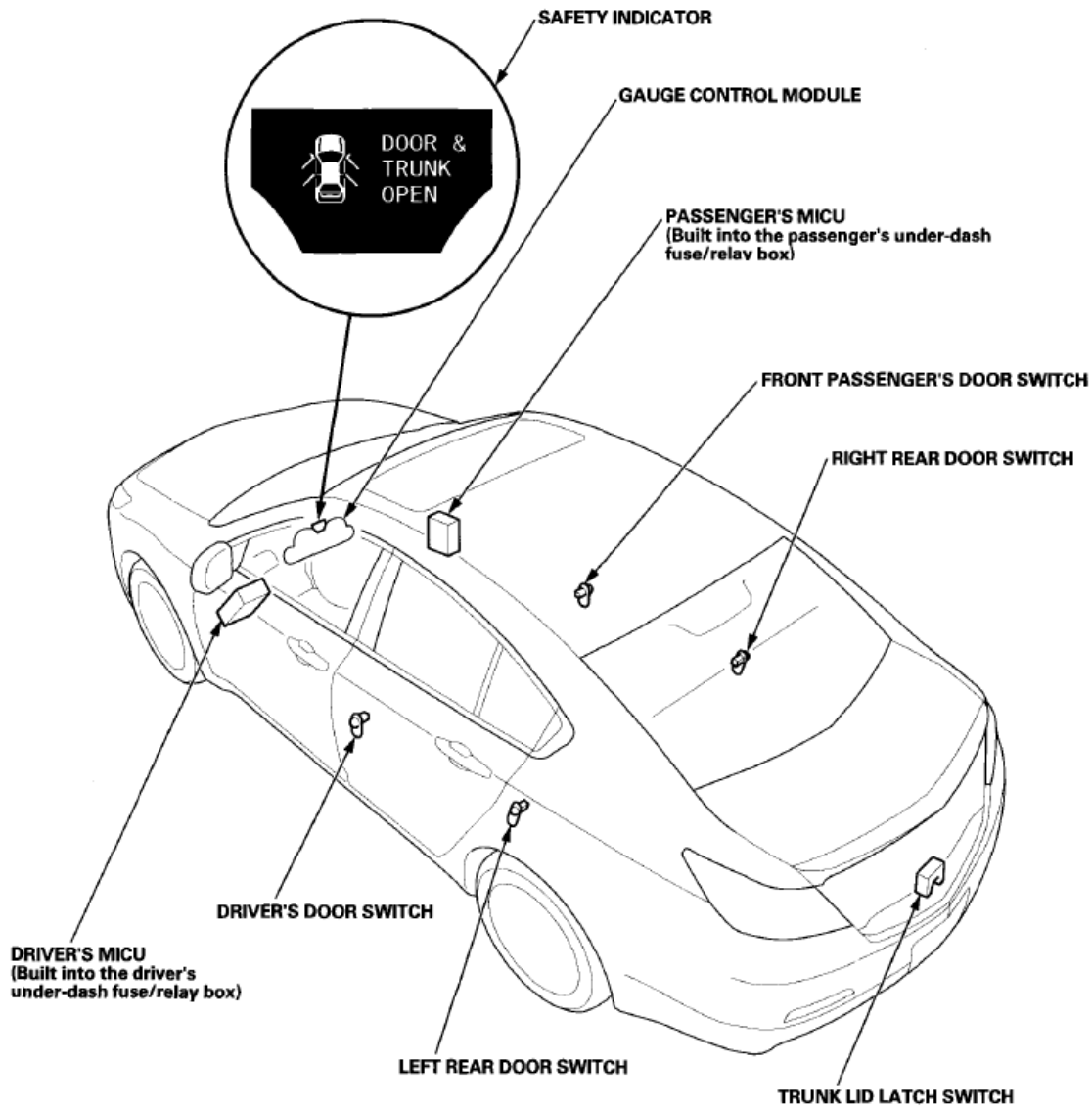


Fig. 1: Safety Indicator Components Location
Courtesy of AMERICAN HONDA MOTOR CO., INC.

CIRCUIT DIAGRAM

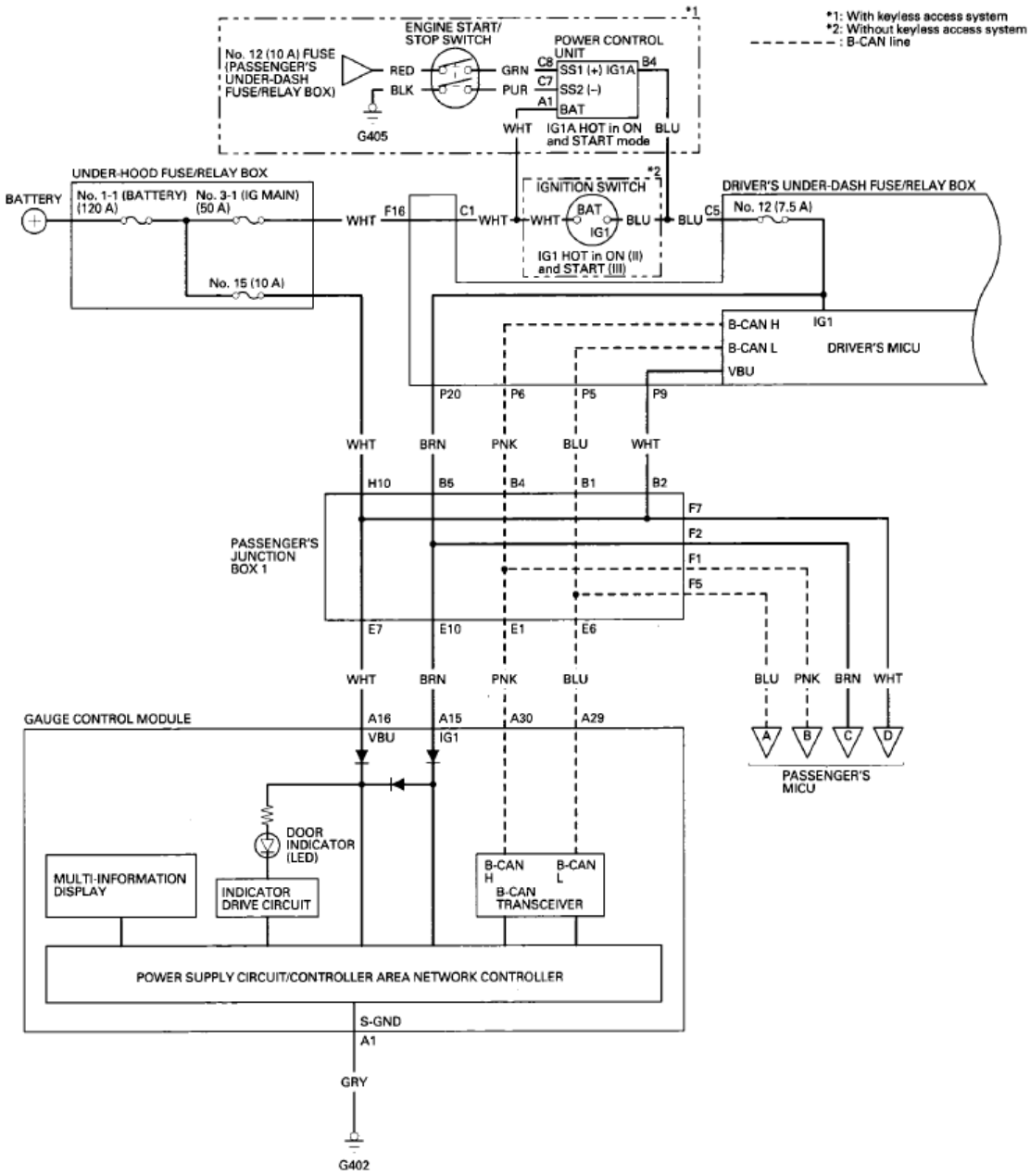


Fig. 2: Safety Indicator System - Circuit Diagram (1 Of 2)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

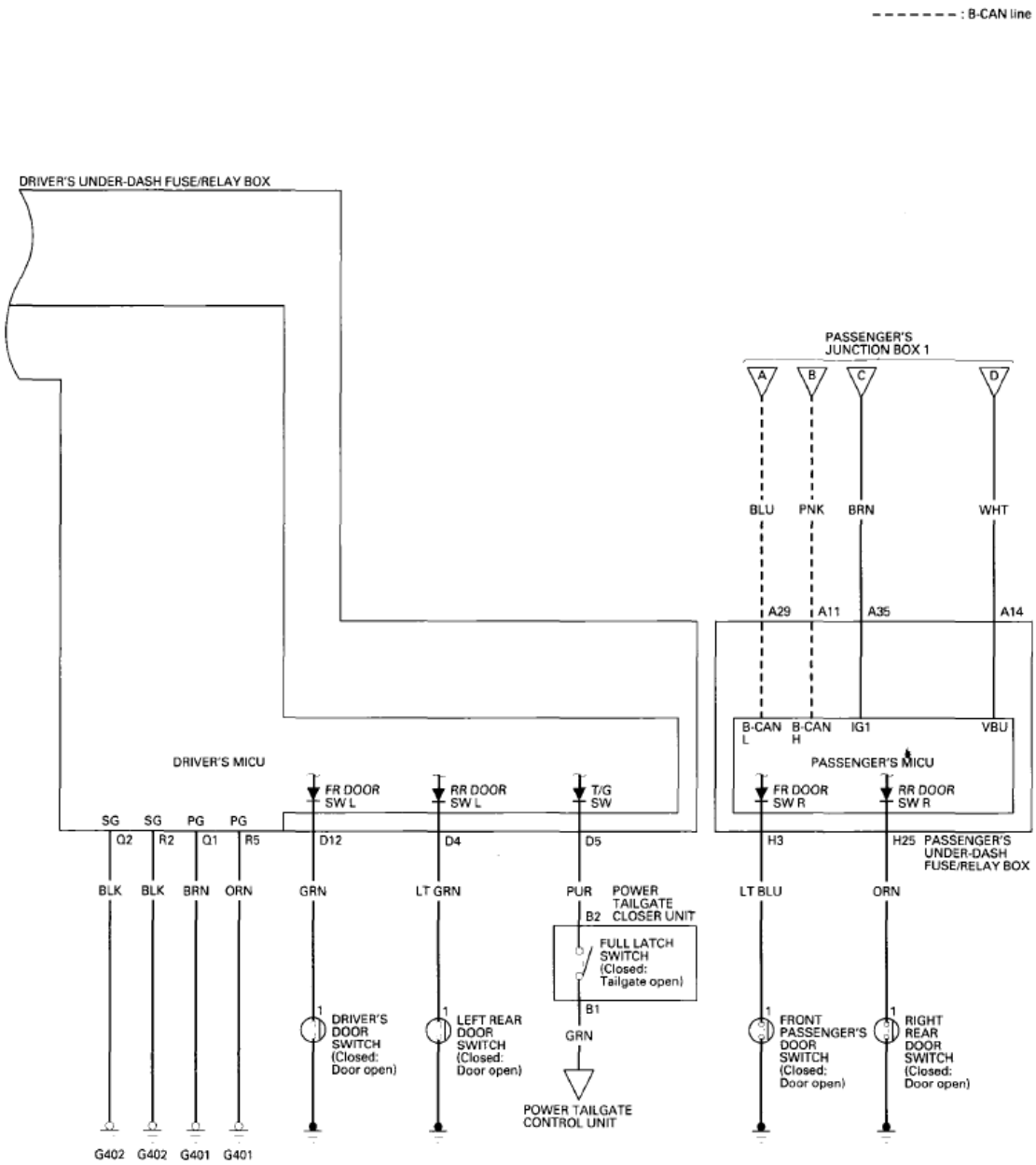


Fig. 3: Safety Indicator System - Circuit Diagram (2 Of 2)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

CONTROL UNIT INPUT TEST

NOTE:

- **Before testing, troubleshoot the multiplex integrated control unit first, using B-CAN System Diagnosis Test Mode A (see TROUBLESHOOTING - B-CAN SYSTEM DIAGNOSIS TEST MODE A).**
- **Before testing, make sure the No. 12 (7.5 A) fuse in the driver's under-dash fuse/relay box is OK.**

Driver's MICU

1. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
2. Remove the driver's dashboard undercover (see **DRIVER'S DASHBOARD UNDERCOVER REMOVAL/INSTALLATION**).
3. Disconnect driver's under-dash fuse/relay box connectors D, Q, and R.

NOTE: All connector views are wire side of female terminals.

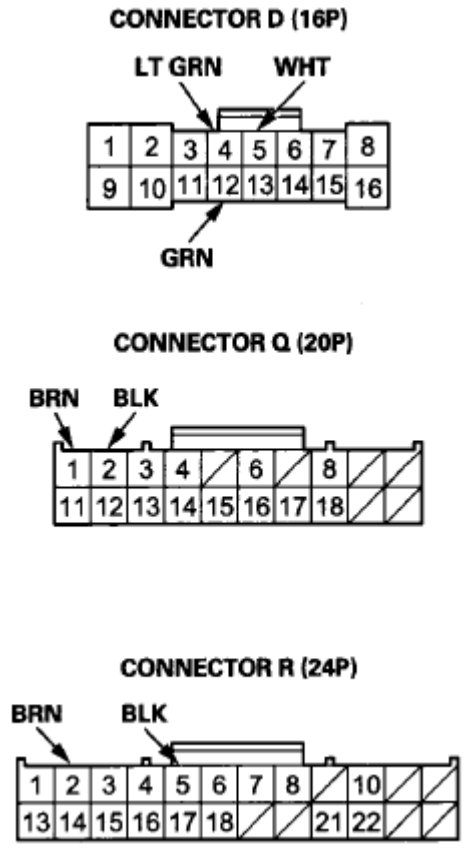


Fig. 4: Identifying Driver's Under-Dash Fuse/Relay Box D (16P), Q (20P), & R (24P) Connector End Views
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Inspect the connector and socket terminals to be sure they are all making good contact.
   - If the terminals are bent, loose or corroded, repair them as necessary, and recheck the system.
   - If the terminals look OK, go to step 5.
5. Reconnect the connectors to the driver's under-dash fuse/relay box, and do the following input tests:
6. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
   - If any test indicates a problem, find and correct the cause, then recheck the system.
   - If all the input tests prove OK, go to step 7.

Cavity	Wire	Test condition	Test: Desired result	Possible cause if desired result is not obtained
Q1	BRN	In all ignition switch positions or all power modes	Measure the voltage to ground: There should be less than 0.2 V.	• Poor ground(G402) • An open or high resistance in the ground wire
Q2	BLK	In all ignition switch positions or all power modes	Measure the voltage to ground: There should be less than 0.2 V.	• Poor ground(G402) • An open or high resistance in the ground wire
R2	BRN	In all ignition switch positions or all power modes	Measure the voltage to ground: There should be less than 0.2 V.	• Poor ground (G401) • An open or high resistance in the ground wire
R5	BLK	In all ignition switch positions or all power modes	Measure the voltage to ground: There should be less than 0.2 V.	• Poor ground (G402) • An open or high resistance in the ground wire
D4	LT GRN	Left rear door open	Measure the voltage to ground: There should be less than 0.2 V.	• Faulty left rear door switch • Faulty left rear door switch ground • An open or high resistance in the wire
		Left rear door closed	Measure the voltage to ground: There should be about 5 V.	• Faulty left rear door switch • A short to ground in the wire
D5	WHT	Trunk lid open	Measure the voltage to ground: There should be less than 0.2 V.	• Faulty trunk lid latch switch • Poor ground (G603) or an open in the ground wire • An open or high resistance in the wire
		Trunk lid closed	Measure the voltage to ground: There should be about 5 V.	• Faulty trunk lid latch switch • A short to ground in the wire
		Driver's door open	Measure the voltage to ground: There should be less	• Faulty driver's door switch • Faulty driver's door

			than 0.2 V.	switch ground • An open or high resistance in the wire
D12	GRN	Driver's door closed	Measure the voltage to ground: There should be about 5 V.	• Faulty driver's door switch • A short to ground in the wire
(1) Without keyless access system (2) With keyless access system				

Passenger's MICU

7. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode, and remove the passenger's kick panel (see **TRIM REMOVAL/INSTALLATION - DOOR AREAS**).
8. Disconnect passenger's under-dash fuse/relay box connectors A, G*1 , (or H*2).

*1: Without SH-AWD

*2: With SH-AWD

NOTE: All connector views are wire side of female terminals.

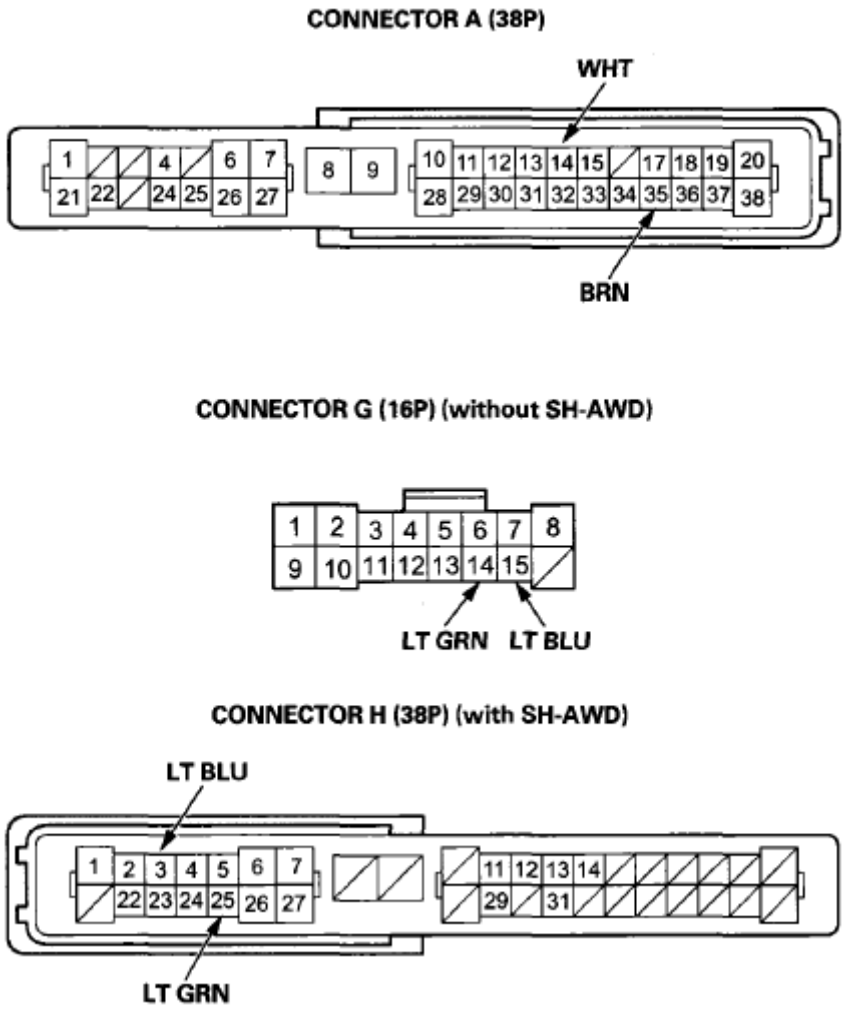


Fig. 5: Identifying Passenger's Under-Dash Fuse/Relay Box A (38P), G (16P) (w/o SH-AWD) & H (38P) (w/ SH-AWD) Connector End Views
Courtesy of AMERICAN HONDA MOTOR CO., INC.

9. Inspect the connector and socket terminals to be sure they are all making good contact.
   - If the terminals are bent, loose or corroded, repair them as necessary, and recheck the system.
   - If the terminals look OK, go to step 10.
10. Reconnect the connectors to the passenger's under-dash fuse/relay box, and do the following input tests:
   - If any test indicates a problem, find and correct the cause, then recheck the system.
   - If all the input tests prove OK, go to step 11.

Cavity	Wire	Test condition	Test: Desired result	Possible cause if desired result is not obtained
A14	WHT	Under all conditions	Measure the voltage to ground: There should be	• Blown No. 15 (10 A) fuse in the under-hood fuse/relay box • Faulty driver's under-dash

			battery voltage.	fuse/relay box • An open or high resistance in the wire
A35	BRN	Ignition switch ON (II), or power mode ON	Measure the voltage to ground: There should be battery voltage.	• Blown No. 12(7.5 A) fuse in the driver's under-dash fuse/relay box • Faulty driver's under-dash fuse/relay box • An open or high resistance in the wire
G14() or H25()	LT GRN	Right rear door open	Measure the voltage to ground: There should be less than 0.2 V.	• Faulty right rear door switch • Faulty right rear door switch ground • An open or high resistance in the wire
		Right rear door closed	Measure the voltage to ground: There should be about 5 V.	• Faulty right rear door switch • A short to ground in the wire
G15(1) or H3(2)	LT BLU	Front passenger's door open	Measure the voltage to ground: There should be less than 0.2 V.	• Faulty front passenger's door switch • Faulty front passenger's door switch ground • An open or high resistance in the wire
		Front passenger's door closed	Measure the voltage to ground: There should be about 5 V.	• Faulty front passenger's door switch • A short to ground in the wire
(1) Without SH-AWD (2) With SH-AWD				

Gauge Control Module

11. Remove the gauge control module (see **GAUGE CONTROL MODULE REPLACEMENT**), and disconnect the 32P connector from it.

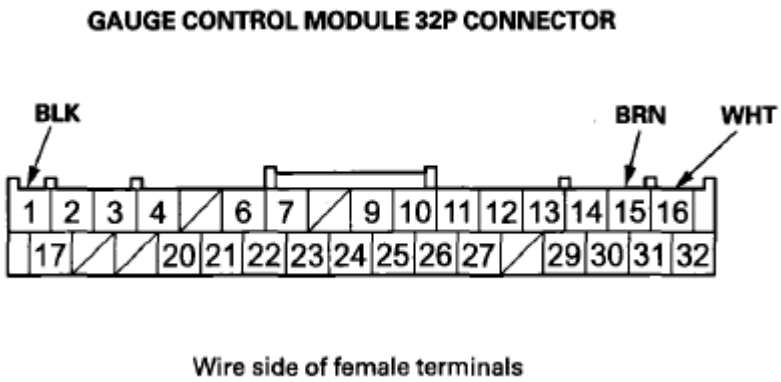


Fig. 6: Checking Condition Of Gauge Control Module Connector Terminals
Courtesy of AMERICAN HONDA MOTOR CO., INC.

12. Inspect the connector and socket terminals to be sure they are all making good contact.
    - If the terminals are bent, loose or corroded, repair them as necessary, and recheck the system.
    - If the terminals are OK, go to step 13.
13. Reconnect connector to the gauge control module, and do the following input tests:
    - If any test indicates a problem, find and correct the cause, then recheck the system.
    - If all the input tests prove OK, go to step 14.

Cavity	Wire	Test condition	Test: Desired result	Possible cause if desired result is not obtained
16	WHT	Under all conditions	Measure the voltage to ground: There should be battery voltage.	• Blown No. 15 (10 A) fuse in the under-hood fuse/relay box • An open or high resistance in the wire
15	BRN	Ignition switch ON (II), or power mode ON	Measure the voltage to ground: There should be battery voltage.	• Blown No. 12 (7.5 A) fuse in the driver's under-dash fuse/relay box • Faulty driver's under-dash fuse/relay box • An open or high resistance in the wire
1	BLK	In all ignition switch positions or all power modes	Measure the voltage to ground: There should be less than 0.2 V.	• Poor ground (G401) • An open or high resistance in the ground wire

14. If multiple failures are found on more than one control unit, replace the driver's under-dash fuse/relay box (includes the driver's MICU) (see **DRIVER'S UNDER-DASH FUSE/RELAY BOX (MICU) REMOVAL AND INSTALLATION**). If input failures are related to a particular control unit, replace the control unit.

2012 ACCESSORIES & EQUIPMENT

Seat Heaters - TL

COMPONENT LOCATION INDEX

DRIVER'S SEAT

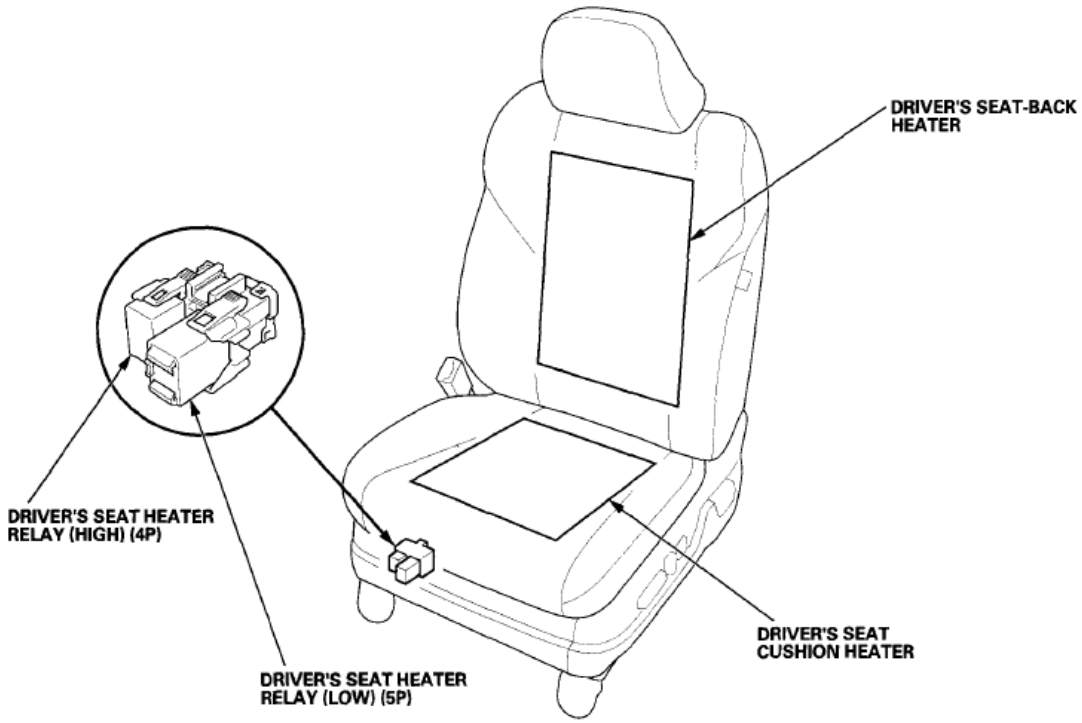


Fig. 1: Seat Heaters Components Location (1 Of 3)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

FRONT PASSENGER'S SEAT

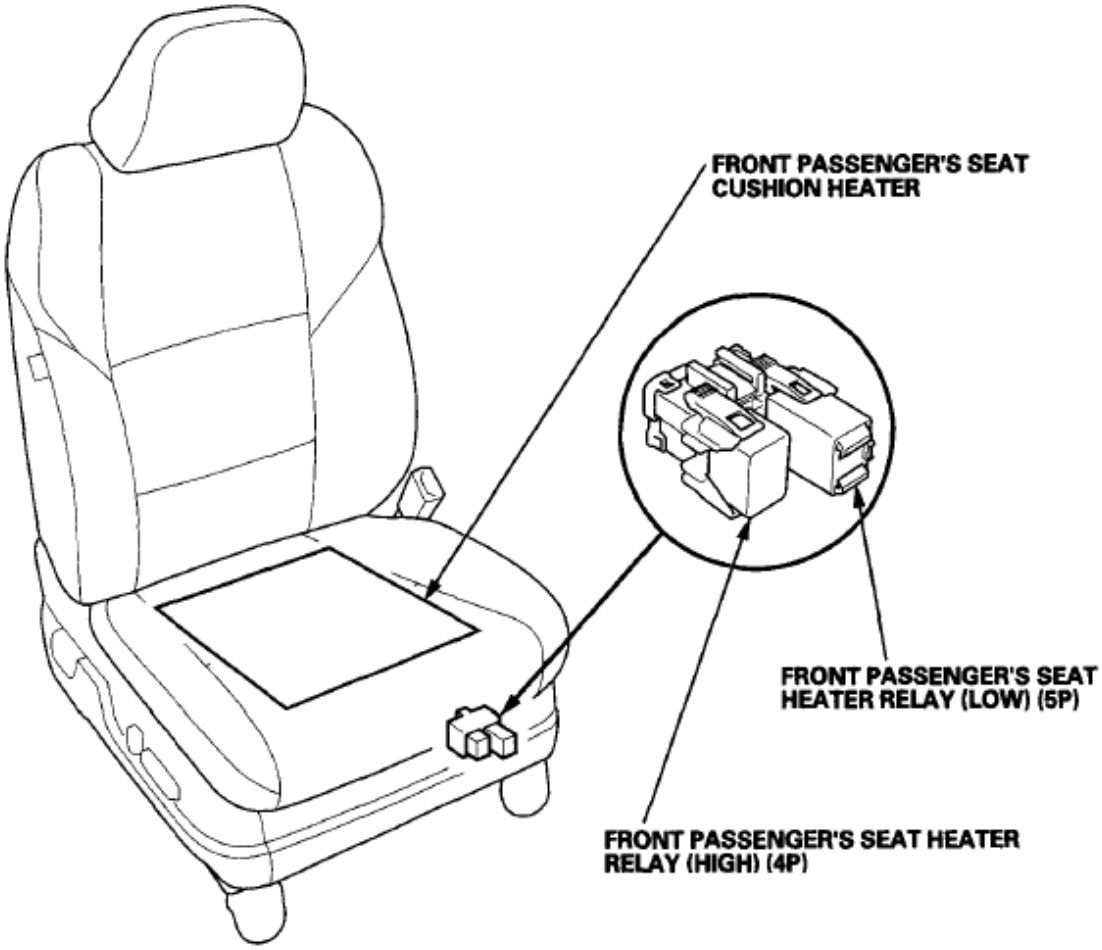


Fig. 2: Seat Heaters Components Location (2 Of 3)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

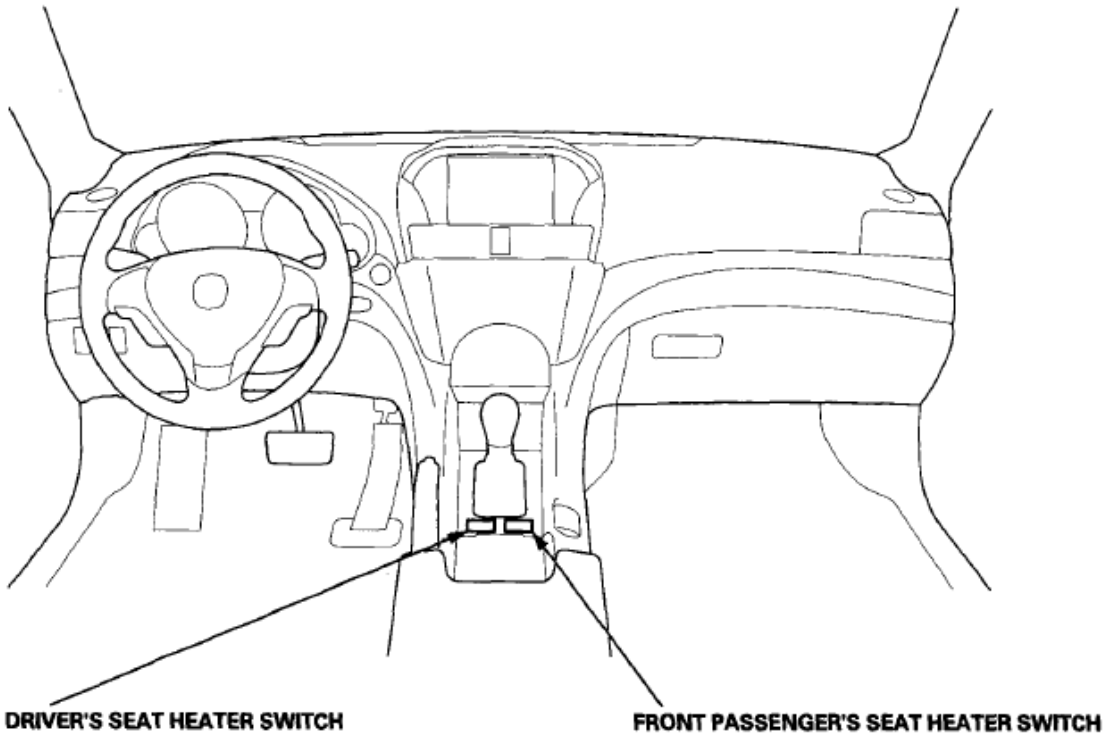


Fig. 3: Seat Heaters Components Location (3 Of 3)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

CIRCUIT DIAGRAM

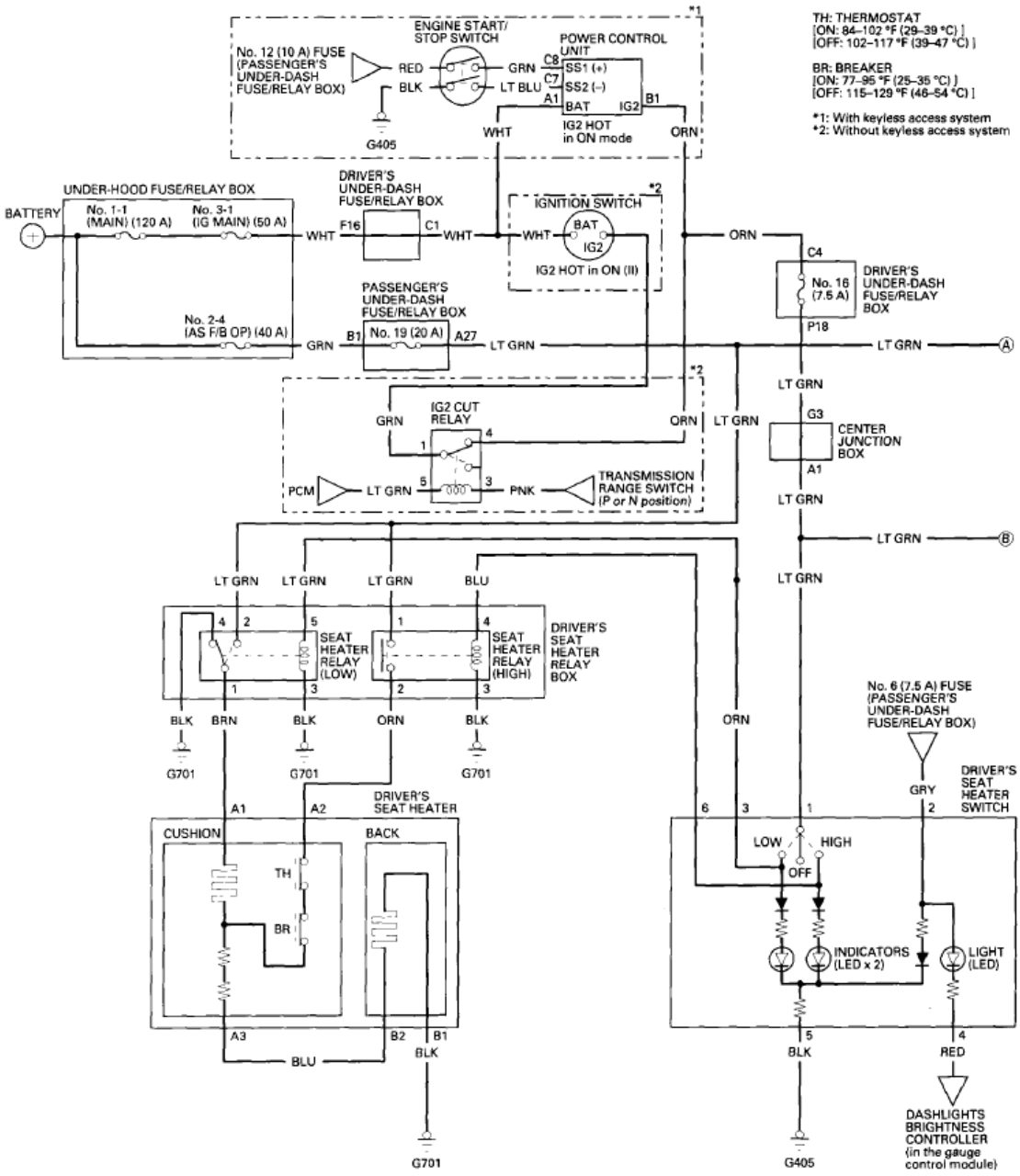


Fig. 4: Seat Heaters - Circuit Diagram (1 Of 2)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

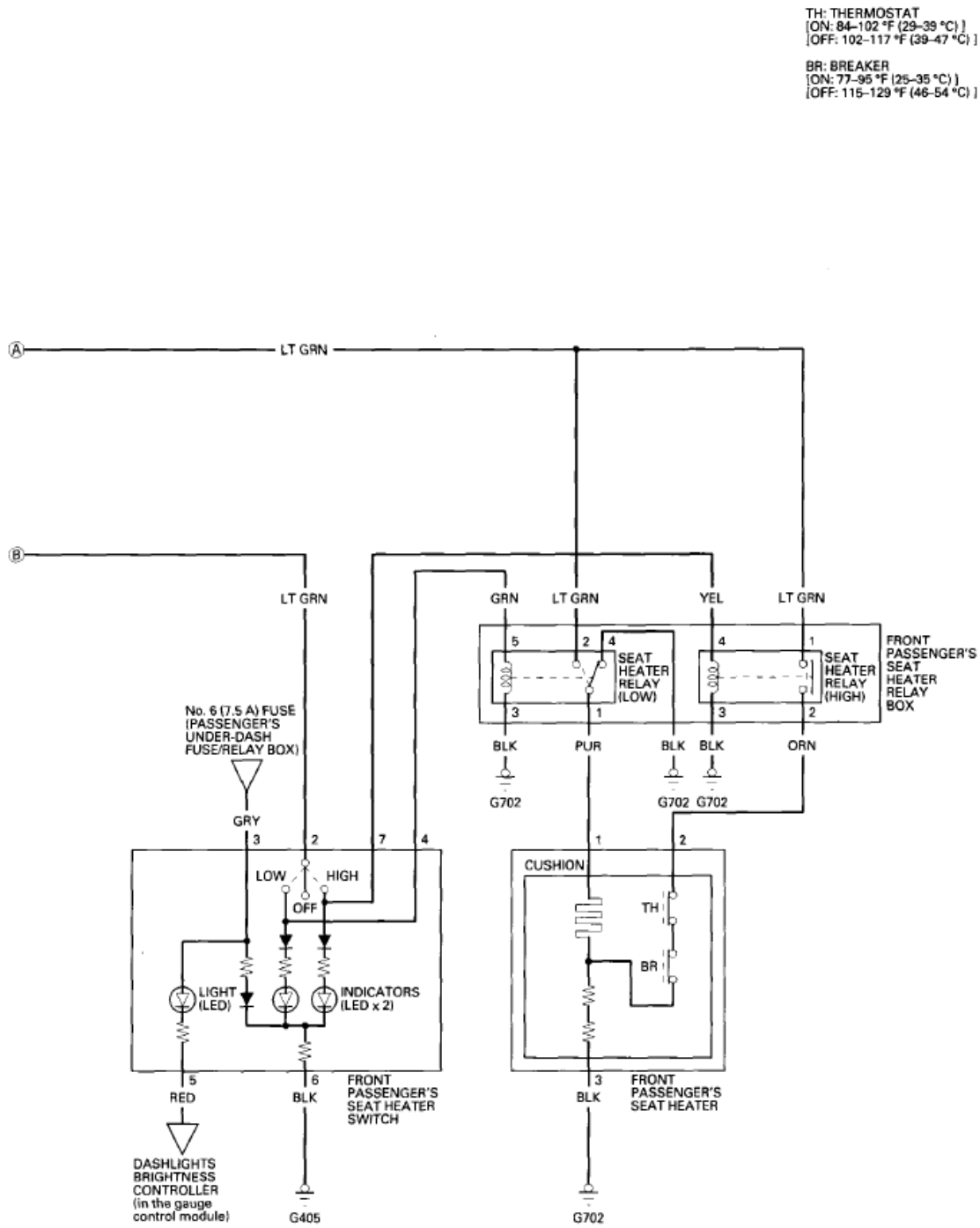


Fig. 5: Seat Heaters - Circuit Diagram (2 Of 2)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

SEAT HEATER TEST

DRIVER'S SEAT

NOTE: SRS components are located in this area. Review the SRS component locations (see COMPONENT LOCATION INDEX), and precautions and procedures (see PRECAUTIONS AND PROCEDURES) before doing repairs or servicing.

1. Remove the driver's seat (see **FRONT SEAT REMOVAL/INSTALLATION**).
2. Remove the seat-back cover (see **FRONT SEAT-BACK COVER REPLACEMENT**).
3. Lean the seat-back and disconnect the connector A (3P) and connector B (2P) from the seat heaters.

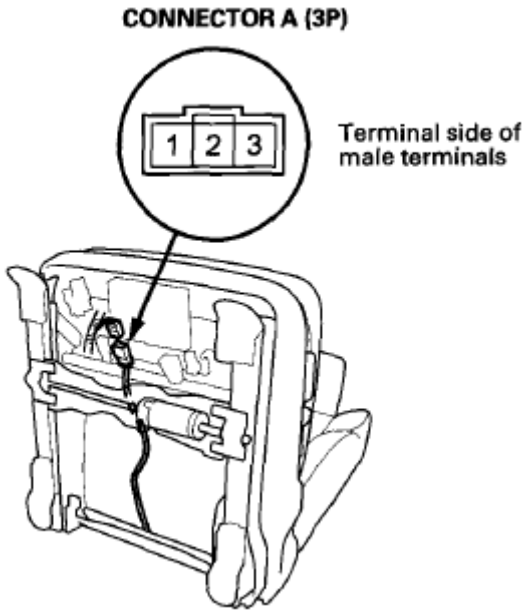


Fig. 6: Identifying A (3P) Connector End View
Courtesy of AMERICAN HONDA MOTOR CO., INC.

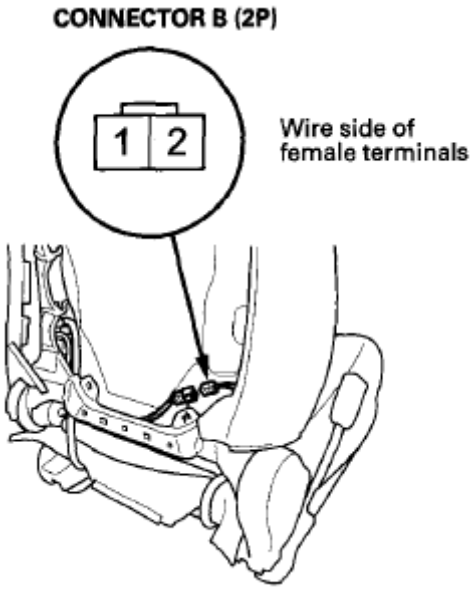


Fig. 7: Identifying B (2P) Connector End View
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Check for continuity between seat heater connector A (3P) terminal No. 3, and seat heater connector B (2P) terminal No. 2. There should be continuity.
5. If there is no continuity, replace the seat wire harness.
6. Check for continuity between seat heater connector B (2P) terminals No. 1 and No. 2. There should be continuity.
7. If the continuity is not as specified, replace the seat-back heater (see **Seat-Back Heater**).
8. Check for continuity between seat heater connector A (3P) terminals No. 1 and No. 3, and between terminals No. 2 and No. 3. There should be continuity.
9. If there is no continuity, replace the seat cushion heater (see **Seat-Back Heater**).

FRONT PASSENGER'S SEAT

NOTE: SRS components are located in this area. Review the SRS component locations (see COMPONENT LOCATION INDEX), and precautions and procedures (see PRECAUTIONS AND PROCEDURES) before doing repairs or servicing.

1. Remove the front passenger's seat (see **FRONT SEAT REMOVAL/INSTALLATION**).
2. Disconnect the 4P connector from the seat heater.

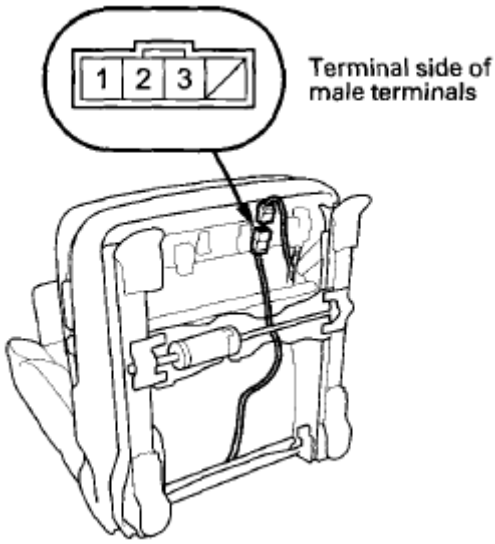


Fig. 8: Identifying 4P Connector End View
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Check for continuity between seat heater 4P connector terminals No. 1 and No. 3 and terminals No. 2 and No. 3. There should be continuity.
4. If the continuity is not as specified, replace the seat heater (see **Seat Heater Replacement**).

SWITCH TEST/REPLACEMENT

1. Remove the shift panel (see **CENTER CONSOLE PANEL REMOVAL/INSTALLATION**).
2. Remove the seat heater switch from panel.

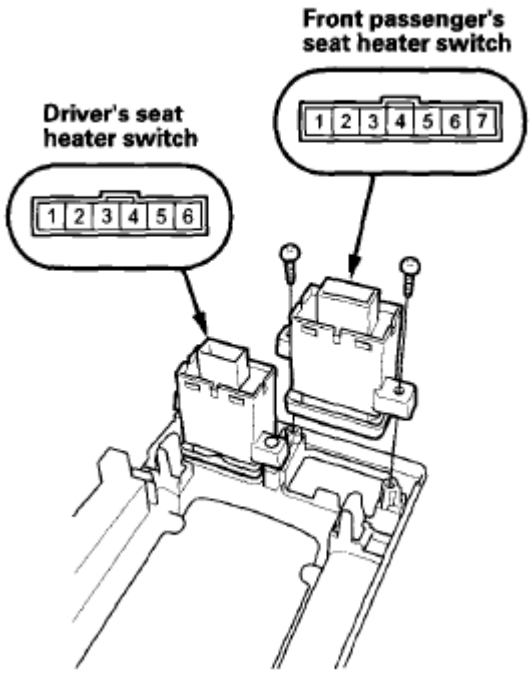


Fig. 9: Identifying Seat Heater Switches & Panel With Connector End Views
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Check for continuity between the terminals in each switch position according to the table.

NOTE:

- **Make sure the correct test lead (+ or -) is placed on the terminal.**
- **When checking for continuity across the diode, use the diode setting on the digital volt/ohm meter to check the diode bias.**
- **Be careful of this characteristic; a diode is one that conducts fully in one direction (forward) and not at all in the opposite direction (reverse).**

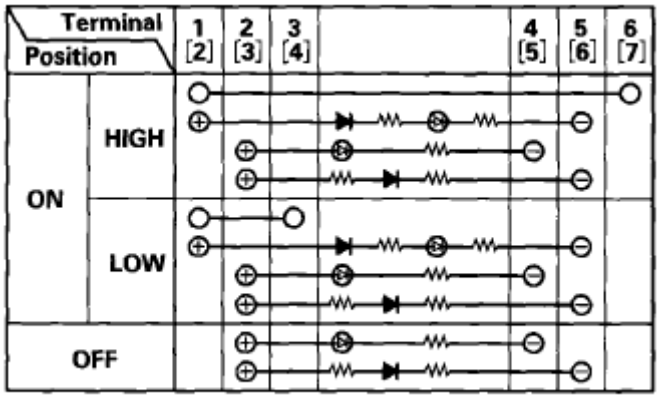


Fig. 10: Identifying Continuity Reference Chart
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. If the continuity is not as specified, replace the switch.
5. Install the parts in the reverse order of removal.

SEAT HEATER REPLACEMENT

SEAT CUSHION HEATER

NOTE: SRS components are located in this area. Review the SRS component locations (see COMPONENT LOCATION INDEX), and precautions and procedures (see PRECAUTIONS AND PROCEDURES) before doing repairs or servicing.

1. Remove the front seat cushion cover (see **FRONT SEAT CUSHION COVER REPLACEMENT**).
2. Carefully remove the seat cushion heater (A) from the seat cushion pad (B).

NOTE: The seat cushion heater is glued to the seat cushion pad. When removing it, take care not to damage the seat cushion pad.

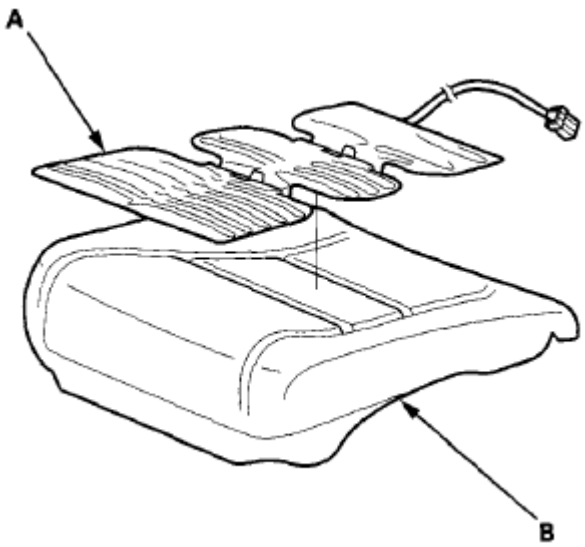


Fig. 11: Identifying Seat Cushion Pad And Seat Cushion Heater
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Install the removed parts in the reverse order of removal.

SEAT-BACK HEATER

NOTE: SRS components are located in this area. Review the SRS component locations (see COMPONENT LOCATION INDEX), and precautions and procedures (see PRECAUTIONS AND PROCEDURES) before doing repairs or servicing.

1. Remove the front seat-back cover (see **FRONT SEAT-BACK COVER REPLACEMENT**).
2. Carefully remove the seat-back heater (A) from the seat-back pad (B).

NOTE: The seat-back heater is glued to the seat-back pad. When removing it, take care not to damage the seat-back pad.

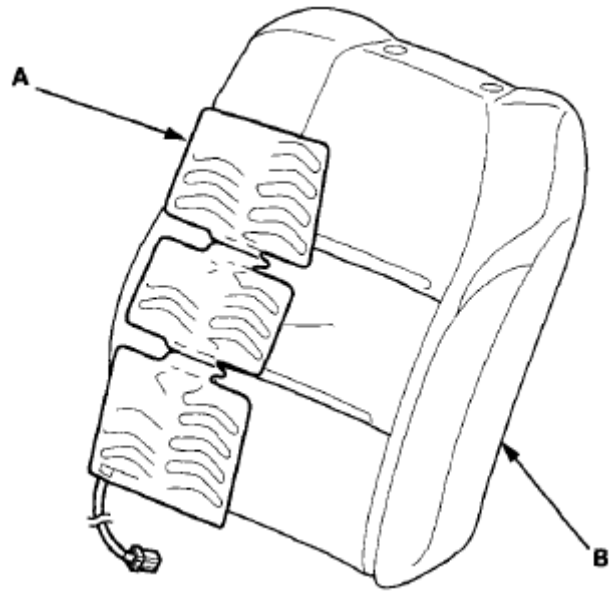


Fig. 12: Identifying Seat-Back Heater And Seat-Back Pad
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Install the removed parts in the reverse order of removal.

2012 ACCESSORIES & EQUIPMENT

Seats - TL

COMPONENT LOCATION INDEX

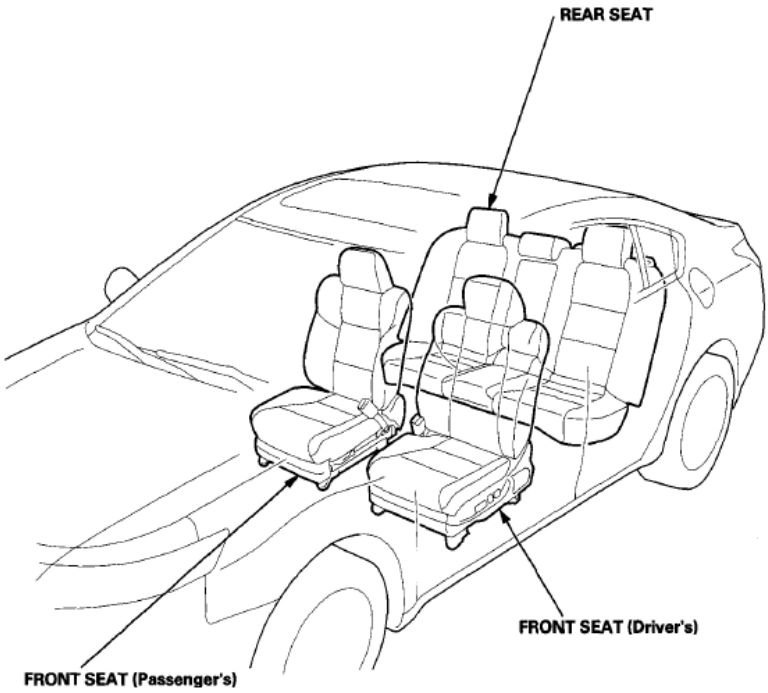


Fig. 1: Identifying Seats Components Location
Courtesy of AMERICAN HONDA MOTOR CO., INC.

FRONT SEAT ACTIVE HEAD RESTRAINT INSPECTION

NOTE: If the vehicle has been in a collision, always inspect the active head restraint, even if they appear reusable, by doing the following procedure.

1. Move the seat-back to the fully upright position. Raise the head restraint to the highest position.
2. Apply masking tape on the top of the head restraint.
3. Make the marks (A) on both sides at 300 mm (11.8 in) upward from the roots of the head restraint frame (B) along the back of the head restraint (C) surface. Use the center point (D) between the two marks for the measurements in step 4.

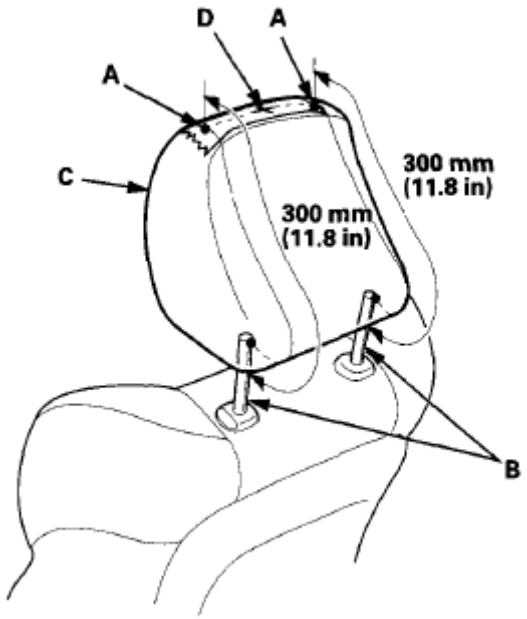


Fig. 2: Identifying Marks, Restraint Frame, Head Restraint And Center Point
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Push the head restraint (A) forward, and measure the horizontal head restraint movement. The head restraint should move more than 50 mm (2.0 in) without resistance. If it is less than 50 mm (2.0 in), or the head restraint does not move smoothly, replace the seat frame (see **FRONT SEAT FRAME REPLACEMENT**).

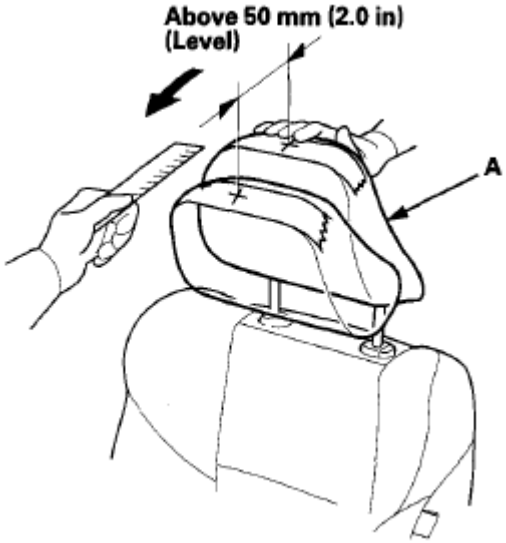


Fig. 3: Pushing Head Restraint Forward And Measure Horizontal Head Restraint Movement
Courtesy of AMERICAN HONDA MOTOR CO., INC.

FRONT SEAT REMOVAL/INSTALLATION

Special Tools Required

KTC Trim Tool Set SOJATP2014*

*Available through the Acura Tool and Equipment Program; call 888-424-6857

SRS components are located in this area. Review the SRS component locations (see **COMPONENT LOCATION INDEX**) and the precautions and procedures (see **PRECAUTIONS AND PROCEDURES**) before doing repairs or service.

Do the ODS unit initialization (see **ODS UNIT INITIALIZATION**) after front passenger's seat replacement.

NOTE:

- **Put on gloves to protect your hands.**
- **Take care not to scratch the body or tear the seat covers.**
- **Use the appropriate tool from the KTC trim tool set to avoid damage when removing components.**
- **When prying with a flat-tip screwdriver, wrap it with protective tape to prevent damage.**

1. Adjust the steering column to the full tilt up position and to the full telescopic in position.
2. Slide the front seat all the way forward. Carefully pry up on the bottom of the anchor cover (A) at the pry point (B) with the appropriate trim tool to release the hooks (C) and the tab (D), then remove the cover by pulling it upward. The driver's seat is shown; the passenger's seat is similar.

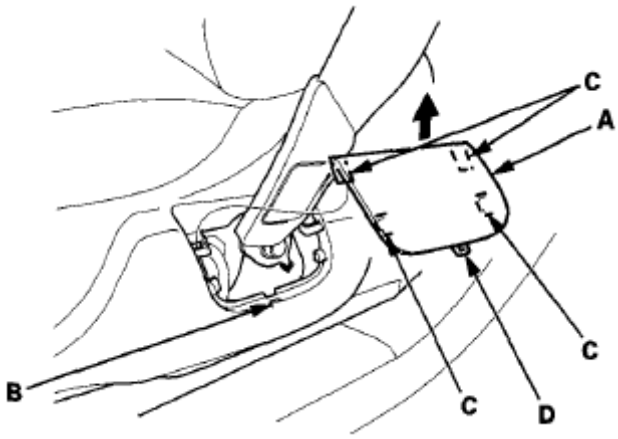


Fig. 4: Sliding Front Seat All Way Forward
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Remove the lower anchor bolt (A).

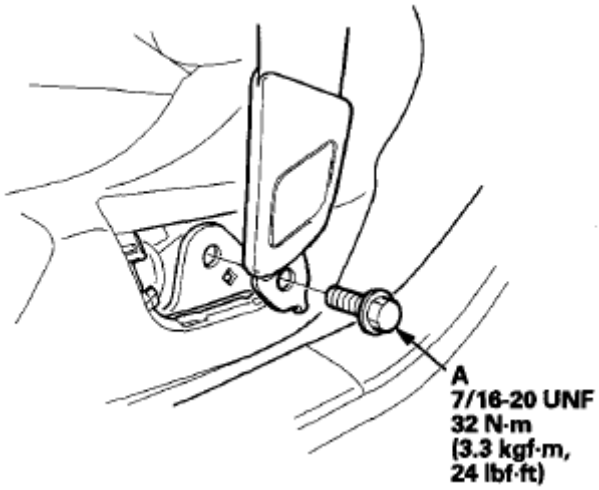


Fig. 5: Identifying Lower Anchor Bolt With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Remove the seat track end covers (A) from the back of both seat tracks.

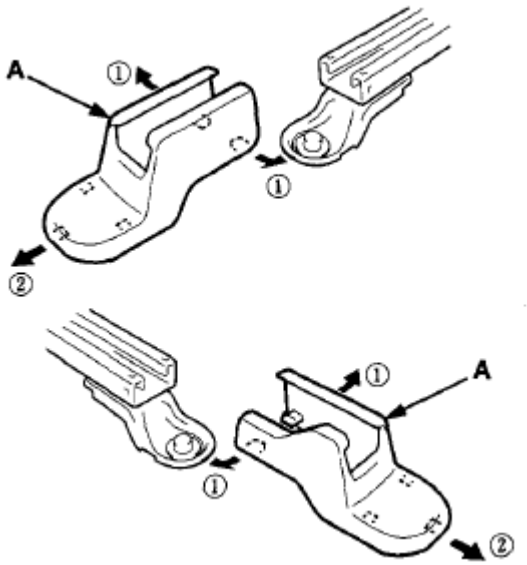


Fig. 6: Removing Seat Track End Covers From Back Of Both Seat Tracks
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Remove the seat mounting bolts from the rear side of the front seat.

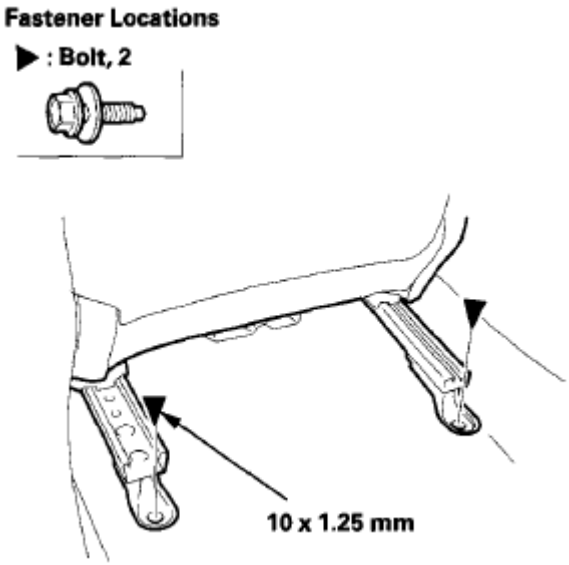


Fig. 7: Identifying Seat Mounting Bolts From Rear Side Of Front Seat
Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Slide the front seat all the way back, and remove the seat mounting bolts.

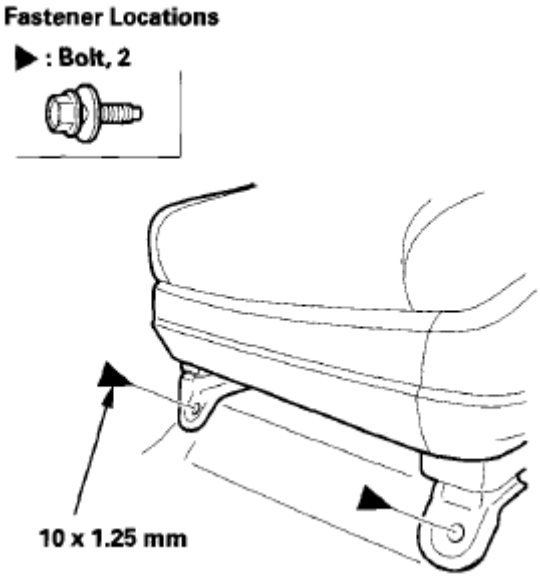


Fig. 8: Sliding Front Seat All Way Back
Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Do the battery terminal disconnection procedure (see **BATTERY TERMINAL DISCONNECTION AND RECONNECTION**), then wait at least 3 minutes before removing the seat.
8. Lift up the front seat, then detach the harness clip(s) (A). Disconnect the side airbag connector (B) and the seat wire harness connector (C).

Driver's seat (Without seat ventilation)

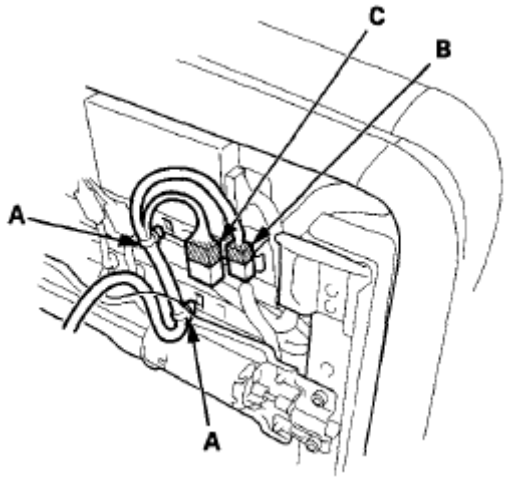


Fig. 9: Identifying Harness Clip, Side Airbag Connector And Seat Wire Harness Connector (Without Seat Ventilation)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Driver's seat (With seat ventilation)

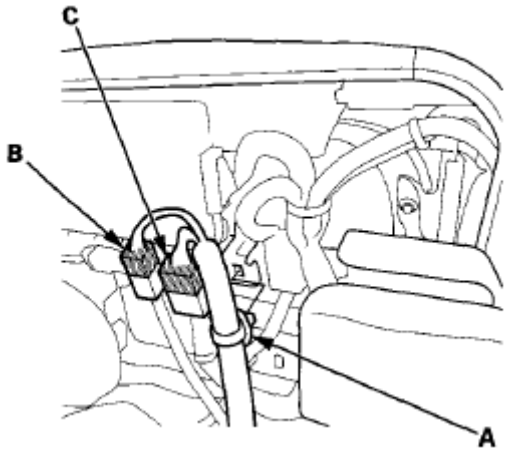


Fig. 10: Identifying Driver's Seat (With Seat Ventilation)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Passenger's seat

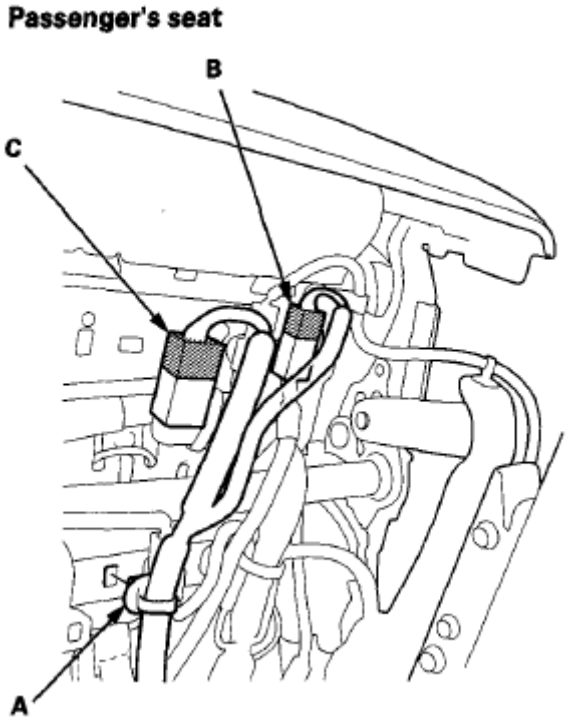


Fig. 11: Identifying Passenger's Seat Wire Harness And Connectors
Courtesy of AMERICAN HONDA MOTOR CO., INC.

9. Remove the head restraint.
10. With the help of an assistant, carefully remove the front seat through the front door opening.
11. Install the seat in the reverse order of removal, and note these items:
    - Tighten the seat mounting bolts to the specified torque in the sequence shown. Slide the seat all the way back and tighten (1) and (2), then slide it forward and tighten (3) and (4).
    - Tighten the bolts by hand first, then tighten them to the specified torque.
    - Do the battery terminal reconnection procedure (see **BATTERY TERMINAL DISCONNECTION AND RECONNECTION**).
    - Check for any DTCs that may have been set during repairs, and clear them.

Driver's seat



Fig. 12: Identifying Driver's Seat Fasteners Location With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Passenger's seat



Fig. 13: Identifying Passenger's Seat Fasteners Location With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

FRONT SEAT RECLINE MOTOR REPLACEMENT

SRS components are located in this area. Review the SRS component locations (see **COMPONENT**

LOCATION INDEX) and the precautions and procedures (see **PRECAUTIONS AND PROCEDURES**) before doing repairs or service.

NOTE:

- **Put on gloves to protect your hands.**
- **The driver's seat is shown; the passenger's seat is similar.**

1. Remove these items:
   - Front seat (see **FRONT SEAT REMOVAL/INSTALLATION**)
   - Seat-back cover/pad (see **FRONT SEAT-BACK COVER REPLACEMENT**)
   - Recline cover (see **FRONT SEAT RECLINE COVER REMOVAL/INSTALLATION**)
2. Disconnect and detach the recline motor connector (A), and detach the harness clip (B).

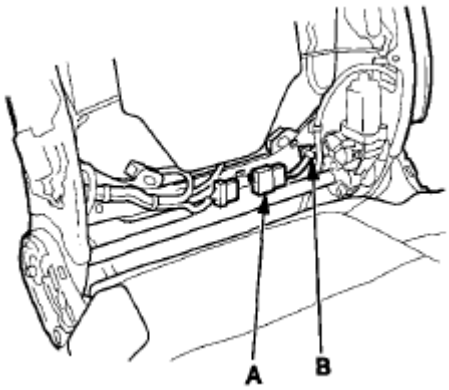


Fig. 14: Identifying Recline Motor Connector And Harness Clip
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Release the push nut (A) from the motor side end of the connecting rod (B), gently tap on the motor side of the connecting rod to remove it from the recline motor (C) and both recline adjusters (D).

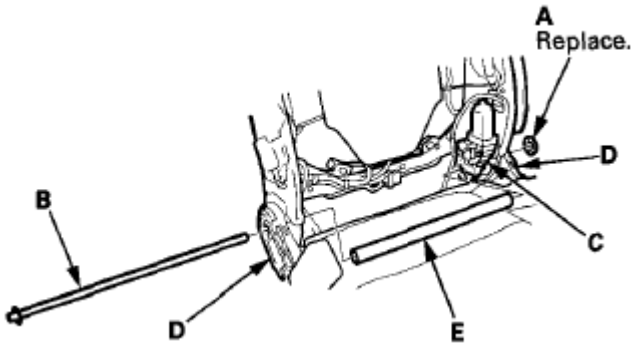


Fig. 15: Identifying Push Nut, Connecting Rod, Recline Motor, Rod Cover And Adjusters
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Remove the rod cover (E).
5. Remove the mounting bolt, then remove the recline motor (A).

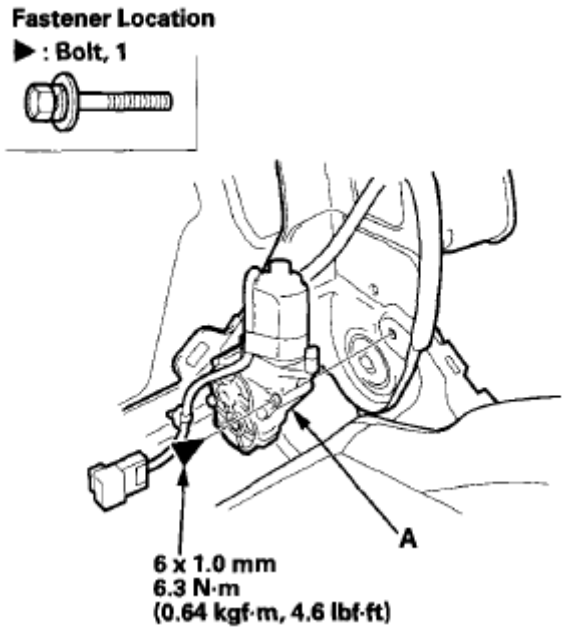


Fig. 16: Removing Recline Motor With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Install the motor in the reverse order of removal, and note these items:
   - Replace the push nut with a new one. Make sure the push nut is installed correctly.
   - Make sure the recline motor harness is routed properly.
   - Apply medium strength liquid thread lock to the mounting bolt before reinstallation.
   - Make sure the connector is plugged in properly.
   - Check the front seat recline operation.

FRONT SEAT LUMBAR SUPPORT REPLACEMENT

SRS components are located in this area. Review the SRS component locations (see **COMPONENT LOCATION INDEX**) and the precautions and procedures (see **PRECAUTIONS AND PROCEDURES**) before doing repairs or service.

WITHOUT SEAT VENTILATION

NOTE:
- **Put on gloves to protect your hands.**
- **Take care not to kink the cable.**
- **Take care not to tear or damage the seat covers.**

1. Remove the driver's front seat (see **FRONT SEAT REMOVAL/INSTALLATION**).
2. Remove the seat-back panel (see **FRONT SEAT-BACK COVER REPLACEMENT**).
3. Release the hook strips as needed, then turn over the seat-back cover (see step 4 on).
4. Remove the cable band (A) fastening the lumbar support cable (B).

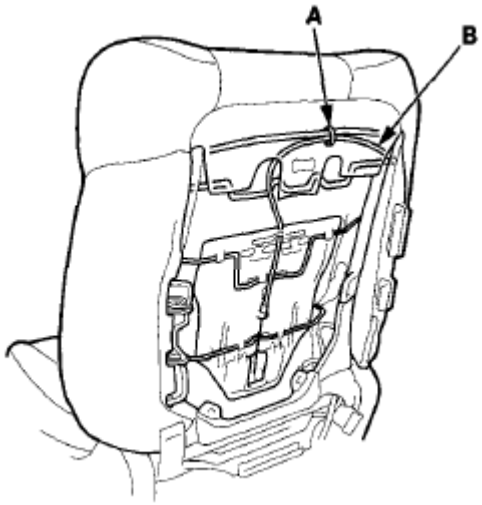


Fig. 17: Identifying Cable Band And Lumbar Support Cable
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Remove the upper wire (A) from both seat-back side frames inside the seat-back.

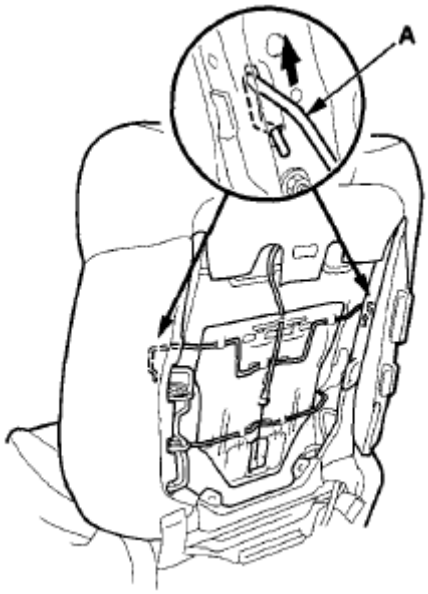


Fig. 18: Removing Upper Wire From Both Seat-Back Side Frames Inside Seat-Back
Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Release the lower wires (A) from both active head restraint links (B) inside the seat-back.

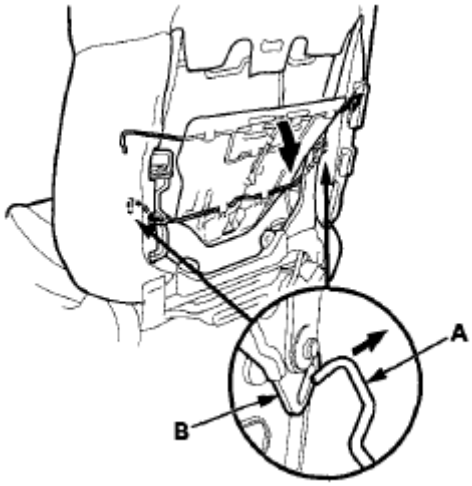


Fig. 19: Releasing Lower Wires From Both Active Head Restraint Links Inside Seat-Back
Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Remove the lumbar support motor cover (A).
    1. Release the cover from the lower hooks (B).
    2. Pull the cover upward to release it from the upper hook (C).

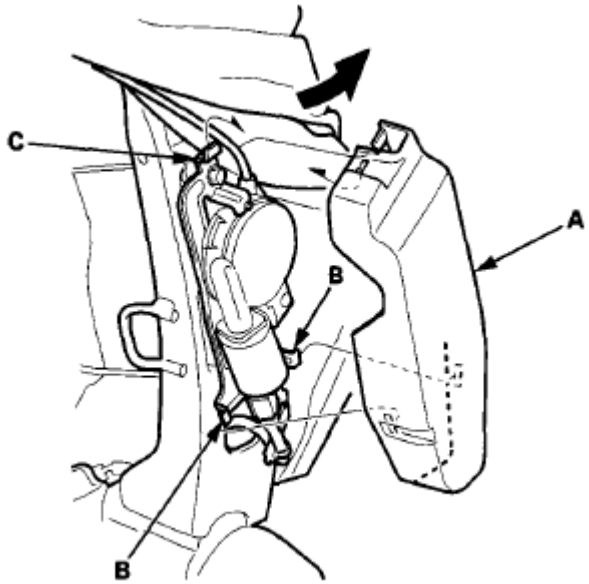


Fig. 20: Pulling Cover Upward To Release It From Upper Hook
Courtesy of AMERICAN HONDA MOTOR CO., INC.

8. Disconnect the lumbar support motor connector (A), and detach the harness clip (B). Remove the bolts, and separate the lumbar support motor (C) from the seat frame, then remove the lumbar support.

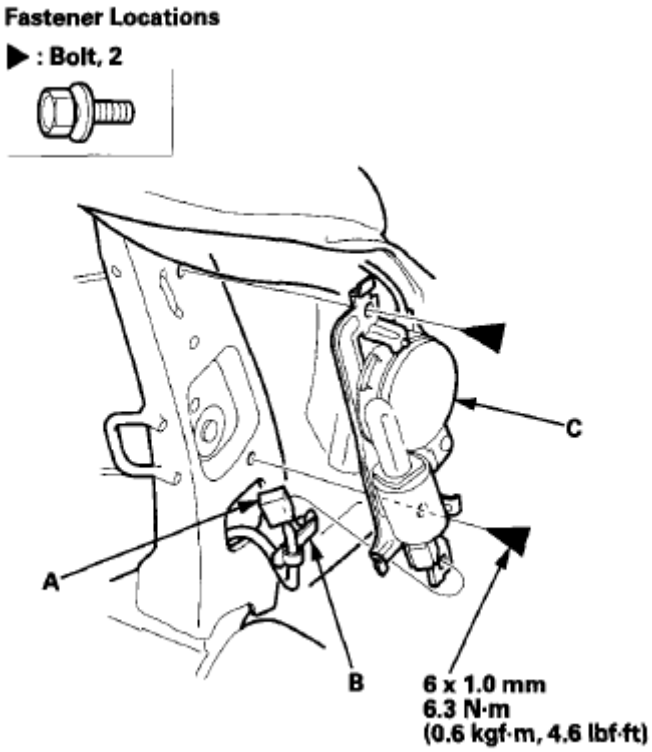


Fig. 21: Identifying Motor Connector, Harness Clip And Lumbar Support Motor With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

9. Install the lumbar support in the reverse order of removal, and note these items:
   - Make sure the connector is plugged in properly.
   - To prevent wrinkles when installing a seat-back cover, make sure the material is stretched evenly over the pad before securing the hook strips.

WITH SEAT VENTILATION

NOTE: Put on gloves to protect your hands.

1. Remove the driver's front seat (see **FRONT SEAT REMOVAL/INSTALLATION**).
2. Remove the seat-back cover/pad (see **FRONT SEAT-BACK COVER REPLACEMENT**).
3. Remove the upper wires (A) from both seat-back side frames inside the seat-back.

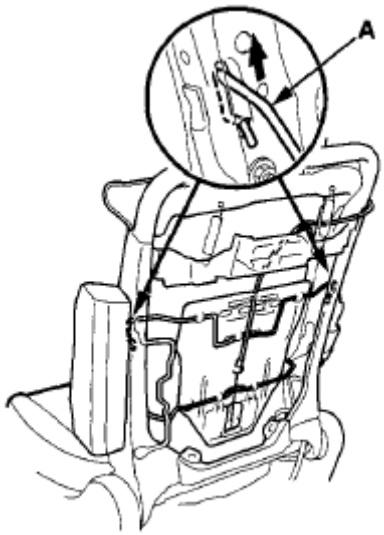


Fig. 22: Identifying Upper Wire Of Seat-Back
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Release the lower wires (A) from both active head restraint links (B) inside the seat-back.



Fig. 23: Identifying Lower Wires And Restraint Links
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Remove the lumbar support motor cover (A).
    1. Release the cover from the lower hooks (B).
    2. Pull the cover upward to release it from the upper hook (C).

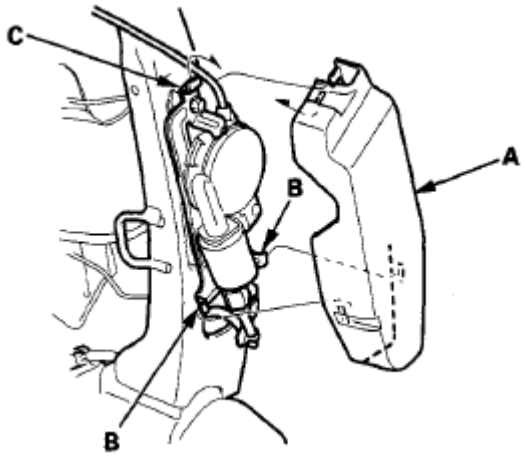


Fig. 24: Identifying Lumbar Support Motor Cover, Lower Hooks And Upper Hook
Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Release the tie (A). Disconnect the lumbar support motor connector (B), and detach the harness clip (C). Remove the bolts, then separate the lumbar support motor (D) from the seat frame.

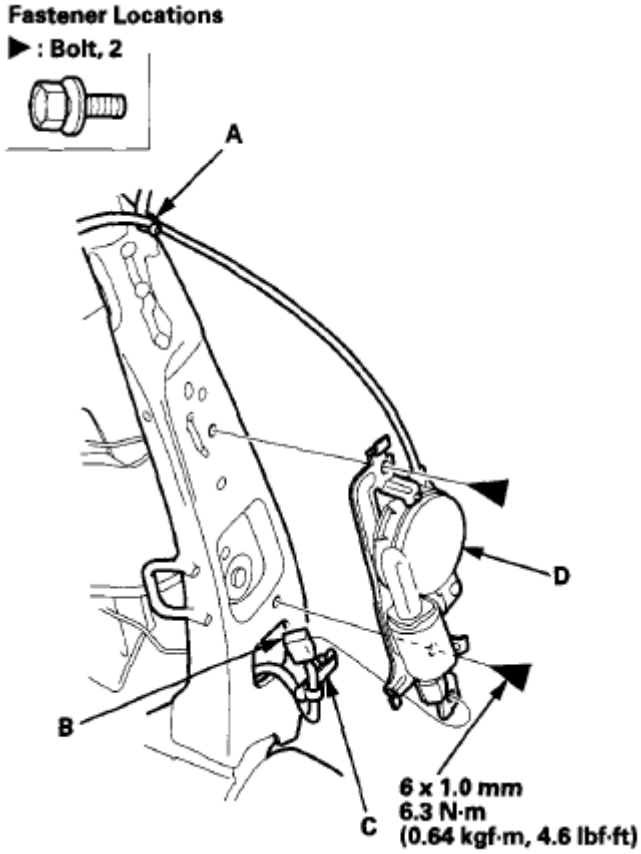


Fig. 25: Identifying Tie, Motor Connector, Harness Clip And Support Motor With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Remove the seat frame spring (A), and pass the lumbar support motor (B) out through the seat frame, then remove it.

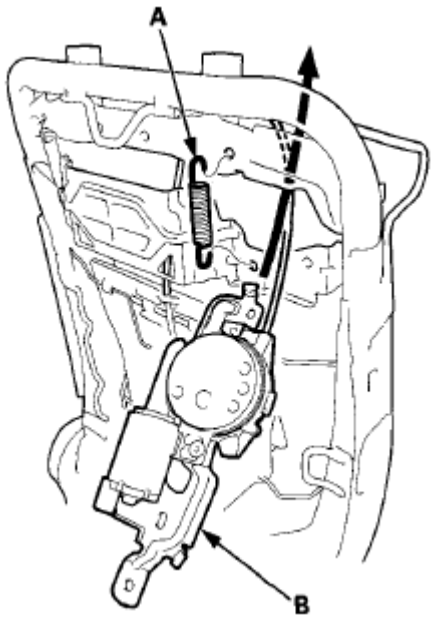


Fig. 26: Passing Lumbar Support Motor Out Through Seat Frame
Courtesy of AMERICAN HONDA MOTOR CO., INC.

8. Install the lumbar support in the reverse order of removal, and note these items:
   - Make sure the connector is plugged in properly.
   - To prevent wrinkles when installing the seat-back cover/pad, make sure the material is stretched evenly over the pad before securing the hook strips.

FRONT SEAT SLIDE MOTOR REPLACEMENT

SRS components are located in this area. Review the SRS component locations (see **COMPONENT LOCATION INDEX**) and the precautions and procedures (see **PRECAUTIONS AND PROCEDURES**) before doing repairs or service.

NOTE:
- **Put on gloves to protect your hands.**
- **Take care not to tear or damage the seat covers.**
- **The driver's seat is shown; the passenger's seat is similar.**

1. Remove the front seat (see **FRONT SEAT REMOVAL/INSTALLATION**).
2. Remove the flex cable (A) and the cable housing (B).
   1. Release the housing from the hooks (C).
   2. Disconnect the cable from the worm gear (D) in the inner seat track by pulling out the housing.
   3. Disconnect the cable from the slide motor (E).

NOTE: Take care not to kink the cable.

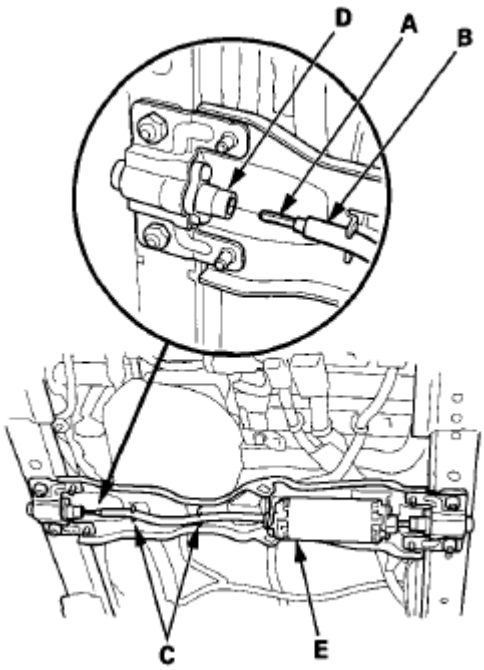


Fig. 27: Identifying Flex Cable, Cable Housing, Hooks, Worm Gears And Slide Motor
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Disconnect the slide motor connector (A), and remove the screws, then remove the slide motor (B) from the slide motor bracket (C) while disconnecting the motor from the short flex cable (D).

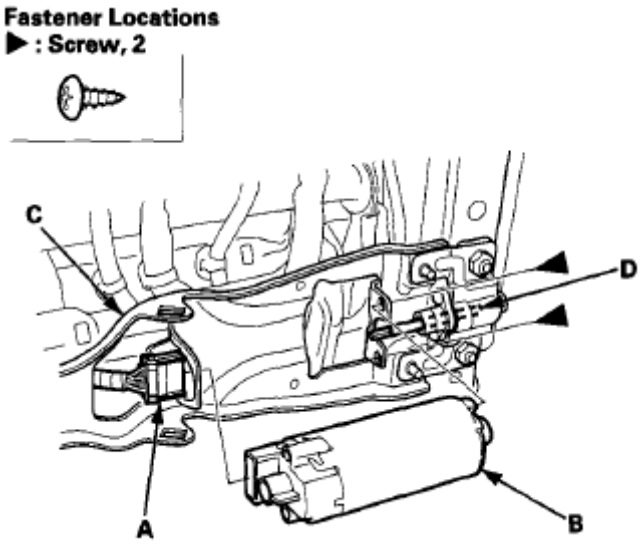


Fig. 28: Identifying Slide Motor Connector, Motor Bracket, Slide Motor And Flex Cable
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Pull out the short flex cable (A) from the worm gear (B) in the outer seat track.

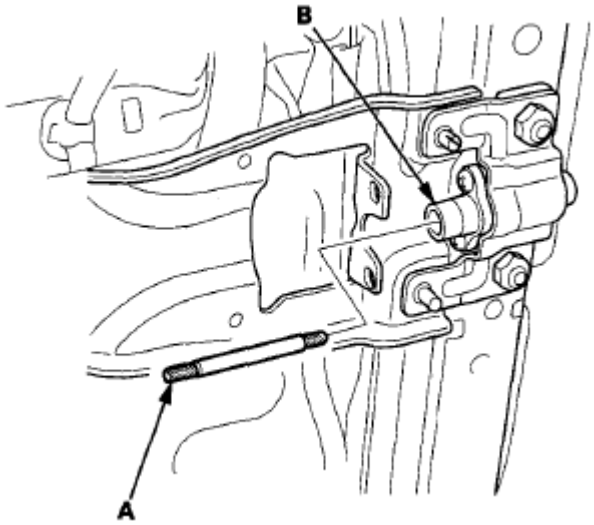


Fig. 29: Identifying Short Flex Cable And Worm Gear
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Install the motor in the reverse order of removal, and note these items:
   - Apply multipurpose grease to the worm gear areas in both seat tracks.
   - Install the short flex cable to the slide motor before installing the slide motor to the slide motor bracket.
   - Make sure both seat tracks are all the way forward before installing the slide motor bracket on the tracks. Install the short flex cable to the slide motor.
   - Make sure the short flex cable and the flex cable are connected properly.
   - Make sure the connector is plugged in properly.
   - Check the front seat slide operation.

FRONT SEAT RAIL REPLACEMENT - DRIVER'S SEAT

Special Tools Required

KTC Trim Tool Set SOJATP2014*

*Available through the Acura Tool and Equipment Program; call 888-424-6857

SRS components are located in this area. Review the SRS component locations (see **COMPONENT LOCATION INDEX**) and the precautions and procedures (see **PRECAUTIONS AND PROCEDURES**) before doing repairs or service.

Check the operation of the driver's seat position sensor (see **DRIVER'S SEAT POSITION SENSOR OPERATION CHECK**) after driver's seat position sensor replacement.

NOTE:
- **Put on gloves to protect your hands.**

- **Take care not to tear or damage the seat covers.**
- **Use the appropriate tool from the KTC trim tool set to avoid damage when removing components.**

1. Raise the seat all the way up.
2. Remove the front seat (see **FRONT SEAT REMOVAL/INSTALLATION**).
3. Remove these items:
   - Front seat recline cover (see **FRONT SEAT RECLINE COVER REMOVAL/INSTALLATION**)
   - Seat belt buckle (see **FRONT SEAT BELT BUCKLE**)
4. Detach the clips (A, B), then remove the upper rail outer cover (C).

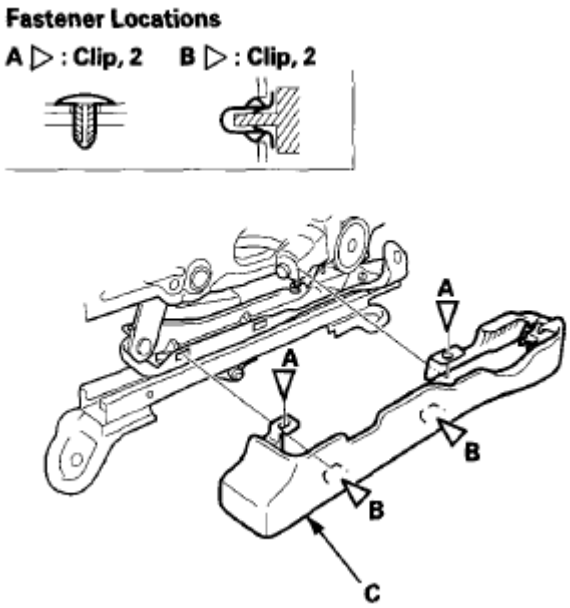


Fig. 30: Identifying Clips And Upper Rail Outer Cover
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Detach the clip, then remove the upper rail inner cover (A).

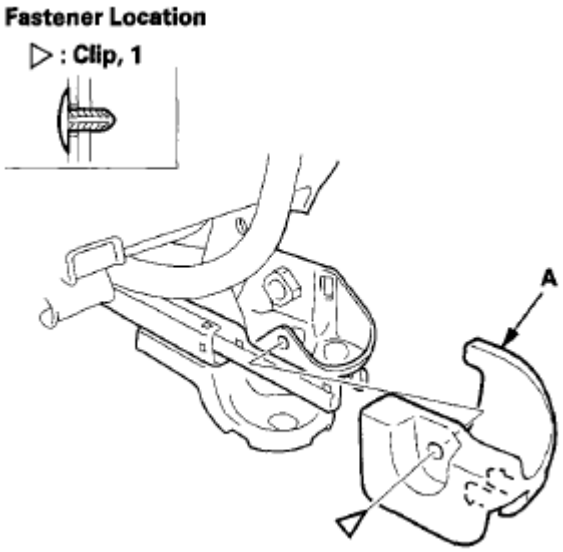


Fig. 31: Identifying Upper Rail Inner Cover
Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Remove the slide motor cover (A).

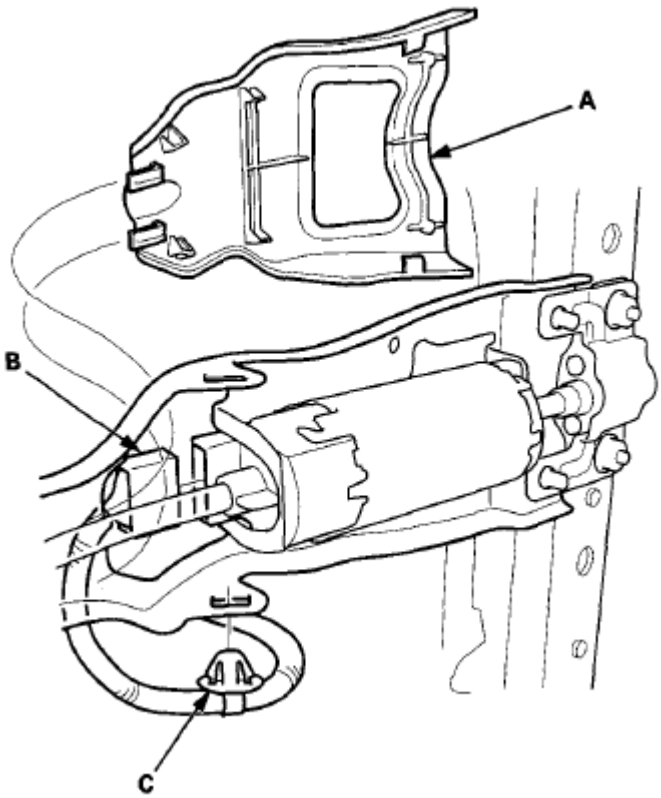


Fig. 32: Identifying Slide Motor Cover, Motor Connector And Harness Clip
Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Disconnect the slide motor connector (B), then detach the harness clip (C).
8. Disconnect the driver's seat position sensor connector (A), then detach the harness clip (B).

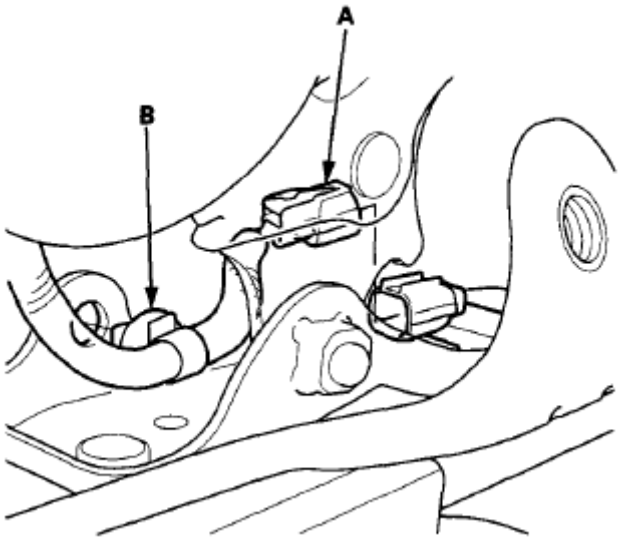


Fig. 33: Identifying Driver's Seat Position Sensor Connector And Harness Clip
Courtesy of AMERICAN HONDA MOTOR CO., INC.

9. Remove the bolts with a TORX T30 bit, then remove the front seat rail (A).

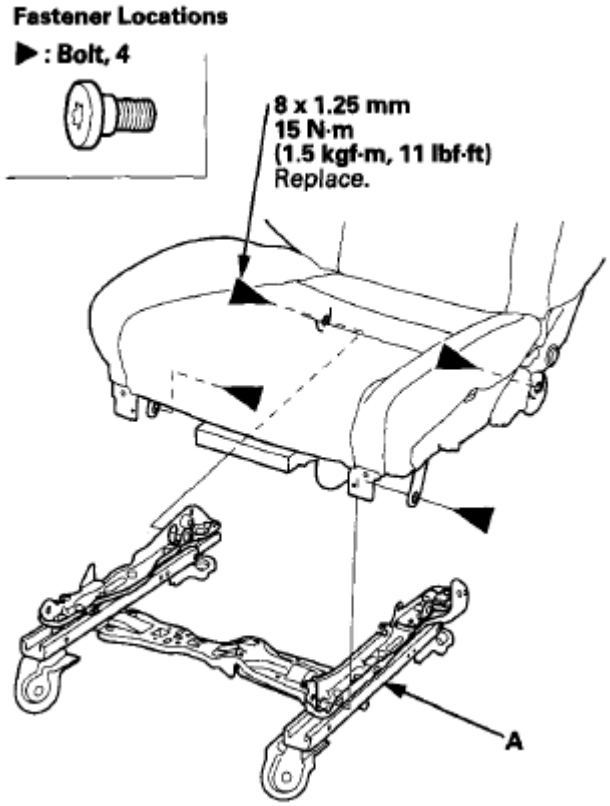


Fig. 34: Identifying Front Seat Rail With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

10. Remove the bolt and nut with a TORX T30 bit, then remove the driver's seat position sensor (A) from the front seat rail (B).

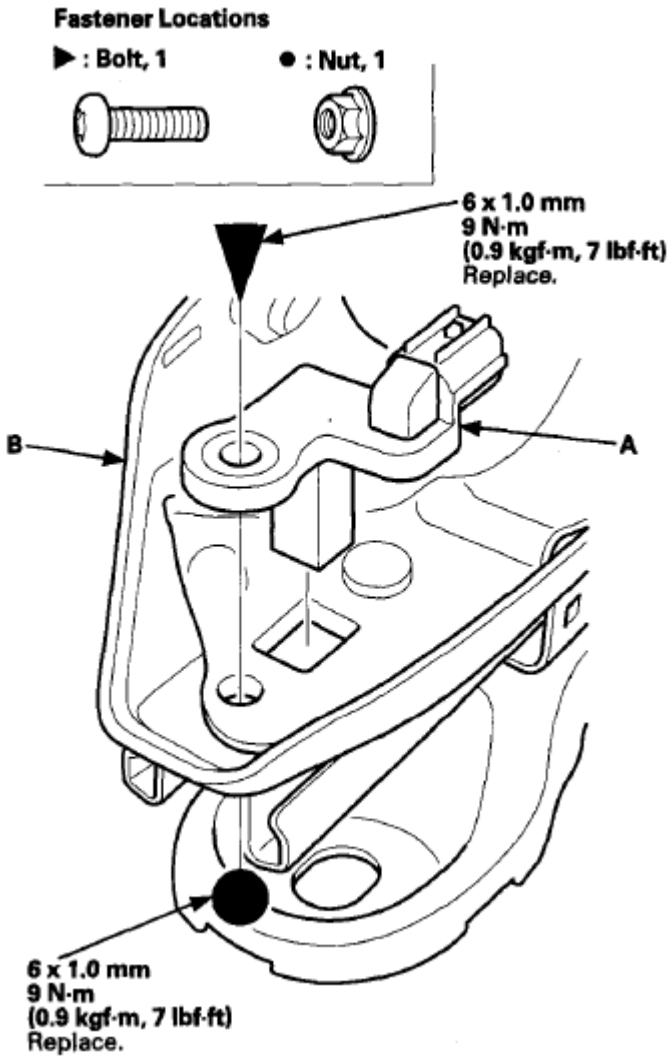


Fig. 35: Identifying Driver's Seat Position Sensor And Front Seat Rail With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

11. Install the seat rail in the reverse order of removal, and note these items:
    - Clear any DTCs with the HDS (see **HOW TO READ DTCS**).
    - Check the operation of the driver's seat position sensor with the HDS (see **DRIVER'S SEAT POSITION SENSOR OPERATION CHECK**).
    - Confirm proper SRS operation: Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode, and check that the SRS indicator comes on for about 6 seconds and then goes off.

- If the clips are damaged or stress-whitened, replace them with new ones.
- Push the clips into place securely.
- Be sure to install the harness so it is not pinched or interferes with other parts.
- Check the seat slide operation.

FRONT SEAT RAIL REPLACEMENT - PASSENGER'S SEAT

Special Tools Required

KTC Trim Tool Set SOJATP2014*

*Available through the Acura Tool and Equipment Program; call 888-424-6857

SRS components are located in this area. Review the SRS component locations (see **COMPONENT LOCATION INDEX**) and the precautions and procedures (see **PRECAUTIONS AND PROCEDURES**) before doing repairs or service.

Do the front passenger's weight sensor initialization (see **FRONT PASSENGER'S WEIGHT SENSOR INITIALIZATION**) after front passenger's seat frame replacement.

NOTE:

- **Put on gloves to protect your hands.**
- **Take care not to tear or damage the seat covers.**
- **Use the appropriate tool from the KTC trim tool set to avoid damage when removing components.**

1. Raise the seat all the way up.
2. Remove the front seat (see **FRONT SEAT REMOVAL/INSTALLATION**).
3. Remove these items:
   - Front seat recline cover (see **FRONT SEAT RECLINE COVER REMOVAL/INSTALLATION**)
   - Seat belt buckle (see **FRONT SEAT BELT BUCKLE**)
4. Detach the clips (A, B), then remove the upper rail outer cover (C).

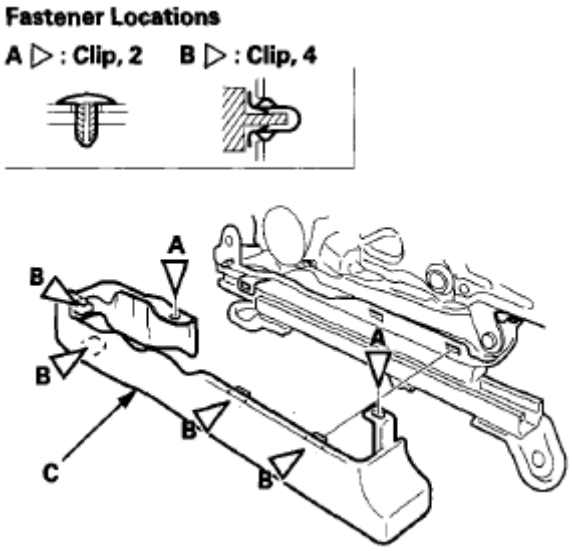


Fig. 36: Identifying Clips And Upper Rail Outer Cover
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Detach the clip (A, B), then remove the upper rail inner cover (C).

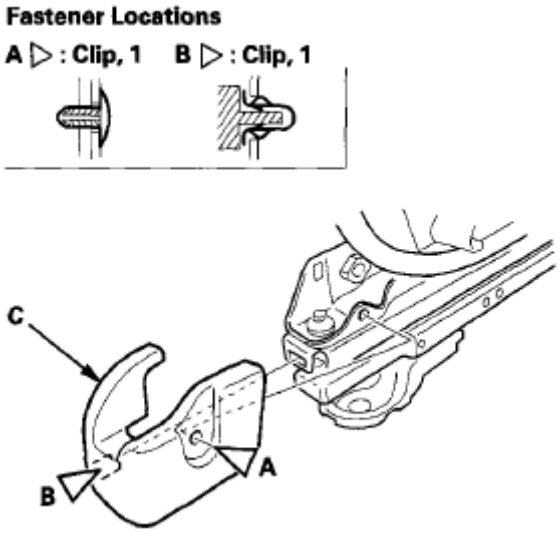


Fig. 37: Identifying Clip And Upper Rail Inner Cover
Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Remove the slide motor cover (A).

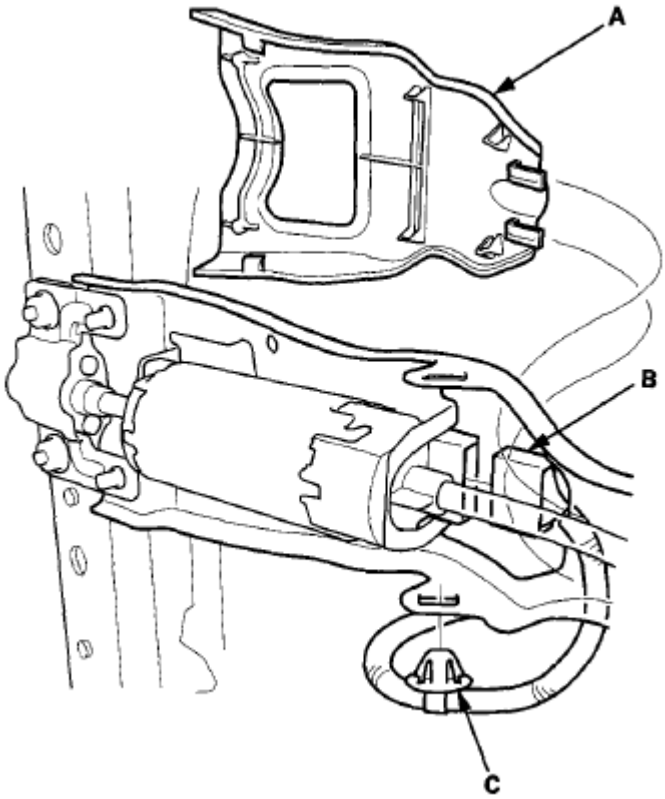


Fig. 38: Identifying Slide Motor Cover And Slide Motor Connector And Harness Clip
Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Disconnect the slide motor connector (B), then detach the harness clip (C).
8. Disconnect the front passenger's weight sensor connector (A), then detach the harness clip (B). Repeat on the opposite side.

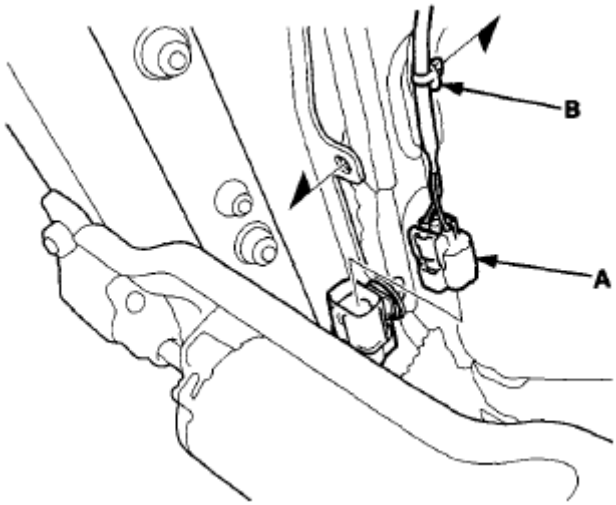


Fig. 39: Identifying Front Passenger's Weight Sensor Connector And Harness Clip
Courtesy of AMERICAN HONDA MOTOR CO., INC.

9. Remove the bolts with a TORX T30 bit, then remove the front seat rail (A).

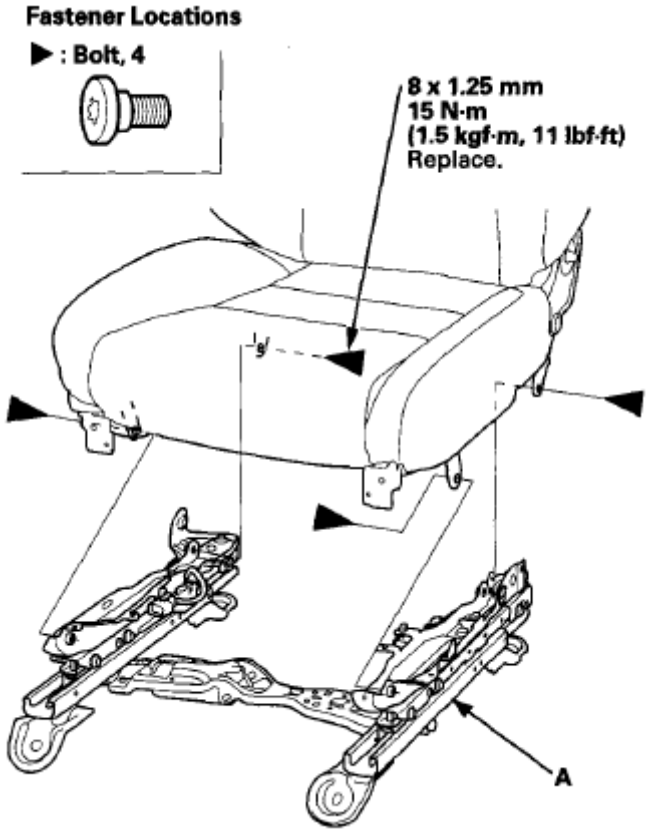


Fig. 40: Identifying Front Seat Rail With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

10. Remove the bolts with a TORX T40 bit, then remove the front passenger's weight sensors (A).

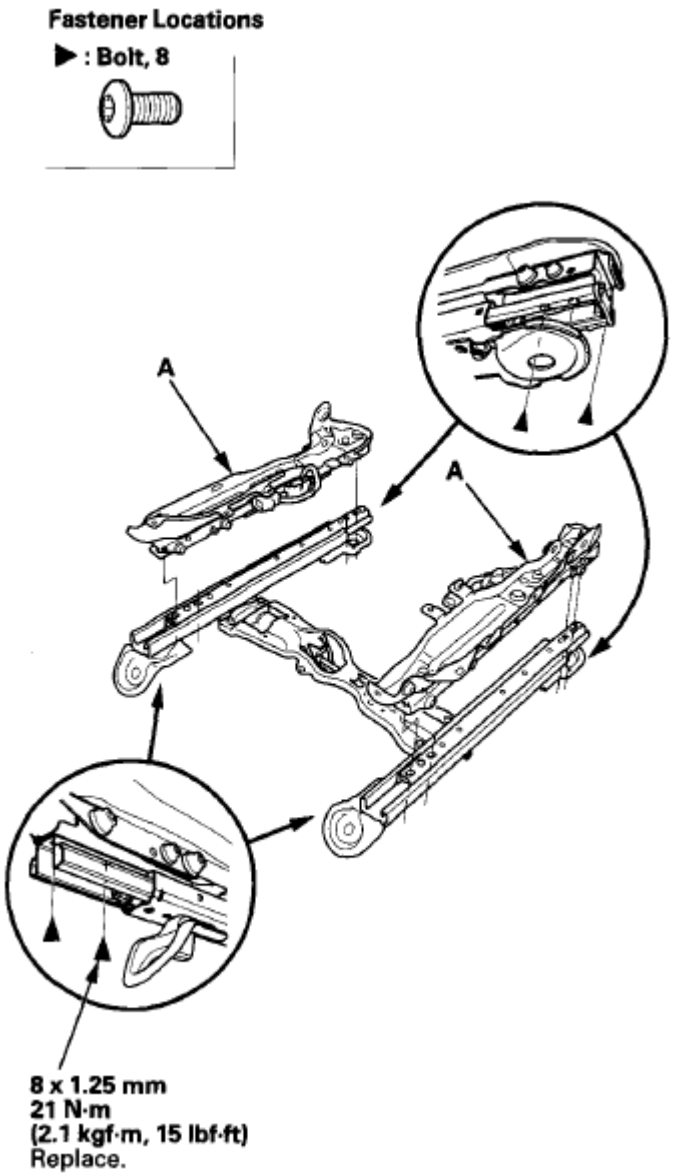


Fig. 41: Identifying Front Passenger's Weight Sensors With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

11. Install the seat frame in the reverse order of removal, and note these items:
    - The front passenger's weight sensors are part of the seat frame and must be replaced as assembly.
    - Clear any DTCs with the HDS (see **HOW TO READ DTCS**).
    - Do the front passenger's weight sensor initialization (see **FRONT PASSENGER'S WEIGHT SENSOR INITIALIZATION**).
    - Confirm proper SRS operation: Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode, and check that the SRS indicator comes on for about 6 seconds and then goes off.
    - If the clips are damaged or stress-whitened, replace them with new ones.

- Push the clips into place securely.
- Be sure to install the harness wires so they are not pinched or interfere with other parts.
- Check the seat slide operation.

FRONT SEAT FRAME REPLACEMENT

Special Tools Required

KTC Trim Tool Set SOJATP2014*

*Available through the Acura Tool and Equipment Program; call 888-424-6857

SRS components are located in this area. Review the SRS component locations (see **COMPONENT LOCATION INDEX**) and the precautions and procedures (see **PRECAUTIONS AND PROCEDURES**) before doing repairs or service.

Do the front passenger's weight sensor initialization (see **FRONT PASSENGER'S WEIGHT SENSOR INITIALIZATION**) after front passenger's seat frame replacement.

NOTE:

- **Put on gloves to protect your hands.**
- **Take care not to tear or damage the seat covers.**
- **Use the appropriate tool from the KTC trim tool set to avoid damage when removing components.**
- **If the side airbag has deployed, replace the seat frame, along with the other parts listed for side airbag deployment (see COMPONENT REPLACEMENT/INSPECTION AFTER DEPLOYMENT).**

1. Remove the front seat (see **FRONT SEAT REMOVAL/INSTALLATION**).
2. Remove these items:
   - Front seat-back cover/pad (see **FRONT SEAT-BACK COVER REPLACEMENT**)
   - Front seat cushion cover/pad (see **FRONT SEAT CUSHION COVER REPLACEMENT**)
   - Seat belt buckle (see **FRONT SEAT BELT BUCKLE**)
   - Side airbag (see **SIDE AIRBAG REPLACEMENT**)
3. Detach the clips (A, B), then remove the upper rail outer cover (C).

Driver's seat

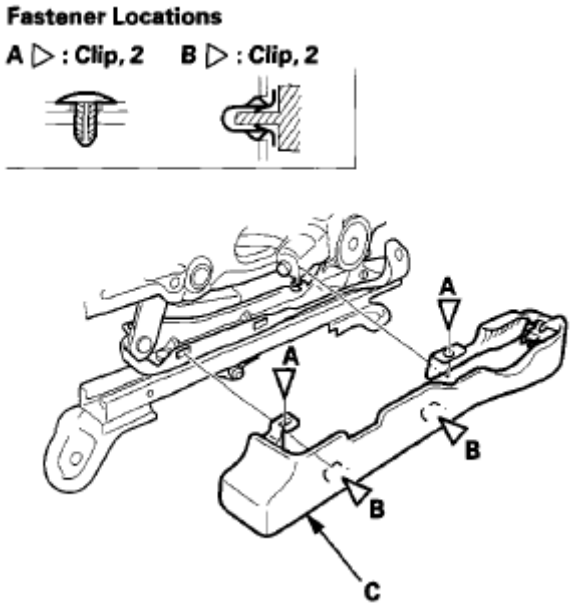


Fig. 42: Identifying Clips And Upper Rail Outer Cover (Driver's Seat)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Passenger's seat

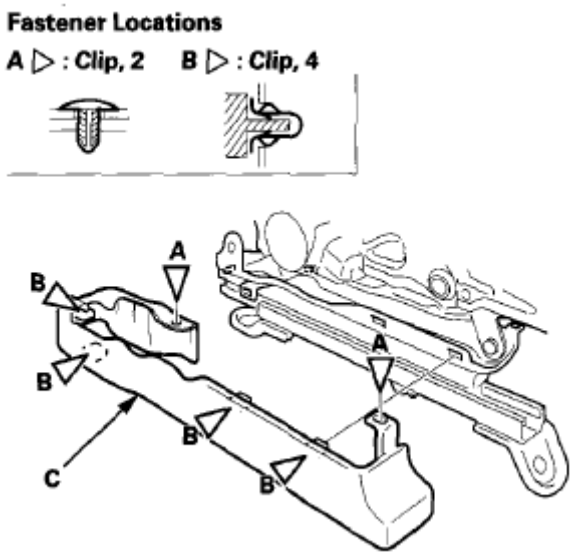


Fig. 43: Identifying Clips And Upper Rail Outer Cover (Passenger's Seat)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Detach the clip (A, B), then remove the upper rail inner cover (C).

Driver's seat

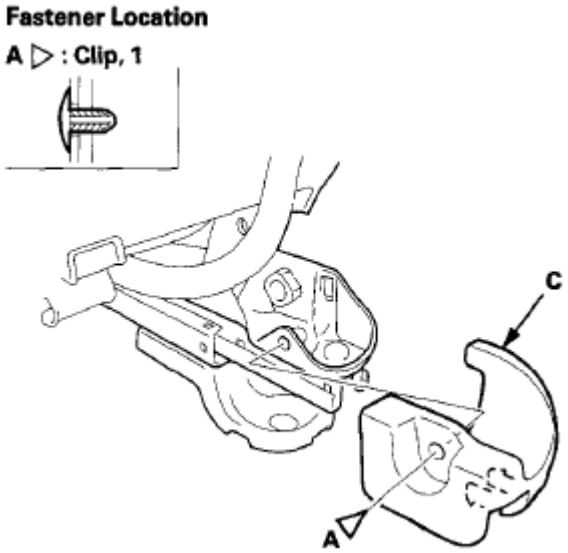


Fig. 44: Identifying Clip And Upper Rail Inner Cover (Driver's Seat)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Passenger's seat

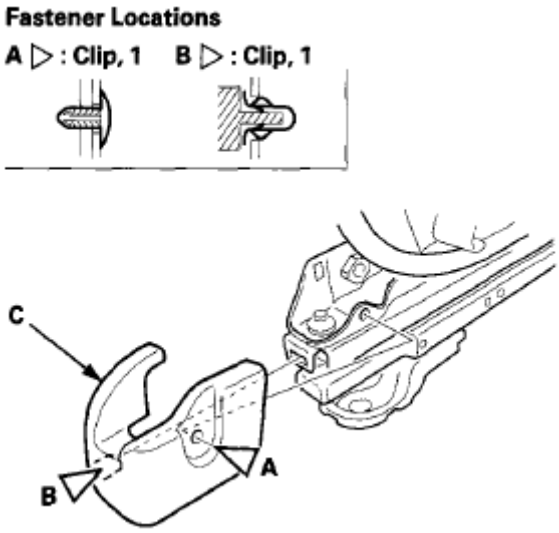


Fig. 45: Identifying Clip And Upper Rail Inner Cover (Passenger's Seat)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Remove the recline inner cover (A) and the center inner cover (B).

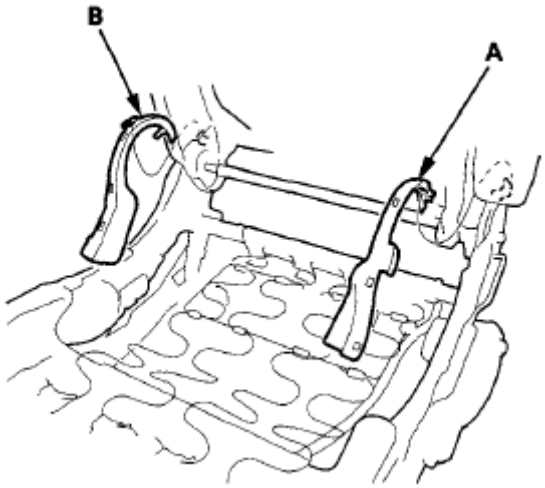


Fig. 46: Identifying Recline Inner Cover And Center Inner Cover
Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Install the seat frame in the reverse order of removal, and note these items:
   - If the clips are damaged or stress-whitened, replace them with new ones.
   - Push the clips into place securely.

FRONT SEAT-BACK COVER REPLACEMENT

Special Tools Required

- DTC Trim Tool Set SOJATP2014*
- Trim Pad Remover, Snap-on A 177A or equivalent, commercially available

* Available through the Acura Tool and Equipment Program; call 888-424-6857

SRS components are located in this area. Review the SRS component locations (see **COMPONENT LOCATION INDEX**) and the precautions and procedures (see **PRECAUTIONS AND PROCEDURES**) before doing repairs or service.

Do the OPDS sensor initialization (see **ODS UNIT INITIALIZATION**) after front passenger's seat-back cover replacement.

NOTE:

- **Put on gloves to protect your hands.**
- **Take care not to tear or damage the seat covers.**
- **On the passenger's seat, do not touch the OPDS sensor in the seat-back cover/pad, and keep it away from oil. Oil can corrode the sensor causing it to fail.**
- **Use the appropriate tool from the KTC trim tool set to avoid damage when removing components.**

1. Remove the front seat (see **FRONT SEAT REMOVAL/INSTALLATION**).
2. From under the seat cushion, release the hooks (A) on the elastic strap from the seat cushion frame springs (B), then pull out the back panel undercover (C).

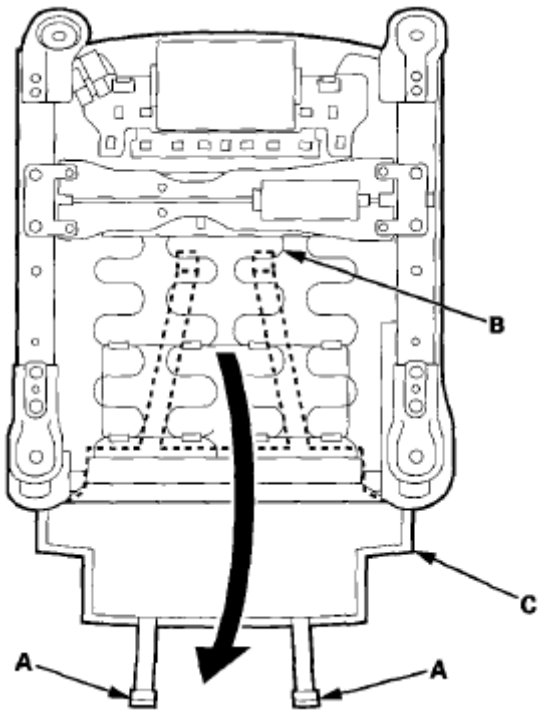


Fig. 47: Identifying Hooks, Seat Cushion Frame Springs And Back Panel Undercover
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Insert a trim pad remover between the bottom of the back panel (A) and the seat frame until it squarely engages one of the clips. Gently pry on the clip until it detaches from the seat frame. Repeat for the other clip. Gently pull back the panel to release the hooks (B), then pull down the panel to release the hooks (C).

NOTE:

- **The clips usually break during removal. Always replace the clips with new ones.**
- **Detach the clips and release the hooks in numbered sequence as shown.**
- **Take care not damage the seat-back panel or the clip mounting pads.**

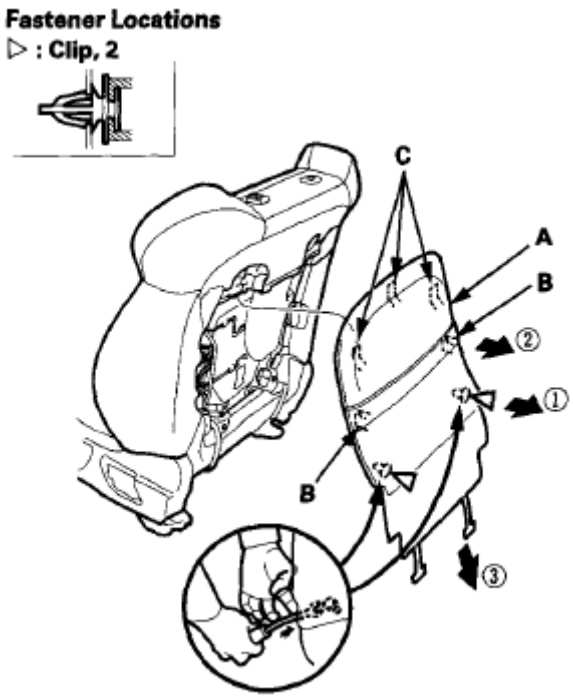


Fig. 48: Identifying Back Panel And Hooks
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Release the Velcro fasteners (A) and the hook strips (B), then loosen the seat-back cover (C).

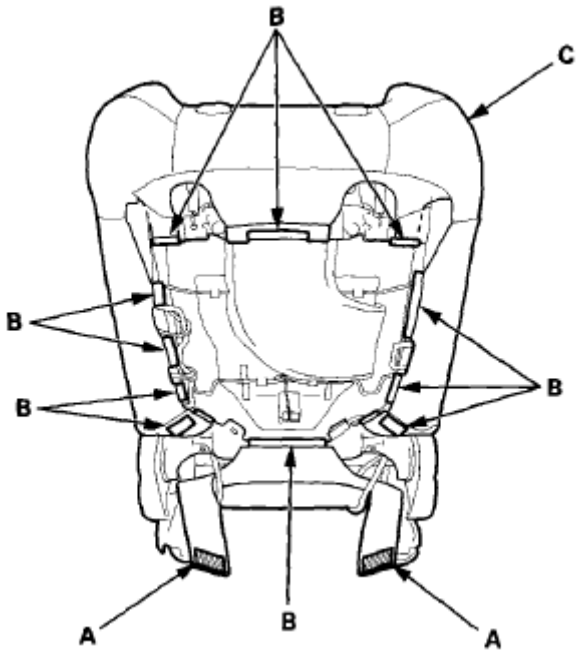


Fig. 49: Identifying Velcro Fasteners, Hook Strips And Seatback Cover
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. With seat ventilation: Remove the nuts, and release the front seat-back blower (A) from the seat frame (B).

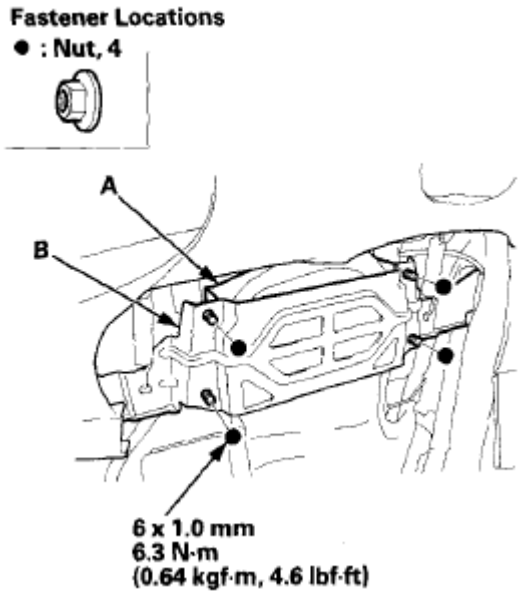


Fig. 50: Identifying Front Seat-Back Blower And Seat Frame With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. With seat ventilation: Release the hooks (A), then remove the front seat-back blower (B).

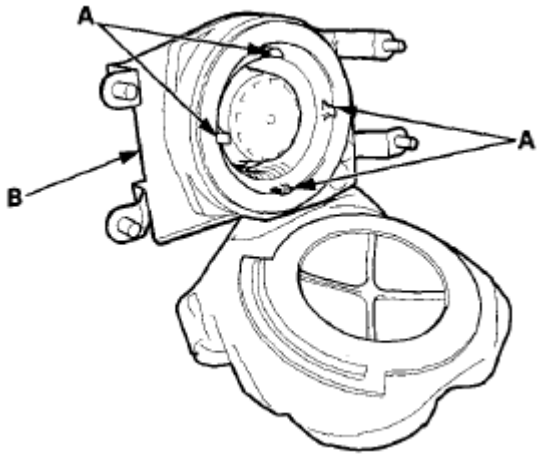


Fig. 51: Identifying Hooks And Front Seat-Back Blower
Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Disconnect the seat-back heater connector (A), and detach the harness clip (B).

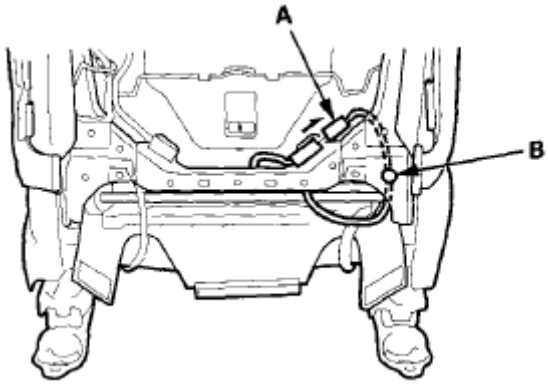


Fig. 52: Identifying Seat-Back Heater Connector And Harness Clip
Courtesy of AMERICAN HONDA MOTOR CO., INC.

8. Release airbag attachment wire A and airbag attachment wire B from the seat-back frame (C).

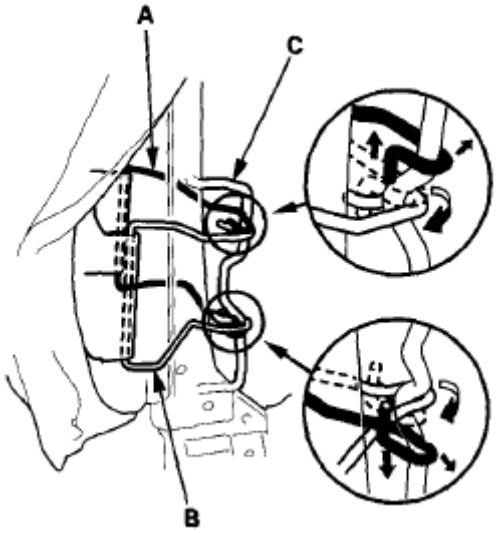


Fig. 53: Identifying Airbag Attachment Wire A And Airbag Attachment Wire B From Seat-Back Frame
Courtesy of AMERICAN HONDA MOTOR CO., INC.

9. Passenger's seat: Remove the ODS unit cover (A).
    1. Turn over the seat-back cover (B) and the pad (C) as needed.
    2. Release the cover from the lower hooks (D).
    3. Pull the cover upward to release it from the upper hook (E).

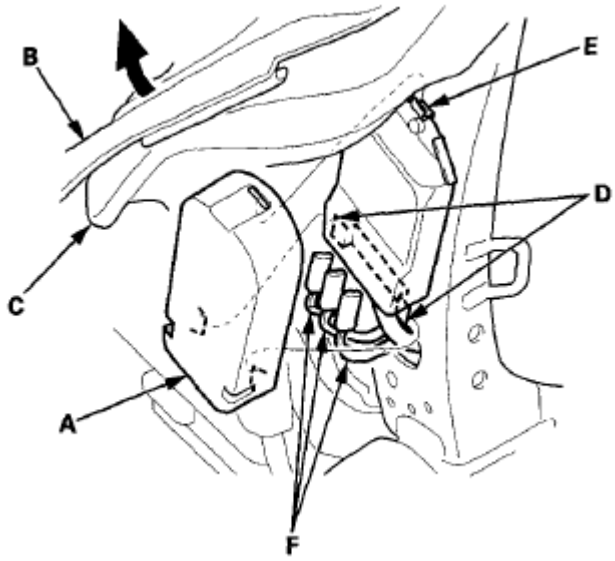


Fig. 54: Pulling Cover Upward To Release It From Upper Hook
Courtesy of AMERICAN HONDA MOTOR CO., INC.

10. Passenger's seat: Disconnect the OPDS sensor connectors (F).
11. Passenger's seat: Detach the harness clips (A) fastening the OPDS sensor harnesses (B), and release the wire tie (C).

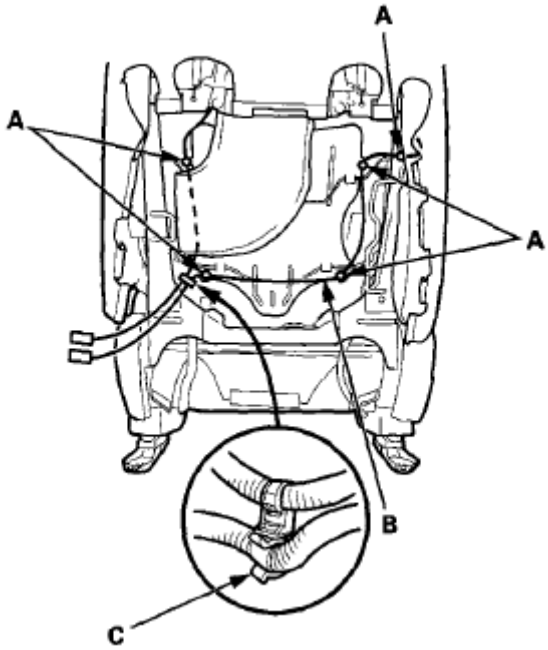


Fig. 55: Identifying Harness Clip, OPDS Sensor Harnesses And Wire Tie
Courtesy of AMERICAN HONDA MOTOR CO., INC.

12. Pinch the tabs on the ends of the head restraint guides (A), and remove them from the seat-back.

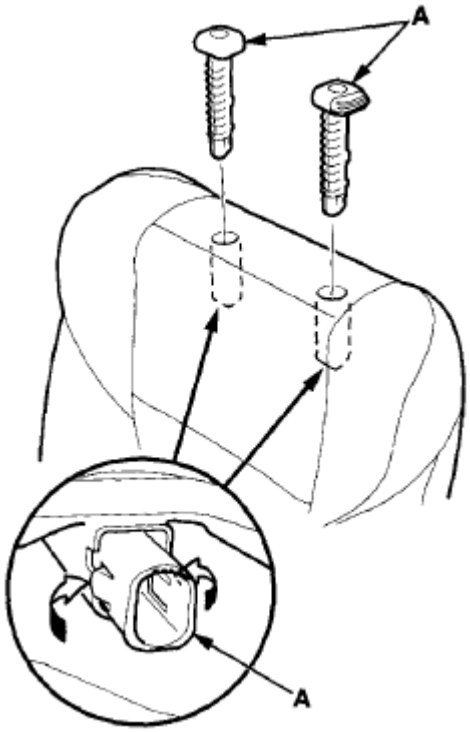


Fig. 56: Identifying Head Restraint Guides
Courtesy of AMERICAN HONDA MOTOR CO., INC.

13. Remove the seat-back cover/pad (A) from the seat-back frame (B).

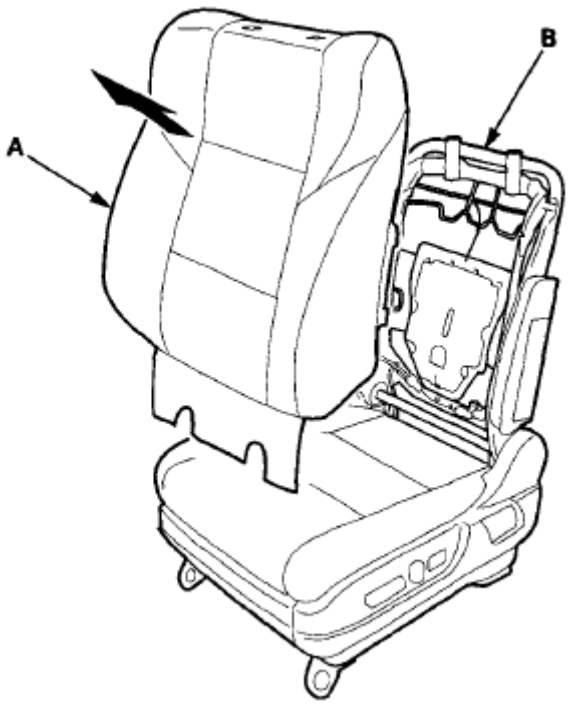


Fig. 57: Removing Seat-Back Cover/Pad From Seat-Back Frame

Courtesy of AMERICAN HONDA MOTOR CO., INC.

14. Pull back the edge of the seat-back cover (A) all the way around, and release the clips (B), and the Velcro fasteners (C), then remove the seat-back cover.

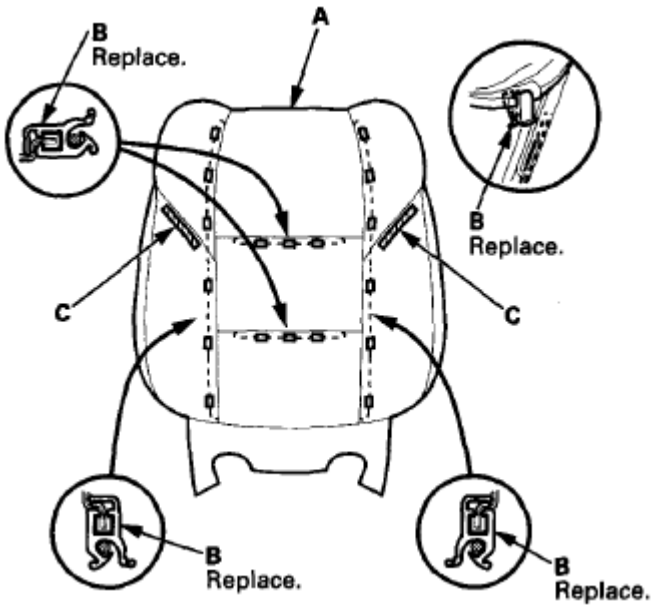


Fig. 58: Identifying Seat-Back Cover, Cloth, Loop, Clips And Velcro Fasteners
Courtesy of AMERICAN HONDA MOTOR CO., INC.

15. Remove airbag attachment wire B from the outside reinforcing cloth (C). Pull airbag attachment wire A out through the loop (D) of the inside reinforcing cloth (E). Remove airbag attachment wires A and B.

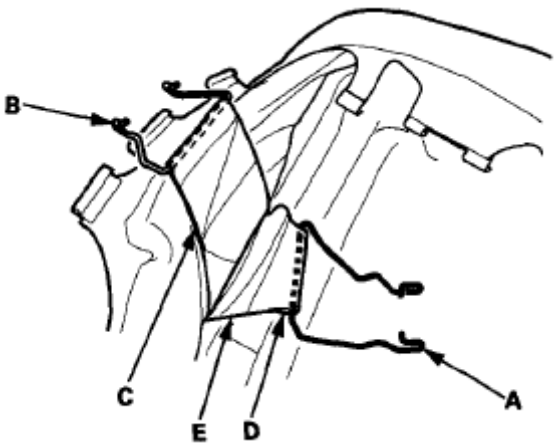


Fig. 59: Identifying Reinforcing Cloth, Loop And Wires
Courtesy of AMERICAN HONDA MOTOR CO., INC.

16. Install the cover in the reverse order of removal, and note these items:
    - To prevent wrinkles when installing the seat-back cover, make sure the material is stretched evenly

over the pad before securing the clips, the hooks, and the hook strips.

- Before installing the seat-back cover, make sure airbag attachment wires A, B are installed in the reinforcing cloths (C) correctly.
- Replace any clips (D) you removed with new ones.
- Reinstall airbag attachment wires A, B securely to the seat-back frame as shown.
- Use only original Acura replacement seat-back covers.
- Make sure the side airbag harness and the seat wire harnesses are routed properly.

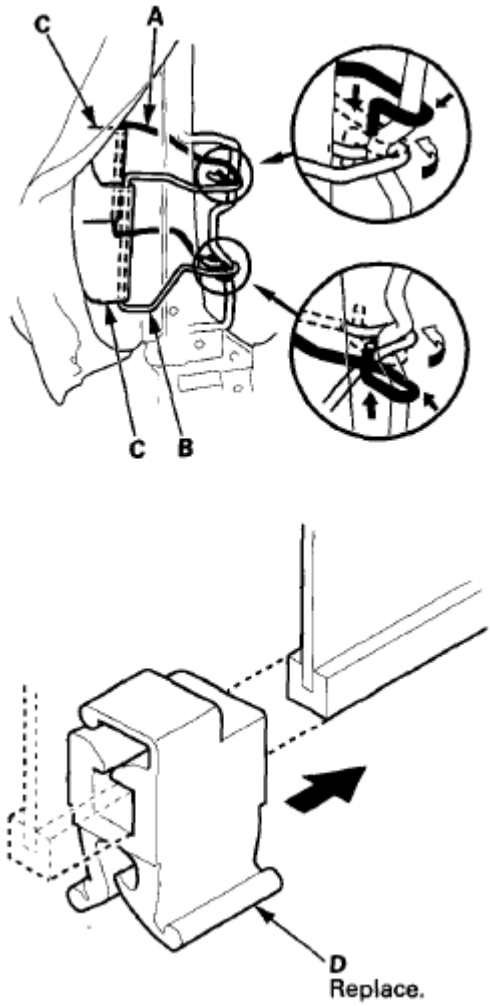


Fig. 60: Replacing Clips Of Front Seat Back Cover
Courtesy of AMERICAN HONDA MOTOR CO., INC.

FRONT SEAT-BACK BLOWER REPLACEMENT

Special Tools Required

- KTC Trim Tool Set SOJATP2014*
- Trim Pad Remover, Snap-on A 177A or equivalent, commercially available

*Available through the Acura Tool and Equipment Program; call 888-424-6857

NOTE:

- **Put on gloves to protect your hands.**
- **Take care not to tear or damage the seat covers.**
- **Use the appropriate tool from the KTC trim tool set to avoid damage when removing components.**

1. Remove the front seat (see **FRONT SEAT REMOVAL/INSTALLATION**).
2. From under the seat cushion, release the hooks (A) on the elastic strap from the seat cushion frame springs (B), then pull out the back panel undercover (C).

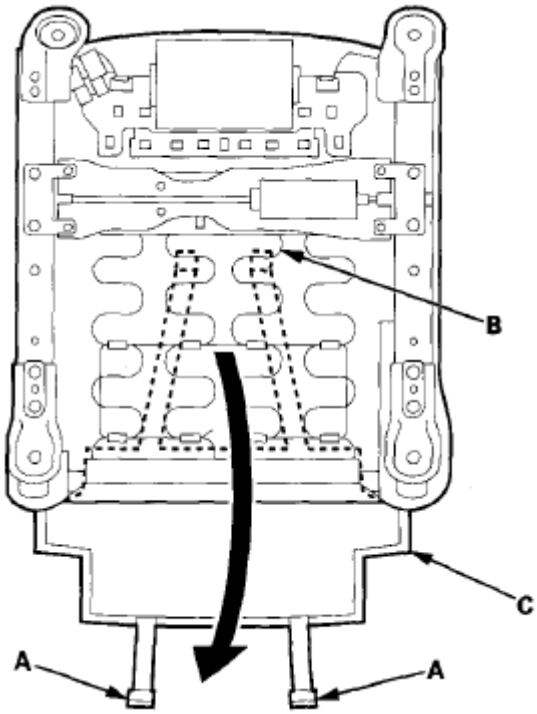


Fig. 61: Pulling Out Back Panel Undercover
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Insert a trim pad remover between the bottom of the back panel (A) and the seat frame until it squarely engages one of the clips. Gently pry on the clip until it detaches from the seat frame. Repeat for the other clip. Gently pull back the panel to release the hooks (B), then pull down the panel to release the hooks (C).

NOTE:

- **The clips usually break during removal. Always replace the clips with new ones.**
- **Detach the clips and release the hooks in numbered sequence as shown.**
- **Take care not damage the seat-back panel or the clip mounting pads.**

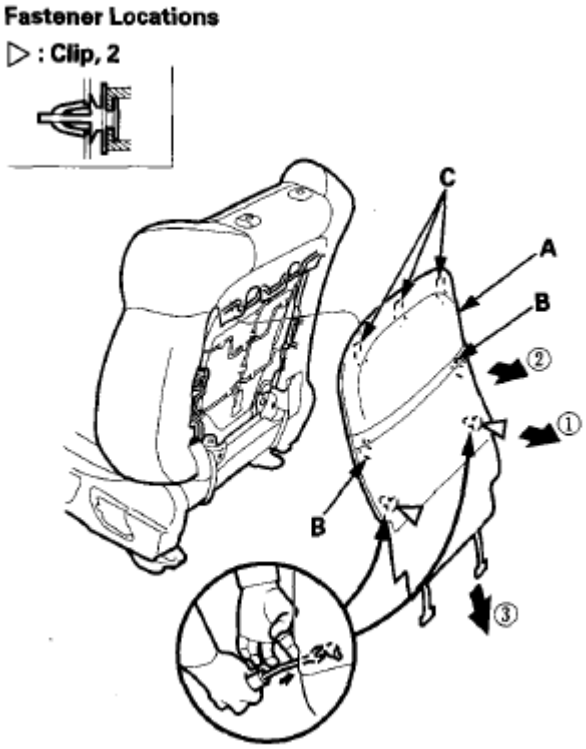


Fig. 62: Identifying Back Panel And Hooks
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. With seat ventilation: Disconnect the front seat-back blower connector (A). Release the ties (B) and detach the harness clip (C).

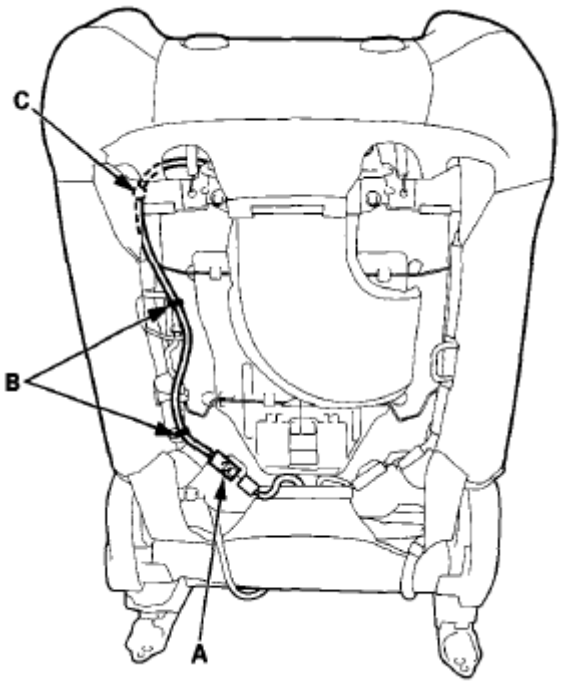


Fig. 63: Identifying Front Seat-Back Blower Connector, Ties And Harness Clip
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Release the hook strips (A), then loosen the seat-back cover (B).

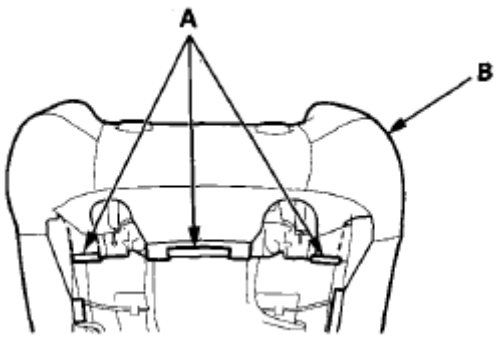


Fig. 64: Identifying Hook Strips And Seat-Back Cover
Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. With seat ventilation: Remove the nuts, and release the front seat-back blower (A) from the seat frame (B).

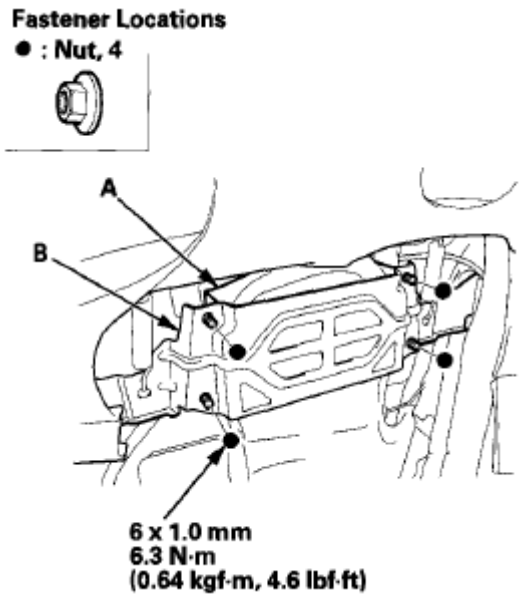


Fig. 65: Identifying Front Seat-Back Blower And Seat Frame With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. With seat ventilation: Release the hooks (A), then remove the front seat-back blower (B).

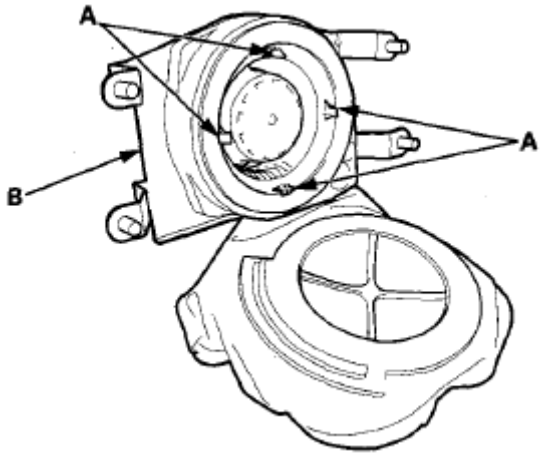


Fig. 66: Identifying Hooks And Front Seat-Back Blower
Courtesy of AMERICAN HONDA MOTOR CO., INC.

8. Install the blower in the reverse order of removal.

FRONT SEAT RECLINE COVER REMOVAL/INSTALLATION

Special Tools Required

KTC Trim Tool Set SOJATP2014*

*Available through the Acura Tool and Equipment Program; call 888-424-6857

SRS components are located in this area. Review the SRS component locations (see **COMPONENT LOCATION INDEX**) and the precautions and procedures (see **PRECAUTIONS AND PROCEDURES**) before doing repairs or service.

NOTE:

- **Put on gloves to protect your hands.**
- **Take care not to tear or damage the seat covers.**
- **Use the appropriate tool from the KTC trim tool set to avoid damage when removing components.**

1. Remove the front seat (see **FRONT SEAT REMOVAL/INSTALLATION**).
2. Remove the screw, and release the hook (A), the tabs (B), and the pin (C), then remove the front cover (D). The driver's seat is shown; the passenger's seat is similar.

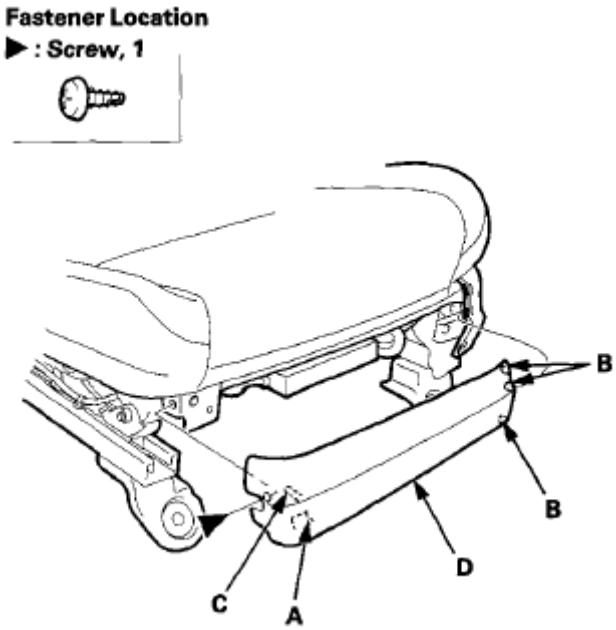


Fig. 67: Identifying Hook, Tabs, Pin And Front Cover
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. From under the seat cushion, release the seat-back hooks from the seat cushion frame springs (see step 2 on).
4. Remove the recline cover (A).
    1. Remove the screws, and detach the clip.
    2. Release the tabs (B).
    3. Pull up the cover, then release the hooks (C).
    4. Disconnect the power seat adjustment switch connector (D) and the lumbar support switch connector (E).
    5. Remove the wire harness (F) from the hooks (G).

Driver's seat

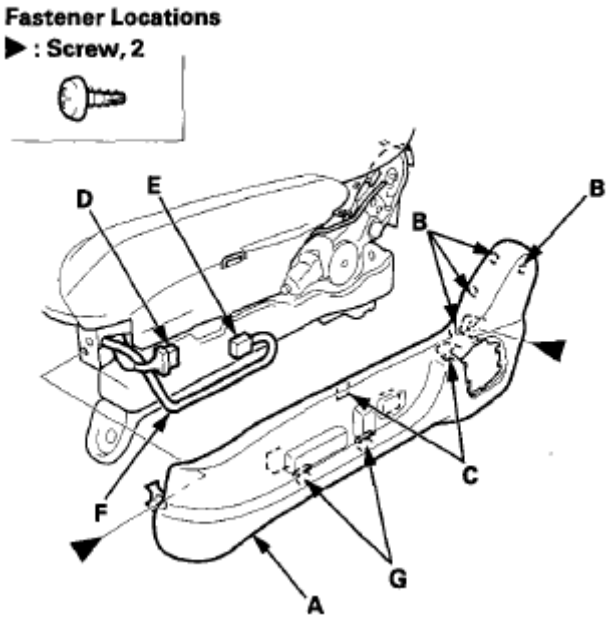
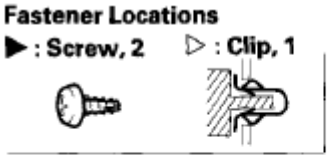


Fig. 68: Identifying Recline Cover, Tabs, Hooks, Switch Connector, Wire Harness And Hooks (Driver'S Seat)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Passenger's seat



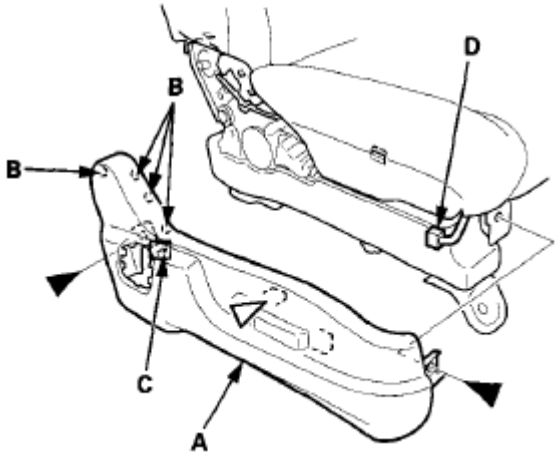


Fig. 69: Identifying Recline Cover, Tabs, Hooks, Switch Connector, Wire Harness And Hooks (Passenger'S Seat)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Remove the center cover (A). The driver's seat is shown; the passenger's seat is similar.
    1. Remove the screw.
    2. Pull up the cover to release the tab (B).

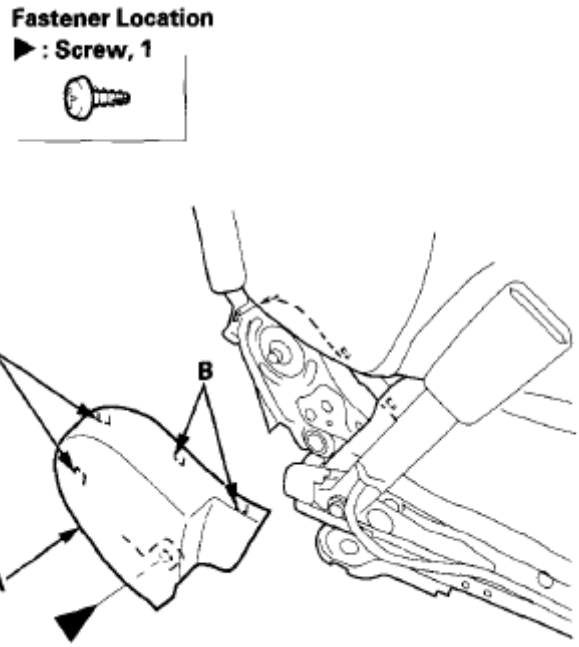


Fig. 70: Identifying Center Cover And Tab
Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Install the cover in the reverse order of removal, and push the clips, the hooks, and the tabs into place securely.

FRONT SEAT CUSHION COVER REPLACEMENT

Special Tools Required

KTC Trim Tool Set SOJATP2014*

*Available through the Acura Tool and Equipment Program; call 888-424-6857

SRS components are located in this area. Review the SRS component locations (see **COMPONENT LOCATION INDEX**) and the precautions and procedures (see **PRECAUTIONS AND PROCEDURES**) before doing repairs or service.

NOTE:

- **Put on gloves to protect your hands.**
- **Take care not to tear or damage the seat covers.**
- **Use the appropriate tool from the KTC trim tool set to avoid damage when removing components.**

- **The driver's seat is shown; the passenger's seat is similar.**

1. Remove the front seat (see **FRONT SEAT REMOVAL/INSTALLATION**).
2. Remove the front seat recline cover (see **FRONT SEAT RECLINE COVER REMOVAL/INSTALLATION**).
3. From under the seat cushion, release the hooks (A) on the elastic straps from the seat cushion frame springs (B), then pull out the back panel undercover (C).

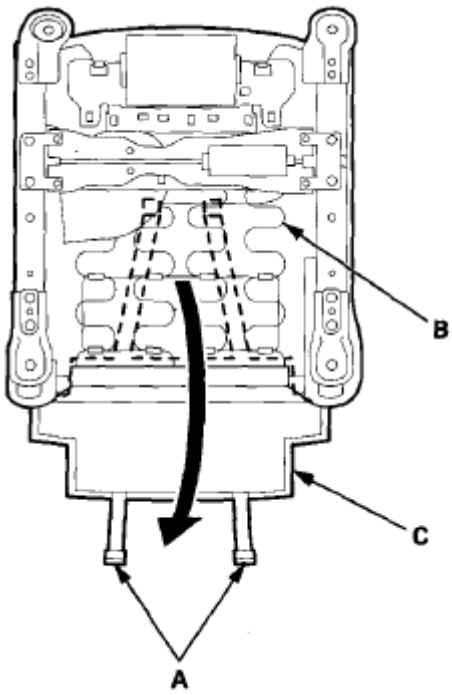


Fig. 71: Identifying Hooks, Seat Cushion Frame Springs And Back Panel Under Cover
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. From under the seat cushion, disconnect the seat cushion heater connector (A). Detach the connector clip (B) and the harness clip (C), and release the harness holder (D) from the seat cushion frame springs (E).

Driver's seat (Without seat ventilation)

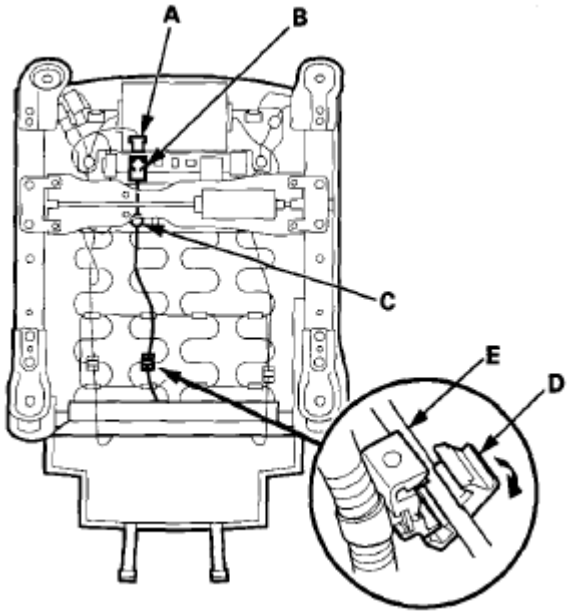


Fig. 72: Identifying Seat Cushion Heater Connector, Connector Clip And Harness Clip (Without Seat Ventilation)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Driver's seat (With seat ventilation)

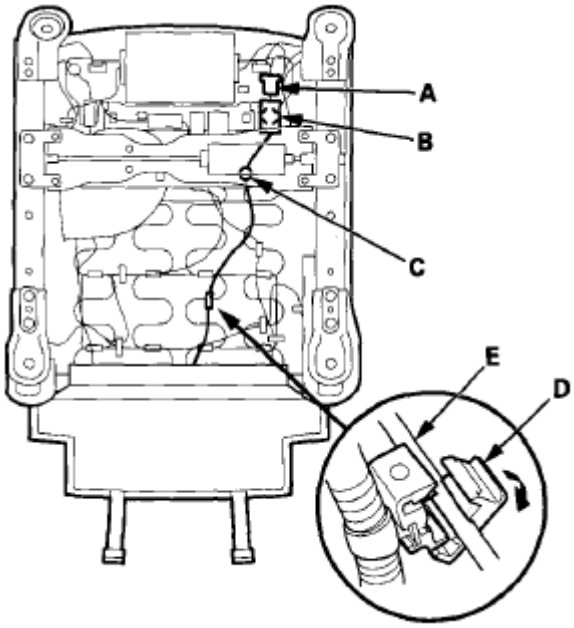


Fig. 73: Identifying Seat Cushion Heater Connector, Connector Clip And Harness Clip (With Seat Ventilation)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Passenger's seat

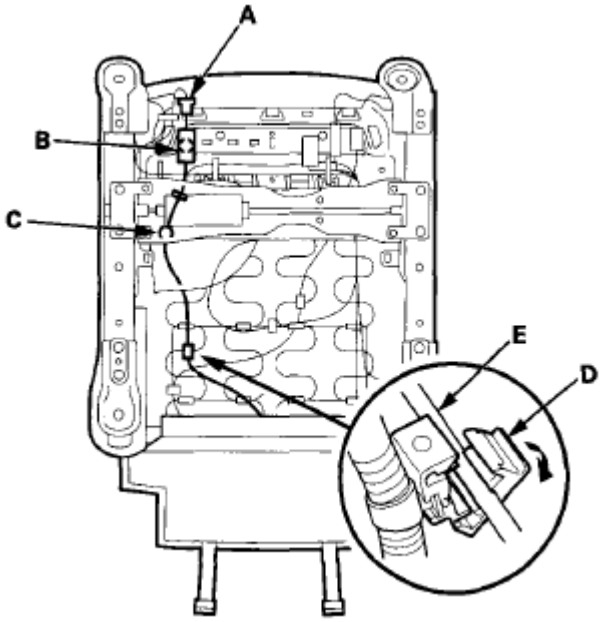


Fig. 74: Identifying Seat Cushion Heater Connector, Connector Clip And Harness Clip (Passenger's Seat)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Driver's seat: Disconnect the connectors (A), and remove the bolts, then remove the power seat control unit (B).

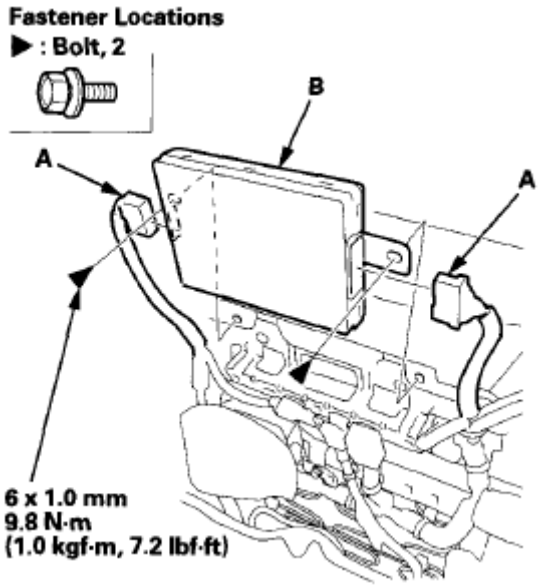


Fig. 75: Identifying Connectors And Power Seat Control Unit With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Release the hook strips (A) from under the seat cushion.

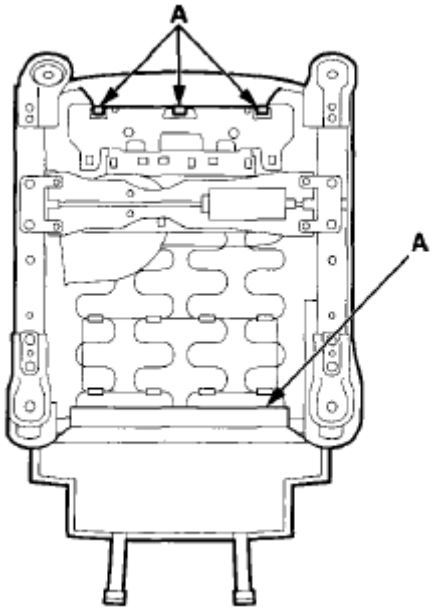


Fig. 76: Identifying Hook Strips
Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. With seat ventilation: Release the tie (A). Release the hooks (B), then separate the front seat cushion blower bag (C) from the front seat cushion blower (D).

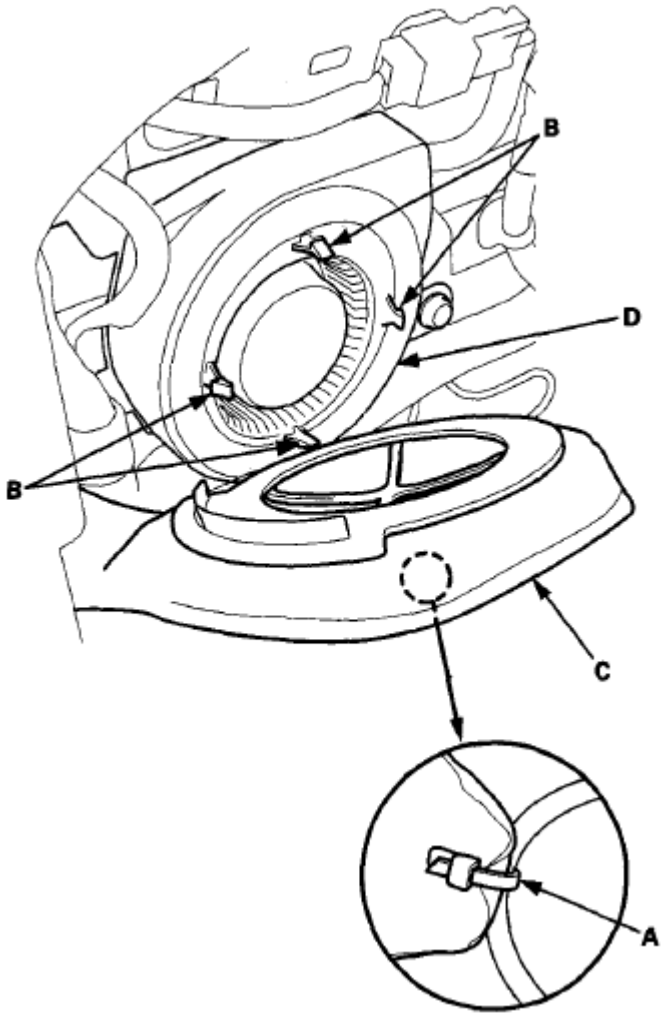


Fig. 77: Identifying Tie, Hooks, Front Seat Cushion Blower Bag And Front Seat Cushion Blower
Courtesy of AMERICAN HONDA MOTOR CO., INC.

8. Release the hook strips (A) from both sides of the seat cushion frame.

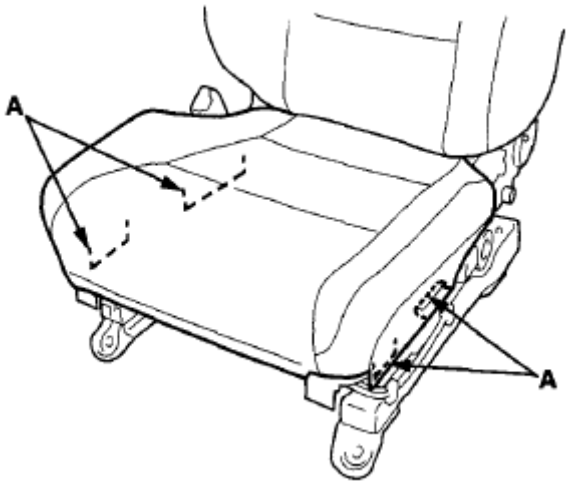


Fig. 78: Identifying Hook Strips Location
Courtesy of AMERICAN HONDA MOTOR CO., INC.

9. Remove the seat cushion cover/pad (A) from the seat frame (B).

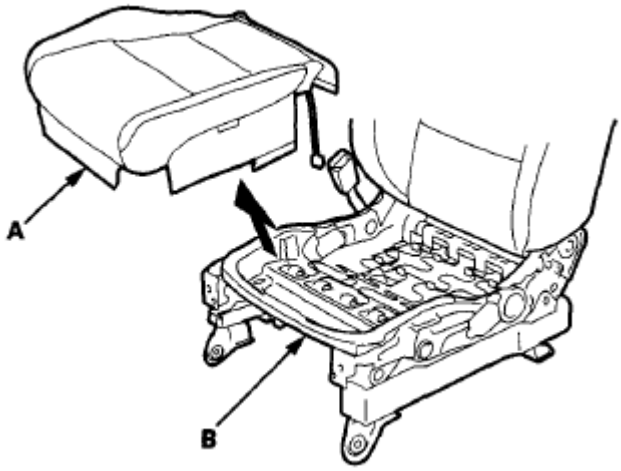


Fig. 79: Identifying Seat Cushion Cover/Pad And Seat Frame
Courtesy of AMERICAN HONDA MOTOR CO., INC.

10. Release the hook strips (A) fastening the seat cushion cover (B) on the seat cushion pad.

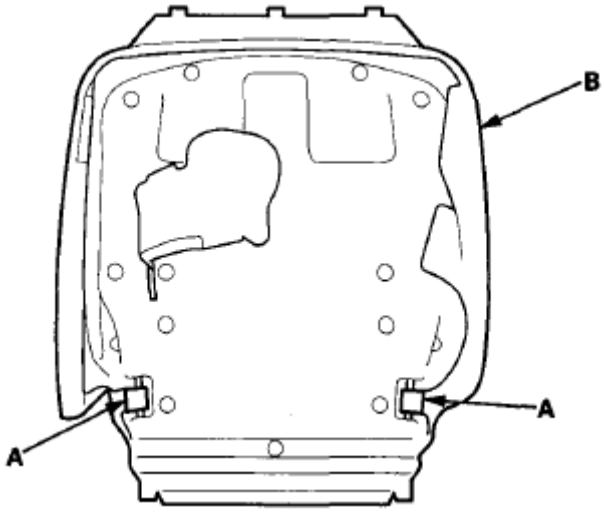


Fig. 80: Identifying Hook Strips And Seat Cushion Cover
Courtesy of AMERICAN HONDA MOTOR CO., INC.

11. Pull back the edge of the seat cushion cover (A) all the way around, and release the clips (B), then remove the seat cushion cover.

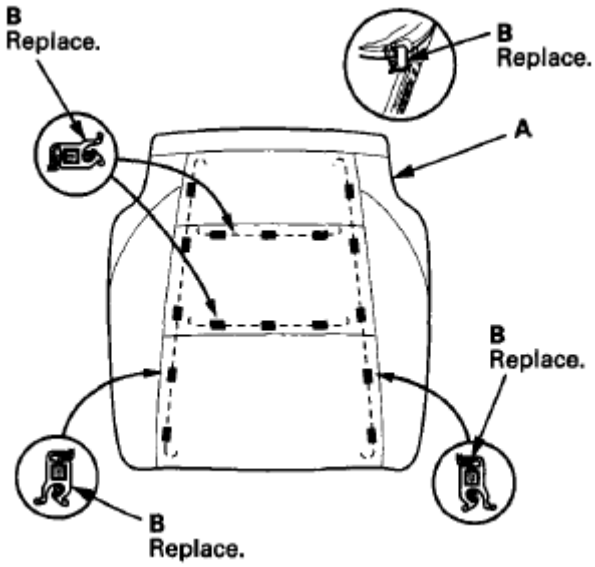


Fig. 81: Identifying Seat Cushion Cover And Clips
Courtesy of AMERICAN HONDA MOTOR CO., INC.

12. Install the cushion cover in the reverse order of removal, and note these items:
    - To prevent wrinkles when installing a seat cushion cover, make sure the material is stretched evenly over the pad before securing the clips, the hooks, and the hook strips.
    - Replace any clips (A) you removed with new ones.
    - Push the clips, the hooks, and the hook strips into place securely.

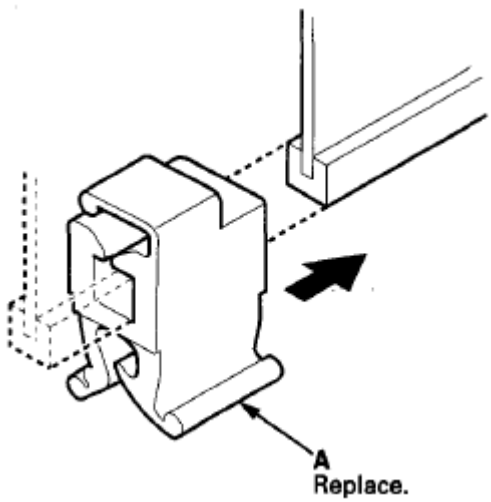


Fig. 82: Pushing Clips, Hooks, And Hook Strips Into Place Securely
Courtesy of AMERICAN HONDA MOTOR CO., INC.

FRONT SEAT CUSHION BLOWER REPLACEMENT

NOTE:

- **Put on gloves to protect your hands.**
- **Take care not to tear or damage the seat covers.**

1. Remove the front seat (see **FRONT SEAT REMOVAL/INSTALLATION**).
2. Release the hooks (A), then separate the front seat cushion blower bag (B) from the front seat cushion blower (C).

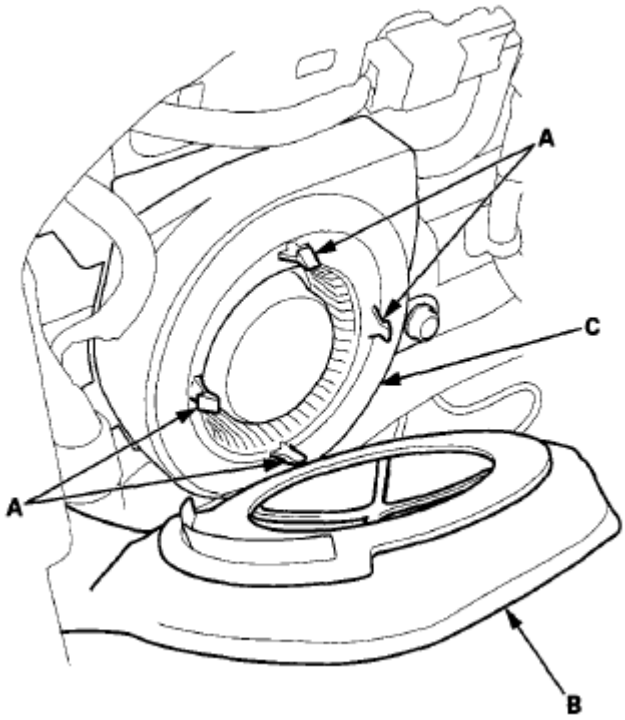


Fig. 83: Identifying Hooks, Seat Cushion Blower Bag And Front Seat Cushion Blower
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Detach and disconnect the front seat cushion blower connector (A).

Driver's seat

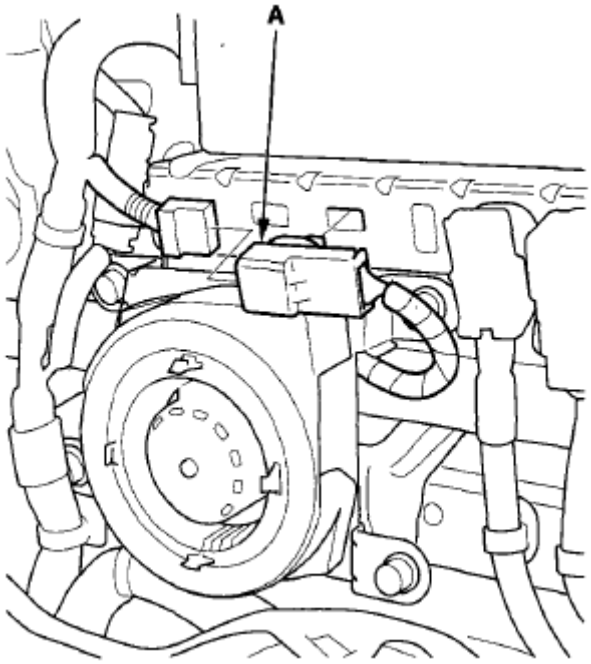


Fig. 84: Identifying Front Seat Cushion Blower Connector (Driver'S Seat)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Passenger's seat

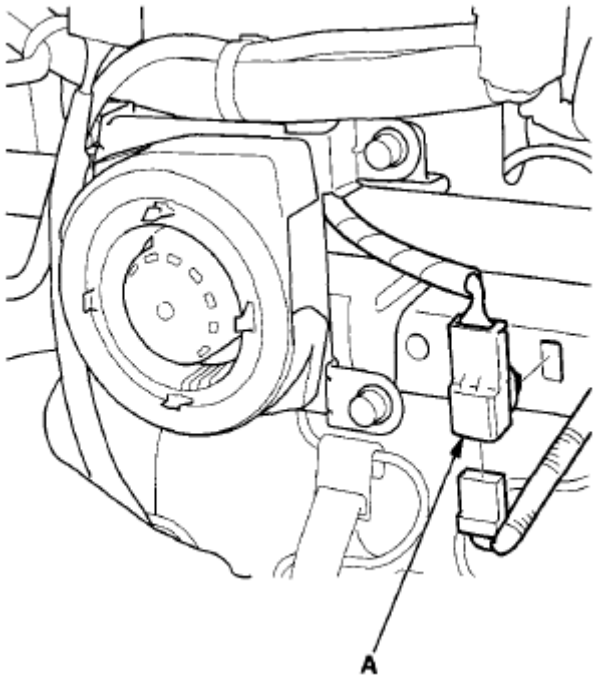
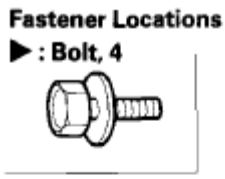


Fig. 85: Identifying Front Seat Cushion Blower Connector (Passenger's Seat)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Remove the bolts, then remove the front seat cushion blower (A).



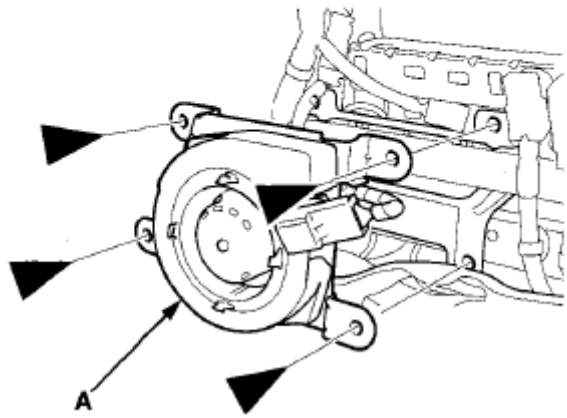


Fig. 86: Removing Front Seat Cushion Blower
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Install the blower in the reverse order of removal.

REAR SEAT REMOVAL/INSTALLATION

NOTE:

- **Have an assistant help you when removing and installing the rear seat-back.**
- **Take care not to scratch the body or tear the seat covers.**

1. While pushing down on the rear seat cushion (A), pull the seat hook handles (B) to release the hooks (C).

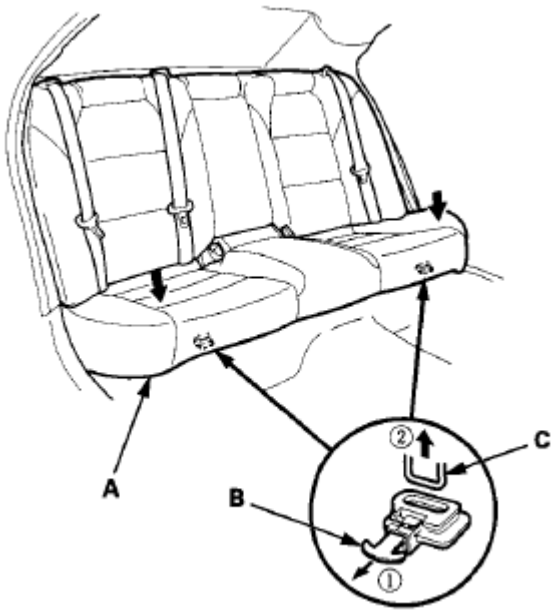


Fig. 87: Identifying Rear Seat Cushion, Seat Hook Handles And Hooks
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Remove the seat cushion (A), and release the center seat belt buckles (B) from the slits (C).

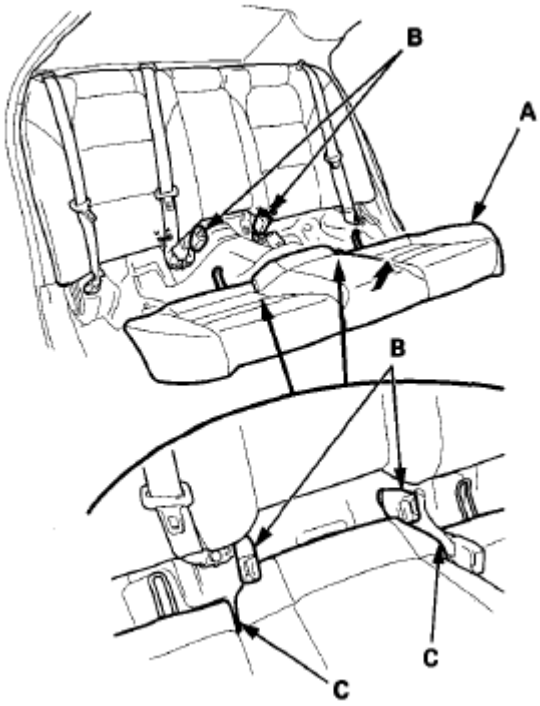


Fig. 88: Identifying Seat Cushion, Center Seat Belt Buckles And Slits
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Release the seat belts (A) from their guides (B).

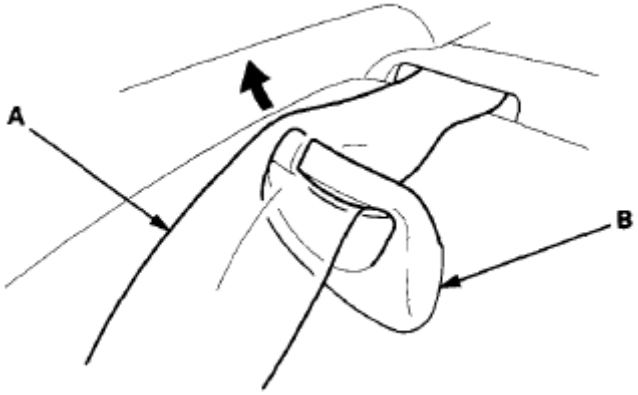


Fig. 89: Releasing Seat Belts From Their Guides
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Remove the bolts from the base of the seat-back (A).

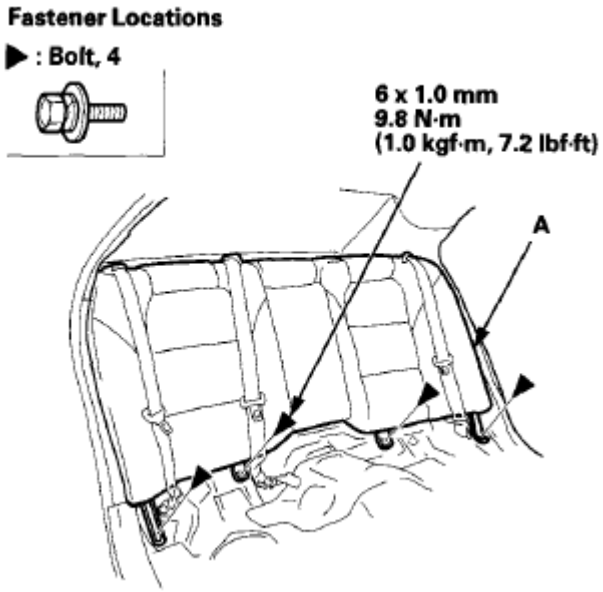


Fig. 90: Removing Bolts From Base Of Seat-Back With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Remove the rear seat-back (A).
    1. Lift up the bottom of the seat-back.
    2. Push on the seat-back while lifting it up to release the wire loops (B) from the hooks (C) on the body.

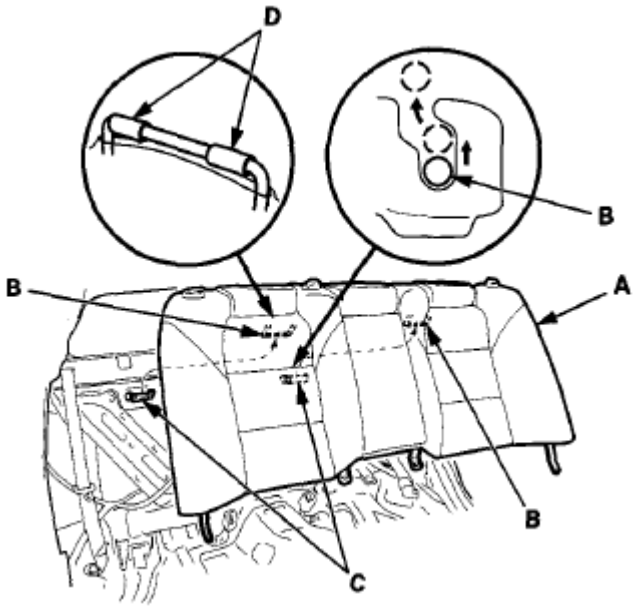


Fig. 91: Identifying Rear Seat Back, Wire Loops And Hooks
Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Install the seat in the reverse order of removal, and note these items:

- Replace any damaged felt tape (D) on the wire loops.
- Guide the belts over the front of the seat-back as you install it.
- Make sure there are no twists or kinks in the seat belts before attaching the rear seat-back and the rear seat cushion.
- Slip the seat belt buckles through the slits in the seat cushion as you install it.

REAR SEAT ARMREST REPLACEMENT

NOTE: Take care not to tear or damage the seat covers.

1. Remove the rear seat-back (see **REAR SEAT REMOVAL/INSTALLATION**).
2. Remove the screws, and release the hooks (A), then remove the upper cover (B) and the spring (C).

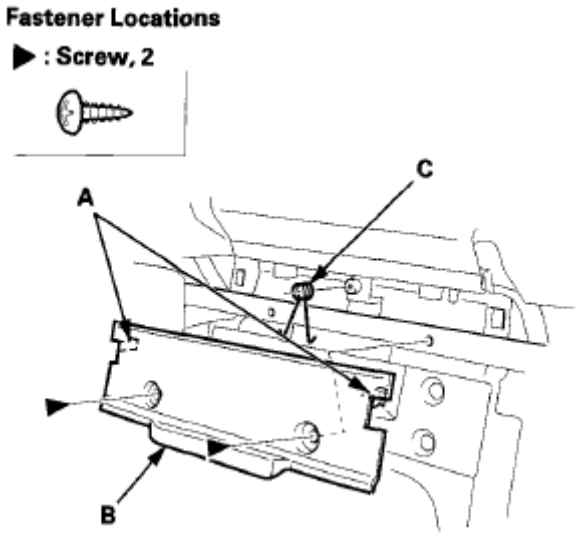


Fig. 92: Identifying Hooks, Upper Cover And Spring
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Pinch the tabs on the ends of the head restraint guides (A), and remove them from the seat-back.

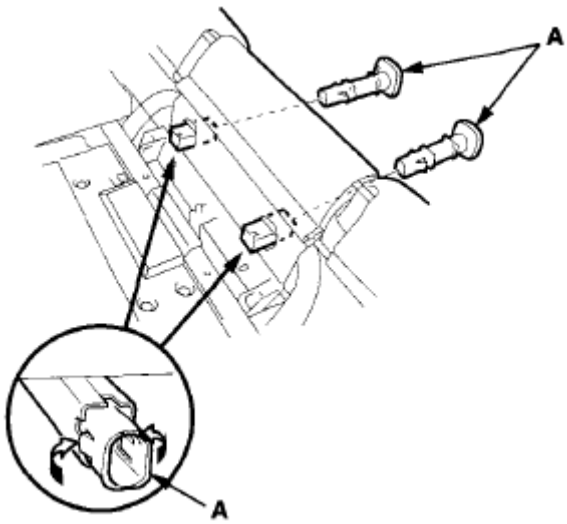


Fig. 93: Identifying Head Restraint Guides
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Release the Velcro fastener (A), then pull back the upper flap (B). Remove the screws and detach the clips, then remove the trunk pass-through lid (C).

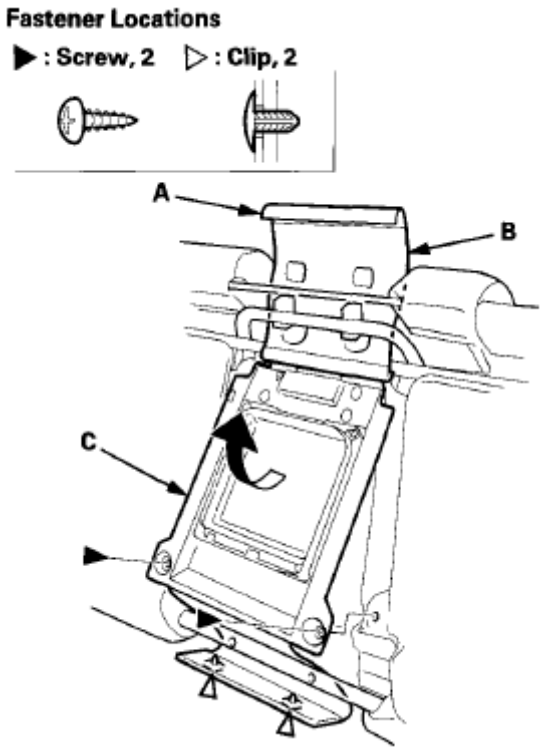


Fig. 94: Removing Trunk Pass-Through Lid
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. If necessary, detach the clips and remove the screws, then remove the rear seat-back upper flap (A) and

the armrest cover (B) from the trunk pass-through lid (C).

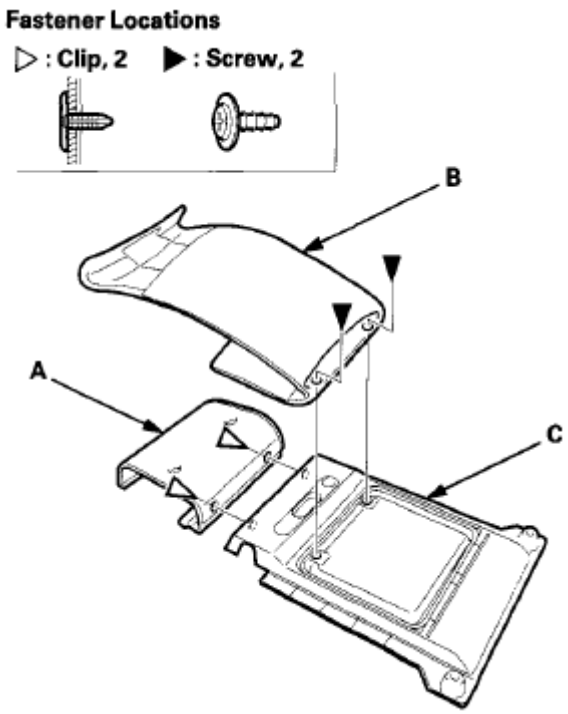


Fig. 95: Identifying Rear Seat-Back Upper Flap, Armrest Cover And Lid
Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Remove the bolts, then remove the rear seat armrest (A) from the seat-back frame.

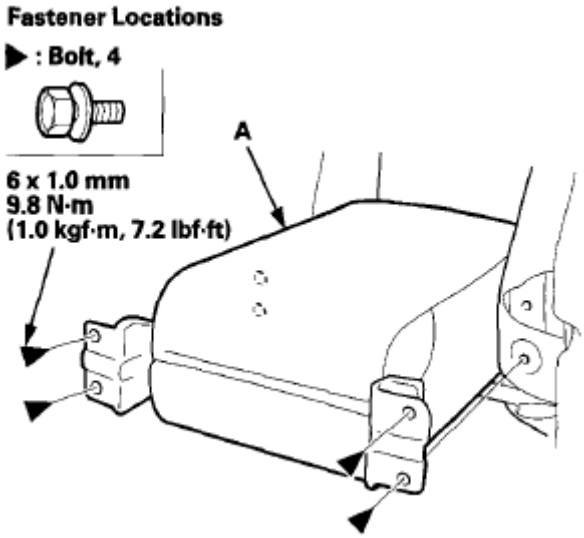


Fig. 96: Identifying Rear Seat Armrest With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Install the armrest in the reverse order of removal.

TRUNK PASS-THROUGH LID LOCK CYLINDER REPLACEMENT

NOTE: Take care not to tear or damage the seat covers.

1. Remove the rear seat-back (see **REAR SEAT REMOVAL/INSTALLATION**).
2. Remove the screws, and release the hooks (A), then remove the upper cover (B).

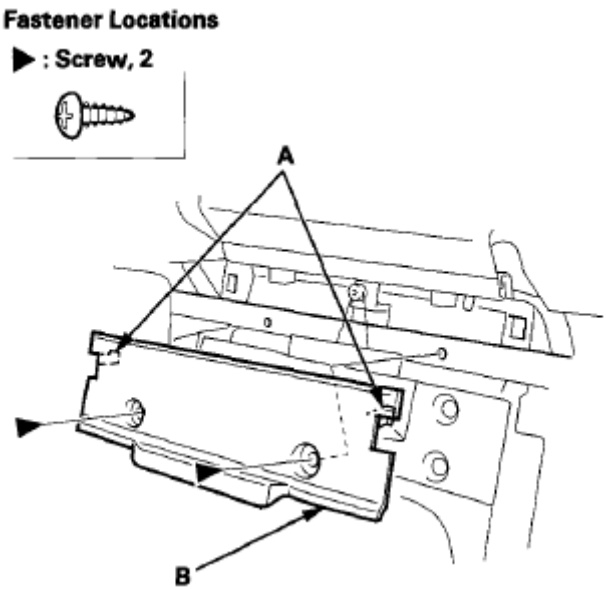


Fig. 97: Identifying Hooks And Upper Cover
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Remove the screws, and release the upper hook (A), then pull out the lock cover (6) to release the lower hook (C).

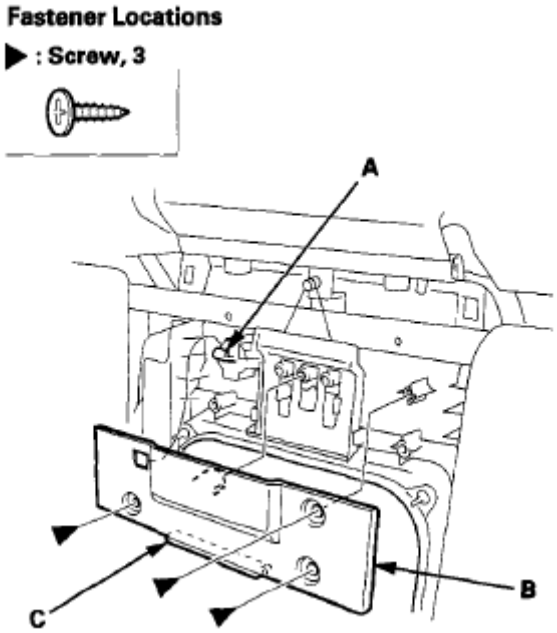


Fig. 98: Identifying Upper Hook, Lock Cover And Lower Hook
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Remove the retainer (A) with a hook-shaped tool, then remove the trunk pass-through lid lock cylinder (B) from the lid (C).

NOTE: Wear eye protection when doing this step.

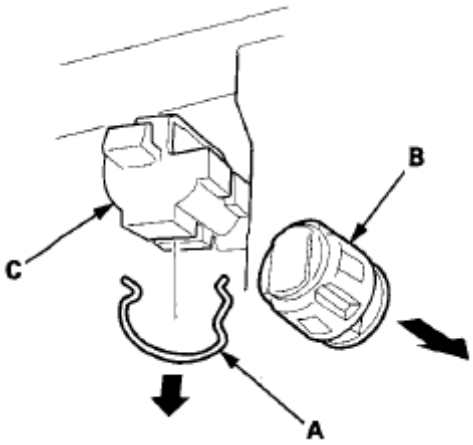


Fig. 99: Identifying Retainer, Lock Cylinder And Lid
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Install the lock cylinder in the reverse order of removal, and make sure the trunk pass-through lid opens properly and locks securely.

REAR SEAT ARMREST BEVERAGE HOLDER REPLACEMENT

Special Tools Required

KTC Trim Tool Set SOJATP2014*

*Available through the Acura Tool and Equipment Program; call 888-424-6857

NOTE:

- **Take care not to tear or damage the seat covers.**
- **Use the appropriate tool from the KTC trim tool set to avoid damage when removing components.**

1. Detach the clips, and release the hooks (A) from the armrest trim (B), then remove the beverage holder (C).

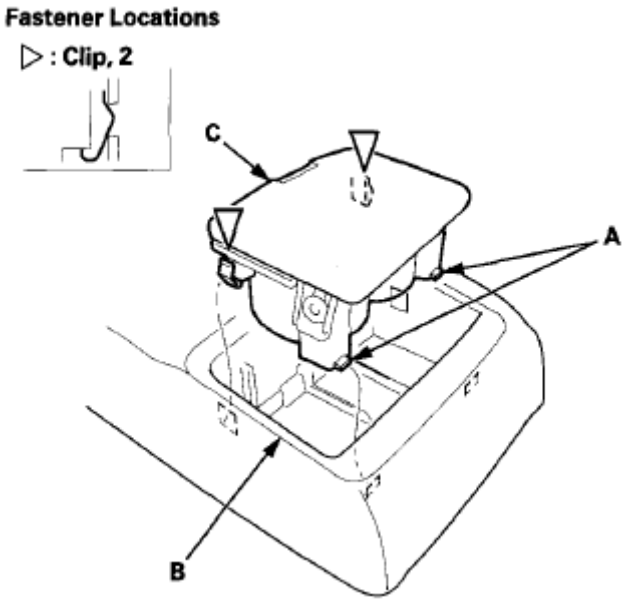


Fig. 100: Identifying Hook, Armrest Trim And Beverage Holder
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. If necessary, remove the screw, then remove the armrest trim (A) from the rear seat armrest (B).

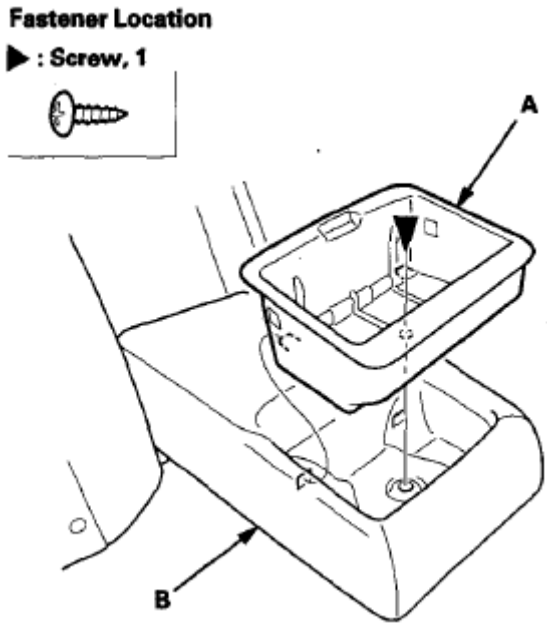


Fig. 101: Identifying Armrest Trim And Rear Seat Armrest
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Install the beverage holder in the reverse order of removal, and push the clips and the hooks into place securely.

REAR SEAT HEAD RESTRAINT TILT BUTTON REMOVAL/INSTALLATION

Special Tools Required

KTC Trim Tool Set SOJATP2014*

* Available through the Acura Tool and Equipment Program; call 888-424-6857

NOTE:

- **Take care not to tear or damage the seat covers.**
- **Use the appropriate tool from the KTC trim tool set to avoid damage when removing components.**

1. Remove the rear seat head restraint to its upright position.
2. Remove the rear seat head restraint tilt button (A) from the rear seat head restraint (B).
    1. Position the appropriate trim tool (C) behind the tilt button as shown.
    2. Pull out on the tilt button to release it from the head restraint.

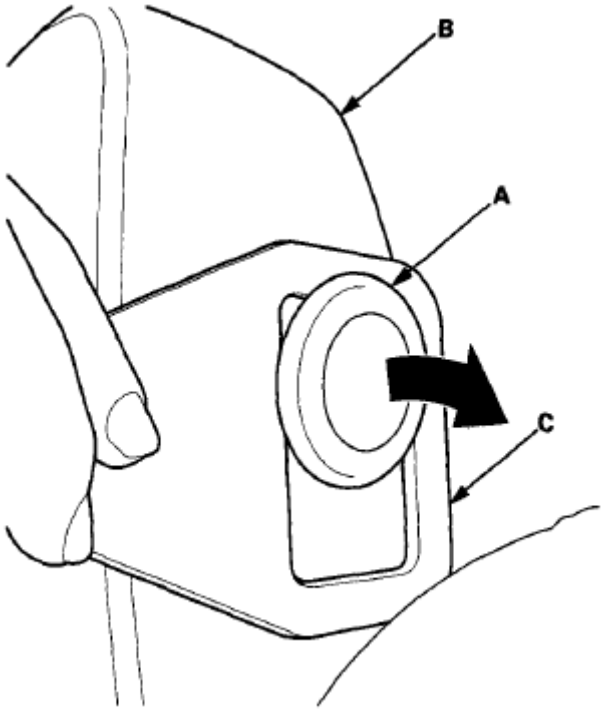


Fig. 102: Position Appropriate Trim Tool Behind Tilt Button
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Located the slots (A) in the rear seat head restraint tilt button hole (B), then align the slots with the tabs (C) on the new rear seat head restraint tilt button (D).

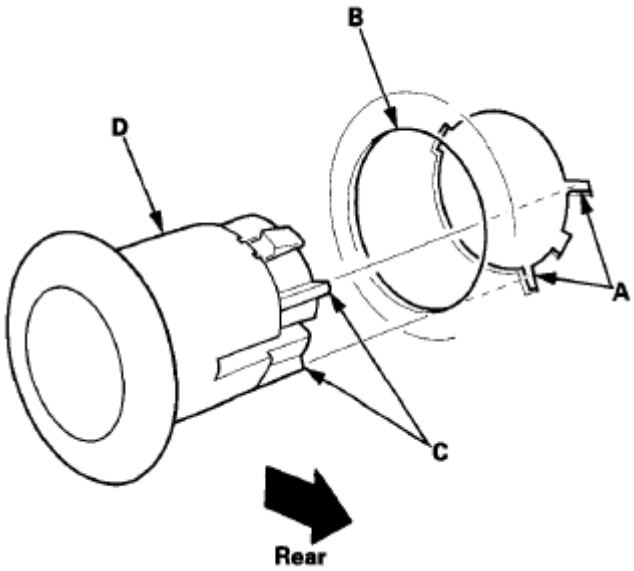


Fig. 103: Aligning Slots With Tabs On New Rear Seat Head Restraint Tilt Button
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. With the slots and tabs aligned, push the new rear seat head restraint tilt button (A) in until you hear a

click.

NOTE: Make sure the tilt button is installed securely.

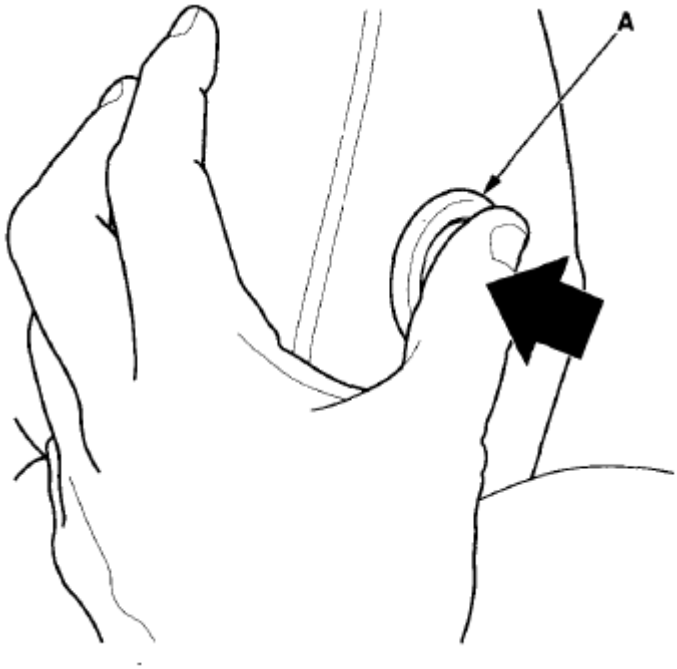


Fig. 104: Pushing New Rear Seat Head Restraint Tilt Button
Courtesy of AMERICAN HONDA MOTOR CO., INC.

REAR SEAT-BACK COVER REPLACEMENT

NOTE:

- **Put on gloves to protect your hands.**
- **Take care not to tear or damage the seat covers.**

1. Remove the seat-back (see **REAR SEAT REMOVAL/INSTALLATION**).
2. Release all the upholstery rings (A), then remove the insulators (B).

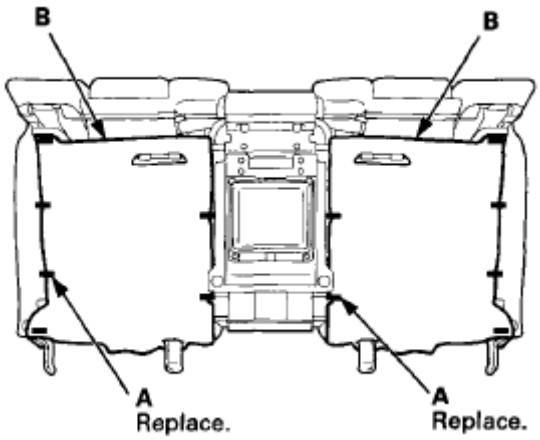


Fig. 105: Identifying Upholstery Rings And Insulators
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Remove the armrest (see **REAR SEAT ARMREST REPLACEMENT**).
4. Release the hook strips (A) and the Velcro fasteners (B).

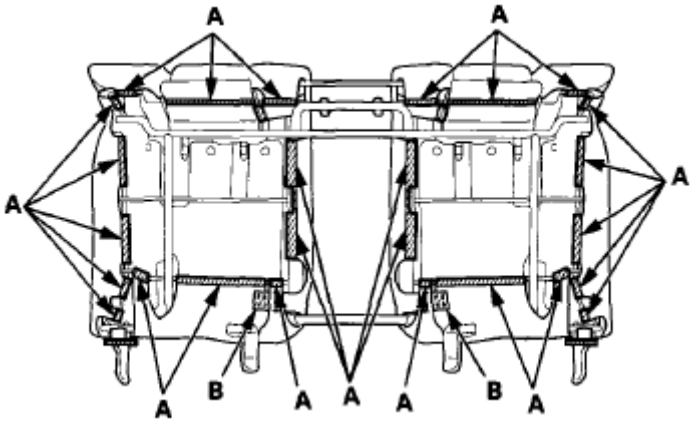


Fig. 106: Identifying Hook Strips And Velcro Fasteners
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Remove the screw, then remove the center belt guide (A).

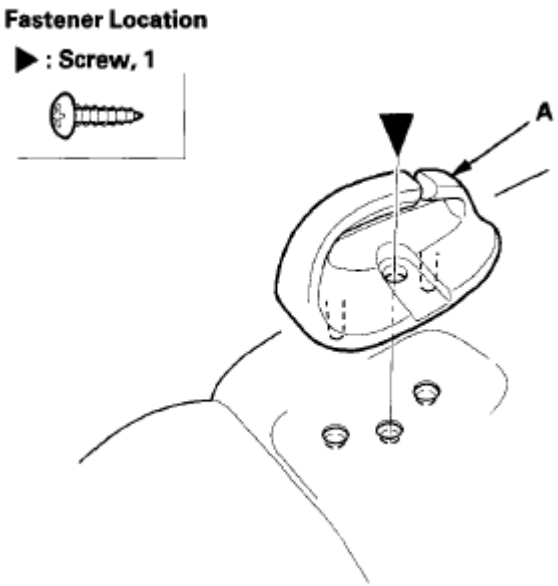


Fig. 107: Identifying Center Belt Guide
Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Pinch the tabs on the ends of the head restraint guides (A), and remove them from the seat-back.

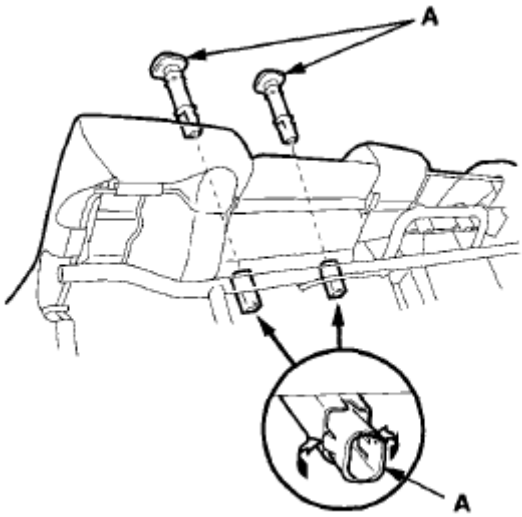


Fig. 108: Identifying Head Restraint Guides
Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Separate the seat-back cover/pads (A) and the seat-back frame (B).

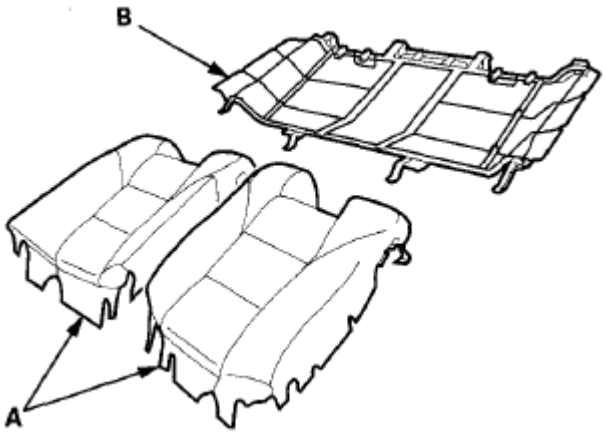


Fig. 109: Identifying Seat-Back Cover/Pads And Seat-Back Frame
Courtesy of AMERICAN HONDA MOTOR CO., INC.

8. Pull back the edge of the seat-back cover all the way around, and release the upholstery rings (A) and Velcro fastener (B), then remove the seat-back cover (C). The left seat-back cover is shown; the right seat-back cover is similar.

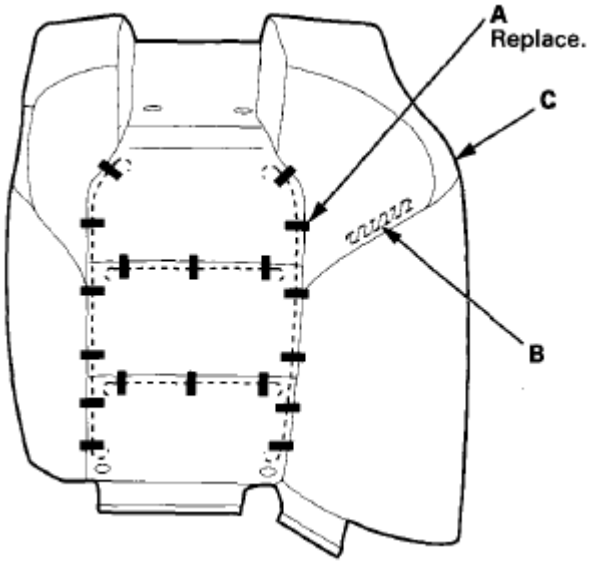


Fig. 110: Identifying Upholstery Rings, Velcro Fastener And Seat-Back Cover
Courtesy of AMERICAN HONDA MOTOR CO., INC.

9. Install the cover in the reverse order of removal, and note these items:
   - To prevent wrinkles when installing a seat-back cover, make sure the material is stretched evenly over the pad before securing the upholstery rings and the hook strips.
   - Replace all of the upholstery rings (A) fastening the seat-back cover (B) to the pad wires (C) with new ones using commercially available upholstery ring pliers (D).

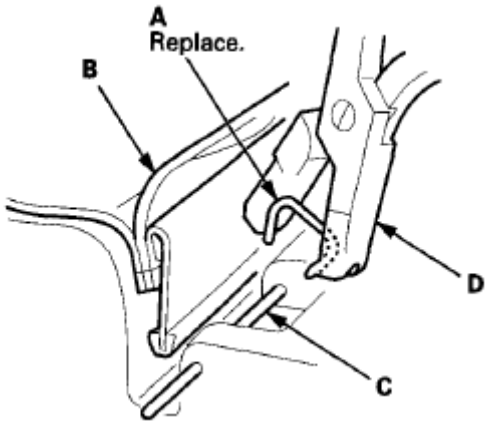


Fig. 111: Identifying Upholstery Rings, Seat-Back Cover, Pad Wires And Upholstery Ring Pliers
Courtesy of AMERICAN HONDA MOTOR CO., INC.

REAR SEAT CUSHION COVER REPLACEMENT

NOTE:

- **Put on gloves to protect your hands.**
- **Take care not to tear or damage the seat covers.**

1. Remove the seat cushion (see **REAR SEAT REMOVAL/INSTALLATION**).
2. From the back of the seat cushion (A), release all the upholstery rings (B), then remove the insulators (C).

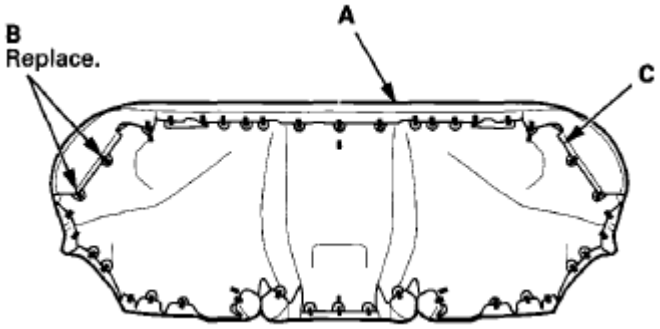


Fig. 112: Identifying Seat Cushion, Upholstery Rings And Insulators
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Pull back the edge of the seat cushion cover (A) all the way around, and release the upholstery rings (B). Release the hooks (C) of the lateral wires (D) from the longitudinal wires (E) on the pad, then remove the seat cushion cover.

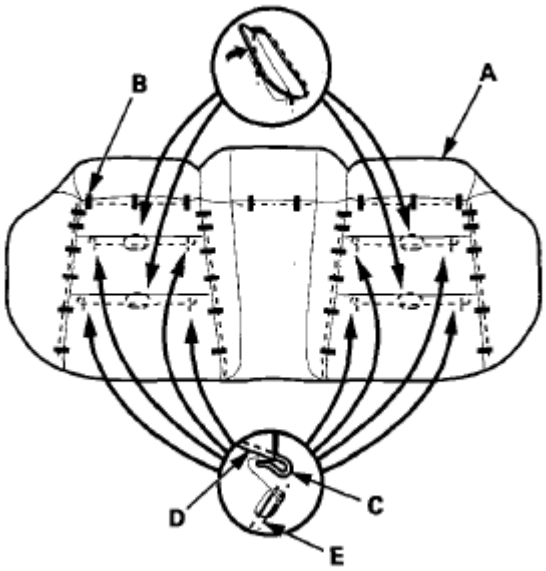


Fig. 113: Identifying Seat Cushion Cover, Upholstery Rings, Hooks, Lateral Wires And Longitudinal Wires
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Install the cover in the reverse order of removal, and note these items:
   - To prevent wrinkles when installing a seat cushion cover, make sure the material is stretched evenly over the pad before securing the upholstery rings and hook strips.
   - Replace all of the upholstery rings (A) fastening the seat cushion cover (B) to the pad wires (C) with new ones using commercially available upholstery ring pliers (D).

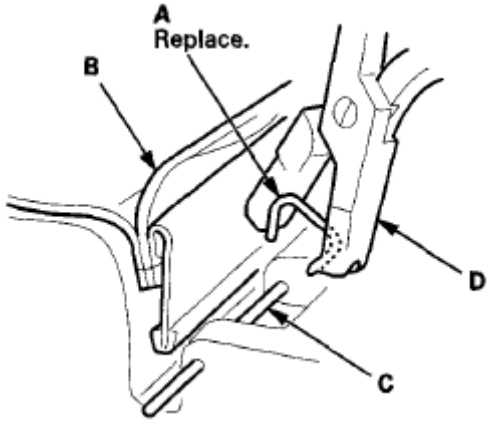


Fig. 114: Identifying Upholstery Rings, Seat Cushion Cover, Pad Wires And Upholstery Ring Pliers
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2012 ACCESSORIES & EQUIPMENT

Ventilated Seats - TL

COMPONENT LOCATION INDEX

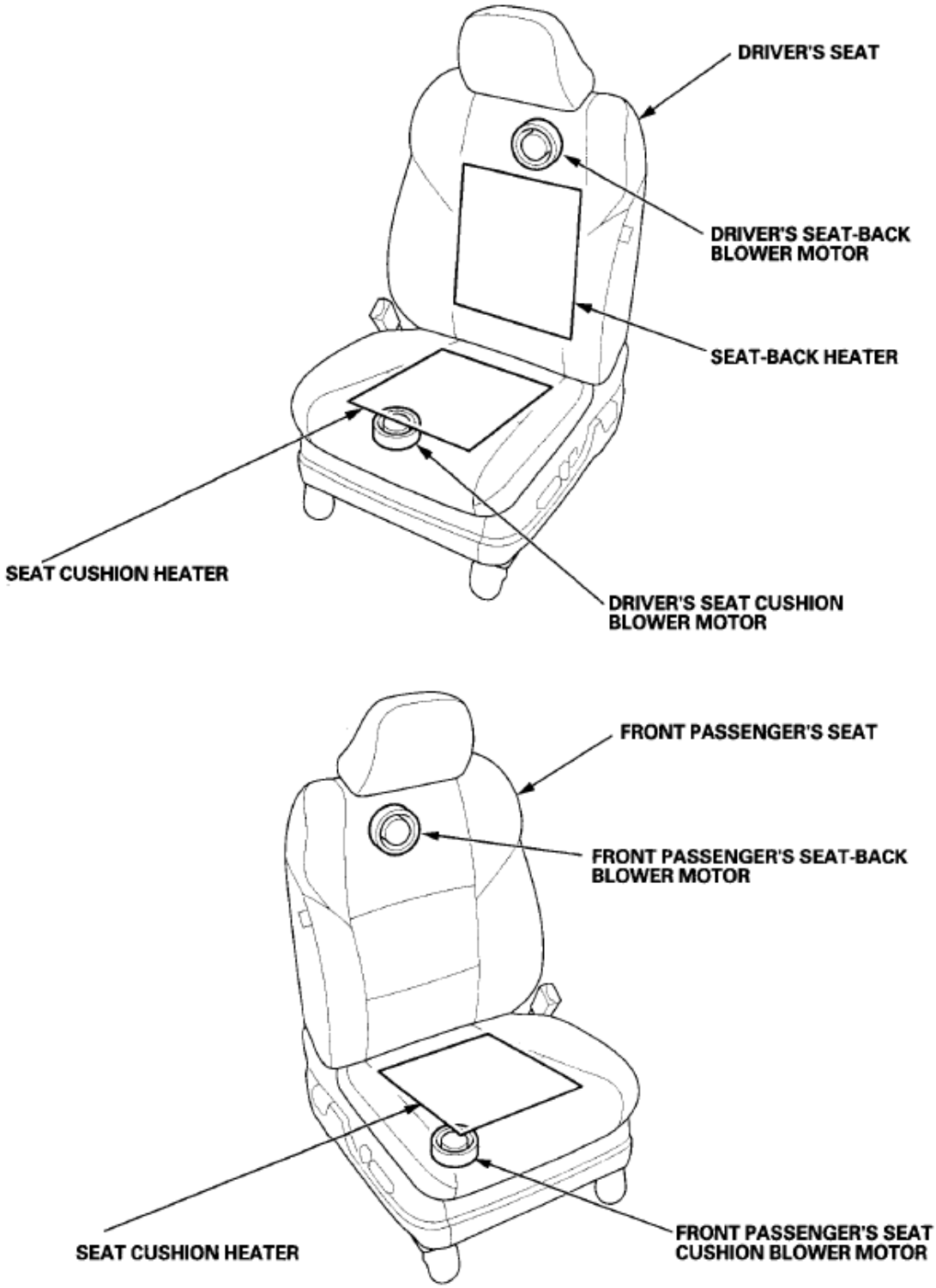


Fig. 1: Ventilated Seats Components Location (1 Of 2)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

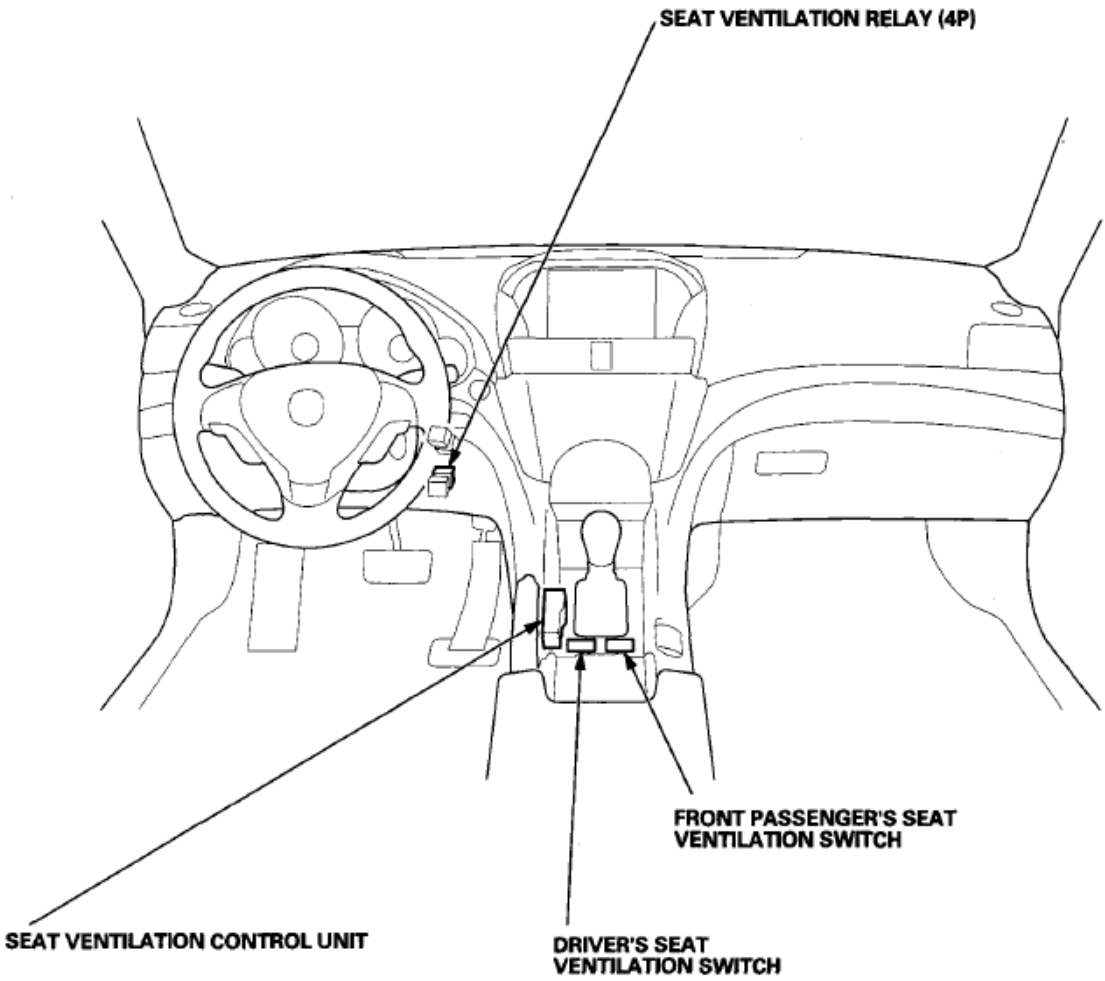


Fig. 2: Ventilated Seats Components Location (2 Of 2)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

SELF-DIAGNOSTIC FUNCTION

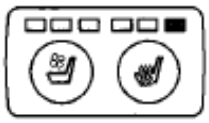
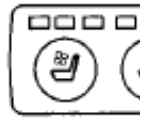
The seat ventilation control unit has a thermistor self-diagnostic function. It indicates the result by lighting the LEDs of the seat ventilation switch.

ENTERING THE SELF-DIAGNOSTIC FUNCTION

1. Push and hold the HEAT side of the driver's seat ventilation switch.
2. Turn the combination light switch ON.
3. Press the engine start/stop button to select the ON mode.
4. Within 2 to 5 seconds, turn the combination light switch OFF, then ON and OFF again.
5. Release the HEAT side of the driver's seat ventilation switch, and press the HEAT side of the driver's seat ventilation switch 3 times within 5 seconds.
6. If the system enters the self-diagnostic mode, all of the indicators turn on for 3 seconds.

- During self-diagnostic mode, the control unit blinks the driver's or front passenger's seat ventilation switch heat indicators in a specific pattern corresponding to the failure.
- An LED pattern will start to blink 2 seconds after all indicators turn off.
- The LED pattern will continue to blink every 2 seconds until self-diagnostic mode is off.
- If more than 1 failure exists, each pattern will be displayed according to their priority every 2 seconds.
- After all patterns are displayed, the cycle will be repeated until self-diagnostic mode is off.
- The DTC will be displayed on either the driver's seat ventilation switch or the front passenger's seat ventilation switch dependent upon where the failure has occurred.
- All LEDs turn off after entering the self diagnostic mode if there are no DTCs stored.

INDICATOR BLINK PATTERNS

Order of priority	1	2	3	4
Blinking pattern (1)	Seat heater HIGH indicator blinking 	Seat heater LOW indicator blinking 	Seat heater MIDDLE indicator and LOW indicator blinking 	Seat heater HIGH indicator and MIDD indicator blinking 
Failure status	Thermistor open	Thermistor short	Heater current abnormal	Heater voltage abno

(1) The indicator(s) will blink 4 times a second.

HOW TO CLEAR THE DTCS

Whenever the control unit detects failures (abnormal seat heater voltage, abnormal seat heater current abnormal, and/or a driver side or front passenger side seat not heating), each failure is stored in the control unit.

To clear the DTCs, press and hold the applicable HEAT side of the ventilation switch for 6 seconds while in the self-diagnostic mode.

NOTE:

- **Completely clear all DTCs for the driver's side (or passenger's side) before clearing the other side.**
- **After clearing the DTCs, all seat heater indicators will turn on for 2 seconds, and then go off.**
- **A thermistor open or a thermistor short failure is stored only when the vehicle ignition is in the ON mode. After the engine start/stop button is pressed to select the OFF mode, it is cleared.**
- **For self-diagnostic mode display of a thermistor open or a thermistor short failure, if the failure has already occurred, it will be detected within 6 seconds after the engine start/stop button is pressed to select the ON**

mode.

- **To exit the self-diagnostic mode, press the engine start/stop button to select the OFF mode.**

FACTORY MODE

When the vehicle is initially delivered, the seat ventilation control unit is in factory mode. While in this mode, the seats are fully functional for basic operation, fail-safe operation, etc., but will not store failures in memory while in self-diagnostic mode.

After manual or automatic activation, the control unit will permanently exit factory mode, and will never again simultaneously display all the indicator lights if all four switches are pressed with the ignition switch ON (II).

AUTOMATIC ACTIVATION METHOD

Press the engine start/stop button to select the ON mode and then the OFF mode: Do this procedure 9 more times for a total of 10 times.

NOTE: Keep the vehicle ignition in the ON mode for at least 20 seconds following activation using this method.

MANUAL ACTIVATION METHOD

Press the engine start/stop button to select the ON mode, then push and hold all four seat ventilation buttons for 2 seconds. After this sequence is accepted by the control unit, all indicators will turn on for 2 seconds.

CIRCUIT DIAGRAM

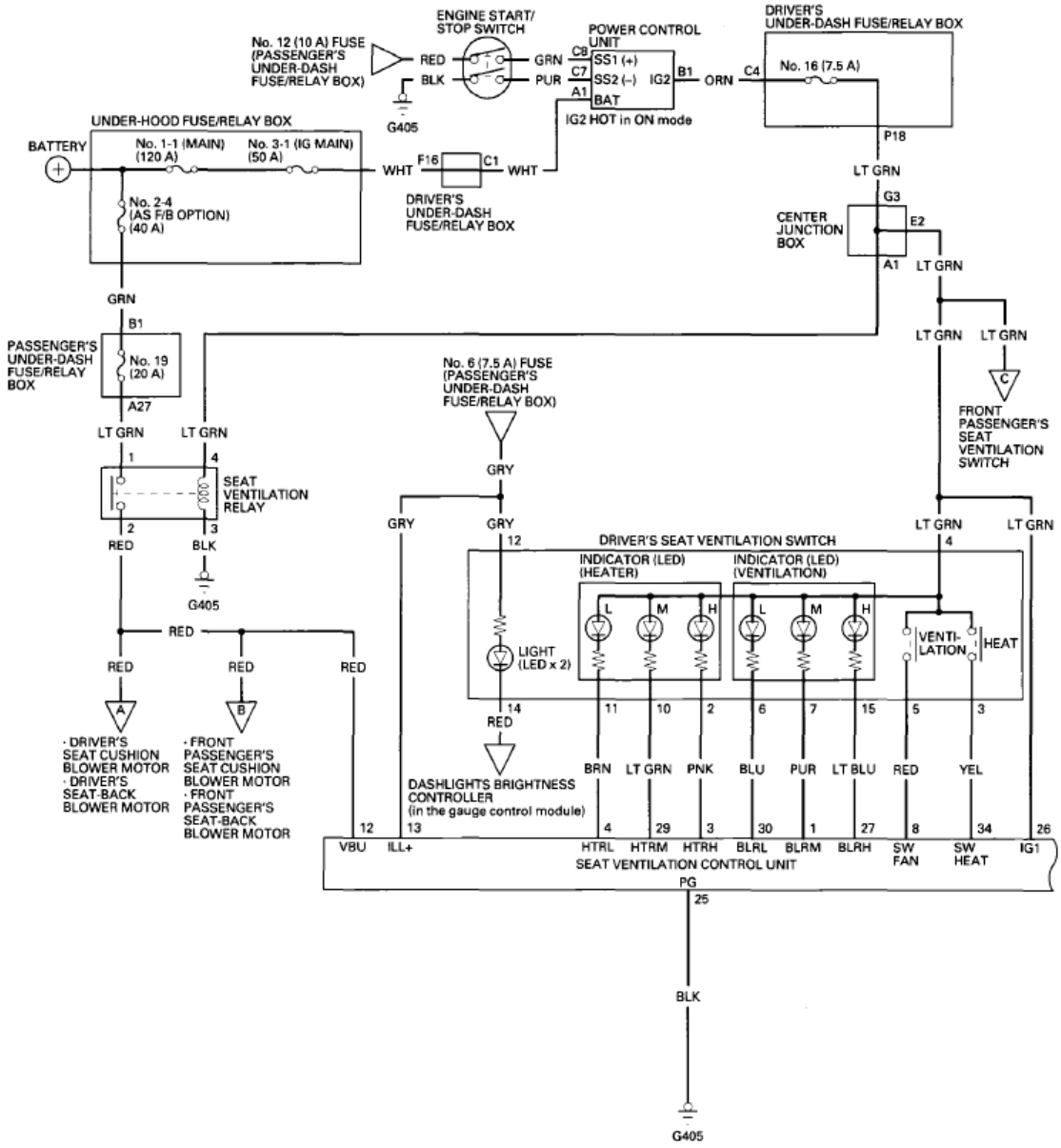


Fig. 3: Ventilated Seats - Circuit Diagram (1 Of 3)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

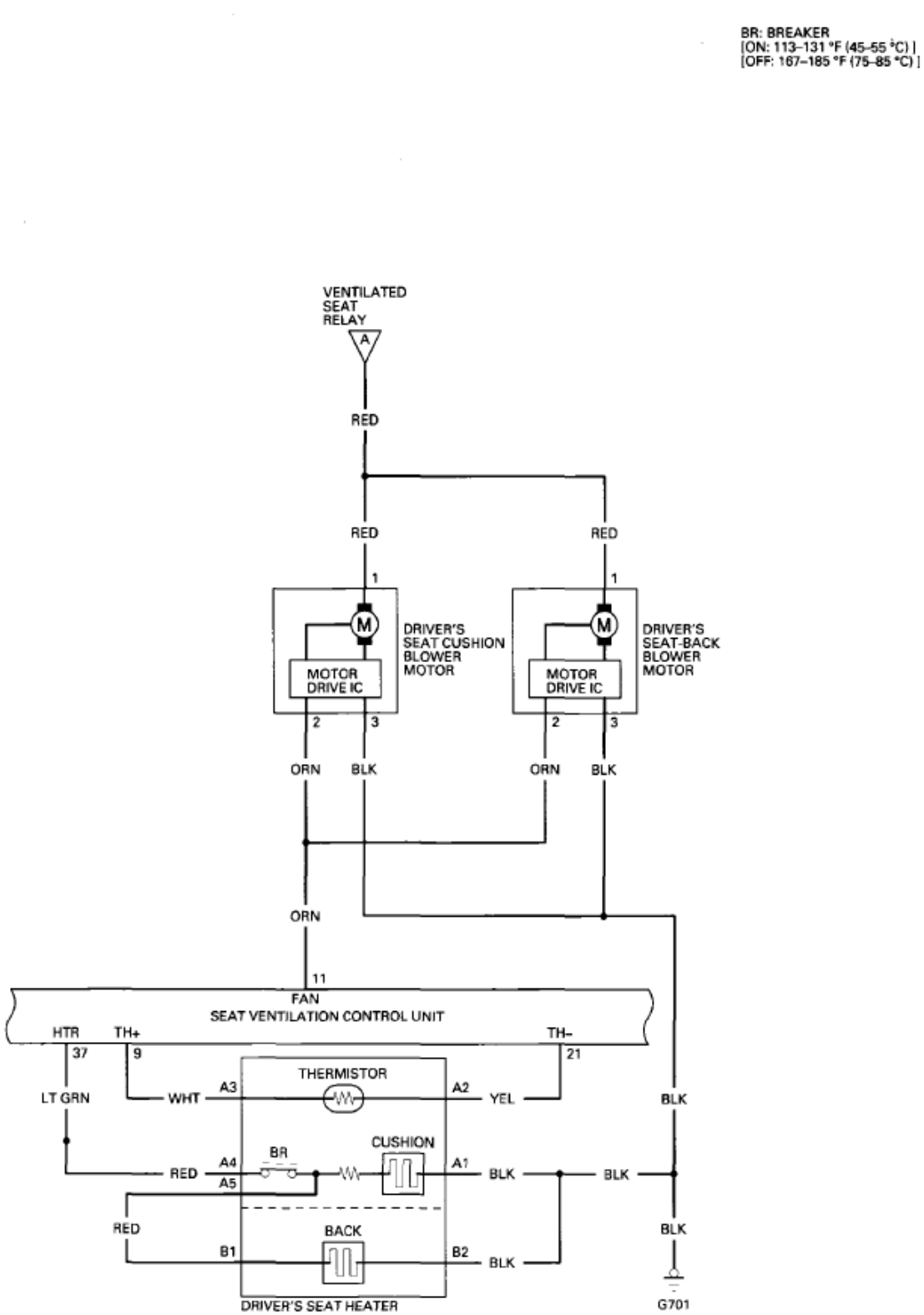


Fig. 4: Ventilated Seats - Circuit Diagram (2 Of 3)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

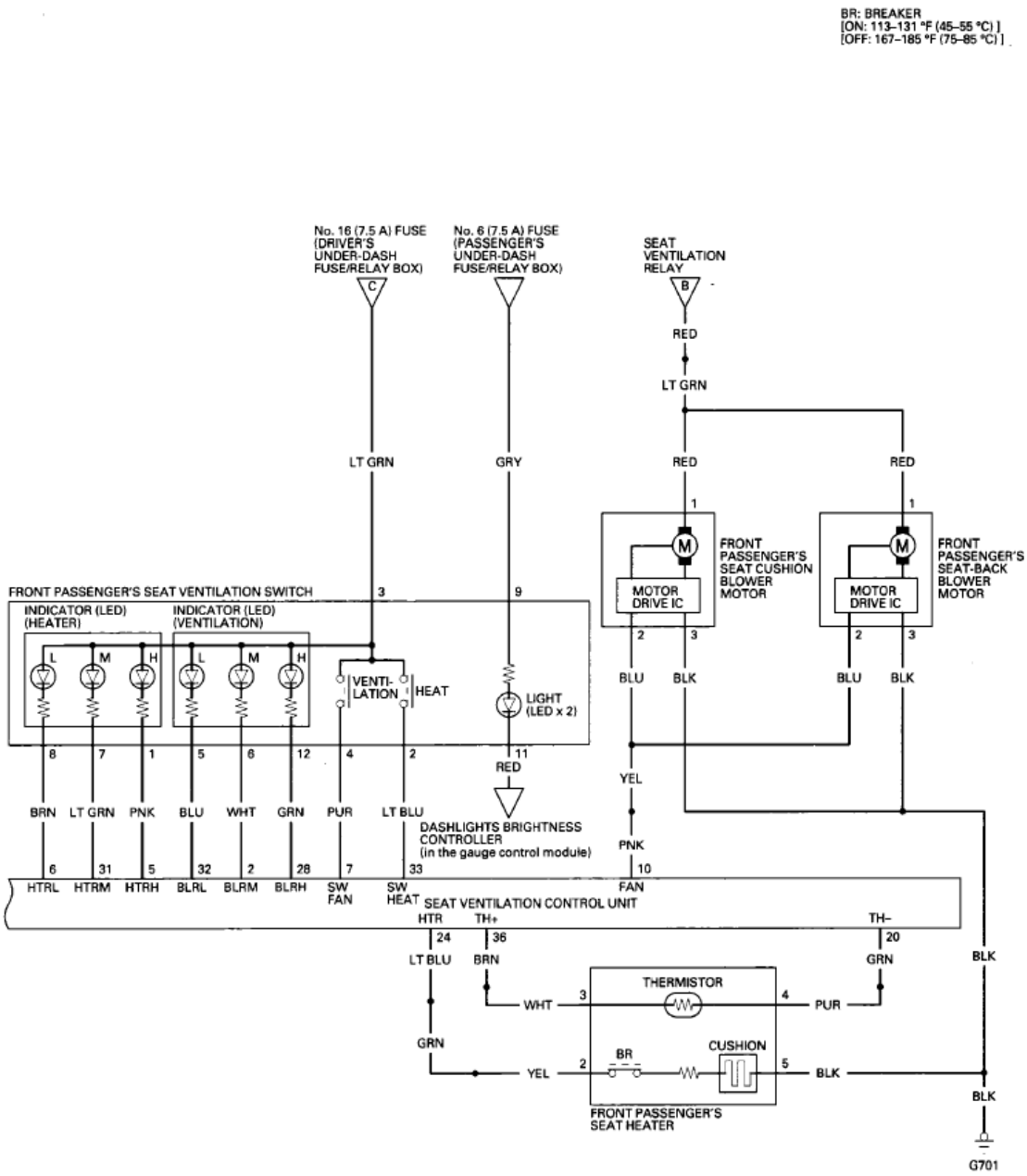


Fig. 5: Ventilated Seats - Circuit Diagram (3 Of 3)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

SYMPTOM TROUBLESHOOTING

1. Troubleshoot the seat ventilation system in this order:

Order of priority	Symptom	Possible cause
		Measure the resistance between seat cushion heater connector A (5P) [seat

		cushion heater 5P connector] terminals No. 3 and No. 2 [No. 4]. If the resistance value is at least 350 kohms. The thermistor is faulty; replace the seat cushion cover/pad (see **FRONT SEAT CUSHION COVER REPLACEMENT**).
1	Thermistor open	Check for continuity between seat ventilation control unit 37P connector terminals No. 9 [No. 36] and No. 21 [No. 20] and seat cushion heater connector A (5P) [seat cushion heater 5P connector] terminals No. 3 and No. 2 [No. 4] respectively. If there no continuity, repair an open in the wire.
2	Thermistor short	Measure the resistance between seat cushion heater connector A (5P) [seat cushion heater 5P connector] terminals No. 2 [No. 4] and No. 3. If the resistance value is 600 ohms or less. The thermistor is faulty; replace the seat cushion cover/pad (see **FRONT SEAT CUSHION COVER REPLACEMENT**).
		Disconnect the seat ventilation control unit 37P connector, and check for continuity between body ground and seat cushion heater connector A (5P) [seat cushion heater 5P connector] terminals No. 2 [No. 4] and No. 3 individually. If there continuity, repair a short to ground in the wire.
3	Heater current abnormal	Go to the ventilated seat system input test, and do all power and ground input tests (see). If the tests prove OK, measure the resistance between seat cushion heater connector A (5P) [seat cushion heater 5P connector] terminals No. 1 [No. 5] and No. 4 [No. 2], and seat-back heater connector B (2P) terminals No. 1 and No. 2: • If the resistance value of the seat cushion heater is out of the range between 4.7 and 5.7 ohms. The seat cushion heater is faulty; replace the seat cushion cover/pad (see **FRONT SEAT CUSHION COVER REPLACEMENT**). • If the resistance value of the seat-back heater is out of the range between 4.5 and 5.6 ohms. The seat-back heater is faulty; replace the seat cushion cover/pad (see **FRONT SEAT CUSHION COVER REPLACEMENT**).
	Heater voltage abnormal	Go to the ventilated seat system input test, and do all power and ground input tests (see **Control Unit Input Test/Replacement**).
4	Seat ventilation switch failure	Go to the ventilated seat system input test, and do all power and ground input tests (see **Control Unit Input Test/Replacement**). If the tests prove OK, measure the resistance between seat cushion heater connector A (5P) [seat cushion heater 5P connector] terminals No. 1 [No. 5] and No. 4 [No. 2], and seat-back heater connector B (2P) terminals No. 1 and No. 2: • If the resistance value of the seat cushion heater is out of the range between 4.7 and 5.7 ohms. The seat cushion heater is faulty; replace the seat cushion cover/pad (see **FRONT SEAT CUSHION COVER REPLACEMENT**). • If the resistance value of the seat-back heater is out of the range between

5	Seat not heating	4.5 and 5.6 ohms. The seat-back heater is faulty; replace the seat cushion cover/pad (see **FRONT SEAT CUSHION COVER REPLACEMENT**). • If the resistance value is within the specified value, replace the seat ventilation control unit.
[]: Front passenger's seat		

CONTROL UNIT INPUT TEST/REPLACEMENT

NOTE: Before testing, make sure the No. 2-4 (AS F/B OPTION) (40 A) fuse in the under-hood fuse/relay box, the No. 16 (7.5 A) fuse in the driver's under-dash fuse/relay box, and the No. 19 (20 A) fuse in the passenger's under-dash fuse/relay box are OK.

1. Remove the center console (see **CENTER CONSOLE REMOVAL/INSTALLATION**).
2. Disconnect the 37P connector (A) from the seat ventilation control unit (B).

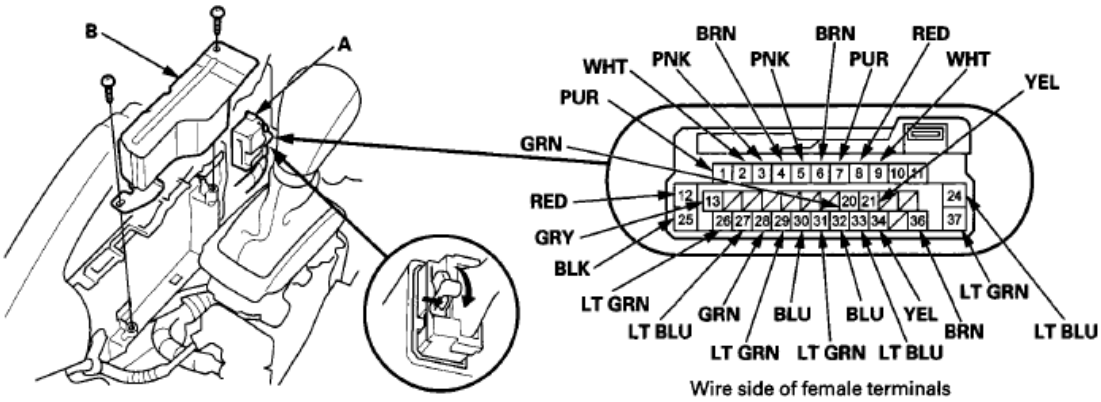


Fig. 6: Identifying 37P Connector And Seat Ventilation Control Unit With Connector End View
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Inspect the connector and socket terminals to be sure they are all making good contact.
   - If the terminals are bent, loose or corroded, repair them as necessary, and recheck the system.
   - If the terminals look OK, go to step 4.
4. Reconnect the 37P connector to the control unit, and do the following input tests.
   - If any test indicates a problem, find and correct the cause, then recheck the system.
   - If all the input tests prove OK, go to step 5.

Cavity	Wire	Test condition	Test: Desired result	Possible cause if desired result is not obtained
25	BLK	In all power modes	Measure the voltage to ground:	• Poor ground (G405) • An open or high resistance in the

			There should be less than 0.2 V.	ground wire
12	RED	Power mode ON	Measure the voltage to ground: There should be battery voltage.	• Blown No. 19 (20 A) fuse in the passenger's under-dash fuse/relay box • Faulty seat ventilation relay • An open or high resistance in the wire
13	GRY	Combination light switch (PARKING position) ON	Measure the voltage to ground: There should be battery voltage.	• Blown No. 6 (7.5 A) fuse in the passenger's under-dash fuse/relay box • An open or high resistance in the wire
26	LT GRN	Power mode ON	Measure the voltage to ground: There should be battery voltage.	• Blown No. 16 (7.5 A) fuse in the driver's under-dash fuse/relay box • An open or high resistance in the wire
24	LT BLU	Power mode ON, front passenger's seat heat switch pressed	Measure the voltage to ground: There should be battery voltage.	• Faulty front passenger's seat heater • Poor ground (G701) or an open in the ground wire • An open or high resistance in the wire
37	LT GRN	Power mode ON, driver's seat heat switch pressed	Measure the voltage to ground: There should be battery voltage.	• Faulty driver's seat heater • Poor ground (G701) or an open in the ground wire • An open or high resistance in the wire

5. Disconnect the 37P connector from the control unit, and do the following input tests.

- If any test indicates a problem, find and correct the cause, then recheck the system.
- If all the input tests prove OK, the control unit must be faulty; replace it.

Cavity	Wire	Test condition	Test: Desired result	Possible cause if desired result is not obtained
9	WHT	Under all conditions	Check for continuity between terminals No. 9 and No. 21: There should be continuity.	• Faulty driver's seat cushion heater • An open or high resistance in the wire
21	YEL			
20	GRN		Check for continuity	• Faulty front passenger's

36	BRN	Under all conditions	between terminals No. 20 and No. 36: There should be continuity.	seat cushion heater • An open or high resistance in the wire
33	LT BLU	Power mode ON, front passenger's seat heat switch pressed	Measure the voltage to ground: There should be battery voltage.	• Blown No. 16 (7.5 A) fuse in the driver's under-dash fuse/relay box • Faulty front passenger's seat ventilation switch • An open or high resistance in the wire
7	PUR	Power mode ON, front passenger's seat ventilation switch pressed	Measure the voltage to ground: There should be battery voltage.	• Blown No. 16 (7.5 A) fuse in the driver's under-dash fuse/relay box • Faulty front passenger's seat ventilation switch • An open or high resistance in the wire
34	YEL	Power mode ON, driver's seat heat switch pressed	Measure the voltage to ground: There should be battery voltage.	• Blown No. 16 (7.5 A) fuse in the driver's under-dash fuse/relay box • Faulty driver's seat ventilation switch • An open or high resistance in the wire
8	RED	Power mode ON, driver's seat ventilation switch pressed	Measure the voltage to ground: There should be battery voltage.	• Blown No. 16 (7.5 A) fuse in the driver's under-dash fuse/relay box • Faulty driver's seat ventilation switch • An open or high resistance in the wire
3	PNK	Power mode ON	Connect to ground with a jumper wire: The driver's seat heater HIGH indicator should come on.	• Blown No. 16 (7.5 A) fuse in the driver's under-dash fuse/relay box • Faulty driver's seat ventilation switch • An open or high resistance in the wire
29	LT	Power mode ON	Connect to ground with a jumper wire: The driver's seat heater	• Blown No. 16 (7.5 A) fuse in the driver's under-dash fuse/relay box • Faulty driver's seat

	GRN		MIDDLE indicator should come on.	ventilation switch • An open or high resistance in the wire
4	BRN	Power mode ON	Connect to ground with a jumper wire: The driver's seat heater LOW indicator should come on.	• Blown No. 16 (7.5 A) fuse in the driver's under-dash fuse/relay box • Faulty driver's seat ventilation switch • An open or high resistance in the wire
27	LT BLU	Power mode ON	Connect to ground with a jumper wire: The driver's seat ventilation HIGH indicator should come on.	• Blown No. 16 (7.5 A) fuse in the driver's under-dash fuse/relay box • Faulty driver's seat ventilation switch • An open or high resistance in the wire
1	PUR	Power mode ON	Connect to ground with a jumper wire: The driver's seat ventilation MIDDLE indicator should come on.	• Blown No. 16 (7.5 A) fuse in the driver's under-dash fuse/relay box • Faulty driver's seat ventilation switch • An open or high resistance in the wire
30	BLU	Power mode ON	Connect to ground with a jumper wire: The driver's seat ventilation LOW indicator should come on.	• Blown No. 16 (7.5 A) fuse in the driver's under-dash fuse/relay box • Faulty driver's seat ventilation switch • An open or high resistance in the wire
5	PNK	Power mode ON	Connect to ground with a jumper wire: The front passenger's seat heater HIGH indicator should come on.	• Blown No. 16 (7.5 A) fuse in the driver's under-dash fuse/relay box • Faulty front passenger's seat ventilation switch • An open or high resistance in the wire
31	LT	Power mode ON	Connect to ground with a jumper wire: The front passenger's seat	• Blown No. 16 (7.5 A) fuse in the driver's under-dash fuse/relay box • Faulty front passenger's

	GRN		heater MIDDLE indicator should come on.	seat ventilation switch • An open or high resistance in the wire
6	BRN	Power mode ON	Connect to ground with a jumper wire: The front passenger's seat heater LOW indicator should come on.	• Blown No. 16 (7.5 A) fuse in the driver's under-dash fuse/relay box • Faulty front passenger's seat ventilation switch • An open or high resistance in the wire
28	GRN	Power mode ON	Connect to ground with a jumper wire: The front passenger's seat ventilation HIGH indicator should come on.	• Blown No. 16 (7.5 A) fuse in the driver's under-dash fuse/relay box • Faulty front passenger's seat ventilation switch • An open or high resistance in the wire
2	WHT	Power mode ON	Connect to ground with a jumper wire: The front passenger's seat ventilation MIDDLE indicator should come on.	• Blown No. 16 (7.5 A) fuse in the driver's under-dash fuse/relay box • Faulty front passenger's seat ventilation switch • An open or high resistance in the wire
32	BLU	Power mode ON	Connect to ground with a jumper wire: The front passenger's seat ventilation LOW indicator should come on.	• Blown No. 16 (7.5 A) fuse in the driver's under-dash fuse/relay box • Faulty front passenger's seat ventilation switch • An open or high resistance in the wire

SEAT HEATER TEST

DRIVER'S SEAT

NOTE: SRS components are located in this area. Review the SRS component locations (see COMPONENT LOCATION INDEX), and precautions and procedures (see PRECAUTIONS AND PROCEDURES) before doing repairs or servicing.

1. Remove the driver's seat (see **FRONT SEAT REMOVAL/INSTALLATION**).
2. Remove the seat-back panel (see **FRONT SEAT-BACK COVER REPLACEMENT**).

3. Disconnect connector A (5P) and connector B (2P) from the seat heaters.

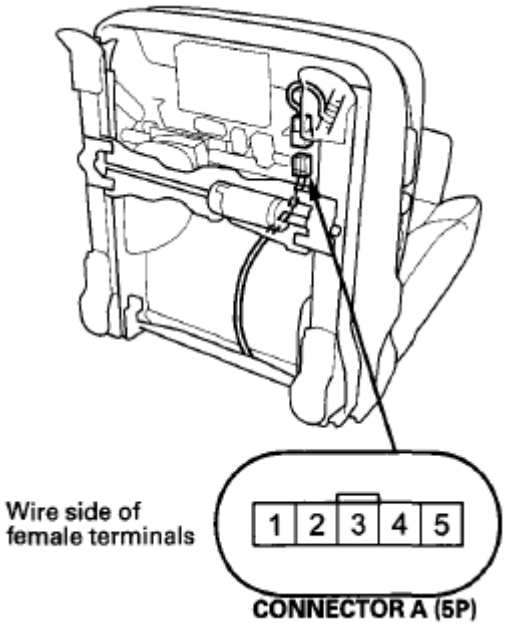


Fig. 7: Identifying Connector A (5P) From Seat Heaters With Connector End View
Courtesy of AMERICAN HONDA MOTOR CO., INC.

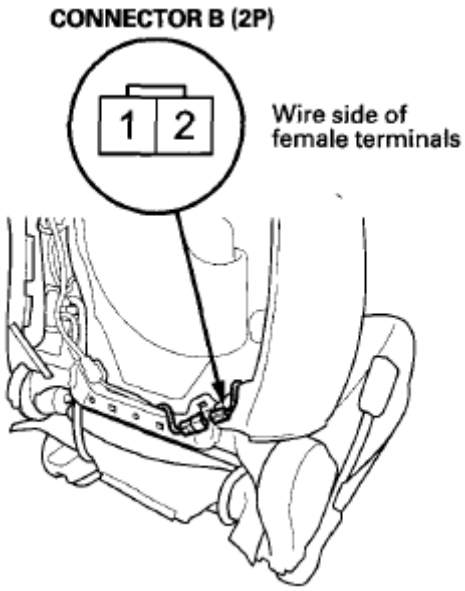


Fig. 8: Identifying Connector B (2P) From Seat Heaters With Connector End View
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Check for continuity between seat heater connector A (5P) terminal No. 3, and terminal No. 2. There should be continuity.
5. If the continuity is not as specified, the seat cushion heater is faulty; replace the seat cushion cover/pad

(see **FRONT SEAT CUSHION COVER REPLACEMENT**).

6. Check for continuity between seat heater connector B (2P) terminals No. 1 and No. 2. There should be continuity.
7. If the continuity is not as specified, the seat-back heater is faulty; replace the seat-back cover/pad (see **FRONT SEAT-BACK COVER REPLACEMENT**).
8. Check for continuity between seat heater connector A (5P) terminals No. 1 and No. 5, and terminals No. 1 and No. 4. There should be continuity.
9. If the continuity is not as specified, the seat cushion heater is faulty; replace the seat cushion cover/pad (see **FRONT SEAT CUSHION COVER REPLACEMENT**).

FRONT PASSENGER'S SEAT

NOTE: SRS components are located in this area. Review the SRS component locations (see COMPONENT LOCATION INDEX), and precautions and procedures (see PRECAUTIONS AND PROCEDURES) before doing repairs or servicing.

1. Remove the front passenger's seat (see **FRONT SEAT REMOVAL/INSTALLATION**).
2. Disconnect the 5P connector from the seat heater.

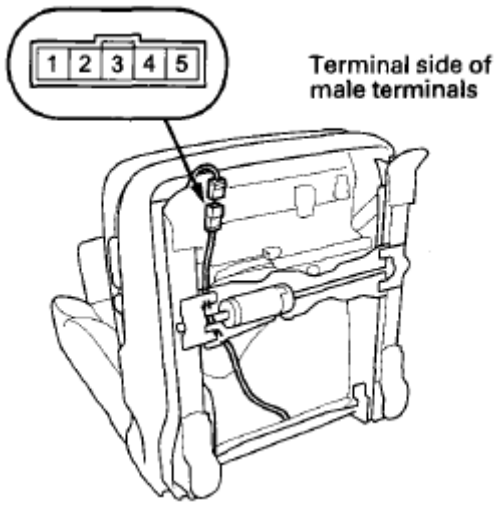


Fig. 9: Identifying 5P Connector End View
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Check for continuity between seat heater 5P connector terminals No. 3 and No. 4 and terminals No. 2 and No. 5. There should be continuity.
4. If the continuity is not as specified, the seat cushion heater is faulty; replace the seat cushion cover/pad (see **FRONT SEAT CUSHION COVER REPLACEMENT**).

SWITCH TEST/REPLACEMENT

1. Remove the center console panel (see **CENTER CONSOLE PANEL**

REMOVAL/INSTALLATION).

2. Disconnect the 16P [12P] connector from the seat ventilation switch (A).

   []: Front passenger's seat ventilation switch

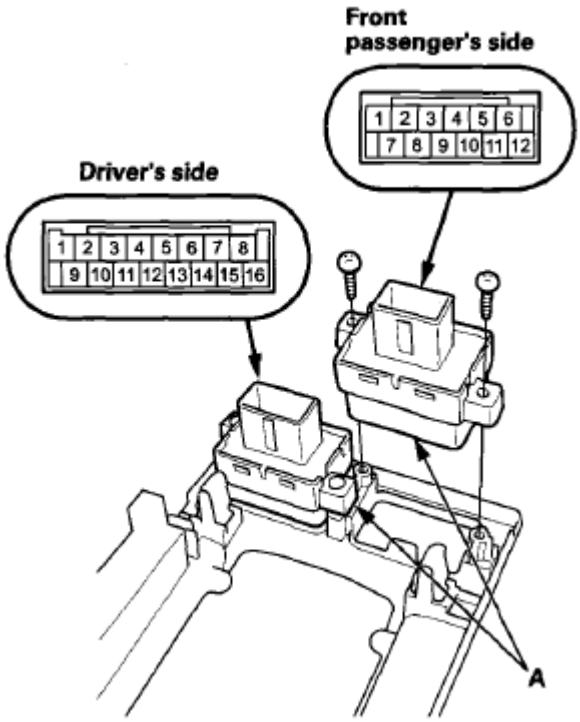


Fig. 10: Identifying Seat Ventilation Switch With Connector End Views
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Remove the two screws and the switch.
4. Check for continuity between the terminals in each switch position according to the table.

NOTE:

- **Make sure the correct test lead (+ or -) is placed on the terminal.**
- **When checking for continuity across the diode, use the diode setting on the digital volt/ohm meter to check the diode bias.**
- **Be careful of this characteristic; a diode is one that conducts fully in one direction (forward) and not at all in the opposite direction (reverse).**

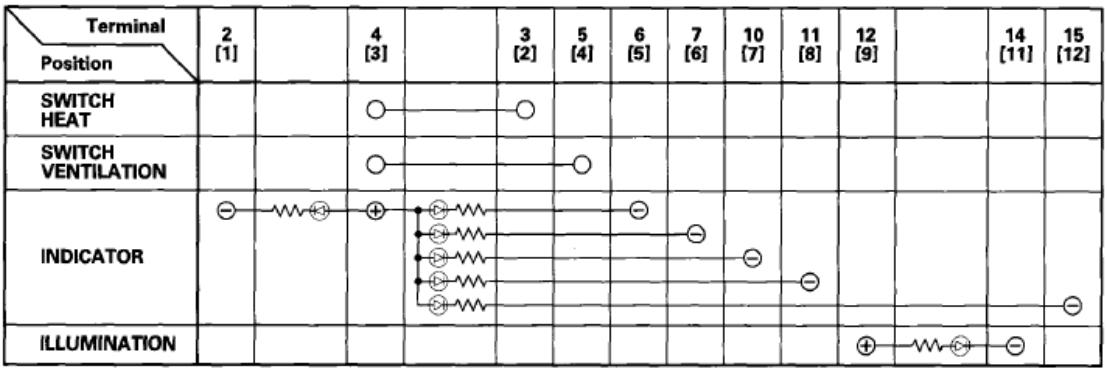


Fig. 11: Identifying Continuity Reference Chart
Courtesy of AMERICAN HONDA MOTOR CO., INC.

[]: Front passenger's seat ventilation

5. If the continuity check is not as specified, replace the seat ventilation switch.
6. Install the parts in the reverse order of removal.

2012 ACCESSORIES & EQUIPMENT

Wiper System / Washer System - TL

COMPONENT LOCATION INDEX

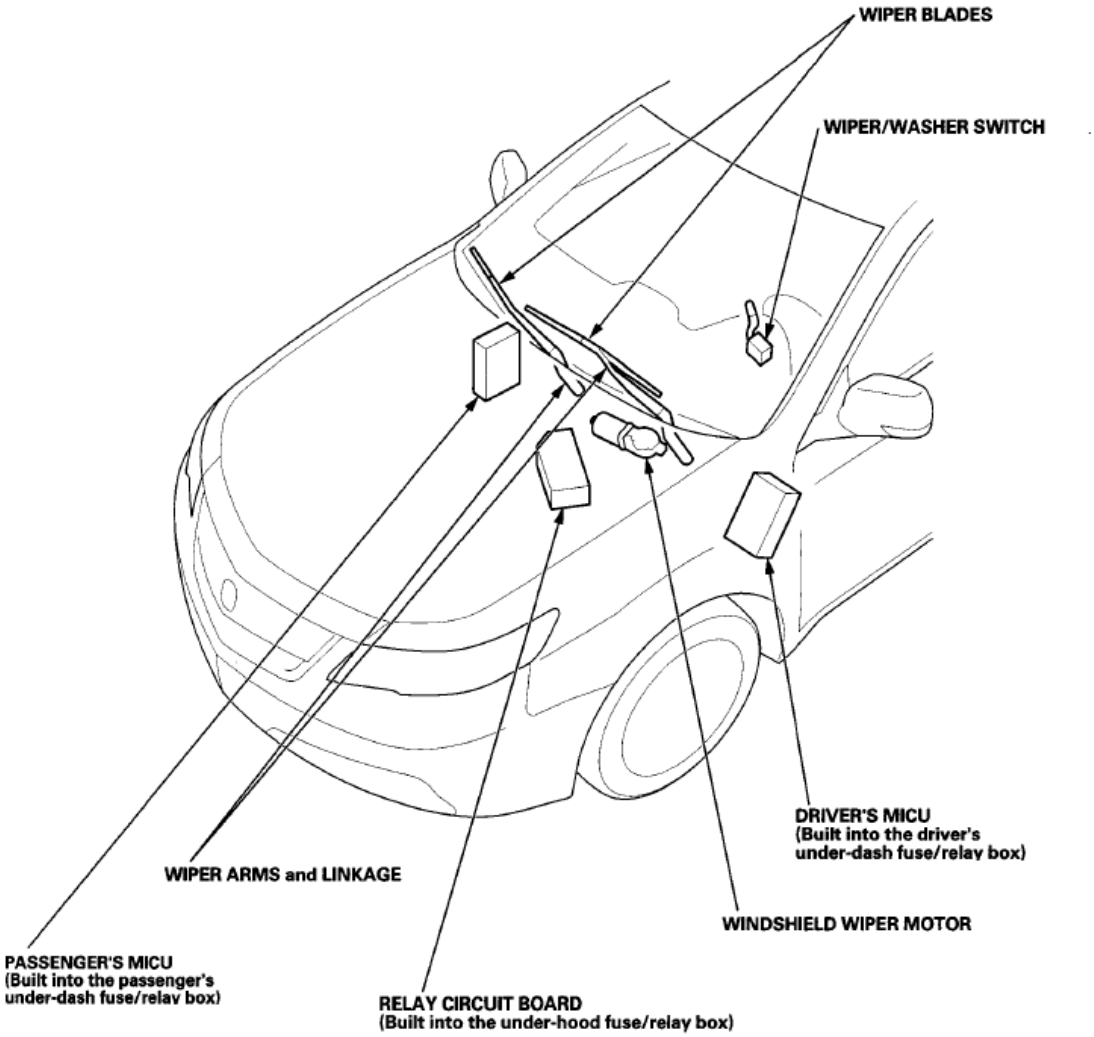


Fig. 1: Wiper & Washer System Components Location (1 Of 3)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

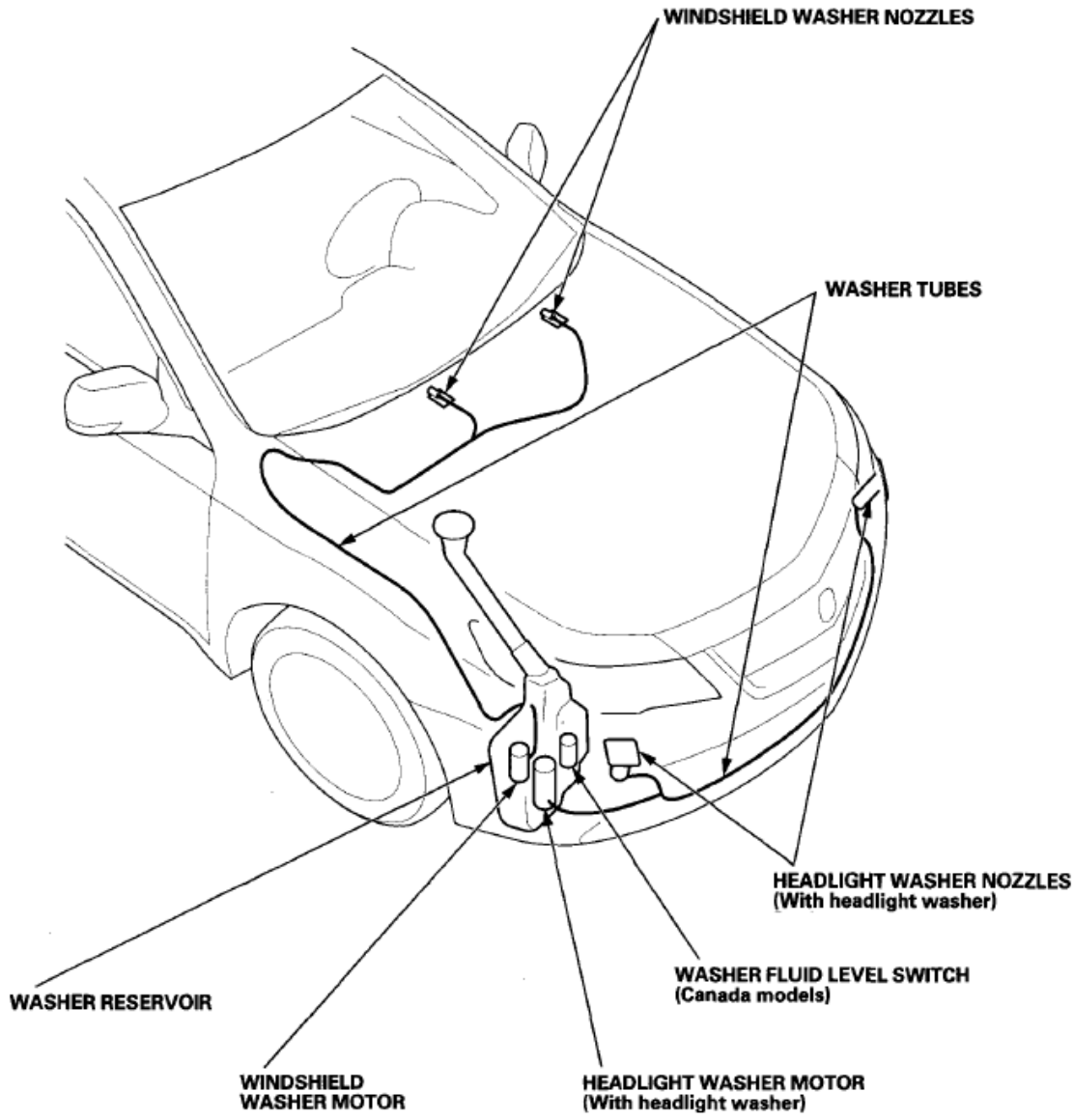


Fig. 2: Wiper & Washer System Components Location (2 Of 3)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

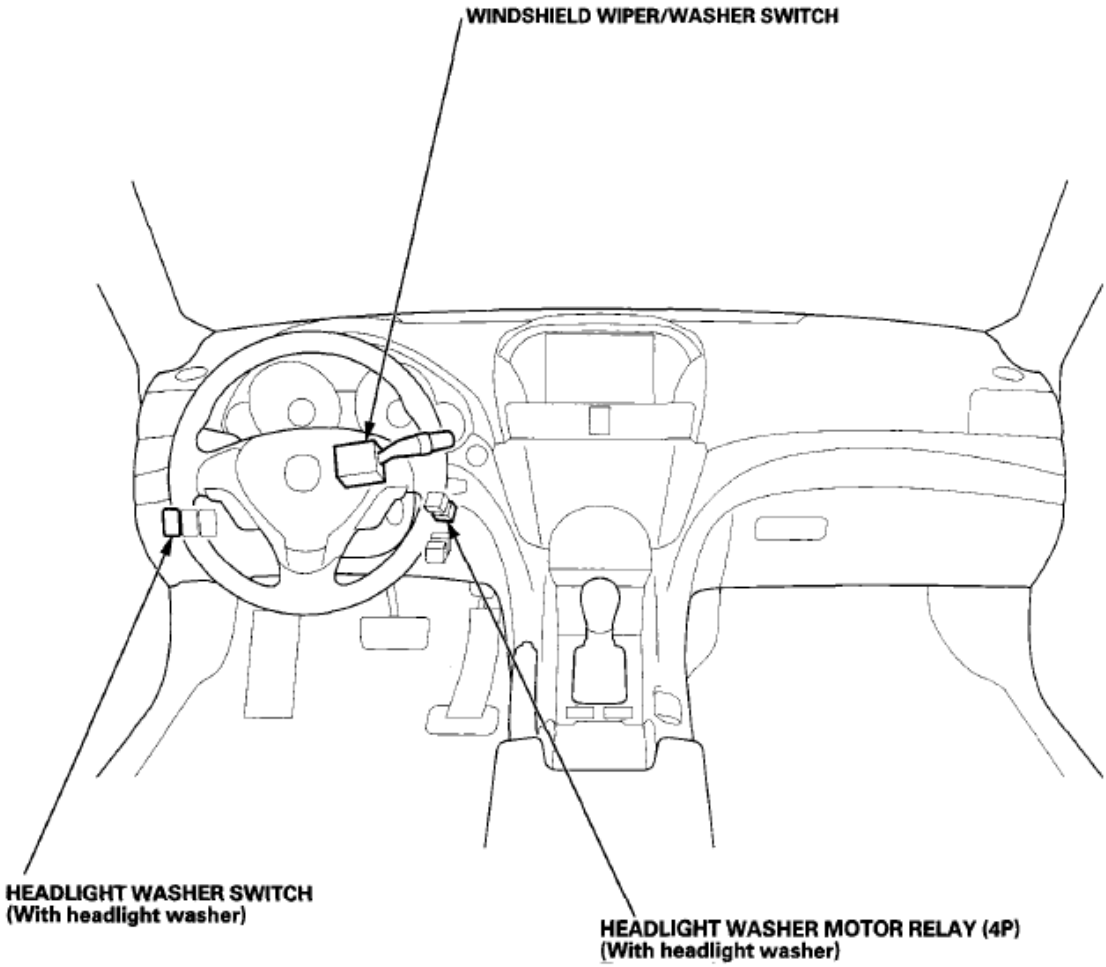


Fig. 3: Wiper & Washer System Components Location (3 Of 3)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

CIRCUIT DIAGRAM

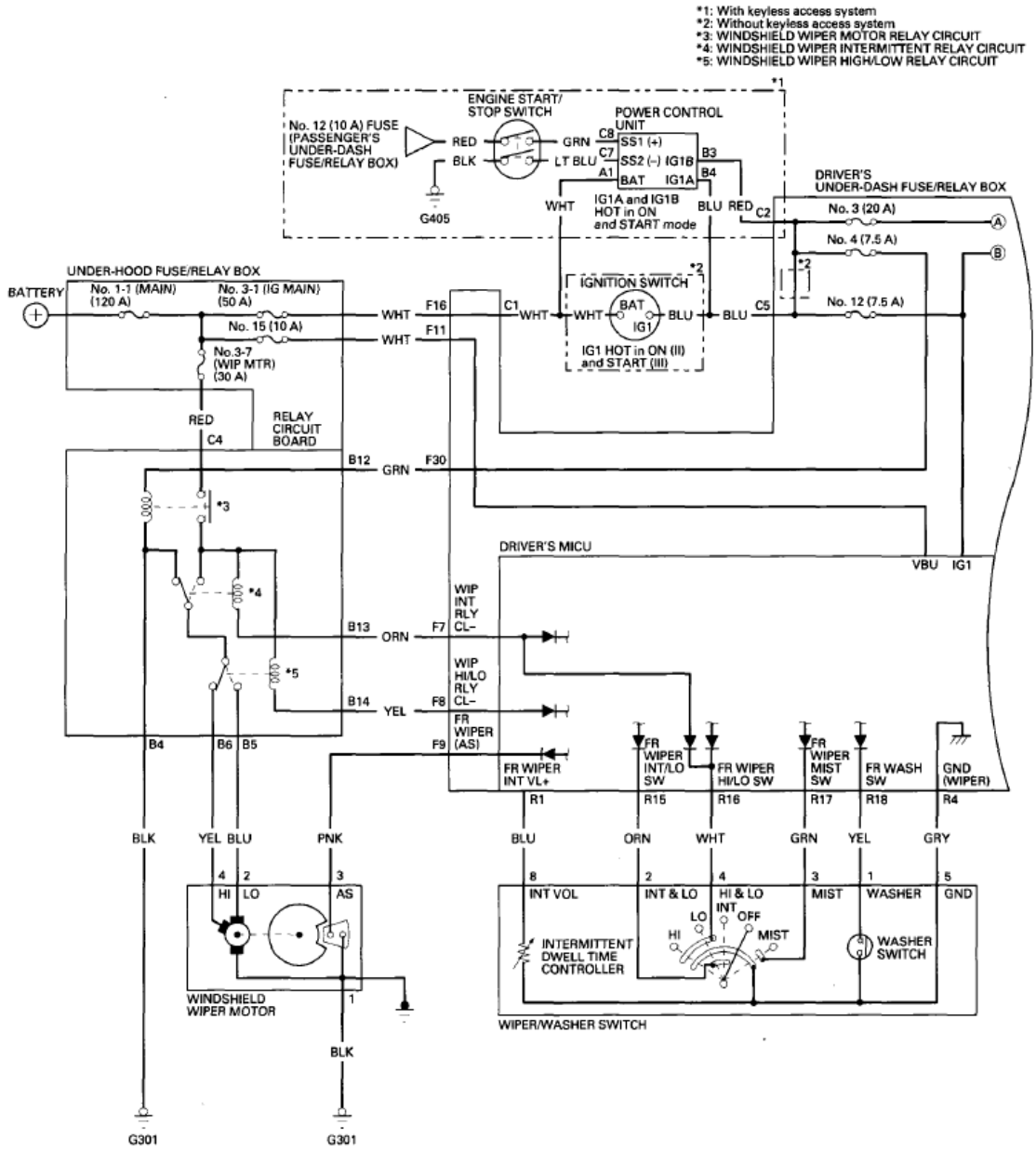


Fig. 4: Wiper & Washer System Circuit Diagram (1 Of 2)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

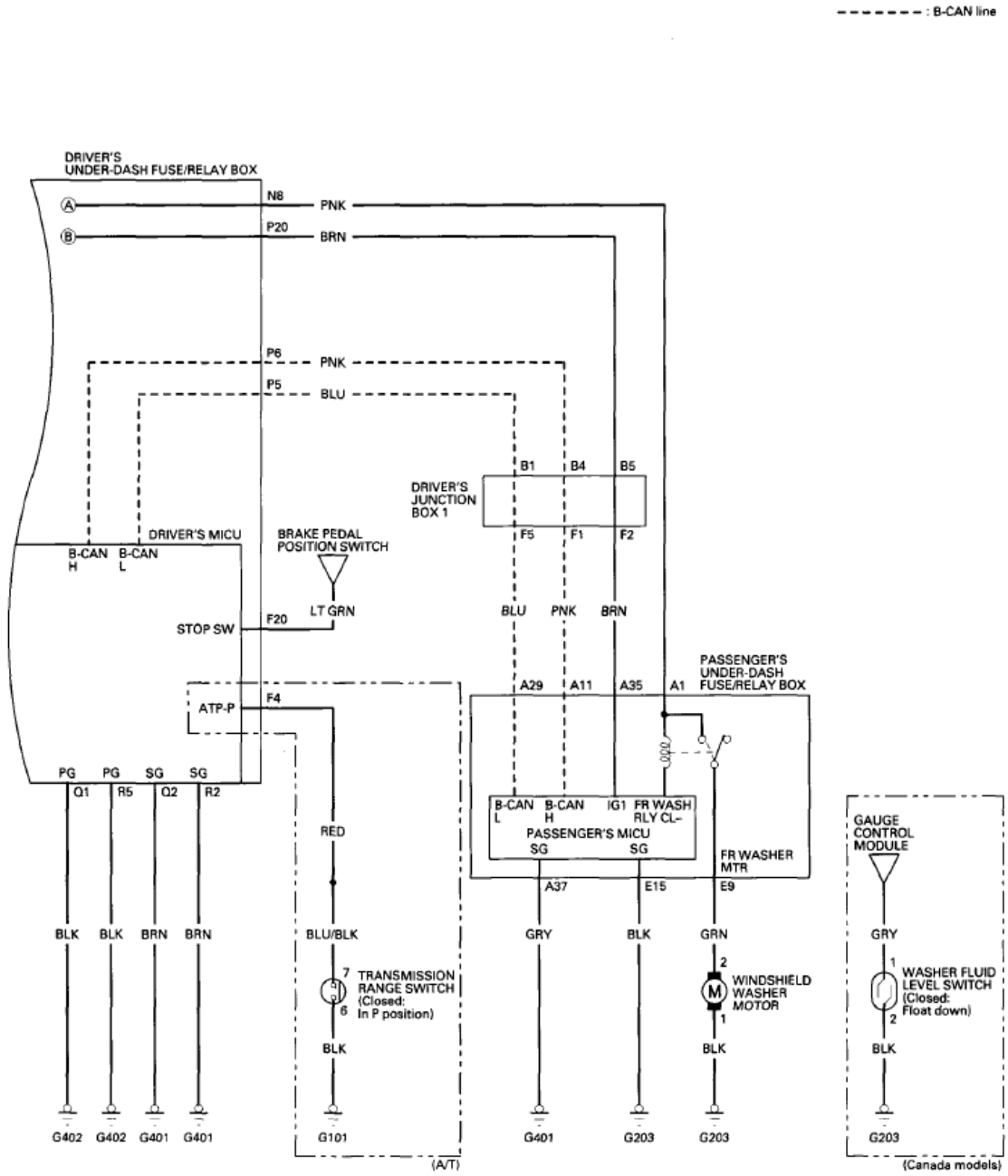


Fig. 5: Wiper & Washer System Circuit Diagram (2 Of 2)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

CIRCUIT DIAGRAM - HEADLIGHT WASHER

WITH HEADLIGHT WASHER

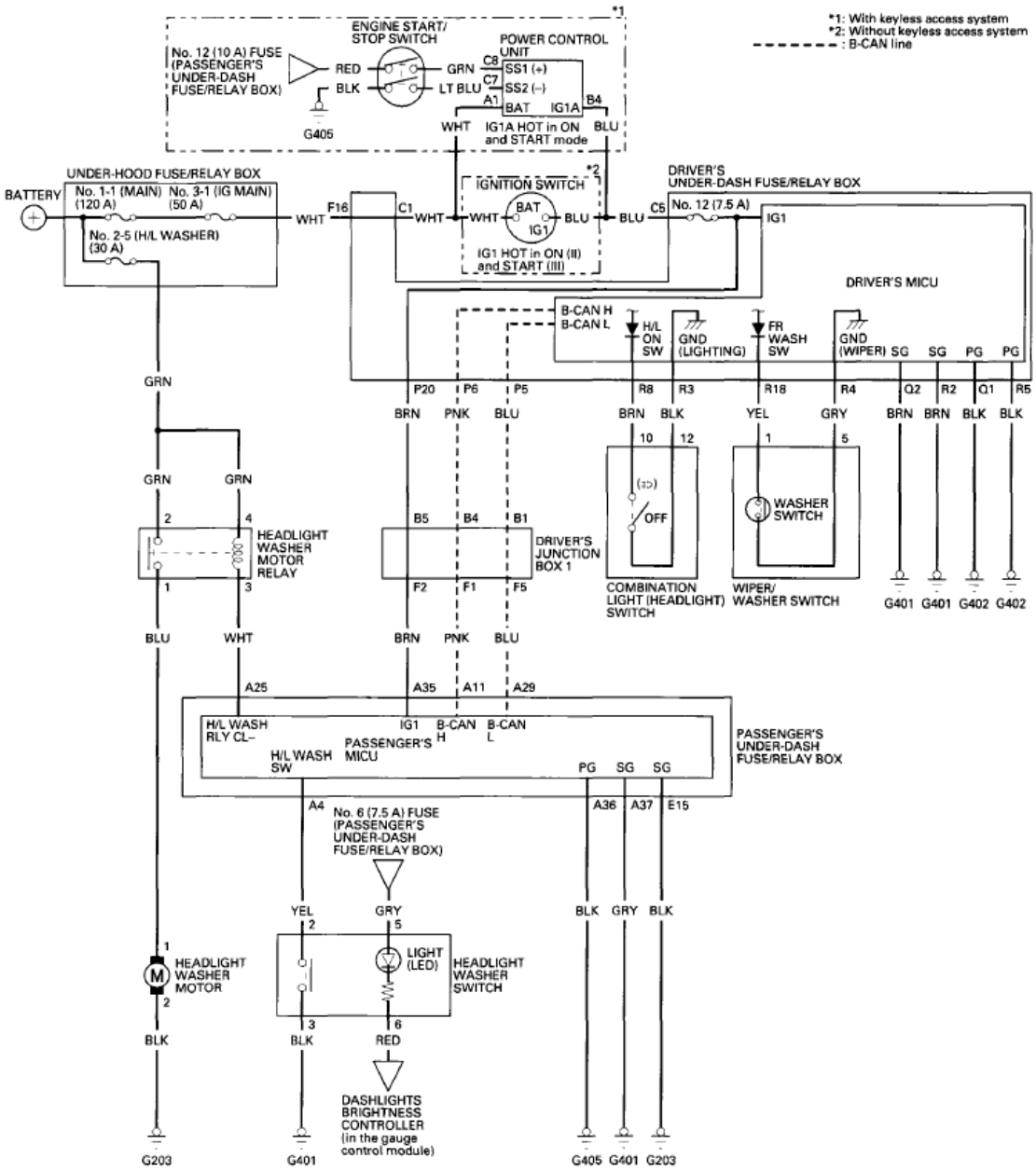


Fig. 6: Headlight Washer System Circuit Diagram
Courtesy of AMERICAN HONDA MOTOR CO., INC.

DTC TROUBLESHOOTING

DTC B1077: WIPER AUTO-STOP (AS) SIGNAL CIRCUIT MALFUNCTION

NOTE: **If you are troubleshooting multiple DTCs, be sure to follow the instructions in B-CAN System Diagnosis Test Mode A (see TROUBLESHOOTING - B-CAN SYSTEM DIAGNOSIS TEST MODE A).**

1. Clear the DTCs with the HDS.
2. Turn the ignition switch to LOCK (0) and then back to ON (II), or press the engine start/stop button to select the OFF mode and then the ON mode.
3. Turn the wiper switch to LOW or HIGH for at least 15 seconds, then turn the wiper switch OFF.

   NOTE: If the wiper motor does not run, go to step 13.

   Do the wiper arms stop at AUTO STOP (park) position?

   YES - Go to step 4.

   NO - Go to step 5.

4. Check for DTCs with the HDS.

   Is DTC B1077 indicated?

   YES - Check for loose or poor connections at the driver's MICU and the wiper motor. If the connections are OK, replace the driver's under-dash fuse/relay box (see **DRIVER'S UNDER-DASH FUSE/RELAY BOX (MICU) REMOVAL AND INSTALLATION**).

   NO - Intermittent failure, the system is OK at this time. Check for loose or poor connections.

5. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
6. Do the windshield wiper motor test (see **WIPER MOTOR TEST**).

   Is the windshield wiper motor OK?

   YES - Go to step 7.

   NO - Replace the windshield wiper motor (see **WIPER MOTOR REPLACEMENT**), and recheck.

7. Disconnect the windshield wiper motor 4P connector.
8. Disconnect driver's under-dash fuse/relay box connector F (33P).
9. Check for continuity between windshield wiper motor 4P connector terminal No. 3 and driver's under-dash fuse/relay box connector F (33P) terminal No. 9.

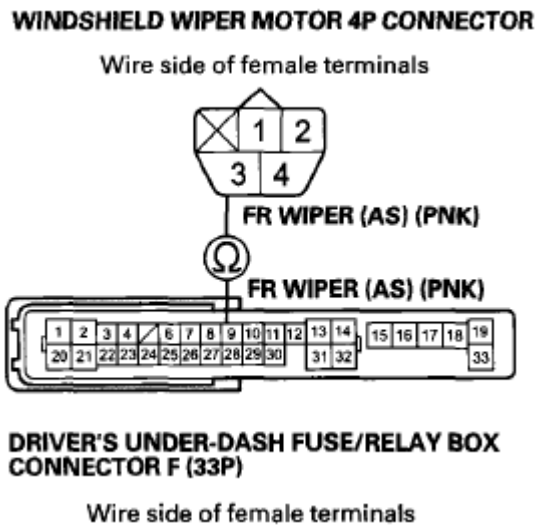


Fig. 7: Checking Continuity Between Windshield Wiper Motor 4P Connector And Driver's Under-Dash Fuse/Relay Box Connector F (33P) With Connector End View
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 10.

NO - Repair an open or high resistance in the wire.

10. Check for continuity between windshield wiper motor 4P connector terminal No. 3 and body ground.

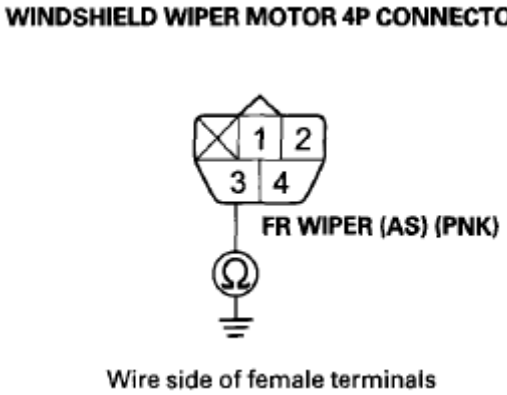


Fig. 8: Checking Continuity Between Windshield Wiper Motor 4P Connector Terminal No. 3 And Body Ground With Connector End View
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair a short to ground in the wire.

NO - Go to step 11.

11. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
12. Measure the voltage between windshield wiper motor 4P connector terminal No. 3 and body ground.

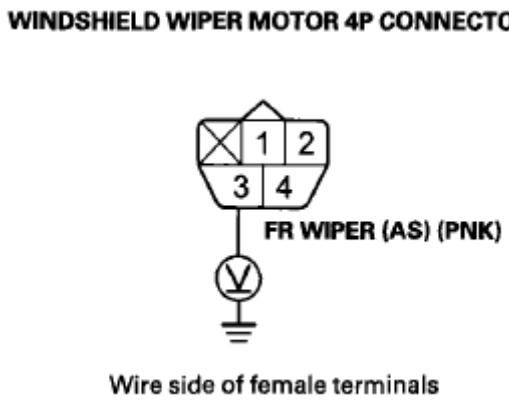


Fig. 9: Measuring Voltage Between Windshield Wiper Motor 4P Connector Terminal No. 3 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there voltage?

YES - Repair a short to power in the wire.

NO - Faulty driver's MICU; replace the driver's under-dash fuse/relay box (see **DRIVER'S UNDER-DASH FUSE/RELAY BOX (MICU) REMOVAL AND INSTALLATION**).

13. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
14. Measure the voltage between under-hood fuse/relay box connector C (5P) terminal No. 4 and body ground.

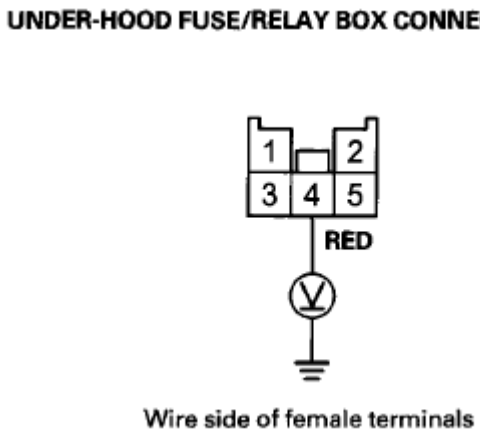


Fig. 10: Measuring Voltage Between Under-Hood Fuse/Relay Box Connector C (5P) Terminal No. 4 And Body Ground With Connector End View

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there battery voltage?

YES - Go to step 16.

NO - Go to step 15.

15. Check the No. 3-7 (WIP MTR) (30 A) fuse in the under-hood fuse/relay box.

    Is the fuse OK?

    YES - Repair an open or high resistance in the No. 3-7 (WIP MTR) (30 A) fuse circuit.

    NO - Replace the fuse. If the fuse blows again, repair a short to ground in the No. 3-7 (WIP MTR) (30 A) fuse circuit.

16. Do the relay circuit board test.

    Is the relay circuit board OK?

    YES - Go to step 17.

    NO - Replace the relay circuit board, and recheck.

17. Disconnect under-hood fuse/relay box connector B (14P).
18. Check for continuity between under-hood fuse/relay box connector B (14P) terminal No. 4 and body ground.

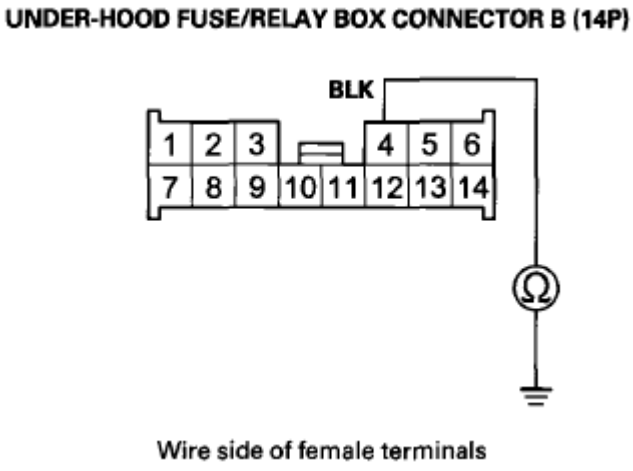


Fig. 11: Checking Continuity Between Under-Hood Fuse/Relay Box Connector B (14P) Terminal No. 4 And Body Ground With Connector End View
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 19.

NO - Repair an open or high resistance in the wire or poor ground (G301).

19. Do the windshield wiper motor test

    Is the windshield wiper motor OK?

    YES - Go to step 20.

    NO - Replace the windshield wiper motor (see **WIPER MOTOR REPLACEMENT**), and recheck.

20. Reconnect under-hood fuse/relay box connector B (14P).
21. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
22. Measure the voltage between body ground and windshield wiper motor 4P connector terminal No. 2 with the wiper switch ON (Low), and measure the voltage between body ground and windshield wiper motor 4P connector terminal No. 4 with the wiper switch ON (High) individually.

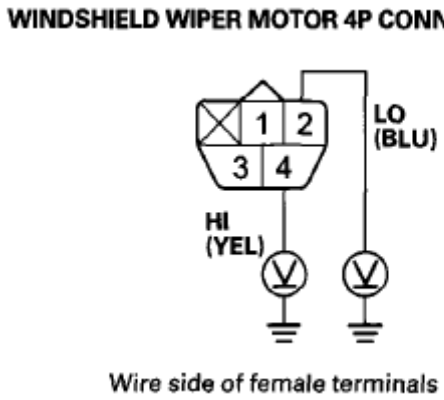


Fig. 12: Measuring Voltage Between Body Ground And Windshield Wiper Motor 4P Connector Terminal No. 2
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there battery voltage?

YES - Repair an open or high resistance in the wire between the windshield wiper motor and body ground. If the wire is OK, check for poor ground (G301).

NO - Go to step 23.

23. Measure the voltage between body ground and under-hood fuse/relay box connector B (14P) terminal No. 5 with the wiper switch ON (Low), and measure the voltage between body ground and under-hood fuse/relay box connector B (14P) terminal No. 6 with the wiper switch ON (High) individually.

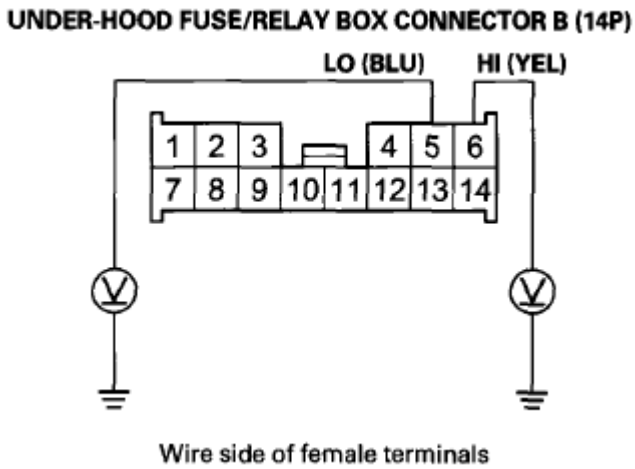


Fig. 13: Measuring Voltage Between Body Ground And Under-Hood Fuse/Relay Box Connector B (14P) Terminal No. 5
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there battery voltage?

YES - Repair an open or high resistance in the BLU (LO) or YEL (HI) wire.

NO - Check terminals F7 and F8 of the driver's under-dash fuse/relay box connector F (33P) using the input test (see **MICU INPUT TEST**). If the input tests prove OK, replace the driver's under-dash fuse/relay box (see **DRIVER'S UNDER-DASH FUSE/RELAY BOX (MICU) REMOVAL AND INSTALLATION**).

DTC B1281: FRONT WIPER MIST POSITION CIRCUIT MALFUNCTION; DTC B1282: FRONT WIPER INT (AUTO) POSITION CIRCUIT MALFUNCTION; DTC B1283: FRONT WIPER LOW POSITION CIRCUIT MALFUNCTION; DTC B1284: FRONT WIPER HIGH POSITION CIRCUIT MALFUNCTION

NOTE: If you are troubleshooting multiple DTCs, be sure to follow the instructions in B-CAN System Diagnosis Test Mode A (see TROUBLESHOOTING - B-CAN SYSTEM DIAGNOSIS TEST MODE A).

1. Clear the DTCs with the HDS.
2. Turn the ignition switch to LOCK (0) and then back to ON (II), or press the engine start/stop button to select the OFF mode and then the ON mode.
3. Turn the wiper switch to the MIST, INT, LOW, HIGH, and OFF positions, and wait for at least 6 seconds.
4. Check for DTCs with the HDS.

Are DTCs B1281, B1282, B1283, and/or B1284 indicated?

YES - Go to step 5.

NO - Intermittent failure, the wiper system is OK at this time. Check for loose or poor connections.

5. Select WIPER from the BODY ELECTRICAL SYSTEM SELECT menu, and enter DATA LIST.
6. Check each wiper switch position value with the DATA LIST menu.

WHEN WIPER SWITCH IS TURNED OFF

Data List	Value
Wiper switch (LOW)	OFF
Wiper switch (HIGH)	OFF
Wiper switch (MIST)	OFF
Wiper switch (INT)	OFF

Are all data list values correct?

YES - Go to step 7.

NO - Go to step 10.

7. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
8. Disconnect driver's under-dash fuse/relay box connector R (24P).
9. Check for continuity between driver's under-dash fuse/relay box connector R (24P) terminals as shown:

From terminal	To terminal
15 (ORN)	1(BLU) 16 (WHT) 17 (GRN)
17 (GRN)	1 (BLU) 16 (WHT)

Is there continuity?

YES - Repair short between the wires.

NO - Faulty driver's MICU; replace the driver's under-dash fuse/relay box (see **DRIVER'S UNDER-DASH FUSE/RELAY BOX (MICU) REMOVAL AND INSTALLATION**).

10. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
11. Disconnect the 8P connector from the wiper switch.
12. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
13. Check each wiper switch position value with the DATA LIST menu.

Data List	Value
Wiper switch (LOW)	OFF
Wiper switch (HIGH)	OFF

Wiper switch (MIST)	OFF
Wiper switch (INT)	OFF

Are all data list values correct?

YES - Replace the wiper/washer switch (see **WIPER/WASHER SWITCH TEST/REPLACEMENT**).

NO - Go to step 14.

14. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
15. Disconnect driver's under-dash fuse/relay box connector R (24P).
16. Check for continuity between body ground and driver's under-dash fuse/relay box connector R (24P) terminals No. 15, No. 16, and No. 17 individually.

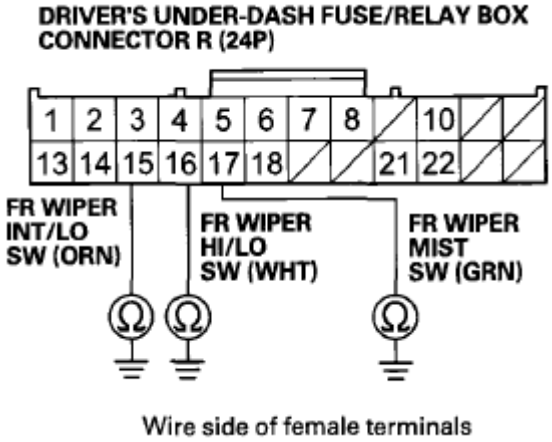


Fig. 14: Checking Continuity Between Body Ground And Driver's Under-Dash Fuse/Relay Box Connector R (24P) Terminals No. 15, No. 16, And No. 17
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair a short to ground in the wire.

NO - Go to step 17.

17. Check for continuity between driver's under-dash fuse/relay box connector R (24P) terminal No. 4 and terminals No. 15, No. 16, and No. 17 respectively.

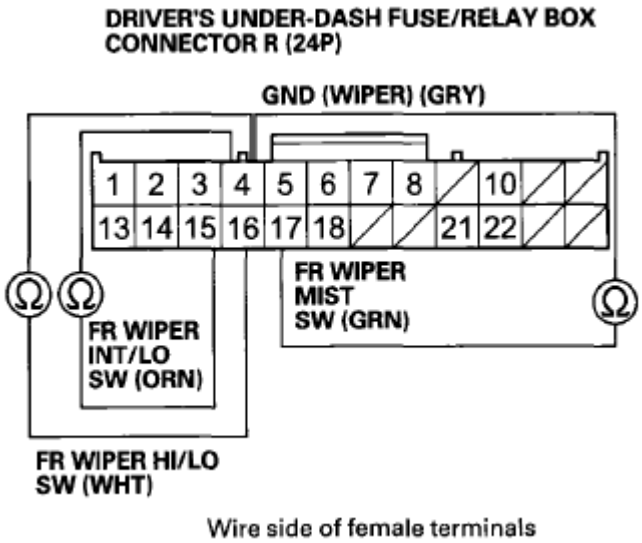


Fig. 15: Checking Continuity Between Driver's Under-Dash Fuse/Relay Box Connector R (24P) Terminal No. 4 And Terminals No. 15, No. 16, And No. 17
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair a short between the wires.

NO - Faulty driver's MICU; replace the driver's under-dash fuse/relay box (see **DRIVER'S UNDER-DASH FUSE/RELAY BOX (MICU) REMOVAL AND INSTALLATION**).

MICU INPUT TEST

NOTE: Before testing, troubleshoot the multiplex integrated control system first, using B-CAN System Diagnosis Test Mode A (see TROUBLESHOOTING - B-CAN SYSTEM DIAGNOSIS TEST MODE A).

Drivers MICU

1. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
2. Remove the driver's dashboard undercover (see **DRIVER'S DASHBOARD UNDERCOVER REMOVAL/INSTALLATION**).
3. Disconnect driver's under-dash fuse/relay box connectors F, Q, and R.

NOTE: All connector views are wire side of female terminals.

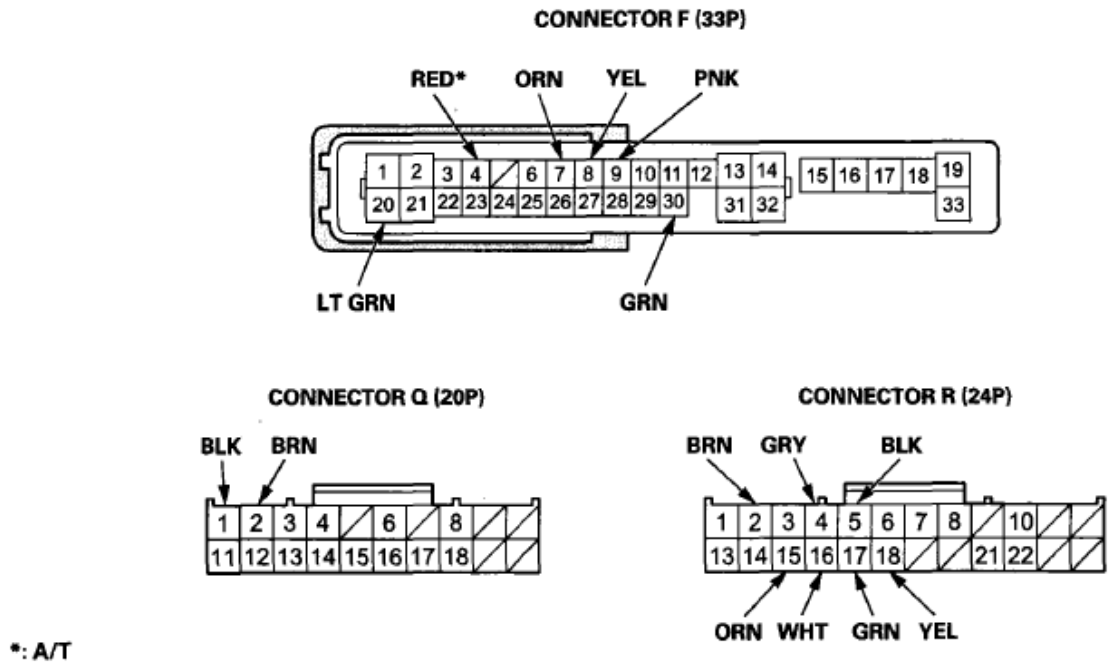


Fig. 16: View Of Driver's Under-Dash Fuse/Relay Box F (33P), Q (20P), & R (24P) Connector End Views
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Inspect the connector and socket terminals to be sure they are all making good contact.
   - If the terminals are bent, loose or corroded, repair them as necessary, and recheck the system.
   - If the terminals look OK, go to step 5.
5. With the connectors still disconnected, do the following input tests:
   - If any test indicates a problem, find and correct the cause, then recheck the system.
   - If all the input tests prove OK, go to step 6.

Cavity	Wire	Test condition	Test: Desired result	Possible cause if desired result is not obtained
F7 . F30	ORN . GRN	Under all conditions	Connect terminals F16 and F30 and terminal F7 to body ground: The windshield wiper motor should run at high speed.	• Blown No. 3-7 (WIP MTR) (30 A) fuse in the under-hood fuse/relay box • Blown No. 4 (7.5A) fuse in the driver's under-dash fuse/relay box • Faulty relay circuit board • Faulty windshield wiper motor

				• Poor ground(G301)or an open in the ground wire • An open or high resistance in the wire
F8	YEL	Run the windshield wiper motor by connecting terminals F16 and F30 to terminal F7 to body ground.	Connect terminal F8 to body ground: The windshield wiper motor speed should change from high speed to low speed.	• Faulty under-hood fuse/relay box • Faulty relay circuit board • Faulty windshield wiper motor • An open or high resistance in the wire
F9	PNK	Run the windshield wiper motor by connecting terminals F16 and F30 to terminal F7 to body ground.	Check for continuity to ground: The needle of the ohmmeter should pulse 1 time per wiper motor cycle. **NOTE:** **Use a DVOM.**	• Faulty windshield wiper motor • Poor ground(G301)or an open in the ground wire • An open or high resistance in the wire

6. Reconnect the connectors to the driver's under-dash fuse/relay box, turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode, and do the following input tests:
   - If any test indicates a problem, find and correct the cause, then recheck the system.
   - If all the input tests prove OK, go to step 7.

Cavity	Wire	Test condition	Test: Desired result	Possible cause if desired result is not obtained
Q1	BLK	In all ignition switch positions or all power modes	Measure the voltage to ground: There should be less than 0.2 V.	• Poor ground(G402) • An open or high resistance in the ground wire
Q2	BRN	In all ignition switch positions or all power modes	Measure the voltage to ground: There should be less than 0.2 V.	• Poor ground(G401) • An open or high resistance in the ground wire
R2	BRN	In all ignition switch positions or all power modes	Measure the voltage to ground: There should be less than 0.2 V.	• Poor ground(G401) • An open or high resistance in the ground wire
		In all ignition switch	Measure the voltage to	• Poor ground(G402)

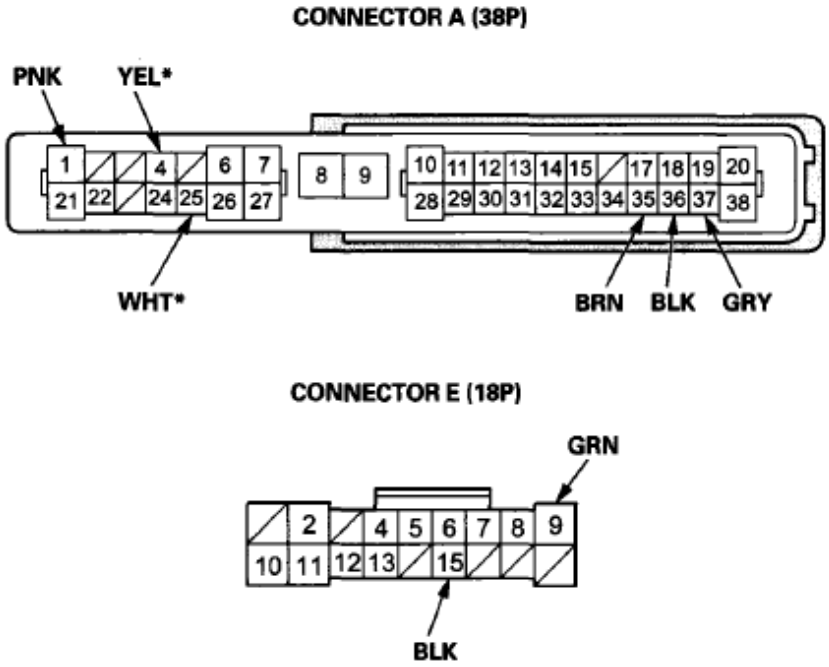
R5	BLK	positions or all power modes	ground: There should be less than 0.2 V.	• An open or high resistance in the ground wire
F4 (A/T)	RED	Transmission range switch in P	Measure the voltage to ground: There should be less than 0.2 V.	• Faulty transmission range switch • Poor ground (G101) or an open in the ground wire • An open or high resistance in the wire
		Transmission range switch in any other position than P	Measure the voltage to ground: There should be about 5 V.	• Faulty transmission range switch • A short to ground in the wire
F20	LT GRN	Brake pedal pressed	Measure the voltage to ground: There should be battery voltage.	• Blown No. 10 (20 A) fuse in the under-hood fuse/relay box • Faulty brake pedal position switch • An open or high resistance in the wire
		Brake pedal released	Measure the voltage to ground: There should be no voltage.	• Faulty brake pedal position switch • A short to power in the wire
R15 . R4	ORN . GRY	Wiper switch (INT or LO) ON	Measure the voltage between terminals R15 and R4: There should be less than 0.2 V.	• Faulty windshield wiper/washer switch • An open or high resistance in the wire
		Wiper switch OFF	Measure the voltage between terminals R15 and R4: There should be about 5 V.	• Faulty windshield wiper/washer switch • A short to ground in the wire
R16 . R4	WHT . GRY	Wiper switch (LO or HI) ON	Measure the voltage between terminals R16 and R4: There should be less than 0.2 V.	• Faulty windshield wiper/washer switch • An open or high resistance in the wire
		Wiper switch OFF	Measure the voltage between terminals R16 and R4: There should be about battery voltage.	• Faulty windshield wiper/washer switch • A short to ground in the wire

R17 . R4	GRN . GRY	Wiper switch (MIST) ON	Measure the voltage between terminals R17 and R4: There should be less than 0.2 V.	• Faulty windshield wiper/washer switch • An open or high resistance in the wire
		Wiper switch OFF	Measure the voltage between terminals R17 and R4: There should be about 5 V.	• Faulty windshield wiper/washer switch • A short to ground in the wire
R18 . R4	YEL . GRY	Washer switch ON	Measure the voltage between terminals R18 and R4: There should be less than 0.2 V.	• Faulty windshield wiper/washer switch • An open or high resistance in the wire
		Washer switch OFF	Measure the voltage between terminals R18 and R4: There should be about 5 V.	• Faulty windshield wiper/washer switch • A short to ground in the wire

Passenger's MICU

7. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
8. Remove the front passenger's kick panel (see **TRIM REMOVAL/INSTALLATION - DOOR AREAS**).
9. Disconnect passenger's under-dash fuse/relay box connectors A and E.

NOTE: All connector views are wire side of female terminals.



*: With headlight washer

Fig. 17: View Of Passenger's Under-Dash Fuse/Relay Box A (38P) & E (18P) Connector End Views
Courtesy of AMERICAN HONDA MOTOR CO., INC.

10. With the connectors still disconnected, do the following input tests:
    - If any test indicates a problem, find and correct the cause, then recheck the system.
    - If all the input tests prove OK, go to step 11.

Cavity	Wire	Test condition	Test: Desired result	Possible cause if desired result is not obtained
E9	GRN	Ignition switch ON (II), or power mode ON	Connect terminals A1 and E9: The windshield washer motor should run.	• Faulty windshield washer motor • An open or high resistance in the wire
A25(1)	WHT	Under all conditions	Connect to ground with a jumper wire: The headlight washer motor should run.	• Blown No. 2-5 (H/L WASHER) (30 A) fuse in the under-hood fuse/relay box • Faulty headlight washer motor • Faulty headlight washer motor relay • Poor ground (G203) or an open in the ground wire • An open or high resistance

				in the wire
A4(1)	YEL	Headlight washer switch pushed	Check for continuity to ground: There should be continuity.	• Faulty headlight washer switch • Poor ground (G401) or an open in the ground wire • An open or high resistance in the wire
		Headlight washer switch released	Check for continuity to ground: There should be no continuity.	• Faulty headlight washer switch • A short to ground in the wire
(1) With headlight washer				

11. Reconnect the connectors to the passenger's under-dash fuse/relay box, and do the following input tests:
    - If any test indicates a problem, find and correct the cause, then recheck the system.
    - If all the input tests prove OK, go to step 12.

Cavity	Wire	Test condition	Test: Desired result	Possible cause if desired result is not obtained
A1	PNK	Ignition switch ON (II), or power mode ON	Measure the voltage to ground: There should be battery voltage.	• Blown No. 3 (20 A) fuse in the driver's under-dash fuse/relay box • Faulty driver's under-dash fuse/relay box • An open or high resistance in the wire
A35	BRN	Ignition switch ON (II), or power mode ON	Measure the voltage to ground: There should be battery voltage.	• Blown No. 12 (7.5 A) fuse in the driver's under-dash fuse/relay box • Faulty driver's under-dash fuse/relay box • An open or high resistance in the wire
E15	BLK	In all ignition switch positions or all power modes	Measure the voltage to ground: There should be less than 0.2 V.	• Poor ground (G203) • An open or high resistance in the ground wire
A36	BLK	In all ignition switch positions or all power modes	Measure the voltage to ground: There should be less than 0.2 V.	• Poor ground (G405) • An open or high resistance in the ground wire
A37	GRY	In all ignition switch positions or all power modes	Measure the voltage to ground: There should be less than 0.2 V.	• Poor ground(G401) • An open or high resistance

				in the ground wire

12. If multiple failures are found on more than one control unit, replace the driver's under-dash fuse/relay box (includes the driver's MICU) (see **DRIVER'S UNDER-DASH FUSE/RELAY BOX (MICU) REMOVAL AND INSTALLATION**). If input failures are related to a particular control unit, replace the control unit.

WIPER/WASHER SWITCH TEST/REPLACEMENT

1. Remove the steering column covers (see **SIDE DEFOGGER VENT TRIM REMOVAL/INSTALLATION**).
2. Disconnect the dashboard wire harness 8P connector (A) from the windshield wiper/washer switch (B).

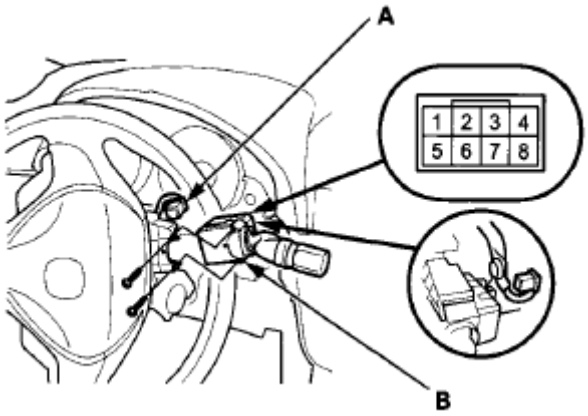


Fig. 18: Identifying Dashboard Wire Harness 8P Connector And Windshield Wiper/Washer Switch With Connector End View
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Remove the two screws, then slide out the switch.
4. Inspect the connector terminals to be sure they are all making good contact.
   - If the terminals are bent, loose or corroded, repair them as necessary, and recheck the system.
   - If the terminals look OK, go to step 5.
5. Check for continuity between the terminals in each switch position according to the table.

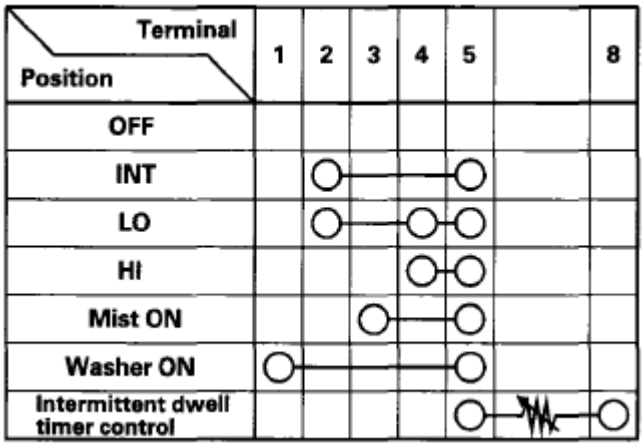


Fig. 19: Identifying Continuity Reference Chart
Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. If the continuity is not as specified, replace the switch.
7. Install the switch in the reverse order of removal.

WIPER MOTOR TEST

1. Remove the wiper arms (see **WIPER MOTOR REPLACEMENT**).
2. Remove the cowl cover (see **FRONT BULKHEAD BRACE COVER REPLACEMENT**).
3. Disconnect the 4P connector (A) from the windshield wiper motor (B).

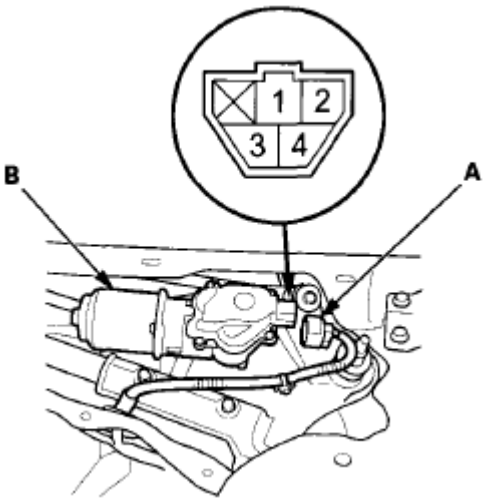


Fig. 20: Identifying 4P Connector And Windshield Wiper Motor
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Test the motor by connecting battery power to terminal No. 2 and ground to terminal No. 1 of wiper motor 4P connector. The motor should run at low speed.
5. Test the motor by connecting battery power to terminal No. 4 and ground to terminal No. 1 of the wiper

motor 4P connector. The motor should run at high speed.

6. Connect an analog ohmmeter to the terminals No. 3 and No. 1, and run the motor at low or high speed. The needle of the ohmmeter should pulse.
7. If the motor does not run or fails to run smoothly, or there is no pulse, replace the motor (see **WIPER MOTOR REPLACEMENT**).

WASHER MOTOR TEST

WINDSHIELD

1. Remove the right inner fender (see **FRONT INNER FENDER REPLACEMENT**).
2. Disconnect the 2P connector (A) from the windshield washer motor (B).

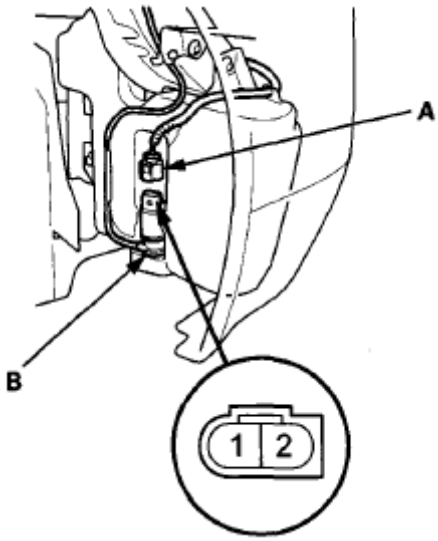


Fig. 21: Identifying 4P Connector And Windshield Wiper Motor
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Test the motor by connecting battery power to terminal No. 2 and ground to terminal No. 1 of the washer motor. The motor should run.
   - If the motor does not run or fails to run smoothly, replace the motor (see **WIPER MOTOR REPLACEMENT**).
   - If the motor runs smoothly, but little or no washer fluid is pumped, check for a disconnected or blocked washer hose, or a clogged washer motor outlet.

HEADLIGHT WASHER

1. Remove the right inner fender (see **FRONT INNER FENDER REPLACEMENT**).
2. Disconnect the 2P connector (A) from the headlight washer motor (B).

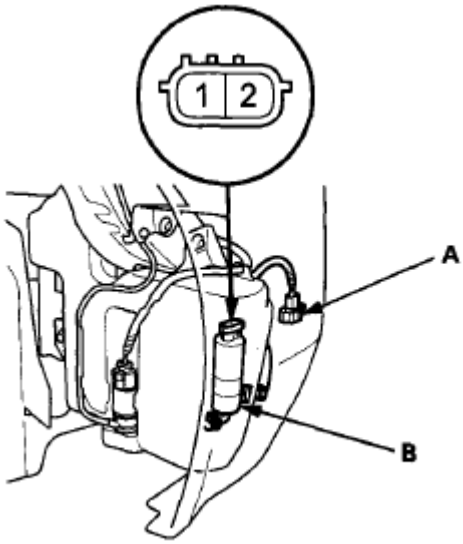


Fig. 22: Identifying 4P Connector & Motor Headlight Washer Motor
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Test the motor by connecting battery power to terminal No. 1 and ground to terminal No. 2 of the washer motor. The motor should run.
   - If the motor does not run or fails to run smoothly, replace the motor (see **WIPER MOTOR REPLACEMENT**).
   - If the motor runs smoothly, but little or no washer fluid is pumped, check for a disconnected or blocked washer hose, or a clogged washer motor outlet.

WASHER FLUID LEVEL SWITCH TEST

CANADA MODELS

1. Remove the right inner fender (see **FRONT INNER FENDER REPLACEMENT**).
2. Disconnect the 2P connector (A) from the washer fluid level switch (B).

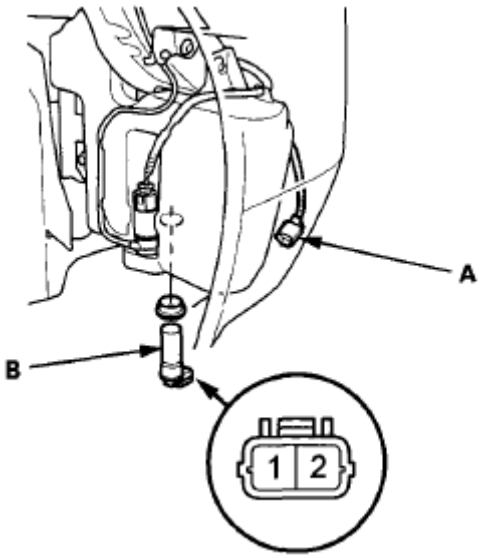


Fig. 23: Identifying 2P Connector And Washer Fluid Level Switch (Canada Model)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Remove the washer fluid level switch from the washer reservoir.

NOTE: Fluid may flow out of the opening.

4. Check for continuity between terminals No. 1 and No. 2 in each float position.
   - There should be continuity when the float is down.
   - There should be no continuity when the float is up.
5. If the continuity is not as specified, replace the switch (see **WIPER/WASHER SWITCH TEST/REPLACEMENT**).

WIPER MOTOR REPLACEMENT

1. Open the hood. Remove the cap, nuts (A), and the windshield wiper arms (B).

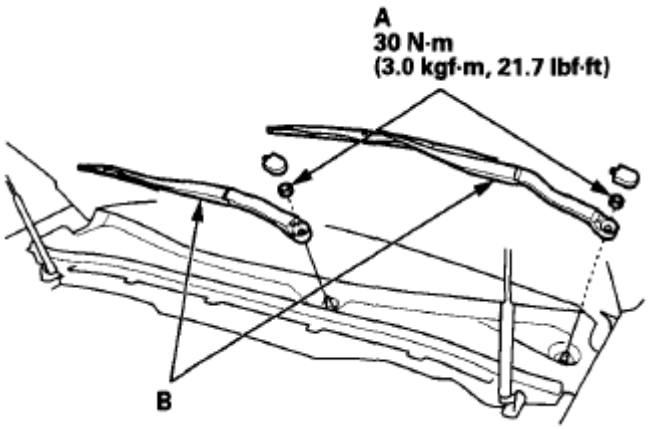


Fig. 24: Identifying Windshield Wiper Arms & Nuts With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Remove the cowl cover (see **FRONT BULKHEAD BRACE COVER REPLACEMENT**).
3. Disconnect the 5P connector (A) from the windshield wiper motor.

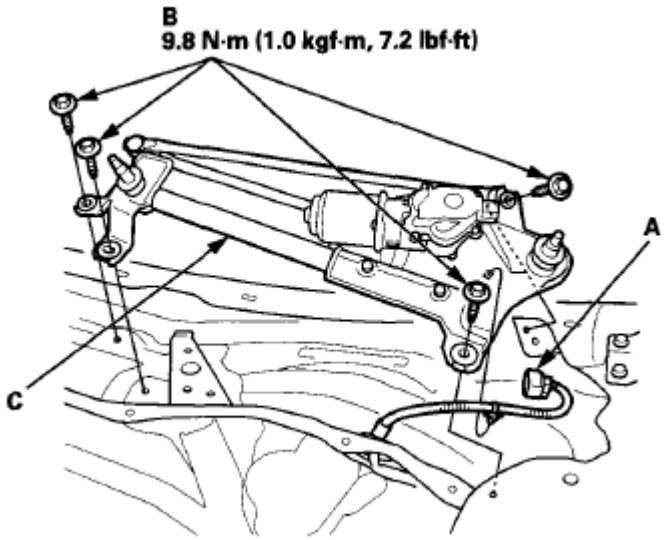


Fig. 25: Identifying 5P Connector, Wiper Linkage Assembly & Bolts With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Remove the four bolts (B) and the wiper linkage assembly (C).
5. Separate the linkage (A) from the link (B).

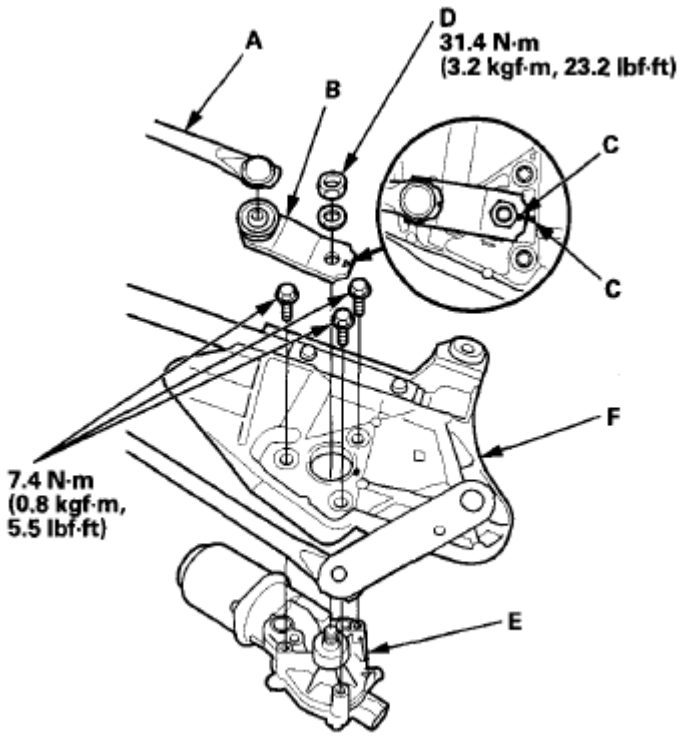


Fig. 26: Identifying Link, Linkage, Alignment Marks, Wiper Motor & Nuts With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Note the alignment marks (C), then remove the nut (D) and the link from the wiper motor (E).
7. Remove the three bolts, and separate the wiper motor from the linkage (F).
8. Before installing the motor, connect the 4P connector to the wiper motor, and turn the wiper/washer switch ON to (LO) or (HI) position, then OFF to return the motor shaft to the park position.

NOTE:

- **Do not use the wiper/washer switch (INT) position in this step.**
- **If necessary, replace any damaged clips.**
- **Apply multipurpose grease to the moving parts.**

9. Install the wiper motor to the wiper linkage assembly in the reverse order of removal.
10. Install the link to the wiper motor shaft, then align the mark (A) of the link and the mark (B) of the wiper linkage assembly.

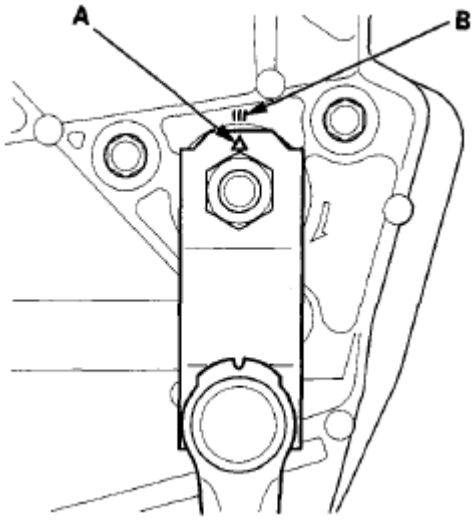


Fig. 27: Identifying Alignment Marks Of Wiper Linkage Assembly
Courtesy of AMERICAN HONDA MOTOR CO., INC.

11. After installation, adjust the wiper arms (see **WIPER ARM/NOZZLE ADJUSTMENT**).

WASHER MOTOR/RESERVOIR REPLACEMENT

1. Remove the right front inner fender (see **FRONT INNER FENDER REPLACEMENT**).
2. Disconnect the 2P connector(s) (A) from the windshield washer motor (B), washer fluid level switch (Canada models), and the headlight washer motor (with headlight washer).

Washer Reservoir Capacity:

2.5 L (2.64 US qt): USA models

5.8 L (6.13 US qt): Canada models

USA models

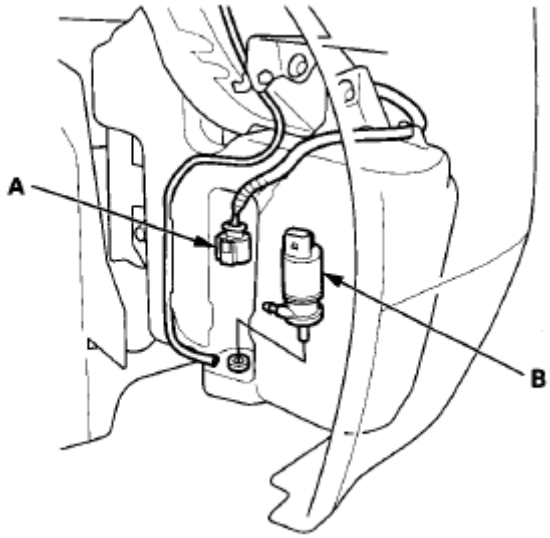


Fig. 28: Identifying Windshield Washer Motor & 2P Connector (USA Models)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Canada models

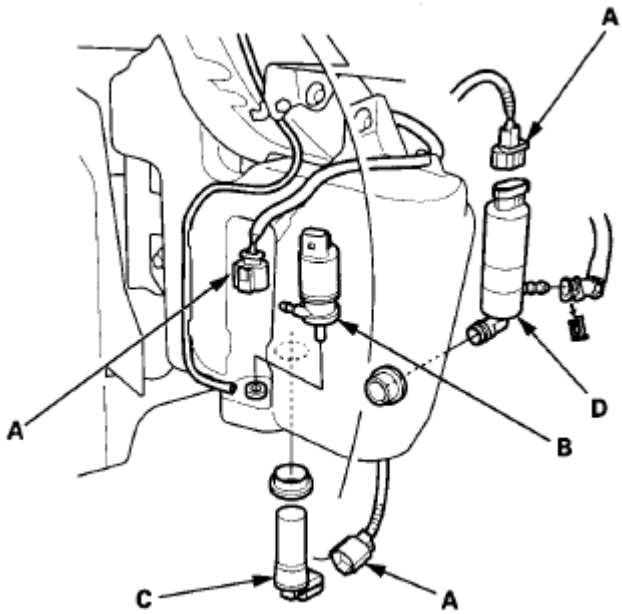


Fig. 29: Identifying Windshield Washer Motor, Washer Fluid Level Switch, Headlight Washer Motor & 2P Connector (Canada Models)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Disconnect the washer tube(s), then if necessary, remove the washer motor, the washer fluid level switch (C) (Canada models), and the headlight washer motor (D) (with headlight washer).

NOTE: Fluid may flow out of the opening.

4. Remove the clip (A) and three bolts from the washer reservoir (B).

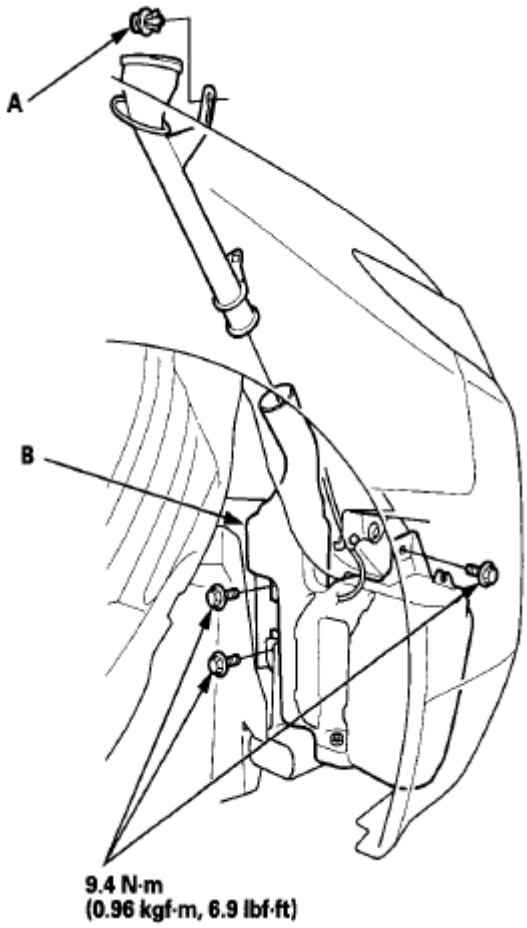


Fig. 30: Identifying Clip, Bolts & Washer Reservoir With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Install the washer reservoir in the reverse order of removal. Check the washer motor operation.

HEADLIGHT WASHER SWITCH TEST/REPLACEMENT

HEADLIGHT WASHER SWITCH

1. Remove the driver's dashboard undercover (see **DRIVER'S DASHBOARD UNDERCOVER REMOVAL/INSTALLATION**).
2. Disconnect the 6P connector (A) from the headlight washer switch (B).

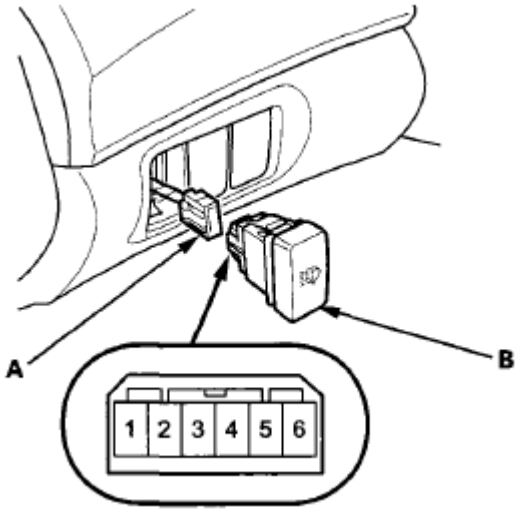


Fig. 31: Identifying 6P Connector And Headlight Washer Switch
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Check for continuity between the terminals in each switch position according to the table.

NOTE:

- **Make sure the correct test lead (+ or -) is placed on the terminal.**
- **When checking for continuity across the diode, use the diode setting on the digital volt/ohm meter to check the diode bias.**
- **Be careful of this characteristic; a diode is one that conducts fully in one direction (forward) and not at all in the opposite direction (reverse).**

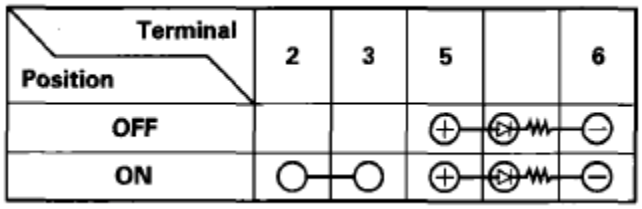


Fig. 32: Continuity Chart Of Diode
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. If the continuity is not as specified, replace the switch.
5. Install the switch in the reverse order of removal.

HEADLIGHT WASHER NOZZLE REPLACEMENT

HEADLIGHT WASHER NOZZLE

1. Remove the front bumper (see **FRONT BUMPER REMOVAL/INSTALLATION**).
2. Remove the cover (A), tube, mounting screws and headlight washer nozzles (B).

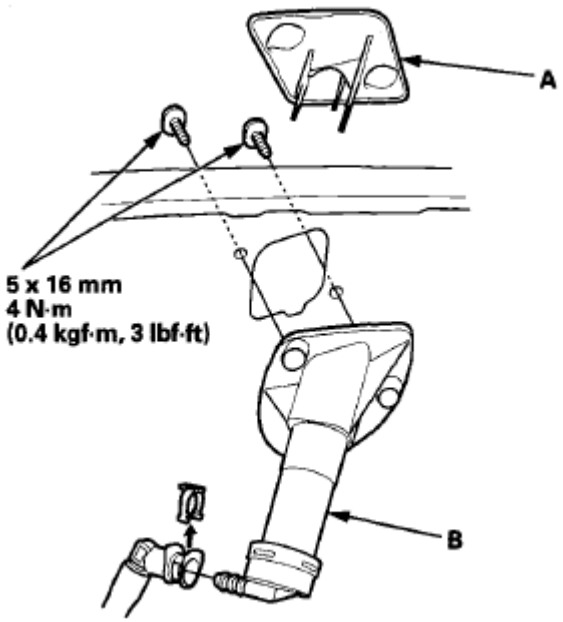


Fig. 33: Identifying Cover & Headlight Washer Nozzles With Mounting Screws With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Install the nozzle in the reverse order of removal. Take care not to pinch the washer tube. Check the headlight washer operation.

WIPER BLADE REPLACEMENT

1. Lift the wiper arms from the windshield.

NOTE: Lift the driver's side first.

2. Press and hold the tab (A) and slide the wiper blade assembly (B) toward the tab to release it from the wiper arm (C).

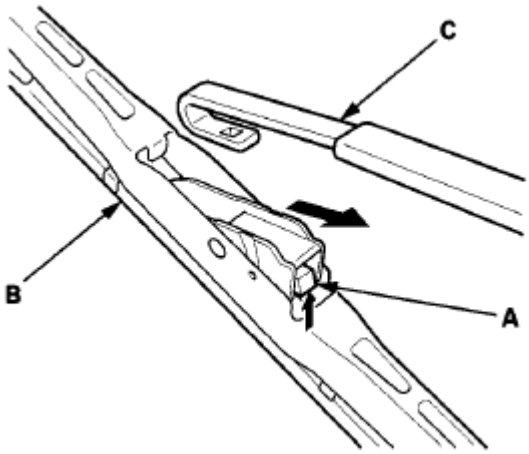


Fig. 34: Sliding Wiper Blade Assembly Toward Tab To Release It From Wiper Arm
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Slide the blade (A) out from the wiper blade holder (B).

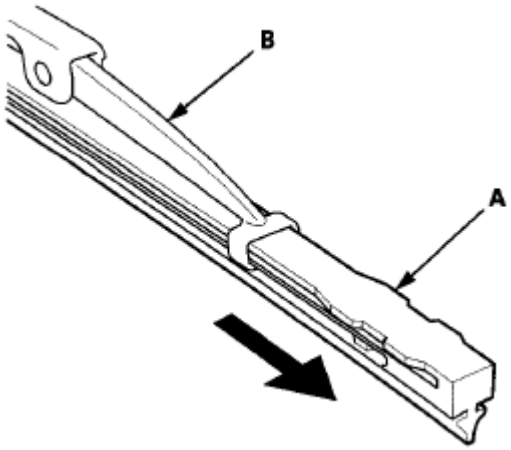


Fig. 35: Sliding Blade Out From Wiper Blade Holder
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Install a new blade to the wiper blade holder in the reverse order of removal.
5. Install the wiper blade assembly onto the wiper arms in the reverse order of removal.
6. Check the wiper operation, if the blades slip, turn the wiper switch OFF, and reinstall the wiper blades securely.

WIPER ARM/NOZZLE ADJUSTMENT

NOTE:

- **When you adjust the washer nozzles, carefully move the outside of the washer nozzles (A).**
- **Do not insert tools into the nozzle hole (B) as it may cause the washer fluid to spray incorrectly.**

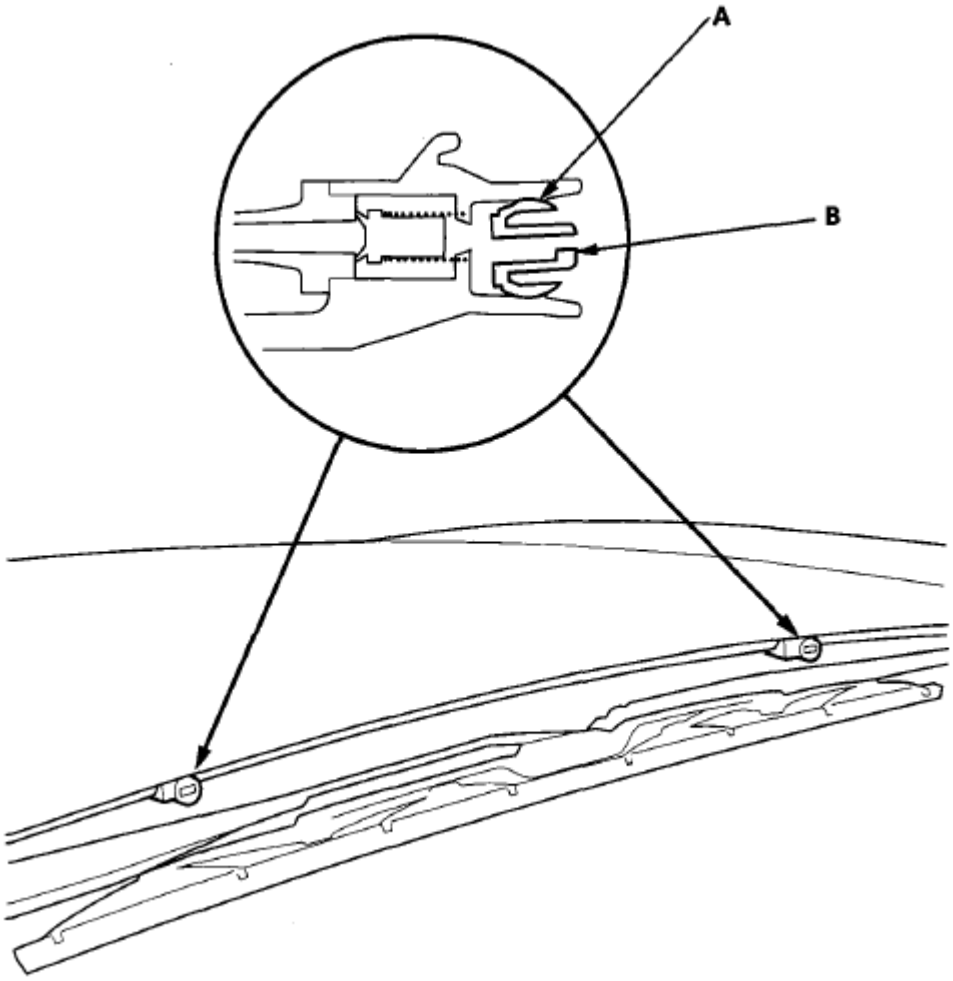


Fig. 36: Identifying Washer Nozzles And Nozzle Hole
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Windshield Wiper Arms Park Position

1. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode, then turn the wiper switch ON, and then back OFF.
2. When the wiper arms stop at the park position, make sure that they are at the correct position.
    a. Position at about 66.9 mm (2.6 in) from the top of cowl cover (A).
    b. Position at about 36.2 mm (1.4 in) from the top of cowl cover (A).

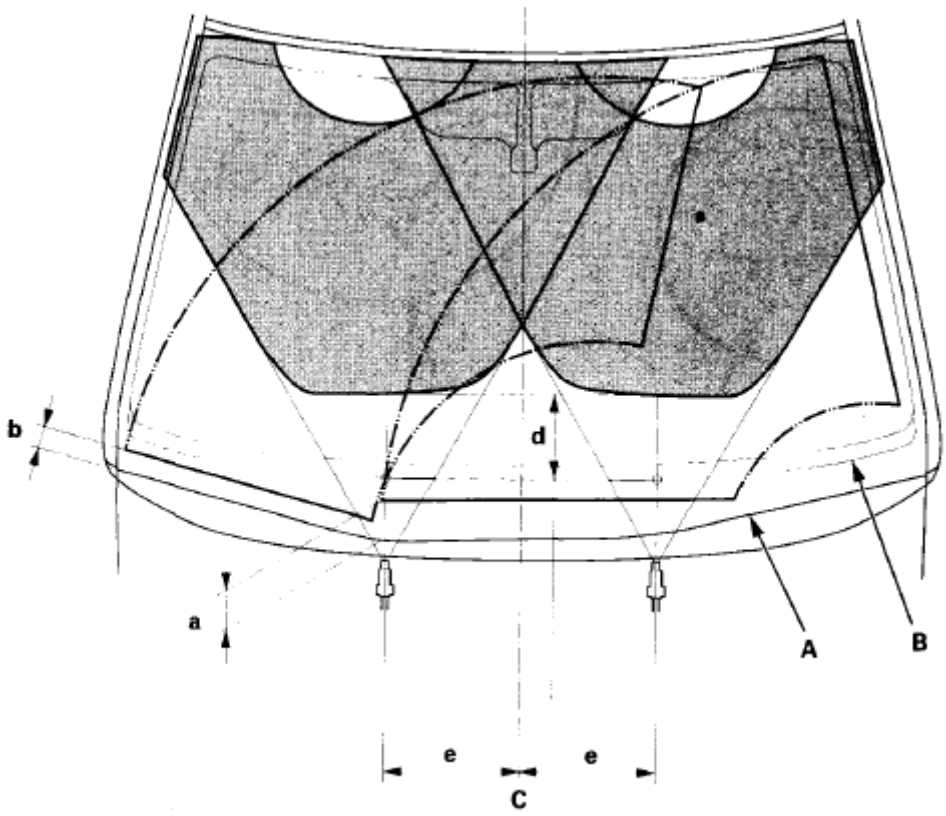


Fig. 37: Identifying Windshield Wiper Arms Park Position
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Washer Nozzle Position

3. When you turn on the washer(s), make sure 50 % or more of the washer fluid lands within the spray area. If the spray area is not within the standard positions, adjust the nozzle(s).

   d: Position at about 153 mm (6.0 in) from the top of the black ceramic area (B) at the lower windshield.

   e: Position at about 250 mm (9.8 in) from the windshield center line (C).

WASHER TUBE REPLACEMENT

WINDSHIELD

1. Remove the right front inner fender (see **FRONT INNER FENDER REPLACEMENT**).
2. Remove the washer nozzles and clips, then remove the tubes.

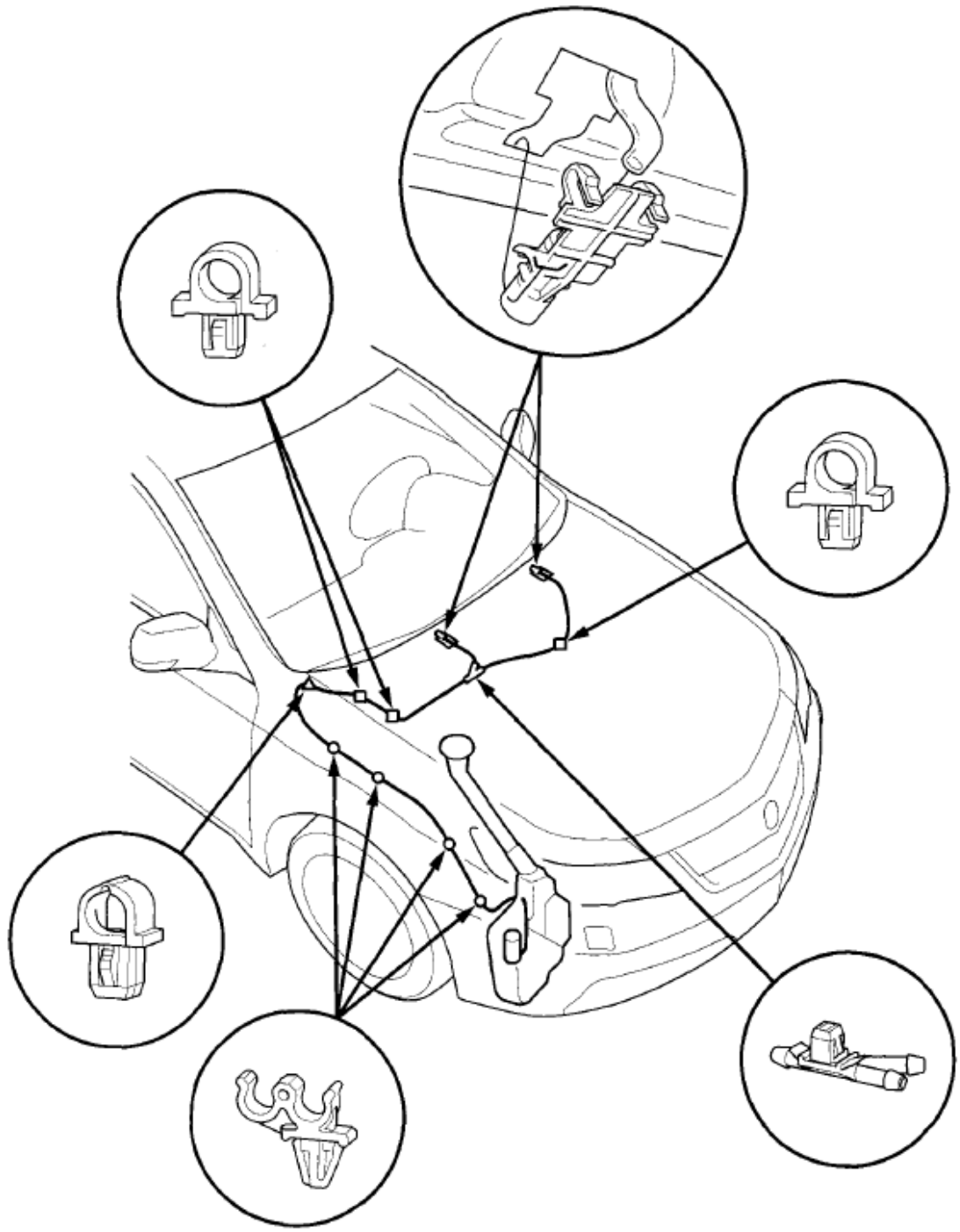


Fig. 38: Identifying Windshield Washer Tube, Washer Nozzles & Clips
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Install in the reverse order of removal. Take care not to pinch the washer tubes. Check the washer operation.

HEADLIGHT WASHER

1. Remove the front bumper (see **FRONT BUMPER REMOVAL/INSTALLATION**).
2. Remove the tube, mounting bolts and washer nozzles.

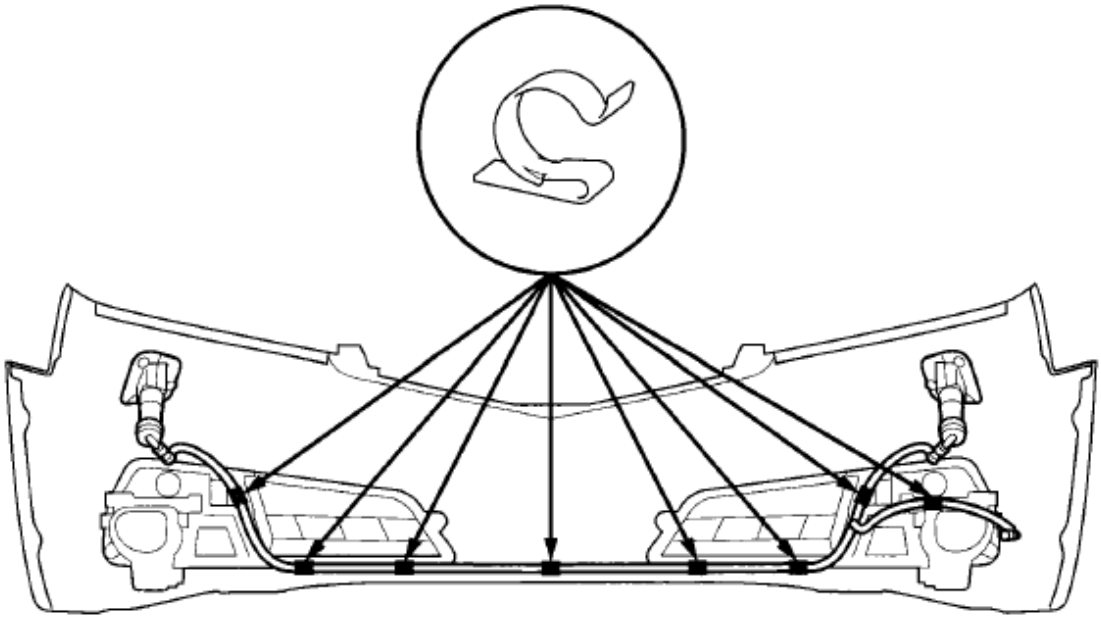


Fig. 39: Identifying Headlight Washer Tubes
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Install the parts in the reverse order of removal. Take care not to pinch the washer tubes. Check the washer operation.

2012 ACCESSORIES & EQUIPMENT

Body (Special Tools) - TL

SPECIAL TOOLS

Ref.No.	Tool Number	Description	Qty
①	070AG-SJAA10S	Subframe Alignment Pin	1
②	07AAF-SNAA100	Torsion Bar Assembly Tool	1

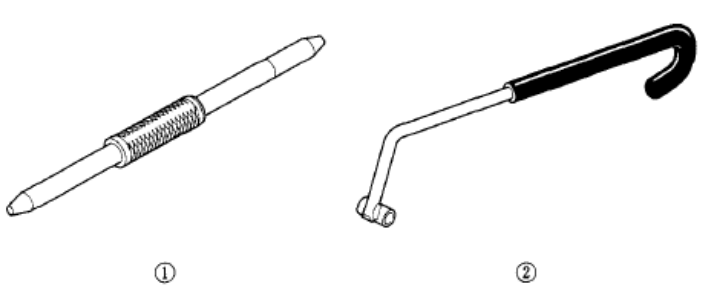


Fig. 1: Identifying Body Special Tools

2012 ACCESSORIES & EQUIPMENT

Bumpers - TL

FRONT BUMPER REMOVAL/INSTALLATION

NOTE:

- **Have an assistant help you when removing and installing the front bumper.**
- **Put on gloves to protect your hands.**
- **Take care not to scratch the front bumper or the body.**
- **When prying with a flat-tip screwdriver, wrap it with protective tape to prevent damage.**

1. Disconnect the outside temperature sensor connector (A) from under the front bumper (B).

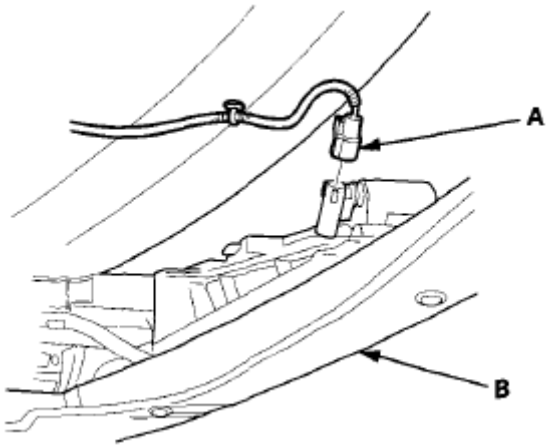


Fig. 1: Identifying Outside Temperature Sensor Connector And Front Bumper
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Remove these items:
   - Front bulkhead cover (see **ENGINE COMPARTMENT COVER REPLACEMENT**)
   - Front strakes, both sides (see **FRONT STRAKE REPLACEMENT**)
3. Remove the bolts (A, B), the screws (C), and the clips (D, E) securing the front bumper (F).

NOTE: **To release the clips D, pry up on the center pin at the notch (G).**

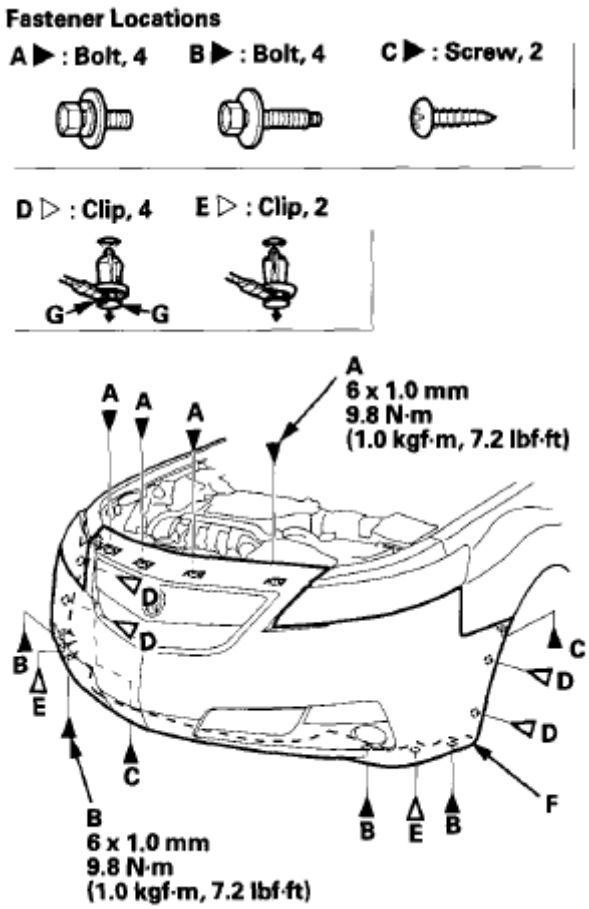


Fig. 2: Identifying Front Bumper, Notch, Clips, Screws And Bolts With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Pull out the front bumper (A) at the wheel arch areas to release it from the hooks (B) on the side spacers (C).

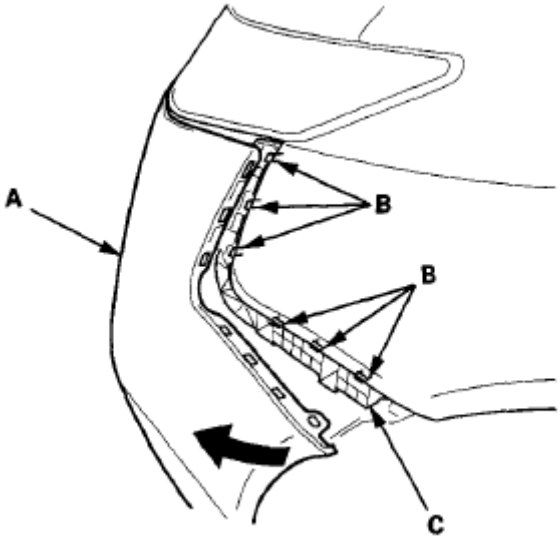


Fig. 3: Pulling Out Front Bumper At Wheel Arch Areas To Release It From Hooks On Side Spacers
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. With the help of an assistant, pull both sides of the front bumper (A) away from the side spacers (B). Then pull out the bumper to release the hooks (C) from the upper beams (D).

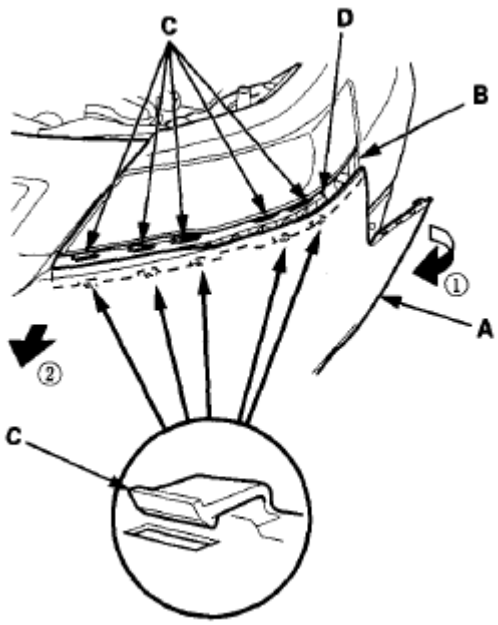


Fig. 4: Pulling Both Sides Of Front Bumper Away From Side Spacers
Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Hold up the bumper (A). Disconnect the front turn signal connectors (B), the fog light connectors (C), and, the headlight washer tube (D) (for some models). Release the projection (E) from the bulkhead (F), then remove the bumper.

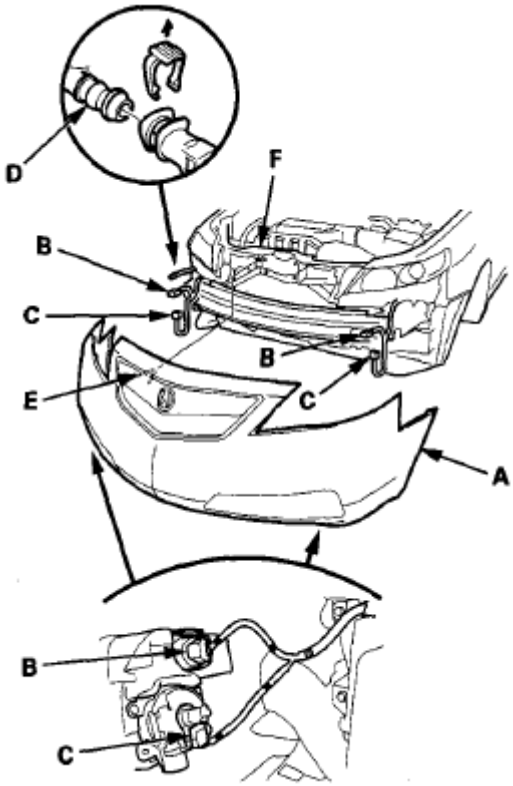


Fig. 5: Identifying Bumper, Front Turn Signal Connectors, Fog Light Connectors, Headlight Washer, Projection And Bulkhead
Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Install the bumper in the reverse order of removal, and note these items:
   - If the clips are damaged or stress-whitened, replace them with new ones.
   - Make sure the each connector is plugged in properly.
   - For some models: Make sure the headlight washer tube is connected properly.
   - Make sure the front bumper engages the hooks (on the upper beam and the side spacers) on each side securely.
   - Push the clips and the hooks into place securely.

LOWER FRONT BUMPER GRILLE REPLACEMENT

Special Tools Required

KTC Trim Tool Set SOJATP2014*

*Available through the Acura Tool and Equipment Program; call 888-424-6857

NOTE:
- **Put on gloves to protect your hands.**
- **Take care not to scratch the front bumper.**

- **Use the appropriate tool from the KTC trim tool set to avoid damage when removing components.**

1. Remove the **FRONT BUMPER**.
2. For some models: Remove the headlight washer tube as needed (see **HEADLIGHT WASHER (WITH HEADLIGHT WASHER)**).
3. Remove the screws from back of the front bumper (A), and release the hooks (B, C), then remove the lower front bumper grille (D) and the fog light housing (E).

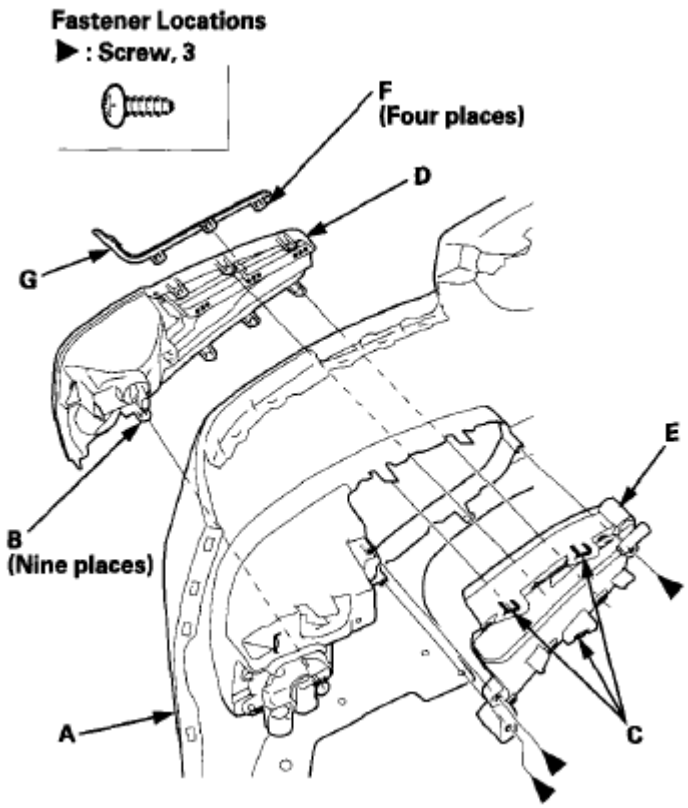


Fig. 6: Identifying Front Bumper, Hooks Lower Front Bumper Grille And Fog Light Housing
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. If necessary, release the hooks (F) (four places), then remove the front bumper lower mesh cross bar (G).
5. Install the grille in the reverse order of removal, and push the hooks into place securely.

REAR BUMPER REMOVAL/INSTALLATION

NOTE:

- **Have an assistant help you when removing and installing the rear bumper.**
- **Put on gloves to protect your hands.**
- **Take care not to scratch the rear bumper or the body.**
- **When prying with a flat-tip screwdriver, wrap it with protective tape to**

prevent damage.

1. Remove the screws (A, B) and the clips (C) securing the rear bumper (D).

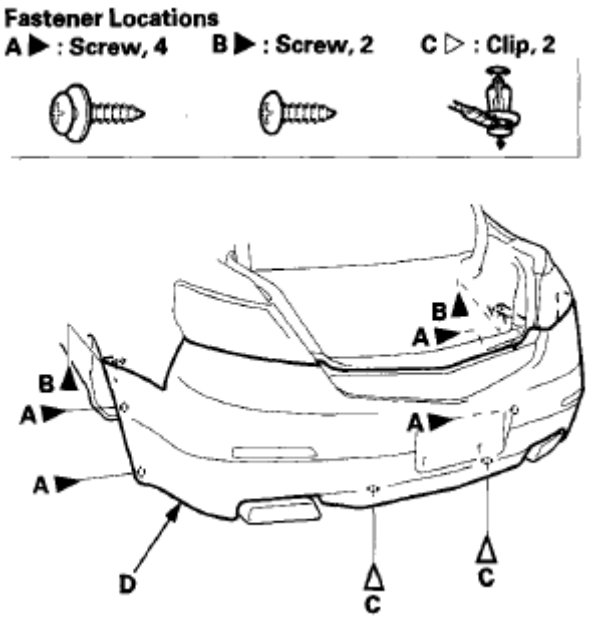


Fig. 7: Identifying Screws, Clips And Rear Bumper
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Pull out the rear bumper (A) at the wheel arch areas to release it from the hooks (B) on the side spacer (C).

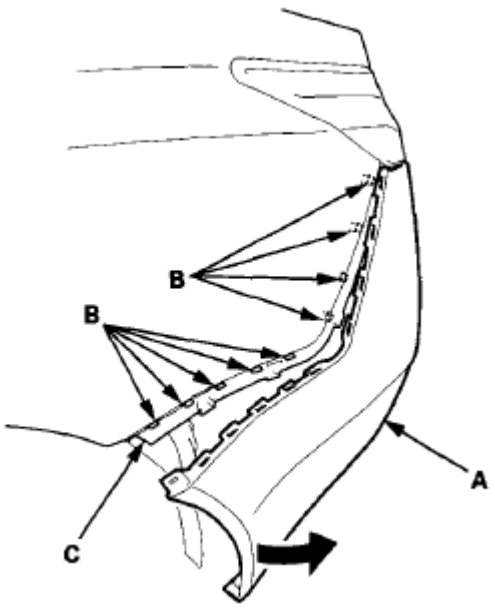


Fig. 8: Identifying Rear Bumper, Hooks And Side Spacer

Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. With the help of an assistant, pull out one side of the rear bumper (A) to release the hooks (B) on the rear spacer (C) as shown. Repeat this step on the opposite side.

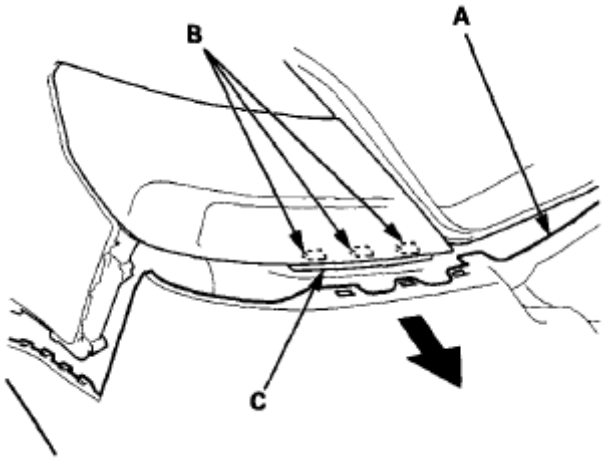


Fig. 9: Pulling Out One Side Of Rear Bumper To Release Hooks On Rear Spacer
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. With the help of an assistant, pull out the rear bumper to release the bumper (A) from the hooks (B) on the upper brackets (C). Disconnect the rear license plate light connectors (D).

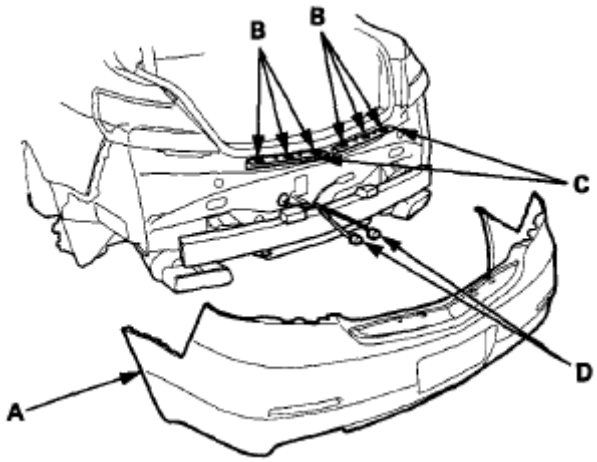


Fig. 10: Pulling Out Rear Bumper To Release Bumper From Hooks On Upper Brackets
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Install the bumper in the reverse order of removal, and note these items:
   - If the clips are damaged or stress-whitened, replace them with new ones.
   - Make sure each connector is plugged in properly.
   - Make sure the rear bumper engages the hooks (of both side spacers and rear spacers) on each side securely.

- Push the clips and the hooks into place securely.

REAR BUMPER UPPER CENTER TRIM REPLACEMENT

NOTE:

- **Put on gloves to protect your hands.**
- **Take care not to scratch the rear bumper.**

1. Remove the **REAR BUMPER**.
2. Release the screws, then remove the rear bumper upper center trim (A).

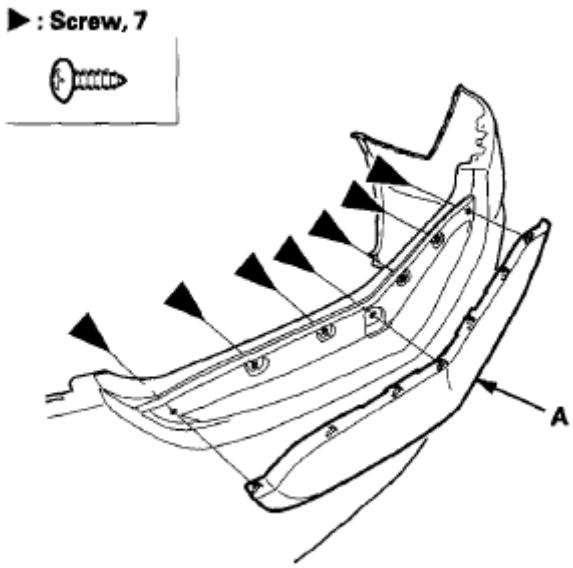


Fig. 11: Removing Rear Bumper Upper Center Trim
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Install the trim in the reverse order of removal, and push the hooks into place securely.

REAR BUMPER LOWER TRIM REPLACEMENT

NOTE:

- **Put on gloves to protect your hands.**
- **Take care not to scratch the rear bumper.**
- **When prying with a flat-tip screwdriver, wrap it with protective tape to prevent damage.**

1. Remove the **rear bumper**.
2. Detach the clips, and release the hooks (A) (six places), then remove the rear bumper lower trim (B).

NOTE: To release the clips, pry up on the center pin at the notch (C).

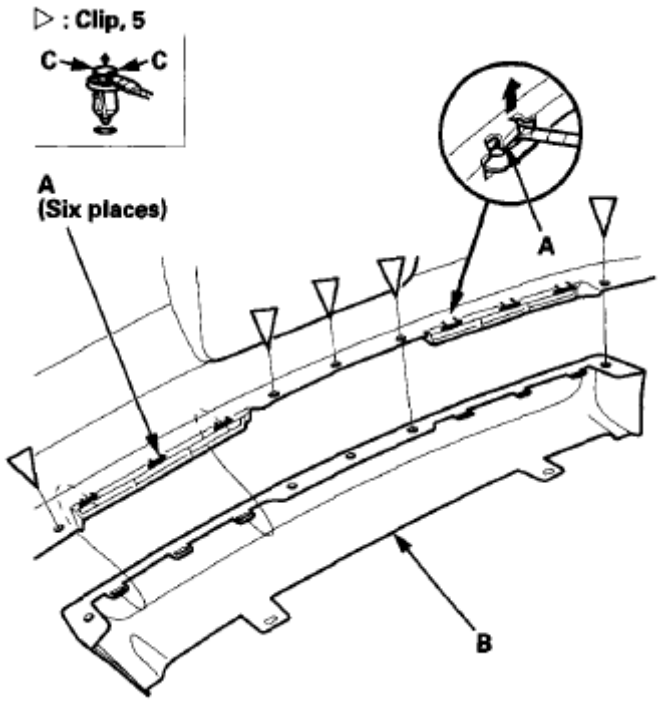


Fig. 12: Identifying Hooks, Rear Bumper Lower Trim And Notch
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Install the trim in the reverse order of removal, and push the clips and the hooks into place securely.

REAR BUMPER REFLECTOR REPLACEMENT

NOTE:

- **Put on gloves to protect your hands.**
- **Take care not to scratch the rear bumper.**

1. Remove the **REAR BUMPER**.
2. Release the hooks (A), then remove the rear bumper reflector (B) from the rear bumper (C).

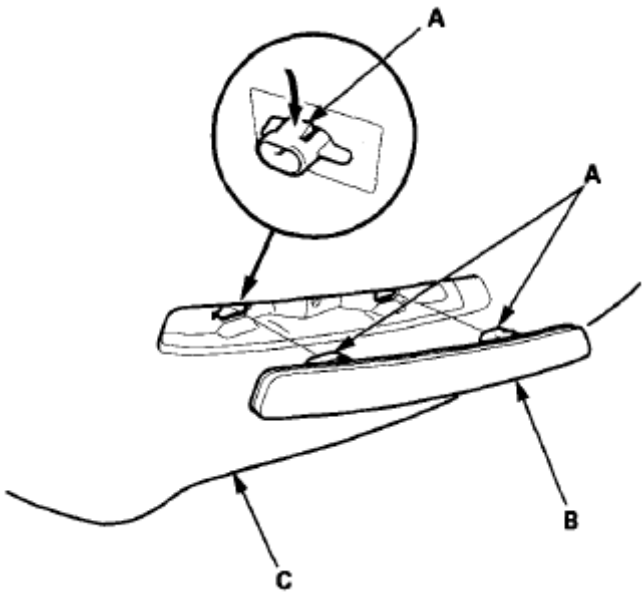


Fig. 13: Identifying Hooks, Rear Bumper Reflector And Rear Bumper
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Install the reflector in the reverse order of removal, and push the hooks into place securely.

2012 ACCESSORIES & EQUIPMENT

Doors - TL

COMPONENT LOCATION INDEX - FRONT DOOR

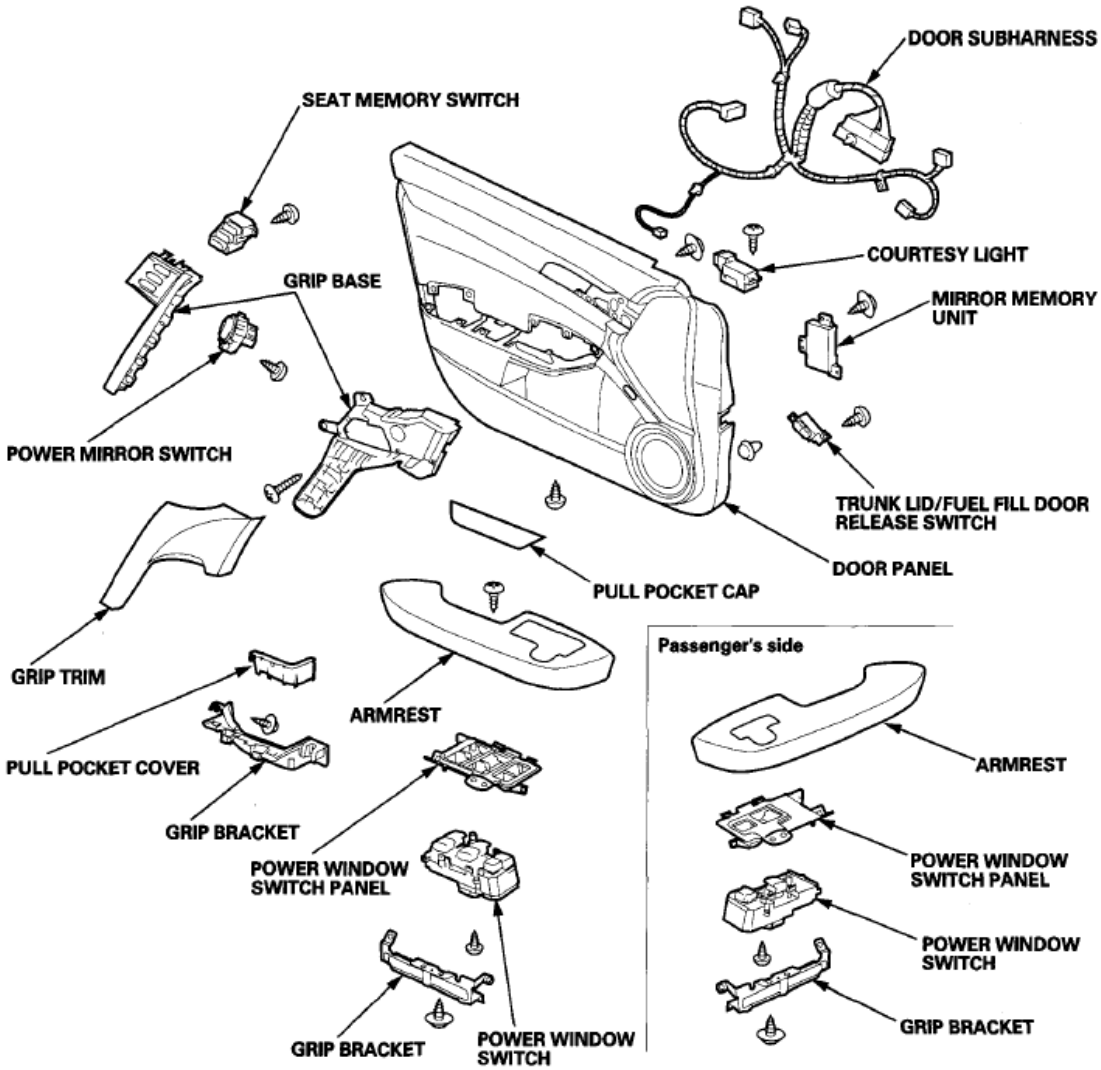


Fig. 1: Front Door Components Location (1 Of 3)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

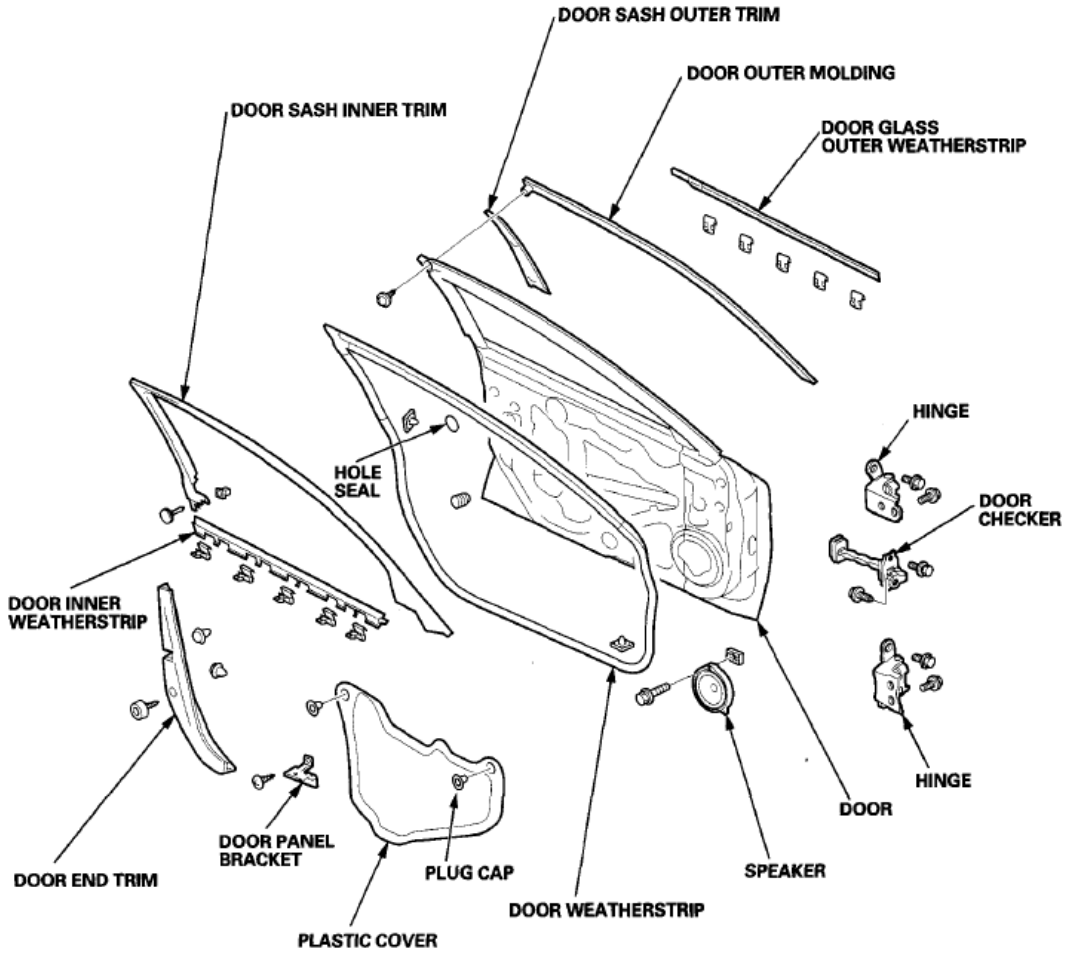


Fig. 2: Front Door Components Location (2 Of 3)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

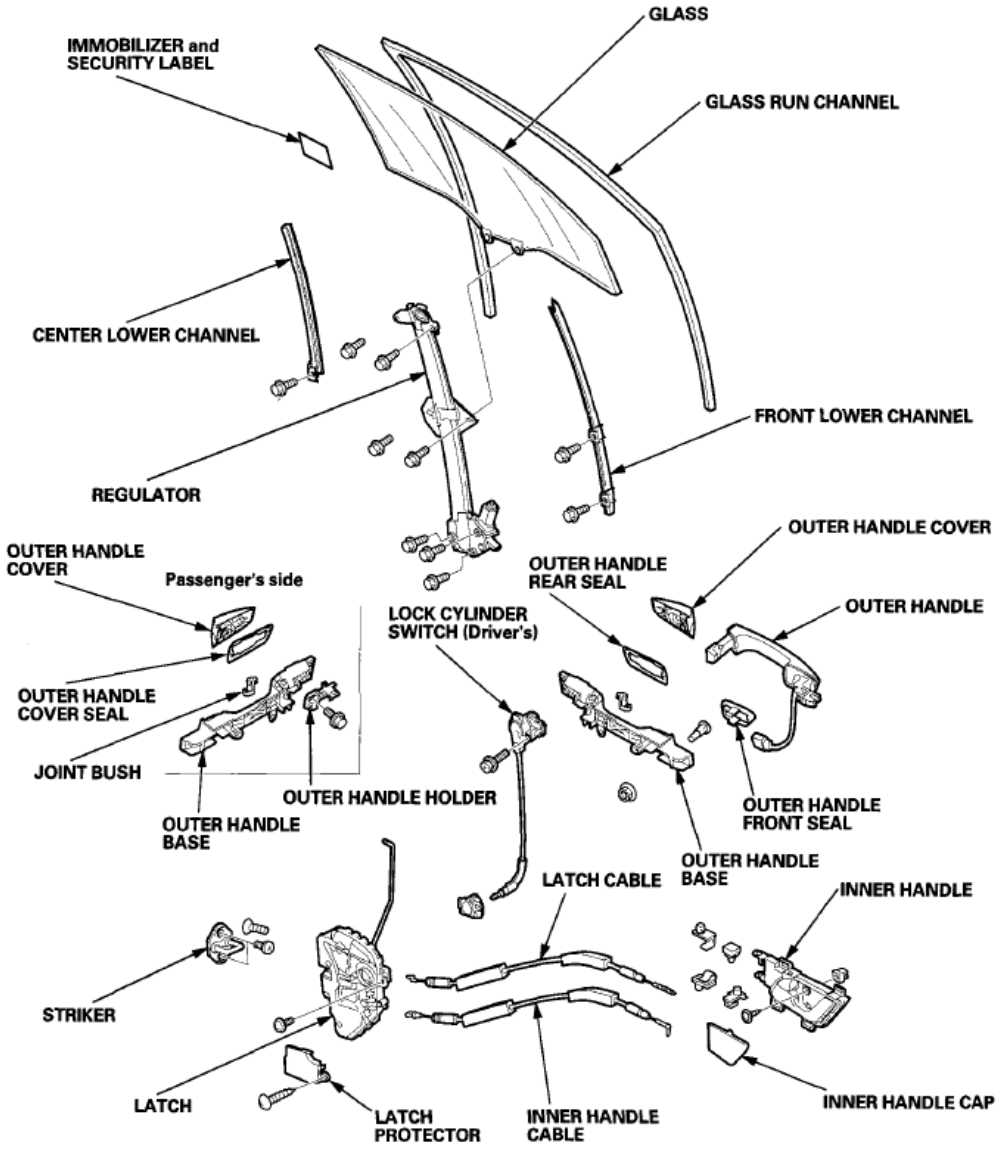


Fig. 3: Front Door Components Location (3 Of 3)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

COMPONENT LOCATION INDEX - REAR DOOR

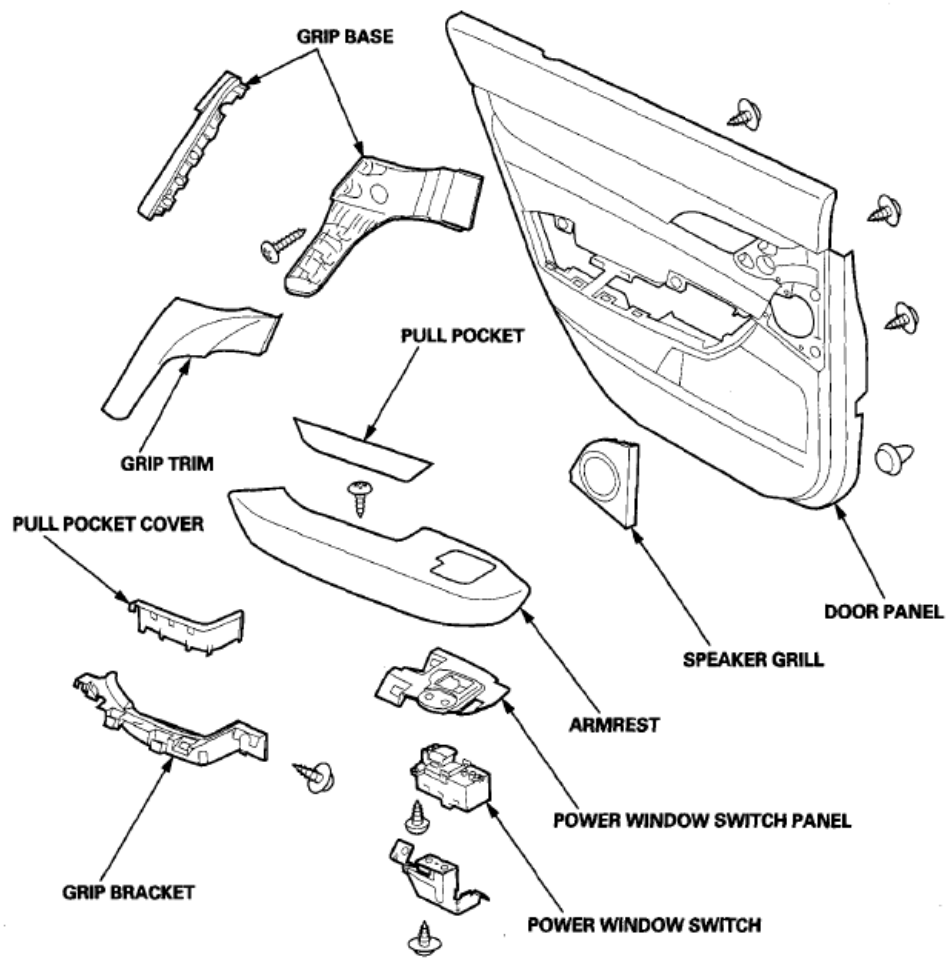


Fig. 4: Rear Door Components Location (1 Of 3)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

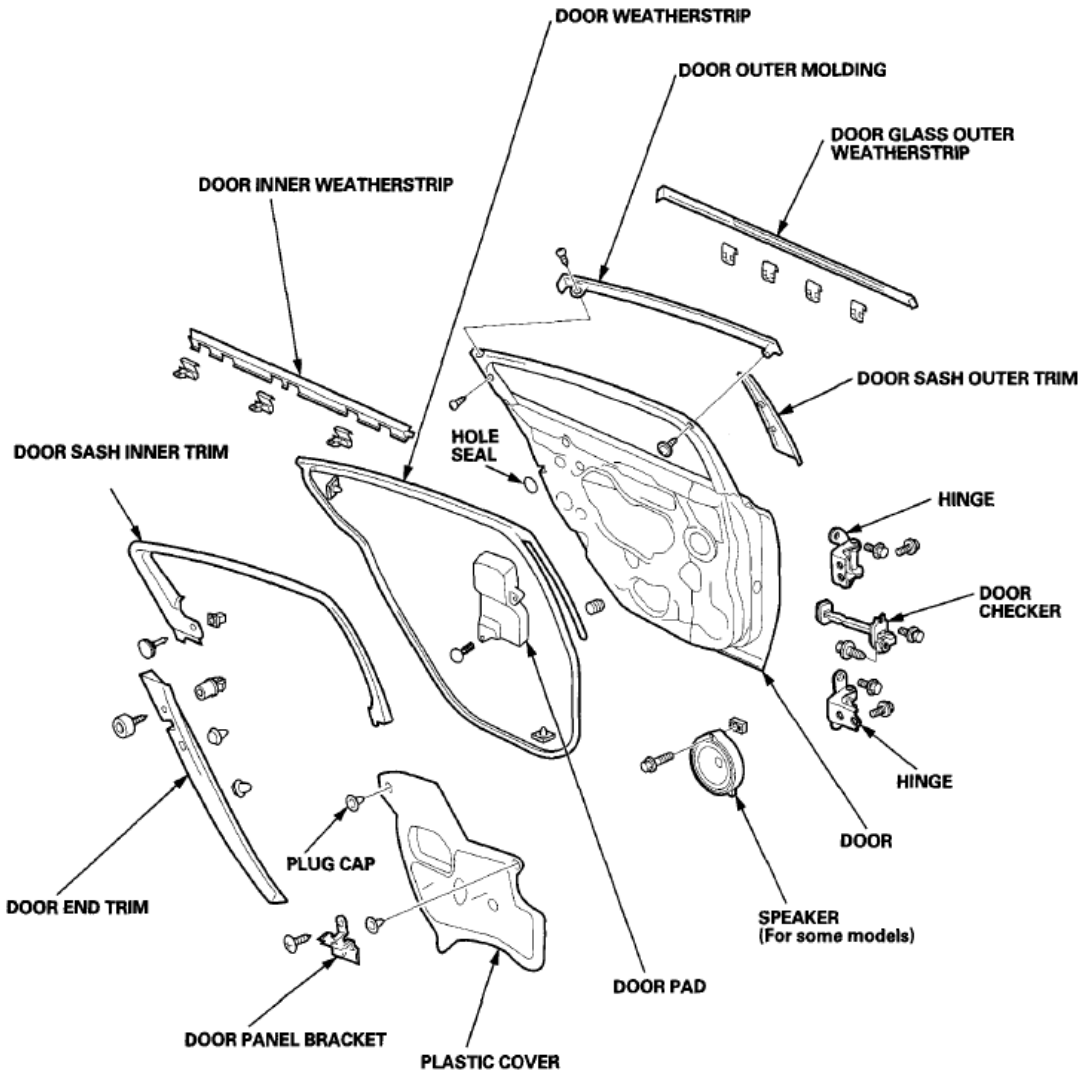


Fig. 5: Rear Door Components Location (2 Of 3)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

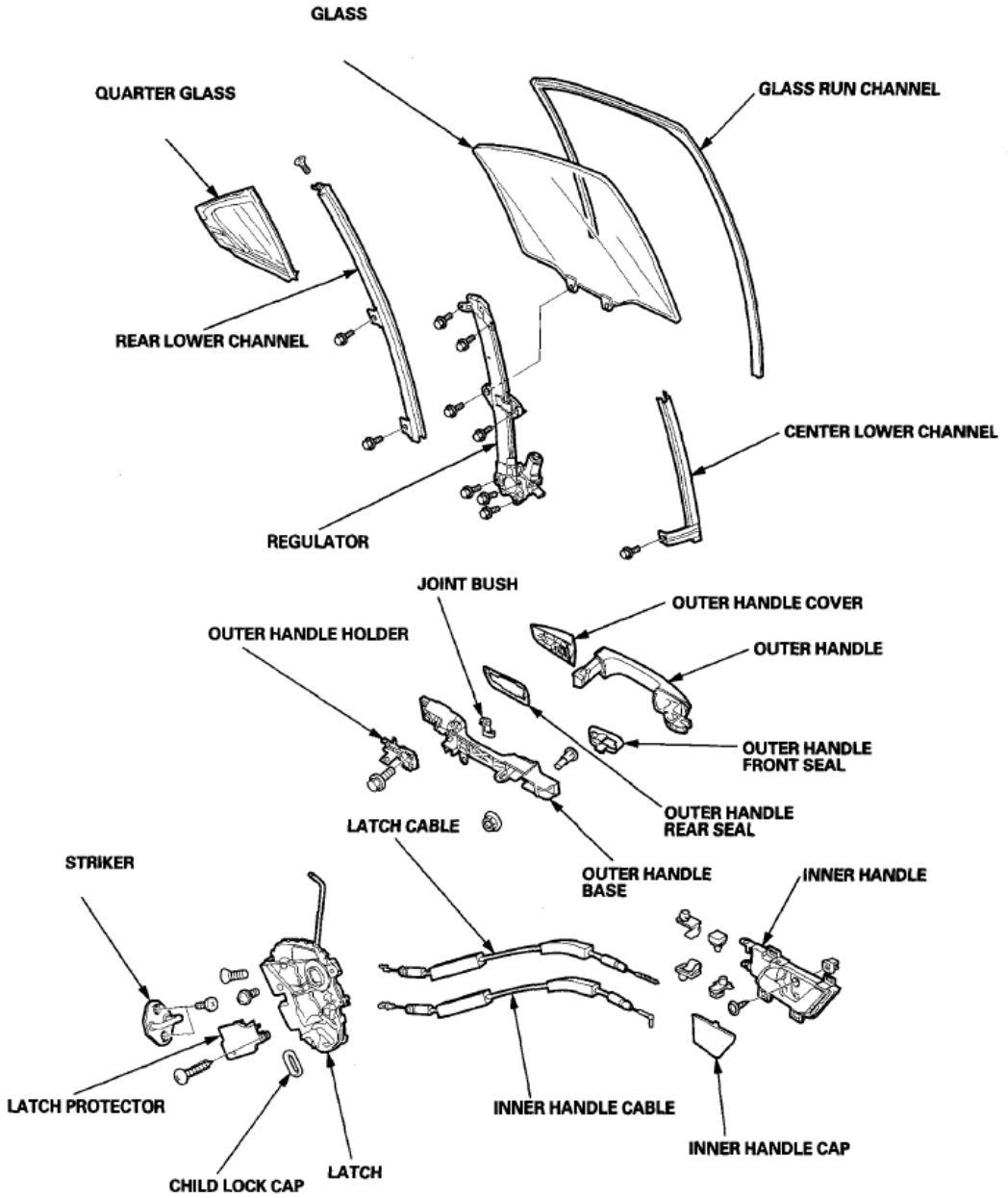


Fig. 6: Rear Door Components Location (3 Of 3)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

FRONT DOOR PANEL REMOVAL/INSTALLATION

Special Tools Required

- KTC Trim Tool Set SOJATP2014*
- Trim Pad Remover, Snap-on A 177A or equivalent, commercially available

*Available through the Acura Tool and Equipment Program; call 888-424-6857

NOTE:

- **Take care not to scratch the door or the related parts.**
- **Use the appropriate tool from the KTC trim tool set to avoid damage when removing components.**
- **When prying with a flat-tip screwdriver, wrap it with protective tape to prevent damage.**

1. Push on the upper hook (A) with the appropriate trim tool, then pull back the inner handle cap (B) to remove it.

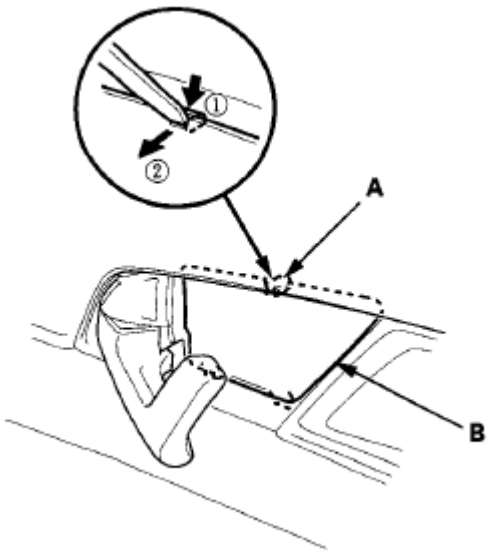


Fig. 7: Pushing On Upper Hook With Appropriate Trim Tool
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Remove the screws securing the inner handle (A).

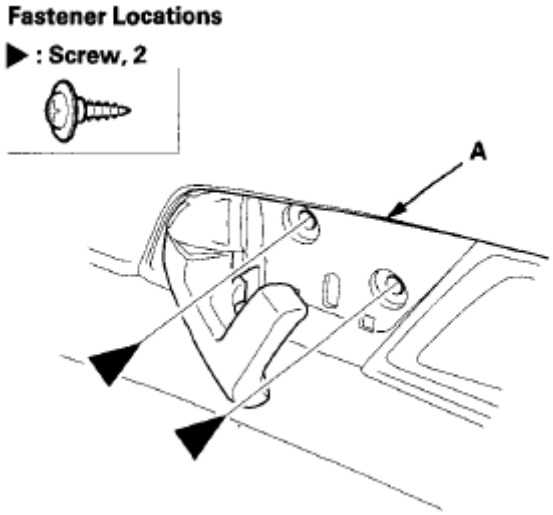


Fig. 8: Identifying Inner Handle

Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Remove the door grip trim (A).
    1. Insert the appropriate trim tool into the notch (B), and pry out along the edge of the trim to release the hooks (C).
    2. Pull up the trim to release the hook (D).

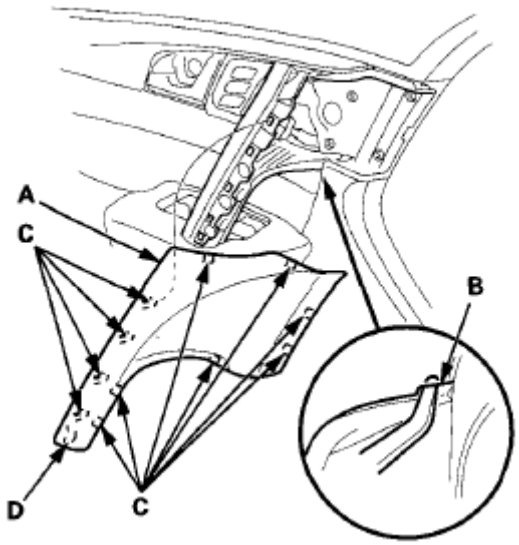


Fig. 9: Identifying Door Grip Trim, Notch And Hooks
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Remove the screw.

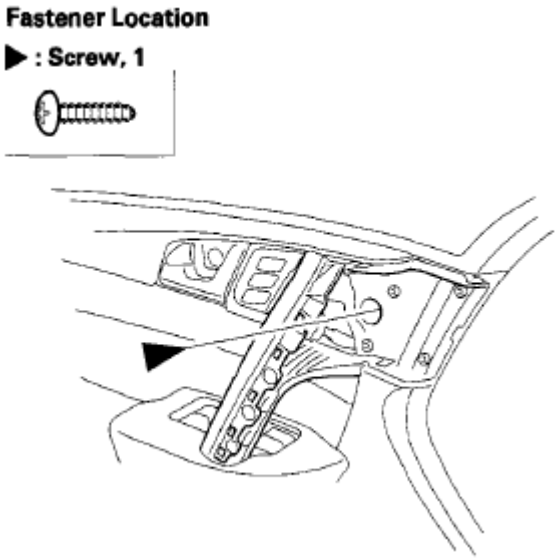


Fig. 10: Identifying Screws
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Release the hooks (A), and remove the front pull pocket cap (B), then remove the screw.

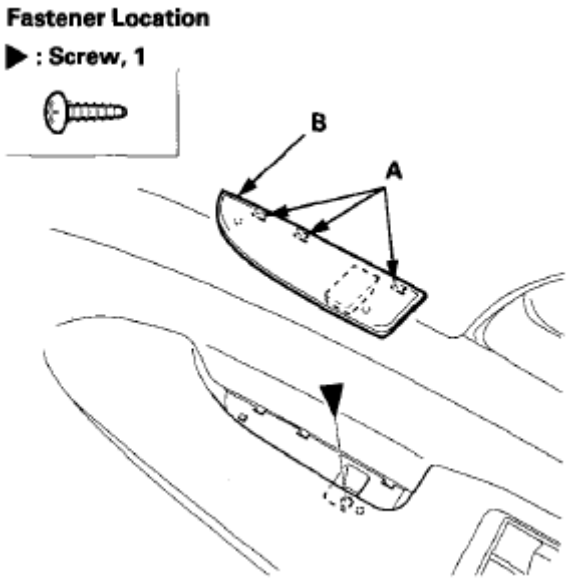


Fig. 11: Identifying Hooks And Pull Pocket Cap
Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. From under the armrest, pry out at the notch (A) with the appropriate trim tool, and open the pocket cap (B), then remove the screw.

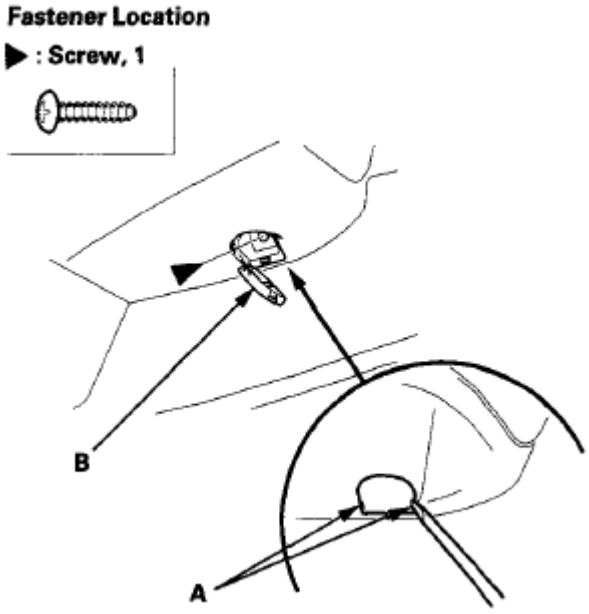


Fig. 12: Identifying Notch And Pocket Cap
Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Remove the door panel (A) with as little bending as possible to avoid creasing or breaking it.

1. Start at the bottom edge of the door panel, detach the clips (B) with a commercially available trim pad remover.
2. Detach the remaining clips (C).
3. Release the door panel from the metal clips (D) attached to the door glass inner weatherstrip.
4. Starting at the rear, pull out the door panel.

NOTE: The inner handle cable (E) and the latch cable (F) are connected to the inner handle (G). Do not pull up the door panel too far, or these cables will be damaged.

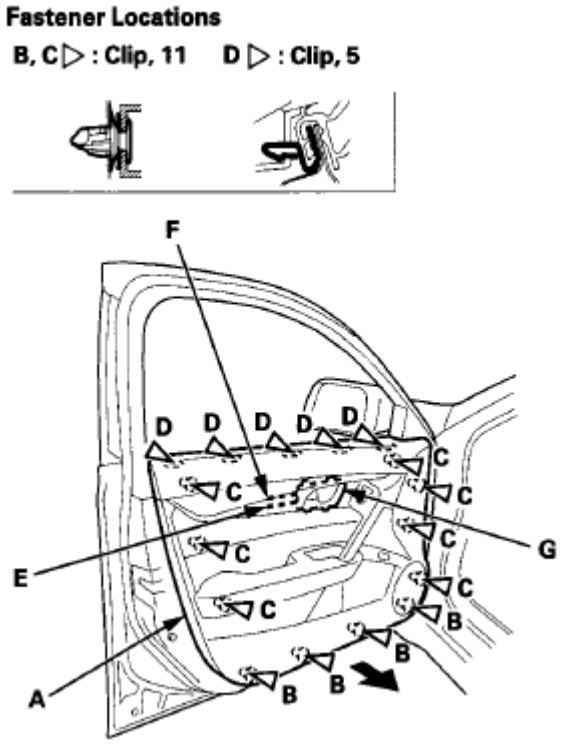


Fig. 13: Identifying Clips And Inner Handle Cable
Courtesy of AMERICAN HONDA MOTOR CO., INC.

8. While holding the door panel away from the door, detach the clips by pulling out the inner handle (A), then remove the inner handle from the door panel.

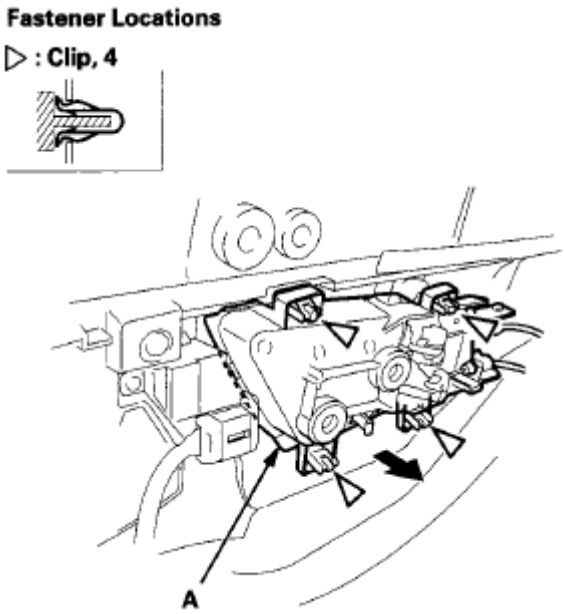


Fig. 14: Pulling Out Inner Handle
Courtesy of AMERICAN HONDA MOTOR CO., INC.

9. While holding the door panel (A) away from the door, remove these items:
   - Driver's door: Disconnect the driver's door wire harness connectors (B, C).
   - Passenger's door: Detach the harness clip (D), then disconnect the power window switch connector (E) and the courtesy light connector (F).

NOTE: If you are only removing the door panel, go to step 14. If you are doing further disassembly of the door panel, continue to step 10.

Driver's Door

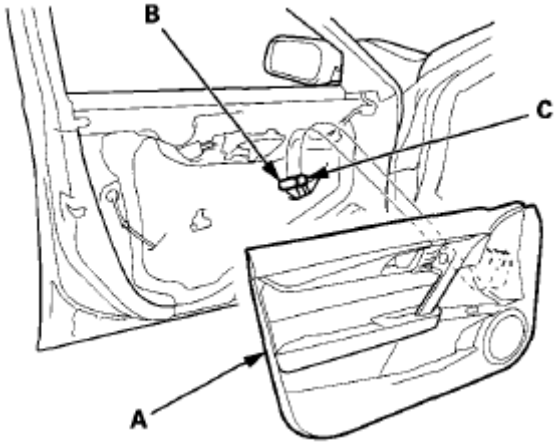


Fig. 15: Identifying Door Panel, Wire Harness Connections And Connectors (Driver's Door)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Passenger's Door

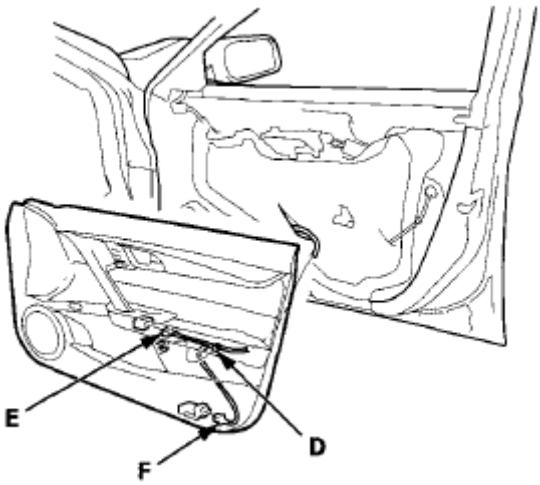


Fig. 16: Identifying Door Panel, Wire Harness Connections And Connectors (Passenger's Door)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Inner Handle Removal

10. Disconnect the inner handle cable (A) and the latch cable (B) from the inner handle (C), then remove the handle.
    1. Release the inner handle cable fasteners (D, E), then disconnect the inner handle cable from the cable fasteners.
    2. Release the latch cable fastener (F), and remove the latch cable fastener (G) from the inner handle by pinching its tabs together.

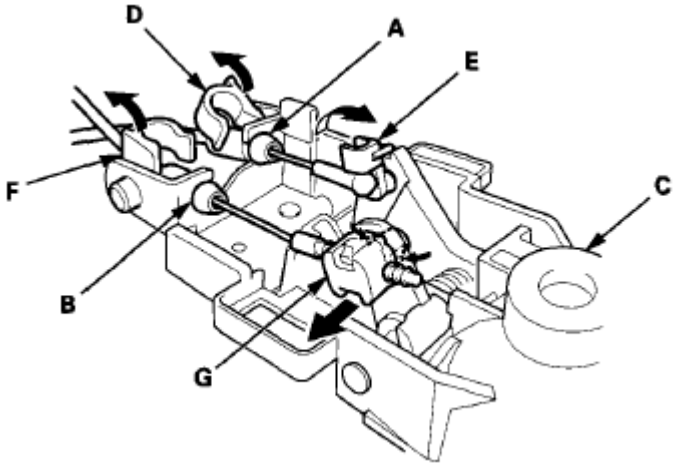


Fig. 17: Releasing Latch Cable Fastener
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Door End Trim Removal

11. Remove the screw (A), and detach the clips (B), then remove the door end trim (C) by pulling back the trim. The clips (D) will stay in the door.

NOTE: Install the clips D on the door end trim before installing the trim on the door.

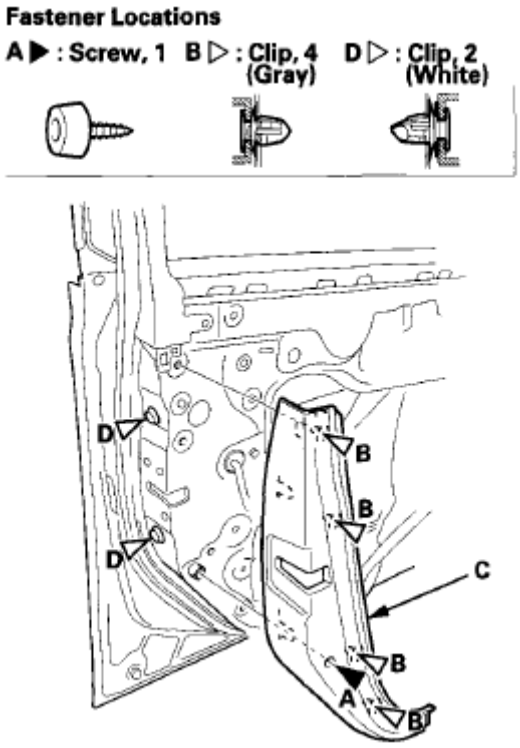


Fig. 18: Identifying Screw, Clips And Door End Trim
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Armrest Assembly/Grip Assembly Removal

12. Remove the armrest/grip assembly (A) from the door panel (B).
    1. Disconnect the door subharness connector (C).
    2. Driver's door: Disconnect the seat position memory switch connector (D) and the power mirror switch connector (E).
    3. Remove the screws from back of the door panel and the front of the grip assembly.
    4. Pull out along the edge of the armrest/grip assembly to release the hooks (F).

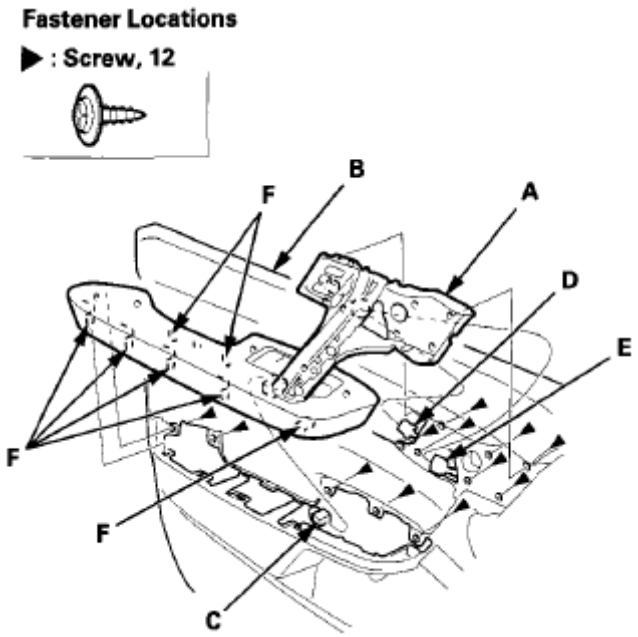


Fig. 19: Identifying Armrest/Grip Assembly Components
Courtesy of AMERICAN HONDA MOTOR CO., INC.

13. Remove the screws, then separate the armrest assembly (A) and the grip assembly (B).

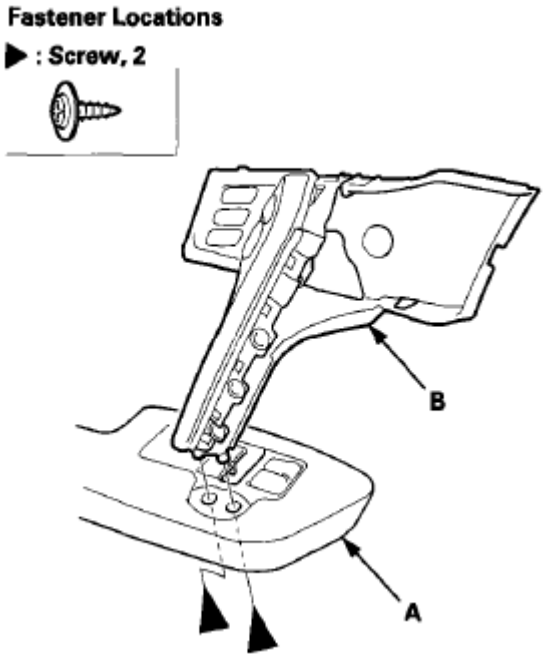


Fig. 20: Identifying Armrest Assembly And Grip Assembly
Courtesy of AMERICAN HONDA MOTOR CO., INC.

14. Install the door panel in the reverse order of removal, and note these items:

- If the clips are damaged or stress-whitened, replace them with new ones.
- Replace any damaged cable fasteners with new ones.
- If the inner door handle cable end is damaged or stress-whitened, replace it with a new one.
- The latch cable (A) should be fixed to the cable fastener (B) with the latch in the unlocked position as shown.
- Make sure each connector is plugged in properly, and each cable is connected securely.
- Make sure the power window, the power door lock, and the power mirror operate properly.
- When reinstalling the door panel, make sure the plastic cover on the door is installed properly.
- Push the clips and the hooks into place securely.

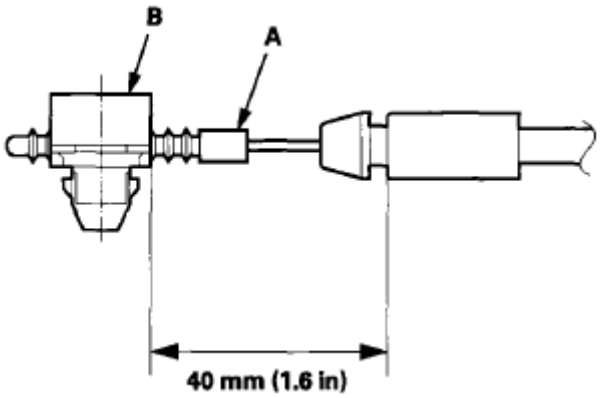


Fig. 21: Identifying Latch Cable And Cable Fasteners
Courtesy of AMERICAN HONDA MOTOR CO., INC.

FRONT DOOR OUTER HANDLE REPLACEMENT

NOTE:
- **Put on gloves to protect your hands.**
- **Take care not to scratch the door.**

1. Remove these items:
   - Door panel (see **FRONT DOOR PANEL REMOVAL/INSTALLATION**)
   - Door end trim (see **FRONT DOOR PANEL REMOVAL/INSTALLATION**)
2. Raise the glass fully.
3. Remove the plastic cover (A) as needed.
   1. Disconnect the power door lock actuator connector (B), and detach the harness clip (C).
   2. Remove the rear plug cap (D).

NOTE: If the plastic cover is damaged or torn, replace it with a new one.

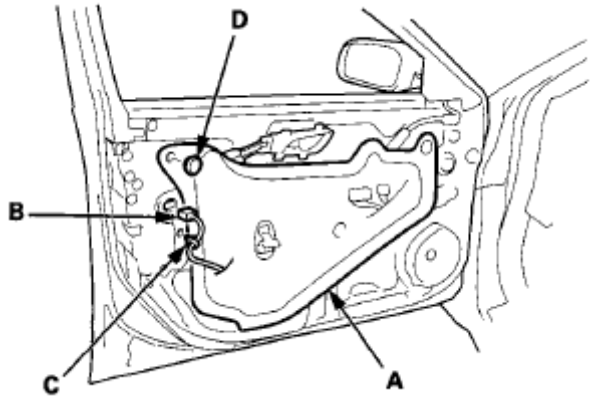


Fig. 22: Identifying Plastic Cover, Power Door Lock Actuator Connector, Rear Plug Cap And Detach Harness Clip
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Driver's door: Pull both side flanges (A) of the retainer (B) outward, and pull out the middle flange area (C) of the outer casing cover (D), then disconnect the lock cylinder cable (E) from the latch.

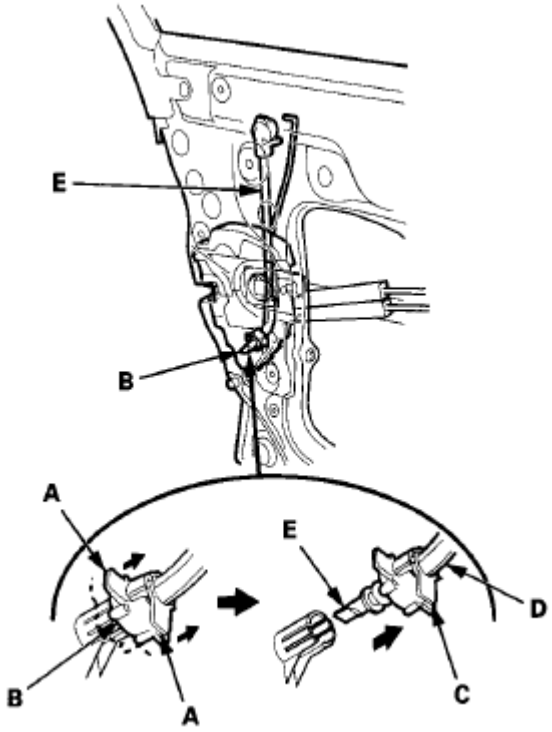


Fig. 23: Identifying Flanges, Retainer, Middle Flange Area, Outer Casing Cover And Lock Cylinder Cable
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. While holding the outer handle cover (A), loosen the bolt until it can be pulled out half-way by hand (driver's door), or remove the bolt (passenger's door). Release the hooks (B) of the cover, then remove the cover.

Driver's door

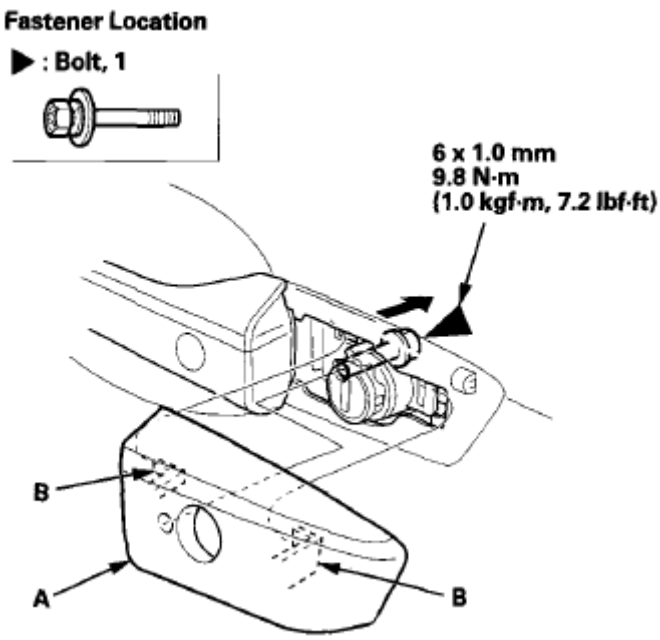


Fig. 24: Removing Front Door Outer Handle Cover (Driver's Door) With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Passenger's door

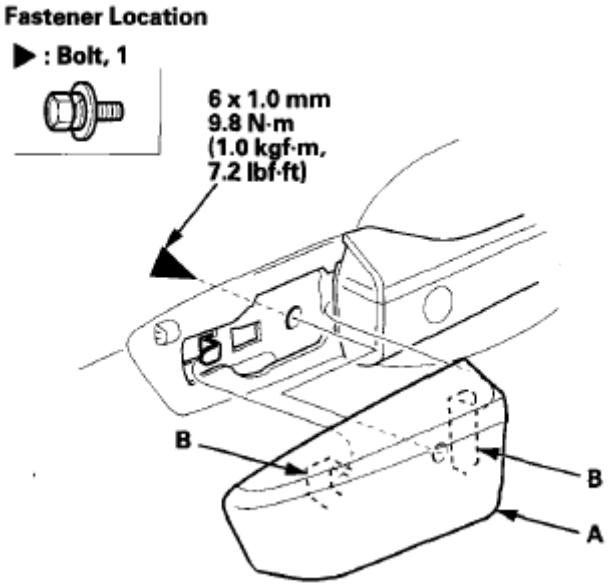


Fig. 25: Removing Front Door Outer Handle Cover (Passenger's Door) With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Release the hooks (A), then remove the lock cylinder (B) (driver's door) or the outer handle holder (C) (passenger's door) from the outer handle base (D).

Driver's door

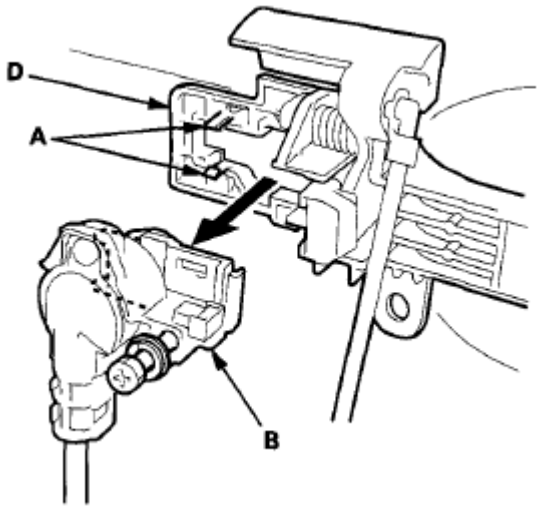


Fig. 26: Removing Lock Cylinder Or Outer Handle Holder From Outer Handle Base (Driver's Door)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Passenger's door

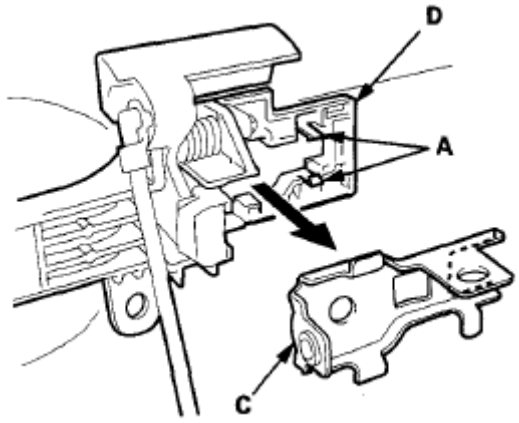


Fig. 27: Removing Lock Cylinder Or Outer Handle Holder From Outer Handle Base (Passenger's Door)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Driver's door: If the retainer (A) of the lock cylinder cable (B) is damaged, release the hooks (C), then replace it with a new one.

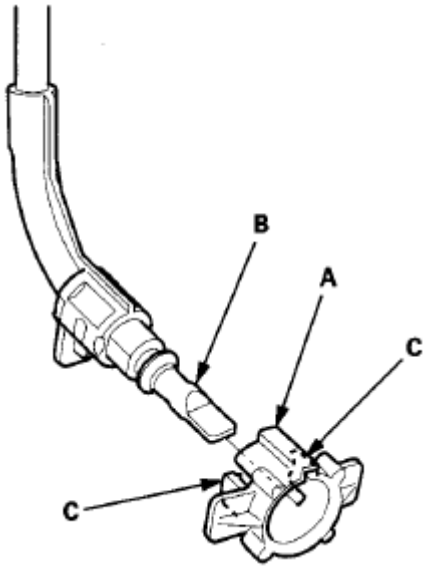


Fig. 28: Identifying Retainer, Hooks And Lock Cylinder Cable
Courtesy of AMERICAN HONDA MOTOR CO., INC.

8. Disconnect the door outer handle connector (A) (for some models) from the inside of the door. Pull back the outer handle (B), and out as shown to remove it from the door.

NOTE: If you are only removing the door panel, go to step 14. If you are doing further disassembly of the door panel, continue to step 9.

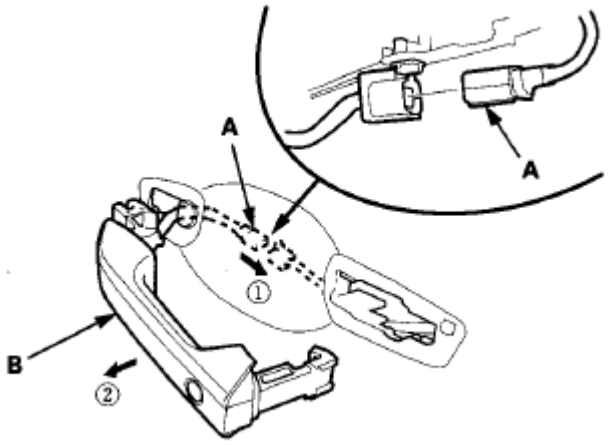


Fig. 29: Disconnecting Door Outer Handle Connector From Inside Of Door
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Outer Handle Base Removal

9. Release the hooks (A, B), then remove the outer handle front seal (C) and the outer handle rear seal (D).

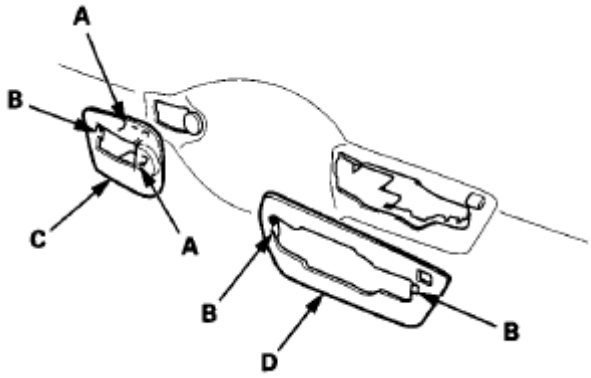


Fig. 30: Identifying Hooks, Outer Handle Front And Rear Seal
Courtesy of AMERICAN HONDA MOTOR CO., INC.

10. For some models: Detach the harness clips (A).

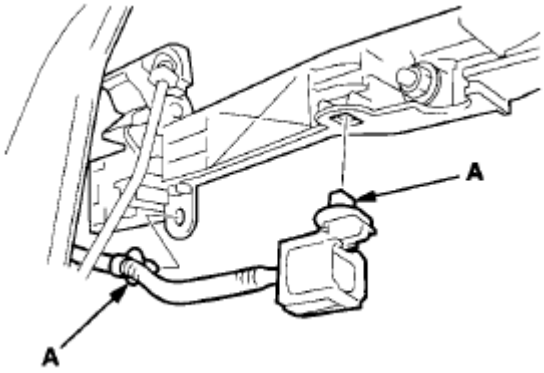


Fig. 31: Identifying Harness Clips
Courtesy of AMERICAN HONDA MOTOR CO., INC.

11. Remove the hole seal (A).

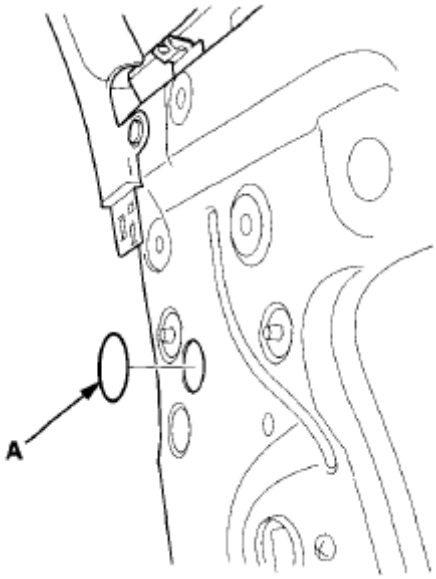


Fig. 32: Identifying Hole Seal
Courtesy of AMERICAN HONDA MOTOR CO., INC.

12. Remove the outer handle base (A).
    1. Release the rod fastener (B).
    2. Disconnect the outer handle rod (C) with a clip remover.
    3. Loosen the nut.
    4. Release the hook (D), and slide the base forward to release the special bolt (E) from the door.

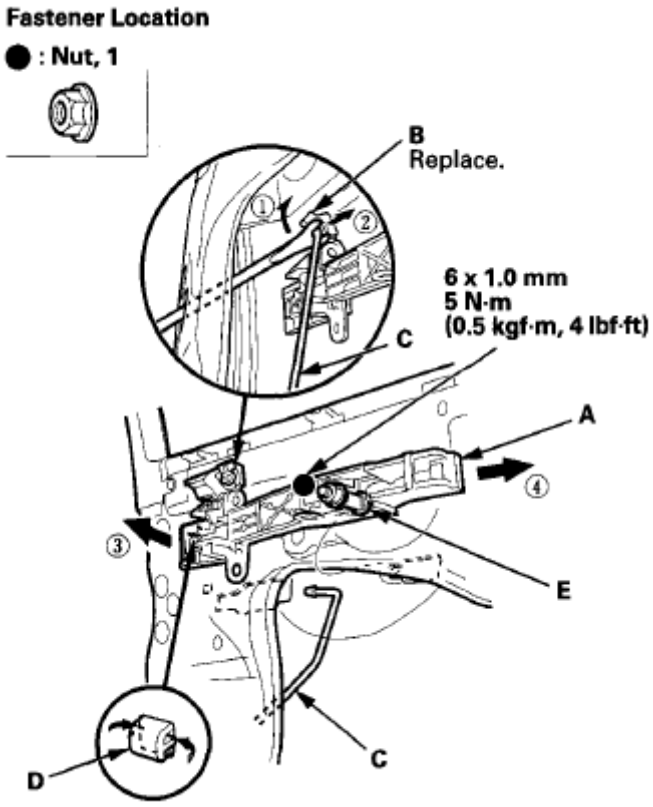


Fig. 33: Sliding Base Forward To Release Special Bolt From Door With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

13. Remove the rod fastener (A) from the outer handle base (6), then replace it with a new one.

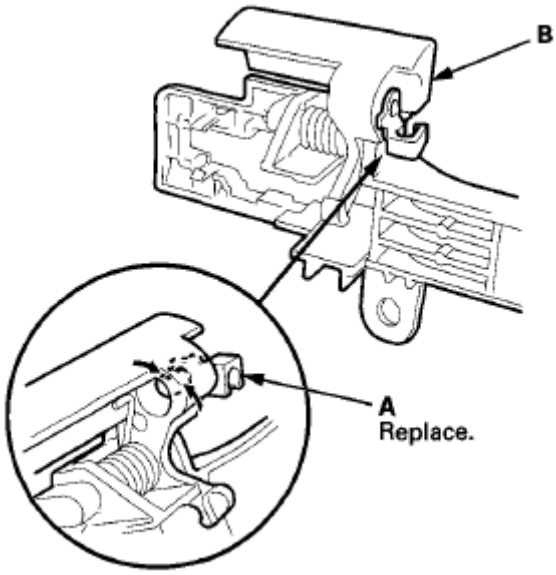


Fig. 34: Identifying Rod Fastener And Outer Handle Base
Courtesy of AMERICAN HONDA MOTOR CO., INC.

14. Install the outer handle in the reverse order of removal, and note these items:
    - Reinstall the lock cylinder (driver's door) or the outer handle holder (passenger's door) before installing the outer handle cover.
    - Make sure each connector is plugged in properly, and the cable and the rod are connected securely.
    - Make sure the door key cylinder/door locks operate properly.
    - Make sure the door handle works properly.
    - When reinstalling the door panel, make sure the plastic cover on the door is installed properly.
    - Push the clips and the hooks into place securely.

FRONT DOOR LATCH REPLACEMENT

NOTE: Put on gloves to protect your hands.

1. Remove these items:
    - Door panel (see **FRONT DOOR PANEL REMOVAL/INSTALLATION**)
    - Inner handle (see step 10)
    - Door end trim (see step 11)
2. Raise the glass fully.
3. Remove the plastic cover as needed (see step 3).
4. Detach the rod fastener, and disconnect the outer handle rod from the outer handle base (see step 12).
5. Driver's door: Disconnect the lock cylinder cable from the latch (see step 4).
6. Pull away the glass run channel (A) as needed, and remove the bolt, then remove the center lower channel (B) by pulling it downward.

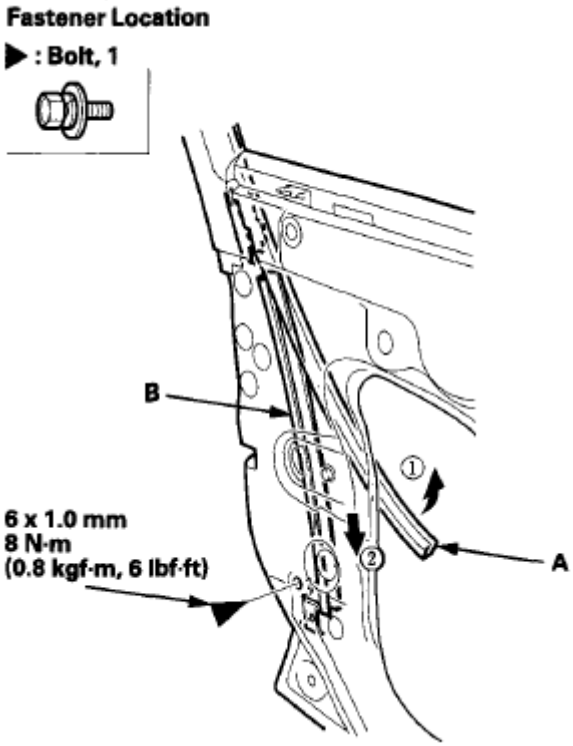


Fig. 35: Pulling Center Lower Channel Downward With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Remove the screws (A, B) securing the latch (C), then remove the latch through the hole in the door.

NOTE: Take care not to bend the outer handle rod (D), the latch cable (E), or the inner handle cable (F).

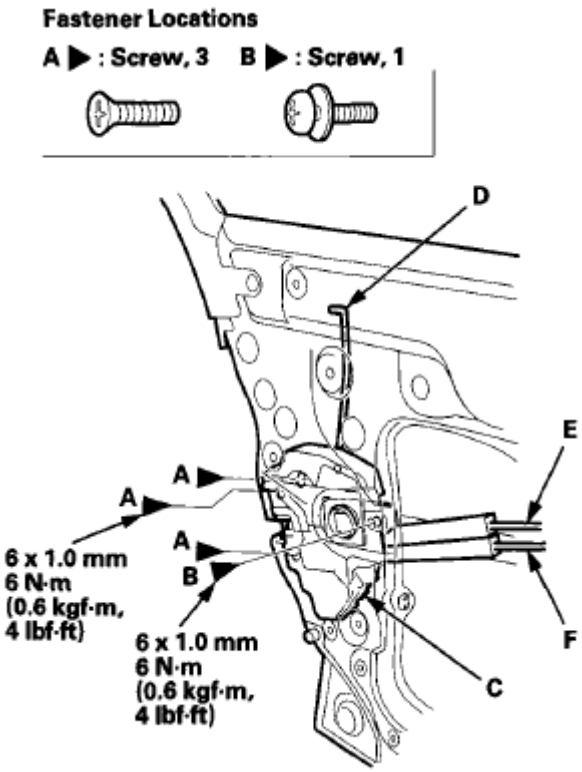


Fig. 36: Identifying Screws, Latch, Outer Handle Rod, Latch Cable And Inner Handle Cable With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

8. Remove the foam seals (A, B) from the latch protector (C) and the latch (D).

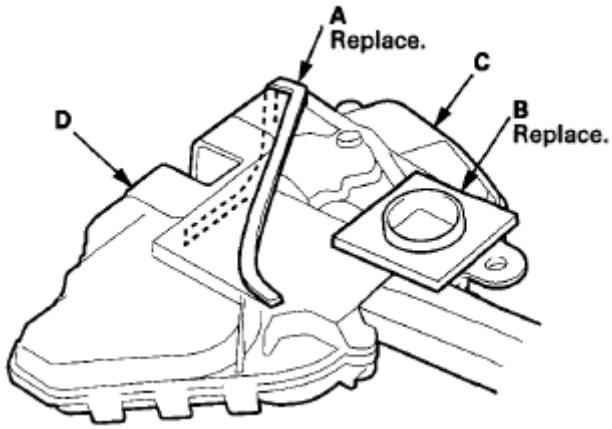


Fig. 37: Identifying Seals, Latch Protector And Latch
Courtesy of AMERICAN HONDA MOTOR CO., INC.

9. Remove the screw, then remove the latch protector (A) by releasing the hook (B).

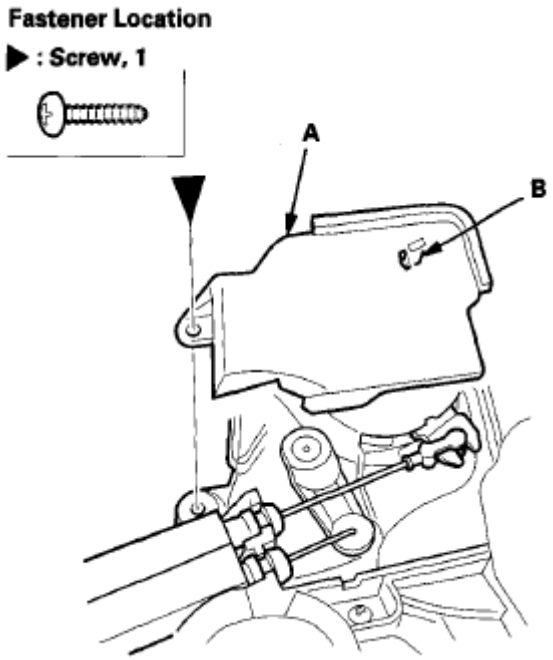


Fig. 38: Releasing Hook To Remove Latch Protector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

10. Disconnect the latch cable (A) and the inner handle cable (B) from the latch (C).

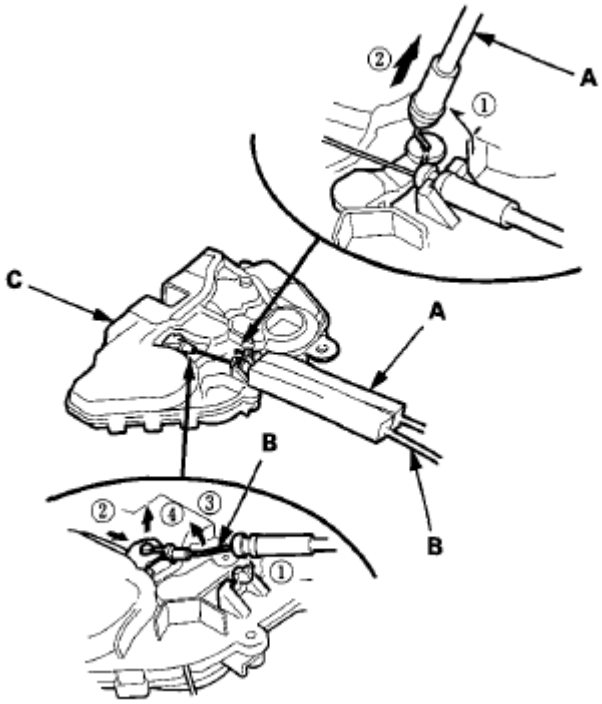


Fig. 39: Identifying Latch Cable, Inner Handle Cable And Latch
Courtesy of AMERICAN HONDA MOTOR CO., INC.

11. Install the latch in the reverse order of removal, and note these items:
    - Before reinstalling the latch protector, clean the latch and the latch protector surfaces with isopropyl alcohol where the new foam seals will be attached.
    - After reinstalling the latch protector to the latch, attach the new foam seals to the protector and the latch.
    - Make sure each connector is plugged in properly, and the rod and the cables are connected securely.
    - Make sure the power door locks and opens properly.
    - When reinstalling the door panel, make sure the plastic cover on the door is installed properly.
    - Push the hook into place securely.

FRONT DOOR GLASS AND REGULATOR REPLACEMENT

NOTE: Put on gloves to protect your hands.

1. Remove the door panel (see **FRONT DOOR PANEL REMOVAL/INSTALLATION**).
2. Raise the glass fully.
3. Remove the screws, then remove the door panel bracket (A).

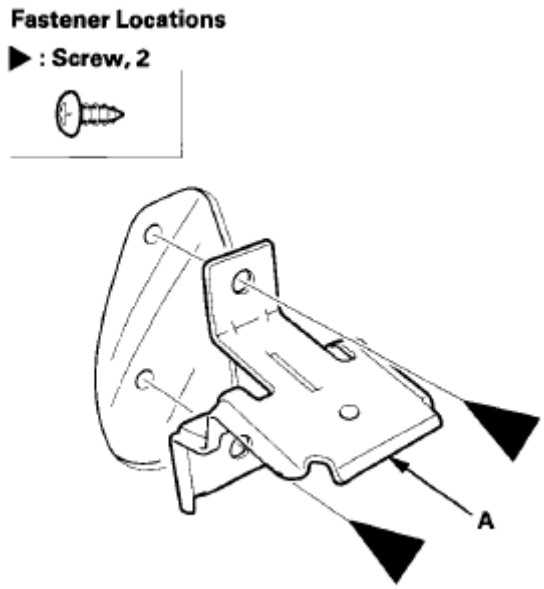


Fig. 40: Removing Door Panel Bracket
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Remove the plastic cover (A).
    1. Disconnect the power door lock actuator connector (B), and detach the harness clip (C).
    2. Remove the plug caps (D).
    3. Pass the wire harnesses (E) through the slits (F) in the cover, then remove the cover.

NOTE: If the plastic cover is damaged or torn, replace it with a new one.

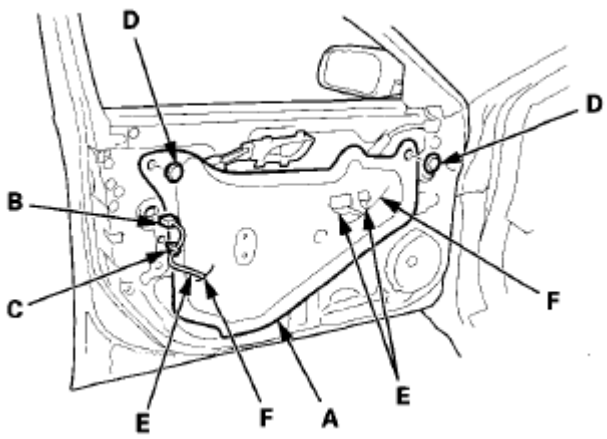


Fig. 41: Identifying Plastic Cover, Power Door Lock Actuator Connector, Harness Clip And Slits
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Detach the harness clip (A). Loosen the bolt (B), and remove the bolt (C), then remove the door panel bracket (D).

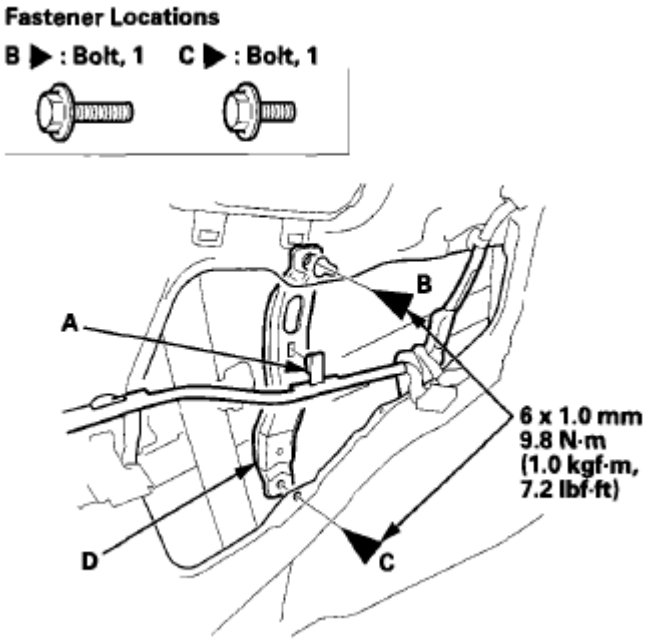


Fig. 42: Removing Door Panel Bracket With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Lower the glass (A) until you can see the bolts, then remove them. Carefully pull out the glass through the window slot.

NOTE: Take care not to drop the glass inside the door.

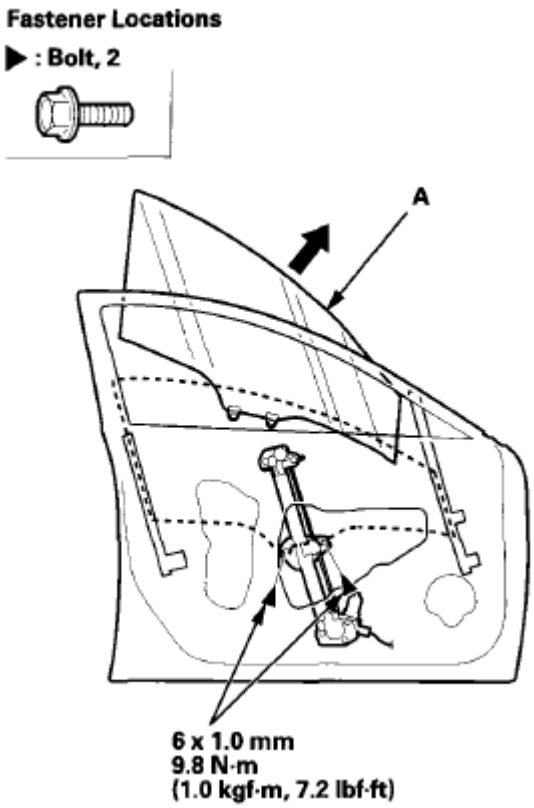


Fig. 43: Identifying Glass With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Disconnect the connector (A) from the regulator (B).

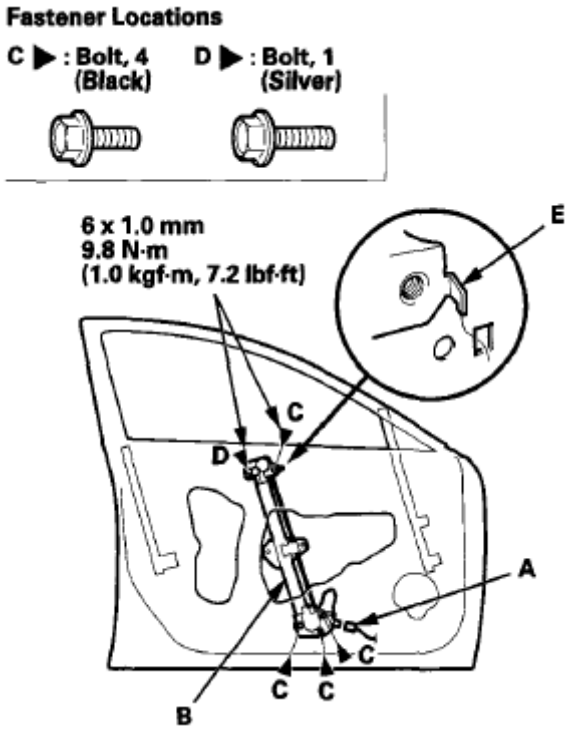


Fig. 44: Identifying Connector, Regulator, Bolts And Hook With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

8. Remove the bolts (C), and loosen the bolt (D). Release the hook (E), then remove the regulator through the hole in the door.
9. Apply multipurpose grease to all the sliding surfaces of the regulator (A) where shown.

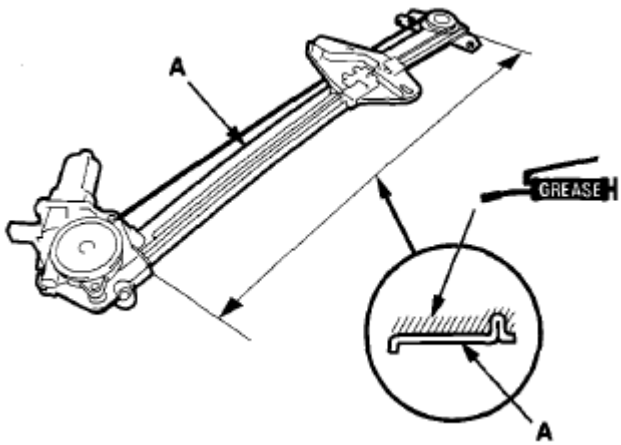


Fig. 45: Identifying Regulator
Courtesy of AMERICAN HONDA MOTOR CO., INC.

10. Install the glass and the regulator in the reverse order of removal, and note these items:
    - If the clips are damaged or stress-whitened, replace them with new ones.

- Roll the glass up and down to make sure it moves freely without binding.
- Make sure that there is no clearance between the glass and the glass run channel when the glass is closed.
- Make sure each connector is plugged in properly.
- Adjust the position of the glass as necessary (see **DOOR GLASS ADJUSTMENT**).
- Do the power window control unit reset procedure (see **RESETTING THE POWER WINDOW CONTROL UNIT**).
- Make sure the power door locks, the power windows, and the power mirror operate properly.
- Make sure the plastic cover on the door is installed properly and sealed around its outside perimeter to seal out water.
- Push the clips and the hook into place securely.
- Check for water leaks (see step 10).
- Test-drive the vehicle, and check for wind noise and rattles.

FRONT DOOR SASH INNER TRIM REPLACEMENT

NOTE: Take care not to scratch the door.

1. Remove there items:
   - Door panel (see **FRONT DOOR PANEL REMOVAL/INSTALLATION**)
   - Door end trim (see **FRONT DOOR PANEL REMOVAL/INSTALLATION**)
2. Lower the glass fully.
3. Remove the front door sash inner trim (A).
   1. Detach the clips (B, C) fastening the trim.
   2. Pull back along the outside edge of the trim to release the hook strip (D) from the door glass opening flange at the A-pillar area and the roof area of the door sash.
   3. Pull back along the outside edge of the trim to release the hook strip (E) from the door glass opening flange at the B-pillar area of the door sash.
   4. With BSI: Disconnect the BSI warning indicator connector (F).
   5. If necessary, release the clip (G) from the door panel.

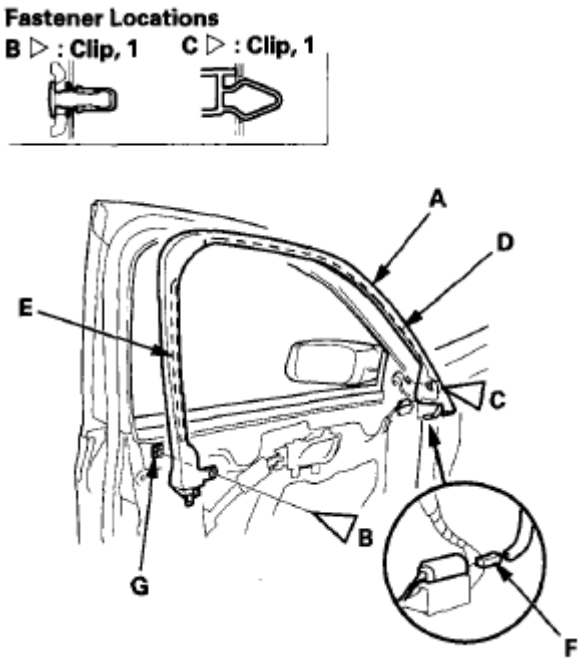


Fig. 46: Identifying Front Door Sash Inner Trim Related Components
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Install the trim in the reverse order of removal, and note these items:
   - If the clips are damaged or stress-whitened, replace them with new ones.
   - Make sure the connector is plugged in properly.
   - Push the clips and the hook strips into place securely.

FRONT DOOR SASH OUTER TRIM REPLACEMENT

NOTE: Take care not to scratch the door.

1. Remove the door outer molding (see **FRONT DOOR OUTER MOLDING REPLACEMENT**).
2. Pull up the door sash outer trim (A) to release the hooks (B) from the door, and release the trim from between the door glass outer weatherstrip (C) and the door, then remove the trim.

NOTE: Take care not to damage the door glass outer weatherstrip.

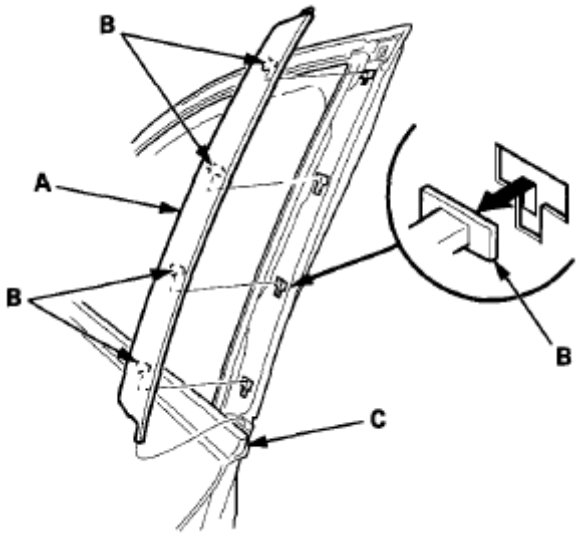


Fig. 47: Identifying Front Door Sash Outer Trim Related Components
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Install the trim in the reverse order of removal.

FRONT DOOR GLASS OUTER WEATHERSTRIP REPLACEMENT

NOTE:

- **Put on gloves to protect your hands.**
- **Take care not to scratch the door.**

1. Remove these items:
   - Door panel bracket (see step 3)
   - Plastic cover, as needed (see step 3)
   - Power mirror (see **POWER MIRROR REPLACEMENT**)
2. Remove the screw from the rear edge of the door.

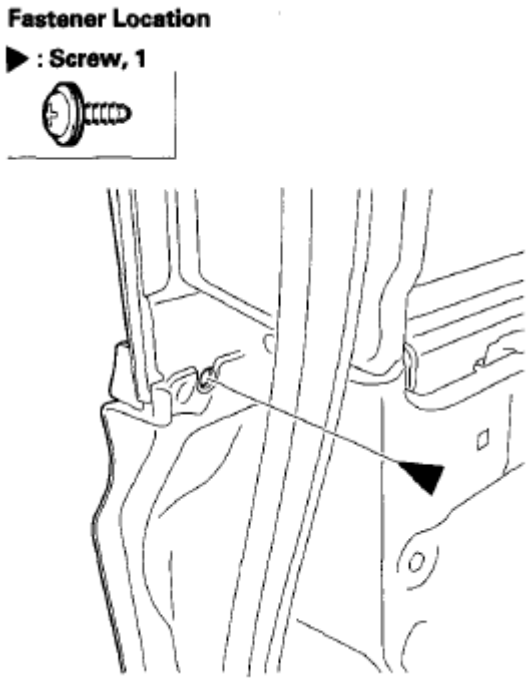


Fig. 48: Removing Screw From Rear Edge Of Door
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. From the inside of the door, slide the clips (A) on the door glass outer weatherstrip (B) to release the hooks (C) from the flanges (D) on the door.

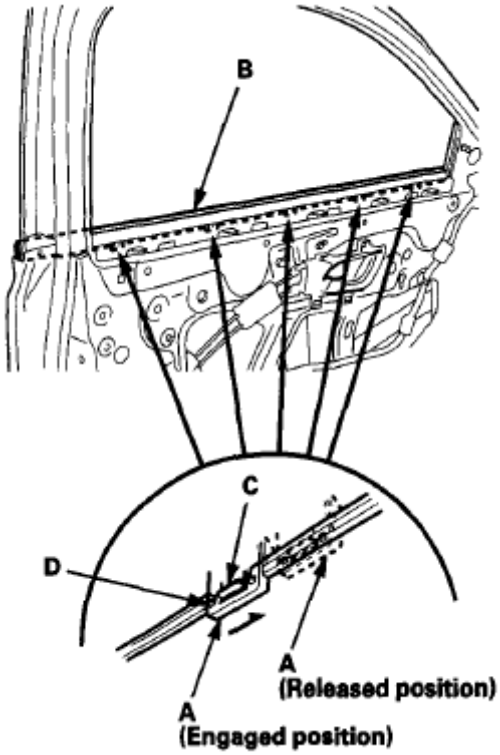


Fig. 49: Identifying Clips, Door Glass Outer Weatherstrip, Hooks And Flanges
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Pull up the door glass outer weatherstrip (A), then remove the weatherstrip.

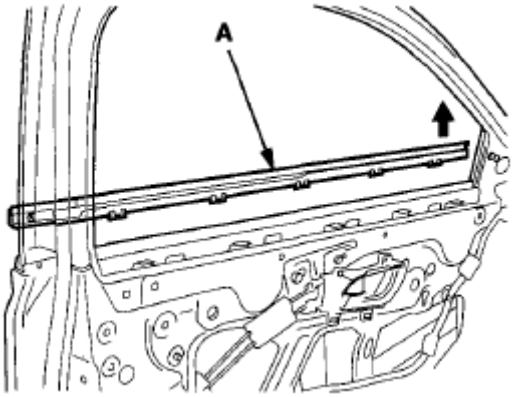


Fig. 50: Pulling Up Door Glass Outer Weatherstrip
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Before installing the door glass outer weatherstrip, slide the clips to the released position as in step 3.
6. Install the front door glass outer weatherstrip, and slide the clips securely on to the flanges.
7. Reinstall all remaining removed parts, and note these items:
    - When reinstalling the door panel, make sure the plastic cover on the door is installed properly and sealed around its outside perimeter to seal out water.

- Check for water leaks (see step 10).

FRONT DOOR OUTER MOLDING REPLACEMENT

Special Tools Required

KTC Trim Tool Set SOJATP2014*

*Available through the Acura Tool and Equipment Program; call 888-424-6857

NOTE:

- **If you remove the door outer molding, replace it with a new one because it will bend during removal.**
- **Put on gloves to protect your hands.**
- **Take care not to scratch the door.**
- **Use the appropriate tool from the KTC trim tool set to avoid damage when removing components.**

1. Remove these items:
   - Door panel (see **FRONT DOOR PANEL REMOVAL/INSTALLATION**)
   - Power mirror (see **POWER MIRROR REPLACEMENT**)
2. Detach the clip with a clip remover, and release the hook (A), then pull back the door weatherstrip (B). Remove the screw securing the door outer molding (C).

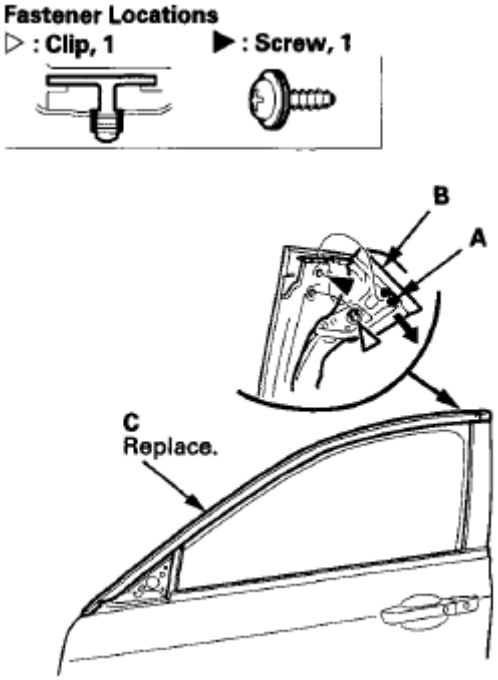


Fig. 51: Identifying Hook, Weatherstrip And Door Outer Molding
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Pull out the upper edge of the door outer molding (A) from the edge of the sash, and cut the double-sided adhesive tape (B) with a utility knife, then remove the molding from the sash.

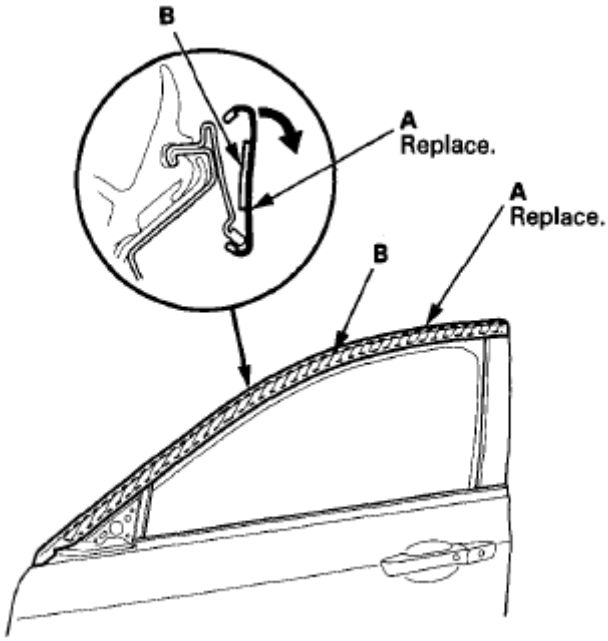


Fig. 52: Identifying Door Outer Molding And Double-Sided Adhesive Tape
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Carefully remove the remaining double-sided adhesive tape from the sash, then clean the sash surface with a shop towel dampened with isopropyl alcohol.
5. Install the door outer molding in the reverse order of removal, and note these items:
   - Push the adhesive areas into place securely.
   - Make sure the upper and lower sides of the molding are catching the edges of the sash properly.
   - Push the clip and the hook into place securely.

FRONT DOOR WEATHERSTRIP REPLACEMENT

NOTE:

- **Put on gloves to protect your hands.**
- **Take care not to scratch the door.**
- **Take care not to damage the front upper corner hook and the rear upper corner clip (black) because they are not available separately.**
- **Use a clip remover to detach the clips.**

1. Remove the door checker mounting bolt (A) at the A-pillar.

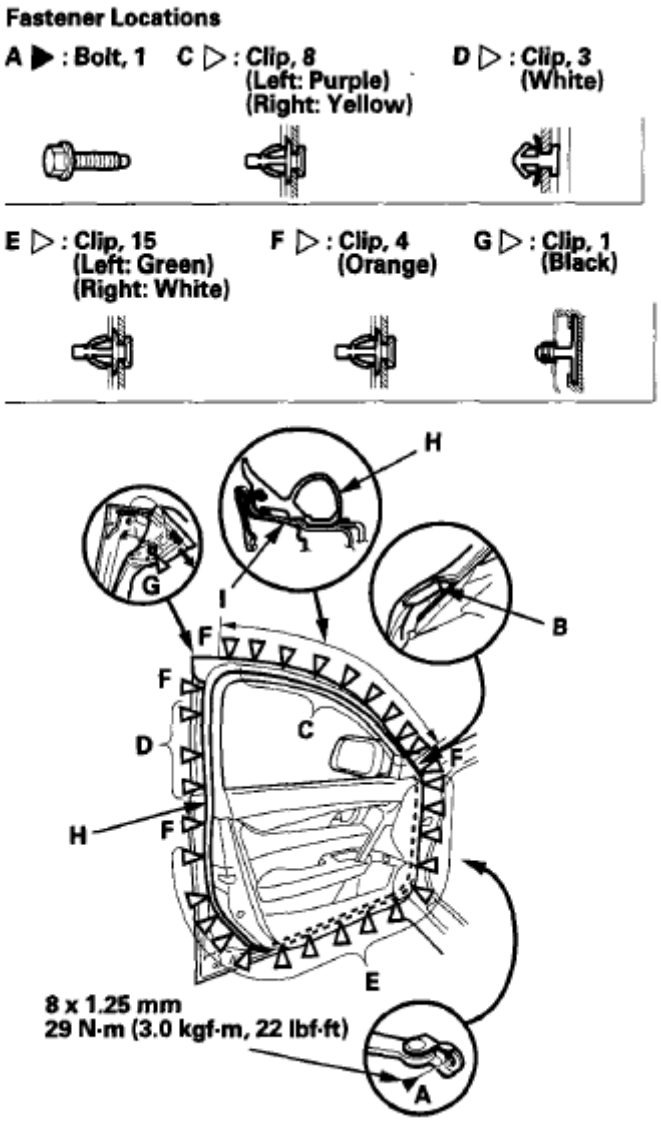


Fig. 53: Identifying Door Checker Mounting Bolt, Hooks And Clips With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Release the hook (B) and detach the clips (C, D, E, F, G). Then release the door weatherstrip (H) from the holder (I) on the door sash, and remove the weatherstrip.
3. Install the weatherstrip in the reverse order of removal, and note these items:
   - If the clips are damaged or stress-whitened, replace them with new ones.
   - Push the clips and the hook into place securely.
   - Make sure the door weatherstrip is installed in the holder securely.
   - Apply medium strength liquid thread lock to the door checker mounting bolt before installation.
   - Check for water leaks (see step 10).

REAR DOOR PANEL REMOVAL/INSTALLATION

Special Tools Required

- KTC Trim Tool Set SOJATP2014*
- Trim Pad Remover, Snap-on A 177A or equivalent, commercially available

*Available through the Acura Tool and Equipment Program; call 888-424-6857

NOTE:

- **Take care not to scratch the door or the related parts.**
- **Use the appropriate tool from the KTC trim tool set to avoid damage when removing components.**
- **When prying with a flat-tip screwdriver, wrap it with protective tape to prevent damage.**

1. Push on the upper hook (A) with the appropriate trim tool, then pull back the inner handle cap (B) to remove it.

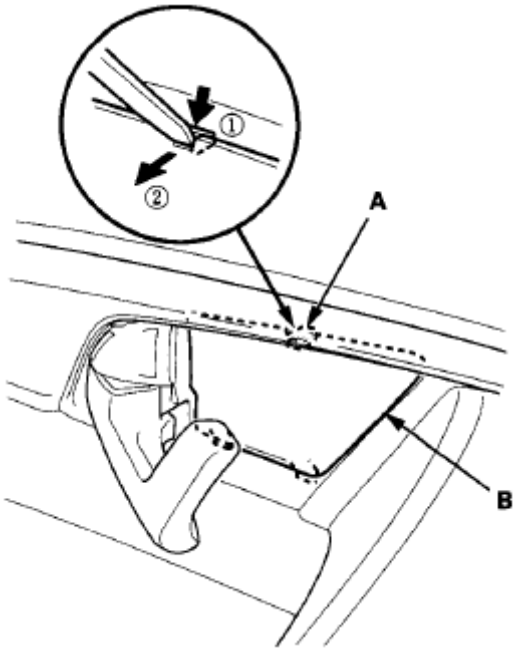


Fig. 54: Pushing On Upper Hook With Appropriate Trim Tool And Pull Back Inner Handle Cap
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Remove the screws securing the inner handle (A).

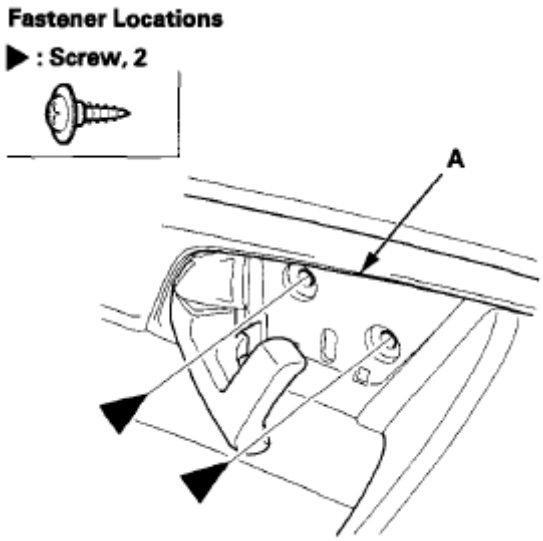


Fig. 55: Removing Screws Securing Inner Handle
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Remove the door grip trim (A).
    1. Insert the appropriate trim tool into the notch (B), and pry out along the edge of the trim to release the hooks (C).
    2. Pull up the trim to release the hook (D).

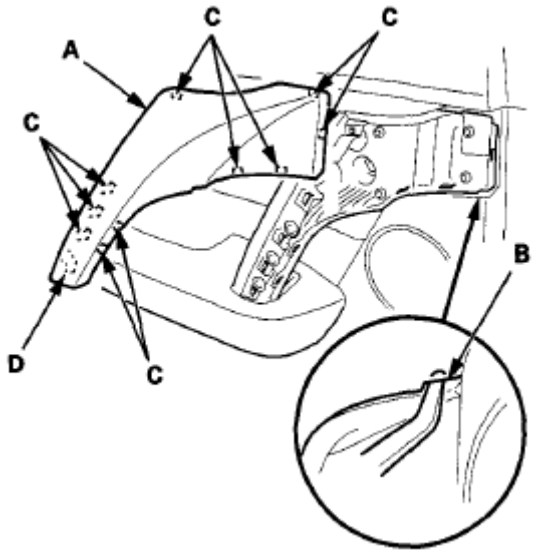


Fig. 56: Identifying Notch, Hooks And Door Grip Trim
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Remove the screw.

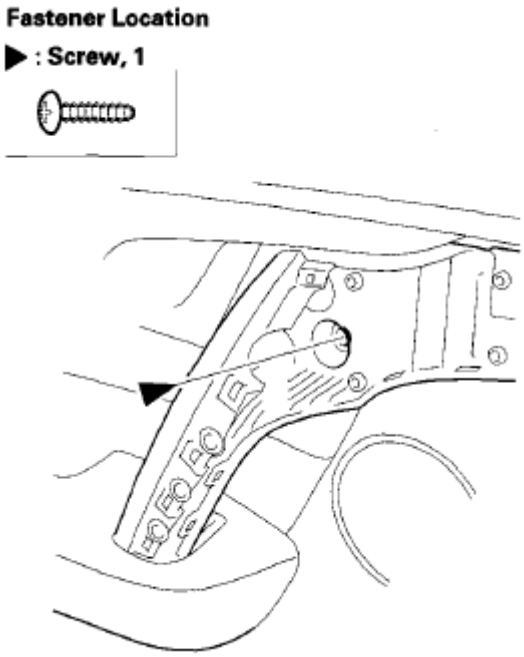


Fig. 57: Identifying Screw
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Release the hooks (A), then remove the rear pull pocket cap (B), and remove the screw.

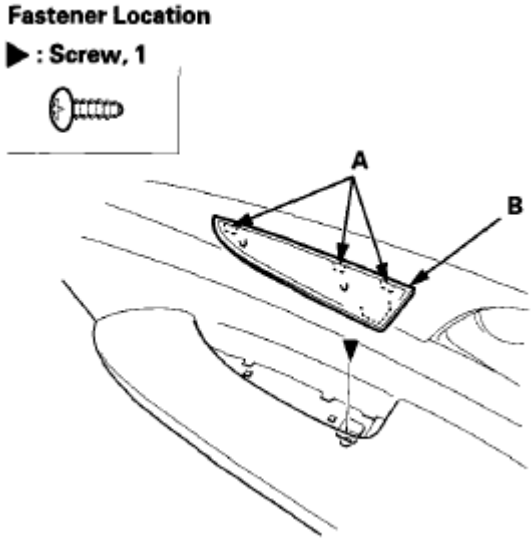


Fig. 58: Releasing Hooks Rear Pull Pocket Cap
Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. From under the armrest, pry out at the notch (A) with the appropriate trim tool, and open the pocket cap (B), then remove the screw.

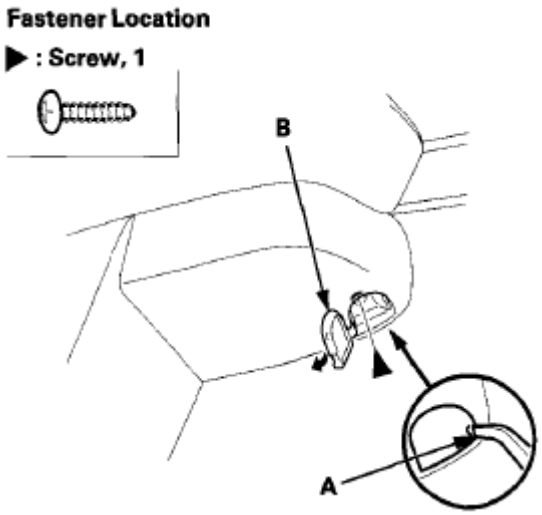


Fig. 59: Prying Out At Notch With Trim Tool
Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Remove the door panel (A) with as little bending as possible to avoid creasing or breaking it.
    1. Start at the bottom edge of the door panel, detach the clips (B) with a commercially available trim pad remover.
    2. Detach the remaining clips (C).
    3. Release the door panel from the metal clips (D) attached to the door glass inner weatherstrip.
    4. Starting at the rear, pull out the door panel.

NOTE: The inner handle cable (E) and the latch cable (F) are connected to the inner handle (G). Do not pull the door panel up too far, or these cables will be damaged.

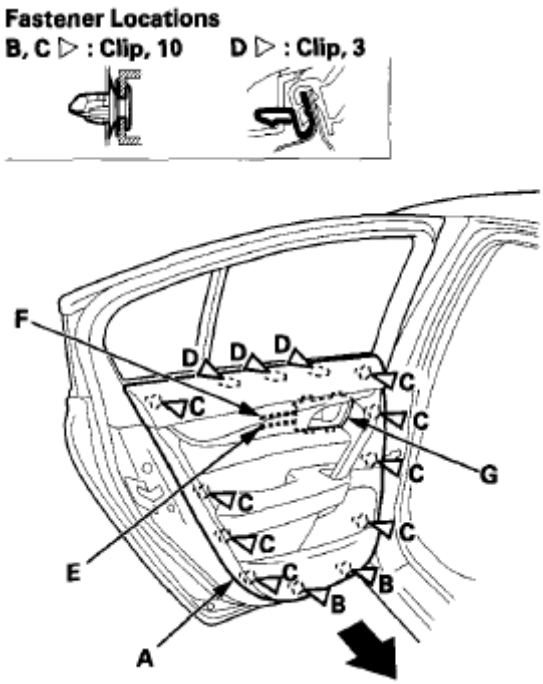


Fig. 60: Identifying Door Panel, Clips, Inner Handle And Latch Cables And Inner Handle
Courtesy of AMERICAN HONDA MOTOR CO., INC.

8. While holding the door panel away from the door, detach the clips by pulling out the inner handle (A), then remove the inner handle from the door panel.

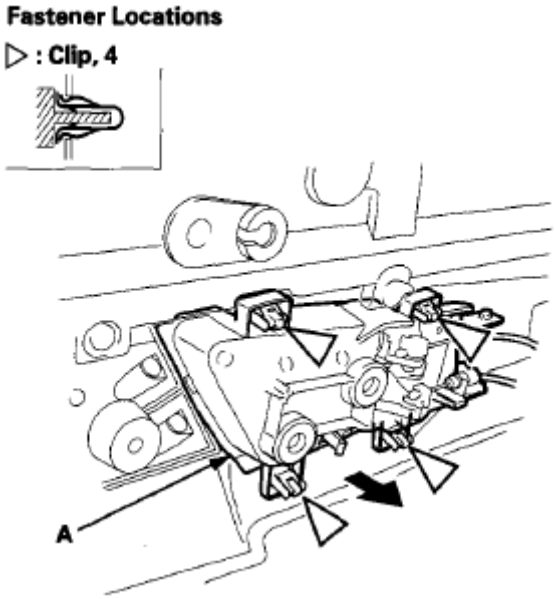


Fig. 61: Removing Inner Handle From Door Panel
Courtesy of AMERICAN HONDA MOTOR CO., INC.

9. While holding the door panel (A) away from the door, disconnect the power window switch connector

(B).

NOTE: If you are only removing the door panel, go to step 14. If you are doing further disassembly of the door panel, continue to step 10.

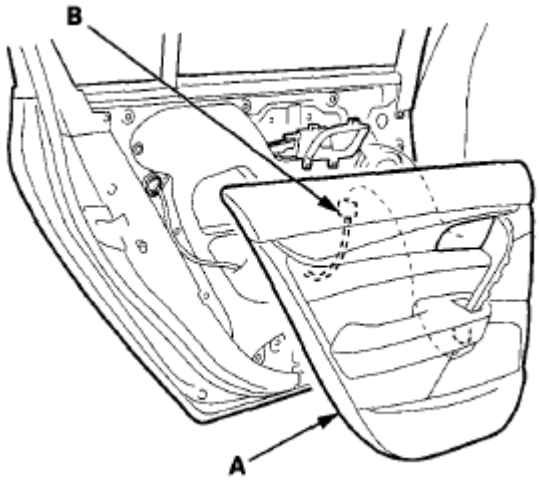


Fig. 62: Identifying Door Panel And Power Window Switch Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Inner Handle Removal

10. Disconnect the inner handle cable (A) and the latch cable (B) from the inner handle (C), then remove the handle.
    1. Release the inner handle cable fasteners (D, E), then disconnect the inner handle cable.
    2. Release the latch cable fastener (F), and remove the latch cable fastener (G) from the inner handle by pinching its tabs together.

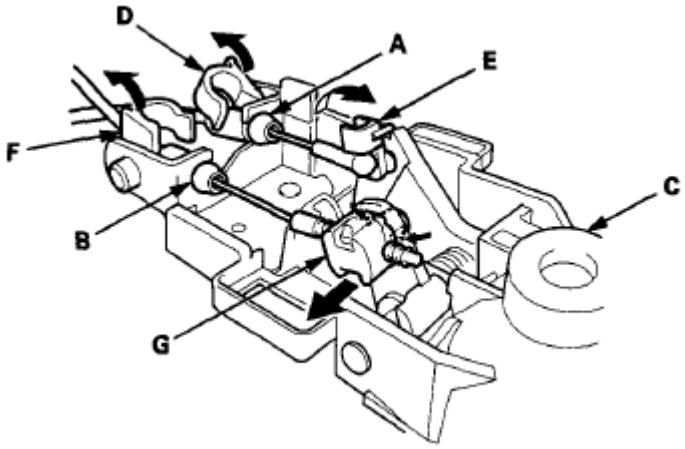


Fig. 63: Disconnecting Inner Handle Cable And Latch Cable From Inner Handle
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Door End Trim Removal

11. Remove the screw (A), and detach the clips (B), then remove the door end trim (C) by pulling back the trim. The clips (D) will stay in the door.

NOTE: Install the clips D on the door end trim before installing the trim on the door.

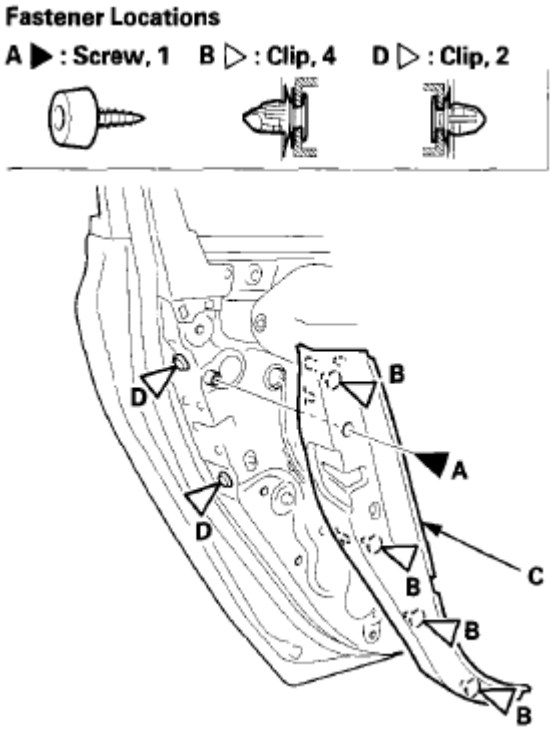


Fig. 64: Identifying Screw, Detach Clips, Door End Trim And Clips
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Armrest Assembly/Grip Assembly Removal

12. Remove the armrest/grip assembly (A) from the door panel (B).
    1. Remove the screws from back of the door panel and the front of the grip assembly.
    2. Pull out along the edge of the armrest/grip assembly to release the hooks (C).

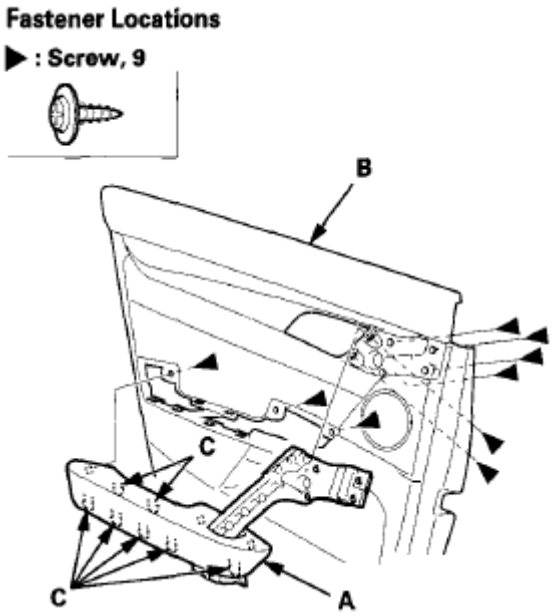


Fig. 65: Identifying Armrest/Grip Assembly, Door Panel And Hooks
Courtesy of AMERICAN HONDA MOTOR CO., INC.

13. Remove the screws, then separate the armrest assembly (A) and the grip assembly (B).

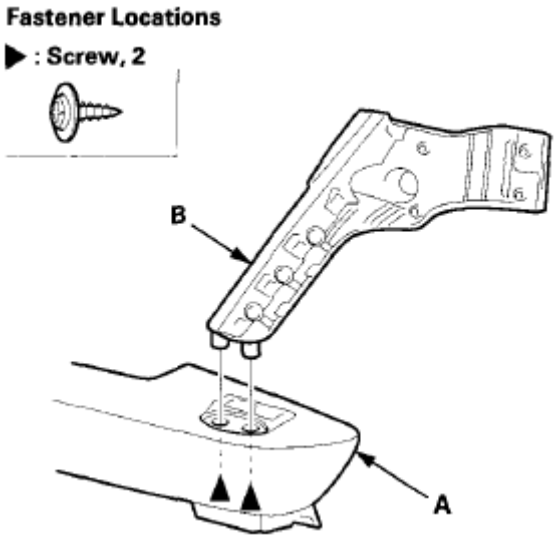


Fig. 66: Identifying Armrest Assembly And Grip Assembly
Courtesy of AMERICAN HONDA MOTOR CO., INC.

14. Install the door panel in the reverse order of removal, and note these items:
    - If the clips are damaged or stress-whitened, replace them with new ones.
    - Replace any damaged cable fasteners with new ones.
    - If the inner door handle cable end is damaged or stress-whitened, replace it with a new one.
    - The latch cable (A) should be fixed to the cable fastener (B) with the latch in the unlocked position

as shown.

- Make sure the connector is plugged in properly, and the cables are connected securely.
- Make sure the power window and the power door lock operate properly.
- When reinstalling the door panel, make sure the plastic cover on the door is installed properly.
- Push the clips and the hooks into place securely.

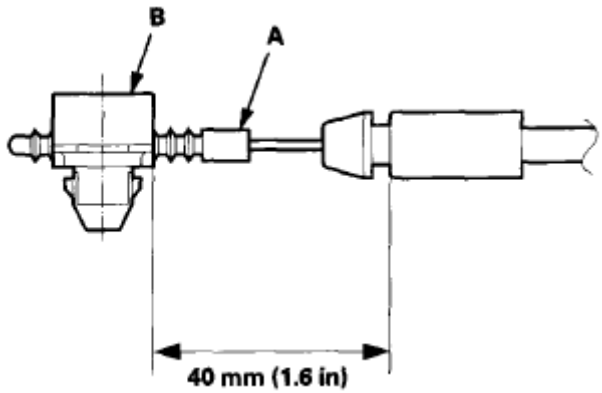


Fig. 67: Identifying Latch Cable And Cable Fastener
Courtesy of AMERICAN HONDA MOTOR CO., INC.

REAR DOOR OUTER HANDLE REPLACEMENT

NOTE:

- **Put on gloves to protect your hands.**
- **Take care not to scratch the door.**

1. Remove these items:
   - Door panel (see **REAR DOOR PANEL REMOVAL/INSTALLATION**)
   - Door end trim (see **REAR DOOR PANEL REMOVAL/INSTALLATION**)
2. Raise the glass fully.
3. Remove the plastic cover (A) as needed.
   1. Disconnect the power door lock actuator connector (B), and detach the harness clip (C).
   2. Remove the rear plug cap (D).

NOTE: If the plastic cover is damaged or torn, replace it with a new one.

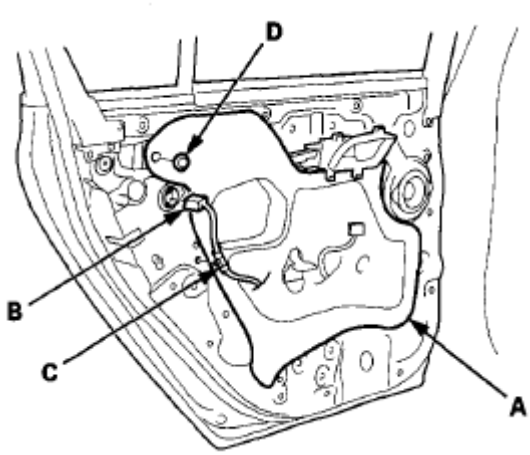


Fig. 68: Identifying Plastic Cover, Door Lock Actuator Connector, Harness Clip And Rear Plug Cap
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Remove the screws (A, B) securing the latch (C), then lower it.

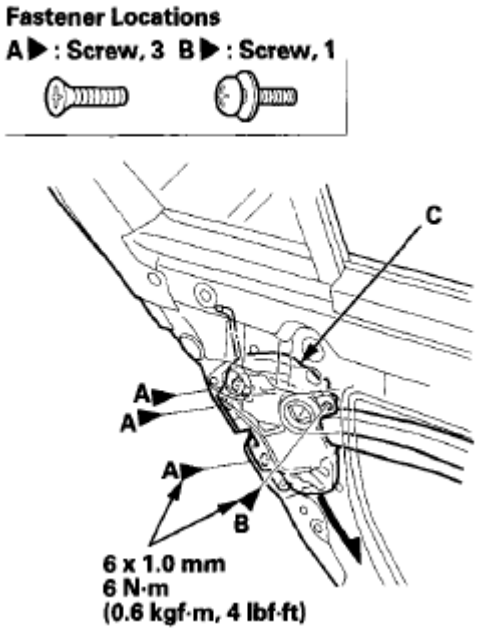


Fig. 69: Identifying Screws And Latch With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. While holding the outer handle cover (A), remove the bolt and release the hooks (B) of the cover, then remove the cover.

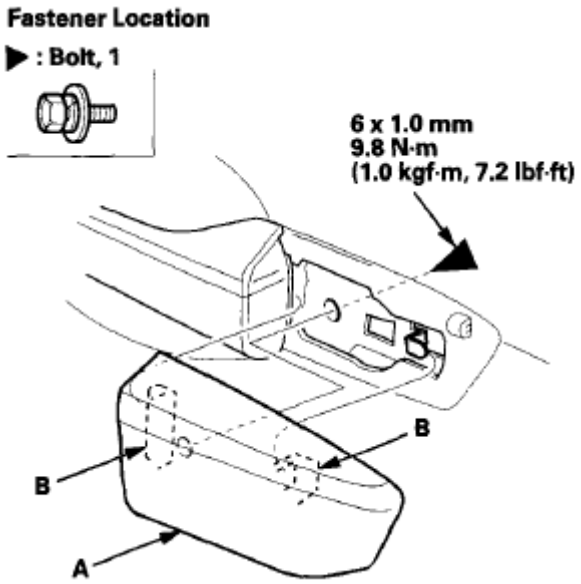


Fig. 70: Identifying Outer Handle Cover And Hooks With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Release the hooks (A), then remove the outer handle holder (B) from the outer handle base (C).

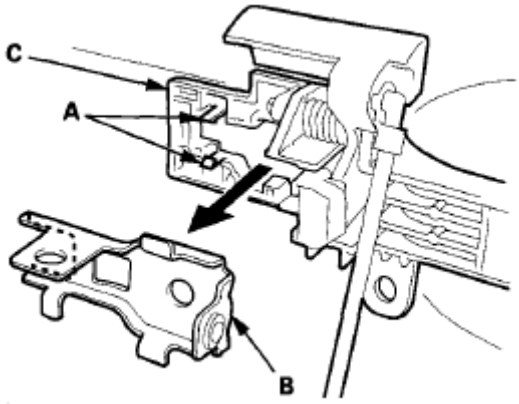


Fig. 71: Removing Outer Handle Holder From Outer Handle Base
Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Pull back the outer handle (A), and out as shown to remove it from the door.

NOTE: If you are only removing the door panel, go to step 12. If you are doing further disassembly of the door panel, continue to step 8.

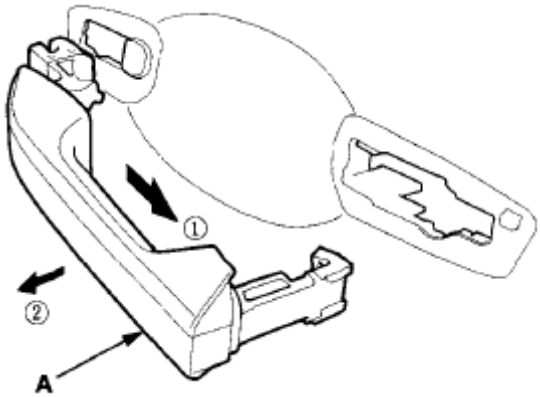


Fig. 72: Pulling Back Outer Handle And Out As Shown To Remove It From Door
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Outer Handle Base Removal

8. Release the hooks (A, B), then remove the outer handle front seal (C) and the outer handle rear seal (D).

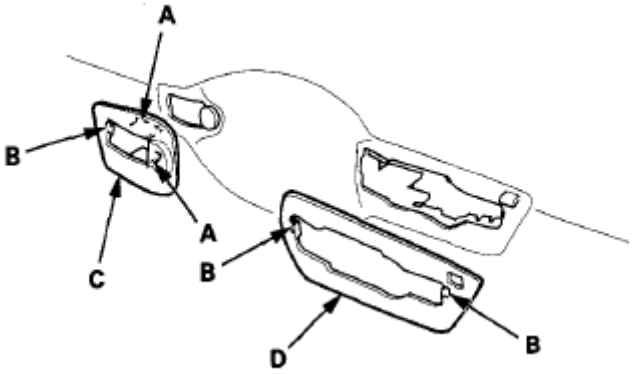


Fig. 73: Identifying Hooks, Outer Handle Front And Rear Seal
Courtesy of AMERICAN HONDA MOTOR CO., INC.

9. Remove the hole seal (A).

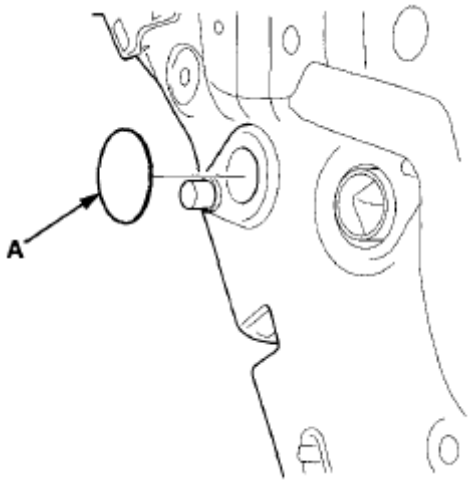


Fig. 74: Identifying Hole Seal
Courtesy of AMERICAN HONDA MOTOR CO., INC.

10. Remove the outer handle base (A).
    1. Release the rod fastener (B).
    2. Disconnect the outer handle rod (C) with a clip remover.
    3. Loosen the nut.
    4. Release the hook (D), and slide the base forward to release the special bolt (E) from the door.

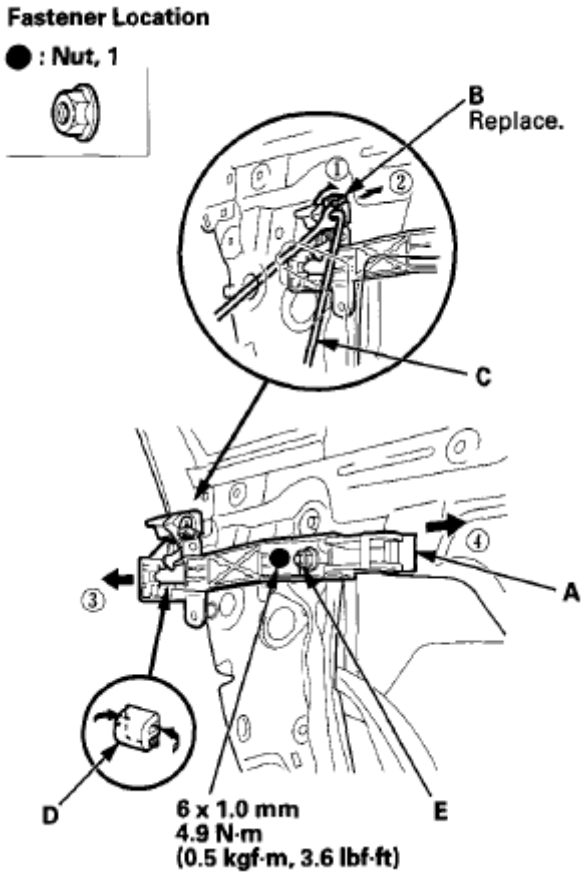


Fig. 75: Sliding Base Forward To Release Special Bolt From Door With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

11. Remove the rod fastener (A) from the outer handle base (B), then replace it with a new one.

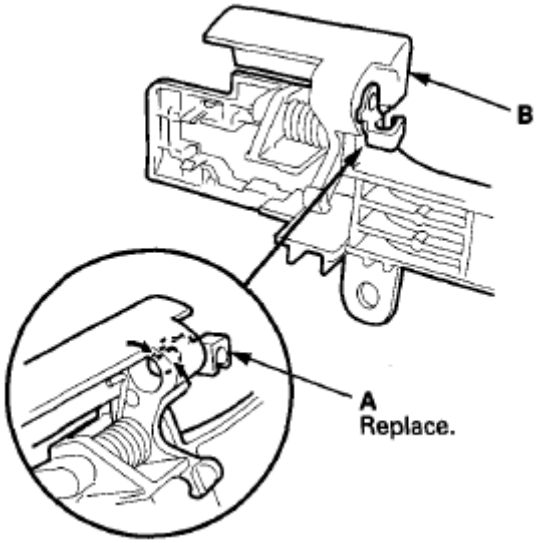


Fig. 76: Identifying Rod Fastener And Outer Handle Base

Courtesy of AMERICAN HONDA MOTOR CO., INC.

12. Install the handle in the reverse order of removal, and note these items:
    - Reinstall the outer handle holder before installing the outer handle cover.
    - Make sure each connector is plugged in properly, and the rod is connected securely.
    - Make sure the door locks operate properly.
    - Make sure the door handle works properly.
    - When reinstalling the door panel, make sure the plastic cover on the door is installed properly.
    - Push the clip and the hooks into place securely.

REAR DOOR LATCH REPLACEMENT

NOTE: Put on gloves to protect your hands.

1. Remove these items:
    - Door panel (see **REAR DOOR PANEL REMOVAL/INSTALLATION**)
    - Inner handle (see **REAR DOOR PANEL REMOVAL/INSTALLATION**)
    - Door end trim (see **REAR DOOR PANEL REMOVAL/INSTALLATION**)
2. Raise the glass fully.
3. Remove the plastic cover as needed (see step 3).
4. Remove the door pad (see **REAR DOOR PAD REPLACEMENT**).
5. Release the rod fastener, and disconnect the outer handle rod from the outer handle base (see step 10).
6. Remove the bolts (A, B), then remove the collar (C) from the rear lower channel (D).

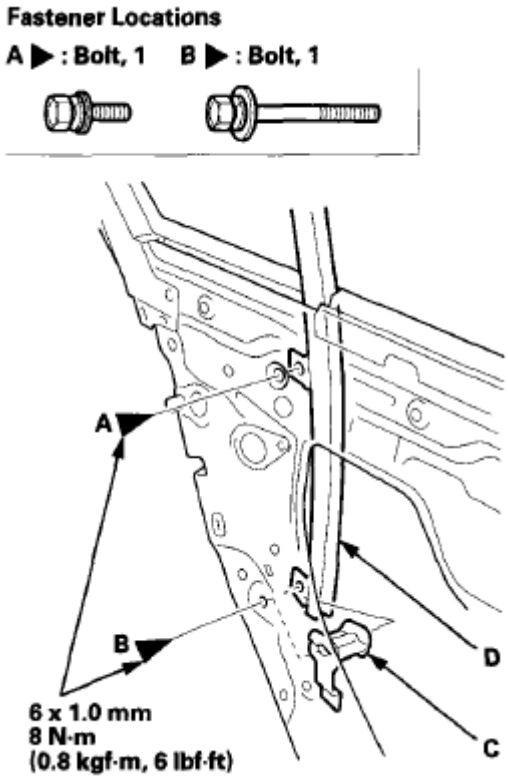


Fig. 77: Identifying Collar, Rear Lower Channel And Bolts With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Remove the screws (A, B) securing the latch (C), then remove the latch through the hole in the door.

NOTE: Take care not to bend the outer handle rod (D), the latch cable (E), or the inner handle cable (F).

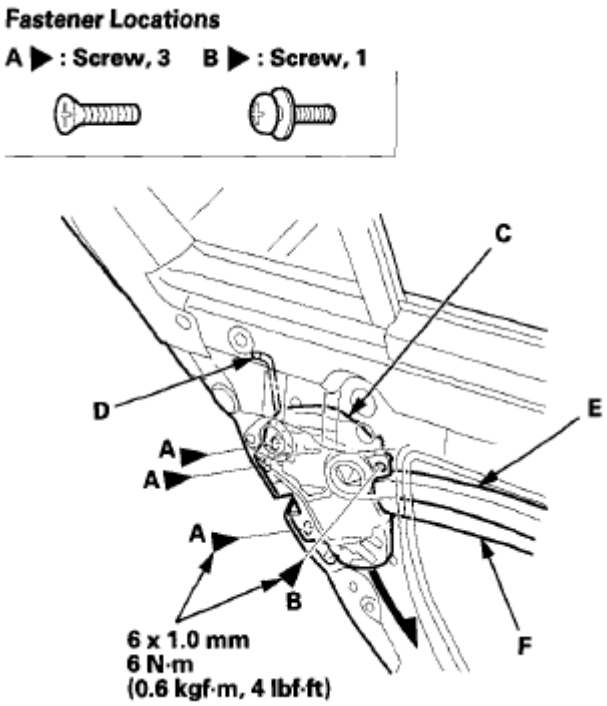


Fig. 78: Identifying Screws, Latch, Outer Handle Rod, Latch Cable And Inner Handle Cable With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

8. Remove the foam seals (A, B) from the latch protector (C) and the latch (D).

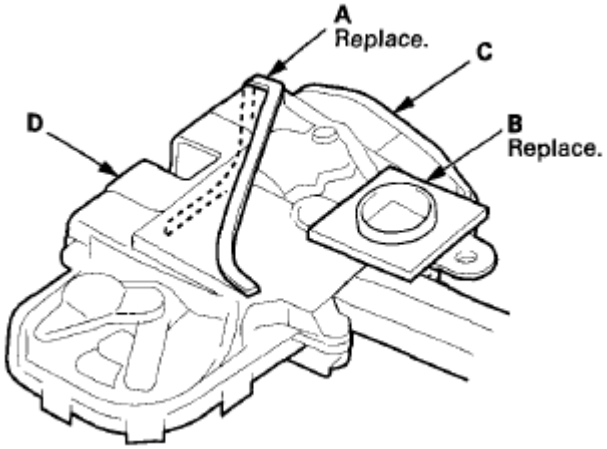


Fig. 79: Identifying Foam Seals, Latch Protector And Latch
Courtesy of AMERICAN HONDA MOTOR CO., INC.

9. Remove the screw, then remove the latch protector (A) by releasing the hook (B).

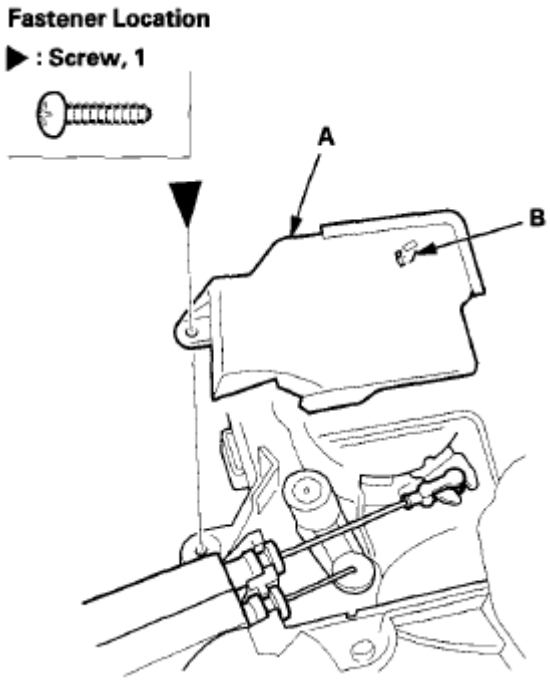


Fig. 80: Removing Latch Protector By Releasing Hook
Courtesy of AMERICAN HONDA MOTOR CO., INC.

10. Disconnect the latch cable (A) and the inner handle cable (B) from the latch (C).

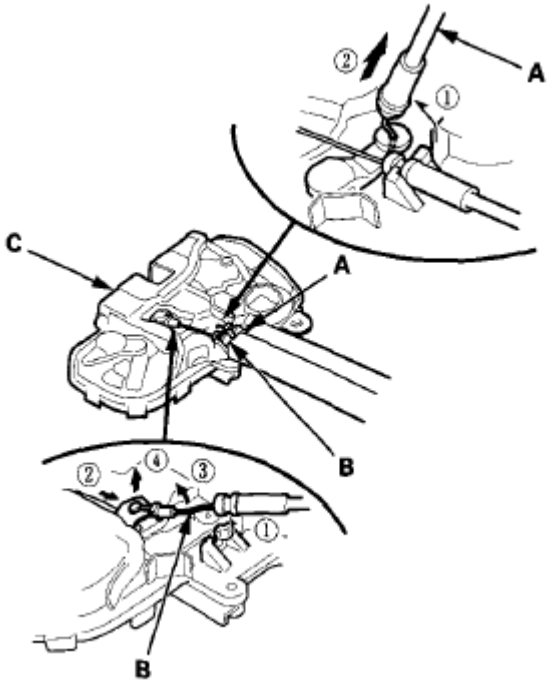


Fig. 81: Identifying Latch Cable, Inner Handle Cable And Latch
Courtesy of AMERICAN HONDA MOTOR CO., INC.

11. Install the latch in the reverse order of removal, and note these items:
    - Before reinstalling the latch protector, clean the latch and the latch protector surfaces with isopropyl alcohol where the new foam seals will be attached.
    - After reinstalling the latch protector to the latch, attach the new foam seals to the protector and the latch.
    - Make sure each connector is plugged in properly, and the rod is connected securely.
    - Make sure the door locks and opens properly.
    - When reinstalling the door panel, make sure the plastic cover on the door is installed properly.
    - Push the hook into place securely.

REAR DOOR GLASS AND REGULATOR REPLACEMENT

NOTE: Put on gloves to protect your hands.

1. Remove the door panel (see **REAR DOOR PANEL REMOVAL/INSTALLATION**).
2. Raise the glass fully.
3. Remove the screws, then remove the door panel bracket (A).

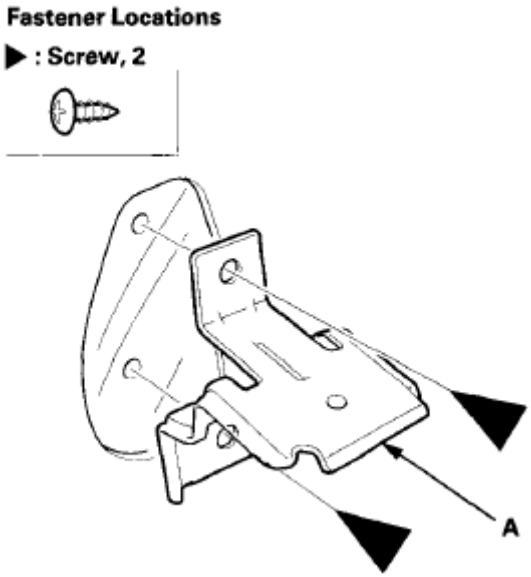


Fig. 82: Identifying Door Panel Bracket
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Remove the plastic cover (A).
    1. Disconnect the power door lock actuator connector (B), and detach the harness clip (C).
    2. Remove the plug caps (D).
    3. Pass the wire harness (E) through the slits (F) in the plastic cover (G), then remove the cover.

NOTE: If the plastic cover is damaged or torn, replace it with a new one.

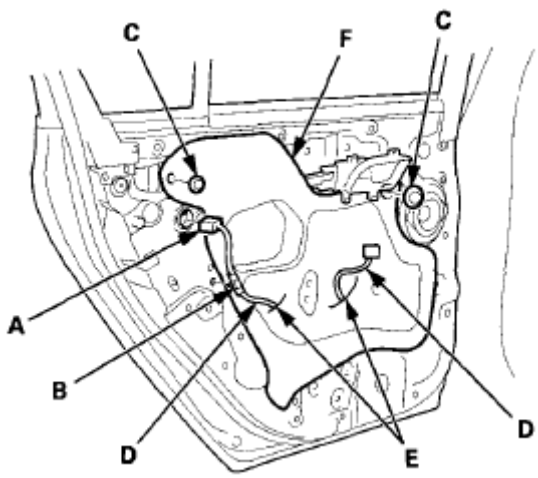


Fig. 83: Identifying Plastic Cover, Power Door Lock Actuator Connector, Harness Clip, Plug Caps And Slits
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Detach the harness clip (A). Remove the bolts, and release the hook (B), then remove the door panel bracket (C).

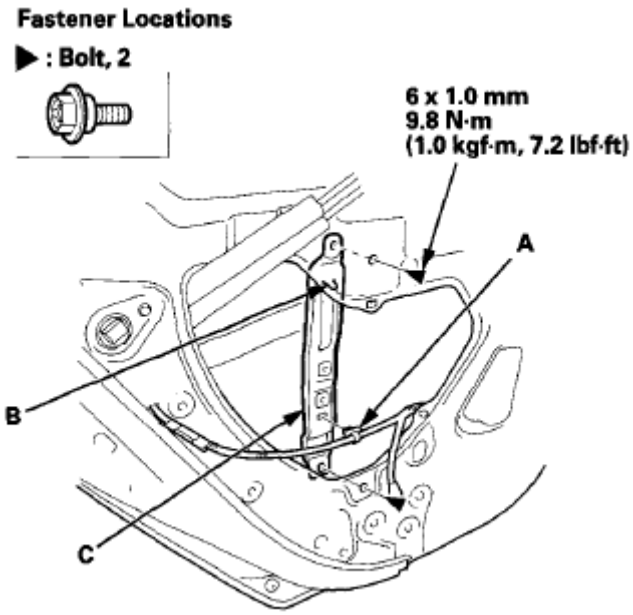


Fig. 84: Identifying Harness Clip, Hook And Door Panel Bracket With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Remove the door pad (see **REAR DOOR PAD REPLACEMENT**).
7. Lower the glass (A) until you can see the bolts, then remove them. Release the glass from the holder (B), then remove it from the regulator (C), and carefully lower the glass.

NOTE: Take care not to drop the glass inside the door.

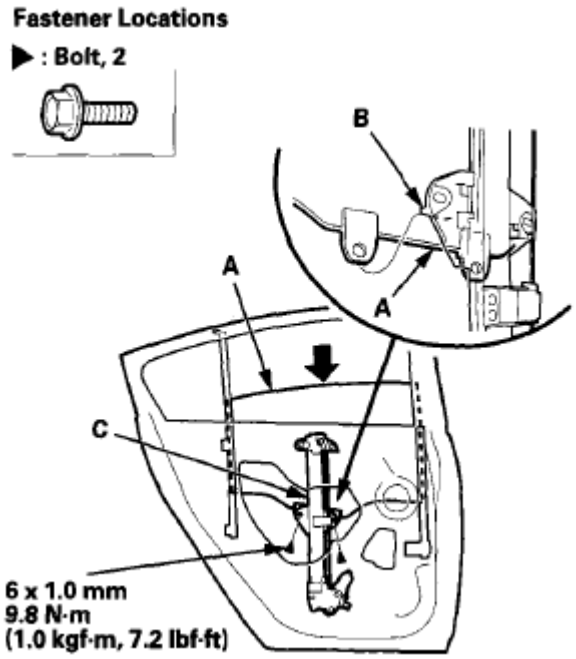


Fig. 85: Releasing Glass From Holder With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

8. Remove the bolts (A, B) and the collar (C) from the rear lower channel (D). Pull away the door weatherstrip (E) as needed, and remove the screw (F).

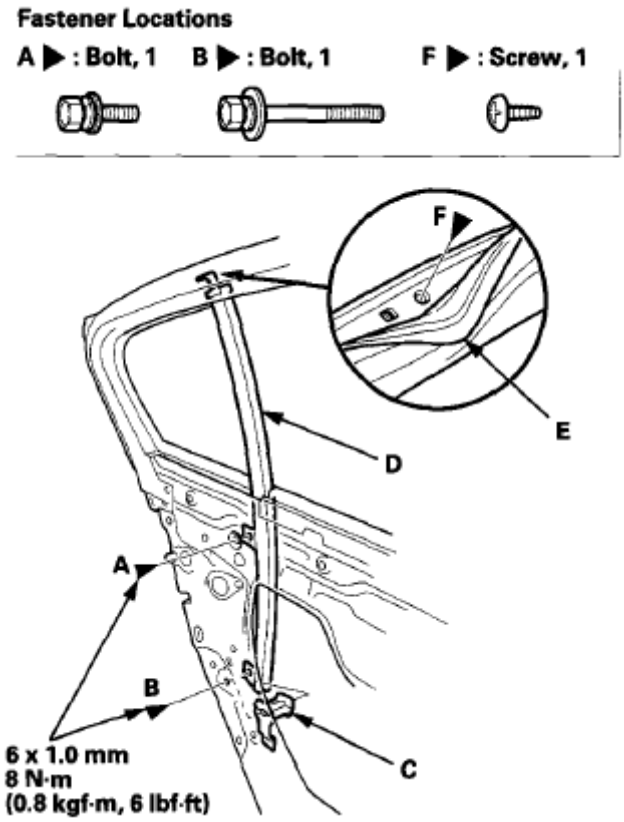


Fig. 86: Identifying Bolts, Collar, Rear Lower Channel, Door Weatherstrip And Screw With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

9. Pull away the glass run channel (A) as needed. Pull the rear lower channel (B) forward from the quarter glass seal (C), then release the upper hook (D) from the door. Remove the rear lower channel from the door glass (E), then pull up the channel to remove it.

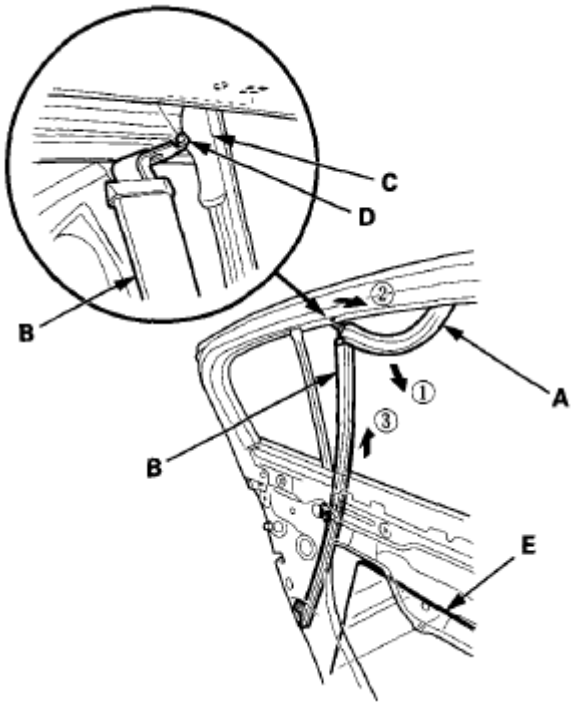


Fig. 87: Pulling Away Glass Run Channel And Rear Lower Channel Forward From Quarter Glass Seal
Courtesy of AMERICAN HONDA MOTOR CO., INC.

10. Remove the rear lower channel (A) from the glass run channel (B).

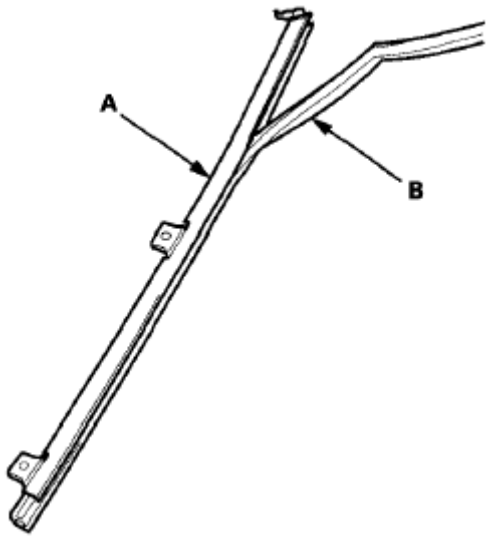


Fig. 88: Identifying Rear Lower Channel And Glass Run Channel
Courtesy of AMERICAN HONDA MOTOR CO., INC.

11. Carefully remove the glass (A) out through the window slot.

NOTE: Take care not to drop the glass inside the door.

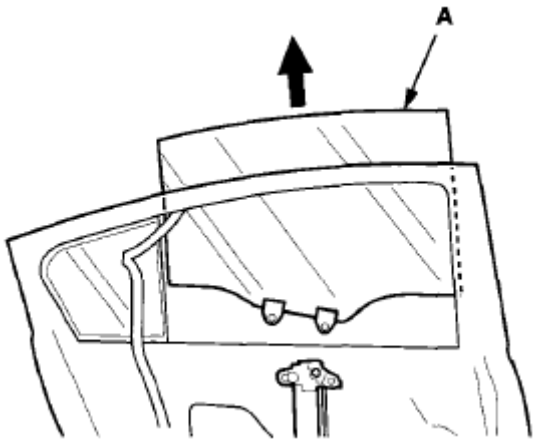


Fig. 89: Removing Glass Out Through Window Slot
Courtesy of AMERICAN HONDA MOTOR CO., INC.

12. Pull back the rear pillar inner trim (A) to release the hooks (B), then remove the trim. Remove the screws securing the quarter glass (C).

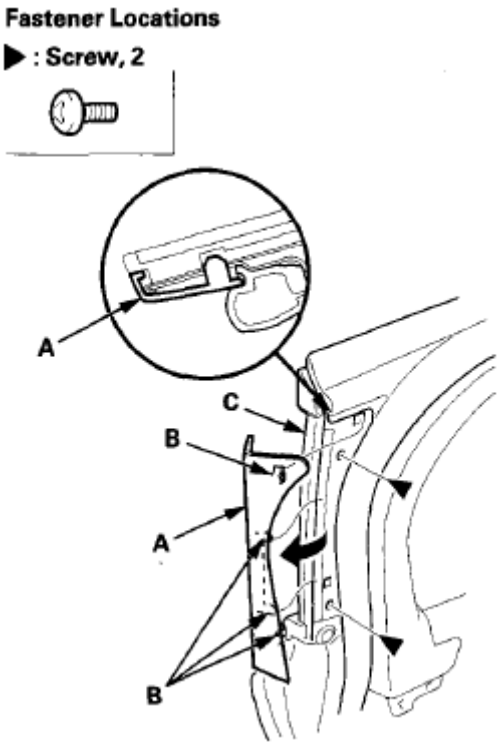


Fig. 90: Removing Screws Securing Quarter Glass
Courtesy of AMERICAN HONDA MOTOR CO., INC.

13. Starting at the rear, pull up the door inner weatherstrip (A), then remove it.

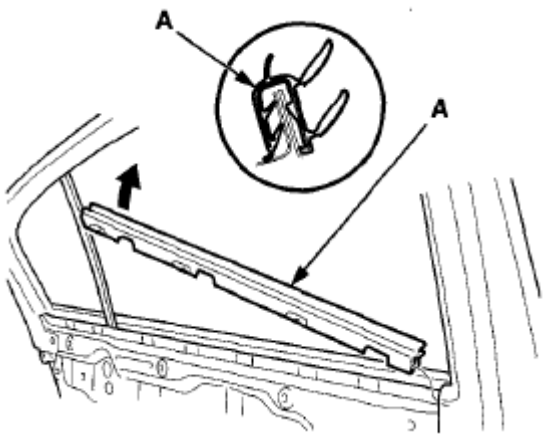


Fig. 91: Pulling Up Door Inner Weatherstrip
Courtesy of AMERICAN HONDA MOTOR CO., INC.

14. Remove the quarter glass (A).

NOTE: Take care not to damage the door glass outer weatherstrip (B).

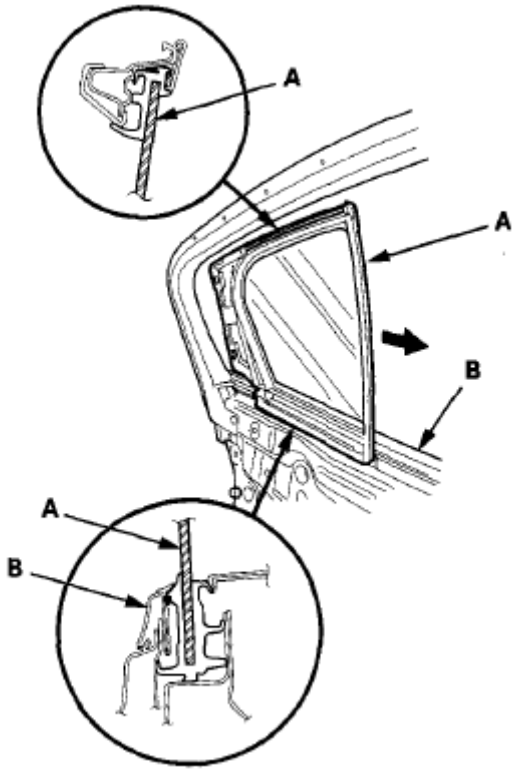


Fig. 92: Removing Quarter Glass
Courtesy of AMERICAN HONDA MOTOR CO., INC.

15. Disconnect the connector (A) from the regulator (B).

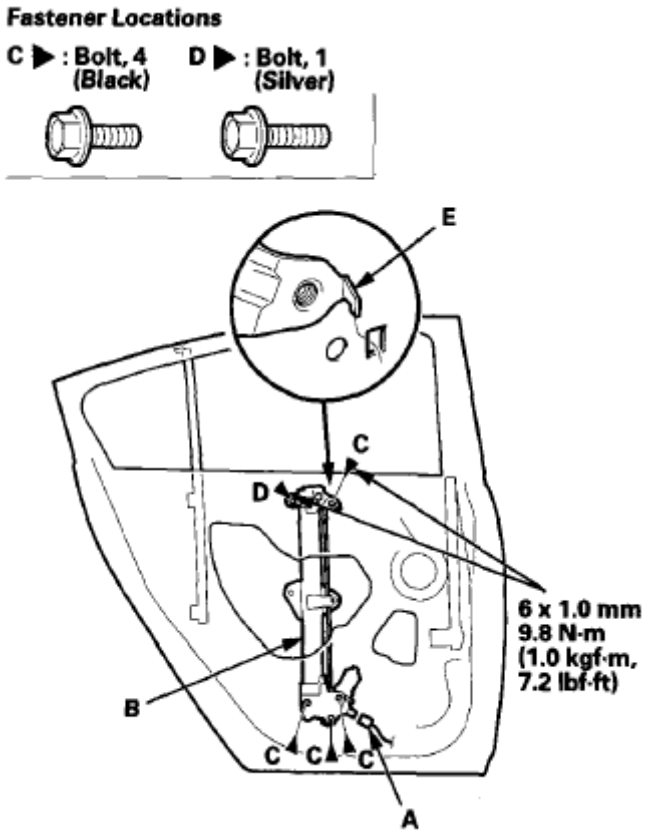


Fig. 93: Identifying Connector, Regulator, Bolts And Hook With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

16. Remove the bolts (C), and loosen the bolt (D). Release the hook (E), then remove the regulator through the hole in the door.
17. Apply multipurpose grease to all the sliding surfaces of the regulator (A) where shown.

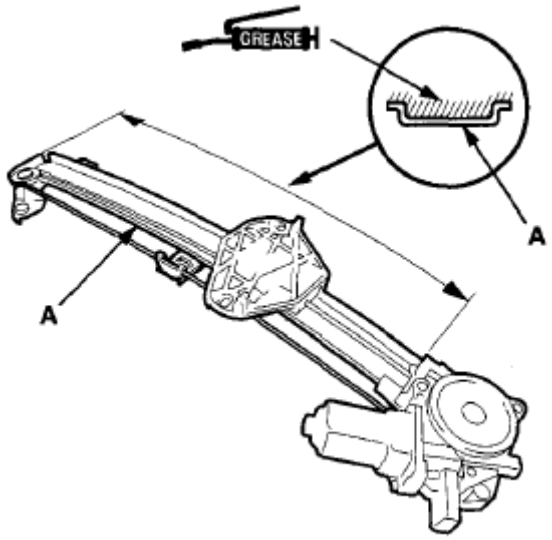


Fig. 94: Identifying Regulator
Courtesy of AMERICAN HONDA MOTOR CO., INC.

18. Install the glass and the regulator in the reverse order of removal, and note these items:
    - If the clip is damaged or stress-whitened, replace it with a new one.
    - Roll the glass up and down to make sure it moves freely without binding.
    - Make sure that there is no clearance between the glass and the glass run channel when the glass is closed.
    - Make sure each connector is plugged in properly.
    - Adjust the position of the glass as necessary (see **DOOR GLASS ADJUSTMENT**).
    - Make sure the power door locks and the power windows operate properly.
    - Make sure the plastic cover on the door is installed properly and sealed around its outside perimeter to seal out water.
    - Push the hooks into place securely.
    - Check for water leaks (see step 10).
    - Test-drive the vehicle, and check for wind noise and rattles.

REAR DOOR PAD REPLACEMENT

NOTE:
- **Put on gloves to protect your hands.**
- **Take care not to scratch the door.**

1. Remove these items:
    - Door panel (see **REAR DOOR PANEL REMOVAL/INSTALLATION**)
    - Plastic cover, as needed (see step 3)
2. Detach the clips with a clip remover, then remove the door pad (A) from the door.

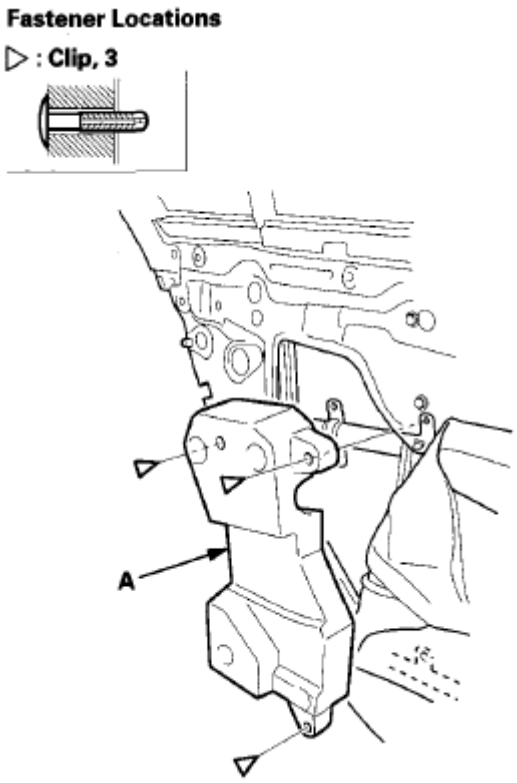


Fig. 95: Identifying Door Pad From Door
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Install the pad in the reverse order of removal, and note these items:
   - Make sure the plastic cover on the door is installed properly.
   - Push the clips into place securely.

REAR DOOR SASH INNER TRIM REPLACEMENT

NOTE: Take care not to scratch the door.

1. Remove these items:
   - Door panel (see **REAR DOOR PANEL REMOVAL/INSTALLATION**)
   - Door end trim (see **REAR DOOR PANEL REMOVAL/INSTALLATION**)
2. Remove the rear door sash inner trim (A).
   1. Detach the clips fastening the trim.
   2. Pull back along the outside edge of the trim to release the hook strip (6) from the door glass opening flange at the B-pillar area of the door sash.
   3. Pull back along the outside edge of the trim to release the hook strips (C) from the door glass opening flange at the roof area and the quarter glass area of the door sash.
   4. If necessary, release the clip (D) from the door panel.

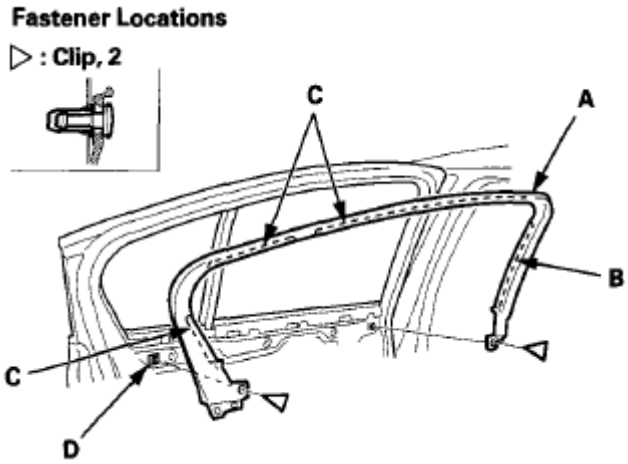


Fig. 96: Identifying Rear Door Sash Inner Trim, Hook Strip And Clip
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Install the trim in the reverse order of removal, and note these items:
   - If the clips are damaged or stress-whitened, replace them with new ones.
   - Push the clips and the hook strips into place securely.

REAR DOOR SASH OUTER TRIM REPLACEMENT

NOTE: Take care not to scratch the door.

1. Remove the door outer molding (see **REAR DOOR OUTER MOLDING REPLACEMENT**).
2. Pull up the door sash outer trim (A) to release the hooks (B) from the door, and release the trim from between the door glass outer weatherstrip (C) and the door, then remove the trim.

NOTE: Take care not to damage the door glass outer weatherstrip.

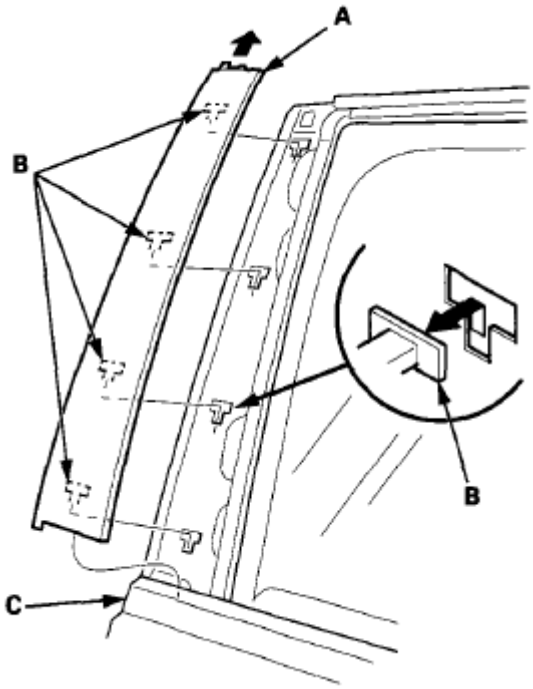


Fig. 97: Identifying Outer Trim, Hooks And Outer Weatherstrip
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Install the trim in the reverse order of removal.

REAR DOOR GLASS OUTER WEATHERSTRIP REPLACEMENT

NOTE:

- **Put on gloves to protect your hands.**
- **Take care not to scratch the door.**

1. Remove these items:
   - Door panel bracket (see step 3)
   - Door pad (see **REAR DOOR PAD REPLACEMENT**)
   - Rear pillar inner trim (see step 12)
2. Raise the glass fully.
3. Remove the screws (A, B).

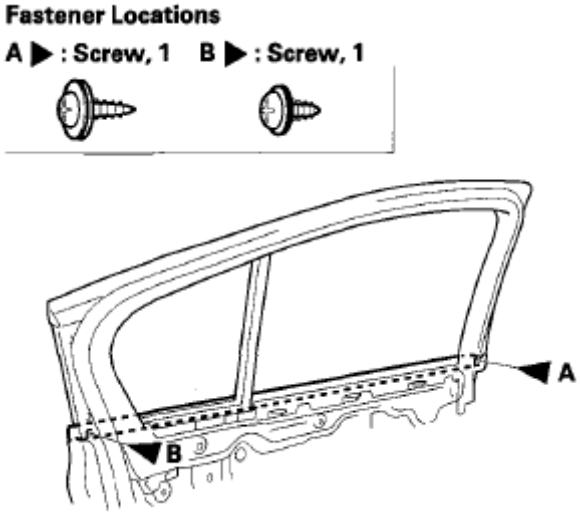


Fig. 98: Identifying Screws
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. From the inside of the door, slide the clips (A) on the door glass outer weatherstrip (B) to release the hooks (C) from the flanges (D) on the door.

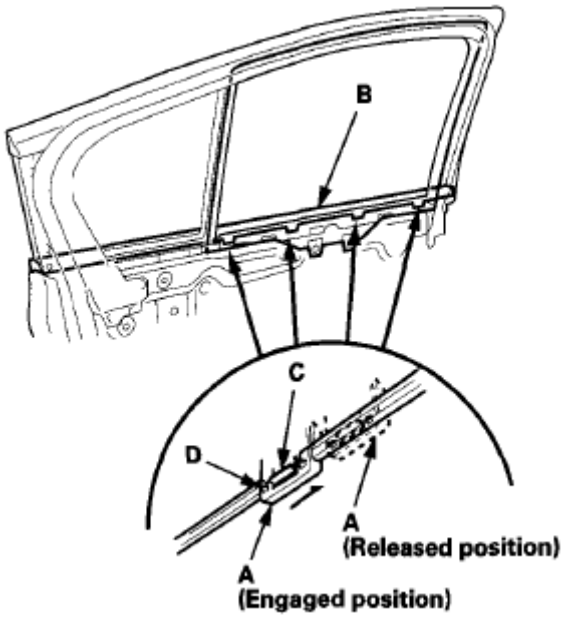


Fig. 99: Identifying Clips, Outer Weatherstrip, Hooks And Flanges
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Pull up the door glass outer weatherstrip (A), then remove the weatherstrip.

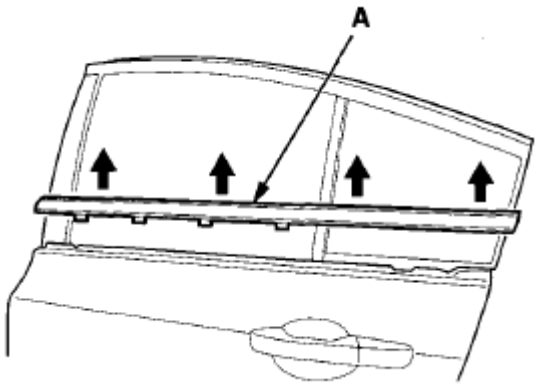


Fig. 100: Identifying Weatherstrip
Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. If the clips are damaged or stress-whitened, replace them with new ones.
7. Before installing the door glass outer weatherstrip, slide the clips to the released position as in step 4.
8. Install the door glass outer weatherstrip, and slide the clips securely on to the flanges.
9. Reinstall all remaining removed parts, and note these items:
   - Make sure the plastic cover on the door is installed properly and sealed around its outside perimeter to seal out water.
   - Check for water leaks (see step 10).

REAR DOOR OUTER MOLDING REPLACEMENT

Special Tools Required

KTC Trim Tool Set SOJATP2014*

*Available through the Acura Tool and Equipment Program; call 888-424-6857

NOTE:

- **If you remove the door outer molding, replace it with a new one because it will bend during removal.**
- **Put on gloves to protect your hands.**
- **Take care not to scratch the door.**
- **Use the appropriate tool from the KTC trim tool set to avoid damage when removing components.**

1. Remove the rear pillar inner trim (see step 12).
2. Detach the clips (A, B) with a clip remover, and release the hook (C), then pull back the door weatherstrip (D). Remove the screws (E, F) securing the door outer molding (G).

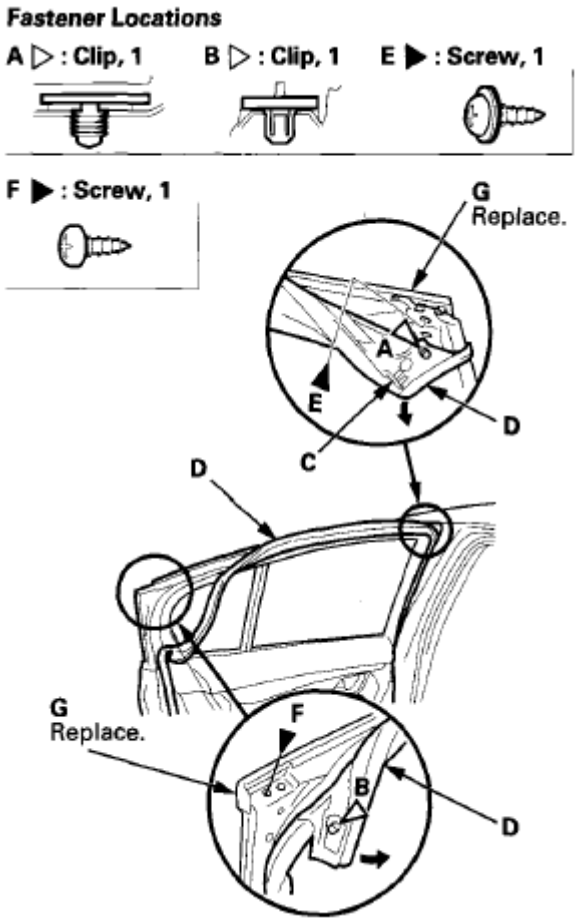


Fig. 101: Identifying Clips, Hook, Weatherstrip, Screws And Door Outer Molding
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Pull out the upper edge of the door outer molding (A) from the edge of the sash, and cut the double-sided adhesive tape (B) with a utility knife, then remove the molding from the sash.

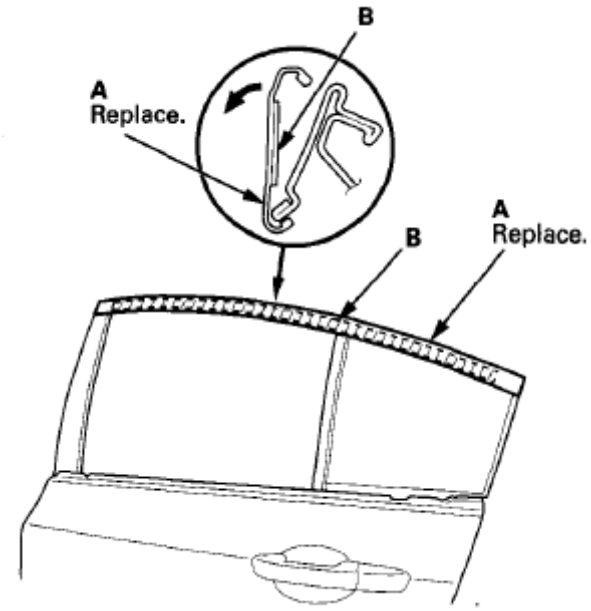


Fig. 102: Identifying Door Outer Molding And Adhesive Tape
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Carefully remove the remaining double-sided adhesive tape from the sash, then clean the sash surface with a shop towel dampened with isopropyl alcohol.
5. Install the door outer molding in the reverse order of removal, and note these items:
   - Push the adhesive areas into place securely.
   - Make sure the upper and lower sides of the molding are catching the edges of the sash properly.
   - Push the clips into place securely.

REAR DOOR WEATHERSTRIP REPLACEMENT

NOTE:

- **Put on gloves to protect your hands.**
- **Take care not to scratch the door.**
- **Take care not to damage the front upper corner clip (black) and the rear upper corner clips (black) because they are not available separately.**
- **Use a clip remover to detach the clips.**

1. Remove the rear pillar inner trim (see step 12).
2. Remove the door checker mounting bolt (A) at the B-pillar.

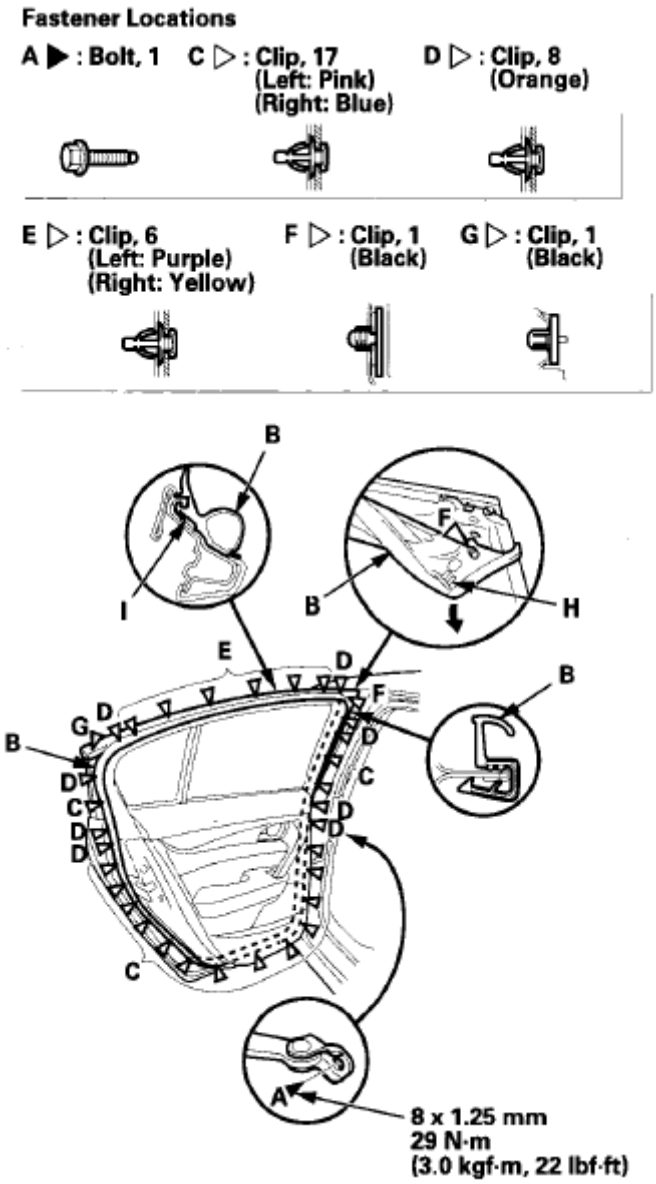


Fig. 103: Identifying Rear Door Weatherstrip & Fasteners With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Remove the door weatherstrip (B).
    1. Detach the clips (C, D, E, F, G).
    2. Release the hook (H).
    3. Release the weatherstrip from the holder (I) on the door sash.
4. Install the weatherstrip in the reverse order of removal, and note these items:
    - If the clips are damaged or stress-whitened, replace them with new ones.
    - Push the clips and the hook into place securely.
    - Make sure the door weatherstrip is installed in the holder securely.
    - Apply medium strength liquid thread lock to the door checker mounting bolt before installation.

- Check for water leaks (see step 10).

DOOR GLASS ADJUSTMENT

NOTE: Check the door weatherstrip and the glass run channel for damage or deterioration, and replace them if necessary.

1. Place the vehicle on a firm, level surface when adjusting the door glass.
2. Remove these items:
   - Door panel:
     - Front door (see **FRONT DOOR PANEL REMOVAL/INSTALLATION**)
     - Rear door (see **REAR DOOR PANEL REMOVAL/INSTALLATION**)
   - Door panel bracket:
     - Front door (see step 3)
     - Rear door (see step 3)
   - Plastic cover:
     - Front door (see step 4)
     - Rear door (see step 4)
3. Carefully lower the glass (A) until you can see the glass mounting bolts (B), then loosen them.

Front door

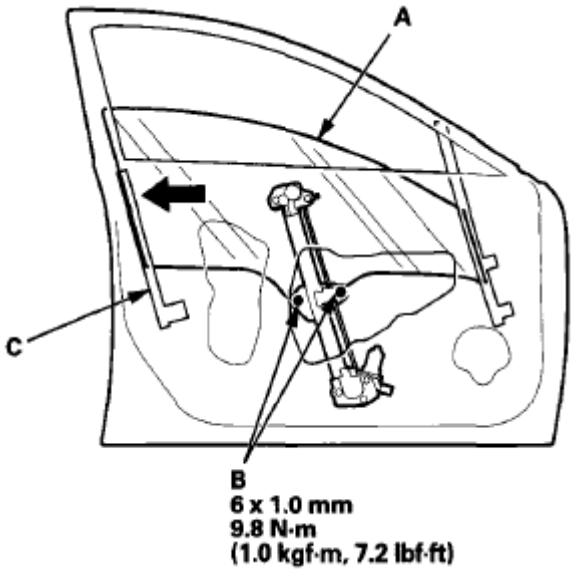


Fig. 104: Lowering Glass Until You Can See Glass Mounting Bolts (Front Door) With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Rear door

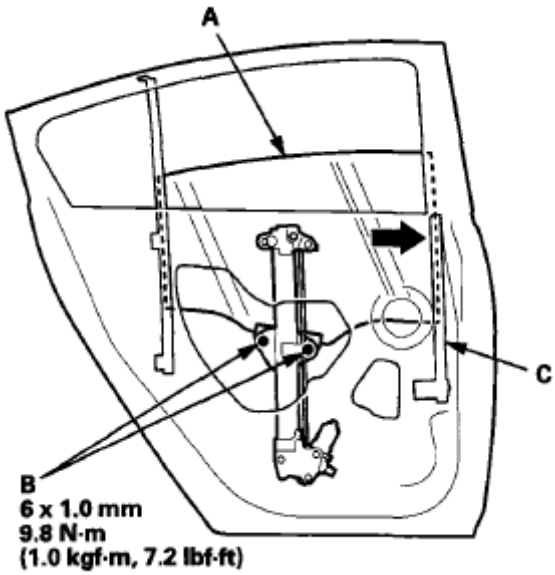


Fig. 105: Lowering Glass Until You Can See Glass Mounting Bolts (Rear Door) With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Push the glass against the glass run channel (C), then tighten the glass mounting bolts.
5. Check that the glass moves smoothly.
6. Raise the glass fully, and check for gaps. Also make sure that the glass (A) contacts the glass run channel (B) evenly.

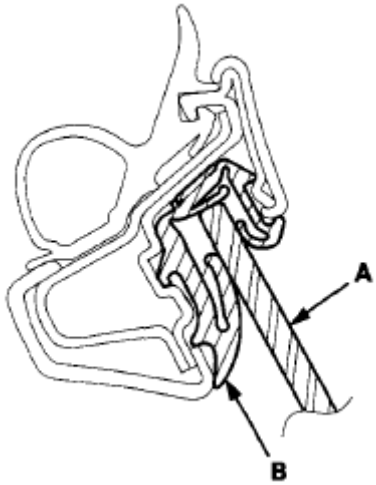


Fig. 106: Identifying Glass And Glass Run Channel
Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Attach the plastic cover making sure it is sealed around its outside perimeter to seal out water.
8. Reinstall the door panel bracket:
    - Front door (see step 3)

- Rear door (see step 3)

9. Reinstall the door panel:
   - Front door (see **FRONT DOOR PANEL REMOVAL/INSTALLATION**)
   - Rear door (see **REAR DOOR PANEL REMOVAL/INSTALLATION**)
10. Check for water leaks. Run water over the roof and on the sealing area as shown, and note these items:
    - Use a 12 mm (1/2 in) diameter hose (A).
    - Adjust the rate of water flow as shown (B).
    - Do not use a nozzle.
    - Hold the hose about 300 mm (12 in) away from the door (C).

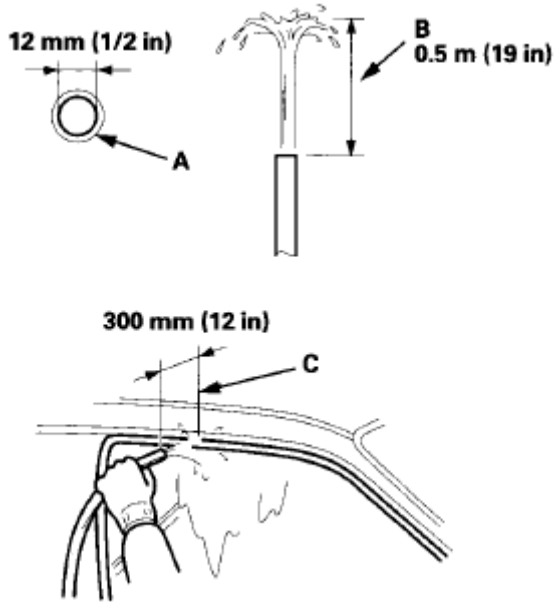


Fig. 107: Measuring Dimensions Of Water Hose And Door
Courtesy of AMERICAN HONDA MOTOR CO., INC.

DOOR POSITION ADJUSTMENT

NOTE: Check for a flush fit with the body, then check for equal gaps between the front, rear, and bottom door edges and the body. Check that the door and body edges are parallel.

1. Place the vehicle on a firm, level surface when adjusting the doors.
2. Adjust at the hinges (A):
   - Pad a floor jack (B) with shop towels (C), then use the jack to support the door while adjusting it.
   - On the front door: Remove the front inner fender (see **FRONT INNER FENDER REPLACEMENT**) and the front fender fairing (see **FRONT BRAKE DUCT REPLACEMENT**). Loosen the hinge mounting bolts (D) slightly, and move the door backward or forward, up or down as necessary to equalize the gaps.

- On the rear door: Loosen the hinge mounting bolts (E) slightly, and move the door backward or forward, up or down as necessary to equalize the gaps.

Front door

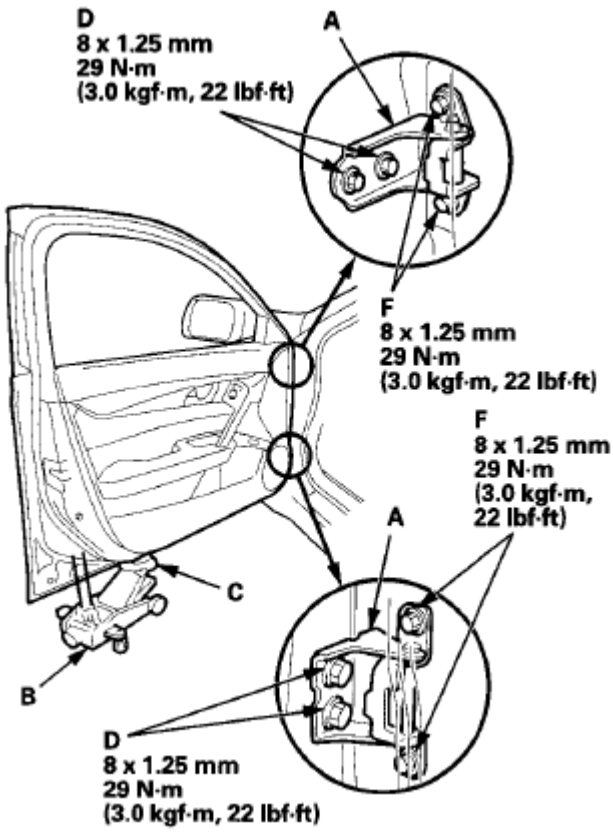


Fig. 108: Identifying Hinges, Floor Jack, Shop Towels, Mounting Bolts And Hinge Mounting Bolts (Front Door) With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Rear door

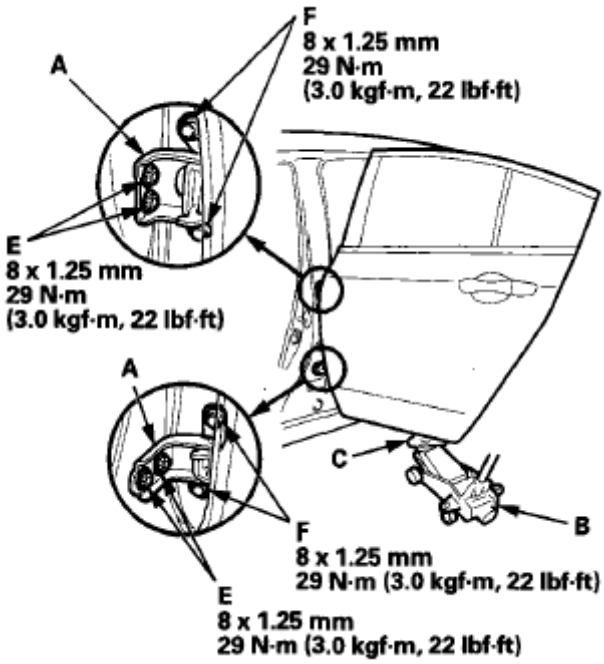


Fig. 109: Identifying Hinges, Floor Jack, Shop Towels, Mounting Bolts And Hinge Mounting Bolts (Rear Door) With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. If necessary, replace the door mounting bolts with the adjusting bolts made specifically for door adjustment, then adjust at the door: Loosen the door mounting bolts (F) slightly, and move the door up or down as necessary to equalize the gaps, and move it in or out until it's flush with the body.

NOTE: Refer to the Parts Catalog if you need use an adjusting bolt.

4. Check that the door and body edges are parallel. If necessary, adjust the door cushions (A) to make the rear of the doors flush with the body.

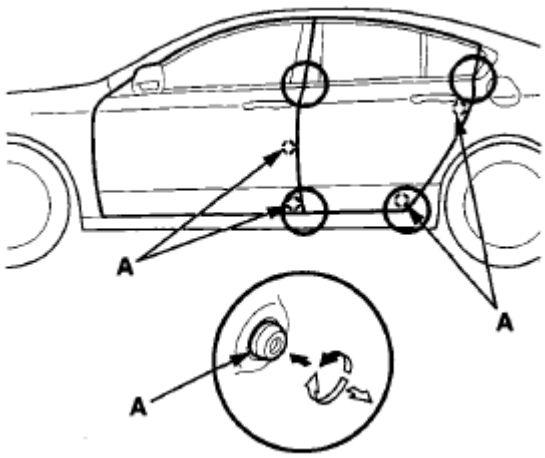


Fig. 110: Adjusting Door Cushions To Make Rear Of Doors Flush With Body

Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Apply touch-up paint to the hinge mounting bolts and around the hinges.
6. Check for water leaks (see step 10).

DOOR STRIKER ADJUSTMENT

Make sure the door latches securely without slamming it. If necessary, adjust the striker (A): The striker can be adjusted slightly up or down, and in or out.

1. Release the hooks (B), then remove the striker trim (C).

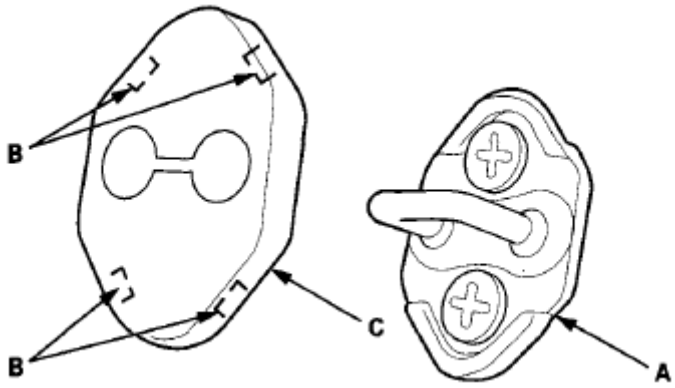


Fig. 111: Identifying Hooks, Striker Trim And Striker
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Loosen but do not remove the screws (A).

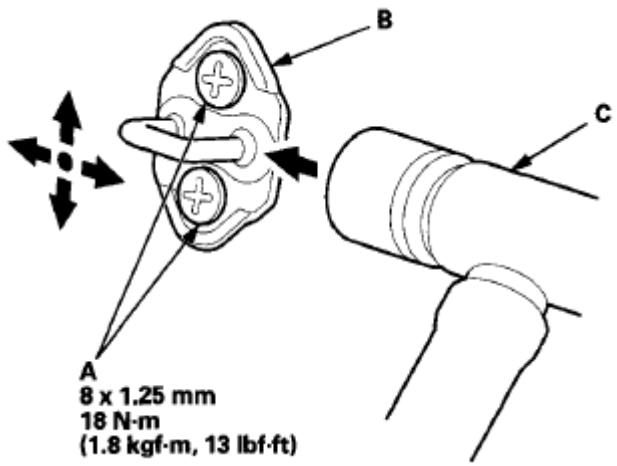


Fig. 112: Identifying Screws, Striker And Plastic Hammer With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Wrap the striker with a shop towel, then adjust the striker (B) by tapping it with a plastic hammer (C). Do

not hit the striker too hard.

4. Lightly tighten the screws.
5. Hold out the outer handle, and push the door against the body to be sure the striker allows a flush fit. If the door latches properly, tighten the screws to the specified torque, and recheck.
6. Install the striker trim.

2012 ACCESSORIES & EQUIPMENT

Exterior Trim - TL

ENGINE COMPARTMENT COVER REPLACEMENT

NOTE: Take care not to scratch the front grille or the body.

1. Remove the left engine compartment cover (A).
    1. Detach the clips and release the hook (B).
    2. Slide the cover to release the sleeve (C) from the front bulkhead cover (D).

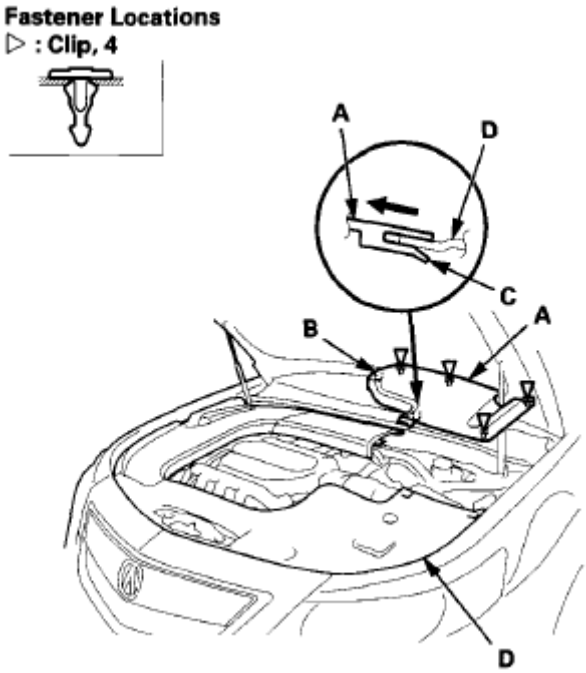


Fig. 1: Identifying Hook, Left Engine Compartment Cover, Sleeve And Bulkhead Cover
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Remove the right engine compartment cover (A).
    1. Detach the clips and release the hook (B).
    2. Slide the cover to release the sleeve (C) from the front bulkhead cover (D).

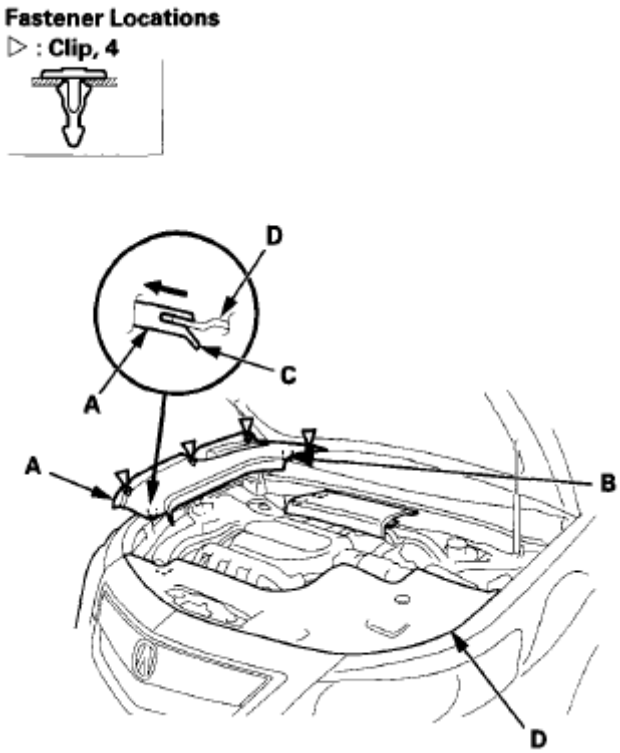


Fig. 2: Identifying Right Engine Compartment Cover, Hook, Sleeve And Bulkhead Cover
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Detach the clips, and release the projection (A), then remove the front bulkhead cover (B).

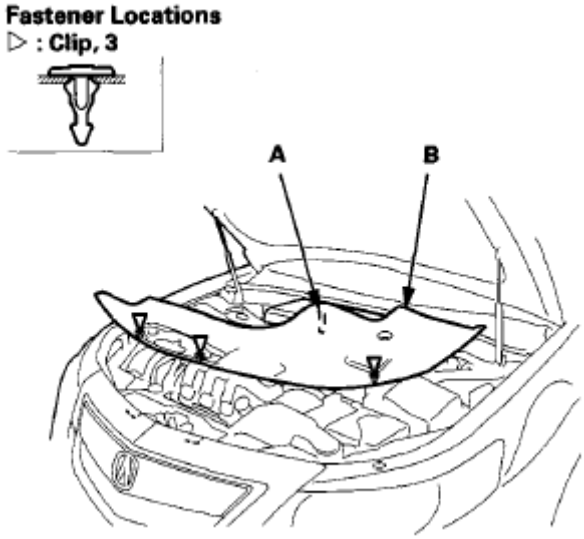


Fig. 3: Identifying Clips, Projection And Front Bulkhead Cover
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Detach the clip, and release the hook (A), then remove the strut brace cover (B).

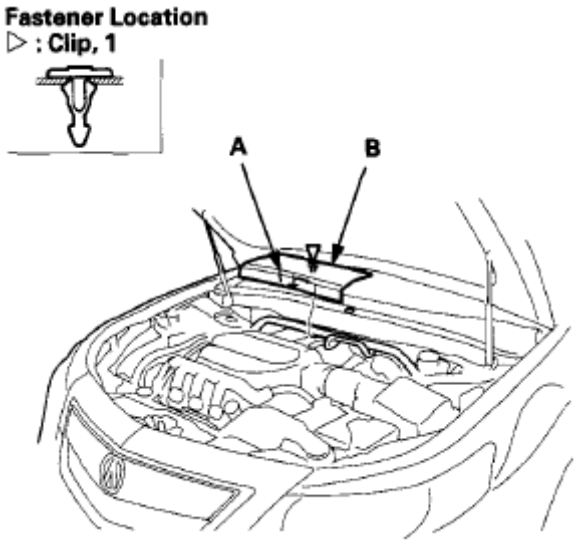


Fig. 4: Identifying Hook And Strut Brace Cover
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Install the covers in the reverse order of removal, and note these items:
   - If the clips are damaged or stress-whitened, replace them with new ones.
   - Push the clips and the hooks into place securely.

FRONT GRILLE REPLACEMENT

GRILLE REPLACEMENT

NOTE:
- **Take care not to scratch the front bumper.**
- **When prying with a flat-tip screwdriver, wrap it with protective tape to prevent damage.**

1. Remove the front bumper (see **FRONT BUMPER REMOVAL/INSTALLATION**).
2. Detach the clips, then remove the front grille (A) from the front bumper (B).

NOTE: To release the clips, pry up on the center pin at the notch (C).

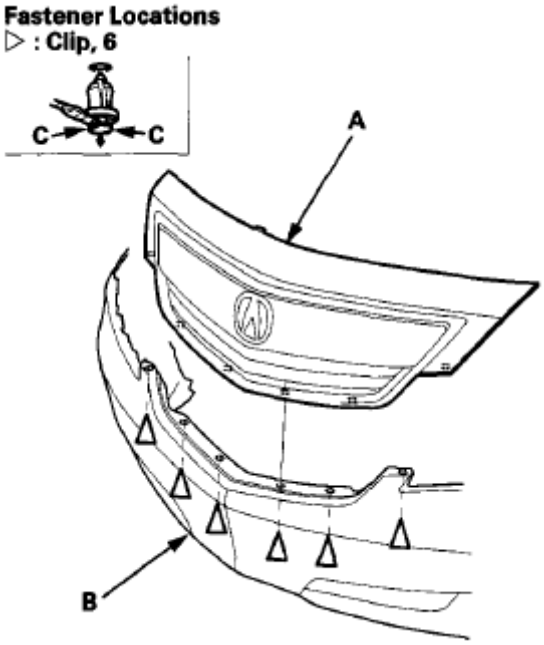


Fig. 5: Identifying Front Grille, Front Bumper And Notch
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Install the grille in the reverse order of removal, and note these items:
   - If the clips are damaged or stress-whitened, replace them with new ones.
   - Push the clips into place securely.

MOLDING REPLACEMENT

NOTE: Take care not to scratch the front grille.

1. Remove the grille.
2. From behind the grille, remove the TORX screws, then remove the front grille emblem base (A) from the front grille base (B).

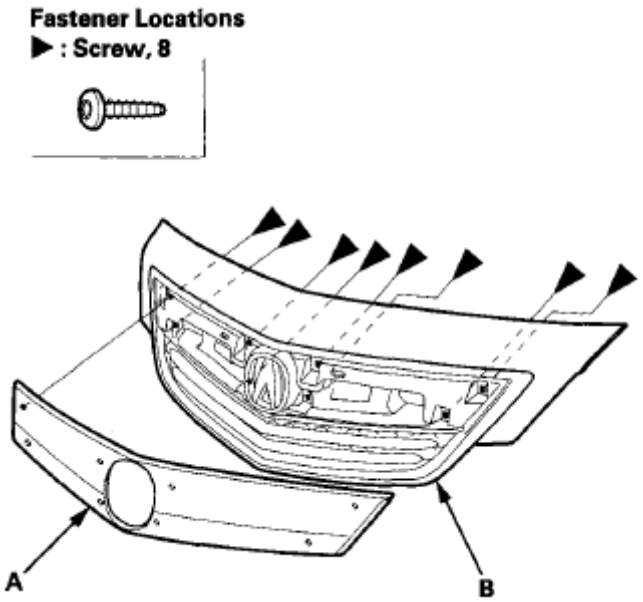


Fig. 6: Identifying Front Grille Emblem Base And Front Grille Base
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Remove the TORX screws, then remove the front grille molding (A) and the front grill trim (B) from the front grille base (C).

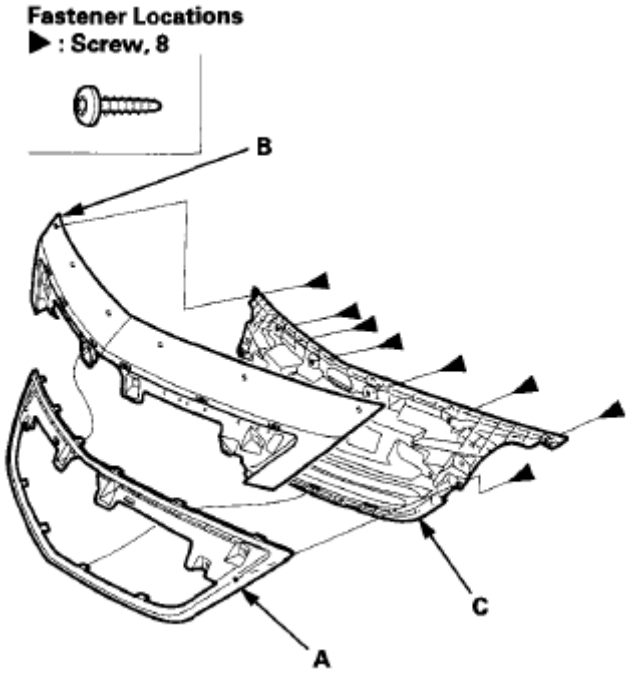


Fig. 7: Identifying Front Grille Molding, Front Grill Trim And Front Grille Base
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. If necessary, release the hooks (A, B) (nine places), then remove the front grill mesh upper bar (C) and

front grill mesh lower bar (D) from the front grille base (E).

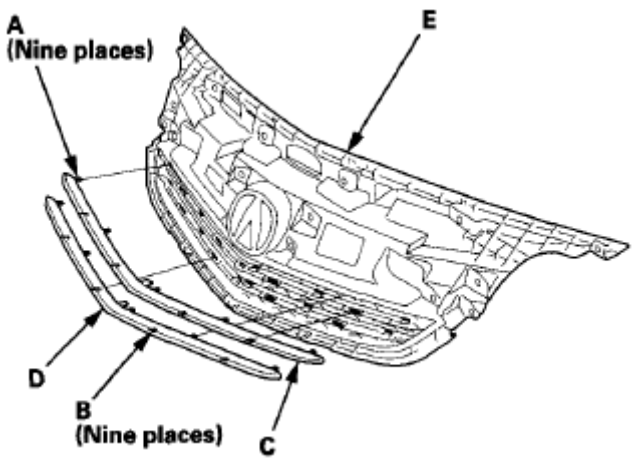


Fig. 8: Identifying Hooks, Front Grill Mesh Upper Bar, Front Grill Mesh Lower Bar And Front Grille Base
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Install the molding in the reverse order of removal.

FRONT BULKHEAD BRACE COVER REPLACEMENT

NOTE: When prying with a flat-tip screwdriver, wrap it with protective tape to prevent damage.

1. Remove the front bumper (see **FRONT BUMPER REMOVAL/INSTALLATION**).
2. Detach the clips, and release the hook (A), then remove the front bulkhead brace cover (B).

NOTE: To release the clips, pry up on the center pin at the notch (C).

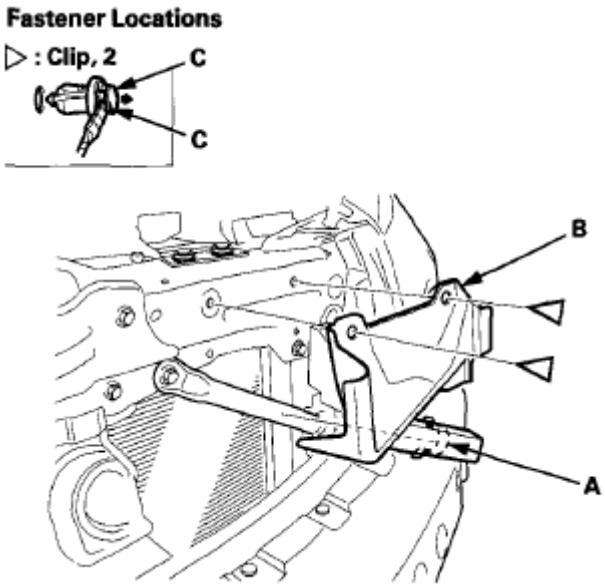


Fig. 9: Identifying Hook, Front Bulkhead Brace Cover And Notch
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Install the cover in the reverse order of removal, and note these items:
   - If the clips are damaged or stress-whitened, replace them with new ones.
   - Push the clips into place securely.

COWL COVER REPLACEMENT

Special Tools Required

KTC Trim Tool Set SOJATP2014*

* Available through the Acura Tool and Equipment Program; call 888-424-6857

NOTE:

- **Put on gloves to protect your hands.**
- **Take care not to scratch the body.**
- **Use the appropriate tool from the KTC trim tool set to avoid damage when removing components.**
- **When prying with a flat-tip screwdriver, wrap it with protective tape to prevent damage.**

1. Remove these items:
   - Windshield wiper arms (see **WASHER FLUID LEVEL SWITCH TEST**)
   - **Engine compartment covers**.
2. Remove the cowl cover (A).
   1. Detach the clips (B).

2. Detach the clips (C, D, E) by carefully pulling up the cover.
3. Release the hood hinge covers (F) from both hood hinges.

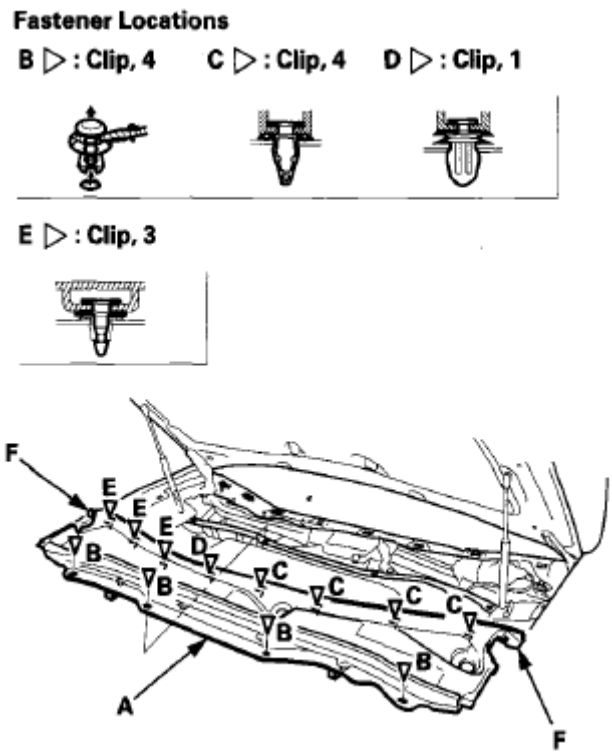


Fig. 10: Identifying Cowl Cover, Clips And Hood Hinge Covers
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. If necessary, release the hooks (A), then remove the A/C intake umbrella (B).

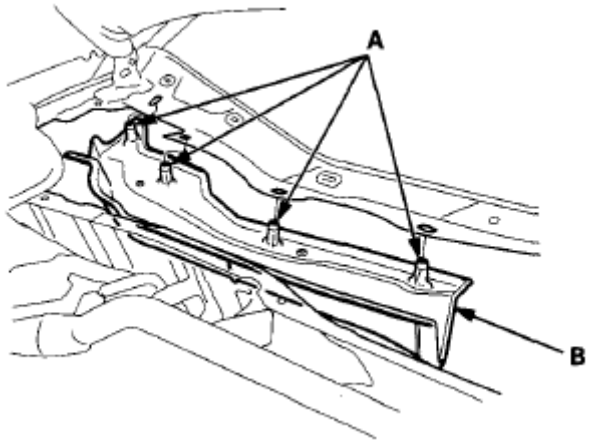


Fig. 11: Identifying Hooks And A/C Intake Umbrella
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Install the cover in the reverse order of removal, and note these items:

- If the clips are damaged or stress-whitened, replace them with new ones.
- Push the clips and the hooks into place securely.
- Make sure the washer tube is connected properly.

ROOF MOLDING REPLACEMENT

Special Tools Required

KTC Trim Tool Set SOJATP2014*

* Available through the Acura Tool and Equipment Program; call 888-424-6857

MOLDING REPLACEMENT

NOTE:

- **Put on gloves to protect your hands.**
- **Take care not to scratch the windshield.**
- **Take care not to bend the roof molding.**
- **Do not use any metallic tools to remove the windshield area of the roof molding, or you may chip or crack the windshield.**
- **Use the appropriate tool from the KTC trim tool set to avoid damage when removing components.**

1. Remove the windshield area of the roof molding (A).
    1. Carefully insert the large trim tool (B) and the plastic spatula (C) (from the KTC tool set) under the molding next to the lower clip (D).
    2. While pulling up the clip area of the molding by hand, push each of the six small hooks (E) in the numbered sequence shown to release the clip from the retainer (F) on the A-pillar.

        NOTE: Do not try to pry up the clip if it is hard to release from the clip on the A-pillar.

    3. Gradually work your way up to release each of the upper clips (G, H, I).

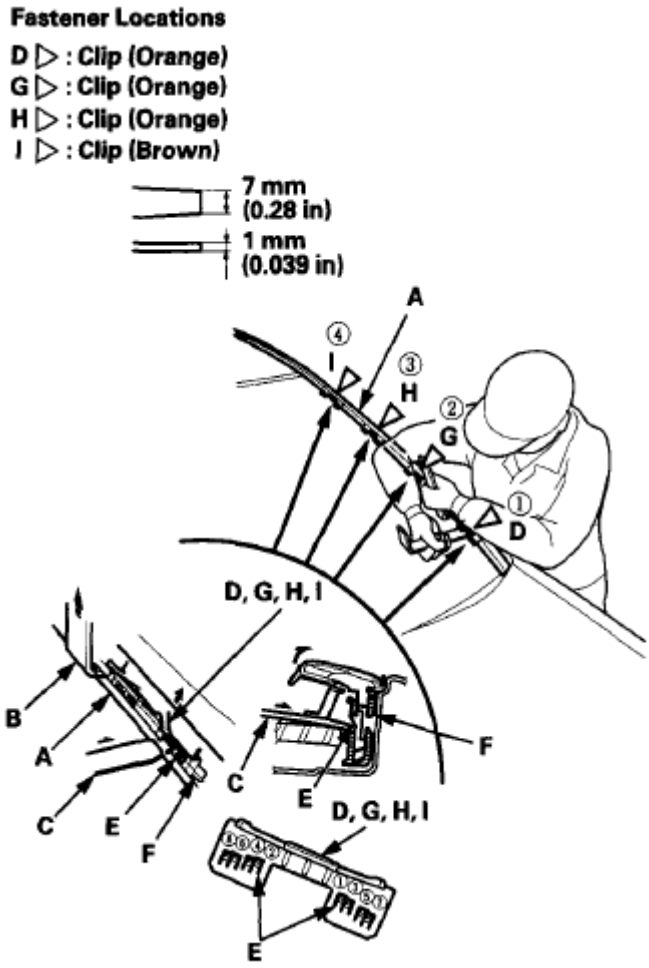


Fig. 12: Identifying Roof Molding, Large Trim Tool, Plastic Spatula, Lower Clip And Retainer
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Pull up the roof area of the roof molding (A) to release it from the retainers (B).

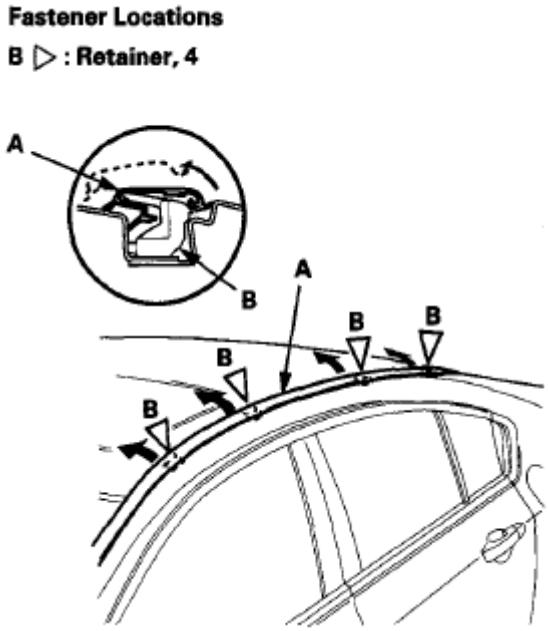


Fig. 13: Identifying Roof Molding And Retainers
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Pull the rear end of the roof molding (A) forward to release it from the rear window molding (B).

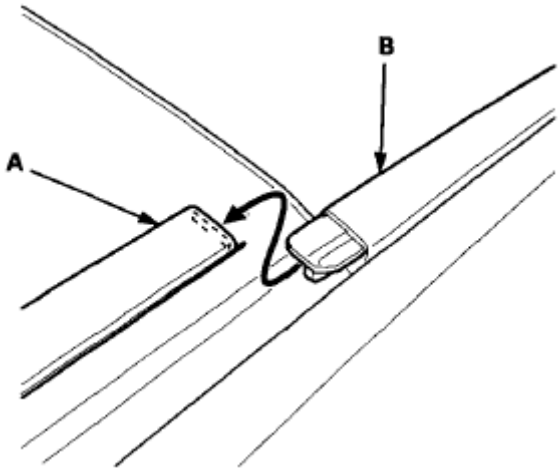


Fig. 14: Identifying Roof Molding And Rear Window Molding
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Install the molding in the reverse order of removal, and note these items:
   - If the clips are damaged or stress-whitened, replace them with new ones.
   - Make sure the roof molding is installed securely.

RETAINER REPLACEMENT (WINDSHIELD AREA)

NOTE:

- **Take care not to scratch the body or damage the windshield.**
- **When prying with a flat-tip screwdriver, wrap it with protective tape to prevent damage.**

1. Pry out the middle hooks (A) with a flat-tip screwdriver, and slide the retainers (B, C) downward to release them from the pins (D) on the A-pillar.

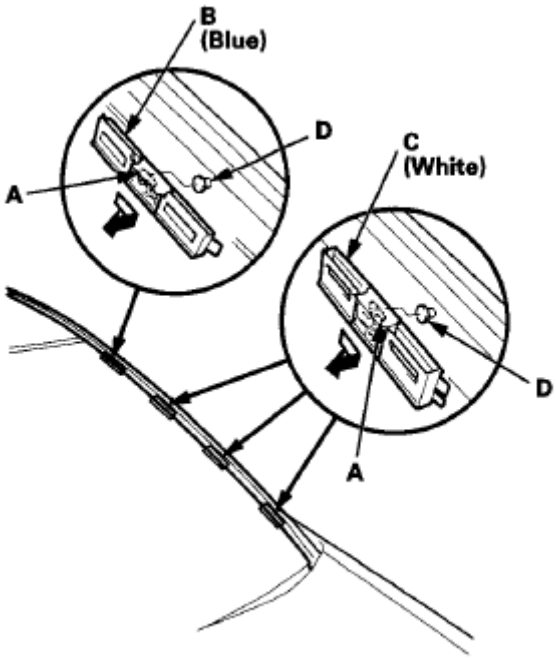


Fig. 15: Identifying Middle Hooks, Retainers And Pins
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Install the retainers in the reverse order of removal, and make sure the retainers are securely fastened on the pins.

RETAINER REPLACEMENT (ROOF AREA)

NOTE:

- **Take care not to scratch the body.**
- **When prying with a flat-tip screwdriver, wrap it with protective tape to prevent damage.**

1. Pry up the middle hooks (A) with a flat-tip screwdriver, and slide the retainers (B) rearward to release them from the pins (C) on the body.

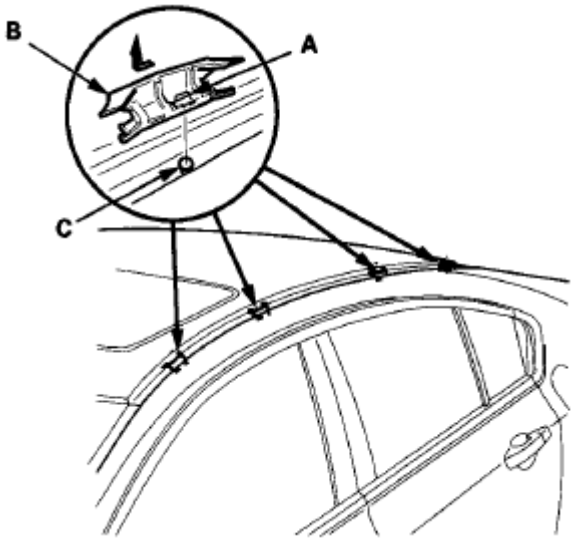


Fig. 16: Identifying Middle Hooks, Retainers And Pins
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Install the retainers in the reverse order of removal, and make sure the retainers securely fastened on the pins.

REAR WINDOW MOLDING REPLACEMENT

Special Tools Required

KTC Trim Tool Set SOJATP2014*

* Available through the Acura Tool and Equipment Program; call 888-424-6857

MOLDING REPLACEMENT

NOTE:

- **Put on gloves to protect your hands.**
- **Take care not to scratch the rear window.**
- **Take care not to bend the rear window molding.**
- **Do not use any metallic tools to remove the rear window molding, or you may chip or crack the rear window.**
- **Use the appropriate tool from the KTC trim tool set to avoid damage when removing components.**

1. Remove the **roof molding**.
2. Remove the rear window molding (A).
    1. Gently pry up the front edge of the molding, then pull up the molding from the top to the bottom to release the hooks (B) from the retainers (C) on the C-pillar.

2. Slide the molding forward to release the rear end (D) from the pin (E) on the body.

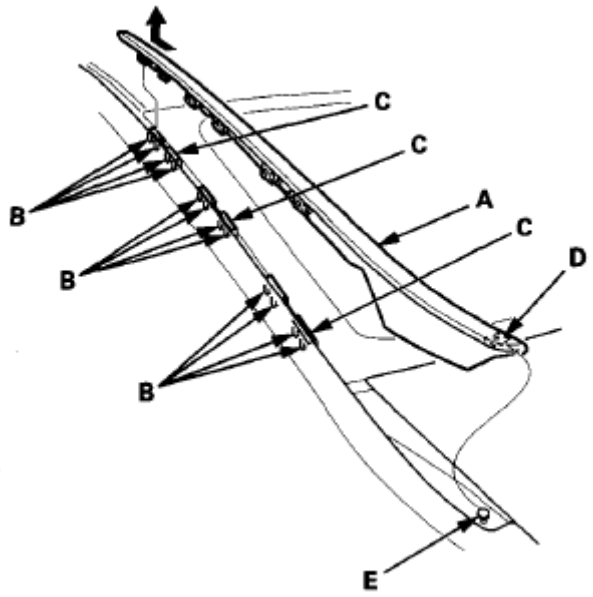


Fig. 17: Identifying Rear Window Molding, Hooks, Retainers, Rear End And Pin
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Install the molding in the reverse order of removal, and push the hooks into place securely.

RETAINER REPLACEMENT

NOTE:

- **Take care not to scratch the body or damage the rear window.**
- **When prying with a flat-tip screwdriver, wrap it with protective tape to prevent damage.**

1. Pry up the middle hooks (A) with a flat-tip screwdriver, and slide the retainers (B) upward to release them from the pins (C) on the C-pillar.

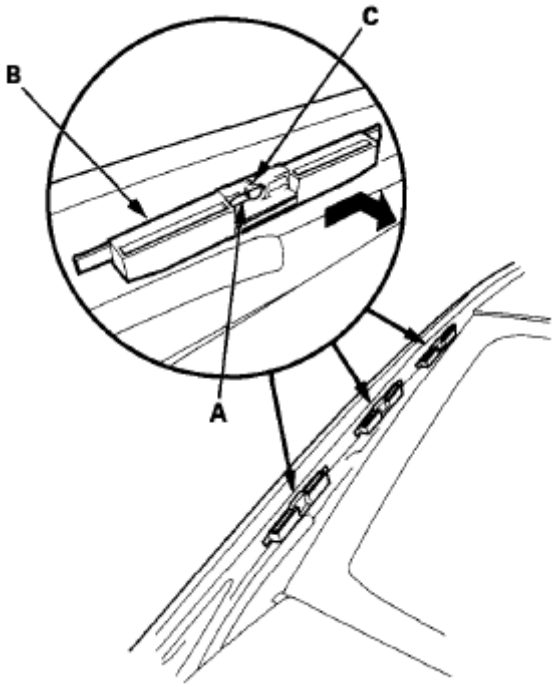


Fig. 18: Identifying Middle Hooks, Retainers And Pins
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Install the retainers in the reverse order of removal, and make sure the retainers are securely fastened on the pins.

C-PILLAR OUTER TRIM REPLACEMENT

Special Tools Required

KTC Trim Tool Set SOJATP2014*

* Available through the Acura Tool and Equipment Program; call 888-424-6857

NOTE:

- **Take care not to scratch the trim or the body.**
- **Use the appropriate tool from the KTC trim tool set to avoid damage when removing components.**

1. Open the rear door.
2. Pry up on the edge of the C-pillar outer trim (A) with a trim tool to detach the clips, then remove the trim.

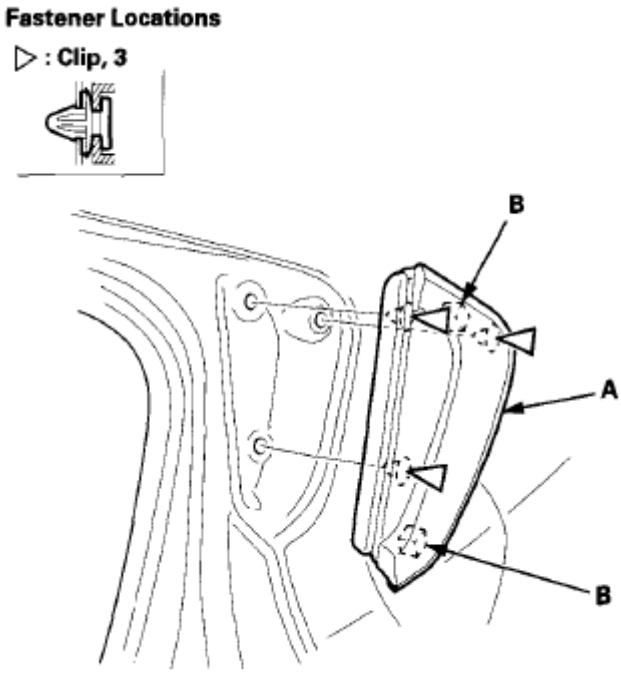


Fig. 19: Identifying C-Pillar Trim And EPT Foams
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Install the trim in the reverse order of removal, and note these items:
   - If the clips are damaged or stress-whitened, replace them with new ones.
   - Make sure you cannot see the EPT foams (B) from outside.
   - Push the clips into place securely.

SIDE SILL PANEL REPLACEMENT

NOTE:

- **Put on gloves to protect your hands.**
- **Take care not to scratch the body.**
- **When prying with a flat-tip screwdriver, wrap it with protective tape to prevent damage.**

1. Canada models: Remove the front splash guard (see **FRONT INNER FENDER REPLACEMENT**).
2. Remove the side sill panel (A).
   1. Except Canada models: Detach the clip (B) from the rear of the front wheel arch.
   2. Except Canada models: Remove the screws (C) securing the front inner fender and the side sill panel.
   3. Detach the clips (D, E).
   4. Remove the screws (F) securing the rear inner fender and the side sill panel.
   5. Pry out the rear clip (G) with a trim tool, then release the rear of the side sill panel from the body. Remove the grommet (H) from the body, then install the grommet on the rear clip on the side sill

panel.

6. Pull the rear area of the side sill panel away from the body, and slide the panel rearward to remove it. The side clips (I) will stay in the body.
7. Slide the side sill inner trim (J) forward and remove it. The side clip (K) will stay in the body.
8. Remove the side clips I, K from the body by turning them 45 °.

NOTE: To release the clips B, D, pry up on the center pin at the notch (L).

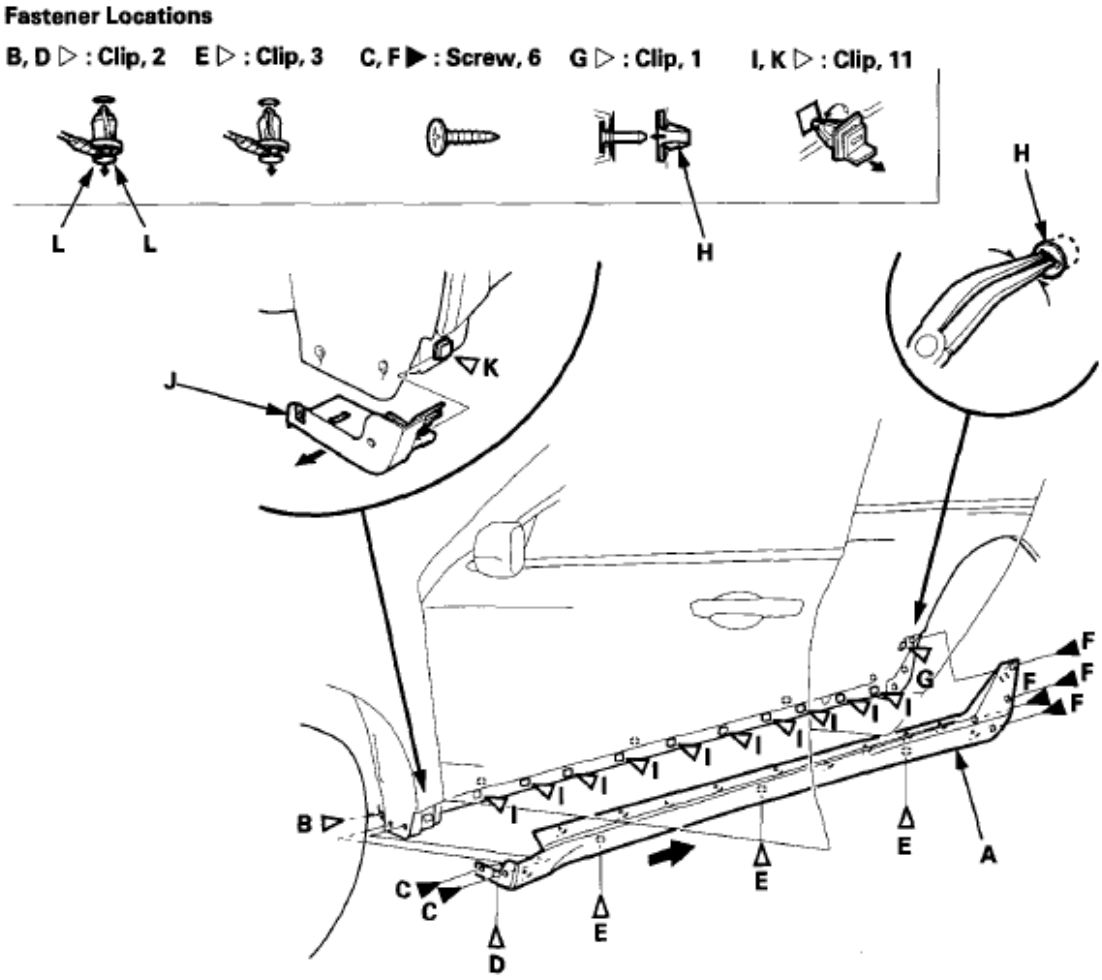


Fig. 20: Identifying Side Skill Panel & Fasteners
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. If the clips are damaged or stress-whitened, replace them with new ones.
4. Install the side clips (A) and the rear clip (B) on the side sill panel (C).

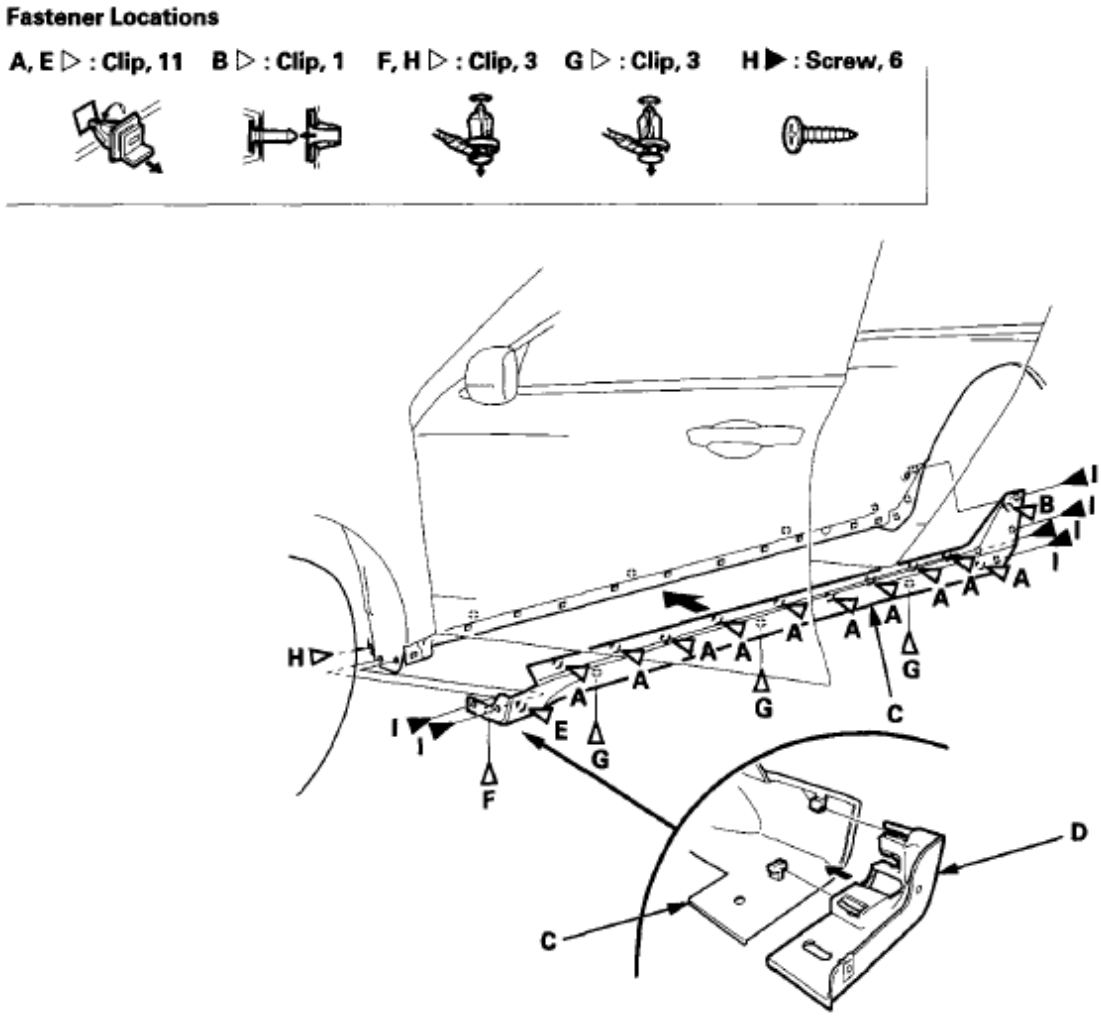


Fig. 21: Installing Side Clips And Rear Clip On Side Sill Panel
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Install the side sill inner trim (D) on the side sill panel, and install the front side clip (E) on the side sill inner trim.
6. Hold up the panel, and slide it forward to engage the front side clip. Fit all the side clips and the rear clip into the holes in the body, then push on the panel until the clips snap into place.
7. Install the clips (F, G).
8. Install the clip (H) and the screws (I).

SIDE SILL PROTECTION TAPE REPLACEMENT

CANADA MODELS

1. Slowly peel off the original side sill protection tape.
2. Clean the side sill panel bonding surface with a shop towel dampened with isopropyl alcohol. After cleaning, keep oil, grease, and water from getting on the surface.

3. Peel the adhesive backing from the side sill protection tape.
4. Align the side sill protection tapes (A, B) with the edge of the side sill panel (C), then press them into place.

Unit: mm (in).

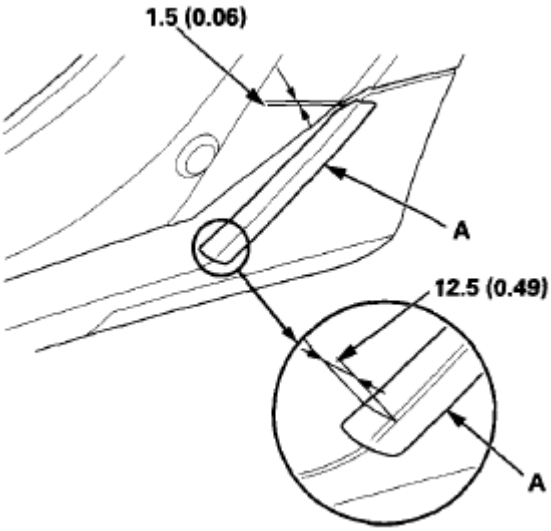


Fig. 22: Identifying Protection Tapes
Courtesy of AMERICAN HONDA MOTOR CO., INC.

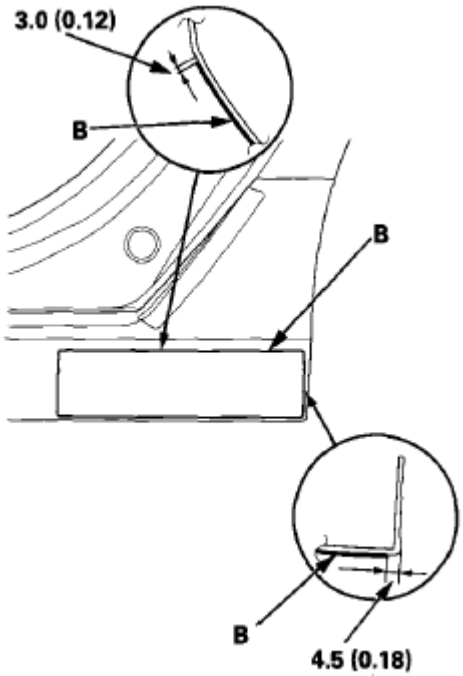


Fig. 23: Identifying Side Sill Panel
Courtesy of AMERICAN HONDA MOTOR CO., INC.

TRUNK LID SPOILER REPLACEMENT

FOR SOME MODELS

NOTE:

- **Put on gloves to protect your hands.**
- **Take care not to scratch the trunk lid.**

1. Remove the trunk lid trim panel (see **TRIM REMOVAL/INSTALLATION - TRUNK LID**).
2. Open the trunk lid. Remove the nuts, and disconnect the trunk release switch connector (A) from inside the trunk lid.

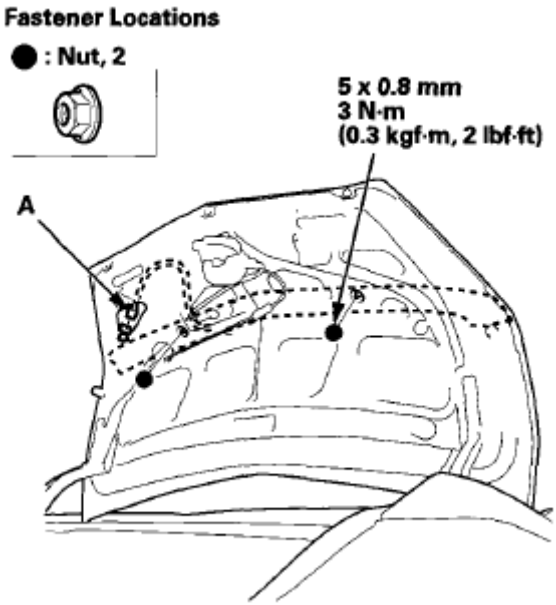


Fig. 24: Identifying Trunk Release Switch Connector & Fasteners With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Close the trunk lid, and while gently pulling out the edge of the trunk lid spoiler (A), carefully cut the double-sided adhesive tapes (B) along the edge of the spoiler.

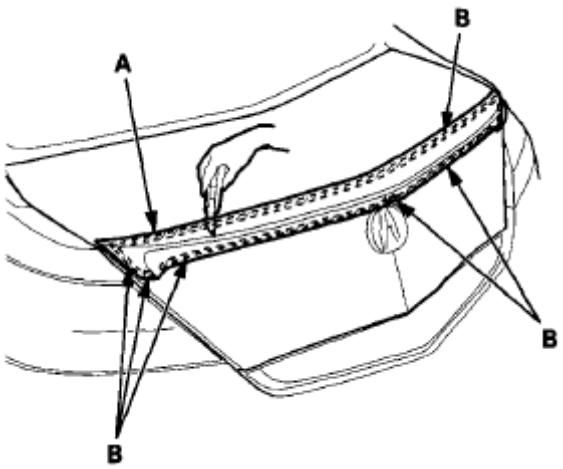


Fig. 25: Identifying Trunk Lid Spoiler And Double Sided Adhesive Tapes
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Pull out the trunk lid spoiler (A) to detach the clips, then remove the spoiler from the trunk lid.

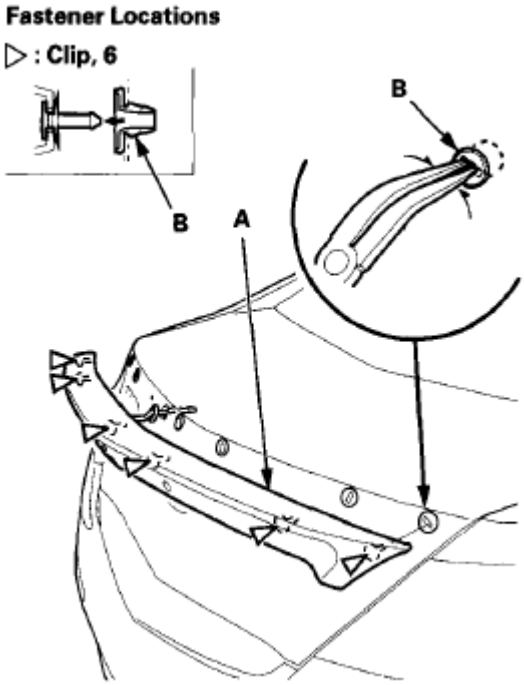


Fig. 26: Identifying Trunk Lid Spoiler And Grommets
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Remove the grommets (B) from the trunk lid, then insert the grommets into the clips on the trunk lid spoiler.
6. If the clips and the grommets are damaged or stress-whitened, replace them as an assembly with new ones.
7. If you are reusing the original trunk lid spoiler, carefully remove the remaining double-sided adhesive

tapes from the trunk lid spoiler. Also carefully remove the remaining double-sided adhesive tapes from the trunk lid. Clean the spoiler and trunk lid surfaces with a shop towel dampened with isopropyl alcohol.

8. Attach new double-sided adhesive tape to the edge of the trunk lid spoiler (F) as shown.

Adhesive tape (A): Thickness 1 mm (0.04 in) Width 5 mm (0.2 in) Length 602 mm (23.7 in)

Adhesive tape (B): Thickness 1.5 mm (0.06 in) Width 5 mm (0.2 in) Length 49 mm (1.93 in)

Adhesive tape (C): Thickness 1.5 mm (0.06 in) Width 5 mm (0.2 in) Length 473 mm (18.6 in)

Adhesive tape (D): Thickness 1.5 mm (0.06 in) Width 5 mm (0.2 in) Length 23 mm (0.91 in)

Adhesive tape (E): Thickness 1.5 mm (0.06 in) Width 5 mm (0.2 in) Length 90 mm (3.54 in)

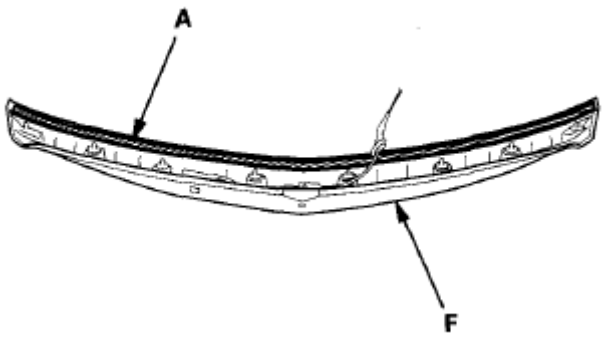


Fig. 27: Identifying Trunk Lid Spoiler And Adhesive Tape
Courtesy of AMERICAN HONDA MOTOR CO., INC.

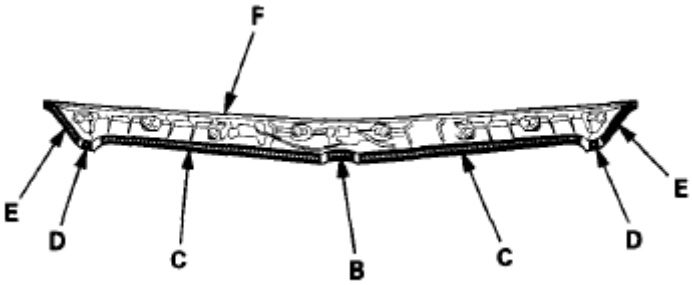


Fig. 28: Identifying Adhesive Tapes Of Different Sizes
Courtesy of AMERICAN HONDA MOTOR CO., INC.

9. Fold the edge of each adhesive backing from the double-sided adhesive tape.
10. Hold up the spoiler, and fit the clips into the holes in the trunk lid, then push on the spoiler until the clips snap into place securely.
11. Carefully pull the adhesive backing away, and push on the double-sided adhesive tape areas to make adhesive stick securely.
12. Reconnect the trunk release switch connector, and reinstall the nuts.

EMBLEM/STICKER REPLACEMENT

NOTE: When removing the emblems, take care not to scratch the body.

1. To remove the front "A" emblem, raise the vehicle on a lift. From underneath the vehicle, remove the two screws, then remove the emblem.
2. Clean the body surfaces where emblems are applied with a shop towel dampened with isopropyl alcohol. After cleaning, keep oil, grease, and water from getting on the surface.
3. Apply the emblems where shown.

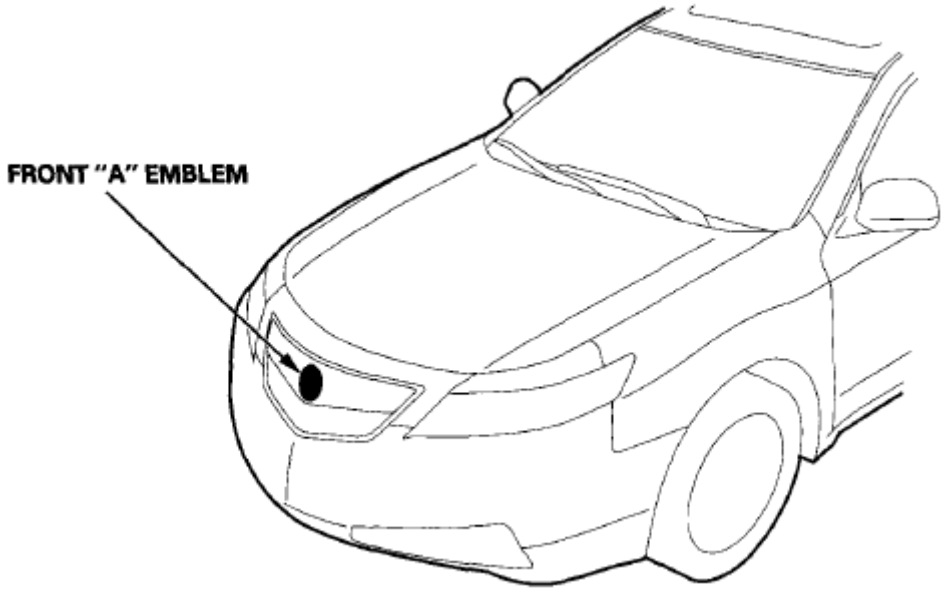


Fig. 29: Identifying Front "A" Emblem
Courtesy of AMERICAN HONDA MOTOR CO., INC.

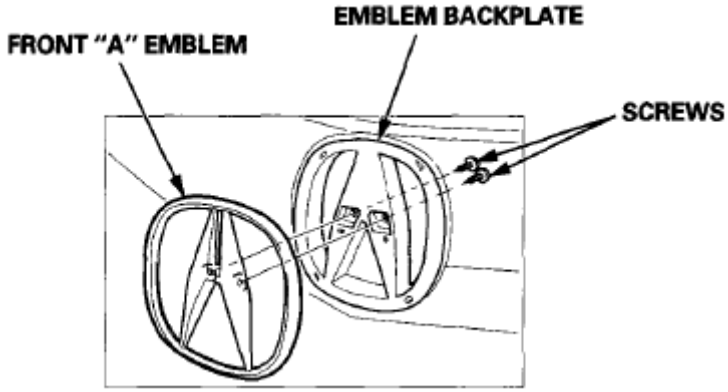


Fig. 30: Identifying Front "A" Emblem, Emblem Backplate And Screws
Courtesy of AMERICAN HONDA MOTOR CO., INC.

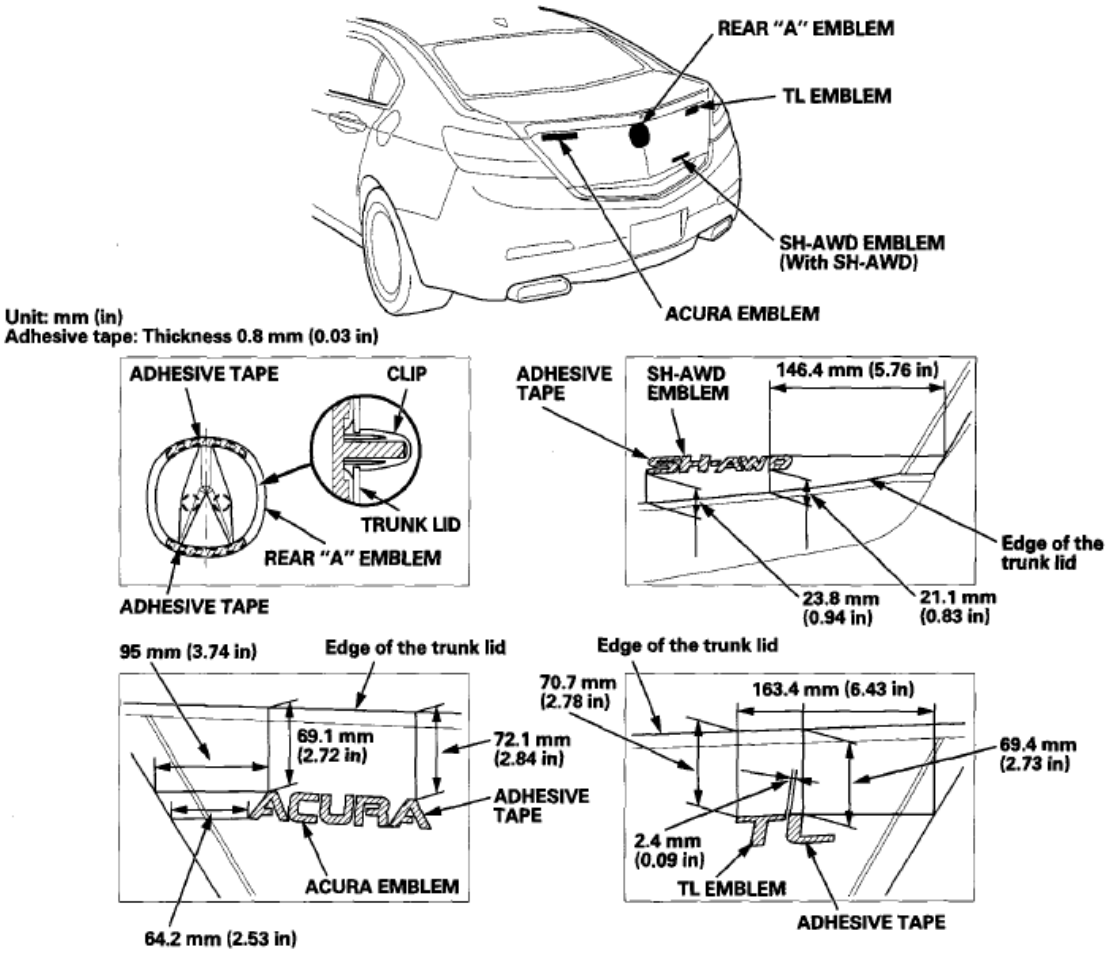


Fig. 31: Identifying Rear Emblems
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2012 ACCESSORIES & EQUIPMENT

Fenderwell - TL

FRONT AIR GUIDE PLATE REPLACEMENT

NOTE: Take care not to scratch the body.

1. Remove the bolts, and release the hooks (A), then remove the front air guide plate (B).

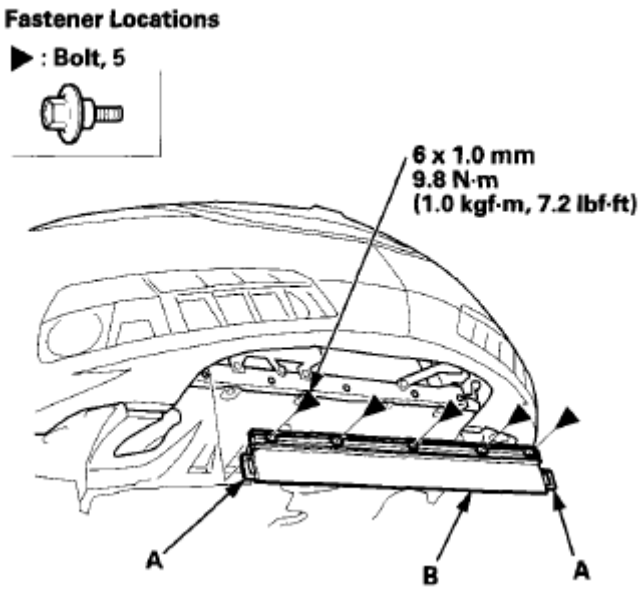


Fig. 1: Identifying Hooks, Front Air Guide Plate & Fasteners With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Install the plate in the reverse order of removal.

FRONT BUMPER STRAKE REPLACEMENT

NOTE: Take care not to scratch the bumper.

1. Remove the bolts. Release the front bumper strake (A) from the front air guide plate (B), then remove it.

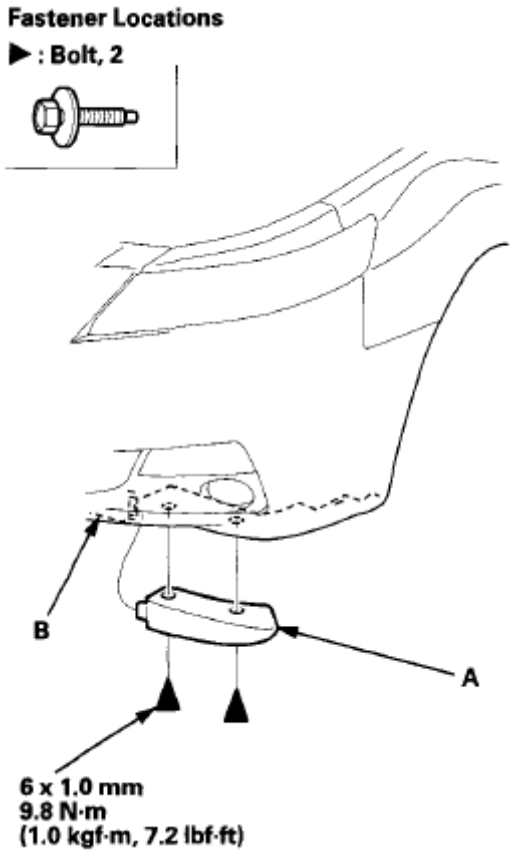


Fig. 2: Identifying Front Bumper Strake, Air Guide Plate & Fasteners With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Install the strake in the reverse order of removal.

FRONT STRAKE REPLACEMENT

NOTE: Take care not to scratch the body.

1. Remove the bolts (A, B). Release the front strake (C) from the front inner fender (D), then remove it.

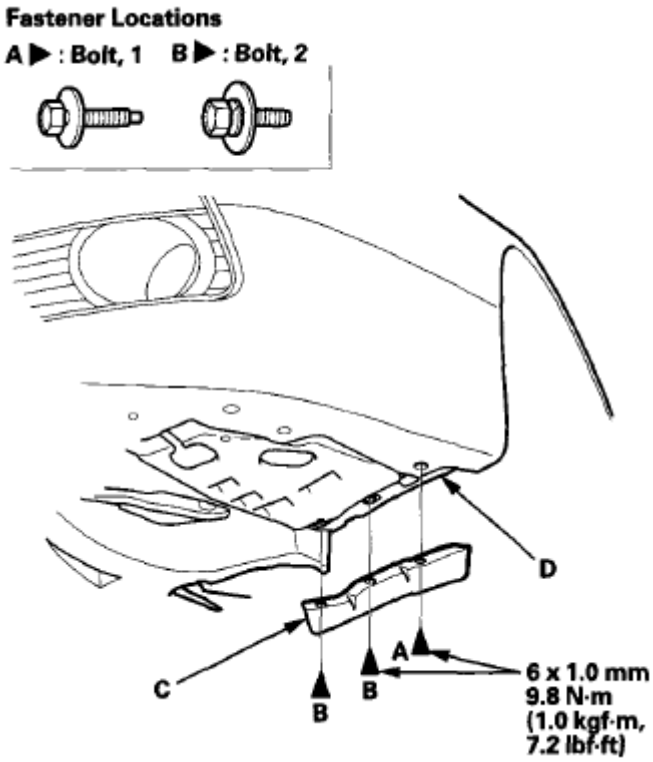


Fig. 3: Identifying Front Strake, Front Inner Fender & Bolts With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Install the strake in the reverse order of removal.

FRONT INNER FENDER REPLACEMENT

NOTE:

- **Put on gloves to protect your hands.**
- **Take care not to scratch the body.**
- **When prying with a flat-tip screwdriver, wrap it with protective tape to prevent damage.**

1. Remove these items:
   - Front wheel (see **KNUCKLE/HUB REPLACEMENT**)
   - Front strake (see **FRONT STRAKE REPLACEMENT**)
2. Remove the front inner fender (A).
   1. Canada models: On the back of the wheel arch, remove the screws (B) and the clip (C), and remove the front splash guard (D).
   2. Except Canada models: On the back of the wheel arch, remove the screws (E).
   3. From under the front bumper (F), remove the bolt (G) and detach the clip (H) securing the front strake (I), the front bumper, and the front inner fender.
   4. From the wheel arch, detach the clips (J) securing the front bumper and the front inner fender.

5. From the wheel arch, detach the clips (K, L, M) that secure the front inner fender (and splash shield) to the body.
6. With SH-AWD (left side): Release the front inner fender from the front brake duct (N).
7. Release the hook (0) on the splash shield, then remove the front inner fender.

NOTE: To release the clips C, H, J, K, M, pry up on the center pin at the notch (P).

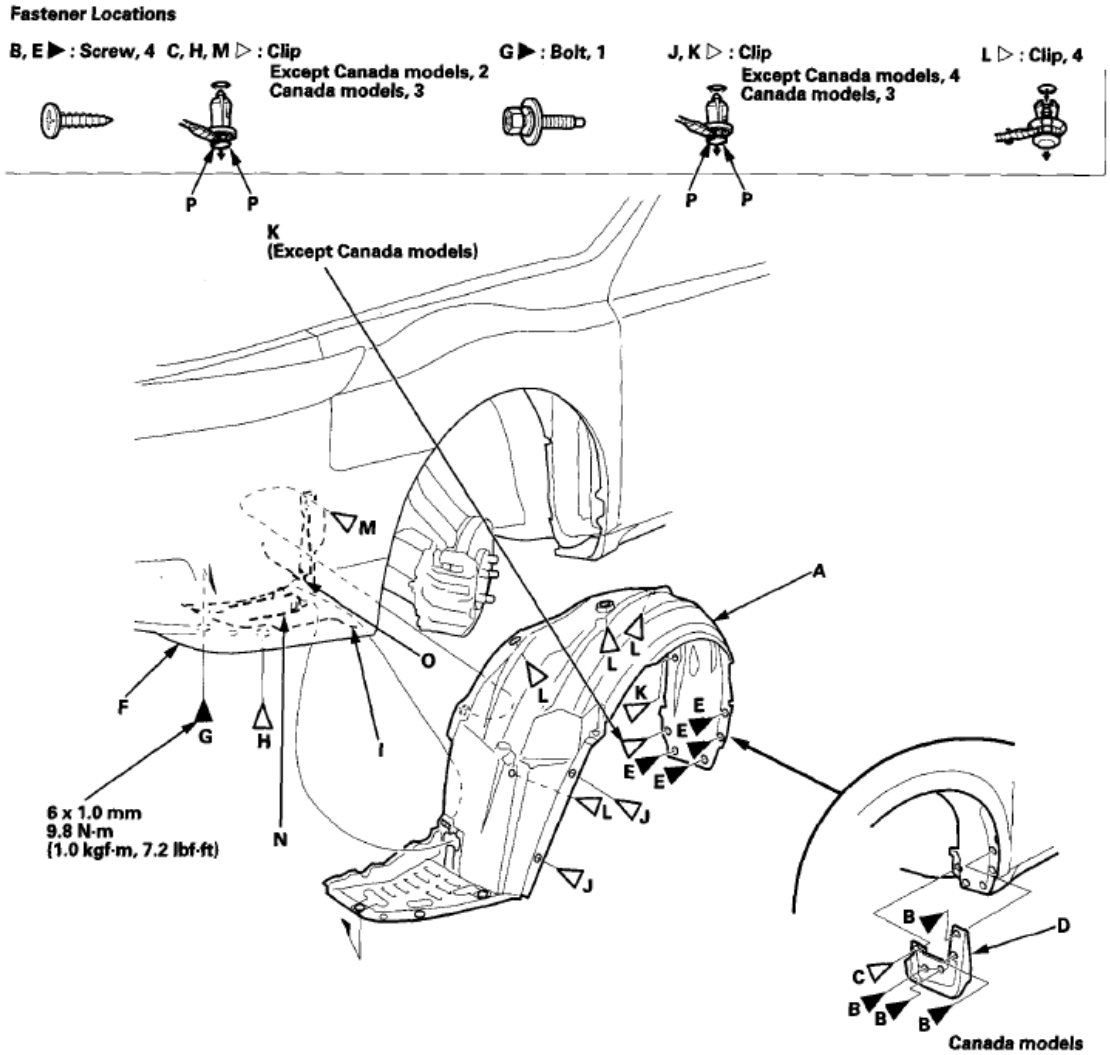


Fig. 4: Identifying Front Inner Fender & Fasteners With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Install the inner fender in the reverse order of removal, and note these items:
   - If the clips are damaged or stress-whitened, replace them with new ones.
   - Push the clips and the hook into place securely.

FRONT SPLASH SHIELD REPLACEMENT

NOTE:

- **Put on gloves to protect your hands.**
- **Take care not to scratch the body.**
- **When prying with a flat-tip screwdriver, wrap it with protective tape to prevent damage.**

1. Remove the front wheel (see **KNUCKLE/HUB REPLACEMENT**).
2. Remove the front splash shield (A).
   1. Detach the clips (B, C) that secure the front splash shield to the body.
   2. Detach the clips (D) that secure the front inner fender (E) and the front splash shield to the body.
   3. From under the front bumper (F), remove the bolts (G) that secure the front bumper, and the front splash shield to the body.

NOTE: To release the clips, pry up on the center pin up at the notch (H).

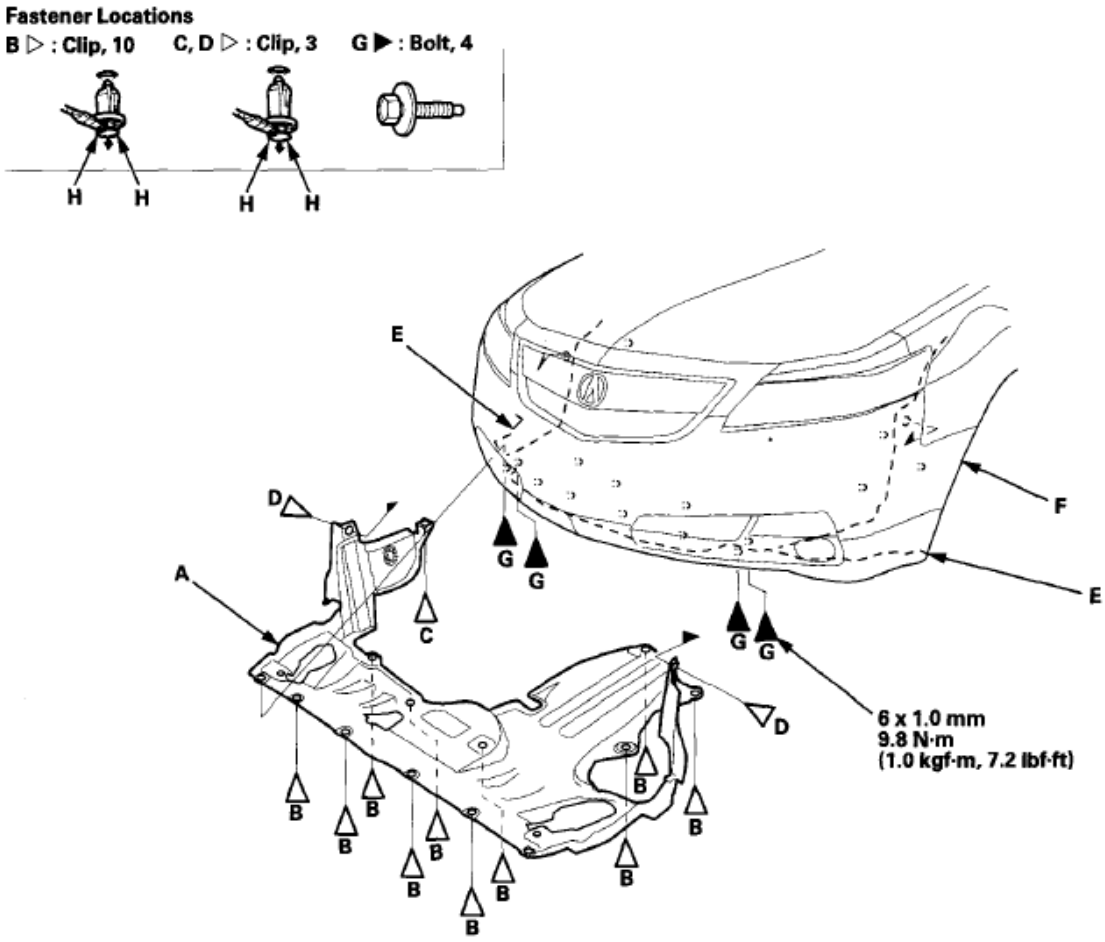


Fig. 5: Identifying Front Splash Shield & Fasteners With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Install the splash shield in the reverse order of removal, and note these items:

- If the clips are damaged or stress-whitened, replace them with new ones.
- Push the clips into place securely.

FRONT BRAKE DUCT REPLACEMENT

WITH SH-AWD

NOTE: Take care not to scratch the bumper or the body.

1. Remove the front bumper (see **FRONT BUMPER REMOVAL/INSTALLATION**).
2. Remove the bolts, and release the hooks (A) from the front inner fender (B), then remove the front brake duct (C).

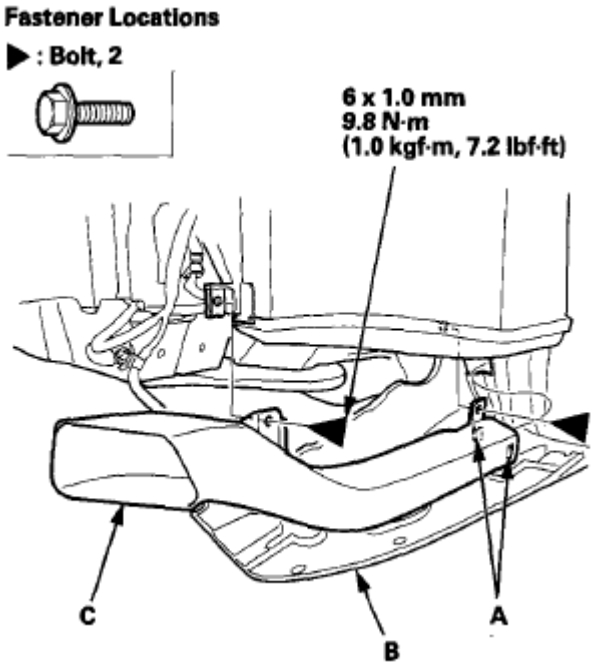


Fig. 6: Identifying Hooks, Front Inner Fender, Front Brake Duct & Fasteners With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Install the duct in the reverse order of removal, and push the hooks into place securely.

FRONT FENDER FAIRING REPLACEMENT

NOTE:

- **Put on gloves to protect your hands.**
- **Take care not to scratch the body.**

1. Remove the front inner fender (see **FRONT INNER FENDER REPLACEMENT**).

2. Pull out the front fender fairing (A).

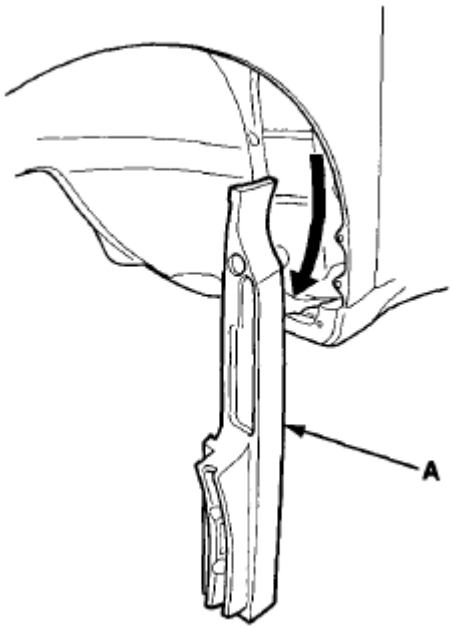


Fig. 7: Identifying Front Fender Fairing
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Install the fender fairing in the reverse order of removal.

MIDDLE FLOOR UNDERCOVER REPLACEMENT

NOTE:

- **Put on gloves to protect your hands.**
- **Take care not to scratch the body.**
- **With SH-AWD: The left side is shown; the right side is similar.**

1. Remove the left middle floor undercover (A) and the right middle floor undercover (B).
    1. Remove the bolts.
    2. Right side (without SH-AWD): Remove the nut.
    3. Release the hook(s) (C).

LEFT SIDE

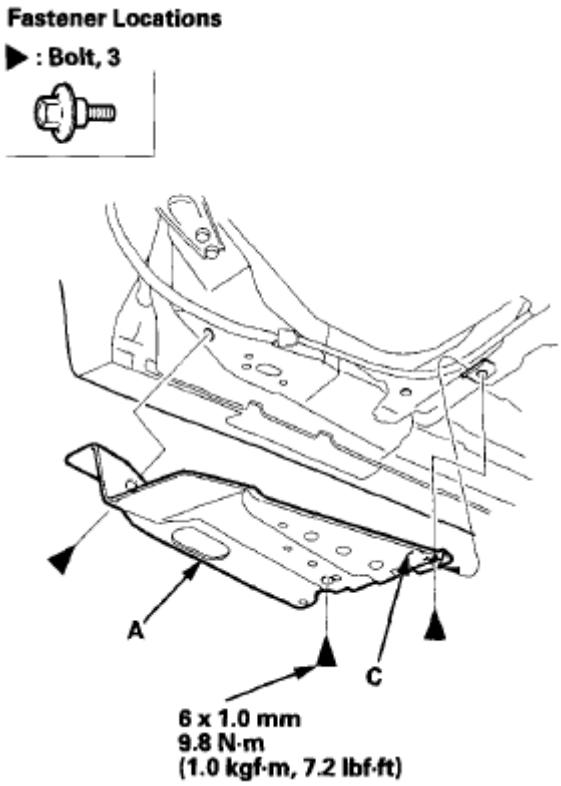


Fig. 8: Identifying Left Middle Floor Undercover, Right Middle Floor Undercover, Hooks & Fasteners With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

RIGHT SIDE (without SH-AWD)

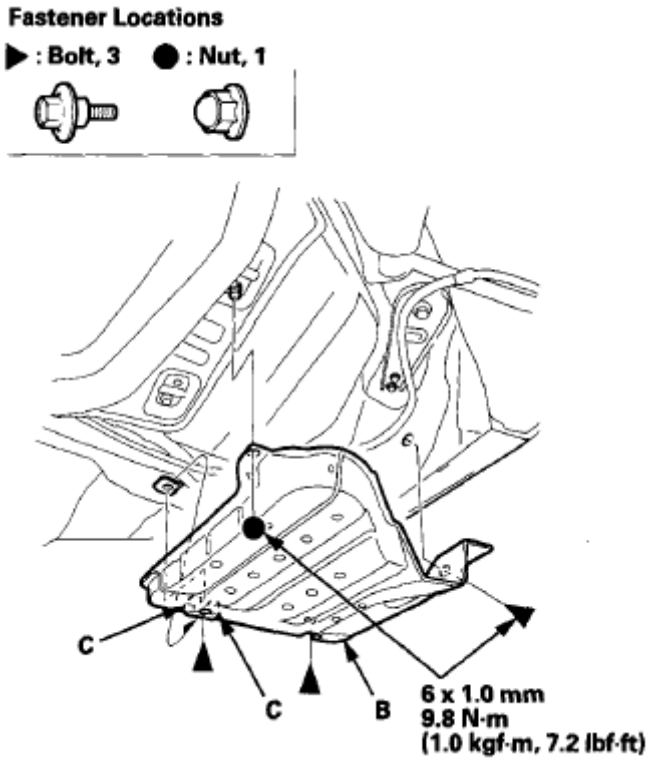


Fig. 9: Identifying Left Middle Floor Undercover, Right Middle Floor Undercover, Hooks & Fasteners With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Install the undercover in the reverse order of removal, and first attach the hook(s), then set the bolts starting at the rear.

REAR UNDERCOVER REPLACEMENT

NOTE:

- **Put on gloves to protect your hands.**
- **Take care not to scratch the rear bumper or the body.**
- **When prying with a flat-tip screwdriver, wrap it with protective tape to prevent damage.**

1. Remove the rear undercover (A).
    1. Remove the bolts (B) and detach the clips (C) that secure the undercover to the body.
    2. From under the rear bumper (D), detach the clips (E) securing the undercover and the bumper.
    3. Lower the front area of the undercover, and pull the undercover away from the bumper.

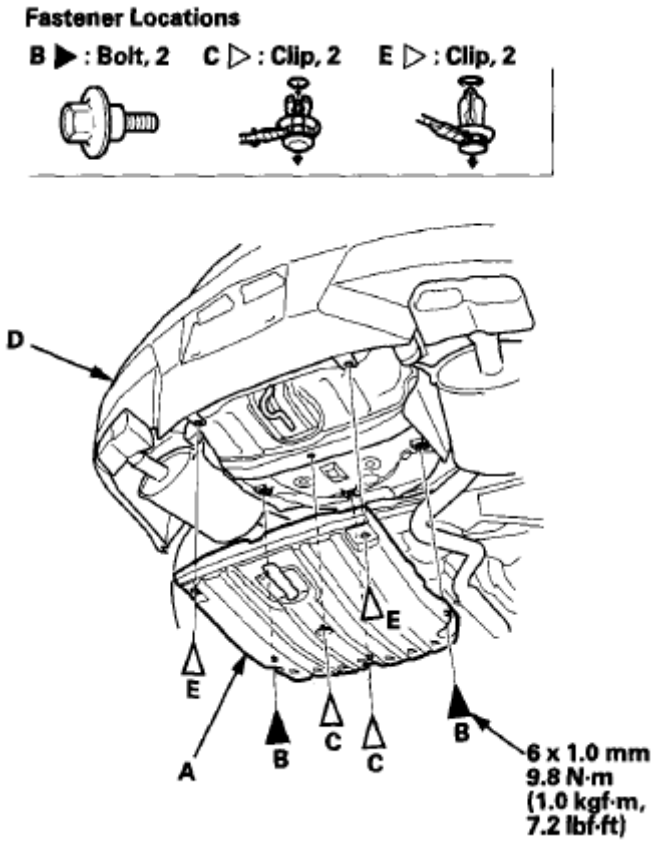


Fig. 10: Identifying Rear Undercover, Rear Bumper & Fasteners With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Install the undercover in the reverse order of removal, and note these items:
   - If the clips are damaged or stress-whitened, replace them with new ones.
   - Push the clips into place securely.

FUEL PIPE PROTECTOR REPLACEMENT

NOTE:

- **Put on gloves to protect your hands.**
- **Take care not to scratch the body.**
- **When prying with a flat-tip screwdriver, wrap it with protective tape to prevent damage.**

1. Remove the left rear wheel (see **HUB BEARING UNIT REPLACEMENT**).
2. Detach the clips, then remove the fuel pipe protector (A).

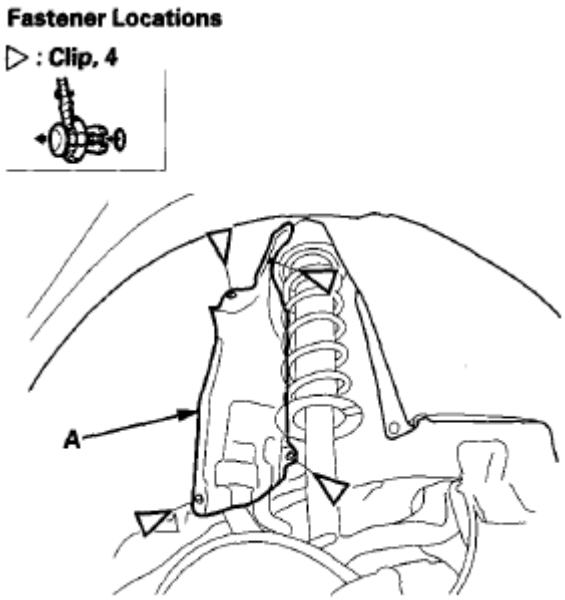


Fig. 11: Identifying Fuel Pipe Protector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Install the protector in the reverse order of removal, and note these items:
   - If the clips are damaged or stress-whitened, replace them with new ones.
   - Push the clips into place securely.

REAR INNER FENDER REPLACEMENT

NOTE:

- **Put on gloves to protect your hands.**
- **Take care not to scratch the body or the related parts.**
- **When prying with a flat-tip screwdriver, wrap it with protective tape to prevent damage.**

1. Remove the rear inner fender (A).
   1. Remove the screw (B) that secures the inner fender and the side sill panel (C) from the front of the rear wheel arch.
   2. Remove the screws (D) that secure the inner fender and the rear bumper (E) from the rear of the rear wheel arch.
   3. Remove the bolts (F) and the screw (G), and detach the clips (H, I, J, K) from the rear wheel arch.
   4. Pull out the rear inner fender.

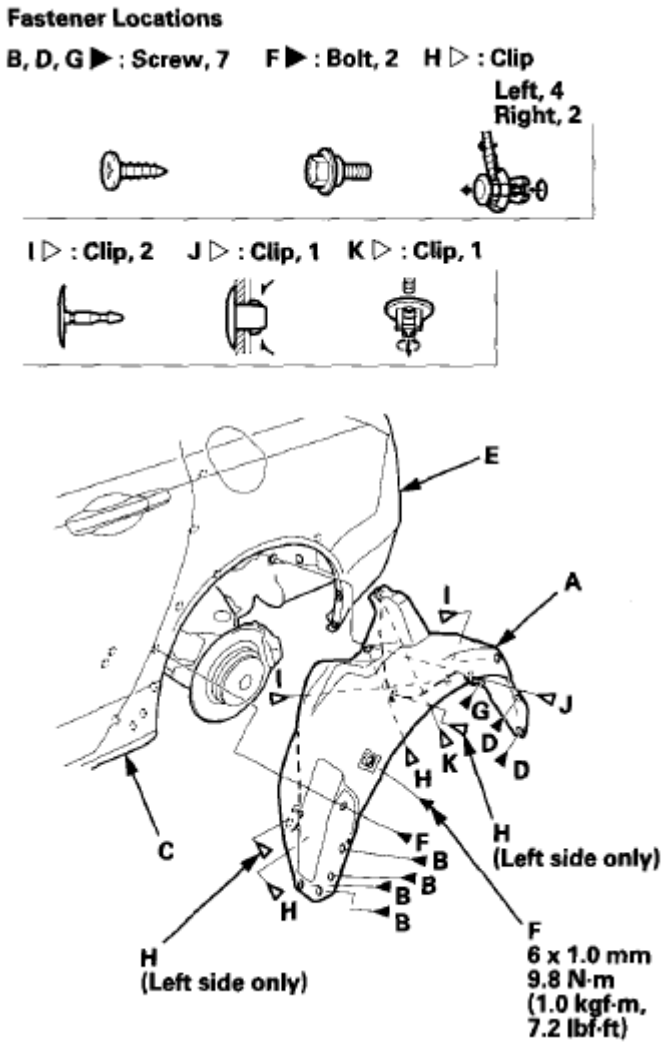


Fig. 12: Identifying Rear Inner Fender, Side Sill Panel, Rear Bumper & Fasteners With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Install the inner fender in the reverse order of removal, and note these items:
   - If the clips are damaged or stress-whitened, replace them with new ones.
   - Push the clips into place securely.

REAR AIR OUTLET REPLACEMENT

NOTE: Take care not to scratch the body.

1. Remove the rear bumper (see **LOWER FRONT BUMPER GRILLE REPLACEMENT**).
2. Release the hooks (A), then remove the rear air outlet (B).

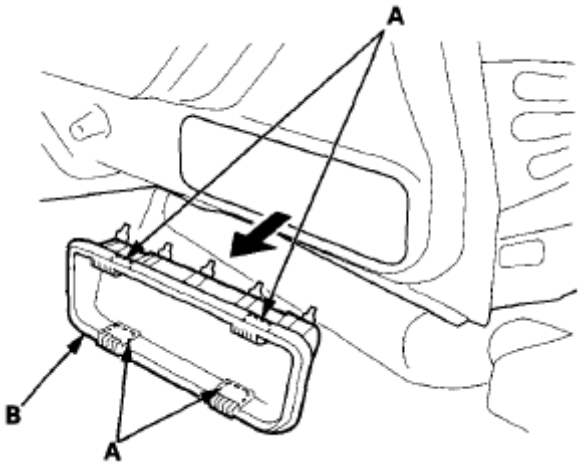


Fig. 13: Identifying Rear Air Outlet & Hooks
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Install the air outlet by pushing on the hook areas until the hooks snap into place.

2012 ACCESSORIES & EQUIPMENT

Frame - TL

FRAME BRACE REPLACEMENT

STRUT BRACE REPLACEMENT

1. Remove the cowl cover (see **FRONT BULKHEAD BRACE COVER REPLACEMENT**).
2. Disconnect the brake booster vacuum hose (A) from the strut brace (B).

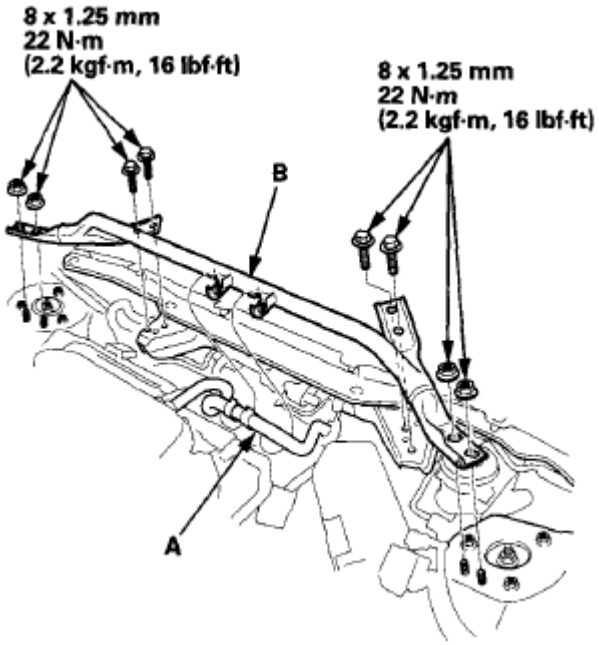


Fig. 1: Identifying Brake Booster Vacuum Hose And Strut Brace With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Remove the bolts and the nuts from the top of the damper, and remove the strut brace.
4. Install the strut brace in the reverse order of removal.

SUBFRAME REPLACEMENT

Special Tools Required

Subframe Alignment Pin 070AG-SJAA10S

FRONT SUBFRAME TORQUE

If you remove the mounting bolts for any of the following items, always replace the bolts with new ones:

- Front subframe
- Front subframe middle rubber mount
- Front subframe front stiffener
- Front subframe rear stiffener
- Rear engine mounting base bracket

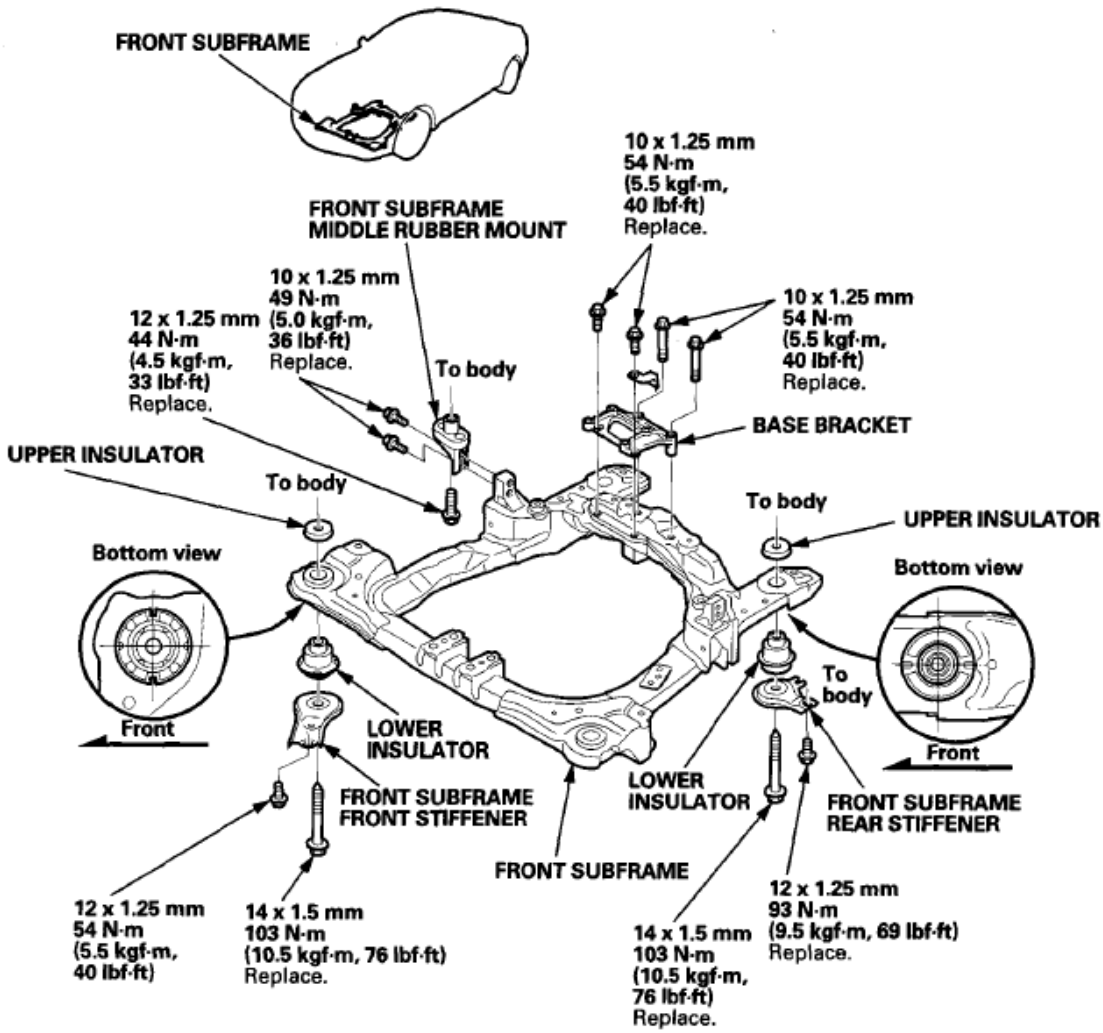


Fig. 2: Front Subframe And Related Components Location With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

FRONT SUBFRAME ALIGNMENT

NOTE: Align the front subframe with the subframe alignment pin.

1. Align the front subframe (A) in the following sequence.
    1. Lift the front subframe up to the body, and loosely install the new subframe mounting bolts (B), the front stiffener mounting bolts (C), the new rear stiffener mounting bolts (D) and the stiffeners (E).

2. Loosely install the new subframe middle rubber mounting bolts (F, G) securing the subframe middle rubber mounts (H).
3. Insert the subframe alignment pin (I) through the positioning slot (J) on the right rear stiffener, through the positioning hole (K) on the subframe, and into the positioning hole (L) on the body, then loosely tighten the subframe right rear mounting bolt.
4. Insert the subframe alignment pin through the positioning slot on the left rear stiffener, through the positioning hole on the subframe, and into the positioning hole on the body, then loosely tighten the subframe left rear mounting bolt.
5. Tighten the subframe mounting bolts to the specified torque values starting with the right rear subframe mounting bolt. Use the subframe alignment pin when tightening the rear side subframe mounting bolts.
6. Check all of the subframe mounting bolts, and retighten if necessary.

NOTE: Tighten the bolts in the sequence shown.

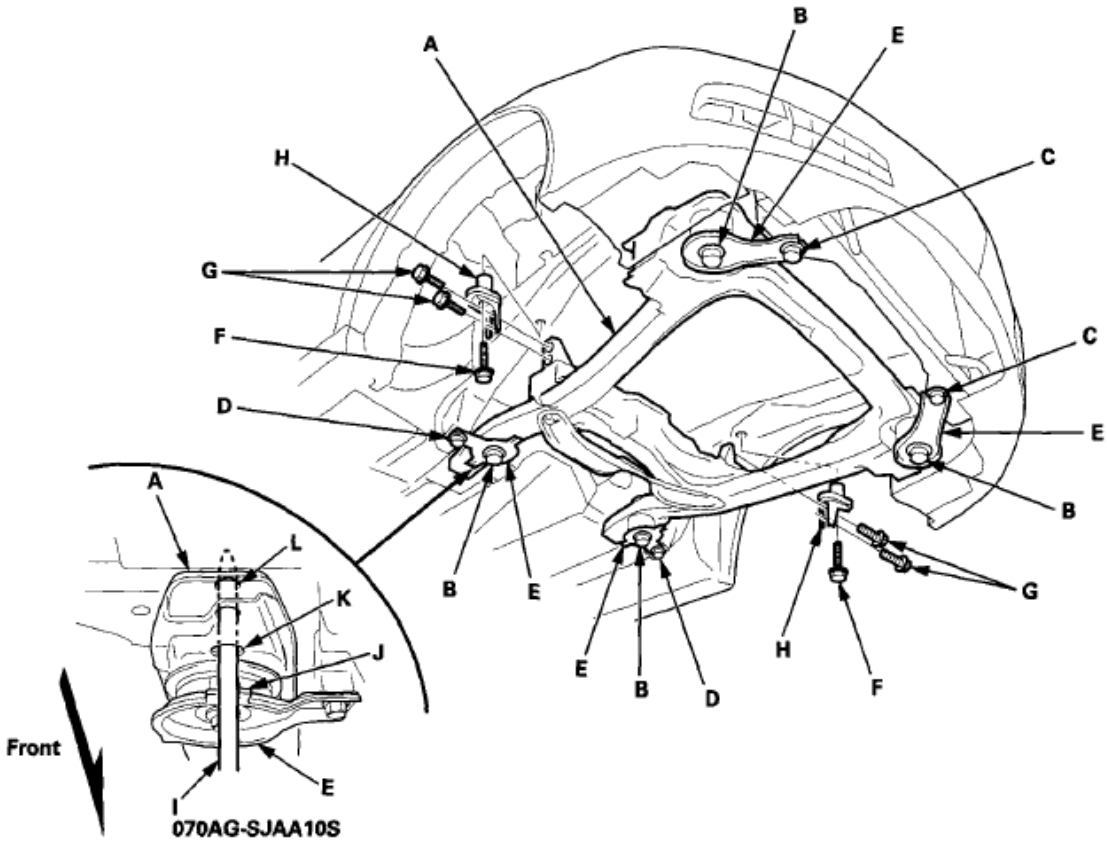


Fig. 3: Identifying Front Subframe Alignment
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Tighten the bolts securing the subframe middle mounts to the specified torque.
3. After reinstalling all removed parts, check and adjust the front wheel alignment (see **WHEEL ALIGNMENT**).

REAR SUBFRAME TORQUE

NOTE:

- **Install the rear subframe by aligning the installation positioning holes and positioning holes with the subframe alignment pin.**
- **Always replace any removed subframe mounting bolts with new ones.**

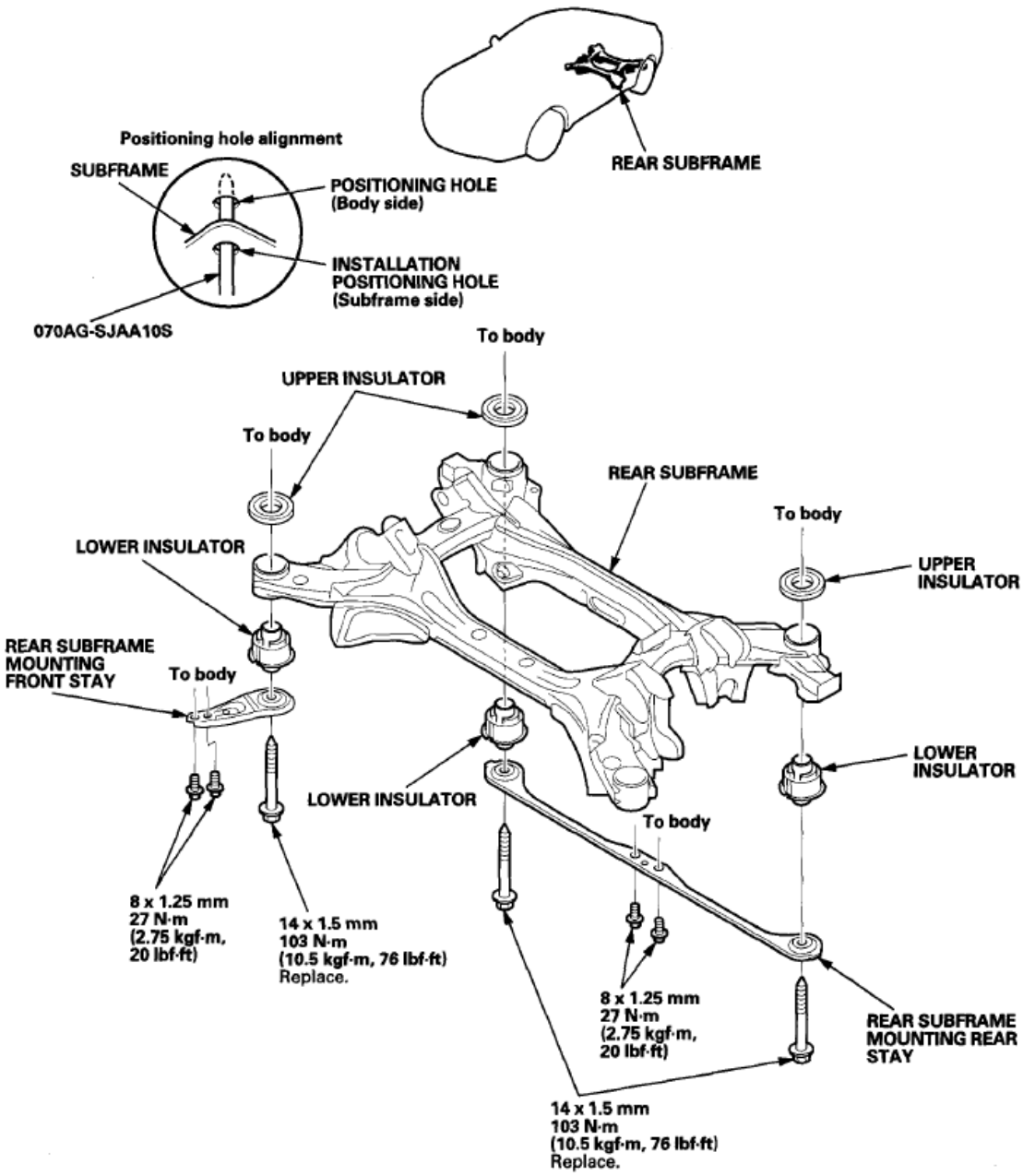


Fig. 4: Rear Subframe Torque And Related Components Location With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

FRAME REPAIR CHART

TOP VIEW

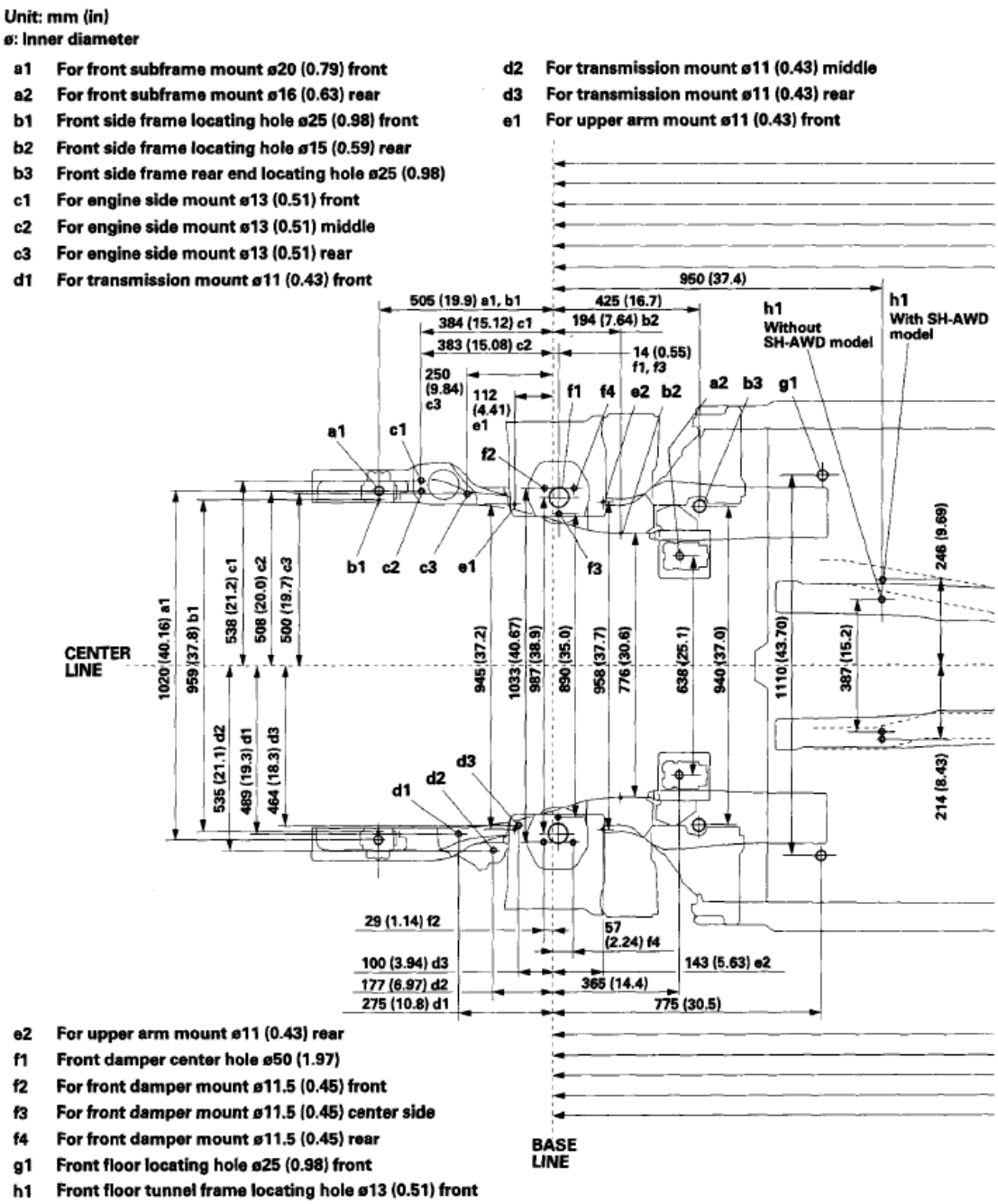
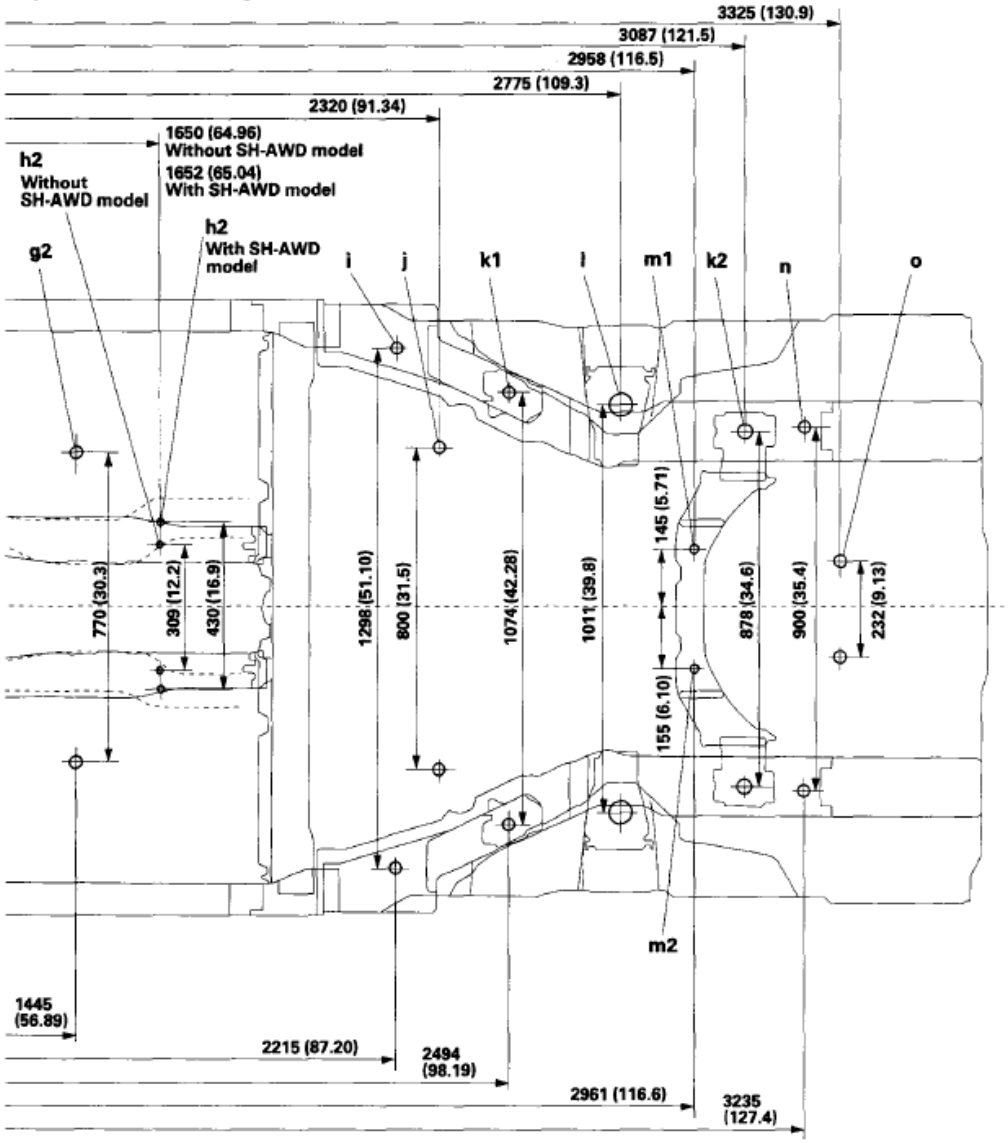


Fig. 5: Frame Repair Chart (1 Of 2)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

g2 Front floor locating hole ø25 (0.98) rear
h2 Front floor tunnel frame locating hole ø13 (0.51) rear
i Rear frame A locating hole ø25 (0.98)
j Rear floor locating hole ø25 (0.98)
k1 For rear subframe mount ø26.2 (1.03) front
k2 For rear subframe mount ø26.2 (1.03) rear
l Rear damper center hole ø52 (2.05)



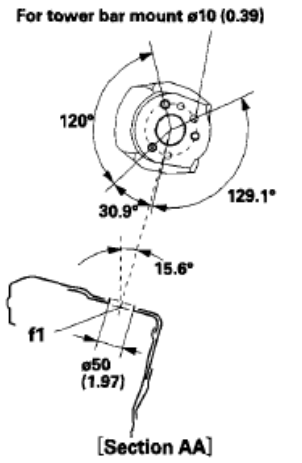
m1 Rear floor crossmember locating hole ø15 (0.59) right side
m2 Rear floor crossmember locating hole ø15 (0.59) left side
n Rear frame B locating hole ø25 (0.98)
o Spare tire pan locating hole ø25 (0.98)

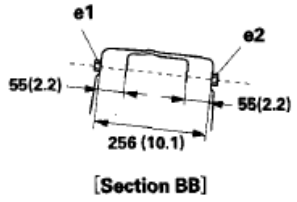
Fig. 6: Frame Repair Chart (2 Of 2)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

SIDE VIEW

Unit: mm (in)
ø: Inner diameter

a1	For front subframe mount ø20 (0.79) front
a2	For front subframe mount ø16 (0.63) rear
b1	Front side frame locating hole ø25 (0.98) front
b2	Front side frame locating hole ø15 (0.59) rear
b3	Front side frame rear end locating hole ø25 (0.98)
c1	For engine side mount ø13 (0.51) front
c2	For engine side mount ø13 (0.51) middle
c3	For engine side mount ø13 (0.51) rear
d1	For transmission mount ø11 (0.43) front
d2	For transmission mount ø11 (0.43) middle
d3	For transmission mount ø11 (0.43) rear
e1	For upper arm mount ø11 (0.43) front
e2	For upper arm mount ø11 (0.43) rear
f1	Front damper center hole ø50 (1.97)
f2	For front damper mount ø11.5 (0.45) front
f3	For front damper mount ø11.5 (0.45) center side
f4	For front damper mount ø11.5 (0.45) rear
g1	Front floor locating hole ø25 (0.98) front
h1	Front floor tunnel frame locating hole ø13 (0.51) front





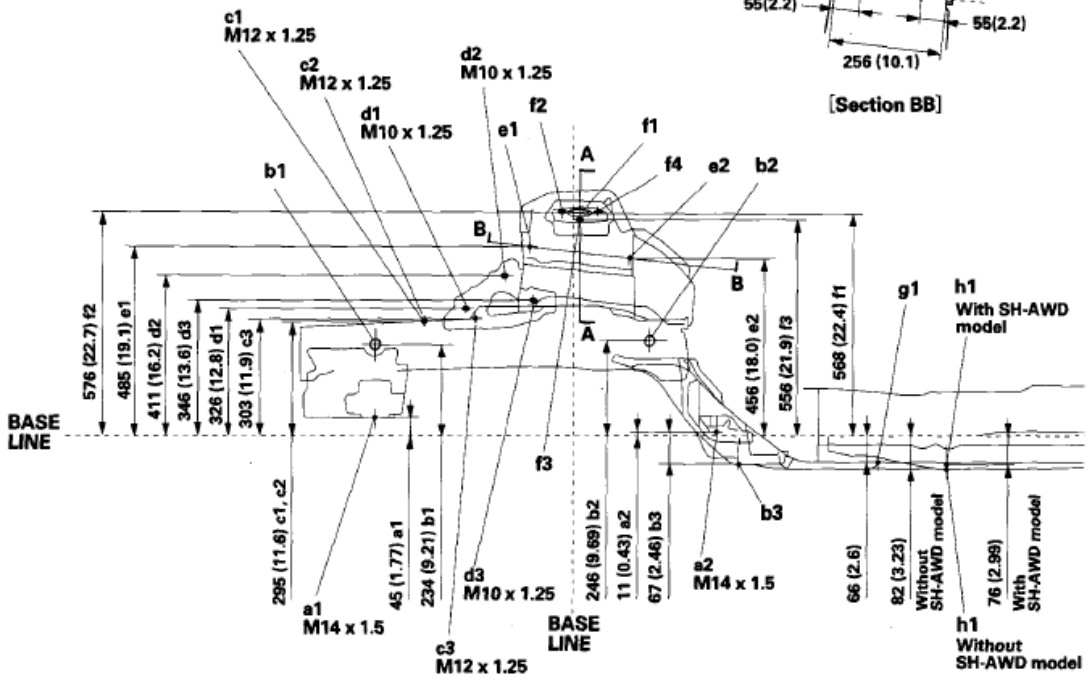


Fig. 7: Frame Repair Chart (Left Side View)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

g2	Front floor locating hole ø25 (0.98) rear
h2	Front floor tunnel frame locating hole ø13 (0.51) rear
i	Rear frame A locating hole ø25 (0.98)
j	Rear floor locating hole ø25 (0.98)
k1	For rear subframe mount ø26.2 (1.03) front
k2	For rear subframe mount ø26.2 (1.03) rear
l	Rear damper center hole ø52 (2.05)
m1	Rear floor crossmember locating hole ø15 (0.59) right side
m2	Rear floor crossmember locating hole ø15 (0.59) left side
n	Rear frame B locating hole ø25 (0.98)
o	Spare tire pan locating hole ø25 (0.98)

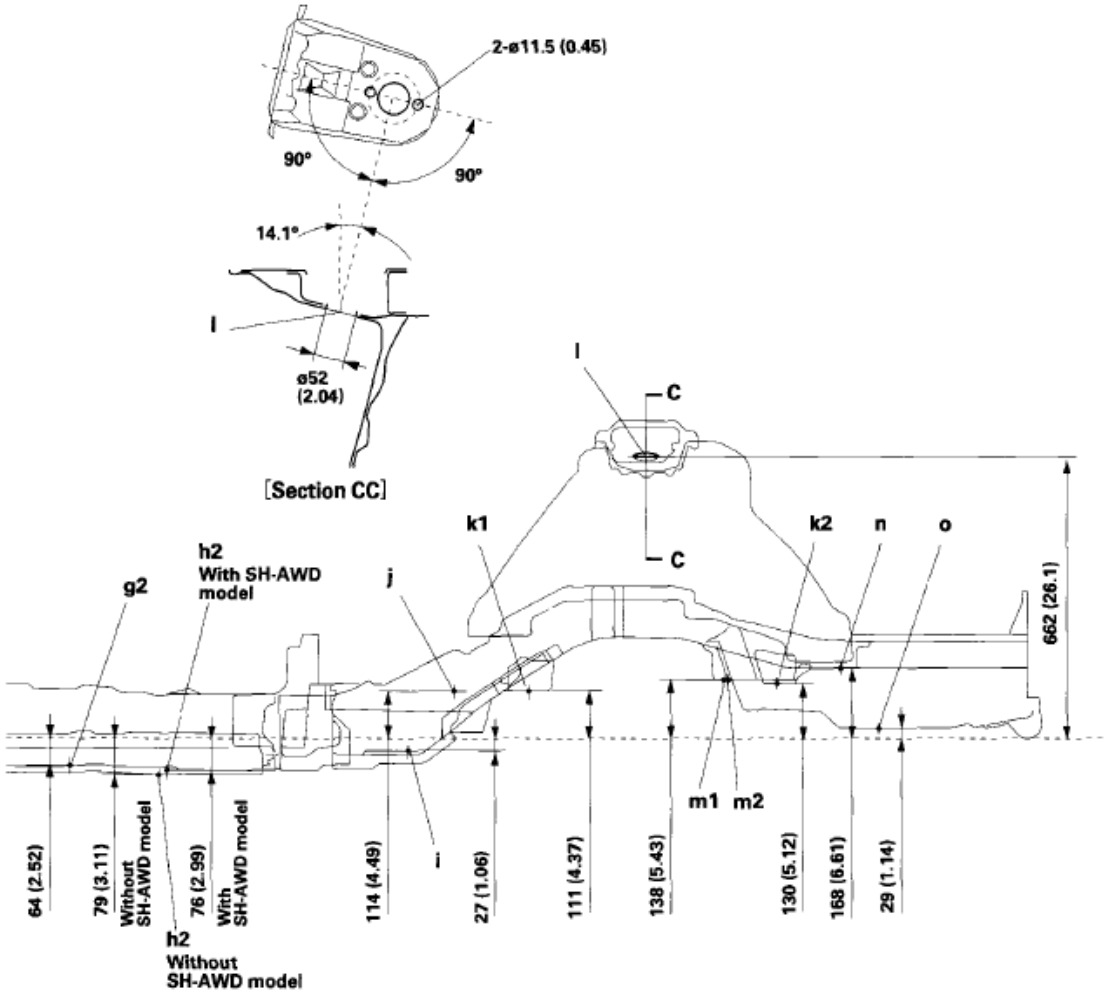


Fig. 8: Frame Repair Chart (Right Side View)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2012 ACCESSORIES & EQUIPMENT

Fuel Fill Door - TL

FUEL FILL DOOR ADAPTER REPLACEMENT

NOTE:

- **Put on gloves to protect your hands.**
- **Take care not to scratch the body.**

1. Remove the fuel pipe protector (see **REAR UNDERCOVER REPLACEMENT**).
2. Remove the fuel cap (A) by turning it counterclockwise, and remove the fuel cap wire (B) from the hinge arm (C). Remove the screw.

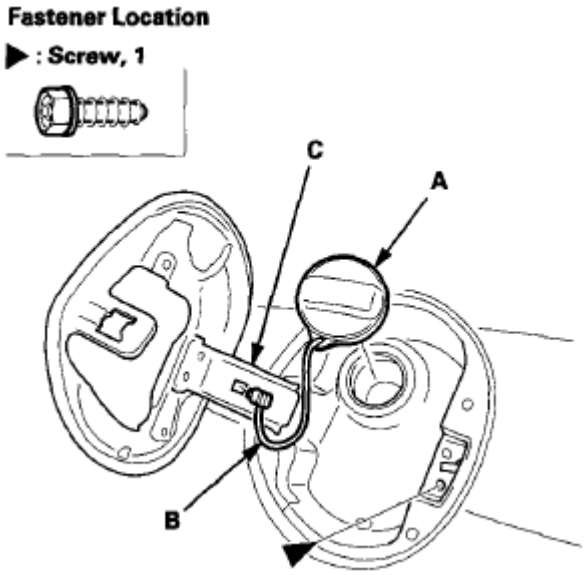


Fig. 1: Identifying Fuel Cap, Fuel Cap Wire And Hinge Arm
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Remove the rear inner fender as needed (see **REAR INNER FENDER REPLACEMENT**).
4. Release the drain tube (A). Remove the bolts, and lower the fuel filler pipe (B), then remove it from the fuel fill door adapter (C).

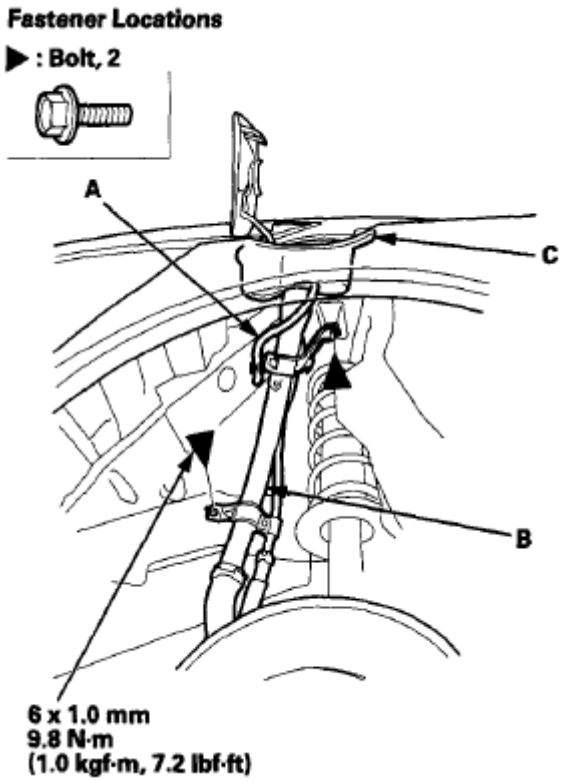


Fig. 2: Identifying Drain Tube, Fuel Filler Pipe And Fuel Fill Door Adapter With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Release the hooks (A), and remove the fuel adapter cover (B).

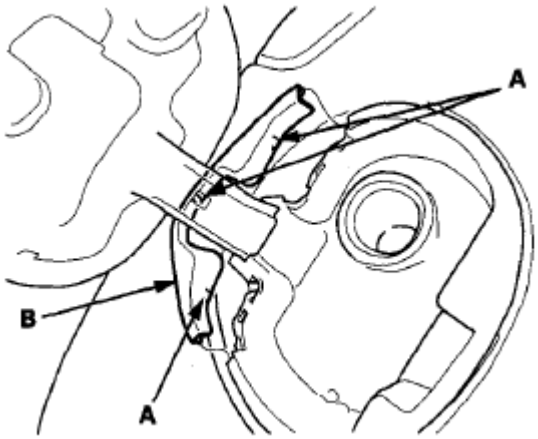


Fig. 3: Identifying Hooks And Fuel Adapter Cover
Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Turn the fuel cap adapter (A), then remove it.

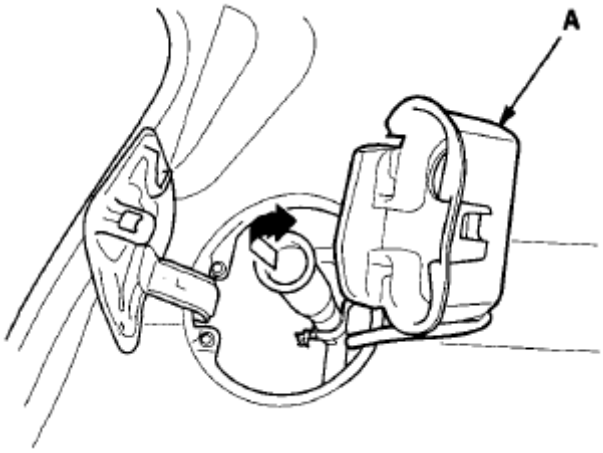


Fig. 4: Turning Fuel Cap Adapter
Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Pinch the hooks (A) from inside the vehicle, and remove the grommet (B) from the body.

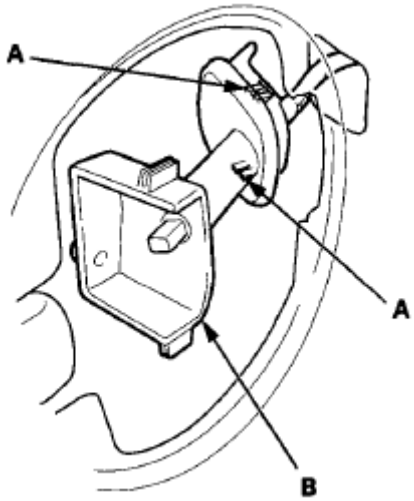


Fig. 5: Identifying Hooks And Grommet
Courtesy of AMERICAN HONDA MOTOR CO., INC.

8. Release the hook (A), then remove the grommet (B) from the fuel fill door latch (C).

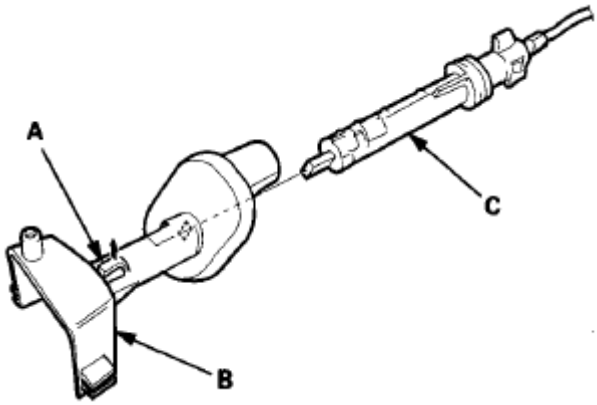


Fig. 6: Identifying Hook, Grommet And Fuel Fill Door Latch
Courtesy of AMERICAN HONDA MOTOR CO., INC.

9. Install the adapter in the reverse order of removal, and note these items:
   - Make sure the fuel cap adapter is properly installed on the fuel filler pipe.
   - Apply medium strength liquid thread lock to the fuel filler pipe mounting bolts before reinstallation.
   - Install the grommet by pushing on the hook areas until the hooks snap into place.

FUEL FILL DOOR ADJUSTMENT

1. Remove the fuel adapter cover (see step 5).
2. Slightly loosen the hinge mounting bolts (A).

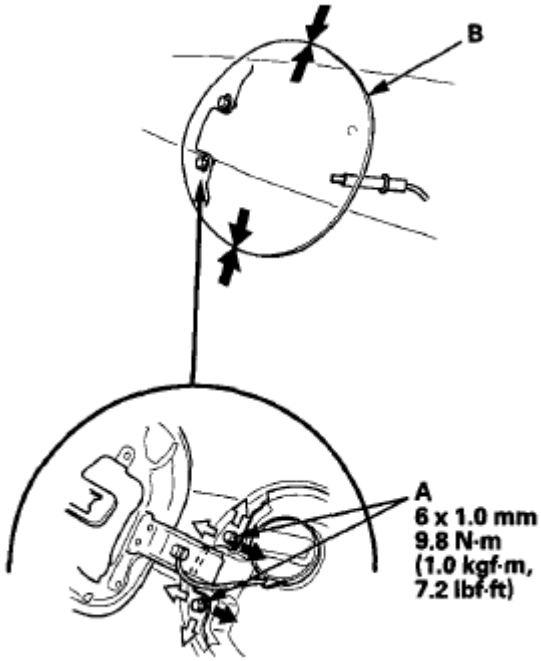


Fig. 7: Adjusting Fuel Fill Door In Or Out Until It Is Flush With Body With Torque Specifications

Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Adjust the fuel fill door (B) in or out until it is flush with the body, and up or down as necessary to equalize the gaps.
4. Tighten the hinge mounting bolts.
5. Check that the fuel fill door opens properly and locks securely, and check that the door is flush with the body.
6. Apply multipurpose grease to each location indicated by the arrows.

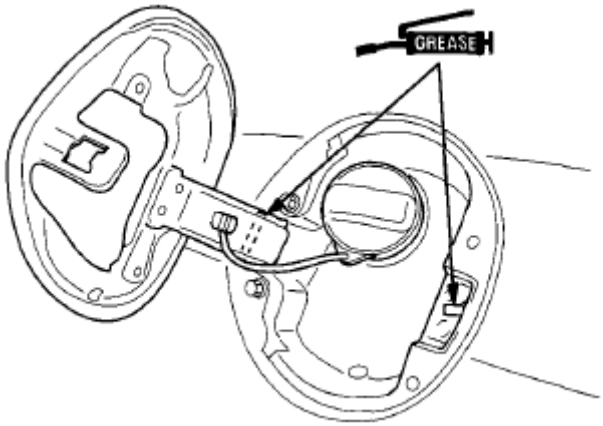


Fig. 8: Applying Multipurpose Grease To Location Indicated
Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Apply touch-up paint to the hinge mounting bolts and around the hinges.
8. Reinstall the fuel adapter cover (see step 5).

2012 ACCESSORIES & EQUIPMENT

Hood - TL

COMPONENT LOCATION INDEX

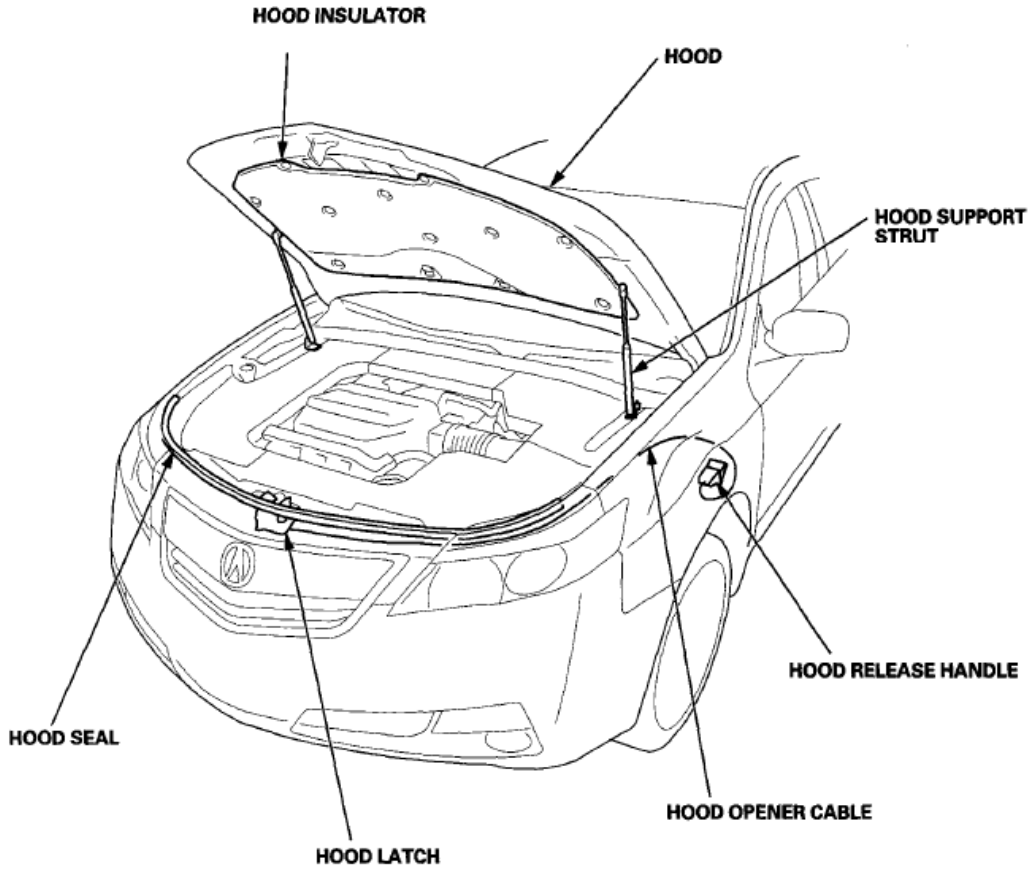


Fig. 1: Hood Components Location
Courtesy of AMERICAN HONDA MOTOR CO., INC.

HOOD ADJUSTMENT

1. Remove these items:
   - Engine compartment cover (see **ENGINE COMPARTMENT COVER REPLACEMENT**)
   - Cowl cover (see **FRONT BULKHEAD BRACE COVER REPLACEMENT**)
   - Front bulkhead center cover (see **HOOD LATCH REPLACEMENT**)
2. Slightly loosen the hood hinge mounting bolts (A) and the hood latch mounting bolts (B).

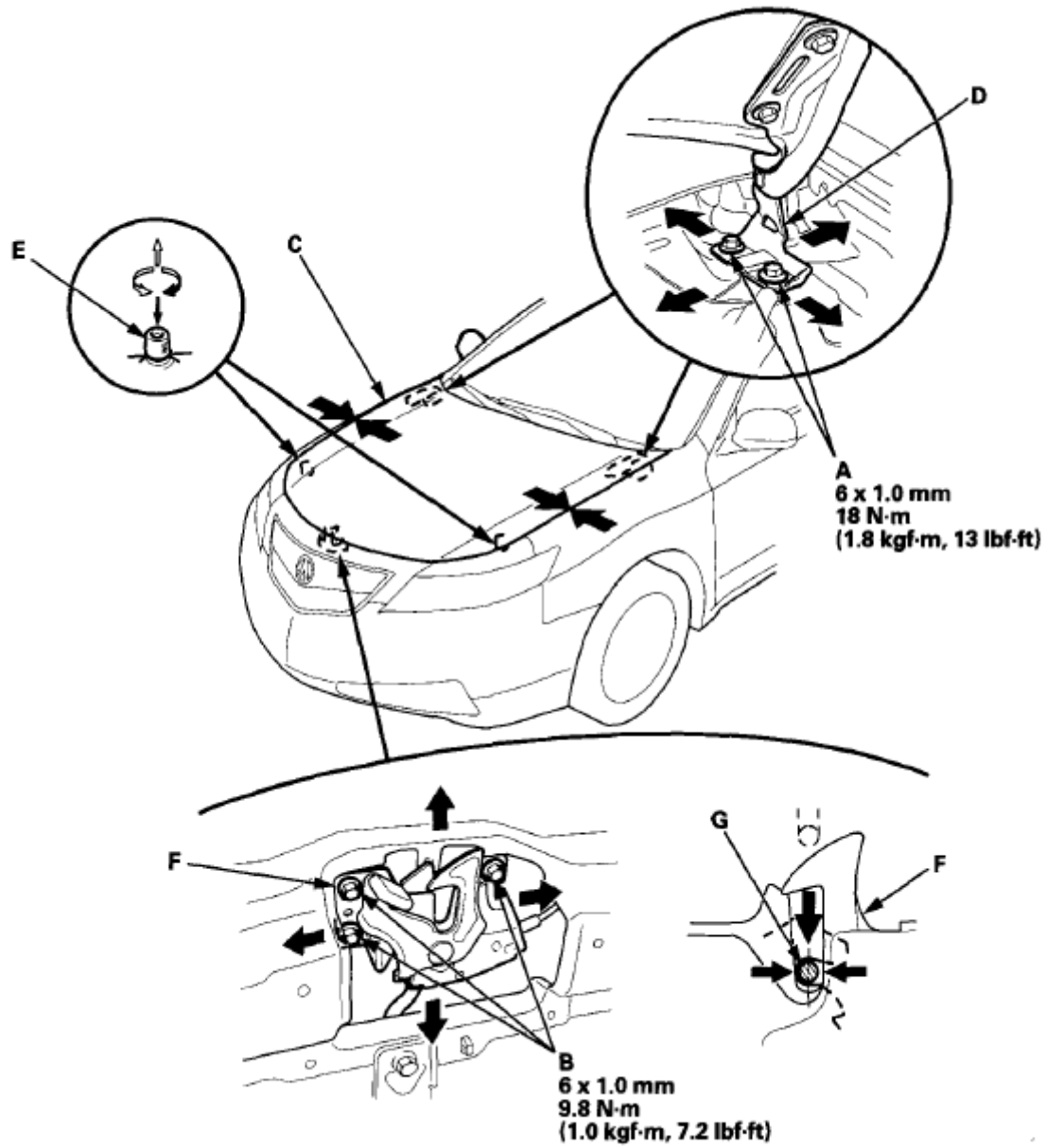


Fig. 2: Identifying Hood Hinges & Fasteners With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Adjust the hood (C) alignment in the following sequence:
   - Adjust the hood right and left, as well as forward and rearward, by using the elongated holes in the hood hinges (D).
   - Turn the hood edge cushions (E), in or out as necessary, to make the hood fit flush with the body at the front and side edges.
4. Adjust the hood latch (F) to obtain the proper height at the forward edge, and move the latch right or left until the striker (G) is centered in the latch.
5. Tighten each bolt to the specified torque.
6. Check that the hood opens properly and closes securely.

7. Apply touch-up paint to the hinge mounting bolts and around the hinges, and let the paint dry.
8. Apply multipurpose grease to the hood latch and the hood hinges as indicated by the arrows.

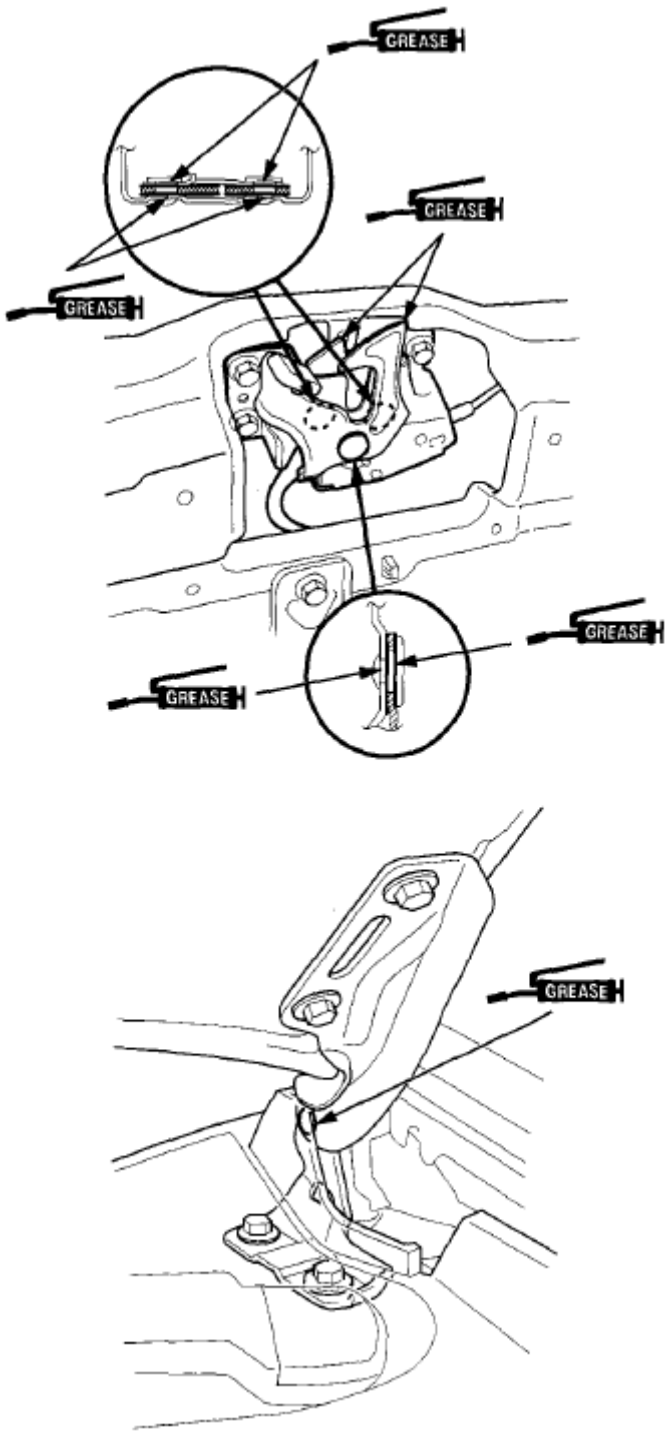


Fig. 3: Applying Multipurpose Grease To Hood Latch And Hood Hinges As Indicated
Courtesy of AMERICAN HONDA MOTOR CO., INC.

9. Reinstall all remaining removed parts.

HOOD SEAL REPLACEMENT

1. Remove the hood seals (A, B) from all of the hooks.

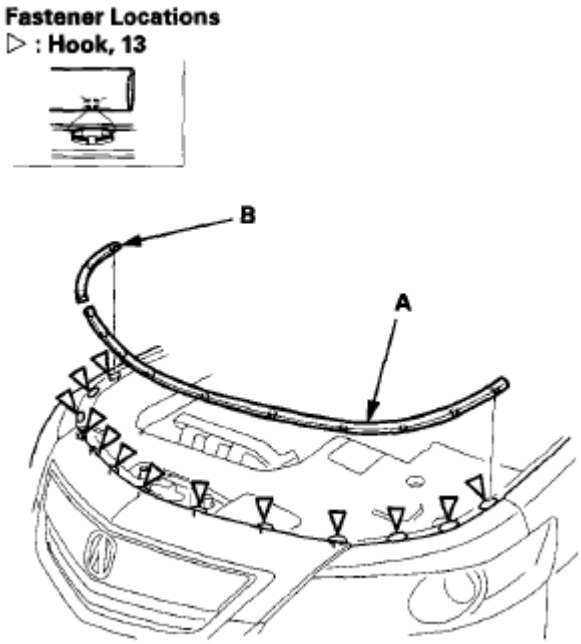


Fig. 4: Identifying Hood Seals & Fasteners
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Install the seal in the reverse order of removal.

HOOD INSULATOR REPLACEMENT

NOTE: Take care not to scratch the hood.

1. Detach the clips with a clip remover. Remove the hood insulator (A) by pulling it away from the hooks (B).

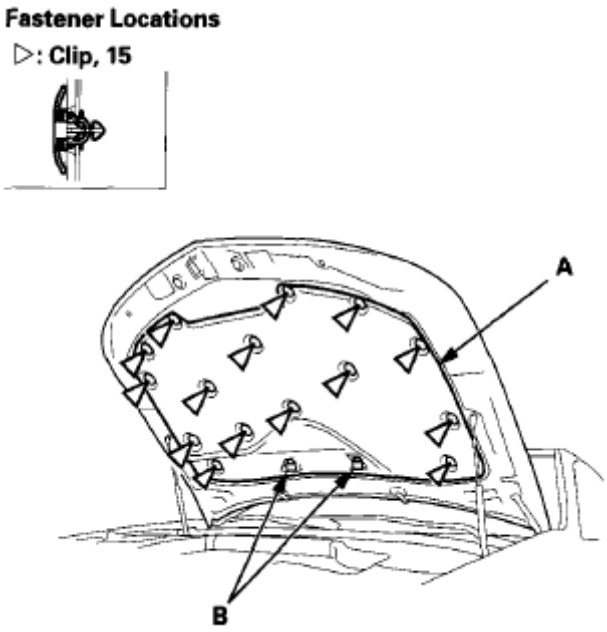


Fig. 5: Identifying Hood Insulator And Hooks
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Install the insulator in the reverse order of removal, and note these items:
   - If the clips are damaged or stress-whitened, replace them with new ones.
   - Push the clips and the hooks into place securely.

HOOD SUPPORT STRUT REPLACEMENT

NOTE:
- **Use eye protection when doing this procedure.**
- **When prying with a flat-tip screwdriver, wrap it with protective tape to prevent damage.**

1. With the help of an assistant, use a flat-tip screwdriver (A) to pry out the clips (B) on both ends of the hood support struts (C), and then remove the support struts from the pivot bolts (D). Do not remove the clips from the struts.

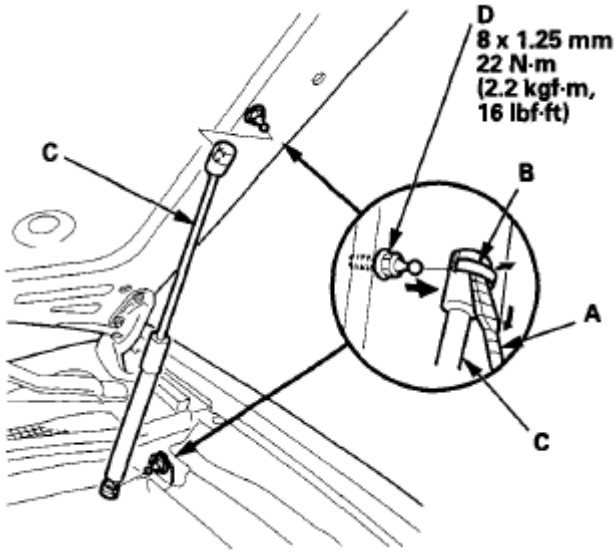


Fig. 6: Identifying Flat-Tip Screwdriver, Clips, Hood Support Struts, And Pivot Bolts With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Push the clips back into their original position, and then push the ends of the struts onto the pivot bolts.

HOOD OPENER CABLE REPLACEMENT

NOTE:

- **Put on gloves to protect your hands.**
- **Take care not to scratch the body or the related parts.**
- **Take care not to kink the hood opener cable.**

1. Remove these items:
   - Front bulkhead cover (see **ENGINE COMPARTMENT COVER REPLACEMENT**)
   - Front inner fender, driver's side as needed (see **FRONT INNER FENDER REPLACEMENT**)
   - Kick panel, driver's side (see **TRIM REMOVAL/INSTALLATION - DOOR AREAS**)
   - Front bulkhead center cover (see **HOOD LATCH REPLACEMENT**)
2. Disconnect the hood opener cable (A) from the hood latch (B) (see step 3).

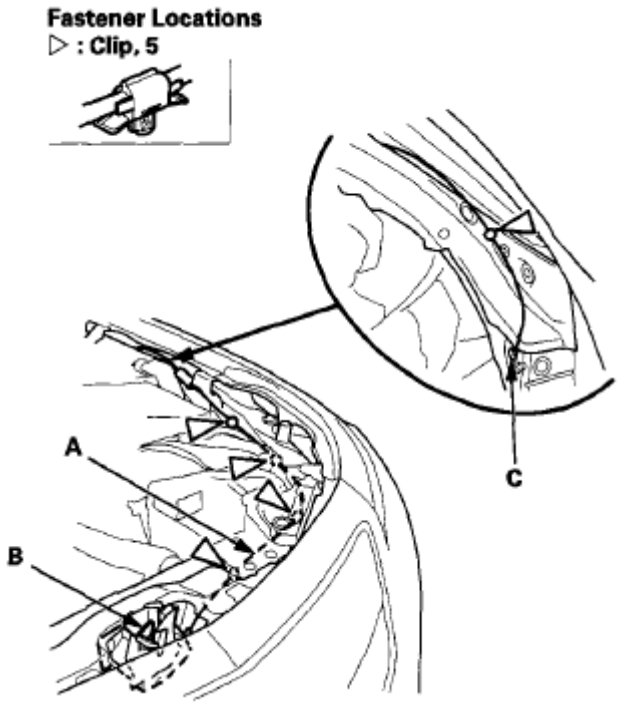


Fig. 7: Identifying Hood Opener Cable, Hood Latch And Grommet
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Detach the clips with a clip remover, and remove the grommet (C) from the body, then remove the hood opener cable from the vehicle.
4. Install the cable in the reverse order of removal, and note these items:
   - If the clips are damaged or stress-whitened, replace them with new ones.
   - Make sure the tape (A) is set to the front side of the clip (B).
   - Make sure the foam pad (C) is set properly.

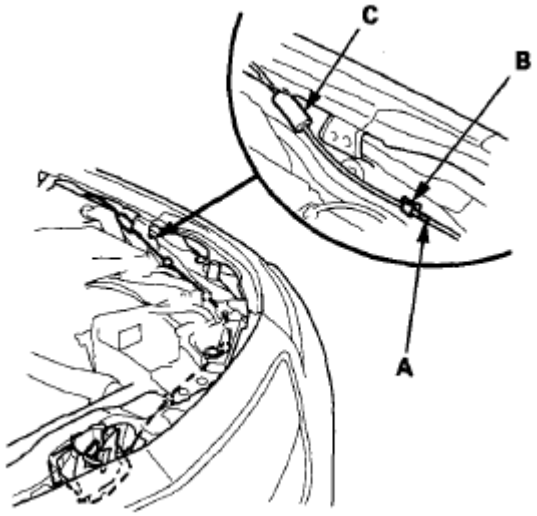


Fig. 8: Identifying Tape, Clip And Foam Pad

Courtesy of AMERICAN HONDA MOTOR CO., INC.

HOOD LATCH REPLACEMENT

NOTE:

- **Put on gloves to protect your hands.**
- **Take care not to scratch the body or the related parts.**

1. Remove these items:
   - Front bulkhead cover (see **ENGINE COMPARTMENT COVER REPLACEMENT**)
   - Front bulkhead brace cover (see **FRONT BULKHEAD BRACE COVER REPLACEMENT**)
2. Remove the bolts (A, B), then remove the front bulkhead center cover (C).

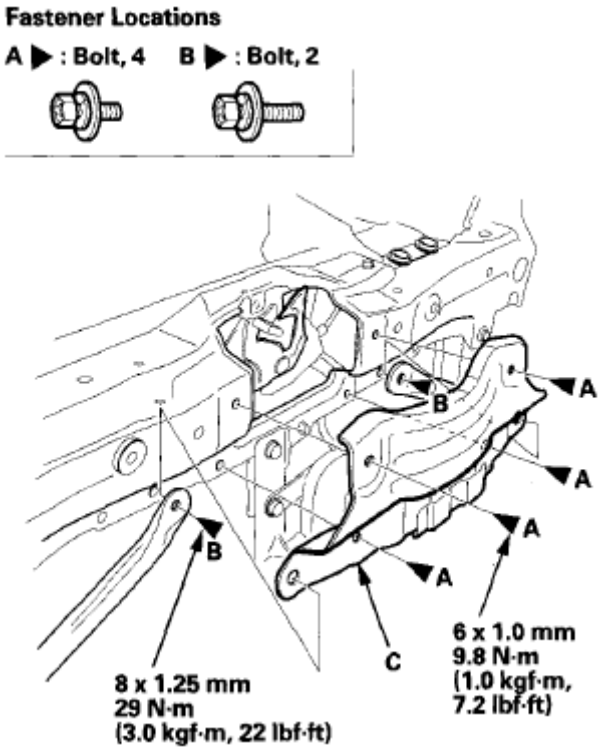


Fig. 9: Identifying Bulkhead Center Cover And Bolts With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Remove the bolts, then remove the hood latch (A) from the body, and disconnect the hood opener cable (B) from the hood latch.

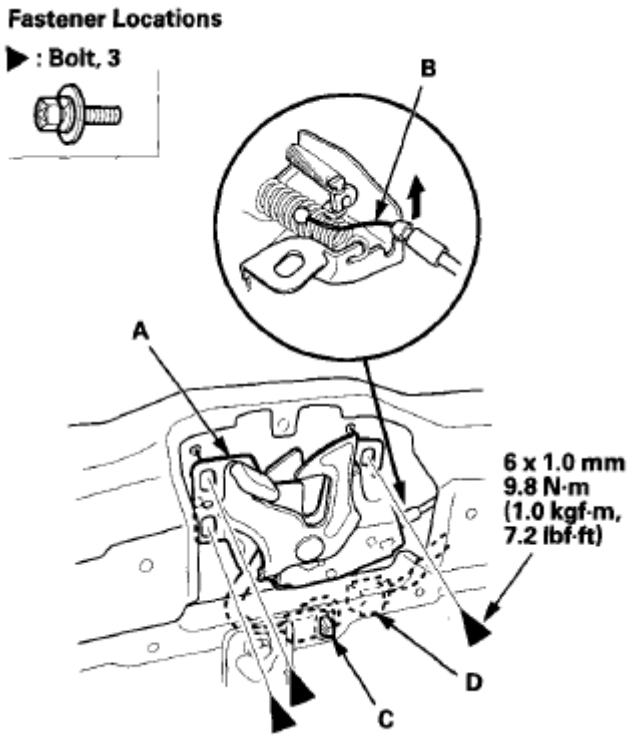


Fig. 10: Identifying Hood Latch, Harness Clips, Hood Latch Switch Connector And Hood Opener Cable With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Detach the harness clip (C), and disconnect the hood latch switch connector (D).
5. Install the latch in the reverse order of removal, and note these items:
    - Apply multipurpose grease to each location on the hood latch indicated by the arrows.
    - Make sure the cable is connected properly, and the connector is plugged in properly.
    - Adjust the hood latch alignment (see step 4).
    - Make sure the hood opens properly and locks securely.

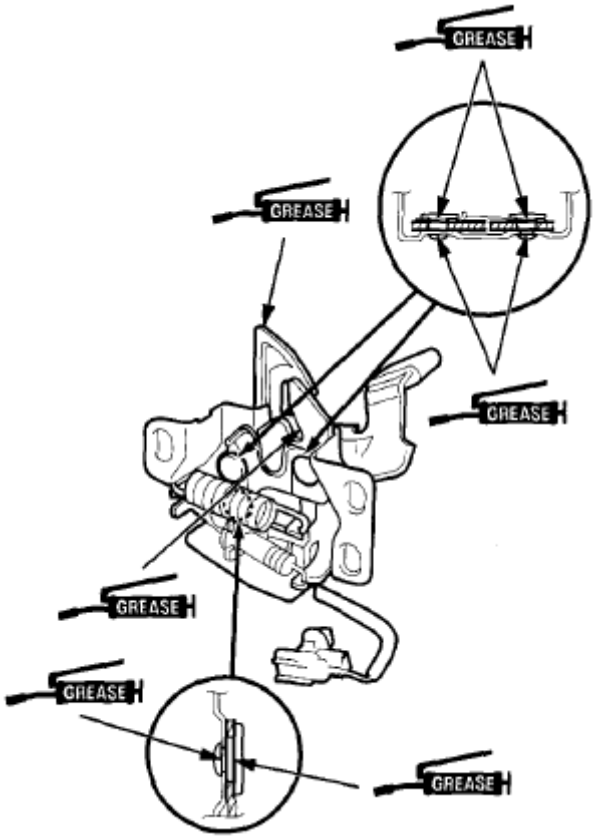


Fig. 11: Adjusting Hood Latch Alignment
Courtesy of AMERICAN HONDA MOTOR CO., INC.

HOOD RELEASE HANDLE REPLACEMENT

NOTE: Take care not to kink the hood opener cable.

1. Remove the bolt, and release the hook (A), then remove the hood release handle (B) from the dashboard.

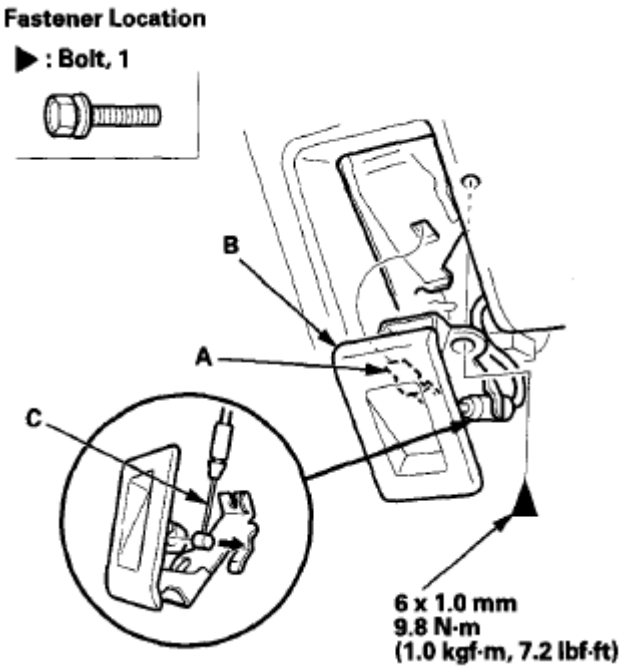


Fig. 12: Identifying Hook, Handle And Hood Opener Cable With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Disconnect the hood opener cable (C) from the hood release handle.
3. Install the hood release handle in the reverse order of removal, and note these items:
    - Make sure the cable is connected properly.
    - Make sure the hood opens properly.

2012 ACCESSORIES & EQUIPMENT

Interior Trim - TL

COMPONENT LOCATION INDEX

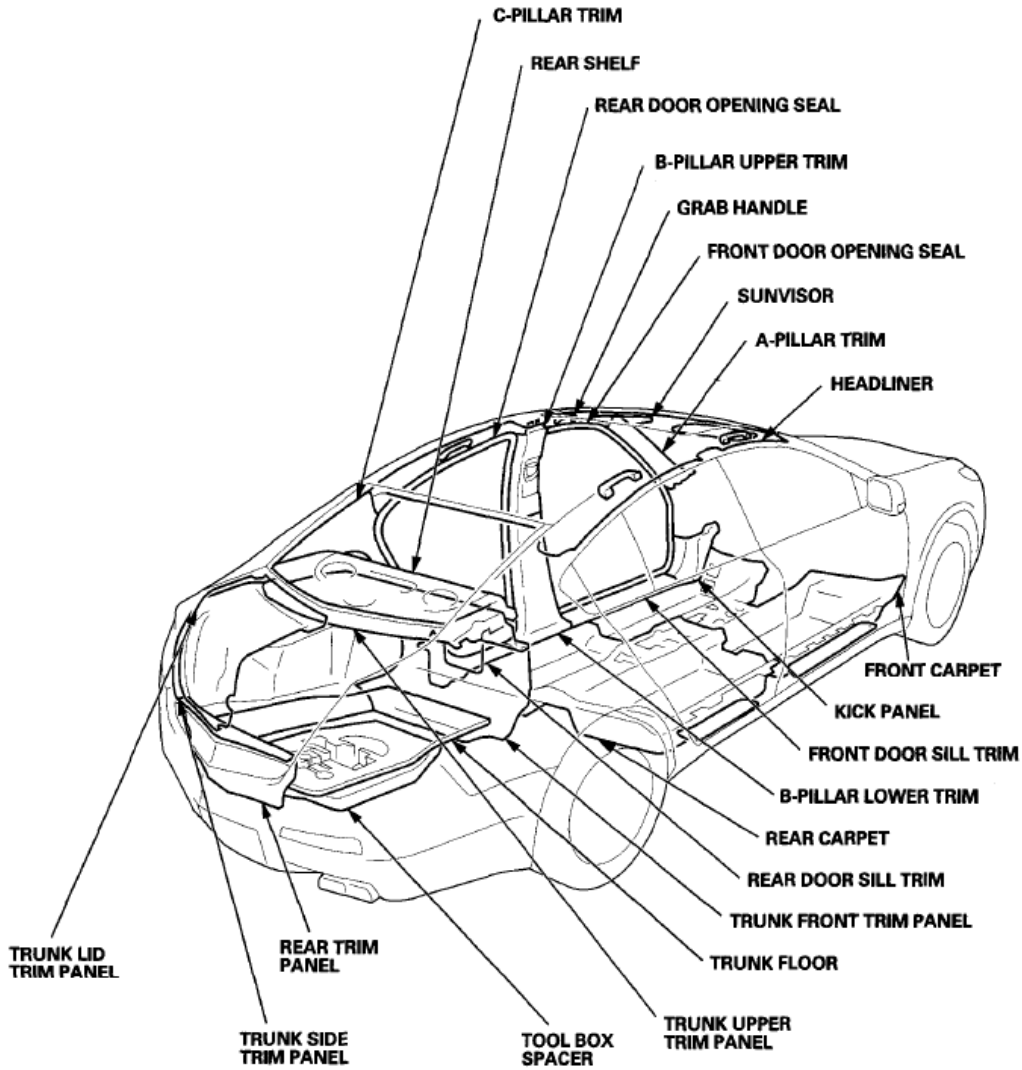


Fig. 1: Interior Trim Components Location
Courtesy of AMERICAN HONDA MOTOR CO., INC.

TRIM REMOVAL/INSTALLATION - DOOR AREAS

Special Tools Required

KTC Trim Tool Set SOJATP2014*

*Available through the Acura Tool and Equipment Program; call 888-424-6857

FRONT DOOR SILL AREA

NOTE:

- **Put on gloves to protect your hands.**
- **Take care not to bend or scratch the trim or the panels.**
- **Use the appropriate tool from the KTC trim tool set to avoid damage when removing components.**

1. Release the hooks (A) from the kick panel (B) and the B-pillar lower trim (C), and pull up the front door sill trim (D) by hand to detach the clips (E), then remove the trim.

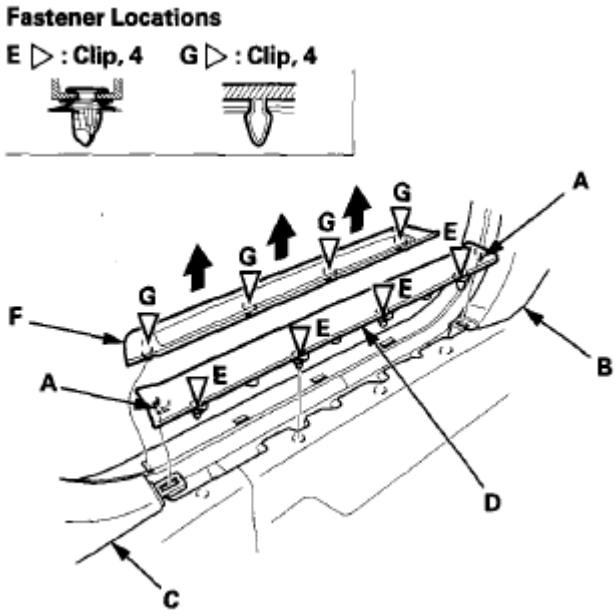


Fig. 2: Identifying Hooks, Kick Panel, B-Pillar Lower Trim, Front Door Sill Trim And Clips
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. If necessary, pull up the front side outer trim (F) to detach the clips (G), then remove the trim.
3. Remove the kick panels (A).
    1. Pull out the front door opening seal (B) as needed from the kick panel hooks (C).
    2. Pull back the kick panel by hand to detach the clips.

Driver's side

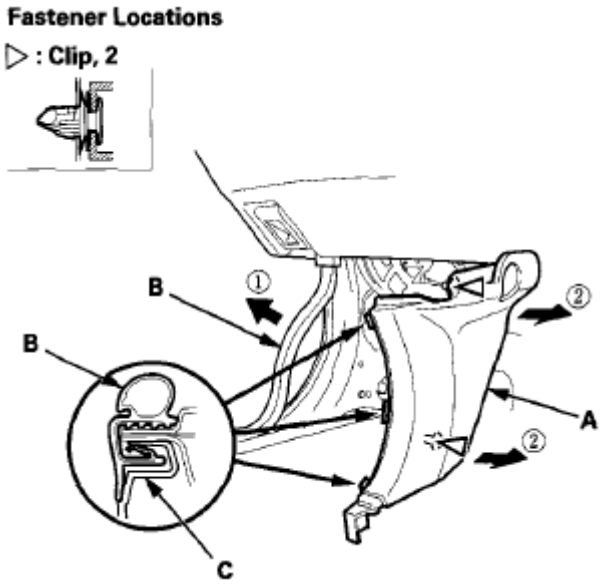


Fig. 3: Identifying Kick Panels, Front Door Opening Seal And Kick Panel Hooks (Driver'S Seat)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Passenger's side

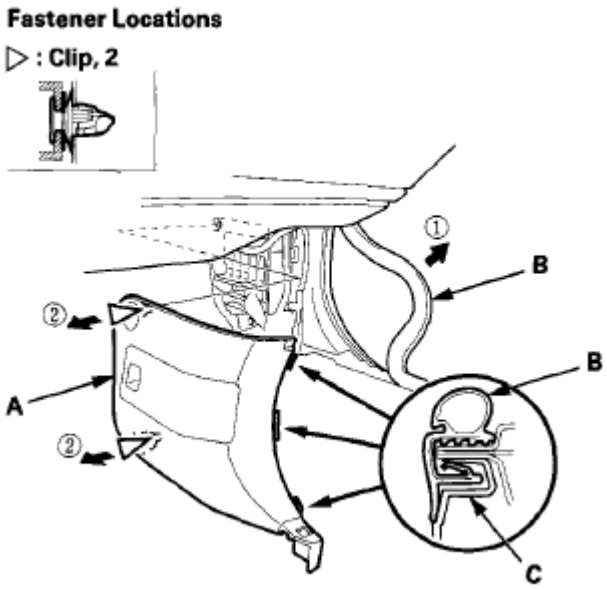


Fig. 4: Identifying Kick Panels, Front Door Opening Seal And Kick Panel Hooks (Passenger'S Seat)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Remove the B-pillar lower trim (see **B-PILLAR UPPER/LOWER TRIM**).
5. Pull out the front door opening seal (A) from the trim hooks (B) around the front door opening flange, then remove the seal.

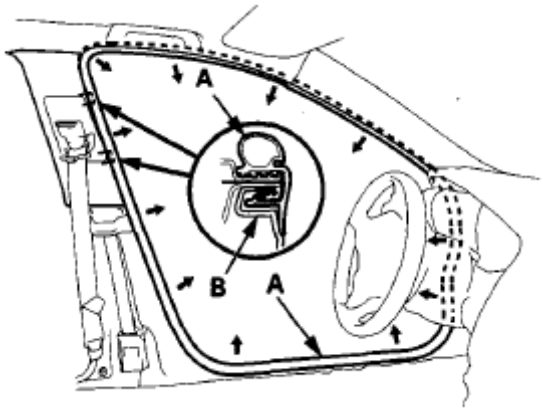


Fig. 5: Identifying Front Door Opening Seal, Trim Hooks And Front Door Opening Flange
Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Install the trim in the reverse order of removal, and note these items:
   - If the clips are damaged or stress-whitened, replace them with new ones.
   - Push the clips and the hooks into place securely.

REAR DOOR SILL AREA

NOTE:

- **Put on gloves to protect your hands.**
- **Take care not to bend or scratch the trim or the panels.**
- **Use the appropriate tool from the KTC trim tool set to avoid damage when removing components.**

1. Remove the rear seat cushion (see **REAR SEAT REMOVAL/INSTALLATION**).
2. Release the hooks (A) and the tab (B) from the B-pillar lower trim (C). Pull up the rear door sill trim (D) by hand to detach the clips (E, F), then remove the trim.

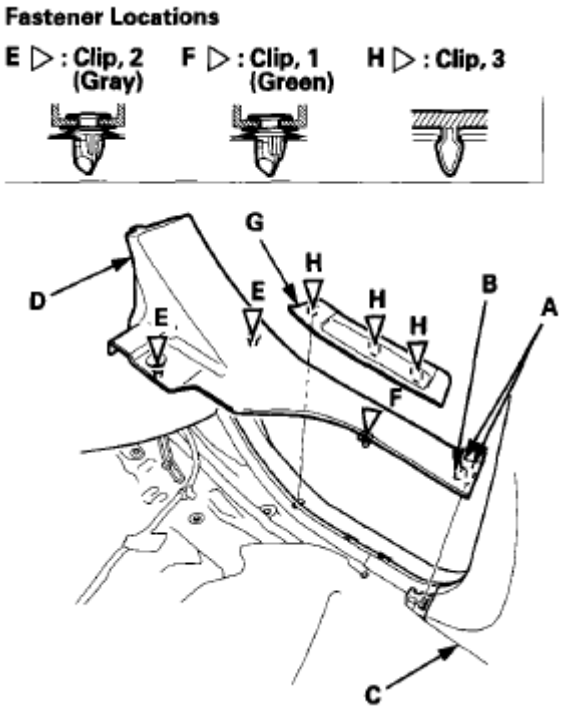


Fig. 6: Identifying Hooks, Tab, B-Pillar Lower Trim, Rear Door Sill Trim And Clips
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. If necessary, pull up the rear side outer trim (G) to detach the clips (H), then remove the trim.
4. Remove the B-pillar lower trim (see **B-PILLAR UPPER/LOWER TRIM**).
5. Pull out the rear door opening seal (A) from the trim hooks (B) around the rear door opening flange, then remove the seal.

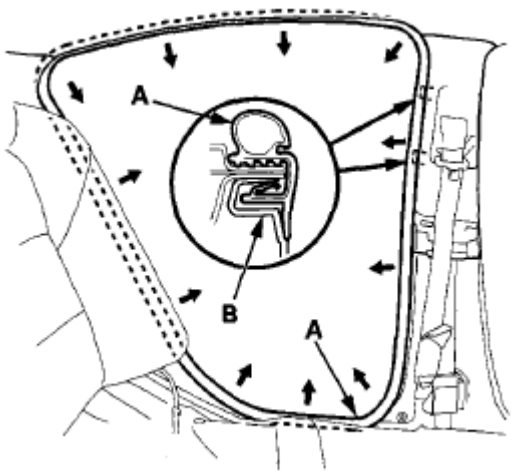


Fig. 7: Identifying Rear Door Opening Seal And Trim Hooks
Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Install the trim in the reverse order of removal, and note these items:

- If the clips are damaged or stress-whitened, replace them with new ones.
- Push the clips, the hooks, and the tabs into place securely.

TRIM REMOVAL/INSTALLATION - PILLAR AREAS

Special Tools Required

KTC Trim Tool Set SOJATP2014*

* Available through the Acura Tool and Equipment Program; call 888-424-6857

A-PILLAR TRIM

SRS components are located in this area. Review the SRS component locations (see **COMPONENT LOCATION INDEX**) and the precautions and procedures (see **PRECAUTIONS AND PROCEDURES**) before doing repairs or service.

NOTE:

- **If side airbags and/or side curtain airbags have deployed, the affected pillar area trim and attachment clips must be replaced. Refer to Component Replacement/Inspection After Deployment (see COMPONENT REPLACEMENT/INSPECTION AFTER DEPLOYMENT).**
- **Put on gloves to protect your hands.**
- **Take care not to scratch the trims or the panels.**
- **Use the appropriate tool from the KTC trim tool set to avoid damage when removing components.**
- **The upper clip (A) in the A-pillar trim (B) consists of a plastic grommet (C) and a metal pin (D). The grommet expanded by the pin secures it to the body panel (E). The projections (F) on the pin will break during removal, so the upper clip must be replaced with a new one when the trim is reinstalled.**

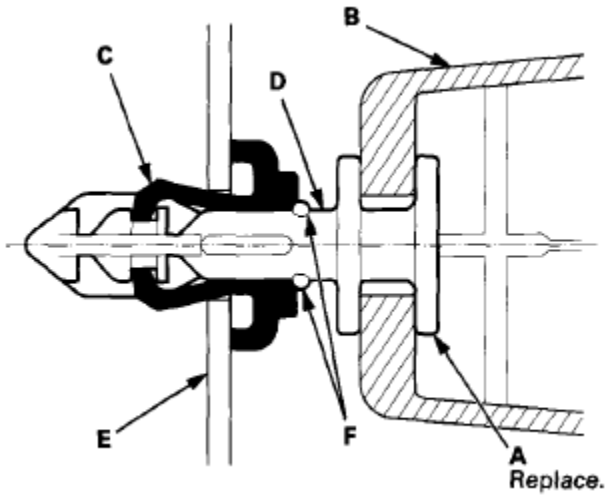


Fig. 8: Identifying Upper Clips, A-Pillar Trim, Plastic Grommet, Metal Pin, Body Panel And Projections
Courtesy of AMERICAN HONDA MOTOR CO., INC.

1. Pull the front door opening seal away from the A-pillar as needed (see step 5).
2. Hit the upper clip (A) in the A-pillar trim (B) with a rubber mallet. The clip is located under the point where the index tab (C) on the edge of the trim indicates. Hitting the clip breaks the projections (D) on the pin (E) and pushes it into the grommet (F) on the body (G).

NOTE: The upper clip must be replaced with a new one when the A-pillar trim is reinstalled.

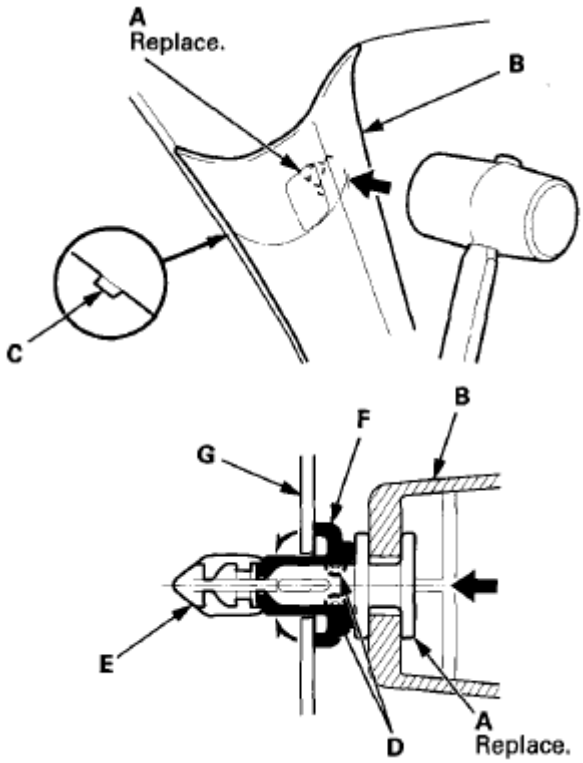


Fig. 9: Hitting Upper Clip In A-Pillar Trim With Rubber Mallet
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Pull back the top of the A-pillar trim (A) by hand to remove the upper clip (B) from the body (C).

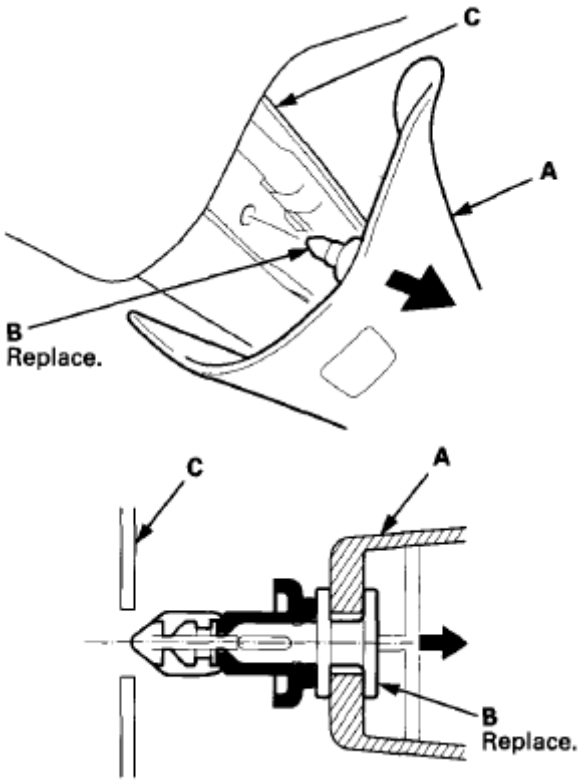


Fig. 10: Identifying A-Pillar Trim, Upper Clip And Body
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Pull the A-pillar trim (A) by hand to detach the clip. Pull up the trim from the dashboard (B), and disconnect the tweeter connector (C), then remove the trim.

NOTE: Be careful not to damage the tweeter connector when removing the A-pillar trim.

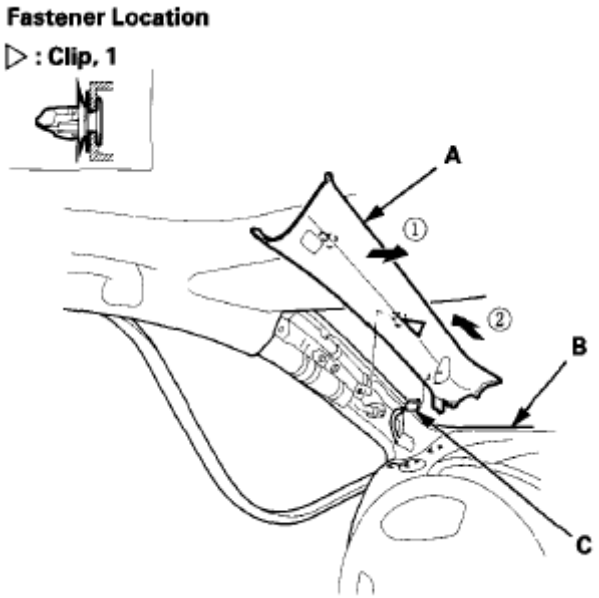


Fig. 11: Identifying A-Pillar Trim, Dashboard And Tweeter Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. If the side curtain airbag has deployed, replace the A-pillar trim, along with the other parts listed for side curtain airbag deployment (see **COMPONENT REPLACEMENT/INSPECTION AFTER DEPLOYMENT**).
6. If the side curtain airbag has not deployed, check the A-pillar trim (A) and note the following items:
   - To prevent the side curtain airbags from deploying improperly and possibly causing injury, inspect the A-pillar trim and replace it with a new one if it has any of the following damage:
     - Any cracks, deformations, or stress-whitened areas in the A-pillar trim
     - Any cracks or stress-whitening in the clip seating surfaces (B)
   - After checking and adjusting the overlap between the headliner and the A-pillar trim, replace the upper clip (C) with a new one.
   - If the clip (D) is damaged or stress-whitened, replace it with a new one.

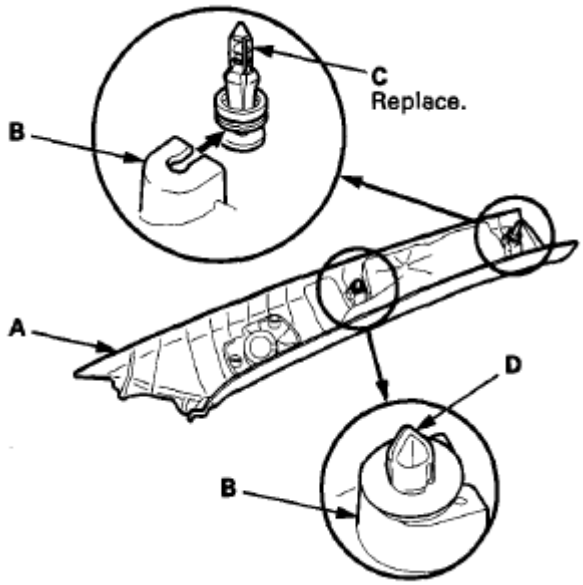


Fig. 12: Identifying A-Pillar Trim, Clip Seating Surfaces, Upper Clip And Clip
Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Temporarily install the A-pillar trim (without the upper clip) to check the overlap between the trim and the headliner (see **B-PILLAR TRIM**). Remove the trim, and if necessary, adjust the overlap.
8. Carefully install the new upper clip (A) to the A-pillar trim (B). Be sure that the grommet (C) is nearest to the top of the pin (D) as shown.

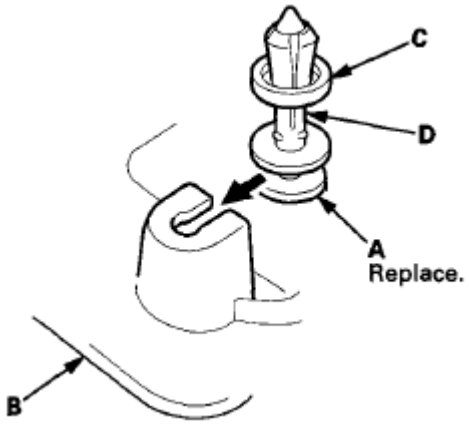


Fig. 13: Installing Upper Clip To A-Pillar Trim
Courtesy of AMERICAN HONDA MOTOR CO., INC.

9. Reinstall the A-pillar trim (A).
    1. Insert the bottom of the trim into the dashboard (B), then reconnect the tweeter connector (C).
    2. Place the trim over the A-pillar (D), and fit the upper clip (E) and the lower clip into the holes (F) in the A-pillar, then lightly push the trim into place.

NOTE:

- **Make sure the side curtain airbag is not tucked under the clips or the trim ribs.**
- **Do not push too hard on the A-pillar trim. If you push too hard, the clip will be damaged, and it will not hold the trim properly.**
- **Gently tug on the A-pillar trim to verify that all clips are securely fastened.**

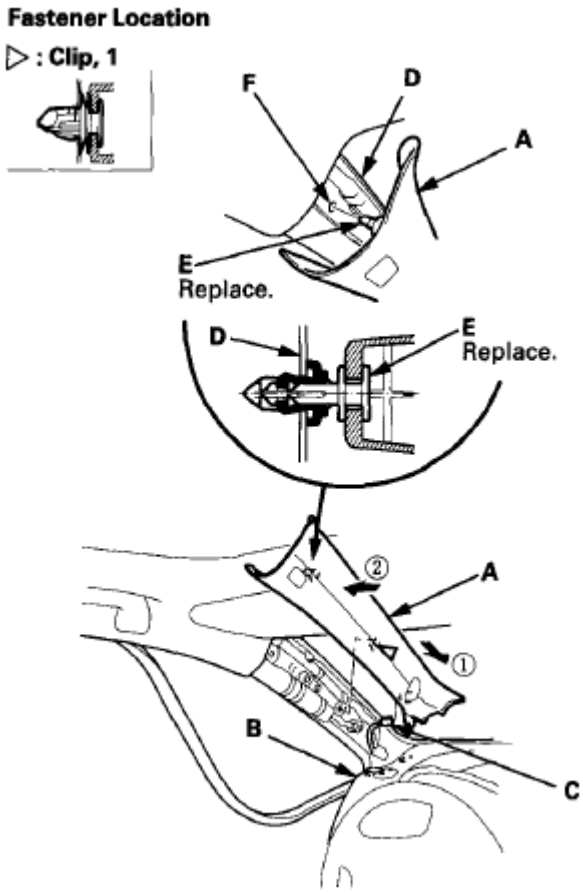


Fig. 14: Identifying A-Pillar Trim, Upper Clip, Dashboard And Holes
Courtesy of AMERICAN HONDA MOTOR CO., INC.

10. Reinstall the front door opening seal.

B-PILLAR UPPER/LOWER TRIM

SRS components are located in this area. Review the SRS component locations (see **COMPONENT LOCATION INDEX**) and the precautions and procedures (see **PRECAUTIONS AND PROCEDURES**) before doing repairs or service.

NOTE:

- **If side airbags and/or side curtain airbags have deployed, the affected**

pillar area trim and attachment clips must be replaced. Refer to Component Replacement/Inspection After Deployment (see COMPONENT REPLACEMENT/INSPECTION AFTER DEPLOYMENT).

- **Put on gloves to protect your hands.**
- **Take care not to bend or scratch the trims or the panels.**
- **Use the appropriate tool from the KTC trim tool set to avoid damage when removing components.**

1. Remove these items:
   - Front door sill trim (see **FRONT DOOR SILL AREA**)
   - Rear door sill trim (see **REAR DOOR SILL AREA**)
2. Slide the front seat forward fully.
3. Remove the B-pillar lower trim (A).
   1. Pull back the upper area of the trim to release the hooks (B).
   2. Detach the clip by pulling back the bottom of the trim by hand.

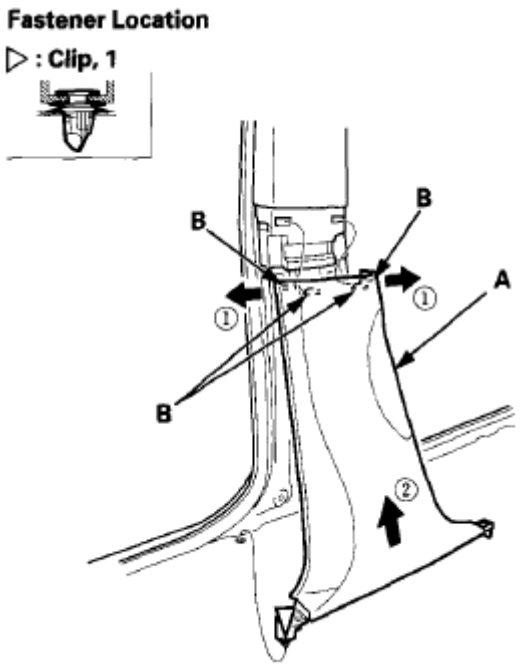


Fig. 15: Identifying B-Pillar Trim And Hooks
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Remove these items:
   - Front seat belt lower anchor (see **FRONT SEAT BELT REPLACEMENT**)
   - Front door opening seal, as needed (see step 5)
   - Rear door opening seal, as needed (see step 5)
5. Remove the B-pillar upper trim (A).

1. Pull back the bottom of the trim by hand to release the lower hooks (B).
2. Pull back the bottom of the trim to detach the clip.
3. Pull down the trim to release the upper hooks (C) from the holes in the body.

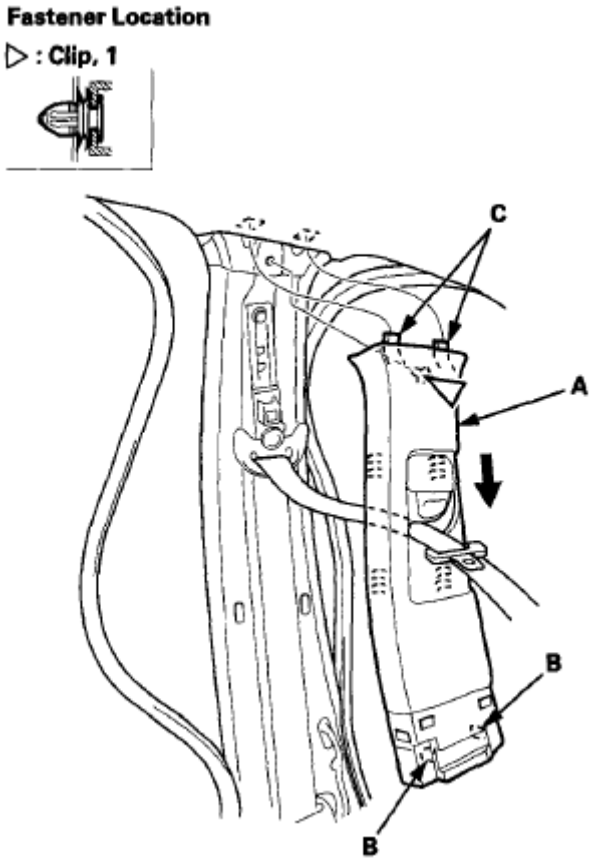


Fig. 16: Identifying B-Pillar Trim, Lower Hooks And Upper Hooks
Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Pass the front seat belt lower anchor (A) out through a hole in the slider (B), then remove the B-pillar upper trim (C).

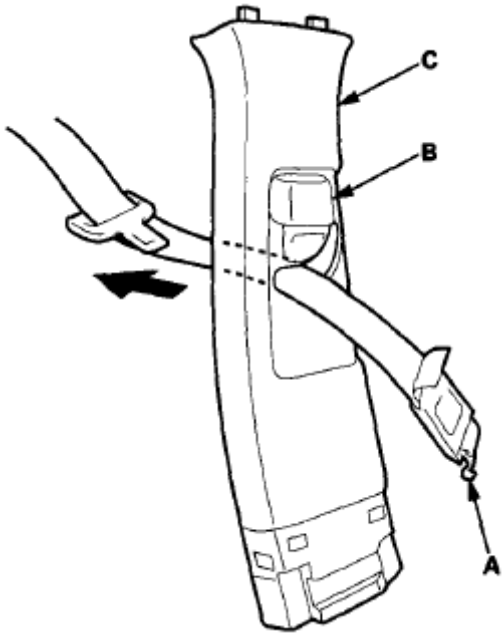


Fig. 17: Removing B-Pillar Upper Trim
Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Install the trim in the reverse order of removal, and note these items:
   - If the side curtain airbag has deployed, replace the B-pillar upper trim (A), the B-pillar lower trim (B), and the clip (C), along with the other parts listed for side curtain airbag deployment (see **COMPONENT REPLACEMENT/INSPECTION AFTER DEPLOYMENT**).
   - To prevent the side curtain airbags from deploying improperly and possibly causing injury, inspect the trim and replace it with a new one if it has any of the following damage:
     - Any cracks or deformations in the B-pillar upper trim or the hooks (D), or any stress-whitened areas in the upper part of the trim
     - Any cracks or deformations in the B-pillar lower trim, or any breakages in the area (E) that overlaps the B-pillar upper trim
     - Any cracks or stress-whitening in the clip seating surface (F)
   - If the clip is damaged or stress-whitened, replace it with a new one.
   - Replace any damaged parts with new ones.
   - Make sure the top of the trim overlaps with the headliner correctly (see **B-PILLAR TRIM**).
   - Make sure the pin (G) on the front seat belt shoulder anchor adjuster (H) and the hole (I) on the back of the slider are engaged when installing the B-pillar upper trim.
   - Make sure the upper hooks are installed into the holes in the body securely.
   - Push the clip and the hooks into place securely.
   - Before installing the anchor bolt, make sure there are no twists or kinks in the seat belt.

Trim inspection

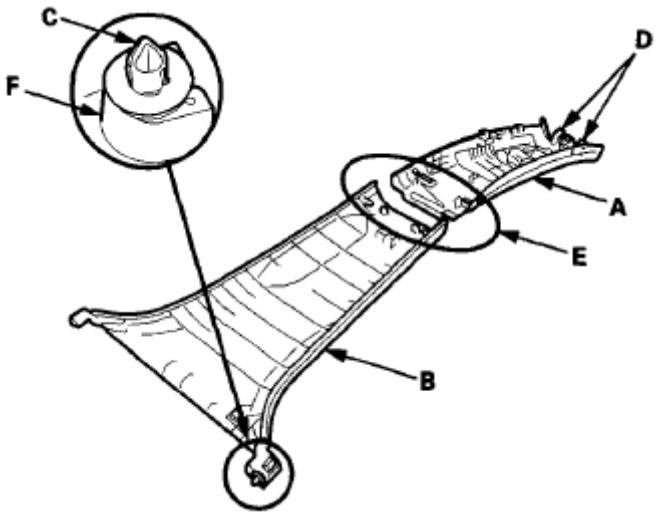


Fig. 18: Inspecting Trim
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Slider engagement with shoulder anchor adjuster

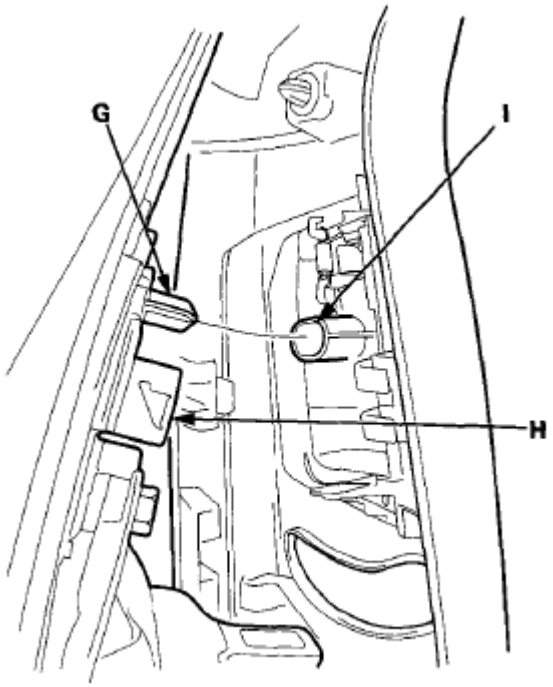


Fig. 19: Identifying Pin, Shoulder Anchor Adjuster And Hole
Courtesy of AMERICAN HONDA MOTOR CO., INC.

C-PILLAR TRIM

SRS components are located in this area. Review the SRS component locations (see **COMPONENT LOCATION INDEX**) and the precautions and procedures (see **PRECAUTIONS AND PROCEDURES**)

before doing repairs or service.

NOTE:

- **If side airbags and/or side curtain airbags have deployed, the affected pillar area trim and attachment clips must be replaced. Refer to Component Replacement/Inspection After Deployment (see COMPONENT REPLACEMENT/INSPECTION AFTER DEPLOYMENT).**
- **Put on gloves to protect your hands.**
- **Take care not to scratch the trims or the panels.**
- **Use the appropriate tool from the KTC trim tool set to avoid damage when removing components.**
- **The upper clip (A) in the C-pillar trim (B) consists of a plastic grommet (C) and a metal pin (D). The grommet expanded by the pin secures it to the body panel (E). The projections (F) on the pin will break during removal, so the upper clip must be replaced with a new one when the trim is reinstalled.**

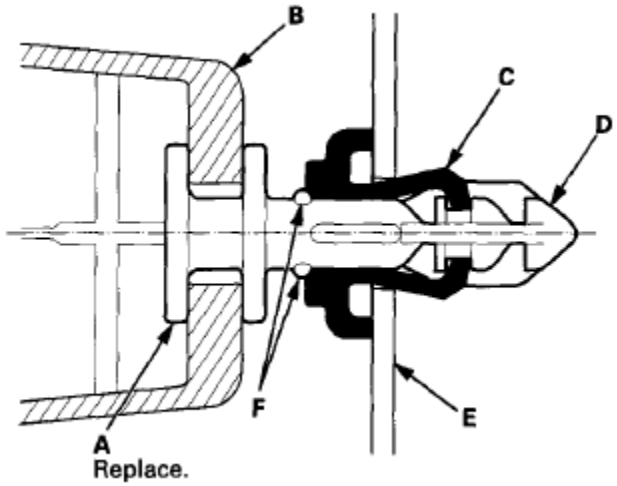


Fig. 20: Identifying Upper Clip, C-Pillar Trim, Grommet, Pin, Panel Projections
Courtesy of AMERICAN HONDA MOTOR CO., INC.

1. Remove these items:
   - Rear seat-back (see **REAR SEAT REMOVAL/INSTALLATION**)
   - Rear door opening seal, as needed (see step 5)
2. Hit the upper clip (A) in the C-pillar trim (B) with a rubber mallet. Hitting the clip breaks the projections (C) on the pin (D) and pushes it into the grommet (E) on the body (F).

NOTE: **The upper clip must be replaced with a new one when the C-pillar trim is reinstalled.**

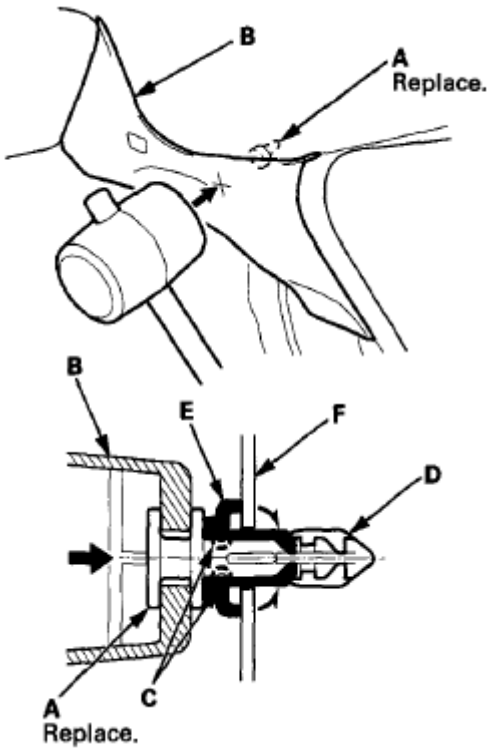


Fig. 21: Hitting Upper Clip In C-Pillar Trim Using Rubber Mallet
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Pull back the top of the C-pillar trim (A) by hand to remove the upper clip (B) from the body (C).

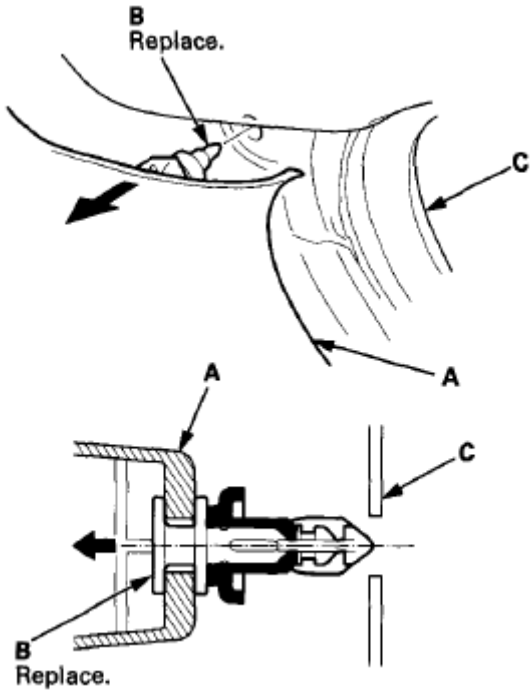


Fig. 22: Removing Upper Clip From Body

Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Pull the C-pillar trim (A) by hand to detach the clips and to release the hooks (B), then pull out the trim from the rear shelf (C).

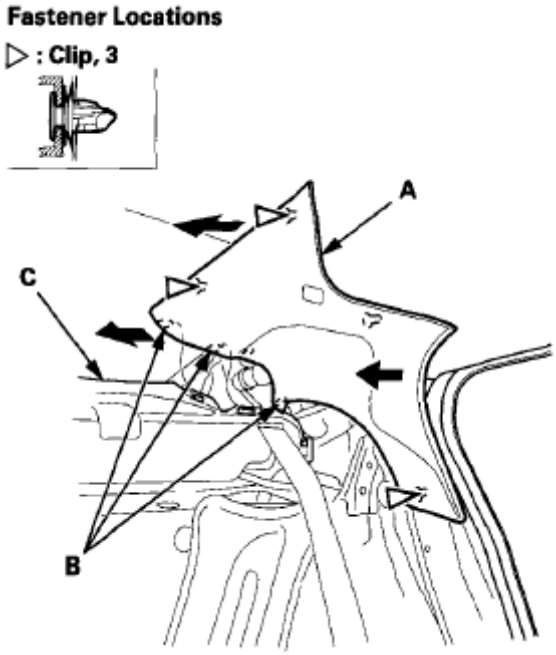


Fig. 23: Pulling C-Pillar Trim By Hand To Detach Clips And To Release Hooks To Pull Out Trim From Rear Shelf
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. If the side curtain airbag has deployed, replace the C-pillar trim, along with the other parts listed for side curtain airbag deployment (see **COMPONENT REPLACEMENT/INSPECTION AFTER DEPLOYMENT**).
6. If the side curtain airbag has not deployed, check the C-pillar trim (A) and note the following items:
   - To prevent the side curtain airbags from deploying improperly and possibly causing injury, inspect the trim and replace it with a new one if it has any of the following damage:
     - Any cracks, deformations, or stress-whitened areas in the C-pillar trim
     - Any cracks or stress-whitening in the clip seating surfaces (B)
   - After checking and adjusting the overlap between the headliner and the C-pillar trim, replace the upper clip (C) with a new one.
   - If the clips (D) are damaged or stress-whitened, replace them with new ones.

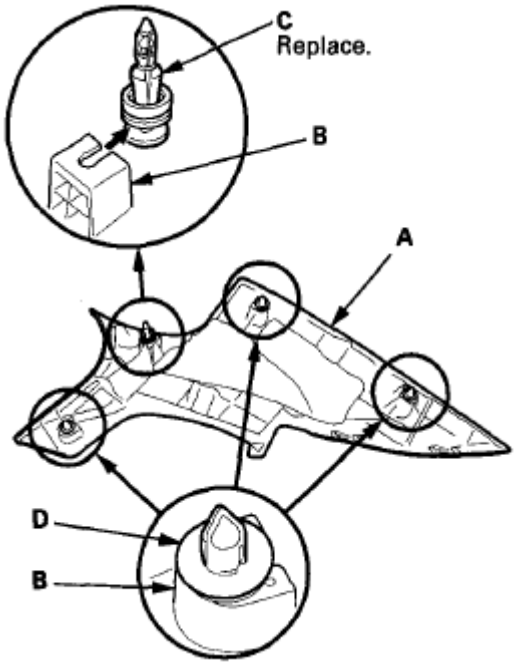


Fig. 24: Identifying C-Pillar Trim, Clip Seating Surfaces, Upper Clip And Clips
Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Temporarily install the C-pillar trim (without the upper clip) to check the overlap between the trim and the headliner (see **B-PILLAR TRIM**). Remove the trim, and if necessary, adjust the overlap.
8. Carefully install the new upper clip (A) to the C-pillar trim (B). Be sure that the grommet (C) is nearest to the top of the pin (D) as shown.

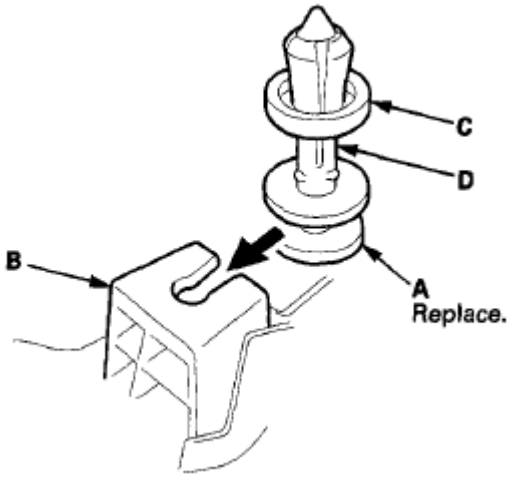


Fig. 25: Identifying Upper Clip, C-Pillar Trim, Grommet And Pin
Courtesy of AMERICAN HONDA MOTOR CO., INC.

9. Reinstall the C-pillar trim (A).
    1. Insert the bottom hooks (B) of the trim in the rear shelf (C).

2. Place the trim over the C-pillar (D), and fit the upper clip (E) and the lower clips into the holes (F) in the C-pillar, then lightly push the trim into place.

NOTE:

- **Make sure the side curtain airbag is not tucked under the clips or the trim ribs.**
- **Do not push too hard on the C-pillar trim. If you push too hard, the clip will be damaged, and it will not hold the trim properly.**
- **Gently tug on the C-pillar trim to verify that all clips are securely fastened.**

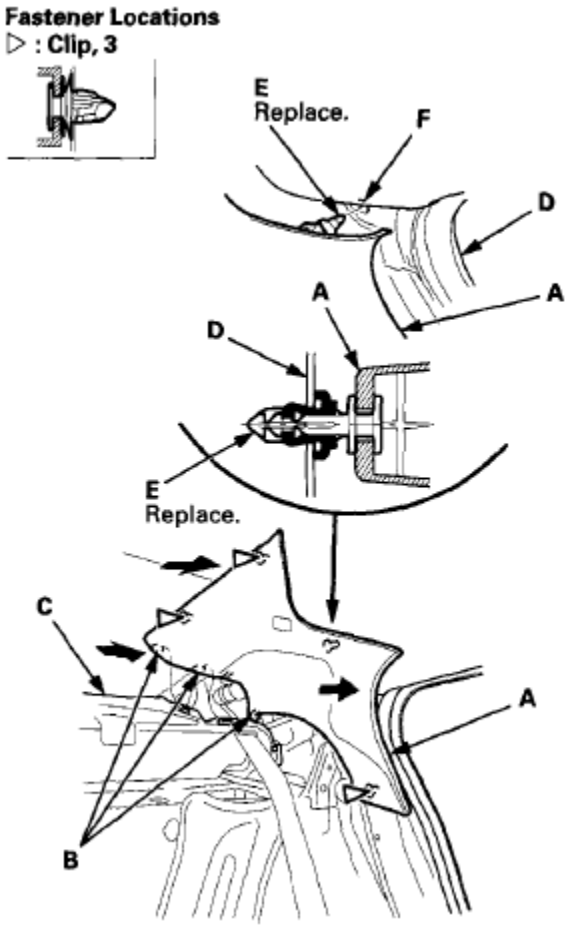


Fig. 26: Inserting Bottom Hooks Of Trim In Rear Shelf
Courtesy of AMERICAN HONDA MOTOR CO., INC.

10. Reinstall the rear door opening seal.

TRIM REMOVAL/INSTALLATION - REAR SHELF AREA

Special Tools Required

KTC Trim Tool Set SOJATP2014*

*Available through the Acura Tool and Equipment Program; call 888-424-6857

REAR SHELF

SRS components are located in this area. Review the SRS component locations (see **COMPONENT LOCATION INDEX**) and the precautions and procedures (see **PRECAUTIONS AND PROCEDURES**) before doing repairs or service.

NOTE:

- **Put on gloves to protect your hands.**
- **Take care not to bend or scratch the rear shelf or the trim.**
- **Use the appropriate tool from the KTC trim tool set to avoid damage when removing components.**

1. Remove the C-pillar trims, both sides (see **C-PILLAR TRIM**).
2. Remove the rear shelf (A).
    1. Pull up the entire rear shelf to detach the clips.
    2. Pull both rear seat belts (B) and the rear center seat belt (C) out through the slits (D) in the rear shelf.

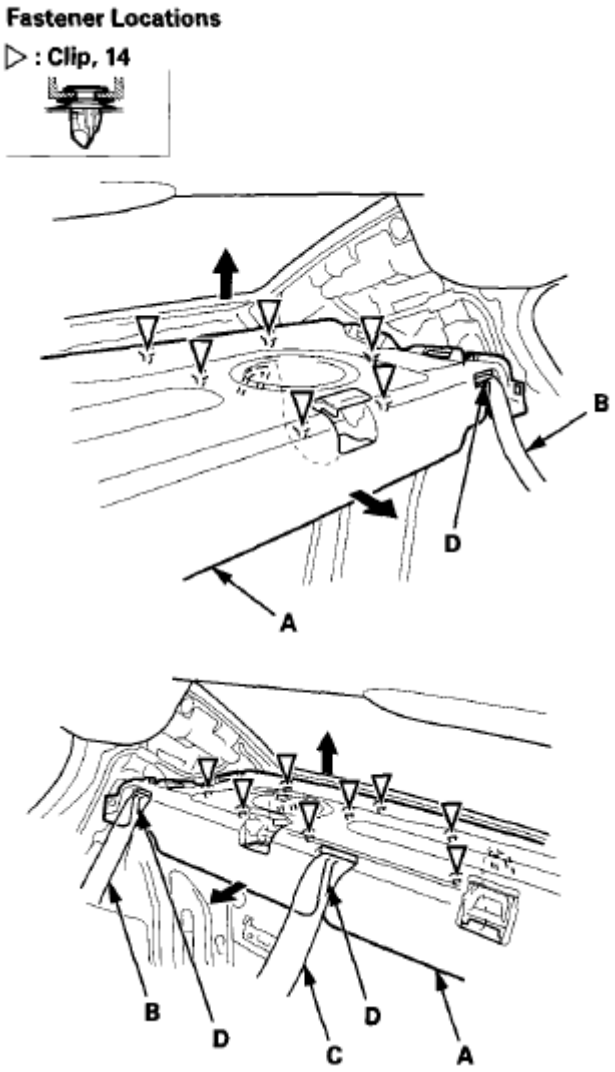


Fig. 27: Pulling Rear Seat Belts And Rear Center Seat Belt Out Through Slits In Rear Shelf
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Install the shelf in the reverse order of removal, and note these items:
   - Remove any clips with a clip remover left in the body, and install them on the rear shelf.
   - If the clips are damaged or stress-whitened, replace them with new ones.
   - When installing the rear shelf, slip the rear seat belts and the rear center seat belt through the slits in the rear shelf properly.
   - Push the clips and the hooks into place securely.

TRIM REMOVAL/INSTALLATION - TRUNK AREA

Special Tools Required

KTC Trim Tool Set SOJATP2014*

* Available through the Acura Tool and Equipment Program; call 888-424-6857

NOTE:

- **Put on gloves to protect your hands.**
- **Take care not to bend or scratch the trim or the panels.**
- **Use the appropriate tool from the KTC trim tool set to avoid damage when removing components.**

1. Remove the trunk floor (A).

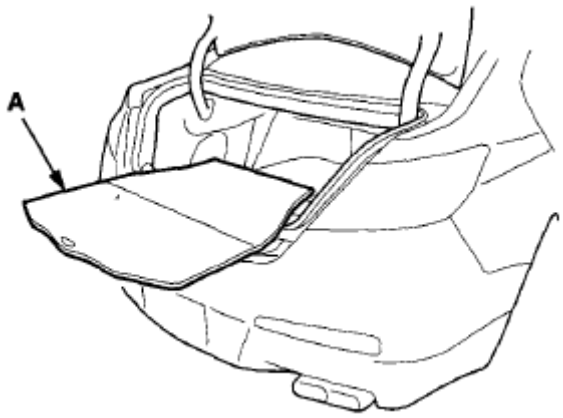


Fig. 28: Identifying Trunk Floor
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Remove the tool box spacer (A).

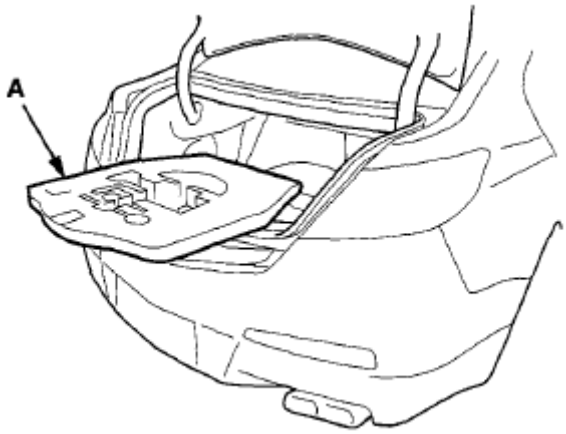


Fig. 29: Identifying Tool Box Spacer
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Remove the trunk lid weatherstrip near the trunk rear trim panel (see **TRUNK LID WEATHERSTRIP REPLACEMENT**).
4. Detach the clips, and release the hooks (A) and the tabs (6) by pulling up the trunk rear trim panel (C), then remove the panel.

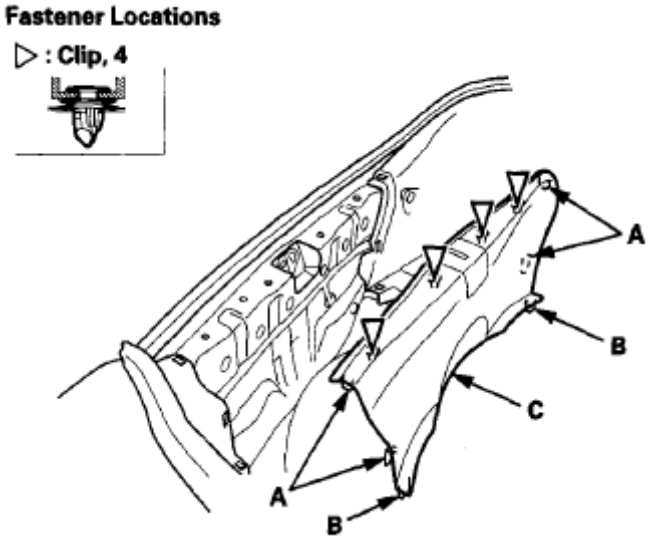


Fig. 30: Identifying Hooks, Tabs And Trunk Rear Trim Panel
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Detach the clips, and release the Velcro fasteners (A), then remove the trunk front trim panel (B).

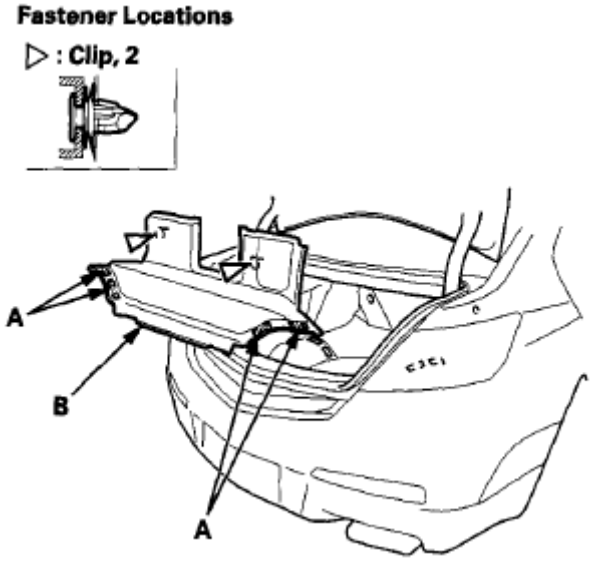


Fig. 31: Identifying Velcro Fasteners And Trunk Front Trim Panel
Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Detach the clips (A, B), and remove the cargo hook buttons (C, D), then remove the trunk side trim panel (E).

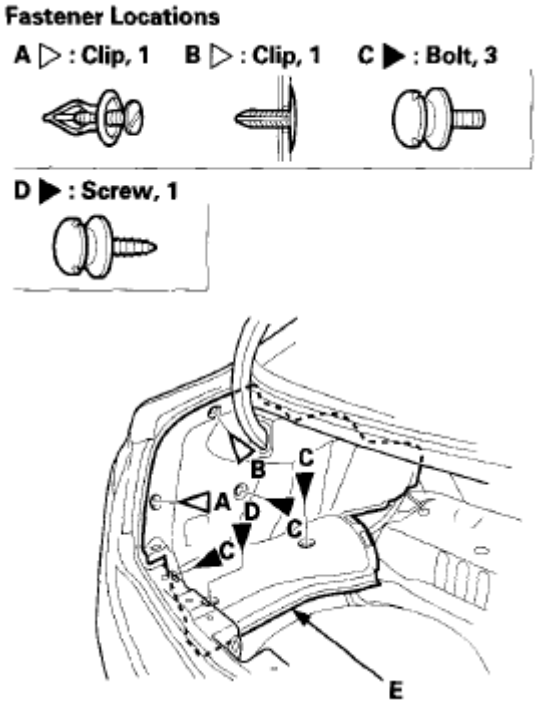


Fig. 32: Identifying Clips, Cargo Hook Buttons And Trunk Side Trim Panel
Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Remove the rear seat-back (see **REAR SEAT REMOVAL/INSTALLATION**).
8. Detach the clips.

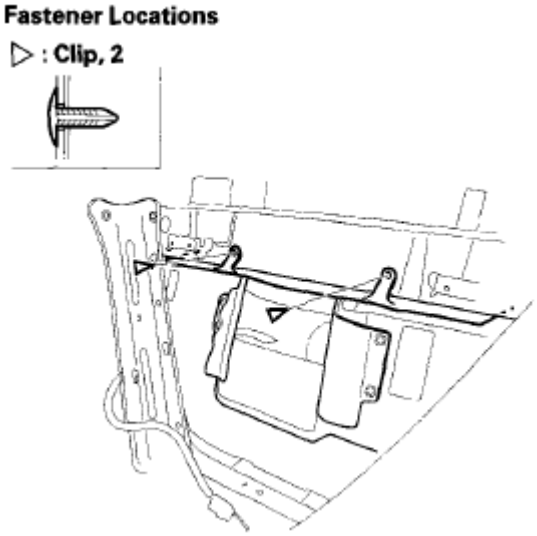


Fig. 33: Detaching Clips
Courtesy of AMERICAN HONDA MOTOR CO., INC.

9. Lower the trunk upper trim panel (A) to detach the clips, then remove the panel from the trunk compartment.

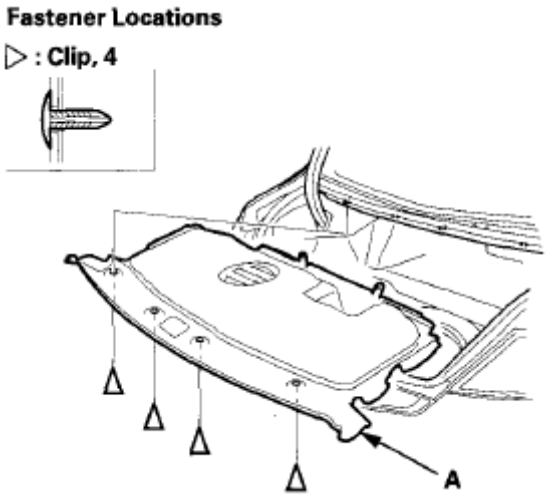


Fig. 34: Identifying Upper Trim Panel
Courtesy of AMERICAN HONDA MOTOR CO., INC.

10. Install the trim in the reverse order of removal, and note these items:
    - If the clips are damaged or stress-whitened, replace them with new ones.
    - Push the clips and the hooks into place securely.

TRIM REMOVAL/INSTALLATION - TRUNK LID

Special Tools Required

KTC Trim Tool Set SOJATP2014*

*Available through the Acura Tool and Equipment Program; call 888-424-6857

TRUNK LID TRIM PANEL

NOTE:
- **Put on gloves to protect your hands.**
- **Take care not to bend or scratch the panel.**
- **Use the appropriate tool from the KTC trim tool set to avoid damage when removing components.**

1. Remove the trunk lid cushion (see **TRUNK LID WEATHERSTRIP REPLACEMENT**).
2. Detach the clip, and remove the trunk lid hinge trim A by releasing the hooks (C) from the trunk lid hinge B (on both sides).

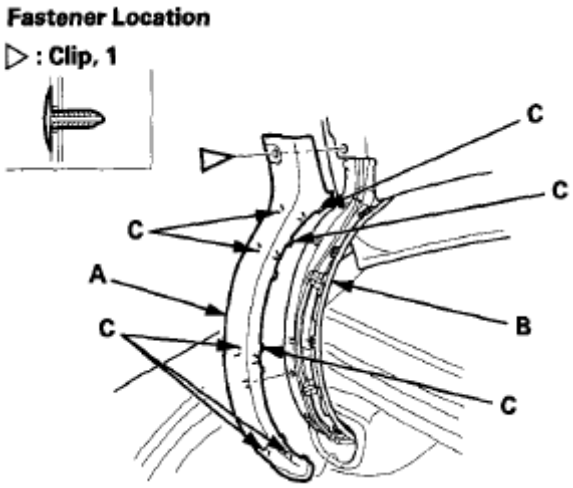


Fig. 35: Identifying Trunk Lid Hinge Trim, Hooks And Trunk Lid Hinge
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Detach the clips with a clip remover, then remove the trunk lid trim panel (A).

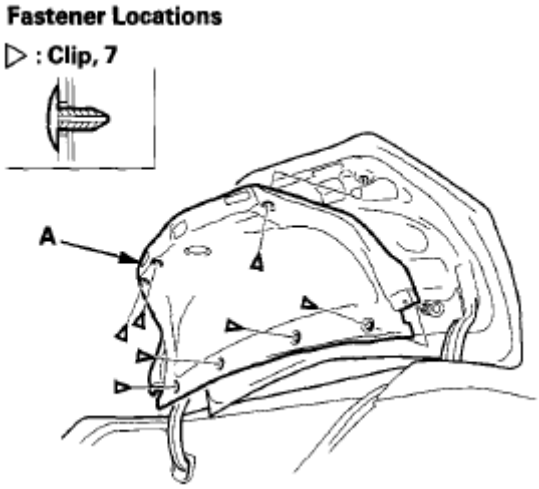


Fig. 36: Identifying Trunk Lid Trim Panel
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. If necessary, release the hook (A), then remove the trunk lid handle (B).

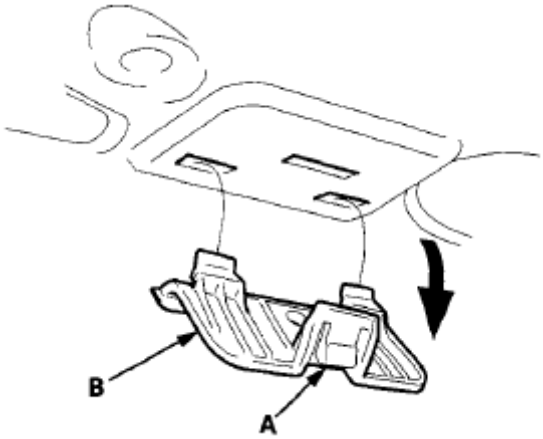


Fig. 37: Removing Trunk Lid Handle
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Install the trim in the reverse order of removal, and note these items:
   - If the clips are damaged or stress-whitened, replace them with new ones.
   - Push the clips and the hooks into place securely.

TRUNK LID HINGE TRIM

NOTE:

- **Put on gloves to protect your hands.**
- **Take care not to bend or scratch the panel.**
- **Use the appropriate tool from the KTC trim tool set to avoid damage when removing components.**

1. Remove the trunk side trim panel as needed (see **TRIM REMOVAL/INSTALLATION - TRUNK AREA**).
2. Detach the clip, and remove the trunk lid hinge trim A by releasing the hooks (C) from the trunk lid hinge trim B.

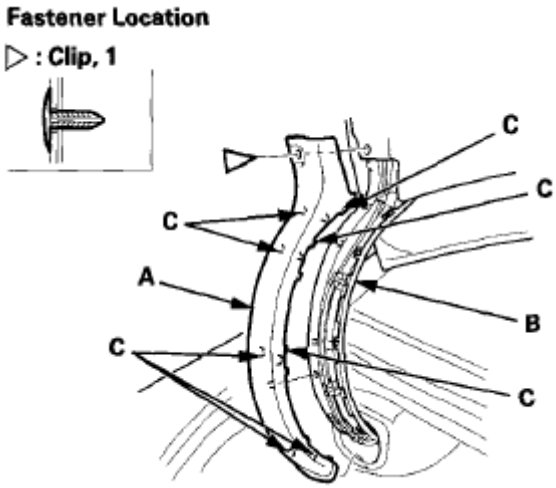


Fig. 38: Identifying Trunk Lid Hinge Trim And Hooks
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Remove the trunk lid hinge trim B from the trunk lid hinge (A).

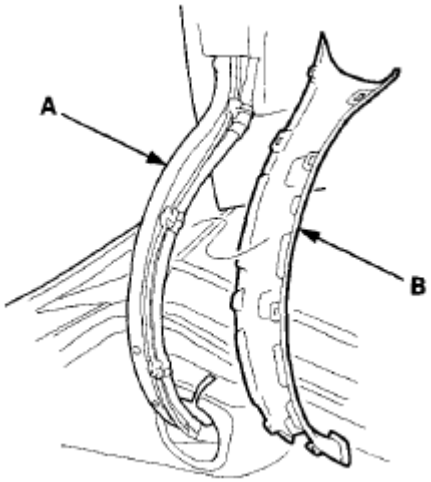


Fig. 39: Identifying Trunk Lid Hinge Trim And Trunk Lid Hinge
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Install the trim in the reverse order of removal, and note these items:
   - If the clip is damaged or stress-whitened, replace it with a new one.
   - Push the clip and the hooks into place securely.

SUNVISOR REMOVAL/INSTALLATION

NOTE:

- **Put on gloves to protect your hands.**
- **Take care not to damage the sunvisor or the headliner.**
- **When prying with a flat-tip screwdriver, wrap it with protective tape to**

prevent damage.

1. Insert a flat-tip screwdriver through the hole in the front side of the bracket cover (A), and push the hook (B). Make sure the hook is unlocked.

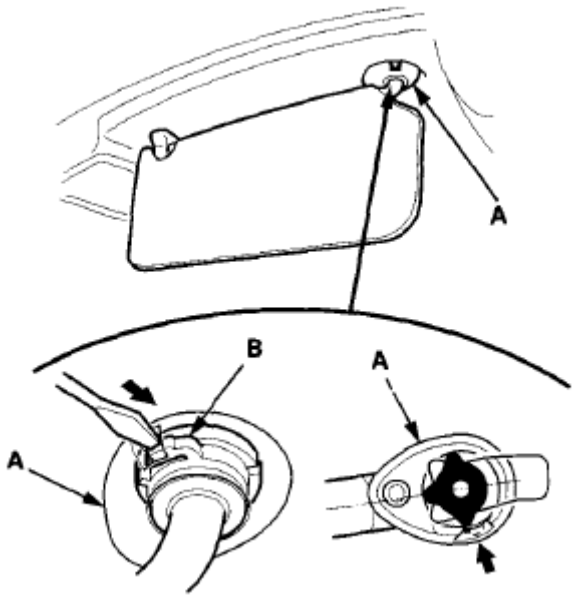


Fig. 40: Identifying Bracket Cover And Hook
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. While pushing in the hook (A) with a flat-tip screwdriver, release the sunvisor (B) from the holder (C), and rotate the sunvisor backward about 45°. Make sure the hook slides into the bracket cover as you rotate the sunvisor.

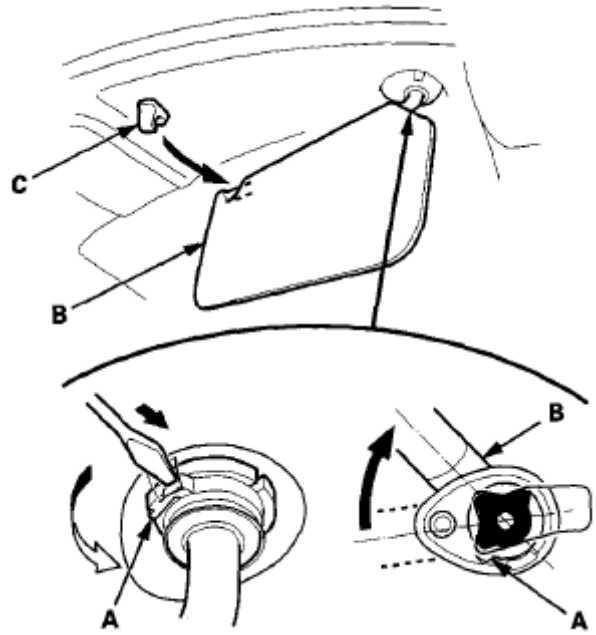


Fig. 41: Identifying Hook, Sunvisor And Holder
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Pull down the sunvisor (A) to release the pin (B) and the bracket (C) from the holes in the body. Then pull out the vanity mirror light connector (D), and disconnect it.

NOTE: If the sunvisor cannot be pulled down, the hook has not rotated into the bracket cover. Repeat step 2 to rotate the hook.

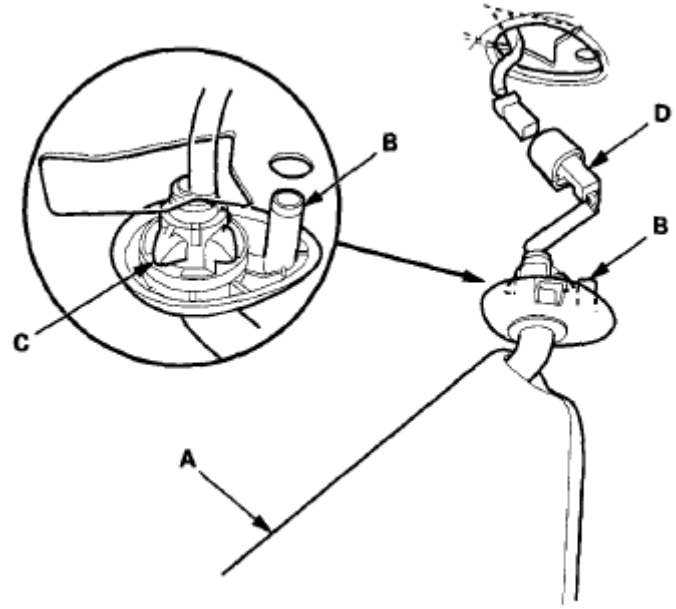


Fig. 42: Identifying Sunvisor, Pin, Bracket And Mirror Light Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Turn the holder (A) 45° counterclockwise, and pull it down to remove it from the holder grommet (B).

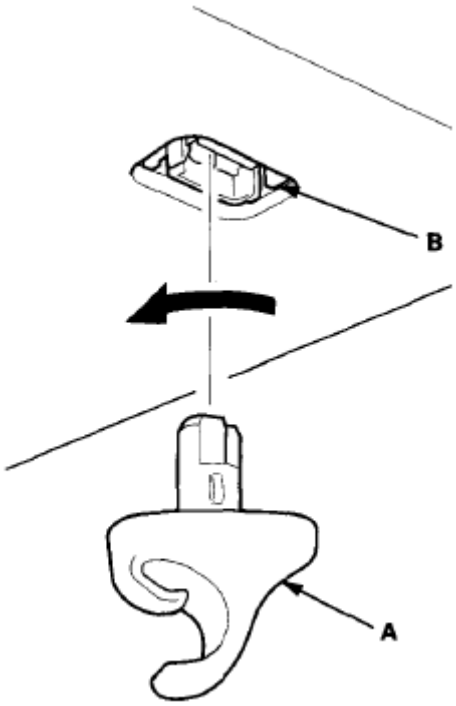


Fig. 43: Identifying Holder And Grommet
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Pry out the holder grommet (A) from the body by pinching its hooks (B).

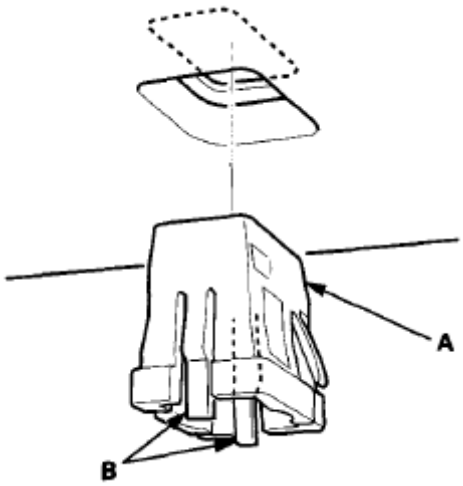


Fig. 44: Identifying Holder Grommet And Hooks
Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. If the side curtain airbag has deployed, replace the sunvisor, along with the other parts listed for side curtain airbag deployment (see **COMPONENT REPLACEMENT/INSPECTION AFTER**

DEPLOYMENT).

7. If the side curtain airbag has not deployed, inspect the sunvisor for damage. A damaged sunvisor may cause the side curtain airbags to deploy improperly, possibly causing injury. Replace the sunvisor if it has any of the following damage:
   - Any cracks in the sunvisor bracket (A)
   - Any cracks in the sunvisor bracket cover (B)
   - Any bends or cracks in the sunvisor stay shaft (C)
   - Any cracks in the sunvisor base (D)
   - Any cracks in the vanity mirror base (E)

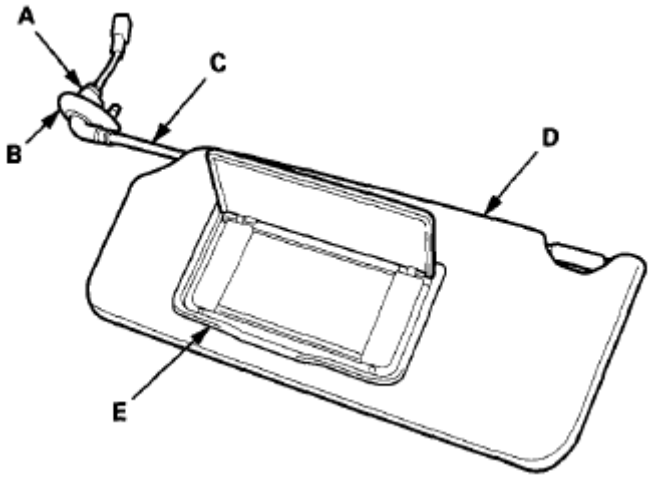


Fig. 45: Identifying Sunvisor Bracket, Cover, Shaft, Sunvisor Base And Mirror Base
Courtesy of AMERICAN HONDA MOTOR CO., INC.

8. If the holder grommet is damaged or stress-whitened, replace it with a new one.
9. Install the holder (A) into the holder grommet (B) by turning it 45° clockwise, and install them into the body as an assembly by pushing it until the hooks (C) snap into place securely.

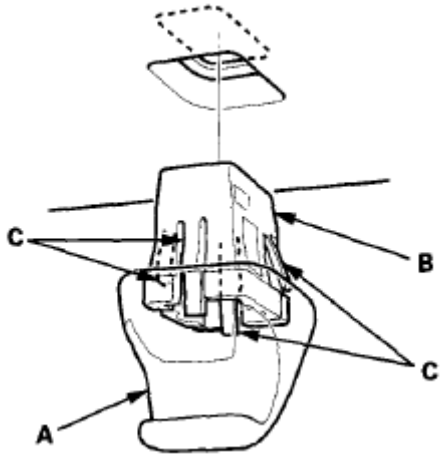


Fig. 46: Identifying Holder, Grommet And Hooks

Courtesy of AMERICAN HONDA MOTOR CO., INC.

10. Connect the vanity mirror light connector (A), and install the sunvisor (B) by inserting the bracket (C) and the pin (D) of the bracket cover (E) into the holes in the body.

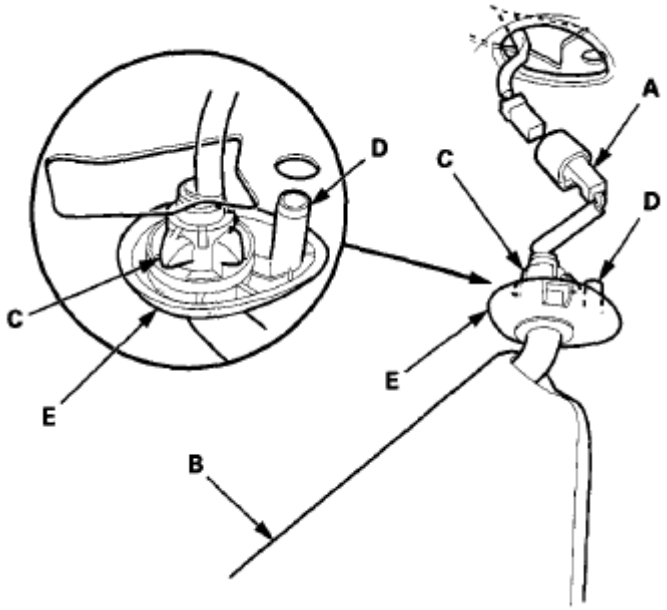


Fig. 47: Identifying Mirror Light Connector, Sunvisor, Bracket, Pin And Cover
Courtesy of AMERICAN HONDA MOTOR CO., INC.

11. While holding the bracket cover (A), rotate the sunvisor (B) forward until the hook (C) snaps into place. Gently pull down on the sunvisor to make sure it is properly secured in the body. Rotate the sunvisor into the holder (D).

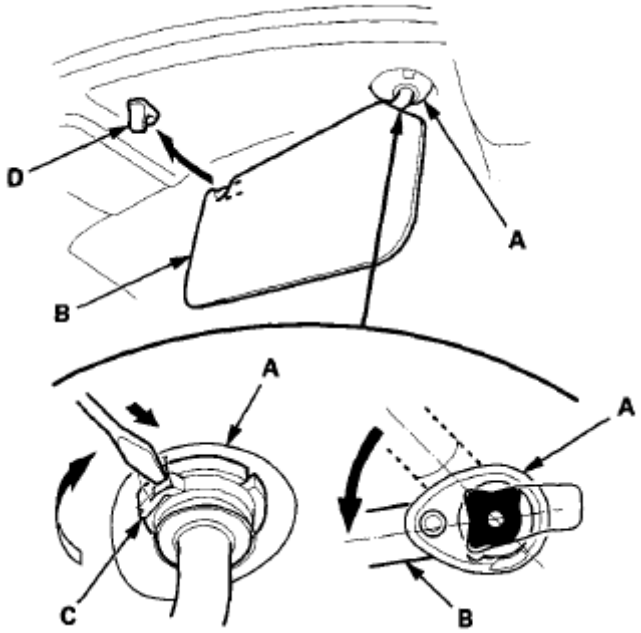


Fig. 48: Identifying Bracket Cover, Sunvisor, Hook And Holder
Courtesy of AMERICAN HONDA MOTOR CO., INC.

GRAB HANDLE REMOVAL/INSTALLATION

Special Tools Required

KTC Trim Tool Set SOJATP2014*

*Available through the Acura Tool and Equipment Program; call 888-424-6857

NOTE:

- **Use the appropriate tool from the KTC trim tool set to avoid damage when removing components.**
- **When prying with a flat-tip screwdriver, wrap it with protective tape to prevent damage.**

1. Lower the grab handle (A), then insert a small flat-tip screwdriver into the notch.

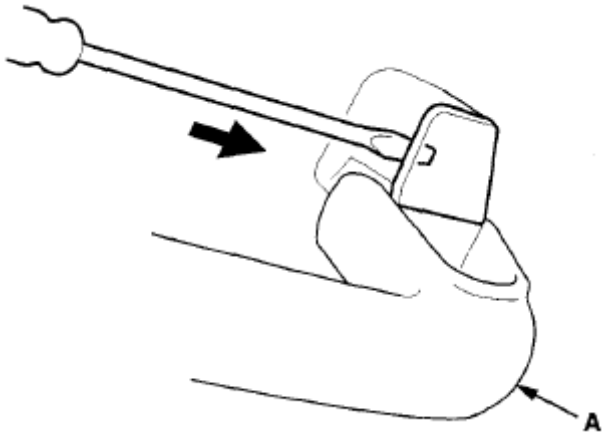


Fig. 49: Lowering Grab Handle Using Screwdriver
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Pull on the small flat-tip screwdriver with the appropriate trim tool (A), and remove the cap (B).

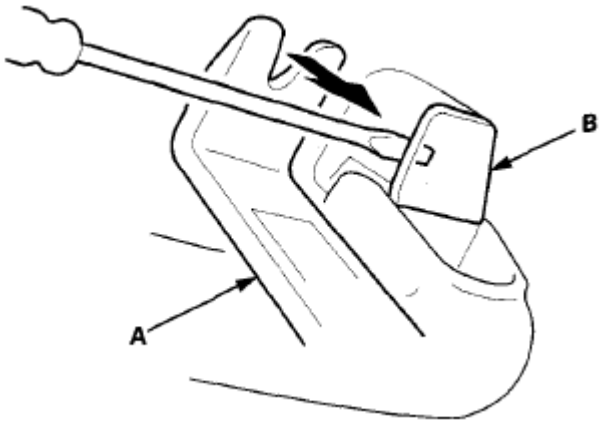


Fig. 50: Pulling On Small Flat-Tip Screwdriver With Appropriate Trim Tool
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Pinch the clips (A) to release the hooks (B), then remove the grab handle (C).

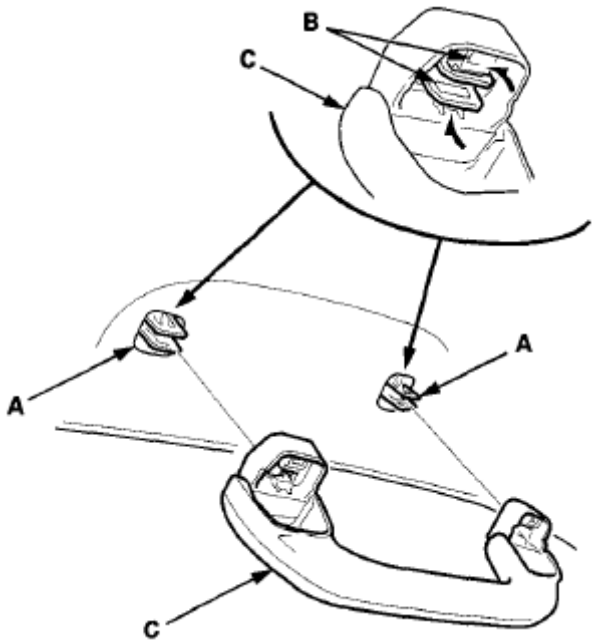


Fig. 51: Identifying Clips, Hooks And Handle
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Pinch the hooks on the clips (A) with a pair of pliers, and pull the clips out of the bracket.

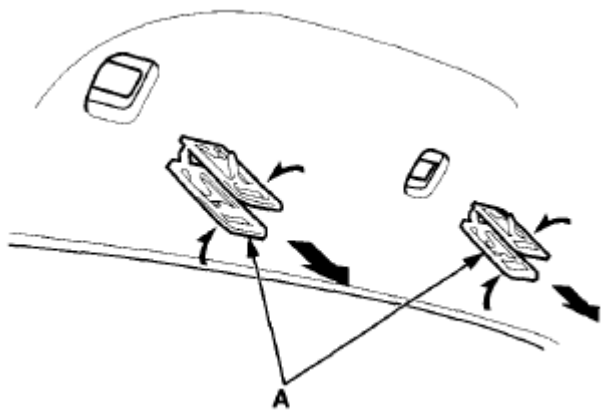


Fig. 52: Pinching Hooks On Clips With Pair Of Pliers
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. If the side curtain airbag has deployed, replace the grab handle, along with the other parts listed for side curtain airbag deployment (see **COMPONENT REPLACEMENT/INSPECTION AFTER DEPLOYMENT**).
6. If the side curtain airbag has not deployed, inspect the grab handle for damage. A damaged grab handle may cause the side curtain airbag to deploy improperly, possibly causing injury. Replace the grab handle if it has any of the following damage:
   - Any cracks or damage in the grab handle (A)
   - Any cracks or stress-whitening in the caps (B)

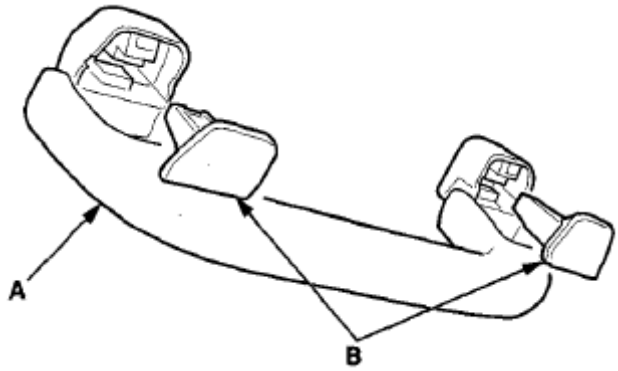


Fig. 53: Identifying Grab Handle And Caps
Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Install the clips (A) on the grab handle (B), then insert the caps (C) fully into the clips.

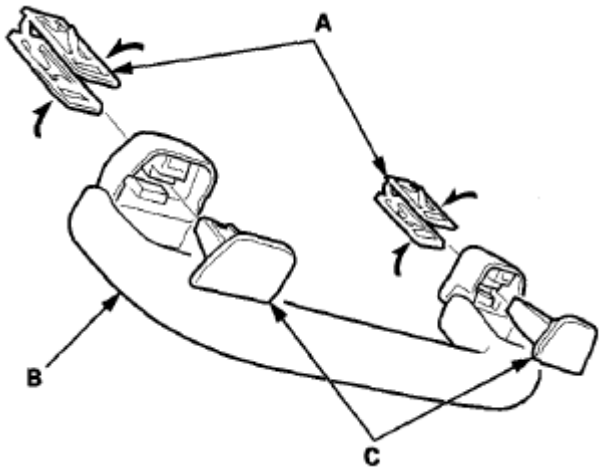


Fig. 54: Identifying Clips, Grab Handle And Caps
Courtesy of AMERICAN HONDA MOTOR CO., INC.

8. Position the grab handle (A) on the mounting bracket (B), and push on the grab handle until the clips (C) snap into place securely.

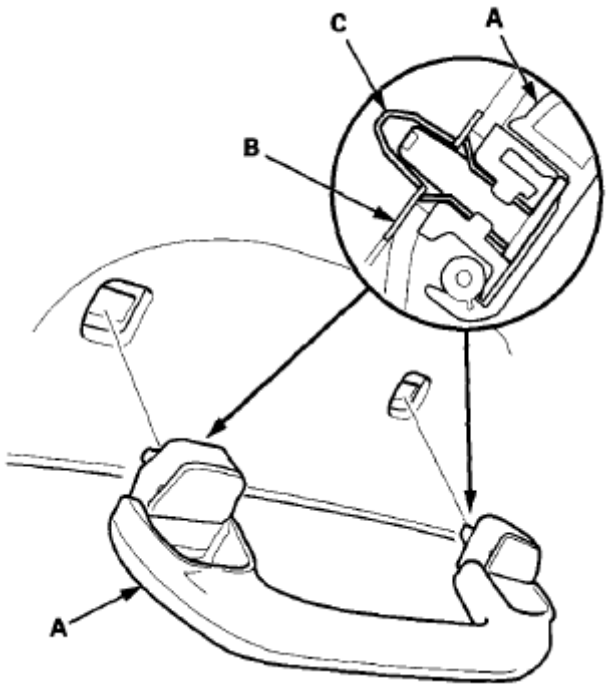


Fig. 55: Identifying Grab Handle, Mounting Bracket And Clips
Courtesy of AMERICAN HONDA MOTOR CO., INC.

HEADLINER REMOVAL/INSTALLATION

Special Tools Required

KTC Trim Tool Set SOJATP2014*

*Available through the Acura Tool and Equipment Program; call 888-424-6857

SRS components are located in this area. Review the SRS component locations (see **COMPONENT LOCATION INDEX**) and the precautions and procedures (see **PRECAUTIONS AND PROCEDURES**) before doing repairs or service.

NOTE:

- **Have an assistant help you when removing and installing the headliner.**
- **Put on gloves to protect your hands.**
- **Take care not to bend or scratch the headliner.**
- **Be careful not to damage the dashboard or the interior trim.**
- **Use the appropriate tool from the KTC trim tool set to avoid damage when removing components.**

1. Remove the front seat head restraints, and hold down the rear seat head restraints. Slide both the front seats all the way back, and fully recline the seat-back.
2. Do the battery terminal disconnection procedure (see **BATTERY TERMINAL DISCONNECTION**

AND RECONNECTION), then wait at least 3 minutes before beginning work.

3. Remove these items:
   - A-pillar trims, both sides (see **A-PILLAR TRIM**)
   - B-pillar upper/lower trims, both sides (see **B-PILLAR UPPER/LOWER TRIM**)
   - C-pillar trims, both sides (see **C-PILLAR TRIM**)
   - Sunvisors and holders, both sides (see **SUNVISOR REMOVAL/INSTALLATION**)
   - Grab handles, four places (see **GRAB HANDLE REMOVAL/INSTALLATION**)
   - Center console (see **CENTER CONSOLE REMOVAL/INSTALLATION**)
   - Rear individual map light (see **REAR INDIVIDUAL MAP LIGHT INPUT TEST/REPLACEMENT**)
   - High mount brake light cover (see **LICENSE PLATE LIGHT REPLACEMENT**)
   - Shift cable (see **SHIFT CABLE REPLACEMENT**)
   - Shift lever bracket base (see **SHIFT LEVER REMOVAL**)
4. Remove the roof console (A).
   1. Remove the screws, then pull down the roof console by detaching the clips.
   2. Disconnect the roof console connector (B), the moonroof switch connector (C), and the HFL microphone connector (D) (for some models).

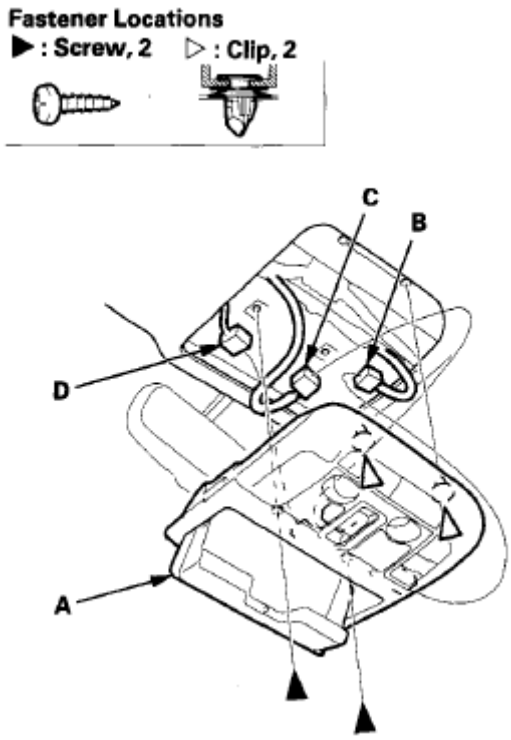


Fig. 56: Identifying Roof Console, Connector, Switch Connector And Phone Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Remove the rearview mirror harness cover. Disconnect the connector from the rearview mirror, and

release the wire harness from the rearview mirror harness cover base (see **REARVIEW MIRROR HARNESS COVER BASE REPLACEMENT**).

6. Driver's side: Disconnect the roof wire harness connector (A), and remove the roof wire harness (B) from the A-pillar by detaching the harness clips (C).

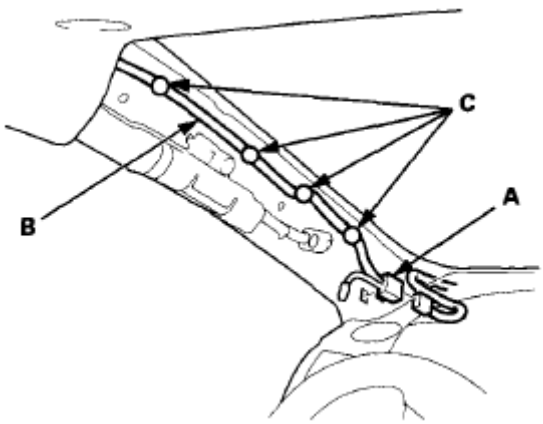


Fig. 57: Identifying Wire Harness Connector, Wire Harness And Harness Clips
Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Disconnect the moonroof subharness connector (A), and detach the harness clip (B) as shown.

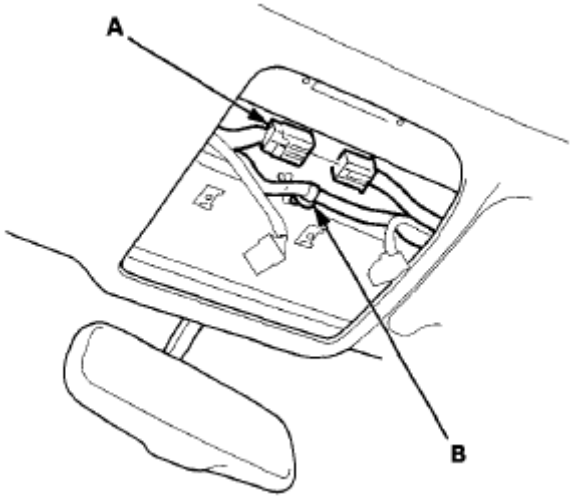


Fig. 58: Identifying Moonroof Subharness Connector And Harness Clip
Courtesy of AMERICAN HONDA MOTOR CO., INC.

8. Lower the headliner (A).
    1. Remove the front door opening seals (B) and the rear door opening seals (C) from each roof area.
    2. With the help of an assistant, detach the rear clips (D) by pulling down the rear area of the headliner.
    3. Detach the front clips (E), the magnet (F), and the Velcro fasteners (G) by pulling down the headliner at the moonroof opening.

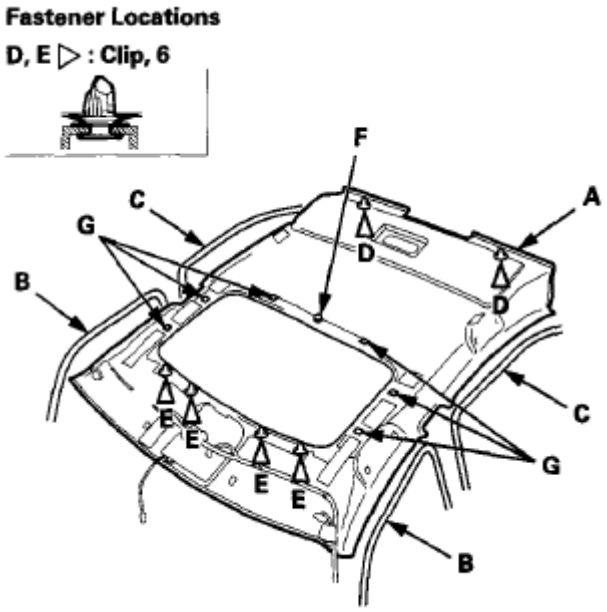


Fig. 59: Identifying Headliner, Door Opening Seals, Rear And Front Clips, Magnet And Velcro Fasteners
Courtesy of AMERICAN HONDA MOTOR CO., INC.

9. Remove the headliner (A) from the vehicle.
    1. Lower the headliner.
    2. Move the headliner rearward.
    3. Lower the front of the headliner below the dashboard.
    4. Rotate the headliner to point the front corner outside of the passenger's front door opening and the rear corner outside of the driver's front door opening.
    5. Pull the headliner and the roof wire harness (B) out through the passenger's front door.

NOTE: Do not bend the headliner. Bending the headliner will crease and damage it.

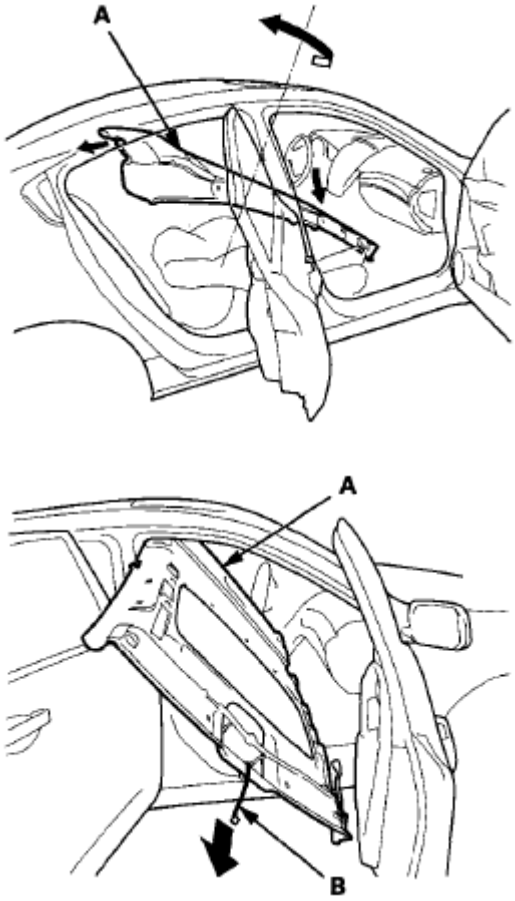


Fig. 60: Identifying Headliner And Roof Wire Harness
Courtesy of AMERICAN HONDA MOTOR CO., INC.

10. If necessary, remove the cushion tapes fastening the roof wire harness (A) to the headliner (B), then remove the harness from the headliner.

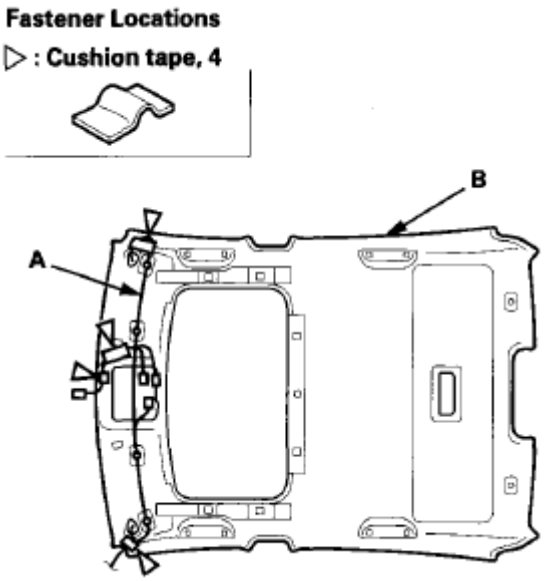


Fig. 61: Identifying Roof Wire Harness And Headliner
Courtesy of AMERICAN HONDA MOTOR CO., INC.

11. If necessary, remove the front grab handle bracket (A) and the rear grab handle bracket (B). Take care not to damage the side curtain airbag.
    1. Remove the side curtain airbag mounting bolts (C, D).
    2. Release the tabs (E) holding the grab handle bracket to the side curtain airbag, and remove the bracket.

    Front

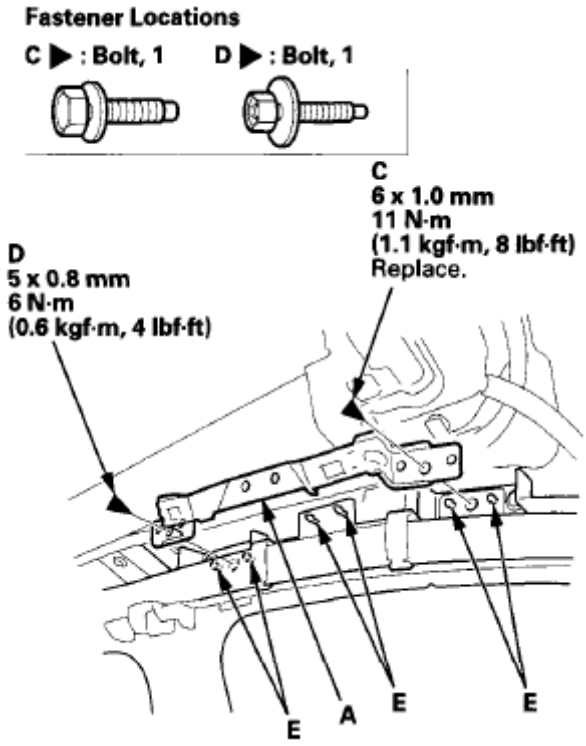


Fig. 62: Identifying Front Grab Handle Bracket, Mounting Bolts And Tabs (Front) With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Rear

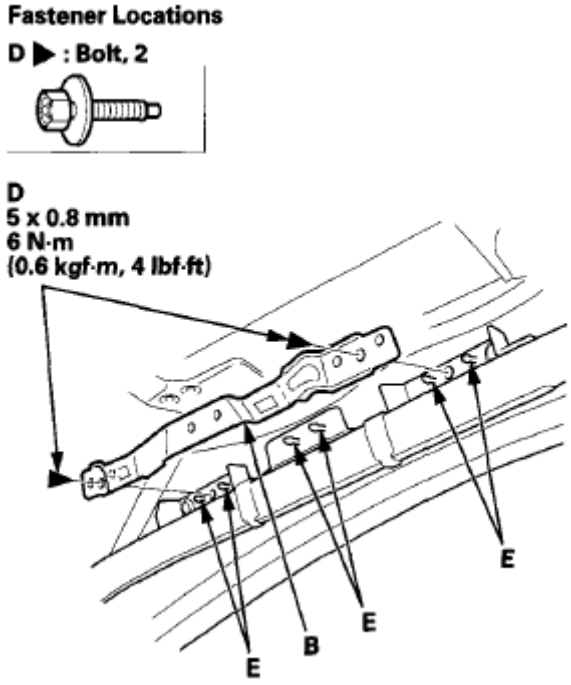


Fig. 63: Identifying Rear Grab Handle Bracket, Mounting Bolts And Tabs (Rear) With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

12. Install the headliner in the reverse order of removal, and note these items:
    - If the side curtain airbag has deployed, replace the headliner, along with the other parts listed for side curtain airbag deployment (see **COMPONENT REPLACEMENT/INSPECTION AFTER DEPLOYMENT**).
    - To prevent the side curtain airbags from deploying improperly and possibly causing injury, inspect the headliner and all removed trim. Replace any pieces with the following damage:
        - Any creases or tears in the headliner (A)
        - Any cracks or breakage in the grab handle (B)
        - Any damages around the grab handle holes (C) or sunvisor holes (D) in the headliner
        - Any cracks in the sunvisor stay base (E)
        - Any cracks in the sunvisor bracket cover (F)
        - Any bends or cracks in the sunvisor stay shaft (G)
        - Any cracks in the sunvisor base (H)
        - Any cracks or breakage in the vanity mirror base (I)
        - Any fastener bases (J), stiffeners (K), magnet (L), or clip bases (M) which have come off the headliner
    - When installing the grab handle, push on the handle against the bracket (N) until the clips (0) snap into place securely.
    - If the clips are damaged or stress-whitened, replace them with new ones.
    - Replace the removed cushion tapes with new pieces.
    - Check that both sides of the headliner are securely attached to the body.
    - Make sure the headliner overlaps the trim pieces correctly (see **B-PILLAR TRIM**).
    - Be careful not to crease or damage the headliner when reinstalling it through the front passenger's door opening. Also be careful not to scratch the body.
    - Push the clips and the hooks into place securely.

Headliner

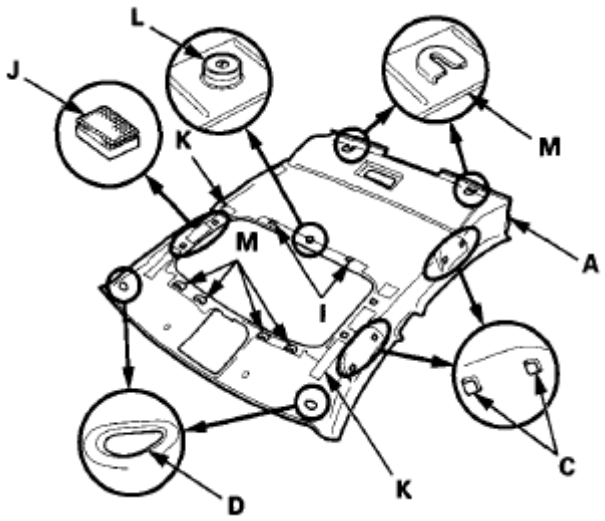


Fig. 64: Identifying Headliner Related Components
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Grab handle

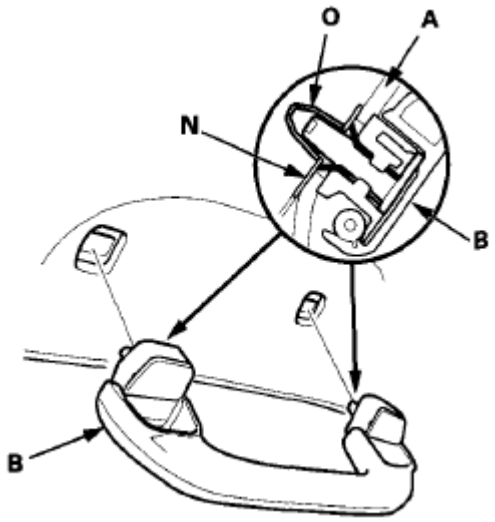


Fig. 65: Identifying Grab Handle Related Components
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Sunvisor

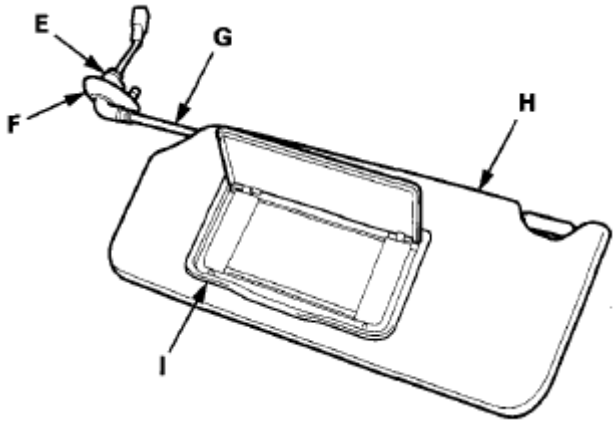


Fig. 66: Identifying Sunvisor Related Components
Courtesy of AMERICAN HONDA MOTOR CO., INC.

FRONT CARPET REPLACEMENT

Special Tools Required

KTC Trim Tool Set SOJATP2014*

*Available through the Acura Tool and Equipment Program; call 888-424-6857

SRS components are located in this area. Review the SRS component locations (see **COMPONENT LOCATION INDEX**) and the precautions and procedures (see **PRECAUTIONS AND PROCEDURES**) before doing repairs or service.

NOTE:

- **Put on gloves to protect your hands.**
- **Take care not to damage, wrinkle, or twist the carpet.**
- **Be careful not to damage the dashboard or the other interior trim pieces.**
- **Use the appropriate tool from the KTC trim tool set to avoid damage when removing components.**
- **When prying with a flat-tip screwdriver, wrap it with protective tape to prevent damage.**

1. Remove these items:
   - Front seats, both sides (see **FRONT SEAT REMOVAL/INSTALLATION**)
   - Kick panels, both sides (see **FRONT DOOR SILL AREA**)
   - Driver's dashboard undercover (see **DRIVER'S DASHBOARD UNDERCOVER REMOVAL/INSTALLATION**)
   - Passenger's dashboard undercover (see **GLOVE BOX DAMPER REPLACEMENT**)
   - Center console (see **CENTER CONSOLE REMOVAL/INSTALLATION**)
   - Steering joint cover (see **STEERING COLUMN REMOVAL AND INSTALLATION**)

- Shift cable (see **SHIFT CABLE REPLACEMENT**)
- Shift lever bracket base (see **SHIFT LEVER REMOVAL**)

2. Release the hooks (A), then remove the accelerator pedal clip (B).

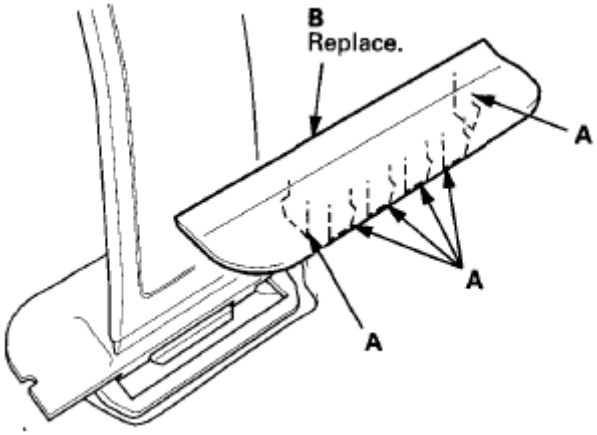


Fig. 67: Identifying Hooks And Accelerator Pedal Clip
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. While pushing down the return spring (A) with a flat-tip screwdriver, pull back the accelerator pedal (B) to release the hook (C).

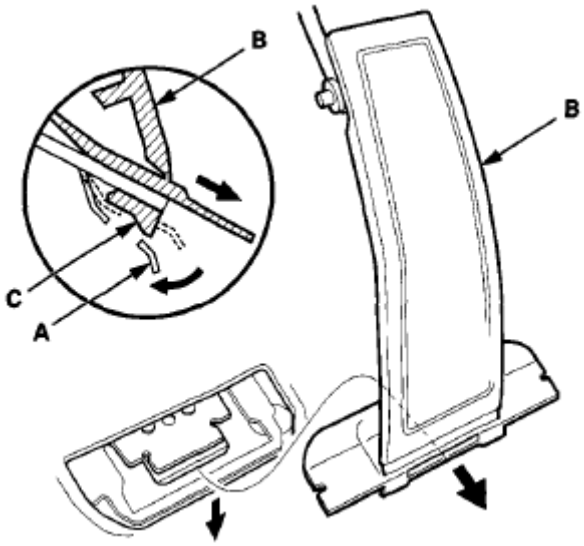


Fig. 68: Pulling Back Accelerator Pedal To Release Hook
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Remove the footrest (A) by pulling it to detach the clips.

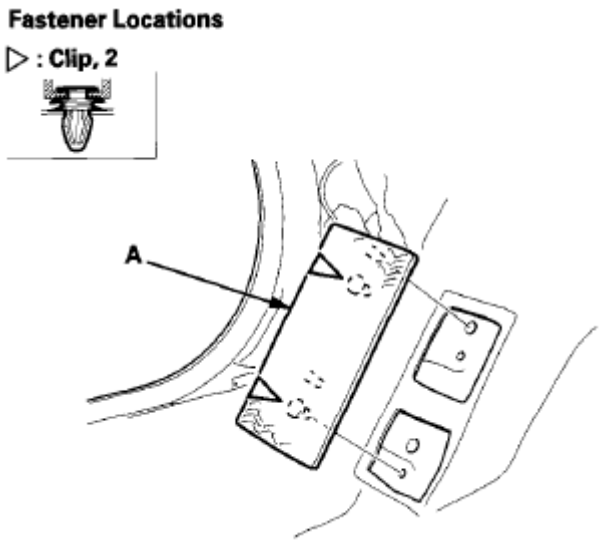


Fig. 69: Identifying Footrest
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Remove the bolts, then remove the yaw rate-lateral/(longitudinal) acceleration sensor mounting bracket (A). Detach the harness clips (C), and remove the TORX ground bolt (D) with a TORX T30 bit. Disconnect the SRS unit connector B.

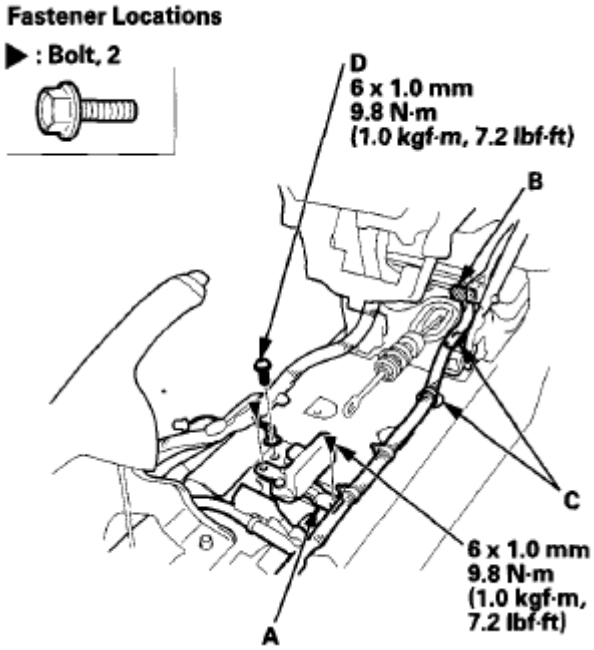


Fig. 70: Identifying Acceleration Sensor Mounting Bracket, Detach Harness Clips And Torx Ground Bolt With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Detach the clips (A, B) fastening the carpet to both door sill areas.

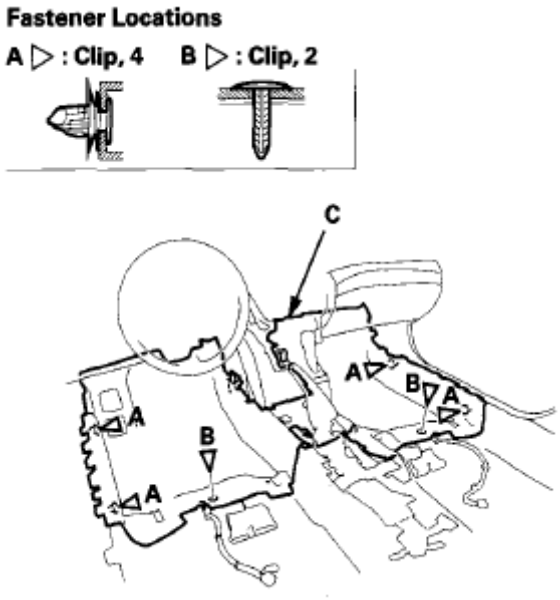


Fig. 71: Identifying Clips And Front Carpet
Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Pull out the front carpet (C) from under the dashboard, then remove the carpet.
8. If necessary, release the hook (A) that is just under the arrow mark (B) on the floor mat holder (C) by prying up on the holder with a flat-tip screwdriver, and remove the holder through the slit (D) in the carpet (E).

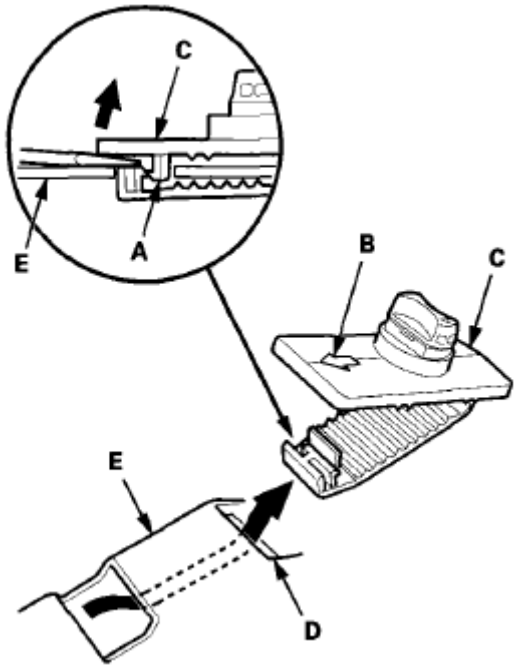


Fig. 72: Removing Holder Through Slit In Carpet
Courtesy of AMERICAN HONDA MOTOR CO., INC.

9. Install the front carpet in the reverse order of removal, and note these items:
    - If the clips are damaged or stress-whitened, replace them with new ones.
    - If you remove the accelerator pedal clip, replace it with a new one.
    - If necessary, adjust the parking brake cable (see **PEDAL FREE PLAY**).
    - Push the clips into place securely.

REAR CARPET REPLACEMENT

Special Tools Required

KTC Trim Tool Set SOJATP2014*

*Available through the Acura Tool and Equipment Program; call 888-424-6857

SRS components are located in this area. Review the SRS component locations (see **COMPONENT LOCATION INDEX**) and the precautions and procedures (see **PRECAUTIONS AND PROCEDURES**) before doing repairs or service.

NOTE:

- **Put on gloves to protect your hands.**
- **Take care not to damage, wrinkle, or twist the carpet.**
- **Use the appropriate tool from the KTC trim tool set to avoid damage when removing components.**

1. Remove these items:
    - Front seats, both sides (see **FRONT SEAT REMOVAL/INSTALLATION**)
    - Front door sill trims, both sides (see **FRONT DOOR SILL AREA**)
    - Rear door sill trims, both sides (see **REAR DOOR SILL AREA**)
    - Center console (see **CENTER CONSOLE REMOVAL/INSTALLATION**)
    - Rear seat cushion (see **REAR SEAT REMOVAL/INSTALLATION**)
    - Shift cable (see **SHIFT CABLE REPLACEMENT**)
    - Shift lever bracket base (see **SHIFT LEVER REMOVAL**)
2. Remove the bolts, then remove the yaw rate-lateral/(longitudinal) acceleration sensor mounting bracket (A). Detach the harness clips (C), and remove the TORX ground bolt (D) with a TORX T30 bit. Disconnect the SRS unit connector B.

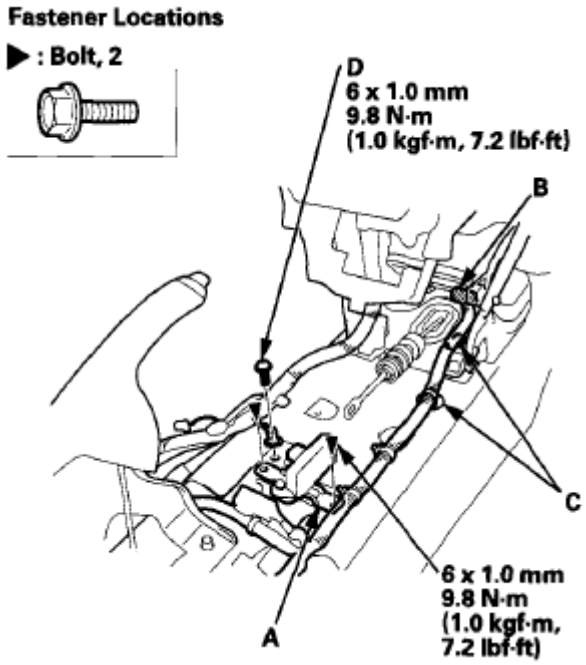


Fig. 73: Identifying Acceleration Sensor Mounting Bracket, Harness Clips And Remove Torx Ground Bolt With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Detach the clips (A) securing the front carpet (B) and the rear carpet (C).

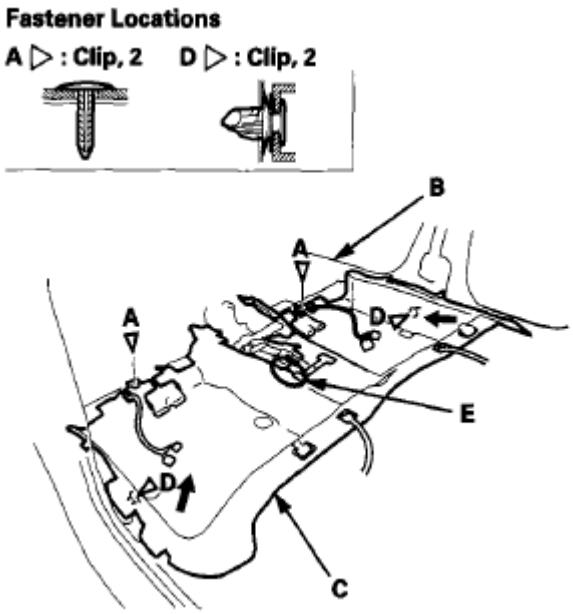


Fig. 74: Identifying Clips And Front Carpet And Rear Carpet
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Pull out the rear carpet by detaching the clips (D), cut the carpet in the area (E) shown, then remove the

carpet.

5. Install the rear carpet in the reverse order of removal, and note these items:
    - If the clips are damaged or stress-whitened, replace them with new ones.
    - Push the clips into place securely.

2012 ACCESSORIES & EQUIPMENT

Moonroof - TL

COMPONENT LOCATION INDEX

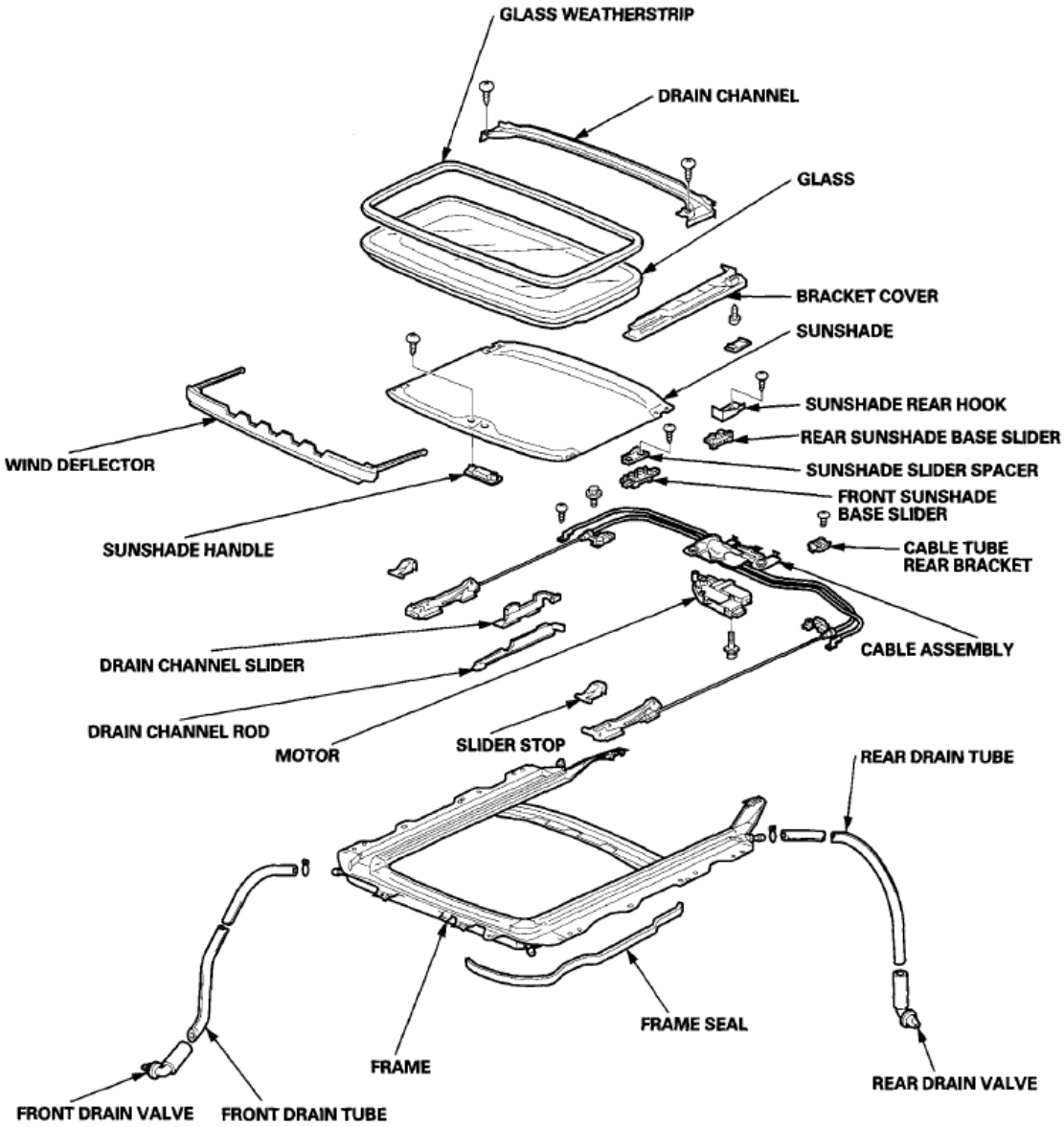


Fig. 1: Moonroof Components Location
Courtesy of AMERICAN HONDA MOTOR CO., INC.

SYMPTOM TROUBLESHOOTING INDEX

Symptom	Diagnostic procedure

Water leaks from moonroof	1. Check for a clogged or detached drain tube. 2. Check the glass position adjustment (see **GLASS POSITION ADJUSTMENT**). 3. Check for a defective or an improperly installed glass weatherstrip or drain channel. 4. Check for a gap between the drain channel seal and the roof panel.
Wind noise from moonroof	1. Check for excessive clearance between the glass weatherstrip and the roof panel. 2. Check the glass position adjustment (see **GLASS POSITION ADJUSTMENT**).
Motor noise from moonroof	1. Check for a loose motor. 2. Check for a worn gear or bearing. 3. Check for a deformed cable assembly. 4. Check for dirt or debris.
Moonroof glass does not move smoothly.	1. Check for a defective motor control unit (see **MOONROOF CONTROL UNIT INPUT TEST**). 2. Check the moonroof motor (see **MOONROOF CONTROL UNIT INPUT TEST**). 3. Check the glass position adjustment (see **GLASS POSITION ADJUSTMENT**). 4. Check the sliding parts.
Moonroof glass does not move, but motor turns	1. Check for foreign matter stuck between the guide rail and the slider. 2. Make sure the cable assembly is attached properly. 3. Check for a loose inner cable. 4. Check for a defective gear or inner cable.
Moonroof glass does not move and motor does not turn.	1. Check for a run down battery (see **BATTERY TEST**). 2. Check for a blown fuse. 3. Check for a faulty moonroof switch (see **MOONROOF SWITCH TEST/REPLACEMENT**). 4. Check for a defective motor control unit (see **MOONROOF CONTROL UNIT INPUT TEST**).
Moonroof glass does not stop at proper flush closed position	1. Reset the moonroof control unit (see **RESETTING THE MOONROOF CONTROL UNIT**). 2. Check the glass position adjustment (see **GLASS POSITION ADJUSTMENT**).
Moonroof glass moves in a jerking motion	

(moves 40 mm (1.57 in), stops for 0.4 seconds, and repeats)	Reset the moonroof control unit (see **RESETTING THE MOONROOF CONTROL UNIT**).
During auto close operation, moonroof glass reverses when no object is trapped	1. Check for dirt and debris in the track. 2. Reset the moonroof control unit (see **RESETTING THE MOONROOF CONTROL UNIT**).
Moonroof glass moves, but there is no AUTO function	Reset the moonroof control unit (see **RESETTING THE MOONROOF CONTROL UNIT**).

GLASS POSITION ADJUSTMENT

The roof panel (A) should be even with the glass weatherstrip (B), to within 0+1/- 1 mm (0+0.04/- 0.04 in) all the way around. If not, make the following adjustment:

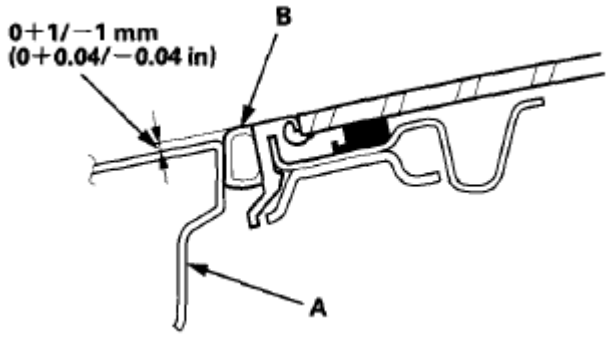


Fig. 2: Identifying Roof Panel And Glass Weatherstrip
Courtesy of AMERICAN HONDA MOTOR CO., INC.

1. Remove the bracket cover (see step 3).
2. Adjust the glass (A).
    1. Slightly loosen the TORX screws with a TORX T25 bit.
    2. Move the glass up or down.
    3. Tighten all bolts securely.

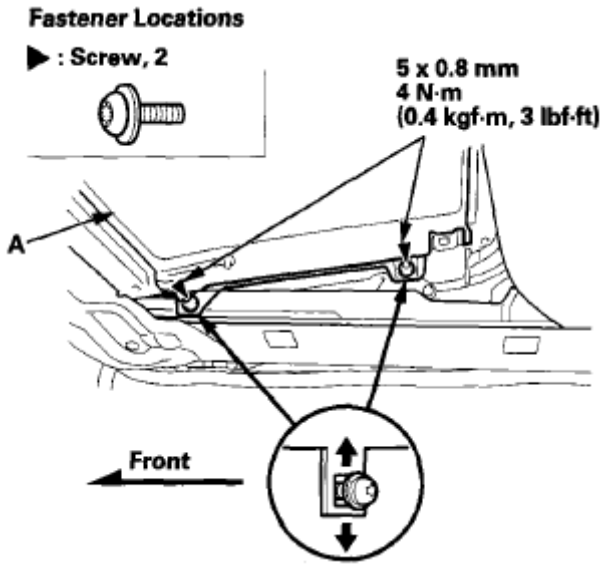


Fig. 3: Adjusting Glass With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. If necessary, repeat on the opposite side.
4. Reset the moonroof control unit (see **RESETTING THE MOONROOF CONTROL UNIT**).

GLASS REPLACEMENT

1. Close the glass fully.
2. Slide the sunshade all the way back.
3. Pry out the cap (A). Remove the screw (B), and release the guide pin (C), then remove the bracket cover (D). Repeat on the opposite side. Remove the TORX screws (E) with a TORX T25 bit from the glass brackets (F) on both sides.

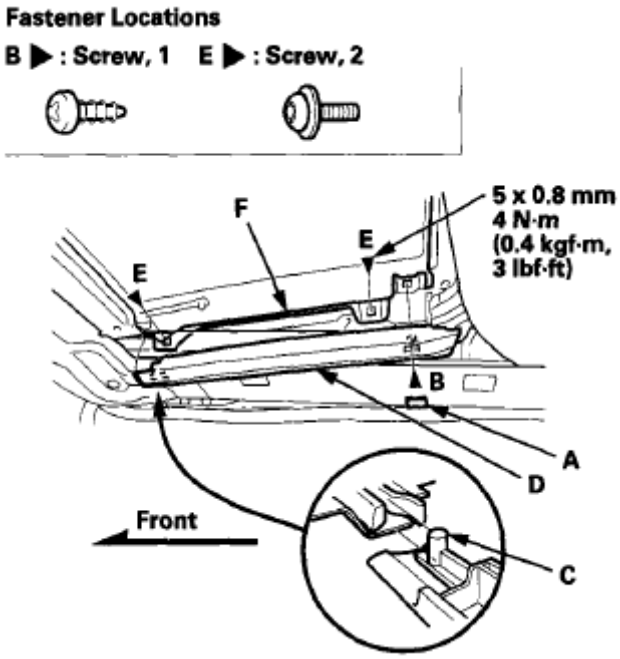


Fig. 4: Replacing Glass Using TORX T25 Bit With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Remove the glass (A) by lifting it up. Do not damage the roof panel.

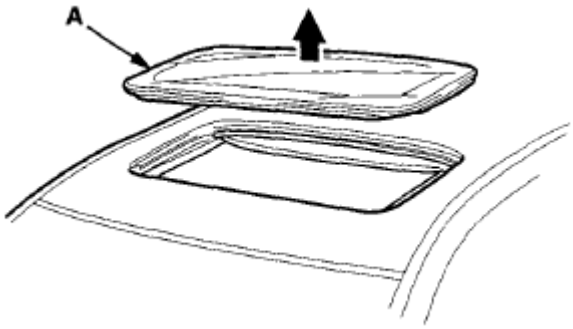


Fig. 5: Removing Glass By Lifting It Up
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Install the glass in the reverse order of removal, and check the glass position adjustment (see **GLASS POSITION ADJUSTMENT**).
6. Check for water leaks (see step 10 in **DOOR POSITION ADJUSTMENT** . Let the water run freely from a hose without a nozzle. Do not use a high-pressure spray.

NOTE: It is normal for some water to seep past the moonroof into the moonroof frame, and exit through the drains.

GLASS WEATHERSTRIP REPLACEMENT

1. Remove the moonroof glass (see **GLASS REPLACEMENT**).
2. Place a piece of masking tape (A) on the middle of the front edge of the moonroof glass (B). Make sure that the tape is on the glass only, and is not touching the weatherstrip.

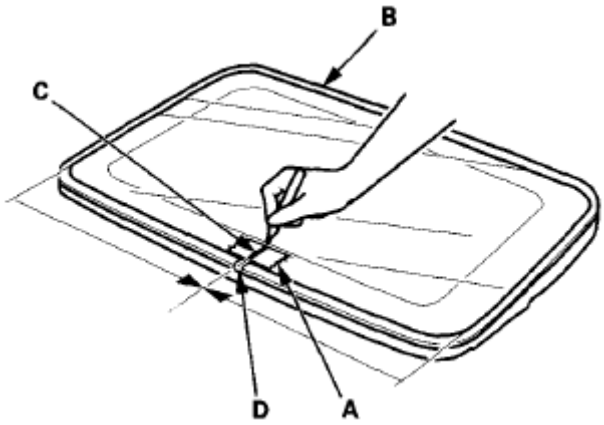


Fig. 6: Placing Piece Of Masking Tape On Middle Of Front Edge Of Moonroof Glass For Markings
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Place a mark (C) on the masking tape that aligns with the seam (D) of the weatherstrip.
4. Push down on the top of the original weatherstrip with your thumb until a small section separates from the moonroof glass. Once a section has started to separate, grip it and pull outward, working around the moonroof glass until the weatherstrip is completely removed (note the locations of the holes in the weatherstrip).
5. Align the seam (A) of the new weatherstrip (B) to the mark (C) on the masking tape (D). Make sure the holes are pointed in the same direction as noted in step 4.

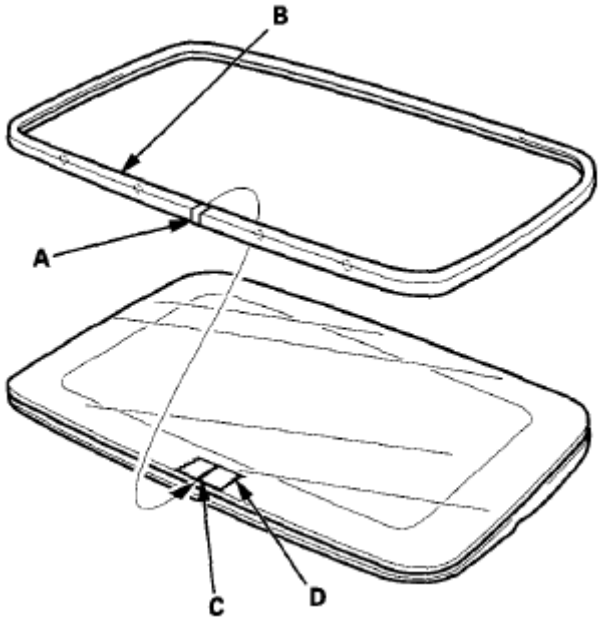


Fig. 7: Identifying Seam, Weatherstrip, Mark And Masking Tape

Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Press the ridge of the new weatherstrip into the groove on the moonroof glass starting at the seam. Work toward one corner; then go back to the middle and work toward the opposite corner.

NOTE: Be careful not to stretch the weatherstrip.

7. Continue pressing along one side, from corner to corner; then press along the opposite side, from corner to corner.
8. At the rear of the moonroof glass, continue pressing from one corner to the middle; then press from the opposite corner to the middle until the strip is completely installed.
9. Reinstall the moonroof glass (see **GLASS REPLACEMENT**).
10. Check for proper fit of the new weatherstrip by opening and closing the moonroof.

WIND DEFLECTOR REPLACEMENT

1. Open the glass fully.
2. Disconnect the deflector springs (A) from the bushings (B) on both sides.

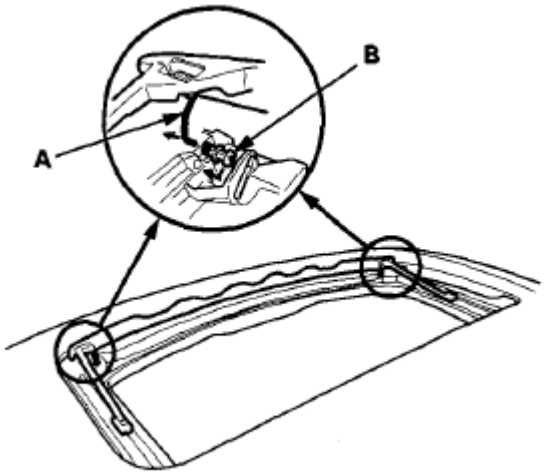


Fig. 8: Identifying Deflector Springs And Bushings
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Remove the wind deflector (A).

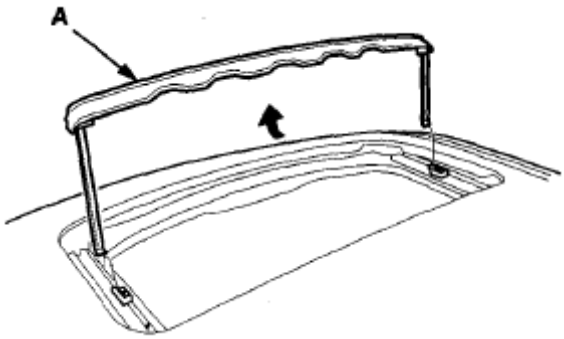


Fig. 9: Removing Wind Deflector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Install the deflector in the reverse order of removal.
5. Reset the moonroof control unit (see **RESETTING THE MOONROOF CONTROL UNIT**).

DRAIN CHANNEL REPLACEMENT

1. Remove the moonroof glass (see **GLASS REPLACEMENT**).
2. Remove the screws securing the drain channel (A).

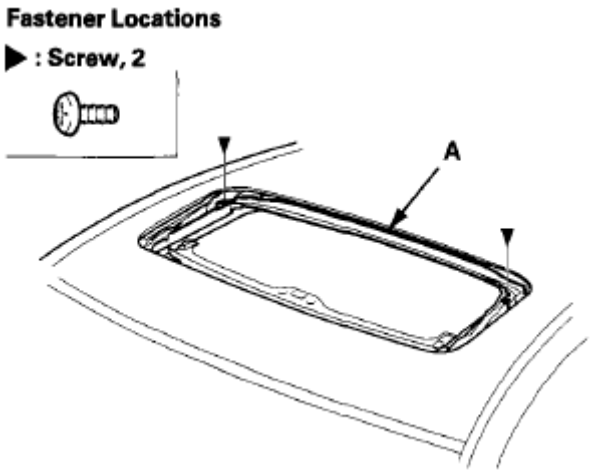


Fig. 10: Removing Screws Securing Drain Channel
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Release the drain channel from both hooks (A) of the drain channel slider by pulling it rearward.

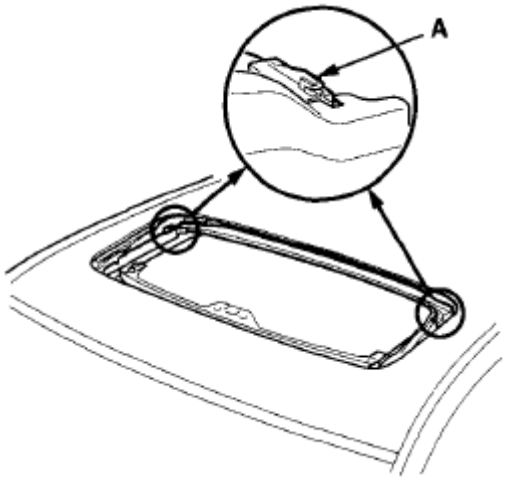


Fig. 11: Identifying Hooks Of Drain Channel Slider
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Remove the drain channel (A).

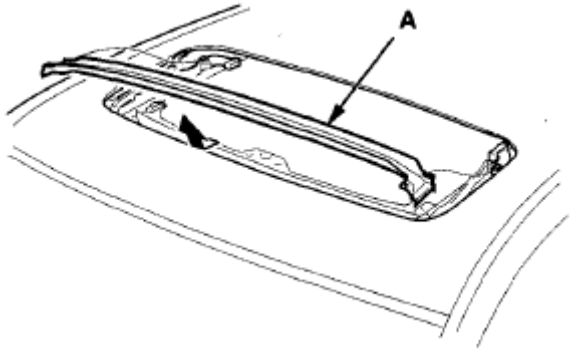


Fig. 12: Removing Drain Channel
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Install the channel in the reverse order of removal, and check the glass position adjustment (see **GLASS POSITION ADJUSTMENT**).
6. Check for water leaks (see step 10 in **DOOR POSITION ADJUSTMENT** . Let the water run freely from a hose without a nozzle. Do not use a high-pressure spray.

SUNSHADE REPLACEMENT

1. Remove the drain channel (see **DRAIN CHANNEL REPLACEMENT**).
2. Slide the sunshade all the way forward.
3. Disconnect both drain channel rods (A) from both glass brackets (B) by pulling the front of them inward, then remove the rods from both drain channel sliders (C) by lifting them up.

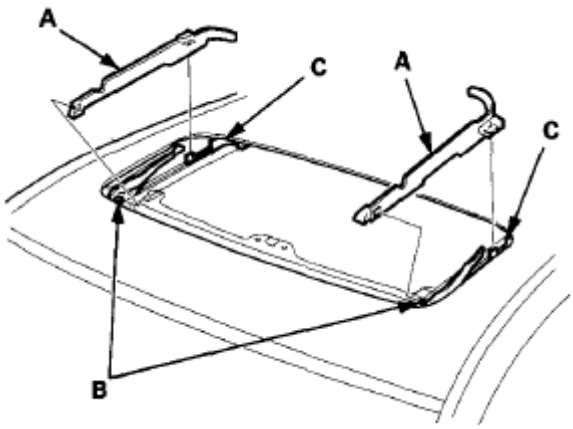


Fig. 13: Identifying Drain Channel Rods, Glass Brackets And Drain Channel Sliders
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Slide both drain channel sliders (A) forward until they contact both glass brackets (B).

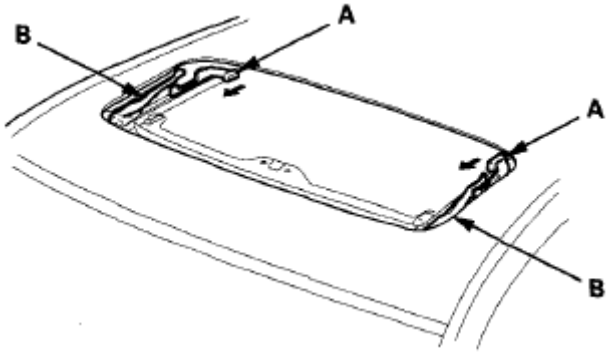


Fig. 14: Identifying Drain Slider Channel And Glass Brackets
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Remove the screws, then remove both sunshade slider spacers (A).

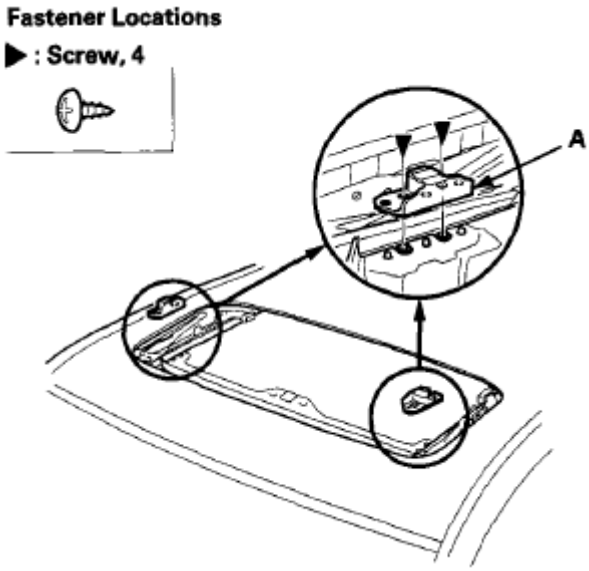


Fig. 15: Removing Screws From Sunshade Slider Spacers
Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. While lifting the front area of the sunshade (A), move the sunshade forward until you can see both sunshade rear hooks (B). Do not damage the sunshade or the hooks.

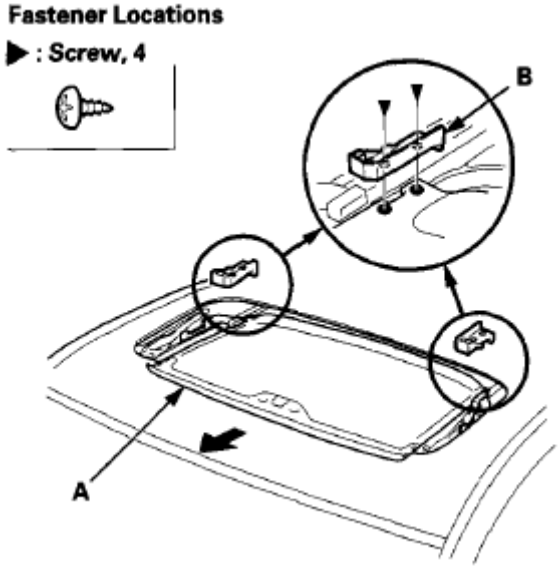


Fig. 16: Identifying Sunshade & Sunshade Rear Hooks
Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Remove the screws, then remove both hooks.
8. Remove the sunshade (A).

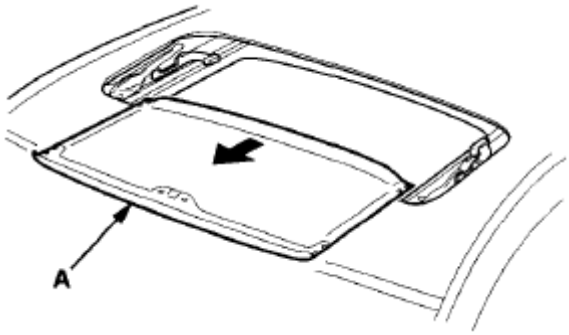


Fig. 17: Removing Sunshade
Courtesy of AMERICAN HONDA MOTOR CO., INC.

9. Remove both front sunshade base sliders (A) and both rear sunshade base sliders (B).

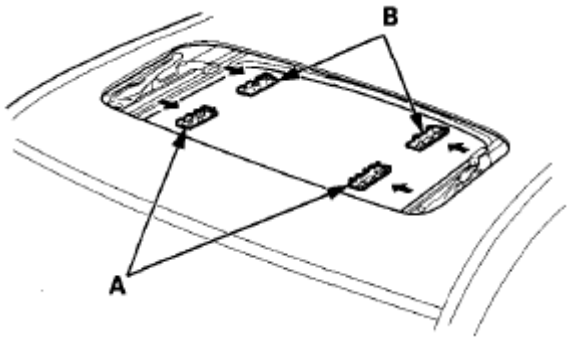


Fig. 18: Removing Front Sunshade Base Sliders And Rear Sunshade Base Sliders
Courtesy of AMERICAN HONDA MOTOR CO., INC.

10. Install the sunshade in the reverse order of removal, and check the glass position adjustment (see **GLASS POSITION ADJUSTMENT**).
11. Check for water leaks (see step 10 in **DOOR POSITION ADJUSTMENT** . Let the water run freely from a hose without a nozzle. Do not use a high-pressure spray.

MOTOR REPLACEMENT

NOTE: Put on gloves to protect your hands.

1. Remove the headliner (see **HEADLINER REMOVAL/INSTALLATION**).
2. Disconnect the connector (A), and remove the screws, then remove the motor (B).

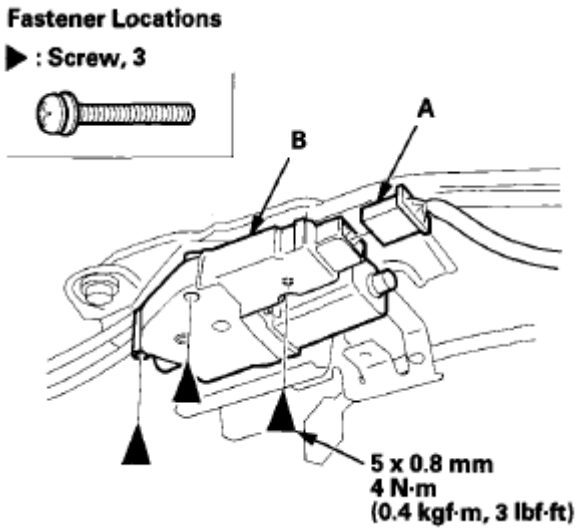


Fig. 19: Identifying Connector And Motor With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Install the motor in the reverse order of removal, and note these items:
   - Make sure the connector is plugged in properly.
   - Reset the moonroof control unit (see **RESETTING THE MOONROOF CONTROL UNIT**).
   - Check the motor operation.

FRAME AND DRAIN TUBE REPLACEMENT

SRS components are located in this area. Review the SRS component locations (see **COMPONENT LOCATION INDEX**) and the precautions and procedures (see **PRECAUTIONS AND PROCEDURES**) before doing repairs or service.

NOTE:
- **Put on gloves to protect your hands.**
- **Take care not to scratch the interior trim or the body, or tear the seat covers.**

1. Remove the headliner (see **HEADLINER REMOVAL/INSTALLATION**).
2. Disconnect the front drain tubes (A) and the rear drain tubes (B).

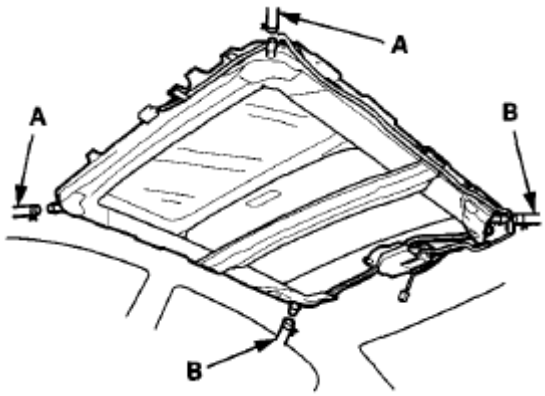


Fig. 20: Identifying Front Drain Tubes And Rear Drain Tubes
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Detach the clips (A) securing the roof wire harness (B) and the moonroof motor subharness (C) from the moonroof frame (D).

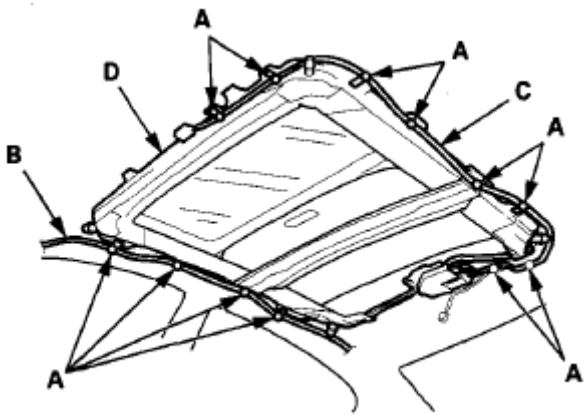


Fig. 21: Identifying Clips, Roof Wire Harness, Moonroof Motor Subharness And Moon Roof Frame
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. With an assistant holding the frame (A), remove the bolts starting at the rear, and release the rear hook (B) by moving the frame forward.

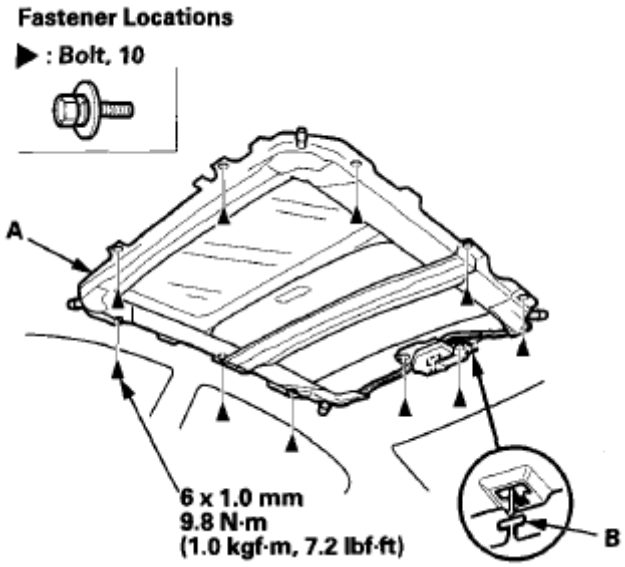


Fig. 22: Identifying Frame And Rear Hook With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. With the help of an assistant, carefully remove the frame through the front door opening.

Front Drain Tube

6. Remove these items:
   - Passenger's dashboard undercover (see **GLOVE BOX DAMPER REPLACEMENT**)
   - Passenger's side: EPS control unit (see **RACK GUIDE REMOVAL/INSTALLATION**)
7. Pull the front drain valve (A) out of the body hole. Tie a string to the top end of the drain tube (B), then pull the drain tube down out of the A-pillar. Leave the string in the pillar to use when reinstalling the drain tube.

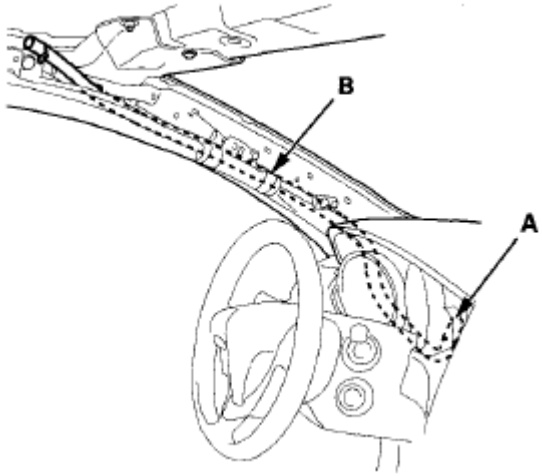


Fig. 23: Identifying Front Drain Drive And Drain Tube
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Rear Drain Tube

8. Remove these items from the trunk compartment (see **TRIM REMOVAL/INSTALLATION - TRUNK AREA**):
   - Trunk floor
   - Tool box spacer
   - Trunk rear trim panel
   - Trunk side trim panel
9. Pull the rear drain valve (A) out of the body hole. Tie a string to the top end of the rear drain tube (B), then pull the drain tube down out of the C-pillar. Leave the string in the pillar to use when reinstalling the drain tube.

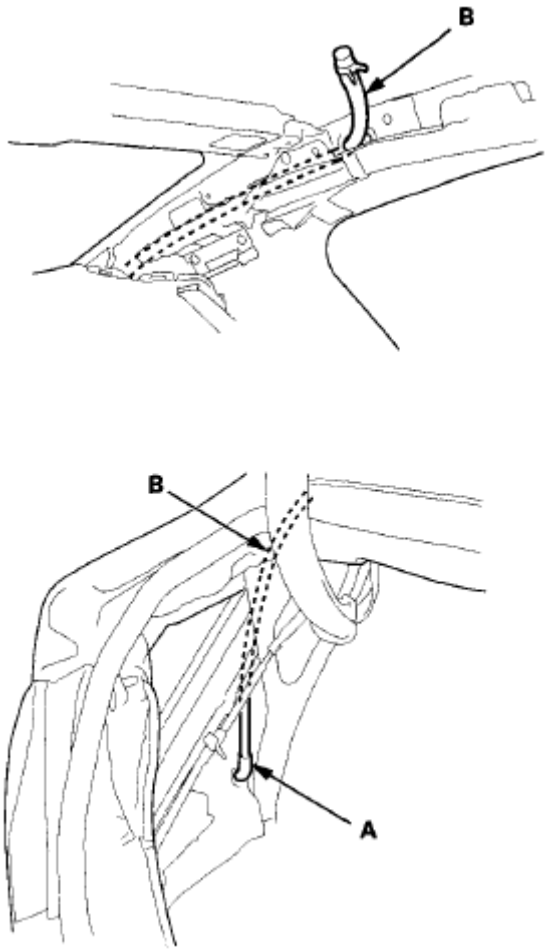


Fig. 24: Identifying Rear Drain Valve
Courtesy of AMERICAN HONDA MOTOR CO., INC.

10. Install the frame and the drain tube in the reverse order of removal, and note these items:
    - Before installing the frame, clear the drain tubes and the drain valves using compressed air.
    - To install a new drain tube, tie the string left in the body during drain tube removal to the top end of

the new drain tube, and pull it up into the roof.

- Check the frame seal.
- Clean the surface of the frame.
- When installing the frame, first attach the rear hook into the body holes.
- Make sure each connector is plugged in properly.
- When connecting the drain tubes, slide them over the frame nozzles at least 10 mm (0.39 in).
- Install the tube clips (A) on the drain tubes (B) as shown.

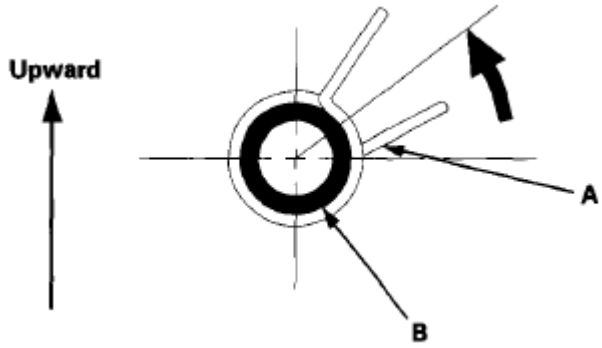


Fig. 25: Installing Tube Clips On Drain Tubes
Courtesy of AMERICAN HONDA MOTOR CO., INC.

11. Check for water leaks (see step 10 in **DOOR POSITION ADJUSTMENT** . Let the water run freely from a hose without a nozzle. Do not use a high-pressure spray.

DRAIN CHANNEL SLIDER AND CABLE ASSEMBLY REPLACEMENT

NOTE: Put on gloves to protect your hands.

1. Remove the frame (see **FRAME AND DRAIN TUBE REPLACEMENT**).
2. Remove these parts from the frame:
   - Sunshade (see **SUNSHADE REPLACEMENT**)
   - Moonroof motor (see **MOTOR REPLACEMENT**)
3. Remove the screws (A) securing the cable tube rear brackets (B). Remove the cable tube side bracket mounting bolts (C) and the cable tube mounting screws (D) from both sides of the frame (E).

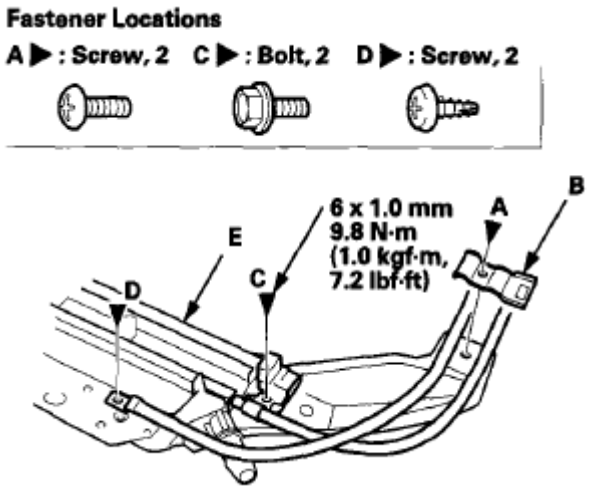


Fig. 26: Identifying Screws, Cable Tube Rear Brackets, Mounting Bolts, Cable Tube Mounting Screws And Frame With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Turn both cable tube side brackets (A) up to release the hooks (B) from the holes in both sides of the frame.

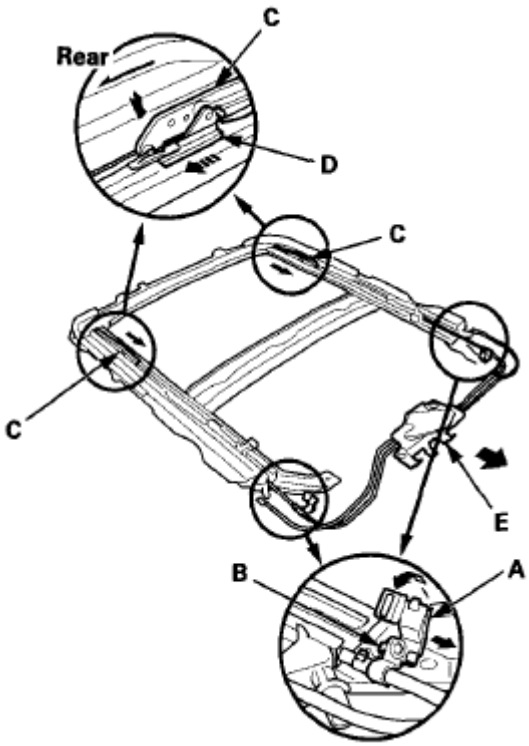


Fig. 27: Turning Cable Tube Side Brackets Up To Release Hooks From Holes In Both Sides Of Frame
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Pivot the glass brackets (C) down by sliding the link lifters (D) back, then slide both glass brackets back with the link lifters.
6. Slide the cable assembly (E) half-way back.
7. Release the rear hooks of the slide stops (A) by pushing them forward, then pivot the stops up.

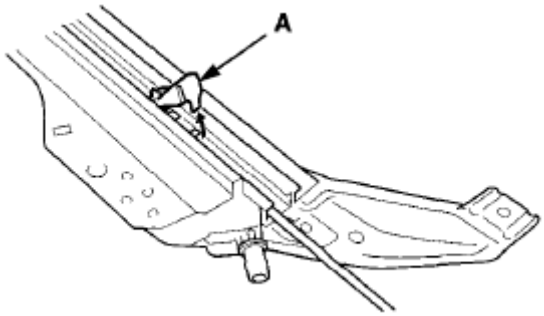


Fig. 28: Identifying Slide Stops
Courtesy of AMERICAN HONDA MOTOR CO., INC.

8. Remove the slide stops (A) and the drain channel sliders (B) from both sides.

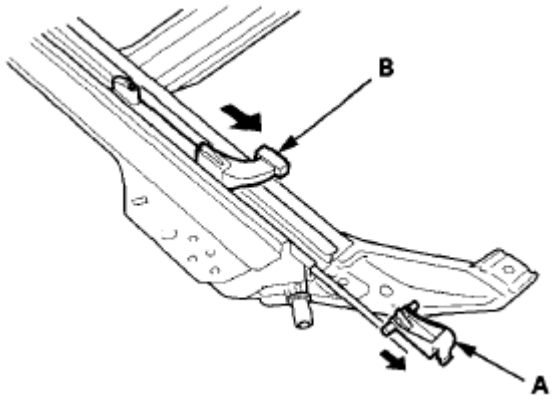


Fig. 29: Removing Slide Stops And Drain Channel Sliders
Courtesy of AMERICAN HONDA MOTOR CO., INC.

9. Slide the cable assembly (A) and both glass brackets (B) back, from both brackets, then remove them from the frame (C).

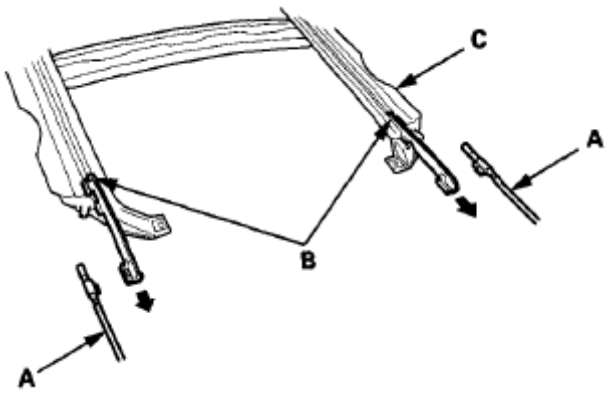


Fig. 30: Sliding Cable Assembly And Glass Brackets Back
Courtesy of AMERICAN HONDA MOTOR CO., INC.

10. Install the drain channel slider and cable assembly in the reverse order of removal, and note these items:
    - Damaged parts should be replaced.
    - Apply multipurpose grease to the glass brackets (A) and the guide rail area of the frame (B) indicated by the arrows.
    - Before reinstalling the motor, make sure both link lifters are parallel, and in the tilt up position.
    - Before reinstalling the motor, install the frame and the glass.
    - After reinstalling the motor, reset the moonroof control unit (see **RESETTING THE MOONROOF CONTROL UNIT**).

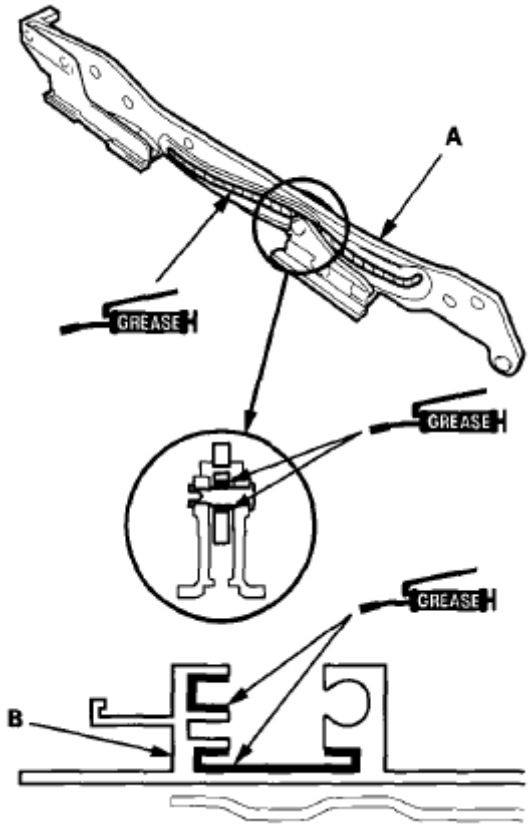


Fig. 31: Identifying Glass Brackets And Frame
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2012 ACCESSORIES & EQUIPMENT

Power Moonroof - TL

COMPONENT LOCATION INDEX

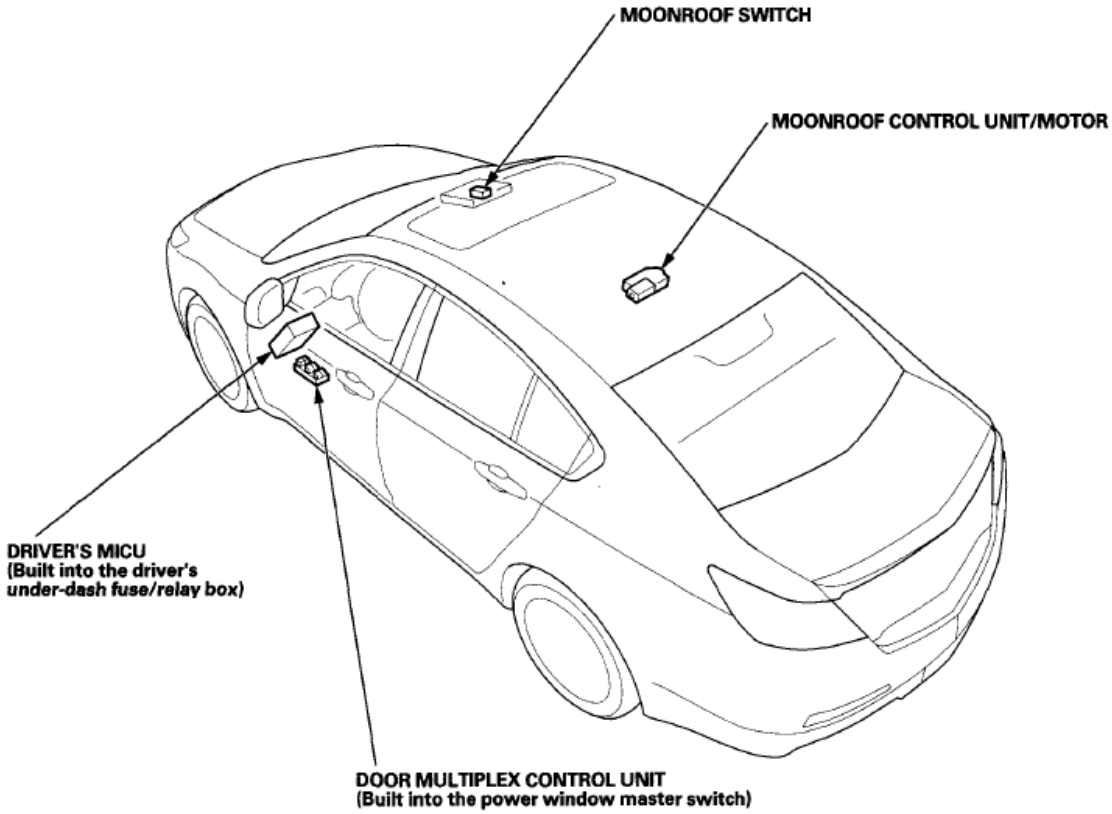


Fig. 1: Power Moonroof Components Location
Courtesy of AMERICAN HONDA MOTOR CO., INC.

SYMPTOM TROUBLESHOOTING INDEX

Symptom	Diagnostic procedure
Water leaks from moonroof	1. Check for a clogged or detached drain tube. 2. Check the glass position adjustment (see **GLASS POSITION ADJUSTMENT**). 3. Check for a defective or an improperly installed glass weatherstrip or drain channel. 4. Check for a gap between the drain channel seal and the roof panel.
	1. Check for excessive clearance between the glass weatherstrip and the roof panel.

Wind noise from moonroof	2. Check the glass position adjustment (see **GLASS POSITION ADJUSTMENT**).
Motor noise from moonroof	1. Check for a loose motor. 2. Check for a worn gear or bearing. 3. Check for a deformed cable assembly. 4. Check for dirt or debris.
Moonroof glass does not move smoothly.	1. Check for a defective motor control unit (see **MOONROOF CONTROL UNIT INPUT TEST**). 2. Check the moonroof motor (see **MOONROOF CONTROL UNIT INPUT TEST**). 3. Check the glass position adjustment (see **GLASS POSITION ADJUSTMENT**). 4. Check the sliding parts.
Moonroof glass does not move, but motor turns	1. Check for foreign matter stuck between the guide rail and the slider. 2. Make sure the cable assembly is attached properly. 3. Check for a loose inner cable. 4. Check for a defective gear or inner cable.
Moonroof glass does not move and motor does not turn.	1. Check for a run down battery (see **BATTERY TEST**). 2. Check for a blown fuse. 3. Check for a faulty moonroof switch (see **MOONROOF SWITCH TEST/REPLACEMENT**). 4. Check for a defective motor control unit (see **MOONROOF CONTROL UNIT INPUT TEST**).
Moonroof glass does not stop at proper flush closed position	1. Reset the moonroof control unit (see **RESETTING THE MOONROOF CONTROL UNIT**). 2. Check the glass position adjustment (see **GLASS POSITION ADJUSTMENT**).
Moonroof glass moves in a jerking motion (moves 40 mm (1.57 in), stops for 0.4 seconds, and repeats)	Reset the moonroof control unit (see **RESETTING THE MOONROOF CONTROL UNIT**).
During auto close operation, moonroof glass reverses when no object is trapped	1. Check for dirt and debris in the track. 2. Reset the moonroof control unit (see **RESETTING THE MOONROOF CONTROL UNIT**).
Moonroof glass moves, but there is no AUTO function	Reset the moonroof control unit (see **RESETTING THE MOONROOF CONTROL UNIT**).

RESETTING THE MOONROOF CONTROL UNIT

Reset the moonroof after doing any of the following actions:

- The moonroof was moved manually while the battery was dead or disconnected.
- The moonroof motor was removed or replaced with a new one.
- Any components related to the moonroof were replaced or removed and reinstalled.
    - Wind deflector
    - Moonroof glass
    - Moonroof seal
    - Moonroof glass bracket
    - Moonroof cables, etc.

To reset the moonroof control unit, do these steps:

1. Close the driver's door, and leave it closed until the procedure is complete.
2. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
3. Press and hold the tilt switch, and turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
4. Release the tilt switch, and turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
5. Repeat steps 3 and 4 four times.
6. Check if the AUTO OPEN and AUTO CLOSE functions still work. If they still work, the AUTO functions have not been cleared, go back to step 1. If the AUTO functions have been cleared, go to step 7.
7. Press and hold the moonroof open switch for at least 3 additional seconds after the moonroof is fully opened.
8. Press and hold the moonroof close switch for at least 3 additional seconds after the moonroof is fully closed (tilted).
9. Confirm that the moonroof control unit is reset by using the moonroof AUTO OPEN and AUTO CLOSE function.

CIRCUIT DIAGRAM

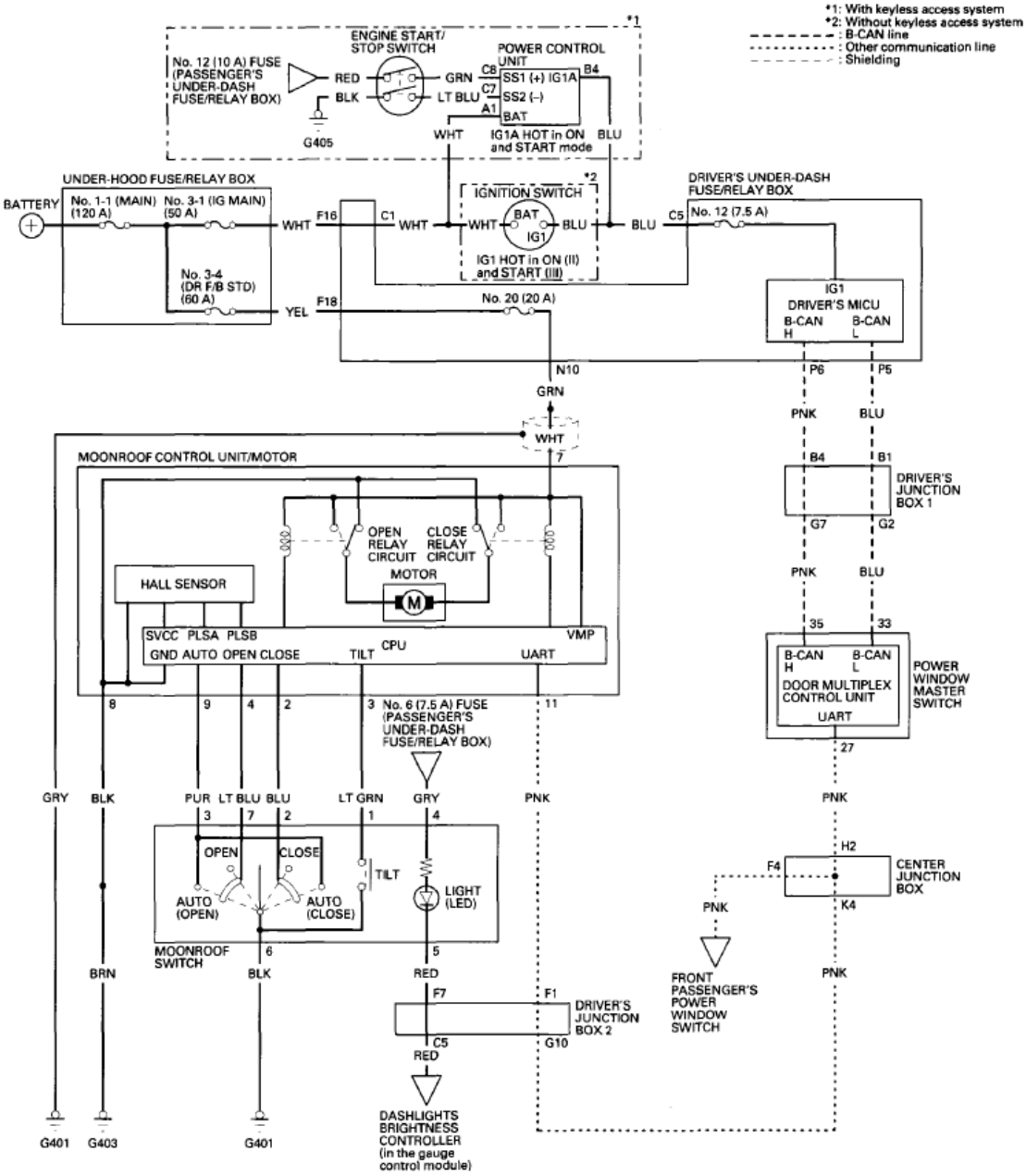


Fig. 2: Power Moonroof - Circuit Diagram
Courtesy of AMERICAN HONDA MOTOR CO., INC.

MOONROOF CONTROL UNIT INPUT TEST

NOTE:

- **If the moonroof works OK manually, but will not work in AUTO, or reverses frequently (obstacle detection), reset the moonroof (see RESETTING THE MOONROOF CONTROL UNIT) before proceeding with the input test.**
- **SRS components are located in this area. Review the SRS component locations (see COMPONENT LOCATION INDEX), and precautions and**

procedures (see PRECAUTIONS AND PROCEDURES) before doing repairs or servicing.

1. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
2. Remove the headliner (see **HEADLINER REMOVAL/INSTALLATION**).
3. Disconnect the 14P connector (A) from the moonroof control unit/motor (B).

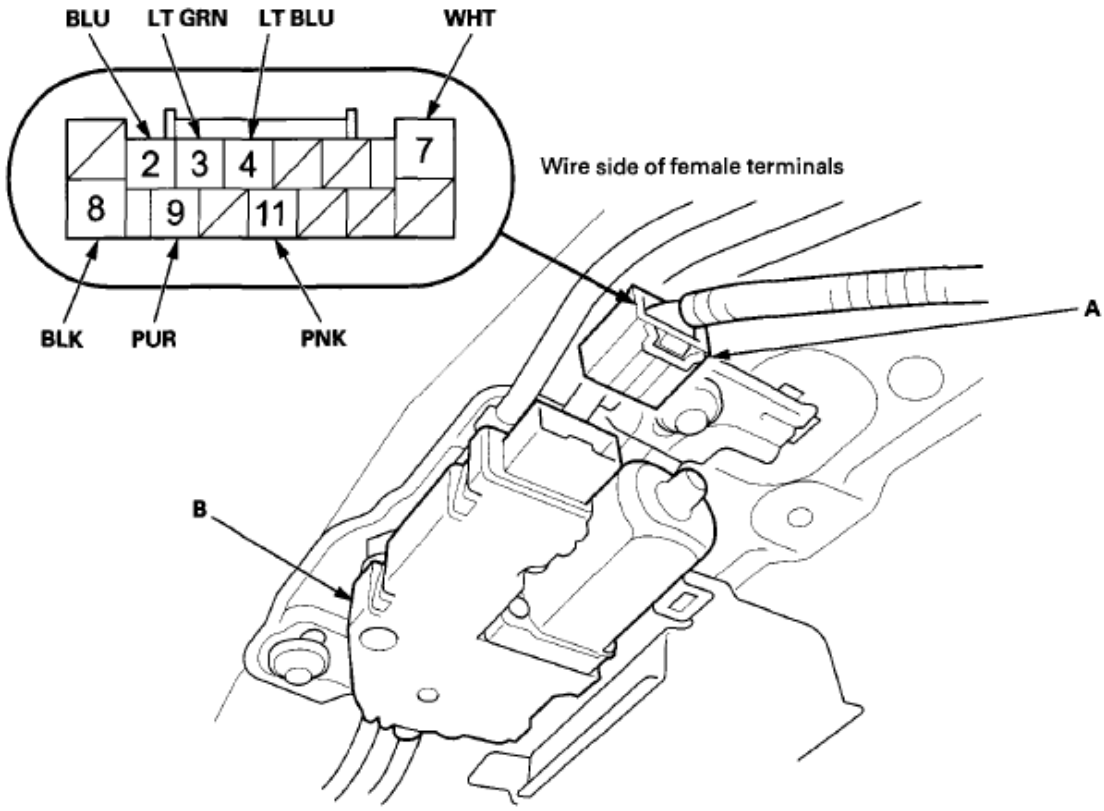


Fig. 3: Identifying 14P Connector End View And Moonroof Control Unit/Motor
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Inspect the connector and socket terminals to be sure they are all making good contact.
   - If the terminals are bent, loose, or corroded, repair them as necessary, and recheck the system.
   - If the terminals look OK, go to step 5.
5. With the moonroof control unit/motor 14P connector still disconnected, do the following input tests:
   - If any test indicates a problem, find and correct the cause, then recheck the system.
   - If the input test proves OK, go to step 6.

Cavity	Wire	Test condition	Test: Desired result	Possible cause if desired result is not obtained
			Check for continuity between moonroof switch 14P connector terminal No. 11	

11	PNK	Disconnect the power window master switch 37P connector and the front passenger's power window switch 37P connector	and power window master switch 37P connector terminal No. 27: There should be continuity.	An open in the UART wire
			Check for continuity to ground: There should be no continuity.	A short to ground in the UART wire

6. Reconnect the connector to the control unit, and do the following input tests:
   - If any test indicates a problem, find and correct the cause, then recheck the system.
   - If all the input tests prove OK, go to step 7.

Cavity	Wire	Test condition	Test: Desired result	Possible cause if desired result is not obtained
7	WHT	Under all conditions	Measure the voltage to ground: There should be battery voltage.	• Blown No. 20 (20 A) fuse in the driver's under-dash fuse/relay box • An open or high resistance in the wire
8	BLK	In all ignition switch positions or all power modes	Measure the voltage to ground: There should be less than 0.2 V.	• Poor ground(G403) • An open or high resistance in the ground wire
2	BLU	Ignition switch to ON (II), or power mode ON, moonroof switch in CLOSE position	Measure the voltage to ground: There should be less than 0.2 V.	• Faulty moonroof switch • Poor ground (G401) or an open in the ground wire • An open or high resistance in the wire
		Ignition switch to ON (II), or power mode ON, moonroof switch released	Measure the voltage to ground: There should be battery voltage.	• Blown No. 20 (20 A) fuse in the driver's under-dash fuse/relay box • Faulty driver's under-dash fuse/relay box • Faulty moonroof switch • A short to ground in the wire
		Ignition switch to ON (II), or power mode ON, moonroof switch in TILT position	Measure the voltage to ground: There should be less than 0.2 V.	• Faulty moonroof switch • Poor ground (G401) or an open in the ground wire

3	LT GRN	Ignition switch to ON (II), or power mode ON, moonroof switch released	Measure the voltage to ground: There should be battery voltage.	• An open or high resistance in the wire • Blown No. 20 (20 A) fuse in the driver's under-dash fuse/relay box • Faulty driver's under-dash fuse/relay box • Faulty moonroof switch • A short to ground in the wire
4	LT BLU	Ignition switch to ON (II), or power mode ON, moonroof switch in OPEN position	Measure the voltage to ground: There should be less than 0.2 V.	• Faulty moonroof switch • Poor ground (G401) or an open in the ground wire • An open or high resistance in the wire • Blown No. 20 (20 A) fuse in the driver's under-dash fuse/relay box • Faulty driver's under-dash fuse/relay box • Faulty moonroof switch • A short to ground in the wire
		Ignition switch to ON (II), or power mode ON, moonroof switch released	Measure the voltage to ground: There should be battery voltage.	
9	PUR	Ignition switch to ON (II), or power mode ON, moonroof switch in AUTO OPEN or AUTO CLOSE position	Measure the voltage to ground: There should be less than 0.2 V.	• Faulty moonroof switch • Poor ground (G401) or an open in the ground wire • An open or high resistance in the wire • Blown No. 20 (20 A) fuse in the driver's under-dash fuse/relay box • Faulty driver's under-dash fuse/relay box • Faulty moonroof switch • A short to ground in the wire
		Ignition switch to ON (II), or power mode ON, moonroof switch released	Measure the voltage to ground: There should be battery voltage.	

7. If all the input tests are OK and multiple failures are found, replace the moonroof control unit/motor assembly (see **MOTOR REPLACEMENT**). If the problem is related to the key-off operation, go to the driver's MICU input test (see **CONTROL UNIT INPUT TEST**), and power window master switch input test (see **POWER WINDOW MASTER SWITCH INPUT TEST**).

MOONROOF SWITCH TEST/REPLACEMENT

1. Remove the roof console (see **ROOF CONSOLE INPUT TEST/REPLACEMENT**).
2. Remove the two screws (A) then pull out the moonroof switch (B) from the roof console (C).

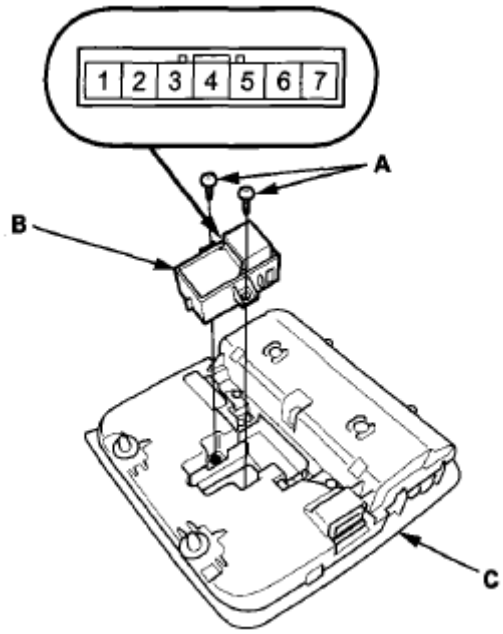


Fig. 4: Identifying Roof Console, Moonroof Switch And Screws With Connector End View
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Check for continuity between the terminals in each switch position according to the table.
   - Make sure the correct test lead (+ or -) is placed on the terminal.
   - When checking for continuity across the diode, use the diode setting on the digital volt/ohm meter to check the diode bias.
   - Be careful of this characteristic; a diode is one that conducts fully in one direction (forward) and not at all in the opposite direction (reverse).

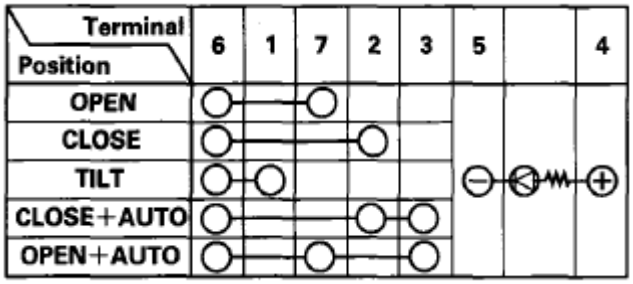


Fig. 5: Diode Setting - Reference Chart
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. If the continuity is not as specified, replace the switch.
5. Install the switch in the reverse order of removal.

2012 ACCESSORIES & EQUIPMENT

Trunk Lid Opener - TL

COMPONENT LOCATION INDEX

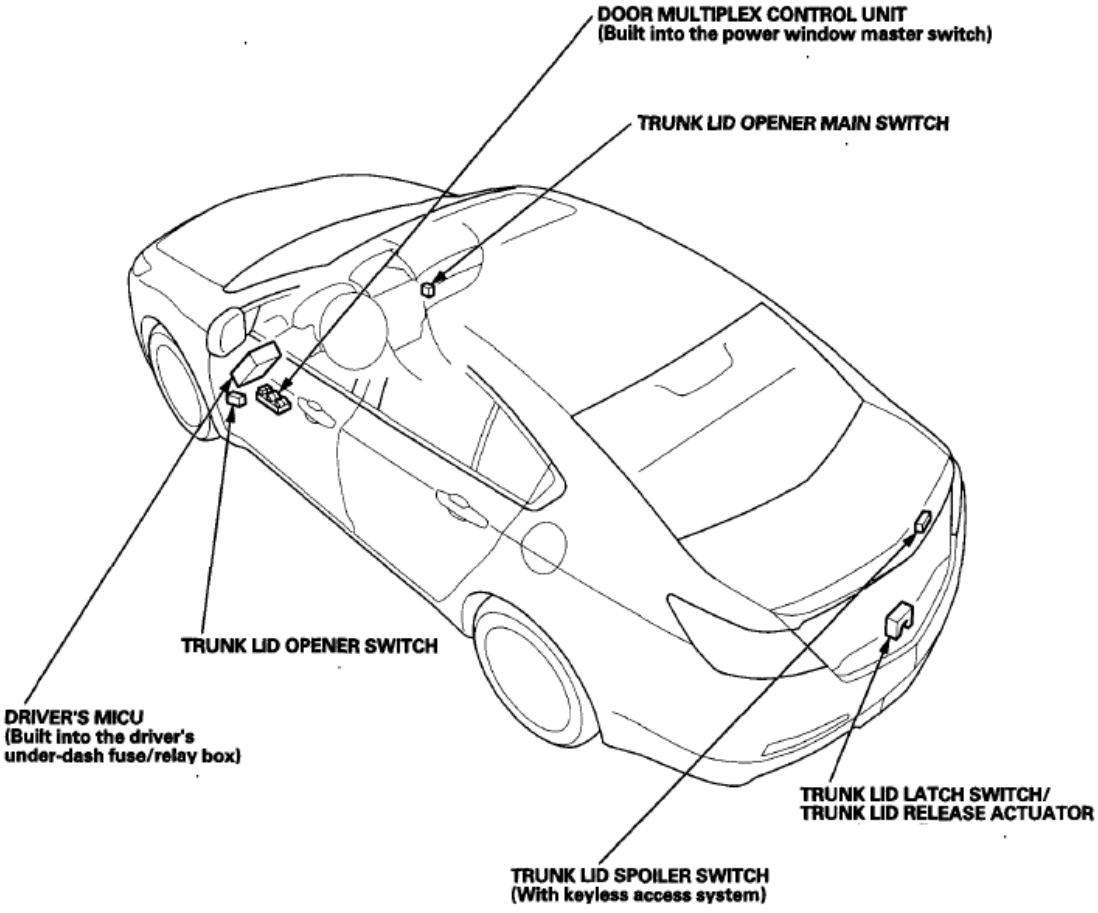


Fig. 1: Trunk Lid Opener Components Location
Courtesy of AMERICAN HONDA MOTOR CO., INC.

CIRCUIT DIAGRAM

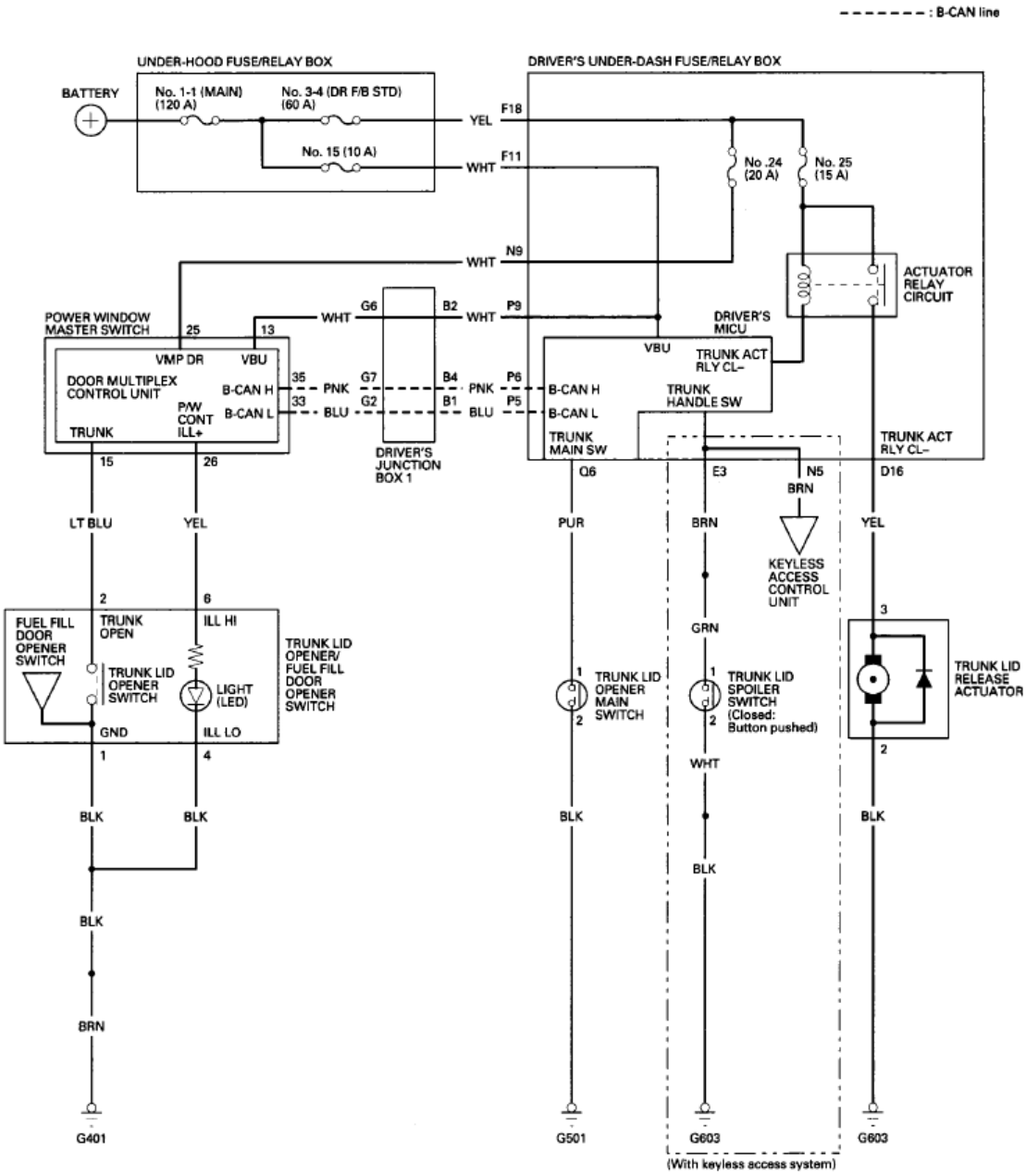


Fig. 2: Trunk Lid Opener Circuit Wiring Diagram
Courtesy of AMERICAN HONDA MOTOR CO., INC.

TRUNK LID OPENER MAIN SWITCH TEST/REPLACEMENT

1. Remove the glove box housing, (see **GLOVE BOX REMOVAL/INSTALLATION**).
2. Carefully push the main switch (A) out from behind the glove box housing.

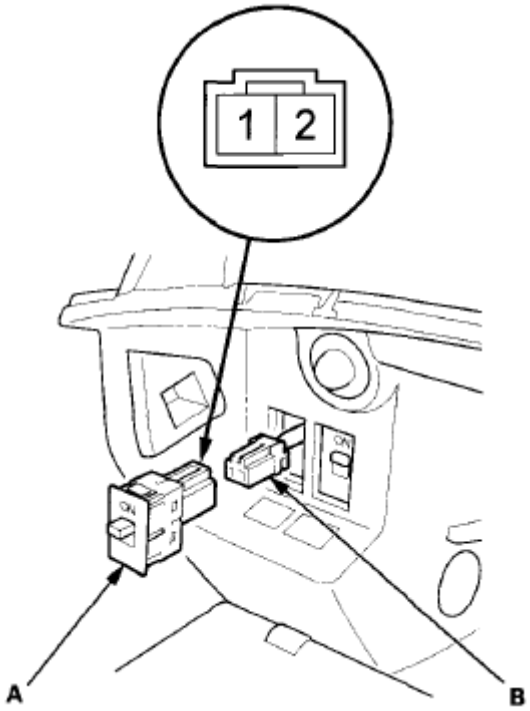


Fig. 3: Identifying Main Switch And 2P Connector End View
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Disconnect the 2P connector (B) from the trunk lid opener main switch.
4. Check for continuity between the terminals in each switch position according to the table.

Position \ Terminal	1	2
ON	○——	——○
OFF		

Fig. 4: Identifying Continuity Chart
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. If the continuity is not as specified, replace the main switch.
6. Install the switch in the reverse order of removal.

TRUNK LID OPENER SWITCH TEST/REPLACEMENT

1. Remove the driver's door panel, (see **FRONT DOOR PANEL REMOVAL/INSTALLATION**).
2. Disconnect the 6P connector (A) from the trunk lid opener switch (B).

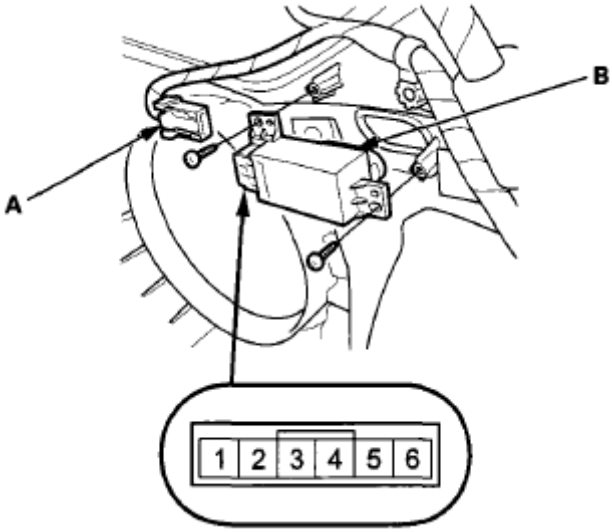


Fig. 5: Identifying Trunk Lid Opener Switch & 6P Connector End View
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Check for continuity between the terminals in each switch position according to the table.

Terminal / Position	1	2
ON	○——	——○
OFF		

Fig. 6: Identifying Continuity Chart
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. If the continuity is not as specified, remove the two screws and replace the switch.
5. Install the switch in the reverse order of removal.

TRUNK LID SPOILER SWITCH TEST/REPLACEMENT

WITH KEYLESS ACCESS SYSTEM

1. Open the trunk lid, and remove the trunk lid spoiler, (see **SIDE SILL PROTECTION TAPE REPLACEMENT**).
2. Disconnect the rearview harness 2P connector (A) from the trunk lid spoiler switch 2P connector (B).

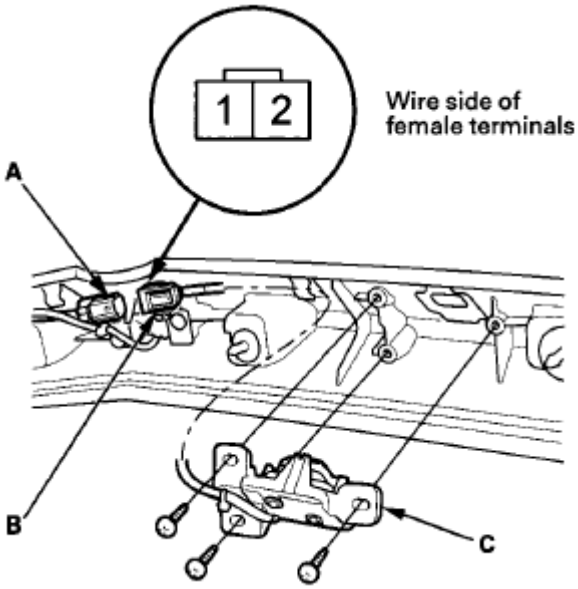


Fig. 7: Identifying Trunk Lid Spoiler Switch, Trunk Lid Spoiler Switch & 2P Connector End View
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Remove the three screws, and the trunk lid spoiler switch (C).
4. Check for continuity between the terminals in each switch position according to the table.

Terminal / Position	1	2
Pushed	○	○
Released		

Fig. 8: Identifying Continuity Chart
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. If the continuity is not as specified, replace the switch.
6. Install the switch in the reverse order of removal.

2012 ACCESSORIES & EQUIPMENT

Trunk Lid - TL

COMPONENT LOCATION INDEX

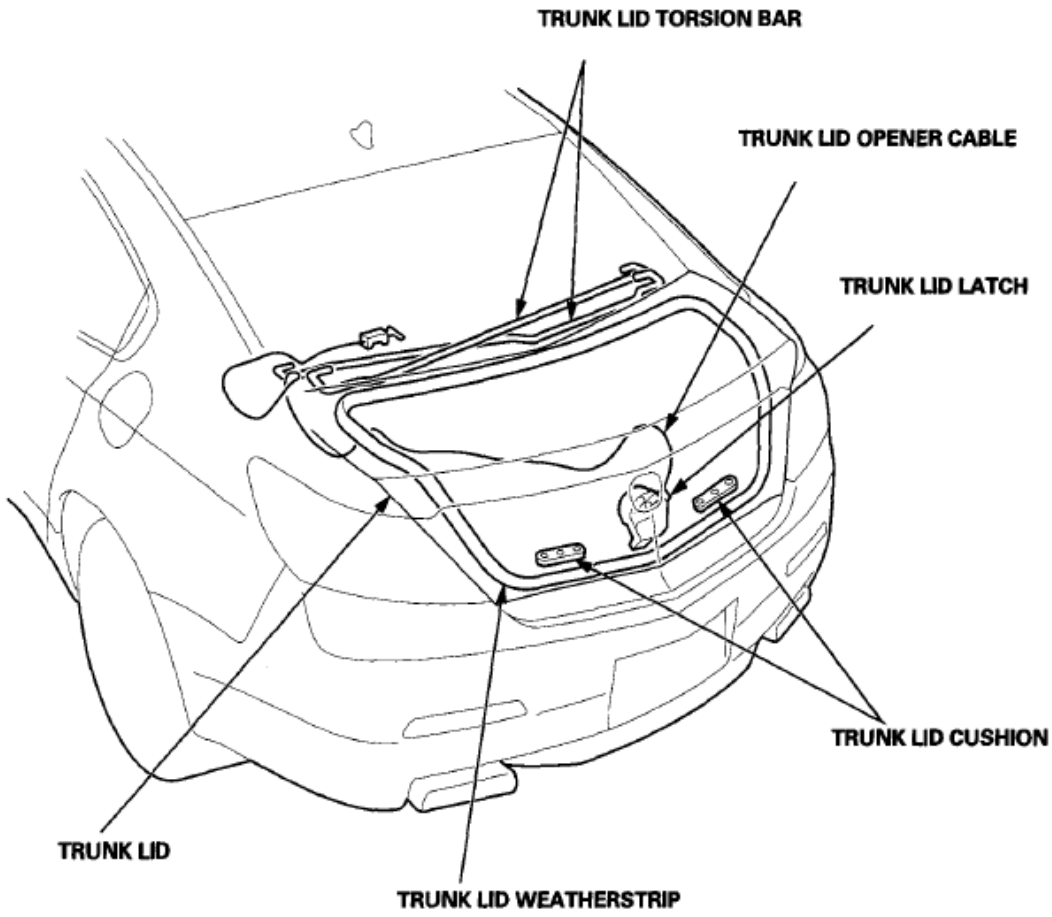


Fig. 1: Trunk Lid Components Location
Courtesy of AMERICAN HONDA MOTOR CO., INC.

TRUNK LID ADJUSTMENT

1. Remove these items:
   - Rear seat cushion (see **REAR SEAT REMOVAL/INSTALLATION**)
   - Rear door opening seal, as needed (see **TRIM REMOVAL/INSTALLATION - DOOR AREAS**)
   - C-pillar trims, both sides (see **C-PILLAR TRIM**)
   - Rear center seat belt lower anchor (see **REAR CENTER SEAT BELT AND REAR SEAT BELT BUCKLES**)
   - Rear shelf (see **TRIM REMOVAL/INSTALLATION - REAR SHELF AREA**)
2. Pull back the rear panel cap (A) to release the hooks (B), then remove the cap.

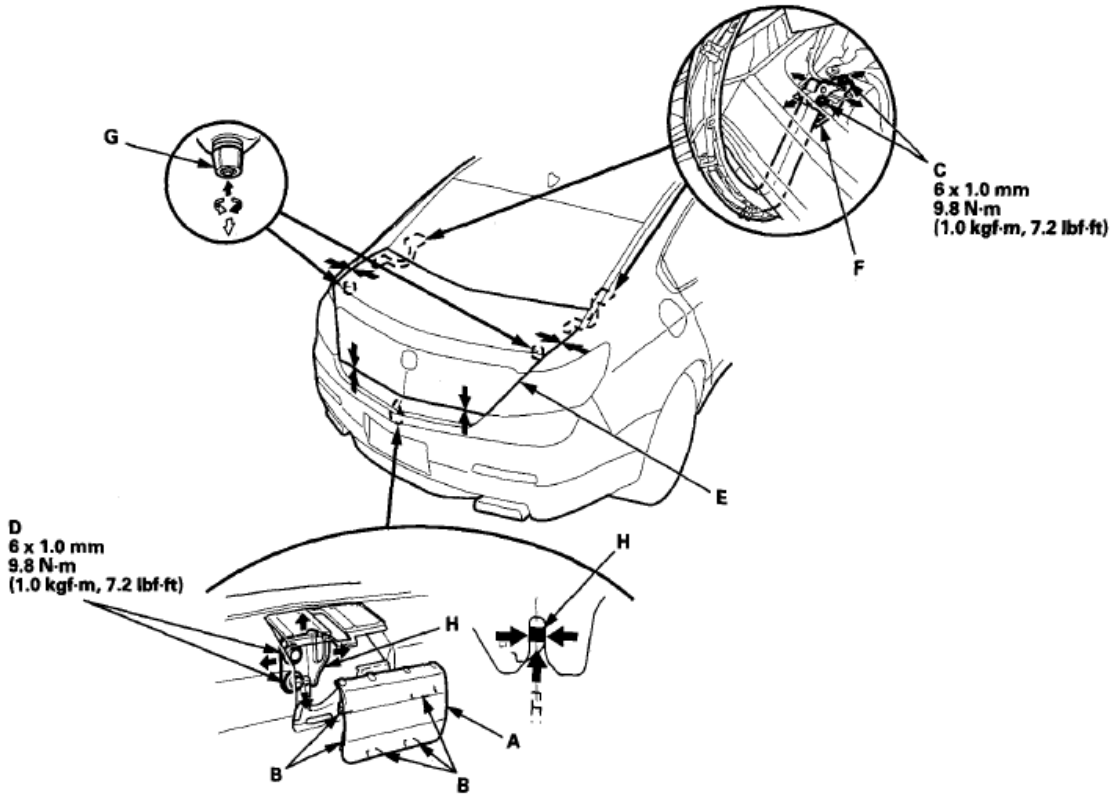


Fig. 2: Identifying Rear Panel Cap, Hooks, Trunk Lid Hinge Bolts, Striker Bolts, Trunk Lid Hinge Bolts And Trunk Lid With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Slightly loosen the trunk lid hinge bolts (C) and the striker bolts (D).
4. Adjust the trunk lid (E) alignment in the following sequence:
   - Adjust the trunk lid hinges (F) right and left, as well as forward and rearward, by using the elongated holes. Take care not to hit the rear window when loosening the bolts.
   - Turn the trunk lid edge cushions (G), in or out as necessary, to make the trunk lid fit flush with the body at the rear and side edges.
   - Adjust the fit between the trunk lid and the trunk lid latch by moving the striker (H).
5. Tighten each bolt to the specified torque.
6. Make sure the trunk lid opens properly and locks securely.
7. Reinstall all remaining removed parts.

TRUNK LID TORSION BAR REPLACEMENT

Special Tools Required

Torsion Bar Assembly Tool 07AAF-SNAA100

NOTE: put on gloves to protect your hands.

1. Remove the trunk side trim panels from both sides (see **TRIM REMOVAL/INSTALLATION - TRUNK AREA**).
2. Remove the trunk lid torsion bars with the torsion bar assembly tool from both trunk lid hinges. First remove the left torsion bar (A), then remove the right torsion bar (B).

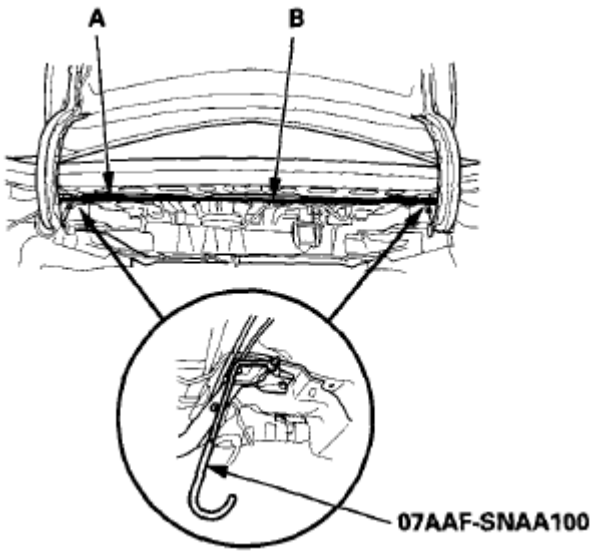


Fig. 3: Identifying Left Torsion Bar And Right Torsion Bar
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Install the torsion bars in the reverse order of removal, and note these items:
   - The shapes of the right torsion bar (A) and the left torsion bar (B) are shown. Install the torsion bars properly.
   - Adjust the torsion bars forward or rearward with the torsion bar assembly tool.
   - The torsion bars ware installed at the factory at the normal position as shown.
   - Make sure the trunk lid opens properly and locks securely.

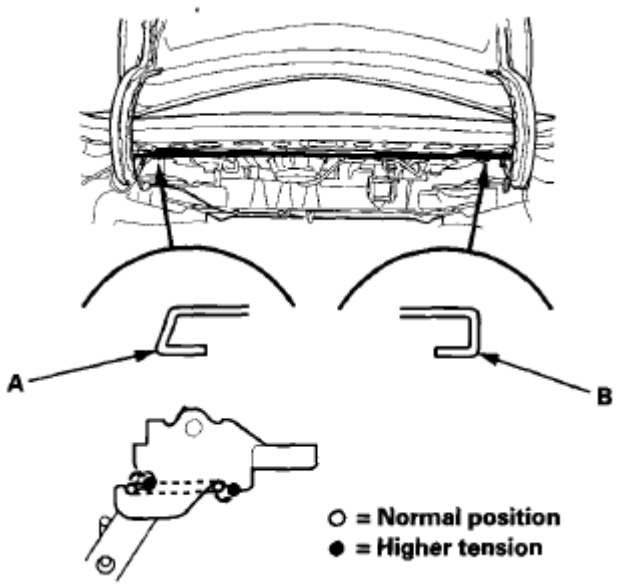


Fig. 4: Adjusting Torsion Bars Forward Or Rearward With Torsion Bar Assembly Tool
Courtesy of AMERICAN HONDA MOTOR CO., INC.

TRUNK LID WEATHERSTRIP REPLACEMENT

1. Remove the trunk lid weatherstrip (A) by pulling it off.

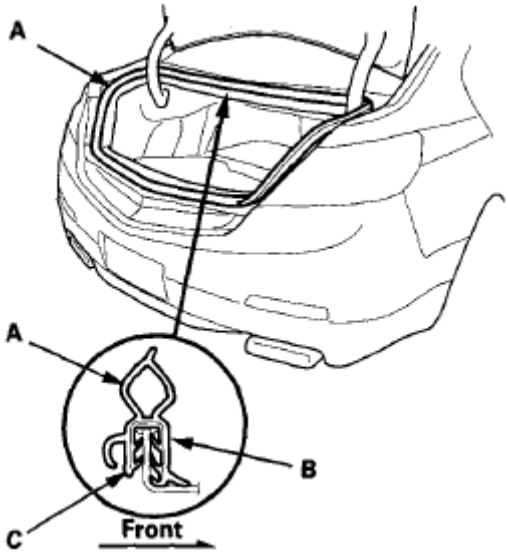


Fig. 5: Identifying Trunk Lid Weatherstrip And Painted Alignment Mark
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Locate the painted alignment mark (B or C) on the trunk lid weatherstrip. Align the painted mark in the center of the trunk lid opening, and install the trunk lid weatherstrip all the way around in the direction shown. Make sure there are no wrinkles in the weatherstrip.

3. Check for water leaks (see **DOOR POSITION ADJUSTMENT**).

TRUNK LID CUSHION REPLACEMENT

1. Remove the trunk lid cushion (A) by pulling it out to detach the clips.

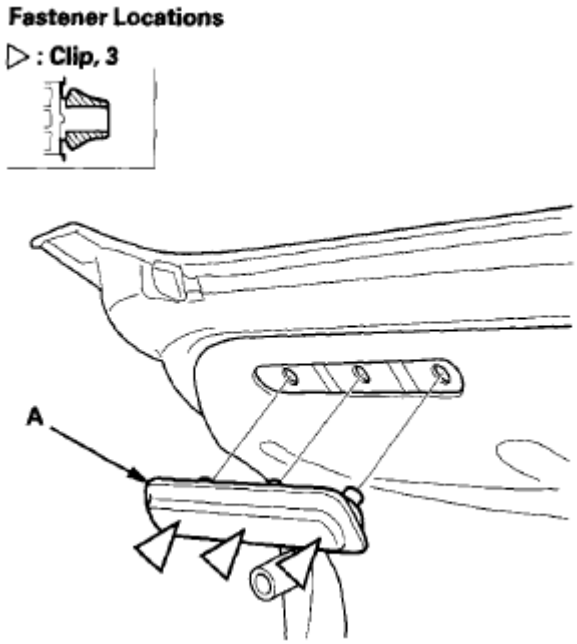


Fig. 6: Removing Trunk Lid Cushion
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Install the trunk lid cushion by pushing on the clip areas until the clips snap into place securely.

TRUNK LID OPENER CABLE REPLACEMENT

NOTE:

- **Put on gloves to protect your hands.**
- **Take care not to scratch the body.**
- **Take care not to kink the trunk lid opener cable.**

1. Remove these items:
   - Rear seat cushion (see **REAR SEAT REMOVAL/INSTALLATION**)
   - Rear seat-back (see **REAR SEAT REMOVAL/INSTALLATION**)
   - Trunk lid hinge trim (see **TRIM REMOVAL/INSTALLATION - TRUNK LID**)
   - Trunk lid trim panel (see **TRIM REMOVAL/INSTALLATION - TRUNK AREA**)
   - Trunk side trim panel, left side (see **TRIM REMOVAL/INSTALLATION - TRUNK AREA**)
   - Trunk upper trim panel (see **TRIM REMOVAL/INSTALLATION - TRUNK AREA**)
2. Disconnect the trunk lid opener cable (A) from the latch (B) (see step 4).

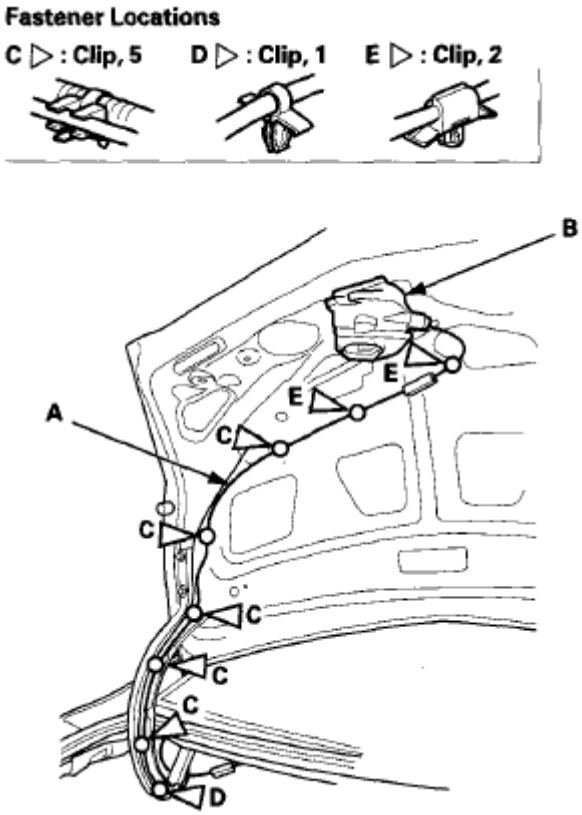


Fig. 7: Identifying Trunk Lid Opener Cable, Latch And Clips
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Detach the clips (C, D, E) with a clip remover.
4. Remove the trunk lid opener cable (A) from the opener cable bracket (B).

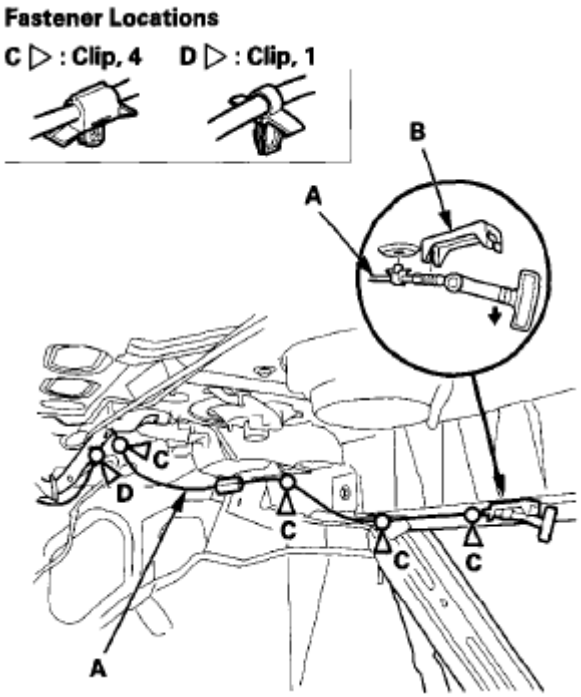


Fig. 8: Identifying Trunk Lid Opener Cable, Opener Cable Bracket And Clips
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Detach the clips (C, D) with a clip remover.
6. Remove the trunk lid opener cable from the vehicle.
7. Install the cable in the reverse order of removal, and note these items:
    - Align the marks (A) on the opener cable (B) with the cable clips (C) as shown.
    - If the clips are damaged or stress-whitened, replace them with new ones.
    - Push the clips into place securely.
    - Make sure the trunk lid opens properly and locks securely.

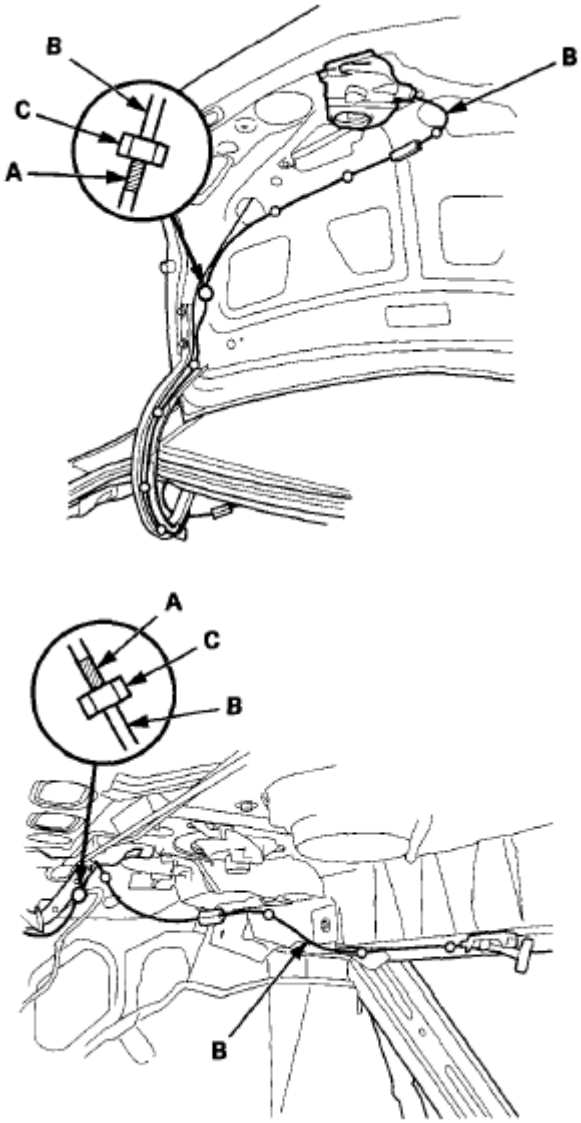


Fig. 9: Aligning Marks On Opener Cable With Cable Clips
Courtesy of AMERICAN HONDA MOTOR CO., INC.

TRUNK LID LATCH REPLACEMENT

Special Tools Required

KTC Trim Tool Set SOJATP2014*

*Available through the Acura Tool and Equipment Program; call 888-424-6857

NOTE:

- **Put on gloves to protect your hands.**
- **Take care not to scratch the trunk lid.**
- **Take care not to kink the trunk lid opener cable.**

- **Use the appropriate tool from the KTC trim tool set to avoid damage when removing components.**

1. Remove the trunk lid trim panel (see **TRIM REMOVAL/INSTALLATION - TRUNK LID**).
2. Insert a trim tool through the latch cover (A) opening, and pry on the cover to release the latch tabs (B). Pull on the cover, and release the projection (C), then remove the cover.

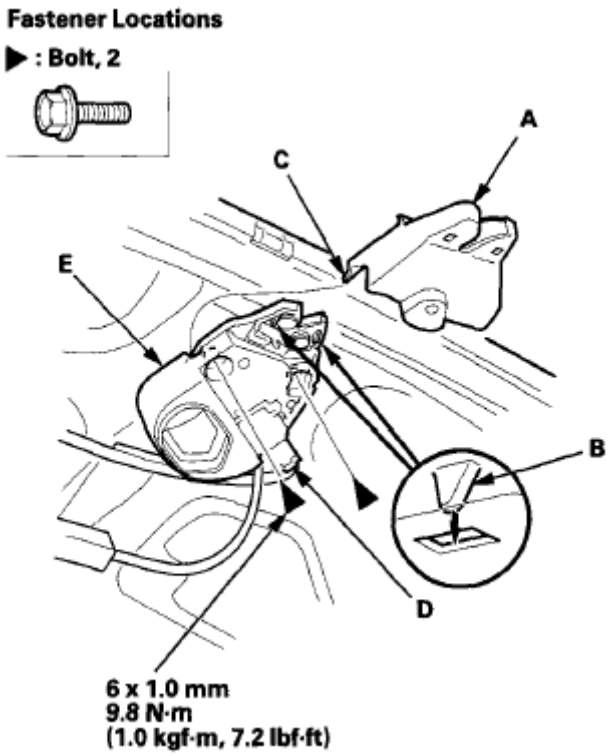


Fig. 10: Identifying Latch Cover, Latch Tabs, Trunk Lid Latch Connector And Trunk Lid Latch With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Disconnect the trunk lid latch connector (D), and remove the bolts, then remove the trunk lid latch (E).
4. Note the position of the manual trunk lid opener cable end (A) in the trunk lid latch (B), then remove the cable from the latch.

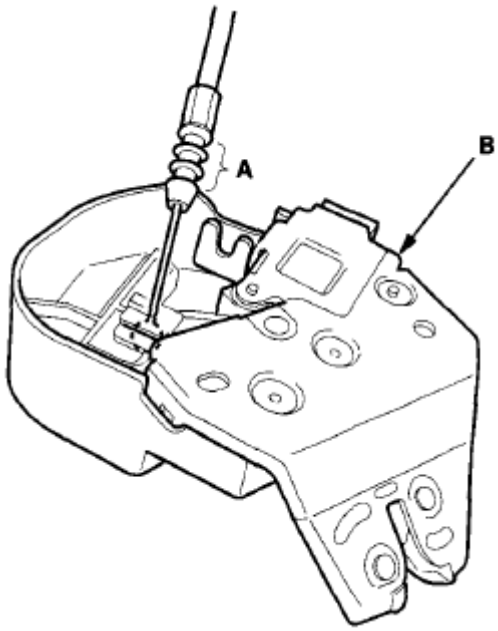


Fig. 11: Positioning Of Manual Trunk Lid Opener Cable End In Trunk Lid Latch
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Install the latch in the reverse order of removal, and note these items:
   - Make sure the connector is plugged in properly and the cable is connected properly.
   - Make sure the trunk lid opens properly and locks securely.
   - Reinstall the manual trunk lid opener cable end (A) back to the position noted in step 4. Check the operation of the manual trunk lid opener, by pulling on the rubber tab inside the pass through opening. If necessary, adjust the cable end position.

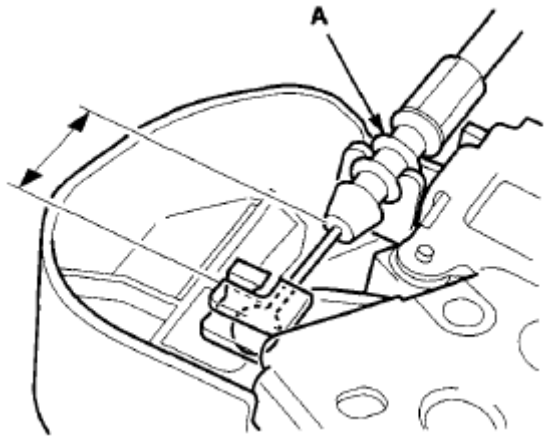


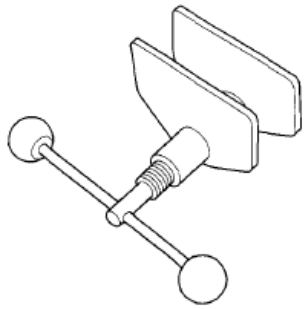
Fig. 12: Installing Manual Trunk Lid Opener Cable End Back To Position
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2012 BRAKES

Conventional Brake System - TL

SPECIAL TOOLS

Ref.No.	Tool Number	Description	Qty
①	07AAE-SEPA101	Brake Caliper Piston Compressor	1



①

Fig. 1: Identifying Conventional Brake System Special Tools
Courtesy of AMERICAN HONDA MOTOR CO., INC.

COMPONENT LOCATION INDEX

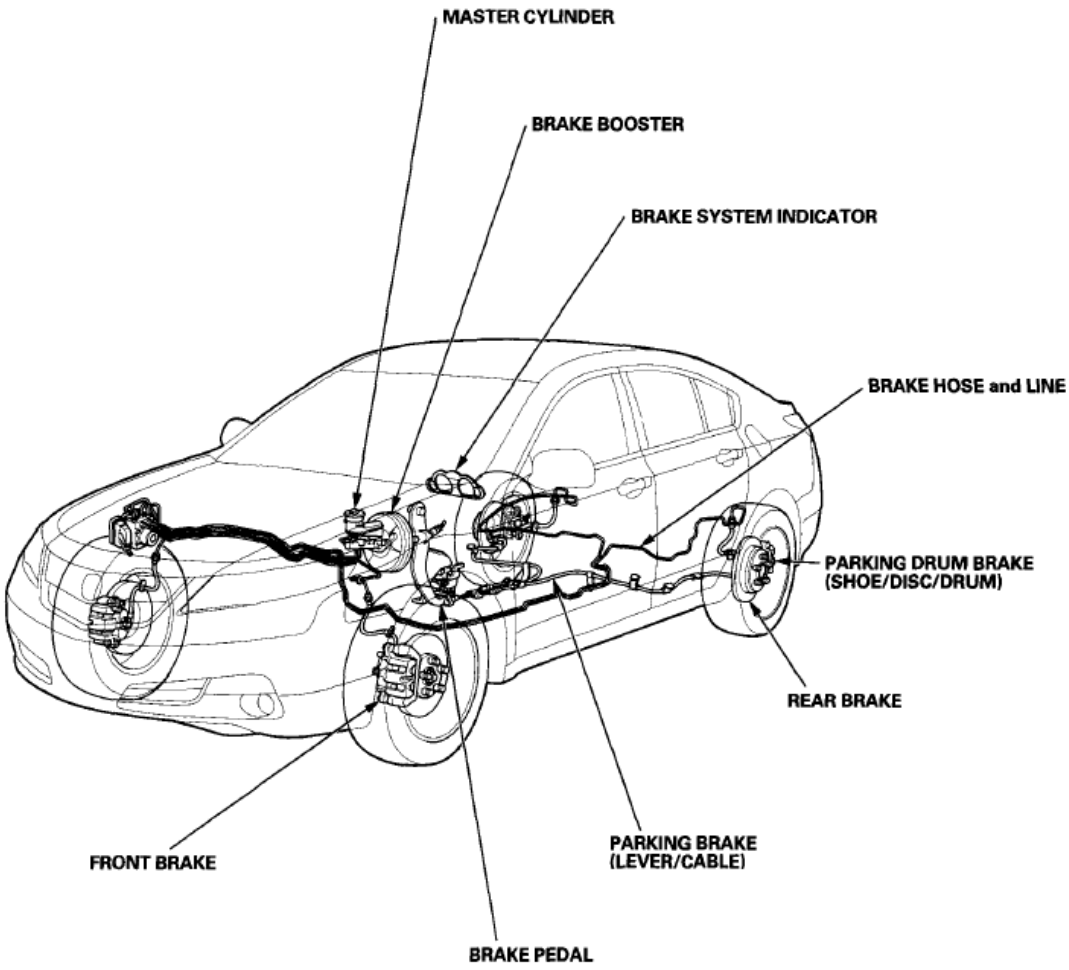


Fig. 2: Brake System Components Location
Courtesy of AMERICAN HONDA MOTOR CO., INC.

BRAKE SYSTEM INSPECTION AND TEST

Inspect the brake system components listed. Repair or replace any parts that are leaking or damaged.

COMPONENT INSPECTIONS

Component	Procedure	Also check for
Master Cylinder	Look for damage or signs of fluid leakage at: • Reservoir or reservoir grommets. • Line joints. • Between master cylinder and booster.	Bulging seal at reservoir cap. This is a sign of fluid contamination.
	Look for damage or signs of fluid	

Brake Hoses	leakage at: • Line joints and banjo bolt connections. • Hoses and lines, also inspect for twisting or damage.	Bulging, twisted, or bent lines.
Caliper	Look for damage or signs of fluid leakage at: • Piston seal. • Banjo bolt connections. • Bleed screw.	Seized or sticking caliper pins.
VSA Modulator-Control Unit	Look for damage or signs of fluid leakage at: • Line joints. • Modulator-control unit.	

BRAKE SYSTEM TEST

Brake pedal sinks/fades when braking

1. Set the parking brake, and start the engine, then turn off the A/C. Allow the engine to warm up to normal operating temperature (radiator fan comes on twice).
2. Attach a 50 mm (2 in) piece of masking tape along the bottom of the steering wheel, and draw a horizontal reference mark across it.
3. Make sure the steering column lock lever is in the locked position. With the transmission in neutral (M/T) or P or N (A/T), press and hold the brake pedal lightly (about the same pressure needed to keep an A/T-equipped vehicle from creeping), then release the parking brake.
4. While still holding the brake pedal, hook the end of the tape measure behind the brake pedal, then pull the tape up to the steering wheel. Note the measurement between the brake pedal and the reference mark on the steering wheel.
5. Apply steady pressure to the brake pedal for 3 minutes.
6. Watch the tape measure.
   - If the measurement increases 10 mm (0.39 in) or less, the master cylinder is OK.
   - If the measurement increases more than 10 mm (0.39 in), replace the master cylinder.

SYMPTOM TROUBLESHOOTING

RAPID BRAKE PAD WEAR, VEHICLE VIBRATION (AFTER A LONG DRIVE), OR HIGH, HARD BRAKE PEDAL

NOTE: Make sure that the caliper pins are installed correctly. The upper caliper pin and the lower caliper pin are different. If these caliper pins are installed in the wrong

location, it will cause vibration, uneven or rapid brake pad wear, and possibly uneven tire wear. For proper caliper pin location: Front caliper (see FRONT BRAKE CALIPER OVERHAUL), rear caliper (see REAR BRAKE CALIPER OVERHAUL).

1. Drive the vehicle until the brakes drag or until the pedal is high and hard. This can take 20 or more brake pedal applications during an extended test-drive.
2. With the engine running, raise and support the vehicle (see **LIFT AND SUPPORT POINTS**), and spin all four wheels by hand.

   Is there brake drag at any of the wheels?

   YES - Go to step 3.

   NO - Look for other causes of pad wear, high pedal, or vehicle vibration.

3. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode (see **POWER MODE CONTROL FUNCTION**), press the brake pedal several times to deplete the vacuum in the brake booster, and then spin the wheels again to check for brake drag.

   Is there brake drag at any of the wheels?

   YES - Go to step 4.

   NO - Replace the brake booster (see **BRAKE BOOSTER REPLACEMENT**).

4. Without removing the brake lines, unbolt and separate the master cylinder from the brake booster, then spin the wheels to check for brake drag.

   Is there brake drag at any of the wheels?

   YES - Go to step 5.

   NO - Check the brake pedal position switch adjustment, and pedal free play (see **BRAKE PEDAL AND BRAKE PEDAL POSITION SWITCH ADJUSTMENT**).

5. Loosen the hydraulic lines at the master cylinder, then spin the wheels to check for brake drag.

   Is there brake drag at any of the wheels?

   YES - Go to step 6.

   NO - Check the master cylinder reservoir for contamination in the brake fluid. If you find contamination, flush the entire brake system of all contaminated fluid, then replace all rubber parts in the brake system that were exposed to contaminated fluid. If the brake fluid is OK, replace the master cylinder (see **MASTER CYLINDER REPLACEMENT**).

6. Loosen the bleed screws at each caliper, then spin the wheels to check for brake drag.

   Is there brake drag at any of the wheels?

   YES - Check the master cylinder reservoir for contamination in the brake fluid. If you find contamination, flush the entire brake system of all contaminated fluid, then replace all rubber parts in the brake system that were exposed to contaminated fluid. If the brake fluid is OK, disassemble and repair the caliper on the wheel(s) with brake drag.

   NO - Look for and replace any damaged brake lines. If all brake lines are OK, replace the VSA modulator-control unit (see **VSA MODULATOR-CONTROL UNIT REMOVAL AND INSTALLATION**).

BRAKE PEDAL AND BRAKE PEDAL POSITION SWITCH ADJUSTMENT

PEDAL HEIGHT

1. Remove the driver's dashboard undercover (see **DRIVER'S DASHBOARD UNDERCOVER REMOVAL/INSTALLATION**).
2. Turn the brake pedal position switch 45 ° counterclockwise, and pull it back until it is no longer touching the brake pedal.
3. Remove the driver's side kick panel (see step 3 under **TRIM REMOVAL/INSTALLATION - DOOR AREAS**).
4. Remove the footrest (see step 4 under **FRONT CARPET REPLACEMENT**).
5. Remove the steering joint cover (see step 6 under **REMOVAL**).
6. Pull back the carpet, and find the cutout (A) in the insulation. Measure the pedal height (B) from the left side middle of the pedal pad (C) to the floor (D) without the insulation.

   Standard pedal height:

   M/T: 156 mm (6.14 in)

   A/T: 155 mm (6.10 in)

   M/T

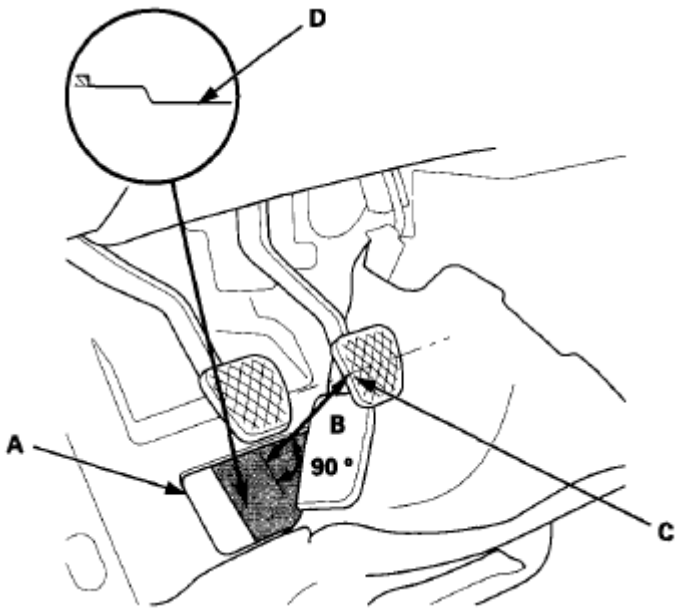


Fig. 3: Identifying Cutout, Pedal Height & Pedal Pad (M/T Model)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

A/T

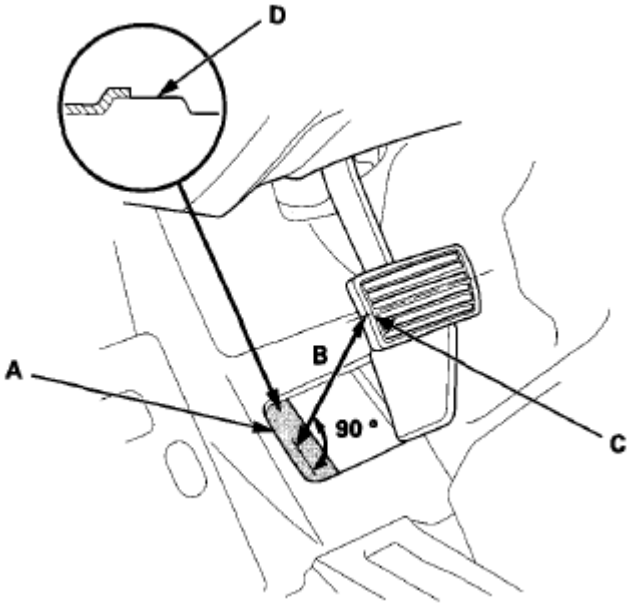


Fig. 4: Identifying Cutout, Pedal Height & Pedal Pad (A/T Model)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Pedal Adjustment

7. Loosen the pushrod locknut (A), and screw the pushrod (B) in or out with pliers until the standard pedal height from the floor is reached. After adjustment, tighten the locknut firmly. Do not adjust the pedal

height with the pushrod pressed.

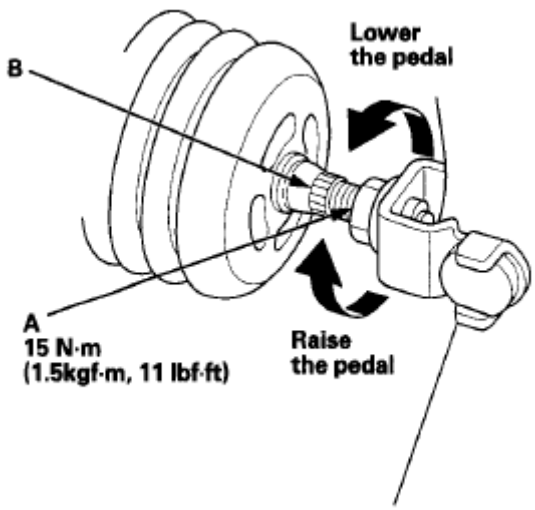


Fig. 5: Remove/Install Pushrod With Pliers With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Brake Pedal Position Switch Adjustment

8. Lift up on the brake pedal by hand. Push in the brake pedal position switch until its plunger is fully pressed (threaded end (A) touching the pad (B) on the pedal arm). Turn the switch 45 ° clockwise to lock it. The gap between the brake pedal position switch and the pad is automatically adjusted to 0.7 mm (0.028 in) by locking the switch. Make sure the brake lights go off when the pedal is released.

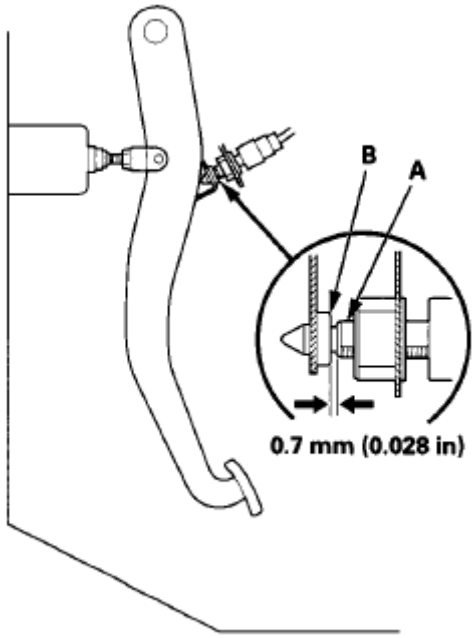


Fig. 6: Measuring Gap Between Brake Pedal Position Switch And Pad
Courtesy of AMERICAN HONDA MOTOR CO., INC.

9. Install all removed parts in the reverse order of removal.
10. Check the brake pedal free play.

PEDAL FREE PLAY

1. With the ignition switch in LOCK (0), or press the engine start/stop button to select the OFF mode, inspect the free play (A) at the brake pedal pad (B) by pushing the brake pedal by hand. If the brake pedal free play is out of specification, adjust the brake pedal position switch (C). If the brake pedal free play is insufficient, it may result in brake drag.

   Free play: 1- 5 mm (0.04- 0.20 in)

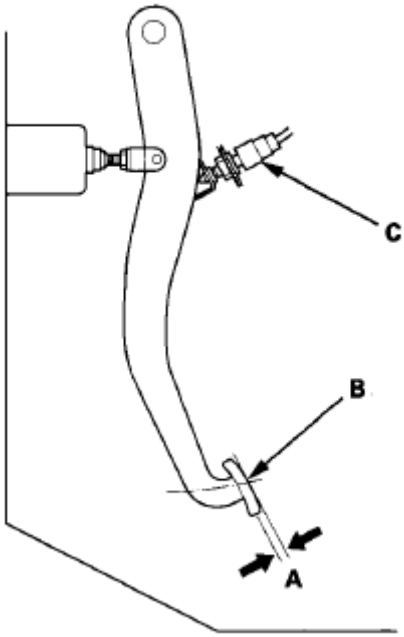


Fig. 7: Measuring Pedal Free Play
Courtesy of AMERICAN HONDA MOTOR CO., INC.

PARKING BRAKE INSPECTION AND ADJUSTMENT

INSPECTION

1. Pull the parking brake lever (A) with 196 N (20 kgf, 44 lbf) of force to fully apply the parking brake. The parking brake lever should be locked within the specified number of clicks.

   Lever locked clicks: 6 to 8 clicks

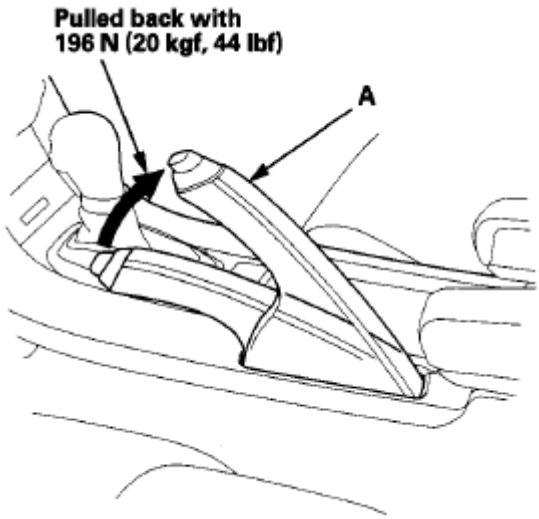


Fig. 8: Pulling Parking Brake Lever With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. If the number of lever clicks is not as specified, adjust the parking brake.

NOTE: Minor parking brake lever adjustments (1 to 2 clicks) can be made with the adjusting nut (see parking brake minor adjustment below). If a larger adjustment is required, follow the major adjustment procedure using the adjuster nut at the parking brake drum (see parking brake major adjustment below). After installing new parking brake shoes and/or new brake disc/drum, make sure you drive the vehicle for "break-in" (see PARKING BRAKE SHOE LINING BREAK-IN).

MINOR ADJUSTMENT

1. Raise and support the vehicle (see **LIFT AND SUPPORT POINTS**).
2. Release the parking brake lever fully.
3. Remove the console box mat (A), then remove the lid (B).

NOTE: It is easier to use packing tape to remove the console box mat.

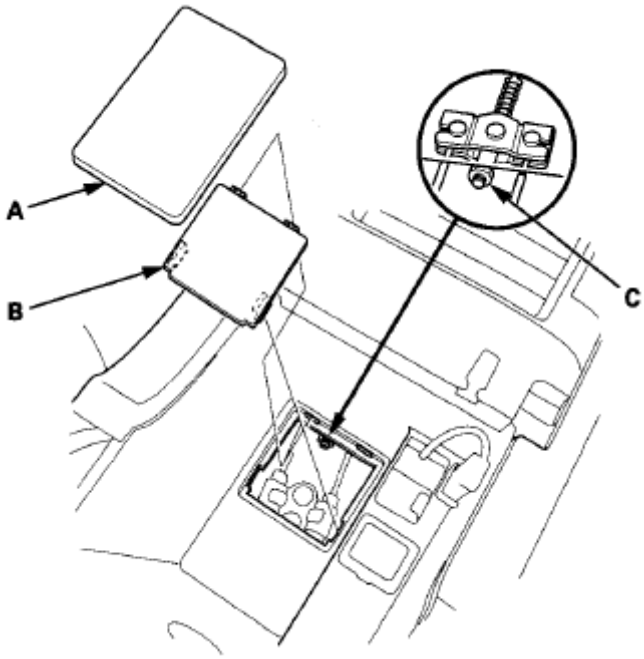


Fig. 9: Identifying Console Box Mat, Lid And Adjusting Nut
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Pull the parking brake lever 1 click.
5. Tighten the adjusting nut (C) until the parking brakes drag slightly when the rear wheels are turned.
6. Release the parking brake lever fully, and check that the parking brakes do not drag when the rear wheels are turned. Readjust if necessary.
7. Make sure the parking brake lever is within the specified number of clicks (6 to 8 clicks).
8. Install the lid, then install the console box mat.

MAJOR ADJUSTMENT (TO BE DONE WHEN REPLACING PARKING BRAKE SHOES)

1. Raise and support the vehicle (see **LIFT AND SUPPORT POINTS**).
2. Release the parking brake lever fully.
3. Remove the console box mat (A), then remove the lid (B).

NOTE: It is easier to use packing tape to remove the console box mat.

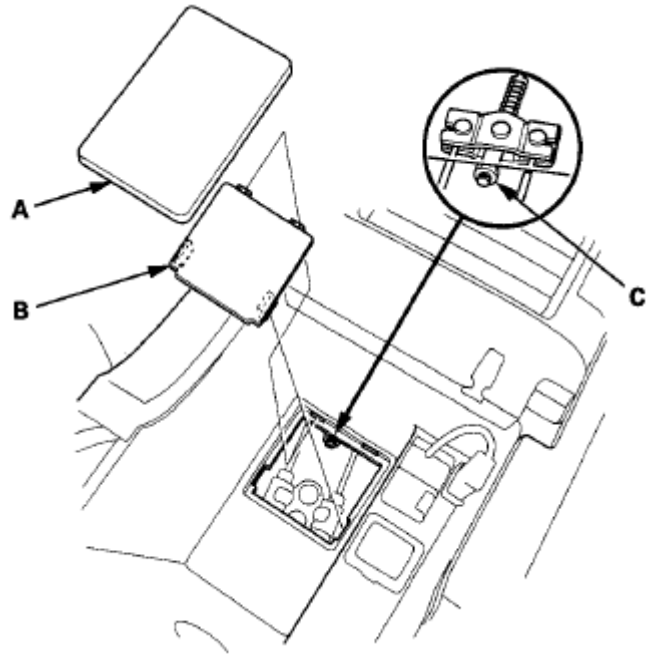


Fig. 10: Identifying Console Box Mat, Lid And Adjusting Nut
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Loosen the adjusting nut (C).
5. Remove the rear wheels.
6. Remove the access plug (A).

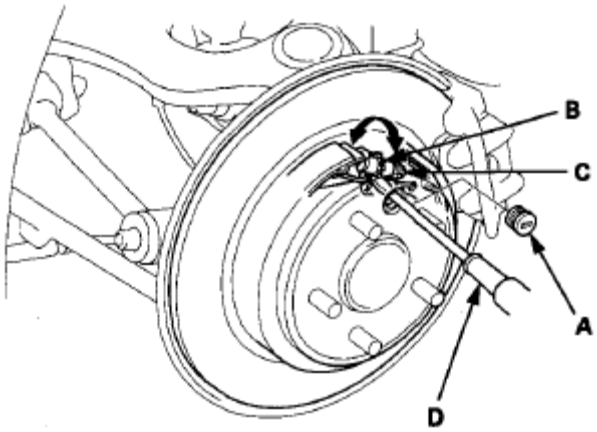


Fig. 11: Removing Access Plug By Using Flat-Tip Screwdriver
Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Turn the ratchet teeth (B) on the adjuster assembly (C) with a flat-tip screwdriver (D) until the shoes lock against the parking brake drum. Then back off the adjuster 8 clicks, and install the access plug.
8. Do the minor adjustment procedure.
9. Clean the mating surfaces between the brake disc/drum and the inside of the wheel, then install the rear

wheels.

BRAKE SYSTEM BLEEDING

NOTE: Do not spill brake fluid on the vehicle; it may damage the paint. If brake fluid gets on the paint, wash it off immediately with water.

NOTE:

- **Do not reuse the drained fluid. Use only new Acura DOT 3 Brake Fluid from an unopened container. Using a non-Acura brake fluid can cause corrosion and shorten the life of the system.**
- **Make sure no dirt or other foreign matter gets in the brake fluid.**
- **The reservoir connected to the master cylinder must be at the MAX (upper) level mark at the start of the bleeding procedure, and checked after bleeding each wheel location. Add fluid as required.**

1. Make sure the brake fluid level in the reservoir (A) is at the MAX (upper) level line (B).

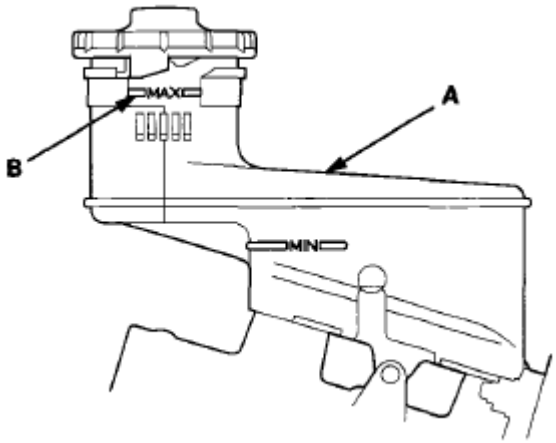


Fig. 12: Identifying Reservoir And MAX Level Line Of Brake Fluid
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Have someone slowly pump the brake pedal several times, then apply steady pressure.
3. Start the bleeding at the driver's side of the front brake system.

NOTE: Bleed the calipers in the sequence shown.

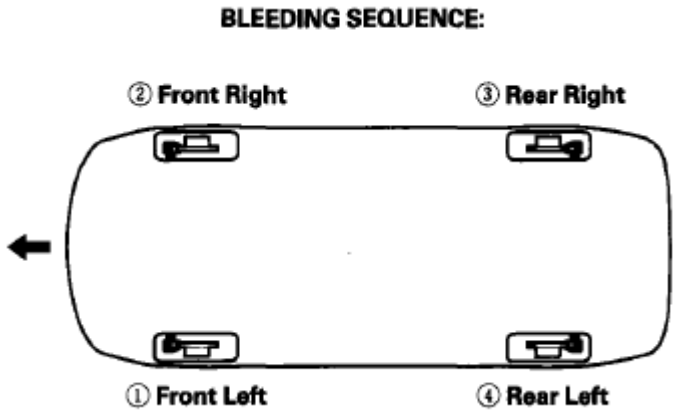


Fig. 13: Bleeding Caliper In Sequences
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Attach a length of clear drain tube (A) to the bleed screw (B), then loosen the bleed screw to allow air to escape from the system. Then tighten the bleed screw securely.

Front

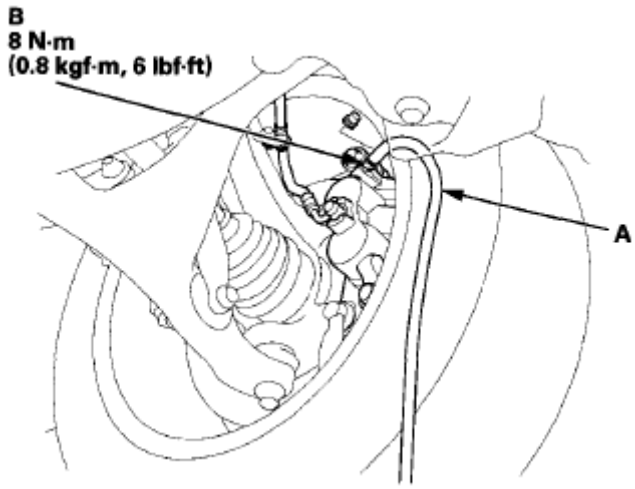


Fig. 14: Identifying Drain Tube And Bleed Screw (Front) With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Rear

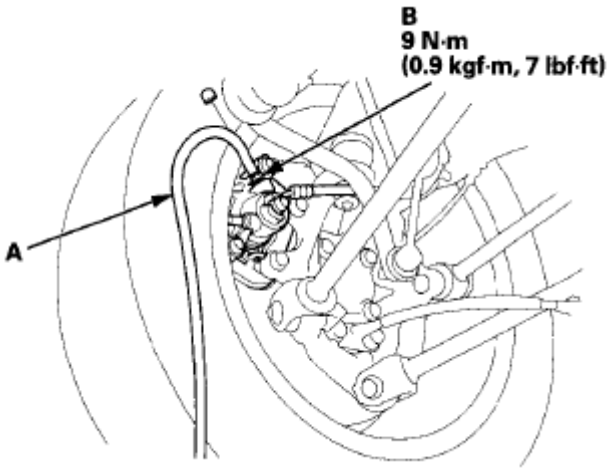


Fig. 15: Identifying Drain Tube And Bleed Screw (Rear) With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Refill the master cylinder reservoir to the MAX (upper) level line.
6. Repeat the procedure for each brake circuit until there are no air bubbles in the fluid.

BRAKE SYSTEM INDICATOR CIRCUIT DIAGRAM

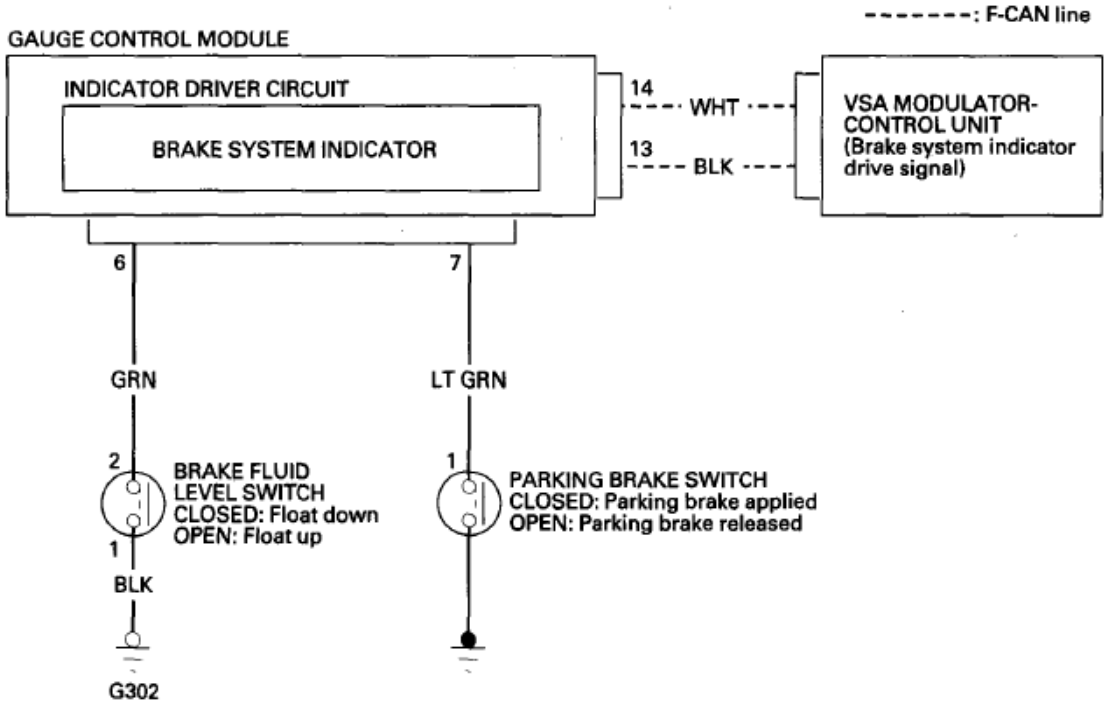


Fig. 16: Brake System Indicator - Circuit Diagram
Courtesy of AMERICAN HONDA MOTOR CO., INC.

PARKING BRAKE SWITCH TEST

NOTE: **If both the ABS/VSA indicator and the brake system indicator come on at the same time, check the VSA system for DTC's first (see GENERAL TROUBLESHOOTING INFORMATION).**

1. Remove the center console panel (see **CENTER CONSOLE PANEL REMOVAL/INSTALLATION**).
2. Disconnect the parking brake switch connector (A) from the parking brake switch (B).

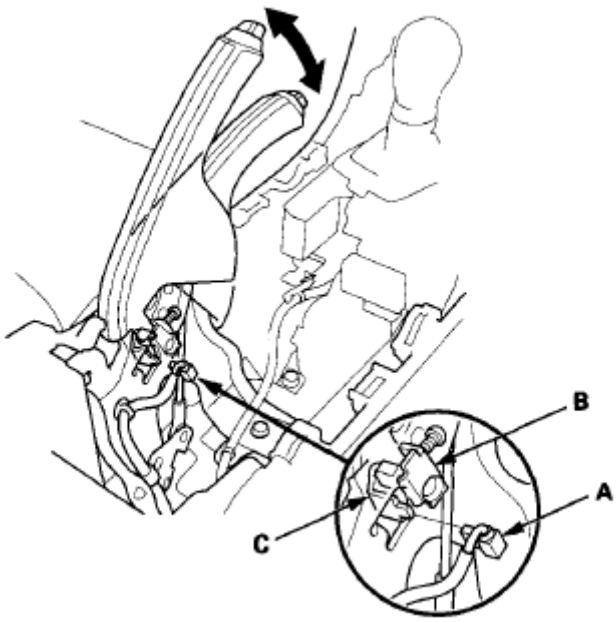


Fig. 17: Pulling Parking Brake Lever
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Check for continuity between the switch terminal (C) and body ground.
   - With the parking brake lever pulled, there should be continuity.
   - With the parking brake lever released, there should be no continuity.

NOTE: **If the parking brake switch and the brake fluid level switch are OK, but the brake system indicator does not function, do the gauge control module self-diagnostic function (see SELF-DIAGNOSTIC FUNCTION).**

4. Reconnect the parking brake switch connector.
5. Install the center console panel (see **CENTER CONSOLE PANEL REMOVAL/INSTALLATION**).

BRAKE FLUID LEVEL SWITCH TEST

NOTE: **If both the ABS/VSA indicator and the brake system indicator come on at the same time, check the VSA system for DTC's first (see GENERAL TROUBLESHOOTING INFORMATION).**

1. Disconnect the brake fluid level switch connector.
2. Check for continuity between the terminals (1) and (2) with the float in the down position and in the up position.
   - Remove the brake fluid completely from the reservoir. With the float down, there should be continuity.
   - Fill the reservoir with brake fluid to the MAX (upper) level (A). With the float up, there should be no continuity.

NOTE: If the parking brake switch and the brake fluid level switch are OK, but the brake system indicator does not function, do the gauge control module self-diagnostic function (see SELF-DIAGNOSTIC FUNCTION).

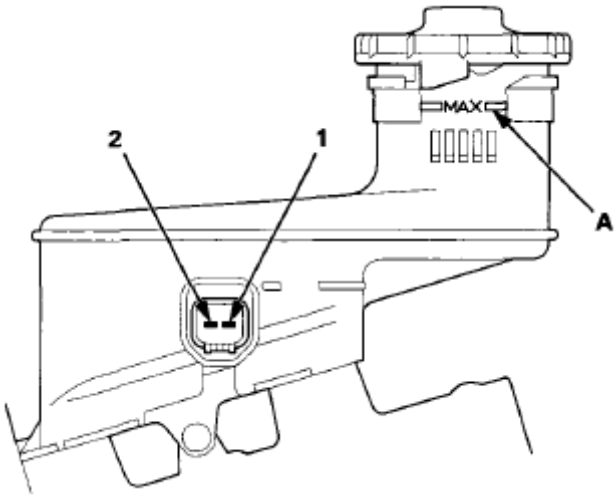


Fig. 18: Identifying MAX Level Of Brake Fluid
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Reconnect the brake fluid level switch connector.

FRONT BRAKE PAD INSPECTION AND REPLACEMENT

Special Tools Required

Brake Caliper Piston Compressor 07AAE-SEPA101

CAUTION: Frequent inhalation of brake pad dust, regardless of material composition, could be hazardous to your health.

- **Avoid breathing dust particles.**
- **Never use an air hose or brush to clean brake assemblies. Use an OSHA-approved vacuum cleaner.**

INSPECTION

1. Raise and support the vehicle (see **LIFT AND SUPPORT POINTS**).
2. Remove the front wheels.
3. Check the thickness (A) of the inner pad (B) and the outer pad (C). Do not include the thickness of the backing plate.

   Brake pad thickness:

   Standard: 11.5- 12.2 mm (0.453- 0.480 in)

   Service limit: 1.6 mm (0.063 in)

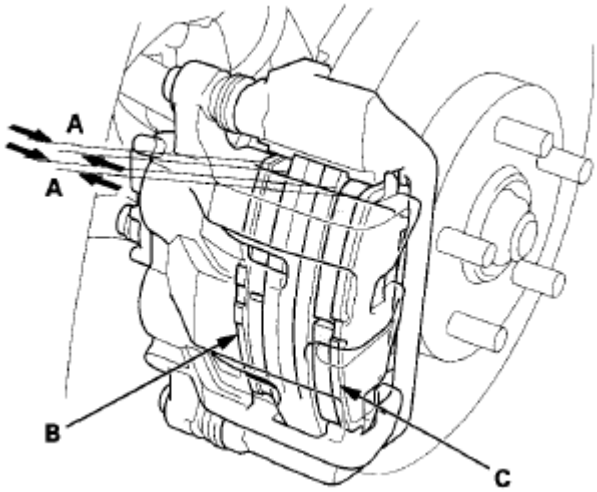


Fig. 19: Checking Thickness Of Inner Pad And Outer Pad
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. If any part of the brake pad thickness is less than the service limit, replace all of the brake pads as a set.
5. Clean the mating surface between the brake disc and the inside of the wheel, then install the front wheels.

REPLACEMENT

1. Remove some brake fluid from the master cylinder.
2. Raise and support the vehicle (see **LIFT AND SUPPORT POINTS**).
3. Remove the front wheels.
4. Remove the brake hose mounting bolt (A).

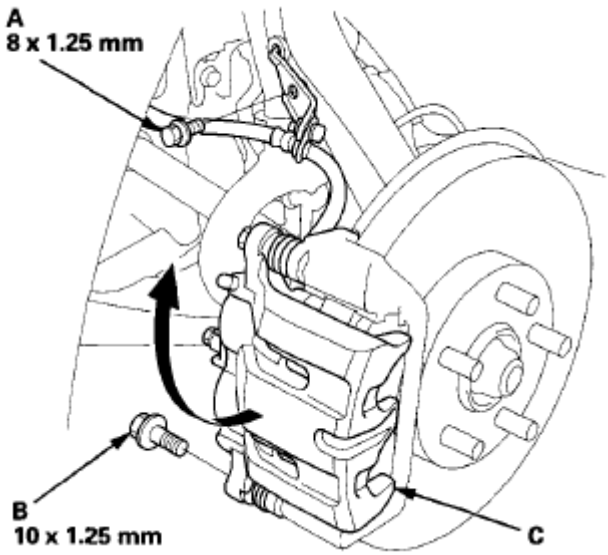


Fig. 20: Pivoting Caliper Body To Removing Flange Bolt
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Remove the flange bolt (B), and pivot the caliper body (C) up out of the way. Check the hose and the pin boots for damage and deterioration.
6. Remove the pad shims (A) and the brake pads (B).

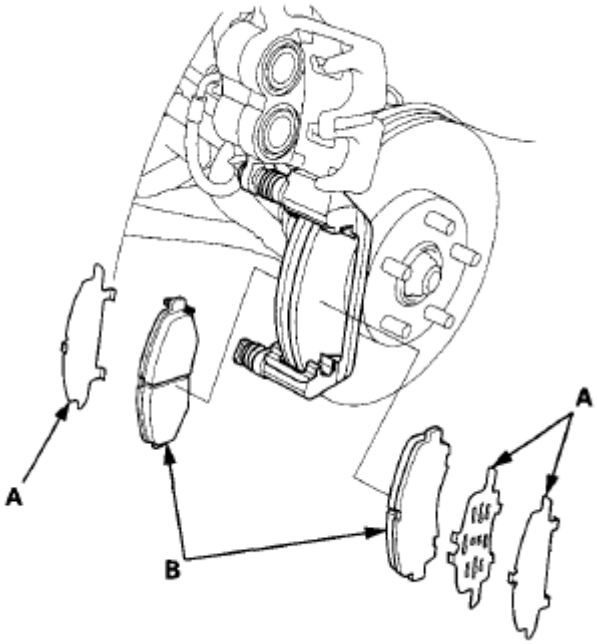


Fig. 21: Identifying Pad Shims And Brake Pads
Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Remove the pad retainers (A).

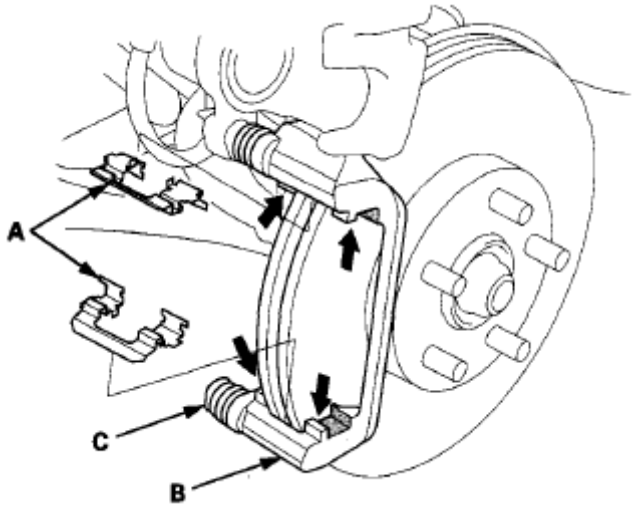


Fig. 22: Removing Pad Retainers
Courtesy of AMERICAN HONDA MOTOR CO., INC.

8. Clean the caliper bracket (B) thoroughly; remove any rust, and check for grooves and cracks. Verify that the caliper pins (C) move in and out smoothly. Clean and lube if needed.
9. Inspect the brake disc for runout, thickness, parallelism (see **THICKNESS AND PARALLELISM**), and check for damage and cracks.
10. Apply a thin coat of M-77 assembly paste (P/N 08798-9010) to the retainer mating surface of the caliper bracket (indicated by the arrows).
11. Install the pad retainers. Wipe off the excess assembly paste from the retainers. Keep any assembly paste away from the brake disc and the brake pads.
12. Install the brake caliper piston compressor tool (A) on the caliper body (B).

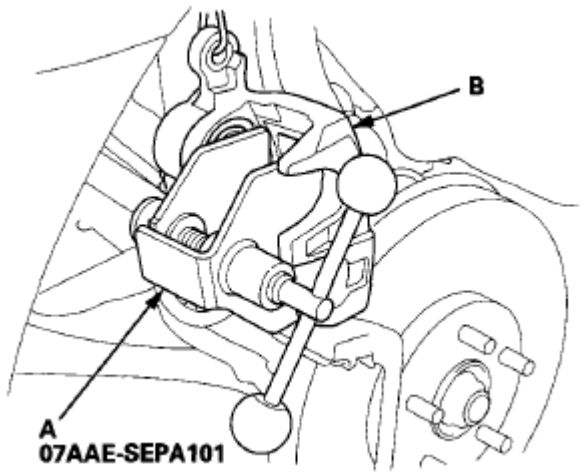


Fig. 23: Installing Brake Caliper Piston Compressor Tool On Caliper Body
Courtesy of AMERICAN HONDA MOTOR CO., INC.

13. Press in the piston with the brake caliper piston compressor tool so the caliper body will fit over the brake

pads. Make sure the piston boot is in position to prevent damaging it when pivoting the caliper body down.

NOTE: Be careful when pressing in the piston; brake fluid might overflow from the master cylinder's reservoir. If brake fluid gets on any painted surface, wash it off immediately with water.

14. Remove the brake caliper piston compressor tool.
15. Apply a thin coat of M-77 assembly paste (P/N 08798-9010) to the pad side of the shims (A), the back of the brake pads (B) and the other areas indicated by the arrows. Wipe off the excess assembly paste from the pad shims and the brake pads friction material. Keep grease and assembly paste away from the brake disc and the brake pads. Contaminated brake disc or brake pads reduce stopping ability.

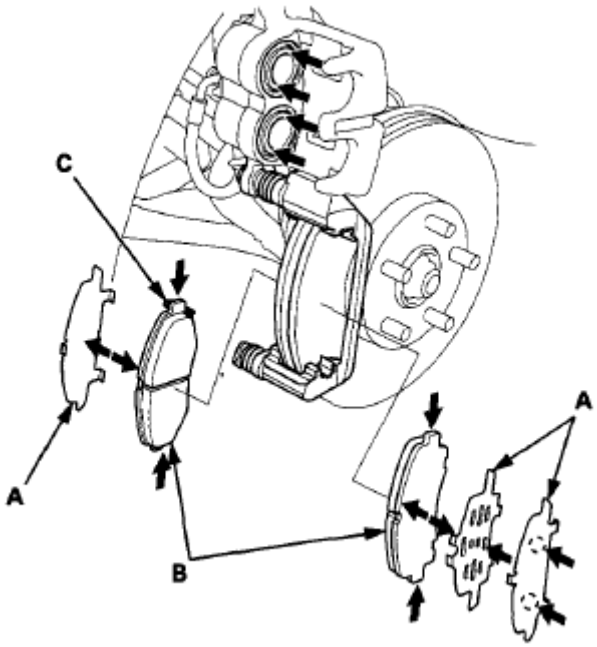


Fig. 24: Applying Thin Coat Of M-77 Assembly Paste To Pad Side Of Shims
Courtesy of AMERICAN HONDA MOTOR CO., INC.

16. Install the brake pads and pad shims correctly. Install the brake pad with the wear indicator (C) on the upper inside position. If you are reusing the brake pads, always reinstall the brake pads in their original positions to prevent a temporary loss of braking efficiency.
17. Pivot the caliper body down into position. Install the flange bolt (A), and tighten it to the specified torque.

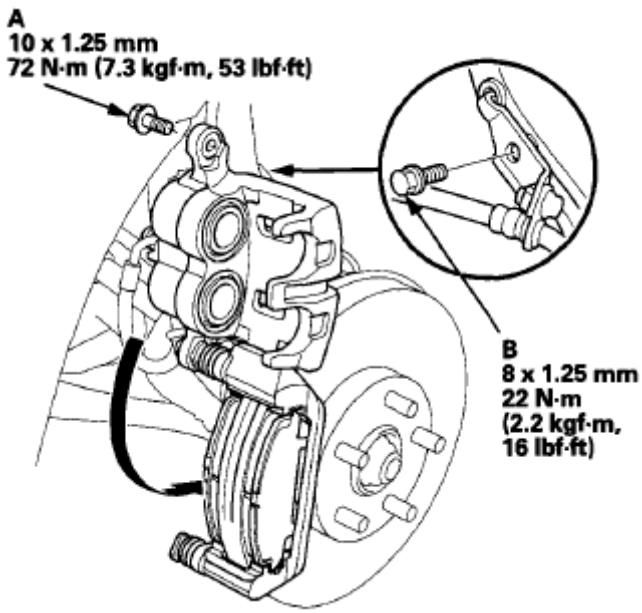


Fig. 25: Pivoting Caliper Body Down Into Position With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

18. Install the brake hose mounting bolt (B).
19. Clean the mating surface between the brake disc and the inside of the wheel, then install the front wheels.
20. Press the brake pedal several times to make sure the brakes work.

NOTE: Engagement may require a greater pedal stroke immediately after the brake pads have been replaced as a set. Several applications of the brake pedal will restore the normal pedal stroke.

21. Add brake fluid as needed.
22. After installation, check for leaks at hose and line joints or connections, and retighten if necessary. Test-drive the vehicle, then check for leaks (see **BRAKE HOSE AND LINE INSPECTION**).

FRONT BRAKE DISC INSPECTION

THICKNESS AND PARALLELISM

1. Raise and support the vehicle (see **LIFT AND SUPPORT POINTS**).
2. Remove the front wheels.
3. Remove the brake pads (see **FRONT BRAKE PAD INSPECTION AND REPLACEMENT**).
4. Using a micrometer (A), measure the brake disc thickness at eight points, about 45 ° apart and 10 mm (0.39 in) in from the outer edge of the brake disc. Replace the brake disc if the smallest measurement is less than the maximum refinishing limit.

Brake disc thickness:

Standard: 27.9- 28.1 mm (1.098- 1.106 in)

Maximum refinishing limit: 26.0 mm (1.024 in)

Brake disc parallelism*: 0.015 mm (0.00059 in) max.

*: This is the maximum allowable difference between the thickness measurements.

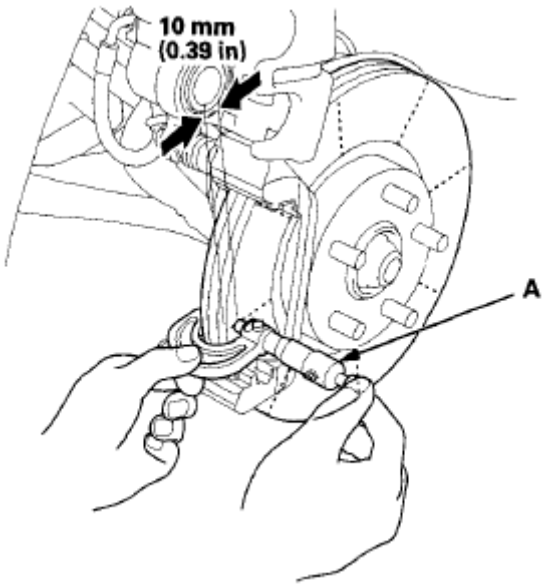


Fig. 26: Measuring Brake Disc Thickness By Using Micrometer
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. If the brake disc is beyond the service limit for parallelism, refinish the brake disc with a Honda-approved commercially available on-car brake lathe.

NOTE: If the brake disc is beyond the service limit for refinishing, replace it (see FRONT BRAKE DISC REPLACEMENT).

6. Inspect the brake disc runout.

RUNOUT

1. Raise and support the vehicle (see **LIFT AND SUPPORT POINTS**).
2. Remove the front wheels.
3. Remove the brake pads (see **FRONT BRAKE PAD INSPECTION AND REPLACEMENT**).
4. Inspect the brake disc to wheel surface for damage and cracks. Clean the brake disc thoroughly, and remove all rust.
5. Install suitable flat washers (A) and the wheel nuts (B), and tighten the wheel nuts to the specified torque to hold the brake disc securely against the hub.

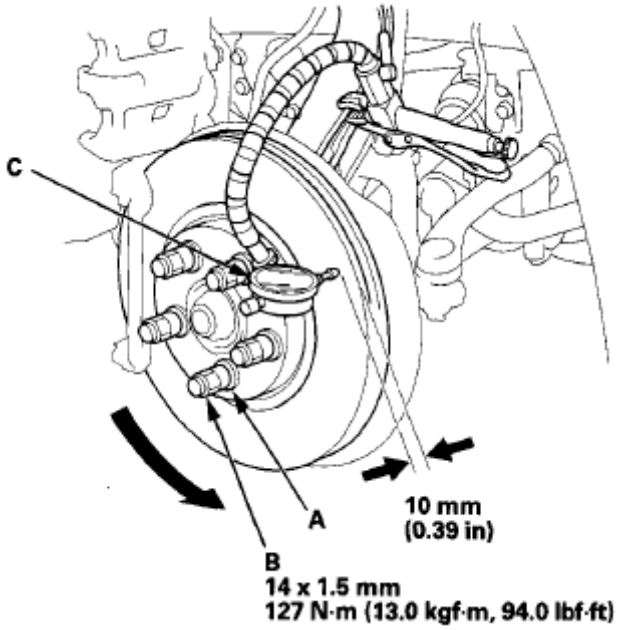


Fig. 27: Identifying Brake Disc, Flat Washers, Wheel Nuts & Dial Gauge With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Set up the dial gauge (C) against the brake disc as shown, and measure the runout at 10 mm (0.39 in) from the outer edge of the brake disc.

   Brake disc runout:

   Service limit: 0.04 mm (0.0016 in)

7. If the brake disc is beyond the service limit, refinish the brake disc with a Honda-approved commercially available on-car brake lathe.

   Maximum refinishing limit: 26.0 mm (1.024 in)

   NOTE:
   - **If the brake disc is beyond the service limit for refinishing, replace it (see FRONT BRAKE DISC REPLACEMENT).**
   - **If the brake disc is replaced with a new one, check the new disc for runout. If the new disc is out of specification, refinish the disc.**

8. Install the brake pads (see **FRONT BRAKE PAD INSPECTION AND REPLACEMENT**).
9. Clean the mating surfaces between the brake disc and the inside of the wheel, then install the front wheels.

FRONT BRAKE DISC REPLACEMENT

NOTE: Keep grease away from the brake disc and the brake pads.

1. Raise and support the vehicle (see **LIFT AND SUPPORT POINTS**).
2. Remove the front wheel.
3. Remove the brake hose mounting bolt (A).

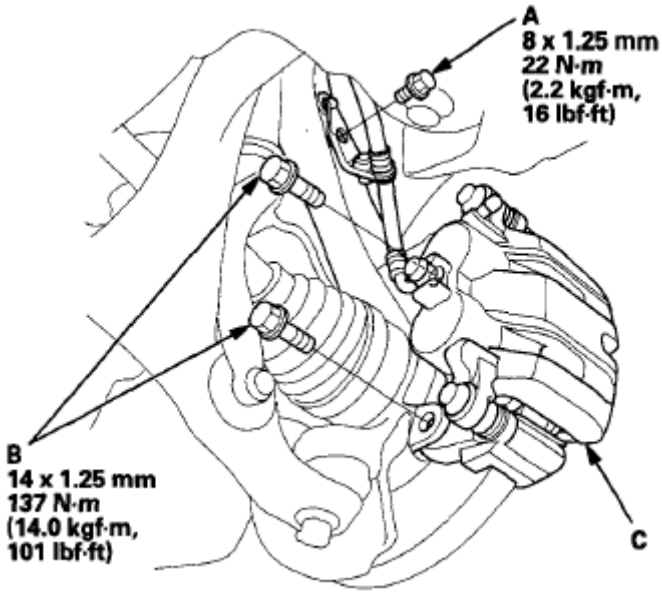


Fig. 28: Identifying Brake Hose Mounting Bolt, Brake Caliper Bracket Mounting Bolts And Caliper Assembly With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Remove the brake caliper bracket mounting bolts (B), then remove the caliper assembly (C) from the knuckle. To prevent damage to the caliper assembly or brake hose, use a short piece of wire to hang the caliper assembly from the undercarriage. Do not twist the brake hose excessively.
5. Remove the brake disc flathead screws (A).

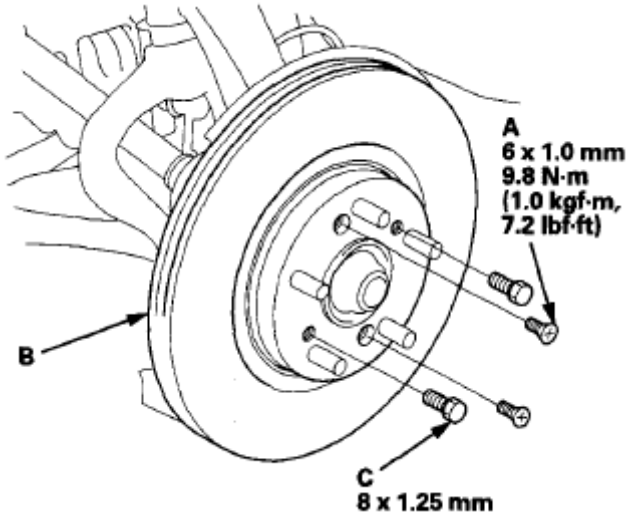


Fig. 29: Identifying Brake Disc And Flathead Screws With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Remove the brake disc (B) from the front hub.

NOTE: If the brake disc is stuck to the front hub, thread two 8 x 1.25 mm bolts (C) into the brake disc to push it away from the front hub. Turn each bolt 90 degrees at a time to prevent the brake disc from binding.

7. Install the brake disc in the reverse order of removal.

NOTE: Before installing the brake disc, clean the mating surfaces between the front hub and the inside of the brake disc.

8. Inspect the brake disc runout (see **FRONT BRAKE DISC INSPECTION**).
9. Clean the mating surfaces between the brake disc and the inside of the wheel, then install the front wheel.

FRONT BRAKE CALIPER OVERHAUL

CAUTION: Frequent inhalation of brake pad dust, regardless of material composition, could be hazardous to your health.

- **Avoid breathing dust particles.**
- **Never use an air hose or brush to clean brake assemblies. Use an OSHA-approved vacuum cleaner.**

NOTE: Do not spill brake fluid on the vehicle; it may damage the paint. If brake fluid gets on the paint, wash it off immediately with water.

Remove, disassemble, inspect, reassemble, and install the caliper, and note these items:

- Make sure that the caliper pins are installed correctly. The upper caliper pin and the lower caliper pin are different. If these caliper pins are installed in the wrong location, it will cause vibration, uneven or rapid brake pad wear, and possibly uneven tire wear.
- To prevent dripping brake fluid, cover disconnected hose joints with clean rags or shop towels.
- Clean all parts in brake fluid and air dry; blow out all passages with compressed air.
- Before reassembling, check that all parts are free of dirt and other foreign particles.
- Replace parts with new ones as specified in the illustration.
- Make sure no dirt or other foreign matter gets in the brake fluid.
- Make sure no grease or oil gets on the brake discs or the pads.
- When reusing brake pads, always reinstall them in their original positions to prevent loss of braking efficiency.
- Do not reuse drained brake fluid. Use only new Acura DOT 3 Brake Fluid from an unopened container. Using a non-Acura brake fluid can cause corrosion and shorten the life of the system.
- Coat the pistons, the piston seal grooves, and the caliper bores with clean brake fluid.
- Use recommended greases in the front caliper set.
- After installing the caliper, check the brake hose and line for leaks, interference, and twisting.
- Refer to the **EXPLODED VIEW** as needed during this procedure.

EXPLODED VIEW

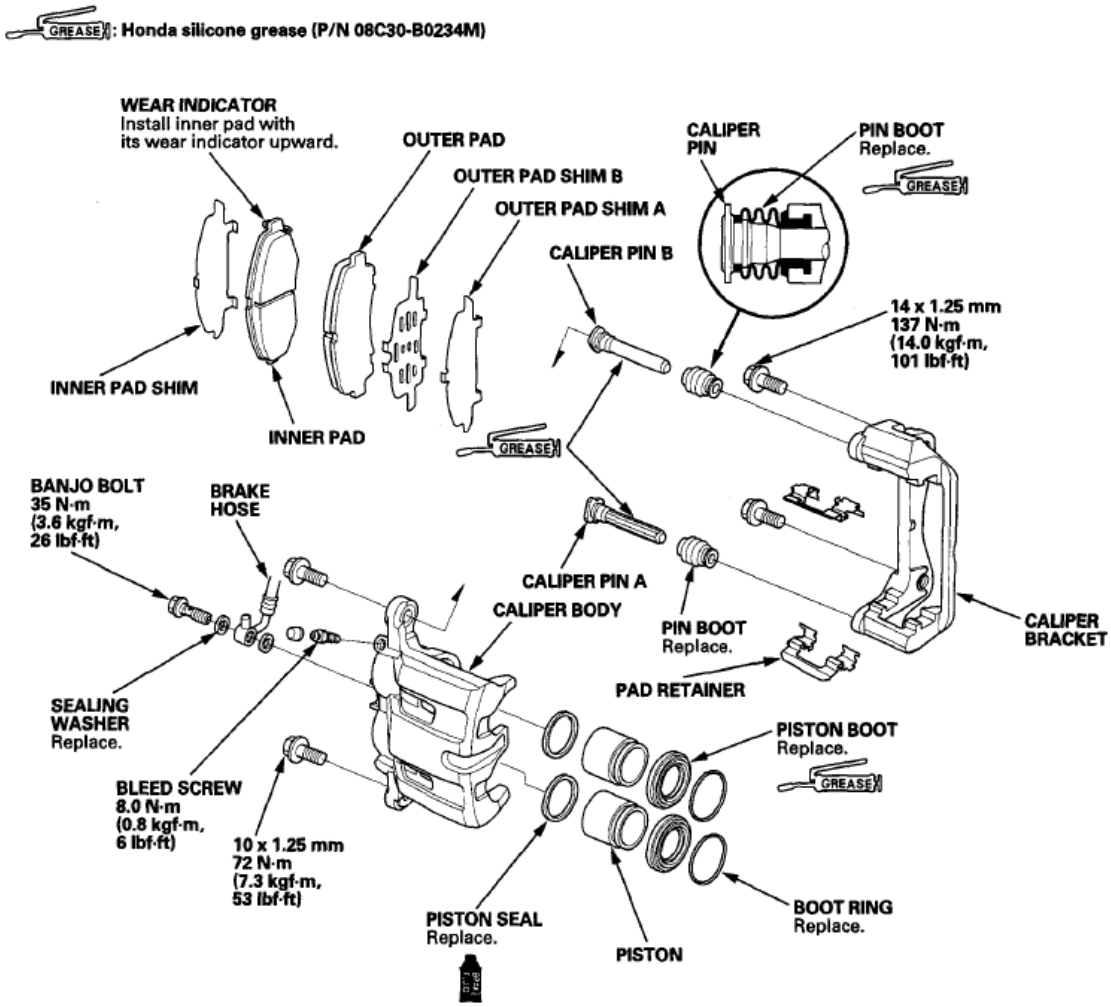


Fig. 30: Exploded View Of Front Brake Caliper With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

MASTER CYLINDER REPLACEMENT

NOTE: **Do not spill brake fluid on the vehicle; it may damage the paint. If brake fluid gets on the paint, wash it off immediately with water.**

NOTE:

- **Be careful not to damage or bend the brake lines during removal and installation.**
- **After removal, plug the ends of the hoses and the joints to prevent spilling brake fluid.**

1. Remove the engine compartment covers (A) in the engine compartment (see **ENGINE COMPARTMENT COVER REPLACEMENT**).

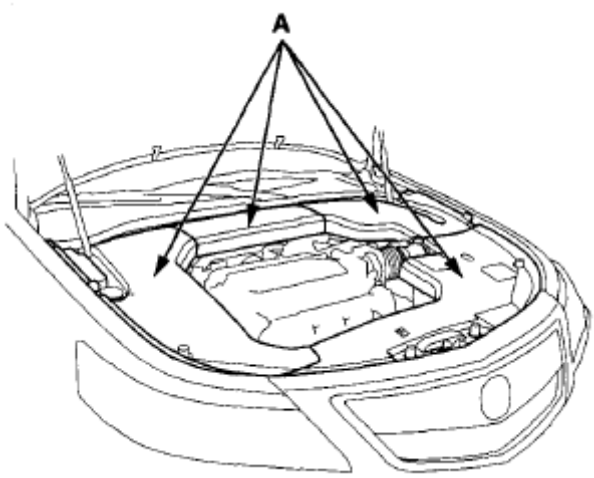


Fig. 31: Identifying Engine Compartment Covers
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Remove the strut brace (see **FRAME BRACE REPLACEMENT**).
3. Remove the under-hood fuse/relay box mount nut (A) and release the clip (B).

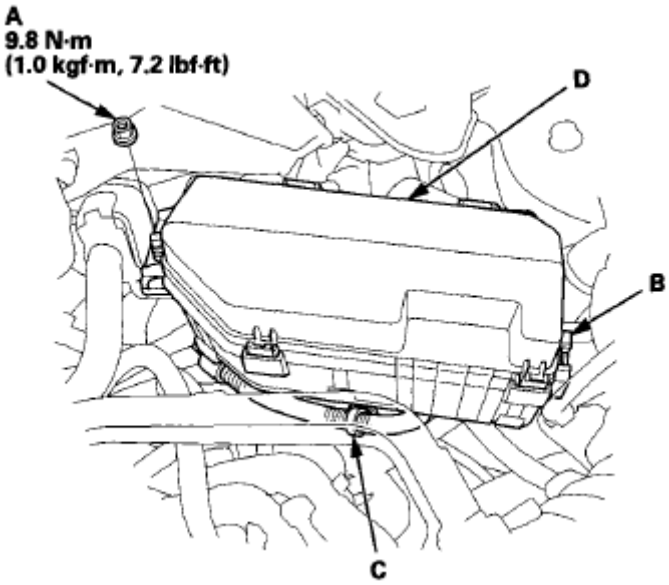


Fig. 32: Identifying Mount Nut, Clip, Harness Clamp And Under-Hood Fuse/Relay Box With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Remove the harness clamp (C), then move the under-hood fuse/relay box (D) aside.
5. Remove the reservoir cap and the brake fluid from the master cylinder reservoir with a syringe.
6. Disconnect the brake fluid level switch connector (A).

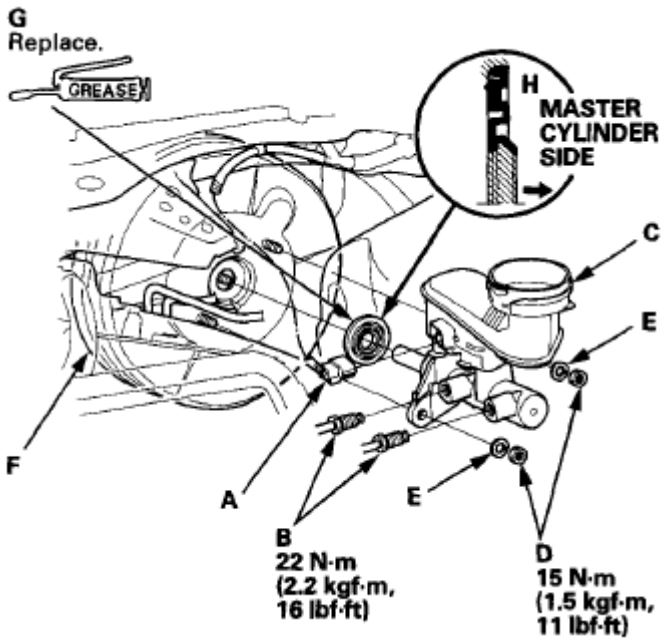


Fig. 33: Identifying Fluid Level Switch Connector, Brake Lines, Master Cylinder & Fasteners With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Disconnect the brake lines (B) from the master cylinder (C). To prevent spills, cover the hose joints with clean rags or shop towels.
8. Remove the master cylinder mounting nuts (D) and the washers (E).
9. Remove the master cylinder from the brake booster (F). Be careful not to bend or damage the brake lines when removing the master cylinder.
10. Remove the rod seal (G) from the master cylinder.

NOTE: During installation, set a new rod seal onto the master cylinder with its grooved side (H) toward the master cylinder.

11. Install the master cylinder with a new rod seal in the reverse order of removal, and note these items:
    - Coat the inner bore lip and the outer circumference of the new rod seal with the Shin-Etsu silicone grease (P/N 08798-9013).
    - Make sure not to get any silicone grease on the terminal part of the connectors and switches, especially if you have silicone grease on your hands or gloves.
    - Check the brake pedal height and free play after installing the master cylinder, and adjust it if necessary (see **BRAKE PEDAL AND BRAKE PEDAL POSITION SWITCH ADJUSTMENT**).
12. Bleed the brake system (see **BRAKE SYSTEM BLEEDING**).
13. Spin the wheels to check for brake drag.

MASTER CYLINDER INSPECTION

1. Remove the master cylinder (see **MASTER CYLINDER REPLACEMENT**).
2. Inspect and note these items:
   - Before reassembling, check that all parts are free of dirt and other foreign particles.
   - Do not try to disassemble the master cylinder assembly. Replace the master cylinder assembly with a new part if necessary.
   - Do not allow dirt or foreign matter to contaminate the brake fluid.

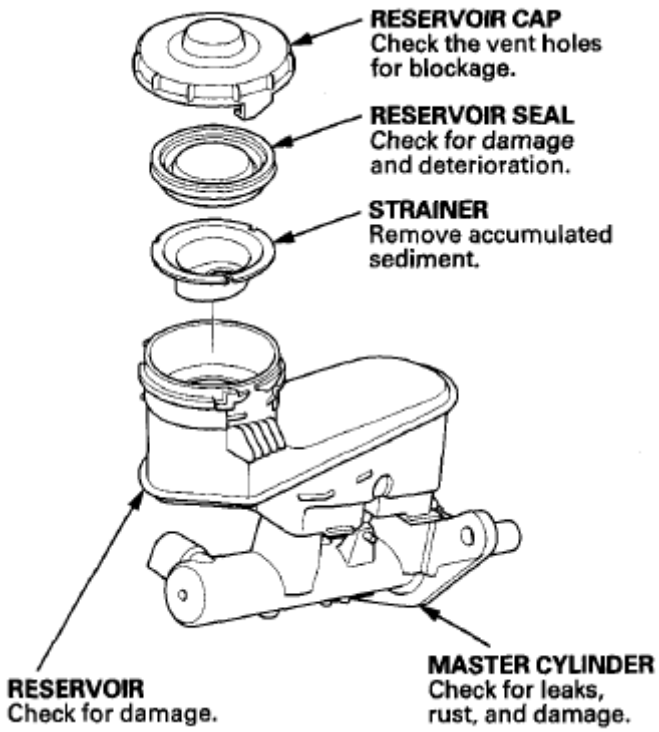


Fig. 34: Identifying Master Cylinder, Reservoir, Cap, Seal And Strainer
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Install the master cylinder (see **MASTER CYLINDER REPLACEMENT**).

BRAKE BOOSTER TEST

FUNCTIONAL TEST

1. With the ignition switch in LOCK (0), or press the engine start/stop button to select the OFF mode, press the brake pedal several times to deplete the vacuum reservoir, then press the brake pedal hard and hold it for 15 seconds. If the brake pedal sinks, either the master cylinder is bypassing internally or the brake system is leaking. Inspect the brake hoses and lines (see **BRAKE HOSE AND LINE INSPECTION**).
2. Start the engine with the brake pedal pressed. If the brake pedal sinks slightly, the vacuum booster is operating normally. If the brake pedal height does not vary, do the brake system test (see **BRAKE SYSTEM TEST**).

LEAK TEST

1. Press the brake pedal with the engine running, then turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode. The brake pedal height should not vary while pressed for 30 seconds.
   - If the pedal height rises, go to step 7.
   - If it does not rise, go to step 2.
2. Start the engine and let it idle for 30 seconds. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode, and wait 30 seconds. Press the brake pedal several times using normal pressure. When the pedal is first pressed, it should be low. On consecutive applications, the pedal height should gradually rise.
   - If it rises, the booster is OK.
   - If it does not rise, go to step 4.
3. Remove the engine compartment covers (A) in the engine compartment (see **ENGINE COMPARTMENT COVER REPLACEMENT**).

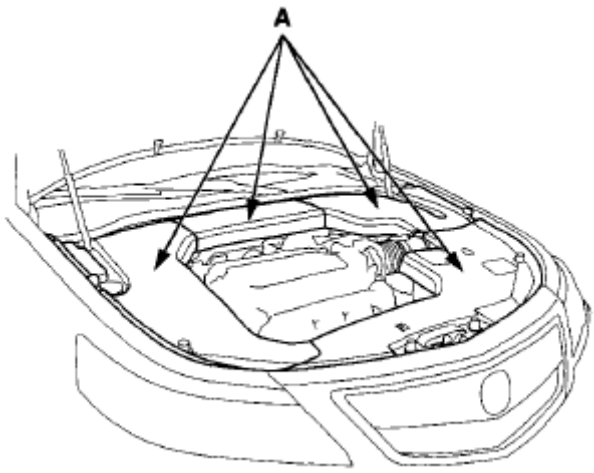


Fig. 35: Identifying Engine Compartment Covers
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Disconnect the brake booster vacuum hose (A) at the booster. The check valve (B) is built into the hose.

NOTE: If the check valve is faulty, replace the brake booster vacuum hose and the check valve as an assembly.

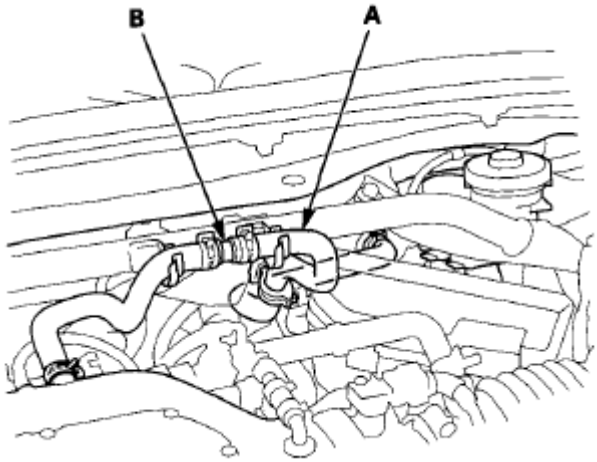


Fig. 36: Identifying Brake Booster Vacuum Hose And Check Valve
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Start the engine, and let it idle. There should be vacuum available.
   - If no vacuum is available, the check valve is not working properly. Replace the brake booster vacuum hose and the check valve as an assembly, and retest.
   - If vacuum is found, go to step 6.
6. With the ignition switch in LOCK (0), or press the engine start/stop button to select the OFF mode, reconnect the vacuum hose to the brake booster.
7. Start the engine, and then pinch the brake booster vacuum hose between the check valve and the booster.
8. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode, and wait 30 seconds. Press the brake pedal several times using normal pressure. When the pedal is first pressed, it should be low. On consecutive applications, the pedal height should gradually rise.
   - If the pedal position does not vary, inspect the seal between the master cylinder and the booster. If the seal is OK, replace the brake booster.
   - If the pedal position varies, replace the brake booster vacuum hose and the check valve as an assembly.

BRAKE BOOSTER REPLACEMENT

1. Do the battery terminal disconnection procedure (see **BATTERY TERMINAL DISCONNECTION AND RECONNECTION**).
2. Remove the master cylinder (see **MASTER CYLINDER REPLACEMENT**).
3. Remove the cowl cover (see **FRONT BULKHEAD BRACE COVER REPLACEMENT**).
4. Remove the under-hood fuse/relay box cover (A), then remove the two positive (+) terminals (B).

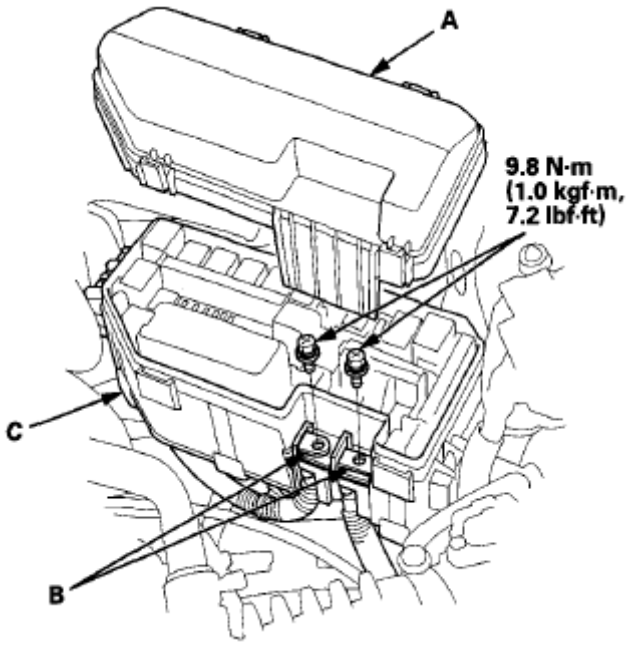


Fig. 37: Identifying Under-Hood Fuse/Relay Box, Cover & Terminals With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Move the under-hood fuse/relay box (C) aside.
6. Disconnect the brake booster vacuum hose (A) from the brake booster.

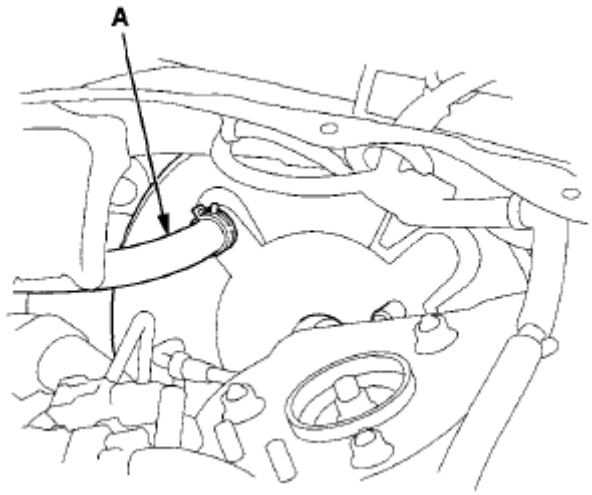


Fig. 38: Identifying Brake Booster Vacuum Hose
Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Remove the under-hood fuse/relay box bracket (A), then remove the engine wire harness clamps (B).

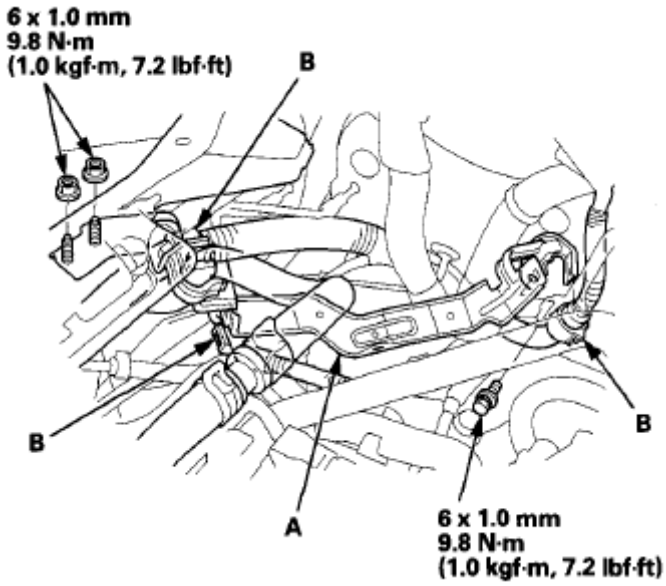


Fig. 39: Identifying Under-Hood Fuse/Relay Box Bracket, Engine Wire Harness Clamps & Mounting Bolts With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

8. Remove the brake lines (A) from the brake line clamp (B).

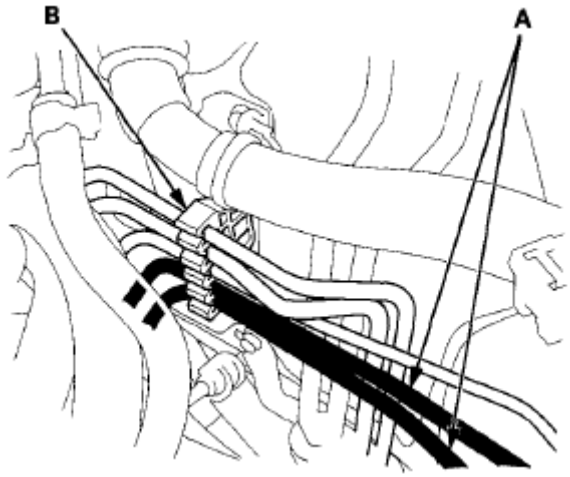


Fig. 40: Identifying Brake Lines And Brake Line Clamp
Courtesy of AMERICAN HONDA MOTOR CO., INC.

9. Remove the driver's dashboard undercover (see **DRIVER'S DASHBOARD UNDERCOVER REMOVAL/INSTALLATION**).
10. Remove the lock pin (A) and the clevis pin (B), then disconnect the yoke from the brake pedal.

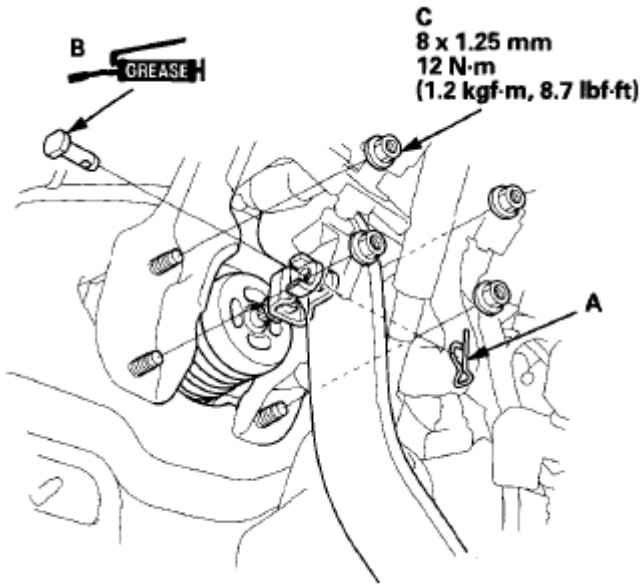


Fig. 41: Identifying Lock Pin, Clevis Pin With Brake Booster Mounting Nuts With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

11. Remove the brake booster mounting nuts (C).
12. Remove the brake booster (A) from the engine compartment.

NOTE:

- **Use a new brake booster gasket (B) during reassembly.**
- **Be careful not to damage the brake booster mounting surfaces and the threads on the booster stud.**
- **Be careful not to bend or damage the brake lines.**

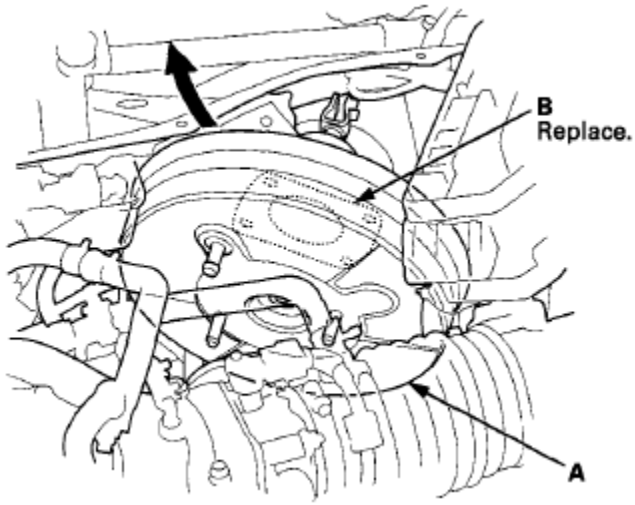


Fig. 42: Removing Brake Booster From Engine Compartment
Courtesy of AMERICAN HONDA MOTOR CO., INC.

13. Install the brake booster in the reverse order of removal, and note these items:
    - Install the master cylinder after installing the brake booster (see **MASTER CYLINDER REPLACEMENT**).
    - Check the brake pedal height and free play after installing the master cylinder, and adjust it if necessary (see **BRAKE PEDAL AND BRAKE PEDAL POSITION SWITCH ADJUSTMENT**).
    - Bleed the brake system (see **BRAKE SYSTEM BLEEDING**).
14. Do the battery terminal reconnection procedure (see **BATTERY TERMINAL DISCONNECTION AND RECONNECTION**).

REAR BRAKE PAD INSPECTION AND REPLACEMENT

Special Tools Required

Brake Caliper Piston Compressor 07AAE-SEPA101

CAUTION: Frequent inhalation of brake pad dust, regardless of material composition, could be hazardous to your health.

- **Avoid breathing dust particles.**
- **Never use an air hose or brush to clean brake assemblies. Use an OSHA-approved vacuum cleaner.**

INSPECTION

1. Raise and support the vehicle (see **LIFT AND SUPPORT POINTS**).
2. Remove the rear wheels.
3. Check the thickness (A) of the inner pad (B) and the outer pad (C). Do not include the thickness of the backing plate.

   Brake pad thickness:

   Standard: 9.6- 10.2 mm (0.378- 0.402 in)

   Service limit: 1.6 mm (0.063 in)

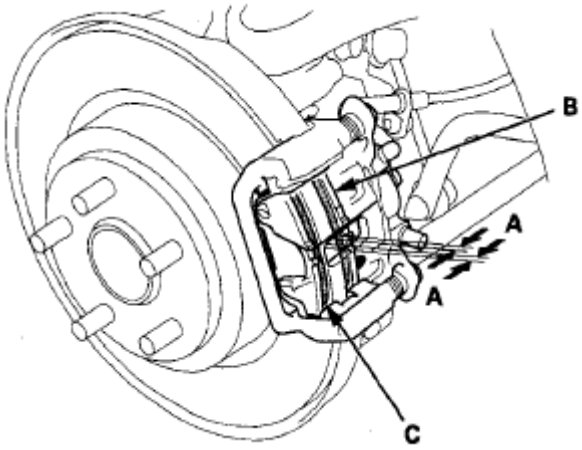


Fig. 43: Checking Thickness Of Inner Pad And Outer Pad
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. If any part of the brake pad thickness is less than the service limit, replace the brake pads as a set.
5. Clean the mating surfaces between the brake disc/drum and the inside of the wheel, then install the rear wheels.

REPLACEMENT

1. Remove some brake fluid from the master cylinder.
2. Raise and support the vehicle (see **LIFT AND SUPPORT POINTS**).
3. Remove the rear wheels.
4. Remove the brake hose mounting bolt (A).

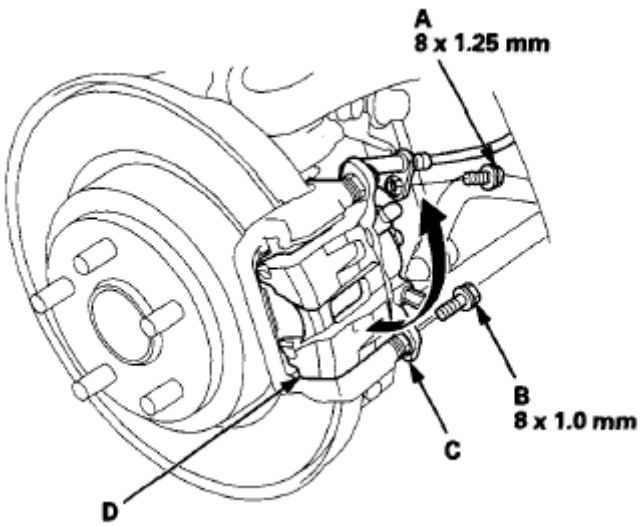


Fig. 44: Pivoting Caliper Body Up Out Of Way
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Remove the flange bolt (B) while holding the caliper pin (C) with a wrench. Be careful not to damage the

pin boot, and pivot the caliper body (D) up out of the way. Check the hose and the pin boots for damage and deterioration.

6. Remove the pad shims (A) and the brake pads (B).

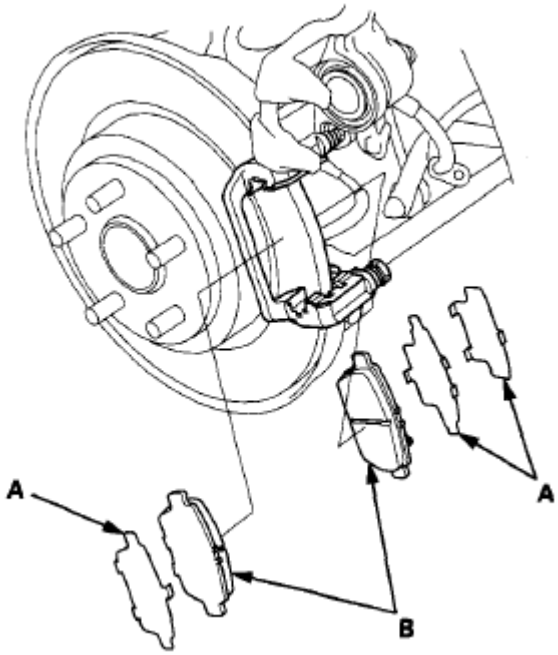


Fig. 45: Identifying Pad Shims And Brake Pads
Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Remove the upper and lower pad retainers (A).

NOTE: The upper and lower pad retainers are different. During installation, make sure the pad retainers are in the proper positions.

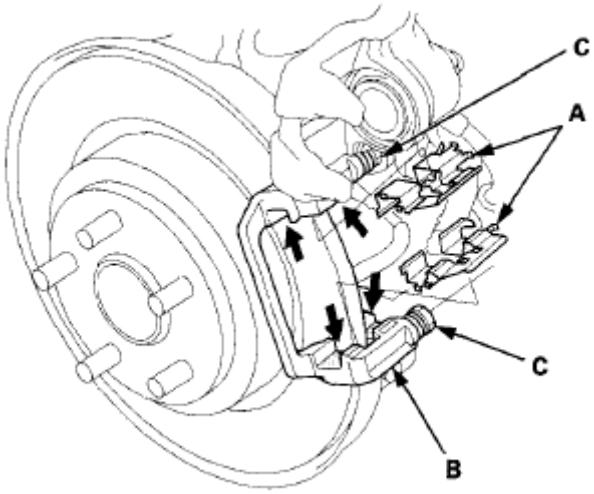


Fig. 46: Removing Upper And Lower Pad Retainers

Courtesy of AMERICAN HONDA MOTOR CO., INC.

8. Clean the caliper bracket (B) thoroughly; remove any rust, and check for grooves and cracks. Verify that the caliper pins (C) move in and out smoothly. Clean and lube if needed.
9. Inspect the brake disc/drum for runout, thickness, parallelism (see **REAR BRAKE DISC INSPECTION**), and check for damage and cracks.
10. Apply a thin coat of M-77 assembly paste (P/N 08798-9010) to the retainer mating surface of the caliper bracket (indicated by the arrows).
11. Install the upper and lower pad retainers. Wipe off the excess assembly paste from the retainers. Keep the assembly paste away from the brake disc/drum and the brake pads.
12. Install the brake caliper piston compressor tool (A) on the caliper body (B).

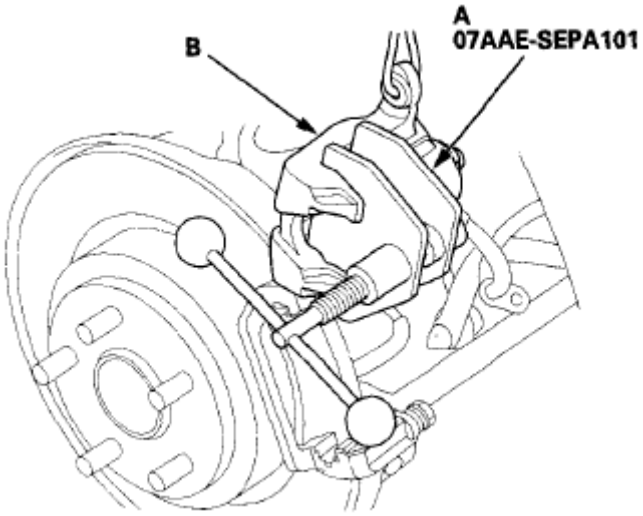


Fig. 47: Installing Brake Caliper Piston Compressor Tool On Caliper Body
Courtesy of AMERICAN HONDA MOTOR CO., INC.

13. Press in the piston with the brake caliper piston compressor tool so the caliper body will fit over the brake pads. Make sure the piston boot is in position to prevent damaging it when pivoting the caliper body down.

NOTE: Be careful when pressing in the piston; brake fluid might overflow from the master cylinder's reservoir. If brake fluid gets on any painted surface, wash it off immediately with water.

14. Remove the brake caliper piston compressor tool.
15. Apply a thin coat of M-77 assembly paste (P/N 08798-9010) to the pad side of the shims (A), the back of the brake pads (B), and the other areas indicated by the arrows. Wipe off the excess assembly paste from the pad shims and the brake pads friction material. Keep grease and assembly paste away from the brake disc/drum and the brake pads. Contaminated brake disc/drum or brake pads reduce stopping ability.

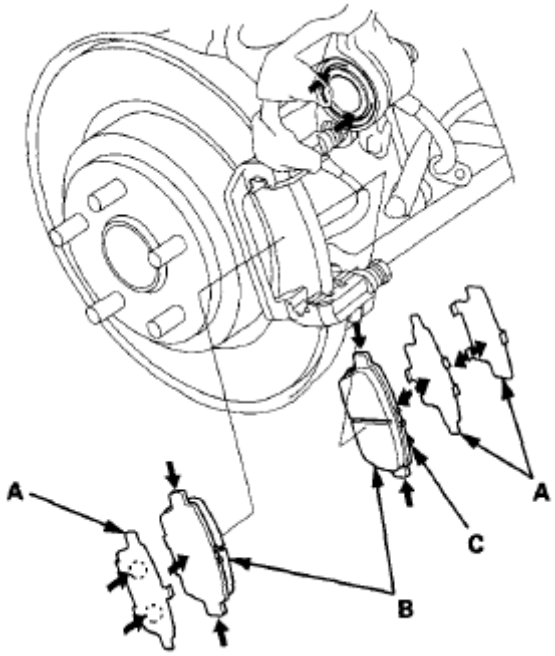


Fig. 48: Applying Thin Coat Of M-77 Assembly Paste To Pad Side Of Shims
Courtesy of AMERICAN HONDA MOTOR CO., INC.

16. Install the brake pads and pad shims correctly. Install the brake pad with the wear indicator (C) on the bottom inside position. If you are reusing the brake pads, always reinstall the brake pads in their original positions to prevent a temporary loss of braking efficiency.
17. Pivot the caliper body down into position. Install the flange bolt (A), and tighten it to the specified torque while holding the caliper pin (B) with a wrench being careful not to damage the pin boot.

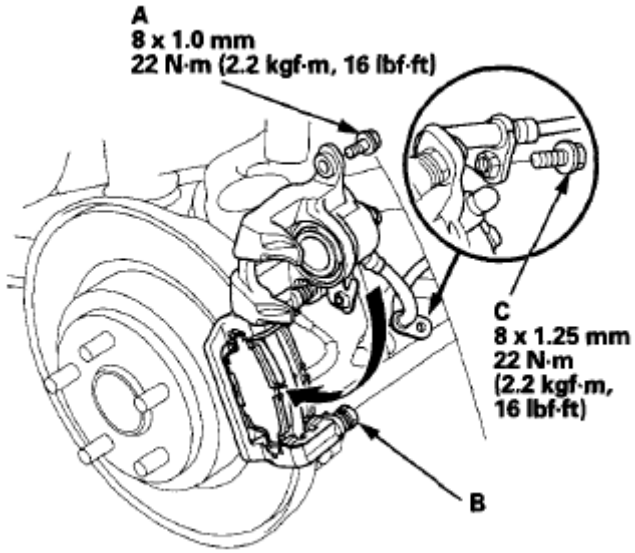


Fig. 49: Identifying Caliper Body, Flange Bolt, Caliper Pin & Brake Hose Mounting Bolt With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

18. Install the brake hose mounting bolt (C).
19. Clean the mating surfaces between the brake disc/drum and the inside of the wheel, then install the rear wheels.
20. Press the brake pedal several times to make sure the brakes work.

NOTE: Engagement may require a greater pedal stroke immediately after the brake pads have been replaced as a set. Several applications of the brake pedal will restore the normal pedal stroke.

21. Add brake fluid as needed.
22. After installation, check for leaks at hose and line joints or connections, and retighten if necessary. Test-drive the vehicle, then recheck for leaks (see **BRAKE HOSE AND LINE INSPECTION**).

REAR BRAKE DISC INSPECTION

THICKNESS AND PARALLELISM

1. Raise and support the vehicle (see **LIFT AND SUPPORT POINTS**).
2. Remove the rear wheels.
3. Remove the brake pads (see **REAR BRAKE PAD INSPECTION AND REPLACEMENT**).
4. Using a micrometer (A), measure the brake disc/drum thickness at eight points, about 45 ° apart and 10 mm (0.39 in) in from the outer edge of the brake disc/drum. Replace the brake disc/drum if the smallest measurement is less than the maximum refinishing limit.

   Brake disc/drum thickness:

   Standard: 10.9- 11.1 mm (0.429- 0.437 in)

   Maximum refinishing limit: 9.0 mm (0.354 in)

   Brake disc/drum parallelism*: 0.015 mm (0.00059 in) max.

   *: This is the maximum allowable difference between the thickness measurements.

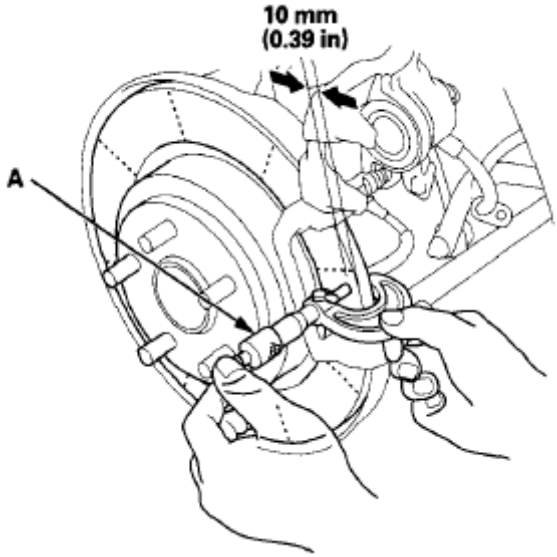


Fig. 50: Measuring Brake Disc/Drum Thickness By Using Micrometer
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. If the brake disc/drum is beyond the service limit for parallelism, refinish the brake disc/drum with a Honda-approved commercially available on-car brake lathe.

NOTE: If the brake disc/drum is beyond the service limit for refinishing, replace it (see REAR BRAKE DISC REPLACEMENT).

6. Inspect the brake disc/drum runout.

RUNOUT

1. Raise and support the vehicle (see **LIFT AND SUPPORT POINTS**).
2. Remove the rear wheels.
3. Remove the brake pads (see **REAR BRAKE PAD INSPECTION AND REPLACEMENT**).
4. Inspect the brake disc/drum to wheel surface for damage and cracks. Clean the brake disc/drum thoroughly, and remove all rust.
5. Install suitable flat washers (A) and the wheel nuts (B), and tighten the wheel nuts to the specified torque to hold the brake disc/drum securely against the hub.

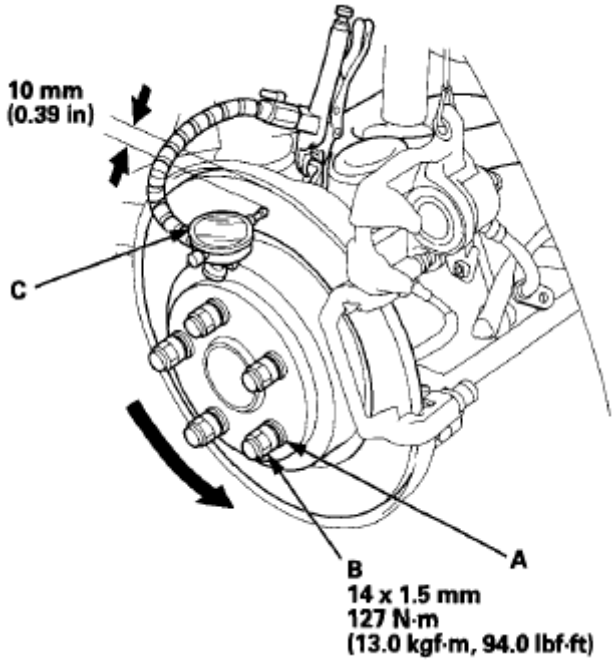


Fig. 51: Identifying Disc, Flat Washers, Wheel Nuts & Dial Gauge With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Set up the dial gauge (C) against the brake disc/drum as shown, and measure the runout at 10 mm (0.39 in) from the outer edge of the brake disc/drum.

   Brake disc/drum runout:

   Service limit: 0.04 mm (0.0016 in)

7. If the brake disc/drum is beyond the service limit, refinish the brake disc/drum with a Honda-approved commercially available on-car brake lathe.

   Maximum refinishing limit: 9.0 mm (0.354 in)

   NOTE:
   - **If the brake disc/drum is beyond the service limit for refinishing, replace it (see REAR BRAKE DISC REPLACEMENT).**
   - **If the brake disc/drum is replaced with a new one, check the new disc/drum for runout. If the new disc/drum is out of specification, refinish the disc/drum.**

8. Install the brake pads (see **REAR BRAKE PAD INSPECTION AND REPLACEMENT**).
9. Clean the mating surfaces between the brake disc/drum and the inside of the wheel, then install the rear wheels.

REAR BRAKE DISC REPLACEMENT

NOTE: Keep grease away from the brake disc/drum and the brake pads.

1. Raise and support the vehicle (see **LIFT AND SUPPORT POINTS**).
2. Remove the rear wheel.
3. Release the parking brake lever fully.
4. Remove the brake hose mounting bolt (A).

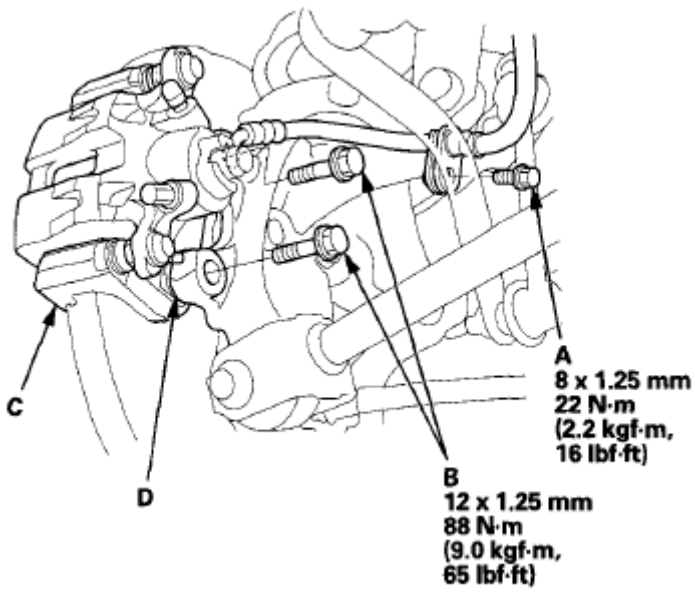


Fig. 52: Identifying Caliper Assembly, Washers, Brake Hose Mounting Bolt And Brake Caliper Bracket Mounting Bolts With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Remove the brake caliper bracket mounting bolts (B), then remove the caliper assembly (C) from the knuckle. To prevent damage to the caliper assembly or brake hose, use a short piece of wire to hang the caliper assembly from the undercarriage. Do not twist the brake hose excessively.

NOTE: Make sure the washers (D) are in position on reassembly, if they are removed (see step 6 under KNUCKLE/HUB/WHEEL BEARING REPLACEMENT).

6. Remove the brake disc/drum flathead screws (A).

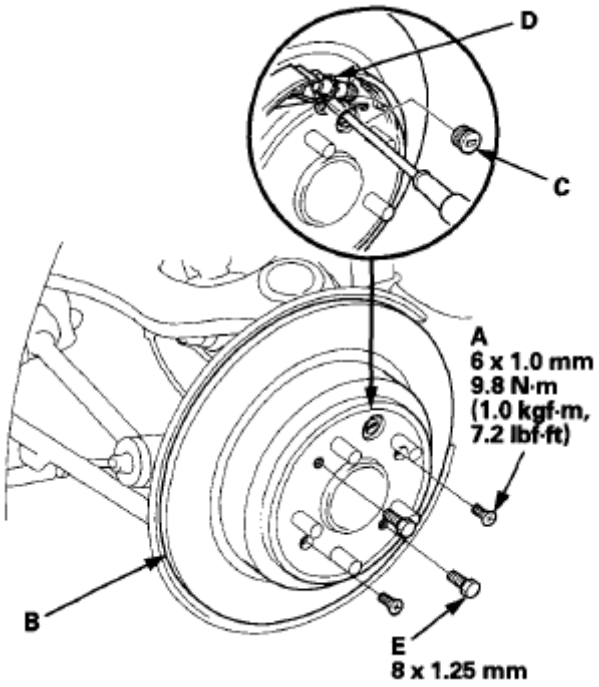


Fig. 53: Removing Brake Disc/Drum Flathead Screws With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Remove the brake disc/drum (B) from the hub bearing unit.

NOTE:

- **Remove the access plug (C), then if necessary, turn the adjuster nut (D) with a flat-tip screwdriver until the shoes become loose.**
- **If the brake disc/drum is stuck to the hub bearing unit, thread two 8 x 1.25 mm bolts (E) into the brake disc/drum to push it away from the hub bearing unit. Turn each bolt 90 degrees at a time to prevent the brake disc/drum from binding.**

8. Install the brake disc/drum in the reverse order of removal, and note these items:
   - Before installing the brake disc/drum, clean the mating surfaces between the hub bearing unit and the inside of the brake disc/drum.
   - Adjust the parking brake (see **PARKING BRAKE INSPECTION AND ADJUSTMENT**).
9. Inspect the brake disc runout (see **REAR BRAKE DISC INSPECTION**).
10. Clean the mating surfaces between the brake disc/drum and the inside of the wheel, then install the rear wheel.

REAR BRAKE CALIPER OVERHAUL

CAUTION: Frequent inhalation of brake pad dust, regardless of material composition, could be hazardous to your health.

- **Avoid breathing dust particles.**
- **Never use an air hose or brush to clean brake assemblies. Use an OSHA-approved vacuum cleaner.**

NOTE: Do not spill brake fluid on the vehicle; it may damage the paint. If brake fluid gets on the paint, wash it off immediately with water.

Remove, disassemble, inspect, reassemble, and install the caliper, and note these items:

- Make sure that the caliper pins are installed correctly. The upper caliper pin and the lower caliper pin are different. If these caliper pins are installed in the wrong location, it will cause vibration, uneven or rapid brake pad wear, and possibly uneven tire wear.
- To prevent dripping brake fluid, cover disconnected hose joints with clean rags or shop towels.
- Clean all parts in brake fluid and air dry; blow out all passages with compressed air.
- Before reassembling, check that all parts are free of dirt and other foreign particles.
- Replace parts with new ones as specified in the illustration.
- Make sure no dirt or other foreign matter gets in the brake fluid.
- Make sure no grease or oil gets on the brake discs or the pads.
- When reusing brake pads, always reinstall them in their original positions to prevent loss of braking efficiency.
- Do not reuse drained brake fluid. Use only new Acura DOT 3 Brake Fluid from an unopened container. Using a non-Acura brake fluid can cause corrosion and shorten the life of the system.
- Coat the piston, the piston seal groove, and the caliper bore with clean brake fluid.
- Use recommended greases in the rear caliper set.
- After installing the caliper, check the brake hose and line for leaks, interference, and twisting.
- Refer to the **EXPLODED VIEW** as needed during this procedure.

EXPLODED VIEW

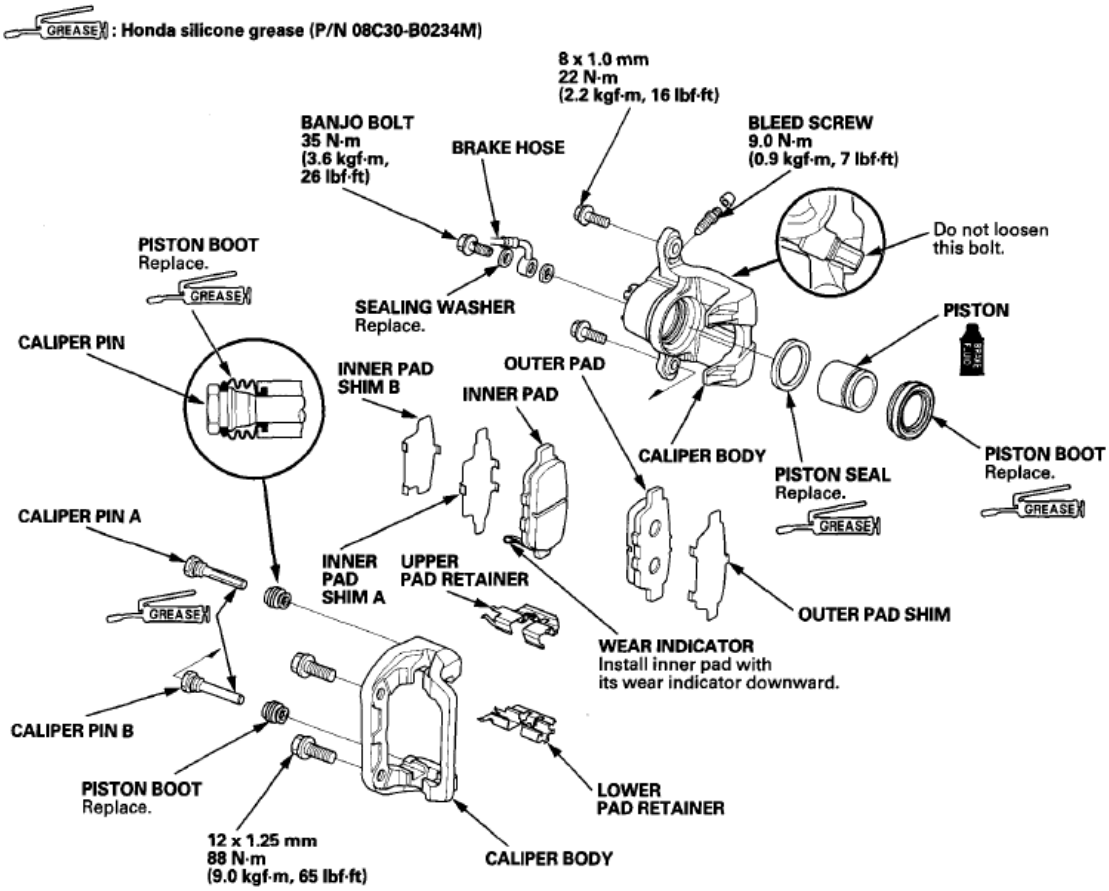


Fig. 54: Exploded View Of Rear Brake Caliper With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

PARKING BRAKE INSPECTION

CAUTION: Frequent inhalation of brake shoe dust, regardless of material composition, could be hazardous to your health.

- **Avoid breathing dust particles.**
- **Never use an air hose or brush to clean brake assemblies. Use an OSHA-approved vacuum cleaner.**

1. Raise and support the vehicle (see **LIFT AND SUPPORT POINTS**).
2. Remove the rear wheels.
3. Release the parking brake, and remove the brake disc/drum (see **REAR BRAKE DISC REPLACEMENT**).

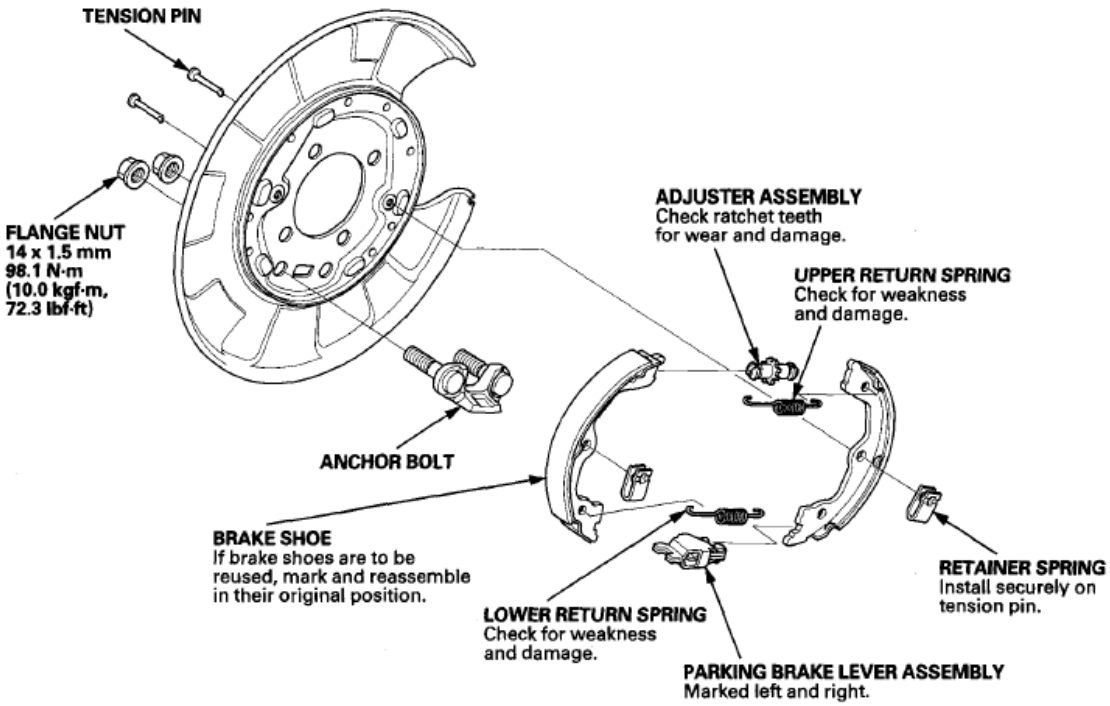


Fig. 55: Identifying Parking Brake Components With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Check the parking brake linings (A) for cracking, glazing, wear, and contamination.

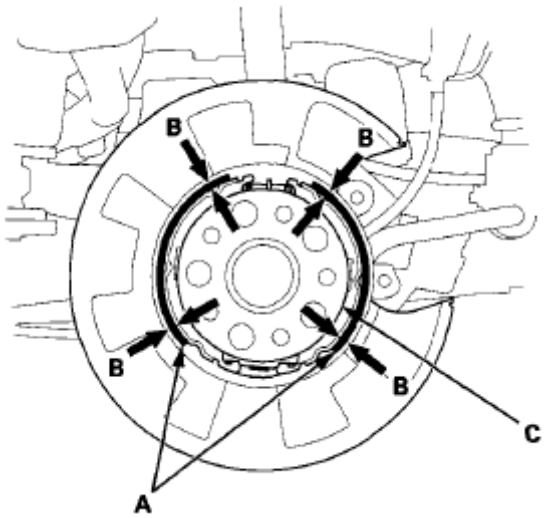


Fig. 56: Checking Parking Brake Lining Thickness
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Measure the parking brake lining thickness (B). Measurement does not include brake shoe thickness.

Parking brake lining thickness:

Standard: 3.4 mm (0.134 in)

Service limit: 1.0 mm (0.039 in)

6. If any part of the parking brake lining thickness is less than the service limit, replace all the parking brake shoes as a set (see **PARKING BRAKE SHOE REPLACEMENT**).
7. Check the hub (C) for smooth operation. If it requires servicing, replace the hub bearing unit (see **HUB BEARING UNIT REPLACEMENT**).
8. Measure the inside diameter of the parking brake drum with an inside vernier caliper.

   Parking brake drum inside diameter:

   Standard: 189.9- 190.0 mm (7.476- 7.480 in)

   Service limit: 191.0 mm (7.520 in)

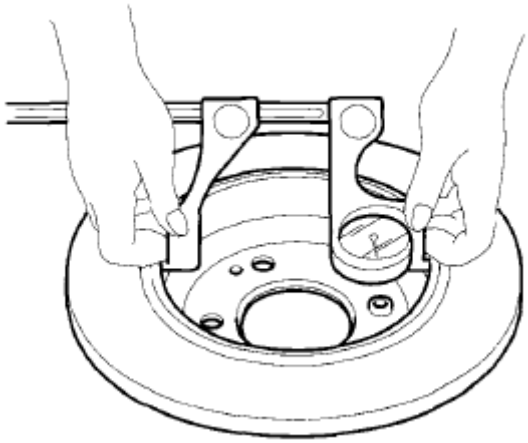


Fig. 57: Measuring Inside Diameter Of Parking Brake Drum With Inside Vernier Caliper
Courtesy of AMERICAN HONDA MOTOR CO., INC.

9. If the inside diameter of the parking brake drum is more than service limit, replace the brake disc/drum.
10. Check the parking brake disc/drum for scoring, grooves, and cracks.
11. Install the brake disc/drum and the brake caliper (see **REAR BRAKE DISC REPLACEMENT**).
12. Do the major parking brake adjustment (see **MAJOR ADJUSTMENT (TO BE DONE WHEN REPLACING PARKING BRAKE SHOES)**).
13. Clean the mating surface between the brake disc/drum and the inside of the wheel, then install the rear wheels.

PARKING BRAKE SHOE REPLACEMENT

CAUTION: Frequent inhalation of brake shoe dust, regardless of material composition, could be hazardous to your health.

- **Avoid breathing dust particles.**
- **Never use an air hose or brush to clean brake assemblies. Use an OSHA-approved vacuum cleaner.**

DISASSEMBLY

1. Raise and support the vehicle (see **LIFT AND SUPPORT POINTS**).
2. Remove the rear wheels.
3. Release the parking brake, and remove the brake disc/drum (see **REAR BRAKE DISC REPLACEMENT**).
4. Disconnect and remove the upper return spring (A).

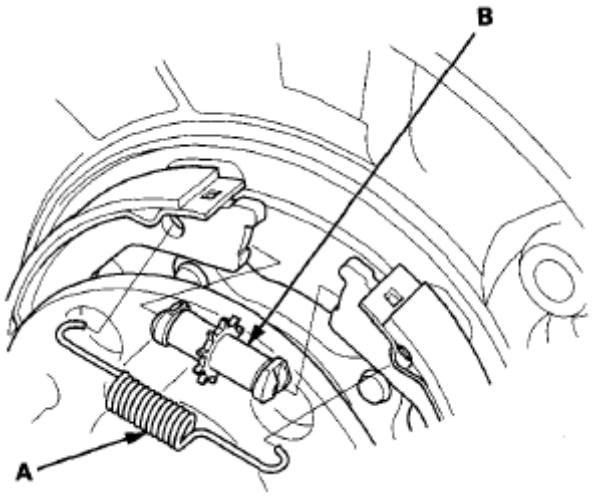


Fig. 58: Identifying Upper Return Spring And Adjuster Assembly
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Remove the adjuster assembly (B).
6. Disconnect and remove the lower return spring (A).

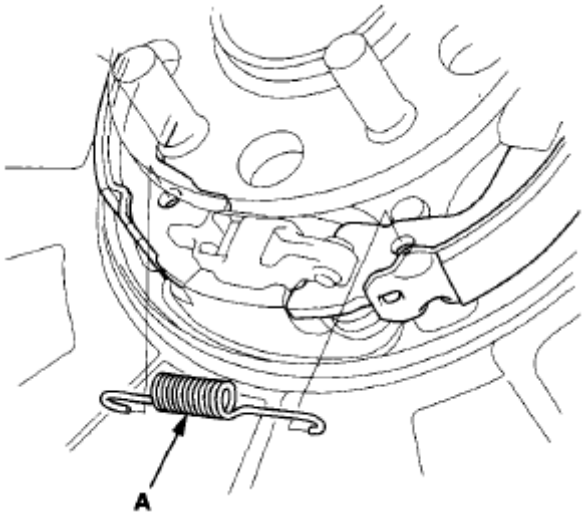


Fig. 59: Identifying Lower Return Spring
Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Remove the parking brake lever assembly (A), and disconnect it from the parking brake cable end (B).

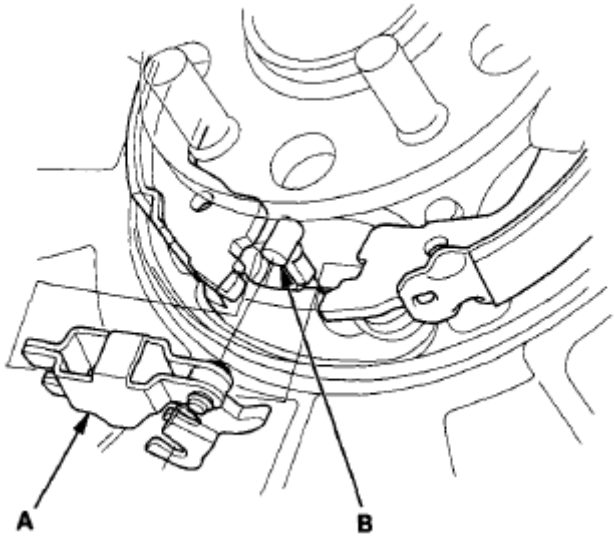


Fig. 60: Identifying Parking Brake Lever Assembly And Retainer Spring
Courtesy of AMERICAN HONDA MOTOR CO., INC.

8. Remove the tension pins (A) by pushing respective retainer springs (B), and turning the pin.

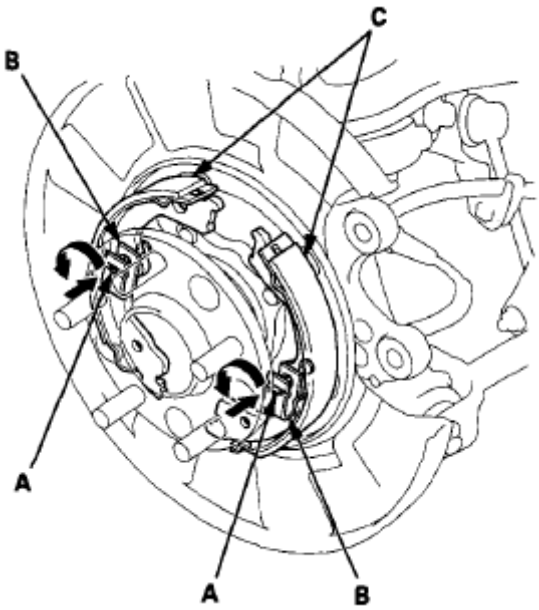


Fig. 61: Removing Tension Pins By Pushing Respective Retainer Springs And Turning Pin
Courtesy of AMERICAN HONDA MOTOR CO., INC.

9. Remove the parking brake shoes (C).

REASSEMBLY

1. Apply Molykote 44MA grease to the shoe ends (A), sliding surfaces (B), and opposite edges of the parking brake shoe (C) as shown. Wipe off any excess. Keep grease away from the brake linings.

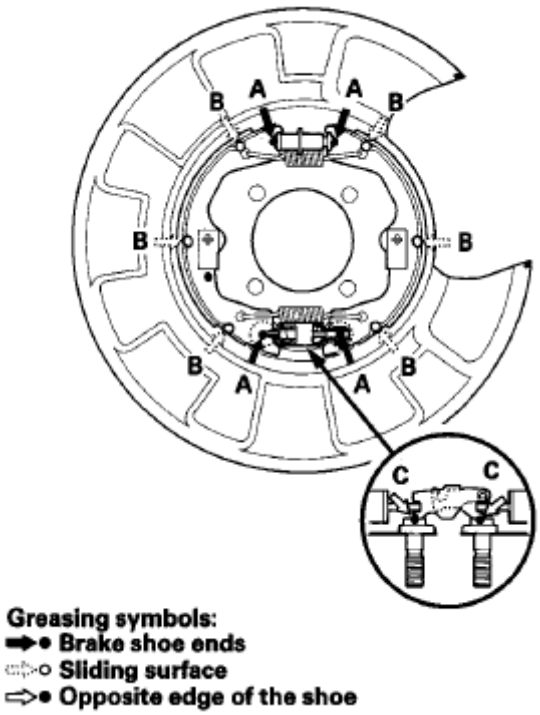


Fig. 62: Applying Molykote 44MA Grease To Shoe Ends, Sliding Surface And Opposite Edge Of Shoe
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Reinstall the tension pins (A) and retainer springs (B).

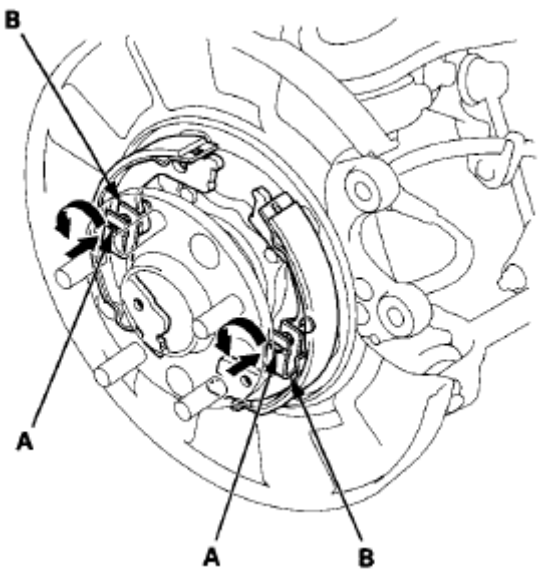


Fig. 63: Installing Tension Pins And Retainer Springs
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Connect the parking brake cable end (A) to the parking brake lever assembly (B), and install the parking

brake lever assembly.

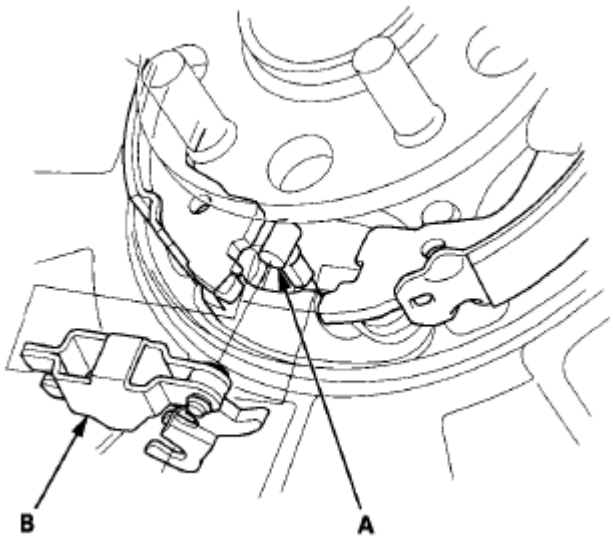


Fig. 64: Identifying Parking Brake Cable End And Lever Assembly
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Reinstall the lower return spring (A).

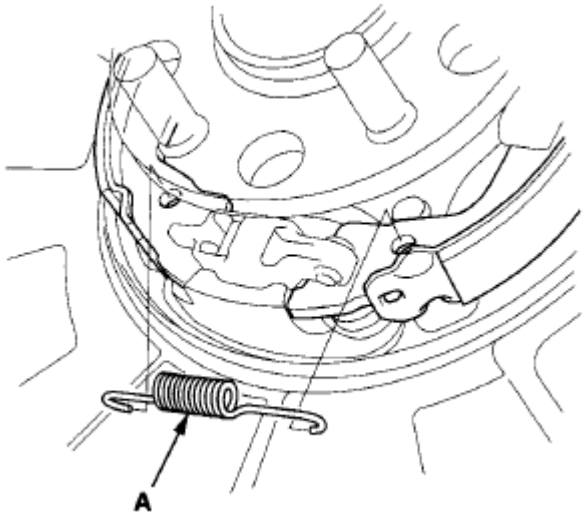


Fig. 65: Installing Lower Return Spring
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Clean the threaded portions of the clevis pin A, and coat the threads of the clevis pin A with grease. Clean the sliding surface of the clevis pin B, and coat the sliding surface of the clevis pin B with grease. Install the clevis pin A and B on the adjuster (C) and shorten the clevis pin A by turning the adjuster.

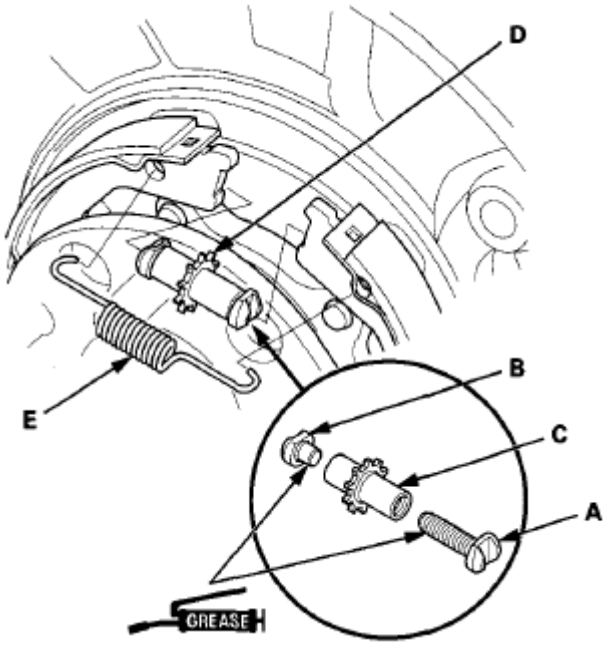


Fig. 66: Identifying Clevis Pins, Adjuster, Adjuster Assembly And Upper Return Spring
Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Position the brake shoe adjuster assembly (D) on the parking brake shoes.
7. Reinstall the upper return spring (E).
8. Install the brake disc/drum and the brake caliper (see **REAR BRAKE DISC REPLACEMENT**).
9. Do the major parking brake adjustment (see **MAJOR ADJUSTMENT (TO BE DONE WHEN REPLACING PARKING BRAKE SHOES)**).
10. Clean the mating surfaces between the brake disc/drum and the inside of the wheel, then install the rear wheels.

PARKING BRAKE SHOE LINING BREAK-IN

WARNING: Do this operation in a safe area.

NOTE:

- **Do the brake lining surface break-in when replacing shoes with new brake linings and/or new rear brake disc/drum.**
- **Check the number of parking brake lever clicks. Adjust the parking brake before lining surface break-in (see MAJOR ADJUSTMENT (TO BE DONE WHEN REPLACING PARKING BRAKE SHOES)).**

1. Park the vehicle on a firm, level surface.
2. Release the parking brake lever.
3. Drive the vehicle at 28 mph (45 km/h) and set cruise.

4. Pull the parking brake lever with 88 N (9 kgf, 20 lbf) (2 clicks) of force for 3 seconds.
5. Pull the parking brake lever with 167 N (17 kgf, 38 lbf) (5 clicks) of force for 12 seconds.
6. Check the parking brake lever adjustment (see **PARKING BRAKE INSPECTION AND ADJUSTMENT**).

BRAKE PEDAL REPLACEMENT

NOTE: The illustration shows A/T.

1. Remove the driver's dashboard undercover (see **DRIVER'S DASHBOARD UNDERCOVER REMOVAL/INSTALLATION**).
2. Disconnect the brake pedal position switch connector (A).

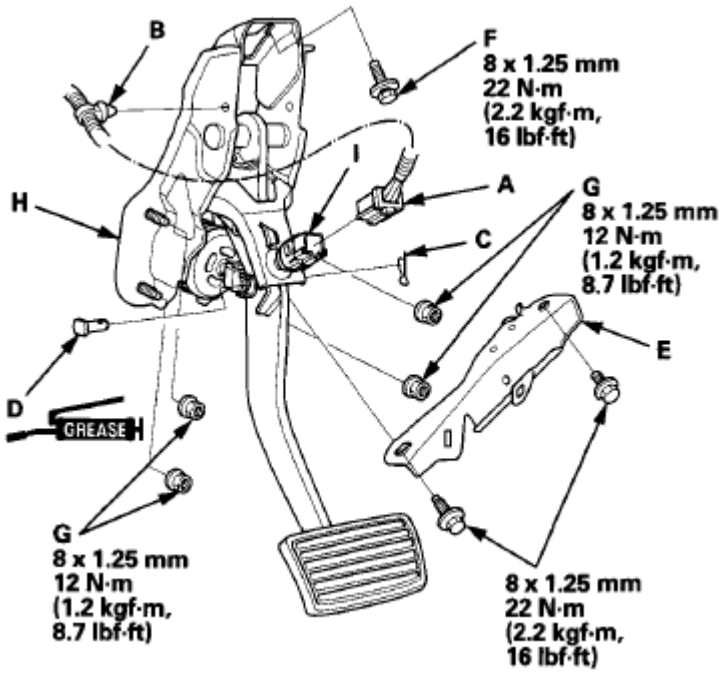


Fig. 67: Identifying Brake Pedal Components With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. A/T: Remove the wire harness clip (B).
4. Remove the lock pin (C) and the clevis pin (D).
5. Remove the brake pedal support member (E).
6. Remove the brake pedal bracket mounting bolt (F) and the nuts (G).
7. Remove the brake pedal with bracket (H).
8. Remove the brake pedal position switch (I) by turning it 45 ° counterclockwise.
9. Install the brake pedal in the reverse order of removal.
10. Adjust the brake pedal and the brake pedal position switch (see **BRAKE PEDAL AND BRAKE**

PEDAL POSITION SWITCH ADJUSTMENT).

BRAKE HOSE AND LINE INSPECTION

1. Inspect the brake hoses for damage, deterioration, leaks, interference, and twisting.
2. Check the brake lines for damage, rusting, and leaks. Also check for bent brake lines.
3. Check for leaks at hose and line joints and connections, and retighten if necessary.
4. Check the master cylinder and the VSA modulator-control unit for damage and leaks.

Connection Point	Component	Connected to	Specified Torque Value	Note
A	Front brake caliper	Brake hose	35 N.m (3.6 kgf.m, 26 lbf.ft)	Banjo bolt
		Bleed screw	8 N.m (0.8 kgf.m, 6 lbf.ft)	
B	Rear brake caliper	Brake hose	35 N.m (3.6 kgf.m, 26 lbf.ft)	Banjo bolt
		Bleed screw	9 N.m (0.9 kgf.m, 7 lbf.ft)	
C	Brake hose	Brake line	15 N.m (1.5 kgf.m, 11 lbf.ft)	Flare nut
D	Master cylinder	Brake line	22 N.m (2.2 kgf.m, 16 lbf.ft)	Flare nut
E	VSA modulator-control unit	Brake line (10 mm nut)	15 N.m (1.5 kgf.m, 11 lbf.ft)	Flare nut
		Brake line (12 mm nut)	22 N.m (2.2 kgf.m, 16 lbf.ft)	

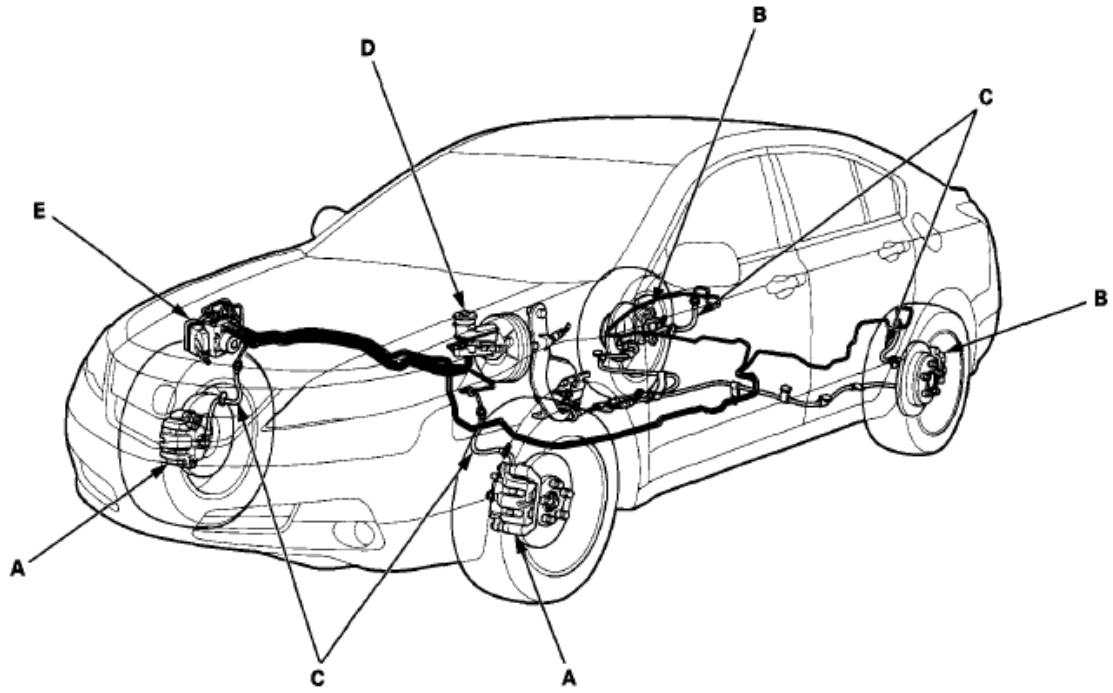


Fig. 68: Identifying Brake Hose And Line Components
Courtesy of AMERICAN HONDA MOTOR CO., INC.

BRAKE HOSE REPLACEMENT

NOTE: **Do not spill brake fluid on the vehicle; it may damage the paint. If brake fluid gets on the paint, wash it off immediately with water.**

NOTE:

- **Before reassembling, check that all parts are free of dirt and other foreign particles.**
- **Replace parts with new ones whenever specified to do so.**
- **After removal, plug the ends of the hoses and the joints to prevent spilling brake fluid.**

Front

1. Raise and support the vehicle (see **LIFT AND SUPPORT POINTS**).
2. Remove the front wheel.
3. Disconnect the brake line (A) from the brake hose (B), then remove the brake hose clip (C).

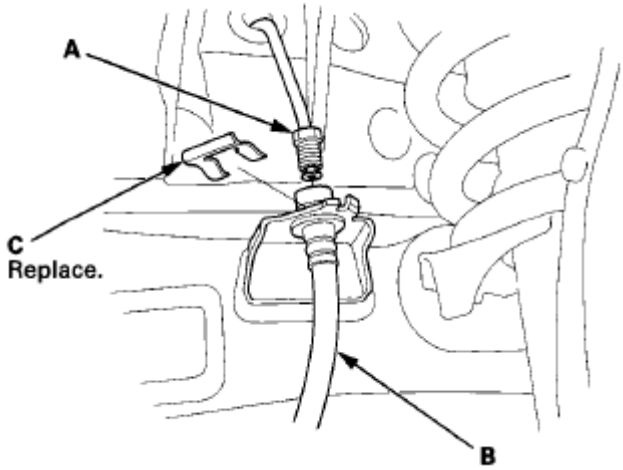


Fig. 69: Identifying Brake Line, Brake Hose And Clip
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Remove the banjo bolt (A), and disconnect the brake hose (B) from the caliper body.

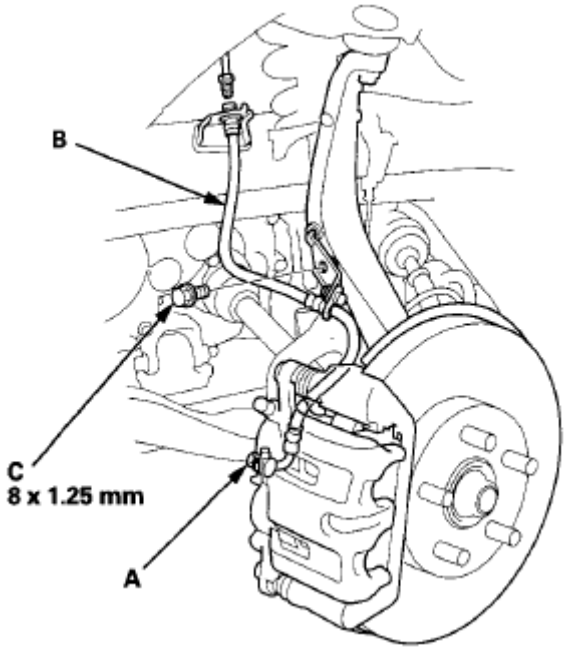


Fig. 70: Identifying Brake Hose, Banjo Bolt And Brake Hose Mounting Bolt
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Remove the brake hose mounting bolt (C), then remove the brake hose.
6. Install the brake hose (A) with the mounting bolt (B).

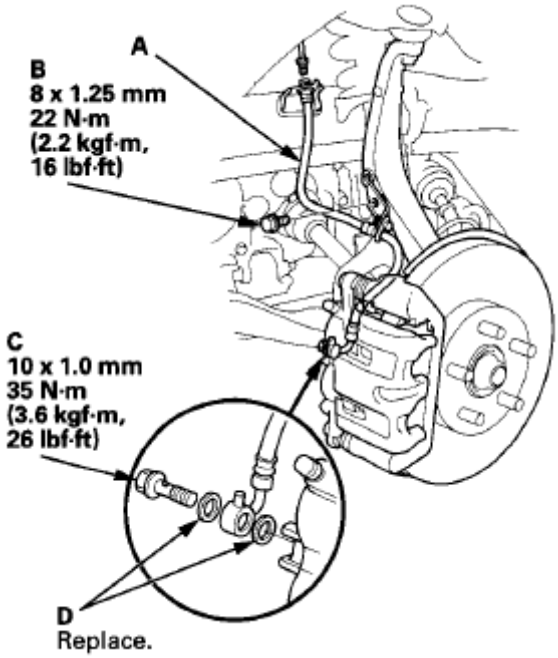


Fig. 71: Identifying Brake Hose, Washer, Banjo Bolt & Mounting Bolt With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Connect the brake hose to the caliper body with the banjo bolt (C) and new sealing washers (D).
8. Install a new brake hose clip (A) to the brake hose (B) on the bracket, then connect the brake line (C). Do not twist the brake hose.

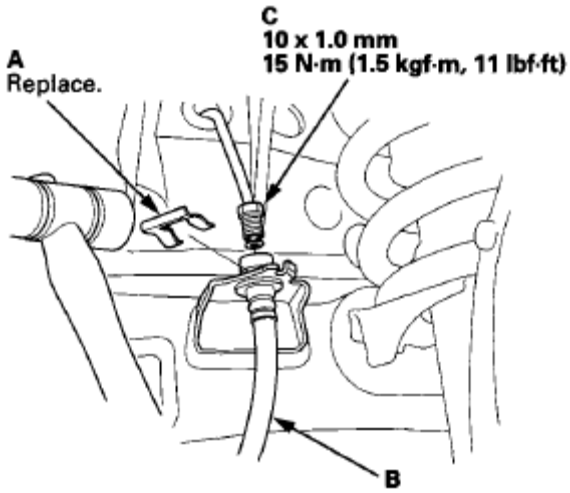


Fig. 72: Identifying Brake Line, Hose And Clip With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

9. After installing the brake hose, bleed the brake system (see **BRAKE SYSTEM BLEEDING**).
10. Do the following checks:
    - Check the brake hose and line joint for leaks, and tighten if necessary.

- Check the brake hoses for interference and twisting.

11. Clean the mating surfaces between the brake disc and the inside of the wheel, then install the front wheel.

REAR

1. Raise and support the vehicle (see **LIFT AND SUPPORT POINTS**).
2. Remove the rear wheel.
3. Disconnect the brake line (A) from the brake hose (B), then remove the brake hose clip (C).

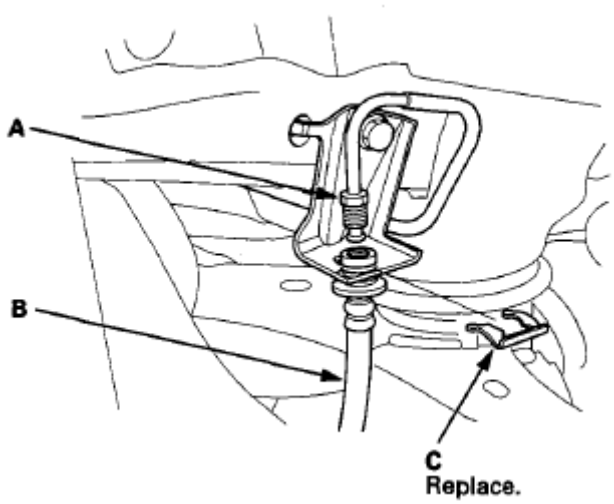


Fig. 73: Identifying Brake Line, Hose And Clip
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Remove the banjo bolt (A), and disconnect the brake hose (B) from the caliper body.

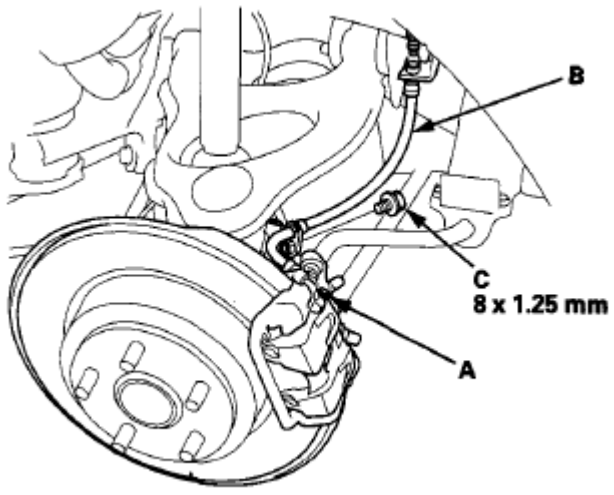


Fig. 74: Identifying Brake Hose, Banjo Bolt And Mounting Bolt
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Remove the brake hose mounting bolt (C), then remove the brake hose.
6. Install the brake hose (A) with the mounting bolt (B).

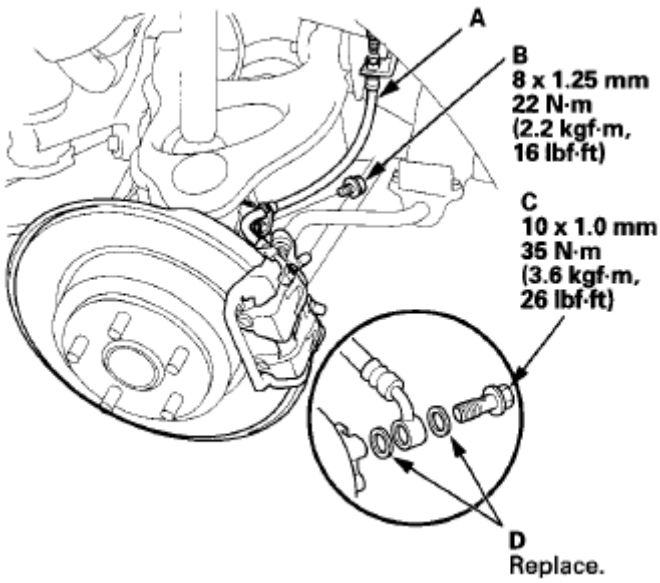


Fig. 75: Identifying Brake Hose, Washer, Banjo Bolt And Mounting Bolt With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Connect the brake hose to the caliper body with the banjo bolt (C) and new sealing washers (D).
8. Install a new brake hose clip (A) to the brake hose (B) on the bracket, then connect the brake line (C). Do not twist the brake hose.

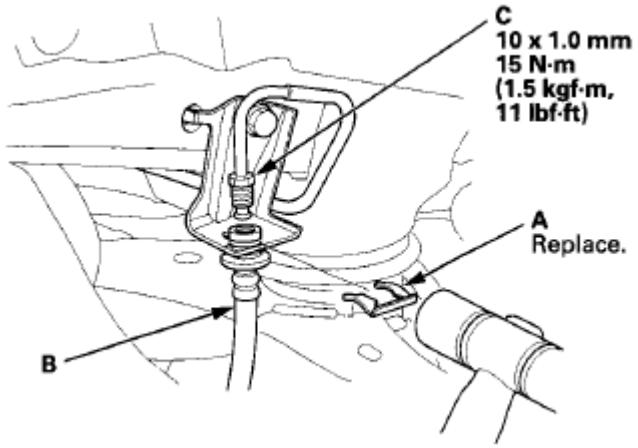


Fig. 76: Identifying Brake Hose, Line And Clip With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

9. After installing the brake hoses, bleed the brake system (see **BRAKE SYSTEM BLEEDING**).
10. Do the following checks:

- Check the brake hose and line joint for leaks, and tighten if necessary.
- Check the brake hose for interference and twisting.

11. Clean the mating surfaces between the brake disc/drum and the inside of the wheel, then install the rear wheel.

PARKING BRAKE LEVER REPLACEMENT

1. Release the parking brake lever fully.
2. Remove the center console (see **CENTER CONSOLE REMOVAL/INSTALLATION**).
3. Remove the RF unit (if equipped) (see **RF UNIT REPLACEMENT**).
4. Remove the parking brake lever mount bolts (A).

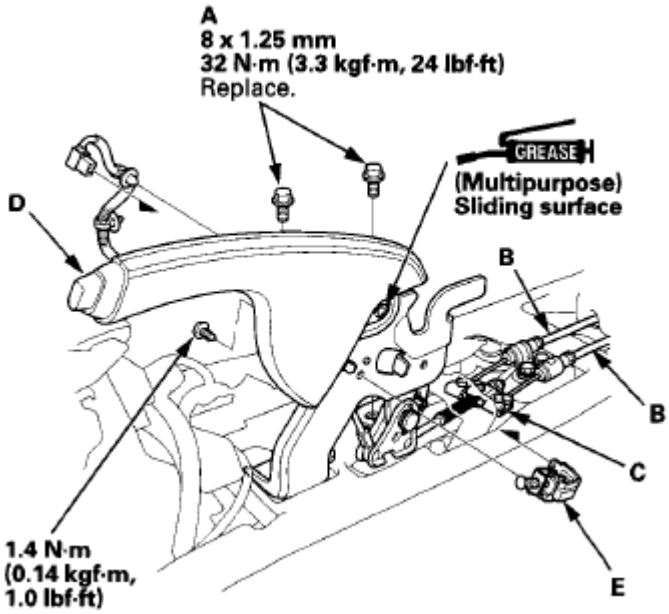


Fig. 77: Identifying Parking Brake Cables, Switch, Lever, Equalizer And Mounting Bolts With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Disconnect the parking brake cables (B) from the equalizer (C), then remove the parking brake lever (D).
6. Remove the parking brake switch (E).
7. Install the parking brake lever in the reverse order of removal.

NOTE: Do not scratch the coating on the link cable while handling and assembling the parking brake lever.

8. Adjust the parking brake (see **PARKING BRAKE INSPECTION AND ADJUSTMENT**).

PARKING BRAKE CABLE REPLACEMENT

EXPLODED VIEW

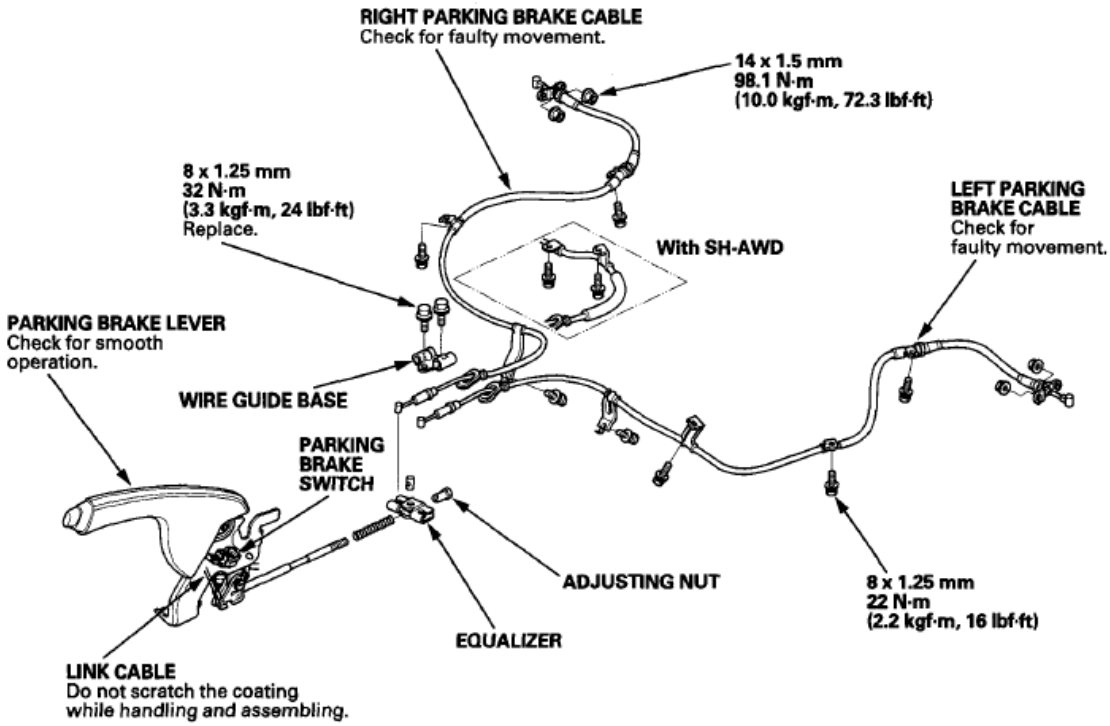


Fig. 78: Exploded View Of Parking Brake Cable With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

NOTE:

- **The parking brake cables must not be bent or distorted. This will lead to stiff operation and premature cable failure.**
- **Refer to the EXPLODED VIEW as needed during this procedure.**

1. Release the parking brake lever fully.
2. Remove the center console (see **CENTER CONSOLE REMOVAL/INSTALLATION**).
3. Remove the wire guide base (A), then disconnect the parking brake cables (B) from the equalizer (C).

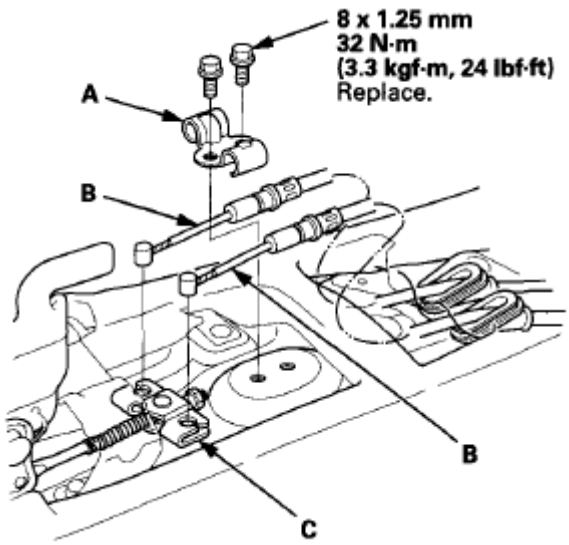


Fig. 79: Identifying Wire Guide Base, Parking Brake Cables And Equalizer With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Without SH-AWD: Remove the heat shield (A).

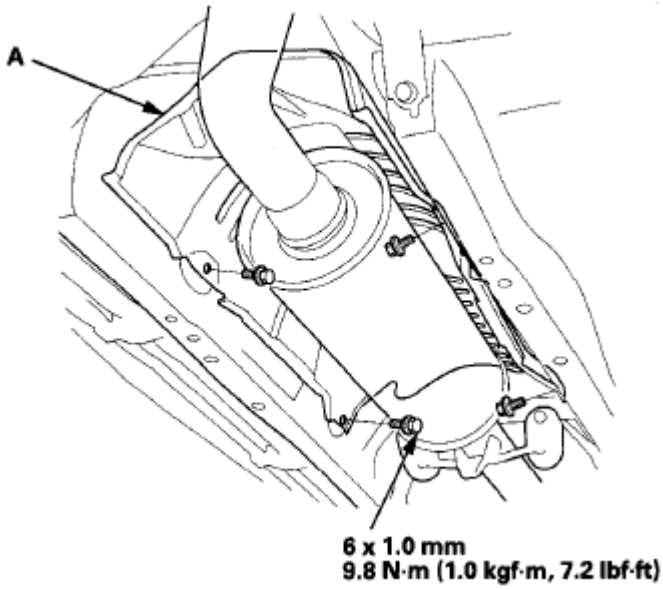


Fig. 80: Identifying Heat Shield And With Mounting Bolt (Without SH-AWD) With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Remove the parking brake cable grommets, and pull out the parking brake cable from the body floor.
6. Remove the parking brake shoes, and disconnect the parking brake cable from the parking brake lever assembly (see **PARKING BRAKE SHOE REPLACEMENT**).
7. Remove the parking brake cable mounting nuts from the backing plate (A), and remove the parking brake

cable (B).

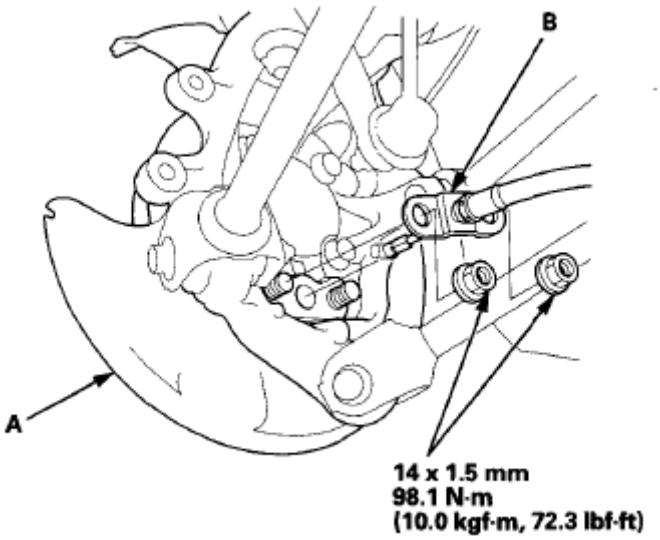


Fig. 81: Identifying Backing Plate, Parking Brake Cable With Mounting Bolts With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

8. Remove the parking brake cable mounting hardware, then remove the cable.
9. Install the parking brake cable in the reverse order of removal, and note these items:
    - Be careful not to bend or distort the cable.
    - Connect the parking brake cable to the parking brake lever assembly, and install the brake shoes and drum (see **PARKING BRAKE SHOE REPLACEMENT**).
    - Adjust the parking brake (see **PARKING BRAKE INSPECTION AND ADJUSTMENT**). Apply the parking brake firmly 10 times then adjust it again.

2012 GENERAL INFORMATION

Specifications - TL

STANDARDS AND SERVICE LIMITS

ENGINE ELECTRICAL (J35Z6)

Item	Measurement	Qualification	Standard or New	Service Limit
Ignition coil	Rated voltage		12V	
	Firing order		1- 4- 2- 5- 3- 6	
Sparkplug	Type	NGK	DILZKR7A11G	
	Gap		1.0- 1.1 mm (0.039- 0.043 in)	-
Ignition timing	At idle Check the red mark	In N or P	10+2°BTDC	
Drive belt	Tension		Auto-tensioner	
Alternator	Output	At 13.5 V and normal engine temperature	130A	
	Coil (rotor) resistance	At 68°F (20°C)	2.5ohms	
	Slip ring O.D.		14.4 mm (0.567 in)	14.0 mm (0.551 in)
	Brush length		10.5 mm (0.413 in)	1.5 mm (0.059 in)
Starter	Output		1.8 kW	
	Commutator mica depth		0.50- 0.90 mm (0.0197- 0.0354 in)	0.20 mm (0.0079 in)
	Commutator runout		0.02 mm (0.0008 in) max.	0.05 mm (0.0020 in)
	Commutator O.D.		28.9- 29.0 mm (1.138- 1.142 in)	28.0 mm (1.102 in)
	Brush length		15.0- 16.0 mm (0.591 - 0.630 in)	9.0 mm (0.354 in)
	Brush spring tension		22.3- 27.1 N (2.27- 2.76 kgf, 5.00- 6.08 lbf)	-

ENGINE ELECTRICAL (J37A4)

Item	Measurement	Qualification	Standard or New	Service Limit
Ignition coil	Rated voltage		12V	
	Firing order		1- 4- 2- 5- 3- 6	
Spark plug	Type	NGK	ILZKR7B- 11S	
		DENSO	SXU22HCR11S	

	Gap		1.0- 1.1 mm (0.039- 0.043 in) -	
Ignition timing	At idle Check the red mark	M/T in neutral, A/Tin Nor P	10+2°BTDC	
Drive belt	Tension		Auto-tensioner	
Alternator	Output	At 13.5 V and normal engine temperature	130A	
	Coil (rotor) resistance	At 68°F (20°C)	2.5 ohms	
	Slip ring O.D.		14.4 mm (0.567 in)	14.0 mm (0.551 in)
	Brush length		10.5 mm (0.413 in)	1.5 mm (0.059 in)
Starter (M/T)		Output	1.6 kohms	
	Commutator mica depth		0.4- 0.5 mm (0.016- 0.020 in)	0.15 mm (0.0059 in)
	Commutator runout		0.02 mm (0.0008 in) max.	0.05 mm (0.0020 in)
	Commutator O.D.		28.0- 28.1 mm (1.102- 1.106 in)	27.5 mm (1.083 in)
	Brush length		15.8- 16.2 mm (0.622- 0.638 in)	11.0 mm (0.433 in)
Starter (A/T)	Output		1.8 kohms	
	Commutator mica depth		0.50- 0.90 mm (0.0197- 0.0354 in)	0.20 mm (0.0079 in)
	Commutator runout		0.02 mm (0.0008 in) max.	0.05 mm (0.0020 in)
	Commutator O.D.		28.9- 29.0 mm (1.138- 1.142 in)	28.0 mm (1.102 in)
	Brush length		15.0- 16.0 mm (0.591- 0.630 in)	9.0 mm (0.354 in)
	Brush spring tension		22.3- 27.1 N (2.27- 2.76 kgf, 5.00- 6.08 lbf)	-

ENGINE ASSEMBLY (J35Z6, J37A4)

Item	Measurement	Qualification	Standard or New	Service Limit
Compression	Pressure (checked with engine starter cranking at wide-open throttle)	Minimum	-	930 kPa (9.48 kgf/cm^2 , 134.8 psi)
		Maximum variation	-	200 kPa (2.04 kgf/cm^2 , 29.0 psi)

CYLINDER HEAD (J35Z6)

Item	Measurement	Qualification	Standard or New	Service Limit
Head	Warpage		-	0.05 mm (0.002 in)
	Height		120.95- 121.05 mm (4.7618- 4.7657 in)	120.8 mm (4.756 in)
Camshaft	End play		0.05- 0.20 mm (0.0020- 0.0079 in)	0.20 mm (0.0079 in)
	Camshaft-to-holder oil clearance		0.050- 0.089 mm (0.00197- 0.00350 in)	0.15 mm (0.0059 in)
	Total runout		0.03 mm (0.0012 in) max.	0.04 mm (0.0016 in)
	Cam lobe height	Intake PRI	34.299 mm (1.35035 in)	-
		Intake SEC	35.621 mm (1.40240 in)	-
		Exhaust	36.760 mm (1.44724 in)	-
Valve	Clearance (cold)	Intake	0.20- 0.24 mm (0.008- 0.009 in)	-
		Exhaust	0.28- 0.32 mm (0.011- 0.012 in)	-
	Stem O.D.	Intake	5.485- 5.495 mm (0.21594- 0.21634 in)	5.455 mm (0.21476 in)
		Exhaust	5.450- 5.460 mm (0.21457- 0.21496 in)	5.420 mm (0.21339 in)
	Stem-to-guide clearance	Intake	0.020- 0.045 mm (0.00079- 0.00177 in)	0.08 mm (0.0031 in)
		Exhaust	0.055- 0.080 mm (0.00217- 0.00315 in)	0.11 mm (0.0043 in)
Valve seat	Width	Intake	1.25- 1.55 mm (0.0492- 0.0610 in)	2.00 mm (0.0787 in)
		Exhaust	1.25- 1.55 mm (0.0492- 0.0610 in)	2.00 mm (0.0787 in)
	Stem installed height	Intake	46.75- 47.55 mm (1.8405- 1.8720 in)	47.80 mm (1.8819 in)
		Exhaust	46.68- 47.48 mm (1.8378- 1.8693 in)	47.73 mm (1.8791 in)
Valve guide	Installed height	Intake	21.20- 22.20 mm (0.8346- 0.8740 in)	-
		Exhaust	20.60- 21.60 mm (0.8110- 0.8504 in)	-
Rocker arm	Arm-to-shaft clearance	Intake	0.015- 0.046 mm (0.00059- 0.00181 in)	0.046 mm (0.00181 in)
		Exhaust	0.018- 0.047 mm (0.00071 - 0.00185 in)	0.047 mm (0.00185 in)

CYLINDER HEAD (J37A4)

Item	Measurement	Qualification	Standard or New	Service Limit
Head	Warpage		-	0.05 mm (0.002 in)
	Height		120.95- 121.05 mm (4.7618- 4.7657 in)	120.8 mm (4.756 in)
Camshaft	End play		0.05- 0.20 mm (0.0020- 0.0079 in)	0.20 mm (0.0079 in)
	Camshaft-to-holder oil clearance		0.050- 0.089 mm (0.00197- 0.00350 in)	0.15 mm (0.0059 in)
	Total runout		0.03 mm (0.0012 in) max.	0.04 mm (0.0016 in)
	Cam lobe height	Intake PRI	34.299 mm (1.35035 in)	-
		Intake SEC	35.932 mm (1.41464 in)	-
		Exhaust PRI	36.734 mm (1.44622 in)	-
		Exhaust SEC	37.370 mm (1.47126 in)	-
Valve	Clearance (cold)	Intake	0.20- 0.24 mm (0.008- 0.009 in)	-
		Exhaust	0.28- 0.32 mm (0.011- 0.012 in)	-
	Stem O.D.	Intake	5.485- 5.495 mm (0.21594- 0.21634 in)	5.455 mm (0.21476 in)
		Exhaust	5.450- 5.460 mm (0.21457- 0.21496 in)	5.420 mm (0.21339 in)
	Stem-to-guide clearance	Intake	0.020- 0.045 mm (0.00079- 0.00177 in)	0.08 mm (0.0031 in)
		Exhaust	0.055- 0.080 mm (0.00217- 0.00315 in)	0.11 mm (0.0043 in)
Valve seat	Width	Intake	1.25- 1.55 mm (0.0492- 0.0610 in)	2.00 mm (0.0787 in)
		Exhaust	1.25- 1.55 mm (0.0492- 0.0610 in)	2.00 mm (0.0787 in)
	Stem installed height	Intake	46.75- 47.55 mm (1.8405- 1.8720 in)	47.80 mm (1.8819 in)
		Exhaust	46.68- 47.48 mm (1.8378- 1.8693 in)	47.73 mm (1.8791 in)
Valve guide	Installed height	Intake	21.20- 22.20 mm (0.8346- 0.8740 in)	-
		Exhaust	20.60- 21.60 mm (0.8110- 0.8504 in)	-
Rocker arm	Arm-to-shaft clearance	Intake	0.015- 0.046 mm (0.00059- 0.00181 in)	0.046 mm (0.00181 in)
		Exhaust	0.015- 0.046 mm (0.00059- 0.00181 in)	0.046 mm (0.00181 in)

ENGINE BLOCK (J35Z6)

Item	Measurement	Qualification	Standard or New	Service Limit
Block	Warpage of deck		0.07 mm (0.002 in) max.	0.10 mm (0.003 in)
	Bore diameter		89.000- 89.015 mm (3.50393- 3.50452 in)	89.065 mm (3.50649 in)
	Bore taper	Difference between first and third measurement	-	0.05 mm (0.0020 in)
	Reboring limit		-	0.25 mm (0.0098 in)
Piston	Skirt O.D. at 16 mm (0.63 in) from bottom of skirt		88.975- 88.985 mm (3.50295- 3.50334 in)	88.965 mm (3.50255 in)
	Clearance in cylinder		0.015- 0.040 mm (0.001- 0.001 in)	0.08 mm (0.003 in)
Piston ring	Ring-to-groove clearance	Top	0.055- 0.080 mm (0.003- 0.003 in)	0.15 mm (0.005 in)
		Second	0.030- 0.055 mm (0.002- 0.002 in)	0.13 mm (0.005 in)
	Ring end gap	Top	0.20- 0.35 mm (0.008- 0.013 in)	0.60 mm (0.023 in)
		Second	0.40- 0.55 mm (0.016- 0.021 in)	0.70 mm (0.027 in)
		Oil	0.20- 0.70 mm (0.008- 0.027 in)	0.80 mm (0.031 in)
Piston pin	O.D.		21.962- 21.965 mm (0.86464- 0.86476 in)	21.954 mm (0.86433 in)
	Pin-to-piston clearance		- 0.005- 0.001 mm (- 0.00020- 0.00004 in)	0.004 mm (0.00016 in)
Connecting rod	Pin-to-rod clearance		0.005- 0.014 mm (0.00020- 0.00055 in)	0.019 mm (0.00075 in)
	Small end bore diameter		21.970- 21.976 mm (0.86496- 0.86520 in)	-
	Big end bore diameter		58.0 mm (2.283 in)	-
	End play		0.15- 0.35 mm (0.006- 0.013 in)	0.45 mm (0.017 in)
	Main journal diameter		71.976- 72.000 mm (2.83370- 2.83464 in)	-
			54.976- 55.000 mm	

Crankshaft	Rod journal diameter		(2.16441- 2.16535 in)	-
	Rod/main journal taper		0.005 mm (0.00020 in) max.	0.010 mm (0.00039 in)
	Rod/main journal out-of-round		0.005 mm (0.00020 in) max.	0.010 mm (0.00039 in)
	End play		0.10- 0.35 mm (0.0039- 0.0138 in)	0.45 mm (0.0177 in)
	Total runout		0.025 mm (0.00098 in) max.	0.030 mm (0.00118 in)
Crankshaft bearing	Main bearing-to-journal oil clearance		0.019- 0.045 mm (0.00075- 0.00177 in)	0.050 mm (0.00197 in)
	Connecting rod bearing-to-journal oil clearance		0.020- 0.044 mm (0.00079- 0.00173 in)	0.050 mm (0.00197 in)

ENGINE BLOCK (J37A4)

Item	Measurement	Qualification	Standard or New	Service Limit
Block	Warpage of deck		0.07 mm (0.002 in) max.	0.10 mm (0.003 in)
	Bore diameter		90.000- 90.015 mm (3.54330- 3.54389 in)	90.065 mm (3.54586 in)
	Bore taper	Difference between first and third measurement	-	0.05 mm (0.0020 in)
Piston	Skirt O.D. at 16 mm (0.63 in) from bottom of skirt		89.983- 89.996 mm (3.54263- 3.54314 in)	89.975 mm (3.54232 in)
	Clearance in cylinder		0.004- 0.032 mm (0.001- 0.001 in)	0.07 mm (0.002 in)
Piston ring	Ring-to-groove clearance	Top	0.055- 0.085 mm (0.003- 0.003 in)	0.15 mm (0.005 in)
		Second	0.030- 0.060 mm (0.002- 0.002 in)	0.13 mm (0.005 in)
	Ring end gap	Top	0.30- 0.40 mm (0.012- 0.015 in)	0.60 mm (0.023 in)
		Second	0.40- 0.55 mm (0.016- 0.021 in)	0.70 mm (0.027 in)
		Oil	0.20- 0.35 mm (0.008- 0.013 in)	0.45 mm (0.017 in)
Piston pin	O.D.		21.962- 21.965 mm (0.86464- 0.86476 in)	21.954 mm (0.86433 in)

	Pin-to-piston clearance		- 0.005- 0.003 mm (- 0.00020- 0.00012 in)	0.004 mm (0.00016 in)
Connecting rod	Pin-to-rod clearance		0.005- 0.014 mm (0.00020- 0.00055 in)	0.019 mm (0.00075 in)
	Small end bore diameter		21.970- 21.976 mm (0.86496- 0.86520 in)	-
	Big end bore diameter		60.0 mm (2.362 in)	-
	End play		0.15- 0.35 mm (0.006- 0.013 in)	0.45 mm (0.017 in)
Crankshaft	Main journal diameter		71.976- 72.000 mm (2.83370- 2.83464 in)	-
	Rod journal diameter		56.976- 57.000 mm (2.24315- 2.24409 in)	-
	Rod/main journal taper		0.005 mm (0.00020 in) max.	0.010 mm (0.00039 in)
	Rod/main journal out-of-round		0.005 mm (0.00020 in) max.	0.010 mm (0.00039 in)
	End play		0.10- 0.35 mm (0.0039- 0.0138 in)	0.45 mm (0.0177 in)
	Total runout		0.025 mm (0.00098 in) max.	0.030 mm (0.00118 in)
Crankshaft bearing	Main bearing-to-journal oil clearance		0.019- 0.045 mm (0.00075- 0.00177 in)	0.050 mm (0.00197 in)
	Connecting rod bearing-to-journal oil clearance		0.020- 0.044 mm (0.00079- 0.00173 in)	0.050 mm (0.00197 in)

ENGINE LUBRICATION (J35Z6, J37A4)

Item	Measurement	Qualification	Standard or New	Service Limit
Engine oil	Capacity	Engine overhaul	5.0 L (5.3 US qt)	-
		Oil change including filter	4.3 L (4.5 US qt)	-
		Oil change without filter	4.0 L (4.2 US qt)	-
	Inner rotor-to-outer rotor radial clearance		0.04- 0.16 mm (0.002- 0.006 in)	0.20 mm (0.007 in)
	Pump housing-to-outer rotor radial clearance		0.07- 0.19 mm (0.003- 0.007 in)	0.20 mm (0.007 in)

Oil pump	Pump housing-to-rotor axial clearance		0.02- 0.07 mm (0.001 - 0.002 in)	0.12 mm (0.004 in)
	Oil pressure with oil temperature at 176°F (80°C)	At idle	70 kPa (0.71 kgf/cm^2 , 10.1 psi) min.	-
		At 3, 000 RPM	490 kPa (5.00 kgf/cm^2 , 71.1 psi) min.	-

COOLING SYSTEM (J35Z6, J37A4)

Item	Measurement	Qualification	Standard or New	Service Limit
Radiator	Coolant capacities (including engine, heater, hoses, and reservoir)	Engine overhaul	8.3 L (2.19 US gal)	-
		Coolant change	6.3 L (1.66 US gal)	-
	Coolant type		Acura Long Life Antifreeze/Coolant Type 2	
Coolant reservoir	Coolant capacity		0.69 L (0.182 US gal)	-
Radiator cap	Opening pressure		93- 123 kPa (0.95- 1.25 kgf/cm^2 , 13.5 - 17.8 psi)	-
Thermostat	Opening temperature	Begins to open	169- 176°F (76- 80°C)	-
		Fully open	194°F (90°C)	-
	Valve lift at fully open		10.0 mm (0.394 in) min.	-

FUEL AND EMISSIONS (J35Z6)

Item	Measurement	Qualification	Standard or New	Service Limit
Fuel pressure regulator	Pressure with fuel pressure gauge connected		390- 440 kPa (4.0- 4.5 kgf/cm^2 , 57- 64 psi)	-
Fuel tank	Capacity		70.0 L (18.49 US gal)	-
Engine idle	Idle speed without load	In N or P	680 ± 50 RPM	
	Idle speed with high electrical load (A/C switch on, temperature set to max cool, blower fan on high, rear window defogger on, and headlights on high beam)	In N or P	680 ± 50 RPM	

FUEL AND EMISSIONS (J37A4)

Item	Measurement	Qualification	Standard or New	Service Limit
Fuel pressure regulator	Pressure with fuel pressure gauge connected		390- 440 kPa (4.0- 4.5 kgf/cm^2 , 57- 64 psi)	-
Fuel tank	Capacity		70.0 L (18.49 US gal)	-
Engine idle	Idle speed without load	M/T in neutral	750 ± 50 RPM	
		A/T in N or P	700 ± 50 RPM	
	Idle speed with high electrical load (A/C switch on, temperature set to max cool, blower fan on high, rear window defogger on, and headlights on high beam)	M/T in neutral	750 ± 50 RPM	
		A/T in N or P	700 ± 50 RPM	

CLUTCH

Item	Measurement	Qualification	Standard or New	Service Limit
Clutch pedal	Height from floor		156 mm (6.14 in)	-
	Stroke		130- 140 mm (5.12- 5.51 in)	-
Flywheel	Runout on clutch mating surface		0.3 mm (0.012 in) max.	0.4 mm (0.016 in)
Clutch disc	Rivet head depth		1.35- 1.95 mm (0.0531 - 0.0768 in)	0.7 mm (0.028 in)
	Thickness		7.9- 8.5 mm (0.311- 0.335 in)	6.0 mm (0.236 in)
Pressure plate	Warpage		0.02 mm (0.001 in)	0.15 mm (0.005 in)
	Evenness of the height of the diaphragm spring fingers		0.6 mm (0.024 in) max.	0.8 mm (0.031 in)

MANUAL TRANSMISSION AND M/T DIFFERENTIAL

Item	Measurement	Qualification	Standard or New	Service Limit
Manual transmission fluid	Capacity: use Acura MTF	Fluid change	2.1 L (2.2US qt)	-
		Overhaul	2.5L (2.6US qt)	-
	End play		0.14- 0.21 mm (0.0055- 0.0083 in)	Adjust
	Diameter of ball bearing contact area (clutch housing side)		28.002- 28.015 mm (1.10244- 1.10295 in)	27.95 mm (1.1004 in)

Mainshaft	Diameter of needle bearing contact area		47.984- 48.000 mm (1.88913- 1.88976 in)	47.93 mm (1.8870 in)
	Diameter of ball bearing contact area (transmission housing side)		38.984- 39.000 mm (1.53480- 1.53543 in)	38.93 mm (1.5327 in)
	Diameter of 4th/5th gear distance collar contact area		41.984- 42.000 mm (1.65291 - 1.65354 in)	41.93 mm (1.6508 in)
	Diameter of 6th gear distance collar contact area		38.984- 39.000 mm (1.53480- 1.53543 in)	38.93 mm (1.5327 in)
	Runout		0.02 mm (0.0008 in) max.	0.05 mm (0.0020 in)
	Diameter of pilot bearing contact area		19.967- 19.980 mm (0.78610- 0.78661 in)	19.91 mm (0.7839 in)
Mainshaft 3rd gear	I.D.		53.010- 53.029 mm (2.08700- 2.08775 in)	-
	Clearance	2nd-3rd	0.06- 0.19 mm (0.002- 0.007 in)	0.3 mm (0.011 in)
	Thickness		23.89- 23.97 mm (0.9405- 0.9437 in)	23.8 mm (0.937 in)
Mainshaft 4th, 5th gear	I.D.		53.010- 53.029 mm (2.08700- 2.08775 in)	-
	End play (4th/5th gear distance collar side)		0.06- 0.19 mm (0.0024- 0.0075 in)	0.3 mm (0.012 in)
	Thickness		22.39- 22.47 mm (0.8815- 0.8846 in)	22.3 mm (0.878 in)
Mainshaft 6th gear	I.D.		53.010- 53.029 mm (2.08700- 2.08775 in)	53.08 mm (2.0898 in)
	End play		0.06- 0.19 mm (0.0024- 0.0075 in)	0.3 mm (0.012 in)
	Thickness		25.89- 25.97 mm (1.0193- 1.0224 in)	25.8 mm (1.016 in)
Mainshaft 4th/5th gear distance collar	I.D.		42.002- 42.012 mm (1.65362- 1.65401 in)	-
	O.D.		47.989- 48.000 mm (1.88933- 1.88976 in)	-
	Overall length		49.95- 50.05 mm	-

			(1.9665- 1.9705 in)	
	Length of needle bearing contact area	4th, 5th	22.53- 22.58 mm (0.8870- 0.8890 in)	-
Mainshaft 6th gear distance collar	I.D.		39.002- 39.012 mm (1.53551 - 1.53590 in)	39.06 mm (1.5378 in)
	O.D.		47.989- 48.000 mm (1.88933- 1.88976 in)	47.94 mm (1.8874 in)
	Length		26.03- 26.08 mm (1.0248- 1.0268 in)	-
Countershaft	Diameter of needle bearing contact area (clutch housing side)		43.974- 43.990 mm (1.73126- 1.73189 in)	43.92 mm (1.7291 in)
	Diameter of ball bearing contact area (transmission housing side)		30.002- 30.015 mm (1.18118- 1.18169 in)	29.95 mm (1.1791 in)
	Diameter of 2nd gear distance collar contact area		42.975- 42.991 mm (1.69193- 1.69256 in)	42.92 mm (1.6898 in)
	Runout		0.02 mm (0.0008 in) max.	0.05 mm (0.0020 in)
	35 mm shim-to-bearing inner race clearance		0.04- 0.10 mm (0.002- 0.003 in)	Adjust
	Diameter of countershaft reverse gear contact area		45.934- 45.950 mm (1.80842- 1.80905 in)	45.88 mm (1.8063 in)
Countershaft 1st gear	I.D.		59.010- 59.029 mm (2.32322- 2.32397 in)	59.08 mm (2.3260 in)
	End play (reverse gear side)		0.04- 0.17 mm (0.0016- 0.0067 in)	0.28 mm (0.0110 in)
	Thickness		22.91- 22.99 mm (0.9020- 0.9051 in)	22.86 mm (0.9000 in)
Countershaft 2nd gear	I.D.		57.010- 57.029 mm (2.24448- 2.24523 in)	57.08 mm (2.2472 in)
	Clearance		2nd-3rd 0.04- 0.17 mm (0.002- 0.006 in)	0.28 mm (0.011 in)
	Thickness		22.91 - 22.99 mm (0.9020- 0.9051 in)	22.86 mm (0.9000 in)
	I.D.		45.970- 45.988 mm (1.80984- 1.81055 in)	46.04 mm (1.8126 in)

Countershaft reverse gear	O.D.		53.987- 54.000 mm (2.12547- 2.12598 in)	53.93 mm (2.1232 in)
	Length		23.03- 23.08 mm (0.9067- 0.9087 in)	-
Countershaft 2nd gear distance collar	I.D.		42.990- 43.000 mm (1.69252- 1.69291 in)	43.05 mm (1.6949 in)
	O.D.		51.989- 52.000 mm (2.04681- 2.04724 in)	51.94 mm (2.0449 in)
	Length		23.03- 23.08 mm (0.9067- 0.9087 in)	-
Reverse idler gear	O.D.		19.989- 20.000 mm (0.78697- 0.78740 in)	19.93 mm (0.7846 in)
Reverse drive/driven gear	I.D.		30.007- 30.020 mm (1.18138- 1.18189 in)	25.07 mm (0.9870 in)
5th synchro ring	Ring-to-gear clearance (ring pushed against gear)		0.70- 1.49 mm (0.028- 0.058 in)	0.4 mm (0.016 in)
6th synchro ring	Ring-to-gear clearance (ring pushed against gear)		0.73- 1.44 mm (0.029- 0.056 in)	0.4 mm (0.016 in)
3rd double cone synchro	Outer synchro ring-to-synchro cone clearance (ring pushed against gear)		0.68- 1.19 mm (0.027- 0.046 in)	0.3 mm (0.012 in)
	Synchro cone-to-gear clearance (ring pushed against gear)		0.48- 1.04 mm (0.019- 0.040 in)	0.3 mm (0.012 in)
	Outer synchro ring-to-gear clearance (ring pushed against gear)		0.95- 1.68 mm (0.037- 0.066 in)	0.6 mm (0.024 in)
4th double cone synchro	Outer synchro ring-to-synchro cone clearance (ring pushed against gear)		0.70- 1.19 mm (0.028- 0.046 in)	0.3 mm (0.012 in)
	Synchro cone-to-gear clearance (ring pushed against gear)		0.50- 1.14 mm (0.020- 0.044 in)	0.3 mm (0.012 in)
	Outer synchro ring-to-gear clearance (ring pushed against gear)		0.95- 1.68 mm (0.037- 0.066 in)	0.6 mm (0.024 in)
1st triple cone synchro	Outer synchro ring-to-synchro cone clearance (ring pushed against gear)		0.70- 1.19 mm (0.028- 0.046 in)	0.3 mm (0.012 in)
	Synchro cone-to-gear clearance (ring pushed against gear)		0.70- 1.88 mm (0.028- 0.074 in)	0.3 mm (0.012 in)
	Outer synchro ring-to-gear		1.12- 1.68 mm	0.6 mm

	clearance (ring pushed against gear)		(0.044- 0.066 in)	(0.024 in)
2nd triple cone synchro	Outer synchro ring-to-synchro cone clearance (ring pushed against gear)		0.70- 1.19 mm (0.028- 0.046 in)	0.3 mm (0.012 in)
	Synchro cone-to-gear clearance (ring pushed against gear)		0.70- 1.88 mm (0.028- 0.074 in)	0.3 mm (0.012 in)
	Outer synchro ring-to-gear clearance (ring pushed against gear)		1.12- 1.68 mm (0.044- 0.066 in)	0.6 mm (0.024 in)
Shift fork	Finger thickness	1st/2nd, 3rd/4th, 5th/6th	7.4- 7.6 mm (0.291 - 0.299 in)	-
		Reverse	6.2- 6.4 mm (0.244- 0.252 in)	-
	Fork-to-synchro sleeve clearance		0.35- 0.65 mm (0.014- 0.025 in)	1.0 mm (0.039 in)
Reverse shift lever	Finger width		6.50- 6.75 mm (0.2559- 0.2657 in)	-
	Shift lever-to-reverse shift piece clearance		0- 0.4 mm (0- 0.015 in)	0.5 mm (0.019 in)
	Shift lever width at contact area (reverse shift piece side)		13.0- 13.2 mm (0.512- 0.520 in)	-
	Shift lever-to-reverse shift fork clearance		0.15- 0.60 mm (0.006- 0.023 in)	0.7 mm (0.027 in)
Detent ball spring	Free length	1st/2nd	26.1 mm (1.028 in)	When worn or damaged
		3rd/4th, 5th/6th	27.4 mm (1.079 in)	When worn or damaged
Steel ball	Ball size		7.94 mm (0.3126 in)	When worn or damaged
Shift arm	I.D.		15.973- 16.005 mm (0.62886- 0.63012 in)	-
	Shift arm-to-shift piece clearance		0.26- 0.57 mm (0.010- 0.022 in)	0.75 mm (0.029 in)
	Shift piece width at contact area		13.6- 13.8 mm (0.535- 0.543 in)	-
M/T differential carrier	Backlash (measured with final driven gear)		0.6- 1.2 mm (0.024- 0.047 in)	-
	Carrier bearing starting torque (preload)		3.4- 4.5 N.m (35- 46 kgf.cm, 30- 40 lbf.in)	Adjust
	Inner rotor-to-outer rotor clearance		0.14 mm (0.006 in) max.	0.2 mm (0.007 in)
			17.1- 17.2 mm	

Oil pump	Oil pump inner rotor I.D.		(0.673- 0.677 in)	-
	Oil pump shaft O.D.		16.8- 17.0 mm (0.661 - 0.669 in)	-
	Oil pump thrust clearance		0.03- 0.13 mm (0.001 - 0.005 in)	0.15 mm (0.005 in)
	Outer rotor-to-clutch housing clearance		0.1 - 0.2 mm (0.004- 0.007 in)	0.22 mm (0.008 in)
Shift piece	I.D.		14.000- 14.068 mm (0.55118- 0.55386 in)	-
	Shift fork width at contact area		12.8- 13.0 mm (0.504- 0.512 in)	-
	Shift piece-to-shift fork clearance		0.2- 0.6 mm (0.008- 0.023 in)	0.7 mm (0.027 in)
Select arm	I.D.		11.01- 11.05 mm (0.4335- 0.4350 in)	-
	Interlock width at contact area		12.9- 13.0 mm (0.508- 0.512 in)	-
	Select arm-to-interlock clearance		0.05- 0.25 mm (0.002- 0.009 in)	0.5 mm (0.019 in)
Transfer output shaft	Diameter of bearing contact area	Transmission housing side	21.977- 21.990 mm (0.86523- 0.86575 in)	21.92 mm (0.8630 in)
		Clucks housing side	40.002- 40.018 mm (1.57488- 1.57551 in)	39.95 mm (1.5728 in)
	Thrust clearance		0.08- 0.17 mm (0.003- 0.006 in)	-
Transfer assembly	Diameter of transfer hypoid drive gear/shaft assembly at tapered roller bearing contact area	At transfer cover side	50.002- 50.018 mm (1.96858- 1.96921 in)	49.95 mm (1.9665 in)
		At transfer gear side	24.987- 25.000 mm (0.98374- 0.98425 in)	24.93 mm (0.9815 in)
	Diameter of transfer output shaft (hypoid gear) at tapered roller bearing contact area	At transfer gear side	40.002- 40.018 mm (1.57488- 1.57551 in)	39.95 mm (1.5728 in)
		At companion flange side	31.975- 31.988 mm (1.25886- 1.25937 in)	31.92 mm (1.2567 in)
	Transfer gear backlash		0.06- 0.16 mm (0.0024- 0.0063 in)	Adjust
	Tapered roller bearing total starting torque (preload)		2.64- 4.23 N.m (26.9- 43.1 kgf.cm, 23.3- 37.4 lbf.in)	Adjust

Transfer assembly fluid	Capacity: Hypoid gear oil SAE 90 viscosity, API classified GL 4 or GL 5 only	Fluid change	0.43 L (0.45 US qt)	-
		Overhaul	0.45 L (0.48 US qt)	-

AUTOMATIC TRANSMISSION AND A/T DIFFERENTIAL

Item	Measurement	Qualification	Standard or New	Service Limit
Automatic transmission fluid	Capacity: use Acura ATF DW-1 (with SH-AWD)	Fluid change	3.1 L (3.3 US qt)	-
		Overhaul	7.8 L (8.2 US qt)	-
	Capacity: use Acura ATF DW-1 (without SH-AWD)	Fluid change	3.1 L (3.3US qt)	-
		Overhaul	7.1 L (7.5US qt)	-
ATF pressure	Line pressure (Low) (APP Sensor opening less than 25 % in D with Line Pressure Sol VLV. A ON)	ATF temperature between 122°F and 212°F (50°C and 100°C)	667- 716 kPa (6.80- 7.30 kgf/cm^2 , 96.7 - 103.8 psi)	Lower limit: 618 kPa (6.30 kgf/cm^2 , 89.6 psi) Upper limit: 765 kPa (7.80 kgf/cm^2 , 111.0 psi)
	Line pressure (Normal)	At 2, 000 RPM in N or P	1, 164- 1, 285 kPa (11.87- 13.10 kgf/cm^2 , 168.8- 186.3 psi)	1, 079 kPa (11.00 kgf/cm^2 , 156.5 psi)
	1st clutch pressure	At 2, 000 RPM in 1st gear	1, 123- 1, 172 kPa (11.45- 11.95 kgf/cm^2 , 162.9- 170.0 psi)	1, 079 kPa (11.00 kgf/cm^2 , 156.5 psi)
	2nd clutch pressure	At 2, 000 RPM in 2nd gear	1, 123- 1, 172 kPa (11.45- 11.95 kgf/cm^2 , 162.9- 170.0 psi)	1, 079 kPa (11.00 kgf/cm^2 , 156.5 psi)
	3rd clutch pressure	At 2, 000 RPM in 3rd gear	1, 123- 1, 172 kPa (11.45- 11.95 kgf/cm^2 , 162.9- 170.0 psi)	1, 079 kPa (11.00 kgf/cm^2 , 156.5 psi)
	4th clutch pressure	At 2, 000 RPM in 4th gear	1, 123- 1, 172 kPa (11.45- 11.95 kgf/cm^2 , 162.9- 170.0	1, 079 kPa (11.00 kgf/cm^2 , 156.5 psi)

			psi)	
	5th clutch pressure	At 2, 000 RPM in 5th gear	1, 123- 1, 172 kPa (11.45- 11.95 kgf/cm^2 , 162.9- 170.0 psi)	1, 079 kPa (11.00 kgf/cm^2 , 156.5 psi)
	6th clutch pressure	At 2, 000 RPM in 6th gear	1, 123- 1, 172 kPa (11.45- 11.95 kgf/cm^2 , 162.9- 170.0 psi)	1, 079 kPa (11.00 kgf/cm^2 , 156.5 psi)
	Torque converter clutch pressure	At 4, 000 RPM in 2nd gear (Lock-up condition)	294 kPa (3.00 kgf/cm^2 , 42.7 psi) or more	245 kPa (2.50 kgf/cm^2 , 35.6 psi)
Torque converter	Stall speed Check with vehicle on level ground		2, 000 RPM	-
		Service limit	1, 800- 2, 100 RPM	-
Clutch	Clearance between clutch end-plate and top disc	1st	1.50- 1.70 mm (0.0591 - 0.0669 in)	-
		2nd	1.25- 1.45 mm (0.0492- 0.0571 in)	-
		3rd	1.25- 1.45 mm (0.0492- 0.0571 in)	-
		4th	1.50- 1.70 mm (0.0591 - 0.0669 in)	-
		5th	1.25- 1.45 mm (0.0492- 0.0571 in)	-
		6th	1.25- 1.45 mm (0.0492- 0.0571 in)	-
	Diameter of stator shaft needle bearing contact area		31.984- 32.000 mm (1.25921- 1.25984 in)	When worn or damaged
	3rd gear I.D.		49.000- 49.016 mm (1.92913- 1.92976 in)	When worn or damaged
	3rd gear axial clearance		0.10- 0.21 mm (0.0039- 0.0083 in)	-
			41.962- 41.978	

Mainshaft	3rd gear collar diameter of needle bearing contact area		mm (1.65204- 1.65267 in)	When worn or damaged
	3rd gear collar width		29.00- 29.05 mm (1.1417- 1.1437 in)	-
	Sealing ring thickness (41 mm)		1.91- 1.96 mm (0.0752- 0.0772 in)	-
	Sealing ring groove width		2.025- 2.060 mm (0.07972- 0.08110 in)	-
Countershaft	Diameter of needle bearing contact area at torque converter housing		40.505- 40.515 mm (1.59468- 1.59508 in)	When worn or damaged
	Diameter of 1st gear at needle bearing contact area		57.000- 57.019 mm (2.24409- 2.24484 in)	When worn or damaged
	Diameter of park gear at needle bearing contact area		52.971 - 52.990 mm (2.08547- 2.08622 in)	When worn or damaged
	Axial clearance of gears	1st gear	0.07- 0.30 mm (0.0028- 0.0118 in)	-
		2nd and 5th gear (total)	0.04- 0.10 mm (0.002- 0.003 in)	-
	Thrust shim thickness (42.5 mm)	A	1.82 mm (0.0717 in)	When worn or damaged
		B	1.86 mm (0.0732 in)	When worn or damaged
		C	1.90 mm (0.0748 in)	When worn or damaged
		D	1.94 mm (0.0764 in)	When worn or damaged
		E	1.98 mm (0.0780 in)	When worn or damaged
		F	2.02 mm (0.0795 in)	When worn or damaged
		G	2.06 mm (0.0811 in)	When worn or damaged
		H	2.10 mm (0.0827 in)	When worn or damaged
		I	2.14 mm (0.0843 in)	When worn or damaged
			2.18 mm	When worn or

		J	(0.0858 in)	damaged
		K	2.22 mm (0.0874 in)	When worn or damaged
		L	2.26 mm (0.0890 in)	When worn or damaged
	5th gear collar width		65.55- 66.50 mm (2.5807- 2.6181 in)	When worn or damaged
Secondary shaft	Diameter of bearing contact area	At 1st gear	31.986- 31.999 mm (1.25929- 1.25980 in)	When worn or damaged
		At torque converter housing bearing	32.002- 32.015 mm (1.25992- 1.26043 in)	When worn or damaged
		At torque converter housing (shaft end side)	28.5935- 28.6065 mm (1.125726- 1.126238 in)	When worn or damaged
	I.D. of gears	1st gear	38.000- 38.016 mm (1.49606- 1.49669 in)	When worn or damaged
		2nd gear	44.000- 44.016 mm (1.73228- 1.73291 in)	When worn or damaged
		5th gear	50.000- 50.016 mm (1.96850- 1.96913 in)	When worn or damaged
	Axial clearance of gears	1st gear	0.16- 0.40 mm (0.0063- 0.0157 in)	-
		2nd and 5th gear	0.05- 0.12 mm (0.002- 0.004 in)	-
	Diameter of gear collars at needle bearing contact area	2nd gear collar	37.975- 37.991 mm (1.49508- 1.49571 in)	When worn or damaged
		5th gear collar	44.962- 44.978 mm (1.77015- 1.77078 in)	When worn or damaged
		A	0.85 mm (0.0335 in)	When worn or damaged
		B	0.92 mm (0.0362 in)	When worn or damaged
		C	0.99 mm (0.0390 in)	When worn or damaged

	Thrust shim thickness (89 mm)	D	1.06 mm (0.0417 in)	When worn or damaged
		E	1.13 mm (0.0445 in)	When worn or damaged
		F	1.20 mm (0.0472 in)	When worn or damaged
		G	1.27 mm (0.0500 in)	When worn or damaged
		H	1.34 mm (0.0528 in)	When worn or damaged
		I	1.41 mm (0.0555 in)	When worn or damaged
		J	1.48 mm (0.0583 in)	When worn or damaged
		K	1.55 mm (0.0610 in)	When worn or damaged
		L	1.62 mm (0.0638 in)	When worn or damaged
		M	1.69 mm (0.0665 in)	When worn or damaged
		N	1.76 mm (0.0693 in)	When worn or damaged
		O	1.83 mm (0.0720 in)	When worn or damaged
		P	1.90 mm (0.0748 in)	When worn or damaged
		Q	1.97 mm (0.0776 in)	When worn or damaged
		R	2.04 mm (0.0803 in)	When worn or damaged
		S	2.11 mm (0.0831 in)	When worn or damaged
		T	2.18 mm (0.0858 in)	When worn or damaged
	2nd gear collar thickness	A	32.89 mm (1.2949 in)	When worn or damaged
		B	32.94 mm (1.2968 in)	When worn or damaged
		C	32.99 mm (1.2988 in)	When worn or damaged
		D	33.04 mm (1.3008 in)	When worn or damaged
		E	33.09 mm (1.3028 in)	When worn or damaged

		F	33.14 mm (1.3047 in)	When worn or damaged
		G	33.19 mm (1.3067 in)	When worn or damaged
		H	33.24 mm (1.3087 in)	When worn or damaged
	5th gear collar width		28.00- 28.05 mm (1.1024- 1.1043 in)	-
Secondary shaft (cont'd)	Sealing ring thickness (30 mm)		1.74- 1.80 mm (0.0685- 0.0709 in)	-
	Sealing ring groove width		1.875- 1.910 mm (0.07382- 0.07520 in)	-
	ATF feed pipe O.D.		5.97- 5.98 mm (0.2350- 0.2354 in)	5.95 mm (0.2343 in)
	ATF feed pipe bushing I.D.		6.018- 6.030 mm (0.23693- 0.23740 in)	6.045 mm (0.23799 in)
	Diameter of needle bearing contact area	At 4th gear collar	44.986- 44.999 mm (1.77110- 1.77161 in)	When worn or damaged
		At 6th gear collar	36.986- 36.999 mm (1.45614- 1.45665 in)	When worn or damaged
	I.D. of gears	4th gear	50.000- 50.016 mm (1.96850- 1.96913 in)	When worn or damaged
		6th gear	42.000- 42.016 mm (1.65354- 1.65417 in)	When worn or damaged
		Reverse gear	41.000- 41.016 mm (1.61417- 1.61480 in)	When worn or damaged
	Diameter of reverse gear collar at needle bearing contact area		34.975- 34.991 mm (1.37697- 1.37760 in)	When worn or damaged
	Axial clearance	4th gear	0.115- 0.350 mm (0.00453- 0.01378 in)	-
		6th gear	0.045- 0.420 mm (0.002- 0.016 in)	-

Third shaft		Reverse gear	0.1 - 0.2 mm (0.004- 0.008 in)	-
	Reverse gear collar width		51.50- 51.55 mm (2.0276- 2.0295 in)	-
	Cotter thickness		2.99- 3.02 mm (0.1177- 0.1189 in)	-
	Sealing ring thickness (35 mm)		1.90- 1.97 mm (0.0748- 0.0776 in)	-
	Sealing ring groove width		2.025- 2.060 mm (0.07972- 0.08110 in)	-
	Reverse selector hub O.D.		51.60- 51.75 mm (2.0315- 2.0374 in)	When worn or damaged
	4th gear washer thickness	A	8.515 mm (0.33524 in)	When worn or damaged
		B	8.540 mm (0.33622 in)	When worn or damaged
		C	8.565 mm (0.33720 in)	When worn or damaged
		D	8.590 mm (0.33819 in)	When worn or damaged
		E	8.615 mm (0.33917 in)	When worn or damaged
		F	8.640 mm (0.34016 in)	When worn or damaged
	Diameter of needle bearing contact area	At transmission housing bearing (shaft end side)	22.995- 23.005 mm (0.90531- 0.90571 in)	When worn or damaged
	Cotter thickness		2.49- 2.52 mm (0.0980- 0.0992 in)	-
		A	1.26 mm (0.0496 in)	When worn or damaged
		B	1.30 mm (0.0512 in)	When worn or damaged
		C	1.34 mm (0.0528 in)	When worn or damaged
		D	1.38 mm (0.0543 in)	When worn or damaged
			1.42 mm	When worn or

Idler gear shaft	Washer thickness (41.5 mm)	E	(0.0559 in)	damaged
		F	1.46 mm (0.0575 in)	When worn or damaged
		G	1.50 mm (0.0591 in)	When worn or damaged
		H	1.54 mm (0.0606 in)	When worn or damaged
		I	1.58 mm (0.0622 in)	When worn or damaged
		J	1.62 mm (0.0638 in)	When worn or damaged
		K	1.66 mm (0.0654 in)	When worn or damaged
		L	1.70 mm (0.0669 in)	When worn or damaged
		M	1.74 mm (0.0685 in)	When worn or damaged
		N	1.78 mm (0.0701 in)	When worn or damaged
		O	1.82 mm (0.0717 in)	When worn or damaged
		P	1.86 mm (0.0732 in)	When worn or damaged
		Q	1.90 mm (0.0748 in)	When worn or damaged
		R	1.94 mm (0.0764 in)	When worn or damaged
		S	1.98 mm (0.0780 in)	When worn or damaged
		T	2.02 mm (0.0795 in)	When worn or damaged
		U	2.06 mm (0.0811 in)	When worn or damaged
Reverse idler gear shaft	Diameter of needle bearing contact area		17.991 - 17.999 mm (0.70831 - 0.70862 in)	When worn or damaged
	I.D. of gear	Reverse idler gear	24.000- 24.013 mm (0.94488- 0.94539 in)	When worn or damaged
	Axial clearance		0.07- 0.27 mm (0.0028- 0.0106 in)	-
	I.D. of transmission housing at reverse idler gear shaft contact area		32.002- 32.020 mm (1.25992- 1.26063 in)	-

	Reverse idler gear shaft thrust washer thickness		1.50- 1.55 mm (0.0591- 0.0610 in)	-
ATF pump	ATF pump thrust clearance		0.04- 0.07 mm (0.002- 0.002 in)	0.07 mm (0.002 in)
	Clearance between ATF pump gear and main valve body	Drive gear	0.210- 0.265 mm (0.009- 0.010 in)	-
		Driven gear	0.070- 0.125 mm (0.003- 0.004 in)	-
	ATF pump driven gear I.D.		14.016- 14.034 mm (0.55181- 0.55252 in)	When worn or damaged
	ATF pump driven gear shaft O.D.		13.980- 13.990 mm (0.55039- 0.55079 in)	When worn or damaged
Stator shaft	I.D. at needle bearing contact area	At torque converter side	28.000- 28.021 mm (1.10236- 1.10319 in)	When worn or damaged
		At ATF pump side	40.000- 40.025 mm (1.57480- 1.57578 in)	-
	I.D. at mainshaft sealing ring contact area		41.000- 41.025 mm (1.61417- 1.61515 in)	41.05 mm (1.6161 in)
Reverse shift fork	Fork finger thickness		5.90- 6.00 mm (0.2323- 0.2362 in)	5.4 mm (0.213 in)
Park gear and pawl	-		-	When worn or damaged
Regulator valve body	I.D. of shift fork shaft contact area	At shaft part	14.000- 14.010 mm (0.55118- 0.55157 in)	-
		At valve part	37.000- 37.039 mm (1.45669- 1.45823 in)	37.045 mm (1.45846 in)
Main valve body	Third shaft sealing ring contact I.D.		35.000- 35.025 mm (1.37795- 1.37893 in)	35.05 mm (1.3799 in)
ATF guide collar	Secondary shaft sealing ring contact 1. D.		30.000- 30.021 mm (1.18110- 1.18193 in)	30.05 mm (1.1831 in)
	Driveshaft/intermediate shaft		32.025- 32.055	

A/T differential carrier	contact area I.D.		mm (1.26082- 1.26201 in)	-
	Clearance between carrier and driveshaft		0.045- 0.096 mm (0.00177- 0.00378 in)	0.13 mm (0.0051 in)
	Clearance between carrier and intermediate shaft		0.080- 0.126 mm (0.00315- 0.00496 in)	-
	Carrier bearing starting torque (preload)	For new bearing	3.9- 5.6 N.m (40- 57 kgf.cm, 35- 49 lbf.in)	Adjust
		For reused bearing	3.6- 5.3 N.m (37- 54 kgf.cm, 32- 47 lbf.in)	Adjust
A/T differential pinion gear	Backlash		0.05- 0.15 mm (0.0020- 0.0059 in)	-
	I.D.		18.042- 18.066 mm (0.71031- 0.71126 in)	-
	Clearance between pinion gear and pinion shaft		0.055- 0.095 mm (0.00217- 0.00374 in)	0.12 mm (0.0047 in)
	Diameter of bearing contact area	At transmission housing side	21.977- 21.990 mm (0.86523- 0.86575 in)	21.92 mm (0.8630 in)
		At torque converter housing side	40.002- 40.018 mm (1.57488- 1.57551 in)	39.95 mm (1.5728 in)
	Axial clearance		0- 0.44 mm (0- 0.0173 in)	-
		A	1.82 mm (0.0717 in)	When worn or damaged
		B	1.84 mm (0.0724 in)	When worn or damaged
		C	1.86 mm (0.0732 in)	When worn or damaged
		D	1.88 mm (0.0740 in)	When worn or damaged
		E	1.90 mm (0.0748 in)	When worn or damaged
		F	1.92 mm (0.0756 in)	When worn or damaged
		G	1.94 mm (0.0764 in)	When worn or damaged

Transfer output shaft	Thrust shim thickness (28.5 mm)	H	1.96 mm (0.0772 in)	When worn or damaged
		I	1.98 mm (0.0780 in)	When worn or damaged
		J	2.00 mm (0.0787 in)	When worn or damaged
		K	2.02 mm (0.0795 in)	When worn or damaged
		L	2.04 mm (0.0803 in)	When worn or damaged
		M	2.06 mm (0.0811 in)	When worn or damaged
		N	2.08 mm (0.0819 in)	When worn or damaged
		O	2.10 mm (0.0827 in)	When worn or damaged
		P	2.12 mm (0.0835 in)	When worn or damaged
		Q	2.14 mm (0.0843 in)	When worn or damaged
		R	2.16 mm (0.0850 in)	When worn or damaged
		S	2.18 mm (0.0858 in)	When worn or damaged
		T	2.20 mm (0.0866 in)	When worn or damaged
		U	2.22 mm (0.0874 in)	When worn or damaged
		V	2.24 mm (0.0882 in)	When worn or damaged
		W	2.26 mm (0.0890 in)	When worn or damaged
		X	2.28 mm (0.0898 in)	When worn or damaged
		Y	2.30 mm (0.0906 in)	When worn or damaged
		Z	2.32 mm (0.0913 in)	When worn or damaged
		AA	2.34 mm (0.0921 in)	When worn or damaged
		AB	1.78 mm (0.0701 in)	When worn or damaged
		AC	1.80 mm (0.0709 in)	When worn or damaged

Transfer assembly fluid	Capacity: Hypoid gear oil SAE 90 viscosity, API classified GL 4 or GL 5 only	Fluid change	0.43 L (0.45 US qt)	-
		Overhaul	0.45 L (0.48 US qt)	-
Transfer assembly	Diameter of transfer hypoid drive gear/shaft assembly at tapered roller bearing contact area	At transfer cover side	50.002- 50.018 mm (1.96858- 1.96921 in)	49.95 mm (1.9665 in)
		At transfer gear side	24.987- 25.000 mm (0.98374- 0.98425 in)	24.93 mm (0.9815 in)
	Diameter of transfer output shaft (hypoid gear) at tapered roller bearing contact area	At transfer gear side	40.002- 40.018 mm (1.57488- 1.57551 in)	39.95 mm (1.5728 in)
		At companion flange side	31.975- 31.988 mm (1.25886- 1.25937 in)	31.92 mm (1.2567 in)
	Transfer gear backlash		0.06- 0.16 mm (0.0024- 0.0063 in)	-
	Tapered roller bearing total starting torque (preload)		2.64- 4.23 N.m (26.9- 43.1 kgf.cm, 23.3- 37.4 lbf.in)	-

REAR DIFFERENTIAL

Item	Measurement	Qualification	Standard or New	Service Limit
Rear differential fluid	Capacity: use Acura All-Wheel Drive Fluid (DPSF)	Fluid change	2.53 L (2.67 US qt)	-
		Overhaul	2.77 L (2.93 US qt)	-

STEERING

Item	Measurement	Qualification	Standard or New	Service Limit
Steering wheel	Rotational play measured at outside edge		0- 10 mm (0- 0.39 in)	-
	Initial turning load measured at outside edge with engine running		29 N (3.0 kgf, 6.6 lbf)	-
Gearbox	Angle of rack guide screw loosened from locked position		10+5°	

SUSPENSION

Item	Measurement	Qualification	Standard or New	Service Limit
Wheel alignment	Camber	Front	- 0°30'$^{+30'}_{-45'}$ ·	
		Rear	- 1 °00'$^{+30'}_{-45'}$ ·	
	Caster	Front	3 ° 48 ' ±45 '	
	Total toe-in	Front	0±2mm (0+0.08 in)	
		Rear	2 ± 2 mm (0.08 ± 0.08 in)	
	Front wheel turning angle	Inward	38° 06' ±2°	
		Outward (reference)	30° 24' ± 1 °	
Wheel	Runout	Axial	0- 0.7 mm (0- 0.028 in)	2.0 mm (0.079 in)
		Radial	0- 0.7 mm (0- 0.028 in)	1.5 mm (0.059 in)
Wheel bearing	End play	Front	0- 0.05 mm (0- 0.0020 in)	-
		Rear	0- 0.05 mm (0- 0.0020 in)	-

BRAKES

Item	Measurement	Qualification	Standard or New	Service Limit
Parking brake	Number of clicks when lever pulled with 196 N (20.0 kgf, 44.1 lbf) of force		6 to 8 clicks	
	Drum I.D.		189.9- 190.0 mm (7.476- 7.480 in)	191.0 mm (7.520 in)
	Shoe lining thickness		3.4 mm (0.134 in)	1.0 mm (0.039 in)
Brake pedal	Height from floor	M/T	156 mm (6.14 in)	-
		A/T	155 mm (6.10 in)	-
	Free play		1 - 5 mm (0.04- 0.20 in)	-
Brake disc	Thickness	Front	27.9- 28.1 mm (1.098- 1.106 in)	26.0 mm (1.024 in)
		Rear	10.9- 11.1 mm (0.429- 0.437 in)	9.0 mm (0.354 in)
	Runout		-	0.04 mm (0.0016 in)
	Parallelism		-	0.015 mm (0.00059 in)
Brake pad	Thickness	Front	11.5- 12.2 mm (0.453- 0.480 in)	1.6 mm (0.063 in)
		Rear	9.6- 10.2 mm (0.378- 0.402 in)	1.6 mm (0.063 in)

AIR CONDITIONING

Item	Measurement	Qualification	Standard or New	Service Limit
Refrigerant	Type		HFC- 134a (R- 134a)	
	Capacity of system		505- 555 g (17.8- 19.6 oz)	-
Refrigerant oil	Type		DENSO ND- OIL 8 (P/N 38897- PR7- A01 AH)	
	Capacity of components	Condenser (including dryer desiccant)	35mL (1 1/5 fl.oz)	
		Evaporator	35mL (1 1/5 fl.oz)	
		Each line and hose	10mL (1/3 fl.oz)	
		Dryer desiccant	10mL (1/3 fl.oz)	
		Compressor	70- 82 mL (2 3/8- 2 7/9 fl.oz)	
Compressor	Field coil resistance	At 68°F (20°C)	3.9- 4.3 ohms	
	Pulley-to-pressure plate clearance		0.35- 0.60 mm (0.014- 0.023 in)	-

TORQUE SUMMARY

TORQUE SPECIFICATIONS

NOTE:

- **Refer to the appropriate Service information for the precautions and complete procedures.**
- **Refer to the appropriate Service information for the bolts/nuts not indicated here.**

Engine Electrical

Location	Item		Remark	Torque
Starting system	Starter bolts	M/T model		74 N.m (7.5 kgf.m, 54 lbf.ft)
		A/T model		44 N.m (4.5 kgf.m, 33 lbf.ft)
	Starter harness clamp nut			9 N.m (0.9 kgf.m, 7 lbf.ft)
Ignition system	Spark plugs			22 N.m (2.2 kgf.m, 16 lbf.ft)
Charging system	Alternator bolt (8 mm)			22 N.m (2.2 kgf.m, 16 lbf.ft)
	Alternator bolt (10 mm)			44 N.m (4.5 kgf.m, 33 lbf.ft)
	Alternator cable nut			12 N.m (1.2 kgf.m, 8.7 lbf.ft)
	Drive belt auto-tensioner bolt			22 N.m (2.2 kgf.m, 16 lbf.ft)
	Drive belt auto-tensioner pulley bolt			56 N.m (5.7 kgf.m, 41 lbf.ft)

NOTE:

- **Refer to the appropriate Service information for the precautions and complete procedures.**

- **Refer to the appropriate Service information for the bolts/nuts not indicated here.**

Engine Mechanical

Location	Item		Remark	Torque
Engine assembly	Power steering pump bracket bolts			22 N.m (2.2 kgf.m, 16 lbf.ft)
	Front engine mount bracket bolts		Use new bolts	54 N.m (5.5 kgf.m, 40 lbf.ft)
	Front engine mount bolts		Use new bolts	54 N.m (5.5 kgf.m, 40 lbf.ft)
	Front engine mount stop nuts		Use new nuts	64 N.m (6.5 kgf.m, 47 lbf.ft)
	Rear engine mount bracket bolts		Use new bolts	78 N.m (8.0 kgf.m, 58 lbf.ft)
	Rear engine mount bolts (10 mm) Qty 4		Use new bolts	54 N.m (5.5 kgf.m, 40 lbf.ft)
	Rear engine mount bolt (14 mm) Qty 1	M/T model	Use new bolt	88 N.m (9.0 kgf.m, 65 lbf.ft)
	Rear engine mount stop nuts	A/T model	Use new nuts	64 N.m (6.5 kgf.m, 47 lbf.ft)
	Side engine mount bracket bolts (10 mm) Qty 3		Use new bolts	44 N.m (4.5 kgf.m, 33 lbf.ft)
	Side engine mount bracket bolts (10 mm) Qty 2 (2)		Use new bolts	54 N.m (5.5 kgf.m, 40 lbf.ft)
	Side engine mount bolt (12 mm) Qty 1 (2)			64 N.m (6.5 kgf.m, 47 lbf.ft)
	Side engine mount bolts (10 mm) Qty 2		Use new bolts	64 N.m (6.5 kgf.m, 47 lbf.ft)
	Upper transmission mount bracket bolts		Use new bolts	59 N.m (6.0 kgf.m, 43 lbf.ft)
	Upper transmission mount bolts			54 N.m (5.5 kgf.m, 40 lbf.ft)
	Lower transmission mount bracket bolts	M/T model	Use new bolts	54 N.m (5.5 kgf.m, 40 lbf.ft)
		A/T model	Use new bolts	39 N.m (4.0 kgf.m, 29 lbf.ft)
	Lower transmission mount nuts			44 N.m (4.5 kgf.m, 33 lbf.ft)
	Lower transmission mount bolt		Use new bolt	54 N.m (5.5 kgf.m, 40 lbf.ft)
			• Use new O-ring	22 N.m (2.2

Engine lubrication	Oil pressure switch	• Apply liquid gasket	kgf.m, 16 lbf.ft)
	Oil pan drain bolt	Use new washer	39 N.m (4.0 kgf.m, 29 lbf.ft)
	Oil filter		12 N.m (1.2 kgf.m, 9 lbf.ft)
	Oil filter feed pipe	Use oil on threads	35 N.m (3.6 kgf.m, 26 lbf.ft)
Intake manifold and exhaust system	Intake manifold bolts (1)		22 N.m (2.2 kgf.m, 16 lbf.ft)
	Intake manifold nuts (1)		22 N.m (2.2 kgf.m, 16 lbf.ft)
	Injector base bolts (1)		22 N.m (2.2 kgf.m, 16 lbf.ft)
	Injector base nuts (1)		22 N.m (2.2 kgf.m, 16 lbf.ft)
	Exhaust pipe A self-locking nuts (10 mm) Qty 3 (warm up TWC side) (2)	Use new nuts	54 N.m (5.5 kgf.m, 40 lbf.ft)
	Exhaust pipe A self-locking nuts (10 mm) Qty 3 (under-floor TWC side) (2)	Use new nuts	33 N.m (3.4 kgf.m, 25 lbf.ft)
	Exhaust pipe B self-locking nuts (10 mm) Qty 3 (2)	Use new nuts	33 N.m (3.4 kgf.m, 25 lbf.ft)
	Exhaust pipe B self-locking nuts (10 mm) Qty 2	Use new nuts	54 N.m (5.5 kgf.m, 40 lbf.ft)
(1) Parts to be tightened in a particular order.			
(2) Follow the S/M procedures closely for torque, sequence, and special steps.			

NOTE:

- **Refer to the appropriate Service information for the precautions and complete procedures.**
- **Refer to the appropriate Service information for the bolts/nuts not indicated here.**

Engine Cooling

Location	Item	Remark	Torque
Cooling system	Water passage bolts		22 N.m (2.2 kgf.m, 16 lbf.ft)
	Water passage nuts		22 N.m (2.2 kgf.m, 16 lbf.ft)

Fuel and Emissions

Location	Item	Remark	Torque

Fuel and emissions	A/F sensor			44 N.m (4.5 kgf.m, 33 lbf.ft)
	EGR pipe bolts		Use new gasket	22 N.m (2.2 kgf.m, 16 lbf.ft)
	EGR pipe nuts		Use new gasket	22 N.m (2.2 kgf.m, 16 lbf.ft)
	EGR valve nuts		Use new gasket	22 N.m (2.2 kgf.m, 16 lbf.ft)
	Fuel joint hose mounting bolt			22 N.m (2.2 kgf.m, 16 lbf.ft)
	Fuel tank locknut (1)		Use new locknut, locknut plate, and base gasket	70 N.m (7.1 kgf.m, 51 lbf.ft)
	Fuel tank support straps bolts			38 N.m (3.9 kgf.m, 28 lbf.ft)
	Knock sensor			31 N.m (3.2 kgf.m, 23 lbf.ft)
	Rocker arm oil pressure switch		Use new O-ring	22 N.m (2.2 kgf.m, 16 lbf.ft)
	Secondary HO2S			44 N.m (4.5 kgf.m, 33 lbf.ft)
	Secondary fuel gauge sending unit locknut (1)		Use new locknut, locknut plate, and base gasket	70 N.m (7.1 kgf.m, 51 lbf.ft)
	Throttle body bolts		Use new gasket	22 N.m (2.2 kgf.m, 16 lbf.ft)
	Under floor TWC self locking nuts	Without SH-AWD	Use new gaskets and nuts	33 N.m (3.4 kgf.m, 25 lbf.ft)
	Under floor TWC self locking nuts (front side)	With SH-AWD	Use new gaskets and nuts	33 N.m (3.4 kgf.m, 25 lbf.ft)
	Under floor TWC self locking nuts (rear side)	With SH-AWD	Use new gaskets and nuts	54 N.m (5.5 kgf.m, 40 lbf.ft)
	Warm up TWC (front bank) bracket bolts			45 N.m (4.5 kgf.m, 33 lbf.ft)
	Warm up TWC (rear bank) bracket bolts			22 N.m (2.2 kgf.m, 16 lbf.ft)
	Warm up TWC (front bank) upper self locking nuts		Use new nuts	31 N.m (3.2 kgf.m, 23 lbf.ft)
	Warm up TWC (rear bank) upper self locking nuts		Use new nuts	31 N.m (3.2 kgf.m, 23 lbf.ft)
(1) Follow the S/M procedures closely for torque, sequence, and special steps.				

Clutch

Location	Item	Remark	Torque

Clutch	Clutch push rod locknut		17 N.m (1.7 kgf.m, 12 lbf.ft)
	Clutch pedal position switch A locknut		9.8 N.m (1.0 kgf.m, 7 lbf.ft)
	Clutch pedal position switch B locknut		9.8 N.m (1.0 kgf.m, 7 lbf.ft)
	Clutch pedal bolt		22 N.m (2.2 kgf.m, 16 lbf.ft)
	Master cylinder nuts		13 N.m (1.3 kgf.m, 9 lbf.ft)
	Slave cylinder bolts		22 N.m (2.2 kgf.m, 16 lbf.ft)
	Flywheel bolts		103 N.m (10.5 kgf.m, 76 lbf.ft)
	Pressure plate bolts (1)		25 N.m (2.6 kgf.m, 19 lbf.ft)
	Release fork bolt		29 N.m (3.0 kgf.m, 22 lbf.ft)
(1) Parts to be tightened in a particular order.			

Manual Transmission

Location	Item	Remark	Torque
Manual transmission	MTF drain plug	Use new sealing washer	44 N.m (4.5 kgf.m, 33 lbf.ft)
	MTF filler plug	Use new sealing washer	44 N.m (4.5 kgf.m, 33 lbf.ft)
	Back-up light switch	Use liquid gasket on threads	29 N.m (3.0 kgf.m, 22 lbf.ft)
	Upper transmission bolts		74 N.m (7.5 kgf.m, 54 lbf.ft)
	Lower transmission bolts		74 N.m (7.5 kgf.m, 54 lbf.ft)
	Shift lever housing bolts		22 N.m (2.2 kgf.m, 16 lbf.ft)
	Shift cable bracket bolts		27 N.m (2.8 kgf.m, 20 lbf.ft)

Automatic Transmission

Location	Item	Remark	Torque
Automatic transmission	ATF drain plug	Use new sealing washer	49 N.m (5.0 kgf.m, 36 lbf.ft)
	ATF filler bolt	Use new sealing washer	44 N.m (4.5 kgf.m, 33 lbf.ft)
	Clutch pressure inspection port sealing bolts (line/1st/5th/torque converter)		20 N.m (2.0 kgf.m, 14 lbf.ft)
	Clutch pressure inspection port sealing bolts (3rd/6th)		27 N.m (2.8 kgf.m, 20 lbf.ft)
	Transmission fluid pressure switches	Use new sealing washers	0 N.m (2.0 kgf.m, 14 lbf.ft)
	Line pressure switch	Use new sealing washer	20 N.m (2.0 kgf.m, 14 lbf.ft)
	Drive plate bolts (1)		74 N.m (7.5 kgf.m, 54 lbf.ft)
	Lower transmission housing mounting bolts		74 N.m (7.5 kgf.m, 54 lbf.ft)
	Upper transmission housing mounting bolts		64 N.m (6.5

			kgf.m, 47 lbf.ft)
	Transfer assembly mounting bolts		51 N.m (5.2 kgf.m, 38 lbf.ft)
	Transmission ground terminal bracket bolt		26 N.m (2.7 kgf.m, 20 lbf.ft)
	Shift lever assembly bolts		22 N.m (2.2 kgf.m, 16 lbf.ft)
	Shift cable end nut		22 N.m (2.2 kgf.m, 16 lbf.ft)
	Shift lever bracket base bolts		22 N.m (2.2 kgf.m, 16 lbf.ft)
Transfer assembly	Transfer assembly fluid drain plug	Use new sealing washer	44 N.m (4.5 kgf.m, 33 lbf.ft)
	Transfer assembly fluid filler plug	Use new sealing washer	44 N.m (4.5 kgf.m, 33 lbf.ft)
(1) Follow the S/M procedures closely for torque, sequence, and special steps.			

NOTE:

- **Refer to the appropriate Service information for the precautions and complete procedures.**
- **Refer to the appropriate Service information for the bolts/nuts not indicated here.**

Rear Differential

Location	Item	Remark	Torque
Rear differential	Rear differential fluid drain plug	Use new sealing washer	47 N.m (4.8 kgf.m, 35 lbf.ft)
	Rear differential fluid filler plug	Use new sealing washer	47 N.m (4.8 kgf.m, 35 lbf.ft)
	Rear differential front mounting bracket nuts (1)	Use new nuts	44 N.m (4.5 kgf.m, 33 lbf.ft)
	Rear differential front mounting bracket bolts (1)	Use new bolts	74 N.m (7.5 kgf.m, 54 lbf.ft)
	Rear differential rear mount bolts (1)	Use new bolts	74 N.m (7.5 kgf.m, 54 lbf.ft)
(1) Follow the S/M procedures closely for torque, sequence, and special steps.			

Driveline/Axle

Location	Item	Remark	Torque
	Driveshaft spindle nut (24	• Use oil on the seating surface	245 N.m (25.0 kgf.m, 181

	mm)	• Use new nut	lbf.ft)
	Driveshaft spindle nut (26 mm)	• Use oil on the seating surface • Use new nut	329 N.m (33.5 kgf.m, 242 lbf.ft)
	Intermediate shaft dowel bolts		39 N.m (4.0 kgf.m, 29 lbf.ft)
Driveline/axle	Intermediate shaft flange bolt		39 N.m (4.0 kgf.m, 29 lbf.ft)
	Heat shield bolts		22 N.m (2.2 kgf.m, 16 lbf.ft)
	No. 1 propeller shaft nuts	Use new nuts	72 N.m (7.3 kgf.m, 53 lbf.ft)
	No. 3 propeller shaft bolts	Use new bolts	72 N.m (7.3 kgf.m, 53 lbf.ft)
	No. 1 support bearing bolts (1)	Use new bolts	39 N.m (4.0 kgf.m, 29 lbf.ft)
	No. 2 support bearing bolts (1)	Use new bolts	39 N.m (4.0 kgf.m, 29 lbf.ft)
(1) Follow the S/M procedures closely for torque, sequence, and special steps.			

Steering

Location	Item	Remark	Torque
Steering	Steering wheel bolt		39 N.m (4.0 kgf.m, 29 lbf.ft)
	Steering joint bolts		28 N.m (2.9 kgf.m, 21 lbf.ft)
	Steering column nuts		16 N.m (1.6 kgf.m, 12 lbf.ft)
	Steering column bolts		16 N.m (1.6 kgf.m, 12 lbf.ft)
	Steering gearbox bolts	Use new bolts	74 N.m (7.5 kgf.m, 54 lbf.ft)
	Tie-rod end ball joint nuts	Use new nuts	60 N.m (6.1 kgf.m, 44 lbf.ft)
	Tie-rod end locking nuts		44 N.m (4.5 kgf.m, 33 lbf.ft)

Suspension

Location	Item	Remark	Torque
Front suspension	Wheel nuts		127 N.m (13.0 kgf.m, 94.0 lbf.ft)
	Upper arm castle nut		44- 52 N.m (4.5- 5.3 kgf.m, 33- 38 lbf.ft)
	Upper arm bolts	Use new bolts	31 N.m (3.2 kgf.m, 23 lbf.ft)
	Knuckle ball joint castle nut	Use new nut	93- 103 N.m (9.5- 10.5 kgf.m, 69- 75.9 lbf.ft)
	Lower arm bolt (12mm)	Use new bolt	74 N.m (7.5 kgf.m, 54 lbf.ft)
	Lower arm bolt (12mm)	Use new bolt	83 N.m (8.5 kgf.m, 61 lbf.ft)
	Stabilizer bar bolts		55 N.m (5.6 kgf.m, 41 lbf.ft)
	Stabilizer link nuts		78 N.m (8.0 kgf.m, 58 lbf.ft)

	Damper nuts	Use new nuts	55 N.m (5.6 kgf.m, 41 lbf.ft)
	Damper pinch bolt		49 N.m (5.0 kgf.m, 36 lbf.ft)
	Damper fork bolt/nut	Use new bolt/nut	64 N.m (6.5 kgf.m, 47 lbf.ft)
	Damper self-locking	nut Use new nut	29 N.m (3.0 kgf.m, 22 lbf.ft)
Rear suspension	Wheel nuts		127 N.m (13.0 kgf.m, 94.0 lbf.ft)
	Upper arm castle nut	Use new nut	69- 78 N.m (7.0- 8.0 kgf.m, 51 - 58 lbf.ft)
	Upper arm bolts	Use new bolts	59 N.m (6.0 kgf.m, 43 lbf.ft)
	Lower arm A bolts	Use new bolts	59 N.m (6.0 kgf.m, 43 lbf.ft)
	Control arm self-locking nut	Use new nut	59 N.m (6.0 kgf.m, 43 lbf.ft)
	Control arm self-locking nut/adjusting bolt	Use new nut	57 N.m (5.8 kgf.m, 42 lbf.ft)
	Lower arm B bolts	Use new bolts	59 N.m (6.0 kgf.m, 43 lbf.ft)
	Stabilizer bar bolts		22 N.m (2.2 kgf.m, 16 lbf.ft)
	Stabilizer link nut	Use new nut	38 N.m (3.9 kgf.m, 28 lbf.ft)
	Stabilizer link self-locking nut	Use new nut	44 N.m (4.5 kgf.m, 33 lbf.ft)
	Damper nuts	Use new nuts	55 N.m (5.6 kgf.m, 41 lbf.ft)
	Damper lower bolt	Use new bolt	64 N.m (6.5 kgf.m, 47 lbf.ft)
	Damper self-locking nut	Use new nut	29 N.m (3.0 kgf.m, 22 lbf.ft)

Brakes

Location	Item	Remark	Torque
Conventional brake	Front brake caliper bolts		72 N.m (7.3 kgf.m, 53 lbf.ft)
	Front brake caliper bracket bolts		137 N.m (14.0 kgf.m, 101 lbf.ft)
	Front brake hose bracket bolt		22 N.m (2.2 kgf.m, 16 lbf.ft)
	Front brake hose banjo bolt	Use new washers	35 N.m (3.6 kgf.m, 26 lbf.ft)
	Brake booster/brake pedal nuts		12 N.m (1.2 kgf.m, 8.7 lbf.ft)
	Master cylinder nuts		15 N.m (1.5 kgf.m, 11 lbf.ft)
	Master cylinder brake lines		22 N.m (2.2 kgf.m, 16 lbf.ft)
	Rear brake caliper bolts		22 N.m (2.2 kgf.m, 16 lbf.ft)
	Rear brake caliper bracket bolts		88 N.m (9.0 kgf.m, 65 lbf.ft)

	Rear brake hose bracket bolt		22 N.m (2.2 kgf.m, 16 lbf.ft)
	Rear brake hose banjo bolt	Use new washers	35 N.m (3.6 kgf.m, 26 lbf.ft)
	Parking brake lever bolts		32 N.m (3.3 kgf.m, 24 lbf.ft)
	Parking brake cable bolts		22 N.m (2.2 kgf.m, 16 lbf.ft)
	Equalizer cover bolts		32 N.m (3.3 kgf.m, 24 lbf.ft)
	Brake pedal bolts		22 N.m (2.2 kgf.m, 16 lbf.ft)
VSA	VSA modulator-control unit brake line (10 mm)		15 N.m (1.5 kgf.m, 11 lbf.ft)
	VSA modulator-control unit brake line (12 mm)		22 N.m (2.2 kgf.m, 16 lbf.ft)

NOTE:

- **Refer to the appropriate Service information for the precautions and complete procedures.**
- **Refer to the appropriate Service information for the bolts/nuts not indicated here.**

BODY

Location	Item	Remark	Torque
Frame	Strut brace nuts		22 N.m (2.2 kgf.m, 16 lbf.ft)
	Strut brace bolts		22 N.m (2.2 kgf.m, 16 lbf.ft)
	Front subframe front stiffener bolts (12 mm) (1)		54 N.m (5.5 kgf.m, 40 lbf.ft)
	Front subframe front stiffener bolts (14 mm) (1)	Use new bolts	103 N.m (10.5 kgf.m, 76 lbf.ft)
	Front subframe middle rubber mount bolts (10 mm) (1)	Use new bolts	49 N.m (5.0 kgf.m, 36 lbf.ft)
	Front subframe middle rubber mount bolts (12 mm) (1)	Use new bolts	44 N.m (4.5 kgf.m, 33 lbf.ft)
	Front subframe rear stiffener bolts (12 mm) (1)	Use new bolts	93 N.m (9.5 kgf.m, 69 lbf.ft)
	Front subframe rear stiffener bolts (14 mm) (1)	Use new bolts	103 N.m (10.5 kgf.m, 76 lbf.ft)
	Rear engine mounting base bracket bolts	Use new bolts	54 N.m (5.5 kgf.m, 40 lbf.ft)
	Rear subframe mounting front stay bolts (8 mm)		27 N.m (2.75 kgf.m, 20 lbf.ft)
		Use new	103 N.m (10.5 kgf.m, 76

	Rear subframe mounting front stay bolts (14 mm)	bolts	lbf.ft)
	Rear subframe mounting rear stay bolts (8 mm)		27 N.m (2.75 kgf.m, 20 lbf.ft)
	Rear subframe mounting rear stay bolts (14 mm)	Use new bolts	103 N.m (10.5 kgf.m, 76 lbf.ft)
(1) Parts to be tightened in a particular order.			

HEATING, VENTILATION, AND AIR CONDITIONING

Location	Item	Remark	Torque
A/C compressor	A/C compressor bracket bolts		45 N.m (4.5 kgf.m, 33 lbf.ft)
	A/C compressor bolts		22 N.m (2.2 kgf.m, 16 lbf.ft)
	A/C compressor center bolt		18 N.m (1.8 kgf.m, 13 lbf.ft)
	A/C compressor relief valve		13 N.m (1.35 kgf.m, 9.7 lbf.ft)
Receiver line	A/C pressure sensor		11 N.m (1.1 kgf.m, 8.0 lbf.ft)

BODY ELECTRICAL

Location	Item	Remark	Torque
Wipers/washers	Windshield wiper arm nut		30 N.m (3.0 kgf.m, 21.7 lbf.ft)
	Windshield wiper linkage nut		31.4 N.m (3.2 kgf.m, 23.2 lbf.ft)

DESIGN SPECIFICATIONS

Item	Measurement	Qualification	Specification
DIMENSIONS	Overall length		4, 966 mm (195.5 in)
	Overall width		1, 880 mm (74.0 in)
	Overall height		1, 452 mm (57.2 in)
	Wheelbase		2, 775 mm (109.3 in)
	Track	Front	1, 606 mm (63.2 in)
		Rear	1, 620 mm (63.8 in)
	Seating capacity		Five (5)
WEIGHT	Gross Vehicle Weight Rating (GVWR)	Without SH-AWD	2, 130 kg (4, 696 lbs)
		With SH-AWD	2, 235 kg (4, 927 lbs)
ENGINE (J35Z6)	Type		Water-cooled, 4-stroke SOHC VTEC gasoline engine
	Cylinder arrangement		60 ° V6-cylinder, transverse
	Bore and stroke		89.0 x 93.0 mm (3.504 x 3.661 in)
	Displacement		3, 471 cm^3 (211.8 cu in)
	Compression ratio		11.2
	Valve train		Belt drive, SOHC VTEC 4 valves

			per cylinder
	Lubrication system		Forced, wet sump, with trochoid pump
	Fuel required		Premium UNLEADED gasoline with 91 Pump Octane Number or higher
ENGINE (J37A4)	Type		Water-cooled, 4- stroke SOHC VTEC gasoline engine
	Cylinder arrangement		60 ° V6- cylinder, transverse
	Bore and stroke		90.0 x 96.0 mm (3.543 x 3.780 in)
	Displacement		3, 664 cm^3 (223.6 cu in)
	Compression ratio		11.2
	Valve train		Belt drive, SOHC VTEC 4 valves per cylinder
	Lubrication system		Forced, wet sump, with trochoid pump
	Fuel required		Premium UNLEADED gasoline with 91 Pump Octane Number or higher
STARTER	Type		Gear reduction
	Nominal output	M/T	1.6 kW
		A/T	1.8 kW
	Nominal voltage		12V
	Hour rating		30 seconds
	Direction of rotation		Counterclockwise as viewed from drive end
CLUTCH	Type		Single plate dry, diaphragm spring
MANUAL TRANSMISSION	Type		Synchronized, six-speed forward, one reverse
	Primary reduction		Direct 1:1
	Gear ratio	1st	3.625
		2nd	2.115
		3rd	1.529
		4th	1.125
		5th	0.847
		6th	0.686
		Reverse	3.656
	Final reduction	Type	Single helical gear
		Gear ratio	3.842
	Type		Electronically-controlled automatic, six-speed forward, one reverse
	Primary reduction		Direct 1:1

AUTOMATIC TRANSMISSION	Gear ratio	1st	3.359
		2nd	2.094
		3rd	1.484
		4th	1.065
		5th	0.754
		6th	0.555
		Reverse	2.269
	Final reduction	Type	Single helical gear
		Gear ratio	3.722
STEERING	Type		Electrical power-assisted rack and pinion
	Overall ratio		13.96
	Turns, lock-to-lock		2.7
	Steering wheel diameter	Without SH-AWD	370 mm (14.57 in)
		With SH-AWD	374 mm (14.72 in)
SUSPENSION	Type	Front	Independent double wishbone with stabilizer, coil spring
		Rear	Independent multilink with stabilizer, coil spring
	Shock absorber	Front and rear	Telescopic, hydraulic, nitrogen gas-filled
TIRES	Size (without SH-AWD)	Front and rear	P245/50R17 98V
			P245/45R18 96V
		Spare	T135/80D17 103M
	Size (with SH-AWD)	Front and rear	P245/45R18 96V
			245/40ZR19 94V (Optional)
		Spare	T135/80D17 103M
WHEEL ALIGNMENT	Camber	Front	- 0°30'
		Rear	- 1°00'
	Caster	Front	3° 48'
	Total toe-in	Front	0 mm (0 in)
		Rear	2 mm (0.08 in)
	Front wheel turning angle	Inward	38 ° 06'
		Outward (reference)	30 ° 24'
BRAKES	Type of service brake	Front	Power-assisted self-adjusting ventilated disc
		Rear	Power-assisted self-adjusting solid disc
	Type of parking brake		Mechanical actuating, rear wheels
	Pad friction surface area (swept area)	Front	59.2 cm^2 (9.18 sq in) x 2
		Rear	34.4 cm^2 (5.33 sq in) x 2
	Parking brake shoe		

	friction surface area		45.6 cm^2 (7.07 sq in) x 2
AIR CONDITIONING	Compressor	Type	Swash plate/DENSO
		Capacity	154.4 mL (9.42 cu in)/rev
		Maximum speed	7, 600 RPM
		Lubricant capacity	70 mL (2 3/8 fl.oz)
		Lubricant type	DENSO ND-OIL 8
	Condenser	Type	Corrugated fin
	Evaporator	Type	Corrugated fin
	Blower	Type	Radial
		Motor input	300W/12V
		Speed control	Infinitely variable
		Maximum capacity	545 m^3 (19, 246 cu ft)/h
	Temperature control		Air-mix type
	Compressor clutch	Type	Dry, single plate, poly V- belt drive
		Electrical power consumption at 68°F (20°C)	35 W maximum at 12 V
	Refrigerant	Type	HFC-134a (R-134a)
		Capacity	505- 555 g (17.8- 19.6 oz)
ELECTRICAL RATINGS	Battery		12 V- 65 Ah/20 HR (12V- 55 Ah/5 HR)
	Fuses	Under-hood fuse/relay box	120 A, 70 A, 60 A, 50 A, 40 A, 30 A, 20 A, 15 A, 10 A, 7.5 A
		Driver's under-dash fuse/relay box	20 A, 15 A, 10 A, 7.5 A
		Passenger's under-dash fuse/relay box	20 A, 15 A, 10 A, 7.5 A
		Auxiliary under-dash fuse/relay box	7.5 A
		Headlight high beam	12V- 60W (HB3)
		Headlight low beam (HID)	12V- 35W (D2S)
		Fog lights	12V- 55W (H11)
		Front turn signal/parking lights	12 V- 24/2.2CP (Amber)
		Side turn signal lights	LED
		Front side marker lights	12V- 3CP
		Rear turn signal lights	12V- 21 W (Amber)
		Brake lights/taillights	LED
		Rear side marker lights	12V- 3CP
		High mount brake light	LED

	Light bulbs	Back-up lights	12V- 16W
		License plate lights	12V- 5W
		Ambient light	LED
		Trunk light	12V- 5W
		Front individual map lights	LED
		Rear individual map lights	LED
		Door courtesy lights	12V- 3.4W
		Glove box light	12V- 1.4W
		Vanity mirror lights	12V- 2W
		Gauge lights	LED
		Indicator lights	LED
		Console box light	12V- 1.4W
		Footwell lights	LED

BODY SPECIFICATIONS

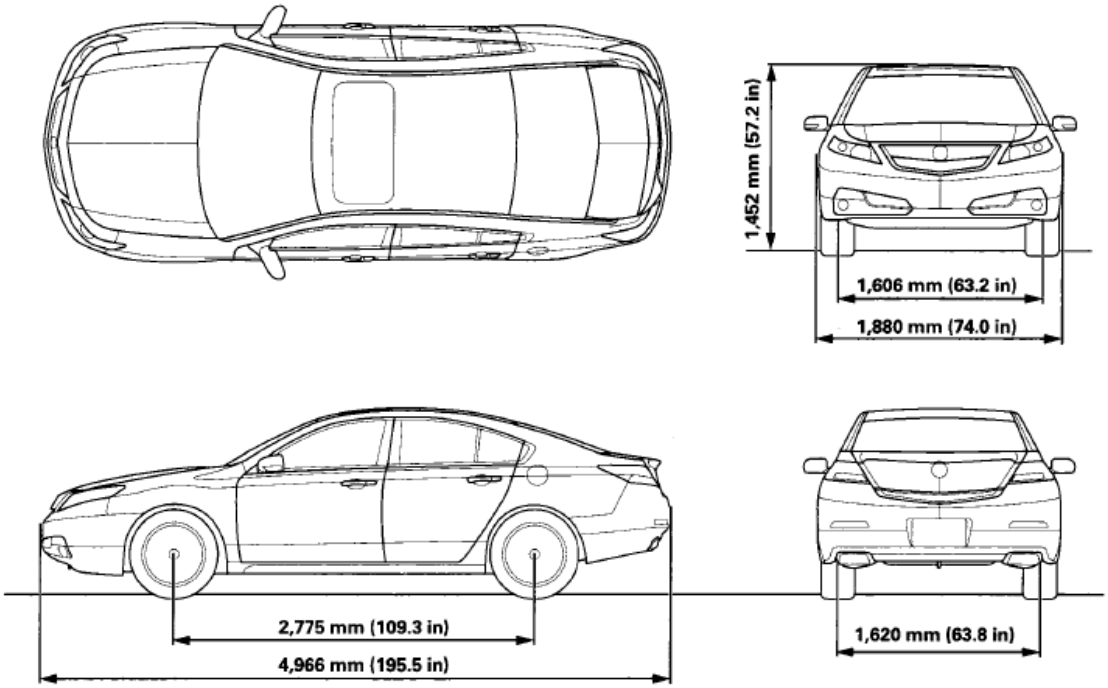


Fig. 1: Identifying Body Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2012 BRAKES

VSA System Components - TL

COMPONENT LOCATION INDEX

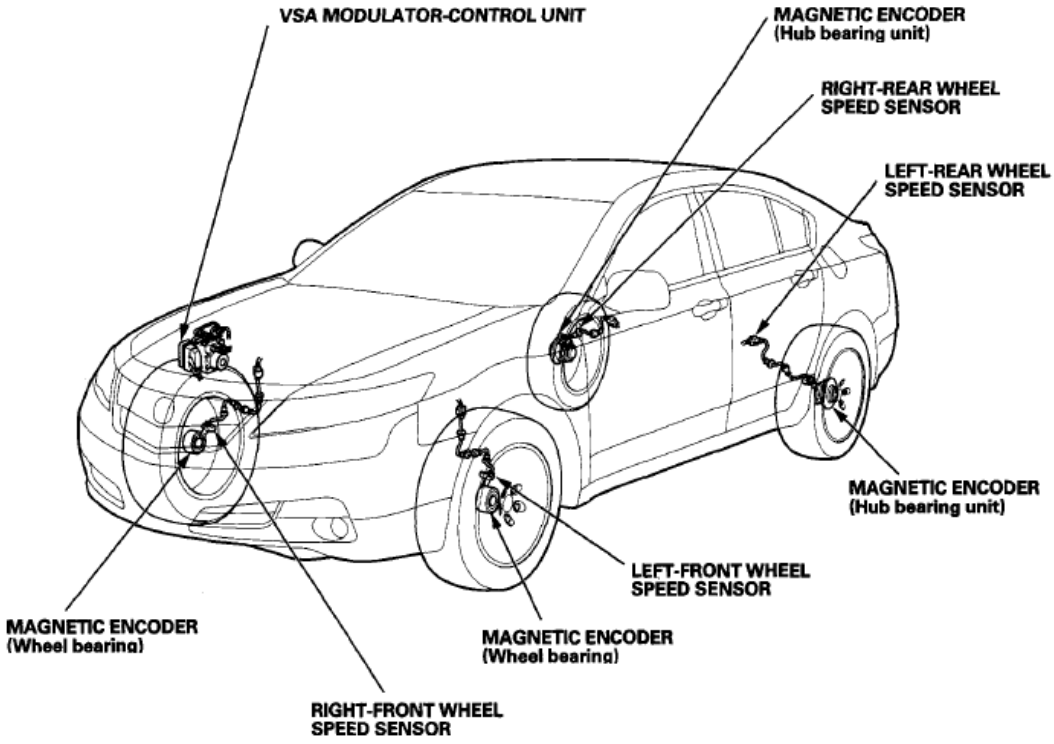


Fig. 1: VSA System Components (1 Of 2)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

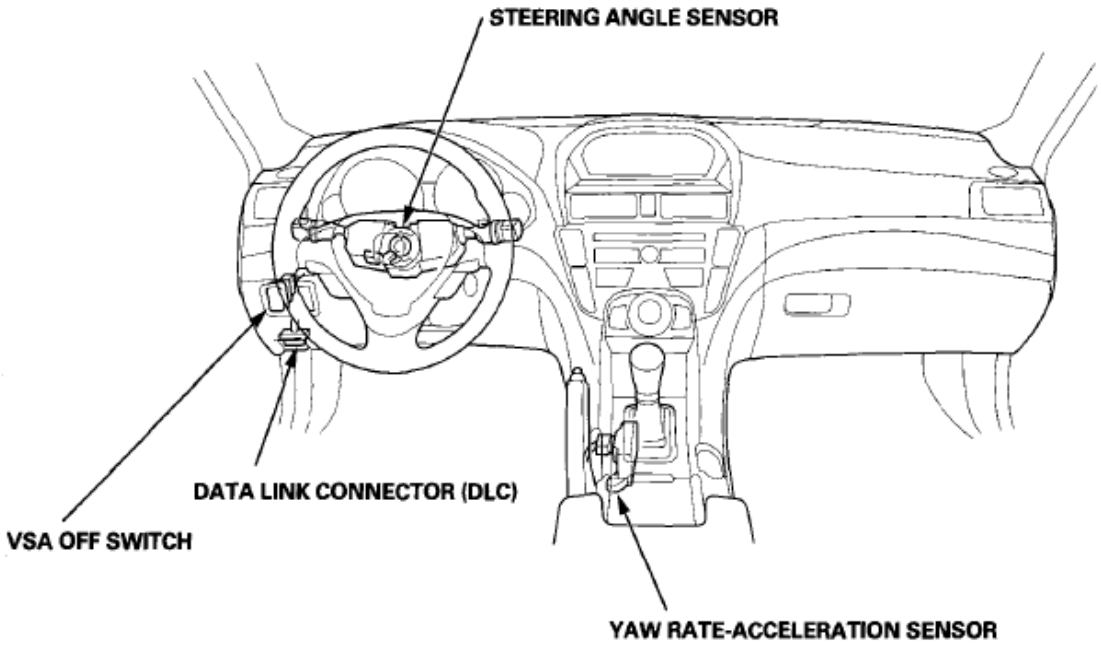


Fig. 2: VSA System Components (2 Of 2)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

GENERAL TROUBLESHOOTING INFORMATION

SYSTEM INDICATOR

This system has four indicators:

- ABS indicator (A)
- Brake system indicator (B)
- VSA indicator (C)
- VSA OFF indicator (D)

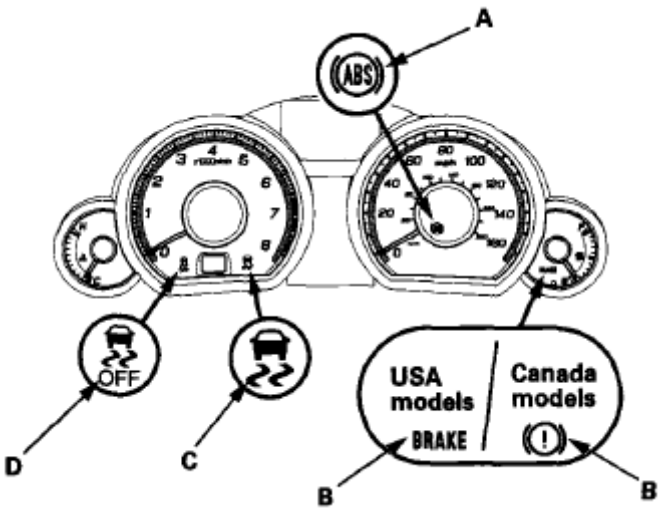


Fig. 3: Identifying System Indicators
Courtesy of AMERICAN HONDA MOTOR CO., INC.

When the system is OK, each indicator comes on for about 2 seconds after turning the ignition switch to ON (II), or press the engine start/stop button to select the ON mode, then goes off.

When the system detects a problem, a DTC will set and depending upon the failure, the VSA modulator-control unit determines which indicator(s) will turn on. If the problem goes away (system returns to normal), the indicator(s) will be controlled in the following way depending upon the DTC that was set:

- The indicator(s) will come on and stay on when the ignition switch is ON (II), or press the engine start/stop button to select the ON mode.
- The indicator(s) will automatically go off.
- The indicator(s) will go off after the vehicle is driven.

ABS Indicator

The ABS indicator comes on when the ABS function is lost. The brakes still work like a conventional system.

Brake System Indicator

The brake system indicator comes on when the EBD (Electronic Brake Distribution) function is lost, the parking brake is applied, and/or the brake fluid level is low.

NOTE: If two or more wheel speed sensors fail, the brake system indicator will come on.

VSA Indicator

The VSA indicator comes on when the VSA function is lost. The VSA indicator blinks when the VSA function is activating.

VSA OFF Indicator

The VSA OFF indicator comes on, when the VSA is turned OFF by using the VSA OFF switch.

DIAGNOSTIC TROUBLE CODE (DTC)

- The memory can hold all DTCs. However, when the same DTC is detected more than once, the more recent DTC is written over the earlier one. Therefore, when the same problem is detected repeatedly, it is memorized as a single DTC.
- The DTCs are indicated in ascending number order, not in the order they occur.
- The DTCs are memorized in the EEPROM in the VSA modulator-control unit. Therefore, the memorized DTCs cannot be erased by disconnecting the battery. Do the specified procedures to clear the DTCs.

SELF-DIAGNOSIS

- Self-diagnosis can be classified into two categories:
  - Initial diagnosis: Done right after the ignition switch is turned to ON (II), or press the engine start/stop button to select the ON mode, and until the ABS and VSA indicators go off.
  - Regular diagnosis: Done right after the initial diagnosis until the ignition switch is turned to LOCK (0), or press the engine start/stop button to select the OFF mode.
- When the system detects a problem, the VSA modulator-control unit shifts to fail-safe mode.

KICKBACK

The pump motor operates when the VSA modulator-control unit is functioning, and the fluid in the reservoir is forced out to the master cylinder, causing kickback at the brake pedal.

PUMP MOTOR

- The pump motor operates when the VSA modulator-control unit is functioning.
- The VSA modulator-control unit checks the pump motor operation during the first acceleration after the vehicle starts driving.

BRAKE FLUID REPLACEMENT/AIR BLEEDING

Brake fluid replacement and air bleeding procedures are identical to the procedures used on vehicles without the VSA system (see **BRAKE SYSTEM BLEEDING**).

HOW TO TROUBLESHOOT DTCS

The troubleshooting procedures assume that the cause of the problem is still present and the ABS and/or VSA indicator is still on. Following a troubleshooting procedure for a DTC that has been cleared but does not reset can result in incorrect diagnosis.

NOTE: Always troubleshoot fuel and emissions DTCs first.

1. Question the client about the conditions when the problem occurred, and try to reproduce the same conditions for troubleshooting. Find out when the ABS and/or VSA indicator came on, such as during activation, after activation, when the vehicle was traveling at a certain speed, etc. If necessary, have the client demonstrate the concern.
2. When the ABS and/or VSA indicators do not come on during the test-drive, but troubleshooting is done based on the DTC, check for loose connectors, poor contact of the terminals, etc. in the circuit indicated by the DTC.
3. After troubleshooting, or the repairs are done, clear the DTCs, and test-drive the vehicle under the same conditions that originally set the DTCs. Make sure the ABS and VSA indicators do not come on.

INTERMITTENT FAILURES

The term "intermittent failure" means a system may have had a failure, but it checks OK now. If you cannot reproduce the condition, check for loose connections and terminals. Also check ground and power connections related to the circuit that you are troubleshooting.

HOW TO USE THE HDS (HONDA DIAGNOSTIC SYSTEM)

NOTE: Make sure the battery is in good condition and fully charged.

1. If the system indicators stay on, connect the HDS to the data link connector (DLC) (A) located under the driver's side of the dashboard.

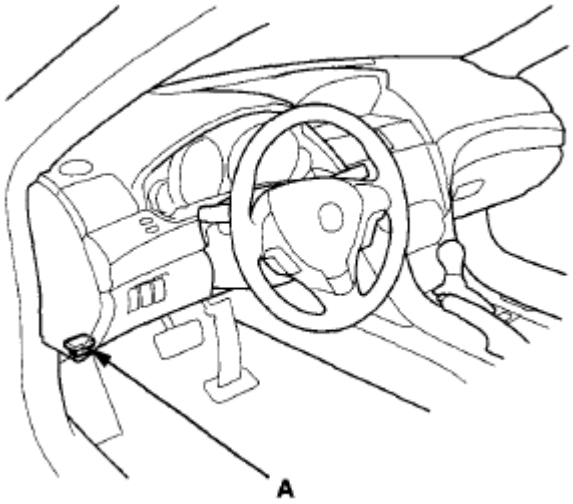


Fig. 4: Identifying Data Link Connector (DLC)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
3. Make sure the HDS communicates with the vehicle and the VSA modulator-control unit. If it does not, go to the DLC circuit troubleshooting (see **DLC CIRCUIT TROUBLESHOOTING**).
4. Check the diagnostic trouble code (DTC) and the freeze data, and note them. Then refer to the indicated DTC's troubleshooting, and do the appropriate troubleshooting procedure.

NOTE:

- **Freeze data indicates the VSA conditions when the first system malfunction that activated the indicator was detected.**
- **The HDS can read the DTC, the freeze data, the current data, and other system data.**
- **For specific operations, refer to the Help menu that came with the HDS.**

HOW TO RETRIEVE DTCS

1. With the ignition switch in LOCK (0), or vehicle in OFF mode, connect the HDS to the data link connector (DLC) under the driver's side of the dashboard.
2. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
3. Make sure the HDS communicates with the vehicle and the VSA modulator-control unit. If it does not, go to the DLC circuit troubleshooting (see **DLC CIRCUIT TROUBLESHOOTING**).
4. Follow the prompts on the HDS to display the DTC(s) on the screen. After determining the DTC, refer to the DTC troubleshooting.
5. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.

HOW TO CLEAR DTCS

1. With the ignition switch in LOCK (0), or vehicle in OFF mode, connect the HDS to the data link connector (DLC) under the driver's side of the dashboard.
2. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
3. Make sure the HDS communicates with the vehicle and the VSA modulator-control unit. If it does not, go to the DLC circuit troubleshooting (see **DLC CIRCUIT TROUBLESHOOTING**).
4. Clear the DTC(s) by following the screen prompts on the HDS.
5. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.

DTC TROUBLESHOOTING INDEX

DTC	Detection Item	Note
11	Right-Front Wheel Speed Sensor Circuit Malfunction	DTC Troubleshooting (see **DTC 11: RIGHT-FRONT WHEEL SPEED SENSOR CIRCUIT MALFUNCTION; DTC 13: LEFT-FRONT WHEEL SPEED SENSOR CIRCUIT MALFUNCTION; DTC 15: RIGHT-REAR WHEEL SPEED SENSOR CIRCUIT MALFUNCTION; DTC 17: LEFT-REAR WHEEL SPEED SENSOR CIRCUIT MALFUNCTION**)
12	Right-Front Wheel Speed Sensor Signal Malfunction	DTC Troubleshooting (see **DTC 12: RIGHT-FRONT WHEEL SPEED SENSOR SIGNAL MALFUNCTION; DTC 14: LEFT-FRONT WHEEL SPEED SENSOR SIGNAL MALFUNCTION; DTC 16: RIGHT-REAR WHEEL SPEED SENSOR SIGNAL MALFUNCTION; DTC 18: LEFT-REAR WHEEL SPEED SENSOR SIGNAL MALFUNCTION**)

13	Left-Front Wheel Speed Sensor Circuit Malfunction	DTC Troubleshooting (see **DTC 11: RIGHT-FRONT WHEEL SPEED SENSOR CIRCUIT MALFUNCTION; DTC 13: LEFT-FRONT WHEEL SPEED SENSOR CIRCUIT MALFUNCTION; DTC 15: RIGHT-REAR WHEEL SPEED SENSOR CIRCUIT MALFUNCTION; DTC 17: LEFT-REAR WHEEL SPEED SENSOR CIRCUIT MALFUNCTION**)
14	Left-Front Wheel Speed Sensor Signal Malfunction	DTC Troubleshooting (see **DTC 12: RIGHT-FRONT WHEEL SPEED SENSOR SIGNAL MALFUNCTION; DTC 14: LEFT-FRONT WHEEL SPEED SENSOR SIGNAL MALFUNCTION; DTC 16: RIGHT-REAR WHEEL SPEED SENSOR SIGNAL MALFUNCTION; DTC 18: LEFT-REAR WHEEL SPEED SENSOR SIGNAL MALFUNCTION**)
15	Right-Rear Wheel Speed Sensor Circuit Malfunction	DTC Troubleshooting (see **DTC 11: RIGHT-FRONT WHEEL SPEED SENSOR CIRCUIT MALFUNCTION; DTC 13: LEFT-FRONT WHEEL SPEED SENSOR CIRCUIT MALFUNCTION; DTC 15: RIGHT-REAR WHEEL SPEED SENSOR CIRCUIT MALFUNCTION; DTC 17: LEFT-REAR WHEEL SPEED SENSOR CIRCUIT MALFUNCTION**)
16	Right-Rear Wheel Speed Sensor Signal Malfunction	DTC Troubleshooting (see **DTC 12: RIGHT-FRONT WHEEL SPEED SENSOR SIGNAL MALFUNCTION; DTC 14: LEFT-FRONT WHEEL SPEED SENSOR SIGNAL MALFUNCTION; DTC 16: RIGHT-REAR WHEEL SPEED SENSOR SIGNAL MALFUNCTION; DTC 18: LEFT-REAR WHEEL SPEED SENSOR SIGNAL MALFUNCTION**)
17	Left-Rear Wheel Speed Sensor Circuit Malfunction	DTC Troubleshooting (see **DTC 11: RIGHT-FRONT WHEEL SPEED SENSOR CIRCUIT MALFUNCTION; DTC 13: LEFT-FRONT WHEEL SPEED SENSOR CIRCUIT MALFUNCTION; DTC 15: RIGHT-REAR WHEEL SPEED SENSOR CIRCUIT MALFUNCTION; DTC 17: LEFT-REAR WHEEL SPEED SENSOR CIRCUIT MALFUNCTION**)
18	Left-Rear Wheel Speed Sensor Signal Malfunction	DTC Troubleshooting (see **DTC 12: RIGHT-FRONT WHEEL SPEED SENSOR SIGNAL MALFUNCTION; DTC 14: LEFT-FRONT WHEEL SPEED SENSOR SIGNAL MALFUNCTION; DTC 16: RIGHT-REAR WHEEL SPEED SENSOR SIGNAL MALFUNCTION; DTC 18: LEFT-REAR WHEEL SPEED SENSOR SIGNAL MALFUNCTION**)
21	Right-Front Magnetic Encoder Malfunction	DTC Troubleshooting (see **DTC 21: RIGHT-FRONT MAGNETIC ENCODER MALFUNCTION; DTC 22: LEFT-FRONT MAGNETIC ENCODER MALFUNCTION; DTC 23: RIGHT-REAR MAGNETIC ENCODER MALFUNCTION; DTC 24: LEFT-REAR MAGNETIC ENCODER MALFUNCTION**)
22	Left-Front Magnetic Encoder Malfunction	DTC Troubleshooting (see **DTC 21: RIGHT-FRONT MAGNETIC ENCODER MALFUNCTION; DTC 22: LEFT-FRONT MAGNETIC ENCODER MALFUNCTION; DTC 23: RIGHT-REAR MAGNETIC ENCODER MALFUNCTION; DTC 24: LEFT-REAR MAGNETIC ENCODER MALFUNCTION**)
		DTC Troubleshooting (see **DTC 21: RIGHT-FRONT MAGNETIC**

23	Right-Rear Magnetic Encoder Malfunction	**ENCODER MALFUNCTION; DTC 22: LEFT-FRONT MAGNETIC ENCODER MALFUNCTION; DTC 23: RIGHT-REAR MAGNETIC ENCODER MALFUNCTION; DTC 24: LEFT-REAR MAGNETIC ENCODER MALFUNCTION**)
24	Left-Rear Magnetic Encoder Malfunction	DTC Troubleshooting (see **DTC 21: RIGHT-FRONT MAGNETIC ENCODER MALFUNCTION; DTC 22: LEFT-FRONT MAGNETIC ENCODER MALFUNCTION; DTC 23: RIGHT-REAR MAGNETIC ENCODER MALFUNCTION; DTC 24: LEFT-REAR MAGNETIC ENCODER MALFUNCTION**)
25	Yaw Rate Sensor Malfunction	DTC Troubleshooting (see **DTC 25: YAW RATE SENSOR MALFUNCTION; DTC 26: LATERAL ACCELERATION SENSOR MALFUNCTION; DTC 28: LONGITUDINAL ACCELERATION SENSOR MALFUNCTION (WITH SH-AWD); DTC 104: YAW RATE-ACCELERATION SENSOR MALFUNCTION**)
26	Lateral Acceleration Sensor Malfunction	DTC Troubleshooting (see **DTC 25: YAW RATE SENSOR MALFUNCTION; DTC 26: LATERAL ACCELERATION SENSOR MALFUNCTION; DTC 28: LONGITUDINAL ACCELERATION SENSOR MALFUNCTION (WITH SH-AWD); DTC 104: YAW RATE-ACCELERATION SENSOR MALFUNCTION**)
27(1)	Steering Angle Sensor Malfunction (Without SH-AWD)	DTC Troubleshooting (see **DTC 27: STEERING ANGLE SENSOR MALFUNCTION (WITHOUT SH-AWD)**)
27(2)	Steering Angle Sensor Malfunction (With SH-AWD)	DTC Troubleshooting (see **DTC 27: STEERING ANGLE SENSOR MALFUNCTION (WITH SH-AWD)**)
28(2)	Longitudinal Acceleration Sensor Malfunction (With SH-AWD)	DTC Troubleshooting (see **DTC 25: YAW RATE SENSOR MALFUNCTION; DTC 26: LATERAL ACCELERATION SENSOR MALFUNCTION; DTC 28: LONGITUDINAL ACCELERATION SENSOR MALFUNCTION (WITH SH-AWD); DTC 104: YAW RATE-ACCELERATION SENSOR MALFUNCTION**)
31	ABS Solenoid Valve Malfunction	DTC Troubleshooting (see **DTC 31, 32, 33, 34, 35, 36, 37, 38: ABS SOLENOID VALVE MALFUNCTION**)
32	ABS Solenoid Valve Malfunction	DTC Troubleshooting (see **DTC 31, 32, 33, 34, 35, 36, 37, 38: ABS SOLENOID VALVE MALFUNCTION**)
33	ABS Solenoid Valve Malfunction	DTC Troubleshooting (see **DTC 31, 32, 33, 34, 35, 36, 37, 38: ABS SOLENOID VALVE MALFUNCTION**)
34	ABS Solenoid Valve Malfunction	DTC Troubleshooting (see **DTC 31, 32, 33, 34, 35, 36, 37, 38: ABS SOLENOID VALVE MALFUNCTION**)
35	ABS Solenoid Valve Malfunction	DTC Troubleshooting (see **DTC 31, 32, 33, 34, 35, 36, 37, 38: ABS SOLENOID VALVE MALFUNCTION**)
36	ABS Solenoid Valve Malfunction	DTC Troubleshooting (see **DTC 31, 32, 33, 34, 35, 36, 37, 38: ABS SOLENOID VALVE MALFUNCTION**)
37	ABS Solenoid Valve Malfunction	DTC Troubleshooting (see **DTC 31, 32, 33, 34, 35, 36, 37, 38: ABS SOLENOID VALVE MALFUNCTION**)
38	ABS Solenoid Valve Malfunction	DTC Troubleshooting (see **DTC 31, 32, 33, 34, 35, 36, 37, 38: ABS SOLENOID VALVE MALFUNCTION**)

51	Motor Lock	DTC Troubleshooting (see **DTC 31, 32, 33, 34, 35, 36, 37, 38: ABS SOLENOID VALVE MALFUNCTION**)
52	Motor Stuck	DTC Troubleshooting (see **DTC 31, 32, 33, 34, 35, 36, 37, 38: ABS SOLENOID VALVE MALFUNCTION**)
54	Fail-Safe Relay Malfunction	DTC Troubleshooting (see **DTC 54: FAIL-SAFE RELAY MALFUNCTION**)
61	Battery Voltage Low	DTC Troubleshooting (see **DTC 61: BATTERY VOLTAGE LOW; DTC 62: BATTERY VOLTAGE HIGH**)
62	Battery Voltage High	DTC Troubleshooting (see **DTC 61: BATTERY VOLTAGE LOW; DTC 62: BATTERY VOLTAGE HIGH**)
64(1)	Sensor Power Source Voltage Malfunction (Without SH-AWD)	DTC Troubleshooting (see **DTC 61: BATTERY VOLTAGE LOW; DTC 62: BATTERY VOLTAGE HIGH**)
64(2)	Sensor Power Source Voltage Malfunction (With SH-AWD)	DTC Troubleshooting (see **DTC 64: SENSOR POWER SOURCE VOLTAGE MALFUNCTION (WITH SH-AWD)**)
65	Brake Fluid Level Low	DTC Troubleshooting (see **DTC 65: BRAKE FLUID LEVEL LOW**)
66	Pressure Sensor Malfunction	DTC Troubleshooting (see **DTC 66: PRESSURE SENSOR MALFUNCTION**)
68	Brake Pedal Position Switch Malfunction	DTC Troubleshooting (see **DTC 66: PRESSURE SENSOR MALFUNCTION**)
81	Modulator-Control Unit Internal Circuit Malfunction	DTC Troubleshooting (see **DTC 81: MODULATOR-CONTROL UNIT INTERNAL CIRCUIT MALFUNCTION**)
83	PGM-FI Malfunction	DTC Troubleshooting (see **DTC 83: PGM-FI MALFUNCTION**)
84-01	VSA Sensor Neutral Position Not Written	DTC Troubleshooting (see **DTC 84-01: VSA SENSOR NEUTRAL POSITION NOT WRITTEN**)
84-12(1)	Steering Angle Sensor Neutral Position Memorization Incomplete	DTC Troubleshooting (see **DTC 84-01: VSA SENSOR NEUTRAL POSITION NOT WRITTEN**)
86	F-CAN Communication Malfunction	DTC Troubleshooting (see **DTC 86: F-CAN COMMUNICATION MALFUNCTION**)
91	VSA Activation Time Too Long	DTC Troubleshooting (see **DTC 91: VSA ACTIVATION TIME TOO LONG**)
104	Yaw Rate-Acceleration Sensor Malfunction	DTC Troubleshooting (see **DTC 25: YAW RATE SENSOR MALFUNCTION; DTC 26: LATERAL ACCELERATION SENSOR MALFUNCTION; DTC 28: LONGITUDINAL ACCELERATION SENSOR MALFUNCTION (WITH SH-AWD); DTC 104: YAW RATE-ACCELERATION SENSOR MALFUNCTION**)
105	Hydraulic Unit Temperature Sensor Malfunction	DTC Troubleshooting (see **DTC 91: VSA ACTIVATION TIME TOO LONG**)
111	Back-Up Light Switch	DTC Troubleshooting (see **DTC 111: BACK-UP LIGHT SWITCH**

(3)	Malfunction	**MALFUNCTION**)
118 (3)	Clutch Pedal Position Switch B Malfunction	DTC Troubleshooting (see **DTC 118: CLUTCH PEDAL POSITION SWITCH B MALFUNCTION**)
121	VSA Solenoid Valve Malfunction	DTC Troubleshooting (see **DTC 121: VSA SOLENOID VALVE MALFUNCTION; DTC 122: VSA SOLENOID VALVE MALFUNCTION; DTC 123: VSA SOLENOID VALVE MALFUNCTION; DTC 124: VSA SOLENOID VALVE MALFUNCTION**)
122	VSA Solenoid Valve Malfunction	DTC Troubleshooting (see **DTC 121: VSA SOLENOID VALVE MALFUNCTION; DTC 122: VSA SOLENOID VALVE MALFUNCTION; DTC 123: VSA SOLENOID VALVE MALFUNCTION; DTC 124: VSA SOLENOID VALVE MALFUNCTION**)
123	VSA Solenoid Valve Malfunction	DTC Troubleshooting (see **DTC 121: VSA SOLENOID VALVE MALFUNCTION; DTC 122: VSA SOLENOID VALVE MALFUNCTION; DTC 123: VSA SOLENOID VALVE MALFUNCTION; DTC 124: VSA SOLENOID VALVE MALFUNCTION**)
124	VSA Solenoid Valve Malfunction	DTC Troubleshooting (see **DTC 121: VSA SOLENOID VALVE MALFUNCTION; DTC 122: VSA SOLENOID VALVE MALFUNCTION; DTC 123: VSA SOLENOID VALVE MALFUNCTION; DTC 124: VSA SOLENOID VALVE MALFUNCTION**)
158	ECU Software Update Failure	DTC Troubleshooting (see **DTC 121: VSA SOLENOID VALVE MALFUNCTION; DTC 122: VSA SOLENOID VALVE MALFUNCTION; DTC 123: VSA SOLENOID VALVE MALFUNCTION; DTC 124: VSA SOLENOID VALVE MALFUNCTION**)

(1) Without SH-AWD

(2) With SH-AWD

(3) M/T

SYMPTOM TROUBLESHOOTING INDEX

When the vehicle has one of these symptoms, check for VSA diagnostic trouble code (DTCs) with the HDS. If there are no DTCs, do the diagnostic procedure for the symptom, in the sequence listed, until you find the cause.

Symptom	Diagnostic procedure	Also check for
HDS does not communicate with the VSA modulator-control	Troubleshoot the DLC circuit (see **DLC CIRCUIT TROUBLESHOOTING**).	

unit or the vehicle		
ABS indicator, brake system indicator, VSA indicator, or VSA OFF indicator do not come on at start-up (bulb check)	1. Do the gauge control module self-diagnostic function (see **SELF-DIAGNOSTIC FUNCTION**). 2. Update the VSA modulator-control unit if it does not have the latest software (see **VSA MODULATOR-CONTROL UNIT UPDATE**). If the VSA modulator-control unit was updated and the symptom is still present, replace the VSA modulator-control unit (see **VSA MODULATOR-CONTROL UNIT REMOVAL AND INSTALLATION**).	
VSA cannot be turned OFF	1. Symptom troubleshooting (see **VSA CANNOT BE TURNED OFF**). 2. Update the VSA modulator-control unit if it does not have the latest software (see **VSA MODULATOR-CONTROL UNIT UPDATE**). If the VSA modulator-control unit was updated and the symptom is still present, replace the VSA modulator-control unit (see **VSA MODULATOR-CONTROL UNIT REMOVAL AND INSTALLATION**).	
VSA OFF indicator does not go off	Do the VSA sensor neutral position memorization (see **VSA SENSOR NEUTRAL POSITION MEMORIZATION**).	
ABS indicator, brake system indicator, and VSA indicator do not go off	1. Check for F-CAN DTCs, and troubleshoot and repair those first (see **GENERAL TROUBLESHOOTING INFORMATION**). 2. Symptom troubleshooting (see **ABS INDICATOR, BRAKE SYSTEM INDICATOR, AND VSA INDICATOR DO NOT GO OFF**).	

SYSTEM DESCRIPTION

VSA MODULATOR-CONTROL UNIT INPUTS AND OUTPUTS FOR 47P CONNECTOR (CONNECTOR DISCONNECTED)

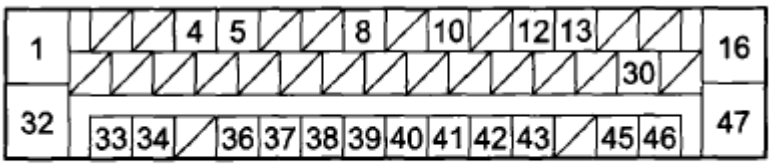


Fig. 5: Identifying VSA Modulator-Control Unit 47P Connector End View
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Terminal number	Wire color	Terminal sign	Description	Signal
1	RED	MR +B	Power source for the	Battery voltage (about 12 V) at all times

			motor relay	
4(1)	BRN	BACK LT	Detects back-up light switch signal	With ignition switch ON (II), or vehicle in ON mode, and back-up light switch ON: battery voltage (about 12 V)
5(2)	ORN	SVCC	Power source for the steering angle sensor	- -
8	PUR	IG1	Power source for activating the system	With ignition switch ON (II), or vehicle in ON mode: battery voltage (about 12 V)
10	LT BLU	K-LINE	Communication with HDS	- -
12	WHT	F-CAN H	F-CAN communication circuit	
13	BLK	F-CAN L	F-CAN communication circuit	
16	BLK	GND	Ground for the VSA modulator-control unit	Continuity to ground
30(2)	WHT	STR-Z	Detects steering angle sensor signal	- -
32	WHT	FSR +B	Power source for the fail-safe relay	Battery voltage (about 12 V) at all times
33	PUR	FR-GND	Detects right-front wheel speed sensor signal	- -
34	LT GRN	FR +B	Detects right-front wheel speed sensor signal	
36	BLU	RL +B	Detects left-rear wheel speed sensor signal	- -
37	RED	RL-GND	Detects left-rear wheel speed sensor signal	
38(2)	PUR	STR-B	Detects steering angle sensor signal	
39	RED	WEN	Detects write enable signal	
40(2)	YEL	SGND	Ground for the steering angle sensor	
41(2)	GRN	STR-A	Detects steering angle sensor signal	
42	PUR	RR-GND	Detects right-rear wheel speed sensor signal	
43	PNK	RR +B	Detects right-rear wheel speed sensor signal	
45	GRY	FL +B	Detects left-front wheel speed sensor signal	
46	LT BLU	FL-GND	Detects left-front wheel speed sensor signal	

47	BLK	MR-GND	Ground for the pump motor	Continuity to ground

(1) M/T

(2) Without SH-AWD

SYSTEM OUTLINE

This system is composed of the VSA modulator-control unit, the wheel speed sensors, the steering angle sensor, the yaw rate-acceleration sensor, and the system indicators in the gauge control module. The VSA modulator-control unit controls the Anti-Lock Brake System (ABS), the Electronic Brake Distribution (EBD), the Traction Control System (TCS), the Vehicle Stability Assist (VSA), the Hill Start Assist* (HSA), and brake assist with the brake pressure of each wheel and reduces engine torque.

*: With SH-AWD

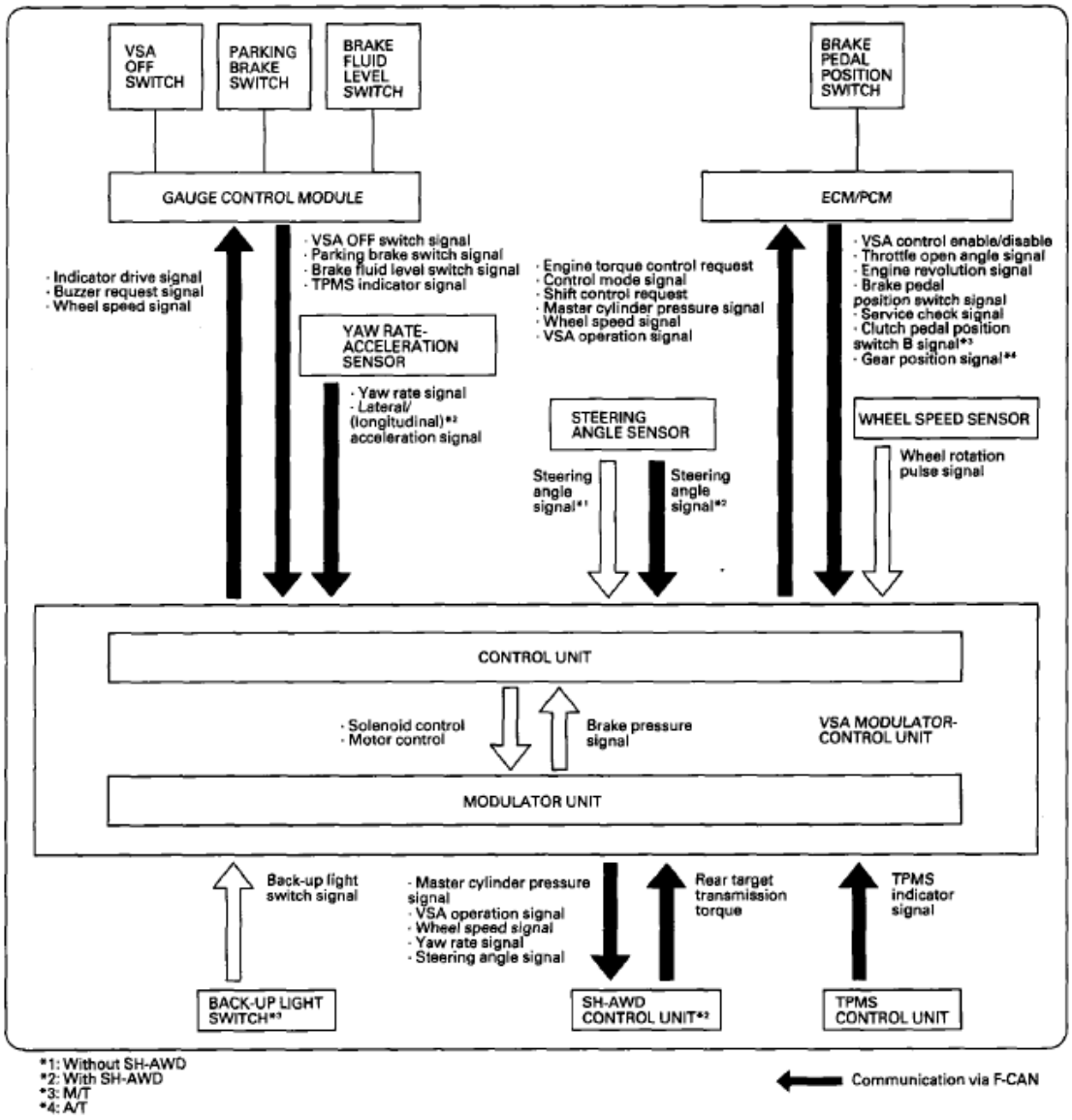


Fig. 6: VSA System Block Diagram (With SH-AWD)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

ABS (ANTI-LOCK BRAKE SYSTEM) FEATURES

Anti-Lock Control

Without ABS, when the brake pedal is pressed while driving, the wheels sometimes lock before the vehicle comes to a stop. In such an event, the maneuverability of the vehicle is reduced if the front wheels are locked, and the stability of the vehicle is reduced if the rear wheels are locked, creating an extremely unstable condition. With ABS, the system precisely controls the slip rate of the wheels to ensure maximum grip force from the tires, and it thereby ensures maneuverability and stability of the vehicle. The ABS calculates the slip rate of the wheels based on the four wheel speeds, and then it controls the brake fluid pressure to reach the target slip rate.

Grip force of tire and road surface

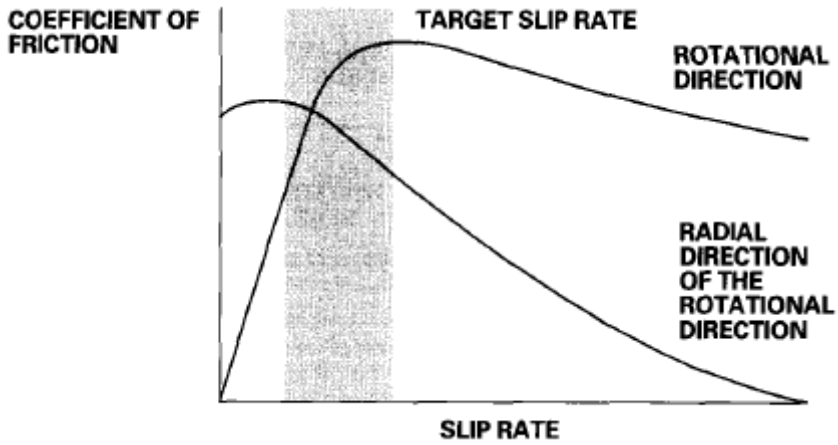


Fig. 7: Grip Force Of Tire And Road Surface - Graph
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Main Control

The control unit detects the wheel speed based on the wheel speed sensor signals it receives, then it calculates the vehicle speed based on the detected wheel speed. The control unit detects the vehicle speed during deceleration based on the wheel speeds.

The control unit calculates the slip rate of each wheel, and transmits the control signal to the modulator unit solenoid valve when the slip rate is high.

The hydraulic control has three modes: Pressure intensifying.- pressure reducing, and pressure retaining.

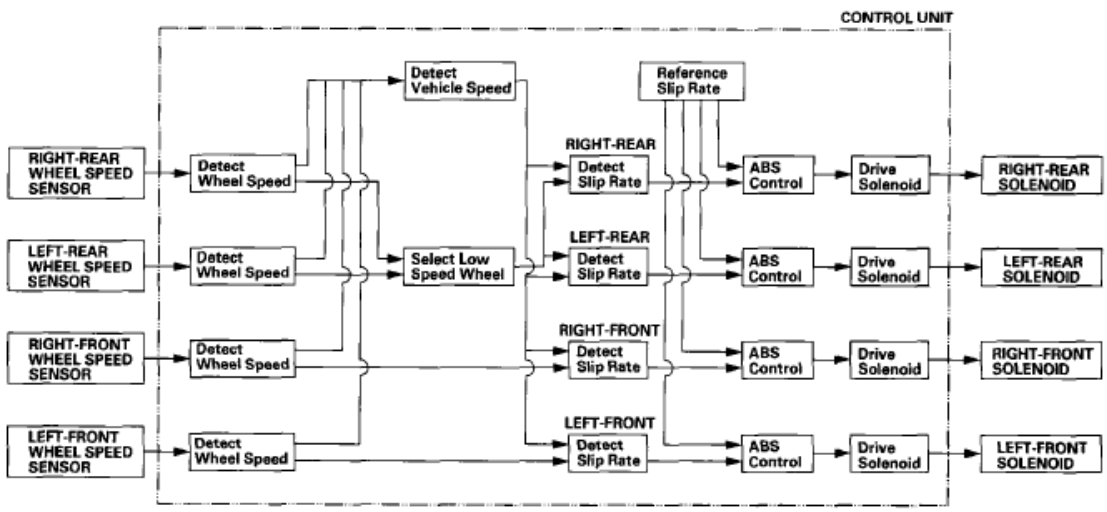


Fig. 8: Main Control Unit - Flow Chart
Courtesy of AMERICAN HONDA MOTOR CO., INC.

EBD (ELECTRONIC BRAKE DISTRIBUTION) FEATURES

The EBD feature helps control vehicle braking by adjusting the rear brake force in accordance with the rear

wheel load before the ABS operates. Based on the wheel speed sensor signals, the control unit uses the modulator to control the rear brakes individually. When the rear wheel speed is less than the front wheel speed, the VSA modulator-control unit retains the current rear brake fluid pressure by closing the inlet valve in the modulator. As the rear wheel speed increases and approaches the front wheel speed, the VSA modulator-control unit increases the rear brake fluid pressure by momentarily opening the inlet valve. This whole process is repeated very rapidly. While this is happening, kickback may be felt at the brake pedal, you may also hear a muted buzzing sound from the VSA modulator-control unit. This is normal.

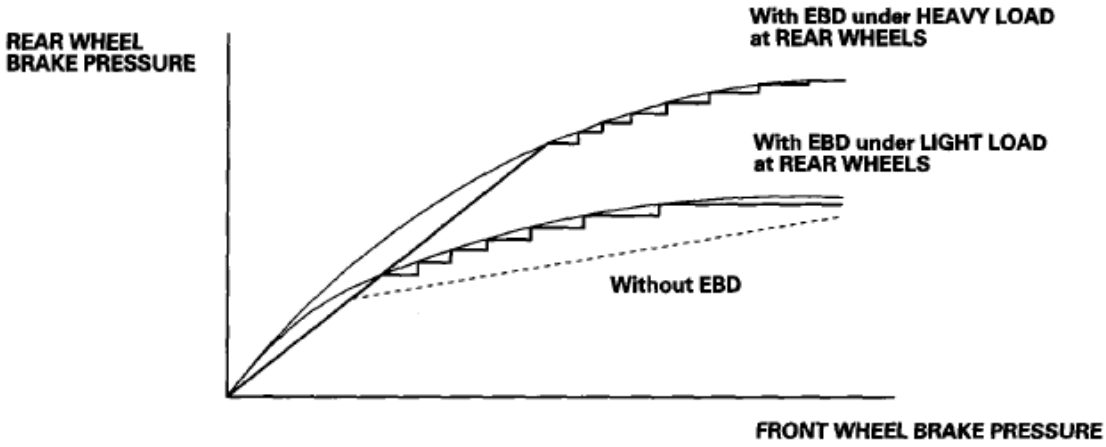


Fig. 9: Electronic Brake Distribution (EBD) Between Rear And Front Wheel Brake Pressure - Graph
Courtesy of AMERICAN HONDA MOTOR CO., INC.

TCS (TRACTION CONTROL SYSTEM) FEATURES

When a drive wheel loses traction on a slippery road surface and starts to spin, the VSA modulator-control unit applies brake pressure to the spinning wheel and sends an engine torque control request to the ECM/PCM to slow the spinning wheel and keep traction.

Without SH-AWD

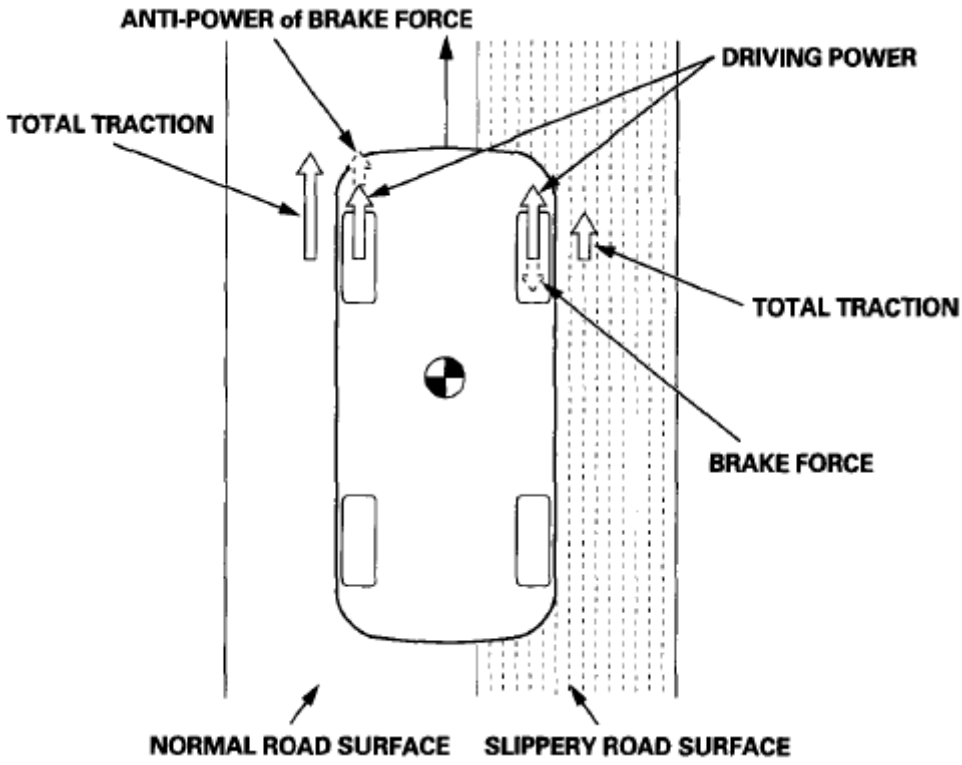


Fig. 10: Identifying Traction Control System Components (Without SH-AWD)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

With SH-AWD

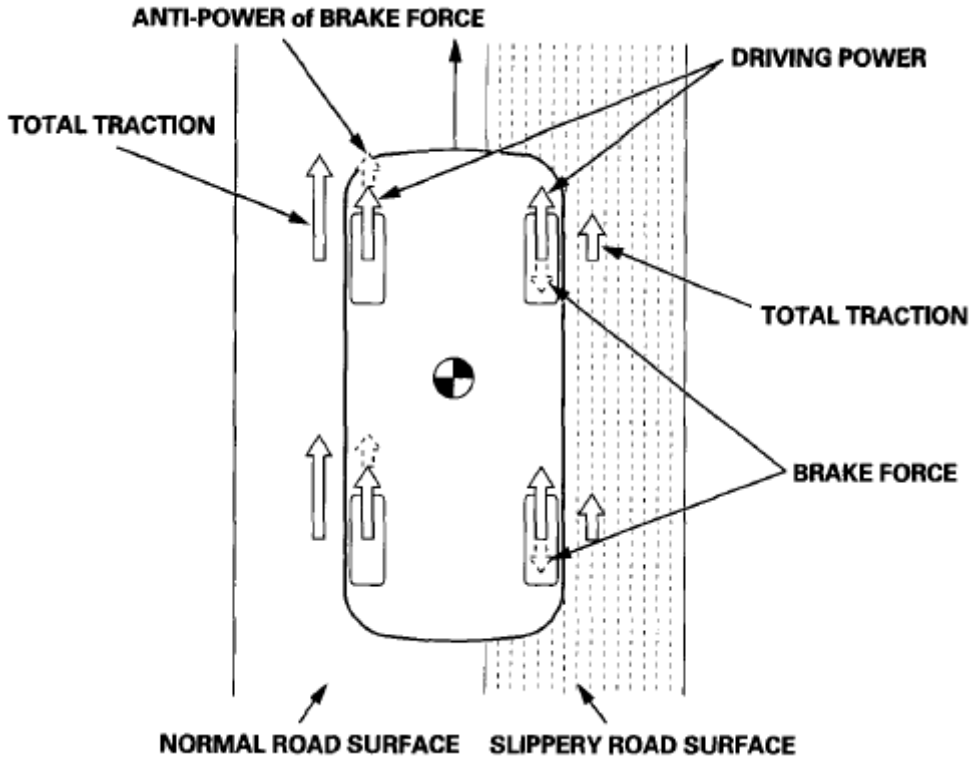


Fig. 11: Identifying Traction Control System Components (With SH-AWD)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

VSA (VEHICLE STABILITY ASSIST) SYSTEM FEATURES

Oversteer Control

Applies the brakes to the front and rear outside wheels

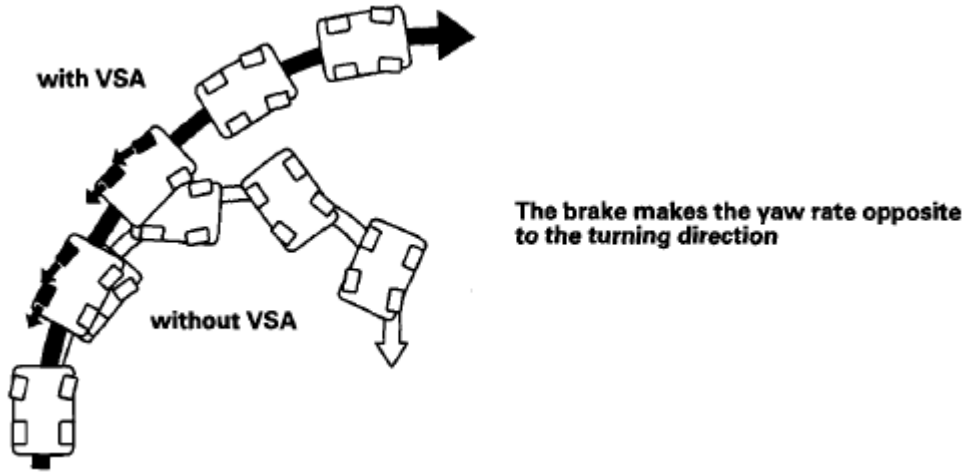


Fig. 12: View Of Oversteer Control (With And Without VSA)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Understeer Control

- Applies the brakes to the front and rear inside wheels
- Controls the engine torque when accelerating

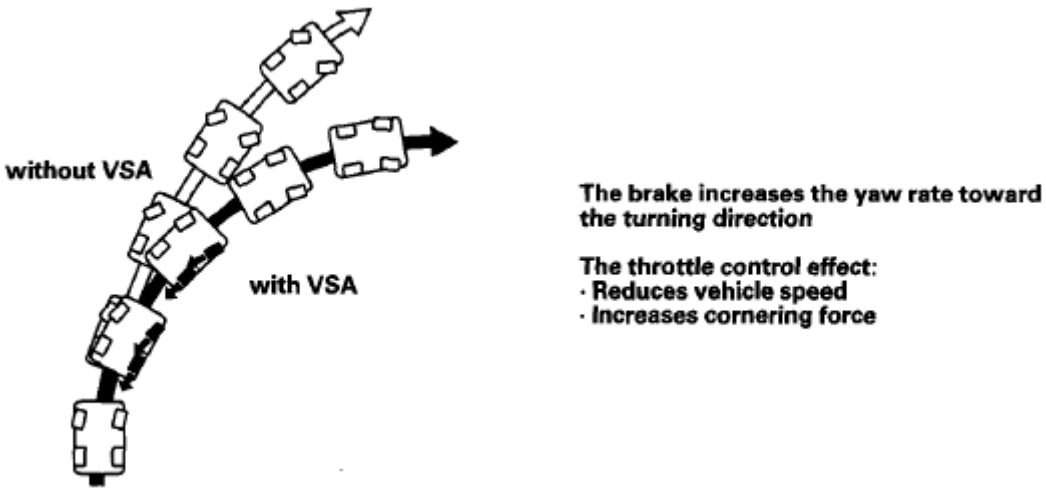


Fig. 13: View Of Understeer Control (With And Without VSA)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

BRAKE ASSIST FEATURES

Brake assist helps ensure that any driver can achieve the full braking potential of the vehicle by increasing brake system pressure in a panic situation, bringing the vehicle into a full ABS stop.

If during a panic stop the VSA modulator-control unit determines that the brake system pressure increases above a threshold in less than a certain amount of time, the VSA modulator-control unit engages brake assist.

Because the brake system pressure crossed the pressure threshold before the time threshold had expired, the VSA modulator-control unit goes into brake assist mode.

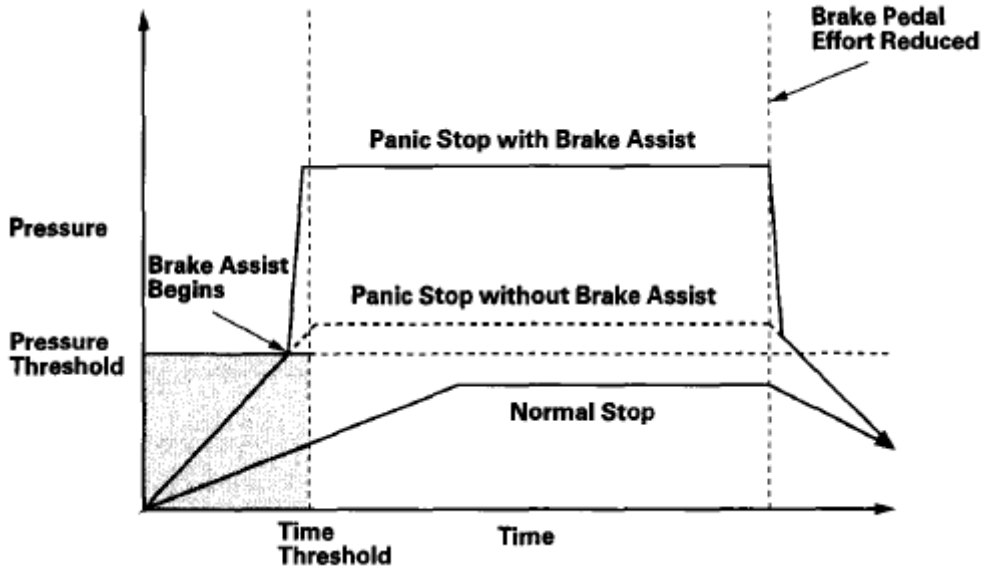


Fig. 14: Brake Assist Features Between Pressure And Time - Graph
Courtesy of AMERICAN HONDA MOTOR CO., INC.

MODULATOR UNIT

The modulator unit consists of the inlet solenoid valve, the outlet solenoid valve, the VSA NO (normally open) solenoid valve, the VSA NC (normally closed) solenoid valve, the reservoir, the pump, and the pump motor.

The hydraulic control has three modes of ABS action; pressure intensifying, pressure retaining, and pressure reducing. Pressure intensifying mode (VSA) is combination of the TCS, VSA, and brake assist action.

The hydraulic circuit is an independent four channel type, one channel for each wheel.

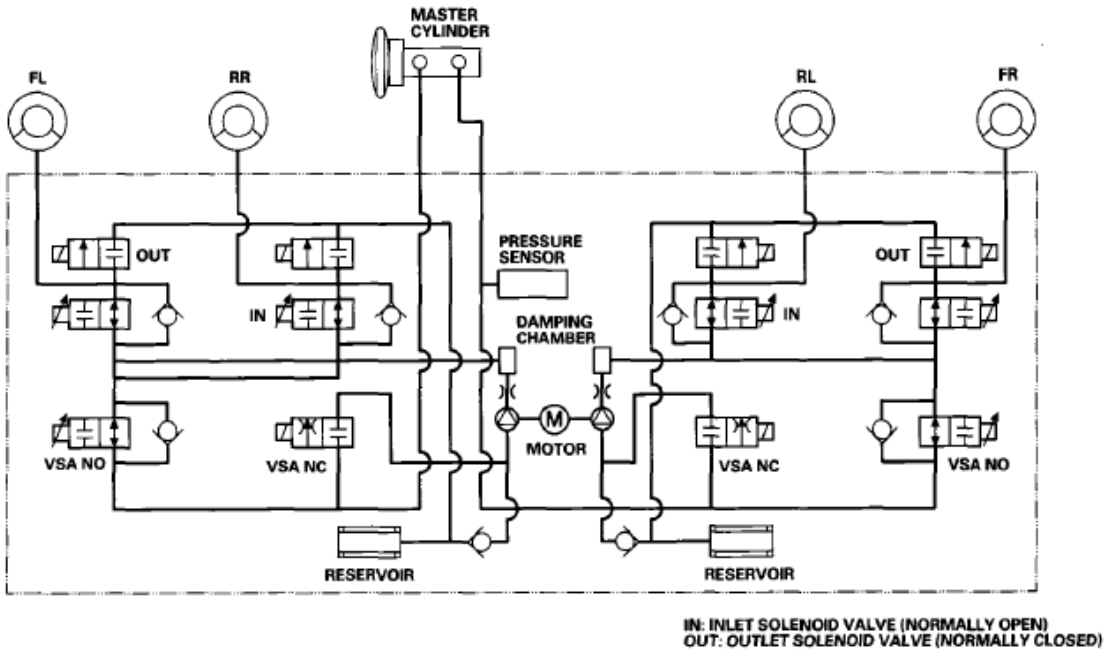


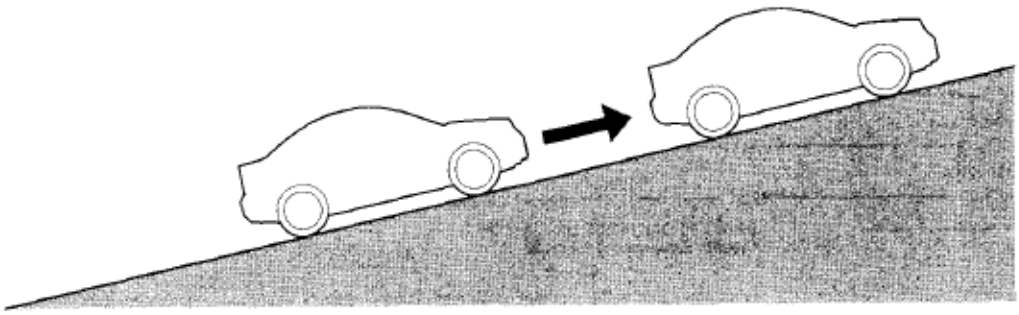
Fig. 15: VSA System Modulator Unit - Circuit Diagram
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Mode	VSA NO Valve	VSA NC Valve	Inlet Solenoid Valve	Outlet Solenoid Valve	Brake Fluid
Pressure intensifying mode	open	closed	open	closed	Master cylinder fluid is pumped out to the caliper.
Pressure retaining mode	open	closed	closed	closed	Caliper fluid is retained by the inlet and outlet valves.
Pressure reducing mode	open	closed	closed	open	• Caliper fluid flows through the outlet valve to the reservoir. • The motor pumps the reservoir fluid through the damping chamber to the master cylinder(1).
Pressure intensifying mode (VSA)	closed	open	open	closed	• Master cylinder fluid is pumped out by the pump through the VSA NC valve to the caliper. • Caliper fluid pressure exceeds master cylinder pressure.
(1) The motor will running until the operation of the anti-lock brake control is finished with the first pressure reducing mode.					

HSA (HILL START ASSIST) FEATURES (WITH SH-AWD)

Prevents the vehicle from rolling backwards when moving your feet from the brake pedal to the accelerator

pedal while stopped on a hill. The control unit reads the angle of inclination from the Yaw rate-acceleration sensor, and that all four wheels are stopped, then it calculates the amount of fluid pressure required to keep the vehicle from rolling backward when the control unit sees the brake pressure decrease as the driver lifts his foot off of the brake pedal, and moves his foot to the accelerator pedal. The hill start assist also works when the vehicle is stopped on a downhill slope.



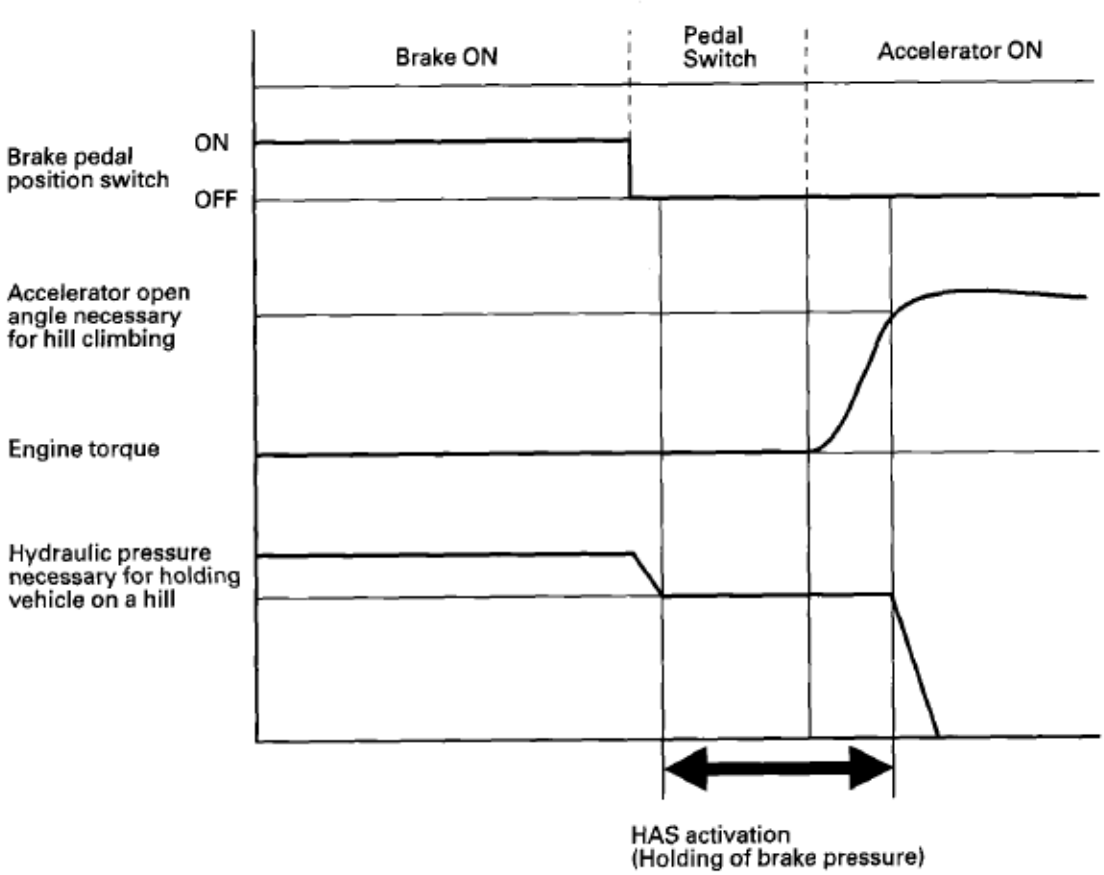


Fig. 16: Hill Start Assist (HSA) Features (With SH-AWD) - Graph
Courtesy of AMERICAN HONDA MOTOR CO., INC.

CIRCUIT DIAGRAM

WITHOUT SH-AWD

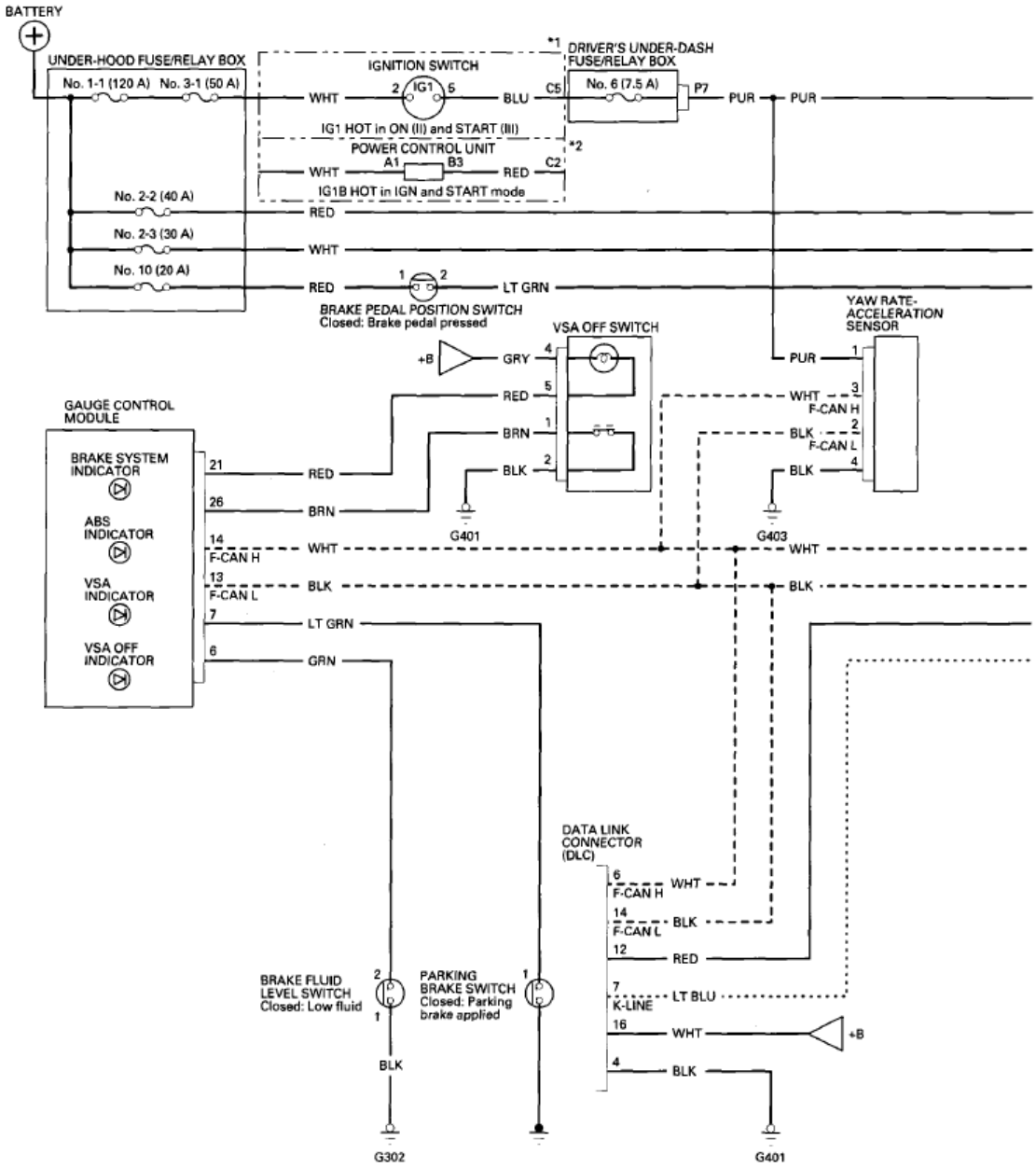


Fig. 17: VSA System (Without SH-AWD) - Circuit Diagram (1 Of 2)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

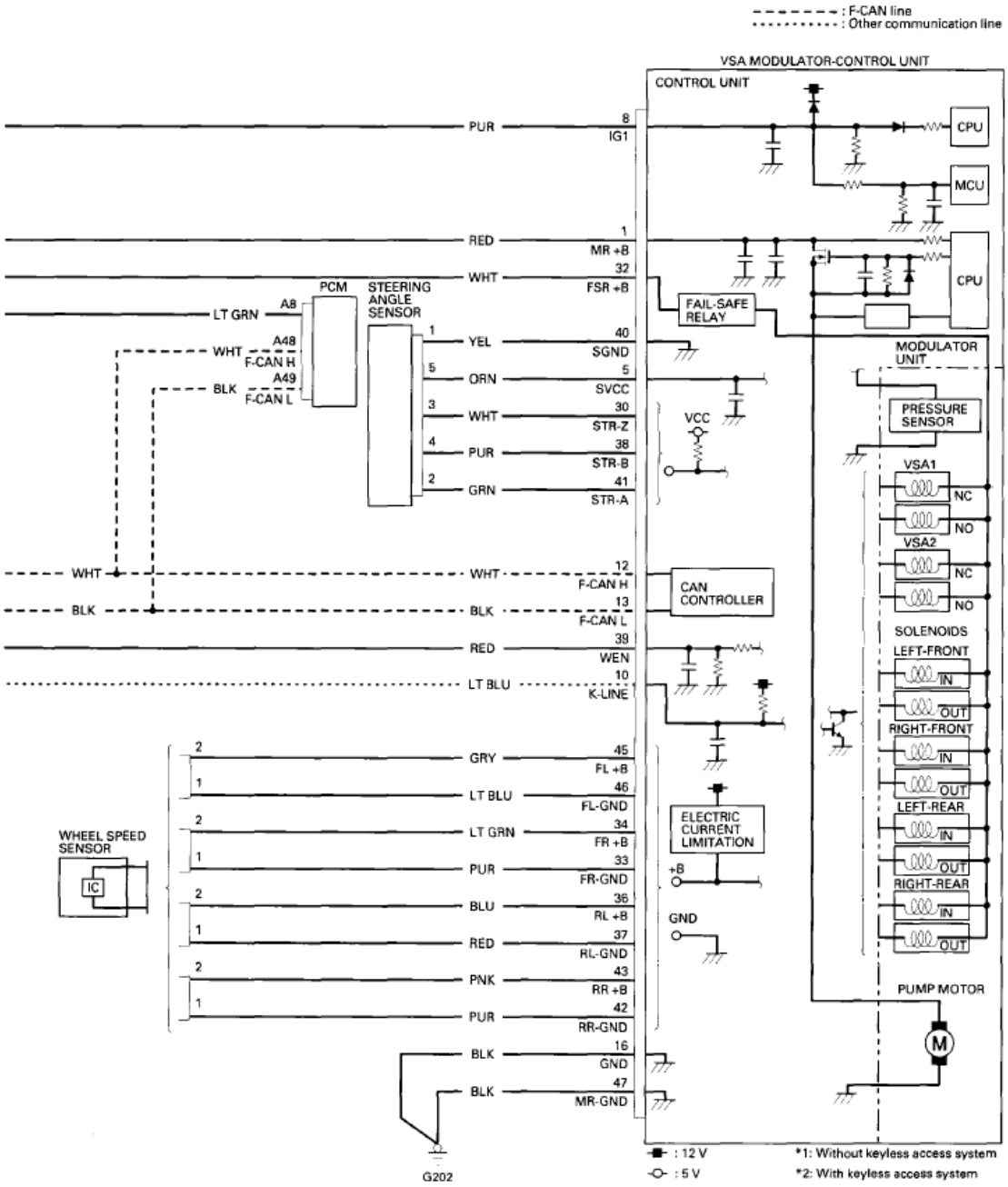


Fig. 18: VSA System (Without SH-AWD) - Circuit Diagram (2 Of 2)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

WITH SH-AWD

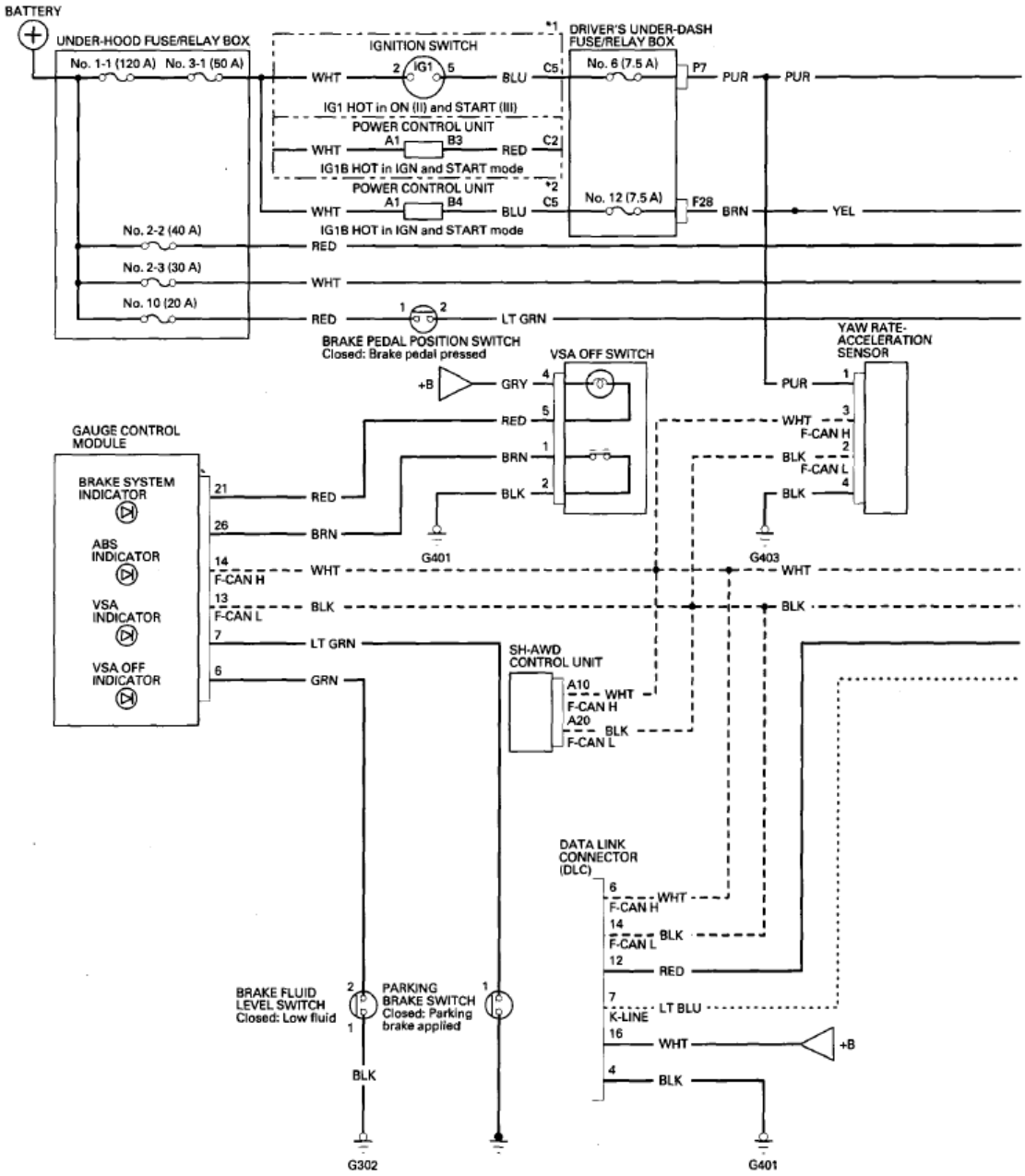


Fig. 19: VSA System (With SH-AWD) - Circuit Diagram (1 Of 2)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

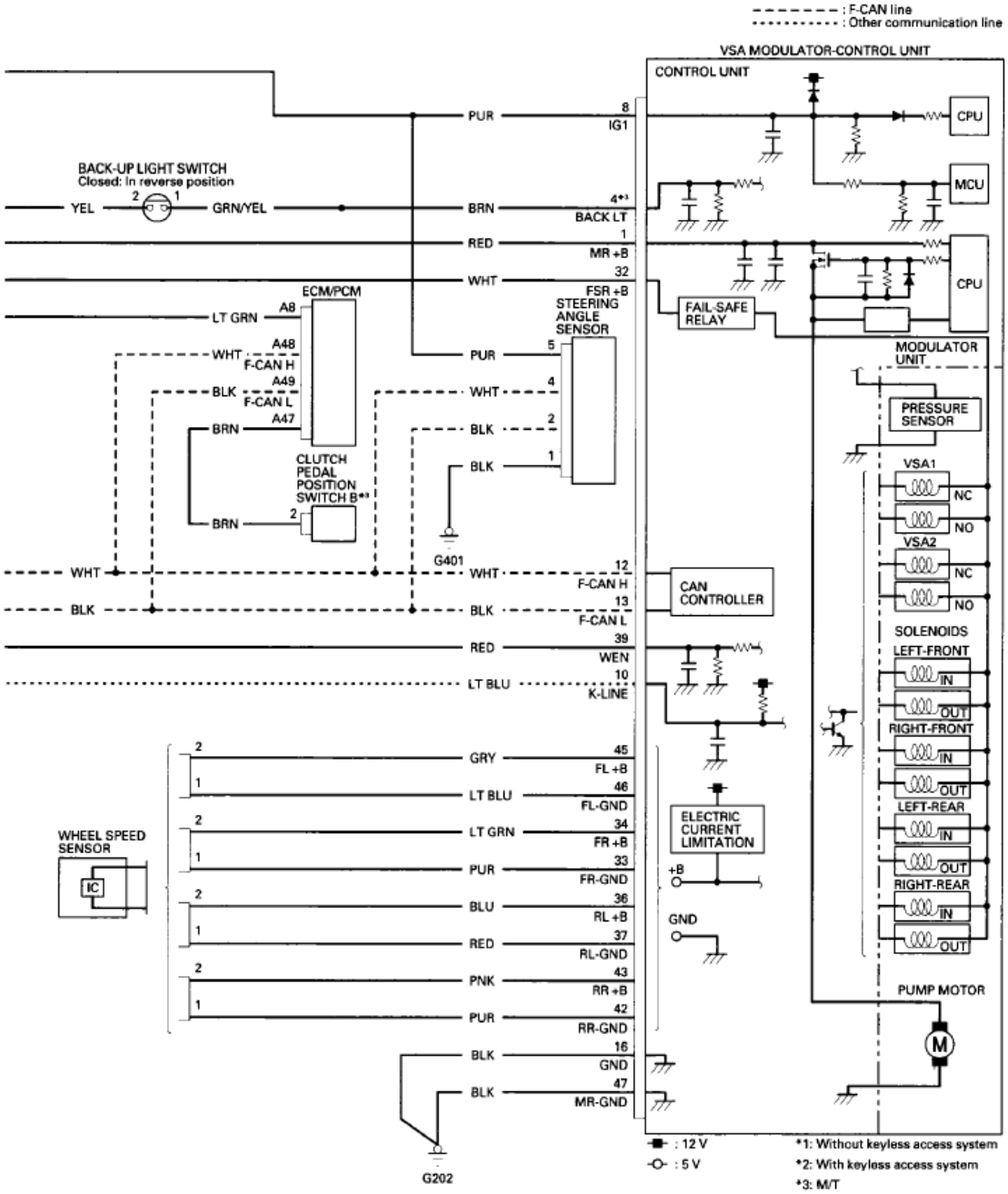


Fig. 20: VSA System (With SH-AWD) - Circuit Diagram (2 Of 2)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

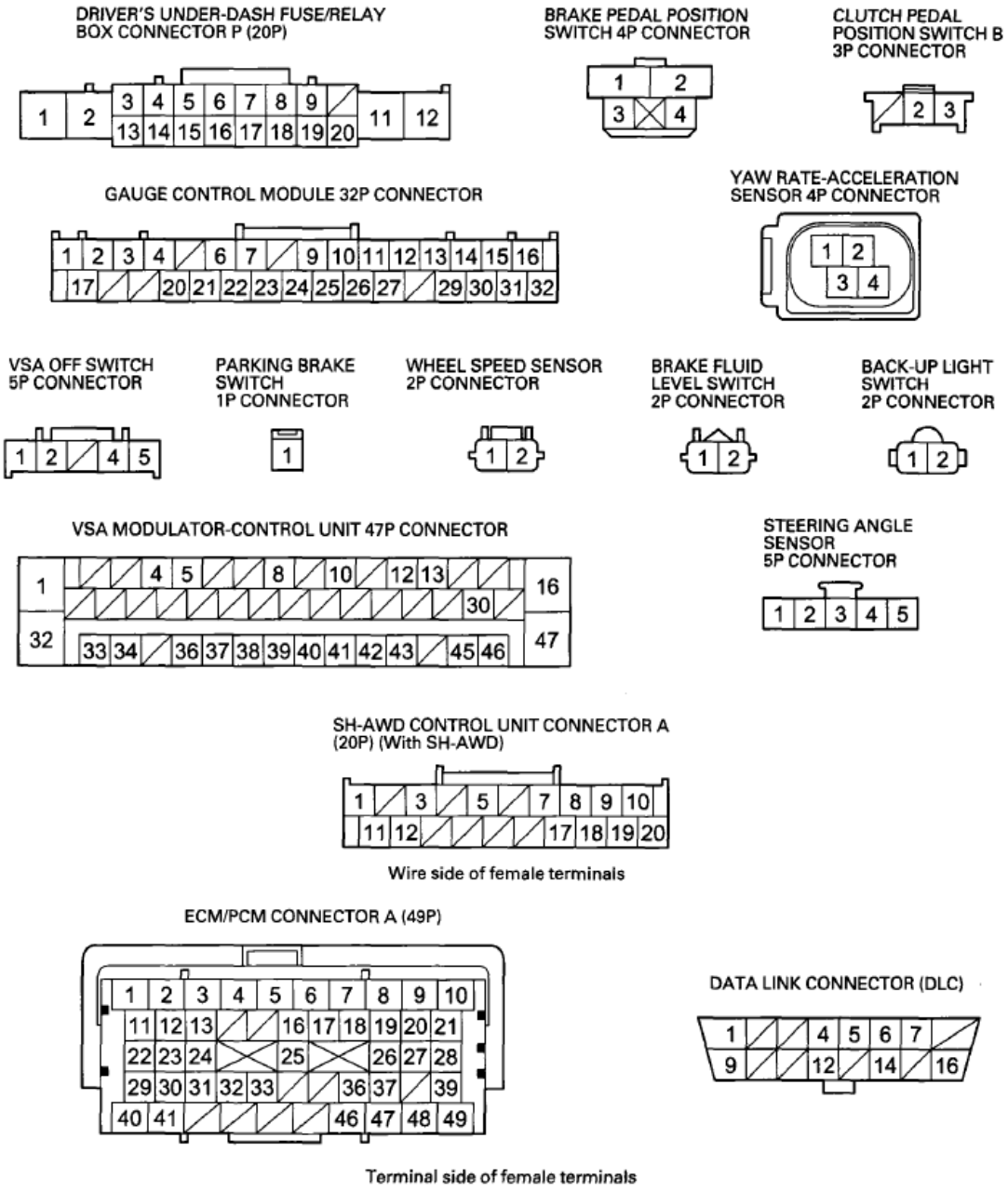


Fig. 21: VSA System P (20P), 4P (BPP), 3P, 32P, 4P (YAW), 5P (VSA OFF), 1P, 2P (WSS), 2P (BFL), 2P (Back-Up Light Switch), 47P, 5P (SAS), A (20P) (With SH-AWD), A (49P) & DLC Connector End Views
Courtesy of AMERICAN HONDA MOTOR CO., INC.

DTC TROUBLESHOOTING

DTC 11: RIGHT-FRONT WHEEL SPEED SENSOR CIRCUIT MALFUNCTION; DTC 13: LEFT-FRONT WHEEL SPEED SENSOR CIRCUIT MALFUNCTION; DTC 15: RIGHT-REAR WHEEL SPEED SENSOR CIRCUIT MALFUNCTION; DTC 17: LEFT-REAR WHEEL SPEED SENSOR CIRCUIT MALFUNCTION

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see GENERAL TROUBLESHOOTING INFORMATION).

1. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
2. Clear the DTC with the HDS.
3. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
4. Test-drive the vehicle at 19 mph (30 km/h) or more.

   NOTE: Drive the vehicle on the road, not on a lift.

5. Check for DTCs with the HDS.

   Is DTC 11, 13, 15, or 17 indicated?

   YES - Go to step 6.

   NO - Intermittent failure, the system is OK at this time. Refer to **INTERMITTENT FAILURES TROUBLESHOOTING**.

6. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
7. Disconnect the VSA modulator-control unit 47P connector (see step 5).
8. Check for continuity between body ground and the appropriate wheel speed sensor +B and GND terminals of the VSA modulator-control unit 47P connector individually (see table below).

DTC	Appropriate Terminal	
	+ B	GND
11 Right-front	FR +B: No. 34	FR-GND: No. 33
13 Left-front	FL +B: No. 45	FL-GND: No. 46
15 Right-rear	RR +B: No. 43	RR-GND: No. 42
17 Left-rear	RL +B: No. 36	RL-GND: No. 37

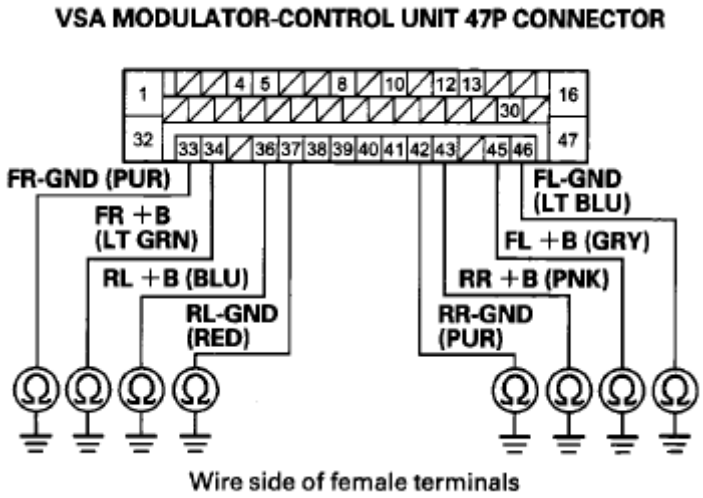


Fig. 22: Checking Continuity Between Body Ground And Wheel Speed Sensor And GND Terminals Of VSA Modulator-Control Unit 47P Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 9.

NO - Go to step 11.

9. Disconnect the appropriate wheel speed sensor 2P connector (see **WHEEL SPEED SENSOR REPLACEMENT**).
10. On the sensor side, check for continuity between body ground and wheel speed sensor 2P connector terminals No. 1 and No. 2 individually.

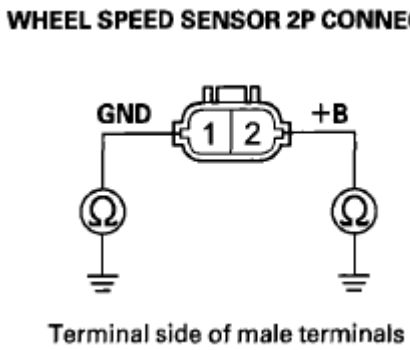


Fig. 23: Checking Continuity Between Body Ground And Wheel Speed Sensor 2P Connector Terminals No. 1 And No. 2
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Replace the appropriate wheel speed sensor (see **WHEEL SPEED SENSOR**

REPLACEMENT).

NO - Repair a short to body ground in the wire between the VSA modulator-control unit and the appropriate wheel speed sensor.

11. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
12. Measure the voltage between body ground and the appropriate wheel speed sensor +B and GND terminals of the VSA modulator-control unit 47P connector individually (see table below).

DTC	Appropriate Terminal	
	+B	GND
11 Right-front	FR +B: No. 34	FR-GND: No. 33
13 Left-front	FL +B: No. 45	FL-GND: No. 46
15 Right-rear	RR +B: No. 43	RR-GND: No. 42
17 Left-rear	RL +B: No. 36	RL-GND: No. 37

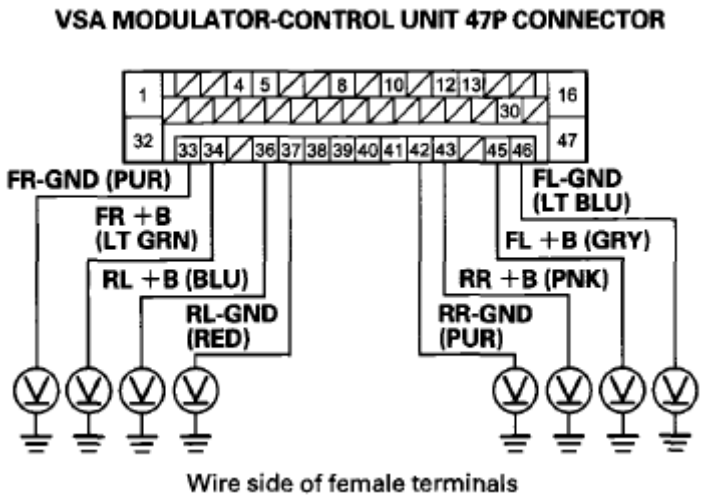


Fig. 24: Measuring Voltage Between Body Ground And Wheel Speed Sensor And GND Terminals
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there 0.1 V or more?

YES - Go to step 13.

NO - Go to step 17.

13. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
14. Disconnect the appropriate wheel speed sensor 2P connector (see **WHEEL SPEED SENSOR REPLACEMENT**).
15. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
16. On the sensor side, measure the voltage between body ground and wheel speed sensor 2P connector terminals No. 1 and No. 2 individually.

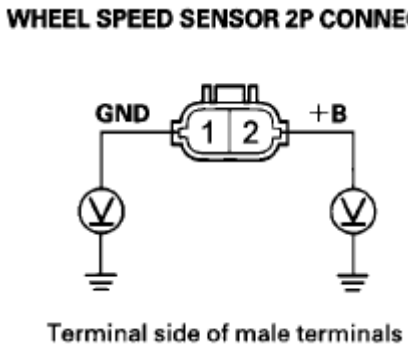


Fig. 25: Measuring Voltage Between Body Ground And Wheel Speed Sensor 2P Connector Terminals
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there 0.1 V or more?

YES - Replace the appropriate wheel speed sensor (see **WHEEL SPEED SENSOR REPLACEMENT**).

NO - Repair a short to power in the wire between the VSA modulator-control unit and the appropriate wheel speed sensor.

17. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
18. Disconnect the appropriate wheel speed sensor 2P connector (see **WHEEL SPEED SENSOR REPLACEMENT**).
19. Check for continuity between the appropriate VSA modulator-control unit 47P connector wheel speed sensor +B and GND terminals (see table below).

DTC	Appropriate Terminal	
	+ B	GND
11 Right-front	FR +B: No. 34	FR-GND: No. 33
13 Left-front	FL +B: No. 45	FL-GND: No. 46
15 Right-rear	RR +B: No. 43	RR-GND: No. 42
17 Left-rear	RL +B: No. 36	RL-GND: No. 37

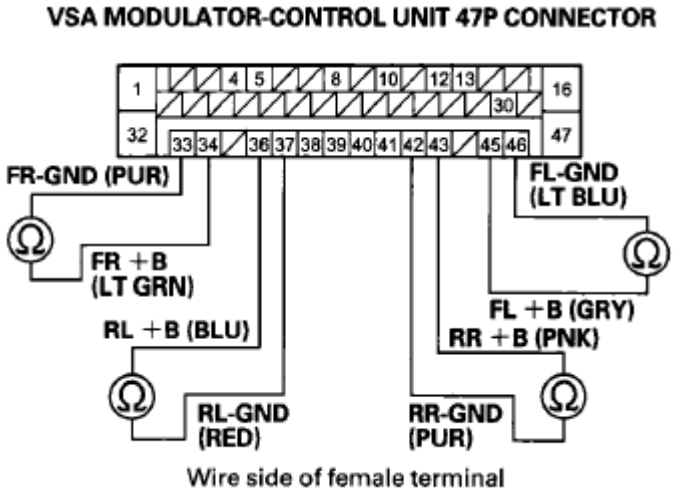


Fig. 26: Checking Continuity Between VSA Modulator-Control Unit 47P Connector Wheel Speed Sensor And GND Terminals
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair a short in the wires between the appropriate wheel speed sensor and the VSA modulator-control unit.

NO - Go to step 20.

20. Check for continuity between the appropriate VSA modulator-control unit 47P connector terminal and the wheel speed sensor 2P connector terminal (see table below).

DTC	VSA Modulator-Control Unit 47P Connector Terminal	Appropriate Wheel Speed Sensor 2P Connector Terminal No. 2
11	No. 34	Right-front
13	No. 45	Left-front
15	No. 43	Right-rear
17	No. 36	Left-rear

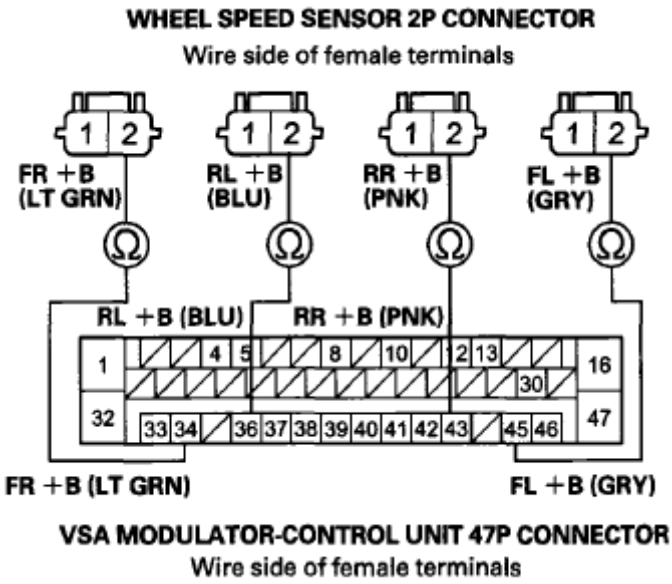


Fig. 27: Checking Continuity Between VSA Modulator-Control Unit 47P And Wheel Speed Sensor 2P Connector Terminal
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 21.

NO - Repair an open in the wire between the appropriate wheel speed sensor and the VSA modulator-control unit.

21. Check for continuity between the appropriate VSA modulator-control unit 47P connector terminal and the wheel speed sensor 2P connector terminal (see table below).

DTC	VSA Modulator-Control Unit 47P Connector Terminal	Appropriate Wheel Speed Sensor 2P Connector Terminal No. 1
11	No. 33	Right-front
13	No. 46	Left-front
15	No. 42	Right-rear
17	No. 37	Left-rear

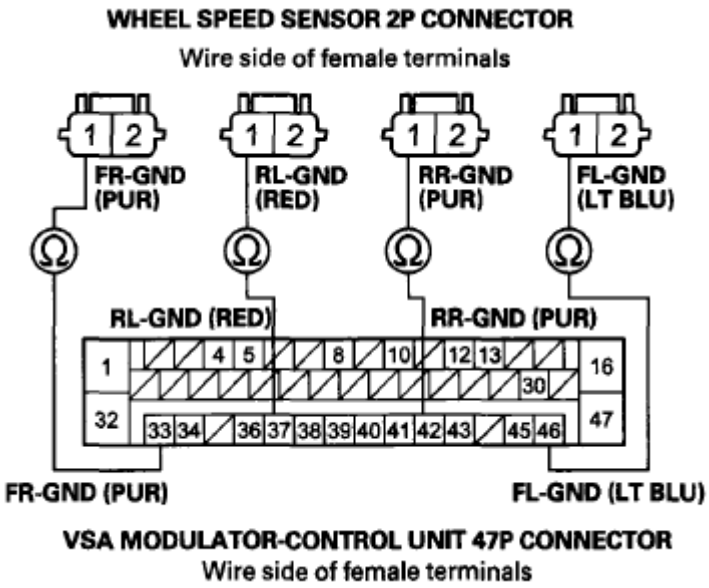


Fig. 28: Checking Continuity Between VSA Modulator-Control Unit 47P And Wheel Speed Sensor 2P Connector Terminal
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES -

- If the DTCs indicate one wheel speed sensor (either the right or left) on the same axle (front or rear), go to step 22.
- If the DTCs indicate both wheel speed sensors (right or left) on the same axle (front or rear), go to step 29.

NO - Repair an open in the wire between the appropriate wheel speed sensor and the VSA modulator-control unit.

22. Swap the applicable left and right wheel speed sensors.
23. Reconnect all connectors.
24. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
25. Clear the DTC with the HDS.
26. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
27. Test-drive the vehicle at 19 mph (30 km/h) or more.

NOTE: Drive the vehicle on the road, not on a lift.

28. Check for DTCs with the HDS.

DTCs Before Swapping	DTCs After Swapping

11 (Right-front)	13 (Left-front)
13 (Left-front)	11 (Right-front)
15 (Right-rear)	17 (Left-rear)
17 (Left-rear)	15 (Right-rear)

Is the DTC indicated for the opposite wheel?

YES - Replace the original wheel speed sensor (see **WHEEL SPEED SENSOR REPLACEMENT**).

NO - Go to step 29.

29. Substitute a known-good wheel speed sensor (see **WHEEL SPEED SENSOR REPLACEMENT**).
30. Reconnect all connectors.
31. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
32. Clear the DTC with the HDS.
33. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
34. Test-drive the vehicle at 19 mph (30 km/h) or more.

NOTE: Drive the vehicle on the road, not on a lift.

35. Check for DTCs with the HDS.

Is DTC 11, 13, 15, or 17 indicated?

YES - Go to step 36.

NO - Replace the original wheel speed sensor (see **WHEEL SPEED SENSOR REPLACEMENT**).

36. Update the VSA modulator-control unit if it does not have the latest software (see **VSA MODULATOR-CONTROL UNIT UPDATE**).
37. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
38. Test-drive the vehicle at 19 mph (30 km/h) or more.

NOTE: Drive the vehicle on the road, not on a lift.

39. Check for DTCs with the HDS.

Is DTC 11, 13, 15, or 17 indicated?

YES - Check for loose terminals in the VSA modulator-control unit 47P connector. If the VSA modulator-control unit was updated and the symptom/indication is still present, replace the VSA modulator-control unit (see **VSA MODULATOR-CONTROL UNIT REMOVAL AND INSTALLATION**).

NO - If the VSA modulator-control unit was updated, troubleshooting is complete. If any other DTCs are indicated, go to the indicated **DTCS TROUBLESHOOTING**.

DTC 12: RIGHT-FRONT WHEEL SPEED SENSOR SIGNAL MALFUNCTION; DTC 14: LEFT-FRONT WHEEL SPEED SENSOR SIGNAL MALFUNCTION; DTC 16: RIGHT-REAR WHEEL SPEED SENSOR SIGNAL MALFUNCTION; DTC 18: LEFT-REAR WHEEL SPEED SENSOR SIGNAL MALFUNCTION

NOTE:

- **Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see GENERAL TROUBLESHOOTING INFORMATION).**
- **If the ABS and the VSA indicators come on because of electrical noise, the indicator goes off when you test-drive the vehicle at 9 mph (15 km/h) after the system returns to normal.**

1. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
2. Check that the appropriate wheel speed sensor is properly mounted (see **WHEEL SPEED SENSOR REPLACEMENT**).

DTC	Appropriate Wheel Speed Sensor
12	Right-front
14	Left-front
16	Right-rear
18	Left-rear

Is the wheel speed sensor installation OK?

YES - Go to step 3.

NO - Reinstall the wheel speed sensor, and check the mounting position (see **WHEEL SPEED SENSOR REPLACEMENT**).

3. Inspect the appropriate magnetic encoder for damage, debris, and correct installation.

DTC	Appropriate Magnetic Encoder	Note
12	Right-front	Remove the driveshaft outboard joint from the appropriate wheel hub (see **KNUCKLE/HUB REPLACEMENT**).
14	Left-front	
16	Right-rear	Remove the hub bearing unit (see **HUB BEARING UNIT REPLACEMENT**).
18	Left-rear	

Is the magnetic encoder OK?

YES - Go to step 4.

NO - Remove the debris from the magnetic encoder, or replace the wheel bearing (front) or the hub bearing unit (rear):

- Front: Replace the front wheel bearing (see **WHEEL BEARING REPLACEMENT**).
- Rear: Replace the rear hub bearing unit (see **HUB BEARING UNIT REPLACEMENT**).

4. Disconnect the VSA modulator-control unit 47P connector (see step 5).
5. Check for continuity between the appropriate wheel speed sensor GND terminal and the other wheel speed sensor GND terminals of the VSA modulator-control unit 47P connector (see table below).

DTC	Appropriate Terminal	Other Terminals		
12	FR-GND: No. 33	No. 46	No. 42	No. 37
14	FL-GND: No. 46	No. 33	No. 42	No. 37
16	RR-GND: No. 42	No. 33	No. 46	No. 37
18	RL-GND: No. 37	No. 33	No. 46	No. 42

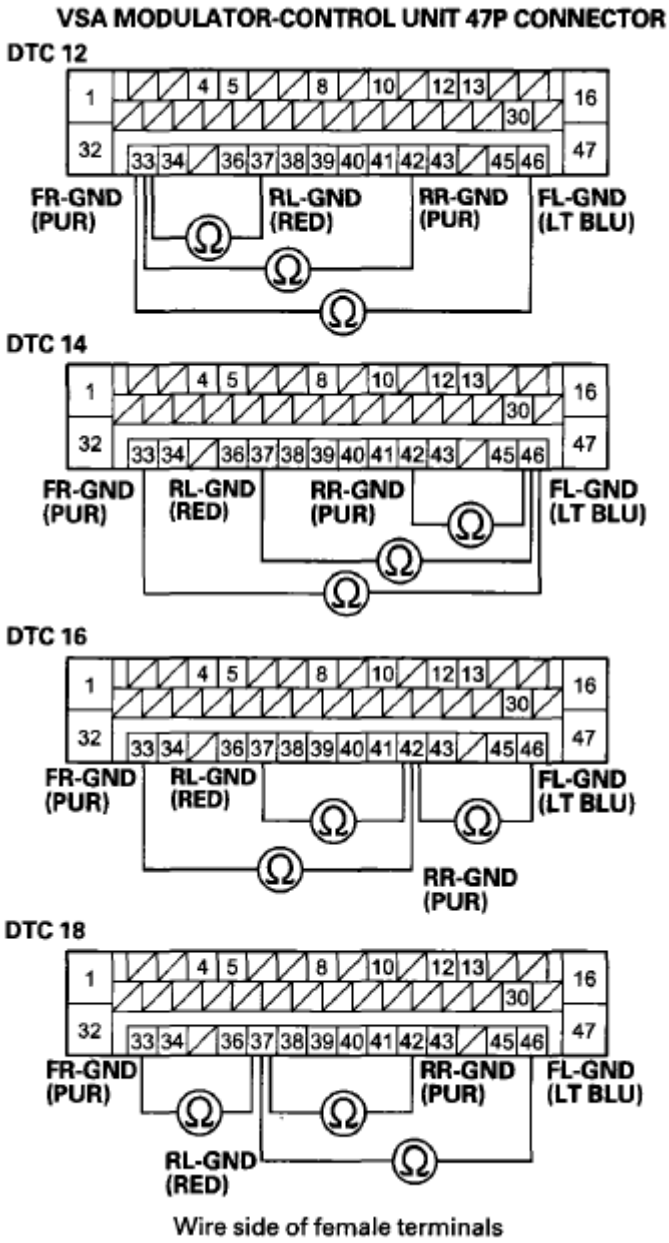


Fig. 29: Checking Continuity Between Both Wheel Speed Sensor GND Terminals Of VSA Modulator-Control Unit 47P Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair a short in the wires between the appropriate wheel speed sensor and the other wheel speed sensor.

NO - Go to step 6.

6. Substitute a known-good wheel speed sensor (see **WHEEL SPEED SENSOR REPLACEMENT**).

7. Reconnect all connectors.
8. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
9. Clear the DTC with the HDS.
10. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
11. Test-drive the vehicle at 19 mph (30 km/h) or more.

NOTE: Drive the vehicle on the road, not on a lift.

12. Check for DTCs with the HDS.

    Is DTC 12, 14, 16, or 18 indicated?

    YES - Go to step 13.

    NO - Replace the original wheel speed sensor (see **WHEEL SPEED SENSOR REPLACEMENT**).

13. Update the VSA modulator-control unit if it does not have the latest software (see **VSA MODULATOR-CONTROL UNIT UPDATE**).
14. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
15. Test-drive the vehicle at 19 mph (30 km/h) or more.

NOTE: Drive the vehicle on the road, not on a lift.

16. Check for DTCs with the HDS.

    Is DTC 12, 14, 16, or 18 indicated?

    YES - Check for loose terminals in the VSA modulator-control unit 47P connector. If the VSA modulator-control unit was updated and the symptom/indication is still present, replace the VSA modulator-control unit (see **VSA MODULATOR-CONTROL UNIT REMOVAL AND INSTALLATION**).

    NO - If the VSA modulator-control unit was updated, troubleshooting is complete. If any other DTCs are indicated, go to the indicated **DTCS TROUBLESHOOTING**.

DTC 21: RIGHT-FRONT MAGNETIC ENCODER MALFUNCTION; DTC 22: LEFT-FRONT MAGNETIC ENCODER MALFUNCTION; DTC 23: RIGHT-REAR MAGNETIC ENCODER MALFUNCTION; DTC 24: LEFT-REAR MAGNETIC ENCODER MALFUNCTION

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see GENERAL TROUBLESHOOTING INFORMATION).

1. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.

2. Clear the DTC with the HDS.
3. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
4. Test-drive the vehicle at 19 mph (30 km/h) or more.

NOTE: Drive the vehicle on the road, not on a lift.

5. Check for DTCs with the HDS.

   Is DTC 21, 22, 23, or 24 indicated?

   YES - Go to step 6.

   NO - Intermittent failure, the system is OK at this time. Refer to **INTERMITTENT FAILURES TROUBLESHOOTING**.

6. Inspect the appropriate magnetic encoder for damage, debris, and correct installation.

DTC	Appropriate Magnetic Encoder	Note
21	Right-front	Remove the driveshaft outboard joint from the appropriate wheel hub (see **KNUCKLE/HUB REPLACEMENT**).
22	Left-front	
23	Right-rear	Remove the hub bearing unit (see **HUB BEARING UNIT REPLACEMENT**).
24	Left-rear	

   Is the magnetic encoder OK?

   YES - Go to step 7.

   NO - Remove the debris from the magnetic encoder, or replace the wheel bearing (front) or the hub bearing unit (rear):

   - Front: Replace the front wheel bearing (see **WHEEL BEARING REPLACEMENT**).
   - Rear: Replace the rear hub bearing unit (see **HUB BEARING UNIT REPLACEMENT**).

7. Update the VSA modulator-control unit if it does not have the latest software (see **VSA MODULATOR-CONTROL UNIT UPDATE**).
8. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
9. Test-drive the vehicle at 19 mph (30 km/h) or more.

NOTE: Drive the vehicle on the road, not on a lift.

10. Check for DTCs with the HDS.

    Is DTC 21, 22, 23, or 24 indicated?

YES - Check for loose terminals in the VSA modulator-control unit 47P connector. If the VSA modulator-control unit was updated and the symptom/indication is still present, replace the VSA modulator-control unit (see **VSA MODULATOR-CONTROL UNIT REMOVAL AND INSTALLATION**).

NO - If the VSA modulator-control unit was updated, troubleshooting is complete. If any other DTCs are indicated, go to the indicated **DTCS TROUBLESHOOTING**.

DTC 25: YAW RATE SENSOR MALFUNCTION; DTC 26: LATERAL ACCELERATION SENSOR MALFUNCTION; DTC 28: LONGITUDINAL ACCELERATION SENSOR MALFUNCTION (WITH SH-AWD); DTC 104: YAW RATE-ACCELERATION SENSOR MALFUNCTION

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see GENERAL TROUBLESHOOTING INFORMATION).

1. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
2. Clear the DTC with the HDS.
3. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
4. Test-drive the vehicle around a number of corners.

   NOTE: Drive the vehicle on the road, not on a lift.

5. Check for DTCs with the HDS.

   Is DTC 25, 26, 28, or 104 indicated?

   YES - Go to step 6.

   NO - Intermittent failure, the system is OK at this time. Refer to **INTERMITTENT FAILURES TROUBLESHOOTING**.

6. Check the size, air pressure, and the amount of wear of all four tires (see **WHEEL ALIGNMENT**).

   Is the tire condition OK?

   YES - Go to step 7.

   NO - Replace the tires and/or adjust the air pressure, then recheck by test-driving.

7. Check the YAW/G COMBINE SENSOR DIAGNOSIS in the VSA FREEZE DATA with the HDS.

   Is YAW/G COMBINE SENSOR DIAGNOSIS NORMAL?

   YES - Go to step 13.

NO - Go to step 8.

8. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
9. Disconnect the yaw rate-acceleration sensor 4P connector (see **YAW RATE-ACCELERATION SENSOR REPLACEMENT**).
10. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
11. Measure the voltage between yaw rate-acceleration sensor 4P connector terminals No. 1 and No. 4.

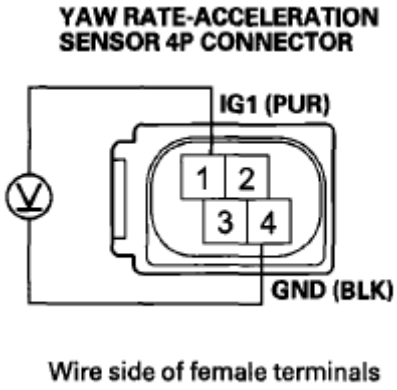


Fig. 30: Measuring Voltage Between Yaw Rate-Acceleration Sensor 4P Connector Terminals No. 1 And No. 4
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there battery voltage?

YES - Replace the yaw rate-acceleration sensor (see **YAW RATE-ACCELERATION SENSOR REPLACEMENT**).

NO - Go to step 12.

12. Measure the voltage between yaw rate-acceleration sensor 4P connector terminal No. 1 and body ground.

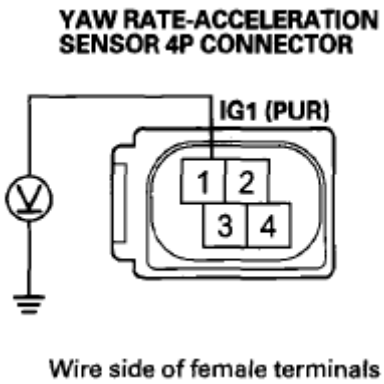


Fig. 31: Measuring Voltage Between Yaw Rate-Acceleration Sensor 4P Connector Terminal No. 1 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there battery voltage?

YES - Repair an open in the wire between the yaw rate-acceleration sensor and body ground (G403).

NO - Repair an open in the wire between the yaw rate-acceleration sensor and the driver's under-dash fuse/relay box.

13. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
14. Disconnect the yaw rate-acceleration sensor 4P connector (see **YAW RATE-ACCELERATION SENSOR REPLACEMENT**).
15. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
16. Measure the voltage between yaw rate-acceleration sensor 4P connector terminals No. 1 and No. 4.

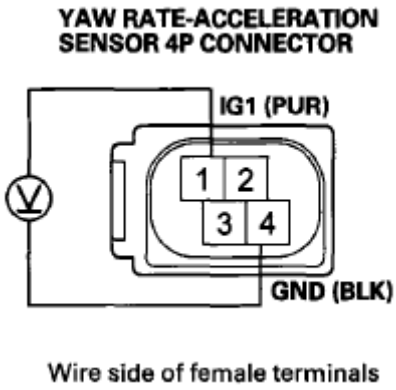


Fig. 32: Measuring Voltage Between Yaw Rate-Acceleration Sensor 4P Connector Terminals No. 1 And No. 4
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there battery voltage?

YES - Go to step 18.

NO - Go to step 17.

17. Measure the voltage between yaw rate-acceleration sensor 4P connector terminal No. 1 and body ground.

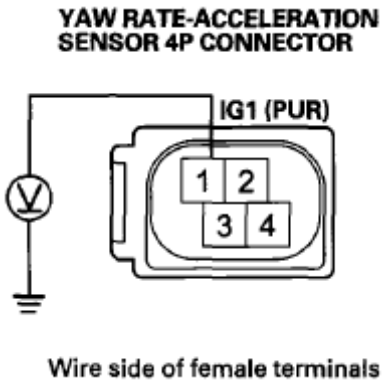


Fig. 33: Measuring Voltage Between Yaw Rate-Acceleration Sensor 4P Connector Terminal No. 1 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there battery voltage?

YES - Repair an open in the wire between the yaw rate-acceleration sensor and body ground (G403).

NO - Repair an open in the wire between the yaw rate-acceleration sensor and the driver's under-dash fuse/relay box.

18. Check the wheel alignment (see **WHEEL ALIGNMENT**).

    Is the wheel alignment OK?

    YES - Go to step 19.

    NO - Make sure the suspension is not modified, and correct the wheel alignment, and recheck by test-driving.

19. Substitute a known-good yaw rate-acceleration sensor (see **YAW RATE-ACCELERATION SENSOR REPLACEMENT**).
20. Reconnect all connectors.
21. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
22. Clear the DTC with the HDS.
23. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
24. Test-drive the vehicle around a number of corners.

    NOTE: Drive the vehicle on the road, not on a lift.

25. Check for DTCs with the HDS.

    Is DTC 25, 26, 28, or 104 indicated?

YES - Go to step 26.

NO - Replace the original yaw rate-acceleration sensor (see **YAW RATE-ACCELERATION SENSOR REPLACEMENT**).

26. Update the VSA modulator-control unit if it does not have the latest software (see **VSA MODULATOR-CONTROL UNIT UPDATE**).
27. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
28. Test-drive the vehicle around a number of corners.

NOTE: Drive the vehicle on the road, not on a lift.

29. Check for DTCs with the HDS.

Is DTC 25, 26, 28, or 104 indicated?

YES - Check for loose terminals in the VSA modulator-control unit 47P connector. If the VSA modulator-control unit was updated and the symptom/indication is still present, replace the VSA modulator-control unit (see **VSA MODULATOR-CONTROL UNIT REMOVAL AND INSTALLATION**).

NO - If the VSA modulator-control unit was updated, troubleshooting is complete. If any other DTCs are indicated, go to the indicated **DTCS TROUBLESHOOTING**.

DTC 27: STEERING ANGLE SENSOR MALFUNCTION (WITHOUT SH-AWD)

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see GENERAL TROUBLESHOOTING INFORMATION).

1. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
2. Clear the DTC with the HDS.
3. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
4. Test-drive the vehicle around a number of corners.

NOTE: Drive the vehicle on the road, not on a lift.

5. Check for DTCs with the HDS.

Is DTC 27 indicated?

YES - Go to step 6.

NO - Intermittent failure, the system is OK at this time. Refer to **INTERMITTENT FAILURES TROUBLESHOOTING**.

6. Check the size, air pressure, and the amount of wear of all four tires (see **WHEEL ALIGNMENT**).

   Is the tire condition OK?

   YES - Go to step 7.

   NO - Replace the tires and/or adjust the air pressure, then recheck by test-driving.

7. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
8. Disconnect the steering angle sensor 5P connector (see **STEERING ANGLE SENSOR REPLACEMENT**).
9. Disconnect the VSA modulator-control unit 47P connector (see step 5).
10. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
11. Measure the voltage between body ground and VSA modulator-control unit 47P connector terminals No. 5 and No. 40 individually.

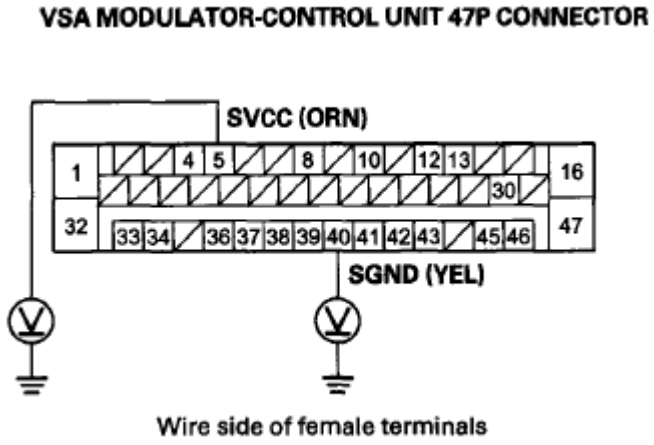


Fig. 34: Measuring Voltage Between Body Ground And VSA Modulator-Control Unit 47P Connector Terminals
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there 0.1 V or more?

YES - Repair a short to power in the wire between the VSA modulator-control unit and the steering angle sensor.

NO - Go to step 12.

12. Measure the voltage between body ground and VSA modulator-control unit 47P connector terminals No. 30, No. 38, and No. 41 individually.

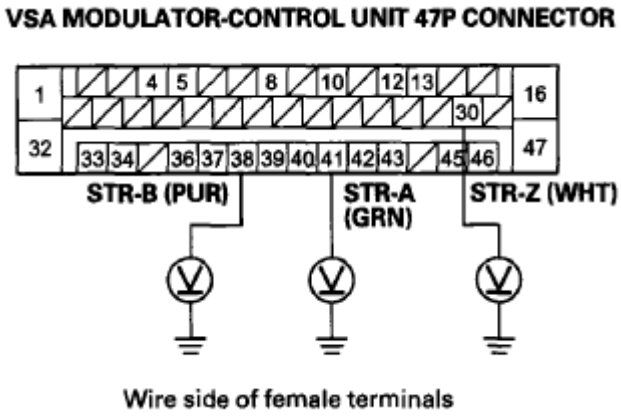


Fig. 35: Measuring Voltage Between Body Ground And VSA Modulator-Control Unit 47P Connector Terminals
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there 0.1 V or more?

YES - Repair a short to power in the wire between the VSA modulator-control unit and the steering angle sensor.

NO - Go to step 13.

13. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
14. Check for continuity between body ground and VSA modulator-control unit 47P connector terminals No. 5 and No. 40 individually.

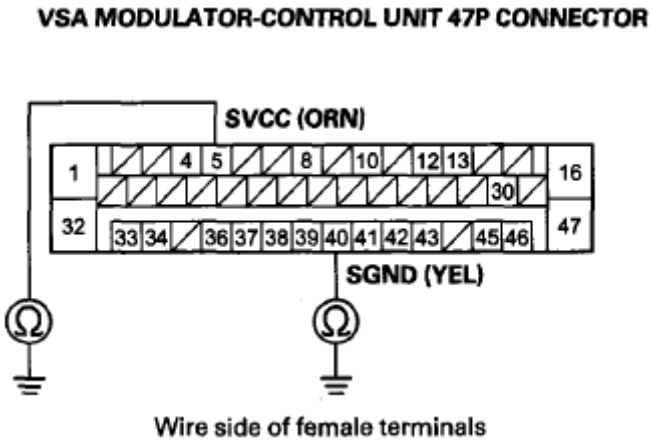


Fig. 36: Checking Continuity Between Body Ground And VSA Modulator-Control Unit 47P Connector Terminals
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair a short to body ground in the wire between the VSA modulator-control unit and the steering

angle sensor.

NO - Go to step 15.

15. Check for continuity between body ground and VSA modulator-control unit 47P connector terminals No. 30, No. 38, and No. 41 individually.

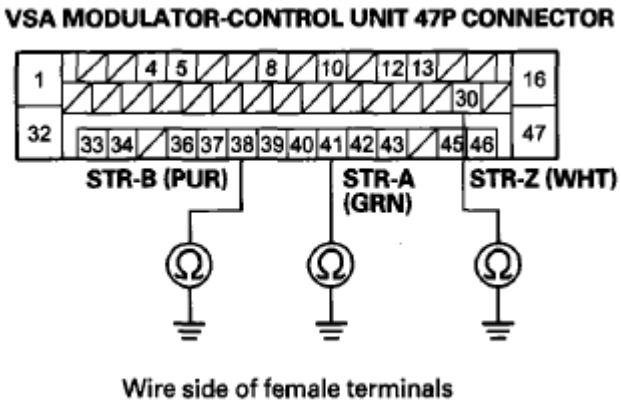


Fig. 37: Checking Continuity Between Body Ground And VSA Modulator-Control Unit 47P Connector Terminals
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair a short to body ground in the wire between the VSA modulator-control unit and the steering angle sensor.

NO - Go to step 16.

16. Check for continuity between VSA modulator-control unit 47P connector terminal and steering angle sensor 5P connector terminal individually (see table below).

Sign	VSA Modulator-Control Unit 47P Connector Terminal	Steering Angle Sensor 5P Connector Terminal
SVCC	No. 5	No. 5
SGND	No. 40	No. 1

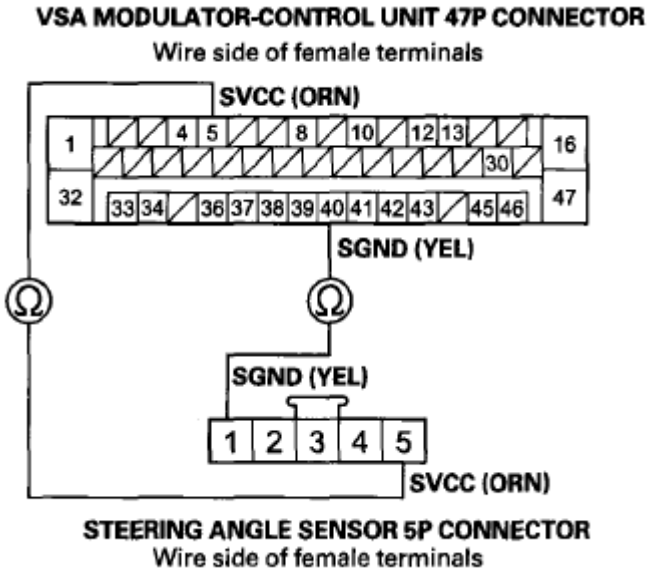


Fig. 38: Checking Continuity Between VSA Modulator-Control Unit 47P And Steering Angle Sensor 5P Connector Terminal
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 17.

NO - Repair an open in the wire between the VSA modulator-control unit and the steering angle sensor.

17. Check for continuity between VSA modulator-control unit 47P connector terminal and steering angle sensor 5P connector terminal individually (see table below).

Sign	VSA Modulator-Control Unit 47P Connector Terminal	Steering Angle Sensor 5P Connector Terminal
STR-A	No. 41	No. 2
STR-B	No. 38	No. 4
STR-Z	No. 30	No. 3

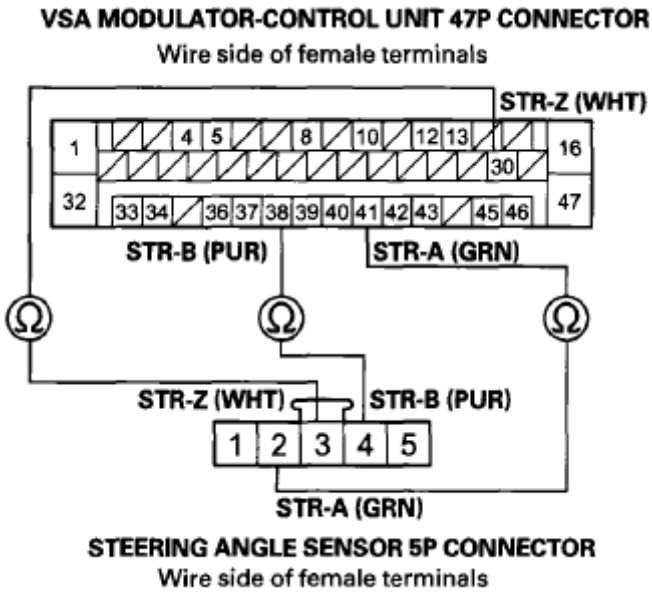


Fig. 39: Checking Continuity Between VSA Modulator-Control Unit 47P And Steering Angle Sensor 5P Connector Terminal
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 18.

NO - Repair an open in the wire between the VSA modulator-control unit and the steering angle sensor.

18. Check the wheel alignment (see **WHEEL ALIGNMENT**).

    Is the wheel alignment OK?

    YES - Go to step 19.

    NO - Make sure the suspension is not modified, and the steering rack is centered. Then correct the wheel alignment, and recheck by test-driving.

19. Substitute a known-good steering angle sensor (see **STEERING ANGLE SENSOR REPLACEMENT**).

    NOTE: Make sure the steering angle sensor and combination switch are mounted properly.

20. Reconnect all connectors.
21. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
22. Clear the DTC with the HDS.
23. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.

24. Test-drive the vehicle around a number of corners.

    NOTE: Drive the vehicle on the road, not on a lift.

25. Check for DTCs with the HDS.

    Is DTC 27 indicated?

    YES - Go to step 26.

    NO - Replace the original steering angle sensor (see **STEERING ANGLE SENSOR REPLACEMENT**).

26. Update the VSA modulator-control unit if it does not have the latest software (see **VSA MODULATOR-CONTROL UNIT UPDATE**).
27. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
28. Test-drive the vehicle around a number of corners.

    NOTE: Drive the vehicle on the road, not on a lift.

29. Check for DTCs with the HDS.

    Is DTC 27 indicated?

    YES - Check for loose terminals in the VSA modulator-control unit 47P connector. If the VSA modulator-control unit was updated and the symptom/indication is still present, replace the VSA modulator-control unit (see **VSA MODULATOR-CONTROL UNIT REMOVAL AND INSTALLATION**).

    NO - If the VSA modulator-control unit was updated, troubleshooting is complete. If any other DTCs are indicated, go to the indicated **DTCS TROUBLESHOOTING**.

DTC 27: STEERING ANGLE SENSOR MALFUNCTION (WITH SH-AWD)

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see GENERAL TROUBLESHOOTING INFORMATION).

1. Check the size, air pressure, and the amount of wear of all four tires, and check the wheel alignment (see **WHEEL ALIGNMENT**).

   Is the tire condition and wheel alignment OK?

   YES - Go to step 2.

NO - Make sure the suspension is not modified, and adjust the wheel alignment, and recheck by test-driving.

2. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
3. Slowly drive the vehicle straight ahead without turning the steering wheel for 10 ft (3 m) or more, then park the vehicle while holding the steering wheel in the straight ahead position.
4. Check the STEERING ANGLE in the VSA DATA LIST with the HDS.

   Is it 0°±3°?

   YES - Go to step 6.

   NO - Go to step 5.

5. Do the VSA sensor neutral position memorization (see **VSA SENSOR NEUTRAL POSITION MEMORIZATION**).
6. Clear the DTC with the HDS.
7. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
8. Test-drive the vehicle around a number of corners.

   NOTE: Drive the vehicle on the road, not on a lift.

9. Check for DTCs with the HDS.

   Is DTC 27 indicated?

   YES - Go to step 10.

   NO - Troubleshooting is complete.

10. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
11. Disconnect the steering angle sensor 5P connector (see **STEERING ANGLE SENSOR REPLACEMENT**).
12. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
13. Measure the voltage between the steering angle sensor 5P connector terminal No. 5 and body ground.

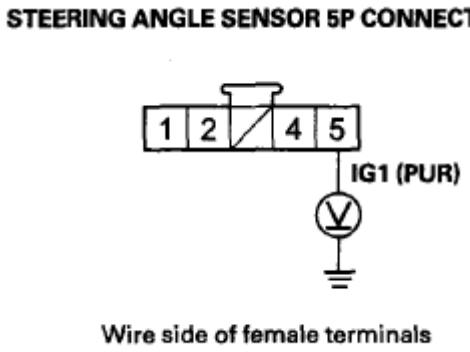


Fig. 40: Measuring Voltage Between Steering Angle Sensor 5P Connector Terminal No. 5 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there battery voltage?

YES - Go to step 14.

NO - Repair an open in the wire between the No. 6 (7.5 A) fuse in the driver's under-dash fuse/relay box and the steering angle sensor.

14. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
15. Check for continuity between the steering angle sensor 5P connector terminal No. 1 and body ground.

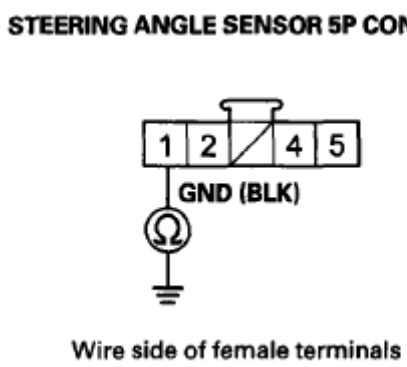


Fig. 41: Checking Continuity Between Steering Angle Sensor 5P Connector Terminal No. 1 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 16.

NO - Repair an open in the wire between the steering angle sensor and body ground (G401).

16. Disconnect the VSA modulator-control unit 47P connector (see step 5).

17. Check for continuity between VSA modulator-control unit 47P connector terminals No. 12, No 13 and steering angle sensor 5P connector terminals No. 4, No. 2 individually.

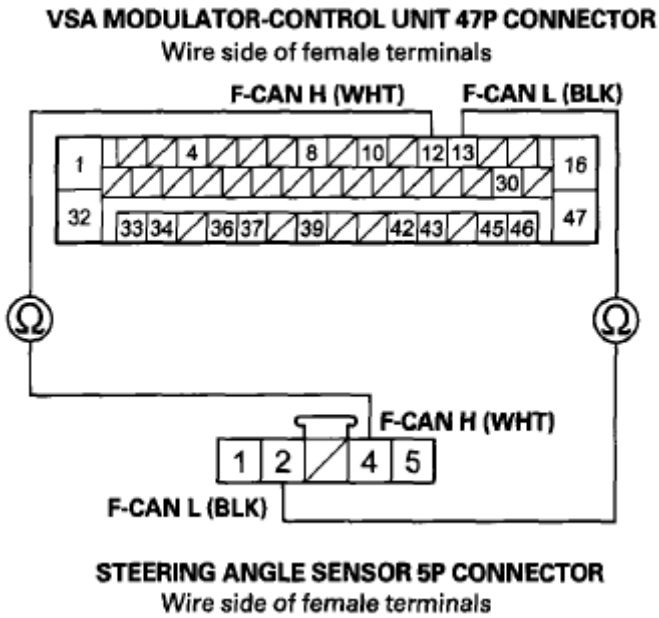


Fig. 42: Checking Continuity Between VSA Modulator-Control Unit 47P And Steering Angle Sensor 5P Connector Terminals
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 18.

NO - Repair an open in the wire between the VSA modulator-control unit and the steering angle sensor.

18. Substitute a known-good steering angle sensor (see **STEERING ANGLE SENSOR REPLACEMENT**).
19. Reconnect all connectors.
20. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
21. Clear the DTC with the HDS.
22. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
23. Test-drive the vehicle around a number of corners.

NOTE: Drive the vehicle on the road, not on a lift.

24. Check for DTCs with the HDS.

Is DTC 27 indicated?

YES - Go to step 25.

NO - Replace the original steering angle sensor (see **STEERING ANGLE SENSOR REPLACEMENT**).

25. Update the VSA modulator-control unit if it does not have the latest software (see **VSA MODULATOR-CONTROL UNIT UPDATE**).
26. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
27. Test-drive the vehicle around a number of corners.

NOTE: Drive the vehicle on the road, not on a lift.

28. Check for DTCs with the HDS.

Is DTC 27 indicated?

YES - Check for loose terminals in the VSA modulator-control unit 47P connector. If the VSA modulator-control unit was updated and the symptom/indication is still present, replace the VSA modulator-control unit (see **VSA MODULATOR-CONTROL UNIT REMOVAL AND INSTALLATION**).

NO - If the VSA modulator-control unit was updated, troubleshooting is complete. If any other DTCs are indicated, go to the indicated **DTCS TROUBLESHOOTING**.

DTC 31, 32, 33, 34, 35, 36, 37, 38: ABS SOLENOID VALVE MALFUNCTION

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see GENERAL TROUBLESHOOTING INFORMATION).

1. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
2. Clear the DTC with the HDS.
3. Turn the ignition switch to LOCK (0), then turn it to ON (II) again, or select the OFF mode, then the ON mode.
4. Check for DTCs with the HDS.

Is DTC 31, 32, 33, 34, 35, 36, 37, or 38 indicated?

YES - Go to step 5.

NO - Intermittent failure, the system is OK at this time. Refer to **INTERMITTENT FAILURES TROUBLESHOOTING**.

5. Update the VSA modulator-control unit if it does not have the latest software (see **VSA MODULATOR-CONTROL UNIT UPDATE**).

6. Turn the ignition switch to LOCK (0), then turn it to ON (II) again, or select the OFF mode, then the ON mode.
7. Check for DTCs with the HDS.

   Is DTC 31, 32, 33, 34, 35, 36, 37, or 38 indicated?

   YES - Check for loose terminals in the VSA modulator-control unit 47P connector. If the VSA modulator-control unit was updated and the symptom/indication is still present, replace the VSA modulator-control unit (see **VSA MODULATOR-CONTROL UNIT REMOVAL AND INSTALLATION**).

   NO - If the VSA modulator-control unit was updated, troubleshooting is complete. If any other DTCs are indicated, go to the indicated **DTCS TROUBLESHOOTING**.

DTC 51: MOTOR LOCK; DTC 52: MOTOR STUCK

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see GENERAL TROUBLESHOOTING INFORMATION).

1. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
2. Clear the DTC with the HDS.
3. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
4. Test-drive the vehicle at 19 mph (30 km/h) or more.

   NOTE: Drive the vehicle on the road, not on a lift.

5. Check for DTCs with the HDS.

   Is DTC 51 or 52 indicated?

   YES - Go to step 6.

   NO - Intermittent failure, the system is OK at this time. Refer to **INTERMITTENT FAILURES TROUBLESHOOTING**.

6. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
7. Check the No. 2-2 (40 A) fuse in the under-hood fuse/relay box.

   Is the fuse blown?

   YES - Go to step 8.

   NO - Reinstall the checked fuse, then go to step 16.

8. Disconnect the VSA modulator-control unit 47P connector (see step 5).
9. Check for continuity between VSA modulator-control unit 47P connector terminal No. 1 and body ground.

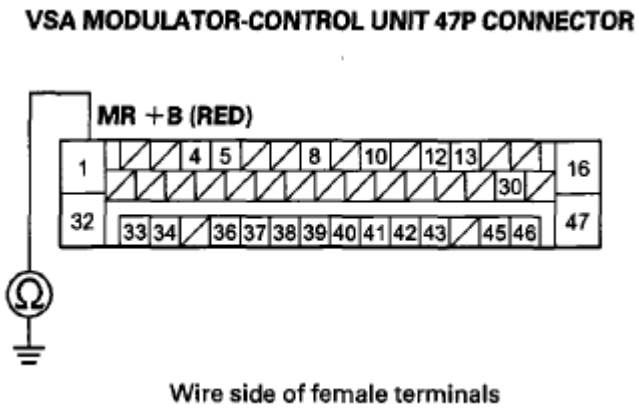


Fig. 43: Checking Continuity Between VSA Modulator-Control Unit 47P Connector Terminal No. 1 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair a short to body ground in the wire between the No. 2-2 (40 A) fuse in the under-hood fuse/relay box and the VSA modulator-control unit.

NO - Install a new No. 2-2 (40 A) fuse in the under-hood fuse/relay box, then go to step 10.

10. Reconnect the VSA modulator-control unit 47P connector.
11. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
12. Clear the DTC with the HDS.
13. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
14. Test-drive the vehicle at 19 mph (30 km/h) or more.

NOTE: Drive the vehicle on the road, not on a lift.

15. Check for DTCs with the HDS.

Is DTC 51 or 52 indicated?

YES - Go to step 20.

NO - Troubleshooting is complete.

16. Disconnect the VSA modulator-control unit 47P connector (see step 5).

17. Measure the voltage between VSA modulator-control unit 47P connector terminal No. 1 and body ground.

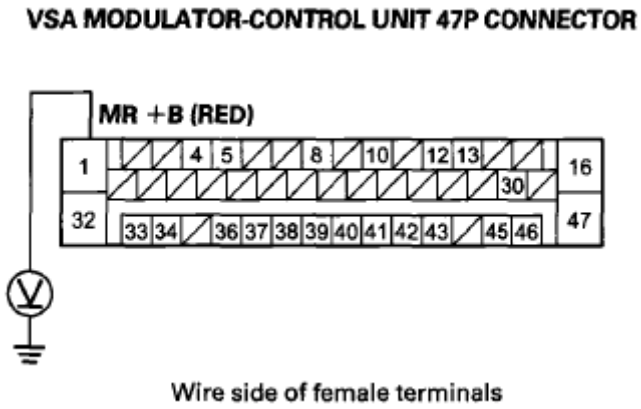


Fig. 44: Measuring Voltage Between VSA Modulator-Control Unit 47P Connector Terminal No. 1 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there battery voltage?

YES - Go to step 18.

NO - Repair an open in the wire between the No. 2-2 (40 A) fuse in the under-hood fuse/relay box and the VSA modulator-control unit.

18. Check for continuity between VSA modulator-control unit 47P connector terminal No. 47 and body ground.

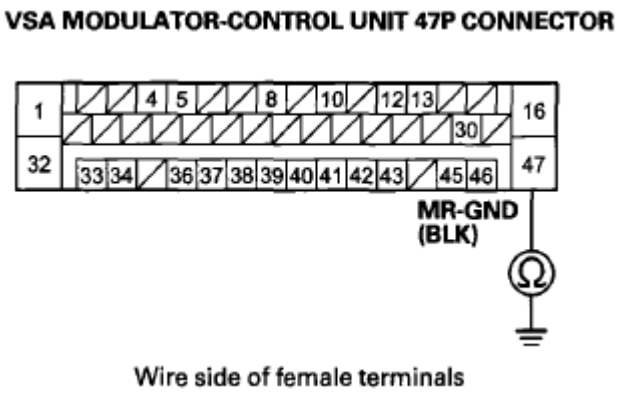


Fig. 45: Checking Continuity Between VSA Modulator-Control Unit 47P Connector Terminal No. 47 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 19.

NO - Repair an open in the wire between the VSA modulator-control unit and body ground (G202).

19. Reconnect the VSA modulator-control unit 47P connector.
20. Update the VSA modulator-control unit if it does not have the latest software (see **VSA MODULATOR-CONTROL UNIT UPDATE**).
21. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
22. Test-drive the vehicle at 19 mph (30 km/h) or more.

NOTE: Drive the vehicle on the road, not on a lift.

23. Check for DTCs with the HDS.

Is DTC 51 or 52 indicated?

YES - Check for loose terminals in the VSA modulator-control unit 47P connector. If the VSA modulator-control unit was updated and the symptom/indication is still present, replace the VSA modulator-control unit (see **VSA MODULATOR-CONTROL UNIT REMOVAL AND INSTALLATION**).

NO - If the VSA modulator-control unit was updated, troubleshooting is complete. If any other DTCs are indicated, go to the indicated **DTCS TROUBLESHOOTING**.

DTC 54: FAIL-SAFE RELAY MALFUNCTION

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see GENERAL TROUBLESHOOTING INFORMATION).

1. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
2. Clear the DTC with the HDS.
3. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
4. Test-drive the vehicle at 19 mph (30 km/h) or more.

NOTE: Drive the vehicle on the road, not on a lift.

5. Check for DTCs with the HDS.

Is DTC 54 indicated?

YES - Go to step 6.

NO - Intermittent failure, the system is OK at this time. Refer to **INTERMITTENT FAILURES TROUBLESHOOTING**.

6. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
7. Check the No. 2-3 (30 A) fuse in the under-hood fuse/relay box.

   Is the fuse blown?

   YES - Go to step 8.

   NO - Reinstall the checked fuse, then go to step 16.

8. Disconnect the VSA modulator-control unit 47P connector (see step 5).
9. Check for continuity between VSA modulator-control unit 47P connector terminal No. 32 and body ground.

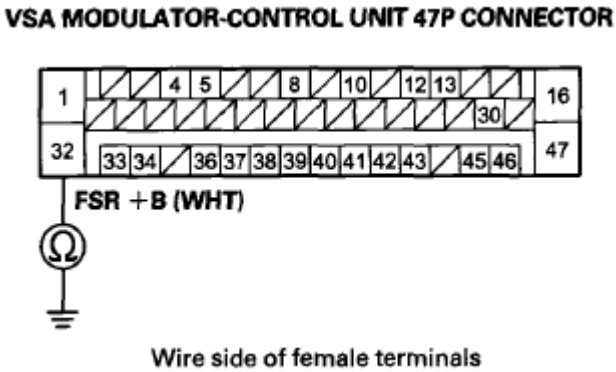


Fig. 46: Checking Continuity Between VSA Modulator-Control Unit 47P Connector Terminal No. 32 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

   Is there continuity?

   YES - Repair a short to body ground in the wire between the No. 2-3 (30 A) fuse in the under-hood fuse/relay box and the VSA modulator-control unit.

   NO - Install a new No. 2-3 (30 A) fuse in the under-hood fuse/relay box, then go to step 10.

10. Reconnect the VSA modulator-control unit 47P connector.
11. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
12. Clear the DTC with the HDS.
13. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
14. Test-drive the vehicle at 19 mph (30 km/h) or more.

    NOTE: Drive the vehicle on the road, not on a lift.

15. Check for DTCs with the HDS.

Is DTC 54 indicated?

YES - Go to step 19.

NO - Troubleshooting is complete.

16. Disconnect the VSA modulator-control unit 47P connector (see step 5).
17. Measure the voltage between VSA modulator-control unit 47P connector terminal No. 32 and body ground.

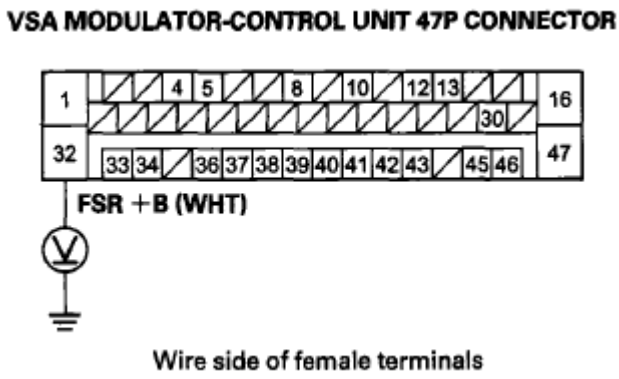


Fig. 47: Measuring Voltage Between VSA Modulator-Control Unit 47P Connector Terminal No. 32 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there battery voltage?

YES - Go to step 18.

NO - Repair an open in the wire between the No. 2-3 (30 A) fuse in the under-hood fuse/relay box and the VSA modulator-control unit.

18. Reconnect the VSA modulator-control unit 47P connector.
19. Update the VSA modulator-control unit if it does not have the latest software (see **VSA MODULATOR-CONTROL UNIT UPDATE**).
20. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
21. Test-drive the vehicle at 19 mph (30 km/h) or more.

NOTE: Drive the vehicle on the road, not on a lift.

22. Check for DTCs with the HDS.

Is DTC 54 indicated?

YES - Check for loose terminals in the VSA modulator-control unit 47P connector. If the VSA modulator-control unit was updated and the symptom/indication is still present, replace the VSA

modulator-control unit (see **VSA MODULATOR-CONTROL UNIT REMOVAL AND INSTALLATION**).

NO - If the VSA modulator-control unit was updated, troubleshooting is complete. If any other DTCs are indicated, go to the indicated **DTCS TROUBLESHOOTING**.

DTC 61: BATTERY VOLTAGE LOW; DTC 62: BATTERY VOLTAGE HIGH

NOTE:

- **Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see GENERAL TROUBLESHOOTING INFORMATION).**
- **If the vehicle has high electric load or a weak battery, DTC 61 may be stored when starting the engine.**

1. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
2. Clear the DTC with the HDS.
3. Turn the ignition switch to LOCK (0), then turn it to ON (II) again, or select the OFF mode, then the ON mode.

   Does the ABS indicator come on?

   YES - Go to step 4.

   NO - Intermittent failure, the system is OK at this time. Refer to **INTERMITTENT FAILURES TROUBLESHOOTING**.

4. Check for DTCs with the HDS.

   Is DTC 61 or 62 indicated?

   YES - Check the battery (see **BATTERY TEST**) and troubleshoot the alternator regulator circuit (see **ALTERNATOR AND REGULATOR CIRCUIT TROUBLESHOOTING**).

   NO - Do the appropriate troubleshooting for the DTC indicated.

DTC 64: SENSOR POWER SOURCE VOLTAGE MALFUNCTION (WITHOUT SH-AWD)

NOTE: **Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see GENERAL TROUBLESHOOTING INFORMATION).**

1. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
2. Clear the DTC with the HDS.
3. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
4. Test-drive the vehicle at 19 mph (30 km/h) or more.

NOTE: Drive the vehicle on the road, not on a lift.

5. Check for DTCs with the HDS.

   Is DTC 64 indicated?

   YES - Go to step 6.

   NO - Intermittent failure, the system is OK at this time. Refer to **INTERMITTENT FAILURES TROUBLESHOOTING**.

6. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
7. Disconnect the steering angle sensor 5P connector (see **STEERING ANGLE SENSOR REPLACEMENT**).
8. Disconnect the VSA modulator-control unit 47P connector (see step 5).
9. Check for continuity between VSA modulator-control unit 47P connector terminal No. 5 and body ground.

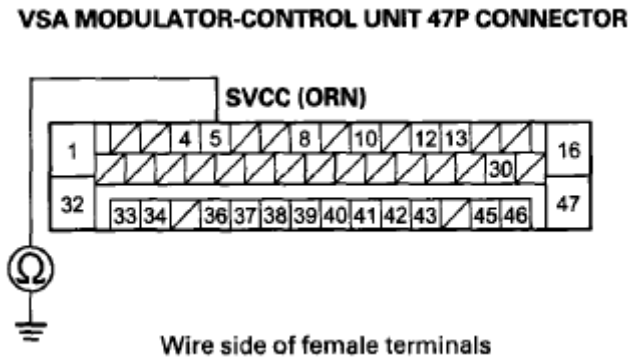


Fig. 48: Checking Continuity Between VSA Modulator-Control Unit 47P Connector Terminal No. 5 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair a short to body ground in the wire between the VSA modulator-control unit and the steering angle sensor.

NO - Go to step 10.

10. Reconnect all connectors.
11. Update the VSA modulator-control unit if it does not have the latest software (see **VSA MODULATOR-CONTROL UNIT UPDATE**).
12. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
13. Test-drive the vehicle at 19 mph (30 km/h) or more.

NOTE: Drive the vehicle on the road, not on a lift.

14. Check for DTCs with the HDS.

    Is DTC 64 indicated?

    YES - Check for loose terminals in the VSA modulator-control unit 47P connector. If the VSA modulator-control unit was updated and the symptom/indication is still present, replace the VSA modulator-control unit (see **VSA MODULATOR-CONTROL UNIT REMOVAL AND INSTALLATION**).

    NO - If the VSA modulator-control unit was updated, troubleshooting is complete. If any other DTCs are indicated, go to the indicated **DTCS TROUBLESHOOTING**.

DTC 64: SENSOR POWER SOURCE VOLTAGE MALFUNCTION (WITH SH-AWD)

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see GENERAL TROUBLESHOOTING INFORMATION).

1. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
2. Clear the DTC with the HDS.
3. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
4. Test-drive the vehicle at 19 mph (30 km/h) or more.

NOTE: Drive the vehicle on the road, not on a lift.

5. Check for DTCs with the HDS.

   Is DTC 64 indicated?

   YES - Go to step 6.

   NO - Intermittent failure, the system is OK at this time. Refer to **INTERMITTENT FAILURES TROUBLESHOOTING**.

6. Update the VSA modulator-control unit if it does not have the latest software (see **VSA MODULATOR-CONTROL UNIT UPDATE**).
7. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
8. Test-drive the vehicle at 19 mph (30 km/h) or more.

NOTE: Drive the vehicle on the road, not on a lift.

9. Check for DTCs with the HDS.

Is DTC 64 indicated?

YES - Check for loose terminals in the VSA modulator-control unit 47P connector. If the VSA modulator-control unit was updated and the symptom/indication is still present, replace the VSA modulator-control unit (see **VSA MODULATOR-CONTROL UNIT REMOVAL AND INSTALLATION**).

NO - If the VSA modulator-control unit was updated, troubleshooting is complete. If any other DTCs are indicated, go to the indicated **DTCS TROUBLESHOOTING**.

DTC 65: BRAKE FLUID LEVEL LOW

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see GENERAL TROUBLESHOOTING INFORMATION).

1. Check the brake fluid level in the master cylinder reservoir (see **BRAKE SYSTEM BLEEDING**).

   Is the brake fluid level OK?

   YES - Go to step 2.

   NO - Inspect the brake pads: Front (see **FRONT BRAKE PAD INSPECTION AND REPLACEMENT**), rear (see **REAR BRAKE PAD INSPECTION AND REPLACEMENT**), and replace worn out brake pads, then recheck.

2. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
3. Clear the DTC with the HDS.
4. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
5. Disconnect the brake fluid level switch 2P connector (see step 6 under **MASTER CYLINDER REPLACEMENT**).
6. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
7. Check for DTCs with the HDS.

   Is DTC 65 indicated?

   YES - Go to step 8.

   NO - Replace the master cylinder (see **MASTER CYLINDER REPLACEMENT**).

8. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
9. Disconnect the gauge control module 32P connector (see **GAUGE CONTROL MODULE REPLACEMENT**).
10. Check for continuity between brake fluid level switch 2P connector terminal No. 2 and body ground.

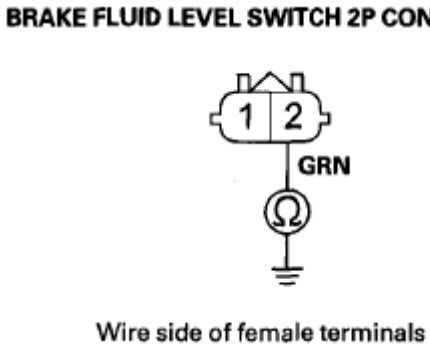


Fig. 49: Checking Continuity Between Brake Fluid Level Switch 2P Connector Terminal No. 2 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair a short to body ground in the wire between the gauge control module and the brake fluid level switch.

NO - Go to step 11.

11. Update the VSA modulator-control unit if it does not have the latest software (see **VSA MODULATOR-CONTROL UNIT UPDATE**).
12. Turn the ignition switch to LOCK (0), then turn it to ON (II) again, or select the OFF mode, then the ON mode.
13. Check for DTCs with the HDS.

Is DTC 65 indicated?

YES - Check for loose terminals in the VSA modulator-control unit 47P connector. If the VSA modulator-control unit was updated and the symptom/indication is still present, replace the VSA modulator-control unit (see **VSA MODULATOR-CONTROL UNIT REMOVAL AND INSTALLATION**).

NO - If the VSA modulator-control unit was updated, troubleshooting is complete. If any other DTCs are indicated, go to the indicated **DTCS TROUBLESHOOTING**.

DTC 66: PRESSURE SENSOR MALFUNCTION

NOTE:

- **Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see GENERAL TROUBLESHOOTING INFORMATION).**
- **Before you troubleshoot, check the brake pedal height, free play, and brake pedal position switch adjustment (see BRAKE PEDAL AND BRAKE PEDAL POSITION SWITCH ADJUSTMENT).**

1. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
2. Clear the DTC with the HDS.
3. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
4. Test-drive the vehicle at 19 mph (30 km/h) or more.

NOTE: Drive the vehicle on the road, not on a lift.

5. Check for DTCs with the HDS.

   Is DTC 66 indicated?

   YES - Go to step 6.

   NO - Intermittent failure, the system is OK at this time. Refer to **INTERMITTENT FAILURES TROUBLESHOOTING**.

6. Update the VSA modulator-control unit if it does not have the latest software (see **VSA MODULATOR-CONTROL UNIT UPDATE**).
7. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
8. Test-drive the vehicle at 19 mph (30 km/h) or more.

NOTE: Drive the vehicle on the road, not on a lift.

9. Check for DTCs with the HDS.

   Is DTC 66 indicated?

   YES - Check for loose terminals in the VSA modulator-control unit 47P connector. If the VSA modulator-control unit was updated and the symptom/indication is still present, replace the VSA modulator-control unit (see **VSA MODULATOR-CONTROL UNIT REMOVAL AND INSTALLATION**)M

   NO - If the VSA modulator-control unit was updated, troubleshooting is complete. If any other DTCs are indicated, go to the indicated **DTCS TROUBLESHOOTING**.

DTC 68: BRAKE PEDAL POSITION SWITCH MALFUNCTION

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see GENERAL TROUBLESHOOTING INFORMATION).

1. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
2. Check for other system DTCs.

Is another DTC indicated?

YES - Do the appropriate troubleshooting for the DTC.

NO - Go to step 3.

3. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
4. Check the brake pedal position switch (see **BRAKE PEDAL POSITION SWITCH TEST**), and adjustment (see **BRAKE PEDAL AND BRAKE PEDAL POSITION SWITCH ADJUSTMENT**).

   Is the brake pedal position switch and adjustment OK?

   YES - Go to step 5.

   NO - Adjust the brake pedal position switch. If necessary, replace the brake pedal position switch (see **BRAKE PEDAL AND BRAKE PEDAL POSITION SWITCH ADJUSTMENT**).

5. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
6. Clear the DTC with the HDS.
7. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
8. Test-drive the vehicle at 19 mph (30 km/h) or more.

   NOTE: Drive the vehicle on the road, not on a lift.

9. Check for DTCs with the HDS.

   Is DTC 68 indicated?

   YES - Go to step 10.

   NO - Intermittent failure, the system is OK at this time. Refer to **INTERMITTENT FAILURES TROUBLESHOOTING**.

10. Troubleshoot the brake pedal position switch signal circuit (see **BRAKE PEDAL POSITION SWITCH SIGNAL CIRCUIT TROUBLESHOOTING**).

    Is the brake pedal position switch circuit OK?

    YES - Go to step 11.

    NO - Repair the brake pedal position switch circuit (see **BRAKE PEDAL POSITION SWITCH SIGNAL CIRCUIT TROUBLESHOOTING**).

11. Reconnect all connectors.
12. Update the ECM/PCM if it does not have the latest software (see **ECM/PCM UPDATE**), or substitute a known-good ECM/PCM (see **SUBSTITUTING THE ECM/PCM**).

13. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
14. Clear the DTC with the HDS.
15. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
16. Test-drive the vehicle at 19 mph (30 km/h) or more.

NOTE: Drive the vehicle on the road, not on a lift.

17. Check for DTCs with the HDS.

    Is DTC 68 indicated?

    YES - Check for loose terminals in the ECM/PCM connector A (49P). If the ECM/PCM was updated, substitute a known-good ECM/PCM (see **SUBSTITUTING THE ECM/PCM**), then retest. If the ECM/PCM was substituted, go to step 18.

    NO - If the ECM/PCM was updated, troubleshooting is complete. If the ECM/PCM was substituted, replace the original ECM/PCM (see **ECM/PCM REPLACEMENT**).

18. Update the VSA modulator-control unit if it does not have the latest software (see **VSA MODULATOR-CONTROL UNIT UPDATE**).
19. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
20. Test-drive the vehicle at 19 mph (30 km/h) or more.

NOTE: Drive the vehicle on the road, not on a lift.

21. Check for DTCs with the HDS.

    Is DTC 68 indicated?

    YES - Check for loose terminals in the VSA modulator-control unit 47P connector. If the VSA modulator-control unit was updated and the symptom/indication is still present, replace the VSA modulator-control unit (see **VSA MODULATOR-CONTROL UNIT REMOVAL AND INSTALLATION**).

    NO - If the VSA modulator-control unit was updated, troubleshooting is complete. If any other DTCs are indicated, go to the indicated **DTCS TROUBLESHOOTING**.

DTC 81: MODULATOR-CONTROL UNIT INTERNAL CIRCUIT MALFUNCTION

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see GENERAL TROUBLESHOOTING INFORMATION).

1. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.

2. Check for other system DTCs.

   Is another DTC indicated?

   YES - Do the appropriate troubleshooting for the DTC.

   NO - Go to step 3.

3. Clear the DTC with the HDS.
4. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
5. Test-drive the vehicle at 19 mph (30 km/h) or more.

   NOTE: Drive the vehicle on the road, not on a lift.

6. Check for DTCs with the HDS.

   Is DTC 81 indicated?

   YES - Go to step 7.

   NO - Intermittent failure, the system is OK at this time. Refer to **INTERMITTENT FAILURES TROUBLESHOOTING**.

7. Update the VSA modulator-control unit if it does not have the latest software (see **VSA MODULATOR-CONTROL UNIT UPDATE**).
8. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
9. Test-drive the vehicle at 19 mph (30 km/h) or more.

   NOTE: Drive the vehicle on the road, not on a lift.

10. Check for DTCs with the HDS.

    Is DTC 81 indicated?

    YES - Check for loose terminals in the VSA modulator-control unit 47P connector. If the VSA modulator-control unit was updated and the symptom/indication is still present, replace the VSA modulator-control unit (see **VSA MODULATOR-CONTROL UNIT REMOVAL AND INSTALLATION**).

    NO - If the VSA modulator-control unit was updated, troubleshooting is complete. If any other DTCs are indicated, go to the indicated **DTCS TROUBLESHOOTING**.

DTC 83: PGM-FI MALFUNCTION

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot, and

review the general troubleshooting information (see GENERAL TROUBLESHOOTING INFORMATION).

1. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
2. Check for DTCs with the HDS.

   Is DTC 86 indicated?

   YES - Do the troubleshooting for DTC 86 (see **DTC 86: F-CAN COMMUNICATION MALFUNCTION**).

   NO - Go to step 3.

3. Clear the DTC with the HDS.
4. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
5. Test-drive the vehicle at 19 mph (30 km/h) or more.

   NOTE: Drive the vehicle on the road, not on a lift.

6. Check for DTCs with the HDS.

   Is DTC 83 indicated?

   YES - Go to step 7.

   NO - Intermittent failure, the system is OK at this time. Refer to **INTERMITTENT FAILURES TROUBLESHOOTING**.

7. Check for fuel and emissions systems DTCs with the HDS (see **GENERAL TROUBLESHOOTING INFORMATION**).

   Are any ECM/PCM DTCs indicated?

   YES - Do the applicable troubleshooting for the ECM/PCM.

   NO - Go to step 8.

8. Update the VSA modulator-control unit if it does not have the latest software (see **VSA MODULATOR-CONTROL UNIT UPDATE**).
9. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
10. Test-drive the vehicle at 19 mph (30 km/h) or more.

    NOTE: Drive the vehicle on the road, not on a lift.

11. Check for DTCs with the HDS.

Is DTC 83 indicated?

YES - Check for loose terminals in the VSA modulator-control unit 47P connector. If the VSA modulator-control unit was updated and the symptom/indication is still present, replace the VSA modulator-control unit (see **VSA MODULATOR-CONTROL UNIT REMOVAL AND INSTALLATION**).

NO - If the VSA modulator-control unit was updated, troubleshooting is complete. If any other DTCs are indicated, go to the indicated **DTCS TROUBLESHOOTING**.

DTC 84-01: VSA SENSOR NEUTRAL POSITION NOT WRITTEN

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see GENERAL TROUBLESHOOTING INFORMATION).

1. Do the VSA sensor neutral position memorization (see **VSA SENSOR NEUTRAL POSITION MEMORIZATION**).
2. Clear the DTC with the HDS.
3. Turn the ignition switch to LOCK (0), then turn it to ON (II) again, or select the OFF mode, then the ON mode.
4. Check for DTCs with the HDS.

   Is DTC 84-01 indicated?

   YES - Go to step 5.

   NO - Intermittent failure, the system is OK at this time. Refer to **INTERMITTENT FAILURES TROUBLESHOOTING**.

5. Update the VSA modulator-control unit if it does not have the latest software (see **VSA MODULATOR-CONTROL UNIT UPDATE**).
6. Turn the ignition switch to LOCK (0), then turn it to ON (II) again, or select the OFF mode, then the ON mode.
7. Check for DTCs with the HDS.

   Is DTC 84-01 indicated?

   YES - Check for loose terminals in the VSA modulator-control unit 47P connector. If the VSA modulator-control unit was updated and the symptom/indication is still present, replace the VSA modulator-control unit (see **VSA MODULATOR-CONTROL UNIT REMOVAL AND INSTALLATION**).

   NO - If the VSA modulator-control unit was updated, troubleshooting is complete. If any other DTCs are indicated, go to the indicated **DTCS TROUBLESHOOTING**.

DTC 84-12: STEERING ANGLE SENSOR NEUTRAL POSITION MEMORIZATION INCOMPLETE

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see GENERAL TROUBLESHOOTING INFORMATION).

1. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
2. Check for DTCs with the HDS.

   Are any DTCs indicated with DTC 84-12 at the same time?

   YES - Troubleshoot any other DTCs first.

   NO - Go to step 3.

3. Clear the DTC with the HDS.
4. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
5. Test-drive the vehicle at 25 mph (40 km/h) or more in the straight ahead driving position, then turn the steering wheel left and right at 30 degrees or more once for each side. Continue test-drive afterwards more than 120 seconds.

   NOTE: Drive the vehicle on the road, not on a lift.

6. Check for DTCs with the HDS.

   Is DTC 84-12 indicated?

   YES - Go to step 7.

   NO - Intermittent failure, the system is OK at this time. Refer to **INTERMITTENT FAILURES TROUBLESHOOTING**.

7. Check the size, air pressure, and the amount of wear of all four tires, and check the wheel alignment (see **WHEEL ALIGNMENT**).

   Is the tire condition and wheel alignment OK?

   YES - Go to step 8.

   NO - Make sure the suspension is not modified, and adjust the wheel alignment (see **WHEEL ALIGNMENT**), and recheck by test-driving.

8. Update the VSA modulator-control unit if it does not have the latest software (see **VSA MODULATOR-CONTROL UNIT UPDATE**).
9. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.

10. Test-drive the vehicle at 25 mph (40 km/h) or more in the straight ahead driving position, then turn the steering wheel left and right at 30 degrees or more once for each side. Continue test-drive afterwards more than 120 seconds.

    NOTE: Drive the vehicle on the road, not on a lift.

11. Check for DTCs with the HDS.

    Is DTC 84-12 indicated?

    YES - Check for loose terminals in the VSA modulator-control unit 47P connector. If the VSA modulator-control unit was updated and the symptom/indication is still present, replace the VSA modulator-control unit (see **VSA MODULATOR-CONTROL UNIT REMOVAL AND INSTALLATION**).

    NO - If the VSA modulator-control unit was updated, troubleshooting is complete. If any other DTCs are indicated, go to the indicated **DTCS TROUBLESHOOTING**.

DTC 86: F-CAN COMMUNICATION MALFUNCTION

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see GENERAL TROUBLESHOOTING INFORMATION).

1. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
2. Clear the DTC with the HDS.
3. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
4. Start and run the engine for at least 5 seconds.
5. Check for DTCs with the HDS.

   Is DTC 86 indicated?

   YES - Go to step 6.

   NO - Check the COMMU FI ECU, COMMU A/T (A/T), COMMU GAUGE, COMMU YAW RATE/G, COMMU STEERING ANGLE S (With SH-AWD), and COMMU 4WD (With SH-AWD) in the VSA FREEZE DATA with the HDS. Then check for F-CAN communication lines continuity to the appropriate system or sensor and loose terminals in the appropriate system or sensor connectors.

6. Check the COMMU Fl ECU, COMMU A/T (A/T), COMMU GAUGE, COMMU YAW RATE/G, COMMU STEERING ANGLE S (With SH-AWD), and COMMU 4WD (With SH-AWD) in the VSA DATA LIST with the HDS.

   Is there a communication error in the system or sensor?

YES - Go to step 7.

NO - Go to step 24.

7. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
8. Short the SCS line with the HDS.
9. Disconnect ECM/PCM connector A (49P) (see **ECM/PCM REPLACEMENT**).
10. Disconnect the VSA modulator-control unit 47P connector (see step 5).
11. Disconnect the gauge control module 32P connector (see **GAUGE CONTROL MODULE REPLACEMENT**).
12. Disconnect the yaw rate-acceleration sensor 4P connector (see **YAW RATE-ACCELERATION SENSOR REPLACEMENT**).
13. With SH-AWD: Disconnect the steering angle sensor 5P connector (see **STEERING ANGLE SENSOR REPLACEMENT**).
14. With SH-AWD: Disconnect SH-AWD control unit connector A (20P) (see **REAR DIFFERENTIAL FLUID TEMPERATURE SENSOR REPLACEMENT**).
15. Check the F-CAN communication lines for continuity between the VSA modulator-control unit and the appropriate system or sensor (see table below).

Component	F-CAN L Terminal	F-CAN H Terminal
VSA Modulator-Control Unit	No. 13	No. 12
ECM/PCM	No. A49	No. A48
Gauge Control Module	No. 13	No. 14
Yaw Rate-Acceleration Sensor	No. 2	No. 3
Steering Angle Sensor (With SH-AWD)	No. 2	No. 4
SH-AWD Control Unit (With SH-AWD)	No. A20	No. A10

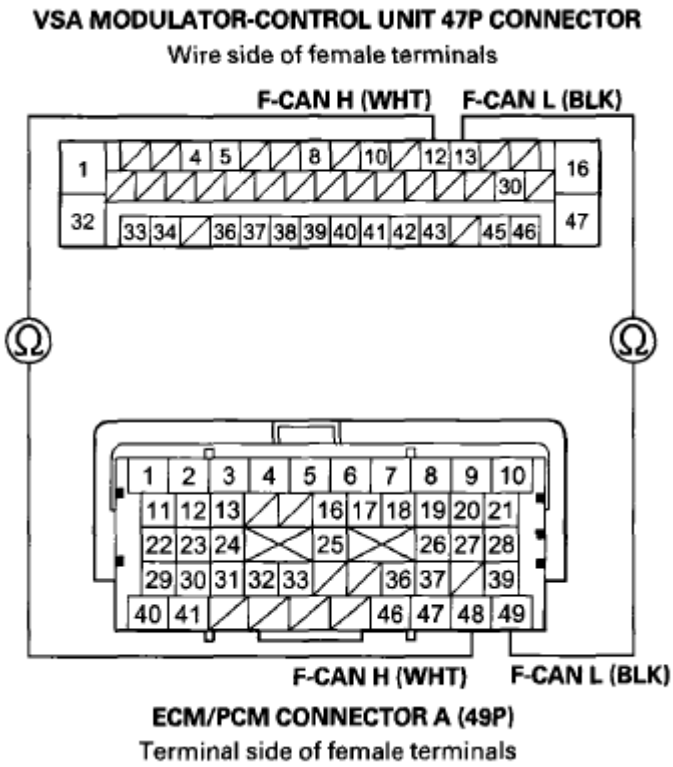


Fig. 50: Checking F-CAN Communication Lines For Continuity Between VSA Modulator-Control Unit And System Or Sensor
Courtesy of AMERICAN HONDA MOTOR CO., INC.

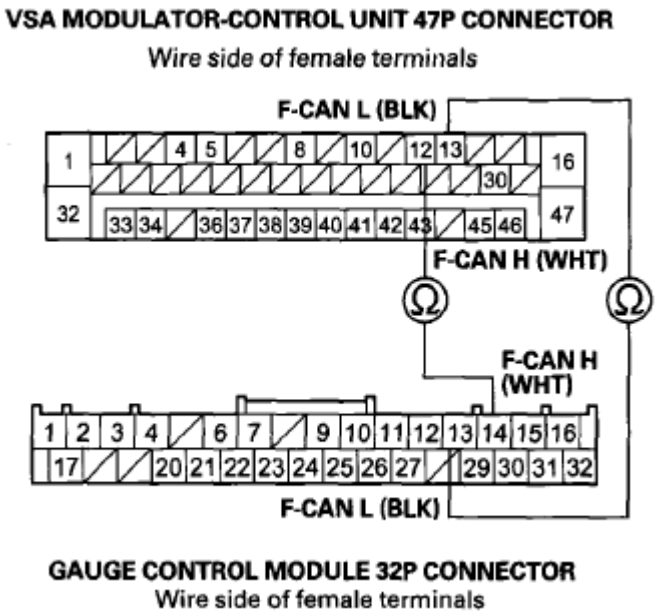


Fig. 51: Measuring Resistance Between VSA Modulator-Control Unit 47P And Gauge Control Module 32P Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

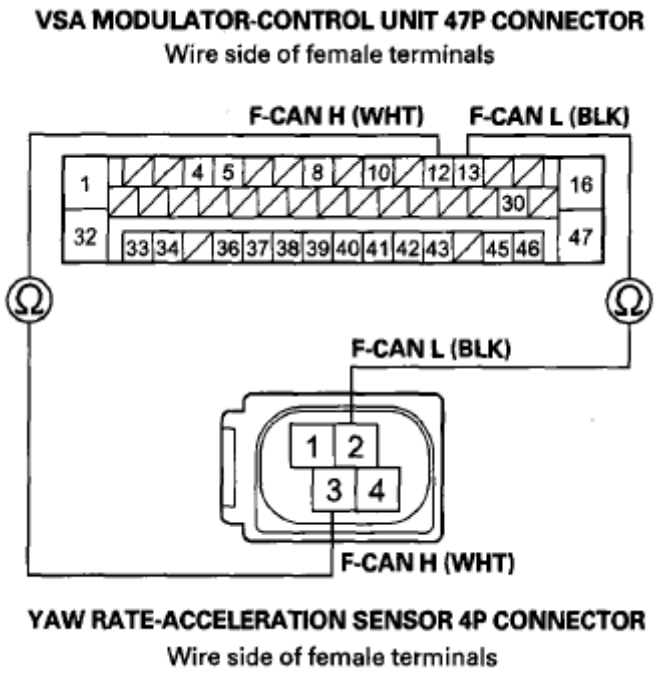


Fig. 52: Measuring Resistance Between VSA Modulator-Control Unit 47P And Yaw Rate-Acceleration Sensor 4P Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

With SH-AWD:

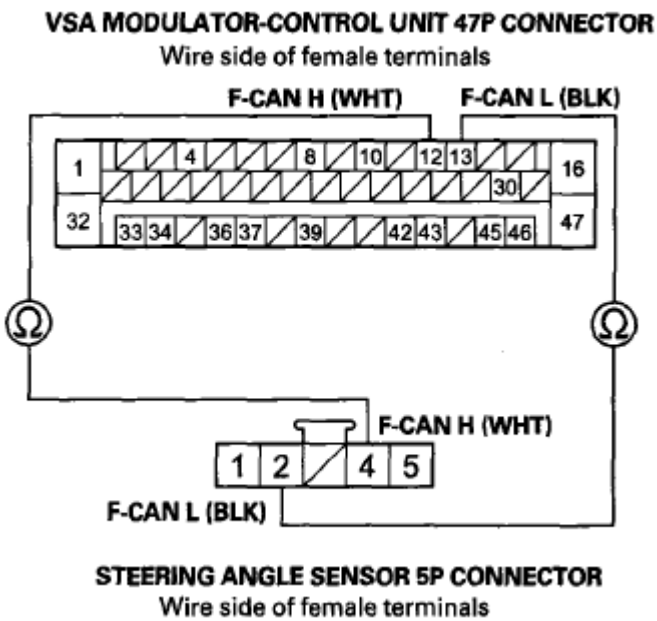


Fig. 53: Measuring Resistance Between VSA Modulator-Control Unit 47P And Steering Angle Sensor 5P Connector (With SH-AWD)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

With SH-AWD:

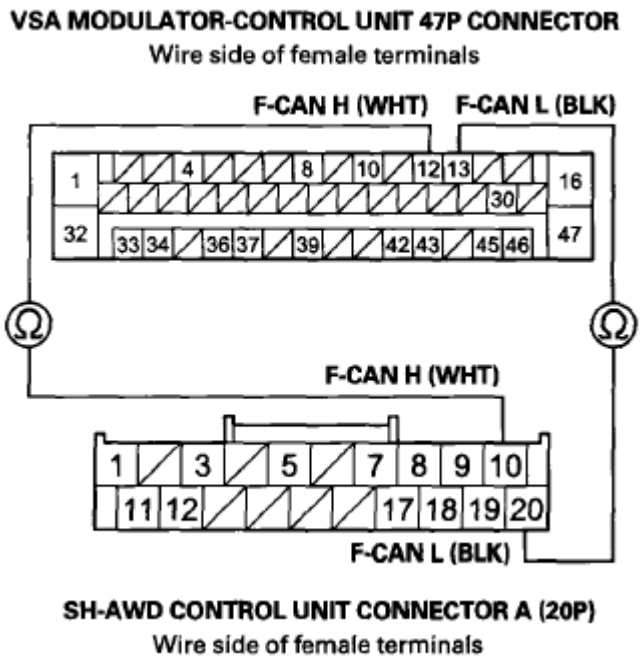


Fig. 54: Measuring Resistance Between VSA Modulator-Control Unit 47P And SH-AWD Control Unit A (20P) Connector (With SH-AWD)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity on the F-CAN communication lines?

YES -

- If the appropriate system or sensor is the yaw rate-acceleration sensor: Go to step 16.
- If the appropriate system or sensor is not the yaw rate-acceleration sensor: Go to step 20.

NO - Repair an open in the appropriate wire.

16. Check for loose terminals in the yaw rate-acceleration sensor 4P connector.

    Is the yaw rate-acceleration sensor 4P connector OK?

    YES - Go to step 17.

    NO - Repair or reconnect the connector securely.

17. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
18. Measure the voltage between yaw rate-acceleration sensor 4P connector terminals No. 1 and No. 4.

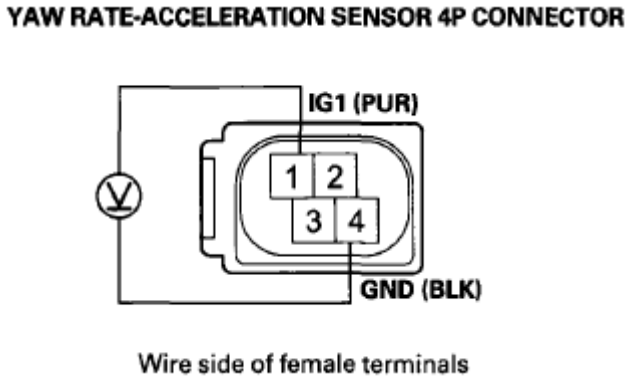


Fig. 55: Measuring Voltage Between Yaw Rate-Acceleration Sensor 4P Connector Terminals No. 1 And No. 4
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there battery voltage?

YES - Replace the yaw rate-acceleration sensor (see **YAW RATE-ACCELERATION SENSOR REPLACEMENT**).

NO - Go to step 19.

19. Measure the voltage between yaw rate-acceleration sensor 4P connector terminal No. 1 and body ground.

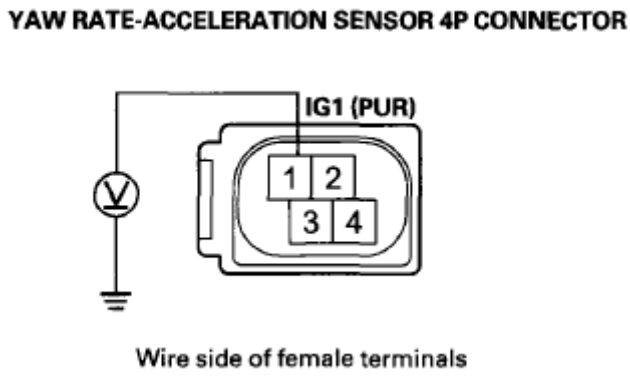


Fig. 56: Measuring Voltage Between Yaw Rate-Acceleration Sensor 4P Connector Terminal No. 1 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there battery voltage?

YES - Repair an open in the wire between the yaw rate-acceleration sensor and body ground (G403).

NO - Repair an open in the wire between the yaw rate-acceleration sensor and the driver's under-dash fuse/relay box.

20. Check for loose terminals in the appropriate system connectors.

Are the appropriate system connectors OK?

YES - Go to step 21.

NO - Repair or reconnect the connector securely.

21. Reconnect all connectors.
22. Start and run the engine for at least 5 seconds.
23. Check for other system DTCs with the HDS.

Is another DTCs indicated?

YES - Do the appropriate DTC troubleshooting.

NO - Go to step 24.

24. Update the VSA modulator-control unit if it does not have the latest software (see **VSA MODULATOR-CONTROL UNIT UPDATE**).
25. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
26. Start and run the engine for at least 5 seconds.
27. Check for DTCs with the HDS.

Is DTC 86 indicated?

YES - Check for loose terminals in the VSA modulator-control unit 47P connector. If the VSA modulator-control unit was updated and the symptom/indication is still present, replace the VSA modulator-control unit (see **VSA MODULATOR-CONTROL UNIT REMOVAL AND INSTALLATION**).

NO - If the VSA modulator-control unit was updated, troubleshooting is complete. If any other DTCs are indicated, go to the indicated **DTCS TROUBLESHOOTING**.

DTC 91: VSA ACTIVATION TIME TOO LONG

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see GENERAL TROUBLESHOOTING INFORMATION).

1. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
2. Clear the DTC with the HDS.
3. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
4. Test-drive the vehicle at 19 mph (30 km/h) or more.

NOTE: Drive the vehicle on the road, not on a lift.

5. Check for DTCs with the HDS.

   Is DTC 91 Indicated?

   YES - Go to step 6.

   NO - Intermittent failure, the system is OK at this time. Refer to **INTERMITTENT FAILURES TROUBLESHOOTING**.

6. Update the VSA modulator-control unit if it does not have the latest software (see **VSA MODULATOR-CONTROL UNIT UPDATE**).
7. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
8. Test-drive the vehicle at 19 mph (30 km/h) or more.

   NOTE: Drive the vehicle on the road, not on a lift.

9. Check for DTCs with the HDS.

   Is DTC 91 indicated?

   YES - Check for loose terminals in the VSA modulator-control unit 47P connector. If the VSA modulator-control unit was updated and the symptom/indication is still present, replace the VSA modulator-control unit (see **VSA MODULATOR-CONTROL UNIT REMOVAL AND INSTALLATION**).

   NO - If the VSA modulator-control unit was updated, troubleshooting is complete. If any other DTCs are indicated, go to the indicated **DTCS TROUBLESHOOTING**.

DTC 105: HYDRAULIC UNIT TEMPERATURE SENSOR MALFUNCTION

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see GENERAL TROUBLESHOOTING INFORMATION).

1. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
2. Clear the DTC with the HDS.
3. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
4. Test-drive the vehicle at 19 mph (30 km/h) or more.

   NOTE: Drive the vehicle on the road, not on a lift.

5. Check for DTCs with the HDS.

   Is DTC 105 indicated?

YES - Go to step 6.

NO - Intermittent failure, the system is OK at this time. Refer to **INTERMITTENT FAILURES TROUBLESHOOTING**.

6. Update the VSA modulator-control unit if it does not have the latest software (see **VSA MODULATOR-CONTROL UNIT UPDATE**).
7. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
8. Test-drive the vehicle at 19 mph (30 km/h) or more.

NOTE: Drive the vehicle on the road, not on a lift.

9. Check for DTCs with the HDS.

Is DTC 105 indicated?

YES - Check for loose terminals in the VSA modulator-control unit 47P connector. If the VSA modulator-control unit was updated and the symptom/indication is still present, replace the VSA modulator-control unit (see **VSA MODULATOR-CONTROL UNIT REMOVAL AND INSTALLATION**).

NO - If the VSA modulator-control unit was updated, troubleshooting is complete. If any other DTCs are indicated, go to the indicated **DTCS TROUBLESHOOTING**.

DTC 111: BACK-UP LIGHT SWITCH MALFUNCTION

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see GENERAL TROUBLESHOOTING INFORMATION).

1. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
2. Clear the DTC with the HDS.
3. Turn the ignition switch to LOCK (0), then turn it to ON (II) again, or select the OFF mode, then the ON mode.
4. Check the REVERSE SWITCH STATUS in the VSA DATA LIST with the HDS.

Does It indicate ON when the shift lever is in reverse, and OFF when the shift lever is in neutral?

YES - Intermittent failure, the system is OK at this time. Refer to **INTERMITTENT FAILURES TROUBLESHOOTING**.

NO - Go to step 5.

5. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
6. Check the back-up light switch (see **BACK-UP LIGHT SWITCH TEST/REPLACEMENT**).

Is the back-up light switch OK?

YES - Go to step 7.

NO - Replace the back-up light switch (see **BACK-UP LIGHT SWITCH TEST/REPLACEMENT**).

7. Check the No. 12 (7.5 A) fuse in the driver's under-dash fuse/relay box.

   Is the fuse blown?

   YES - Go to step 8.

   NO - Reinstall the checked fuse, then go to step 19.

8. Disconnect the driver's under-dash fuse/relay box connector F (33P) (see **FUSE TO COMPONENTS INDEX**).
9. Disconnect the back-up light switch 2P connector (see **BACK-UP LIGHT SWITCH TEST/REPLACEMENT**).
10. Check for continuity between back-up light switch 2P connector terminal No. 2 and body ground.

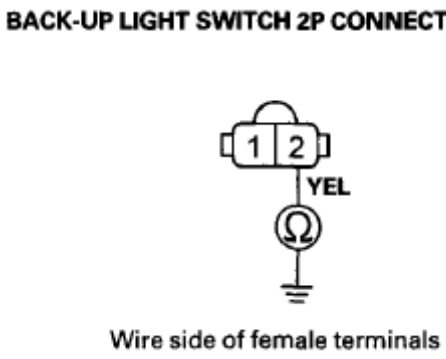


Fig. 57: Checking Continuity Between Back-Up Light Switch 2P Connector Terminal No. 2 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair a short to body ground in the wire between the No. 12 (7.5 A) fuse in the driver's under-dash fuse/relay box and the back-up light switch.

NO - Go to step 11.

11. Disconnect the VSA modulator-control unit 47P connector (see step 5).
12. Check for continuity between VSA modulator-control unit 47P connector terminal No. 4 and body ground.

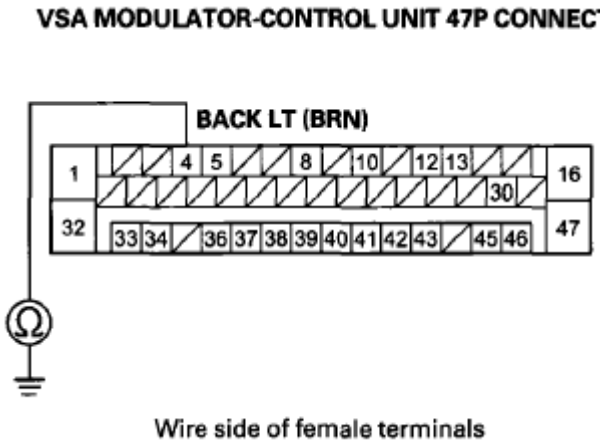


Fig. 58: Checking Continuity Between VSA Modulator-Control Unit 47P Connector Terminal No. 4 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair a short to body ground in the wire between the VSA modulator-control unit and the back-up light switch.

NO - Install a new No. 12 (7.5 A) fuse in the driver's under-dash fuse/relay box, then go to step 13.

13. Reconnect all connectors.
14. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
15. Clear the DTC with the HDS.
16. Turn the ignition switch to LOCK(0), or press the engine start/stop button to select the OFF mode.
17. Test-drive the vehicle at 19 mph (30 km/h) or more.

NOTE: Drive the vehicle on the road, not on a lift.

18. Check for DTCs with the HDS.

Is DTC 111 indicated?

YES - Go to step 30.

NO - Troubleshooting is complete.

19. Disconnect the VSA modulator-control unit 47P connector (see step 5).
20. Shift the shift lever into reverse.
21. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
22. Measure the voltage between VSA modulator-control unit 47P connector terminal No. 4 and body ground.

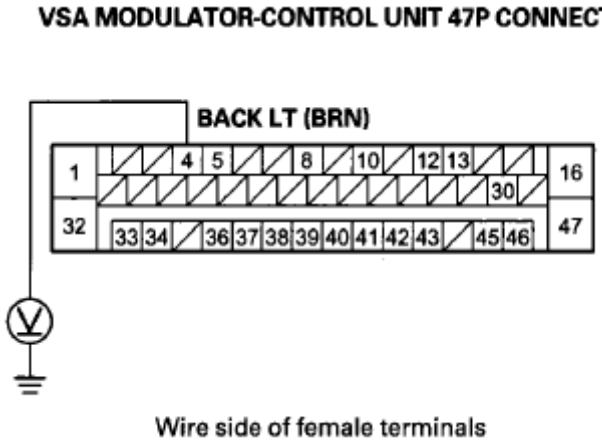


Fig. 59: Measuring Voltage Between VSA Modulator-Control Unit 47P Connector Terminal No. 4 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there battery voltage?

YES - Go to step 23.

NO - Repair an open in the wire between the No. 12 (7.5 A) fuse in the driver's under-dash fuse/relay box and the VSA modulator-control unit.

23. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
24. Disconnect the back-up light switch 2P connector (see **BACK-UP LIGHT SWITCH TEST/REPLACEMENT**).
25. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
26. Measure the voltage between VSA modulator-control unit 47P connector terminal No. 4 and body ground.

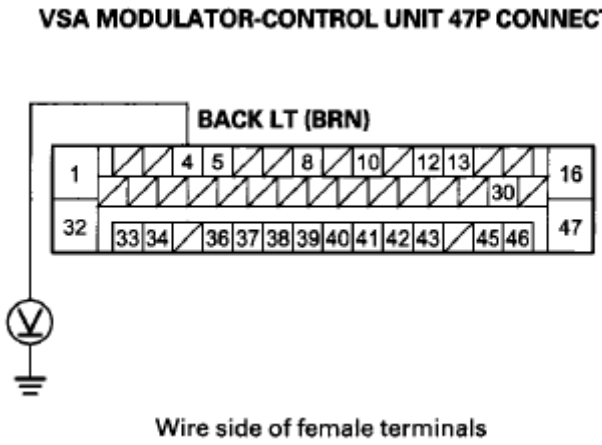


Fig. 60: Measuring Voltage Between VSA Modulator-Control Unit 47P Connector Terminal No. 4 And Body Ground

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there 0.1 V or more?

YES - Repair a short to power in the wire between the VSA modulator-control unit and the back-up light switch.

NO - Go to step 27.

27. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
28. Reconnect all connectors.
29. Shift the shift lever into neutral.
30. Update the VSA modulator-control unit if it does not have the latest software (see **VSA MODULATOR-CONTROL UNIT UPDATE**).
31. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
32. Test-drive the vehicle at 19 mph (30 km/h) or more.

NOTE: Drive the vehicle on the road, not on a lift.

33. Check for DTCs with the HDS.

Is DTC 111 indicated?

YES - Check for loose terminals in the VSA modulator-control unit 47P connector. If the VSA modulator-control unit was updated and the symptom/indication is still present, replace the VSA modulator-control unit (see **VSA MODULATOR-CONTROL UNIT REMOVAL AND INSTALLATION**).

NO - If the VSA modulator-control unit was updated, troubleshooting is complete. If any other DTCs are indicated, go to the indicated **DTCS TROUBLESHOOTING**.

DTC 118: CLUTCH PEDAL POSITION SWITCH B MALFUNCTION

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see GENERAL TROUBLESHOOTING INFORMATION).

1. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
2. Clear the DTC with the HDS.
3. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
4. Start and run the engine for at least 5 seconds.
5. Check for DTCs with the HDS.

Is DTC 86 indicated?

YES - Do the troubleshooting for DTC 86 (see **DTC 86: F-CAN COMMUNICATION MALFUNCTION**).

NO - Go to step 6.

6. Check for fuel and emissions systems DTCs with the HDS (see **GENERAL TROUBLESHOOTING INFORMATION**).

   Is DTC P0835 indicated?

   YES - Do the troubleshooting for DTC P0835 (see **DTC P0835: CLUTCH PEDAL POSITION SWITCH B CIRCUIT LOW VOLTAGE**).

   NO - Go to step 7.

7. Check the CRUISE CANCEL CLUTCH SWITCH STATUS in the VSA DATA LIST with the HDS while moving the clutch pedal.

   Does it indicate OFF when the pedal is pressed, and ON when the pedal is released?

   YES - Intermittent failure, the system is OK at this time. Refer to **INTERMITTENT FAILURES TROUBLESHOOTING**.

   NO - Go to step 8.

8. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
9. Check the clutch pedal position switch B (see **CLUTCH PEDAL POSITION SWITCH B TEST**).

   Is the clutch pedal position switch B OK?

   YES - Go to step 10.

   NO - Replace the clutch pedal position switch B (see **CLUTCH PEDAL POSITION SWITCH B TEST**).

10. Short the SCS line with the HDS.
11. Disconnect ECM connector A (49P) (see **ECM/PCM REPLACEMENT**).
12. Disconnect he clutch pedal position switch B 3P connector (see **CLUTCH PEDAL POSITION SWITCH B REPLACEMENT**).
13. Check for continuity between clutch pedal position switch B 3P connector terminal No. 2 and ECM connector A (49P) terminal No. 47.

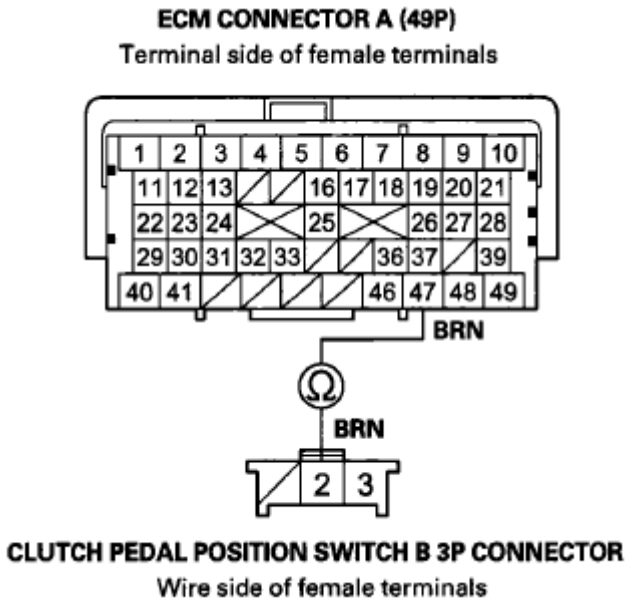


Fig. 61: Checking Continuity Between Clutch Pedal Position Switch B 3P Connector Terminal No. 2 And ECM Connector A (49P) Terminal No. 47
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 14.

NO - Repair an open in the wire between the ECM and the clutch pedal position switch B.

14. Update the VSA modulator-control unit if it does not have the latest software (see **VSA MODULATOR-CONTROL UNIT UPDATE**).
15. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
16. Test-drive the vehicle at 19 mph (30 km/h) or more.

NOTE: Drive the vehicle on the road, not on a lift.

17. Check for DTCs with the HDS.

Is DTC 118 indicated?

YES - Check for loose terminals in the VSA modulator-control unit 47P connector. If the VSA modulator-control unit was updated and the symptom/indication is still present, replace the VSA modulator-control unit (see **VSA MODULATOR-CONTROL UNIT REMOVAL AND INSTALLATION**).

NO - If the VSA modulator-control unit was updated, troubleshooting is complete. If any other DTCs are indicated, go to the indicated **DTCS TROUBLESHOOTING**.

DTC 121: VSA SOLENOID VALVE MALFUNCTION; DTC 122: VSA SOLENOID VALVE MALFUNCTION; DTC 123: VSA SOLENOID VALVE MALFUNCTION; DTC 124: VSA SOLENOID VALVE MALFUNCTION

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see GENERAL TROUBLESHOOTING INFORMATION).

1. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
2. Clear the DTC with the HDS.
3. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
4. Test-drive the vehicle at 19 mph (30 km/h) or more.

   NOTE: Drive the vehicle on the road, not on a lift.

5. Check for DTCs with the HDS.

   Is DTC 121, 122, 123, or 124 indicated?

   YES - Go to step 6.

   NO - Intermittent failure, the system is OK at this time. Refer to **INTERMITTENT FAILURES TROUBLESHOOTING**.

6. Update the VSA modulator-control unit if it does not have the latest software (see **VSA MODULATOR-CONTROL UNIT UPDATE**).
7. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
8. Test-drive the vehicle at 19 mph (30 km/h) or more.

   NOTE: Drive the vehicle on the road, not on a lift.

9. Check for DTCs with the HDS.

   Is DTC 121, 122, 123, or 124 indicated?

   YES - Check for loose terminals in the VSA modulator-control unit 47P connector. If the VSA modulator-control unit was updated and the symptom/indication is still present, replace the VSA modulator-control unit (see **VSA MODULATOR-CONTROL UNIT REMOVAL AND INSTALLATION**).

   NO - If the VSA modulator-control unit was updated, troubleshooting is complete. If any other DTCs are indicated, go to the indicated **DTCS TROUBLESHOOTING**.

DTC 158: ECU SOFTWARE UPDATE FAILURE

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see GENERAL TROUBLESHOOTING INFORMATION).

1. Update the VSA modulator-control unit (see **VSA MODULATOR-CONTROL UNIT UPDATE**).
2. Turn the ignition switch to LOCK (0), then turn it to ON (II) again, or select the OFF mode, then the ON mode.
3. Check for DTCs with the HDS.

   Is DTC 158 indicated?

   YES - Check for loose terminals in the VSA modulator-control unit 47P connector. If the symptom/indication is still present, replace the VSA modulator-control unit (see **VSA MODULATOR-CONTROL UNIT REMOVAL AND INSTALLATION**).

   NO - Troubleshooting is complete.

SYMPTOM TROUBLESHOOTING

VSA CANNOT BE TURNED OFF

NOTE: If the low tire pressure indicator turns ON, the VSA cannot be turned OFF. Check the tire pressure first.

1. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
2. Check the VSA OFF switch (see **VSA OFF SWITCH TEST/REPLACEMENT**).

   Is the VSA OFF switch OK?

   YES - Go to step 3.

   NO - Replace the VSA OFF switch (see **VSA OFF SWITCH TEST/REPLACEMENT**).

3. Disconnect the VSA OFF switch 5P connector (see **VSA OFF SWITCH TEST/REPLACEMENT**).
4. Disconnect the gauge control module 32P connector (see **GAUGE CONTROL MODULE REPLACEMENT**).
5. Check for continuity between gauge control module 32P connector terminals No. 26 and VSA OFF switch 5P connector terminal No. 1.

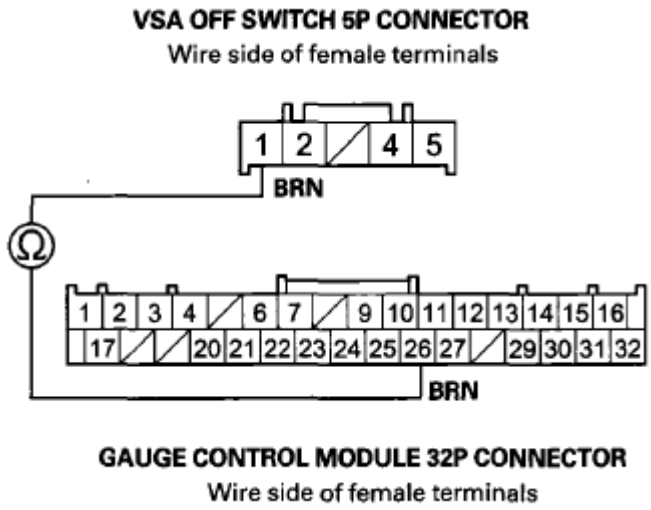


Fig. 62: Checking Continuity Between Gauge Control Module 32P Connector Terminals No. 26 And VSA OFF Switch 5P Connector Terminal No. 1
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 6.

NO - Repair an open in the wire between the gauge control module and the VSA OFF switch.

6. Check for continuity between VSA OFF switch 5P connector terminal No. 1 and body ground.

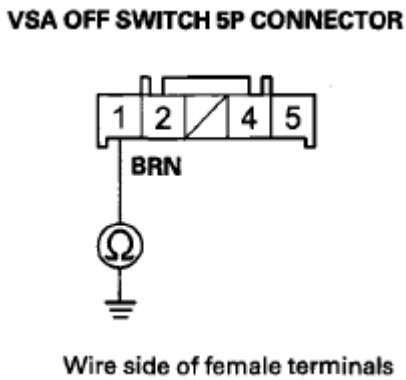


Fig. 63: Checking Continuity Between VSA OFF Switch 5P Connector Terminal No. 1 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair a short to body ground in the wire between the gauge control module and the VSA OFF switch.

NO - Go to step 7.

7. Check for continuity between VSA OFF switch 5P connector terminal No. 2 and body ground.

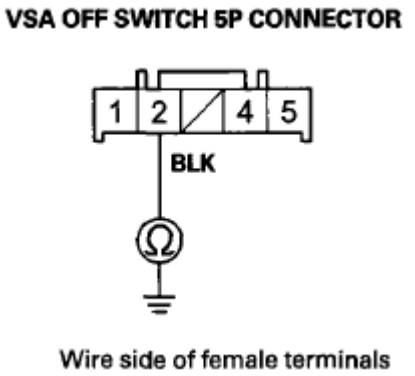


Fig. 64: Check For Continuity Between VSA OFF Switch 5P Connector Terminal No. 2 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Replace the gauge control module (see **GAUGE CONTROL MODULE REPLACEMENT**).

NO - Repair an open in the wire between the VSA OFF switch and body ground (G401).

ABS INDICATOR, BRAKE SYSTEM INDICATOR, AND VSA INDICATOR DO NOT GO OFF

1. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
2. Check the No. 6 (7.5 A) fuse in the driver's under-dash fuse/relay box.

Is the fuse blown?

YES - Replace the fuse. Turn the ignition switch to ON (II), then turn it to LOCK (0), or select the ON mode, then the OFF mode again. If the fuse blows again, repair the short to body ground on the No. 6 (7.5 A) fuse circuit.

NO - Reinstall the checked fuse, then go to step 3.

3. Check the No. 2-3 (30 A) fuse in the under-hood fuse/relay box.

Is the fuse blown?

YES - Replace the fuse. If the fuse blows again, repair the short to body ground on the No. 2-3 (30 A) fuse circuit.

NO - Reinstall the checked fuse, then go to step 4.

4. Do the gauge control module self-diagnostic function (see **SELF-DIAGNOSTIC FUNCTION**).

   Is the gauge control module OK?

   YES - Go to step 5.

   NO - Replace the gauge control module (see **GAUGE CONTROL MODULE REPLACEMENT**).

5. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
6. Disconnect the VSA modulator-control unit 47P connector (see step 5).
7. Disconnect the yaw rate-acceleration sensor 4P connector (see **YAW RATE-ACCELERATION SENSOR REPLACEMENT**).
8. With SH-AWD: Disconnect the steering angle sensor 5P connector (see **STEERING ANGLE SENSOR REPLACEMENT**).

   NOTE: Without SH-AWD, the steering angle sensor is not powered by IG1.

9. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
10. Measure the voltage between VSA modulator-control unit 47P connector terminal No. 8 and body ground.

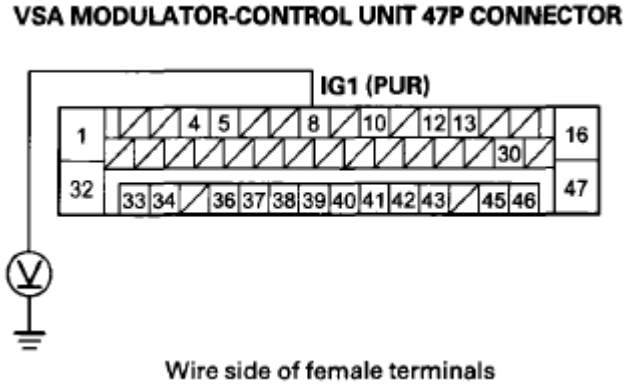


Fig. 65: Measuring Voltage Between VSA Modulator-Control Unit 47P Connector Terminal No. 8 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there battery voltage?

YES - Go to step 11.

NO - Repair an open in the wire between the No. 6 (7.5 A) fuse in the driver's under-dash fuse/relay box and the VSA modulator-control unit.

11. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
12. Check for continuity between VSA modulator-control unit 47P connector terminal No. 16 and body

ground.

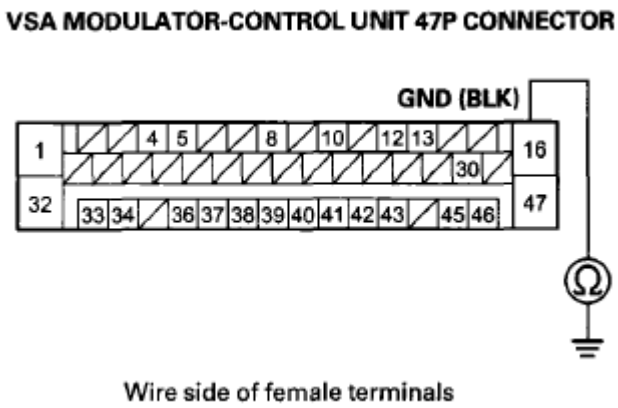


Fig. 66: Checking Continuity Between VSA Modulator-Control Unit 47P Connector Terminal No. 16 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 13.

NO - Repair an open in the wire between the VSA modulator-control unit and body ground (G202).

13. Measure the voltage between VSA modulator-control unit 47P connector terminal No. 32 and body ground.

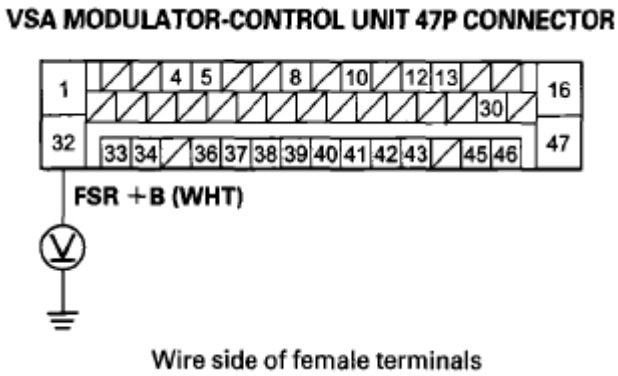


Fig. 67: Measuring Voltage Between VSA Modulator-Control Unit 47P Connector Terminal No. 32 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there battery voltage?

YES - Go to step 14.

NO - Repair an open in the wire between the No. 2-3 (30 A) fuse in the under-hood fuse/relay box and

the VSA modulator-control unit.

14. Disconnect the gauge control module 32P connector (see **GAUGE CONTROL MODULE REPLACEMENT**).
15. Check for continuity between the VSA modulator-control unit 47P connector terminal and gauge control module 32P connector terminal (see table below).

Sign	VSA Modulator-Control Unit 47P Connector Terminal	Gauge Control Module 32P Connector Terminal
F-CAN L	No. 13	No. 13
F-CAN H	No. 12	No. 14

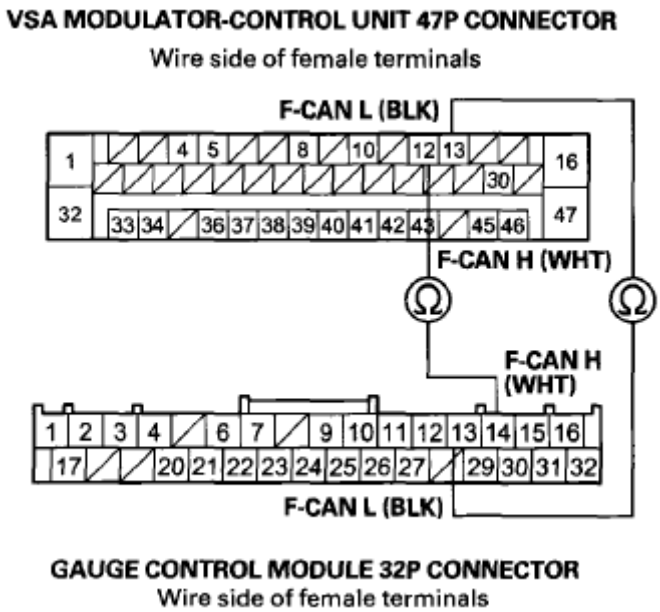


Fig. 68: Checking Continuity Between VSA Modulator-Control Unit 47P Connector Terminal And Gauge Control Module 32P Connector Terminal
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 16.

NO - Repair an open in the wire between the gauge control module and the VSA modulator-control unit.

16. Reconnect all connectors.
17. Update the VSA modulator-control unit if it does not have the latest software (see **VSA MODULATOR-CONTROL UNIT UPDATE**).
18. Turn the ignition switch to LOCK (0), then turn it to ON (II) again, or select the OFF mode, then the ON

mode.

19. Check the ABS indicator, the brake system indicator, and the VSA indicator for several seconds when the ignition switch is turned to ON (II), or press the engine start/stop button to select the ON mode.

    Do the indicators come on then go off?

    YES - Troubleshooting is complete.

    NO - Check for loose terminals in the VSA modulator-control unit 47P connector. If the symptom is still present, replace the VSA modulator-control unit (see **VSA MODULATOR-CONTROL UNIT REMOVAL AND INSTALLATION**).

STEERING ANGLE SENSOR REPLACEMENT

SRS components are located in this area. Review the SRS component locations (see **COMPONENT LOCATION INDEX**) and the precautions and procedures (see **PRECAUTIONS AND PROCEDURES**) before doing repairs or service.

NOTE: Do not damage or drop the combination switch as the steering angle sensor is sensitive to shock and vibration.

1. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
2. With the wheels in the straight ahead position and the steering wheel centered, then remove the steering wheel (see **STEERING WHEEL REMOVAL**).
3. Remove the steering column covers (see **SIDE DEFOGGER VENT TRIM REMOVAL/INSTALLATION**).
4. Disconnect the combination light switch 12P connector (A) and the steering angle sensor 5P connector (B) from the combination switch assembly/cable reel (C).

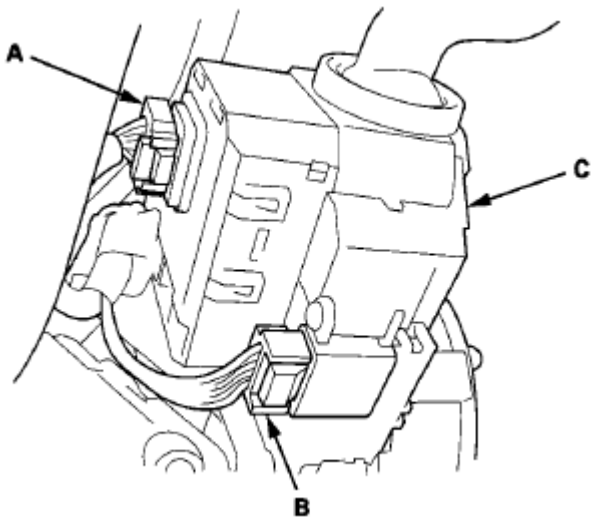


Fig. 69: Identifying Light Switch 12P Connector, Steering Angle Sensor 5P Connector And Switch Assembly/Cable Reel

Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Disconnect the dashboard wire harness 4P connector (A) from the cable reel 4P connector (B), then disconnect the dashboard wire harness 20P connector (C) and the wiper/washer switch 8P connector (D).

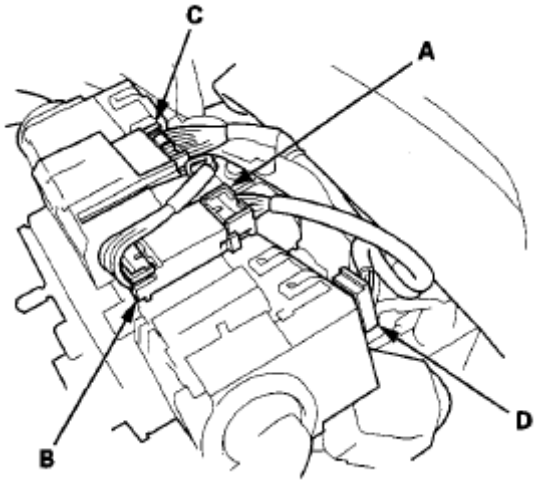


Fig. 70: Identifying Dashboard Wire Harness 4P Connector, 20P Connector, Cable Reel 4P Connector And Wiper/Washer Switch 8P Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Remove the combination switch assembly/cable reel mounting screws (A).

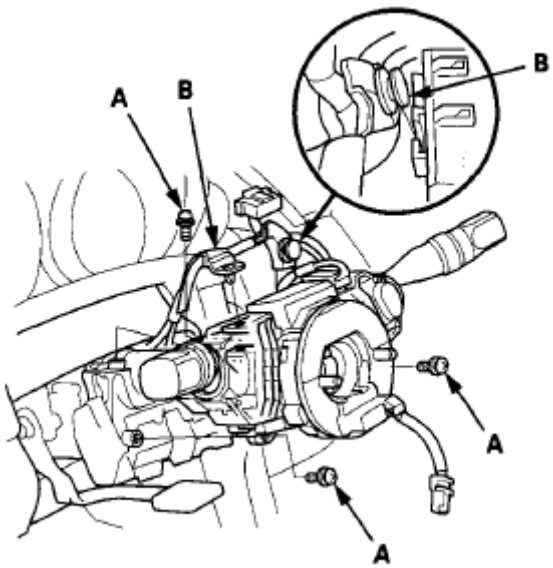


Fig. 71: Identifying Wire Harness Clips And Switch Assembly/Cable Reel Mounting Screws
Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Remove the wire harness clips (B), then remove the combination switch assembly/cable reel from the steering column.

8. Remove the cable reel (see **CABLE REEL REPLACEMENT**).
9. Remove the combination light switch (A) and the wiper/washer switch (B) from the combination switch body assembly (C).

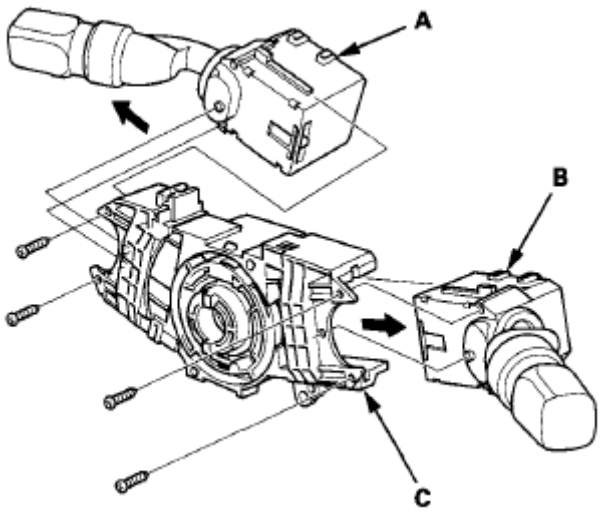


Fig. 72: Removing Combination Light Switch And Wiper/Washer Switch From Combination Switch Body Assembly
Courtesy of AMERICAN HONDA MOTOR CO., INC.

10. Install the combination switch body assembly in the reverse order of removal, and note these items:
    - Do not remove the steering angle sensor from the combination switch body assembly.
    - When installing the cable reel, set the turn signal canceling sleeve position so that the arrow points straight up (see **INSTALLATION**).
    - Tighten the combination switch assembly/cable reel mounting screws in the proper sequence (see **INSTALLATION**).
    - With SH-AWD: Do the VSA sensor neutral position memorization (see **VSA SENSOR NEUTRAL POSITION MEMORIZATION**).

YAW RATE-ACCELERATION SENSOR REPLACEMENT

NOTE:
- **Do not damage or drop the sensor as it is sensitive.**
- **Do not use power tools when replacing the sensor.**

1. Turn the ignition-switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
2. Remove the center console (see **CENTER CONSOLE REMOVAL/INSTALLATION**).
3. MT: Remove the shift lever assembly (see **SHIFT LEVER HOUSING REPLACEMENT**).
4. Disconnect the yaw rate-acceleration sensor 4P connector (A), then remove the yaw rate-acceleration sensor (B).

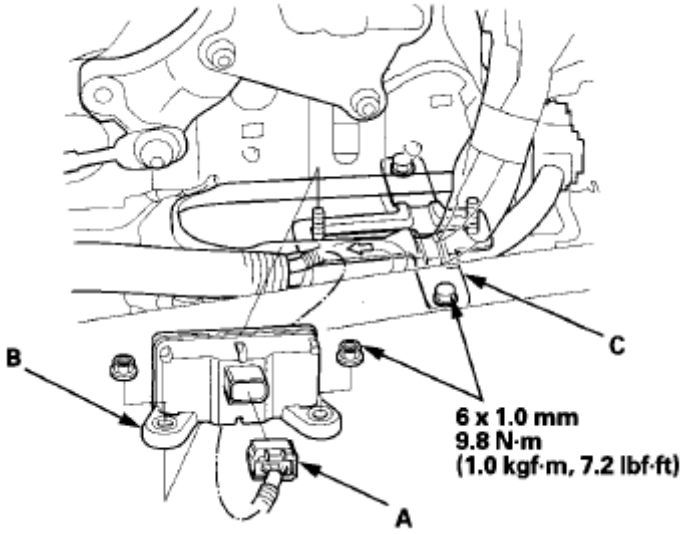


Fig. 73: Identifying Yaw Rate-Acceleration Sensor, Sensor 4P Connector, And Bracket
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Check for deformation in the bracket (C). If necessary replace it.
6. Install the yaw rate-acceleration sensor in the reverse order of removal.
7. Do the VSA sensor neutral position memorization (see **VSA SENSOR NEUTRAL POSITION MEMORIZATION**).
8. SH-AWD: Do the yaw rate-acceleration neutral position memorization (see **SH-AWD® DIFFERENTIAL CLUTCH TORQUE MEMORIZATION**).

VSA SENSOR NEUTRAL POSITION MEMORIZATION

NOTE: Do not press the brake pedal during this procedure.

1. Park the vehicle on a flat and level surface, with the steering wheel in the straight ahead position.
2. With the ignition switch in LOCK (0), or press the engine start/stop button to select the OFF mode, connect the HDS to the data link connector (DLC) (A) under the driver's side of the dashboard.

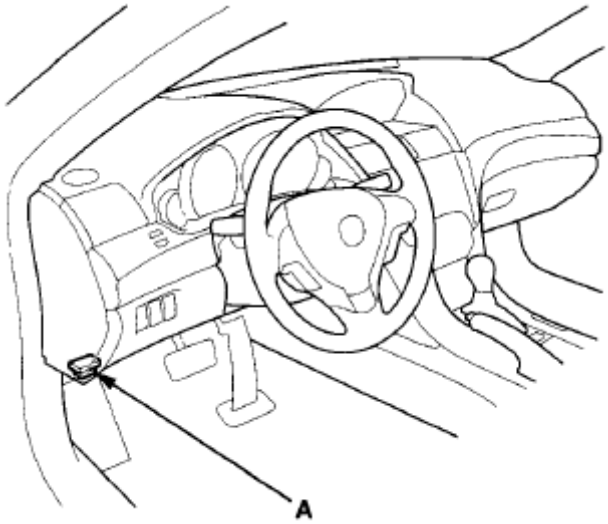


Fig. 74: Identifying Data Link Connector (DLC)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
4. Make sure the HDS communicates with the vehicle and the VSA modulator-control unit. If it does not, go to the DLC circuit troubleshooting (see **DLC CIRCUIT TROUBLESHOOTING**).
5. Select VSA ADJUSTMENT, then select ALL SENSORS with the HDS, and follow the screen prompts.

NOTE: See the HDS Help menu for specific instructions.

6. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.

VSA OFF SWITCH TEST/REPLACEMENT

1. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
2. Remove the driver's switch panel (see **DRIVER'S SWITCH PANEL REMOVAL/INSTALLATION**).
3. Remove the VSA OFF switch (A) from the driver's switch panel (B).

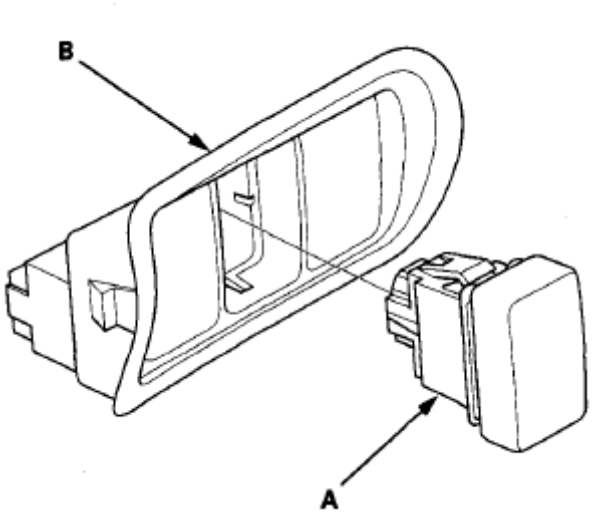
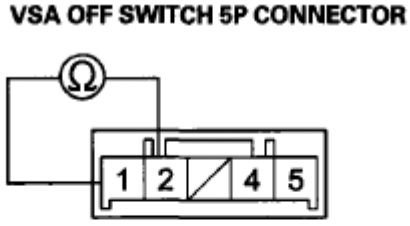


Fig. 75: Identifying VSA OFF Switch And Driver's Switch Panel
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. On the switch side, check for continuity between the VSA OFF switch 5P connector terminal in each switch position according to the table.



Terminal side of male terminals

Position \ Terminal	1	2
PRESSED		
RELEASED	○	○

Fig. 76: Checking Continuity Between VSA OFF Switch 5P Connector Terminal In Each Switch Position
Courtesy of AMERICAN HONDA MOTOR CO., INC.

- If the switch does not work as described in the table, replace the switch.
- If the switch tests OK, go to step 5.

5. On the switch side, check for continuity between VSA OFF switch 5P connector terminals No. 4 and No. 5. There should be continuity at all times.

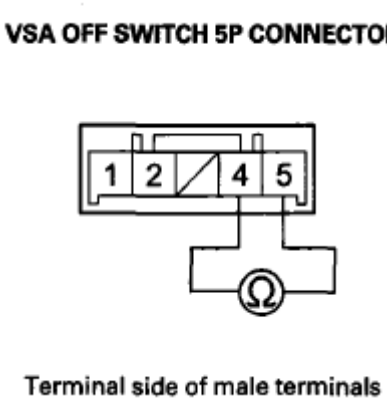


Fig. 77: Checking Continuity Between VSA OFF Switch 5P Connector Terminals No. 4 And No. 5
Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. If the continuity is not as specified, replace the VSA OFF switch.
7. Install the VSA OFF switch in the reverse order of removal.

VSA MODULATOR-CONTROL UNIT UPDATE

Special Tools Required

- Honda Diagnostic System (HDS) tablet tester
- Honda Interface Module (HIM) and an iN workstation with the latest HDS software version
- HDS Pocket Tester
- GNA600 and an iN workstation with the latest HDS software version
- MVCI unit with the latest control module (CM) update software installed

Any one of the above updating tools can be used.

NOTE:

- **Use this procedure when you need to update the VSA modulator-control unit at anytime.**
- **Make sure the HDS/iN workstation has the latest software version.**
- **Before you update the VSA modulator-control unit, make sure the battery in the vehicle is fully charged, and connect a jumper to the battery (not a battery charger) to maintain system voltage.**
- **Never turn the ignition switch to LOCK (0) or ACCESSORY (I), or press the engine start/stop button to select the OFF or ACCESSORY mode, during the update. If there is a problem with the update, leave the ignition switch ON (II), or the ON mode.**
- **To prevent VSA modulator-control unit damage, do not operate anything electrical (headlights, audio system, brakes, A/C, power windows, door locks, etc.) during the update.**
- **To ensure the latest program is installed, do a VSA modulator-control unit**

update whenever the VSA modulator-control unit is substituted or replaced.

- **You cannot update a VSA modulator-control unit with a program it already has. It will only accept a new program.**
- **High temperature in the engine compartment might cause the VSA modulator-control unit to become too hot to run the update. If the engine has been running before this procedure, open the hood and cool the engine compartment.**
- **If you need to diagnose the Honda interface module (HIM) because the HIM's red (#3) light came on or was flashing during the update, leave the ignition switch in ON (II), or in the ON mode when you disconnect the HIM from the data link connector (DLC). This will prevent VSA modulator-control unit damage.**
- **DTCs stored in memory are cleared when the VSA modulator-control unit is updated.**

1. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode, but do not start the engine.
2. Connect the HDS to the data link connector (DLC) (A) located under the driver's side of the dashboard.

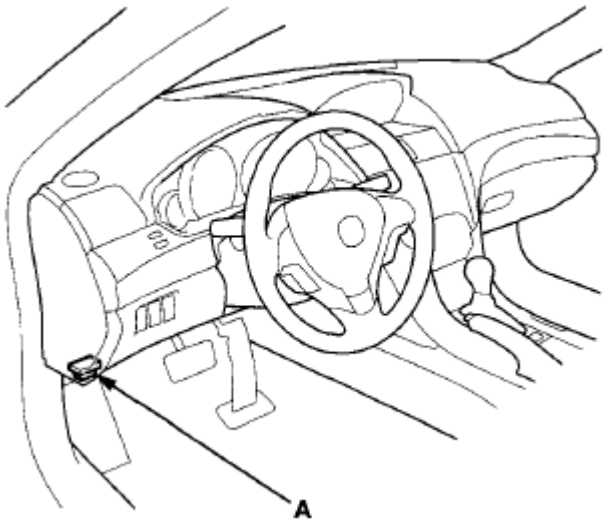


Fig. 78: Identifying Data Link Connector (DLC)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Make sure the HDS communicates with the vehicle and the VSA modulator-control unit. If it does not, go to the DLC circuit troubleshooting (see **DLC CIRCUIT TROUBLESHOOTING**).
4. Select the update mode, and follow the screen prompts to update the VSA modulator-control unit.
5. If the software in the VSA modulator-control unit is the latest, disconnect the HDS/HIM/GNA600 from the DLC. If the software in the VSA modulator-control unit is not the latest, follow the instructions on the screen.
6. Do the VSA sensor neutral position memorization procedure (see **VSA SENSOR NEUTRAL**

POSITION MEMORIZATION).

VSA MODULATOR-CONTROL UNIT REMOVAL AND INSTALLATION

NOTE: **Do not spill brake fluid on the vehicle; it may damage the paint. If brake fluid gets on the paint, wash it off immediately with water.**

NOTE:

- **Be careful not to damage or deform the brake lines during removal and installation.**
- **To prevent the brake fluid from dripping, plug and cover the hose ends and joints with a shop towel.**

REMOVAL

1. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
2. Remove the left and right engine compartment covers (A) (see **ENGINE COMPARTMENT COVER REPLACEMENT**).

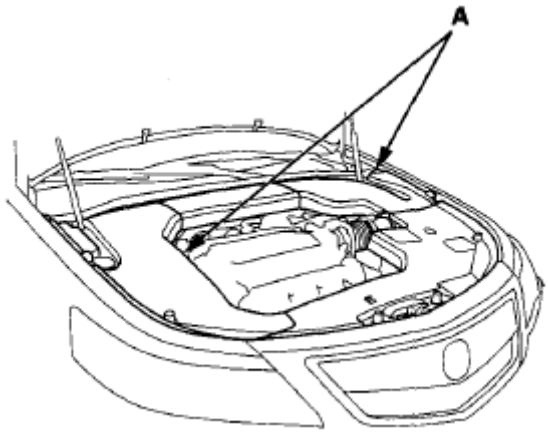


Fig. 79: Identifying Left And Right Engine Compartment Covers
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Remove the suction line mounting bolt (A) from the bracket.

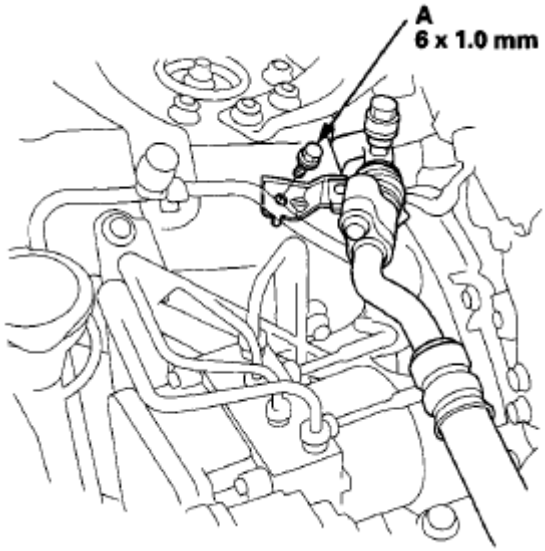


Fig. 80: Identifying Suction Line Mounting Bolt
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Disconnect the 10 mm brake lines (A) and the 12 mm brake lines (B) from the VSA modulator-control unit (C).

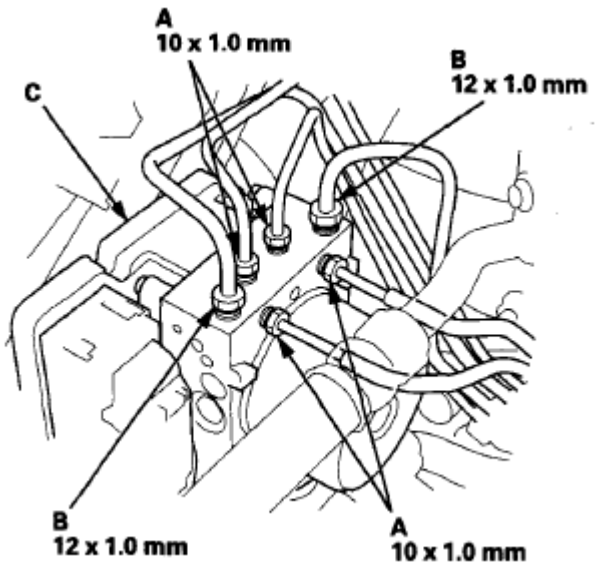


Fig. 81: Identifying Brake Lines, VSA Modulator-Control Unit
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Disconnect the VSA modulator-control unit 47P connector (A) by pushing the lock (B) and pulling up the lever (C); the connector disconnects itself.

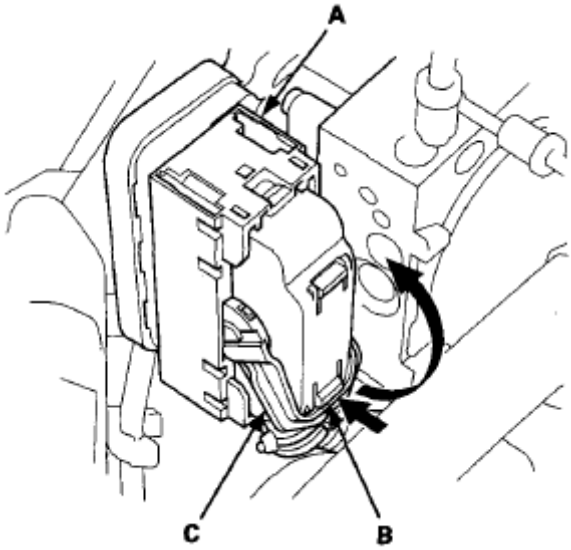


Fig. 82: Disconnecting VSA Modulator-Control Unit 47P Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Remove the VSA modulator-control unit bracket mounting bolts (A) and the wire harness clips (B), then remove the VSA modulator-control unit (C) with the bracket (D) from the body.

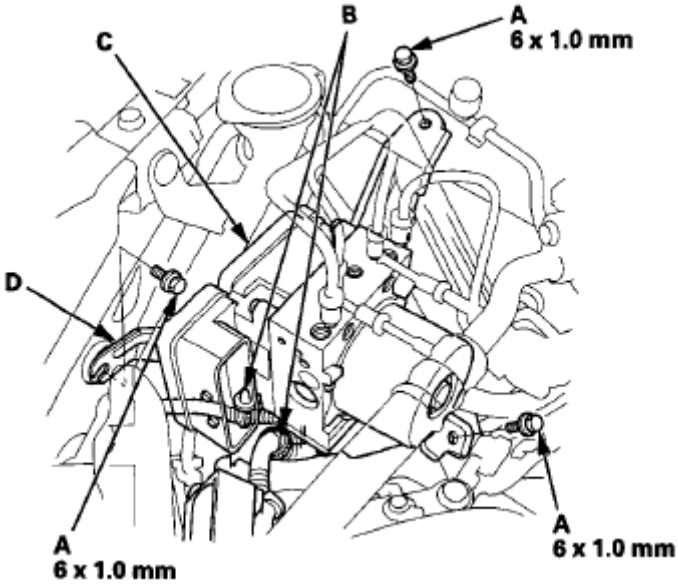


Fig. 83: Identifying Wire Harness Clips, VSA Modulator-Control Unit, Bracket And Bracket Mounting Bolts
Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Remove the TORX bolts (A), then remove the VSA modulator-control unit (B) from the bracket (C).

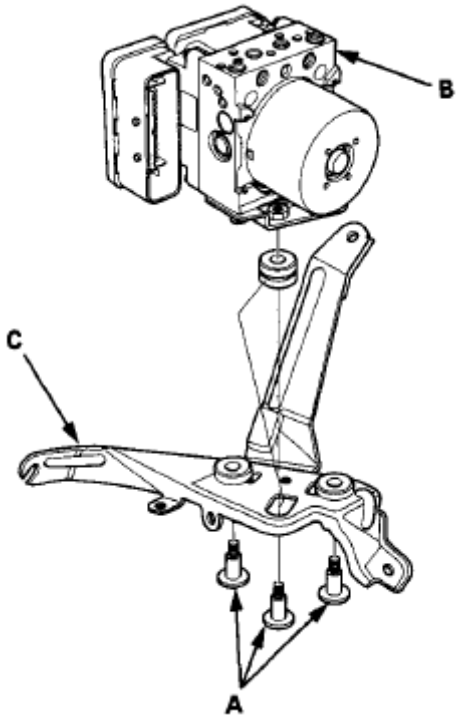


Fig. 84: Identifying Bracket, VSA Modulator-Control Unit And TORX Bolts
Courtesy of AMERICAN HONDA MOTOR CO., INC.

INSTALLATION

1. Install the VSA modulator-control unit (A) onto the bracket (B), then tighten the TORX bolts (C).

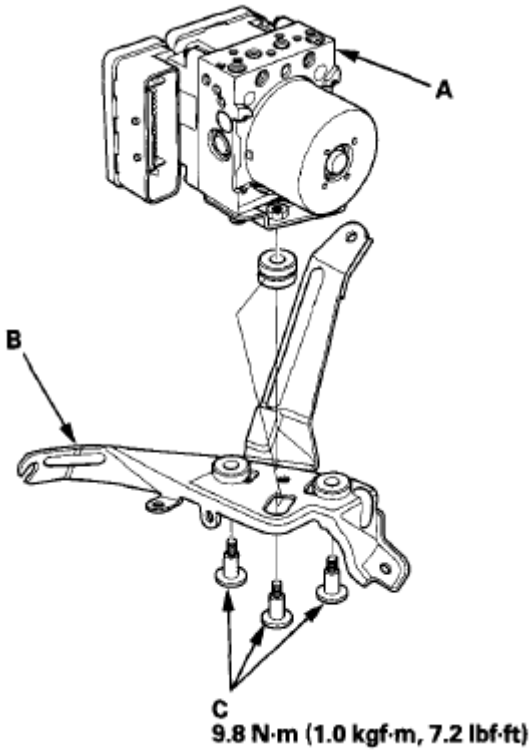


Fig. 85: Identifying Bracket, VSA Modulator-Control Unit And TORX Bolts With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Install the VSA modulator-control unit (A) with the bracket (B) to the body, then install the wire harness clips (C) and the VSA modulator-control unit bracket mounting bolts (D).

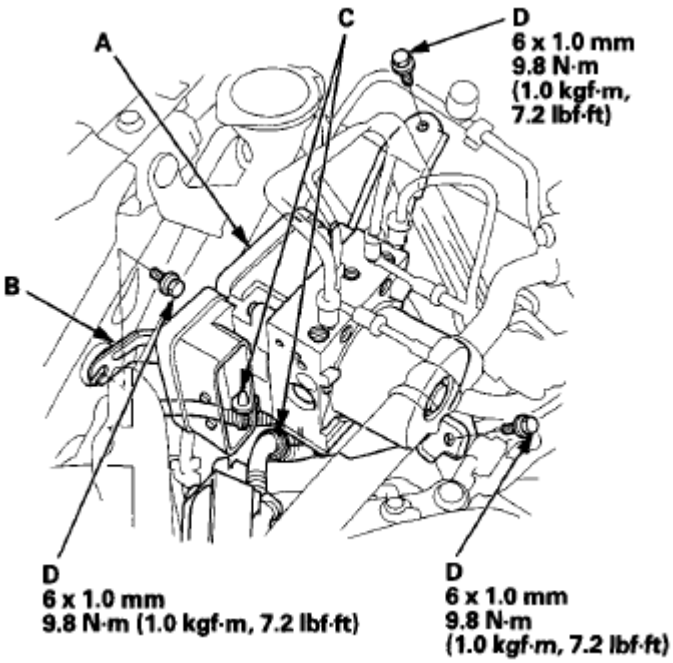


Fig. 86: Identifying Wire Harness Clips, VSA Modulator-Control Unit, Bracket And Mounting Bolts With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Align the connecting surface of the VSA modulator-control unit 47P connector (A) to the VSA modulator-control unit.

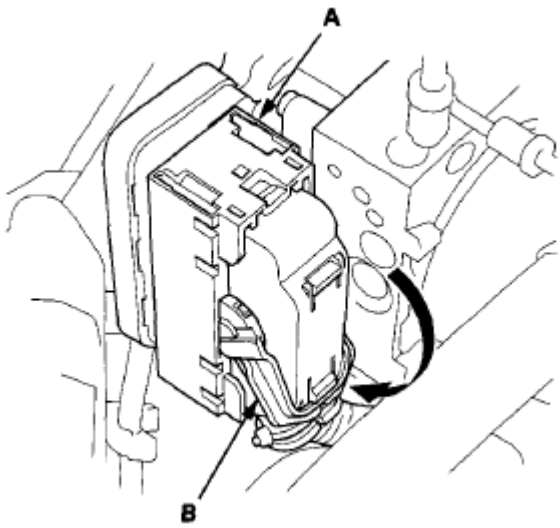


Fig. 87: Identifying VSA Modulator-Control Unit 47P Connector, Lever & VSA Modulator-Control Unit
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Pull down the lever (B) of the VSA modulator-control unit 47P connector, then confirm the connector is fully seated.
5. Connect the 10 mm brake lines and the 12 mm brake lines to the VSA modulator-control unit (A).

NOTE: Brake lines are connected to the master cylinder (B), the left-front (C), the right-front (D), the left-rear (E), and the right-rear (F) brake systems.

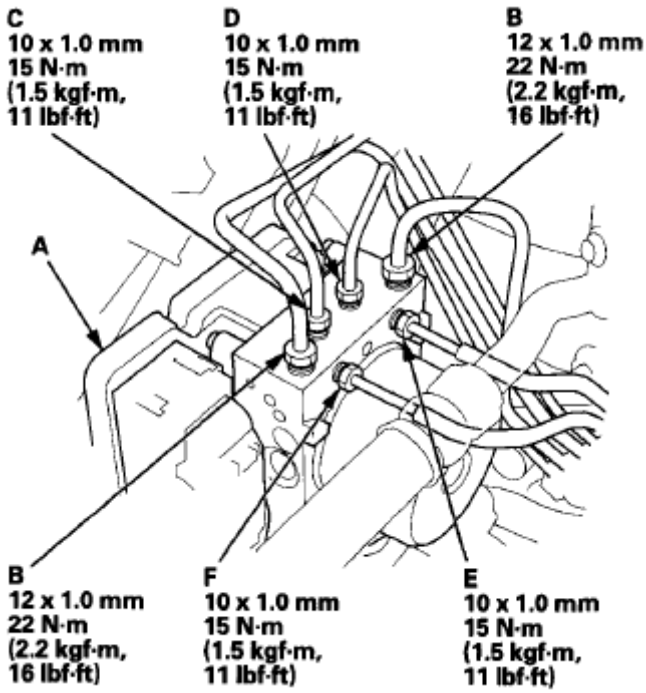


Fig. 88: Identifying Master Cylinder, Left-Front, Right-Front, Left-Rear And Right-Rear Of Brake Systems With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Install the suction line mounting bolt (A) to the bracket.

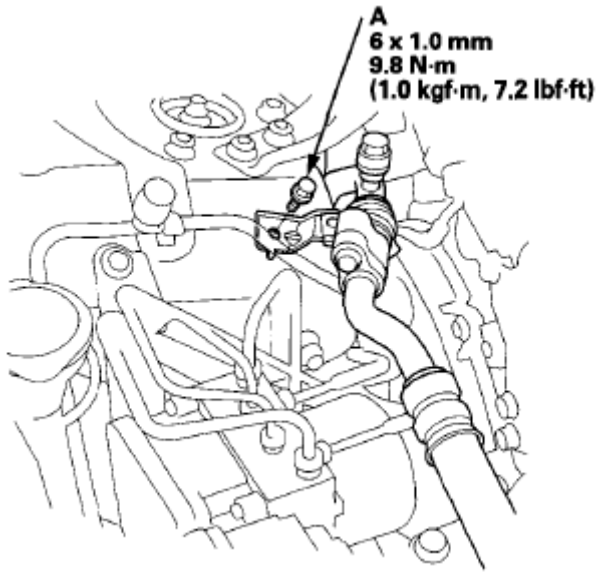


Fig. 89: Identifying Suction Line Mounting Bolt With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Bleed the brake system (see **BRAKE SYSTEM BLEEDING**).

8. Install the left and right engine compartment covers (A) (see **ENGINE COMPARTMENT COVER REPLACEMENT**).

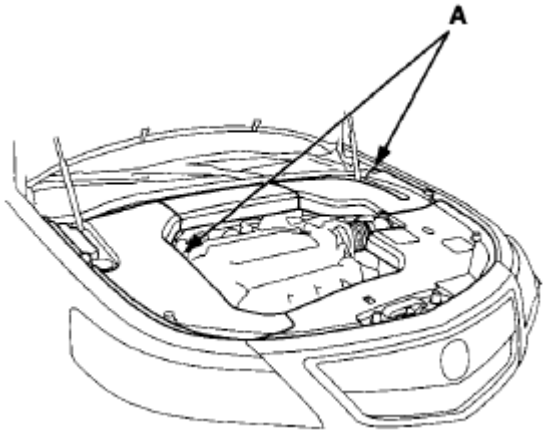


Fig. 90: Identifying Left And Right Engine Compartment Covers
Courtesy of AMERICAN HONDA MOTOR CO., INC.

9. Do the VSA modulator-control unit update (see **VSA MODULATOR-CONTROL UNIT UPDATE**).
10. Do the VSA sensor neutral position memorization procedure (see **VSA SENSOR NEUTRAL POSITION MEMORIZATION**).

WHEEL SPEED SENSOR REPLACEMENT

FRONT

1. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
2. Remove the front wheel.
3. Release the clamp (A), then disconnect the wheel speed sensor connector (B).

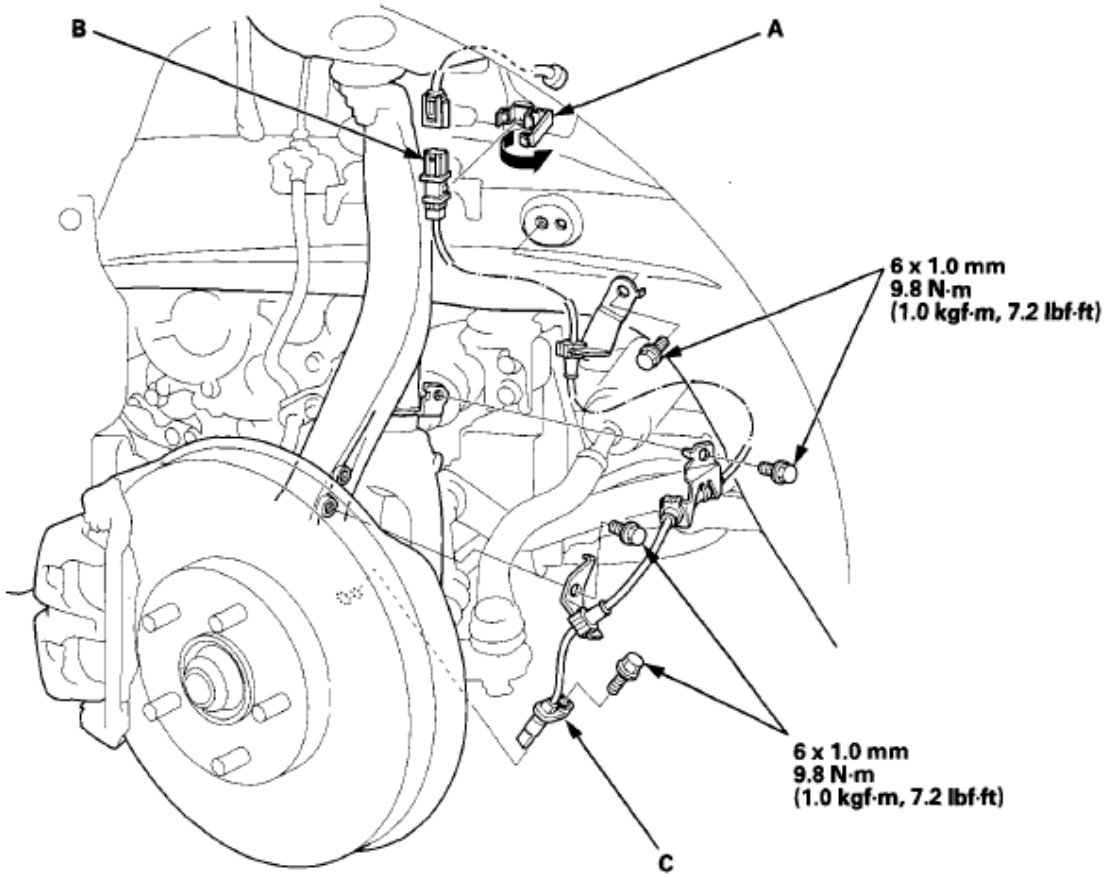


Fig. 91: Identifying Clamp, Wheel Speed Sensor Connector, Wheel Speed Sensor & Fasteners With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Remove the bolts and the wheel speed sensor (C).
5. Install the wheel speed sensor in the reverse order of removal, and note these items:
    - Do not twist the sensor wires.
    - If the wheel speed sensor comes in contact with the wheel bearing, it is faulty.
    - Make sure there is no debris in the sensor mounting hole.

REAR

1. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
2. Remove the rear wheel.
3. Release the clamp (A), then disconnect the wheel speed sensor connector (B).

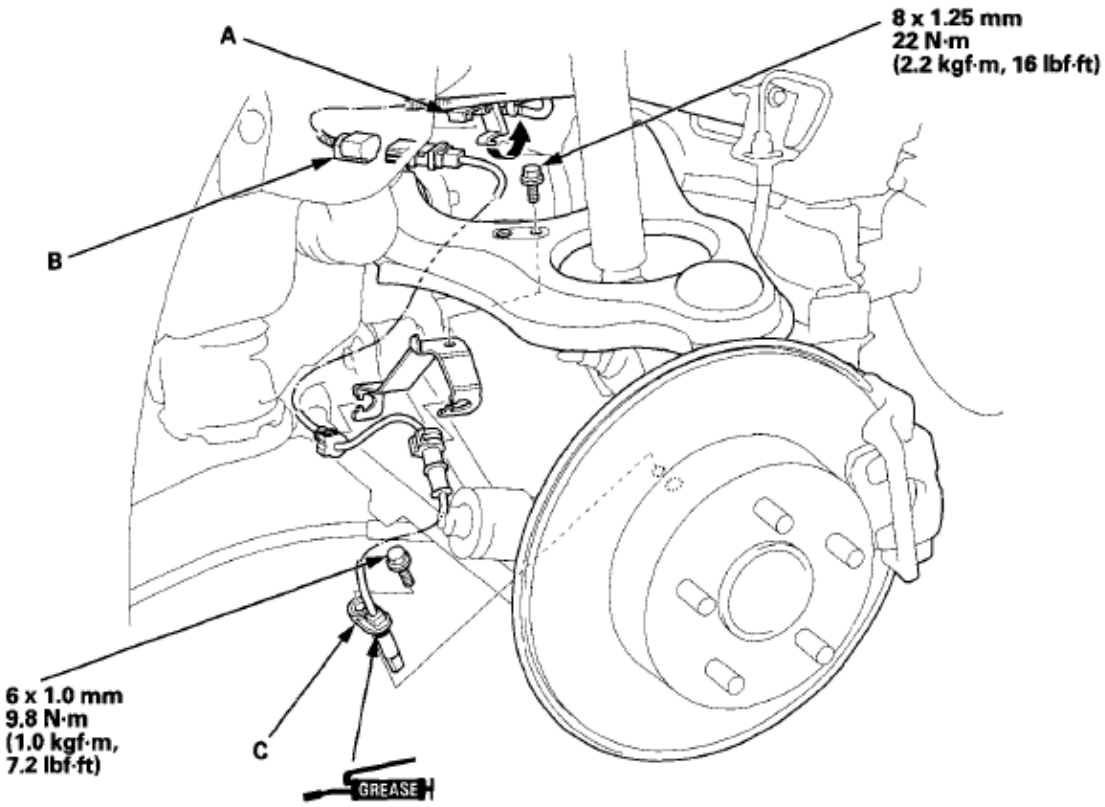


Fig. 92: Identifying Clamp, Wheel Speed Sensor Connector, Wheel Speed Sensor & Fasteners With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Remove the clamps, the bolt, and the wheel speed sensor (C).
5. Install the wheel speed sensor in the reverse order of removal, and note these items:
    - Do not twist the sensor wires.
    - If the wheel speed sensor comes in contact with the hub bearing unit, it is faulty.
    - Make sure there is no debris in the sensor mounting hole.
    - Lubricate the O-ring on the wheel speed sensor.

SUPPLEMENTAL RESTRAINT SYSTEM (SRS) (If body maintenance is required)

The Acura TL SRS includes a driver's airbag in the steering wheel hub, a front passenger's airbag in the dashboard above the glove box, front seat belt tensioners in the front seat belt retractors, side curtain airbags in the sides of the roof, and side airbags in the front seat-backs. Information necessary to safely service the SRS is included in this Service Information. Servicing, disassembling, or replacing these items requires special precautions and tools, and should be done by an authorized Acura dealer.

- To avoid rendering the SRS inoperative, which could lead to personal injury or death in the event of a severe frontal or side collision, all SRS service work should be done by an authorized Acura dealer.
- Improper service procedures, including incorrect removal and installation of the SRS, could lead to personal injury caused by unintentional deployment of the front airbags, side airbags, side curtain airbags,

and/or front seat belt tensioners.

- Do not bump or impact the SRS unit, front impact sensors, side impact sensors, or rear safing sensor, especially when the ignition switch is in ON (II), or the engine start/stop button is in the ON mode, for at least 3 minutes after the ignition switch is turned to LOCK (0), or after the engine start/stop button is pressed to select the OFF mode; otherwise, the system may fail in a collision, or the airbags or the tensioners may deploy.
- SRS electrical connectors are identified by yellow color coding. Related components are located in the steering column, center console, dashboard, dashboard undercover, in the dashboard above the glove box, in the front seats, in the roof side, and around the floor. Do not use electrical test equipment on these circuits.

2012 DRIVELINE/AXLES

Driveline/Axle - TL

SPECIAL TOOLS

Ref.No.	Tool Number	Description	Qty
①	07746-0010300	Bearing Driver Attachment, 42 x 47 mm	1
②	07746-0010400	Bearing Driver Attachment, 52 x 55 mm	1
③	07749-0010000	Driver Handle, 15 x 135L	1
④	07947-4630100	Fork Seal Driver, 39.2 x 49.5 x 15 mm	1
⑤	07965-SD90100	Support Base	1
⑥	07AAD-S3VA000	Driveshaft Remover	1
⑦	07AAE-SJAA100	Ball Joint Thread Protector, 14 mm	1
⑧	07LAD-PW50601	Installer Attachment 40 mm	1
⑨	07LAF-SM40300	Support Base Attachment	1
⑩	07MAC-SL0A202	Ball Joint Remover, 28 mm	1
⑪	07TMD-MAC0100	Fork Seal Driver, 46.2 mm	1
⑫	07XAC-001020A	Threaded Adapter, 24 x 1.5 mm	1
⑬	07XAC-001030A	Threaded Adapter, 26 x 1.5 mm	1

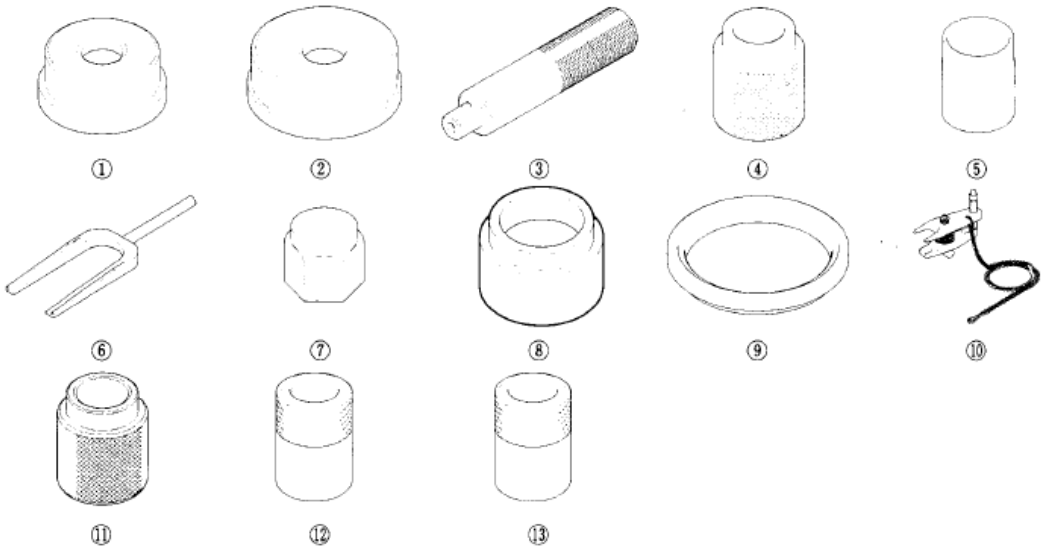


Fig. 1: Identifying Driveline/Axle Special Tools
Courtesy of AMERICAN HONDA MOTOR CO., INC.

COMPONENT LOCATION INDEX

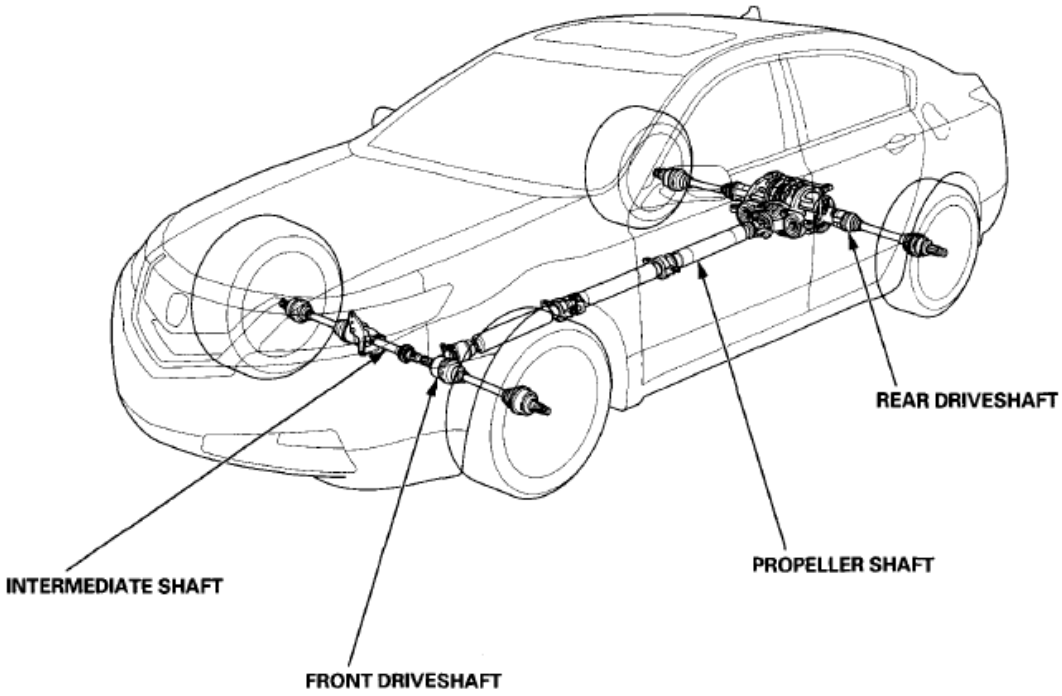


Fig. 2: Driveline/Axle Components Location
Courtesy of AMERICAN HONDA MOTOR CO., INC.

DRIVESHAFT INSPECTION

NOTE: Make sure to use silicone-type (gray) boot on the right front driveshaft inboard joint.

1. Check the inboard boot (A) and the outboard boot (B) on the driveshaft (C) for cracks, damage, leaking grease, and loose boot bands (D). If any damage is found, replace the boot and the boot bands.

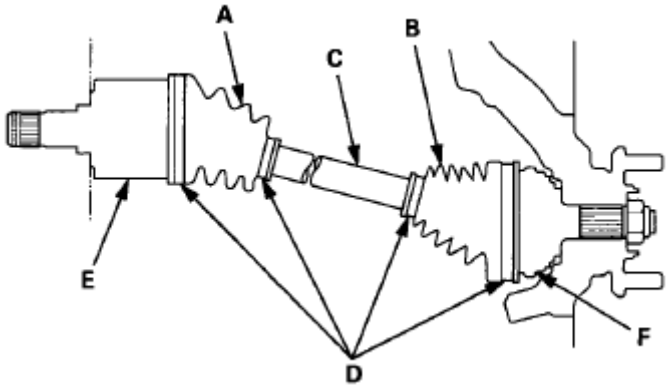


Fig. 3: Identifying Inboard And Outboard Boot, Driveshaft, Loose Boot Bands, Inboard And

Outboard Joint
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Check the driveshaft for cracks and damage. If any damage is found, replace the driveshaft.
3. Check the inboard joint (E) and the outboard joint (F) for cracks and damage. If any damage is found, replace the inboard joint or the outboard joint as an assembly.
4. Hold the inboard joint and turn the wheel by hand, then make sure the joint is not excessively loose. If necessary, replace the inboard joint or the outboard joint as an assembly.

FRONT DRIVESHAFT REMOVAL

Special Tools Required

- Ball Joint Thread Protector, 14 mm 07AAE-SJAA100
- Ball Joint Remover, 28 mm 07MAC-SL0A202

1. Raise and support the vehicle (see **LIFT AND SUPPORT POINTS**).
2. Remove the front wheel.
3. Pry up the stake (A) on the spindle nut (B), then remove the nut.

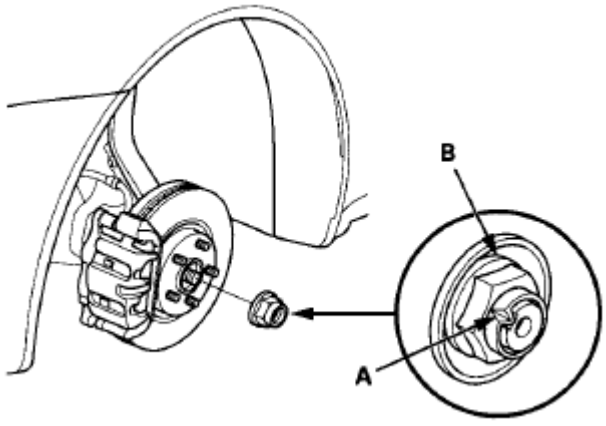


Fig. 4: Identifying Stake And Spindle Nut
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Drain the transmission fluid, then reinstall the drain plug with a new sealing washer:
   - Manual transmission (see **TRANSMISSION FLUID INSPECTION AND REPLACEMENT**)
   - Automatic transmission (see **ATF REPLACEMENT**)
5. Hold the stabilizer joint pin (A) using a hex wrench (B), and remove the flange nut (C). Separate the front stabilizer link (D) from the lower arm.

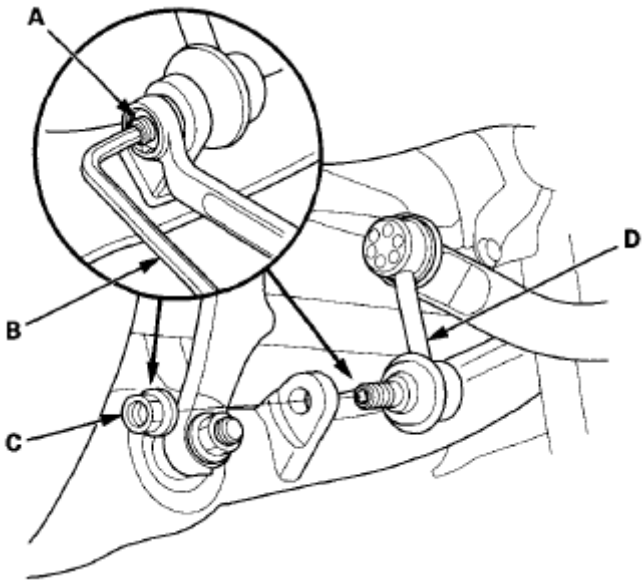


Fig. 5: Identifying Stabilizer Joint Pin, Hex Wrench, Flange Nut And Front Stabilizer Link
Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Remove the damper fork mounting nut (A), the damper fork mounting bolt (B), and the damper pinch bolt (C), then remove the damper fork (D).

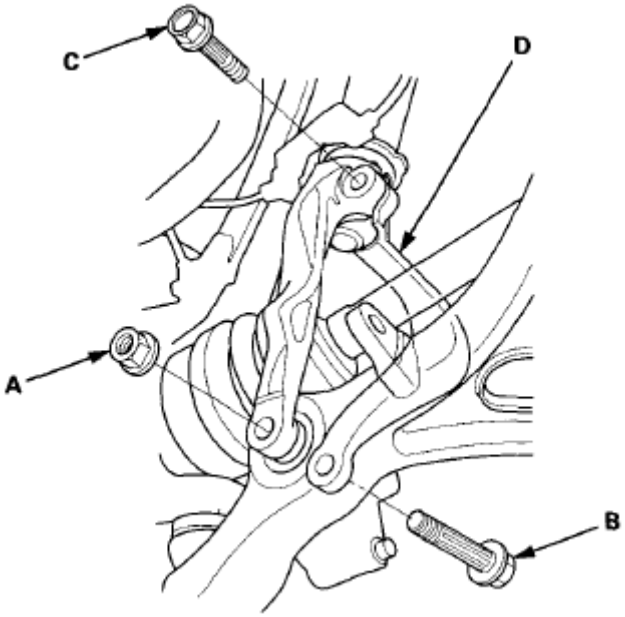


Fig. 6: Identifying Damper Fork Mounting Nut, Bolt, Damper Pinch Bolt And Damper Fork
Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Remove the cotter pin (A) from the knuckle ball joint, then remove the castle nut (B). Separate the ball joint from the lower arm (C) using the 28 mm ball joint remover (D) and the 14 mm ball joint thread protector (E) (see **BALL JOINT BOOT INSPECTION/REPLACEMENT**).

NOTE:

- **Be careful not to damage the ball joint boot when installing the remover.**
- **Do not force or hammer on the lower arm, or pry between the lower arm and the knuckle. You could damage the ball joint.**

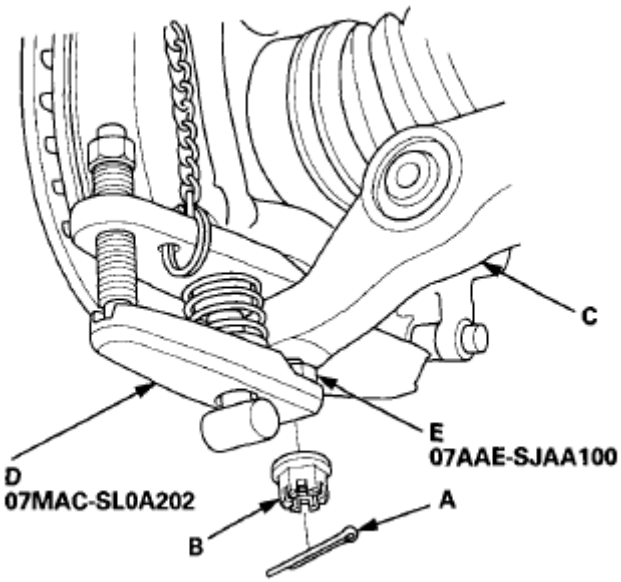


Fig. 7: Identifying Cotter Pin, Castle Nut, Lower Arm, Ball Joint Remover And Thread Protector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

8. Pull the knuckle outward, and separate the outboard joint from the front hub using a soft face hammer.

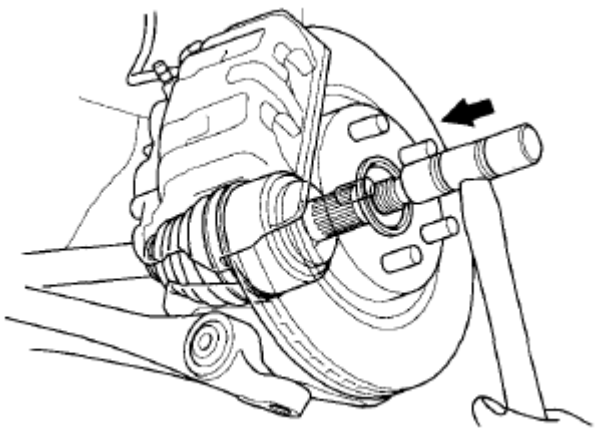


Fig. 8: Pulling Knuckle Outward And Separate Outboard Joint From Front Hub Using Soft Face Hammer
Courtesy of AMERICAN HONDA MOTOR CO., INC.

9. Remove exhaust pipe A.
   - Without SH-AWD (see **EXHAUST PIPE AND MUFFLER REPLACEMENT**)

- With SH-AWD (see **J37A4 ENGINE (WITH SH-AWD)**)

10. Left driveshaft: Pry the inboard joint (A) from the differential using a pry bar. Remove the driveshaft as an assembly.

NOTE:

- **Do not pull on the driveshaft (B), or the inboard joint may come apart. Pull the inboard joint straight out to avoid damaging the oil seal.**
- **Be careful not to damage the oil seal or the end of the inboard joint with the pry bar.**

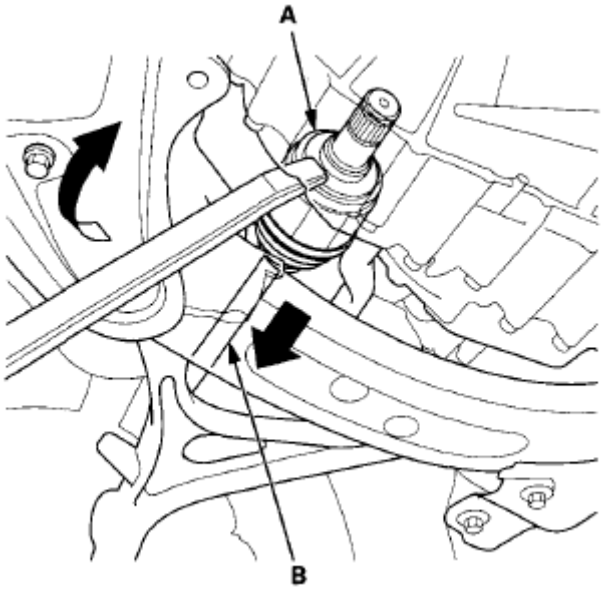


Fig. 9: Prying Inboard Joint From Differential Using Pry Bar
Courtesy of AMERICAN HONDA MOTOR CO., INC.

11. Right driveshaft: Drive the inboard joint (A) off of the intermediate shaft using a drift punch and a hammer. Remove the driveshaft as an assembly.

NOTE: Do not pull on the driveshaft (B), or the inboard joint may come apart.

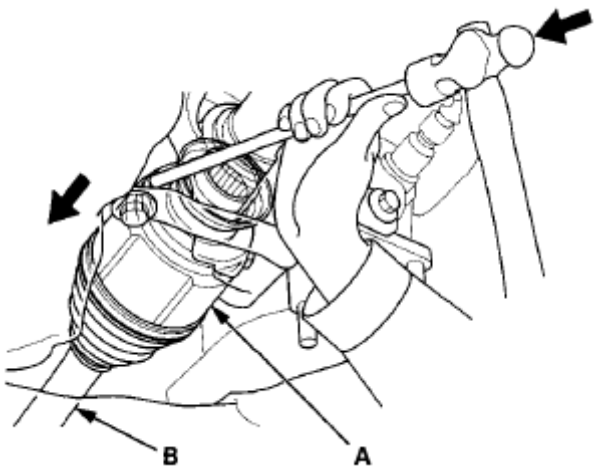


Fig. 10: Driving Inboard Joint Off Of Intermediate Shaft Using Drift Punch And Hammer
Courtesy of AMERICAN HONDA MOTOR CO., INC.

12. Remove the set ring (A) from the left driveshaft inboard joint.

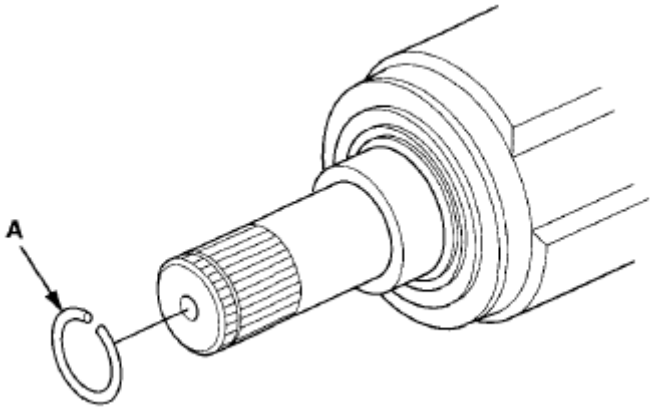


Fig. 11: Identifying Set Ring
Courtesy of AMERICAN HONDA MOTOR CO., INC.

13. Remove the set ring (A) from the intermediate shaft.

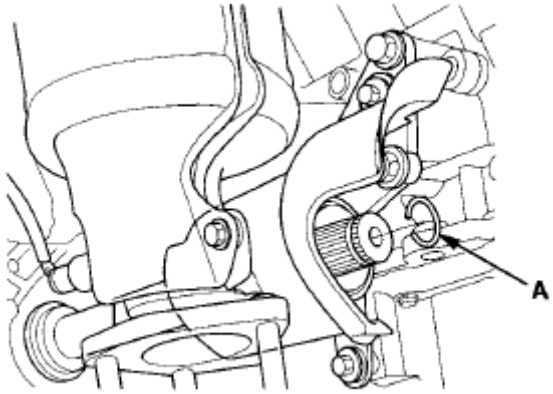


Fig. 12: Identifying Set Ring
Courtesy of AMERICAN HONDA MOTOR CO., INC.

FRONT DRIVESHAFT DISASSEMBLY

Special Tools Required

- Threaded Adapter, 26 x 1.5 mm 07XAC-001030A
- Slide Hammer 5/8"-18 UNF, commercially available
- Bearing Puller, commercially available
- Boot Band Pliers, commercially available

INBOARD JOINT SIDE

1. Remove the boot bands. Be careful not to damage the boot.
    - If the boot band is a welded type (A), cut the boot band.
    - If the boot band is a double loop type (B), lift up the band end (C), and push it into the clip (D).
    - If the boot band is a low profile type (E), pinch the boot band using commercially available boot band pliers (F).

Welded type

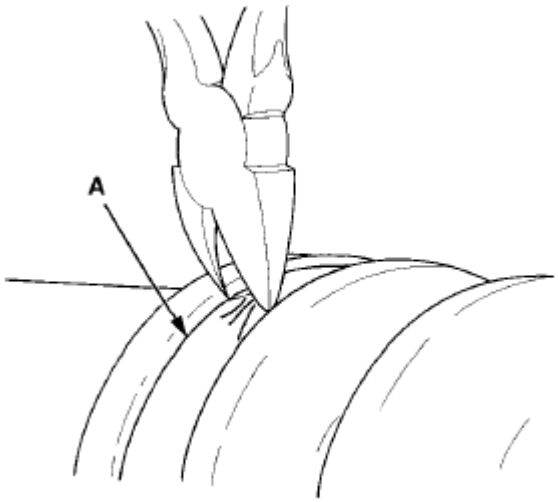


Fig. 13: Removing Boot Band - Welded Type
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Double loop type

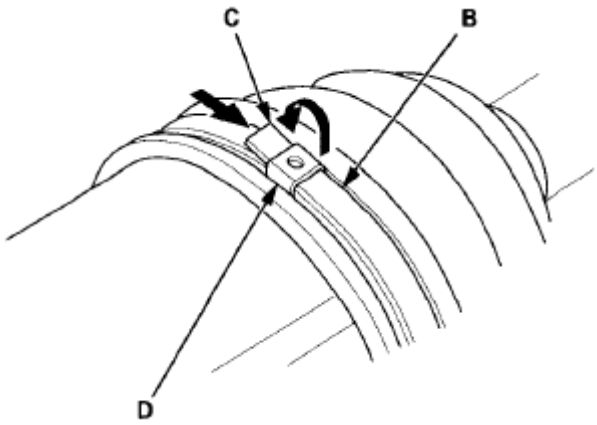


Fig. 14: Removing Boot Band - Double Loop Type
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Low profile type

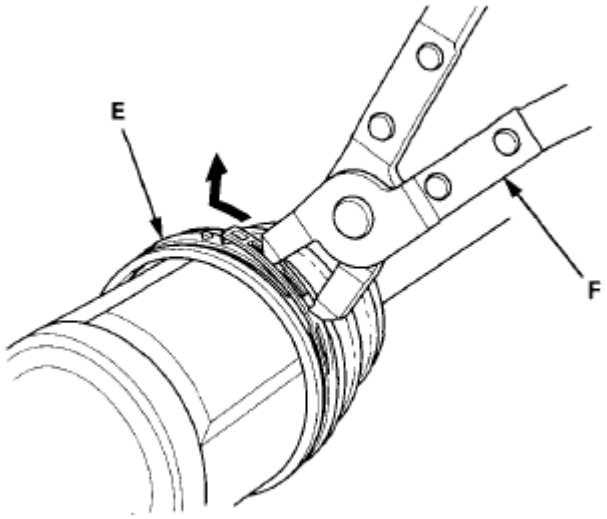


Fig. 15: Removing Boot Band - Low Profile Type
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Make marks (A) on each roller (B) and the inboard joint (C) to identify the locations of the rollers to the grooves in the inboard joint.

NOTE: Do not engrave or scribe any marks on the rolling surface.

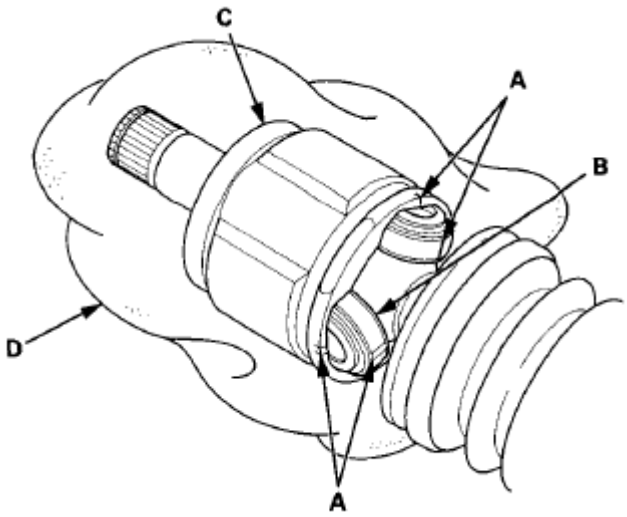


Fig. 16: Identifying Inboard Joint, Roller And Marks On Rollers
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Remove the inboard joint on a clean shop towel (D). Be careful not to drop the rollers when separating them from the inboard joint.
4. Remove the spider.
   - For the except right side with M/T, go to step 5.
   - For the right side with M/T, go to step 9.
5. Make marks (A) on the spider (B) that match the marks on the rollers, then remove the rollers.

NOTE: Do not engrave or scribe any marks on the rolling surface.

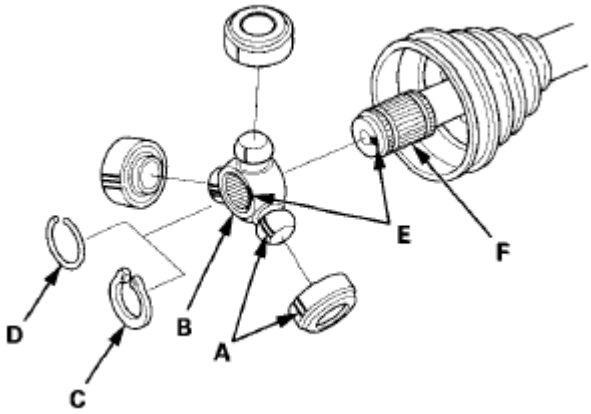


Fig. 17: Identifying Driveshaft, Snap Ring, Circlip, Spider And Marks On Spider
Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. M/T model: Remove the snap ring (C). A/T model: Remove the circlip (D).
7. Make marks (E) on the spider and the driveshaft (F) to identify the position of the spider on the shaft.
8. Remove the spider, then go to step 12.

NOTE: If necessary, use a commercially available bearing puller while being careful not to damage the spider.

9. Remove the snap ring (A).

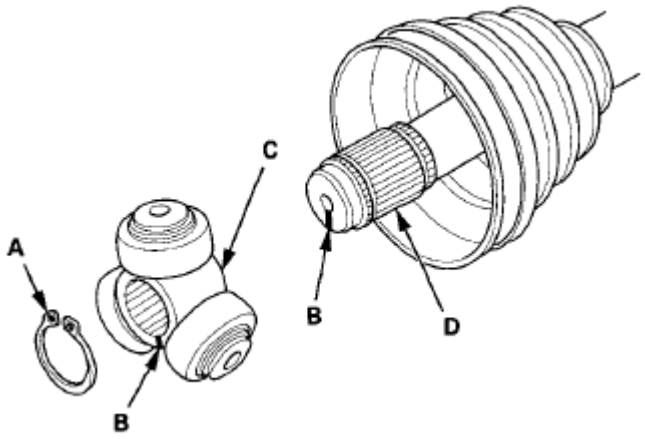


Fig. 18: Identifying Driveshaft, Snap Ring, Spider And Marks On Spider
Courtesy of AMERICAN HONDA MOTOR CO., INC.

10. Make marks (B) on the spider (C) and the driveshaft (D) to identify the position of the spider on the shaft.
11. Remove the spider.

NOTE: If necessary, use a commercially available bearing puller while being careful not to damage the spider.

12. Wrap the splines on the driveshaft with vinyl tape (A) to prevent damaging the inboard boot.

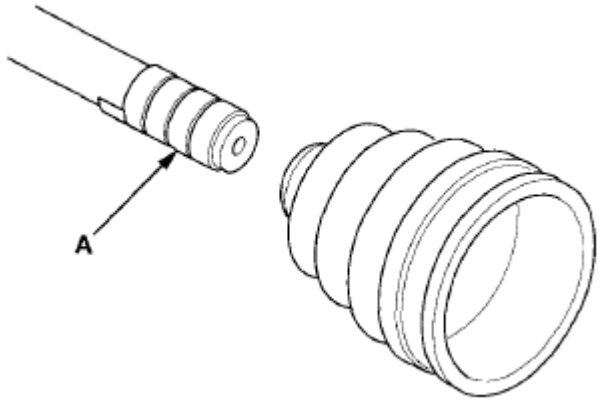


Fig. 19: Identifying Vinyl Tape
Courtesy of AMERICAN HONDA MOTOR CO., INC.

13. Remove the inboard boot. Be careful not to damage the boot.
14. Remove the vinyl tape.

OUTBOARD JOINT SIDE

1. Remove the ear clamp bands (A). Lift up the three tabs (B) using a flat-tipped screwdriver, then release the band. Be careful not to damage the boot.

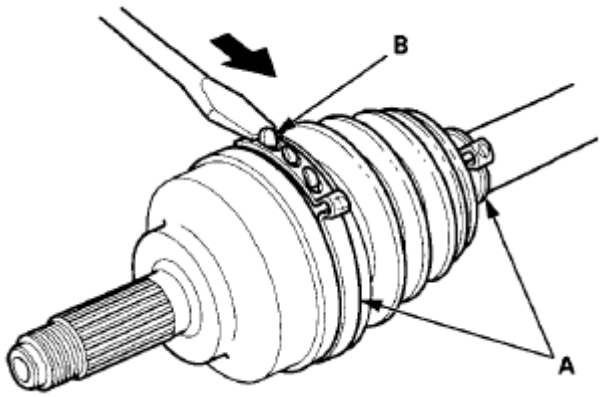


Fig. 20: Lifting Up Three Tabs Using Flat-Tipped Screwdriver And Releasing Ear Clamp Band
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Slide the outboard boot (A) partially toward the inboard joint side. Be careful not to damage the boot.

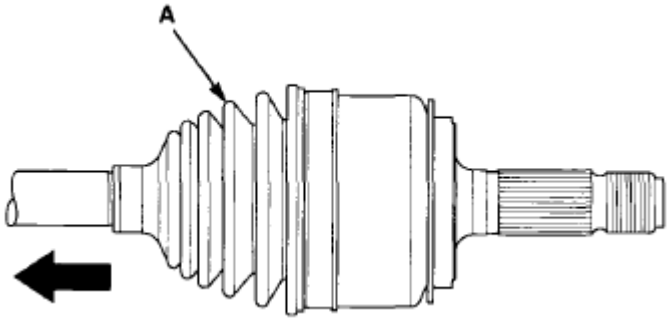


Fig. 21: Sliding Outboard Boot Partially Toward Inboard Joint Side
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Wipe off the grease to expose the driveshaft and the outboard joint inner race.
4. Make a mark (A) on the driveshaft (B) at the same level as the outboard joint end (C).

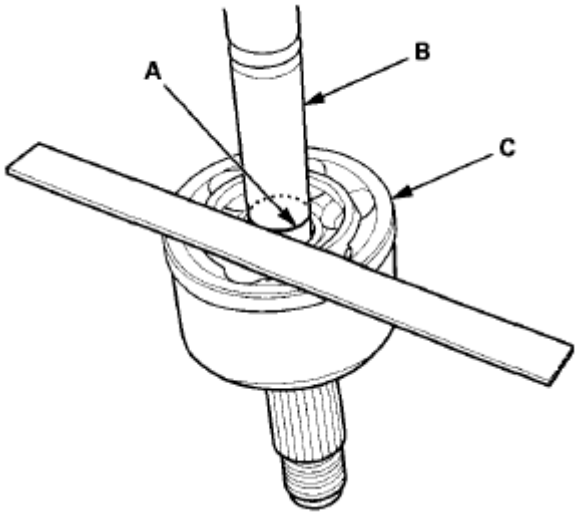


Fig. 22: Making Mark On Driveshaft At Same Level As Outboard Joint End
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Securely clamp the driveshaft in a bench vise with a shop towel wrapped around the driveshaft.
6. Remove the outboard joint (A) using the 26 x 1.5 mm threaded adapter (B) and a commercially available 5/8"-18 UNF slide hammer (C).

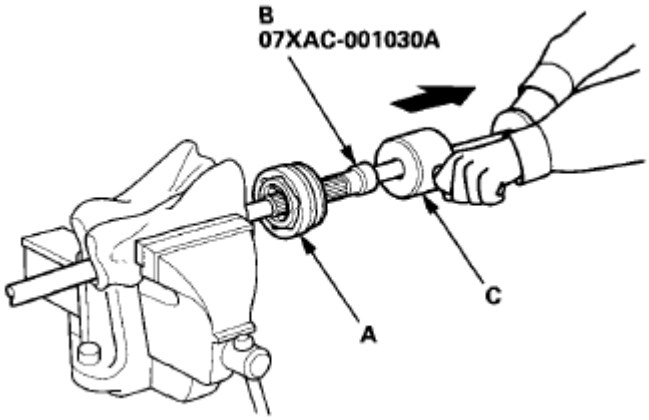


Fig. 23: Removing Outboard Joint Using Threaded Adapter And UNF Slide Hammer
Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Remove the driveshaft from the bench vise.
8. Remove the stop ring (A) from the driveshaft.

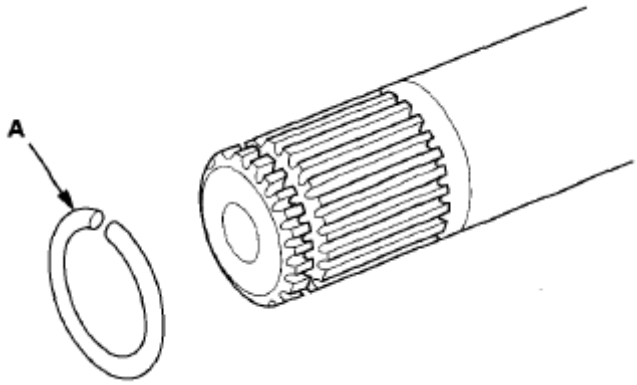


Fig. 24: Identifying Stop Ring
Courtesy of AMERICAN HONDA MOTOR CO., INC.

9. Wrap the splines on the driveshaft with vinyl tape (A) to prevent damaging the outboard boot.

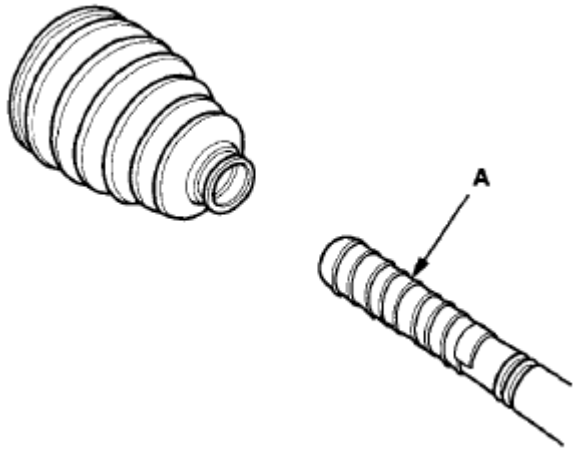


Fig. 25: Identifying Vinyl Tape
Courtesy of AMERICAN HONDA MOTOR CO., INC.

10. Remove the outboard boot. Be careful not to damage the boot.
11. Remove the vinyl tape.

FRONT DRIVESHAFT REASSEMBLY

EXPLODED VIEW (LEFT SIDE)

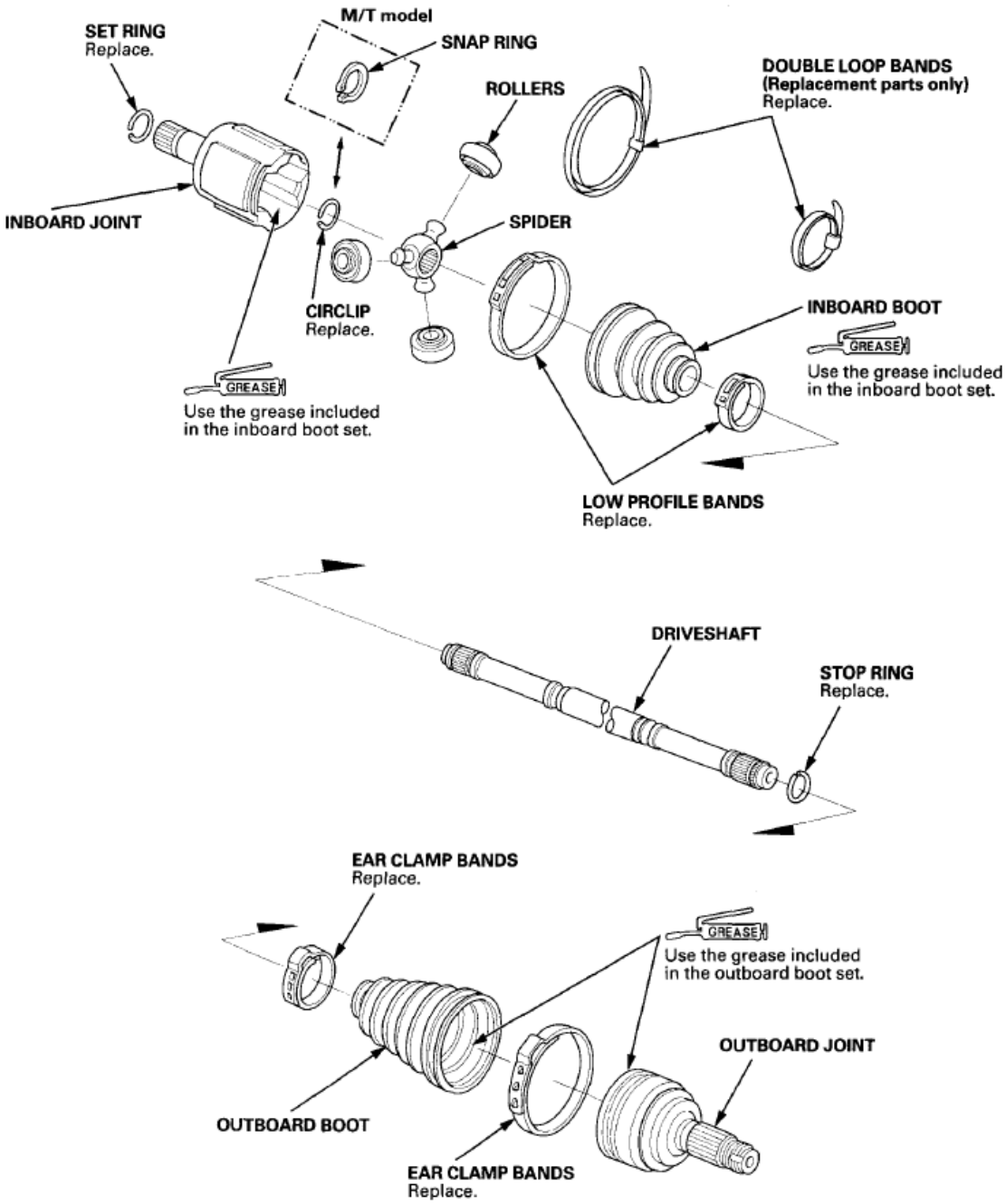


Fig. 26: Exploded View Of Front Driveshaft Assembly (Left Side)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

EXPLODED VIEW (RIGHT SIDE)

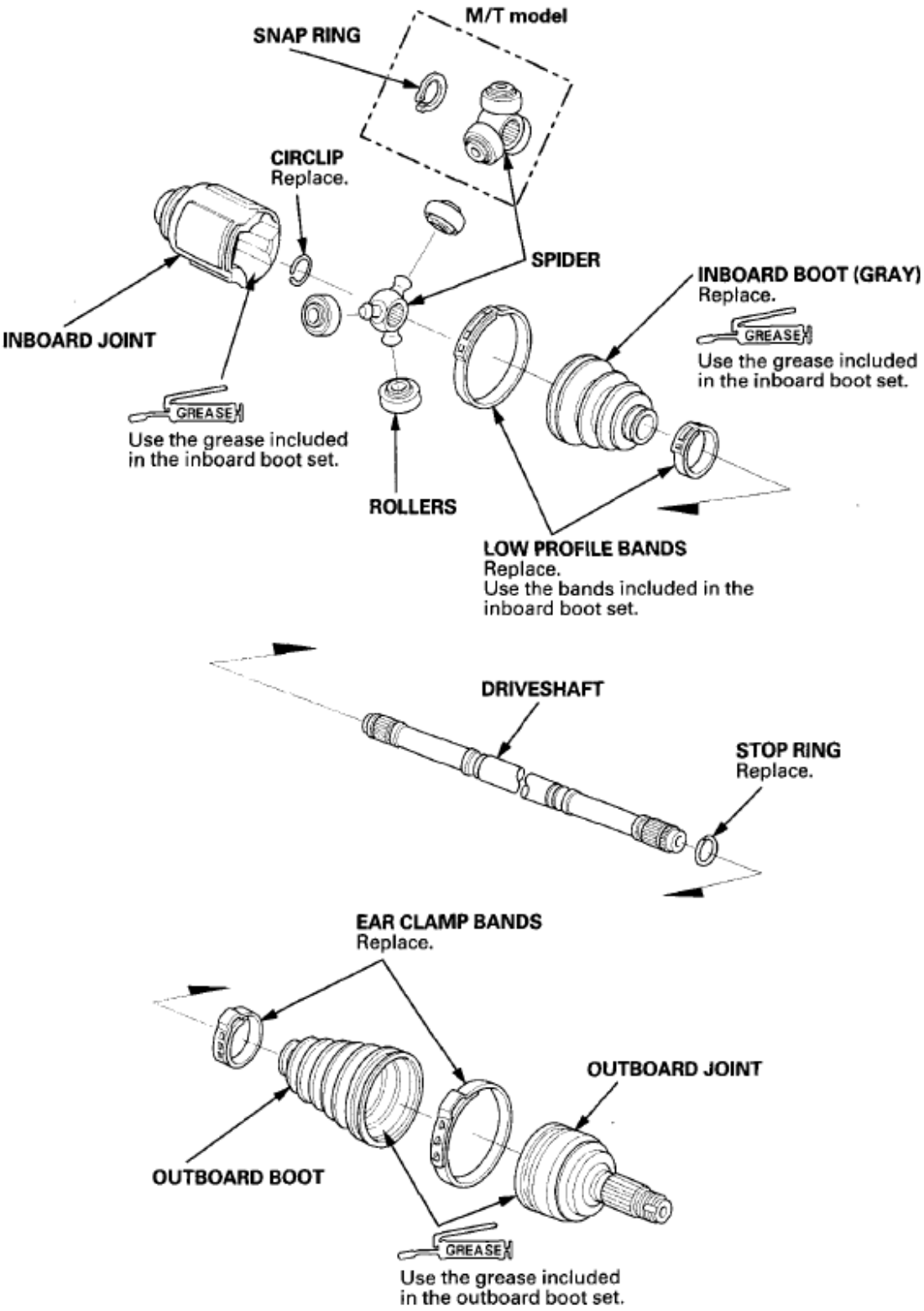


Fig. 27: Exploded View Of Front Driveshaft Assembly (Right Side)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Special Tools Required

- Boot Band Tool KD-3191 or equivalent, commercially available
- Boot Band Clamp Tool Kent-Moore J-35910 or equivalent, commercially available
- Boot Band Pliers, commercially available

NOTE:

- **Refer to the EXPLODED VIEW, as needed, during this procedure.**
- **Make sure to use silicone-type (gray) boot on the right front driveshaft inboard joint.**
  - Do not reuse the removed right front driveshaft inboard boot.
  - Make sure to use the boot bands and the grease included in the inboard boot set or the inboard joint set.

INBOARD JOINT SIDE

1. Wrap the splines on the driveshaft with vinyl tape (A) to prevent damaging the inboard boot.

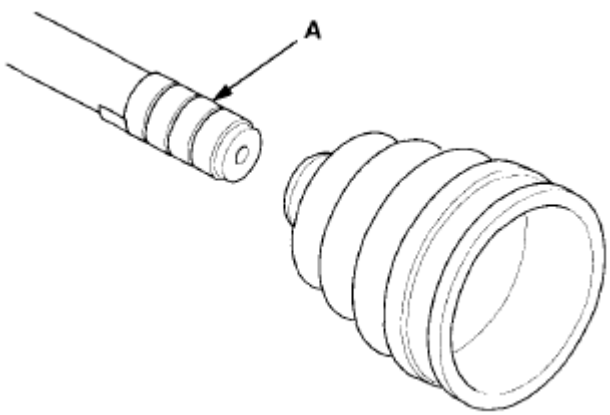


Fig. 28: Identifying Vinyl Tape
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Install the inboard boot onto the driveshaft, then remove the vinyl tape. Be careful not to damage the inboard boot.

NOTE: Do not reuse the removed right front driveshaft inboard boot.

3. Install the spider.
   - For the except right side with M/T, go to step 4.
   - For the right side with M/T, go to step 7.
4. Install the spider (A) onto the driveshaft by aligning the marks (B) you made on the spider and the end of the driveshaft.

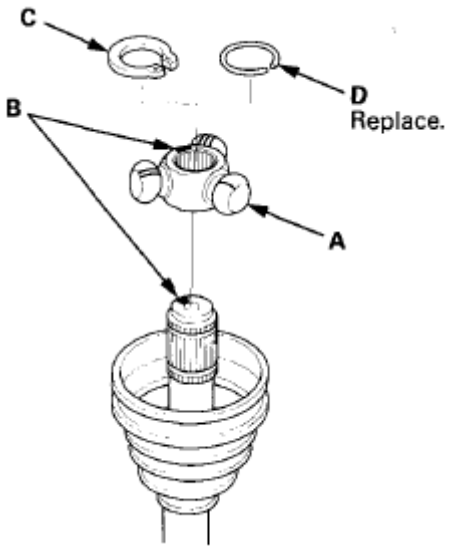


Fig. 29: Identifying Spider, Marks, Snap Ring And Circlip
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. M/T model:

   Install the snap ring (C) into the driveshaft groove. A/T model:

   Install a new circlip (D) into the driveshaft groove.

   NOTE: Always rotate the circlip in its groove to make sure it is fully seated.

6. Fit the rollers (A) onto the spider (B) as shown, then go to step 9.

   NOTE:
   - **Reinstall the rollers in their original positions on the spider by aligning the marks (C) you made.**
   - **Hold the driveshaft pointed up to prevent the rollers from falling off.**

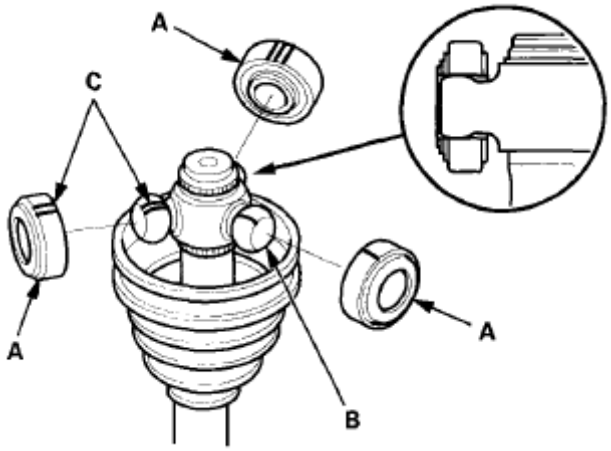


Fig. 30: Identifying Rollers, Spider And Marks
Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Install the spider (A) onto the driveshaft by aligning the marks (B) you made on the spider and the end of the driveshaft.

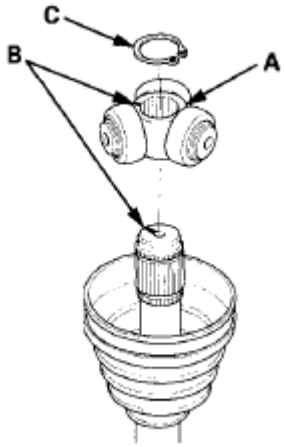


Fig. 31: Identifying Snap Ring, Spider And Marks
Courtesy of AMERICAN HONDA MOTOR CO., INC.

8. Install the snap ring (C).
9. Pack the inboard joint with the joint grease included in the new inboard boot set.

Grease quantity

Inboard joint:

Model	Driveshaft	Quantity
M/T	Left	215- 235 g (7.6- 8.3 oz)
	Right	190- 210g (6.7- 7.4 oz)
A/T	Left	110- 120g (3.9- 4.2 oz)
	Right	



Fig. 32: Greasing Inboard Boot Set
Courtesy of AMERICAN HONDA MOTOR CO., INC.

10. Fit the inboard joint onto the driveshaft, and note these items:
    - Reinstall the inboard joint onto the driveshaft by aligning the marks (A) you made on the inboard joint and the rollers.
    - Hold the driveshaft so the inboard joint is pointing up to prevent it from falling off.

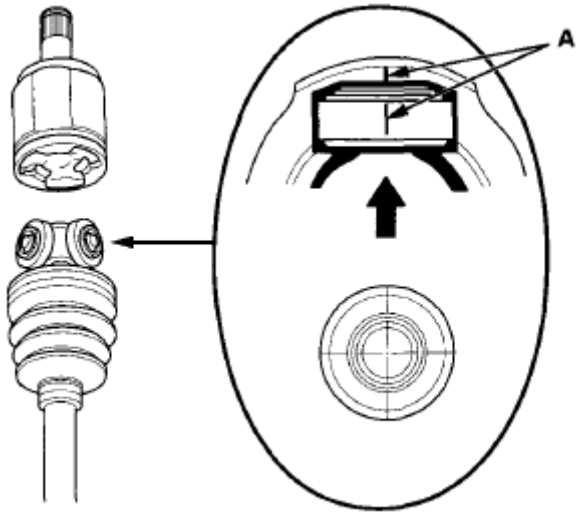


Fig. 33: Fitting Inboard Joint Onto Driveshaft
Courtesy of AMERICAN HONDA MOTOR CO., INC.

11. Fit the boot ends (A) onto the driveshaft (B) and the inboard joint (C).

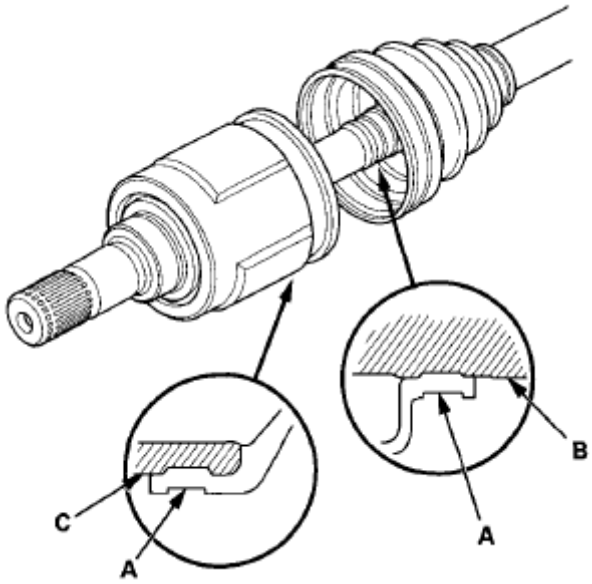


Fig. 34: Identifying Boot Ends, Driveshaft And Inboard Joint
Courtesy of AMERICAN HONDA MOTOR CO., INC.

12. Adjust the length (A) of the driveshafts in the figure as shown, then adjust the boots to halfway between full compression and full extension. Bleed excess air from the boots by inserting a flat-tipped screwdriver between the boot and the joint.

Left driveshaft

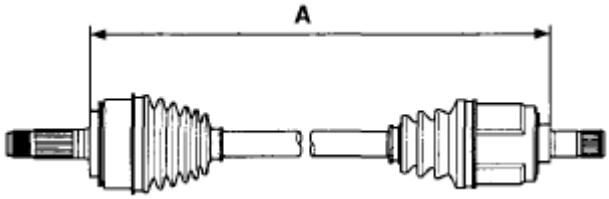


Fig. 35: Adjusting Length Of Driveshafts - Left Driveshaft
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Right driveshaft

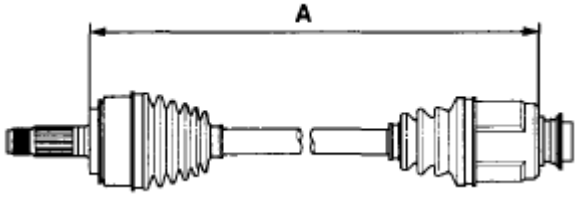


Fig. 36: Adjusting Length Of Driveshafts - Right Driveshaft
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Model	Driveshaft	Specified length (A)
M/T	Left	569.5- 574.5 mm (22.42- 22.62 in)
	Right	527.0- 532.0 mm (20.75- 20.94 in)
A/T	Left	560.0- 565.0 mm (22.05- 22.24 in)
	Right	533.0- 538.0 mm (20.98- 21.18 in)

13. Install new boot bands.

NOTE: Right side is only the low profile type.

- For the double loop type, go to step 14.
- For the low profile type, go to step 23.

14. Fit the boot ends onto the driveshaft and the inboard joint, then install a new double loop band (A) onto the boot (B).

NOTE: Pass the end of the double loop band through the clip (C) twice in the direction of the forward rotation of the driveshaft.

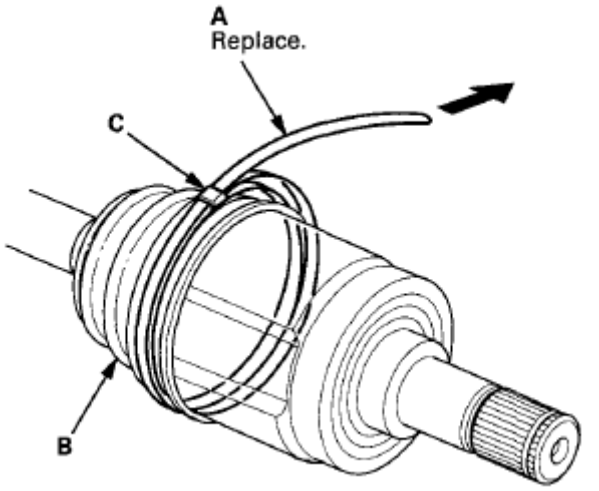


Fig. 37: Installing Double Loop Band Onto Boot
Courtesy of AMERICAN HONDA MOTOR CO., INC.

15. Pull up the slack in the band by hand.
16. Mark a line (A) on the band 10- 14 mm (0.4- 0.6 in) from the clip (B).

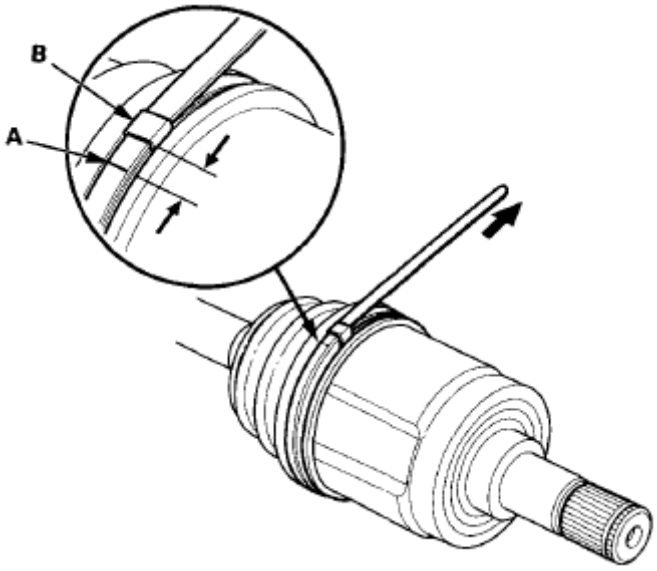


Fig. 38: Marking Line On Band From Clip
Courtesy of AMERICAN HONDA MOTOR CO., INC.

17. Thread the free end of the band through the nose section of the commercially available boot band tool (KD-3191 or equivalent) (A), and into the slot on the winding mandrel (B).

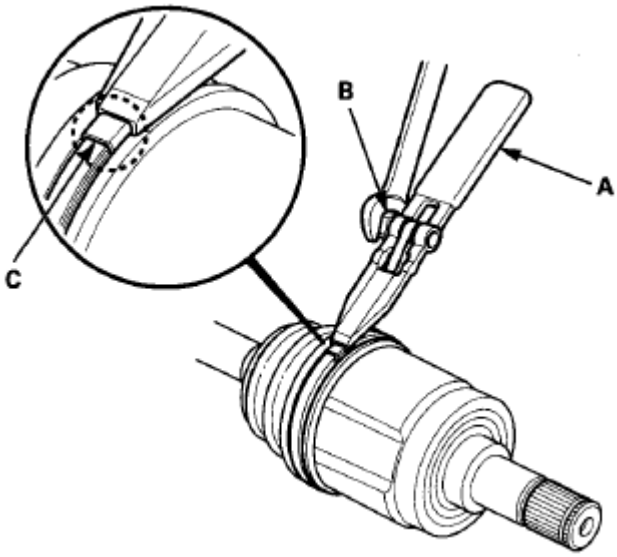


Fig. 39: Threading Free End Of Band Through Nose Section Of Boot Band Tool And Into Slot On Winding Mandrel
Courtesy of AMERICAN HONDA MOTOR CO., INC.

18. Using a wrench on the winding mandrel of the boot band tool, tighten the band until the marked line (C) on the band meets the edge of the clip.
19. Lift up the boot band tool to bend the free end of the band 90 degrees to the clip. Center-punch the clip, then fold over the remaining tail onto the clip.

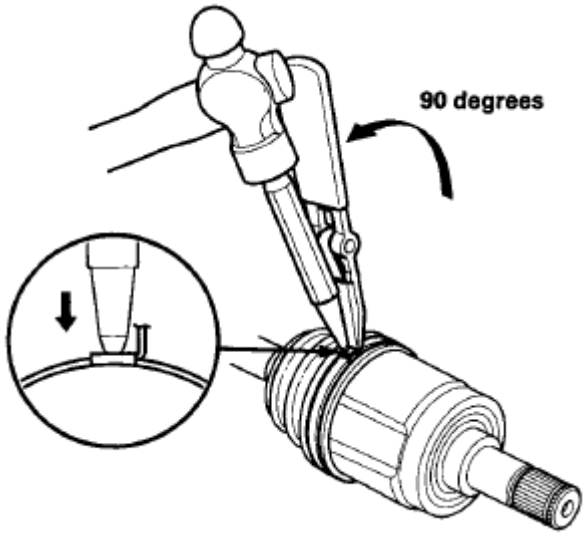


Fig. 40: Lifting Up Boot Band Tool To Bend Free End Of Band 90 Degrees To Clip
Courtesy of AMERICAN HONDA MOTOR CO., INC.

20. Unwind the boot band tool, and cut off the excess free end of the band to leave a 5- 10 mm (0.2- 0.4 in) tail protruding from the clip.

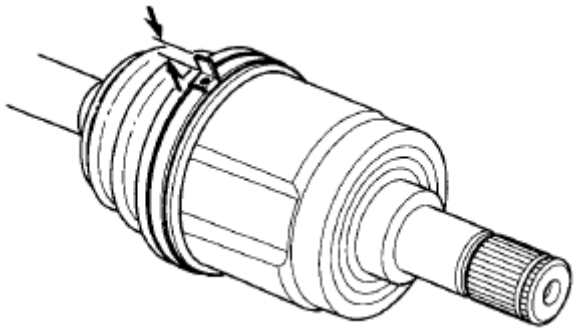


Fig. 41: Identifying Tail Protruding From Clip
Courtesy of AMERICAN HONDA MOTOR CO., INC.

21. Bend the band end (A) by tapping it down using a hammer.

NOTE:

- **Make sure the band and the clip do not interfere with anything on the vehicle, and the band does not move.**
- **Clean any grease remaining on the surrounding surfaces.**

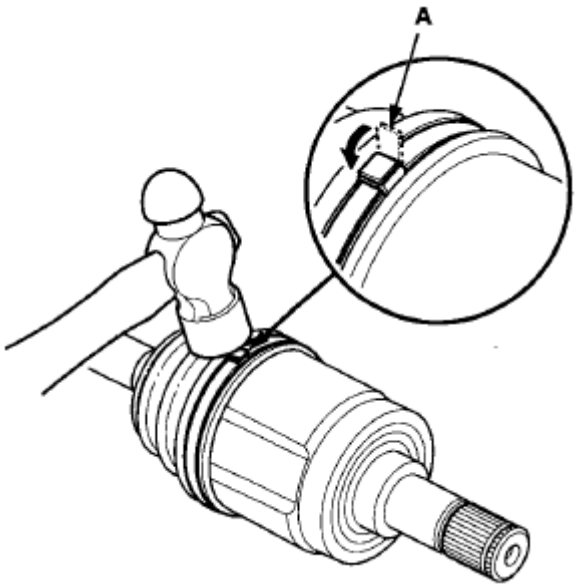


Fig. 42: Bending Band End By Tapping It Down Using Hammer
Courtesy of AMERICAN HONDA MOTOR CO., INC.

22. Repeat steps 14 through 21 for the band on the other end of the boot.
23. Install a new low profile band (A) onto the boot (B), then hook the tab (C) of the band.

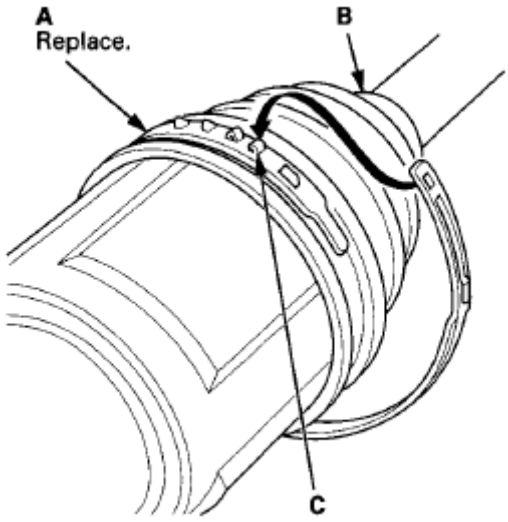


Fig. 43: Hooking Tab Of Boot Band
Courtesy of AMERICAN HONDA MOTOR CO., INC.

24. Close the hook portion of the band using commercially available boot band pliers (A), then hook the tabs (B) of the band.

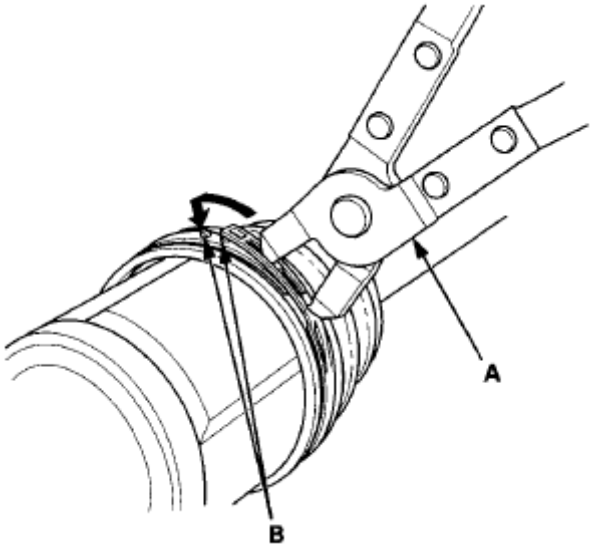


Fig. 44: Closing Hook Portion Of Band Using Boot Band Pliers And Hooking Tabs Of Band
Courtesy of AMERICAN HONDA MOTOR CO., INC.

25. Install the boot band on the other end of the boot, and repeat steps 23 and 24.

OUTBOARD JOINT SIDE

1. Wrap the splines on the driveshaft with vinyl tape (A) to prevent damaging the outboard boot.

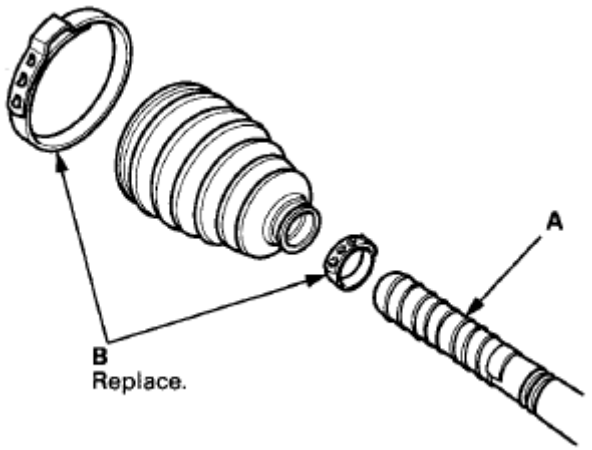


Fig. 45: Identifying Vinyl Tape And Ear Clamp Bands
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Install new ear clamp bands (B) and the outboard boot onto the driveshaft, then remove the vinyl tape. Be careful not to damage the outboard boot.
3. Make sure to check the size of a new stop ring.

NOTE: To avoid driveshaft and vehicle damage, make sure you install a new stop

ring.

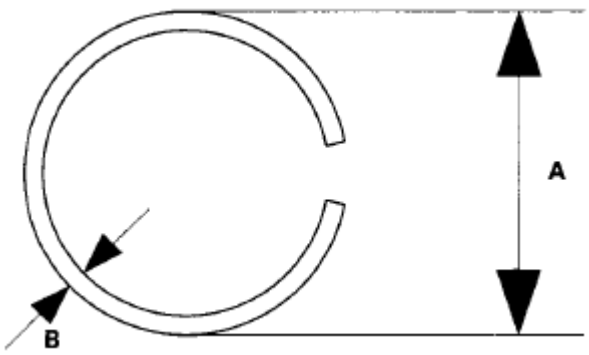


Fig. 46: Checking Size Of Stop Ring
Courtesy of AMERICAN HONDA MOTOR CO., INC.

STOP RING SPECIFICATIONS

Model	Overall diameter (A)	Wire diameter (B)
M/T	31.2 mm (1.23 in)	2.0 mm (0.08 in)
A/T	29.2 mm (1.15 in)	

4. Install the stop ring (A) into the driveshaft groove (B).

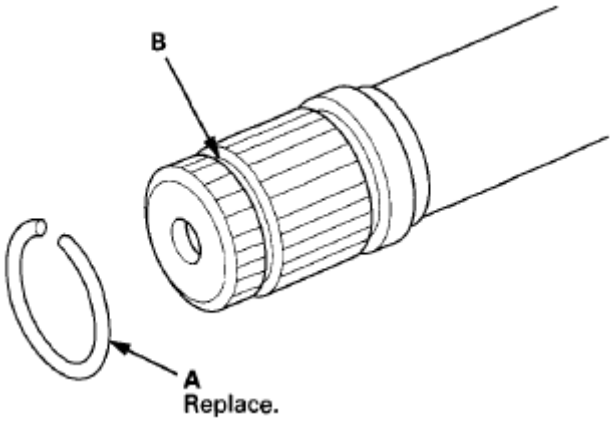


Fig. 47: Identifying Stop Ring And Driveshaft Groove
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Pack about 35 g (1.2 oz) of grease included in the new outboard boot set into the driveshaft hole in the outboard joint.

NOTE: If you are installing a new outboard joint, the grease is already installed.

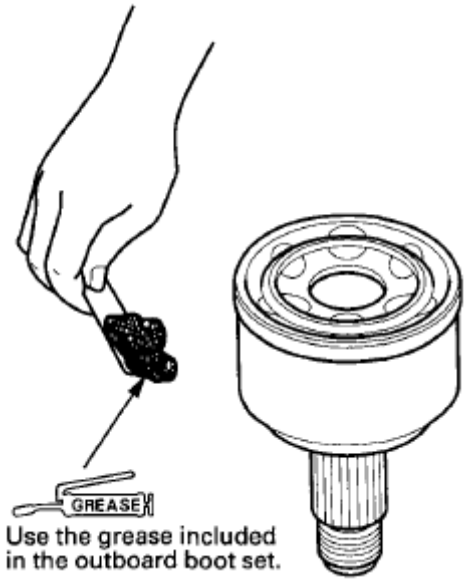


Fig. 48: Greasing Driveshaft Hole In Outboard Joint
Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Insert the driveshaft (A) into the outboard joint (B) until the stop ring (C) is close to the joint

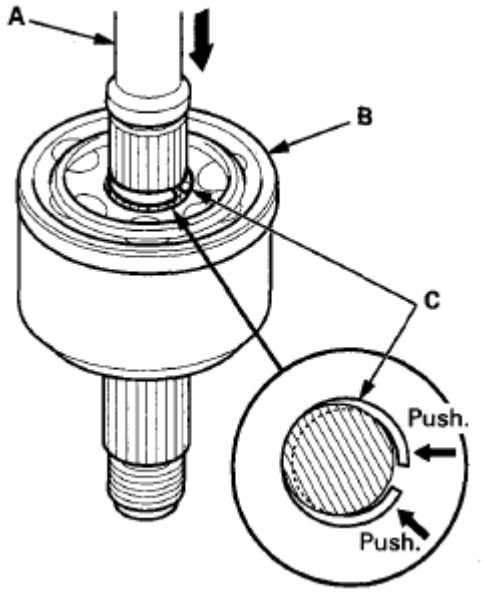


Fig. 49: Inserting Driveshaft Into Outboard Joint Until Stop Ring Is Close To Joint
Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. To completely seat the outboard joint, pick up the driveshaft and the joint, and tap or hit the assembly onto a hard surface from a height of about 10 cm (4 in).

NOTE: Do not use a hammer, as excessive force may damage the driveshaft. Be careful not to damage the threaded section (A) of the outboard joint.

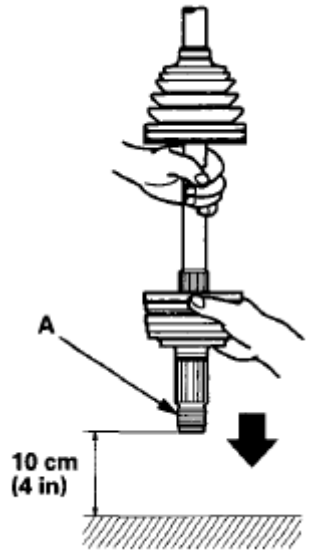


Fig. 50: To Completely Seat Outboard Joint Hitting Assembly Onto Hard Surface From Height
Courtesy of AMERICAN HONDA MOTOR CO., INC.

8. Check the alignment of the paint mark (A) you made with the outboard joint end (B).

NOTE: To avoid driveshaft and vehicle damage, the shaft must be all the way into the outboard joint to ensure the stop ring is properly seated.

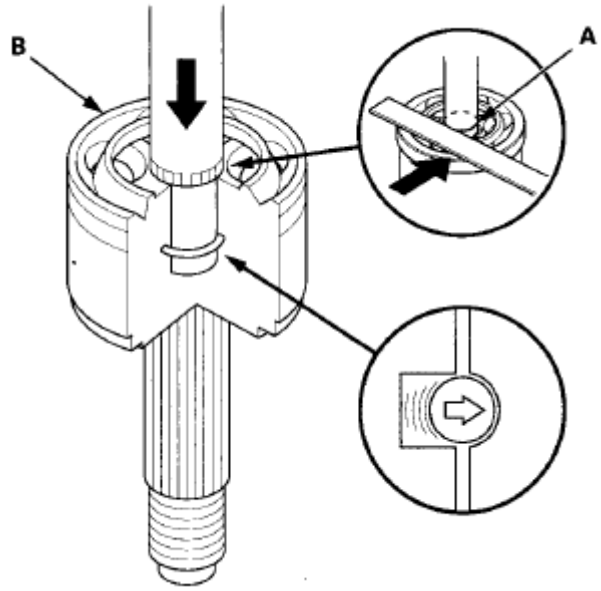


Fig. 51: Checking Alignment Of Paint Mark With Outboard Joint End
Courtesy of AMERICAN HONDA MOTOR CO., INC.

9. Pack the outboard joint (A) with the remaining joint grease included in the outboard boot set.

Total grease quantity

OUTBOARD JOINT

Model	Quantity
M/T	110- 130 g (3.9- 4.6 oz)
A/T	160- 170 g (5.6- 6.0 oz)

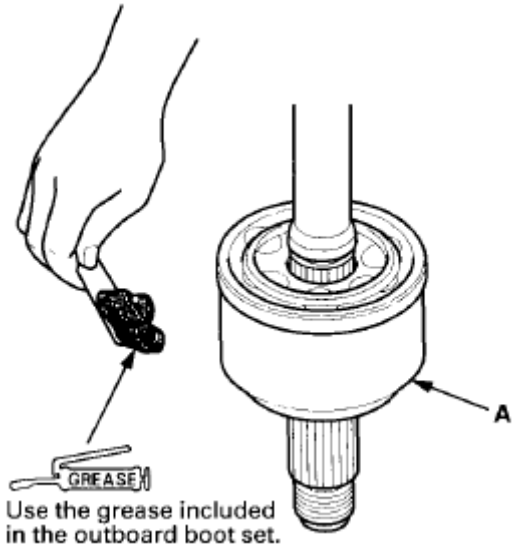


Fig. 52: Packing Outboard Joint With Grease Included In Outboard Boot Set
Courtesy of AMERICAN HONDA MOTOR CO., INC.

10. Fit the boot ends (A) onto the driveshaft (B) and the outboard joint (C). Bleed any excess air from the boot by inserting a flat-tipped screwdriver between the boot and the joint.

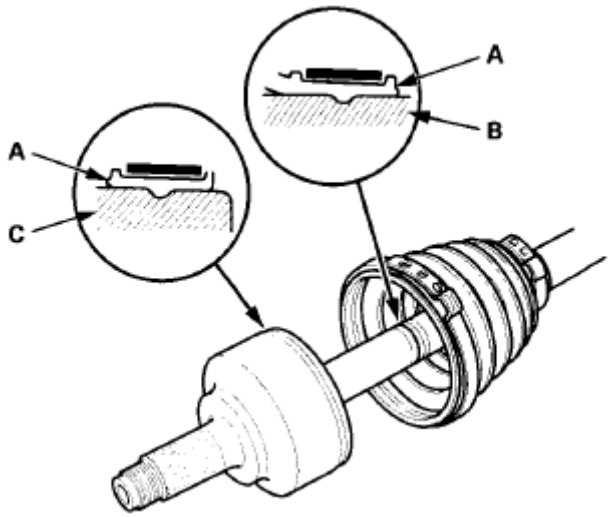


Fig. 53: Identifying Boot Ends, Driveshaft And Outboard Joint
Courtesy of AMERICAN HONDA MOTOR CO., INC.

11. Inspect the length (A) of the driveshafts in the figure as shown, then adjust the boots to halfway between full compression and full extension.

Left driveshaft

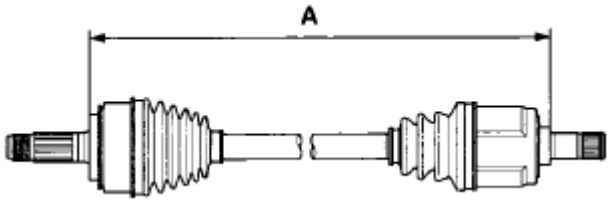


Fig. 54: Checking Length Of Driveshaft - Left Driveshaft
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Right driveshaft

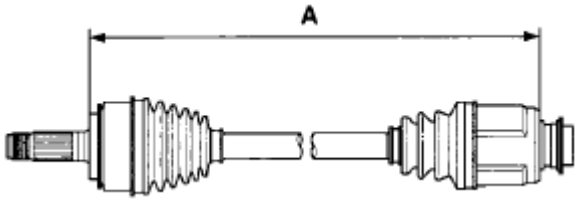


Fig. 55: Checking Length Of Driveshaft - Right Driveshaft
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Model	Driveshaft	Specified length (A)
M/T	Left	569.5- 574.5 mm (22.42- 22.62 in)
	Right	527.0- 532.0 mm (20.75- 20.94 in)
A/T	Left	560.0- 565.0 mm (22.05- 22.24 in)
	Right	533.0- 538.0 mm (20.98- 21.18 in)

12. Close the ear portion (A) of the band using a commercially available boot band clamp tool (Kent-Moore J-35910 or equivalent) (B).

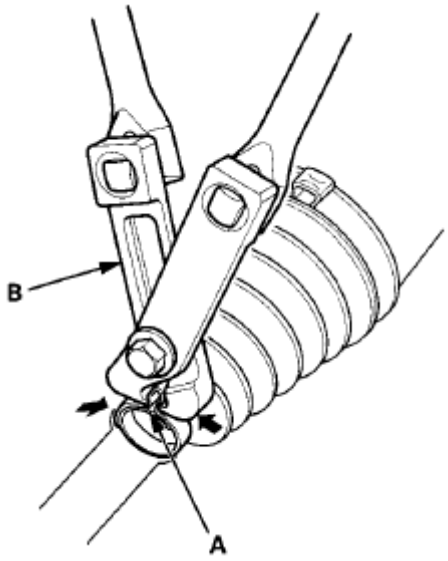


Fig. 56: Closing Ear Portion Of Band Using Boot Band Clamp Tool
Courtesy of AMERICAN HONDA MOTOR CO., INC.

13. Check the clearance between the closed ear portion of the band. If the clearance is not within the standard, close the ear portion of the band tighter.

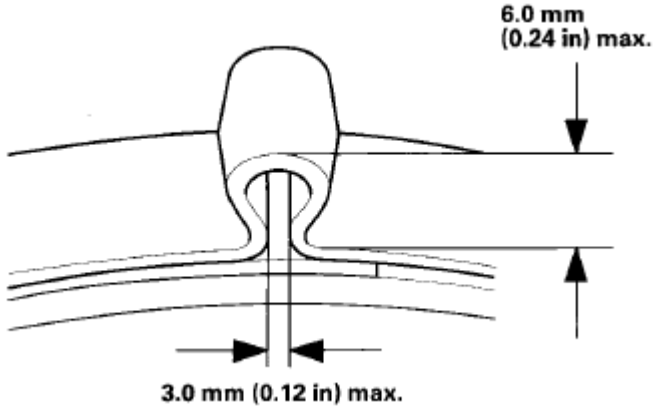


Fig. 57: Checking Clearance Between Closed Ear Portion Of Band
Courtesy of AMERICAN HONDA MOTOR CO., INC.

14. Repeat steps 12 and 13 for the band on the other end of the boot.

FRONT DRIVESHAFT INSTALLATION

NOTE: Before starting installation, make sure the mating surfaces of the joint and the splined section are clean.

1. Apply about 5 g (0.18 oz) of moly 60 paste (P/N 08734-0001) to the contact area (A) of the outboard joint and the front wheel bearing.

NOTE: The paste helps prevent noise and vibration.

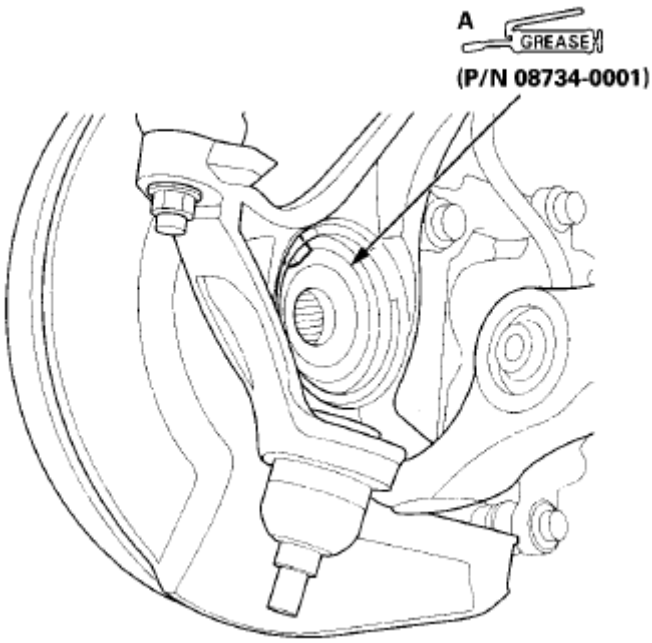


Fig. 58: Identifying Contact Area Of Outboard Joint
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Install a new set ring (A) into the set ring groove (B) of the left driveshaft inboard joint.

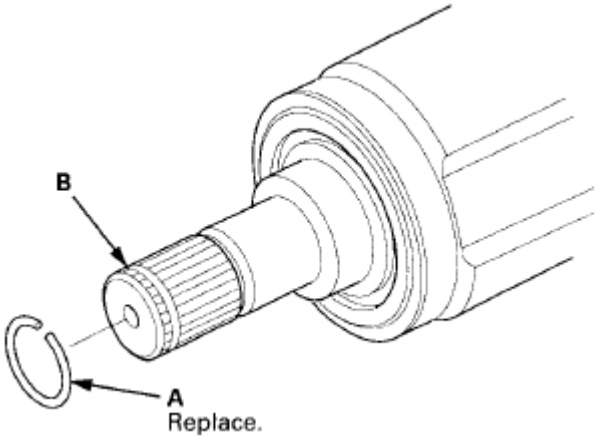


Fig. 59: Identifying Set Ring And Set Ring Groove
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Install a new set ring (A) into the set ring groove (B) of the intermediate shaft.

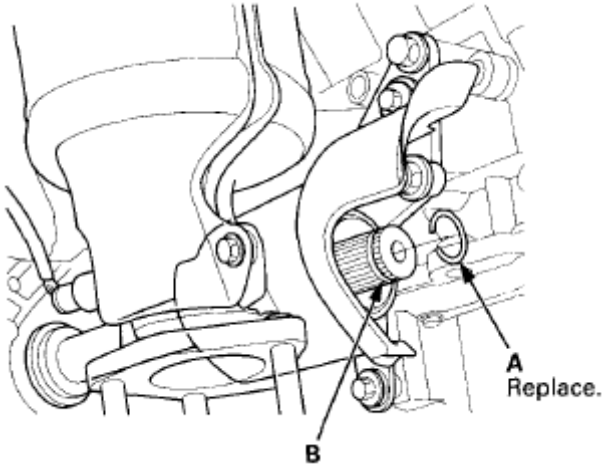


Fig. 60: Identifying Set Ring And Set Ring Groove
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Apply specified quantity of super high temp urea grease (P/N 08798-9002) to the whole splined surface (A) of the right driveshaft. After applying grease, remove the grease from the splined grooves at intervals of 2- 3 splines and from the set ring groove (B) so that air can bleed from the intermediate shaft.

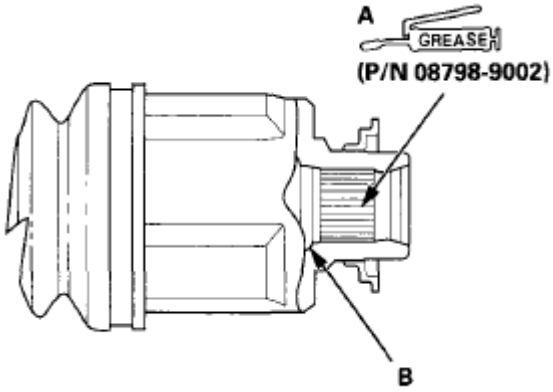


Fig. 61: Applying Super High Temp Urea Grease To Whole Splined Surface Of Right Driveshaft
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Model	Grease quantity
M/T	2.0- 3.0 g (0.07- 0.11 oz)
A/T	0.5- 1.0 g (0.02- 0.04 oz)

5. Clean the areas where the driveshaft contacts the differential thoroughly with solvent, and dry them with compressed air.

NOTE: Do not wash the rubber parts with solvent.

6. Insert the inboard end (A) of the driveshaft into the differential (B) or the intermediate shaft (C) until the set ring (D) locks in the groove (E).

NOTE: Insert the driveshaft horizontally to prevent damaging the oil seal.

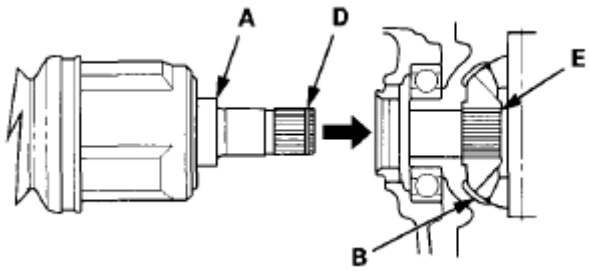


Fig. 62: Inserting Inboard End Of Driveshaft Into Differential Shaft Until Set Ring Locks In Groove - Left
Courtesy of AMERICAN HONDA MOTOR CO., INC.

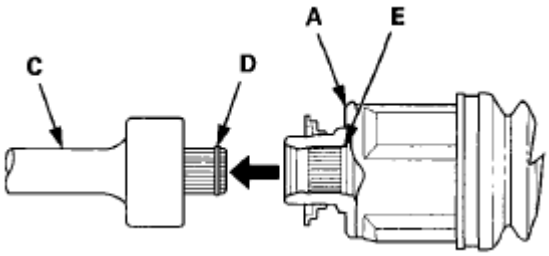


Fig. 63: Inserting Inboard End Of Driveshaft Into Differential Shaft Until Set Ring Locks In Groove - Right
Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Install the outboard joint (A) into the front hub on the knuckle.

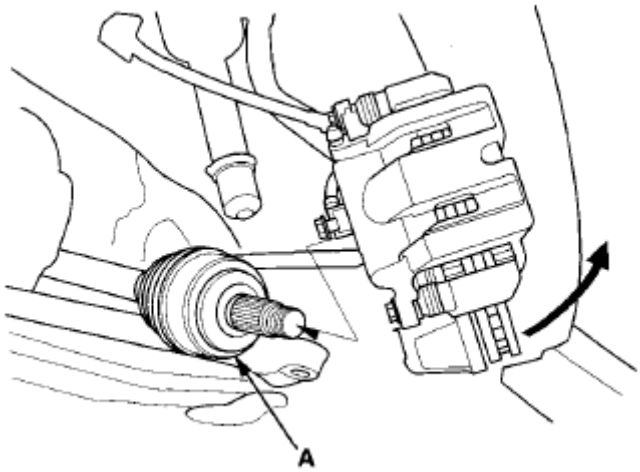


Fig. 64: Installing Outboard Joint Into Front Hub On Knuckle
Courtesy of AMERICAN HONDA MOTOR CO., INC.

8. Install exhaust pipe A.

- Without SH-AWD (see **EXHAUST PIPE AND MUFFLER REPLACEMENT**)
- With SH-AWD (see **J37A4 ENGINE (WITH SH-AWD)**)

9. Wipe off any grease contamination from the ball joint tapered section and threads, then install the knuckle (A) onto the lower arm (B). Be careful not to damage the ball joint boot (C). Wipe off the grease before tightening the nut at the ball joint. Torque a new castle nut (D) to the lower torque specification, then tighten it only far enough to align the slot with the ball joint pin hole.

NOTE:

- **Make sure the ball joint boot is not damaged or cracked.**
- **Do not align the nut by loosening it.**

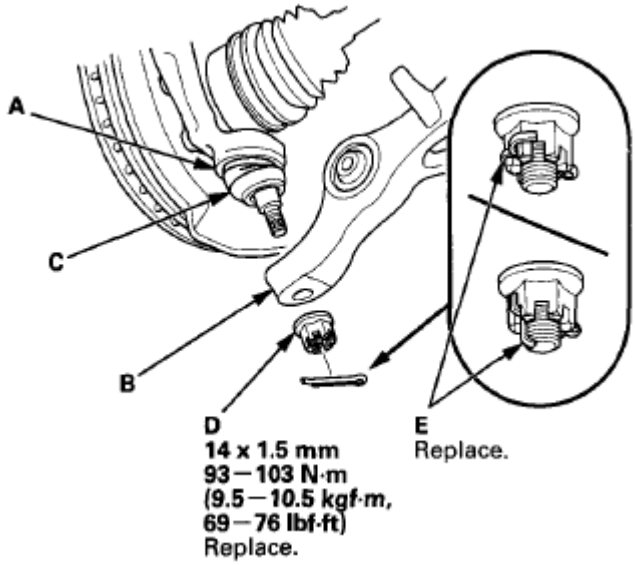


Fig. 65: Identifying Knuckle, Cotter Pin, Lower Arm, Ball Joint Boot And Nut With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

10. Install a new cotter pin (E) into the ball joint pin hole, and bend the cotter pin as shown.
11. Install the damper fork (A) over the driveshaft and onto the lower arm. Install the damper in the damper fork so the aligning tab (B) is aligned with the slot in the damper fork. Loosely install the damper pinch bolt (C).

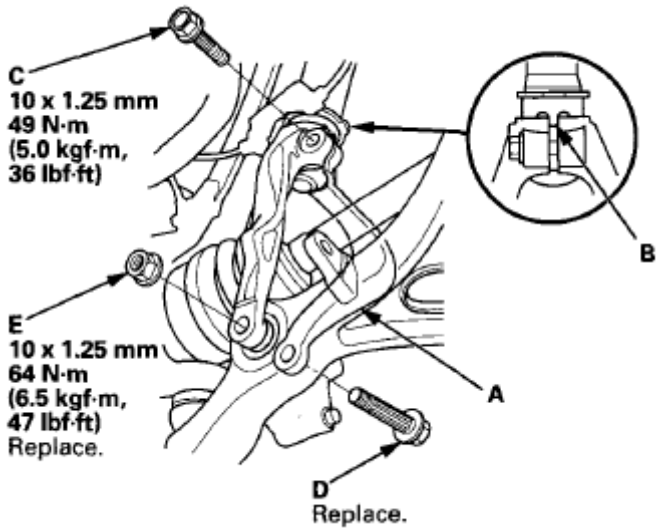


Fig. 66: Identifying Damper Fork, Aligning Tab, Flange Bolt, Pinch Bolt And Damper Fork Mounting Nut With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

12. Loosely install a new flange bolt (D) and a new damper fork mounting nut (E).
13. Connect the front stabilizer link (A) to the lower arm, and loosely install the flange nut (B). Hold the stabilizer joint pin (C) using a hex wrench (D), and tighten the flange nut.

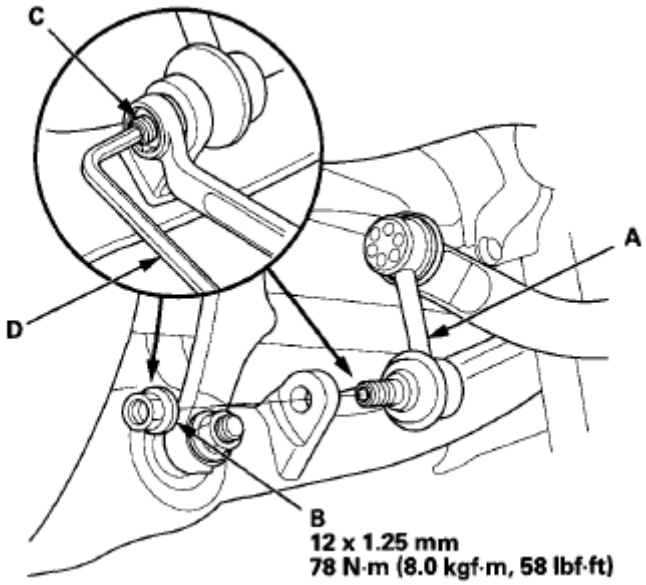


Fig. 67: Identifying Front Stabilizer Link, Hex Wrench, Stabilizer Joint Pin And Flange Nut With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

14. Place a floor jack under the lower arm, and raise the suspension to load it with the vehicle's weight.

NOTE: Do not put the floor jack under the ball joint.

15. Tighten the damper pinch bolt and the damper fork mounting nut while holding the flange bolt to the specified torque values, then remove the floor jack.
16. Apply a small amount of engine oil to the seating surface of a new spindle nut (A).

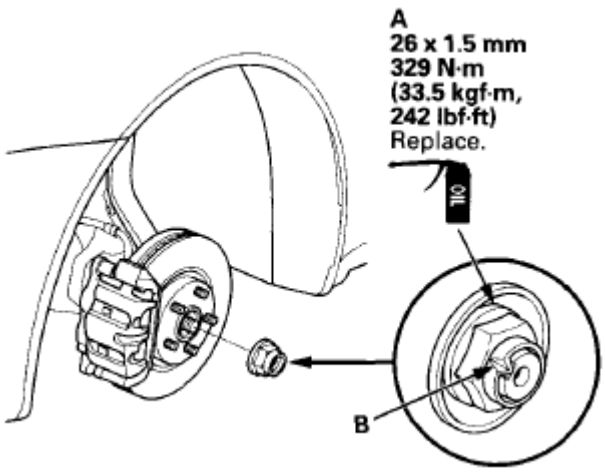


Fig. 68: Identifying Spindle Nut Shoulder And Spindle Nut With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

17. Install the spindle nut, then tighten it. After tightening, use a drift to stake the spindle nut shoulder (B) against the driveshaft.
18. Clean the mating surfaces between the brake disc and the inside of the wheel, then install the front wheel.
19. Turn the wheel by hand, and make sure there is no interference between the driveshaft and surrounding parts.
20. Lower the vehicle.
21. Refill the transmission with recommended transmission fluid:
    - Manual transmission (see **TRANSMISSION FLUID INSPECTION AND REPLACEMENT**)
    - Automatic transmission (see **ATF REPLACEMENT**)
22. Check the wheel alignment, and adjust it if necessary (see **WHEEL ALIGNMENT**).
23. Test-drive the vehicle.

INTERMEDIATE SHAFT REMOVAL

1. Drain the transmission fluid, then reinstall the drain plug with a new sealing washer:
    - Manual transmission (see **TRANSMISSION FLUID INSPECTION AND REPLACEMENT**)
    - Automatic transmission (see **ATF REPLACEMENT**)
2. Remove exhaust pipe A:
    - Without SH-AWD (see **EXHAUST PIPE AND MUFFLER REPLACEMENT**)
    - With SH-AWD (see **J37A4 ENGINE (WITH SH-AWD)**)

3. Remove the right front driveshaft (see **FRONT DRIVESHAFT REMOVAL**).
4. Remove the rear warm up three way catalytic converter (rear WU-TWC) bracket (A).

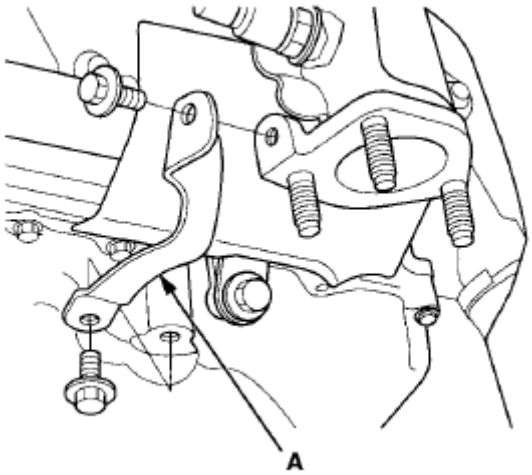


Fig. 69: Identifying Catalytic Converter (Rear WU-TWC) Bracket
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. M/T model: Remove the crankshaft position (CKP) sensor cover (A).

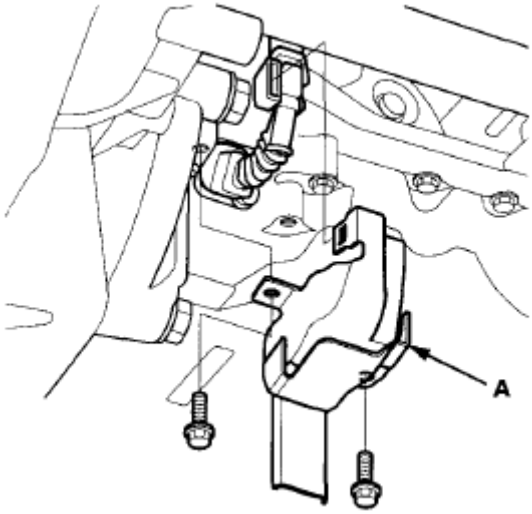


Fig. 70: Identifying Crankshaft Position (CKP) Sensor Cover
Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. M/T model: Disconnect the CKP sensor connector (A), and remove the sensor harness clamp bracket bolt (B).

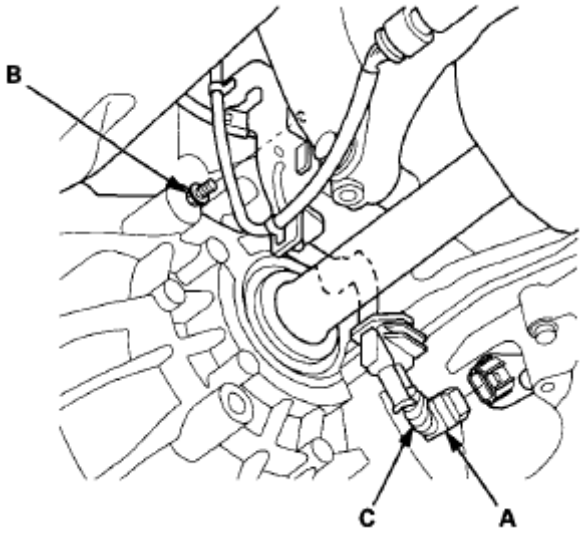


Fig. 71: Identifying CKP Sensor Connector, Sensor Harness And Clamp Bracket Bolt
Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. M/T model: Swing the sensor harness (C) out of the way to prevent damaging it.
8. Remove the flange bolt (A) and the two dowel bolts (B).

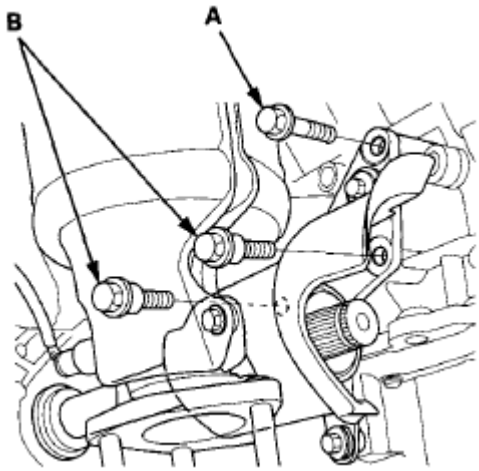


Fig. 72: Identifying Flange And Dowel Bolts
Courtesy of AMERICAN HONDA MOTOR CO., INC.

9. Remove the intermediate shaft (A) from the differential. Hold the intermediate shaft horizontal until it is clear of the differential to prevent damaging the oil seal (B).

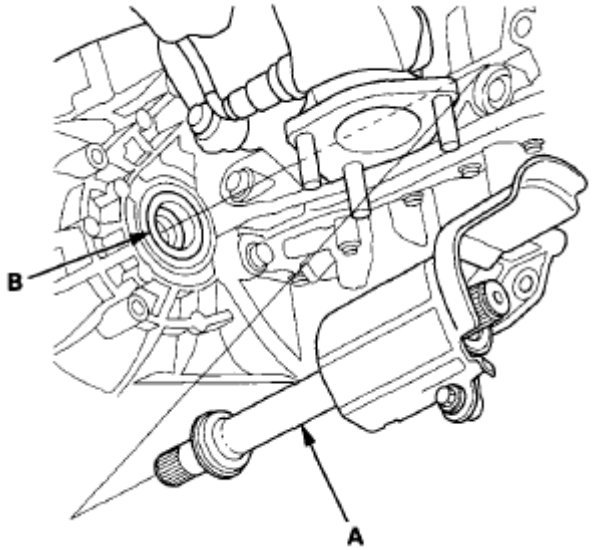


Fig. 73: Identifying Intermediate Shaft And Oil Seal
Courtesy of AMERICAN HONDA MOTOR CO., INC.

INTERMEDIATE SHAFT DISASSEMBLY

Special Tools Required

- Bearing Driver Attachment, 42x47 mm 07746-0010300
- Driver Handle, 15 x 135L 07749-0010000
- Support Base 07965-SD90100
- Support Base Attachment 07LAF-SM40300

1. Remove the heat shield (A).

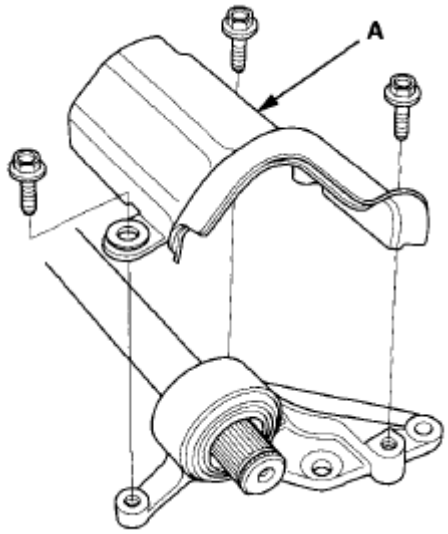


Fig. 74: Identifying Heat Shield
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Remove the outer seal (A) and the external snap ring (B).

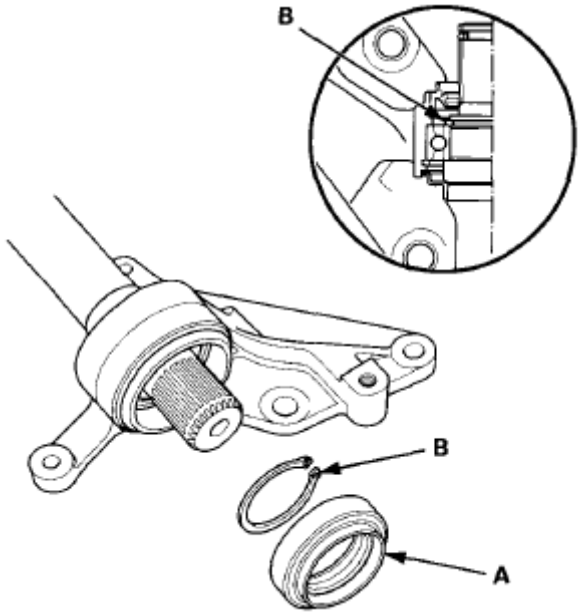


Fig. 75: Identifying Outer Seal And External Snap Ring
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Press the intermediate shaft (A) out of the intermediate shaft bearing (B) using the support base attachment (C), the support base (D), and a press. Be careful not to damage the bearing support ring (E) on the intermediate shaft during disassembly.

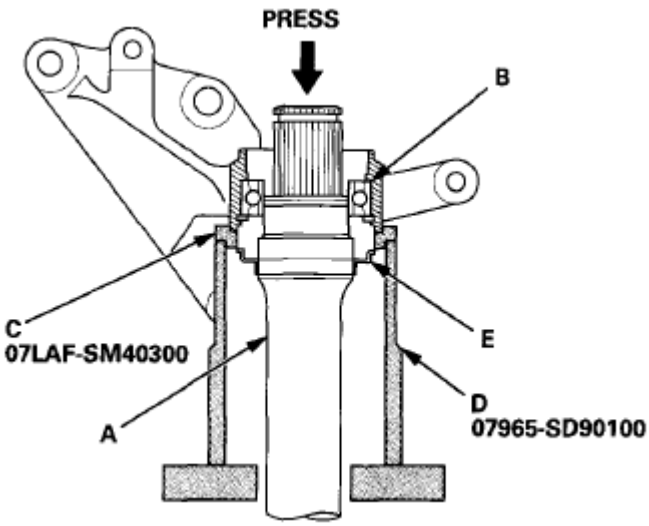


Fig. 76: Pressing Intermediate Shaft Out Of Intermediate Shaft Bearing Using Support Base Attachment, Support Base And Press

Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Remove the internal snap ring (A) from the bearing support (B).

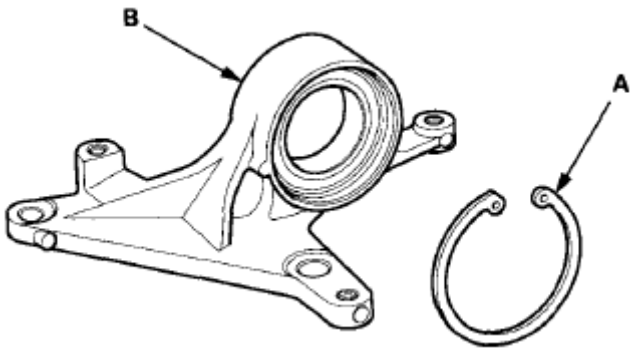


Fig. 77: Identifying Internal Snap Ring And Bearing Support
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Press the intermediate shaft bearing (A) out of the bearing support (B) using the 15 x 135L driver handle (C), the 42 x 47 mm bearing driver attachment (D), the support base attachment (E), the support base (F), and a press.

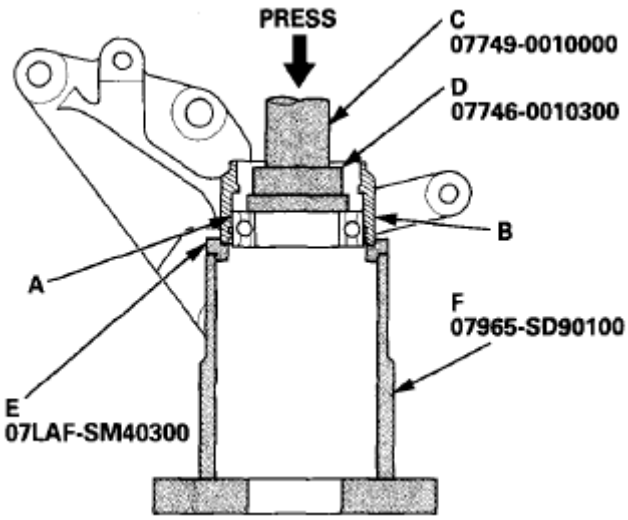


Fig. 78: Pressing Intermediate Shaft Bearing Out Of Bearing Support Using Driver Handle, Bearing Driver Attachment, Support Base Attachment, Support Base And Press
Courtesy of AMERICAN HONDA MOTOR CO., INC.

INTERMEDIATE SHAFT REASSEMBLY

EXPLODED VIEW

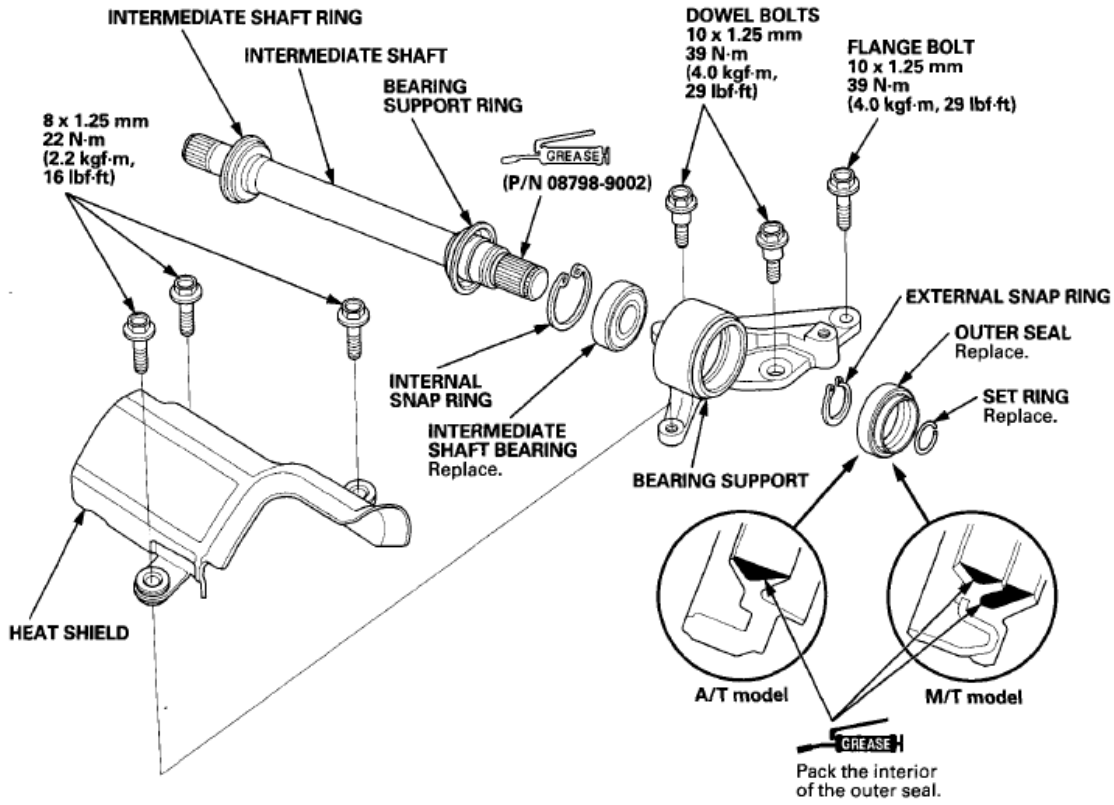


Fig. 79: Exploded View Of Intermediate Shaft Assembly With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Special Tools Required

- Bearing Driver Attachment, 52 x 55 mm 07746-0010400
- Driver Handle, 15 x 135L 07749-0010000
- Fork Seal Driver, 39.2 x 49.5 x 15 mm 07947-4630100
- Support Base 07965-SD90100
- Installer Attachment 40 mm 07LAD-PW50601
- Support Base Attachment 07LAF-SM40300
- Fork Seal Driver, 46.2 mm 07TMD-MAC0100

NOTE: Refer to the EXPLODED VIEW, as needed, during this procedure.

1. Clean the disassembled parts with solvent, and dry them with compressed air.

   NOTE: Do not wash the rubber parts with solvent.

2. Press a new intermediate shaft bearing (A) into the bearing support (B) using the 15 x 135L driver handle (C), the 52 x 55 mm bearing driver attachment (D), the support base attachment (E), the support base (F), and a press.

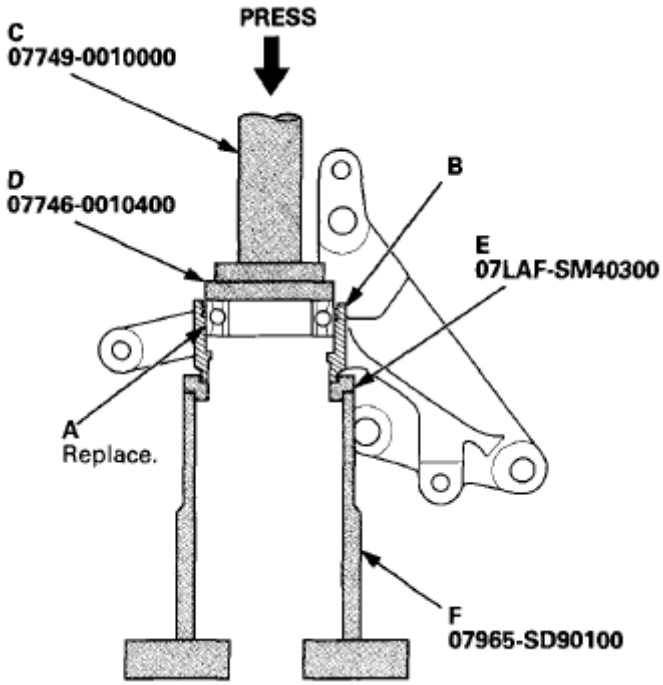


Fig. 80: Pressing Intermediate Shaft Bearing Into Bearing Support Using Driver Handle, Bearing Driver Attachment, Support Base Attachment, Support Base And Press
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Install the internal snap ring (A) into the groove (B) of the bearing support.

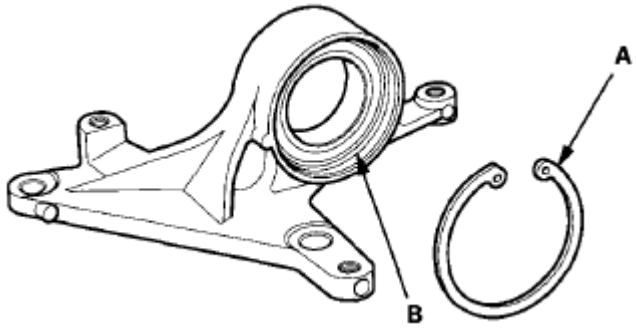


Fig. 81: Identifying Internal Snap Ring And Groove
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Press the intermediate shaft (A) into the shaft bearing (B) using the 39.2 x 49.5 x 15 mm fork seal driver (C) and a press.

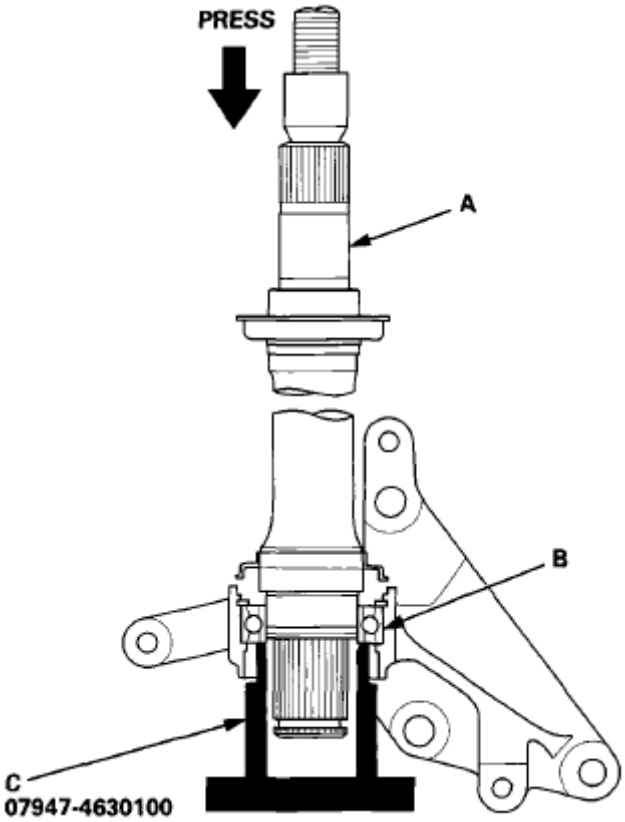


Fig. 82: Pressing Intermediate Shaft Into Shaft Bearing Using Fork Seal Driver And Press
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Install the external snap ring (A) into the groove of the intermediate shaft (B).

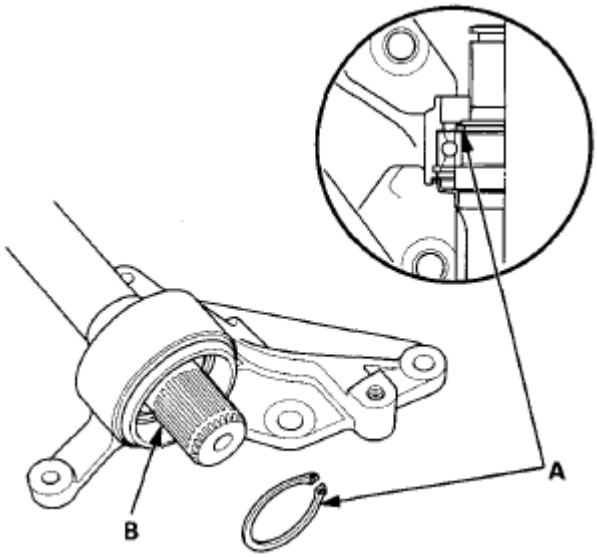


Fig. 83: Identifying External Snap Ring And Groove Of Intermediate Shaft
Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Install the outer seal.
   - M/T model, go to step 7.
   - A/T model, go to step 8.
7. Install a new outer seal (A) into the bearing support (B) using the 46.2 mm fork seal driver (C), the support base attachment (D), the support base (E), and a press. Press in the seal until it is even with the surface of the bearing support. Then go to step 9.

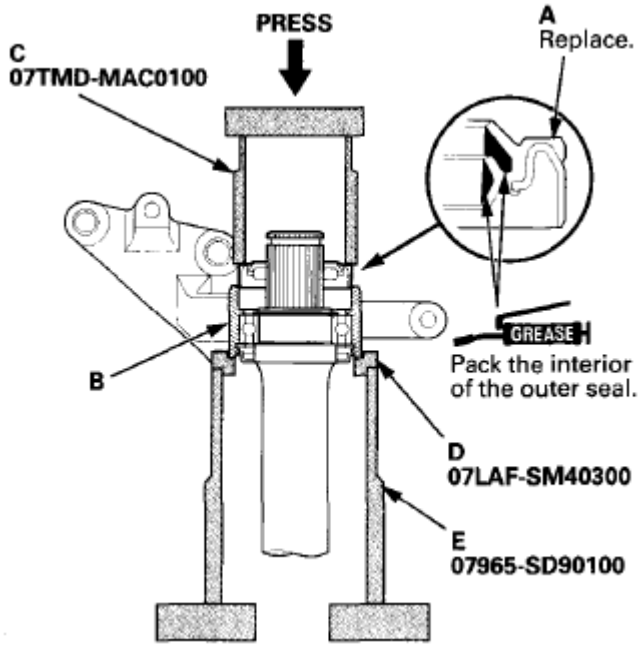


Fig. 84: Installing Outer Seal Into Bearing Support Using Fork Seal Driver, Support Base Attachment, Support Base And Press
Courtesy of AMERICAN HONDA MOTOR CO., INC.

8. Install a new outer seal (A) into the bearing support (B) using the 40 mm installer attachment (C), the support base attachment (D), the support base (E), and a press. Press in the seal until it is even with the surface of the bearing support.

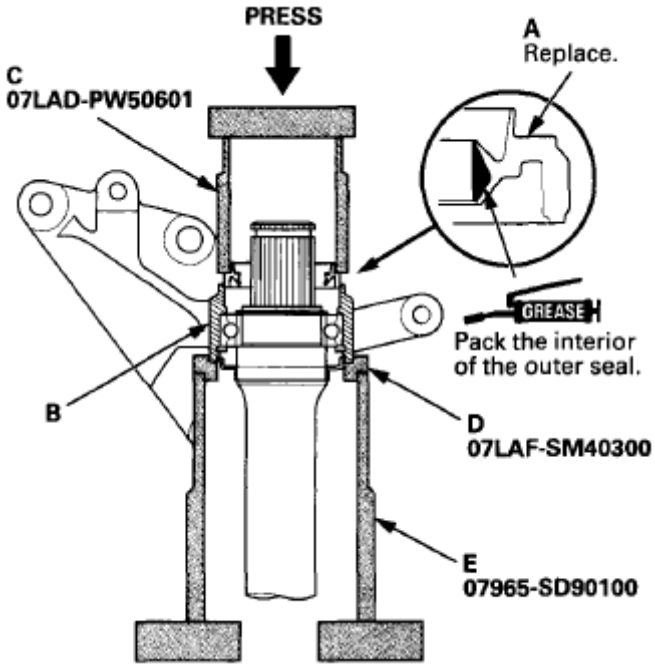


Fig. 85: Installing Outer Seal Into Bearing Support Using Installer Attachment, Support Base Attachment, Support Base And Press
Courtesy of AMERICAN HONDA MOTOR CO., INC.

9. Install the heat shield (A).

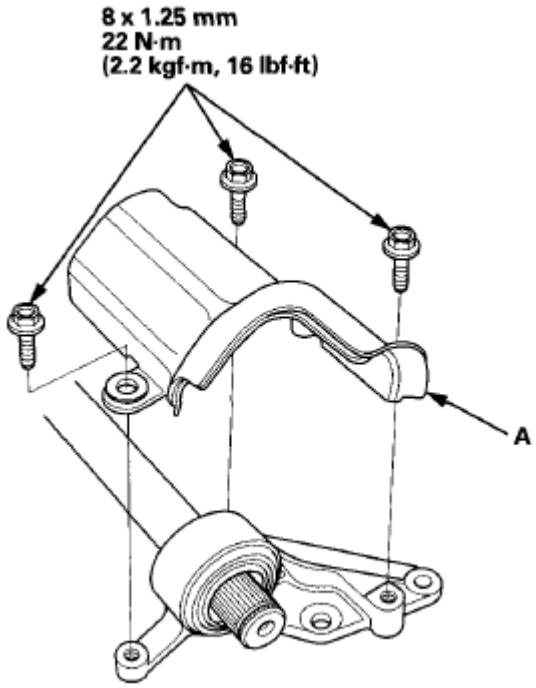


Fig. 86: Identifying Heat Shield & Fasteners With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

INTERMEDIATE SHAFT INSTALLATION

1. Clean the areas where the intermediate shaft contacts the differential thoroughly with solvent, and dry them with compressed air.

   NOTE: Do not wash the rubber parts with solvent.

2. Install a new set ring (A) into the set ring groove (B) of the intermediate shaft (C).

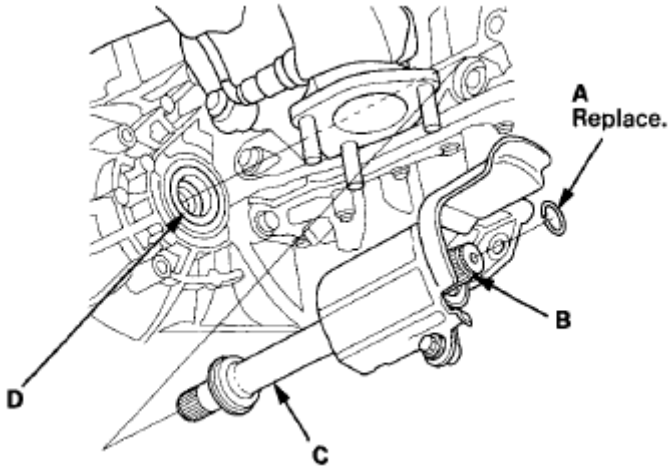


Fig. 87: Identifying New Set Ring, Set Ring Groove, Intermediate Shaft And Oil Seal
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Insert the intermediate shaft into the differential correctly.

   NOTE: Insert the intermediate shaft carefully to prevent damaging the oil seal (D).

4. Install the flange bolt (A) and the two dowel bolts (B).

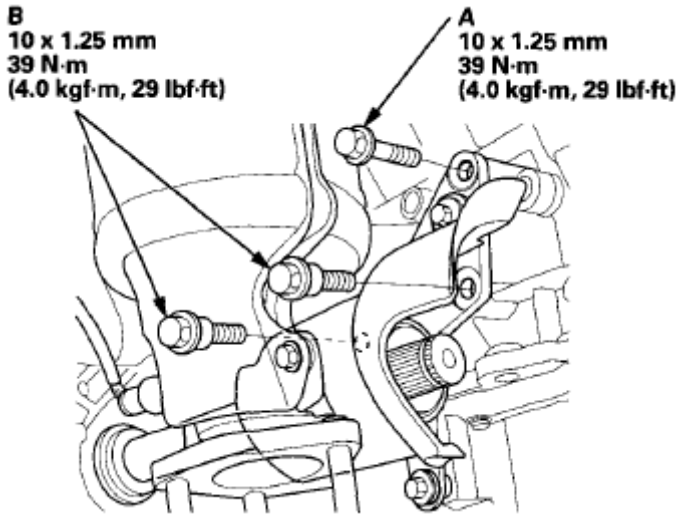


Fig. 88: Identifying Flange And Dowel Bolts With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Install the rear warm up three way catalytic converter (rear WU-TWC) bracket (A).

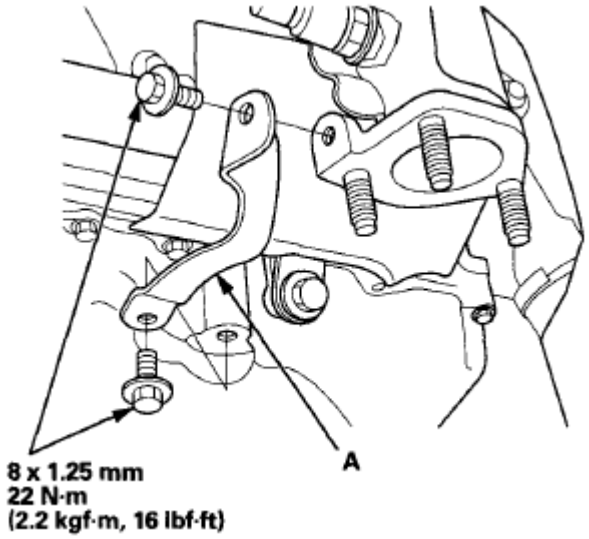


Fig. 89: Identifying Catalytic Converter (Rear WU-TWC) Bracket With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Install the right front driveshaft (see **FRONT DRIVESHAFT INSTALLATION**).
7. M/T model: Connect the crankshaft position (CKP) sensor connector (A), and install the sensor harness clamp bracket (B).

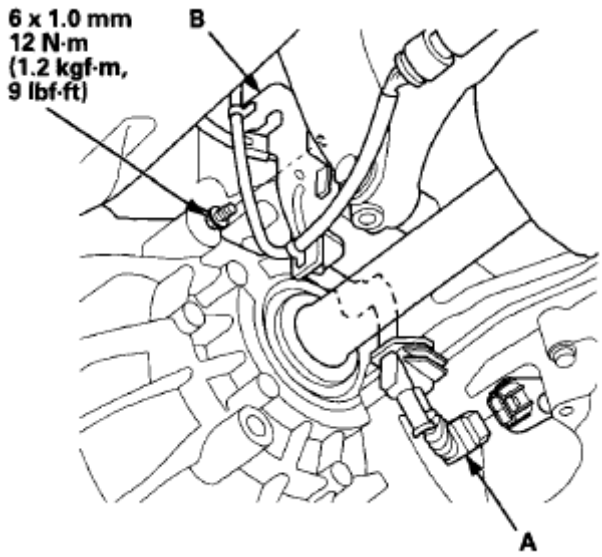


Fig. 90: Identifying Crankshaft Position (CKP) Sensor Connector And Sensor Harness Clamp Bracket With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

8. M/T model: Install the CKP sensor cover (A).

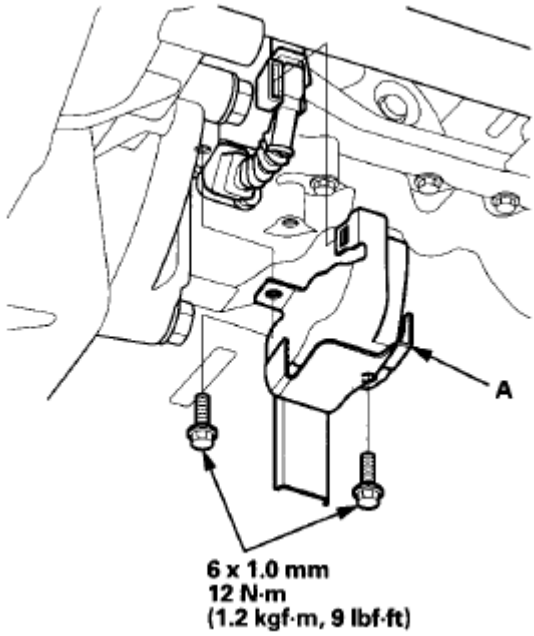


Fig. 91: Identifying CKP Sensor Cover & Fasteners With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

9. Install exhaust pipe A.
   - Without SH-AWD (see **EXHAUST PIPE AND MUFFLER REPLACEMENT**)
   - With SH-AWD (see **J37A4 ENGINE (WITH SH-AWD)**)

10. Refill the transmission with the recommended transmission fluid:
    - Manual transmission (see **TRANSMISSION FLUID INSPECTION AND REPLACEMENT**)
    - Automatic transmission (see **ATF REPLACEMENT**)
11. Check the wheel alignment, and adjust it if necessary (see **WHEEL ALIGNMENT**).
12. Test-d rive the vehicle.

REAR DRIVESHAFT REMOVAL

Special Tools Required

Driveshaft Remover 07AAD-S3VA000

NOTE: Be careful not to damage the brake hose, sensor, and harness.

1. Raise and support the vehicle (see **LIFT AND SUPPORT POINTS**).
2. Remove the rear wheel.
3. Remove exhaust pipe B and the muffler (see **J37A4 ENGINE (WITH SH-AWD)**).
4. Remove the lower arm A mounting bolt (A) and the lower arm B mounting bolt (B).

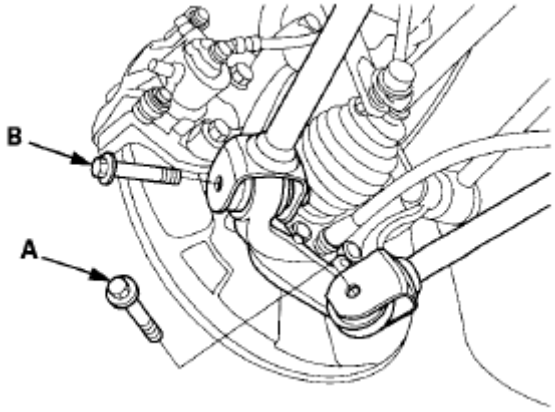


Fig. 92: Identifying Lower Arm Mounting Bolts
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Use a hammer to wedge the driveshaft remover (A) between the inboard joint (B) and the rear differential (C).

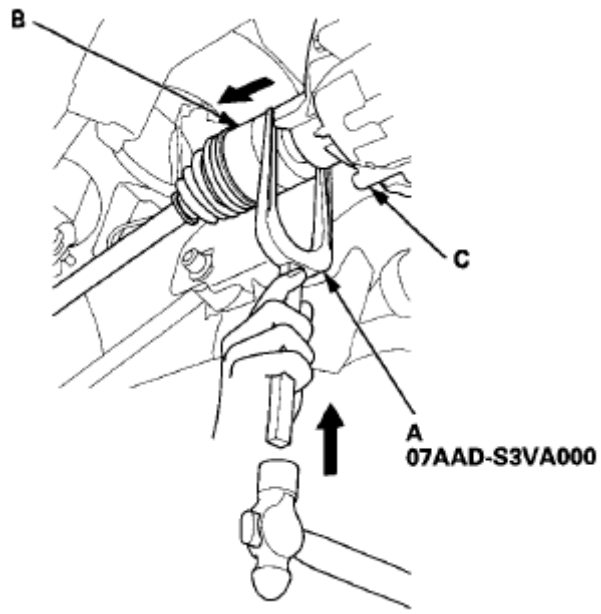


Fig. 93: Using Hammer To Wedge Driveshaft Remover Between Inboard Joint And Rear Differential
Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Pull the knuckle outward, and separate the inboard joint from the rear differential.

NOTE: Be careful not to damage the splash guard (A).

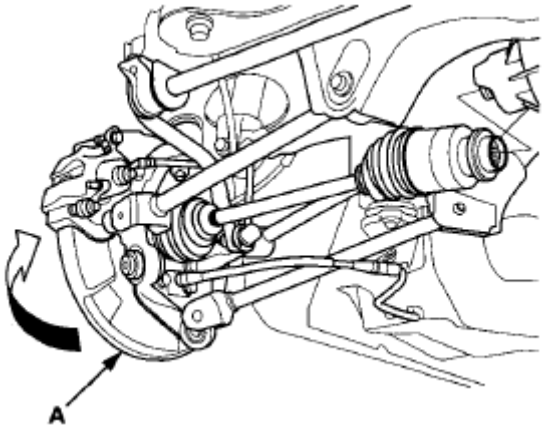


Fig. 94: Pulling Knuckle Outward And Separate Inboard Joint From Rear Differential
Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Pry up the stake (A) on the spindle nut (B), then remove the nut.

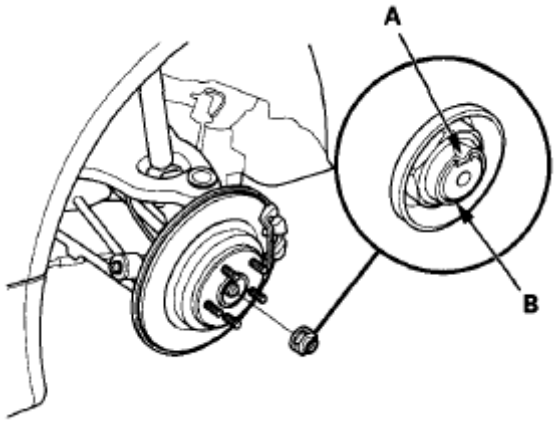


Fig. 95: Identifying Stake And Spindle Nut
Courtesy of AMERICAN HONDA MOTOR CO., INC.

8. While holding the driveshaft by hand, separate the driveshaft outboard joint from the rear hub using a soft face hammer.

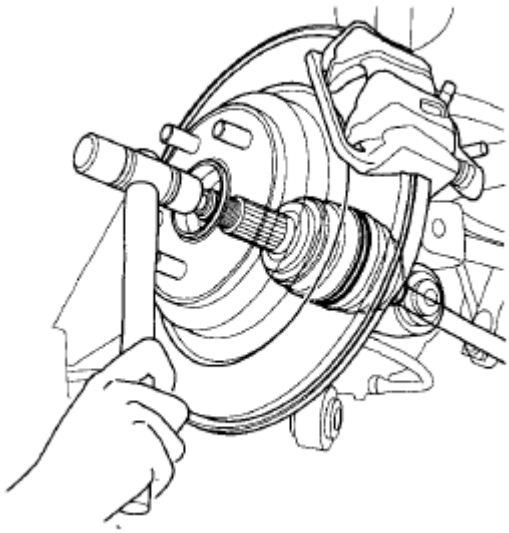


Fig. 96: Separating Driveshaft Outboard Joint From Rear Hub Using Soft Face Hammer
Courtesy of AMERICAN HONDA MOTOR CO., INC.

9. Remove the rear driveshaft (A).

NOTE: Be careful not to damage the wheel speed sensor (B).

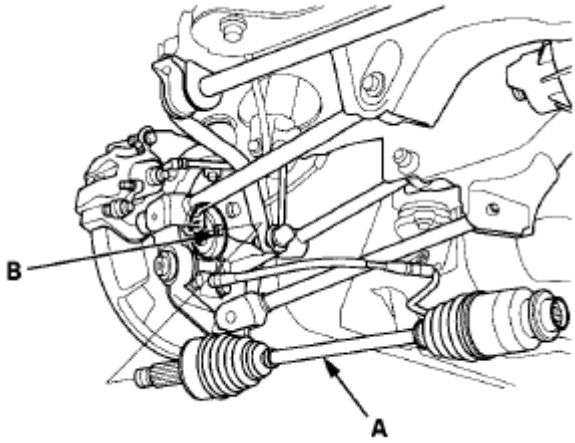


Fig. 97: Identifying Rear Driveshaft And Wheel Speed Sensor
Courtesy of AMERICAN HONDA MOTOR CO., INC.

10. Remove the set ring (A) from the rear differential.

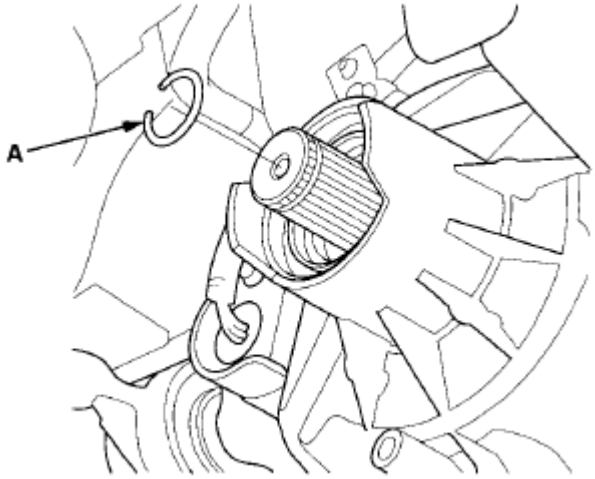


Fig. 98: Identifying Set Ring
Courtesy of AMERICAN HONDA MOTOR CO., INC.

REAR DRIVESHAFT DISASSEMBLY

Special Tools Required

- Threaded Adapter, 24 x 1.5 mm 07XAC-001020A
- Slide Hammer 5/8"-18 UNF, commercially available
- Bearing Puller, commercially available
- Boot Band Pliers, commercially available

INBOARD JOINT SIDE

1. Remove the boot bands. Be careful not to damage the boot.
   - If the boot band is a double loop type (A), lift up the band end (B), and push it into the clip (C).
   - If the boot band is a low profile type (D), pinch the boot band using commercially available boot band pliers (E).

   Double loop type

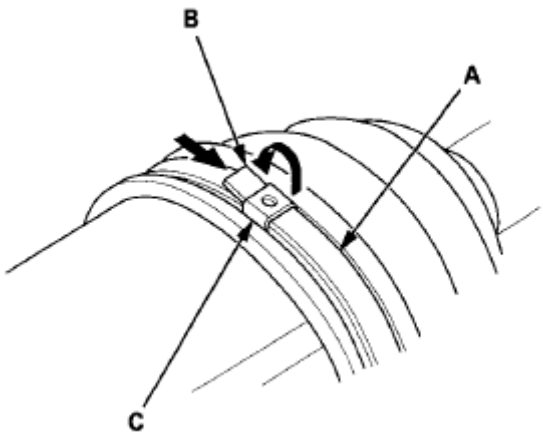


Fig. 99: Removing Boot Bands - Double Loop Type
Courtesy of AMERICAN HONDA MOTOR CO., INC.

   Low profile type

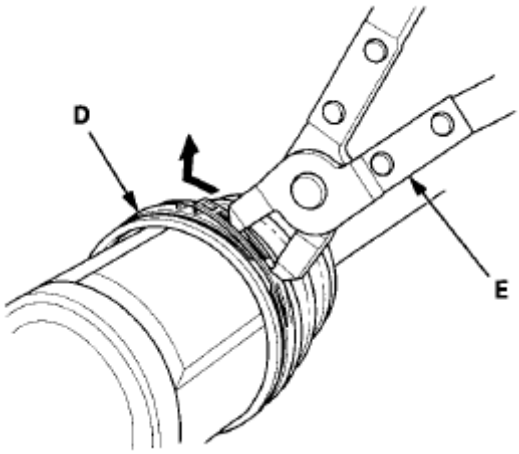


Fig. 100: Removing Boot Bands - Low Profile Type
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Remove the circlip (A).

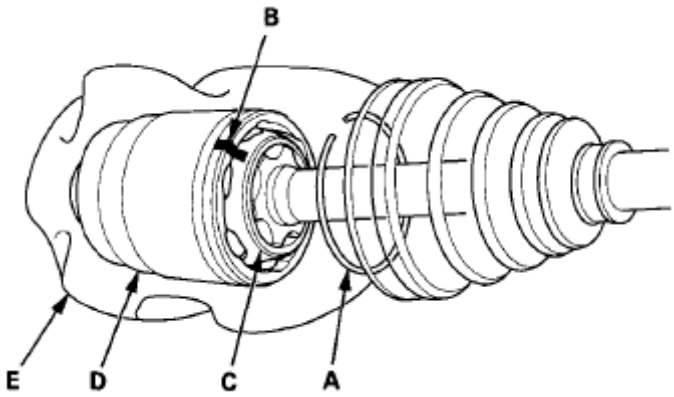


Fig. 101: Identifying Circlip, Bearing Retainer, Marks, Inboard Joint And Shop Towel
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Make marks (B) on the bearing retainer (C) and the inboard joint (D) to identify the locations of the bearing retainer to the grooves in the inboard joint. Then remove the inboard joint on a clean shop towel (E). Be careful not to drop the steel balls when separating them from the inboard joint.
4. Make marks (A) on the bearing retainer (B), the bearing race (C), and the driveshaft (D) to identify the position of the bearing retainer and the bearing race on the shaft.

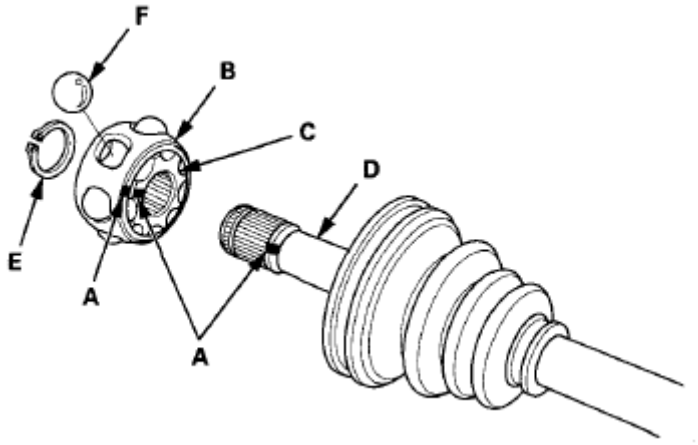


Fig. 102: Identifying Bearing Retainer, Bearing Race, Driveshaft, Snap Ring And Marks
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Remove the snap ring (E).
6. Remove the bearing race and the steel balls (F).

NOTE: If necessary, use a commercially available bearing puller.

7. Wrap the splines on the driveshaft with vinyl tape (A) to prevent damaging the inboard boot.

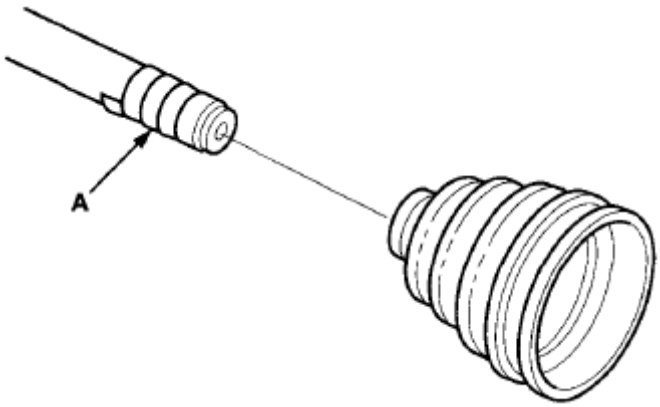


Fig. 103: Identifying Vinyl Tape
Courtesy of AMERICAN HONDA MOTOR CO., INC.

8. Remove the inboard boot. Be careful not to damage the boot.
9. Remove the vinyl tape.

OUTBOARD JOINT SIDE

1. Remove the boot bands. Be careful not to damage the boot.
   - If the boot band is a low profile type (A), pinch the boot band using commercially available boot band pliers (B).
   - If the boot band is an ear clamp type (C), lift up the three tabs (D) using a flat-tipped screwdriver.

Low profile type

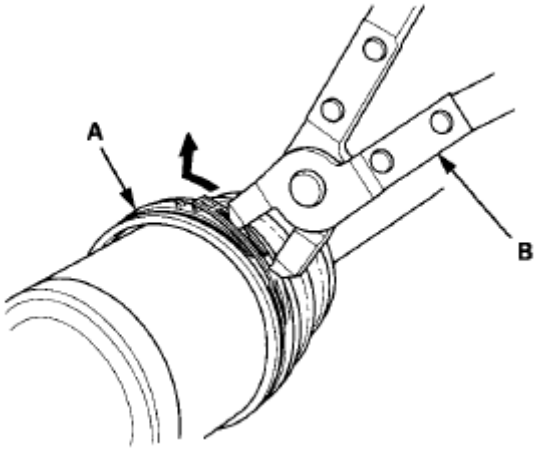


Fig. 104: Removing Boot Bands - Low Profile Type
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Ear clamp type

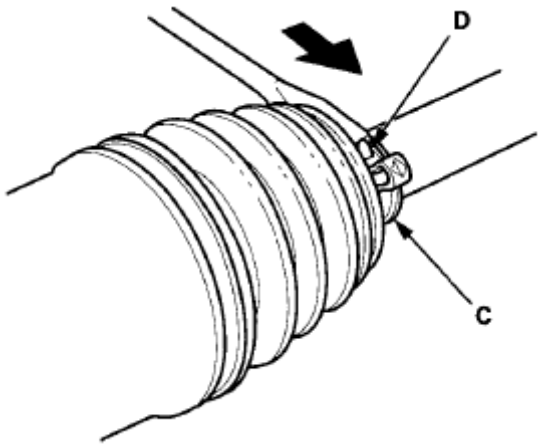


Fig. 105: Removing Boot Bands - Ear Clamp Type
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Slide the outboard boot (A) partially toward the inboard joint side. Be careful not to damage the boot.

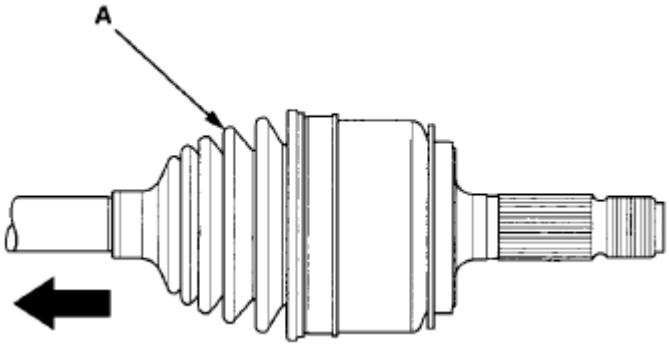


Fig. 106: Sliding Outboard Boot Partially Toward Inboard Joint Side
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Wipe off the grease to expose the driveshaft and the outboard joint inner race.
4. Make a mark (A) on the driveshaft (B) at the same level as the outboard joint end (C).

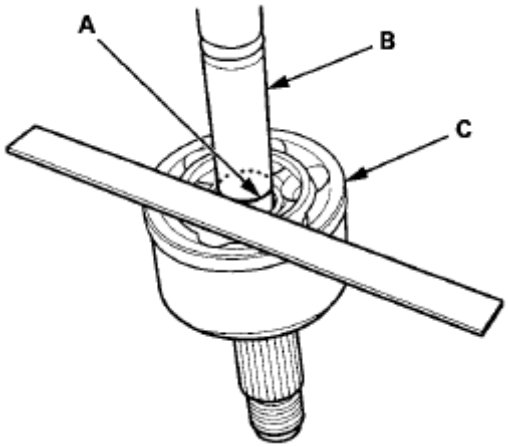


Fig. 107: Making Mark On Driveshaft At Same Level As Outboard Joint End
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Securely clamp the driveshaft in a bench vise with a shop towel wrapped around the driveshaft.
6. Remove the outboard joint (A) using the 24 x 1.5 mm threaded adapter (B) and a commercially available 5/8"-18 UNF slide hammer (C).

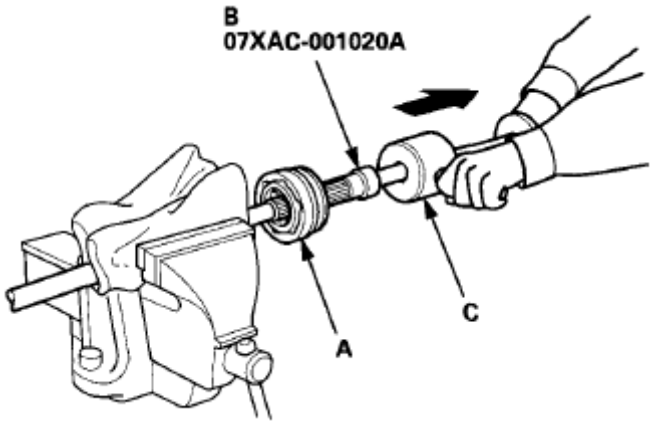


Fig. 108: Removing Outboard Joint Using Threaded Adapter And UNF Slide Hammer
Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Remove the driveshaft from the bench vise.
8. Remove the stop ring (A) from the driveshaft.

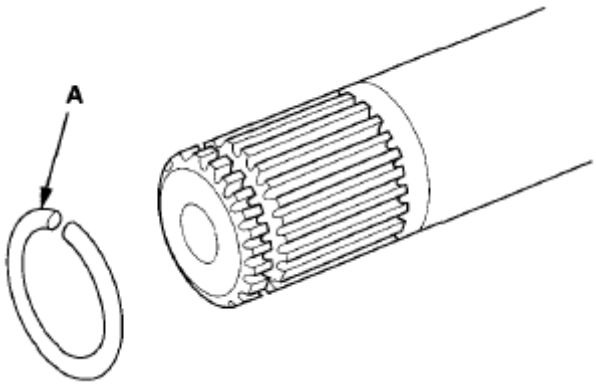


Fig. 109: Identifying Stop Ring
Courtesy of AMERICAN HONDA MOTOR CO., INC.

9. Wrap the splines on the driveshaft with vinyl tape (A) to prevent damaging the outboard boot.

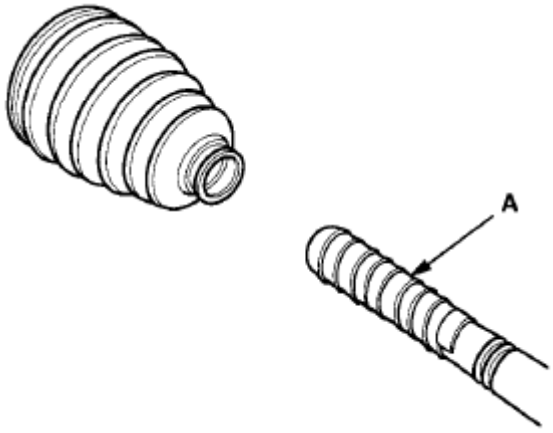


Fig. 110: Identifying Vinyl Tape
Courtesy of AMERICAN HONDA MOTOR CO., INC.

10. Remove the outboard boot. Be careful not to damage the boot.
11. Remove the vinyl tape.

REAR DRIVESHAFT REASSEMBLY

EXPLODED VIEW

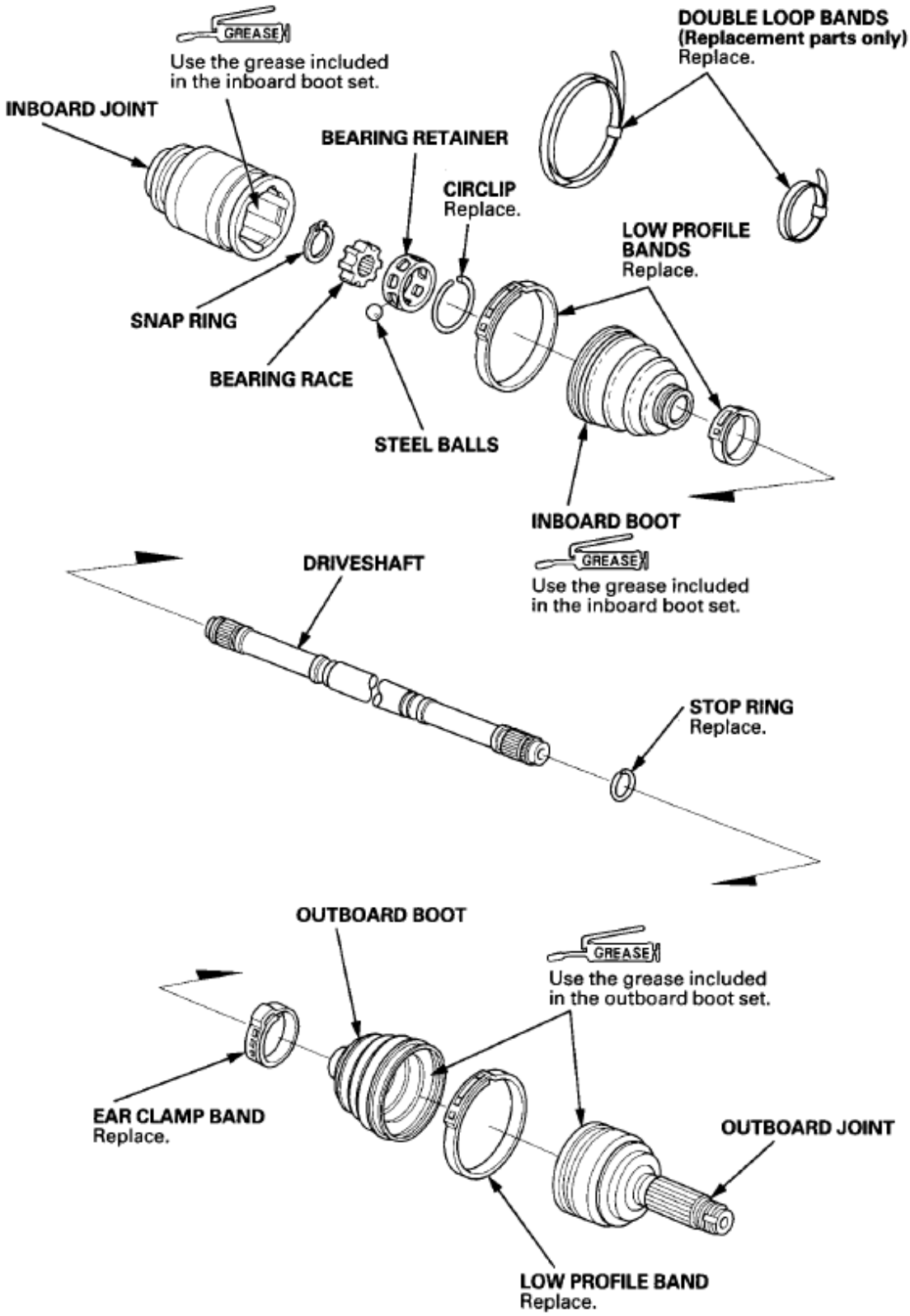


Fig. 111: Exploded View Of Rear Driveshaft Assembly
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Special Tools Required

- Boot Band Tool KD-3191 or equivalent, commercially available
- Boot Band Clamp Tool Kent-Moore J-35910 or equivalent, commercially available
- Boot Band Pliers, commercially available

NOTE: Refer to the EXPLODED VIEW, as needed, during this procedure.

INBOARD JOINT SIDE

1. Wrap the splines on the driveshaft with vinyl tape (A) to prevent damaging the inboard boot.

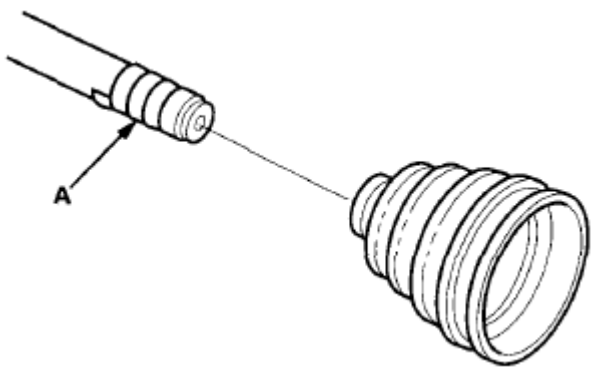


Fig. 112: Identifying Vinyl Tape
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Install the inboard boot onto the driveshaft, then remove the vinyl tape. Be careful not to damage the inboard boot.
3. Assemble the steel balls (A), the bearing retainer (B), and the bearing race (C) by aligning the marks (D) you made on the bearing retainer and the bearing race.

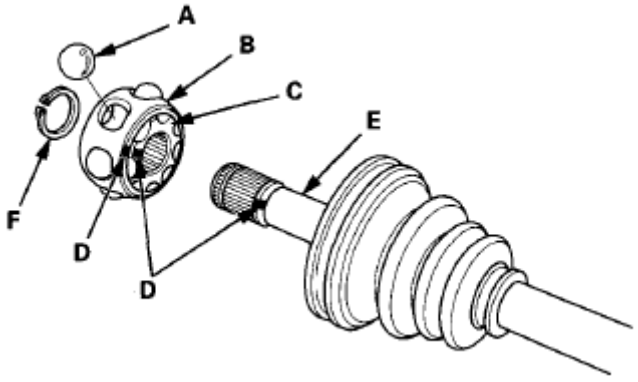


Fig. 113: Identifying Driveshaft, Steel Balls, Bearing Retainer, Bearing Race, Marks And Snap Ring
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Install the bearing onto the driveshaft (E) by aligning the marks you made on the bearing and the driveshaft. Be careful not to drop the steel balls when installing the bearing onto the driveshaft.
5. Install the snap ring (F).
6. Pack the inboard joint with the joint grease included in the new inboard boot set.

   Grease quantity

   Inboard joint: 85- 105 g (3.0- 3.7 oz)



Fig. 114: Packing Inboard Joint With Joint Grease
Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Install the inboard joint onto the driveshaft by aligning the marks (A) you made on the inboard joint and the bearing retainer.

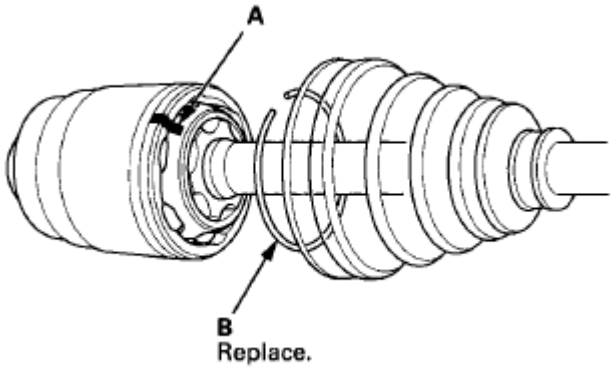


Fig. 115: Identifying Circlip And Marks
Courtesy of AMERICAN HONDA MOTOR CO., INC.

8. Install a new circlip (B) into the inboard joint groove.
9. Fit the boot ends (A) onto the driveshaft (B) and the inboard joint (C).

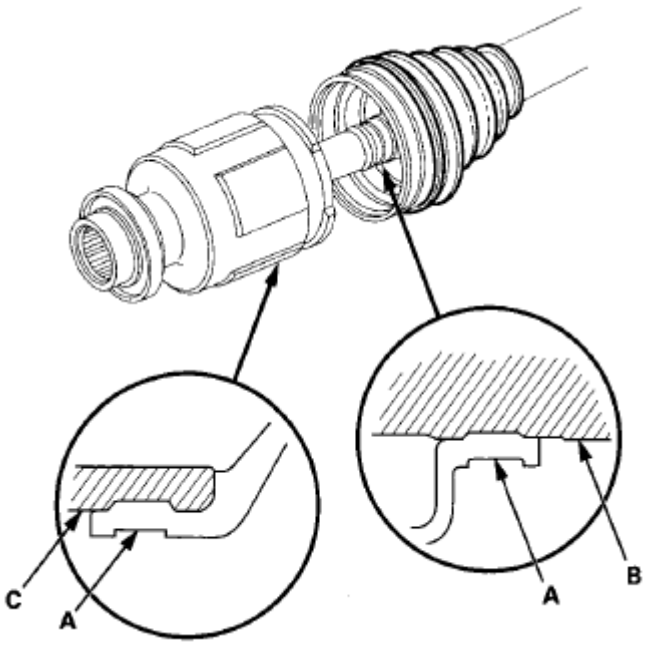


Fig. 116: Identifying Boot Ends, Driveshaft And Inboard Joint
Courtesy of AMERICAN HONDA MOTOR CO., INC.

10. Adjust the length (A) of the driveshafts in the figure as shown, then adjust the boots to halfway between full compression and full extension. Bleed excess air from the boots by inserting a flat-tipped screwdriver between the boot and the joint.

    Left and Right driveshaft: 567.1- 572.1 mm (22.33- 22.52 in)

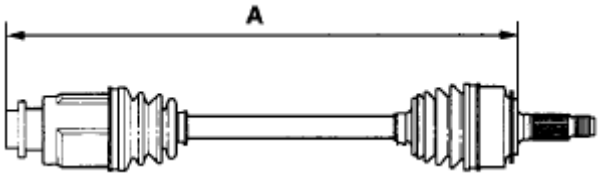


Fig. 117: Adjusting Length Of Driveshafts
Courtesy of AMERICAN HONDA MOTOR CO., INC.

11. Install new boot bands.
    - For the double loop type, go to step 12.
    - For the low profile type, go to step 21.
12. Fit the boot ends onto the driveshaft and the inboard joint, then install a new double loop band (A) onto the boot (B).

    NOTE: Pass the end of the double loop band through the clip (C) twice in the direction of the forward rotation of the driveshaft.

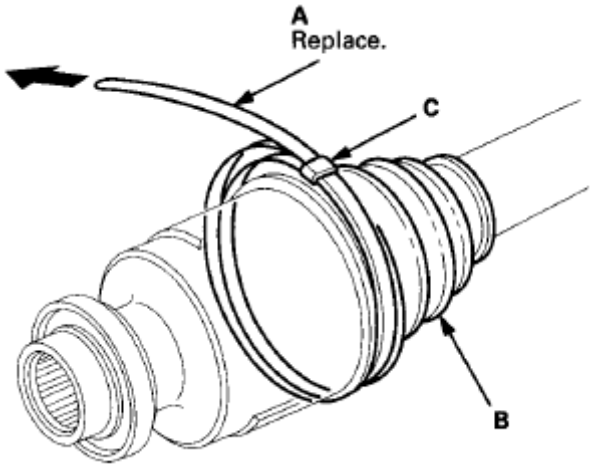


Fig. 118: Installing Double Loop Band Onto Boot
Courtesy of AMERICAN HONDA MOTOR CO., INC.

13. Pull up the slack in the band by hand.
14. Mark a line (A) on the band 10- 14 mm (0.4- 0.6 in) from the clip (B).

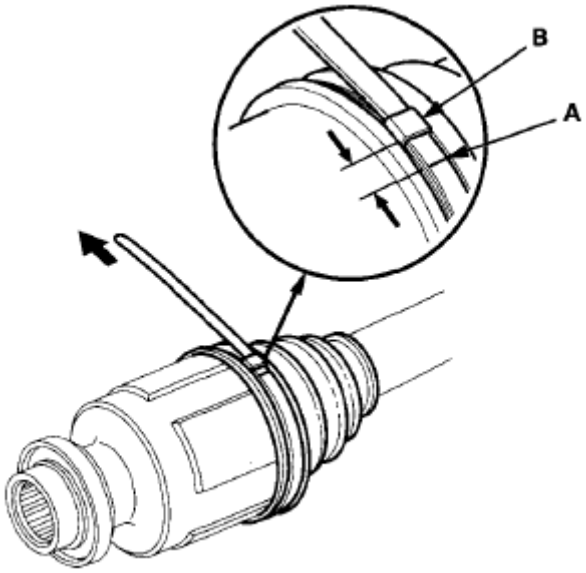


Fig. 119: Marking Line On Band From Clip
Courtesy of AMERICAN HONDA MOTOR CO., INC.

15. Thread the free end of the band through the nose section of the commercially available boot band tool (KD-3191 or equivalent) (A), and into the slot on the winding mandrel (B).

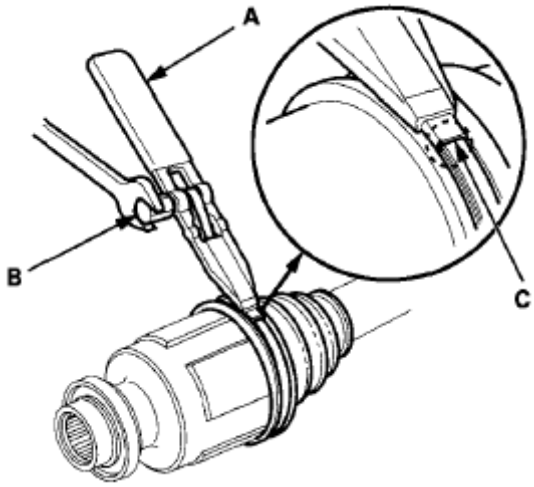


Fig. 120: Threading Free End Of Band Through Nose Section Of Boot Band Tool And Into Slot On Winding Mandrel
Courtesy of AMERICAN HONDA MOTOR CO., INC.

16. Using a wrench on the winding mandrel of the boot band tool, tighten the band until the marked line (C) on the band meets the edge of the clip.
17. Lift up the boot band tool to bend the free end of the band 90 degrees to the clip. Center-punch the clip, then fold over the remaining tail onto the clip.

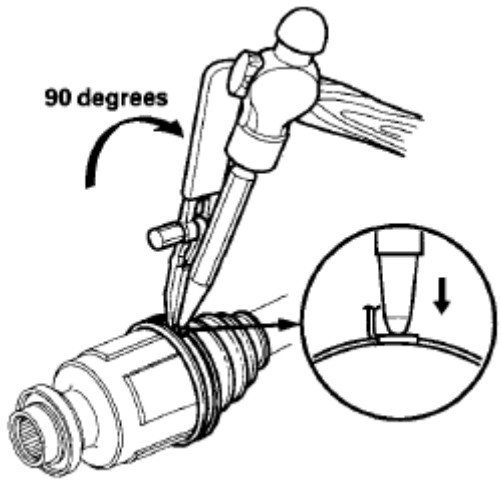


Fig. 121: Lifting Up Boot Band Tool To Bend Free End Of Band 90 Degrees To Clip
Courtesy of AMERICAN HONDA MOTOR CO., INC.

18. Unwind the boot band tool, and cut off the excess free end of the band to leave 5- 10 mm (0.2- 0.4 in) tail protruding from the clip.

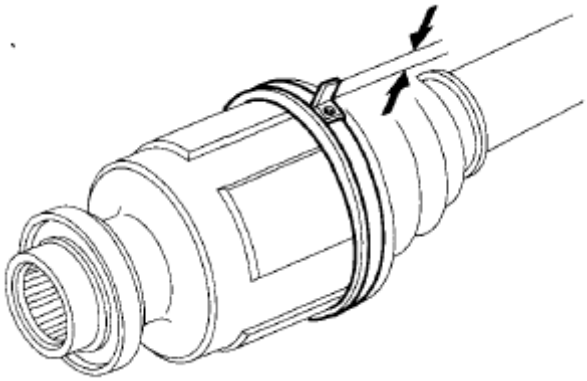


Fig. 122: Identifying Tail Protruding From Clip
Courtesy of AMERICAN HONDA MOTOR CO., INC.

19. Bend the band end (A) by tapping it down using a hammer.

NOTE:

- **Make sure the band and the clip do not interfere with anything on the vehicle, and the band does not move.**
- **Clean any grease remaining on the surrounding surfaces.**

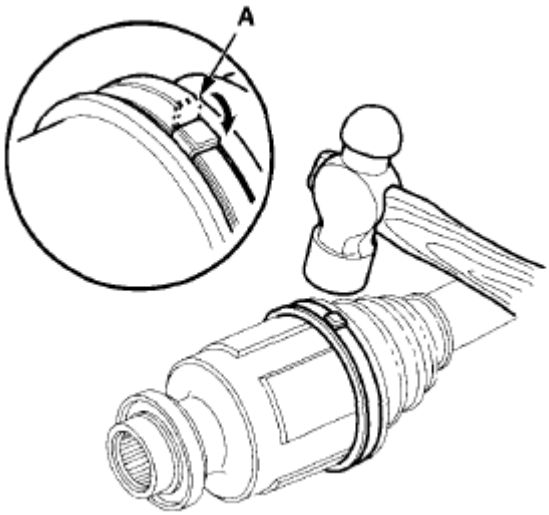


Fig. 123: Bending Band End By Tapping It Down Using Hammer
Courtesy of AMERICAN HONDA MOTOR CO., INC.

20. Repeat steps 12 through 19 for the band on the other end of the boot.
21. Install a new low profile band (A) onto the boot (B), then hook the tab (C) of the band.

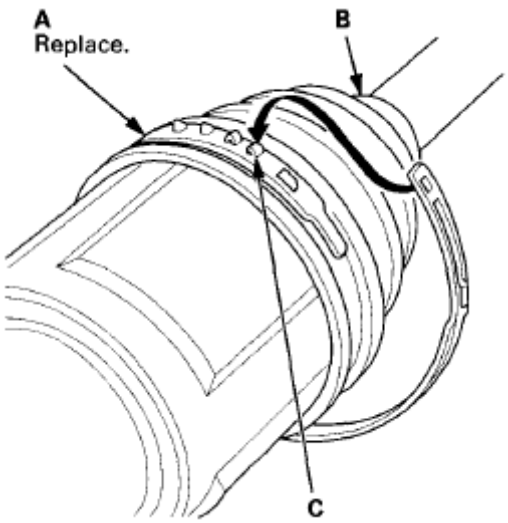


Fig. 124: Hooking Tab Of Boot Band
Courtesy of AMERICAN HONDA MOTOR CO., INC.

22. Close the hook portion of the band using commercially available boot band pliers (A), then hook the tabs (B) of the band.

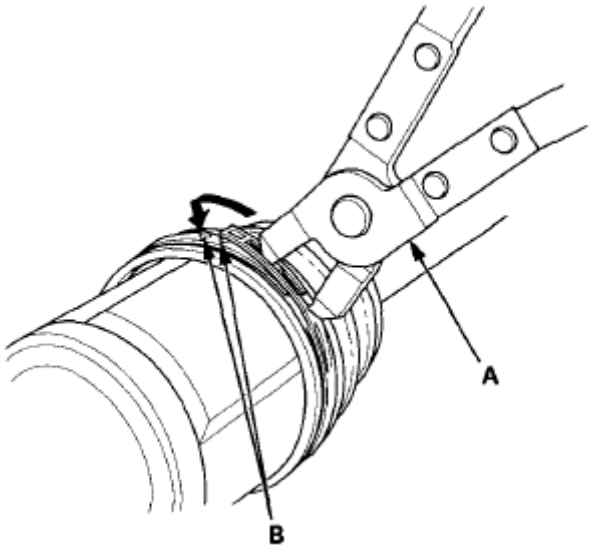


Fig. 125: Closing Hook Portion Of Band Using Boot Band Pliers And Hooking Tabs Of Band
Courtesy of AMERICAN HONDA MOTOR CO., INC.

23. Install the boot band on the other end of the boot, and repeat steps 21 and 22.

OUTBOARD JOINT SIDE

1. Wrap the splines on the driveshaft with vinyl tape (A) to prevent damaging the outboard boot.

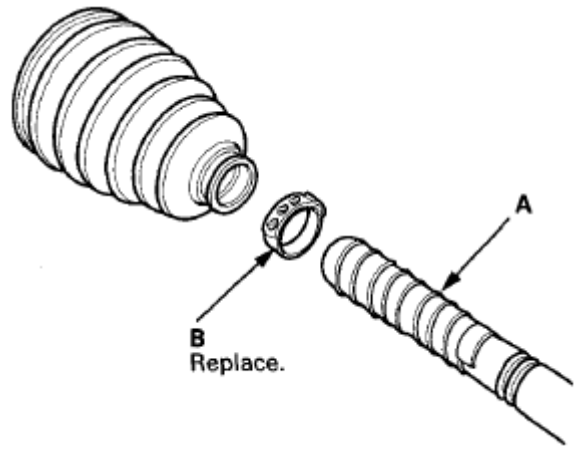


Fig. 126: Identifying Vinyl Tape
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Install new ear clamp band (B) and the outboard boot onto the driveshaft, then remove the vinyl tape. Be careful not to damage the outboard boot.
3. Make sure to check the size of a new stop ring.

NOTE: To avoid driveshaft and vehicle damage, make sure you install a new stop ring.

Stop ring specifications

Overall diameter (A): 28.0 mm (1.10 in)

Wire diameter (B): 1.8 mm (0.07 in)

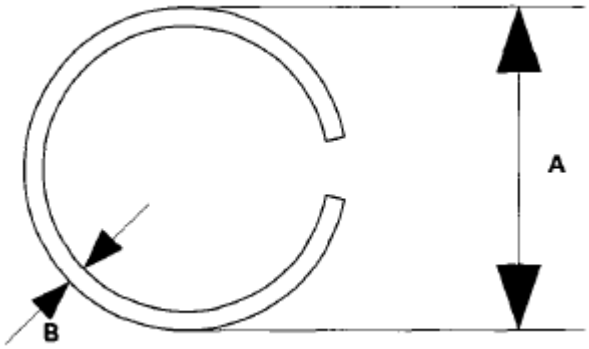


Fig. 127: Checking Size Of Stop Ring
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Install the stop ring (A) into the driveshaft groove (B).

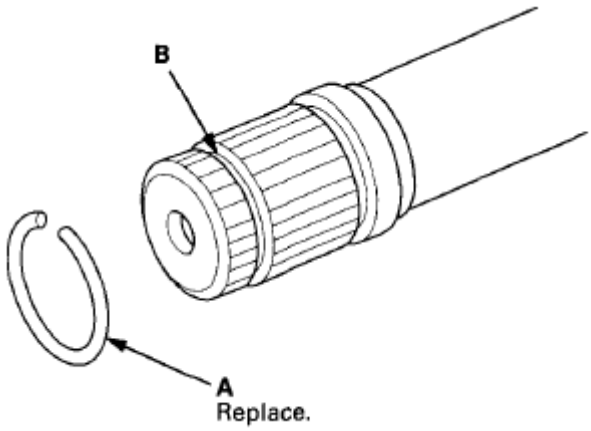


Fig. 128: Identifying Stop Ring And Driveshaft Groove
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Pack about 35 g (1.2 oz) of grease included in the new outboard boot set into the driveshaft hole in the outboard joint.

NOTE: If you are installing a new outboard joint, the grease is already installed.

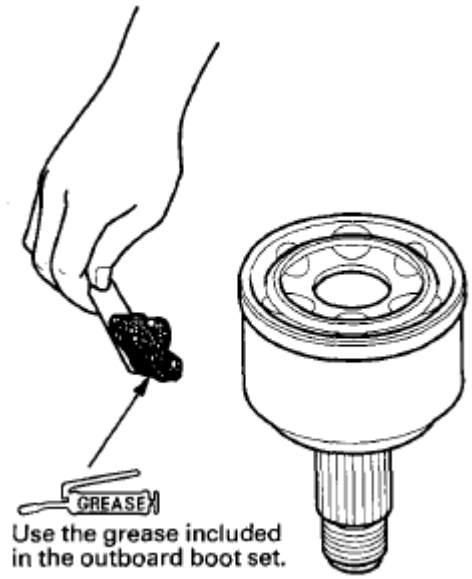


Fig. 129: Packing Grease Into Driveshaft Hole In Outboard Joint
Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Insert the driveshaft (A) into the outboard joint (B) until the stop ring (C) is close to the joint.

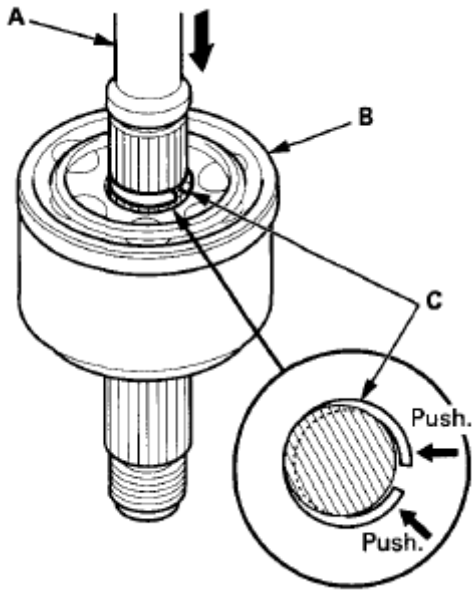


Fig. 130: Inserting Driveshaft Into Outboard Joint Until Stop Ring Is Close To Joint
Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. To completely seat the outboard joint, pick up the driveshaft and the joint, and tap or hit the assembly onto a hard surface from a height of about 10 cm (4 in).

NOTE: Do not use a hammer, as excessive force may damage the driveshaft. Be careful not to damage the threaded section (A) of the outboard joint.

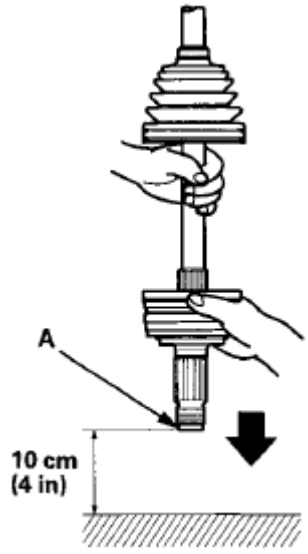


Fig. 131: To Completely Seat Outboard Joint Tapping Assembly Onto Hard Surface From Height
Courtesy of AMERICAN HONDA MOTOR CO., INC.

8. Check the alignment of the paint mark (A) you made with the outboard joint end (B).

NOTE: To avoid driveshaft and vehicle damage, the shaft must be all the way into the outboard joint to ensure the stop ring is properly seated.

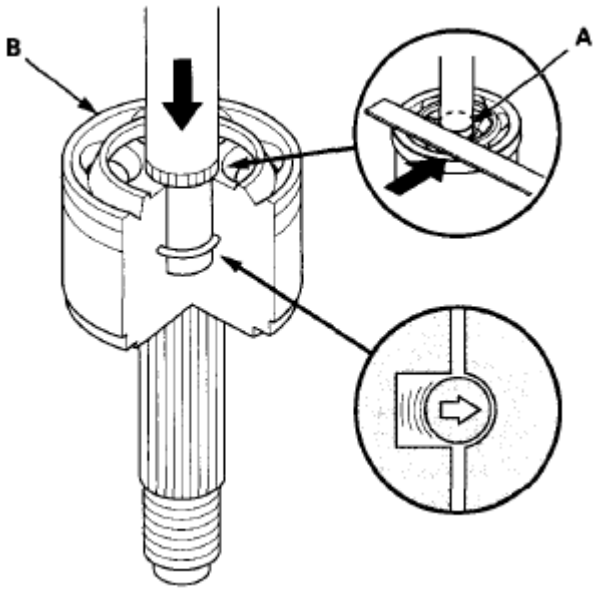


Fig. 132: Checking Alignment Of Paint Mark With Outboard Joint End
Courtesy of AMERICAN HONDA MOTOR CO., INC.

9. Pack the outboard joint (A) with the remaining joint grease included in the outboard boot set.

Total grease quantity

Outboard joint: 80- 100 g (2.8- 3.5 oz)

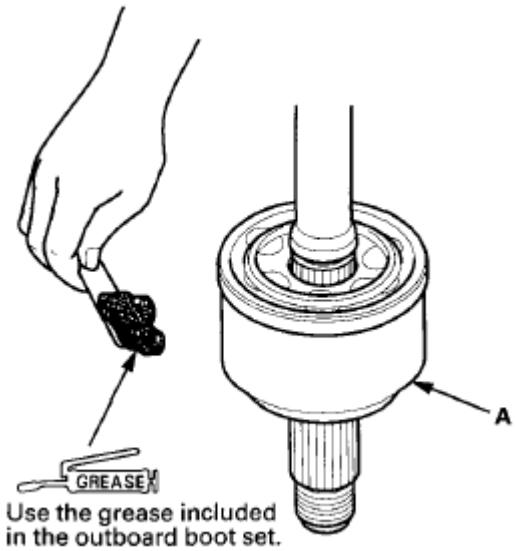


Fig. 133: Packing Outboard Joint With Remaining Joint Grease
Courtesy of AMERICAN HONDA MOTOR CO., INC.

10. Fit the boot ends (A) onto the driveshaft (B) and the outboard joint (C). Bleed any excess air from the boot by inserting a flat-tipped screwdriver between the boot and the joint.

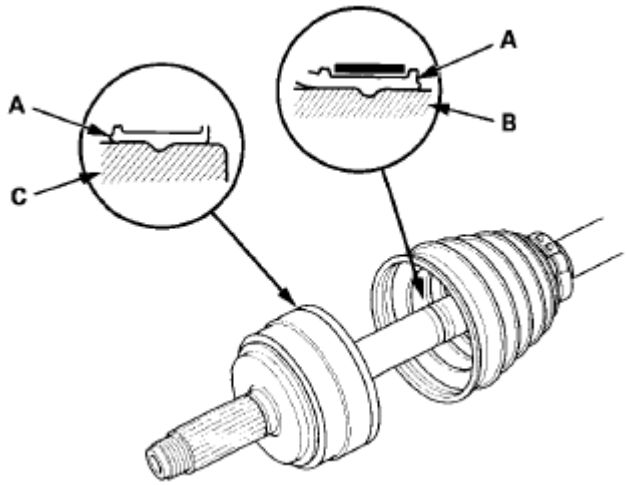


Fig. 134: Identifying Boot Ends, Driveshaft And Outboard Joint
Courtesy of AMERICAN HONDA MOTOR CO., INC.

11. Inspect the length (A) of the driveshafts in the figure as shown, then adjust the boots to halfway between full compression and full extension.

    Left and Right driveshaft: 567.1- 572.1 mm (22.33- 22.52 in)

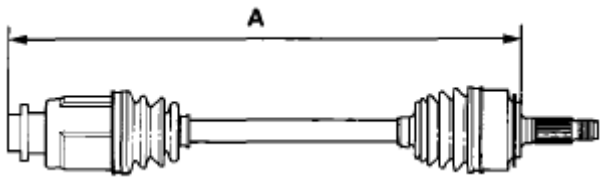


Fig. 135: Inspecting Length Of Driveshafts
Courtesy of AMERICAN HONDA MOTOR CO., INC.

12. Close the ear portion (A) of the band using a commercially available boot band clamp tool (Kent-Moore J-35910 or equivalent) (B).

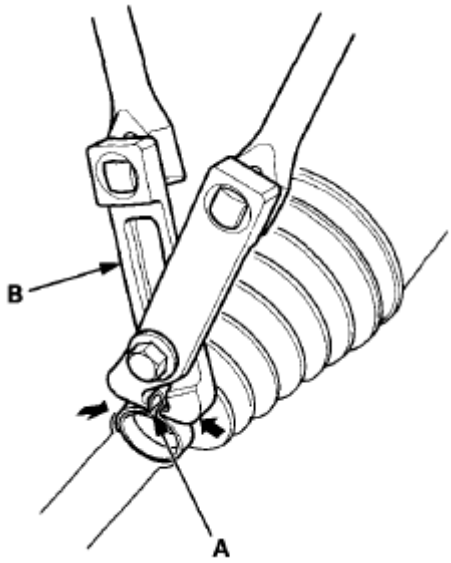


Fig. 136: Closing Ear Portion Of Band Using Boot Band Clamp Tool
Courtesy of AMERICAN HONDA MOTOR CO., INC.

13. Check the clearance between the closed ear portion of the band. If the clearance is not within the standard, close the ear portion of the band tighter.

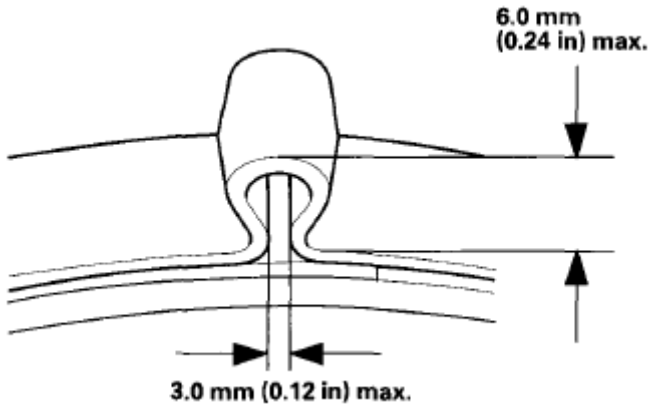


Fig. 137: Checking Clearance Between Closed Ear Portion Of Band
Courtesy of AMERICAN HONDA MOTOR CO., INC.

14. Install a new low profile band (A) onto the boot (B), then hook the tab (C) of the band.

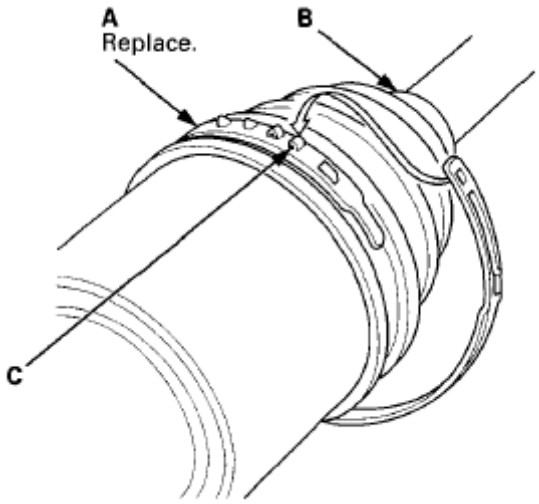


Fig. 138: Hooking Tab Of Band
Courtesy of AMERICAN HONDA MOTOR CO., INC.

15. Close the hook portion of the band using commercially available boot band pliers (A), then hook the tabs (B) of the band.

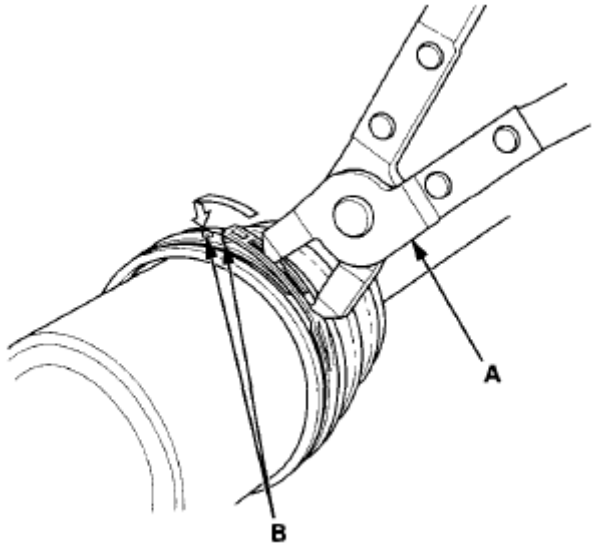


Fig. 139: Closing Hook Portion Of Band Using Boot Band Pliers And Hooking Tabs Of Band
Courtesy of AMERICAN HONDA MOTOR CO., INC.

REAR DRIVESHAFT INSTALLATION

NOTE: Before starting installation, make sure the mating surfaces of the joint and the splined section are clean.

1. Install a new set ring (A) into the set ring groove (B) of the rear differential.

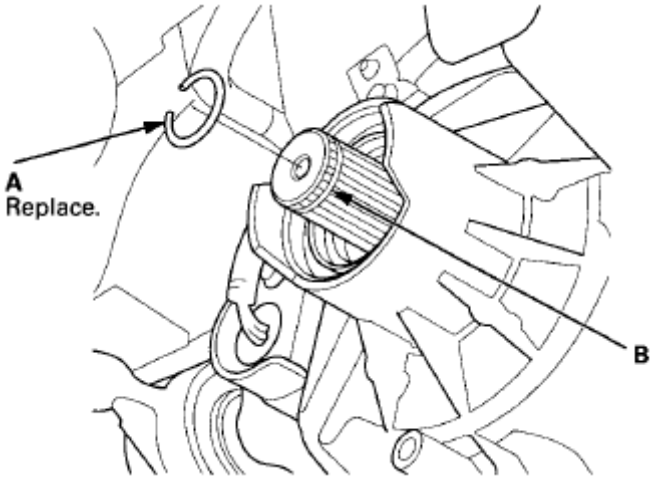


Fig. 140: Identifying Set Ring And Set Ring Groove
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Apply 1.5- 2.0 g (0.05- 0.07 oz) of super high temp urea grease (P/N 08798-9002) to the whole splined surface (A). After applying grease, remove the grease from the splined grooves at intervals of 2- 3 splines and from the set ring groove (B) so that air can bleed from the rear differential.

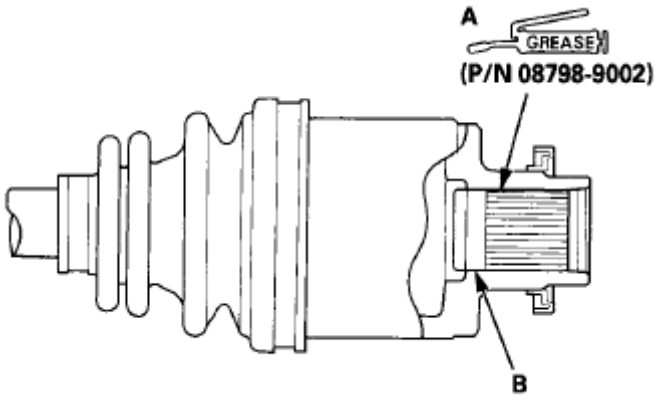


Fig. 141: Applying Super High Temp Urea Grease To Whole Splined Surface
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Install the outboard joint (A) into the rear hub (B).

NOTE: Be careful not to damage the wheel speed sensor (C).

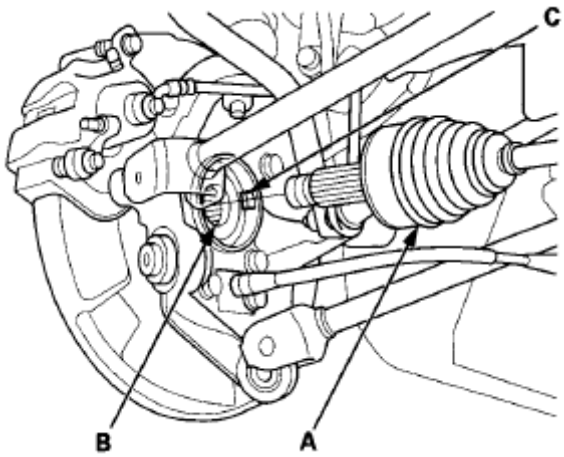


Fig. 142: Identifying Outboard Joint, Rear Hub And Wheel Speed Sensor
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Clean the areas where the driveshaft contacts the differential thoroughly with solvent, and dry them with compressed air.

NOTE: Do not wash the rubber parts with solvent.

5. Pull the knuckle outward, and insert the inboard joint (A) into the rear differential (B).

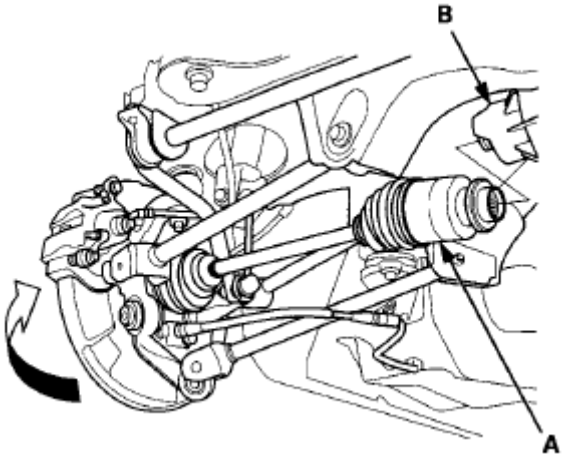


Fig. 143: Pulling Knuckle Outward And Insert Inboard Joint Into Rear Differential
Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Make sure the inboard joint (A) is installed all the way into the rear differential (B) and to ensure the set ring (C) is properly seated.

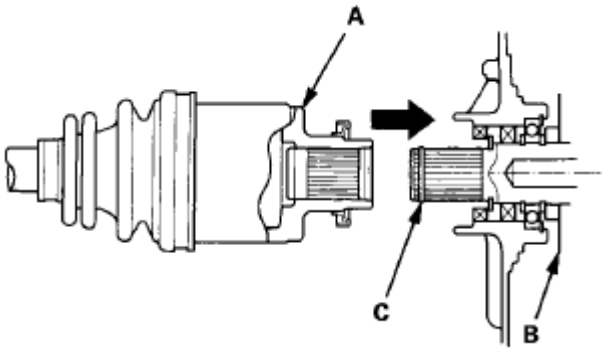


Fig. 144: Installing Inboard Joint Into Rear Differential Ensuring Set Ring Is Properly Seated
Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Loosely install the new lower arm A mounting bolt (A) and the new lower arm B mounting bolt (B).

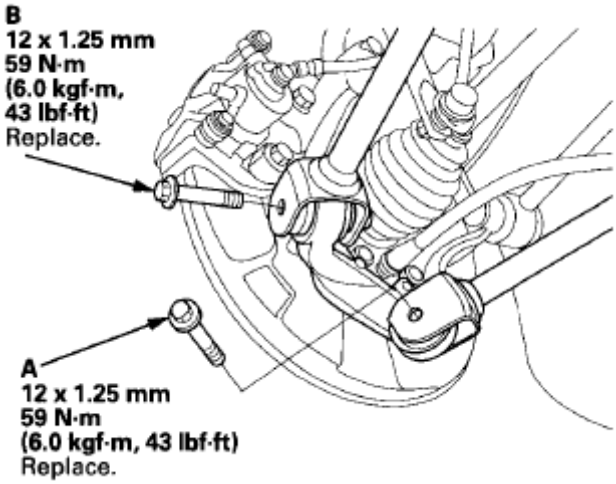


Fig. 145: Identifying Lower Arm Mounting Bolts With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

8. Place a floor jack under the knuckle, and raise the suspension to load it with the vehicle's weight.
9. Tighten the lower arm A mounting bolt and the lower arm B mounting bolt to the specified torque, then remove the floor jack.
10. Apply a small amount of engine oil to the seating surface of a new spindle nut (A).

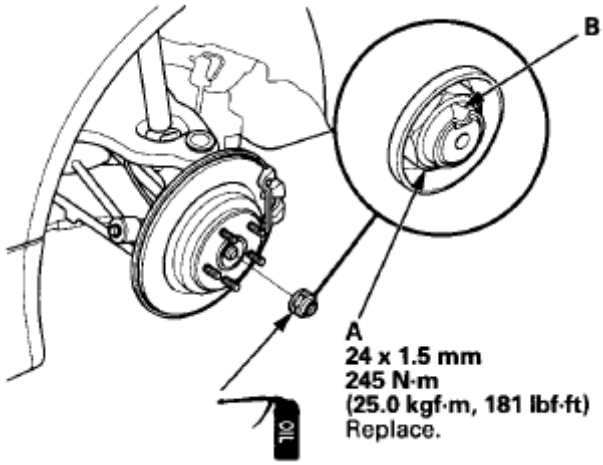


Fig. 146: Identifying Spindle Nut Shoulder And Spindle Nut With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

11. Install the spindle nut, then tighten it. After tightening, use a drift to stake the spindle nut shoulder (B) against the driveshaft.
12. Clean the mating surfaces between the brake disc and the inside of the wheel, then install the rear wheel.
13. Turn the wheel by hand, and make sure there is no interference between the driveshaft and surrounding parts.
14. Install exhaust pipe B and the muffler (see **J37A4 ENGINE (WITH SH-AWD)**).
15. Lower the vehicle.
16. Check the wheel alignment, and adjust it if necessary (see **WHEEL ALIGNMENT**).
17. Test-drive the vehicle.

PROPELLER SHAFT INSPECTION

UNIVERSAL JOINT AND BOOTS

1. Shift the transmission to neutral (M/T model) or N (A/T model).
2. Raise and support the vehicle (see **LIFT AND SUPPORT POINTS**).
3. Check the No. 1 center support bearing (A) and the No. 2 center support bearing (B) for excessive play or noise. If the center support has excessive play or noise, replace the propeller shaft assembly.

Front side

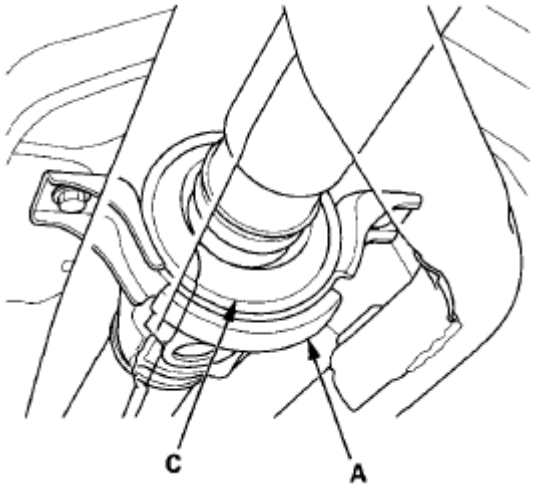


Fig. 147: Identifying Center Support Bearing And Rubber Portions - Front Side
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Rear side

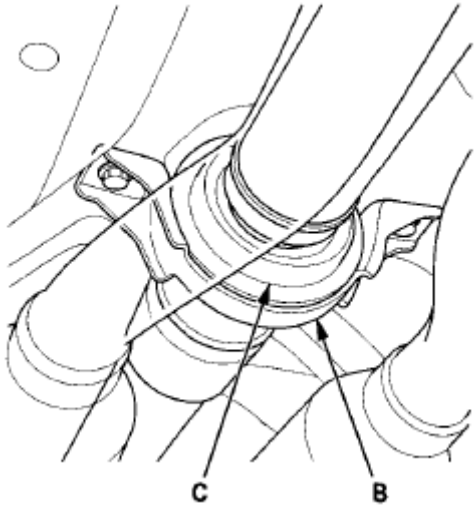


Fig. 148: Identifying Center Support Bearing And Rubber Portions - Rear Side
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Check the rubber portions (C) of the center support bearings for damage and deterioration. If the rubber portions are damaged or deteriorated, replace the propeller shaft assembly.
5. Check the universal joints for excessive play or noise. If the universal joints have excessive play or noise, replace the propeller shaft assembly.

PROPELLER SHAFT RUNOUT

1. Shift the transmission to neutral (M/T model) or N (A/T model).
2. Raise and support the vehicle (see **LIFT AND SUPPORT POINTS**).

3. Install a dial indicator with its needle on the middle of the No. 1, No. 2, or No. 3 propeller shaft.
4. Turn the other propeller shaft slowly and check the runout. Repeat this procedure for the other propeller shaft.

No. 1 Propeller Shaft Runout Service Limit: 1.5 mm (0.06 in)

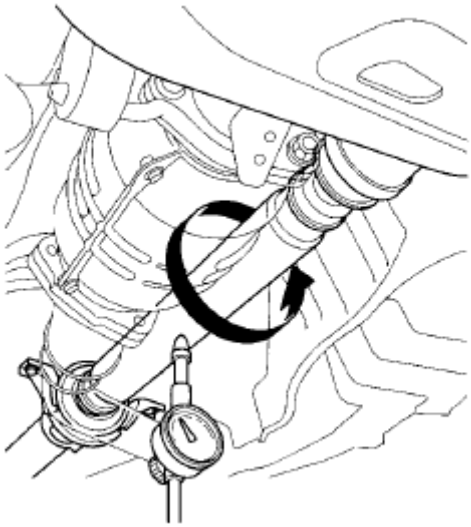


Fig. 149: Measuring No. 1 Propeller Shaft Runout
Courtesy of AMERICAN HONDA MOTOR CO., INC.

No. 2 Propeller Shaft Runout Service Limit: 1.5 mm (0.06 in)

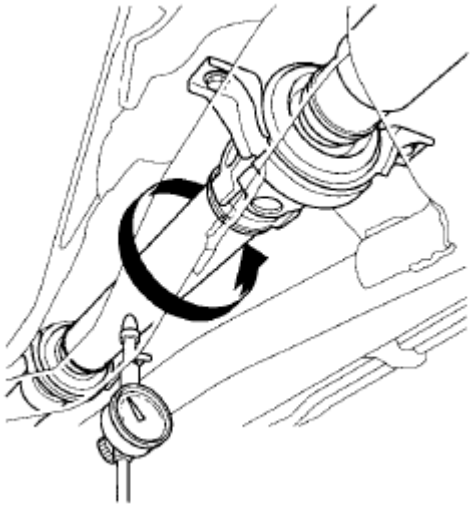


Fig. 150: Measuring No. 2 Propeller Shaft Runout
Courtesy of AMERICAN HONDA MOTOR CO., INC.

No. 3 Propeller Shaft Runout Service Limit: 1.5 mm (0.06 in)

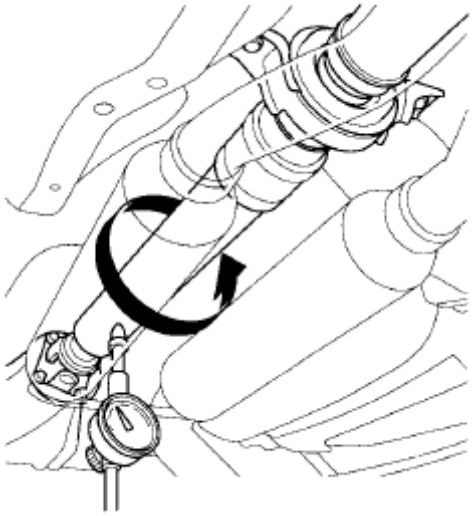


Fig. 151: Measuring No. 3 Propeller Shaft Runout
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. If the runout on either propeller shaft exceeds the service limit, replace the propeller shaft assembly.

PROPELLER SHAFT REMOVAL

1. Raise and support the vehicle (see **LIFT AND SUPPORT POINTS**).
2. Remove exhaust pipe B and the muffler (see **J37A4 ENGINE (WITH SH-AWD)**).
3. Place a transmission jack under the No. 2 propeller shaft.
4. Make reference mark (A) across the No. 1 propeller shaft (B) and the transfer companion flange (C).

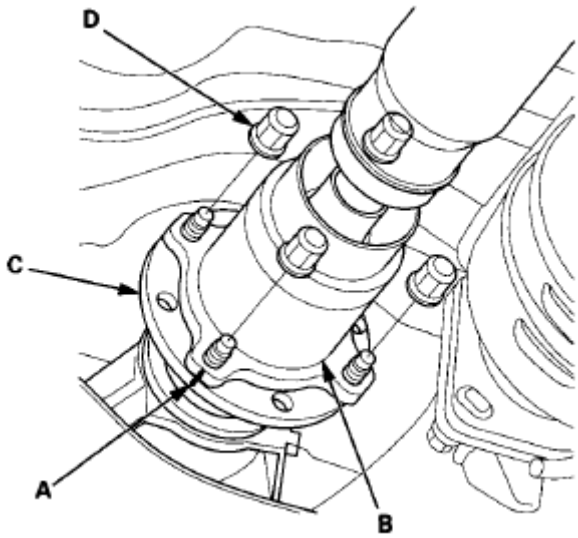


Fig. 152: Identifying Transfer Companion Flange, Reference Mark, Propeller Shaft And Flange Nuts
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Remove the No. 1 propeller shaft flange nuts (D).
6. Make reference mark (A) across the No. 3 propeller shaft (B) and the rear differential companion flange (C).

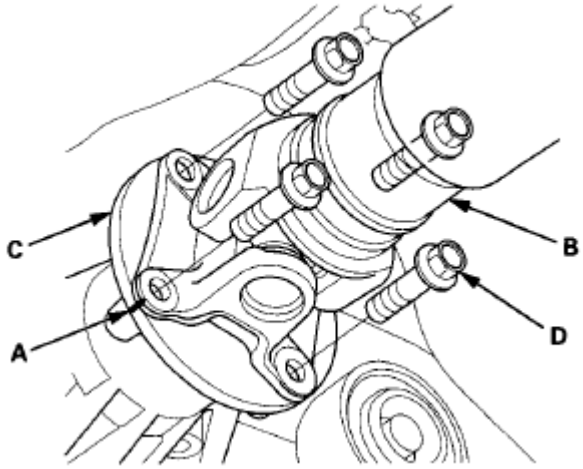


Fig. 153: Identifying Rear Differential Companion Flange, Reference Mark, Propeller Shaft And Flange Bolts
Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Remove the No. 3 propeller shaft flange bolts (D).
8. Remove the No. 1 and the No. 2 center support bearings mounting bolts.

No. 1 Support Bearing

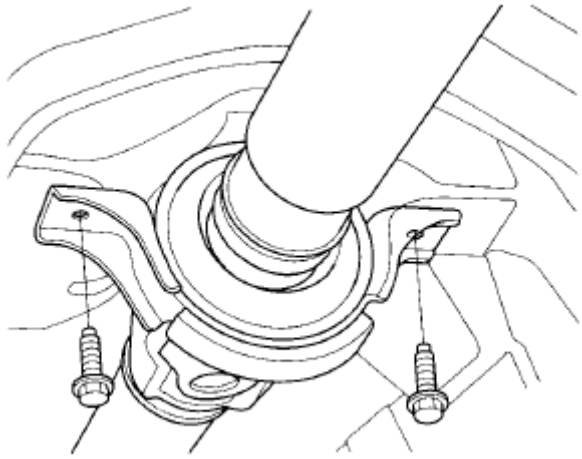


Fig. 154: Identifying No. 1 Support Bearing
Courtesy of AMERICAN HONDA MOTOR CO., INC.

No. 2 Support Bearing

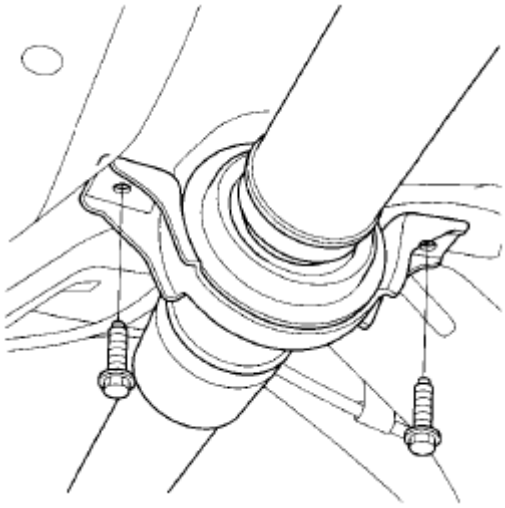


Fig. 155: Identifying No. 2 Support Bearing
Courtesy of AMERICAN HONDA MOTOR CO., INC.

9. Move the propeller shaft (A) toward the rear differential, then lower the propeller shaft assembly on the jack.

NOTE: Secure the shaft to the transmission jack with a tie down to prevent it from rolling off.

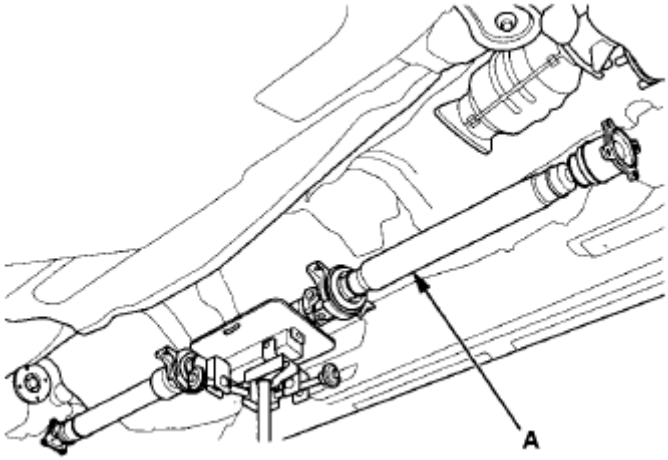


Fig. 156: Identifying Propeller Shaft
Courtesy of AMERICAN HONDA MOTOR CO., INC.

PROPELLER SHAFT INSTALLATION

1. Place the No. 2 propeller shaft on a transmission jack, then raise it to the mounting level.

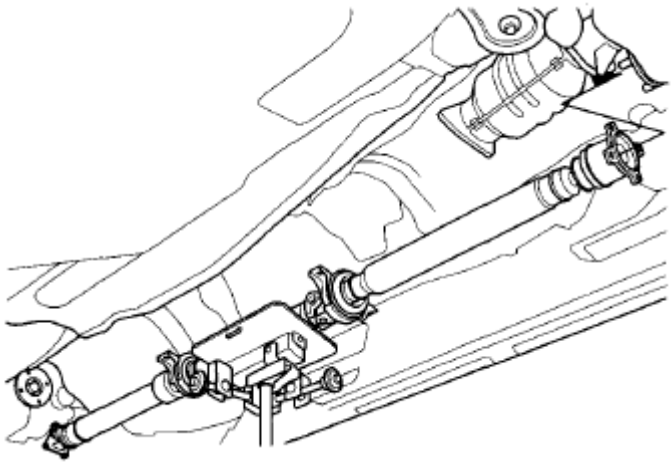


Fig. 157: Raising Propeller Shaft To Mounting Level Using Transmission Jack
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Set the No. 1 propeller shaft (A) to the transfer companion flange (B) by aligning the reference mark (C) you made during the removal procedure. Then install the No. 1 propeller shaft flange nuts (D) finger tight.

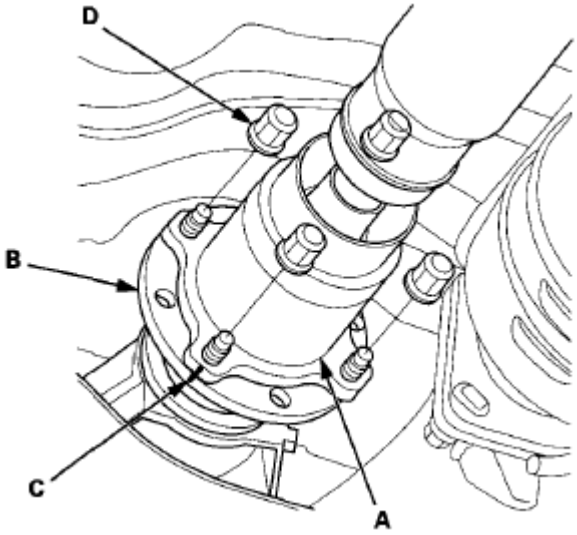


Fig. 158: Identifying Transfer Companion Flange, Reference Mark, Propeller Shaft And Flange Nuts
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Install the No. 1 support bearing (A) with new mounting bolts in the numbered sequence shown.

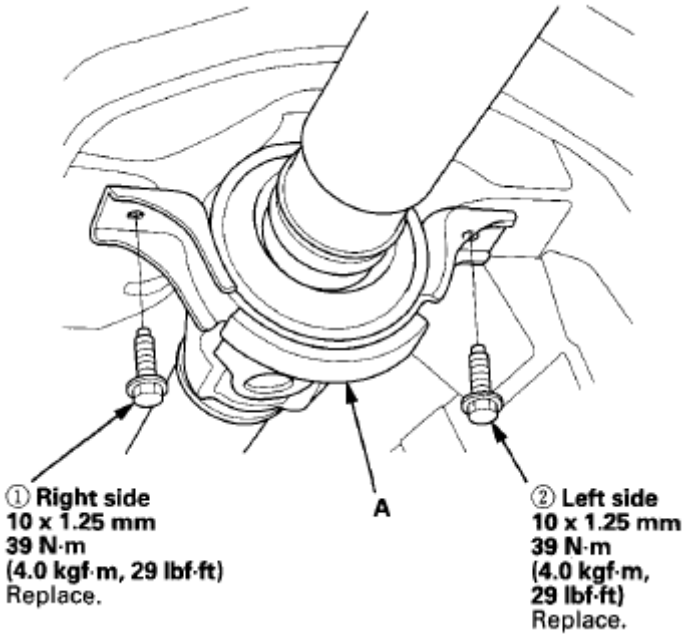


Fig. 159: Identifying Support Bearing With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Install the No. 2 support bearing (A) with new mounting bolts in the numbered sequence shown.

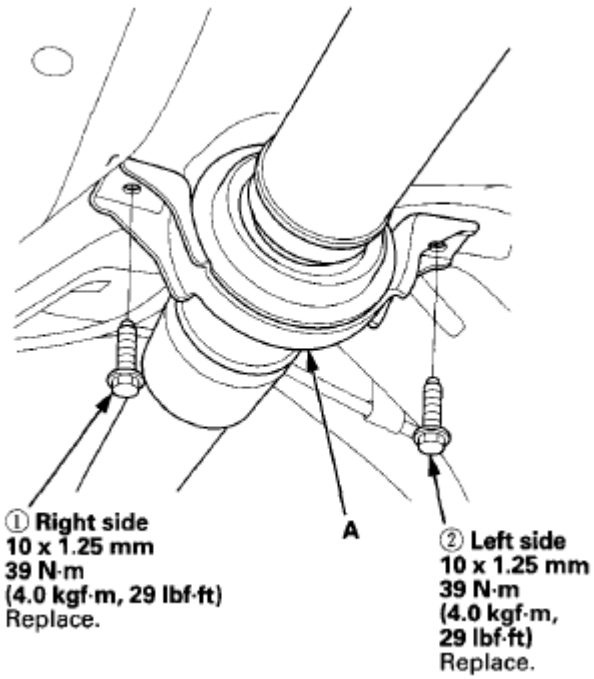


Fig. 160: Identifying Support Bearing With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Set the No. 3 propeller shaft (A) to the rear differential companion flange (B) by aligning the reference

mark (C) you made during the removal procedure. Then install the new No. 3 propeller shaft flange bolts (D) to the specified torque.

NOTE: When replacing the propeller shaft or the rear differential, align the factory reference marks (E).

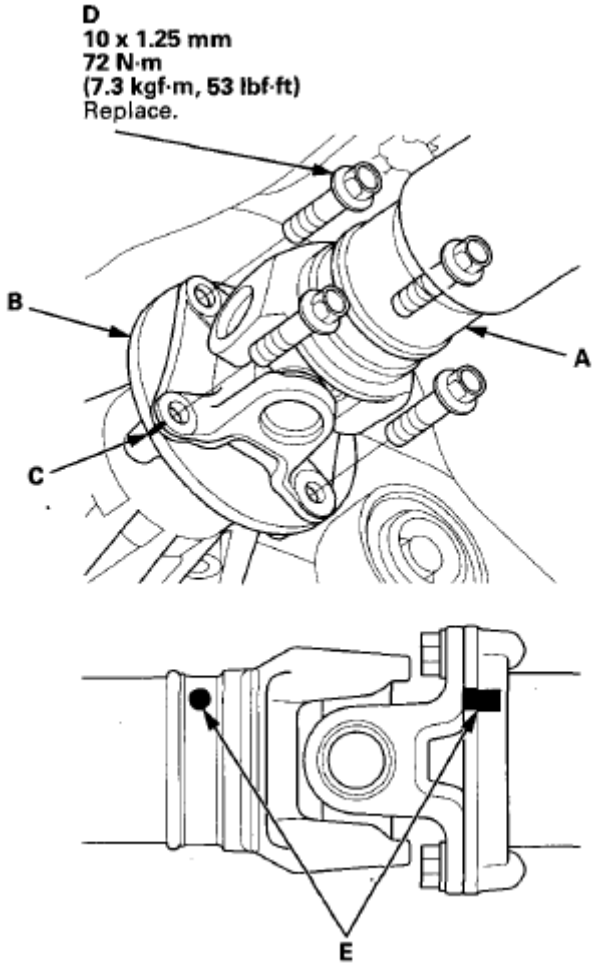


Fig. 161: Identifying Rear Differential Companion Flange, Factory Reference Marks, Propeller Shaft And Flange Bolts With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Tighten the No. 1 propeller shaft flange nuts to the specified torque.

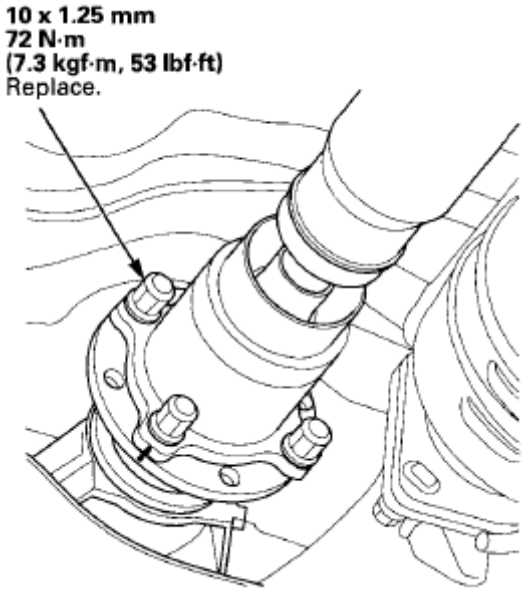


Fig. 162: Identifying Propeller Shaft Flange Nut With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Install exhaust pipe B and the muffler (see **J37A4 ENGINE (WITH SH-AWD)**).
8. Lower the vehicle.
9. If you installed a new propeller shaft, test-drive the vehicle at 55 mph (88 km/h), and check for noise or vibration. If there is a noise or vibration, rotate the propeller shaft 180 degrees from its current alignment with the rear differential companion flange, then recheck.

2012 DRIVELINE/AXLES

Rear Differential - TL

SPECIAL TOOLS

Ref.No.	Tool Number	Description	Qty
①	070AJ-SJAA101	Torque Wrench Adapter	1
②	07AAD-S3VA000	Driveshaft Remover	1
③	07AAD-STKA100	Driver Handle	1
④	07AAD-STKA111	Oil Seal Driver	1
⑤	07AAD-STKA120	Dust Seal Driver	1
⑥	07SAZ-001000A	Backprobe Set	2

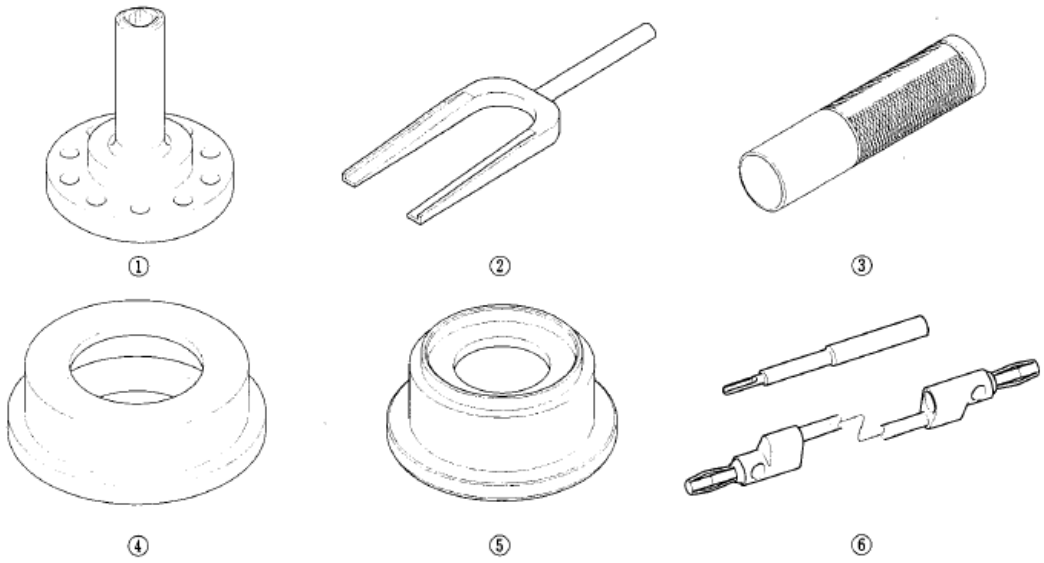


Fig. 1: Identifying Rear Differential Special Tools
Courtesy of AMERICAN HONDA MOTOR CO., INC.

COMPONENT LOCATION INDEX

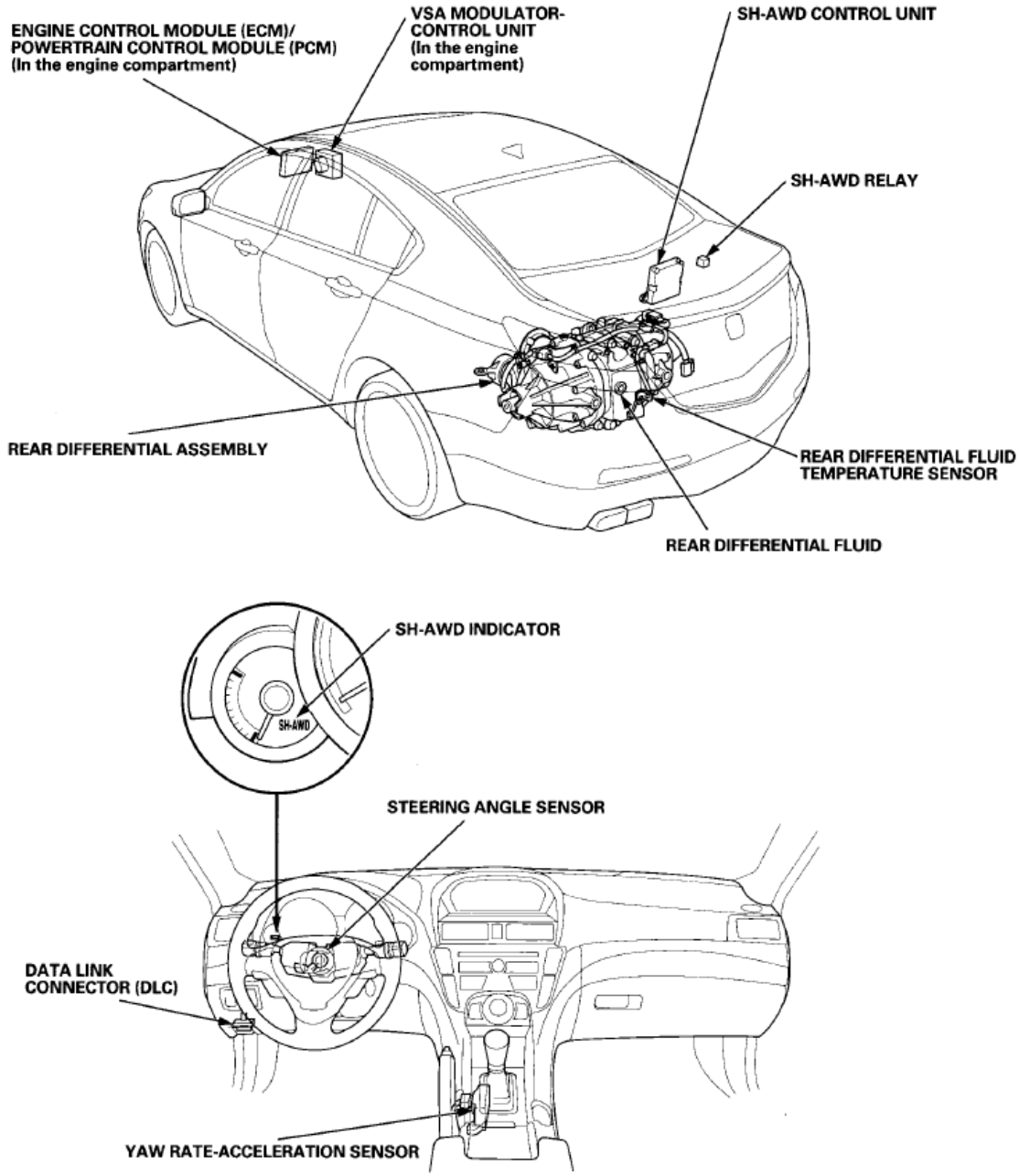


Fig. 2: Rear Differential Components Location
Courtesy of AMERICAN HONDA MOTOR CO., INC.

GENERAL TROUBLESHOOTING INFORMATION

SH-AWD INDICATOR

The SH-AWD indicator will come on under certain conditions even if the AWD system is working normally. Here are some examples:

- When you use high-powered wireless equipment such as a CB or Ham radio in the vehicle.

- When you keep spinning the rear wheels while the vehicle is stuck in sand, mud, snow, etc.
- When the battery voltage suddenly drops below 10 volts.

After the SH-AWD indicator comes on, it stays on until you turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.

DIAGNOSTIC TROUBLE CODE (DTC)

- The SH-AWD control unit can memorize up to eight different DTCs. The system displays the DTCs by blinking the SH-AWD indicator. Multiple DTCs are displayed in the order they occurred, beginning with the most recent.
- If the same DTC is detected more than once, the most recent DTC is written over the earlier one. Therefore, when the same problem is detected more than once, it is memorized as a single DTC.
- The DTCs are memorized in the SH-AWD units EEPROM (non-volatile memory). Therefore, the memorized DTCs are not cleared when the battery is disconnected or when the SH-AWD control unit is disconnected.
- If there is a problem in the central processing unit (CPU) of the SH-AWD control unit, the SH-AWD indicator comes on, but no DTC is memorized. Refer to the **SYMPTOM TROUBLESHOOTING**.

SELF-DIAGNOSIS

When a problem is detected during self-diagnosis, the system does the following:

- Turns the SH-AWD indicator on.
- Memorizes the DTC if possible.
- Stops AWD control and puts the vehicle back into two-wheel drive (front wheel only).
- Reduces engine torque to suit the driving conditions when an abnormality was detected (The client may notice a decrease in engine performance).

HOW TO USE THE HDS (HONDA DIAGNOSTIC SYSTEM)

1. With the ignition switch in LOCK (0), or the vehicle in the OFF mode, connect the Honda Diagnostic System (HDS) to the data link connector (DLC) (A) located under the driver's side of the dashboard.

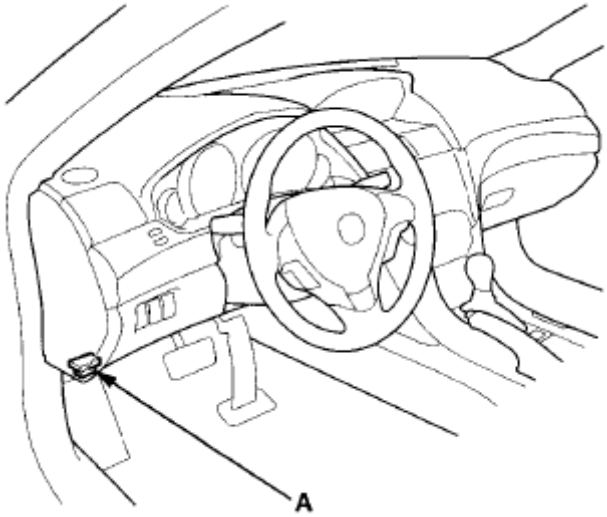


Fig. 3: Identifying Data Link Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
3. Make sure the HDS communicates with the vehicle and the SH-AWD control unit. If it does not, go to the DLC circuit troubleshooting (see **DLC CIRCUIT TROUBLESHOOTING**).
4. Check the diagnostic trouble code (DTC) and the freeze data, for all systems in the vehicle, troubleshoot the powertrain DTCs first and note them. Then refer to the indicated **DTC'S TROUBLESHOOTING**, and do the appropriate troubleshooting procedure.

NOTE:

- **The HDS can read the DTC, the freeze data, the current data, and other system data.**
- **For specific operations, refer to the Help menu that came with the HDS.**
- **It is best do an ALL DTC CHECK to look for other systems DTCs that are related to the problem.**

HOW TO CLEAR DTCS

1. With the ignition switch in LOCK (0), or the vehicle in the OFF mode, connect the HDS to the DLC (A) located under the driver's side of the dashboard.

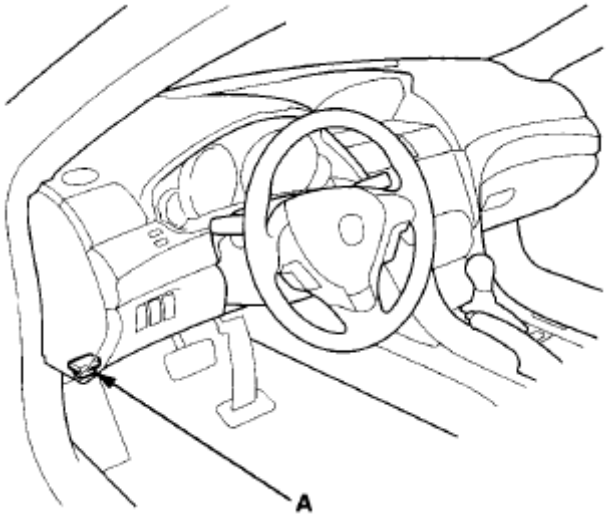


Fig. 4: Identifying Data Link Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
3. Make sure the HDS communicates with the vehicle and the SH-AWD control unit. If it does not, go to the DLC circuit troubleshooting (see **DLC CIRCUIT TROUBLESHOOTING**).
4. Clear the DTC(s) by following the screen prompts on the HDS.
5. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.

NOTE: If the DTC that was cleared is related to another system, that system's DTC must be repaired, or the SH-AWD DTC will return.

HOW TO CHECK FOR DIAGNOSTIC TROUBLE CODES (DTCS)

When the SH-AWD control unit senses an abnormality in the input or output systems, the SH-AWD indicator in the gauge control module will usually come on, and the malfunction indicator lamp (MIL), the D indicator, the VSA indicator, and/or the ABS indicator may also come on.

NOTE: Check the vehicle battery condition and charging system before troubleshooting.

1. With the ignition switch in LOCK (0), or the vehicle in the OFF mode, connect the HDS to the data link connector (DLC) (A) located under the driver's side of the dashboard.

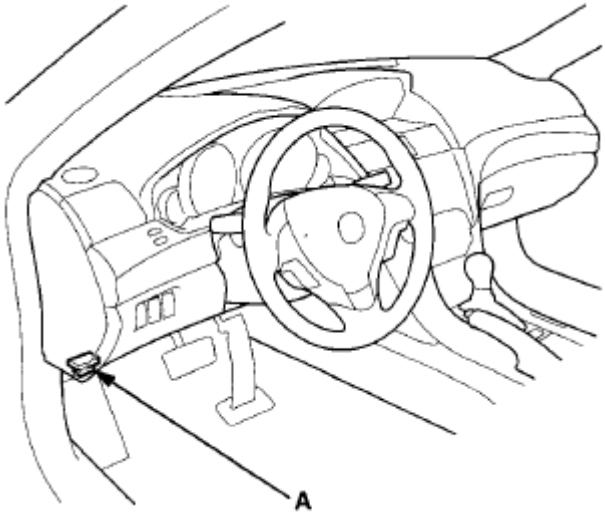


Fig. 5: Identifying Data Link Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode. Make sure the HDS communicates with the vehicle and the SH-AWD control unit. If it does not, go to the DLC circuit troubleshooting (see **DLC CIRCUIT TROUBLESHOOTING**). Follow the prompts on the HDS to display the DTC(s) on the screen. Check the DTC and the freeze data for all systems. After determining the DTC(s), refer to the **DTC TROUBLESHOOTING**.

NOTE: See the HDS help menu for specific instructions.

3. If there are fuel and emissions DTCs and other system DTCs at the same time, troubleshoot the fuel and emissions DTCs first, otherwise the SH-AWD DTC may return.
4. After recording the DTCs, clear all DTCs.
5. Test-drive the vehicle for several minutes in AWD mode, and check for DTCs. If the DTC returns, refer to the **DTC TROUBLESHOOTING**. If the DTC does not return, there was an intermittent problem within the circuit. Make sure all connectors and terminals in the circuit are tight.

HOW TO TROUBLESHOOT CIRCUITS AT THE SH-AWD CONTROL UNIT

Special Tools Required

Backprobe Set 07SAZ-001000A (2)

1. Remove the trunk front trim panel (see **TRIM REMOVAL/INSTALLATION - TRUNK AREA**).
2. Remove the SH-AWD control unit (A).

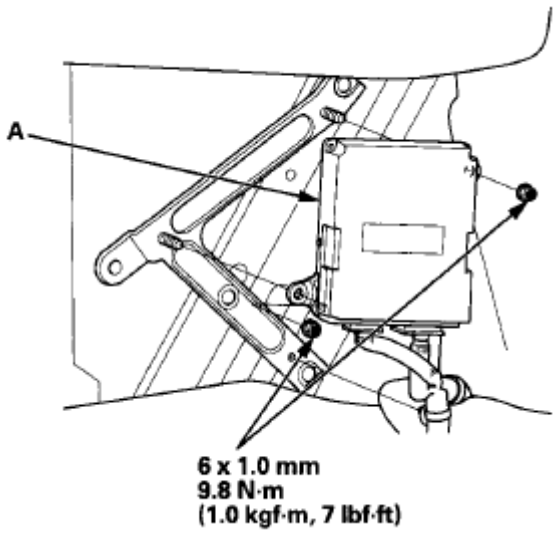


Fig. 6: Identifying SH-AWD Control Unit With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Inspect the circuit on the SH-AWD control unit according to the DTC Troubleshooting using the backprobe set and a digital multimeter or an analog circuit tester.
4. Connect the backprobe adapters (A) to the stacking patch cords (B), and connect the cords to a digital multimeter or an analog circuit tester (C). Using the wire insulator as a guide for the contoured-tip of the backprobe adapter, gently slide the tip into the connector from the wire side until it comes in contact with the terminal end of the wires.

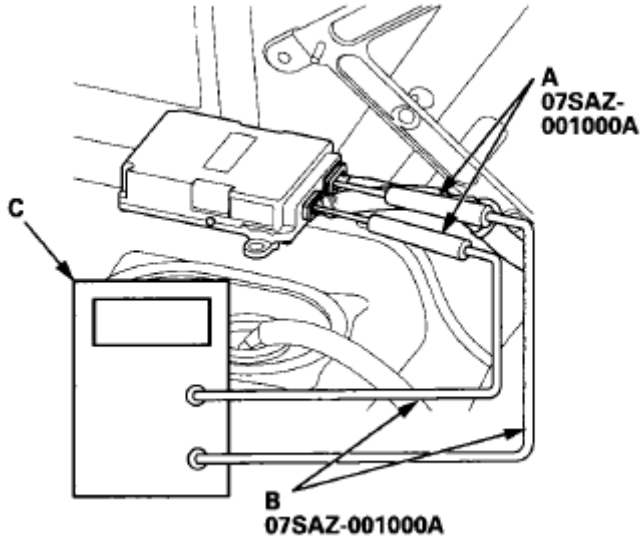


Fig. 7: Identifying Backprobe Adapters, Stacking Patch Cords And Analog Circuit Tester
Courtesy of AMERICAN HONDA MOTOR CO., INC.

SH-AWD® CONTROL UNIT UPDATE

Special Tools Required

- Honda Diagnostic System (HDS)
- Honda Interface Module (HIM).
- HDS pocket tester
- MVCI unit with the latest control module (CM) update software installed

NOTE:

- **Before you update the SH-AWD control unit, make sure the battery in the vehicle is fully charged.**
- **Use this procedure when you need to update the SH-AWD control unit in a troubleshooting procedure.**
- **Make sure the HDS/HIM has the latest software version.**
- **Never turn the ignition switch to LOCK(0), or press the engine start/stop button to select the OFF mode during the update. If there is a problem with the update, leave the ignition switch in ON (II), or the vehicle in the ON mode, otherwise the control unit could be damaged, or it will set DTCs.**
- **To prevent SH-AWD control unit damage, do not operate anything electrical (headlights, audio system, brakes, A/C, power windows, moonroof, door locks, etc.) during the update.**
- **To ensure the latest program is installed, do an SH-AWD control unit update whenever the SH-AWD control unit is substituted or replaced.**
- **You cannot update an SH-AWD control unit with the same program it already has installed. It will only accept a new program.**
- **If you need to diagnose the Honda interface module (HIM) because the HIM's red (#3) light came on or was flashed during the update, leave the ignition switch in the ON (II) position, or the engine start/stop button in the ON mode, when you disconnect the HIM from the data link connector (DLC). This will prevent SH-AWD control unit damage.**

1. With the ignition switch in LOCK (0), or the vehicle in the OFF mode, connect the HDS/HIM to the DLC (A) located under the driver's side of the dashboard.

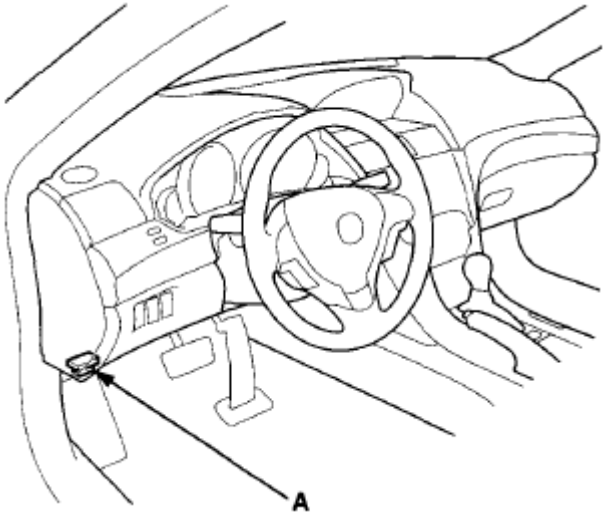


Fig. 8: Identifying Data Link Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
3. Make sure the HDS communicates with the vehicle and the SH-AWD control unit. If it does not, go to the DLC circuit troubleshooting (see **DLC CIRCUIT TROUBLESHOOTING**).
4. Select the update program, and follow the screen prompts to update the SH-AWD control unit.
5. If the software in the SH-AWD control unit is the latest, disconnect the HDS/HIM from the DLC, and go back to the procedure that you were doing. If the software in the SH-AWD control unit is not the latest, follow the instructions on the screen.
6. Do the SH-AWD control unit initialization (see **SH-AWD® CONTROL UNIT INITIALIZATION**).
7. Do the SH-AWD differential clutch torque memorization (see **SH-AWD® DIFFERENTIAL CLUTCH TORQUE MEMORIZATION**).
8. Do the yaw rate-acceleration neutral position memorization (see **YAW RATE-ACCELERATION NEUTRAL POSITION MEMORIZATION**).

SH-AWD® DIFFERENTIAL CLUTCH TORQUE MEMORIZATION

Whenever the right or left clutch side case is replaced, the differential clutch torque memorization must be done.

1. With the ignition switch in LOCK (0), or the vehicle in the OFF mode, connect the HDS to the DLC (A) located under the driver's side of the dashboard.

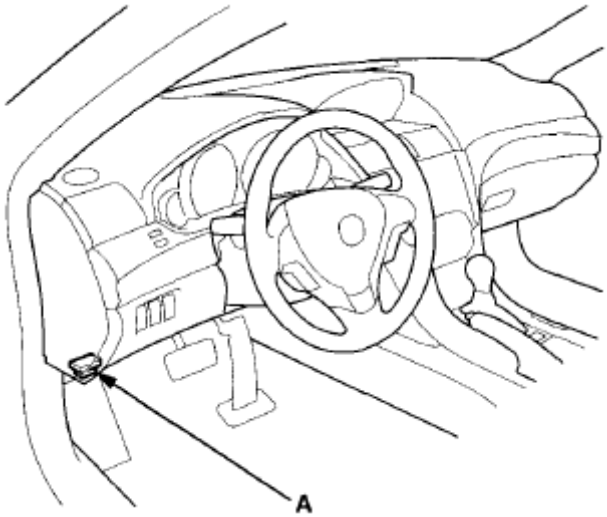


Fig. 9: Identifying Data Link Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
3. Make sure the HDS communicates with the vehicle and the SH-AWD control unit. If it does not, go to the DLC circuit troubleshooting (see **DLC CIRCUIT TROUBLESHOOTING**).
4. From the mode menu, select SH-AWD, select MISCELLANEOUS TEST, select NEUTRAL MENU, then select DIFFERENTIAL TORQUE with the HDS, and follow the screen prompts.

NOTE: See the HDS help menu for specific instructions.

YAW RATE-ACCELERATION NEUTRAL POSITION MEMORIZATION

Whenever the yaw rate-acceleration sensor is replaced, its neutral position memorization must be done.

1. With the ignition switch in LOCK (0), or the vehicle in the OFF mode, connect the HDS to the DLC (A) located under the driver's side of the dashboard.

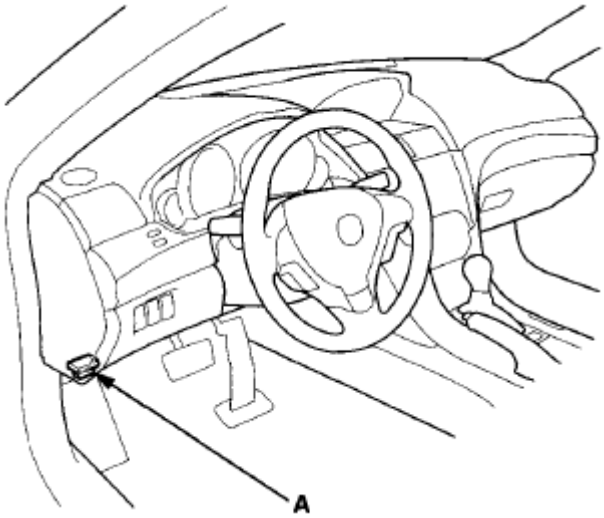


Fig. 10: Identifying Data Link Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
3. Make sure the HDS communicates with the vehicle and the SH-AWD control unit. If it does not, go to the DLC circuit troubleshooting (see **DLC CIRCUIT TROUBLESHOOTING**).
4. From the mode menu, select SH-AWD, select MISCELLANEOUS TEST, select NEUTRAL MENU, then select ALL SENSORS with the HDS, and follow the screen prompts.

NOTE: See the HDS help menu for specific instructions.

SH-AWD® CONTROL UNIT INITIALIZATION

Whenever the SH-AWD control unit is replaced, it must be initialized.

1. With the ignition switch in LOCK (0), or the vehicle in the OFF mode, connect the HDS to the DLC (A) located under the driver's side of the dashboard.

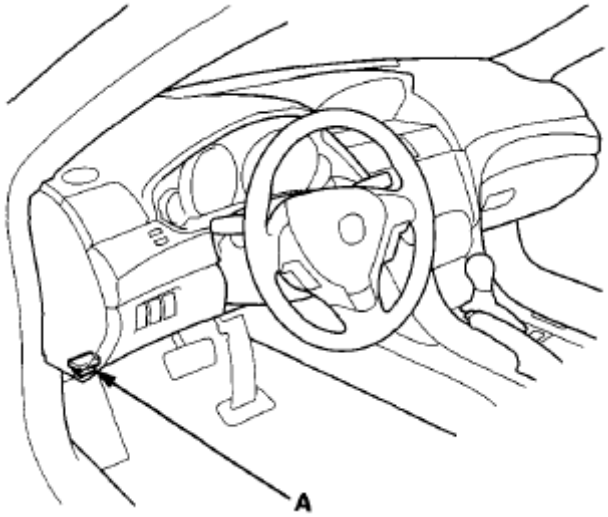


Fig. 11: Identifying Data Link Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
3. Make sure the HDS communicates with the vehicle and the SH-AWD control unit. If it does not, go to the DLC circuit troubleshooting (see **DLC CIRCUIT TROUBLESHOOTING**).
4. From the mode menu, select SH-AWD, select MISCELLANEOUS TEST, then select INITIALIZATION with the HDS, and follow the screen prompts.

NOTE: See the HDS help menu for specific instructions.

DTC TROUBLESHOOTING INDEX

DTC(1)	SH-AWD Indicator Light	Detection Item
12-1	ON	Lateral Acceleration Sensor Malfunction
12-2	ON	Lateral Acceleration Sensor Malfunction
12-3	ON	Lateral Acceleration Sensor Malfunction
15-1	ON	Longitudinal Acceleration Sensor Malfunction
16-3	ON	Steering Angle Sensor Neutral Position Incorrect
33-2	ON	Yaw Rate Sensor Malfunction
33-3	ON	Yaw Rate Sensor Malfunction
41-1	ON	F-CAN Malfunction (Lost Communication with Engine Control Module (ECM)/Powertrain Control

		Module (PCM))
41-2	ON	F-CAN Malfunction (Lost Communication with VSA Modulator-Control Unit)
41-4(2)	ON	F-CAN Malfunction (Lost Communication with A/T Control System)
41-5	ON	F-CAN Malfunction (Lost Communication with Yaw Rate-Acceleration Sensor)
41-6	ON	F-CAN Malfunction (Lost Communication with Steering Angle Sensor)
42-1	ON	Differential Fluid Temperature Sensor (Short to power)
42-2	ON	Differential Fluid Temperature Sensor (Open/GND Short)
43-1	ON	Differential Fluid Temperature Sensor Malfunction
44-11	ON	SH-AWD Control Unit
44-12	ON	SH-AWD Relay Stuck ON
44-32	ON	SH-AWD Control Unit Power Supply Stuck ON
44-41	ON	SH-AWD Control Unit Power Supply Stuck OFF
44-50	ON	SH-AWD Control Unit Power Supply Voltage Low
49-1	ON	SH-AWD Control Unit (PG Line Open)
52-3	ON	Left Clutch Electromagnetic Coil Current Malfunction
53-1	ON	Left Clutch Electromagnetic Coil (Open)
53-2	ON	Left Clutch Electromagnetic Coil (Short)
53-3	ON	Left Clutch Electromagnetic Coil (Open)
56-3	ON	Right Clutch Electromagnetic Coil Current Malfunction
57-1	ON	Right Clutch Electromagnetic Coil (Open)
57-2	ON	Right Clutch Electromagnetic Coil (Short)
57-3	ON	Right Clutch Electromagnetic Coil

		(Open)
76-1	ON	Rear Differential Fluid Overheats
77-1	ON	The Functional Abnormalities of Fuel and Emissions
77-2	ON	The Functional Abnormalities of VSA Modulator-Control Unit
77-4(2)	ON	The Functional Abnormalities of Automatic Transmission
77-5	ON	Yaw Rate-Acceleration Sensor Malfunction
77-6	ON	Steering Angle Sensor Malfunction
78-XX	ON	SH-AWD Control Unit Self-Diagnostic Malfunction
81-1	ON	Left Search Coil Sensor Malfunction
82-1	ON	Right Search Coil Sensor Malfunction
91-1	ON	SH-AWD Control Unit Programming Error

NOTE:

The "x" at the end of each DTC denotes a numeric character (0 thru 9) or an alpha character (A thru F) that you will see on the HDS display. The character is unrelated to your troubleshooting; it designates the SH-AWD control unit manufacturer and other details used for product analysis.

(1) DTCs are indicated by the SH-AWD indicator when the data link connector (DLC) is connected to the HDS.

(2) A/T model

SYMPTOM TROUBLESHOOTING INDEX

NOTE: Most problems in the SH-AWD unit can be diagnosed by identifying noises from the gears or bearings. Care should be taken during diagnosis not to confuse differential noises with those from other drivetrain components.

Symptom	Diagnostic Procedure	Also check for
The SH-AWD indicator does not go off, and no DTCs are stored	Symptom troubleshooting (see **THE SH-AWD INDICATOR DOES NOT GO OFF, AND NO DTCS ARE STORED**).	Low battery voltage
The SH-AWD indicator does not come on	Symptom troubleshooting (see **THE SH-AWD INDICATOR DOES NOT COME ON**).	
Gear or bearing noises	• Inspect and/or replace the rear differential fluid (see **REAR DIFFERENTIAL FLUID INSPECTION AND REPLACEMENT**). • Inspect the side case clearance (see **SIDE**	• Worn or cupped tires • Tire inflation • Fluid condition • Incorrect side case clearance

	CASE REPLACEMENT). • Replace the rear differential carrier assembly.	• Damaged or chipped gears • Incorrect tire size (rolling circumference)
Rear differential overheats	• Inspect and/or replace the rear differential fluid (see **REAR DIFFERENTIAL FLUID INSPECTION AND REPLACEMENT**). • Inspect the tires.	• Fluid condition • Incorrect tire size (rolling circumference)
Rear differential leaks fluid	• Inspect fluid leaks. • Inspect and/or replace the rear differential fluid (see **REAR DIFFERENTIAL FLUID INSPECTION AND REPLACEMENT**). • Replace the side case oil seal (see **SIDE CASE OIL SEAL REPLACEMENT**). • Replace the center case assembly (see **CENTER CASE REPLACEMENT**).	• Fluid condition • Clogged breather hose • Worn or damaged oil seal • Damaged sealing washer • Loose mounting bolts or inadequate sealing
Rear differential screeches, whines, moans, or squeaks	• Inspect and/or replace the rear differential fluid (see **REAR DIFFERENTIAL FLUID INSPECTION AND REPLACEMENT**). • Inspect the tires. • Replace the rear differential carrier assembly.	• Worn or cupped tires • Tire inflation • Fluid condition • Incorrect tire size (rolling circumference) • Damaged oil pump
Noise during acceleration, or when accelerating from a full stop	• Inspect the side case clearance (see **SIDE CASE REPLACEMENT**). • Inspect the tires. • Replace the rear differential carrier assembly.	• Worn or cupped tires • Tire inflation • Incorrect side case clearance • Incorrect tire size (rolling circumference)
HDS does not communicate with the SH-AWD control unit or the vehicle	Troubleshooting the DLC circuit (see **DLC CIRCUIT TROUBLESHOOTING**).	

SYSTEM DESCRIPTION

SH-AWD SYSTEM

Outline

This vehicle is equipped with a Super Handling All-Wheel Drive® (SH-AWD®) rear differential system. This system uses the electromagnetic clutches and the SH-AWD control unit to control front to rear torque distribution and independent left to right rear torque distribution. This allows the system to function as a limited slip differential and as a torque distribution system to improve standing start performance, straight-line stability, climbing, and cornering ability.

SH-AWD features include:

- Independent torque distribution to the front and rear wheels, and to the left and right wheels for neutral handling when cornering.
- Controls differential (inside/outside) wheel speed in a turn to increase cornering stability.
- Limited slip differential function for better acceleration.

Operation

In a normal turn, the radius of the front wheels is shorter than the radius that the rear wheels travel. If the front and rear wheels are driven at the same speed, full power is not transmitted. The SH-AWD system monitors the speed of the front wheels and increases the speed of the outside rear wheel proportionally around the larger radius. This improves stability and steering response. On slippery surfaces, this provides the improved traction of a 4-wheel drive system.

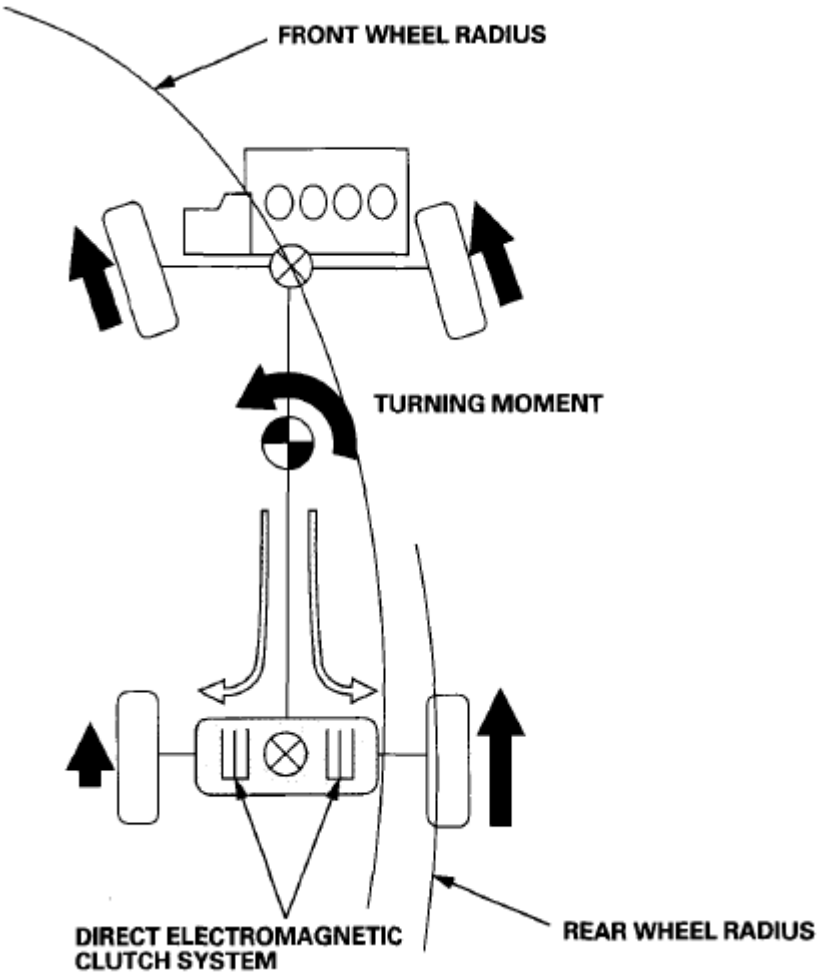


Fig. 12: Identifying Rear Differential Operation Diagram
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Construction

1. The differential assembly has a conventional hypoid ring and pinion gear set.
2. The direct electromagnetic clutch system consists of the coils, the planetary gear sets, and the multi-plate clutches that are installed in the side cases on either side of the differential carrier. When driving straight ahead, both rear wheels rotate at the same speed. When turning, current is applied to the appropriate outside wheel main coil to engage the clutch. The amount of current passed through the electromagnetic clutch controls the amount of driving force to the outside wheel.

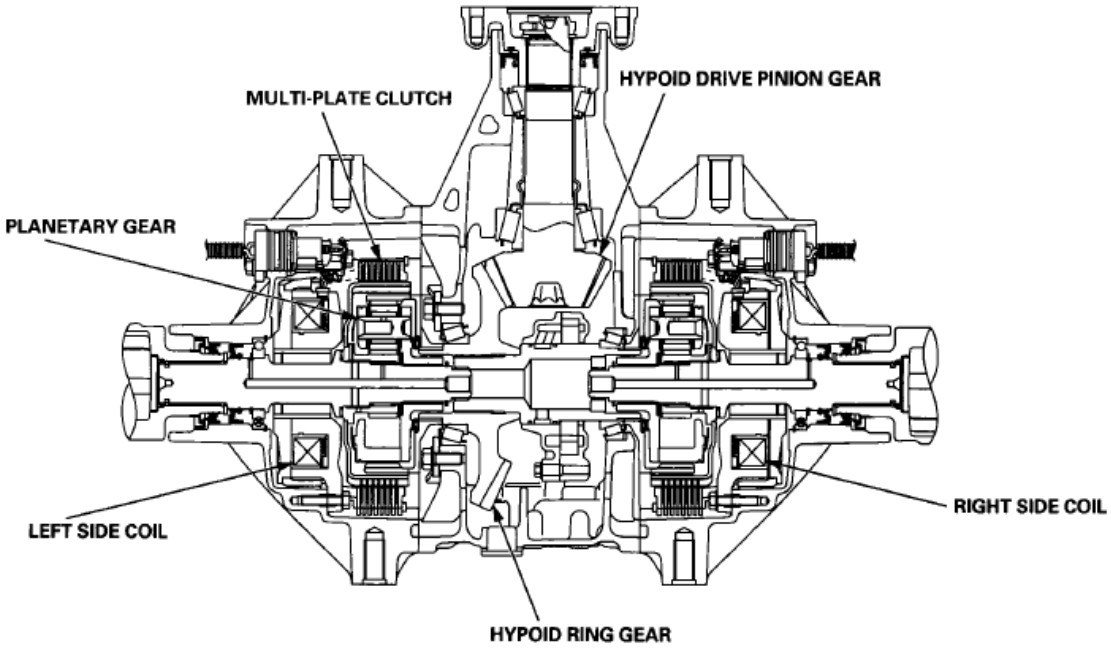


Fig. 13: Identifying Differential Assembly Components Location
Courtesy of AMERICAN HONDA MOTOR CO., INC.

SH-AWD 4WD CONTROL SYSTEM

Control System

The SH-AWD control system consists of a SH-AWD control unit, the ECM/PCM, the VSA modulator-control unit, along with various sensors and switches that detect the steering angle, the lateral G force, the yaw, and the vehicle speed. A fluid temperature sensor is located on the rear differential. The control units exchange information via the CAN communication lines. The SH-AWD control unit has a self-diagnostic function. If a malfunction is detected, the SH-AWD control unit turns on the SH-AWD indicator in the gauge control module, and the system goes into fail-safe mode. When in fail-safe mode, the vehicle disables the SH-AWD differential. The vehicle defaults to front wheel drive and reduces engine torque to suit the driving conditions.

Driving Force Control

The driving force control distributes the power based on the driver's inputs. It distributes torque to the front and rear wheels based on the throttle opening and the available engine torque output. When turning, torque is applied to the rear wheels independently based on the lateral G input and the direction of the turn. This generates an inward yaw movement to help steer the vehicle around the turn.

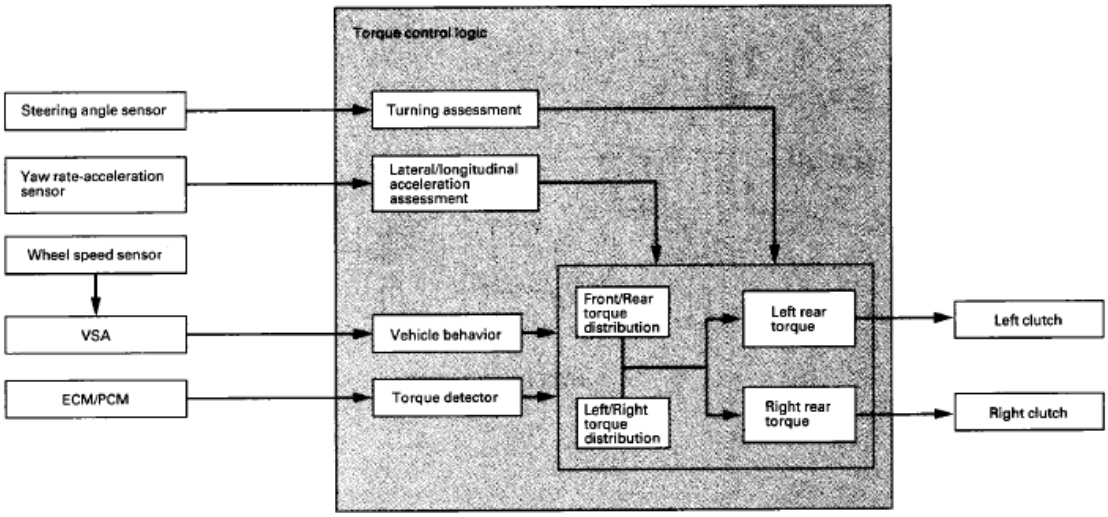


Fig. 14: Driving Force Control Flow Diagram
Courtesy of AMERICAN HONDA MOTOR CO., INC.

ELECTROMAGNETIC CLUTCH SYSTEM

Construction

The electromagnetic clutch system is incorporated into the side case assemblies on both sides of the differential case. The system consists of the multi-plate clutches, the planetary gears, the pressure guides, the solenoid coil assembly (the search coil and the main coil), the armature assembly (the slider and the armature), and the yoke.

Components	Purpose
Multi-plate clutches	Convert thrust into torque, absorb wheel speed differences
Planetary gears	Magnify and convey clutch torque
Pressure guides	Reduce fluctuations in pressure
Search coils	Detect magnetic flux
Main coils	Generates magnetic fields
Slider	Centers the armature
Armature	Generates magnetic flux to generate thrust
Yoke	Generates magnetic flux to clamping force

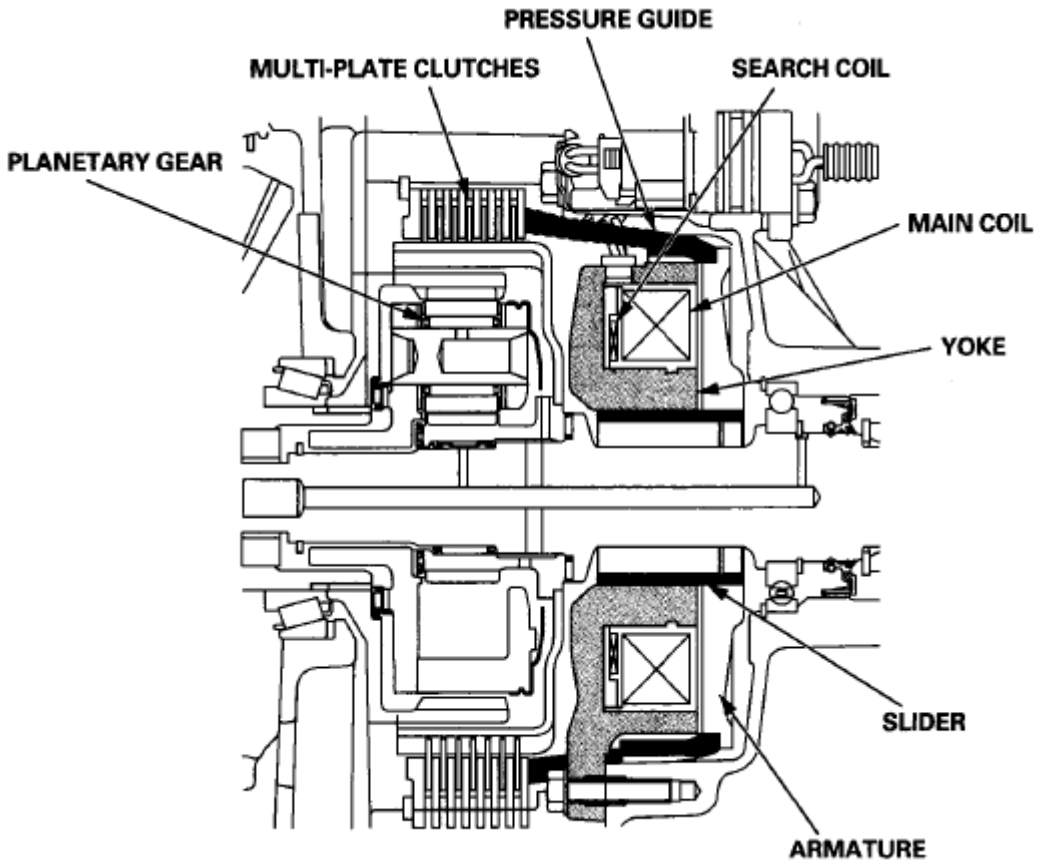


Fig. 15: Electromagnetic Clutch System Construction Diagram
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Operation

The SH-AWD control unit receives inputs from the ECM/PCM and the VSA modulator-control unit on the driving conditions via the CAN. The SH-AWD control unit sends signals to the main coils, which engage the electromagnetic clutches that connect the planetary gear set. This increases the torque applied to the rear wheels. The amount of current sent to the clutch is continuously varied as driving conditions change.

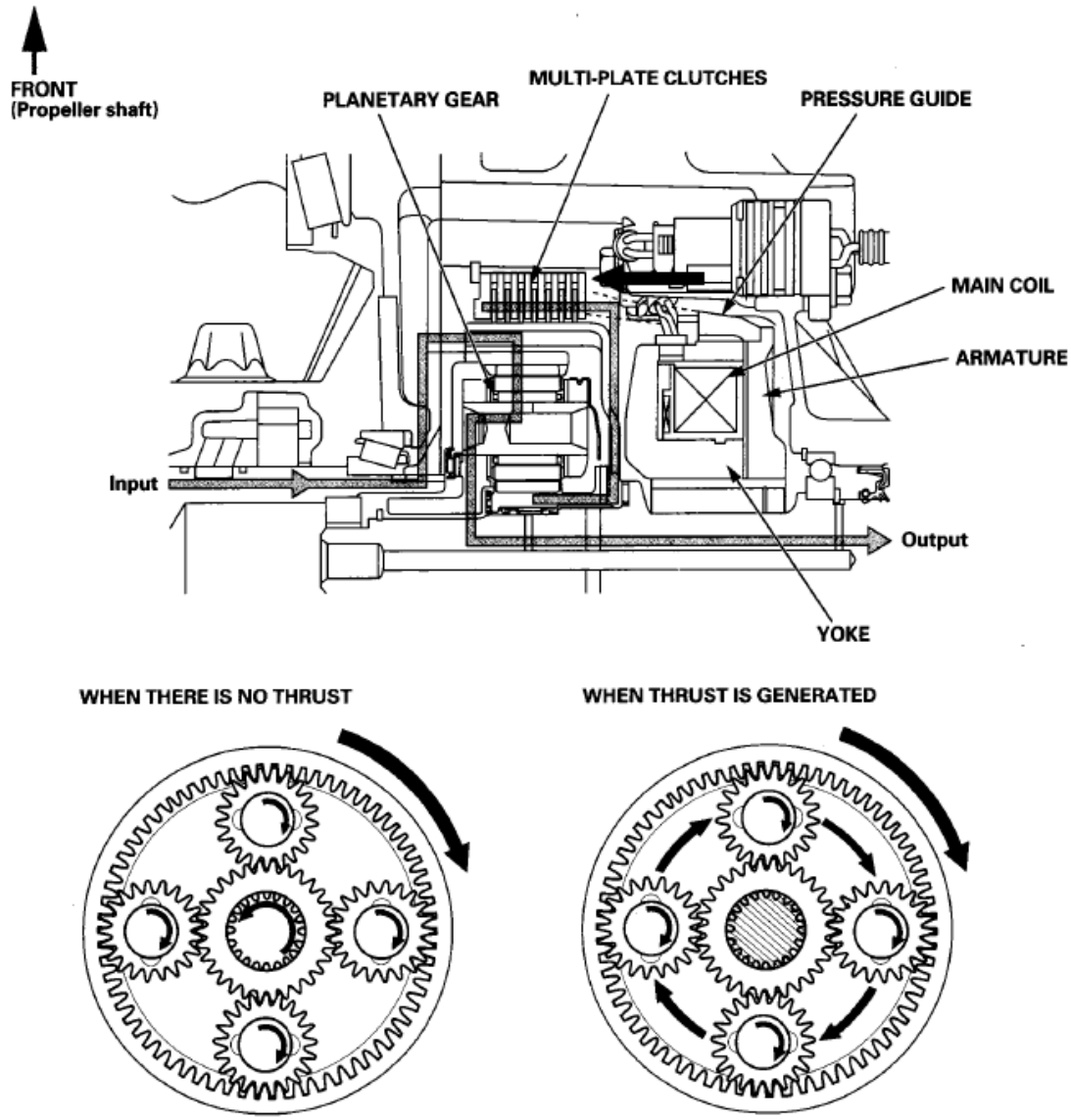


Fig. 16: Electromagnetic Clutch System Operation Diagram
Courtesy of AMERICAN HONDA MOTOR CO., INC.

SEARCH COIL DETECTION SYSTEM

As the clutch discs wear, the air gap between the pressure guides and the multi-plate clutches decrease. The decrease in air gap changes the magnetic field generated by the main coil and the yoke. The search coil detects these changes in the magnetic field. The SH-AWD control unit uses predetermined maps to compensate for the changes to maintain precise control and smooth clutch engagement.

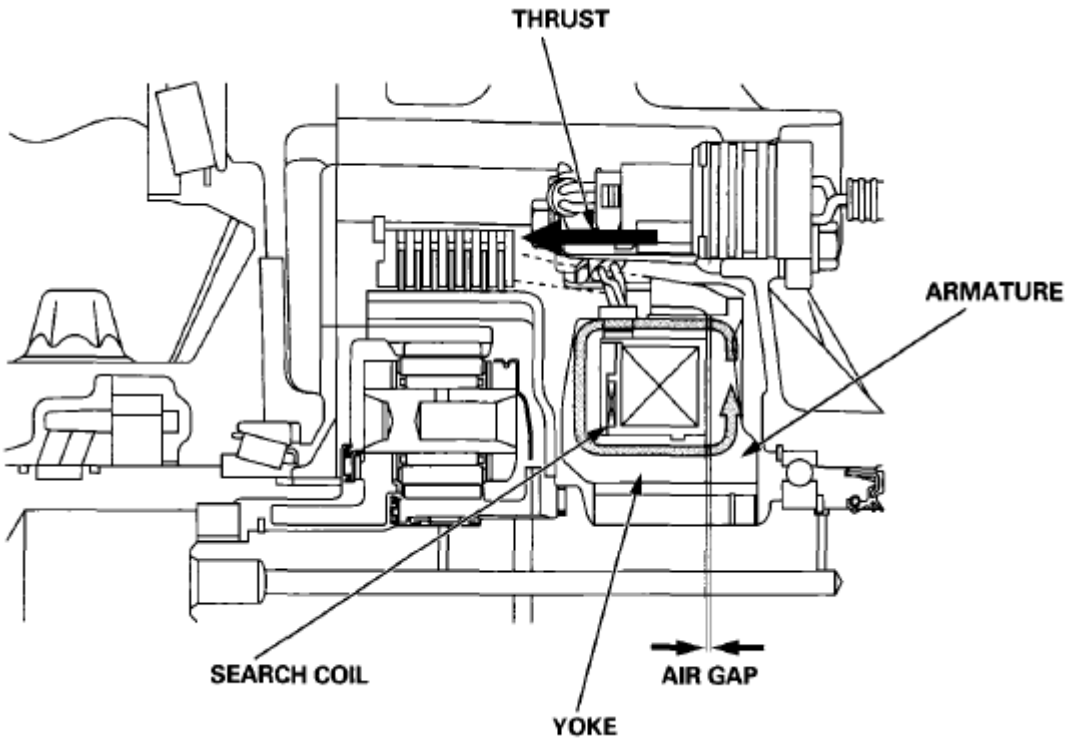


Fig. 17: Search Coil Detection System Diagram
Courtesy of AMERICAN HONDA MOTOR CO., INC.

ELECTRIC CONTROL SYSTEM

SH-AWD Control Unit Electrical Connections

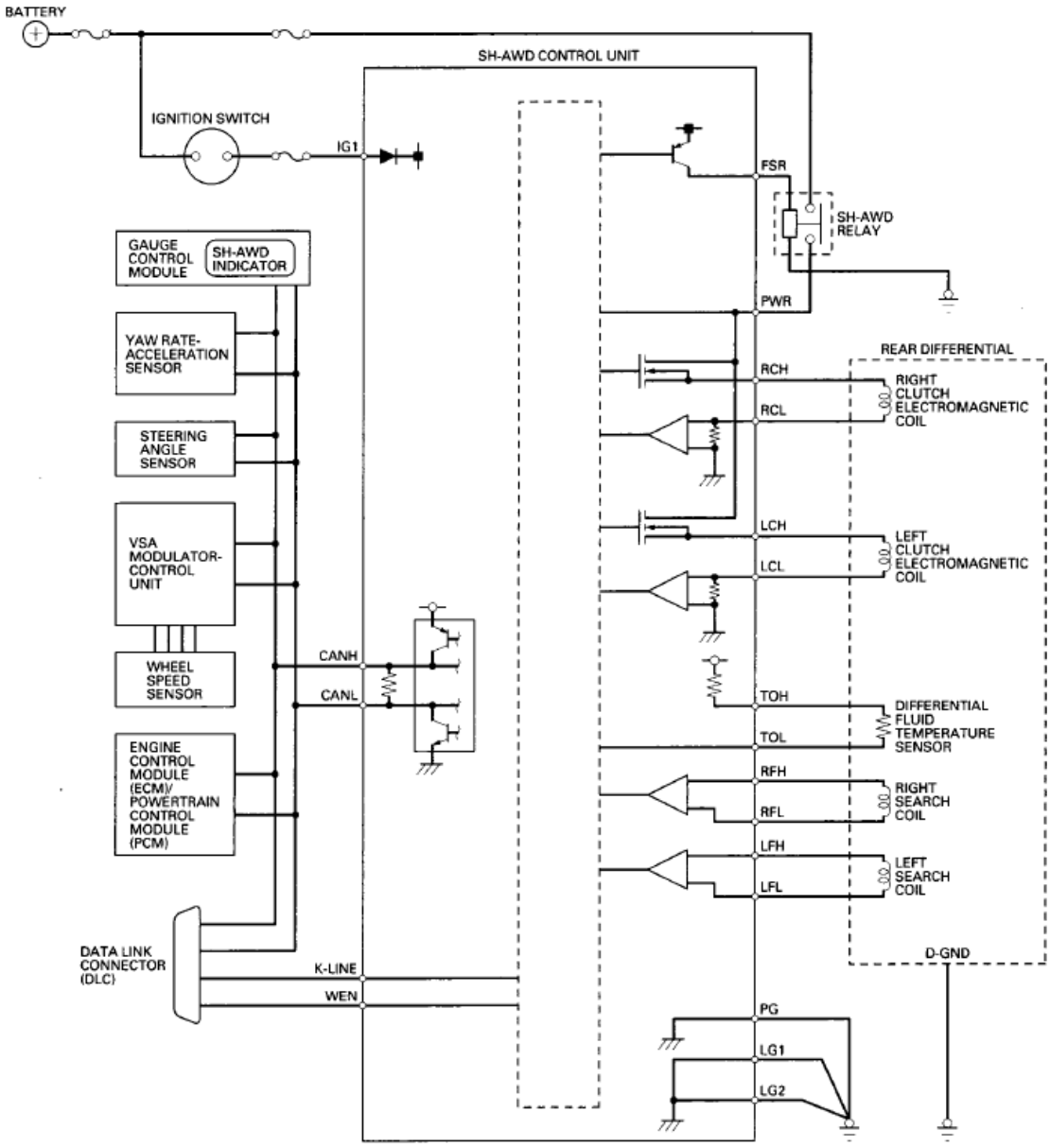
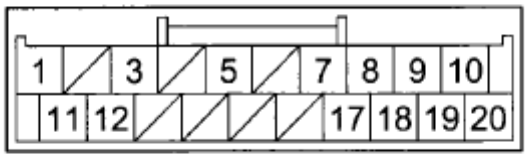


Fig. 18: Electric Control System Circuit Diagram (SH-AWD Control Unit)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

SH-AWD CONTROL UNIT INPUTS AND OUTPUTS

The SH-AWD control unit terminal voltages and the measuring conditions for the SH-AWD inputs and outputs test are done with the SH-AWD connectors connected.

SH-AWD Control Unit Connector A (20P) Terminal Locations



Terminal side of male terminals

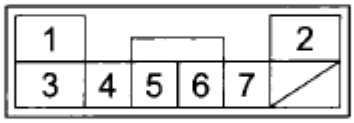
Fig. 19: Identifying SH-AWD Control Unit 20P Connector End View
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Terminal number	Wire color	Signal	Description	Measuring Conditions/Terminal Voltage
A1	BLK	LFH	Detects left search coil signal (positive)	With ignition switch ON (II), or vehicle in ON mode: about 2.5 V
A3	BLU	RFH	Detects right search coil signal (positive)	With ignition switch ON (II), or vehicle in ON mode: about 2.5 V
A5	LT BLU	K-LINE	Communication line SH-AWD control unit-to-DLC	With ignition switch ON (II), or vehicle in ON mode: about 0 V or battery voltage
A7	GRY	IG1	Power supply for SH-AWD control unit	With ignition switch ON (II), or vehicle in ON mode: battery voltage
A8	GRN	TOL	Detects differential fluid temperature sensor (negative)	With ignition switch ON (II), or vehicle in ON mode: about 0.2 V to 4.7 V (Depending on rear differential fluid temperature)
A9	BLK	LG1	Unit ground	With ignition switch ON (II), or vehicle in ON mode: about 0 V
A10	WHT	CANH	F-CAN communication signal	With ignition switch ON (II), or vehicle in ON mode: about 2.5 V to 4.0 V
A11	RED	LFL	Detects left search coil signal (negative)	With ignition switch ON (II), or vehicle in ON mode: about 2.5 V
A12	RED	RFL	Detects right search coil signal (negative)	With ignition switch ON (II), or vehicle in ON mode: about 2.5 V
A17	ORN	FSR	Drives SH-AWD relay	With ignition switch ON (II), or vehicle in ON mode: about 0 V to battery voltage
A18	WHT	TOH	Power supply for differential fluid temperature sensor	With ignition switch ON (II), or vehicle in ON mode: about 4.7 V to 5.0 V
A19	RED	WEN	Detects write enable signal	With ignition switch ON (II), or vehicle in ON mode: about 0 V
A20	BLK	CANL	F-CAN communication signal	With ignition switch ON (II), or vehicle in ON mode: about 2.5 V to 1.0 V

SH-AWD CONTROL UNIT INPUTS AND OUTPUTS (CONT'D)

The SH-AWD control unit terminal voltages and the measuring conditions for the SH-AWD inputs and outputs test are done with the SH-AWD connectors connected.

SH-AWD Control Unit Connector B (8P) Terminal Locations



Terminal side of male terminals

Fig. 20: Identifying SH-AWD Control Unit 8P Connector End View
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Terminal number	Wire color	Signal	Description	Measuring Conditions/Terminal Voltage
B1	WHT	PWR	Power supply for SH-AWD actuator	With engine running: battery voltage
B2	BLK	PG	Actuator ground	With ignition switch ON (II), or vehicle in ON mode: about 0 V
B3	BLK	LG2	Unit ground	With ignition switch ON (II), or vehicle in ON mode: about 0 V
B4	RED	LCH	Drives left clutch electromagnetic coil (positive)	With clutch off: about 0 V With clutch on: battery voltage
B5	BLU	LCL	Drives left clutch electromagnetic coil (negative)	With ignition switch ON (II), or vehicle in ON mode: about 0 V
B6	ORN	RCH	Drives right clutch electromagnetic coil (positive)	With clutch off: about 0 V With clutch on: battery voltage
B7	GRY	RCL	Drives right clutch electromagnetic coil (negative)	With ignition switch ON (II), or vehicle in ON mode: about 0 V

CIRCUIT DIAGRAM

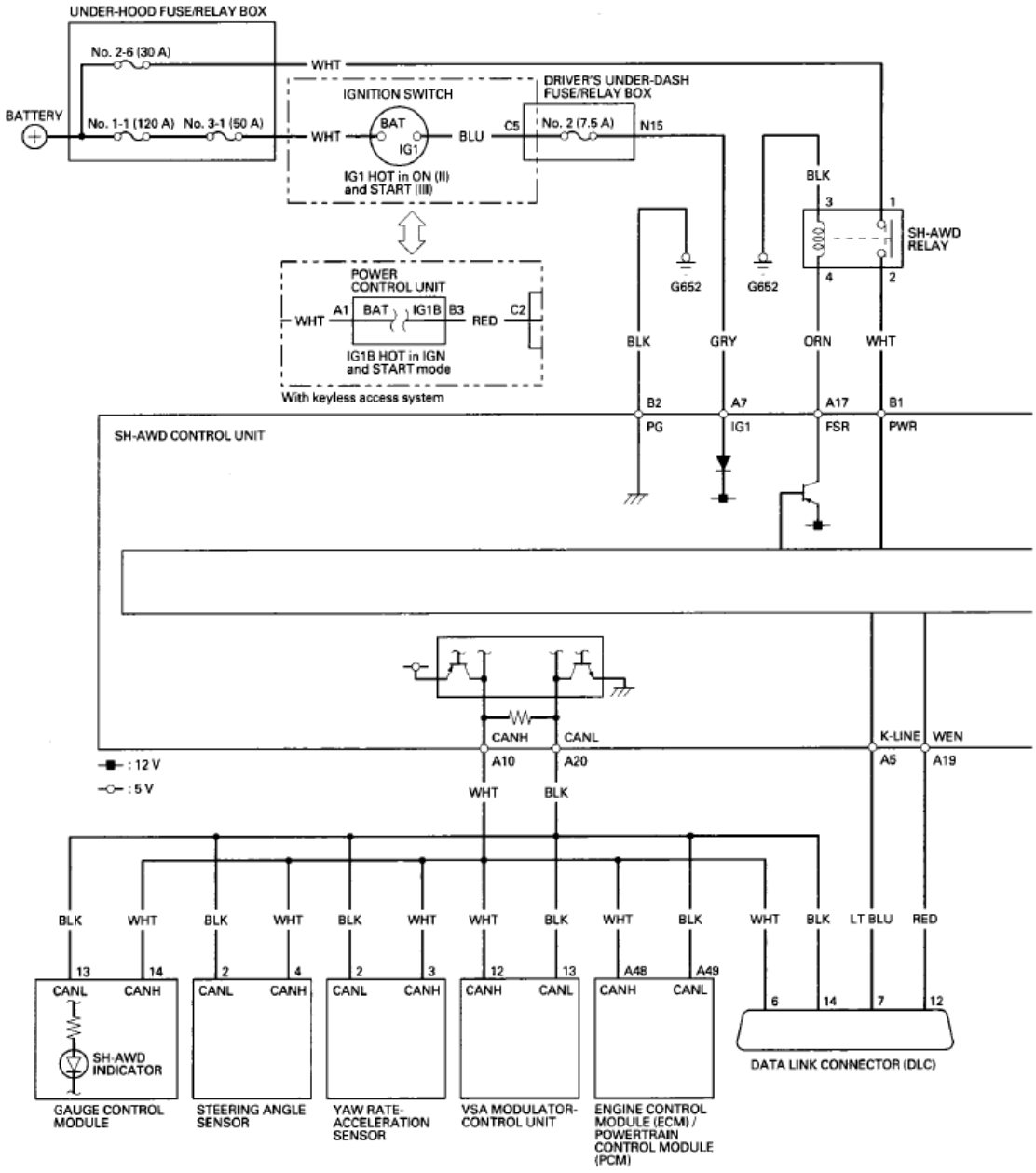


Fig. 21: SH-AWD Control Unit Circuit Diagram (1 Of 2)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

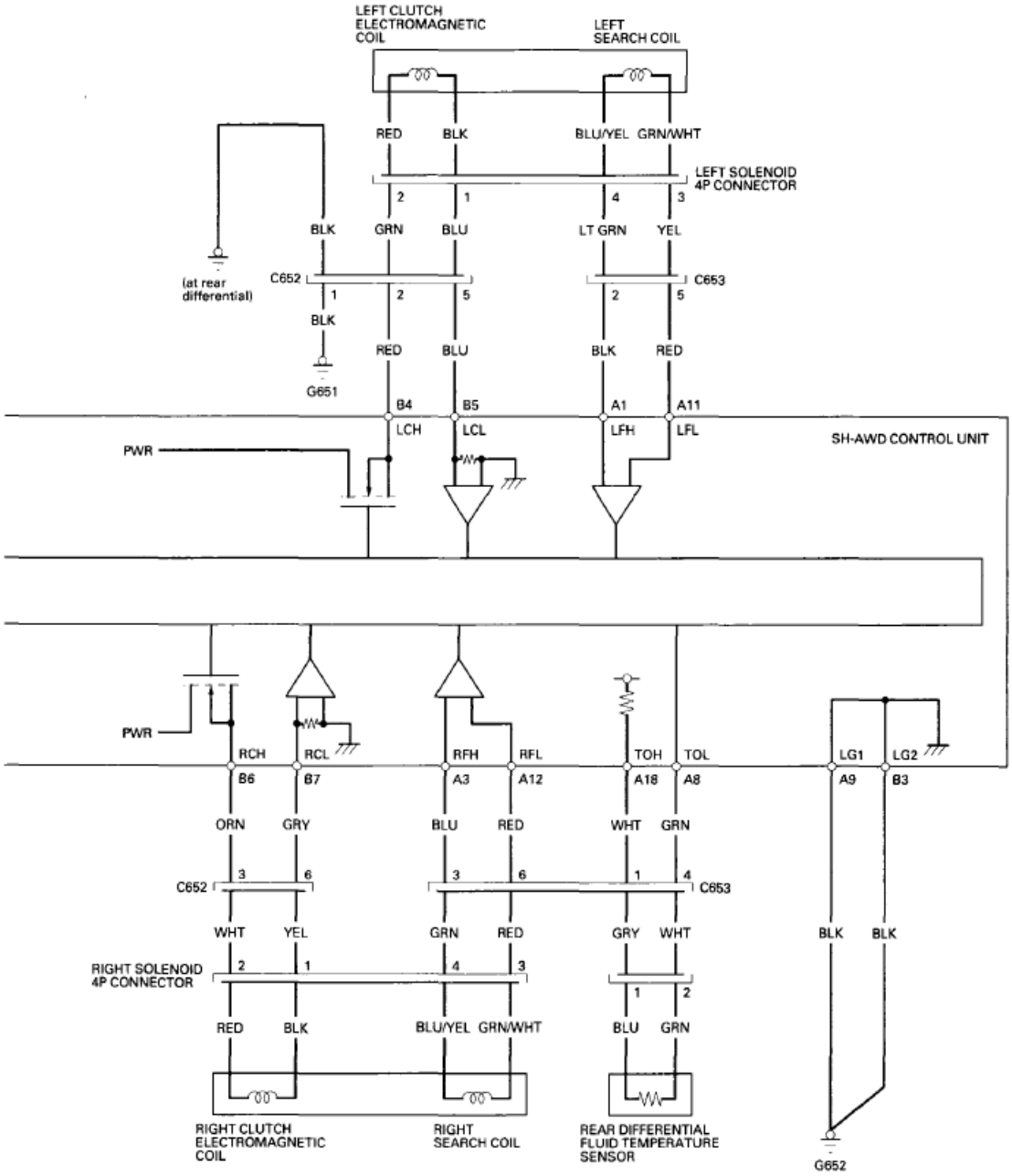


Fig. 22: SH-AWD Control Unit Circuit Diagram (2 Of 2)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

DTC TROUBLESHOOTING

DTC 12-1, 12-2, 12-3: LATERAL ACCELERATION SENSOR MALFUNCTION

NOTE: **Before you troubleshoot, review the general troubleshooting information (see GENERAL TROUBLESHOOTING INFORMATION).**

1. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
2. Clear the DTC with the HDS.
3. Turn the ignition switch to LOCK (0), then turn the ignition switch back to ON (II), or select the OFF mode, then the ON mode.
4. Check for DTCs in the VSA system with the HDS.

   Are any lateral acceleration sensor DTCs indicated?

   YES - Go to the indicated **DTC'S TROUBLESHOOTING**.

   NO - Go to step 5.

5. Check for DTCs with the HDS.

   Is DTC 12-1, 12-2, or 12-3 indicated?

   YES - Go to step 6.

   NO - Intermittent failure, the system is OK at this time.

6. Test-drive the vehicle with an assistant. Drive in a left and right zig-zag pattern at about 13 mph (20 km/h) and check the LATERAL ACCELERATION SENSOR in the SH-AWD mode menu DATA LIST with the HDS.

   Does the sensor value change when turning?

   YES - Go to step 7.

   NO - Update the SH-AWD control unit if it does not have the latest software (see **SH-AWD® CONTROL UNIT UPDATE**), or substitute a known-good SH-AWD control unit (see **SH-AWD® CONTROL UNIT REPLACEMENT**), and recheck. If the symptom/indication goes away with the updated SH-AWD control unit, troubleshooting is complete. If the symptom/indication goes away with a known-good SH-AWD control unit, replace the original SH-AWD control unit (see **SH-AWD® CONTROL UNIT REPLACEMENT**).

7. Park the vehicle on a level surface.
8. Check the LATERAL ACCELERATION SENSOR in the SH-AWD mode menu DATA LIST with the HDS.

   Is there 0.1 G or less?

   YES - Go to step 9.

   NO - Do the yaw rate-acceleration neutral position memorization (see **YAW RATE-ACCELERATION NEUTRAL POSITION MEMORIZATION**), and recheck.

9. Check the LATERAL ACCELERATION SENSOR in the VSA DATA LIST with the HDS.

   Is there 0.1 G or less?

   YES - Update the SH-AWD control unit if it does not have the latest software (see **SH-AWD® CONTROL UNIT UPDATE**), or substitute a known-good SH-AWD control unit (see **SH-AWD® CONTROL UNIT REPLACEMENT**), and recheck. If the symptom/indication goes away with the updated SH-AWD control unit, troubleshooting is complete. If the symptom/indication goes away with a known-good SH-AWD control unit, replace the original SH-AWD control unit (see **SH-AWD® CONTROL UNIT REPLACEMENT**).

   NO - Replace the yaw rate-acceleration sensor (see **YAW RATE-ACCELERATION SENSOR REPLACEMENT**).

DTC 15-1: LONGITUDINAL ACCELERATION SENSOR MALFUNCTION

NOTE: Before you troubleshoot, review the general troubleshooting information (see GENERAL TROUBLESHOOTING INFORMATION).

1. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
2. Clear the DTC with the HDS.
3. Test-drive the vehicle for 2 minutes in a vehicle speed is kept constant at 19 mph (30 km/h).
4. Check for DTCs in the VSA system with the HDS.

   Are any longitudinal acceleration sensor DTCs indicated?

   YES - Go to the indicated **DTC'S TROUBLESHOOTING**.

   NO - Go to step 5.

5. Check for DTCs with the HDS.

   Is DTC 15-1 indicated?

   YES - Go to step 6.

   NO - Intermittent failure, the system is OK at this time.

6. Test-drive the vehicle with an assistant. When accelerating, check the LONGITUDINAL ACCELERATION SENSOR in the SH-AWD mode menu DATA LIST with the HDS.

   Does the sensor value change when acceleration?

   YES - Go to step 7.

   NO - Update the SH-AWD control unit if it does not have the latest software (see **SH-AWD®**

CONTROL UNIT UPDATE), or substitute a known-good SH-AWD control unit (see **SH-AWD® CONTROL UNIT REPLACEMENT**), and recheck. If the symptom/indication goes away with the updated SH-AWD control unit, troubleshooting is complete. If the symptom/indication goes away with a known-good SH-AWD control unit, replace the original SH-AWD control unit (see **SH-AWD® CONTROL UNIT REPLACEMENT**).

7. Park the vehicle on a level surface.
8. Check the LONGITUDINAL ACCELERATION SENSOR in the SH-AWD mode menu DATA LIST with the HDS.

   Is there 0.1 G or less?

   YES - Go to step 9.

   NO - Do the yaw rate-acceleration neutral position memorization (see **YAW RATE-ACCELERATION NEUTRAL POSITION MEMORIZATION**), and recheck.

9. Check the LONGITUDINAL ACCELERATION SENSOR in the VSA DATA LIST with the HDS.

   Is there 0.1 G or less?

   YES - Update the SH-AWD control unit if it does not have the latest software (see **SH-AWD® CONTROL UNIT UPDATE**), or substitute a known-good SH-AWD control unit (see **SH-AWD® CONTROL UNIT REPLACEMENT**), and recheck. If the symptom/indication goes away with the updated SH-AWD control unit, troubleshooting is complete. If the symptom/indication goes away with a known-good SH-AWD control unit, replace the original SH-AWD control unit (see **SH-AWD® CONTROL UNIT REPLACEMENT**).

   NO - Replace the yaw rate-acceleration sensor (see **YAW RATE-ACCELERATION SENSOR REPLACEMENT**).

DTC 16-3: STEERING ANGLE SENSOR NEUTRAL POSITION INCORRECT

NOTE:

- **Before you troubleshoot, review the general troubleshooting information (see GENERAL TROUBLESHOOTING INFORMATION).**
- **Check the wheel alignment (see WHEEL ALIGNMENT).**
- **Check for installation of the steering angle sensor.**

1. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
2. Clear the DTC with the HDS.
3. Test-drive the vehicle for 2 minutes in a straight line at 19 mph (30 km/h) or more.
4. Check for DTCs in the VSA system with the HDS.

   Are any steering angle sensor DTCs indicated?

YES - Go to the indicated **DTC'S TROUBLESHOOTING**.

NO - Go to step 5.

5. Check for DTCs with the HDS.

   Is DTC 16-3 indicated?

   YES - Go to step 6.

   NO - Intermittent failure, the system is OK at this time.

6. Start the engine.
7. Check the STEERING ANGLE SENSOR in the SH-AWD mode menu DATA LIST with the HDS.

   When the steering wheels is turned slowly, does the sensor value change?

   YES - Go to step 8.

   NO - Update the SH-AWD control unit if it does not have the latest software (see **SH-AWD® CONTROL UNIT UPDATE**), or substitute a known-good SH-AWD control unit (see **SH-AWD® CONTROL UNIT REPLACEMENT**), and recheck. If the symptom/indication goes away with the updated SH-AWD control unit, troubleshooting is complete. If the symptom/indication goes away with a known-good SH-AWD control unit, replace the original SH-AWD control unit (see **SH-AWD® CONTROL UNIT REPLACEMENT**).

8. Test-drive the vehicle in a straight line at 19 mph (30 km/h) or more.
9. Park the vehicle on a level surface, and center the steering wheel.
10. Check the STEERING ANGLE SENSOR in the SH-AWD mode menu DATA LIST with the HDS.

    Is it within ±25 deg of center?

    YES - Go to step 11.

    NO - Do the VSA sensor neutral position memorization (see **YAW RATE-ACCELERATION SENSOR REPLACEMENT**), and recheck.

11. Check the STEERING ANGLE SENSOR in the VSA DATA LIST with the HDS.

    Is it within ±25 deg of center?

    YES - Update the SH-AWD control unit if it does not have the latest software (see **SH-AWD® CONTROL UNIT UPDATE**), or substitute a known-good SH-AWD control unit (see **SH-AWD® CONTROL UNIT REPLACEMENT**), and recheck. If the symptom/indication goes away with the updated SH-AWD control unit, troubleshooting is complete. If the symptom/indication goes away with a known-good SH-AWD control unit, replace the original SH-AWD control unit (see **SH-AWD® CONTROL UNIT REPLACEMENT**).

NO - Replace the steering angle sensor (see **STEERING ANGLE SENSOR REPLACEMENT**).

DTC 33-2, 33-3: YAW RATE SENSOR MALFUNCTION

NOTE: Before you troubleshoot, review the general troubleshooting information (see GENERAL TROUBLESHOOTING INFORMATION).

1. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
2. Clear the DTC with the HDS.
3. Turn the ignition switch to LOCK (0), then turn the ignition switch back to ON (II), or select the OFF mode, then the ON mode.
4. Check for DTCs in the VSA system with the HDS.

   Are any yaw rate sensor DTCs indicated?

   YES - Go to the indicated **DTC'S TROUBLESHOOTING**.

   NO - Go to step 5.

5. Check for DTCs with the HDS.

   Is DTC 33-2 or 33-3 indicated?

   YES - Go to step 6.

   NO - Intermittent failure, the system is OK at this time.

6. Test-drive the vehicle with an assistant. Drive in a left and right zig-zag pattern at about 13 mph (20 km/h) and check the YAW RATE SENSOR in the SH-AWD mode menu DATA LIST with the HDS.

   Does the sensor value change when turning?

   YES - Go to step 7.

   NO - Update the SH-AWD control unit if it does not have the latest software (see **SH-AWD® CONTROL UNIT UPDATE**), or substitute a known-good SH-AWD control unit (see **SH-AWD® CONTROL UNIT REPLACEMENT**), and recheck. If the symptom/indication goes away with the updated SH-AWD control unit, troubleshooting is complete. If the symptom/indication goes away with a known-good SH-AWD control unit, replace the original SH-AWD control unit (see **SH-AWD® CONTROL UNIT REPLACEMENT**).

7. Park the vehicle on a level surface.
8. Check the YAW RATE SENSOR in the SH-AWD mode menu DATA LIST with the HDS.

   Is there 3.5 ° or less?

YES - Go to step 9.

NO - Do the yaw rate-acceleration neutral position memorization (see **YAW RATE-ACCELERATION NEUTRAL POSITION MEMORIZATION**), and recheck.

9. Check the YAW RATE SENSOR in the VSA DATA LIST with the HDS.

   Is there 3.5 deg/s or less?

   YES - Update the SH-AWD control unit if it does not have the latest software (see **SH-AWD® CONTROL UNIT UPDATE**), or substitute a known-good SH-AWD control unit (see **SH-AWD® CONTROL UNIT REPLACEMENT**), and recheck. If the symptom/indication goes away with the updated SH-AWD control unit, troubleshooting is complete. If the symptom/indication goes away with a known-good SH-AWD control unit, replace the original SH-AWD control unit (see **SH-AWD® CONTROL UNIT REPLACEMENT**).

   NO - Replace the yaw rate-acceleration sensor (see **YAW RATE-ACCELERATION SENSOR REPLACEMENT**).

DTC 41-1: F-CAN MALFUNCTION (LOST COMMUNICATION WITH ENGINE CONTROL MODULE (ECM)/POWERTRAIN CONTROL MODULE (PCM))

NOTE: Before you troubleshoot, review the general troubleshooting information (see GENERAL TROUBLESHOOTING INFORMATION).

1. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
2. Clear the DTC with the HDS.
3. Start the engine.
4. Check for DTCs in the PGM-FI system with the HDS.

   Are there any PGM-FI system DTCs indicated?

   YES - Go to the indicated **DTC'S TROUBLESHOOTING**.

   NO - Go to step 5.

5. Check for DTCs with the HDS.

   Is DTC 41-1 indicated?

   YES - Go to step 6.

   NO - Intermittent failure, the system is OK at this time. Check for an intermittent open between SH-AWD control unit connector terminals A10 and A20 and ECM/PCM connector terminals A48 and A49.

6. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.

7. Jump the SCS line with the HDS.

NOTE: This step must be done to prevent ECM/PCM damage.

8. Disconnect ECM/PCM connector A (49P).
9. Disconnect SH-AWD control unit connector A (20P).
10. Check for continuity between ECM/PCM connector terminals A48, A49 and SH-AWD control unit connector terminals A10, A20 respectively.

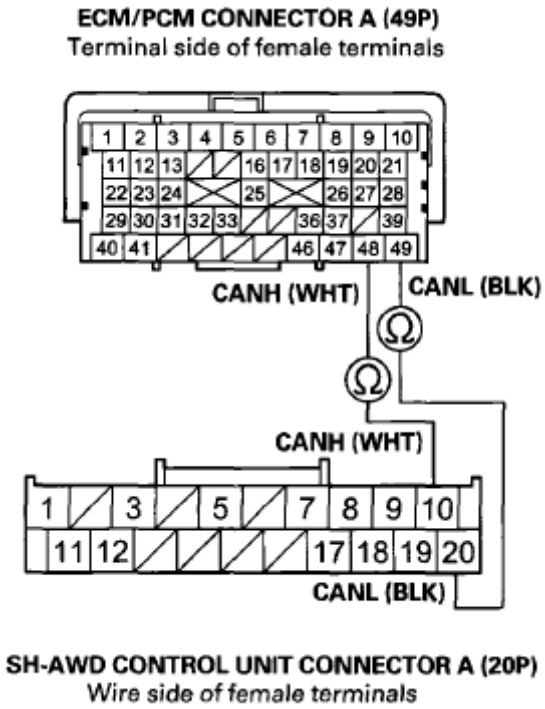


Fig. 23: Checking Continuity Between ECM/PCM Connector Terminals And SH-AWD Control Unit Connector Terminals
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Update the SH-AWD control unit if it does not have the latest software (see **SH-AWD® CONTROL UNIT UPDATE**), or substitute a known-good SH-AWD control unit (see **SH-AWD® CONTROL UNIT REPLACEMENT**), and recheck. If the symptom/indication goes away with the updated SH-AWD control unit, troubleshooting is complete. If the symptom/indication goes away with a known-good SH-AWD control unit, replace the original SH-AWD control unit (see **SH-AWD® CONTROL UNIT REPLACEMENT**).

NO - Repair an open in the wires between the SH-AWD control unit and the ECM/PCM.

DTC 41-2: F-CAN MALFUNCTION (LOST COMMUNICATION WITH VSA MODULATOR-CONTROL UNIT)

NOTE: Before you troubleshoot, review the general troubleshooting information (see GENERAL TROUBLESHOOTING INFORMATION).

1. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
2. Clear the DTC with the HDS.
3. Start the engine.
4. Check for DTCs in the PGM-FI system with the HDS.

   Are there any PGM-FI system DTCs indicated?

   YES - Go to the indicated **DTC'S TROUBLESHOOTING**.

   NO - Go to step 5.

5. Check for DTCs with the HDS.

   Is DTC 41-2 indicated?

   YES - Go to step 6.

   NO - Intermittent failure, the system is OK at this time. Check for an intermittent open between SH-AWD control unit connector terminals A10 and A20 and VSA modulator-control unit 47P connector terminals No. 12 and No. 13.

6. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
7. Disconnect the VSA modulator-control unit 47P connector.
8. Disconnect SH-AWD control unit connector A (20P).
9. Check for continuity between VSA modulator-control unit 47P connector terminals No. 12, No. 13 and SH-AWD control unit connector terminals A10, A20 respectively.

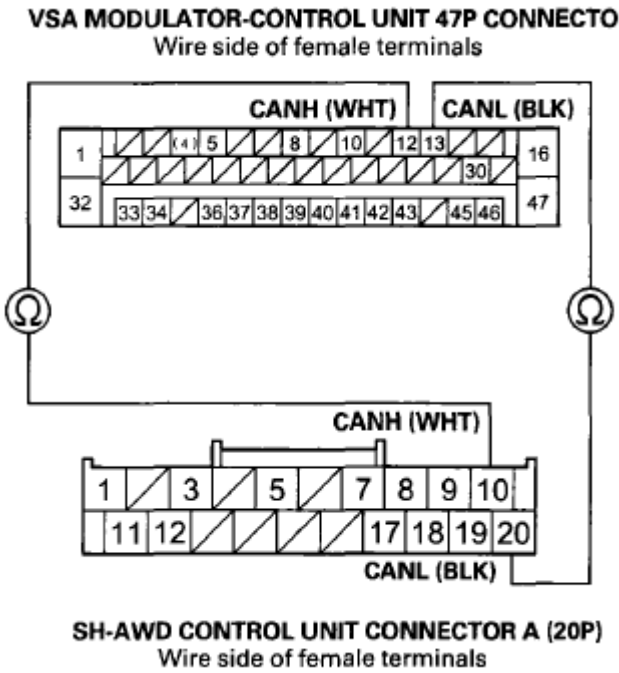


Fig. 24: Checking Continuity Between VSA Modulator-Control Unit 47P Connector Terminals And SH-AWD Control Unit Connector Terminals
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Update the SH-AWD control unit if it does not have the latest software (see **SH-AWD® CONTROL UNIT UPDATE**), or substitute a known-good SH-AWD control unit (see **SH-AWD® CONTROL UNIT REPLACEMENT**), and recheck. If the symptom/indication goes away with the updated SH-AWD control unit, troubleshooting is complete. If the symptom/indication goes away with a known-good SH-AWD control unit, replace the original SH-AWD control unit (see **SH-AWD® CONTROL UNIT REPLACEMENT**).

NO - Repair an open in the wires between the SH-AWD control unit and the VSA modulator-control unit.

DTC 41-4: F-CAN MALFUNCTION (LOST COMMUNICATION WITH A/T CONTROL SYSTEM)

NOTE: Before you troubleshoot, review the general troubleshooting information (see GENERAL TROUBLESHOOTING INFORMATION).

1. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
2. Clear the DTC with the HDS.
3. Start the engine.
4. Check for DTCs in the A/T system with the HDS.

Are there any A/T system DTCs indicated?

YES - Go to the indicated **DTC'S TROUBLESHOOTING**.

NO - Go to step 5.

5. Check for DTCs with the HDS.

   Is DTC 41-4 indicated?

   YES - Go to step 6.

   NO - Intermittent failure, the system is OK at this time. Check for an intermittent open between SH-AWD control unit connector terminals A10 and A20 and PCM connector terminals A48 and A49.

6. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
7. Jump the SCS line with the HDS.

NOTE: This step must be done to prevent PCM damage.

8. Disconnect PCM connector A (49P).
9. Disconnect SH-AWD control unit connector A (20P).
10. Check for continuity between PCM connector terminals A48, A49 and SH-AWD control unit connector terminals A10, A20 respectively.

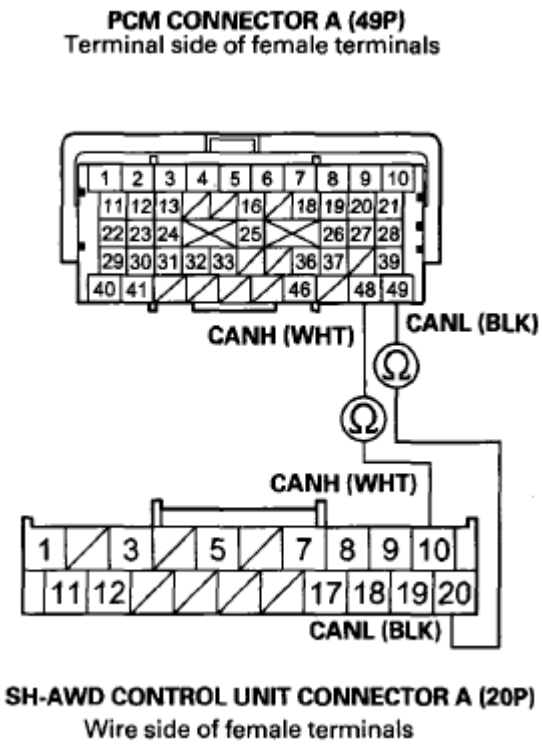


Fig. 25: Checking Continuity Between PCM Connector Terminals And SH-AWD Control Unit Connector Terminals

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Update the SH-AWD control unit if it does not have the latest software (see **SH-AWD® CONTROL UNIT UPDATE**), or substitute a known-good SH-AWD control unit (see **SH-AWD® CONTROL UNIT REPLACEMENT**), and recheck. If the symptom/indication goes away with the updated SH-AWD control unit, troubleshooting is complete. If the symptom/indication goes away with a known-good SH-AWD control unit, replace the original SH-AWD control unit (see **SH-AWD® CONTROL UNIT REPLACEMENT**).

NO - Repair an open in the wires between the SH-AWD control unit and the PCM.

DTC 41-5: F-CAN MALFUNCTION (LOST COMMUNICATION WITH YAW RATE-ACCELERATION SENSOR)

NOTE: Before you troubleshoot, review the general troubleshooting information (see GENERAL TROUBLESHOOTING INFORMATION).

1. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
2. Clear the DTC with the HDS.
3. Start the engine.
4. Check for DTCs in the VSA system with the HDS.

   Are any yaw rate-acceleration sensor DTCs of F-CAN indicated?

   YES - Go to the indicated **DTC'S TROUBLESHOOTING**.

   NO - Go to step 5.

5. Check for DTCs with the HDS.

   Is DTC 41-5 indicated?

   YES - Go to step 6.

   NO - Intermittent failure, the system is OK at this time. Check for an intermittent open between SH-AWD control unit connector terminals A10 and A20 and yaw rate-acceleration sensor 4P connector terminals No. 2 and No. 3.

6. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
7. Disconnect the yaw rate-acceleration sensor 4P connector.
8. Disconnect SH-AWD control unit connector A (20P).
9. Check for continuity between yaw rate-acceleration sensor 4P connector terminals No. 2, No. 3 and SH-AWD control unit connector terminals A10, A20 respectively.

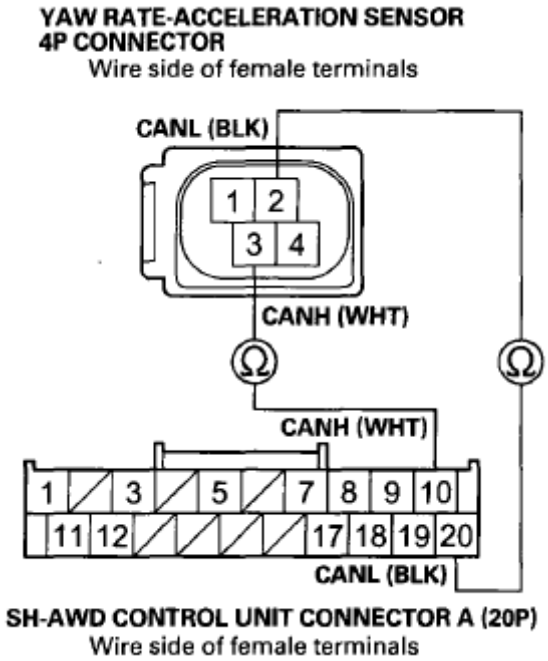


Fig. 26: Checking Continuity Between Yaw Rate-Acceleration Sensor 4P Connector Terminals And SH-AWD Control Unit Connector Terminals
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Update the SH-AWD control unit if it does not have the latest software (see **SH-AWD® CONTROL UNIT UPDATE**), or substitute a known-good SH-AWD control unit (see **SH-AWD® CONTROL UNIT REPLACEMENT**), and recheck. If the symptom/indication goes away with the updated SH-AWD control unit, troubleshooting is complete. If the symptom/indication goes away with a known-good SH-AWD control unit, replace the original SH-AWD control unit (see **SH-AWD® CONTROL UNIT REPLACEMENT**).

NO - Repair an open in the wire between the SH-AWD control unit and the yaw rate-acceleration sensor.

DTC 41-6: F-CAN MALFUNCTION (LOST COMMUNICATION WITH STEERING ANGLE SENSOR)

NOTE: Before you troubleshoot, review the general troubleshooting information (see GENERAL TROUBLESHOOTING INFORMATION).

1. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
2. Clear the DTC with the HDS.
3. Start the engine.
4. Check for DTCs in the VSA system with the HDS.

Are any steering angle sensor DTCs of F-CAN indicated?

YES - Go to the indicated **DTC'S TROUBLESHOOTING**.

NO - Go to step 5.

5. Check for DTCs with the HDS.

   Is DTC 41-6 indicated?

   YES - Go to step 6.

   NO - Intermittent failure, the system is OK at this time. Check for an intermittent open between SH-AWD control unit connector terminals A10 and A20 and steering angle sensor 5P connector terminals No. 2 and No. 4.1

6. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
7. Disconnect the steering angle sensor 5P connector.
8. Disconnect SH-AWD control unit connector A (20P).
9. Check for continuity between steering angle sensor 5P connector terminals No. 2, No. 4 and SH-AWD control unit connector terminals A10, A20 respectively.

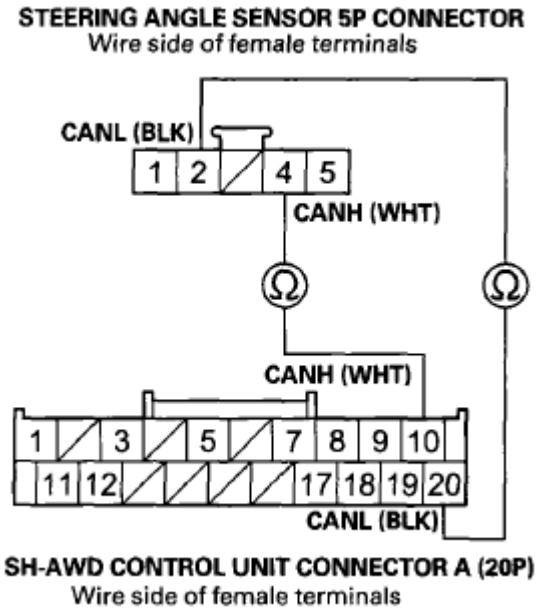


Fig. 27: Checking Continuity Between Steering Angle Sensor 5P Connector Terminals And SH-AWD Control Unit Connector Terminals
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Update the SH-AWD control unit if it does not have the latest software (see **SH-AWD® CONTROL UNIT UPDATE**), or substitute a known-good SH-AWD control unit (see **SH-AWD® CONTROL UNIT REPLACEMENT**), and recheck. If the symptom/indication goes away with the

updated SH-AWD control unit, troubleshooting is complete. If the symptom/indication goes away with a known-good SH-AWD control unit, replace the original SH-AWD control unit (see **SH-AWD® CONTROL UNIT REPLACEMENT**).

NO - Repair an open in the wires between the SH-AWD control unit and the steering angle sensor.

DTC 42-1: DIFFERENTIAL FLUID TEMPERATURE SENSOR (SHORT TO POWER)

NOTE:

- **Before you troubleshoot, review the general troubleshooting information (see GENERAL TROUBLESHOOTING INFORMATION).**
- **If the vehicle was driven prior to this troubleshooting procedure, allow the rear differential to cool for more than an hour before continuing.**

1. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
2. Clear the DTC with the HDS.
3. Turn the ignition switch to LOCK (0), then turn the ignition switch back to ON (II), or select the OFF mode, then the ON mode.
4. Check for DTCs with the HDS.

   Is DTC 42-1 indicated?

   YES - Go to step 5.

   NO - Intermittent failure, the system is OK at this time.

5. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
6. Disconnect the rear differential fluid temperature sensor 2P connector.
7. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
8. Check the REAR DIFFERENTIAL FLUID TEMPERATURE SENSOR in the DATA LIST with the HDS.

   Is the sensor reading 0 V?

   YES - Replace the rear differential fluid temperature sensor (see **REAR DIFFERENTIAL FLUID TEMPERATURE SENSOR REPLACEMENT**).

   NO - Go to step 9.

9. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
10. Disconnect SH-AWD control unit connector A (20P).
11. Check for continuity between rear differential fluid temperature sensor 2P connector terminals No. 1 and No. 2.

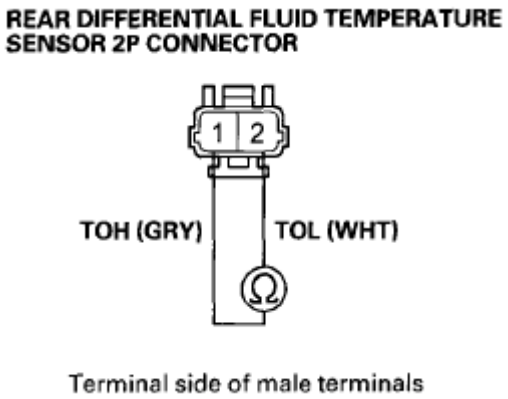


Fig. 28: Checking Continuity Between Rear Differential Fluid Temperature Sensor 2P Connector Terminals No. 1 And No. 2
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair a short in the wire between rear differential fluid temperature sensor 2P connector terminals No. 1 and No. 2.

NO - Go to step 12.

12. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
13. Measure the voltage between body ground and rear differential fluid temperature sensor 2P connector terminals No. 1 and No. 2 respectively.

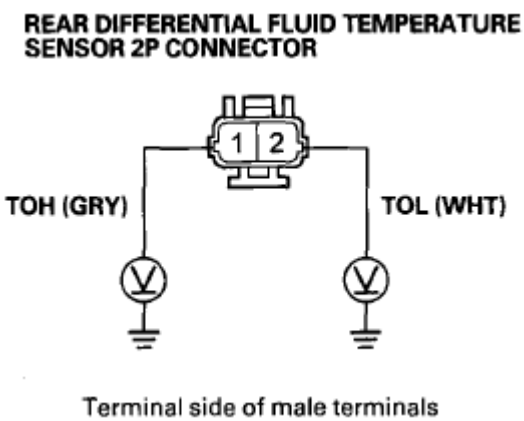


Fig. 29: Measuring Voltage Between Body Ground And Rear Differential Fluid Temperature Sensor 2P Connector Terminals No. 1 And No. 2 Respectively
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there about 5 V or more?

YES - Repair a short to power in the wire harness.

NO - Update the SH-AWD control unit if it does not have the latest software (see **SH-AWD® CONTROL UNIT UPDATE**), or substitute a known-good SH-AWD control unit (see **SH-AWD® CONTROL UNIT REPLACEMENT**), and recheck. If the symptom/indication goes away with the updated SH-AWD control unit, troubleshooting is complete. If the symptom/indication goes away with a known-good SH-AWD control unit, replace the original SH-AWD control unit (see **SH-AWD® CONTROL UNIT REPLACEMENT**).

DTC 42-2: DIFFERENTIAL FLUID TEMPERATURE SENSOR (OPEN/GND SHORT)

NOTE: Before you troubleshoot, review the general troubleshooting information (see GENERAL TROUBLESHOOTING INFORMATION).

1. Raise and support the vehicle, and allow all four wheels to rotate freely (see **LIFT AND SUPPORT POINTS**).
2. Start the engine and turn the VSA off (the VSA OFF lamp in the gauge control module turns on). Run the engine until the vehicle speed reaches 35 mph (56 km/h) and maintain the speed for 10 minutes, then slow down and stop the wheels.
3. Turn the ignition switch to LOCK (0), then turn the ignition switch back to ON (II), or select the OFF mode, then the ON mode.
4. Clear the DTC with the HDS.
5. Check for DTCs with the HDS.

   Is DTC 42-2 indicated?

   YES - Go to step 6.

   NO - Intermittent failure, the system is OK at this time.

6. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
7. Disconnect the rear differential fluid temperature sensor 2P connector.
8. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
9. Measure the voltage between rear differential fluid temperature sensor 2P connector terminals No. 1 and No. 2.

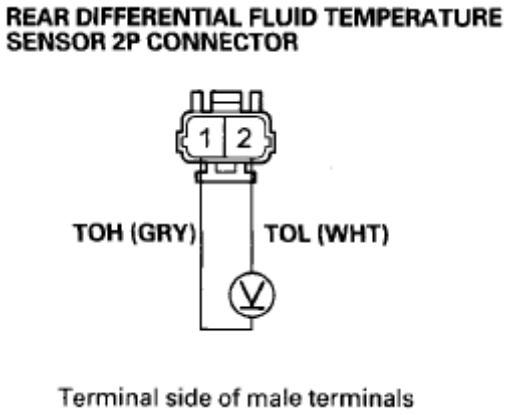


Fig. 30: Measuring Voltage Between Rear Differential Fluid Temperature Sensor 2P Connector Terminals No. 1 And No. 2
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there about 4 V?

YES - Replace the rear differential fluid temperature sensor (see **REAR DIFFERENTIAL FLUID TEMPERATURE SENSOR REPLACEMENT**).

NO - Go to step 10.

10. Measure the voltage between rear differential fluid temperature sensor 2P connector terminal No. 1 and body ground.

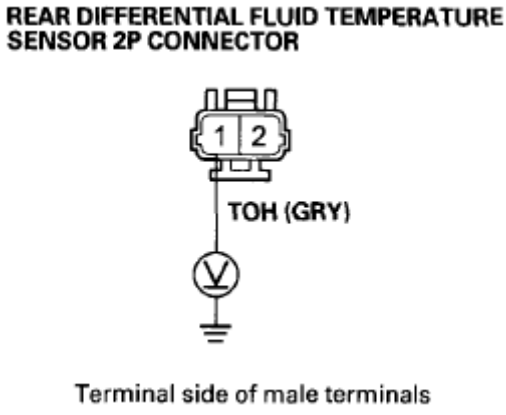


Fig. 31: Measuring Voltage Between Rear Differential Fluid Temperature Sensor 2P Connector Terminal No. 1 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there about 4 V?

YES - Go to step 15.

NO - Go to step 11.

11. Measure the voltage between SH-AWD control unit connector terminal A18 and body ground.

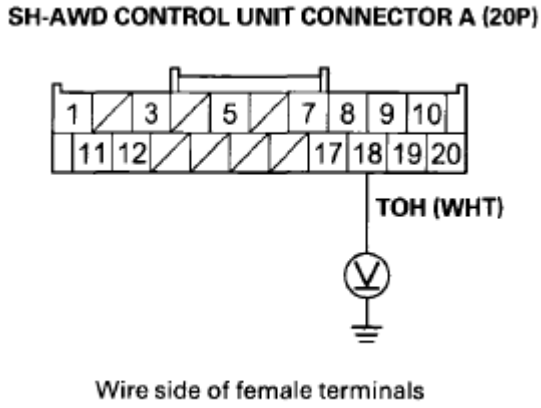


Fig. 32: Measuring Voltage Between SH-AWD Control Unit Connector Terminal A18 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there about 4 V?

YES - Repair an open in the wire between SH-AWD control unit connector terminal A18 and rear differential fluid temperature sensor 2P connector terminal No. 1.

NO - Go to step 12.

12. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
13. Disconnect SH-AWD control unit connector A (20P).
14. Check for continuity between rear differential fluid temperature sensor 2P connector terminal No. 1 and body ground.

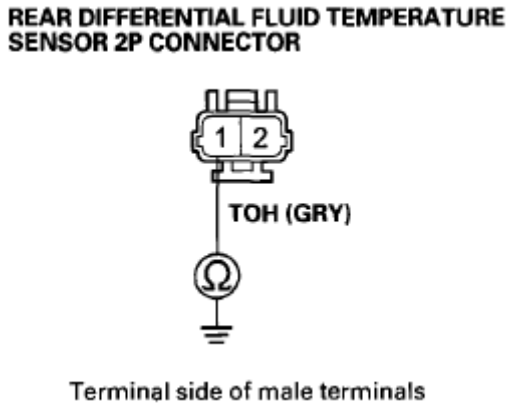


Fig. 33: Checking Continuity Between Rear Differential Fluid Temperature Sensor 2P Connector Terminal No. 1 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair a short to body ground in the wire between SH-AWD control unit connector terminal A18 and the rear differential fluid temperature sensor 2P connector.

NO - Update the SH-AWD control unit if it does not have the latest software (see **SH-AWD® CONTROL UNIT UPDATE**), or substitute a known-good SH-AWD control unit (see **SH-AWD® CONTROL UNIT REPLACEMENT**), and recheck. If the symptom/indication goes away with the updated SH-AWD control unit, troubleshooting is complete. If the symptom/indication goes away with a known-good SH-AWD control unit, replace the original SH-AWD control unit (see **SH-AWD® CONTROL UNIT REPLACEMENT**).

15. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
16. Disconnect SH-AWD control unit connector A (20P).
17. Check for continuity between rear differential fluid temperature sensor 2P connector terminal No. 2 and body ground.

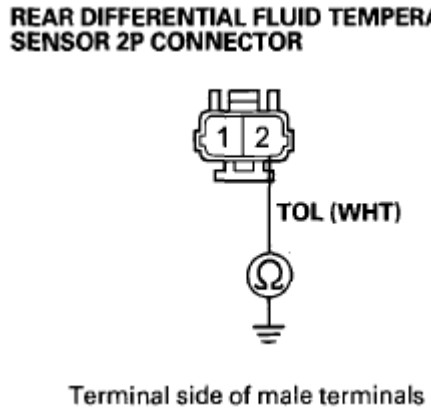


Fig. 34: Checking Continuity Between Rear Differential Fluid Temperature Sensor 2P Connector Terminal No. 2 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair a short to body ground in the wire between SH-AWD control unit connector terminal A8 and the rear differential fluid temperature sensor 2P connector.

NO - Go to step 18.

18. Connect SH-AWD control unit connector terminal A8 to body ground with a jumper wire.

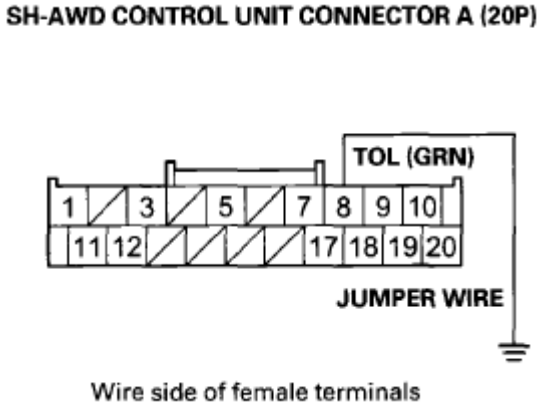


Fig. 35: Connecting SH-AWD Control Unit Connector Terminal A8 To Body Ground With Jumper Wire
Courtesy of AMERICAN HONDA MOTOR CO., INC.

19. Check for continuity between rear differential fluid temperature sensor 2P connector terminal No. 2 and body ground.

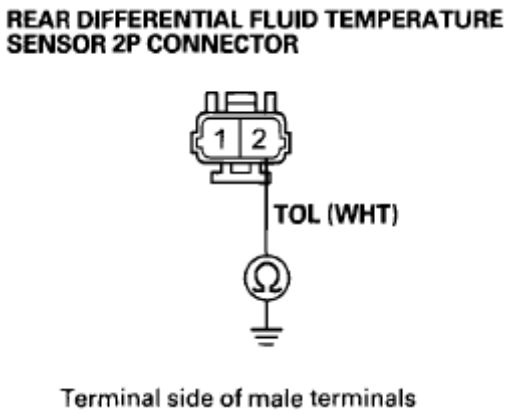


Fig. 36: Checking Continuity Between Rear Differential Fluid Temperature Sensor 2P Connector Terminal No. 2 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Update the SH-AWD control unit if it does not have the latest software (see **SH-AWD® CONTROL UNIT UPDATE**), or substitute a known-good SH-AWD control unit (see **SH-AWD® CONTROL UNIT REPLACEMENT**), and recheck. If the symptom/indication goes away with the updated SH-AWD control unit, troubleshooting is complete. If the symptom/indication goes away with a known-good SH-AWD control unit, replace the original SH-AWD control unit (see **SH-AWD® CONTROL UNIT REPLACEMENT**).

NO - Repair an open in the wire between SH-AWD control unit connector terminal A8 and the rear differential fluid temperature sensor 2P connector.

DTC 43-1: DIFFERENTIAL FLUID TEMPERATURE SENSOR MALFUNCTION

NOTE: Before you troubleshoot, review the general troubleshooting information (see GENERAL TROUBLESHOOTING INFORMATION).

1. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
2. Check for DTCs with the HDS.

   Is DTC 42-1 or 42-2 indicated?

   YES - Go to the indicated **DTC'S TROUBLESHOOTING**.

   NO - Go to step 3.

3. Clear the DTC with the HDS.
4. Start the engine, and let it idle for 1 minute.
5. Test-drive the vehicle for 5 minutes.
6. Check for DTCs with the HDS.

   Is DTC 43-1 indicated?

   YES - Go to step 7.

   NO - Intermittent failure, the system is OK at this time.

7. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
8. Disconnect SH-AWD control unit connector A (20P) and the rear differential fluid temperature sensor 2P connector.
9. Check for continuity between rear differential fluid temperature sensor 2P connector terminals No. 1 and No. 2.

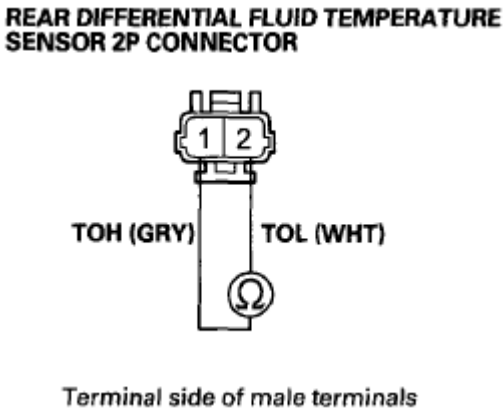


Fig. 37: Checking Continuity Between Rear Differential Fluid Temperature Sensor 2P Connector Terminals No. 1 And No. 2

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair a short in the wires between rear differential fluid temperature sensor 2P connector terminals No. 1 and No. 2.

NO - Go to step 10.

10. Reconnect all connectors.
11. Update the SH-AWD control unit if it does not have the latest software (see **SH-AWD® CONTROL UNIT UPDATE**), or substitute a known-good SH-AWD control unit (see **SH-AWD® CONTROL UNIT REPLACEMENT**).
12. Start the engine, and let it idle for 1 minute.
13. Check for DTCs with the HDS.

Is DTC 43-1 indicated?

YES - Replace the rear differential fluid temperature sensor (see **REAR DIFFERENTIAL FLUID TEMPERATURE SENSOR REPLACEMENT**).

NO - Replace the original SH-AWD control unit (see **SH-AWD® CONTROL UNIT REPLACEMENT**).

DTC 44-11: SH-AWD CONTROL UNIT

NOTE: Before you troubleshoot, review the general troubleshooting information (see GENERAL TROUBLESHOOTING INFORMATION).

1. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
2. Clear the DTC with the HDS.
3. Turn the ignition switch to LOCK (0), then turn the ignition switch back to ON (II), or select the OFF mode, then the ON mode.
4. Check for DTCs with the HDS.

Is DTC 44-11 indicated?

YES - Update the SH-AWD control unit if it does not have the latest software (see **SH-AWD® CONTROL UNIT UPDATE**), or substitute a known-good SH-AWD control unit (see **SH-AWD® CONTROL UNIT REPLACEMENT**), and recheck. If the symptom/indication goes away with the updated SH-AWD control unit, troubleshooting is complete. If the symptom/indication goes away with a known-good SH-AWD control unit, replace the original SH-AWD control unit (see **SH-AWD® CONTROL UNIT REPLACEMENT**).

NO - Intermittent failure, the system is OK at this time.

DTC 44-12: SH-AWD RELAY STUCK ON

NOTE: Before you troubleshoot, review the general troubleshooting information (see GENERAL TROUBLESHOOTING INFORMATION).

1. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
2. Clear the DTC with the HDS.
3. Start the engine.
4. Check for DTCs with the HDS.

   Is DTC 44-12 indicated?

   YES - Go to step 5.

   NO - Intermittent failure, the system is OK at this time.

5. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
6. Remove the SH-AWD relay (see **SH-AWD® RELAY REPLACEMENT**), then test the SH-AWD relay (see **POWER RELAY TEST**).

   Is the SH-AWD relay OK?

   YES - Go to step 7.

   NO - Replace the SH-AWD relay (see **SH-AWD® RELAY REPLACEMENT**).

7. Disconnect SH-AWD control unit connector A (20P).
8. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
9. Measure the voltage between SH-AWD control unit connector terminal A17 and body ground.

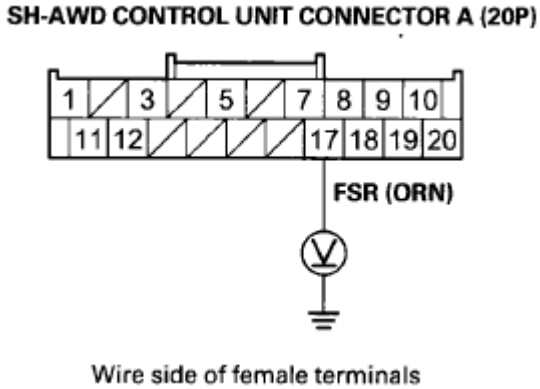


Fig. 38: Measuring Voltage Between SH-AWD Control Unit Connector Terminal A17 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there battery voltage?

YES - Repair a short to power in the wire between the SH-AWD control unit connector terminal A17 and the SH-AWD relay (FSR line).

NO - Go to step 10.

10. Turn the ignition switch to LOCK(0), or press the engine start/stop button to select the OFF mode.
11. Disconnect SH-AWD control unit connector B (8P).
12. Measure the voltage between SH-AWD control unit connector terminals B1 and B2.

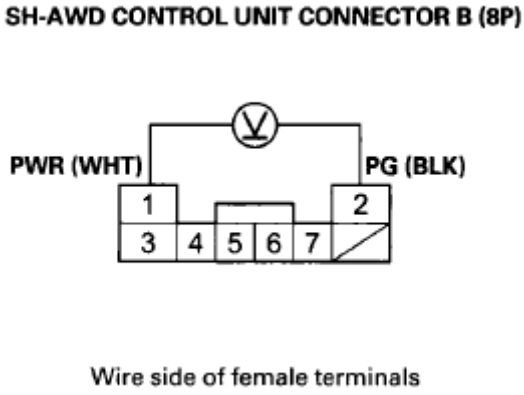


Fig. 39: Measuring Voltage Between SH-AWD Control Unit Connector Terminals B1 And B2
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there battery voltage?

YES - Repair a short to power in the wire between the SH-AWD control unit and the SH-AWD relay (PWR line).

NO - Update the SH-AWD control unit if it does not have the latest software (see **SH-AWD® CONTROL UNIT UPDATE**), or substitute a known-good SH-AWD control unit (see **SH-AWD® CONTROL UNIT REPLACEMENT**), and recheck. If the symptom/indication goes away with the updated SH-AWD control unit, troubleshooting is complete. If the symptom/indication goes away with a known-good SH-AWD control unit, replace the original SH-AWD control unit (see **SH-AWD® CONTROL UNIT REPLACEMENT**).

DTC 44-32: SH-AWD CONTROL UNIT POWER SUPPLY STUCK ON; DTC 44-41: SH-AWD CONTROL UNIT POWER SUPPLY STUCK OFF

NOTE: Before you troubleshoot, review the general troubleshooting information (see GENERAL TROUBLESHOOTING INFORMATION).

1. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
2. Clear the DTC with the HDS.

3. Start the engine.
4. Check for DTCs with the HDS.

   Is DTC 44-32 or 44-41 indicated?

   YES - Update the SH-AWD control unit if it does not have the latest software (see **SH-AWD® CONTROL UNIT UPDATE**), or substitute a known-good SH-AWD control unit (see **SH-AWD® CONTROL UNIT REPLACEMENT**), and recheck. If the symptom/indication goes away with the updated SH-AWD control unit, troubleshooting is complete. If the symptom/indication goes away with a known-good SH-AWD control unit, replace the original SH-AWD control unit (see **SH-AWD® CONTROL UNIT REPLACEMENT**).

   NO - Intermittent failure, the system is OK at this time.

DTC 44-50: SH-AWD CONTROL UNIT POWER SUPPLY VOLTAGE LOW

NOTE:
- **Before you troubleshoot, review the general troubleshooting information (see GENERAL TROUBLESHOOTING INFORMATION).**
- **Make sure the battery is fully charged and the charging system is working properly.**

1. Check the No. 2-6 (30 A) fuse in the under-hood fuse/relay box.

   Is the fuse OK?

   YES - Go to step 2.

   NO - Replace the blown fuse and recheck. If the No. 2-6 (30 A) fuse blows again, repair a short to ground in the wire between the No. 2-6 (30 A) fuse in the under-hood fuse/relay box and the SH-AWD relay 4P connector, then replace the fuse and recheck.

2. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
3. Clear the DTC with the HDS.
4. Start the engine.
5. Check for DTCs with the HDS.

   Is DTC 44-50 indicated?

   YES - Go to step 6.

   NO - Intermittent failure, the system is OK at this time.

6. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
7. Remove the SH-AWD relay (see **SH-AWD® RELAY REPLACEMENT**), then test the SH-AWD relay (see **POWER RELAY TEST**).

Is the SH-AWD relay OK?

YES - Go to step 8.

NO - Replace the SH-AWD relay (see **SH-AWD® RELAY REPLACEMENT**).

8. Measure the voltage between SH-AWD relay 4P connector terminal No. 1 and body ground.

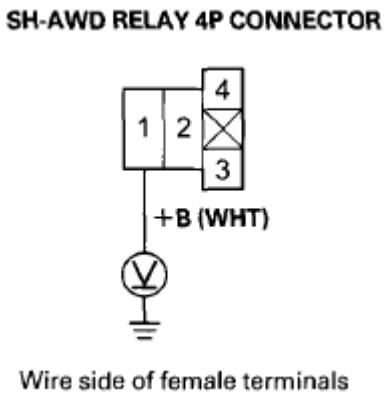


Fig. 40: Measuring Voltage Between SH-AWD Relay 4P Connector Terminal No. 1 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there battery voltage?

YES - Go to step 9.

NO - Repair an open in the wire between the No. 2-6 (30 A) fuse in the under-hood fuse/relay box and the SH-AWD relay 4P connector.

9. Disconnect SH-AWD control unit connector A (20P) and connector B (8P).
10. Connect SH-AWD relay 4P connector terminals No. 1 and No. 2 with a jumper wire.

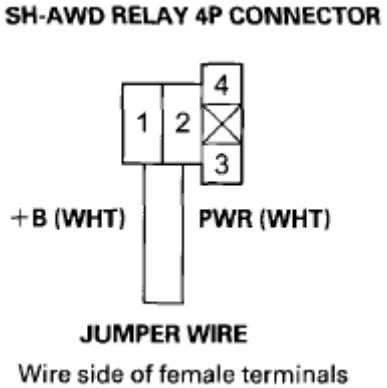


Fig. 41: Connecting SH-AWD Relay 4P Connector Terminals No. 1 And No. 2 With Jumper Wire
Courtesy of AMERICAN HONDA MOTOR CO., INC.

11. Measure the voltage between SH-AWD control unit connector terminal B1 and body ground.

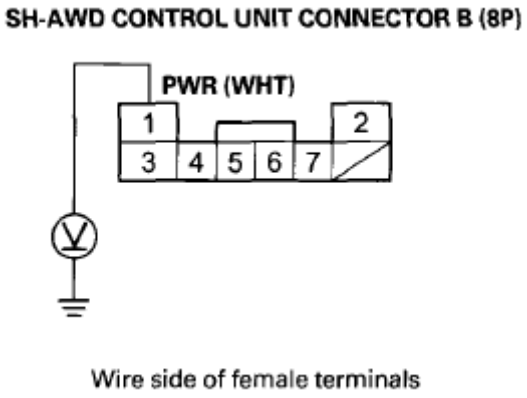


Fig. 42: Measuring Voltage Between SH-AWD Control Unit Connector Terminal B1 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there voltage?

YES - Go to step 12.

NO - Repair an open in the wire between SH-AWD control unit connector terminal B1 and the SH-AWD relay 4P connector.

12. Check for continuity between SH-AWD relay 4P connector terminal No. 3 and body ground.

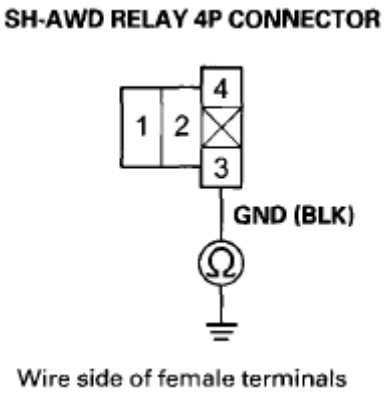


Fig. 43: Checking Continuity Between SH-AWD Relay 4P Connector Terminal No. 3 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 13.

NO - Repair an open in the wire between the SH-AWD relay 4P connector and body ground (G652) (see

CONNECTOR TO FUSE/RELAY BOX INDEX), or repair poor body ground (G652).

13. Connect SH-AWD relay 4P connector terminals No. 3 and No. 4 with a jumper wire.

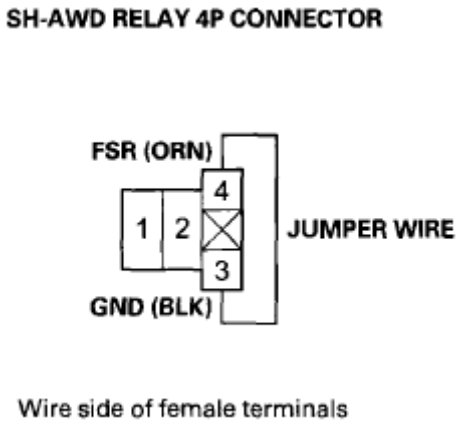


Fig. 44: Connecting SH-AWD Relay 4P Connector Terminals No. 3 And No. 4 With Jumper Wire
Courtesy of AMERICAN HONDA MOTOR CO., INC.

14. Check for continuity between SH-AWD control unit connector terminal A17 and body ground.

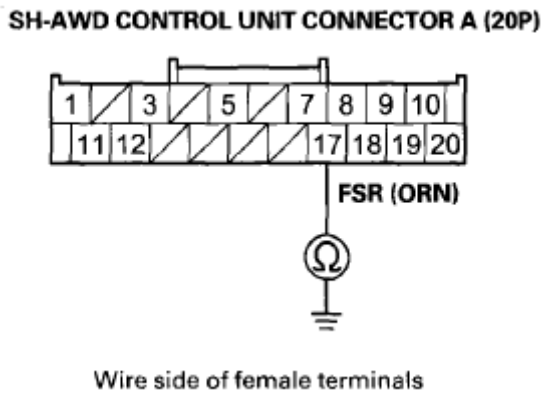


Fig. 45: Checking Continuity Between SH-AWD Control Unit Connector Terminal A17 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Check for loose connector terminals at the SH-AWD control unit. If the connections are OK, update the SH-AWD control unit if it does not have the latest software (see **SH-AWD® CONTROL UNIT UPDATE**), or substitute a known-good SH-AWD control unit (see **SH-AWD® CONTROL UNIT REPLACEMENT**), and recheck. If the symptom/indication goes away with the updated SH-AWD control unit, troubleshooting is complete. If the symptom/indication goes away with a known-good SH-AWD control unit, replace the original SH-AWD control unit (see **SH-AWD® CONTROL UNIT REPLACEMENT**).

NO - Repair an open in the wire between SH-AWD control unit connector terminal A17 and the SH-AWD relay 4P connector.

DTC 49-1: SH-AWD CONTROL UNIT (PG LINE OPEN)

NOTE: Before you troubleshoot, review the general troubleshooting information (see GENERAL TROUBLESHOOTING INFORMATION).

1. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
2. Clear the DTC with the HDS.
3. Start the engine.
4. Check for DTCs with the HDS.

Is DTC 49-1 indicated?

YES - Go to step 5.

NO - Intermittent failure, the system is OK at this time.

5. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
6. Disconnect SH-AWD control unit connector B (8P).
7. Check for continuity between SH-AWD control unit connector terminal B2 and body ground.

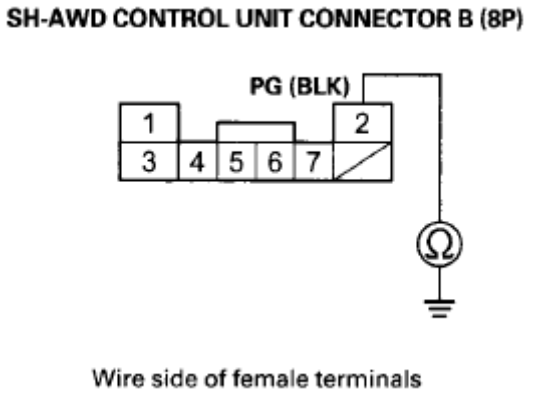


Fig. 46: Checking Continuity Between SH-AWD Control Unit Connector Terminal B2 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Update the SH-AWD control unit if it does not have the latest software (see **SH-AWD® CONTROL UNIT UPDATE**), or substitute a known-good SH-AWD control unit (see **SH-AWD® CONTROL UNIT REPLACEMENT**), and recheck. If the symptom/indication goes away with the updated SH-AWD control unit, troubleshooting is complete. If the symptom/indication goes away with a known-good SH-AWD control unit, replace the original SH-AWD control unit (see **SH-AWD®**

CONTROL UNIT REPLACEMENT).

NO - Repair an open in the wire between SH-AWD control unit connector terminal B2 and body ground (G652) (see **CONNECTOR TO FUSE/RELAY BOX INDEX**), or repair poor body ground (G652).

DTC 52-3: LEFT CLUTCH ELECTROMAGNETIC COIL CURRENT MALFUNCTION

NOTE:

- **Before you troubleshoot, review the general troubleshooting information (see GENERAL TROUBLESHOOTING INFORMATION).**
- **If DTC 49-1 is stored at the same time as DTC 52-3, troubleshoot DTC 49-1 first, then recheck for DTC 52-3.**

1. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
2. Clear the DTC with the HDS.
3. Do the clutch function test with the HDS (see **SH-AWD® FUNCTION TEST**).
4. Check for DTCs with the HDS.

   Is DTC 52-3 indicated?

   YES - Go to step 5.

   NO - Intermittent failure, the system is OK at this time.

5. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
6. Disconnect SH-AWD control unit connector B (8P) and the left solenoid 4P connector.
7. Connect left solenoid 4P connector terminal No. 1 to body ground with a jumper wire.

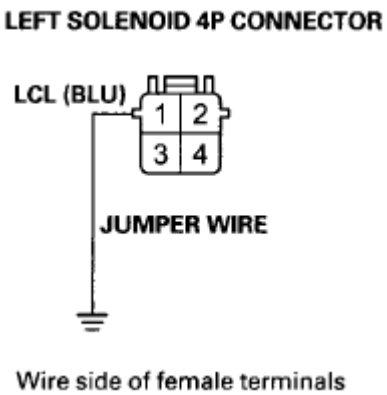


Fig. 47: Connecting Left Solenoid 4P Connector Terminal No. 1 To Body Ground With Jumper Wire
Courtesy of AMERICAN HONDA MOTOR CO., INC.

8. Check for continuity between SH-AWD control unit connector terminal B5 and body ground.

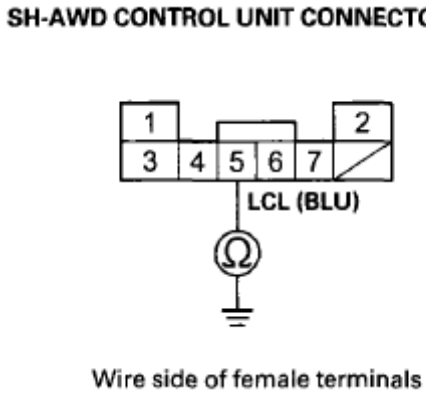


Fig. 48: Checking Continuity Between SH-AWD Control Unit Connector Terminal B5 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 9.

NO - Repair an open in the wire between the SH-AWD control unit connector terminal B5 and the left solenoid 4P connector.

9. Remove the jumper wire from left solenoid 4P connector terminal No. 1.
10. Connect left solenoid 4P connector terminal No. 2 to body ground with a jumper wire.

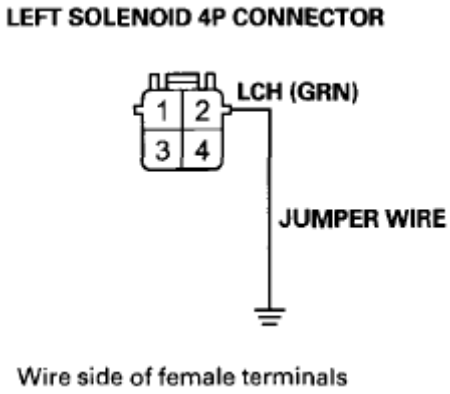


Fig. 49: Connecting Left Solenoid 4P Connector Terminal No. 2 To Body Ground With Jumper Wire
Courtesy of AMERICAN HONDA MOTOR CO., INC.

11. Check for continuity between SH-AWD control unit connector terminal B4 and body ground.

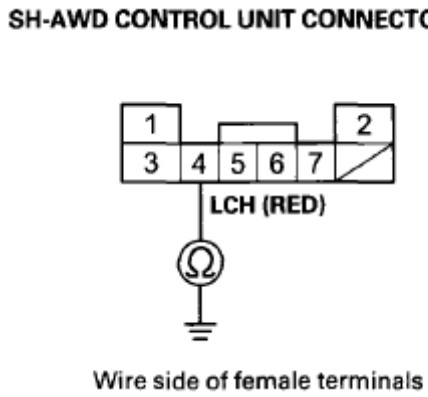


Fig. 50: Checking Continuity Between SH-AWD Control Unit Connector Terminal B4 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 12.

NO - Repair an open in the wire between SH-AWD control unit connector terminal B4 and the left solenoid 4P connector.

12. Remove the jumper wire from left solenoid 4P connector terminal No. 2.
13. Check for continuity between SH-AWD control unit connector terminal B2 and body ground.

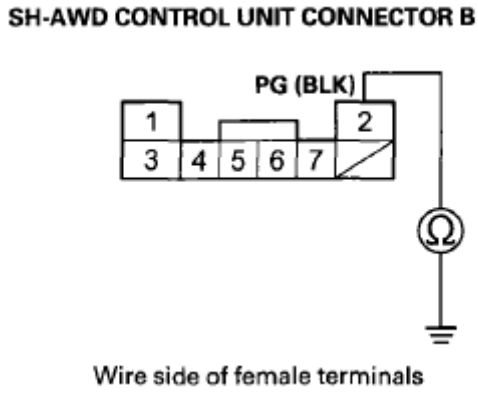


Fig. 51: Checking Continuity Between SH-AWD Control Unit Connector Terminal B2 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 14.

NO - Repair an open in the wire between SH-AWD control unit connector terminal B2 and body ground (G652) (see **CONNECTOR TO FUSE/RELAY BOX INDEX**), or repair poor body ground (G652).

14. Check for continuity between SH-AWD control unit connector terminals B2 and B4.

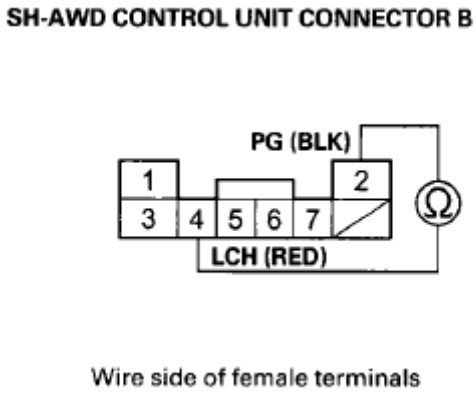


Fig. 52: Checking Continuity Between SH-AWD Control Unit Connector Terminals B2 And B4
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair a short to body ground in the wire between SH-AWD control unit connector terminal B4 and the left solenoid 4P connector.

NO - Go to step 15.

15. Check for continuity between SH-AWD control unit connector terminals B2 and B5.

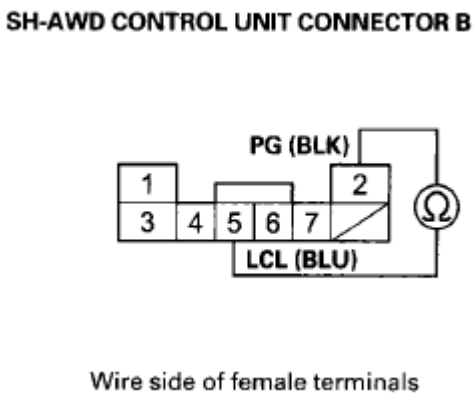


Fig. 53: Checking Continuity Between SH-AWD Control Unit Connector Terminals B2 And B5
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair a short to body ground in the wire between SH-AWD control unit connector terminal B5 and the left solenoid 4P connector.

NO - Go to step 16.

16. Check for continuity between SH-AWD control unit connector terminals B4 and B5.

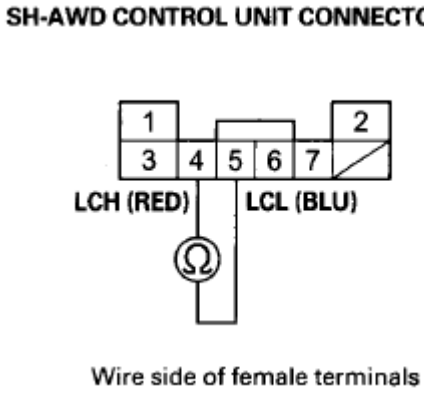


Fig. 54: Checking Continuity Between SH-AWD Control Unit Connector Terminals B4 And B5
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair a short in the wires between the SH-AWD control unit and the left solenoid 4P connector.

NO - Go to step 17.

17. Measure the voltage between SH-AWD control unit connector terminals B2 and B5.

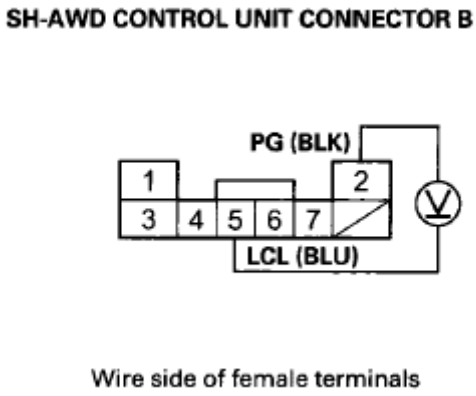


Fig. 55: Measuring Voltage Between SH-AWD Control Unit Connector Terminals B2 And B5
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there voltage?

YES - Repair a short to power in the wire between SH-AWD control unit connector terminal B5 and the left solenoid 4P connector.

NO - Go to step 18.

18. Measure the voltage between SH-AWD control unit connector terminals B2 and B4.

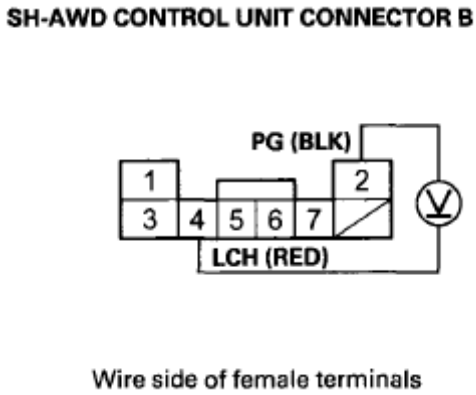


Fig. 56: Measuring Voltage Between SH-AWD Control Unit Connector Terminals B2 And B4
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there voltage?

YES - Repair a short to power in the wire between SH-AWD control unit connector terminal B4 and the left solenoid 4P connector.

NO - Update the SH-AWD control unit if it does not have the latest software (see **SH-AWD® CONTROL UNIT UPDATE**), or substitute a known-good SH-AWD control unit (see **SH-AWD® CONTROL UNIT REPLACEMENT**), and recheck. If the symptom/indication goes away with the updated SH-AWD control unit, troubleshooting is complete. If the symptom/indication goes away with a known-good SH-AWD control unit, replace the original SH-AWD control unit (see **SH-AWD® CONTROL UNIT REPLACEMENT**).

DTC 53-1, 53-3: LEFT CLUTCH ELECTROMAGNETIC COIL (OPEN)

NOTE: Before you troubleshoot, review the general troubleshooting information (see GENERAL TROUBLESHOOTING INFORMATION).

1. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
2. Clear the DTC with the HDS.
3. Do the clutch function test with the HDS (see **SH-AWD® FUNCTION TEST**).
4. Check for DTCs with the HDS.

   Is DTC 53-1 or 53-3 indicated?

   YES - Go to step 5.

   NO - Intermittent failure, the system is OK at this time.

5. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
6. Disconnect SH-AWD control unit connector B (8P) and the left solenoid 4P connector.
7. Connect left solenoid 4P connector terminal No. 1 to body ground with a jumper wire.

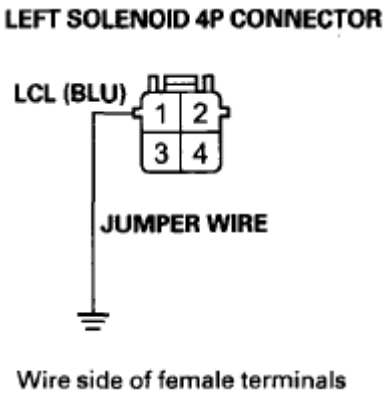


Fig. 57: Connecting Left Solenoid 4P Connector Terminal No. 1 To Body Ground With Jumper Wire
Courtesy of AMERICAN HONDA MOTOR CO., INC.

8. Check for continuity between SH-AWD control unit connector terminal B5 and body ground.

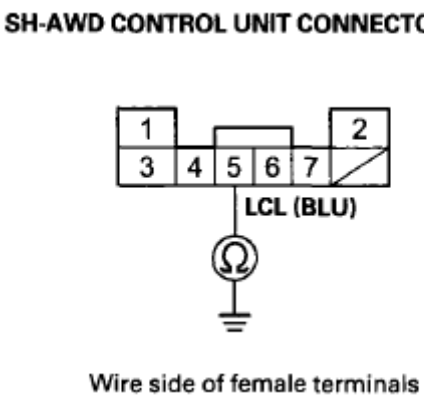


Fig. 58: Checking Continuity Between SH-AWD Control Unit Connector Terminal B5 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 9.

NO - Repair an open in the wire between SH-AWD control unit connector terminal B5 and the left solenoid 4P connector.

9. Remove the jumper wire from left solenoid 4P connector terminal No. 1.
10. Connect left solenoid 4P connector terminal No. 2 to body ground with a jumper wire.

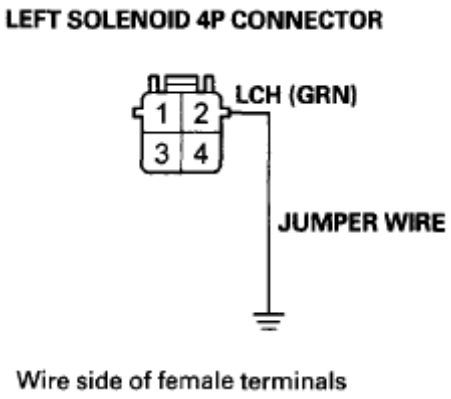


Fig. 59: Connecting Left Solenoid 4P Connector Terminal No. 2 To Body Ground With Jumper Wire
Courtesy of AMERICAN HONDA MOTOR CO., INC.

11. Check for continuity between SH-AWD control unit connector terminal B4 and body ground.

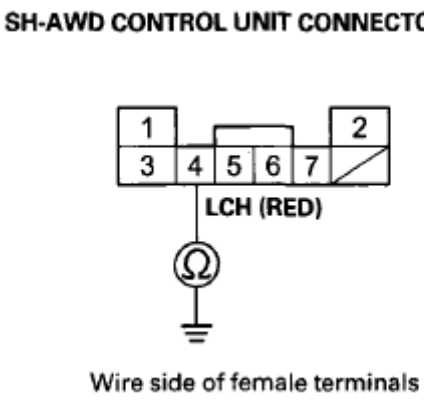


Fig. 60: Checking Continuity Between SH-AWD Control Unit Connector Terminal B4 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 12.

NO - Repair an open in the wire between SH-AWD control unit connector terminal B4 and the left solenoid 4P connector.

12. Remove the jumper wire from left solenoid 4P connector terminal No. 2.
13. Reconnect all connectors.
14. Turn the ignition switch to ON III), or press the engine start/stop button to select the ON mode.
15. Check the REAR DIFFERENTIAL FLUID TEMPERATURE SENSOR in the SH-AWD mode menu DATA LIST. The temperature should be above 68°F (20°C) with the HDS before proceeding to the next step. If the temperature is below 68°F (20°C), drive the vehicle to warm up the rear differential until the

fluid temperature becomes above 68°F (20°C).

16. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
17. Disconnect the left solenoid 4P connector.
18. Measure the resistance between left solenoid 4P connector terminals No. 1 and No. 2.

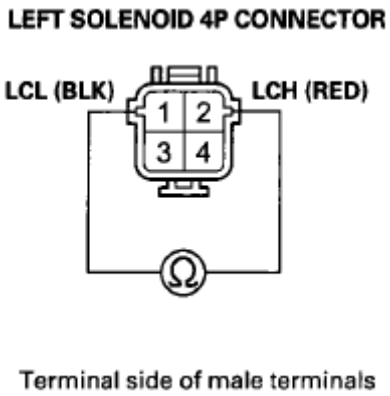


Fig. 61: Measuring Resistance Between Left Solenoid 4P Connector Terminals No. 1 And No. 2
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there 1.8 ohms or more?

YES - Replace the rear differential left side case (see **SIDE CASE REPLACEMENT**).

NO - Update the SH-AWD control unit if it does not have the latest software (see **SH-AWD® CONTROL UNIT UPDATE**), or substitute a known-good SH-AWD control unit (see **SH-AWD® CONTROL UNIT REPLACEMENT**), and recheck. If the symptom/indication goes away with the updated SH-AWD control unit, troubleshooting is complete. If the symptom/indication goes away with a known-good SH-AWD control unit, replace the original SH-AWD control unit (see **SH-AWD® CONTROL UNIT REPLACEMENT**).

DTC 53-2: LEFT CLUTCH ELECTROMAGNETIC COIL (SHORT)

NOTE: Before you troubleshoot, review the general troubleshooting information (see GENERAL TROUBLESHOOTING INFORMATION).

1. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
2. Clear the DTC with the HDS.
3. Do the clutch function test with the HDS (see **SH-AWD® FUNCTION TEST**).
4. Check for DTCs with the HDS.

Is DTC 53-2 indicated?

YES - Go to step 5.

NO - Intermittent failure, the system is OK at this time.

5. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
6. Disconnect SH-AWD control unit connector B (8P) and the left solenoid 4P connector.
7. Check for continuity between SH-AWD control unit connector terminals B4 and B5.

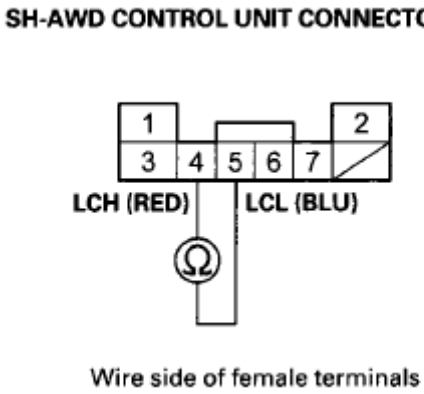


Fig. 62: Checking Continuity Between SH-AWD Control Unit Connector Terminals B4 And B5
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair a short in the wires between SH-AWD control unit connector terminals B4 and B5.

NO - Go to step 8.

8. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
9. Measure the voltage between SH-AWD control unit connector terminal B4 and body ground.

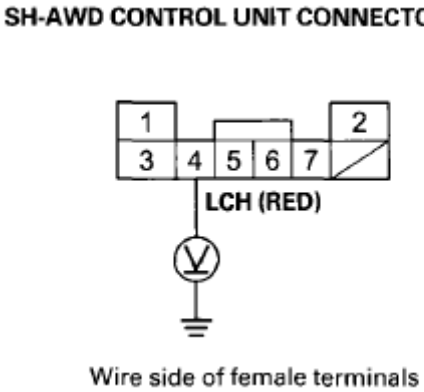


Fig. 63: Measuring Voltage Between SH-AWD Control Unit Connector Terminal B4 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there voltage?

YES - Repair a short to power in the wires between SH-AWD control unit connector terminal B4 and the

left solenoid 4P connector.

NO - Go to step 10.

10. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
11. Reconnect all connectors.
12. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
13. Check the REAR DIFFERENTIAL FLUID TEMPERATURE SENSOR in the SH-AWD mode menu DATA LIST. The temperature should be above 68°F (20°C) with the HDS before proceeding to the next step. If the temperature is below 68°F (20°C), drive the vehicle to warm up the rear differential until the fluid temperature becomes above 68°F (20°C).
14. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
15. Disconnect the left solenoid 4P connector.
16. Measure the resistance between left solenoid 4P connector terminals No. 1 and No. 2.

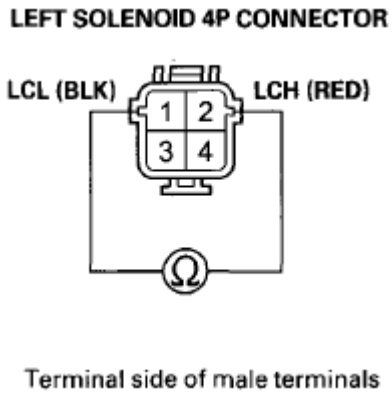


Fig. 64: Measuring Resistance Between Left Solenoid 4P Connector Terminals No. 1 And No. 2
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there 0.45 ohms or less?

YES - Replace the rear differential left side case (see **SIDE CASE REPLACEMENT**).

NO - Update the SH-AWD control unit if it does not have the latest software (see **SH-AWD® CONTROL UNIT UPDATE**), or substitute a known-good SH-AWD control unit (see **SH-AWD® CONTROL UNIT REPLACEMENT**), and recheck. If the symptom/indication goes away with the updated SH-AWD control unit, troubleshooting is complete. If the symptom/indication goes away with a known-good SH-AWD control unit, replace the original SH-AWD control unit (see **SH-AWD® CONTROL UNIT REPLACEMENT**).

DTC 56-3: RIGHT CLUTCH ELECTROMAGNETIC COIL CURRENT MALFUNCTION

NOTE:

- **Before you troubleshoot, review the general troubleshooting information (see GENERAL TROUBLESHOOTING INFORMATION).**

- **If DTC 49-1 is stored at the same time as DTC 56-3, troubleshoot DTC 49-1 first, then recheck for DTC 56-3.**

1. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
2. Clear the DTC with the HDS.
3. Do the clutch function test with the HDS (see **SH-AWD® FUNCTION TEST**).
4. Check for DTCs with the HDS.

   Is DTC 56-3 indicated?

   YES - Go to step 5.

   NO - Intermittent failure, the system is OK at this time.

5. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
6. Disconnect SH-AWD control unit connector B (8P) and the right solenoid 4P connector.
7. Connect right solenoid 4P connector terminal No. 1 to body ground with a jumper wire.

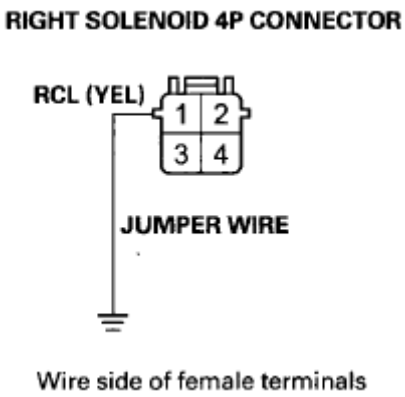


Fig. 65: Connecting Right Solenoid 4P Connector Terminal No. 1 To Body Ground With Jumper Wire
Courtesy of AMERICAN HONDA MOTOR CO., INC.

8. Check for continuity between SH-AWD control unit connector terminal B7 and body ground.

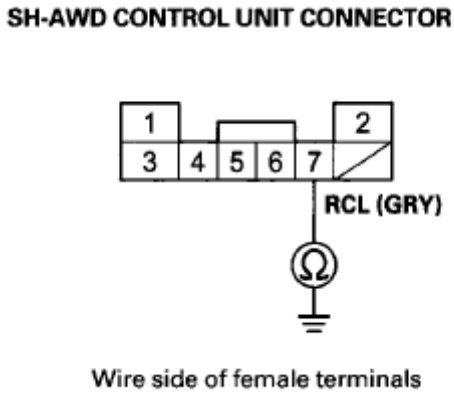


Fig. 66: Checking Continuity Between SH-AWD Control Unit Connector Terminal B7 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 9.

NO - Repair an open in the wire between SH-AWD control unit connector terminal B7 and the right solenoid 4P connector.

9. Remove the jumper wire from right solenoid 4P connector terminal No. 1.
10. Connect right solenoid 4P connector terminal No. 2 to body ground with a jumper wire.

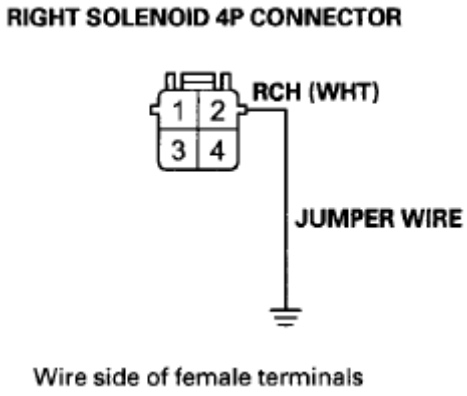


Fig. 67: Connecting Right Solenoid 4P Connector Terminal No. 2 To Body Ground With Jumper Wire
Courtesy of AMERICAN HONDA MOTOR CO., INC.

11. Check for continuity between SH-AWD control unit connector terminal B6 and body ground.

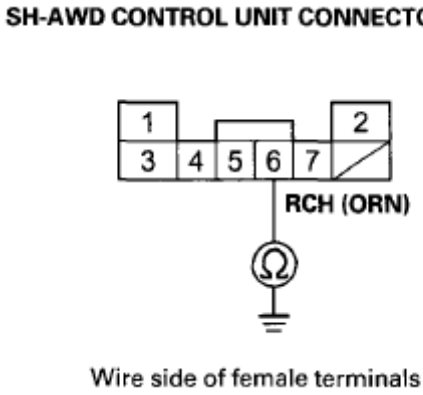


Fig. 68: Checking Continuity Between SH-AWD Control Unit Connector Terminal B6 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 12.

NO - Repair an open in the wire between SH-AWD control unit connector terminal B6 and the right solenoid 4P connector.

12. Remove the jumper wire from right solenoid 4P connector terminal No. 2.
13. Check for continuity between SH-AWD control unit connector terminal B2 and body ground.

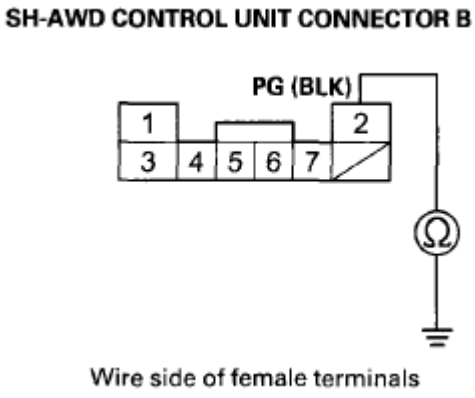


Fig. 69: Checking Continuity Between SH-AWD Control Unit Connector Terminal B2 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 14.

NO - Repair an open in the wire between SH-AWD control unit connector terminal B2 and body ground (G652) (see **CONNECTOR TO FUSE/RELAY BOX INDEX**), or repair poor body ground (G652).

14. Check for continuity between SH-AWD control unit connector terminals B2 and B6.

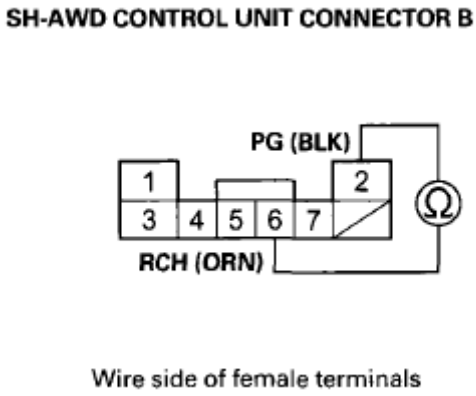


Fig. 70: Checking Continuity Between SH-AWD Control Unit Connector Terminals B2 And B6
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair a short to body ground in the wire between SH-AWD control unit connector terminal B6 and the right solenoid 4P connector.

NO - Go to step 15.

15. Check for continuity between SH-AWD control unit connector terminals B2 and B7.

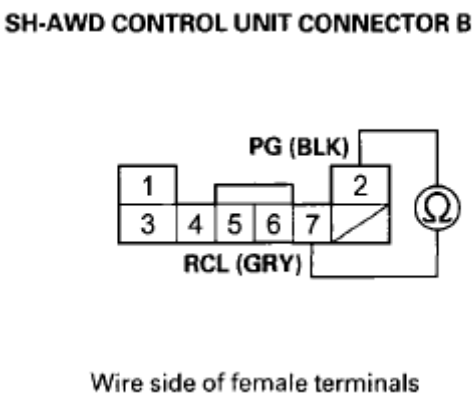


Fig. 71: Checking Continuity Between SH-AWD Control Unit Connector Terminals B2 And B7
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair a short to body ground in the wire between SH-AWD control unit connector terminal B7 and the right solenoid 4P connector.

NO - Go to step 16.

16. Check for continuity between SH-AWD control unit connector terminals B6 and B7.

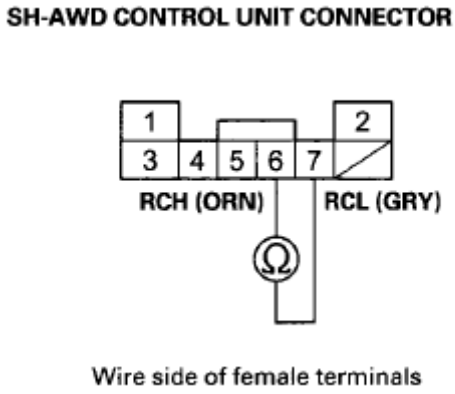


Fig. 72: Checking Continuity Between SH-AWD Control Unit Connector Terminals B6 And B7
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair a short in the wires between the SH-AWD control unit and the right solenoid 4P connector.

NO - Go to step 17.

17. Measure the voltage between SH-AWD control unit connector terminals B2 and B7.

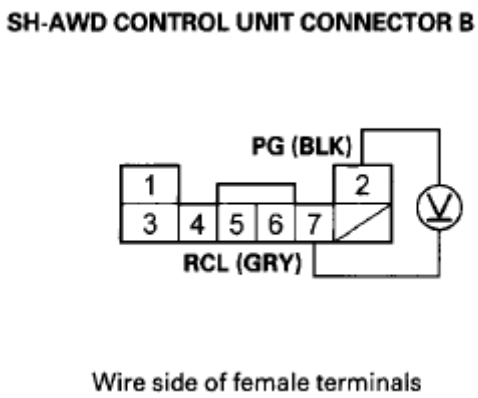


Fig. 73: Measuring Voltage Between SH-AWD Control Unit Connector Terminals B2 And B7
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there voltage?

YES - Repair a short to power in the wire between the SH-AWD control unit connector terminal B7 and the right solenoid 4P connector.

NO - Go to step 18.

18. Measure the voltage between SH-AWD control unit connector terminals B2 and B6.

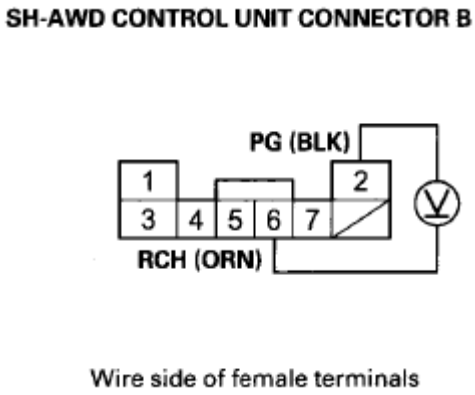


Fig. 74: Measuring Voltage Between SH-AWD Control Unit Connector Terminals B2 And B6
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there voltage?

YES - Repair a short to power in the wire between SH-AWD control unit connector terminal B6 and the right solenoid 4P connector.

NO - Update the SH-AWD control unit if it does not have the latest software (see **SH-AWD® CONTROL UNIT UPDATE**), or substitute a known-good SH-AWD control unit (see **SH-AWD® CONTROL UNIT REPLACEMENT**), and recheck. If the symptom/indication goes away with the updated SH-AWD control unit, troubleshooting is complete. If the symptom/indication goes away with a known-good SH-AWD control unit, replace the original SH-AWD control unit (see **SH-AWD® CONTROL UNIT REPLACEMENT**).

DTC 57-1, 57-3: RIGHT CLUTCH ELECTROMAGNETIC COIL (OPEN)

NOTE: Before you troubleshoot, review the general troubleshooting information (see GENERAL TROUBLESHOOTING INFORMATION).

1. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
2. Clear the DTC with the HDS.
3. Do the clutch function test with the HDS (see **SH-AWD® FUNCTION TEST**).
4. Check for DTCs with the HDS.

   Is DTC 57-1 or 57-3 indicated?

   YES - Go to step 5.

   NO - Intermittent failure, the system is OK at this time.

5. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
6. Disconnect SH-AWD control unit connector B (8P) and the right solenoid 4P connector.
7. Connect right solenoid 4P connector terminal No. 1 to body ground with a jumper wire.

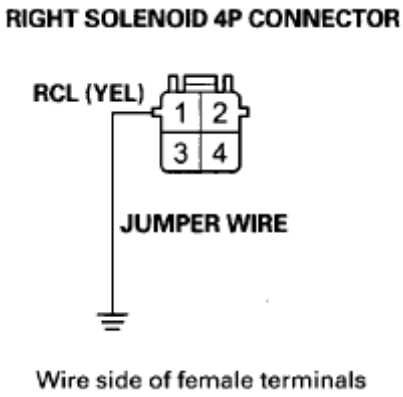


Fig. 75: Connecting Right Solenoid 4P Connector Terminal No. 1 To Body Ground With Jumper Wire
Courtesy of AMERICAN HONDA MOTOR CO., INC.

8. Check for continuity between SH-AWD control unit connector terminal B7 and body ground.

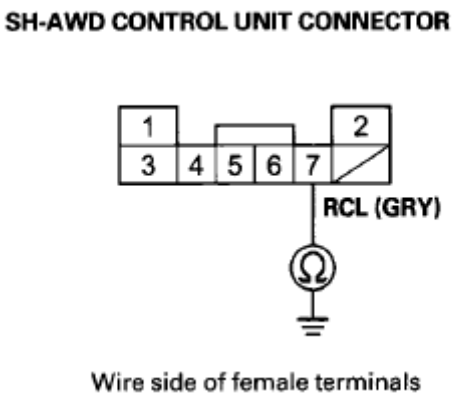


Fig. 76: Checking Continuity Between SH-AWD Control Unit Connector Terminal B7 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 9.

NO - Repair an open in the wire between SH-AWD control unit connector terminal B7 and the right solenoid 4P connector.

9. Remove the jumper wire from right solenoid 4P connector terminal No. 1.
10. Connect right solenoid 4P connector terminal No. 2 to body ground with a jumper wire.

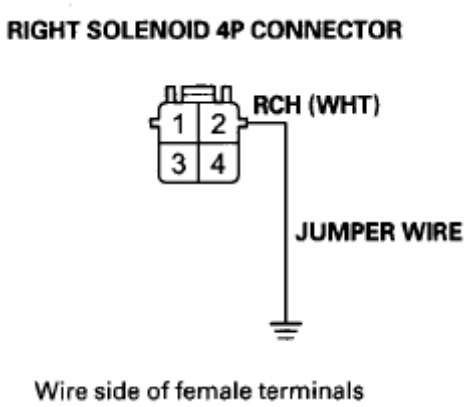


Fig. 77: Connecting Right Solenoid 4P Connector Terminal No. 2 To Body Ground With Jumper Wire
Courtesy of AMERICAN HONDA MOTOR CO., INC.

11. Check for continuity between SH-AWD control unit connector terminal B6 and body ground.

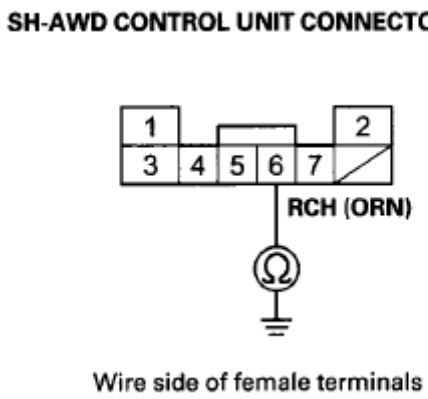


Fig. 78: Checking Continuity Between SH-AWD Control Unit Connector Terminal B6 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 12.

NO - Repair an open in the wire between SH-AWD control unit connector terminal B6 and the right solenoid 4P connector.

12. Remove the jumper wire from right solenoid 4P connector terminal No. 2.
13. Reconnect all connectors.
14. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
15. Check the REAR DIFFERENTIAL FLUID TEMPERATURE SENSOR in the SH-AWD mode menu DATA LIST. The temperature should be above 68°F (20°C) with the HDS before proceeding to the next step. If the temperature is below 68°F (20°C), drive the vehicle to warm up the rear differential until the

fluid temperature becomes above 68°F (20°C).

16. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
17. Disconnect the right solenoid 4P connector.
18. Measure the resistance between right solenoid 4P connector terminals No. 1 and No. 2.

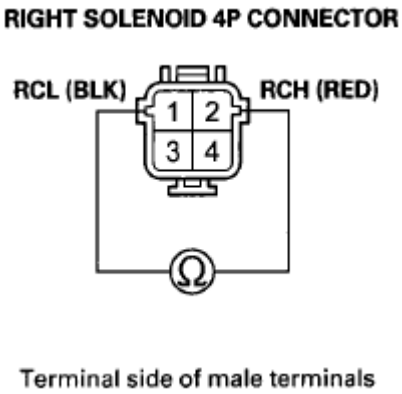


Fig. 79: Measuring Resistance Between Right Solenoid 4P Connector Terminals No. 1 And No. 2
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there 1.8 ohms or more?

YES - Replace the rear differential right side case (see **SIDE CASE REPLACEMENT**).

NO - Update the SH-AWD control unit if it does not have the latest software (see **SH-AWD® CONTROL UNIT UPDATE**), or substitute a known-good SH-AWD control unit (see **SH-AWD® CONTROL UNIT REPLACEMENT**), and recheck. If the symptom/indication goes away with the updated SH-AWD control unit, troubleshooting is complete. If the symptom/indication goes away with a known-good SH-AWD control unit, replace the original SH-AWD control unit (see **SH-AWD® CONTROL UNIT REPLACEMENT**).

DTC 57-2: RIGHT CLUTCH ELECTROMAGNETIC COIL (SHORT)

NOTE: Before you troubleshoot, review the general troubleshooting information (see GENERAL TROUBLESHOOTING INFORMATION).

1. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
2. Clear the DTC with the HDS.
3. Do the clutch function test with the HDS (see **SH-AWD® FUNCTION TEST**).
4. Check for DTCs with the HDS.

Is DTC 57-2 indicated?

YES - Go to step 5.

NO - Intermittent failure, the system is OK at this time.

5. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
6. Disconnect SH-AWD control unit connector B (8P) and the right solenoid 4P connector.
7. Check for continuity between SH-AWD control unit connector terminals B6 and B7.

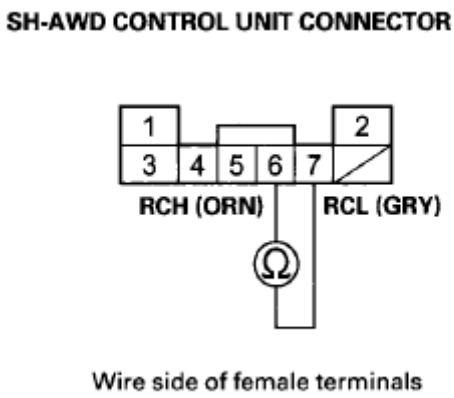


Fig. 80: Checking Continuity Between SH-AWD Control Unit Connector Terminals B6 And B7
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair a short in the wires between SH-AWD control unit connector terminals B6 and B7.

NO - Go to step 8.

8. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
9. Measure the voltage between SH-AWD control unit connector terminal B6 and body ground.

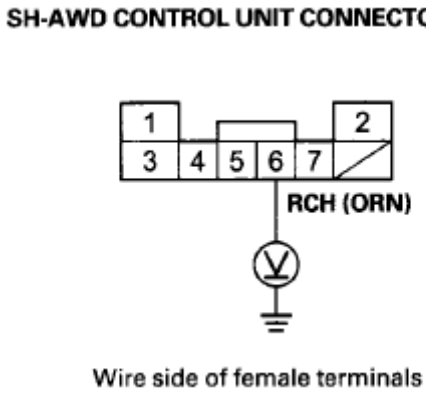


Fig. 81: Measuring Voltage Between SH-AWD Control Unit Connector Terminal B6 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there voltage?

YES - Repair a short to power in the wires between SH-AWD control unit connector terminal B6 and the

right clutch electromagnetic coil.

NO - Go to step 10.

10. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
11. Reconnect all connectors.
12. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
13. Check the REAR DIFFERENTIAL FLUID TEMPERATURE SENSOR in the SH-AWD mode menu DATA LIST. The temperature should be above 68°F (20°C) with the HDS before proceeding to the next step. If the temperature is below 68°F (20°C), drive the vehicle to warm up the rear differential until the fluid temperature becomes above 68°F (20 CC).
14. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
15. Disconnect the right solenoid 4P connector.
16. Measure the resistance between right solenoid 4P connector terminals No. 1 and No. 2.

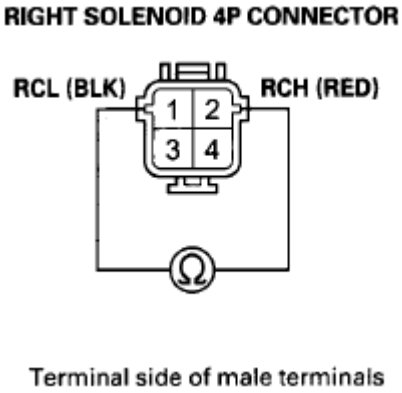


Fig. 82: Measuring Resistance Between Right Solenoid 4P Connector Terminals No. 1 And No. 2
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there 0.45 ohms or less?

YES - Replace the rear differential right side case (see **SIDE CASE REPLACEMENT**).

NO - Update the SH-AWD control unit if it does not have the latest software (see **SH-AWD® CONTROL UNIT UPDATE**), or substitute a known-good SH-AWD control unit (see **SH-AWD® CONTROL UNIT REPLACEMENT**), and recheck. If the symptom/indication goes away with the updated SH-AWD control unit, troubleshooting is complete. If the symptom/indication goes away with a known-good SH-AWD control unit, replace the original SH-AWD control unit (see **SH-AWD® CONTROL UNIT REPLACEMENT**).

DTC 76-1: REAR DIFFERENTIAL FLUID OVERHEATS

NOTE:

- **Before you troubleshoot, review the general troubleshooting information (see GENERAL TROUBLESHOOTING INFORMATION).**

- **When the temperature of the rear differential fluid is abnormally high, the SH-AWD indicator comes on. This is not necessarily a problem, but DTC 76-1 will be stored.**
- **Check the rear differential fluid level (see REAR DIFFERENTIAL FLUID INSPECTION AND REPLACEMENT). If it is low, refill it, clear the DTC, and recheck.**

1. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
2. Check for DTCs in the VSA system with the HDS.

   Are any VSA system DTCs indicated?

   YES - Go to the indicated **DTC'S TROUBLESHOOTING**.

   NO - Go to step 3.

3. Clear the DTC with the HDS.
4. Start the engine.
5. Test-drive the vehicle at 10 mph (15 km/h), and check for WHEEL SPEED in the DATA LIST with the HDS.

   Are all wheel speed the same?

   YES - Intermittent failure, the system is OK at this time.

   NO - Go to step 6.

6. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
7. Check for rear brake drag.

   Are the rear brakes OK?

   YES - Update the SH-AWD control unit if it does not have the latest software (see **SH-AWD® CONTROL UNIT UPDATE**), or substitute a known-good SH-AWD control unit (see **SH-AWD® CONTROL UNIT REPLACEMENT**), and recheck. If the symptom/indication goes away with the updated SH-AWD control unit, troubleshooting is complete. If the symptom/indication goes away with a known-good SH-AWD control unit, replace the original SH-AWD control unit (see **SH-AWD® CONTROL UNIT REPLACEMENT**).

   NO - Inspect and repair the rear brakes (see **SYMPTOM TROUBLESHOOTING**).

DTC 77-1: THE FUNCTIONAL ABNORMALITIES OF FUEL AND EMISSIONS

NOTE: Before you troubleshoot, review the general troubleshooting information (see GENERAL TROUBLESHOOTING INFORMATION).

1. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
2. Clear the DTC with the HDS.
3. Start the engine.
4. Check for DTCs with the HDS.

   Is DTC 77-1 indicated?

   YES - Go to step 5.

   NO - Intermittent failure, the system is OK at this time.

5. Check for DTCs in the PGM-FI system with the HDS.

   Are there any PGM-FI system DTCs indicated?

   YES - Go to the indicated **DTC'S TROUBLESHOOTING**.

   NO - Update the SH-AWD control unit if it does not have the latest software (see **SH-AWD® CONTROL UNIT UPDATE**), or substitute a known-good SH-AWD control unit (see **SH-AWD® CONTROL UNIT REPLACEMENT**), and recheck. If the symptom/indication goes away with the updated SH-AWD control unit, troubleshooting is complete. If the symptom/indication goes away with a known-good SH-AWD control unit, replace the original SH-AWD control unit (see **SH-AWD® CONTROL UNIT REPLACEMENT**).

DTC 77-2: THE FUNCTIONAL ABNORMALITIES OF VSA MODULATOR-CONTROL UNIT; DTC 77-5: YAW RATE-ACCELERATION SENSOR MALFUNCTION; DTC 77-6: STEERING ANGLE SENSOR MALFUNCTION

NOTE: Before you troubleshoot, review the general troubleshooting information (see GENERAL TROUBLESHOOTING INFORMATION).

1. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
2. Clear the DTC with the HDS.
3. Start the engine.
4. Check for DTCs with the HDS.

   Is DTC 77-2, 77-5, or 77-6 indicated?

   YES - Go to step 5.

   NO - Intermittent failure, the system is OK at this time.

5. Check for DTCs in the VSA system with the HDS.

   Are there VSA system DTCs indicated?

YES - Go to the indicated **DTC'S TROUBLESHOOTING**.

NO - Update the SH-AWD control unit if it does not have the latest software (see **SH-AWD® CONTROL UNIT UPDATE**), or substitute a known-good SH-AWD control unit (see **SH-AWD® CONTROL UNIT REPLACEMENT**), and recheck. If the symptom/indication goes away with the updated SH-AWD control unit, troubleshooting is complete. If the symptom/indication goes away with a known-good SH-AWD control unit, replace the original SH-AWD control unit (see **SH-AWD® CONTROL UNIT REPLACEMENT**).

DTC 77-4: THE FUNCTIONAL ABNORMALITIES OF AUTOMATIC TRANSMISSION

NOTE: Before you troubleshoot, review the general troubleshooting information (see GENERAL TROUBLESHOOTING INFORMATION).

1. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
2. Clear the DTC with the HDS.
3. Start the engine.
4. Check for DTCs with the HDS.

   Is DTC 77-4 indicated?

   YES - Go to step 5.

   NO - Intermittent failure, the system is OK at this time.

5. Check for DTCs in the A/T system with the HDS.

   Are there any A/T system DTCs indicated?

   YES - Go to the indicated **DTC'S TROUBLESHOOTING**.

   NO - Update the SH-AWD control unit if it does not have the latest software (see **SH-AWD® CONTROL UNIT UPDATE**), or substitute a known-good SH-AWD control unit (see **SH-AWD® CONTROL UNIT REPLACEMENT**), and recheck. If the symptom/indication goes away with the updated SH-AWD control unit, troubleshooting is complete. If the symptom/indication goes away with a known-good SH-AWD control unit, replace the original SH-AWD control unit (see **SH-AWD® CONTROL UNIT REPLACEMENT**).

DTC 78-XX ("X" CAN BE 0 THRU 9 OR A THRU F): SH-AWD CONTROL UNIT SELF-DIAGNOSTIC MALFUNCTION

NOTE: Before you troubleshoot, review the general troubleshooting information (see GENERAL TROUBLESHOOTING INFORMATION).

1. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
2. Clear the DTC with the HDS.

3. Start the engine.
4. Check for DTCs with the HDS.

   Is DTC 78-xx indicated?

   YES - Update the SH-AWD control unit if it does not have the latest software (see **SH-AWD® CONTROL UNIT UPDATE**), or substitute a known-good SH-AWD control unit (see **SH-AWD® CONTROL UNIT REPLACEMENT**), and recheck. If the symptom/indication goes away with the updated SH-AWD control unit, troubleshooting is complete. If the symptom/indication goes away with a known-good SH-AWD control unit, replace the original SH-AWD control unit (see **SH-AWD® CONTROL UNIT REPLACEMENT**).

   NO - Intermittent failure, the system is OK at this time.

DTC 81-1: LEFT SEARCH COIL SENSOR MALFUNCTION

NOTE: Before you troubleshoot, review the general troubleshooting information (see GENERAL TROUBLESHOOTING INFORMATION).

1. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
2. Disconnect SH-AWD control unit connector A (20P).
3. Check for continuity between SH-AWD control unit connector terminals A1 and A11.

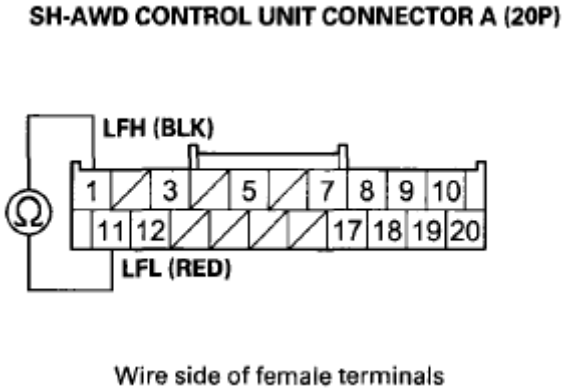


Fig. 83: Checking Continuity Between SH-AWD Control Unit Connector Terminals A1 And A11
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 4.

NO - Go to step 12.

4. Check the REAR DIFFERENTIAL FLUID TEMPERATURE SENSOR in the SH-AWD mode menu DATA LIST. The temperature should be above 68°F (20°C) with the HDS before proceeding to the next

step. If the temperature is below 68°F (20°C), drive the vehicle to warm up the rear differential until the fluid temperature becomes above 68°F (20°C).

5. Measure the resistance between SH-AWD control unit connector terminals A1 and A11.

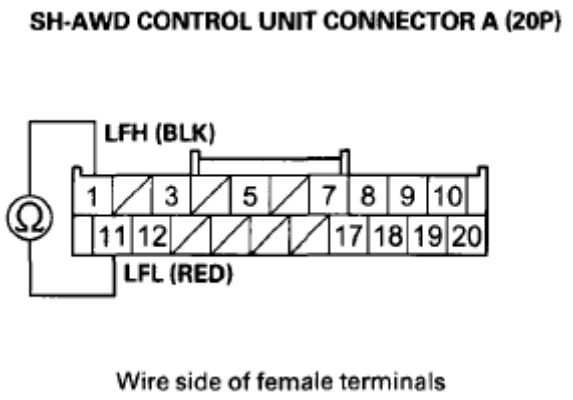


Fig. 84: Measuring Resistance Between SH-AWD Control Unit Connector Terminals A1 And A11
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there about 2.0 ohms or more?

YES - Go to step 8.

NO - Go to step 6.

6. Disconnect the left solenoid 4P connector.
7. Check for continuity between left solenoid 4P connector terminals No. 3 and No. 4.

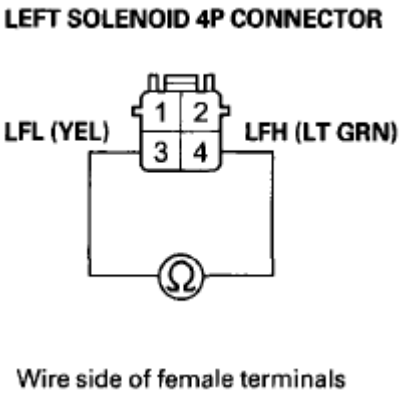


Fig. 85: Checking Continuity Between Left Solenoid 4P Connector Terminals No. 3 And No. 4
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair a short in the wires between SH-AWD control unit connector A and the left solenoid 4P connector.

NO - Replace the rear differential left side case (see **SIDE CASE REPLACEMENT**).

8. Check for continuity between SH-AWD control unit connector terminal A1 and body ground.

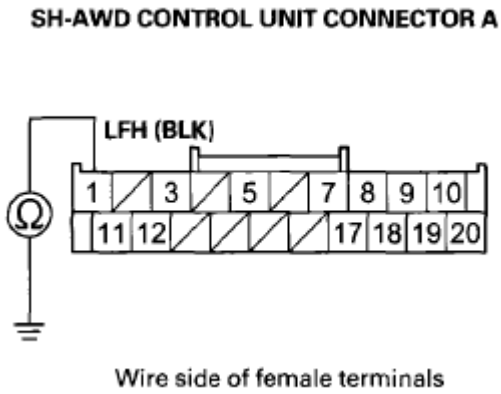


Fig. 86: Checking Continuity Between SH-AWD Control Unit Connector Terminal A1 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair a short to body ground in the wire between SH-AWD control unit connector terminal A1 and body ground.

NO - Go to step 9.

9. Check the connections at the SH-AWD control unit.

Are the connections loose or poor?

YES - Repair the connections as needed, and recheck.

NO - Go to step 10.

10. Update the SH-AWD control unit with the latest software (see **SH-AWD® CONTROL UNIT UPDATE**), and recheck.

Does the symptom/indication go away?

YES - Troubleshooting is complete.

NO - Go to step 11.

11. Substitute the SH-AWD control unit with a known-good control unit, and recheck.

Does the symptom/indication go away?

YES - Replace the original SH-AWD control unit (see **SH-AWD® CONTROL UNIT REPLACEMENT**).

NO - Replace the rear differential left side case (see **SIDE CASE REPLACEMENT**).

NOTE: If a new SH-AWD control unit was used in place of the known-good control unit and the new control unit will not initialize, replace the rear differential left side case (see SIDE CASE REPLACEMENT).

12. Disconnect the left solenoid 4P connector.
13. Connect left solenoid 4P connector terminal No. 3 to body ground with a jumper wire.

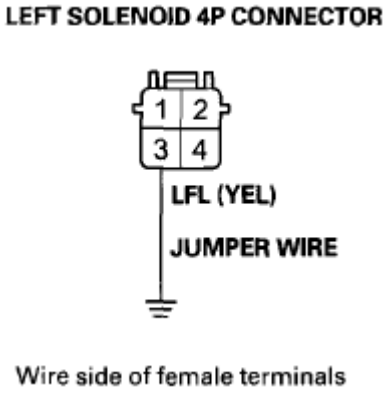


Fig. 87: Connecting Left Solenoid 4P Connector Terminal No. 3 To Body Ground With Jumper Wire
Courtesy of AMERICAN HONDA MOTOR CO., INC.

14. Check for continuity between SH-AWD control unit connector terminal A11 and body ground.

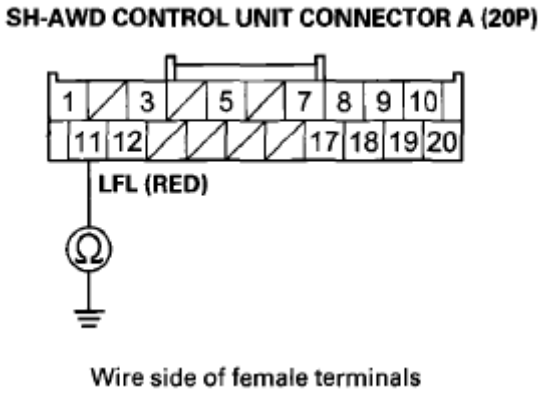


Fig. 88: Checking Continuity Between SH-AWD Control Unit Connector Terminal A11 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 15.

NO - Repair an open in the wire between SH-AWD control unit connector terminal A11 and the left solenoid 4P connector.

15. Remove the jumper wire from left solenoid 4P connector terminal No. 3.
16. Connect left solenoid 4P connector terminal No. 4 to body ground with a jumper wire.

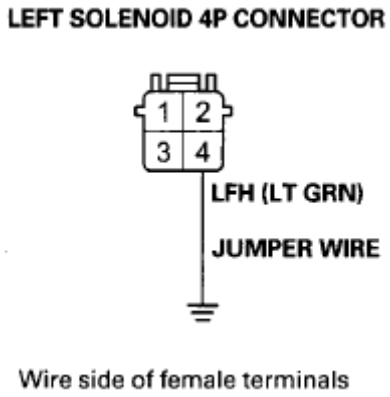


Fig. 89: Connecting Left Solenoid 4P Connector Terminal No. 4 To Body Ground With Jumper Wire
Courtesy of AMERICAN HONDA MOTOR CO., INC.

17. Check for continuity between SH-AWD control unit connector terminal A1 and body ground.

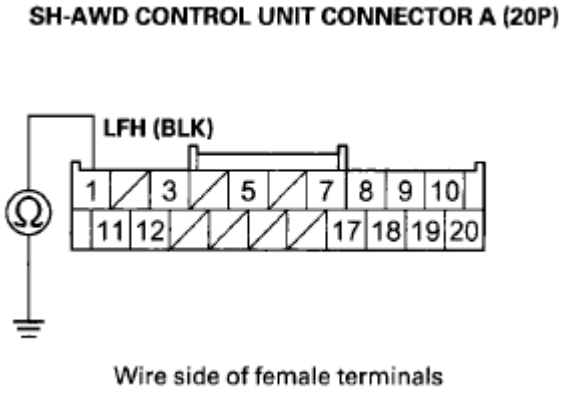


Fig. 90: Checking Continuity Between SH-AWD Control Unit Connector Terminal A1 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Replace the rear differential left side case (see **SIDE CASE REPLACEMENT**).

NO - Repair an open in the wire between SH-AWD control unit connector terminal A1 and the left solenoid 4P connector.

DTC 82-1: RIGHT SEARCH COIL SENSOR MALFUNCTION

NOTE: Before you troubleshoot, review the general troubleshooting information (see GENERAL TROUBLESHOOTING INFORMATION).

1. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
2. Disconnect SH-AWD control unit connector A (20P).
3. Check for continuity between SH-AWD control unit connector terminals A3 and A12.

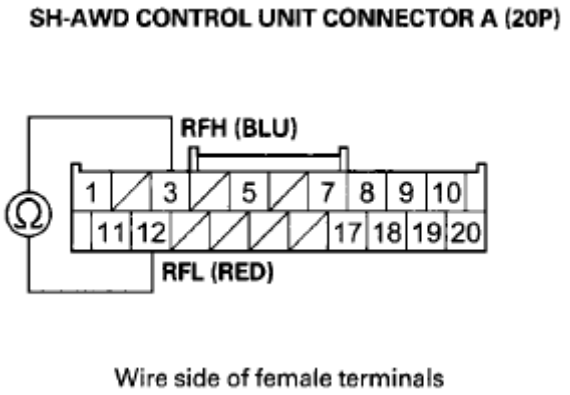


Fig. 91: Checking Continuity Between SH-AWD Control Unit Connector Terminals A3 And A12
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 4.

NO - Go to step 12.

4. Check the REAR DIFFERENTIAL FLUID TEMPERATURE SENSOR in the SH-AWD mode menu DATA LIST. The temperature should be above 68°F (20°C) with the HDS before proceeding to the next step. If the temperature is below 68°F (20°C), drive the vehicle to warm up the rear differential until the fluid temperature becomes above 68°F (20°C).
5. Measure the resistance between SH-AWD control unit connector terminals A3 and A12.

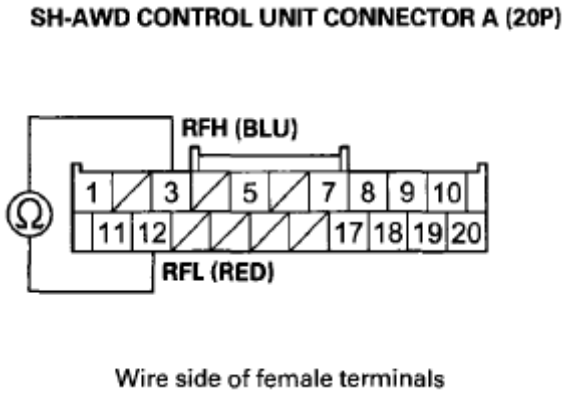


Fig. 92: Measuring Resistance Between SH-AWD Control Unit Connector Terminals A3 And A12
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there about 2.0 ohms or more?

YES - Go to step 6.

NO - Go to step 10.

6. Disconnect the right solenoid 4P connector.
7. Check for continuity between right solenoid 4P connector terminals No. 3 and No. 4.

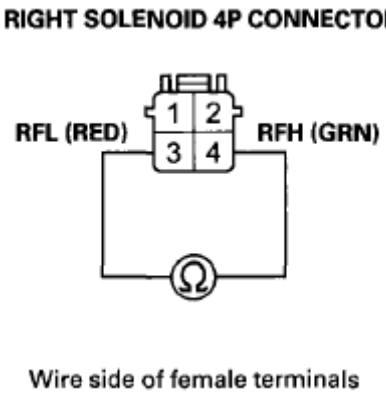


Fig. 93: Checking Continuity Between Right Solenoid 4P Connector Terminals No. 3 And No. 4
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair a short in the wires between SH-AWD control unit connector A and the right solenoid 4P connector.

NO - Replace the rear differential right side case (see **SIDE CASE REPLACEMENT**).

8. Check for continuity between SH-AWD control unit connector terminal A3 and body ground.

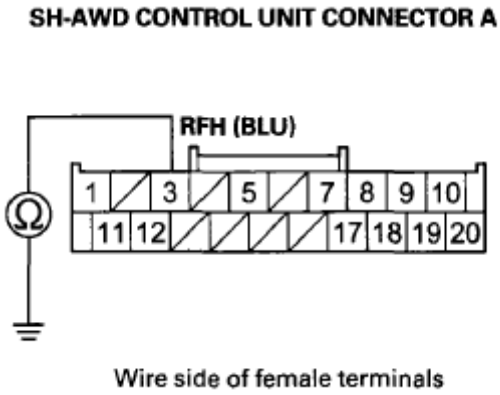


Fig. 94: Checking Continuity Between SH-AWD Control Unit Connector Terminal A3 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair a short to body ground in the wire between SH-AWD control unit connector terminal A3 and body ground.

NO - Go to step 9.

9. Check the connections at the SH-AWD control unit.

   Are the connections loose or poor?

   YES - Repair the connections as needed, and recheck.

   NO - Go to step 10.

10. Update the SH-AWD control unit with the latest software (see **SH-AWD® CONTROL UNIT UPDATE**), and recheck.

    Does the symptom/indication go away?

    YES - Troubleshooting is complete.

    NO - Go to step 11.

11. Substitute the SH-AWD control unit with a known-good control unit, and recheck.

    Does the symptom/indication go away?

    YES - Replace the original SH-AWD control unit (see **SH-AWD® CONTROL UNIT REPLACEMENT**).

NO - Replace the rear differential right side case (see **SIDE CASE REPLACEMENT**).

NOTE: **If a new SH-AWD control unit was used in place of the known-good control unit and the new control unit will not initialize, replace the rear differential right side case.**

12. Disconnect the right solenoid 4P connector.
13. Connect right solenoid 4P connector terminal No. 3 to body ground with a jumper wire.

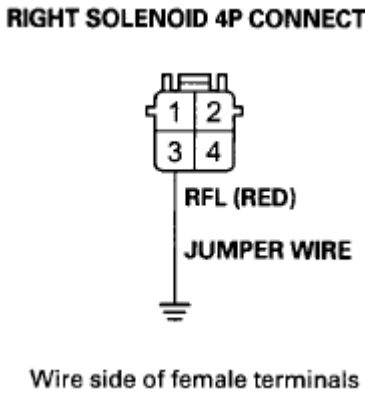


Fig. 95: Connecting Right Solenoid 4P Connector Terminal No. 3 To Body Ground With Jumper Wire
Courtesy of AMERICAN HONDA MOTOR CO., INC.

14. Check for continuity between SH-AWD control unit connector terminal A12 and body ground.

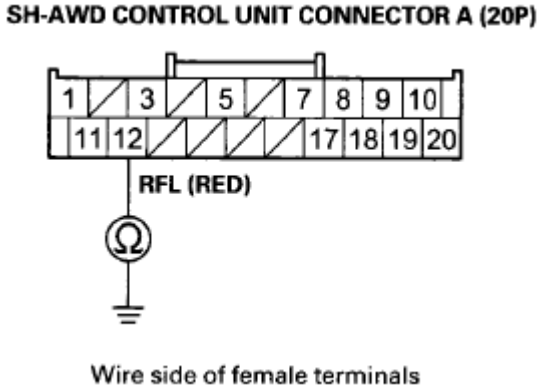


Fig. 96: Checking Continuity Between SH-AWD Control Unit Connector Terminal A12 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 15.

NO - Repair an open in the wire between SH-AWD control unit connector terminal A12 and the right solenoid 4P connector.

15. Remove the jumper wire from right solenoid 4P connector terminal No. 3.
16. Connect right solenoid 4P connector terminal No. 4 to body ground with a jumper wire.

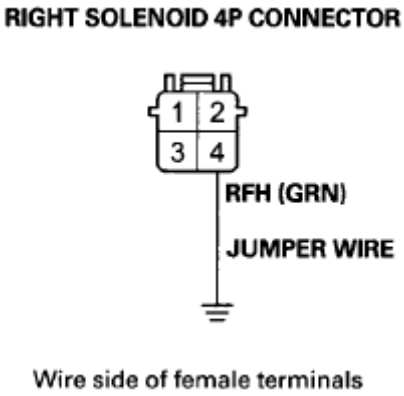


Fig. 97: Connecting Right Solenoid 4P Connector Terminal No. 4 To Body Ground With Jumper Wire
Courtesy of AMERICAN HONDA MOTOR CO., INC.

17. Check for continuity between SH-AWD control unit connector terminal A3 and body ground.

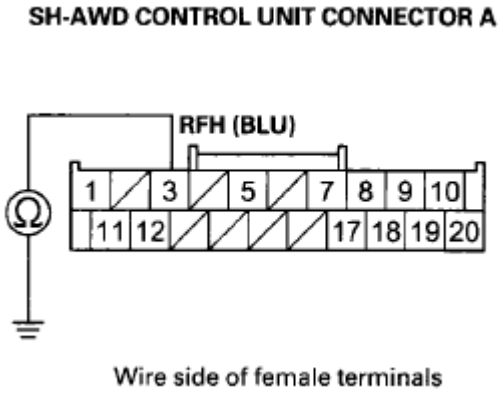


Fig. 98: Checking Continuity Between SH-AWD Control Unit Connector Terminal A3 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Replace the rear differential right side case (see **SIDE CASE REPLACEMENT**).

NO - Repair an open in the wire between SH-AWD control unit connector terminal A3 and the right solenoid 4P connector.

DTC 91-1: SH-AWD CONTROL UNIT PROGRAMMING ERROR

NOTE:

- **Before you troubleshoot, review the general troubleshooting information (see GENERAL TROUBLESHOOTING INFORMATION).**
- **DTC 91-1 is stored when the SH-AWD system update is not completed.**
- **Do not turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode while updating the SH-AWD system. If you do, the SH-AWD system can be damaged.**

1. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
2. Do the SH-AWD system update procedure (see **SH-AWD® CONTROL UNIT UPDATE**).
3. Check for DTCs with the HDS.

   Is DTC 91-1 indicated?

   YES - Substitute a known-good SH-AWD control unit (see **SH-AWD® CONTROL UNIT REPLACEMENT**), and recheck. If the symptom/indication goes away with a known-good SH-AWD control unit, replace the original SH-AWD control unit (see **SH-AWD® CONTROL UNIT REPLACEMENT**).

   NO - Update is complete.

SYMPTOM TROUBLESHOOTING

THE SH-AWD INDICATOR DOES NOT GO OFF, AND NO DTCS ARE STORED

NOTE:

- **Before you troubleshoot, review the general troubleshooting information (see GENERAL TROUBLESHOOTING INFORMATION).**
- **Make sure the No. 2-6 (30 A) fuse in the under-hood fuse/relay box is OK.**
- **Make sure there are no loose connector terminals at the SH-AWD control unit.**
- **Make sure the charging system and the battery are OK.**
- **Make sure the ECM/PCM is not in the middle of updating.**

1. Test the battery (see **BATTERY TEST**). Charge or replace the battery if necessary.
2. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
3. Check the COMPLETE MEMORIZATION in the DATA LIST with the HDS.

   Does the data list show "complete"?

   YES - Go to step 4.

   NO - Do the SH-AWD system memorization procedure for each of the following, then go to step 4.

   - SH-AWD differential clutch torque (see **SH-AWD® DIFFERENTIAL CLUTCH TORQUE**

MEMORIZATION)

- Yaw rate-acceleration neutral position (see **YAW RATE-ACCELERATION NEUTRAL POSITION MEMORIZATION**)
- SH-AWD control unit initialization (see **SH-AWD® CONTROL UNIT INITIALIZATION**)

4. Check for DTCs in the VSA system with the HDS.

   Are any steering angle sensor DTCs indicated?

   YES - Go to the indicated **DTC'S TROUBLESHOOTING**.

   NO - Go to step 5.

5. Start the engine.
6. Check the SH-AWD indicator value with the HDS.

   Is the SH-AWD indicator value OFF?

   YES - Go to the gauge control self-diagnostic function (see **SELF-DIAGNOSTIC FUNCTION**).

   NO - Update the SH-AWD control unit if it does not have the latest software (see **SH-AWD® CONTROL UNIT UPDATE**), or substitute a known-good SH-AWD control unit (see **SH-AWD® CONTROL UNIT REPLACEMENT**), and recheck. If the symptom/indication goes away with the updated SH-AWD control unit, troubleshooting is complete. If the symptom/indication goes away with a known-good SH-AWD control unit, replace the original SH-AWD control unit (see **SH-AWD® CONTROL UNIT REPLACEMENT**).

THE SH-AWD INDICATOR DOES NOT COME ON

NOTE: Before you troubleshoot, review the general troubleshooting information (see GENERAL TROUBLESHOOTING INFORMATION).

1. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
2. Check the SH-AWD indicator.

   Does the SH-AWD indicator come on and go off?

   YES - Intermittent failure, the system is OK at this time.

   NO - Go to step 3.

3. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
4. Disconnect SH-AWD control unit connector A (20P) and connector B (8P).
5. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
6. Check the SH-AWD indicator.

Does the SH-AWD indicator come on?

YES - Update the SH-AWD control unit if it does not have the latest software (see **SH-AWD® CONTROL UNIT UPDATE**), or substitute a known-good SH-AWD control unit (see **SH-AWD® CONTROL UNIT REPLACEMENT**), and recheck. If the symptom/indication goes away with the updated SH-AWD control unit, troubleshooting is complete. If the symptom/indication goes away with a known-good SH-AWD control unit, replace the original SH-AWD control unit (see **SH-AWD® CONTROL UNIT REPLACEMENT**).

NO - Go to the gauge control self-diagnostic function (see **SELF-DIAGNOSTIC FUNCTION**).

SH-AWD® FUNCTION TEST

Special Tools Required

Torque Wrench Adapter 070AJ-SJAA101

DIRECT ELECTROMAGNETIC CLUTCH TEST

NOTE: Before doing the SH-AWD Function Test, check the following conditions.

- Check to make sure there are no DTC detected.
- The transmission is in neutral (A/T in P, M/T in neutral).
- The SH-AWD control unit has been initialized.

1. With the ignition switch in LOCK (0), or the vehicle in the OFF mode, connect the HDS to the DLC (A) located under the driver's side of the dashboard.

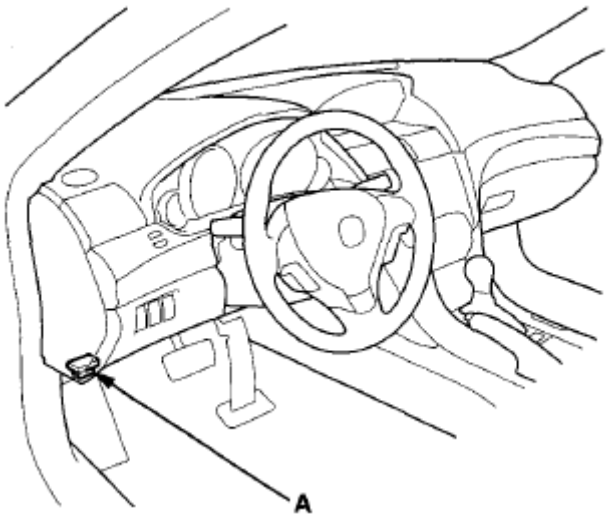


Fig. 99: Identifying Data Link Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
3. Make sure the HDS communicates with the vehicle and the SH-AWD control unit. If it does not, go to the DLC circuit troubleshooting (see **DLC CIRCUIT TROUBLESHOOTING**).
4. Check that the differential fluid temperature is over 68°F (20°C) with the HDS. If it is below 68°F (20° C), raise the temperature by driving the vehicle in circles or by constantly turning.
5. Raise and support the vehicle (see **LIFT AND SUPPORT POINTS**).
6. Remove the rear wheels.
7. Install the torque wrench adapter (A) on the rear wheel hub.

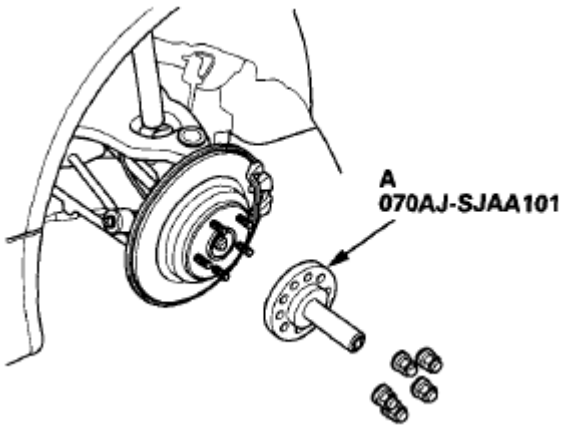


Fig. 100: Identifying Torque Wrench Adapter
Courtesy of AMERICAN HONDA MOTOR CO., INC.

8. Do the Direct Electromagnetic Clutch Test with the HDS.
9. Install a torque wrench on the torque wrench adapter as shown. Write down the torque value with the HDS while slowly rotating the rear hub with the torque wrench as shown. (Turn the hub no more than 90 degrees in 7 to 10 seconds).

NOTE: Use a torque wrench capable of measuring up to 785 N.m (80.0 Kgf.m, 579 lbf.ft) such as a commercially available Snap-on torque wrench TEC602A.

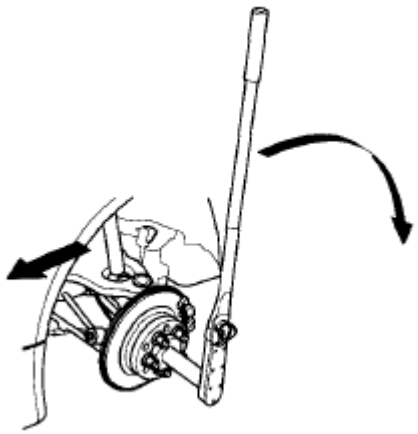


Fig. 101: Rotating Rear Hub With Torque Wrench
Courtesy of AMERICAN HONDA MOTOR CO., INC.

10. Enter the torque value into the HDS, and wait for the test to finish.
    - If the result shows the clutch driving force is normal, the clutch assembly is OK.
    - If the result shows the clutch driving force is abnormal, replace the differential fluid, and retest. If the result still shows the clutch driving force is abnormal, replace the right and left differential side cases (see **SIDE CASE REPLACEMENT**).

REAR DIFFERENTIAL FLUID INSPECTION AND REPLACEMENT

INSPECTION

1. Park the vehicle on level ground, and turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
2. Use solvent and a brush to wash any oil and dirt off the differential fluid filler plug, and dry them with compressed air.
3. Remove the filler plug (A) and the sealing washer (B), then check the condition of the fluid, if the fluid is dirty or burnt, replace it.

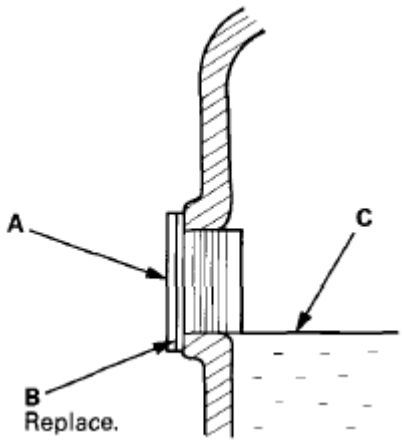


Fig. 102: Identifying Filler Plug, Sealing Washer And Proper Level Of Fluid
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Make sure the fluid is at the proper level (C). If the level is below the proper level, check for fluid leaks at the differential. If a problem is found, fix it before filling the differential with fluid.
5. The fluid level must reach up the bottom of the filler plug hole. If necessary, add the recommended fluid until it runs out, then reinstall the filler plug with a new sealing washer.

REPLACEMENT

1. Park the vehicle on level ground, and turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.

2. Remove the filler plug (A) and the sealing washer (B).

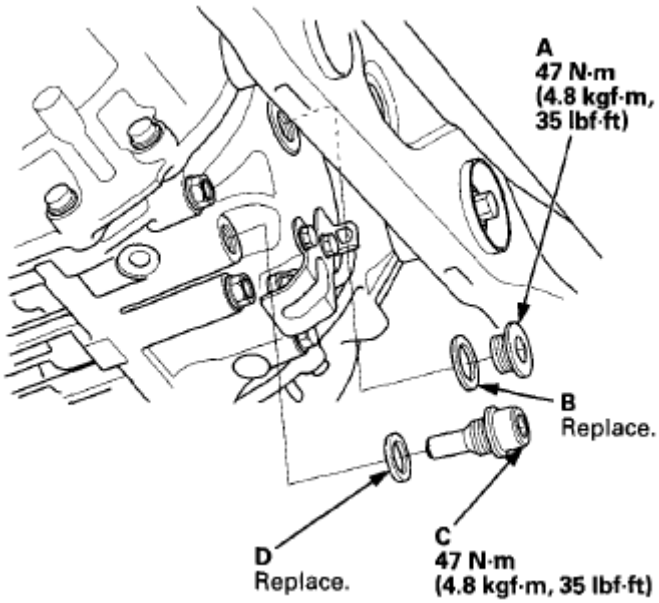


Fig. 103: Identifying Sealing Washer, Filler And Drain Plug With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Remove the drain plug (C) and the sealing washer (D), and drain the fluid.
4. Reinstall the drain plug with a new sealing washer.
5. Refill the recommended fluid until it reaches the bottom of the filler plug hole.

Fluid Capacity:

2.53 L (2.67 US qt) at fluid change

2.77 L (2.93 US qt) at overhaul

Recommended fluid: Acura All-Wheel Drive Fluid (DPSF)

6. Reinstall the filler plug with a new sealing washer.
7. If the Maintenance Minder required to replace the rear differential fluid, reset the Maintenance Minder (see **MAINTENANCE MINDER™**), and this procedure is complete. If the Maintenance Minder did not require to replace the rear differential fluid, go to step 8.
8. With the ignition switch in LOCK (0), or the vehicle in the OFF mode, connect the HDS to the DLC (A) located under the driver's side of the dashboard.

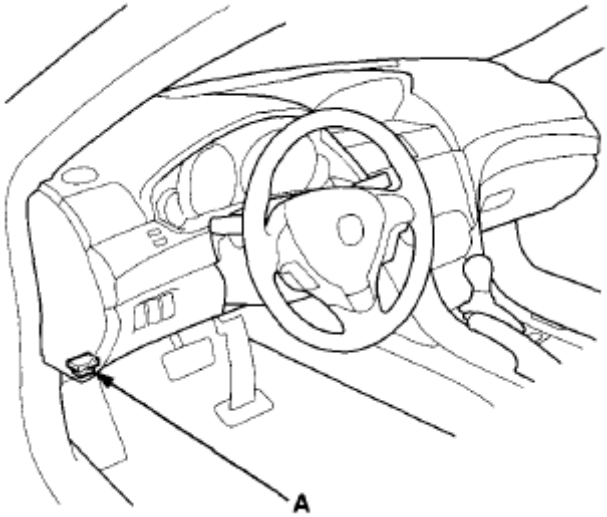


Fig. 104: Identifying Data Link Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

9. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
10. Make sure the HDS communicates with the vehicle and the ECM/PCM. If it does not communicate, troubleshoot the DLC circuit (see **DLC CIRCUIT TROUBLESHOOTING**).
11. Select GAUGES in the BODY ELECTRICAL with the HDS.
12. Select ADJUSTMENT in the GAUGES with the HDS.
13. Select MAINTENANCE MINDER in the ADJUSTMENT with the HDS.
14. Select RESET in the MAINTENANCE MINDER with the HDS.
15. Select MAINTENANCE SUB ITEM 6 RESET with the HDS, and reset the rear differential fluid life.

REAR DIFFERENTIAL FLUID TEMPERATURE SENSOR REPLACEMENT

1. Drain the rear differential fluid, and reinstall the drain plug with a new sealing washer (see **REAR DIFFERENTIAL FLUID INSPECTION AND REPLACEMENT**).
2. Remove the rear differential fluid temperature sensor cover (A) and rear differential harness bracket D, then disconnect the rear differential fluid temperature sensor 2P connector (B).

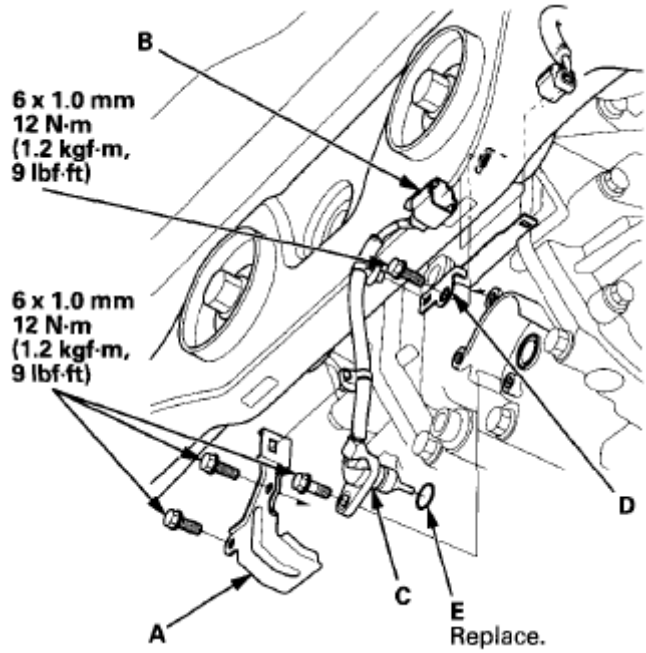


Fig. 105: Identifying Rear Differential Fluid Temperature Sensor, 2P Connector, Cover, Rear Differential Harness Bracket And O-Ring With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Remove the rear differential fluid temperature sensor (C).
4. Install the rear differential fluid temperature sensor with a new O-ring (E) in the reverse order of removal.
5. Refill the rear differential with the recommended fluid (see **REAR DIFFERENTIAL FLUID INSPECTION AND REPLACEMENT**).

SH-AWD® CONTROL UNIT REPLACEMENT

NOTE: The SH-AWD control unit must be initialized (see SH-AWD® CONTROL UNIT INITIALIZATION) after replacement, otherwise the SH-AWD system will not function.

1. Remove the trunk front trim panel (see **TRIM REMOVAL/INSTALLATION - TRUNK AREA**).
2. Remove the SH-AWD control unit (A).

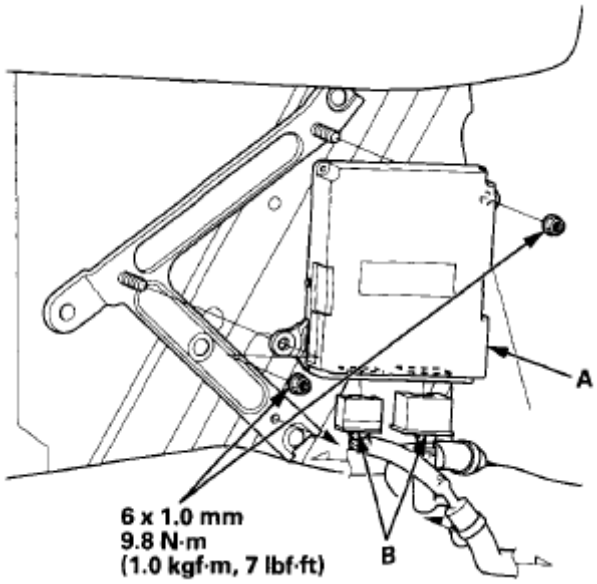


Fig. 106: Identifying SH-AWD Control Unit And Connectors With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Disconnect the SH-AWD control unit connectors (B).
4. Install the SH-AWD control unit in the reverse order of removal.

SH-AWD® RELAY REPLACEMENT

1. Remove the trunk front trim panel (see **TRIM REMOVAL/INSTALLATION - TRUNK AREA**).
2. Remove the SH-AWD relay (A).

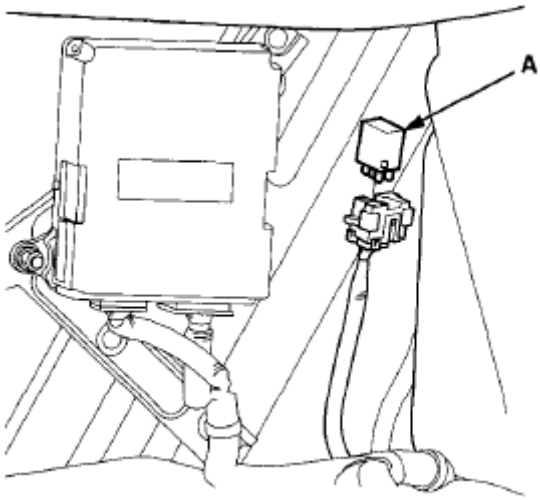


Fig. 107: Identifying SH-AWD Relay
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Install the SH-AWD relay in the reverse order of removal.

REAR DIFFERENTIAL MOUNT REPLACEMENT

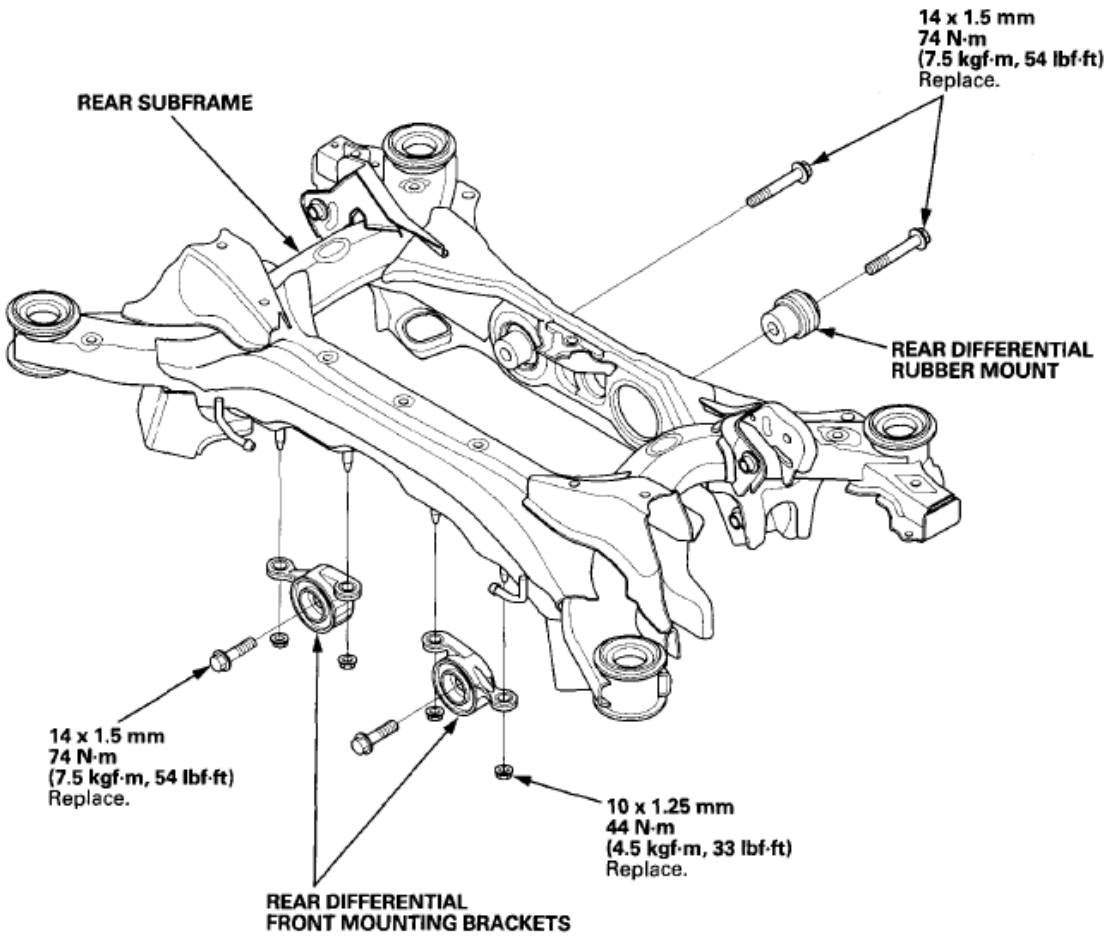


Fig. 108: Exploded View Of Rear Differential Mount With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

REAR DIFFERENTIAL REMOVAL

Special Tools Required

Driveshaft Remover 07AAD-S3VA000

1. Raise and support the vehicle (see **LIFT AND SUPPORT POINTS**).
2. Drain the rear differential fluid (see **REAR DIFFERENTIAL FLUID INSPECTION AND REPLACEMENT**).
3. Remove the rear wheels.
4. Remove exhaust pipe B and the muffler (see **J37A4 ENGINE (WITH SH-AWD)**).
5. Remove the lower arm A mounting bolts (A) and the lower arm B mounting bolts (B).

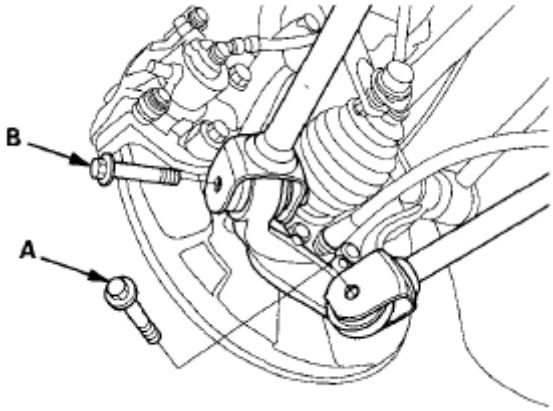


Fig. 109: Identifying Lower Arm Mounting Bolts
Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Disconnect the inboard joints (A) from the rear differential (B) using the driveshaft remover (C) and a hammer.

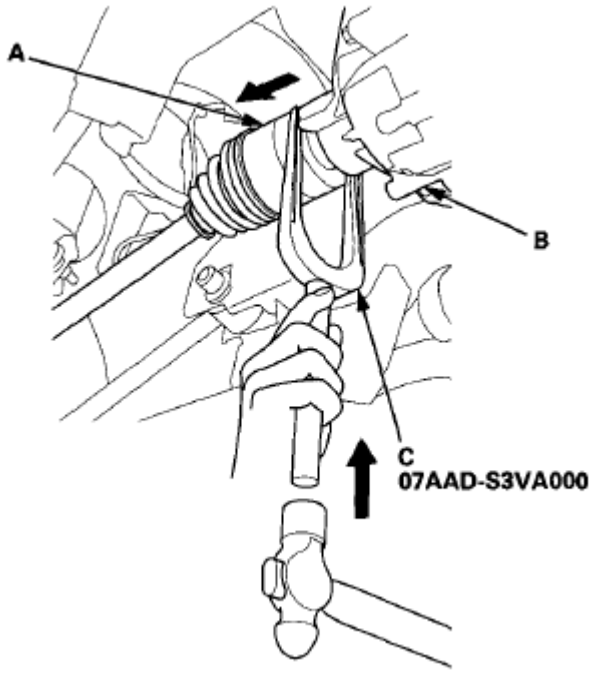


Fig. 110: Disconnecting Inboard Joints From Rear Differential Using Driveshaft Remover And Hammer
Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Pull the knuckle (A) outward, and separate the rear driveshaft inboard joints (B) from the rear differential.

NOTE: Be careful not to damage the splash guard (C).

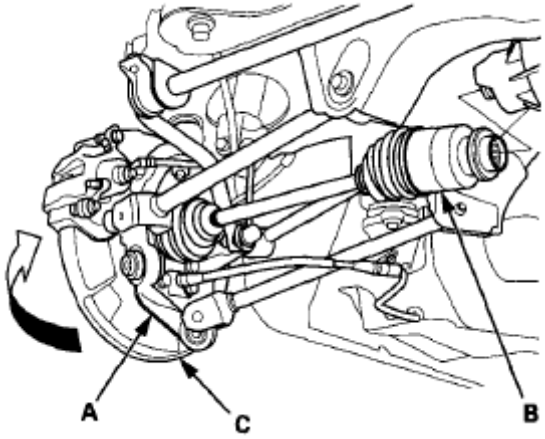


Fig. 111: Pulling Knuckle Outward And Separating Rear Driveshaft Inboard Joints From Rear Differential
Courtesy of AMERICAN HONDA MOTOR CO., INC.

8. Make reference mark (A) across the No. 3 propeller shaft (B) and the rear differential companion flange (C). Separate the No. 3 propeller shaft from the rear differential.

NOTE: Suspend the propeller shaft with an appropriate size nylon strap.

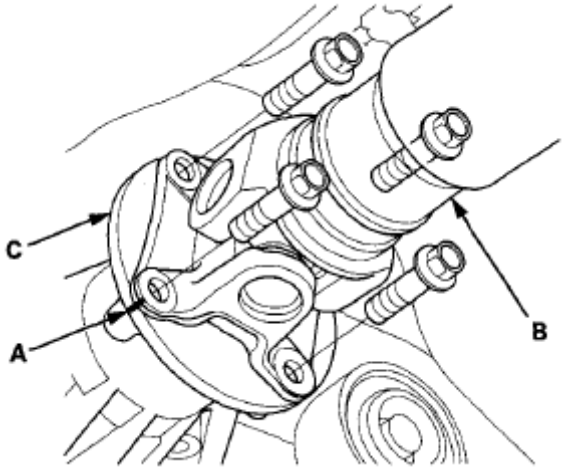


Fig. 112: Identifying Propeller Shaft, Rear Differential Companion Flange And Reference Mark
Courtesy of AMERICAN HONDA MOTOR CO., INC.

9. Disconnect the rear differential subharness connectors (A), and remove the harness clips (B).

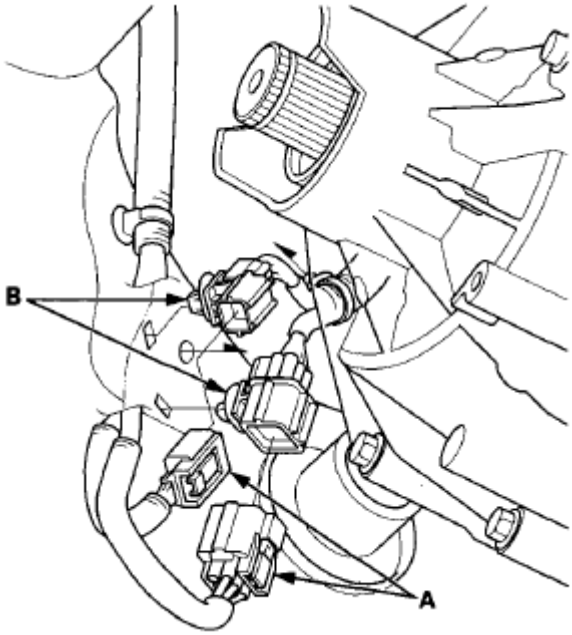


Fig. 113: Identifying Rear Differential Subharness Connectors And Harness Clips
Courtesy of AMERICAN HONDA MOTOR CO., INC.

10. Remove the rear subframe rear bracket bolts (A).

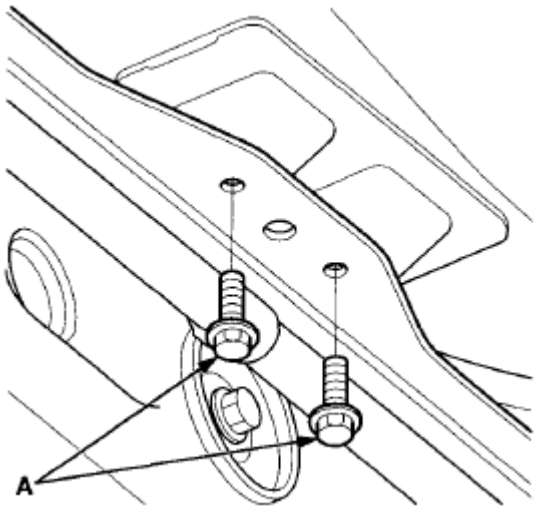


Fig. 114: Identifying Rear Subframe Rear Bracket Bolts
Courtesy of AMERICAN HONDA MOTOR CO., INC.

11. Place a transmission jack (A) under the rear differential (B).

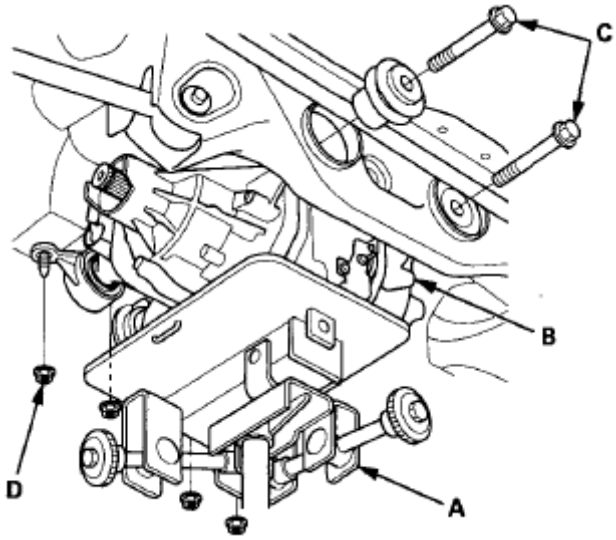


Fig. 115: Placing Transmission Jack Under Rear Differential
Courtesy of AMERICAN HONDA MOTOR CO., INC.

12. Remove the rear differential rear mount bolts (C) and the rear differential front mounting bracket nuts (D).
13. Slightly lower the rear differential on the transmission jack, then disconnect the breather hose (A).

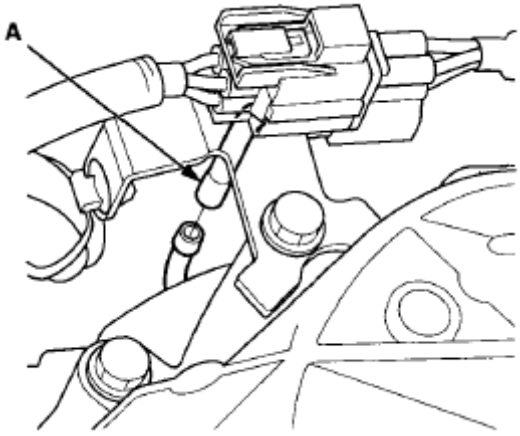


Fig. 116: Identifying Breather Hose
Courtesy of AMERICAN HONDA MOTOR CO., INC.

14. Lower the rear differential on the transmission jack.
15. Remove the set ring (A) from the rear differential.

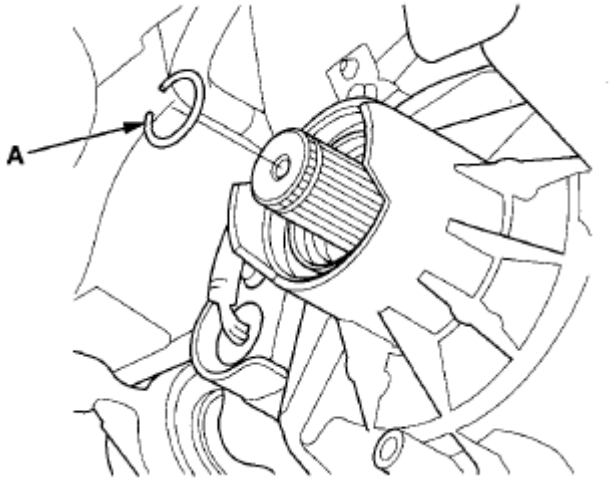


Fig. 117: Identifying Set Ring
Courtesy of AMERICAN HONDA MOTOR CO., INC.

REAR DIFFERENTIAL INSTALLATION

1. Place the rear differential on a transmission jack.
2. Install a new set ring (A) into the set ring groove (B) of the rear differential.

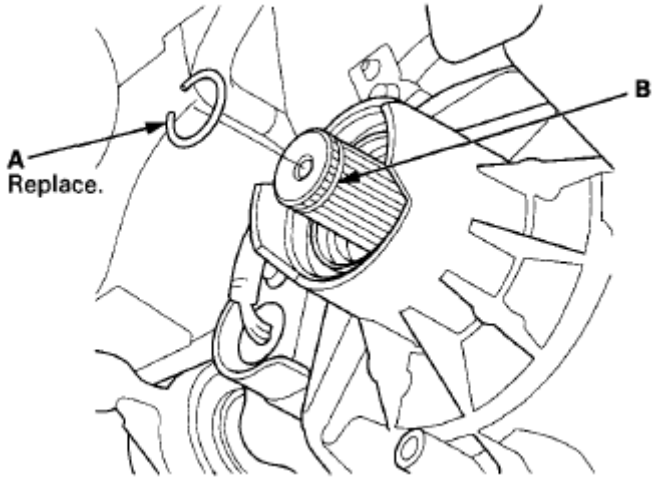


Fig. 118: Identifying Set Ring And Set Ring Groove
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Raise the rear differential to the appropriate position, then connect the breather hose (A).

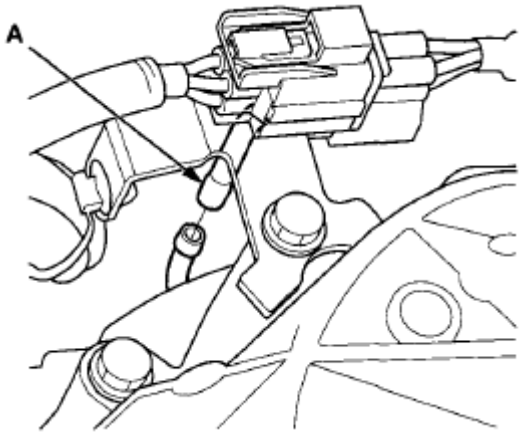


Fig. 119: Identifying Breather Hose
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Raise the rear differential to the mounting level.
5. Loosely install new rear differential rear mount bolts (A) (B) and new rear differential front mounting bracket nuts (C).

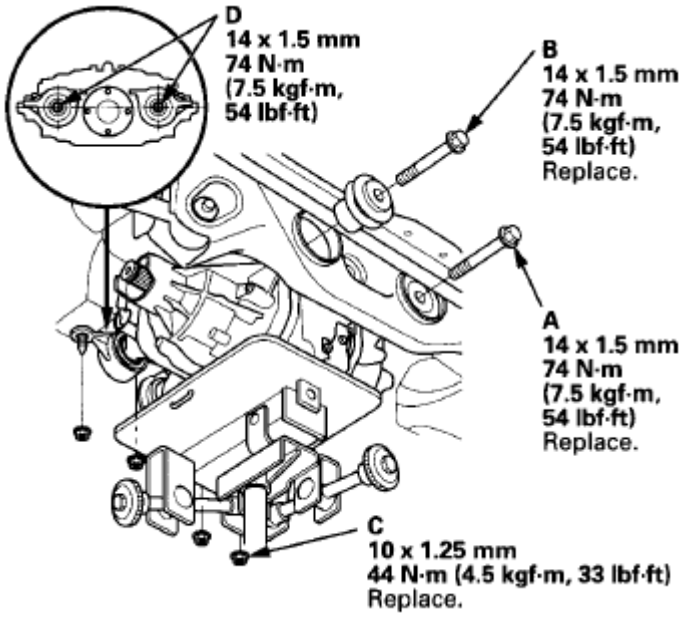


Fig. 120: Identifying Rear Differential Rear Mount Bolts And Bracket Nuts With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Loosen the rear differential front mounting bracket bolts (D).
7. Tighten the rear differential rear mount bolt (A) and the rear differential front mounting bracket nuts (C) to the specified torque.
8. Tighten the rear differential rear mount bolt (B) to the specified torque.

9. Tighten the rear differential front mounting bracket bolts (D) to the specified torque.
10. Install the rear subframe rear bracket bolts (A).

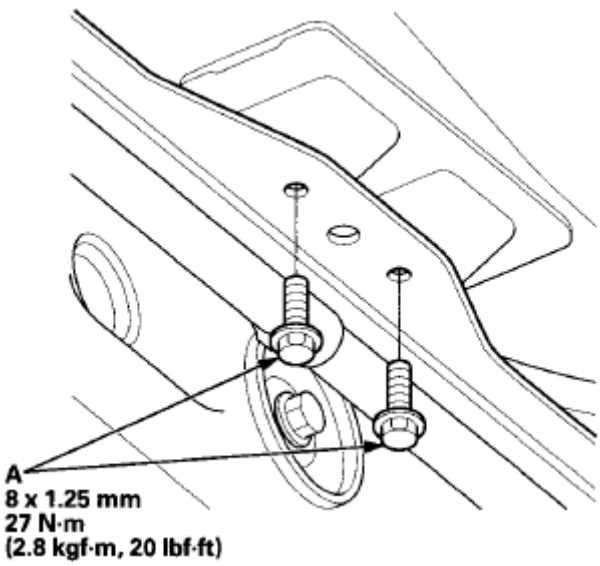


Fig. 121: Identifying Rear Subframe Rear Bracket Bolts With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

11. Connect the rear differential subharness connectors (A), and install the harness clips (B).

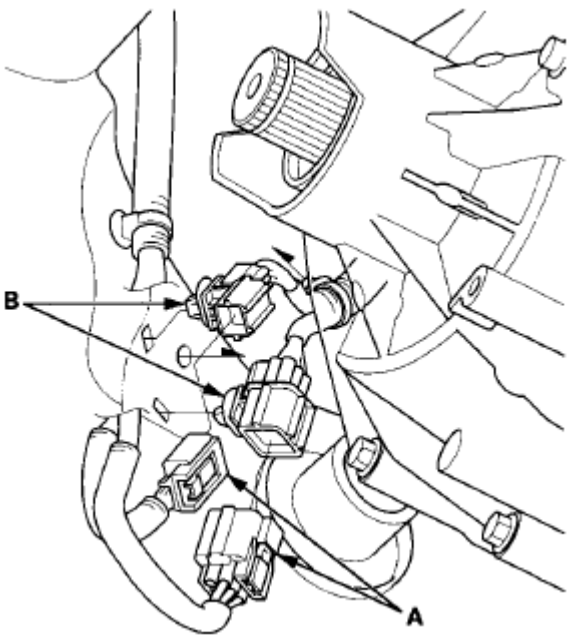


Fig. 122: Identifying Rear Differential Subharness Connectors And Harness Clips
Courtesy of AMERICAN HONDA MOTOR CO., INC.

12. Attach the No. 3 propeller shaft (A) to the rear differential (B) by aligning the reference mark (C) you

made during the removal procedure.

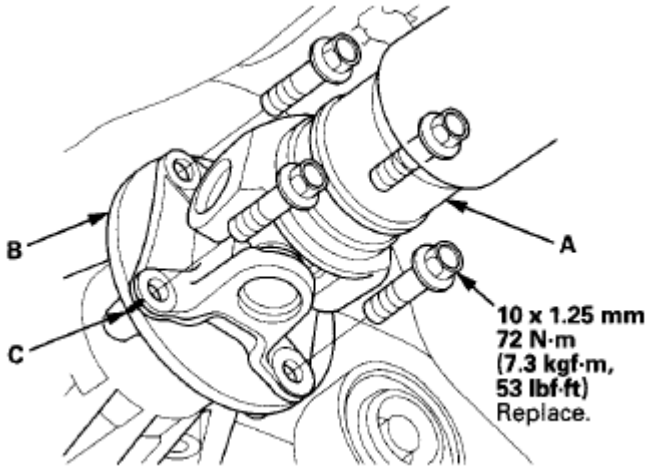


Fig. 123: Identifying Propeller Shaft, Rear Differential And Reference Mark With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

13. Apply appropriate grease to the rear driveshaft inboard joints (see **REAR DRIVESHAFT INSTALLATION**).
14. Pull the knuckle outward, and insert the rear driveshaft inboard joints (A) into the rear differential (B).

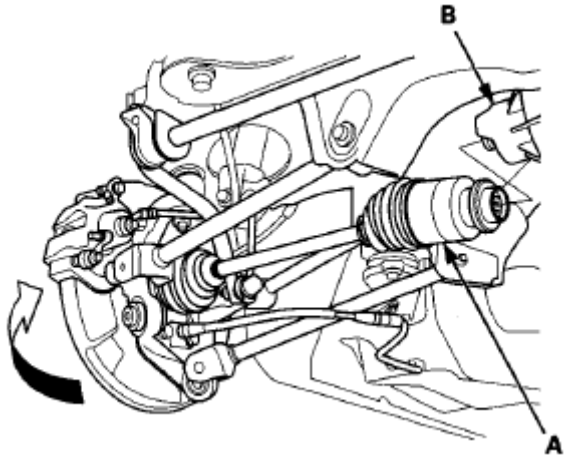


Fig. 124: Pulling Knuckle Outward And Inserting Rear Driveshaft Inboard Joints Into Rear Differential
Courtesy of AMERICAN HONDA MOTOR CO., INC.

15. Loosely install the new lower arm A mounting bolts (A) and the new lower arm B mounting bolts (B).

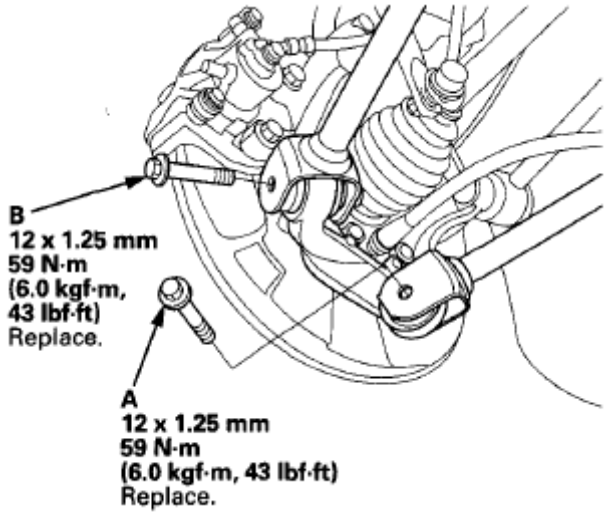
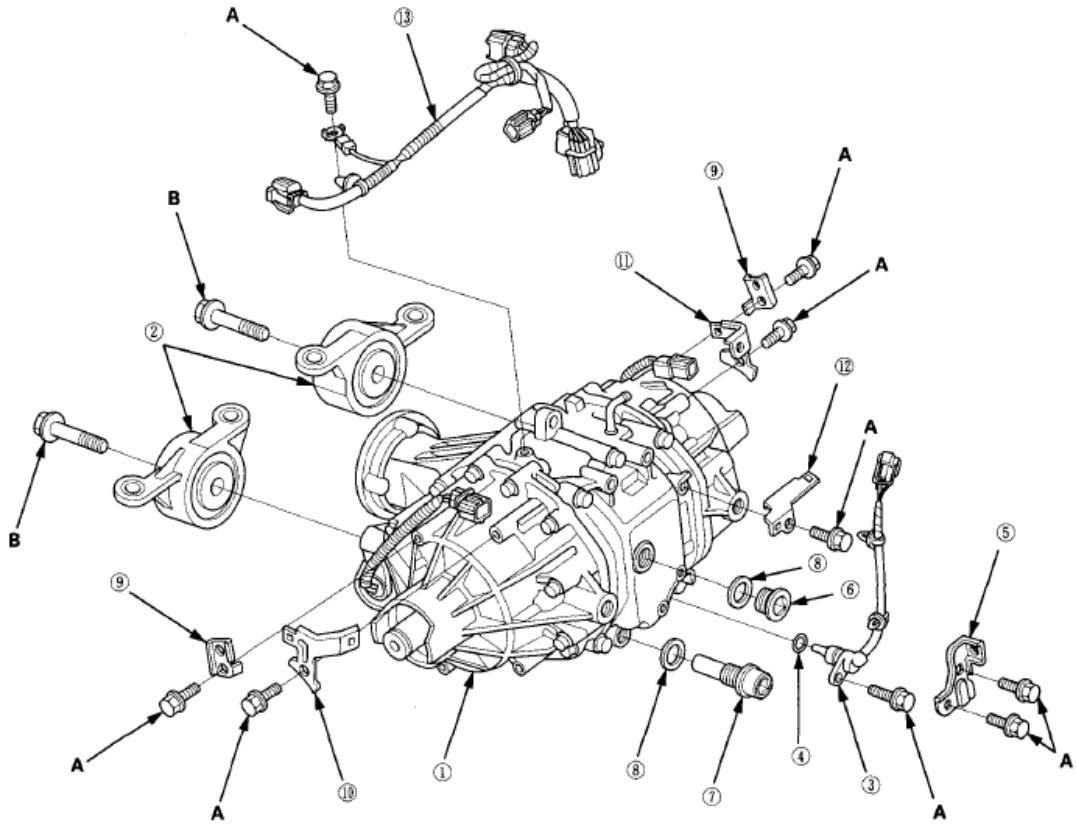


Fig. 125: Identifying Lower Arm Mounting Bolts With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

16. Place a floor jack under the knuckle, and raise the suspension to load it with the vehicle's weight.
17. Tighten the lower arm A mounting bolt and the lower arm B mounting bolt to the specified torque, then remove the floor jack.
18. Install exhaust pipe B and the muffler (see **J37A4 ENGINE (WITH SH-AWD)**).
19. Install the rear wheels.
20. Refill the rear differential with the recommended fluid (see **REAR DIFFERENTIAL FLUID INSPECTION AND REPLACEMENT**).
21. Test-drive the vehicle.

REAR DIFFERENTIAL DISASSEMBLY/REASSEMBLY



① REAR DIFFERENTIAL CARRIER ASSEMBLY
② REAR DIFFERENTIAL FRONT MOUNTING BRACKETS
③ REAR DIFFERENTIAL FLUID TEMPERATURE SENSOR
④ O-RING
Replace.
⑤ REAR DIFFERENTIAL FLUID TEMPERATURE SENSOR COVER
⑥ FILLER PLUG
47 N·m (4.8 kgf·m, 35 lbf·ft)
⑦ DRAIN PLUG
47 N·m (4.8 kgf·m, 35 lbf·ft)
⑧ SEALING WASHER
Replace.
⑨ REAR DIFFERENTIAL HARNESS BRACKET A
⑩ REAR DIFFERENTIAL HARNESS BRACKET B
⑪ REAR DIFFERENTIAL HARNESS BRACKET C
⑫ REAR DIFFERENTIAL HARNESS BRACKET D
⑬ REAR DIFFERENTIAL SUBHARNESS

A: 6 x 1.0 mm
12 N·m (1.2 kgf·m, 9 lbf·ft)
B: 14 x 1.5 mm
74 N·m (7.5 kgf·m, 54 lbf·ft)
Replace.

Fig. 126: Exploded View Of Rear Differential With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

SIDE CASE OIL SEAL REPLACEMENT

Special Tools Required

- Driver Handle 07AAD-STKA100
- Oil Seal Driver 07AAD-STKA111
- Dust Seal Driver 07AAD-STKA120

1. Remove the rear differential (see **REAR DIFFERENTIAL REMOVAL**).
2. Remove the 40 x 55 x 7.5 mm dust seal (A) using a commercially available tool.

NOTE: Remove the dust seal with care so you do not damage the inside surface of the side case seal surface.

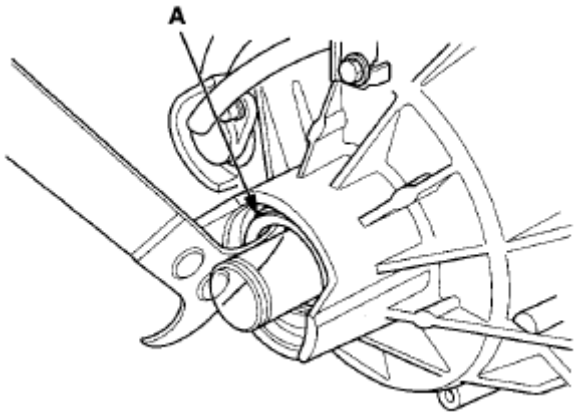


Fig. 127: Identifying Dust Seal
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Remove the thrust washer.
4. To remove the 34.7 x 54 x 9 mm oil seal (A), install the 6 mm screw (B) (P/N 93901-16580) into the maintenance hole (C) of the oil seal as shown; the oil seal has four invisible places on the surface for maintenance (4 places, 90 degrees apart). Remove the oil seal using pliers (D) and a screw driver (E) as shown.

NOTE: Do not thread the 6 mm screw into the oil seal more than 5 mm (0.20 in).

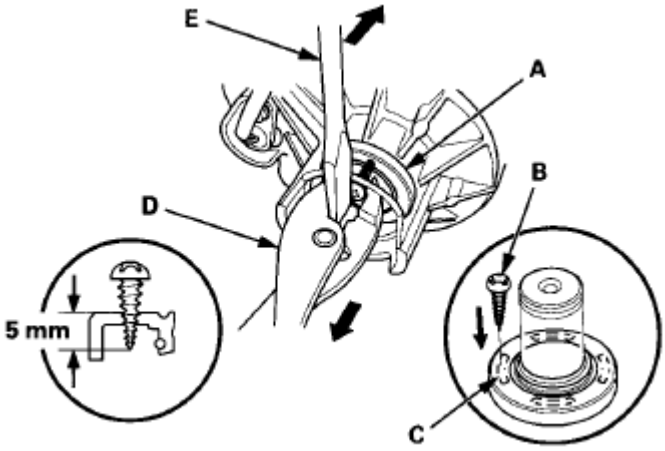


Fig. 128: Removing Oil Seal Using Pliers And Screw Driver
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Install a new 34.7 x 54 x 9 mm oil seal (A) into the rear differential side case (B) using the oil seal driver (C) and the driver handle (D).

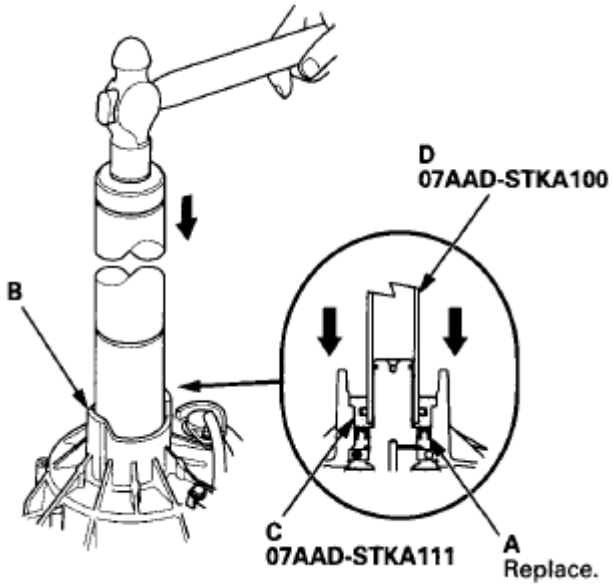


Fig. 129: Installing Oil Seal Into Rear Differential Side Case Using Oil Seal Driver And Driver Handle
Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Install the thrust washer (A), then install a new 40 x 55 x 7.5 mm dust seal (B) using the dust seal driver (C) and the driver handle (D).

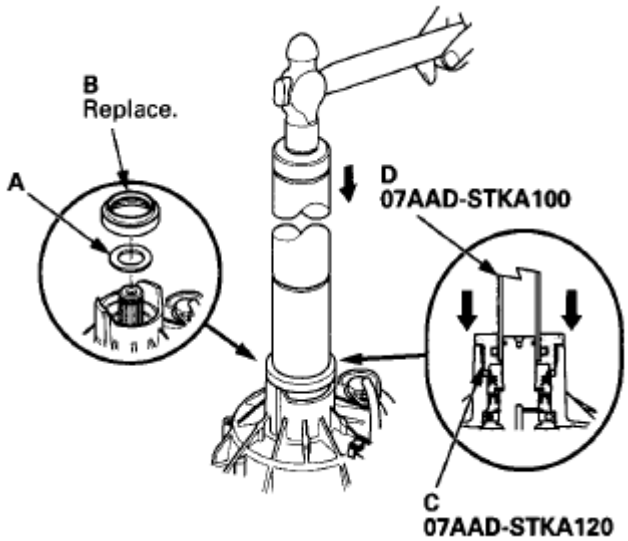


Fig. 130: Installing Thrust Washer And Dust Seal Using Dust Seal Driver And Driver Handle
Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Install the rear differential (see **REAR DIFFERENTIAL INSTALLATION**).

CENTER CASE REPLACEMENT

1. Remove the rear differential (see **REAR DIFFERENTIAL REMOVAL**).
2. Remove the rear differential front mounting brackets (A) from the rear differential (B).

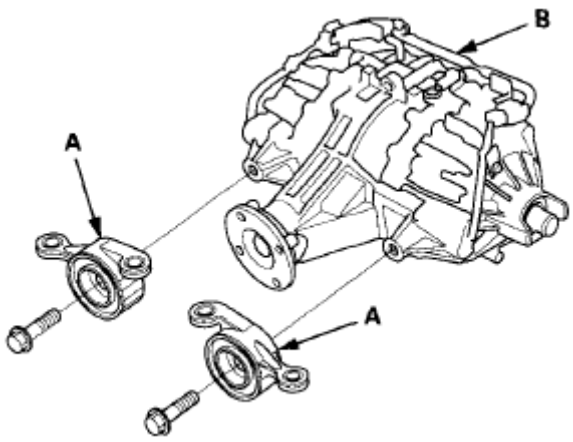


Fig. 131: Identifying Rear Differential Front Mounting Brackets And Rear Differential
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Disconnect the rear differential fluid temperature sensor 2P connector (A), then remove the rear differential fluid temperature sensor cover (B), the rear differential fluid temperature sensor (C), and the O-ring (D).

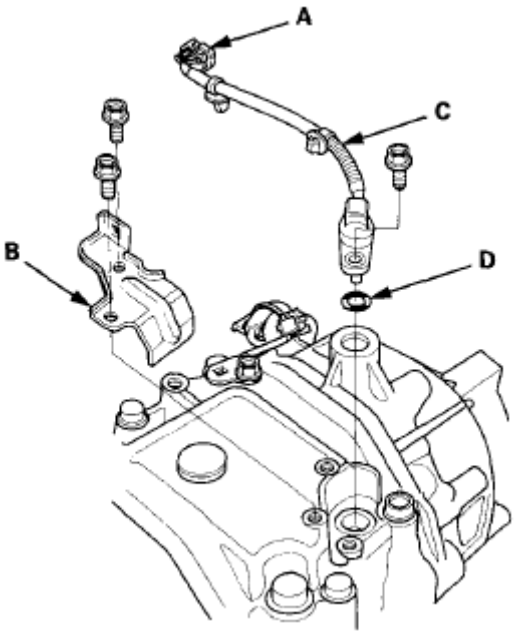


Fig. 132: Identifying Rear Differential Fluid Temperature Sensor, 2P Connector, Cover And O-Ring
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Disconnect the left and right solenoid 4P connectors (A).

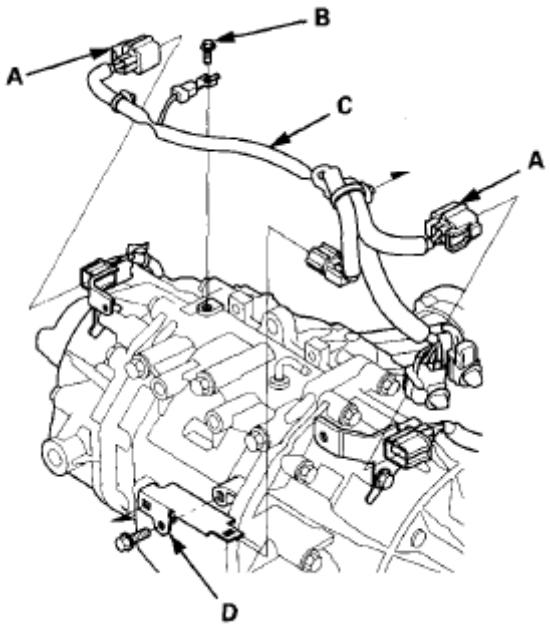


Fig. 133: Identifying Solenoid 4P Connectors, Rear Differential Harness Bracket, Subharness And Ground Cable Bolt
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Remove the ground cable bolt (B) and rear differential harness bracket D, then remove the rear differential subharness (C).
6. Remove the rear differential left side case (A), the rear differential right side case (B), and the 10 x 12 mm dowel pins (C) from the rear differential center case (D).

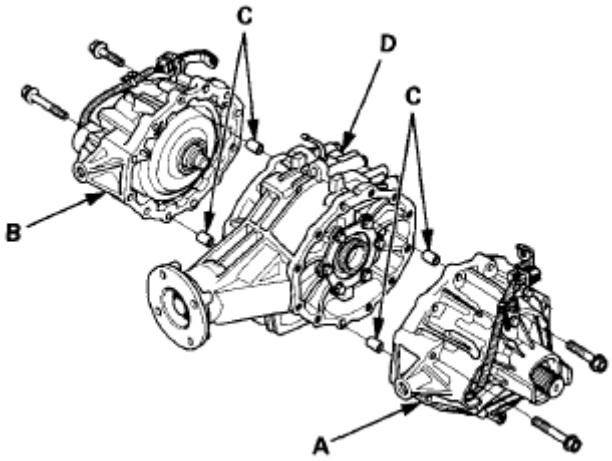


Fig. 134: Identifying Dowel Pins, Rear Differential Center, Left And Right Side Case
Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Replace the rear differential center case.
8. Remove the dirt and oil from the sealing surfaces. Apply liquid gasket (P/N 08717-0004, 08718-0001, 08718-0003, 08718-0004 or 08718-0009) to the sealing surface. Make sure you seal up to the inside edge

of the bolt holes to prevent oil leakage.

NOTE:

- **You must assemble the housings within 5 minutes after applying the liquid gasket. If you applied liquid gasket P/N 08718-0012, the component must be installed within 4 minutes. If not, the sealing surface must be cleaned, and the liquid gasket reapplied.**
- **Allow the liquid gasket to cure at least 30 minutes after assembly before filling the differential with fluid.**

Left side case/Right side case

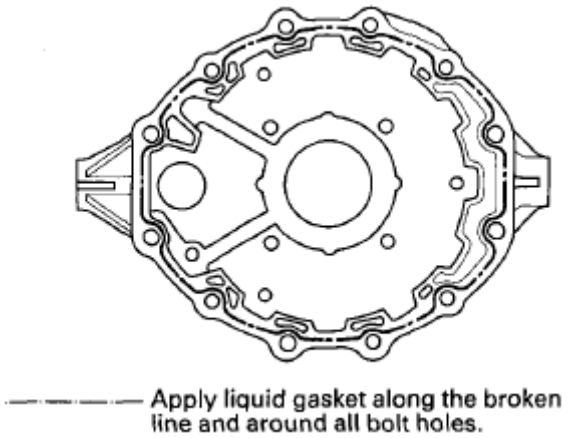


Fig. 135: Identifying Sealing Surface
Courtesy of AMERICAN HONDA MOTOR CO., INC.

9. Install the 10x12 mm dowel pins (A), the rear differential right side case (B), the rear differential left side case (C), and the mounting bolts (D) onto the rear differential center case (E).

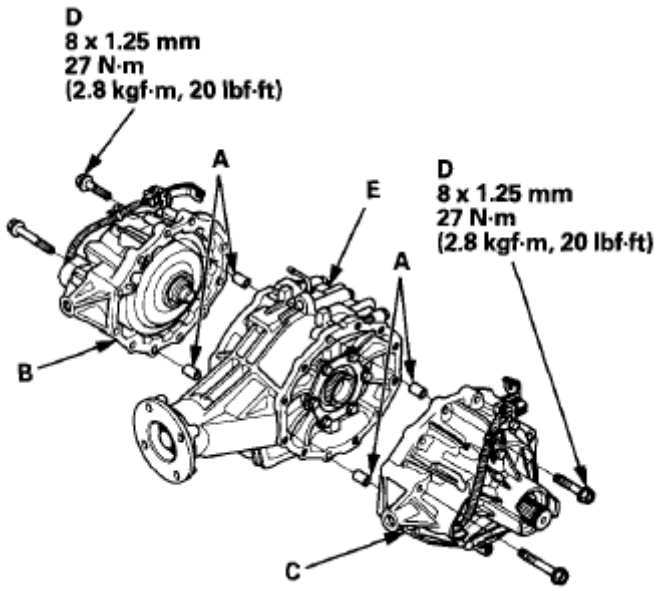


Fig. 136: Identifying Dowel Pins, Mounting Bolts, Rear Differential Center, Left And Right Side Case With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

10. Tighten the mounting bolts in a crisscross pattern in several steps, then tighten the bolts to the specified torque.
11. Install the rear differential subharness (A) and rear differential harness bracket D, and install the ground cable (B).

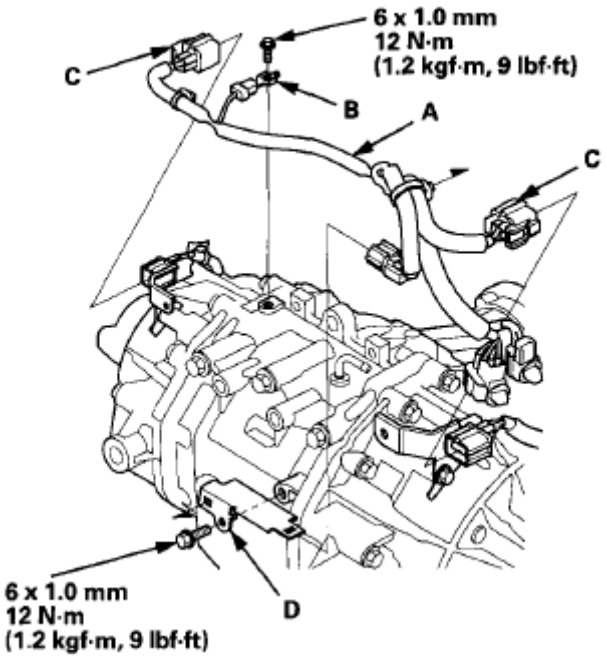


Fig. 137: Identifying Solenoid 4P Connectors, Rear Differential Harness Bracket, Subharness And Ground Cable With Torque Specifications

Courtesy of AMERICAN HONDA MOTOR CO., INC.

12. Connect the left and right solenoid 4P connectors (C).
13. Install the rear differential fluid temperature sensor (A) with a new O-ring (B), and install the rear differential fluid temperature sensor cover (C).

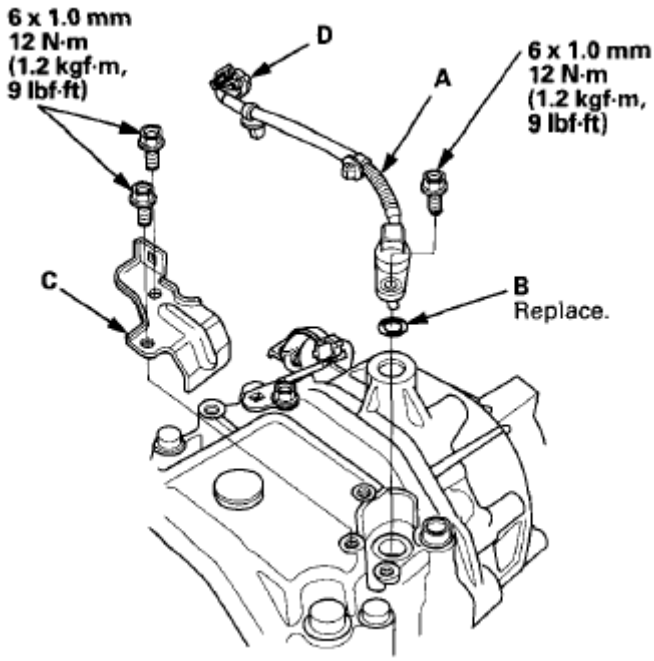


Fig. 138: Identifying Rear Differential Fluid Temperature Sensor, Sensor Cover, 2P Connector And O-Ring With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

14. Connect the rear differential fluid temperature sensor 2P connector (D).
15. Install the rear differential front mounting brackets (A) with new bolts (B) on the rear differential (C).

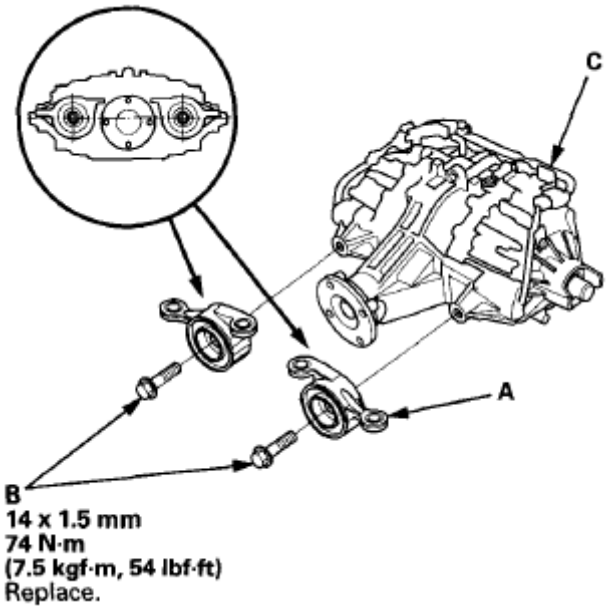


Fig. 139: Identifying Rear Differential, Front Mounting Brackets And Bolts With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

16. Install the rear differential (see **REAR DIFFERENTIAL INSTALLATION**).

SIDE CASE REPLACEMENT

1. Remove the rear differential (see **REAR DIFFERENTIAL REMOVAL**).
2. Remove the rear differential front mounting brackets (A) from the rear differential (B).

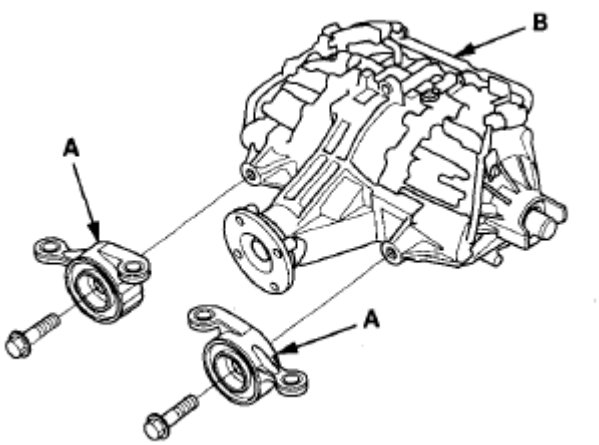


Fig. 140: Identifying Rear Differential And Front Mounting Brackets
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Disconnect the rear differential fluid temperature sensor 2P connector (A), then remove the rear differential fluid temperature sensor cover (B), the rear differential fluid temperature sensor (C), and the

O-ring (D).

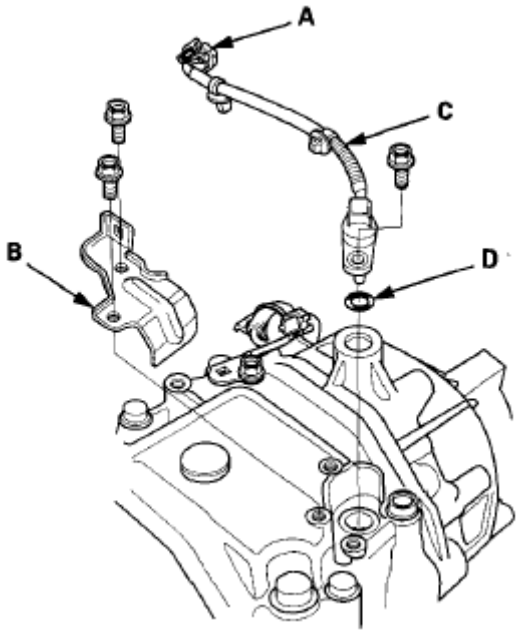


Fig. 141: Identifying Rear Differential Fluid Temperature Sensor, Sensor Cover, 2P Connector And O-Ring
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Disconnect the left and right solenoid 4P connectors (A).

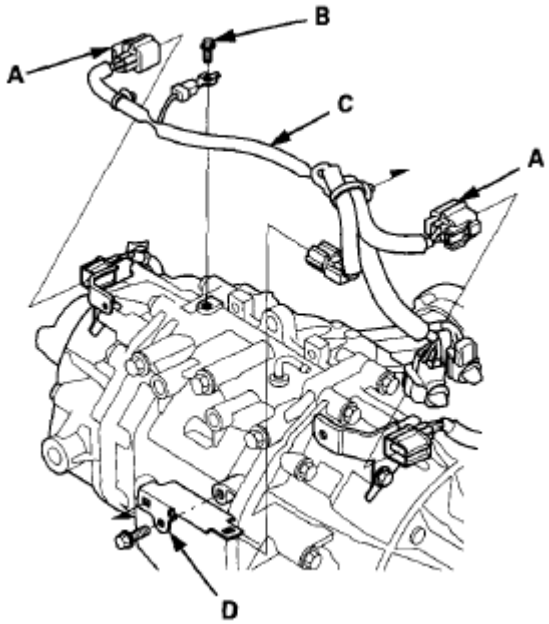


Fig. 142: Identifying Solenoid 4P Connectors, Rear Differential Harness Bracket, Subharness And Ground Cable Bolt
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Remove the ground cable bolt (B) and rear differential harness bracket D, then remove the rear differential subharness (C).
6. Remove the rear differential left side case (A) or the rear differential right side case (D), and the 10x12 mm dowel pins (E) from the rear differential center case (F).

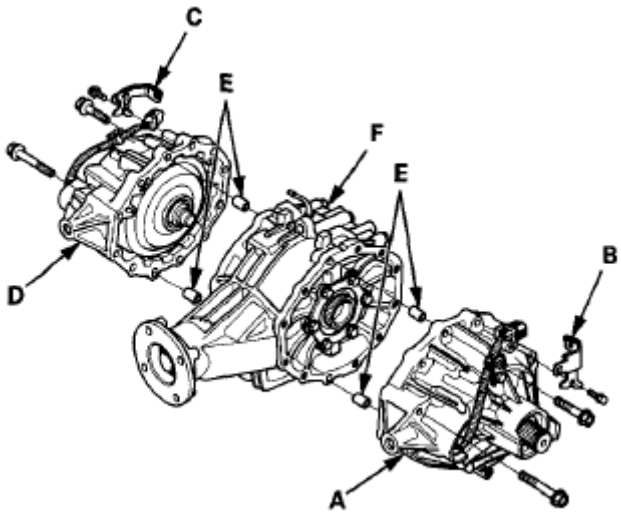


Fig. 143: Identifying Rear Differential Harness Bracket, Center, Left And Right Side Case
Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Remove rear differential harness bracket B and rear differential harness bracket C.
8. Replace the rear differential left side case or the rear differential right side case.
9. Remove the ring gear (A), the needle bearing (B), and the 60.2 mm shim (C) from the differential side case (D).

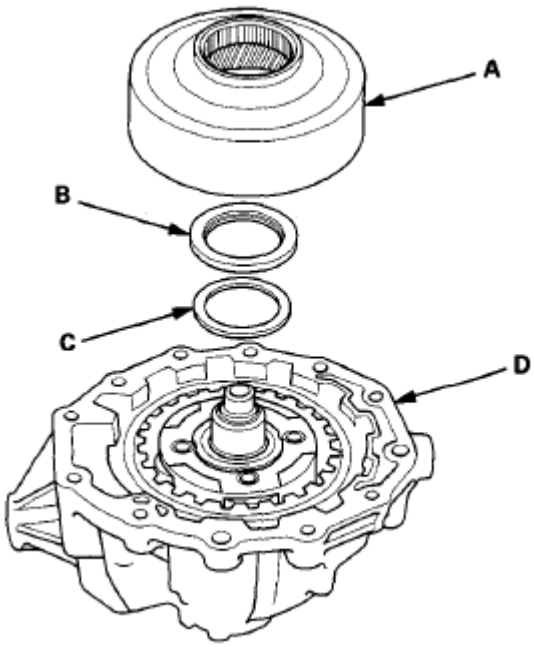


Fig. 144: Identifying Ring Gear, Needle Bearing, Shim And Differential Side Case
Courtesy of AMERICAN HONDA MOTOR CO., INC.

10. Measure the distance (1) between the end of the rear differential side case (A) and the 60.2 mm shim contact area (B) of the planetary gear with a straight edge (C) and a depth gauge (D). Measure at three locations, and average the reading.

NOTE:

- **Carry out the measurement at normal room temperature.**
- **Clean the parts thoroughly before measure.**

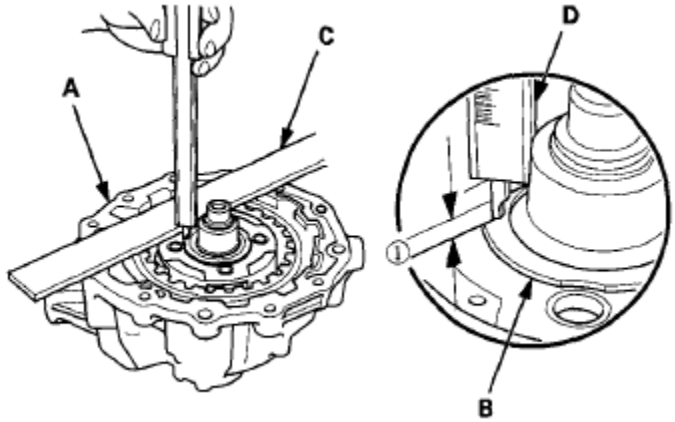


Fig. 145: Measuring Distance Between End Of Rear Differential Side Case And Shim Contact Area Of Planetary Gear With Straight Edge And Depth Gauge
Courtesy of AMERICAN HONDA MOTOR CO., INC.

11. Measure the distance between the end of the rear differential center case (A) and the ring gear contact area (B) of the taper roller bearing with a straight edge (C) and a depth gauge (D). Measure at three locations, and average the reading.

NOTE:

- **Carry out the measurement at normal room temperature.**
- **Clean the parts thoroughly before measure.**

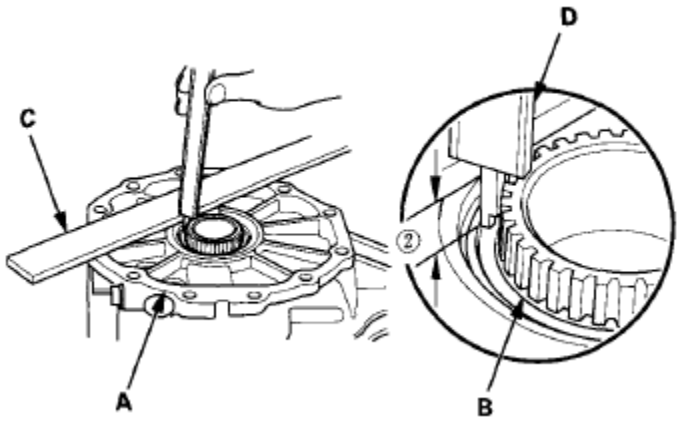


Fig. 146: Measuring Distance Between End Of Rear Differential Center Case And Ring Gear Contact Area Of Taper Roller Bearing With Straight Edge And Depth Gauge
Courtesy of AMERICAN HONDA MOTOR CO., INC.

12. Measure the distance (3) between the needle bearing (A) and the taper roller bearing contact area (B) of ring gear with a depth gauge (C). Measure at three locations, and average the reading.

NOTE:

- **Carry out the measurement at normal room temperature.**
- **Clean the parts thoroughly before measure.**

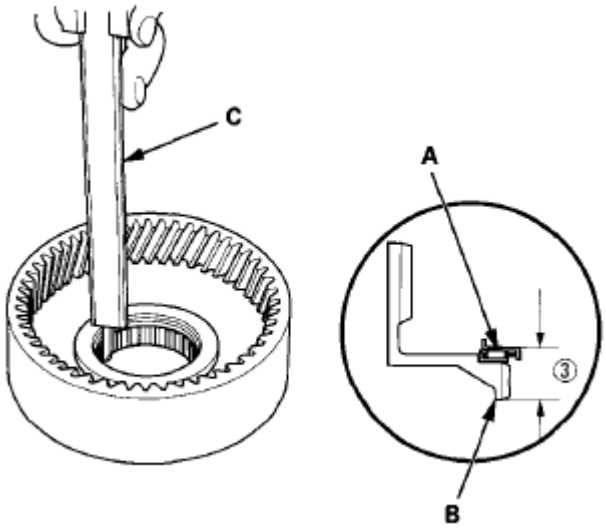


Fig. 147: Measuring Distance Between Needle Bearing And Taper Roller Bearing Contact Area Of Ring Gear With Depth Gauge
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Shim Selection Formula

13. Select the proper 60.2 mm shim from the table. Follow the example below, and use the measurements you

made in step 10 to 12.

(Basic Formula)

(1) + (2) - ((3) + 0.19) = shim thickness 0.19 mm (0.007 in): middle of the standard clearance.

Standard Clearance:

0.14- 0.24 mm (0.006- 0.009 in)

(For example)

(1) = 6.12 mm (0.241 in)

(2) = 15.3 mm (0.602 in)

(3) = 19.56 mm (0.770 in)

6.12 + 15.3 - (19.56 + 0.19) = 1.67 mm

Select the 1.60 mm shim from the table.

60.2 MM SHIM

No.	Thickness
A	1.10 mm (0.043 in)
B	1.20 mm (0.047 in)
C	1.30 mm (0.051 in)
D	1.40 mm (0.055 in)
E	1.50 mm (0.059 in)
F	1.60 mm (0.063 in)
G	1.70 mm (0.067 in)
H	1.80 mm (0.071 in)
I	1.90 mm (0.075 in)
J	2.00 mm (0.079 in)
K	2.10 mm (0.083 in)
L	2.20 mm (0.087 in)

14. Place one strip of plastigage (A) on the 60.2 mm shim contact area (B) of planetary gear. Install the 60.2 mm shim (C), the needle bearing (D), and the ring gear (E). Measure at three locations as shown.

NOTE:

- **Carry out the measurement at normal room temperature.**
- **Clean the parts thoroughly before measure.**

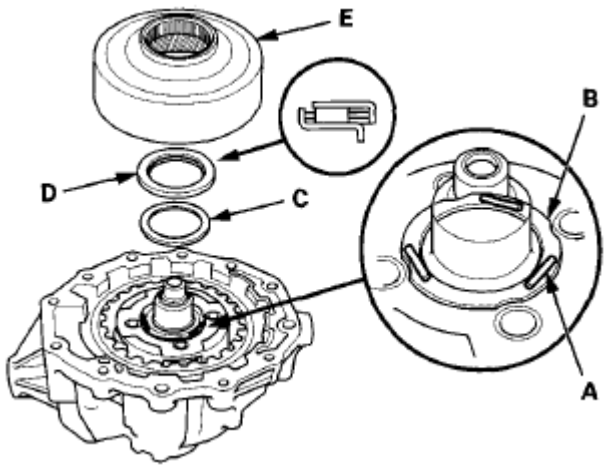


Fig. 148: Identifying Plastigage, Shim, Shim Contact Area, Needle Bearing And Ring Gear
Courtesy of AMERICAN HONDA MOTOR CO., INC.

15. Install the 10x12 mm dowel pins (A), the rear differential right side case (B) or the rear differential left side case (C), and the mounting bolts (D) onto the rear differential center case (E).

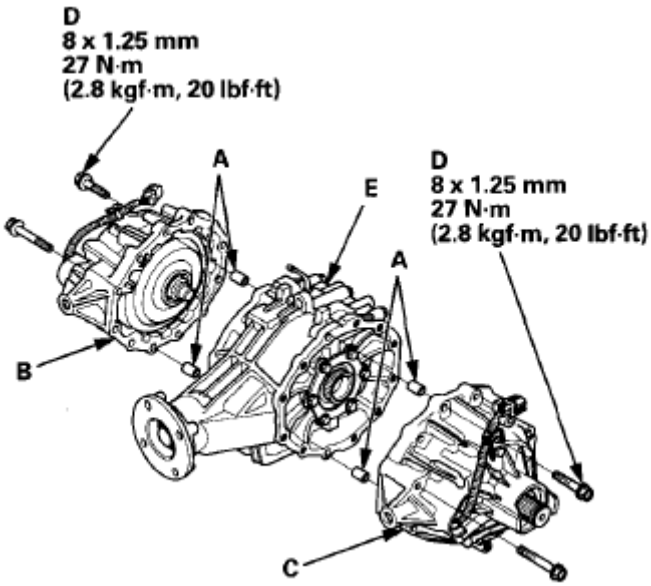


Fig. 149: Identifying Rear Differential Center, Left, Right Side Case, Dowel Pins And Mounting Bolts With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

16. Tighten the mounting bolts in a crisscross pattern in several steps, then tighten the bolts to the specified torque.
17. Remove the rear differential left side case (A) or the rear differential right side case (B), and the 10 x 12 mm dowel pins (C) from the rear differential center case

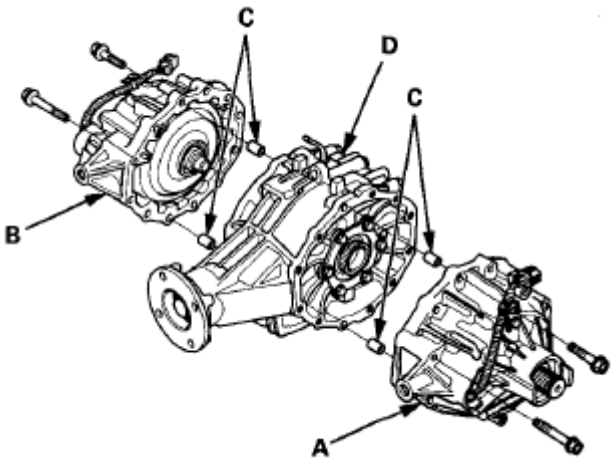


Fig. 150: Identifying Rear Differential Center, Left, Right Side Case And Dowel Pins
Courtesy of AMERICAN HONDA MOTOR CO., INC.

18. Remove the ring gear (A), the needle bearing (B), and the 60.2 mm shim (C) from the differential side case (D).

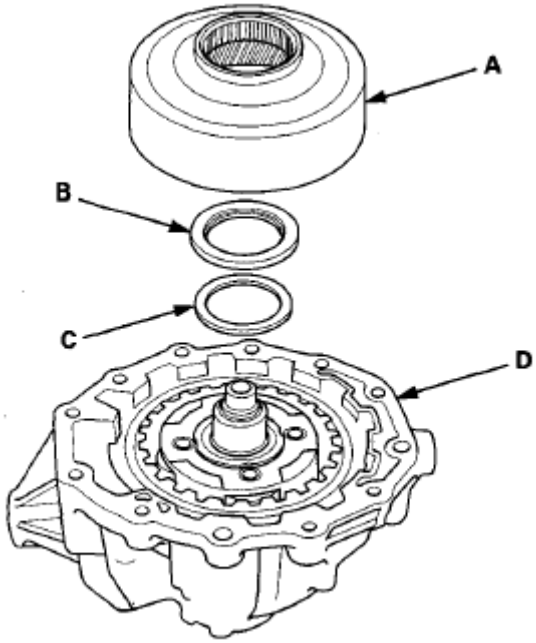


Fig. 151: Identifying Differential Side Case, Ring Gear, Needle Bearing And Shim
Courtesy of AMERICAN HONDA MOTOR CO., INC.

19. Measure the widest part of the plastigage.

    Measure at three locations, and average the reading.

    - If the clearance exceeds the standard, go to step 9.
    - If the clearance is within the standard, go to step 20.

Standard Clearance:

0.14- 0.24 mm (0.006- 0.009 in)

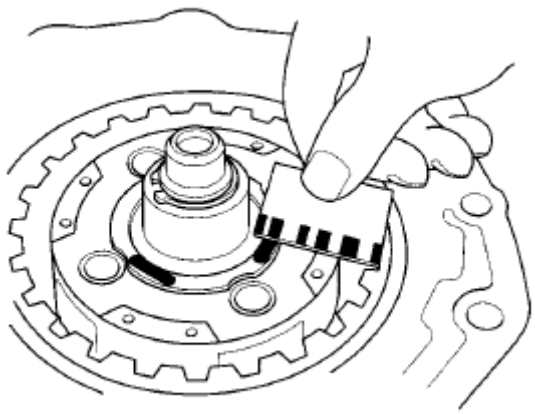


Fig. 152: Measure Clearance Using Plastigage
Courtesy of AMERICAN HONDA MOTOR CO., INC.

20. Install the 60.2 mm shim (A), the needle bearing (B), and the ring gear (C) onto the rear differential side case (D).

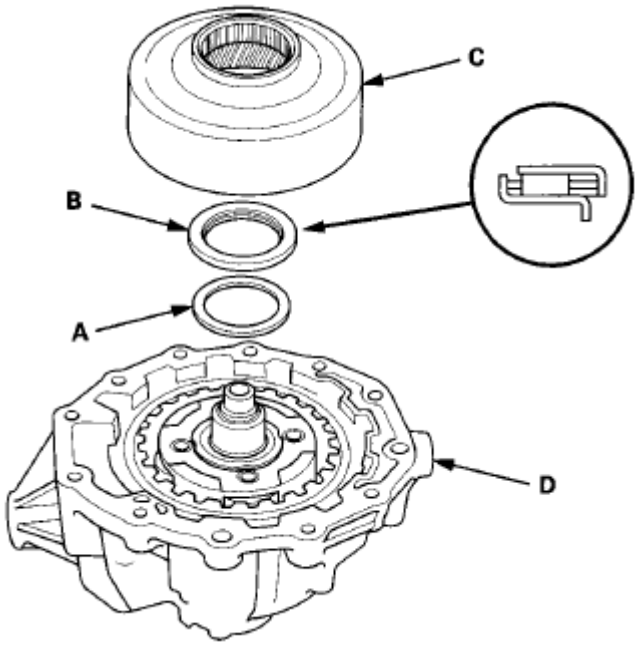


Fig. 153: Identifying Differential Side Case, Ring Gear, Needle Bearing And Shim
Courtesy of AMERICAN HONDA MOTOR CO., INC.

21. Remove the dirt and oil from the sealing surfaces. Apply liquid gasket (P/N 08717-0004, 08718-0001, 08718-0003, 08718-0004, or 08718-0009) to the sealing surface. Make sure you seal up to the inside edge of the bolt holes to prevent oil leakage.

NOTE:

- **You must assemble the housings within 5 minutes after applying the liquid gasket. If you applied liquid gasket P/N 08718-0012, the component must be installed within 4 minutes. If not, the sealing surface must be cleaned, and the liquid gasket reapplied.**
- **Allow the liquid gasket to cure at least 30 minutes after assembly before filling the differential with fluid.**

Left side case/Right side case

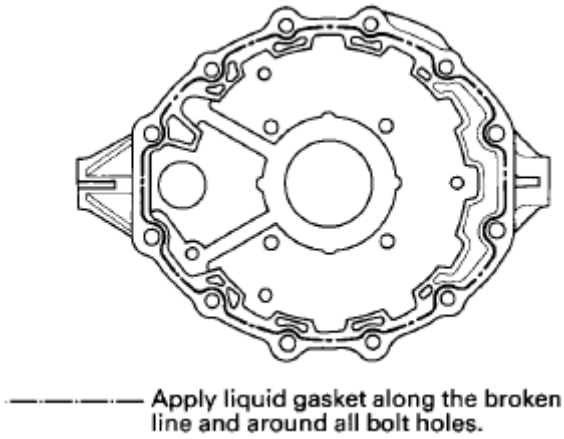


Fig. 154: Identifying Sealing Surface
Courtesy of AMERICAN HONDA MOTOR CO., INC.

22. Install the 10x12 mm dowel pins (A), the rear differential right side case (D) or the rear differential left side case (E), and the mounting bolts (F) onto the rear differential center case (G).

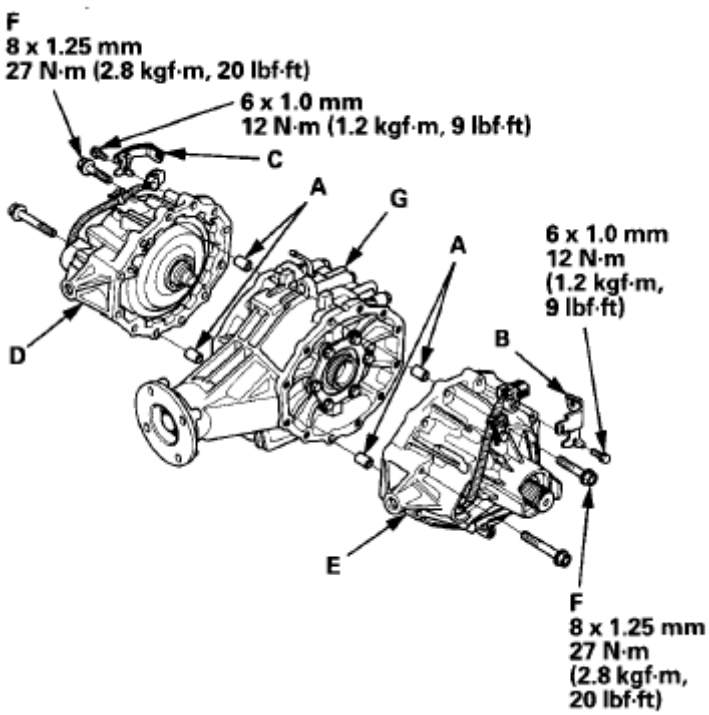


Fig. 155: Identifying Rear Differential Center, Left, Right Side Case, Dowel Pins And Mounting Bolts With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

23. Install rear differential harness bracket B and rear differential harness bracket C.
24. Tighten the mounting bolts in a crisscross pattern in several steps, then tighten the bolts to the specified torque.
25. Install the rear differential subharness (A) and rear differential harness bracket D, and install the ground cable (B).

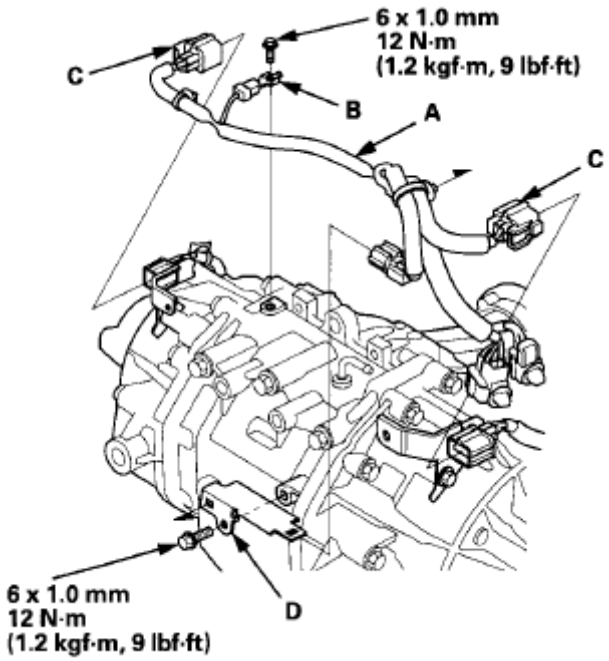


Fig. 156: Identifying Solenoid 4P Connectors, Rear Differential Harness Bracket, Subharness And Ground Cable With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

26. Connect the left and right solenoid 4P connectors (C).
27. Install the rear differential fluid temperature sensor (A) with a new O-ring (B), and install the rear differential fluid temperature sensor cover (C).

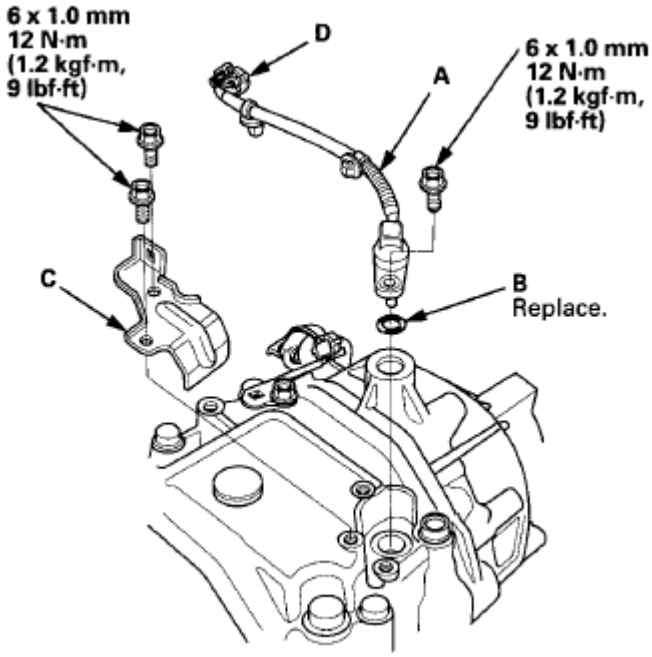


Fig. 157: Identifying Rear Differential Fluid Temperature Sensor, Sensor Cover, 2P Connector

And O-Ring With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

28. Connect the rear differential fluid temperature sensor 2P connector (D).
29. Install the rear differential front mounting brackets (A) with new bolts (B) on the rear differential (C).

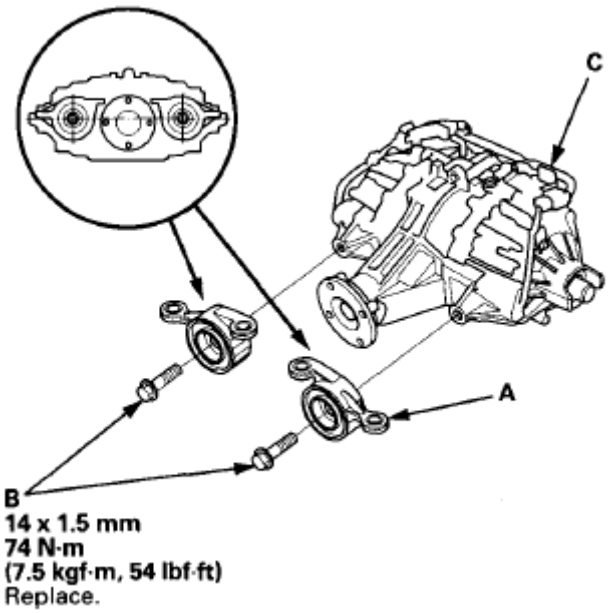


Fig. 158: Identifying Rear Differential, Rear Differential Front Mounting Brackets And Bolts With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

30. Install the rear differential (see **REAR DIFFERENTIAL INSTALLATION**).
31. Do the SH-AWD differential clutch torque memorization (see **SH-AWD® DIFFERENTIAL CLUTCH TORQUE MEMORIZATION**).

2012 ELECTRICAL

Accessory Power Sockets - TL

COMPONENT LOCATION INDEX

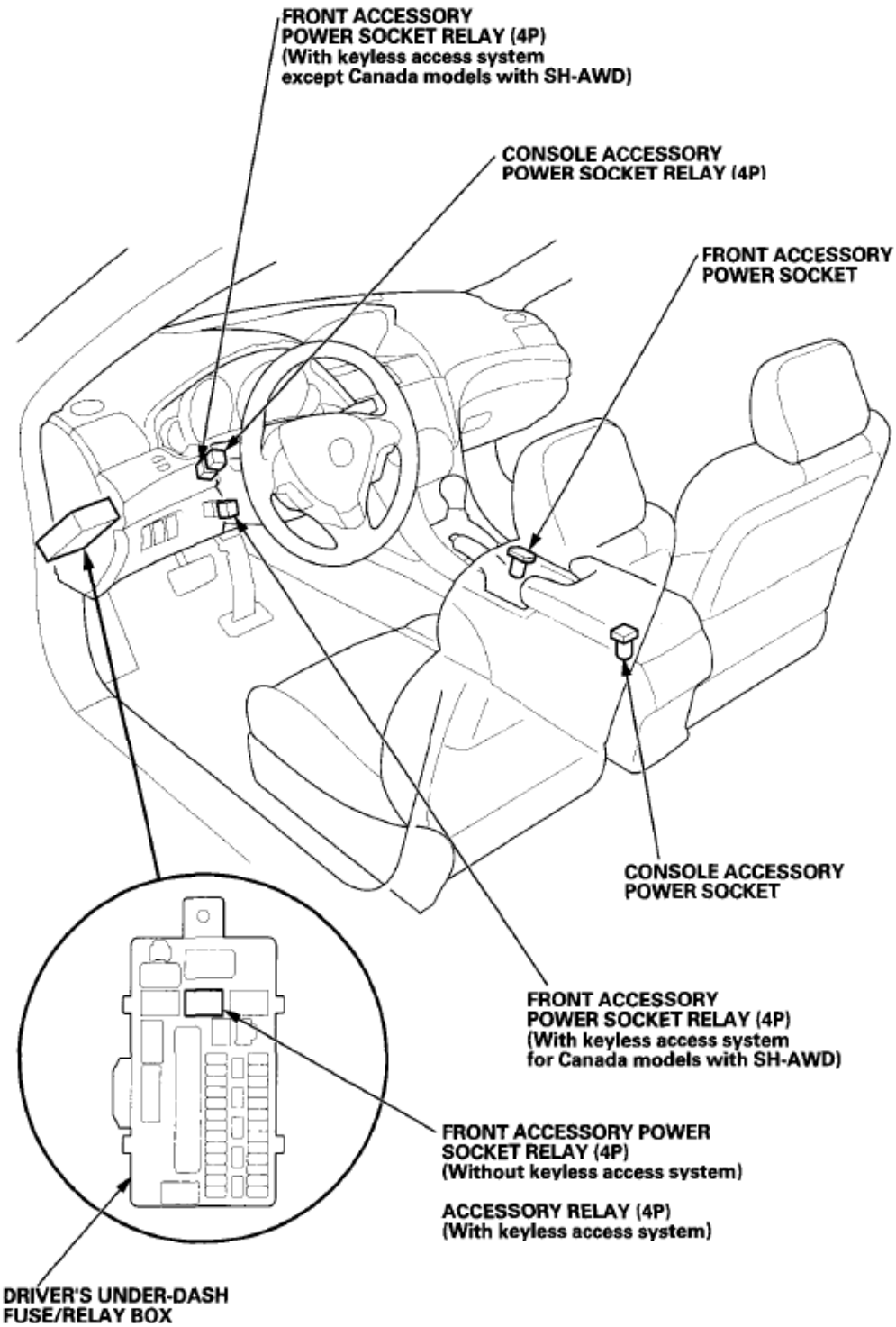


Fig. 1: Accessory Power Socket Components Location
Courtesy of AMERICAN HONDA MOTOR CO., INC.

CIRCUIT DIAGRAM

WITHOUT KEYLESS ACCESS SYSTEM

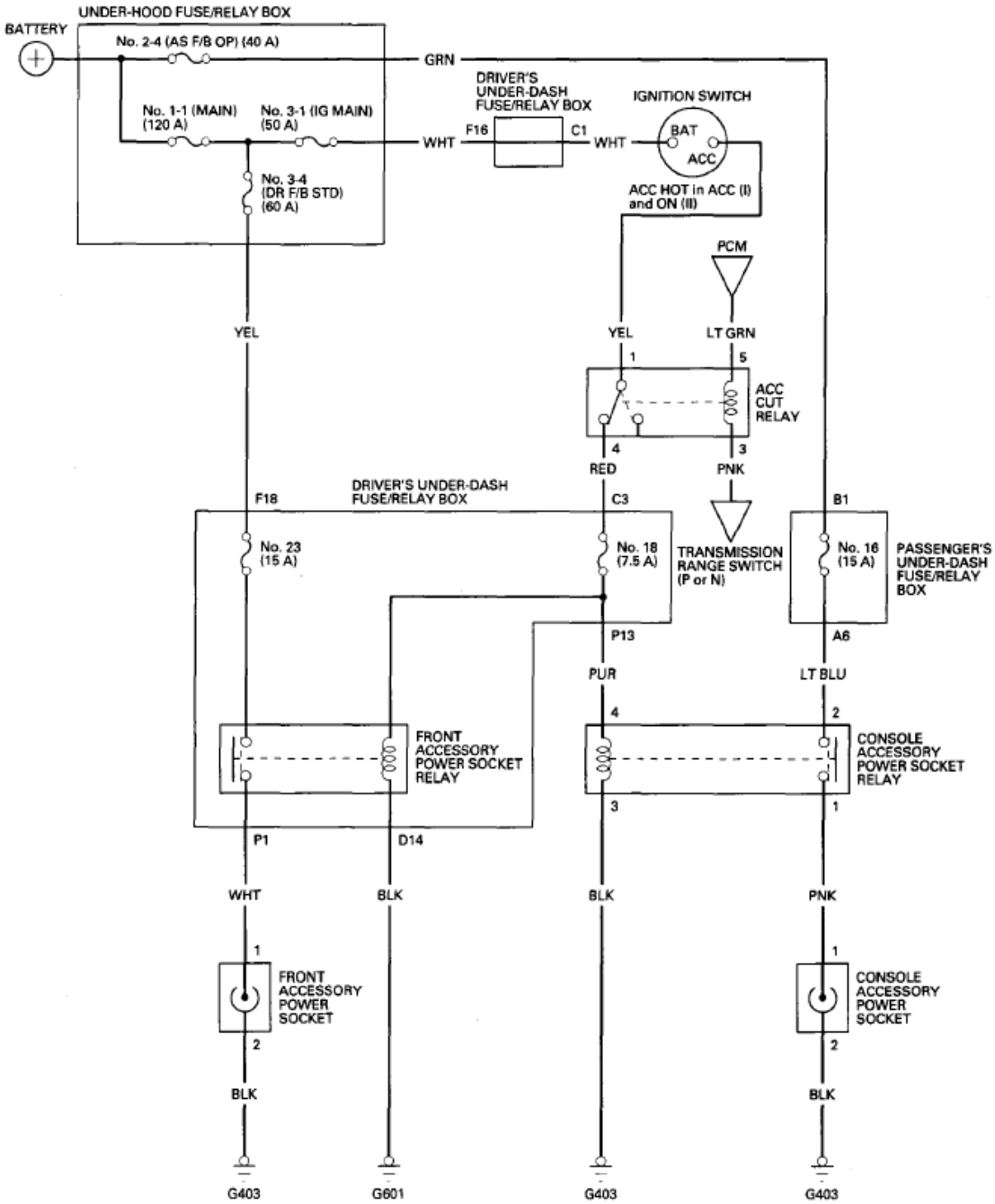


Fig. 2: Accessory Power Socket - Circuit Diagram (Without Keyless Access System)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

WITH KEYLESS ACCESS SYSTEM

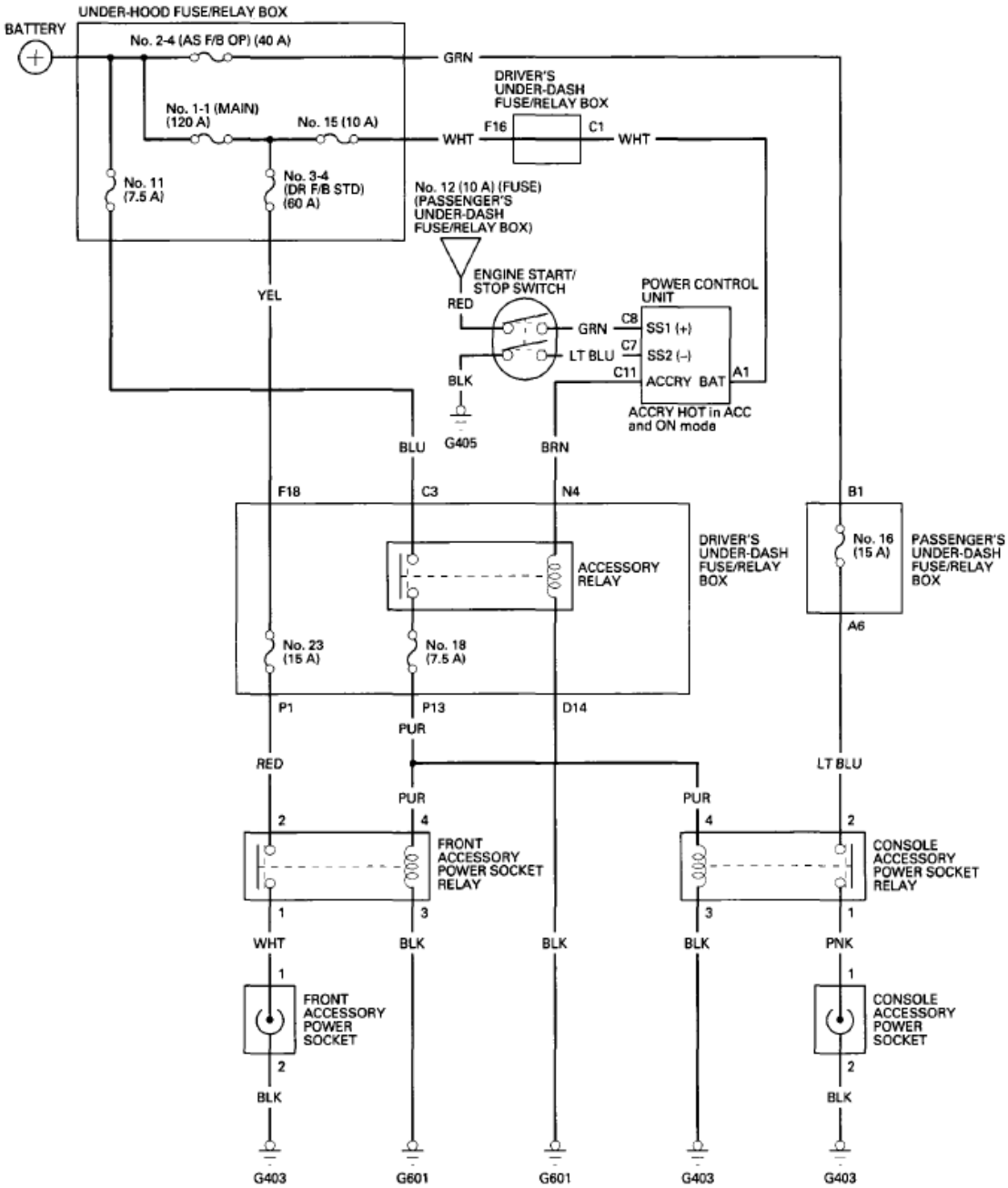


Fig. 3: Accessory Power Socket - Circuit Diagram (With Keyless Access System)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

FRONT ACCESSORY POWER SOCKET TEST/REPLACEMENT

NOTE: **If all of the front and console accessory power sockets do not work, check the No. 18 (7.5 A) fuse in the driver's under-dash fuse/relay box, ground (G403), and ground (G601) (with keyless access system) first.**

1. Remove the passenger's center trim (see **DASHBOARD CENTER TRIM REMOVAL/INSTALLATION**).
2. Disconnect the 2P connector (A) from the front accessory power socket (B).

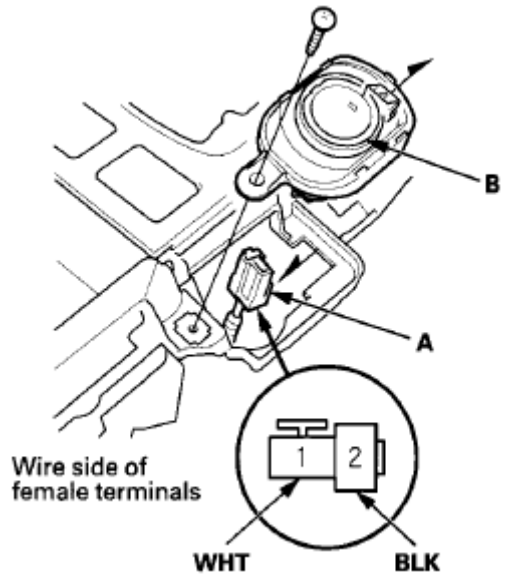


Fig. 4: Identifying 2P Connector And Front Accessory Power Socket Connector End View
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Inspect the connector terminals to be sure they are all making good contact.
   - If the terminals are bent, loose, or corroded, repair them as necessary, and recheck the system.
   - If the terminals look OK, go to step 4.
4. Turn the ignition switch to ACCESSORY (I), or press the engine start/stop button to select the ACC mode:
   - With keyless access system, go to step 5.
   - Without keyless access system, go to step 6.
5. Measure the voltage between front accessory power socket relay terminal No. 3 and body ground. There should be less than 0.2 V.
   - If there is less than 0.2 V, go to step 7.
   - If there is more than 0.2 V, check for:
     - - An open or high resistance in the wire between front accessory power socket relay terminal No. 3 and ground (G601).
     - - Poor ground (G601).
6. Measure the voltage between driver's under-dash fuse/relay box connector D (16P) terminal No. 14 and body ground. There should be less than 0.2 V.
   - If there is less than 0.2 V, go to step 7.
   - If there is more than 0.2 V, check for:
     - - An open or high resistance in the wire between driver's under-dash fuse/relay box connector

D (16P) terminal No. 14 and ground (G601).
- - Poor ground (G601).

7. Measure the voltage between front accessory power socket 2P connector terminal No. 1 and body ground. There should be battery voltage.
   - If there is battery voltage, go to step 8.
   - If there is no voltage, check for:
     - - Blown No. 23 (15 A) fuse in the driver's under-dash fuse/relay box.
     - - Faulty front accessory power socket relay.
     - - Faulty driver's under-dash fuse/relay box.
     - - An open in the wire between front accessory power socket terminal No. 1 and driver's under-dash fuse/relay box connector P (20P) terminal No. 1.
8. Check for continuity between front accessory power socket 2P connector terminal No. 2 and body ground. There should be continuity.
   - If there is continuity, replace the power socket, go to step 9.
   - If there is no continuity, check for:
     - - An open or high resistance in the wire between front accessory power socket 2P connector terminal No. 2 and ground (G403).
     - - Poor ground (G403).
9. Remove the screw and socket base (A), then gently press the tabs (B), and remove the socket (C).

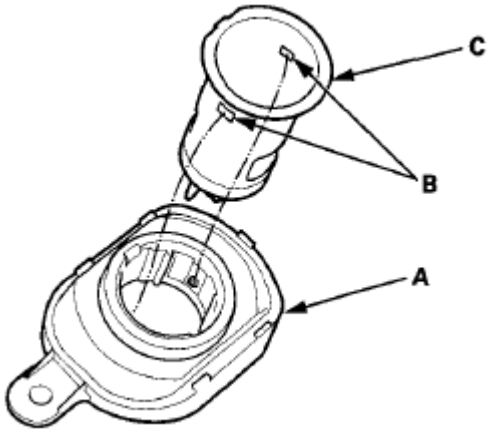


Fig. 5: Identifying Screw And Socket Base, Tabs And Socket
Courtesy of AMERICAN HONDA MOTOR CO., INC.

10. Remove the housing (A) from the socket base (B). Note the location of the indexing tabs (C).

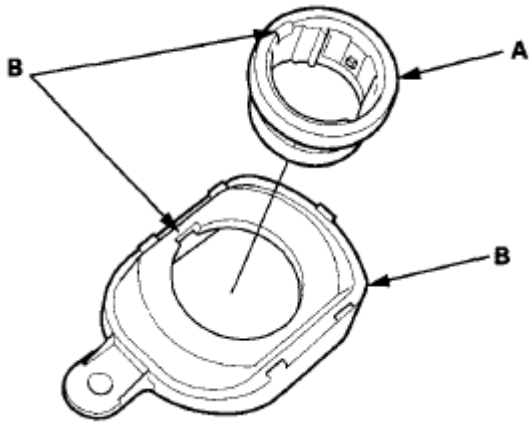


Fig. 6: Identifying Housing, Socket Base And Indexing Tabs
Courtesy of AMERICAN HONDA MOTOR CO., INC.

11. Install the power socket in the reverse order of removal.

CONSOLE ACCESSORY POWER SOCKET TEST/REPLACEMENT

NOTE: If the front and console accessory power socket do not work, check the No. 18 (7.5 A) fuse in the driver's under-dash fuse/relay box, ground (G403), and ground (G601) (with keyless access system) first.

1. Remove the center console panel (see **CENTER CONSOLE PANEL REMOVAL/INSTALLATION**).
2. Disconnect the 2P connector (A) from the console accessory power socket (B).

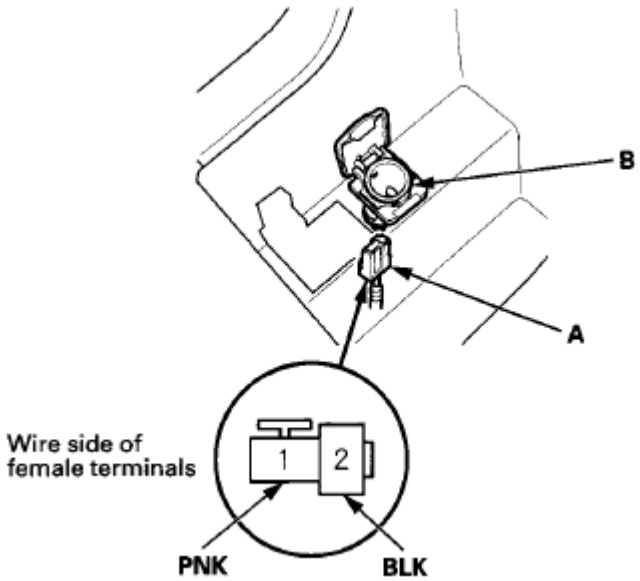


Fig. 7: Identifying 2P Connector And Console Accessory Power Socket
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Inspect the connector terminals to be sure they are all making good contact.
    - If the terminals are bent, loose, or corroded, repair them as necessary, and recheck the system.
    - If the terminals look OK, go to step 4.
4. Turn the ignition switch to ACCESSORY (I), or press the engine start/stop button to select the ACC mode.
5. Measure the voltage between console accessory power socket relay terminal No. 3 and body ground. There should be less than 0.2 V.
    - If there is less than 0.2 V, go to step 6.
    - If there is more than 0.2 V, check for:
        - - An open or high resistance in the wire between console accessory power socket relay terminal No. 3 and ground (G403).
        - - Poor ground (G403).
6. Measure the voltage between console accessory power socket 2P connector terminal No. 1 and body ground. There should be battery voltage.
    - If there is battery voltage, go to step 7.
    - If there is no voltage, check for:
        - - Blown No. 16 (15 A) fuse in the passenger's under-dash fuse/relay box.
        - - Faulty console accessory power socket relay.
        - - Faulty passenger's under-dash fuse/relay box.
        - - An open or high resistance in the wire between console accessory power socket relay terminal No. 2 and passenger's under-dash fuse/relay box connector A (38P) terminal No. 6.
        - - An open or high resistance in the wire between console accessory power socket relay terminal No. 1 and console accessory power socket 2P connector terminal No. 1.
7. Check for continuity between console accessory power socket 2P connector terminal No. 2 and body ground. There should be continuity.
    - If there is continuity, replace the power socket, go to step 8.
    - If there is no continuity, check for:
        - - An open or high resistance in the wire between console accessory power socket 2P connector terminal No. 2 and ground (G403).
        - - Poor ground (G403).
8. Gently press the tabs (A), then remove the socket (B).

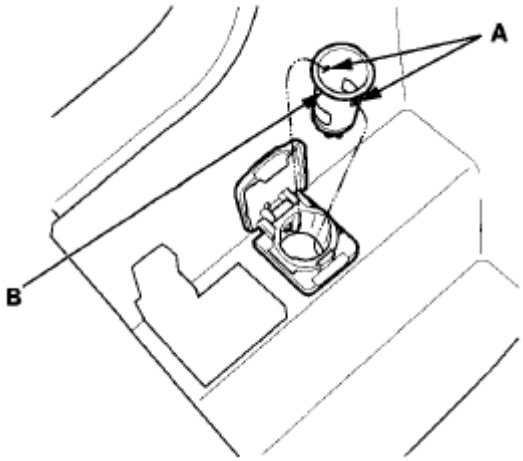


Fig. 8: Identifying Tabs And Socket
Courtesy of AMERICAN HONDA MOTOR CO., INC.

9. Gently press the tabs (A), then remove the housing (B) from the panel. Note the location of the indexing tabs (C).

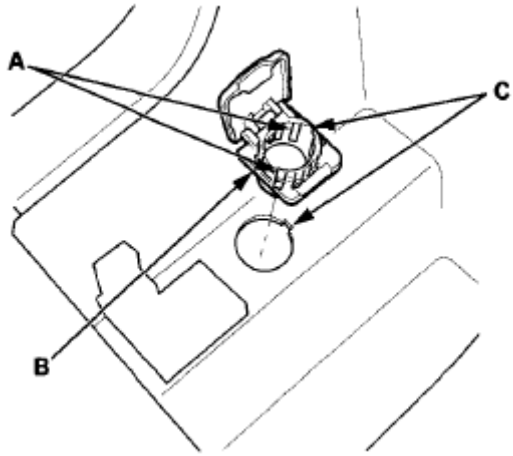


Fig. 9: Identifying Tabs, Housing And Indexing Tabs
Courtesy of AMERICAN HONDA MOTOR CO., INC.

10. Install the power socket in the reverse order of removal.

2000-12 GENERAL INFO

Battery Cable Reset - Acura/Honda

PROCEDURE

NOTE: Before you begin the battery cable reset procedure, make sure the battery is fully charged. A low battery can cause problems with electronics. Then, retrieve the anti-theft code and write down your customer's audio presets.

1. Turn the ignition switch to LOCK (0), and remove the key.
2. Disconnect the negative battery cable first, then positive.
3. Using a jumper wire, short the battery cables together.
4. Turn the ignition switch to ON (II), and wait 10 minutes.
5. Turn the ignition switch to LOCK (0), and remove the key.
6. Remove the jumper wire, and reconnect the positive battery cable first, then negative.
7. Check the applicable service information, and perform the appropriate reset/learn procedures.
8. Enter the anti-theft code, and restore customer settings.

2012 ELECTRICAL

Battery Management System - TL

COMPONENT LOCATION INDEX

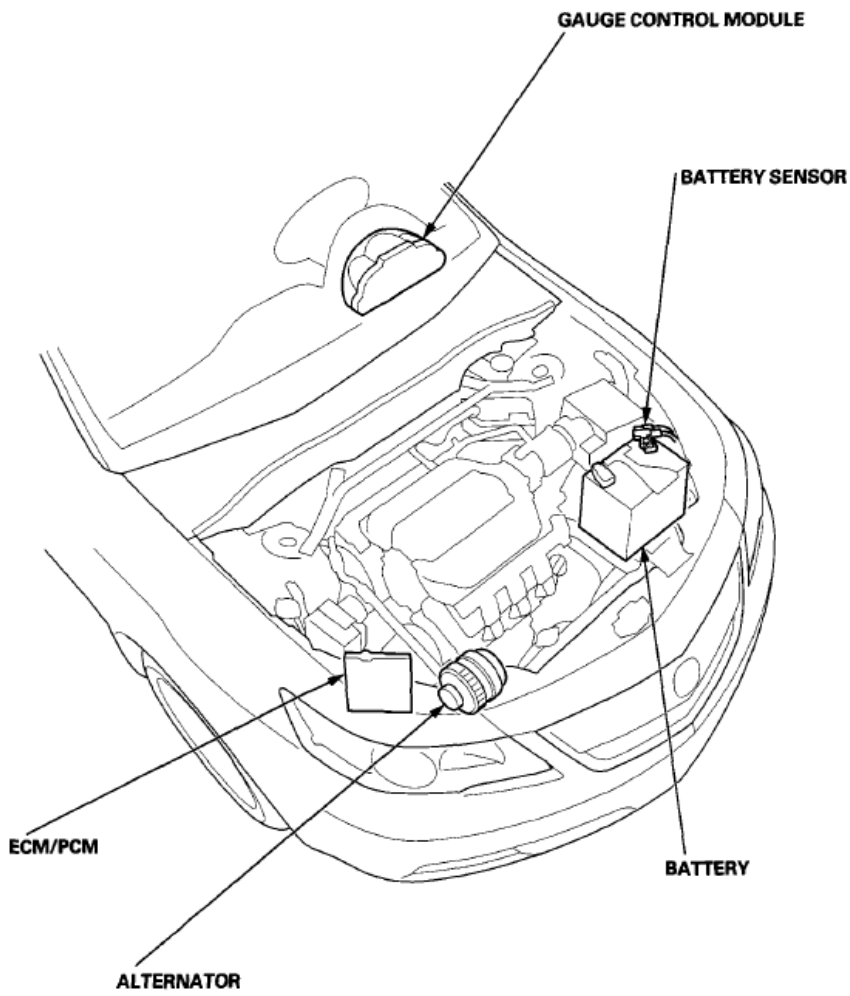


Fig. 1: Battery Management System Components Location (1 Of 3)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

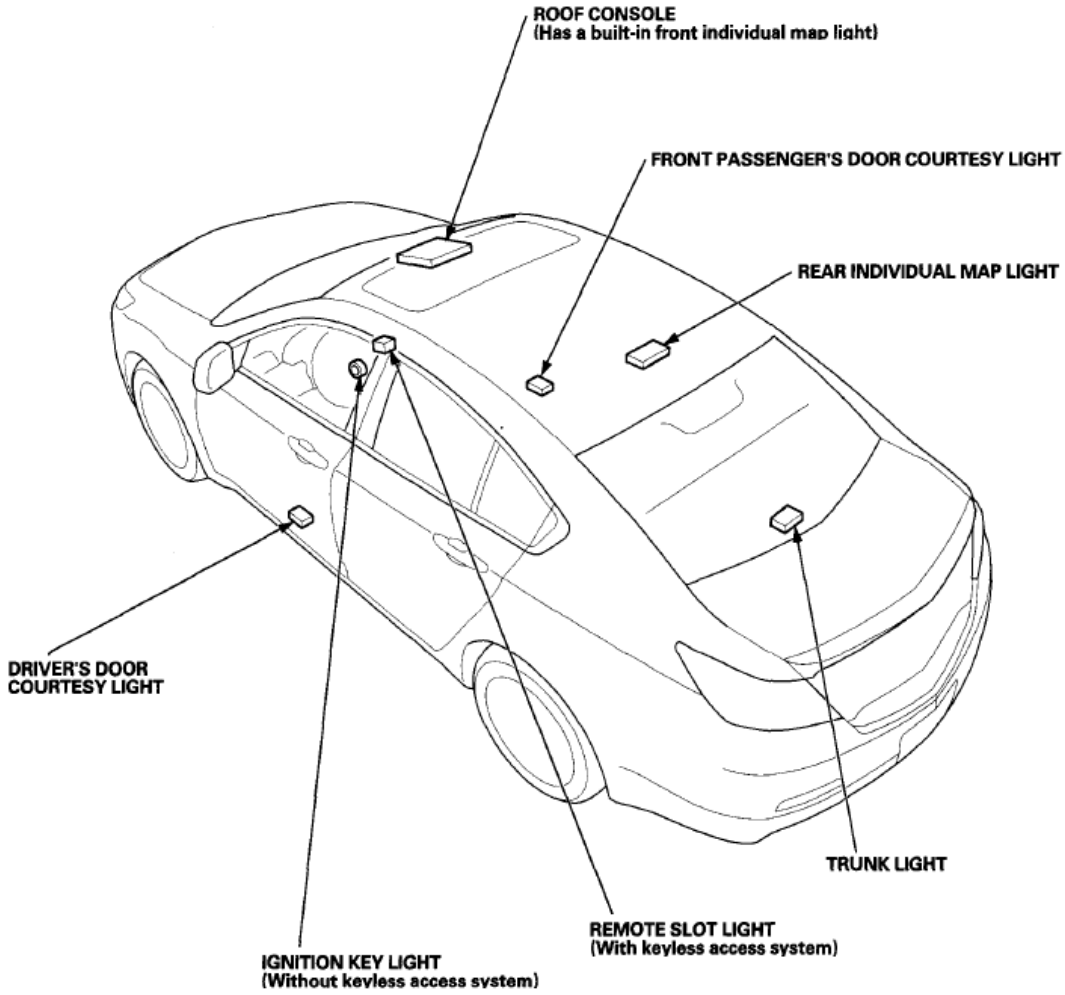


Fig. 2: Battery Management System Components Location (2 Of 3)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

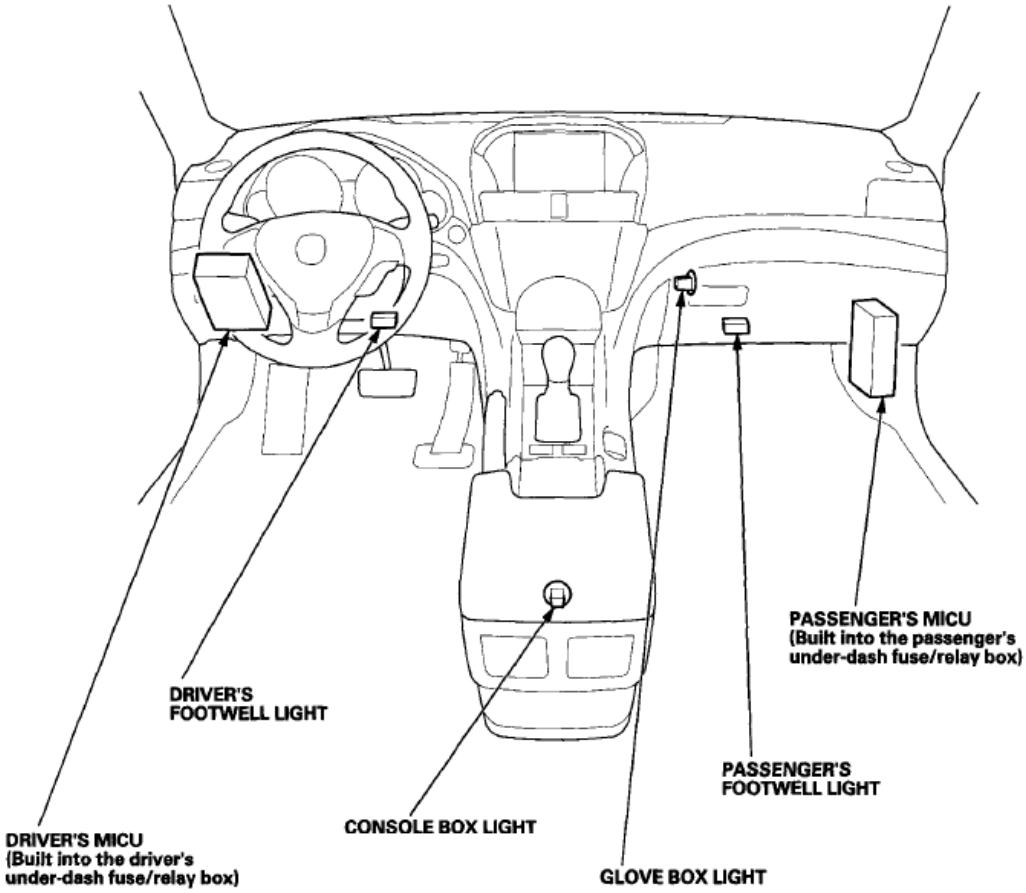


Fig. 3: Battery Management System Components Location (3 Of 3)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

SYSTEM DESCRIPTION

This system consists of the battery sensor, the gauge control module, the driver's MICU, the passenger's MICU, the alternator, and the ECM/PCM.

The battery sensor measures the battery current, voltage, and temperature in all ignition switch positions. This data is used to control the alternator output, the idle speed, and the interior lights. These are the advantages of this system:

- Helps to prevent over-discharge of the battery.
- Helps to protect engine cranking amps.
- Helps to extend the battery life.
- Helps to improve fuel economy.
- Helps to alert the client of the battery condition.

BATTERY MANAGEMENT WHILE THE IGNITION SWITCH IS IN LOCK (0), OR THE VEHICLE IGNITION IS IN THE OFF MODE, AND WITH ELECTRICAL DEVICES ON

When the battery sensor detects the battery voltage decreasing, that information is sent to the gauge control module via the UART line. The gauge control module then operates a beeper, and displays the message Switch Off All Lights and Electrical Devices on the multi-information display (MID) to inform the client that electrical devices should be turned off. If electrical devices are not turned off and the battery voltage decreases more, the gauge control module sends an interior lights off signal to the driver's MICU and the passenger's MICU via the B-CAN line. Based on that signal, the units cut off the ground circuits of the interior lights and turns them off.

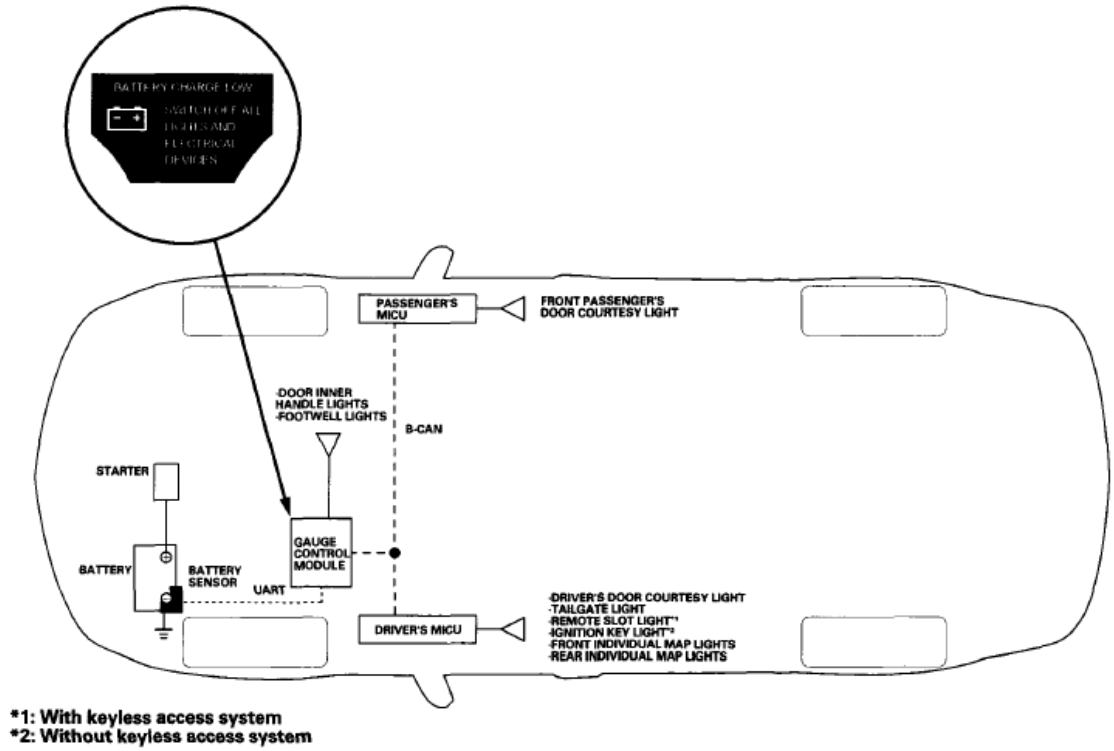


Fig. 4: Identifying Battery Management While Ignition Switch Is In Lock
Courtesy of AMERICAN HONDA MOTOR CO., INC.

BATTERY MANAGEMENT WHILE THE ENGINE IS RUNNING

While the engine is idling, the battery sensor measures the battery current, voltage, and temperature values, and sends this data to the gauge control module via the UART line. The gauge control module sends the idle speed control signal and alternator control signal to the ECM/PCM via the F-CAN line. Then, based on those signals, the ECM/PCM determines the idle speed that is appropriate for the current state of charge of the battery, and also controls the alternator output. These functions help maintain the battery condition and improve the fuel economy. If the battery sensor detects any problems, a warning message appears on the multi-information display (MID) to inform the client that the system needs attention.

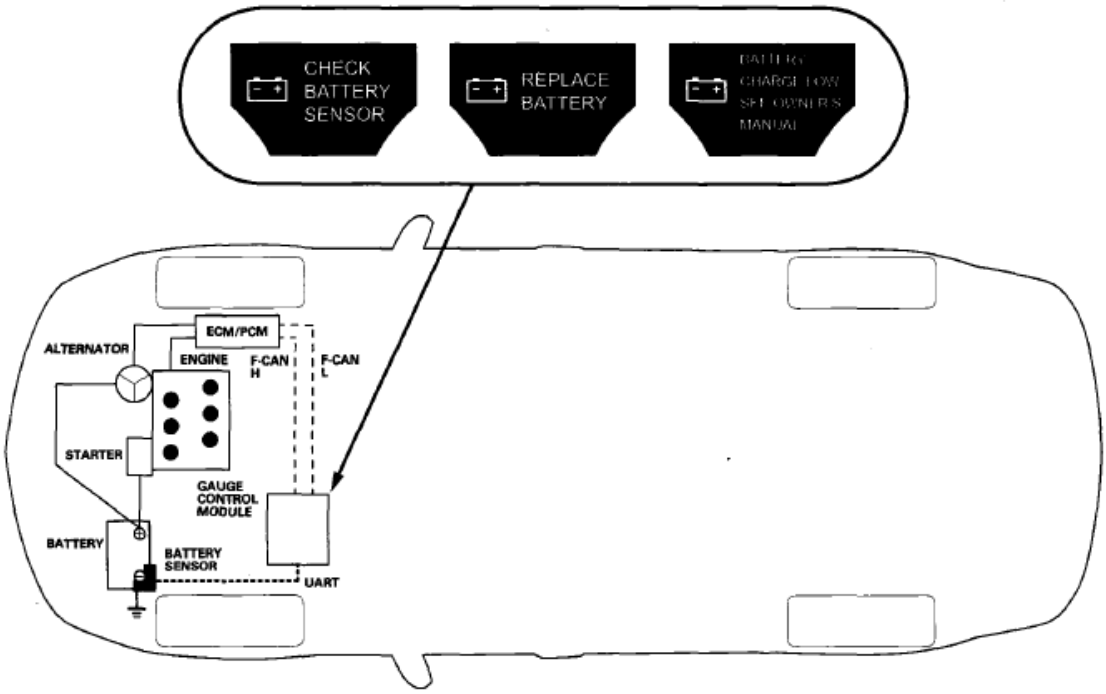


Fig. 5: Identifying Battery Management While Engine Is Running
Courtesy of AMERICAN HONDA MOTOR CO., INC.

NOTE:

- **If there are any problems with the charging system or the battery, the charging system indicator comes on at the same time.**
- **The most common causes for "Battery Charge Low" messages are:**

  1: Short-trip driving.

  2: Using the vehicles electrical devices, like the audio system, or aftermarket electrical devices for long periods of time with the engine OFF and the ignition switch is turned to ON (II), or the vehicle ignition is in the ON mode.

- **If the "Battery Charge Low" warning appears after fully charging the battery, disconnect the gray 2-pin connector next to the Battery Sensor for 10 seconds, then reconnect the connector; and the warning is removed from the display.**
- **If you need to replace the battery, replace it with a new battery of the same group size.**

CIRCUIT DIAGRAM

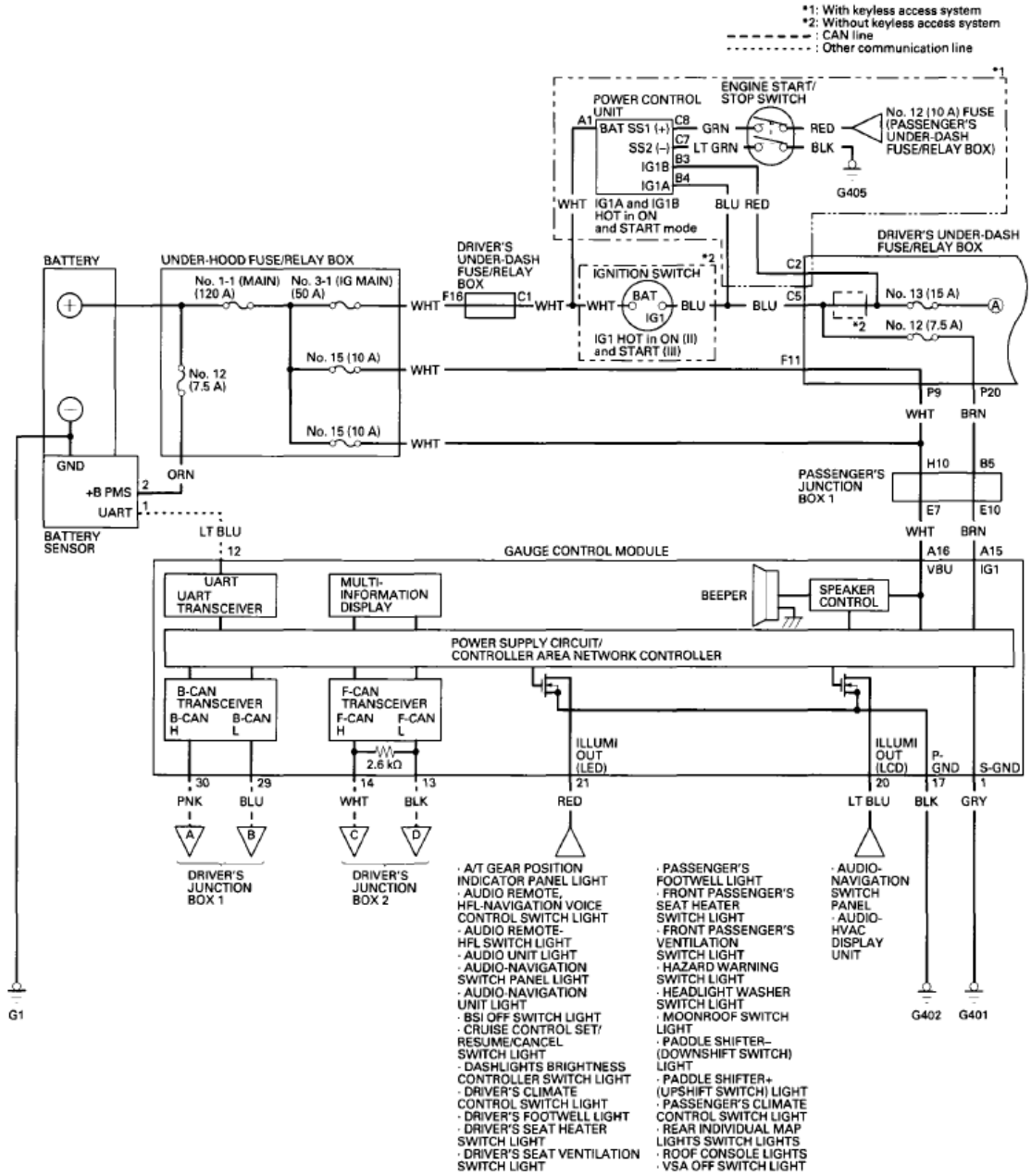


Fig. 6: Battery Management System Circuit Diagram (1 Of 2)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

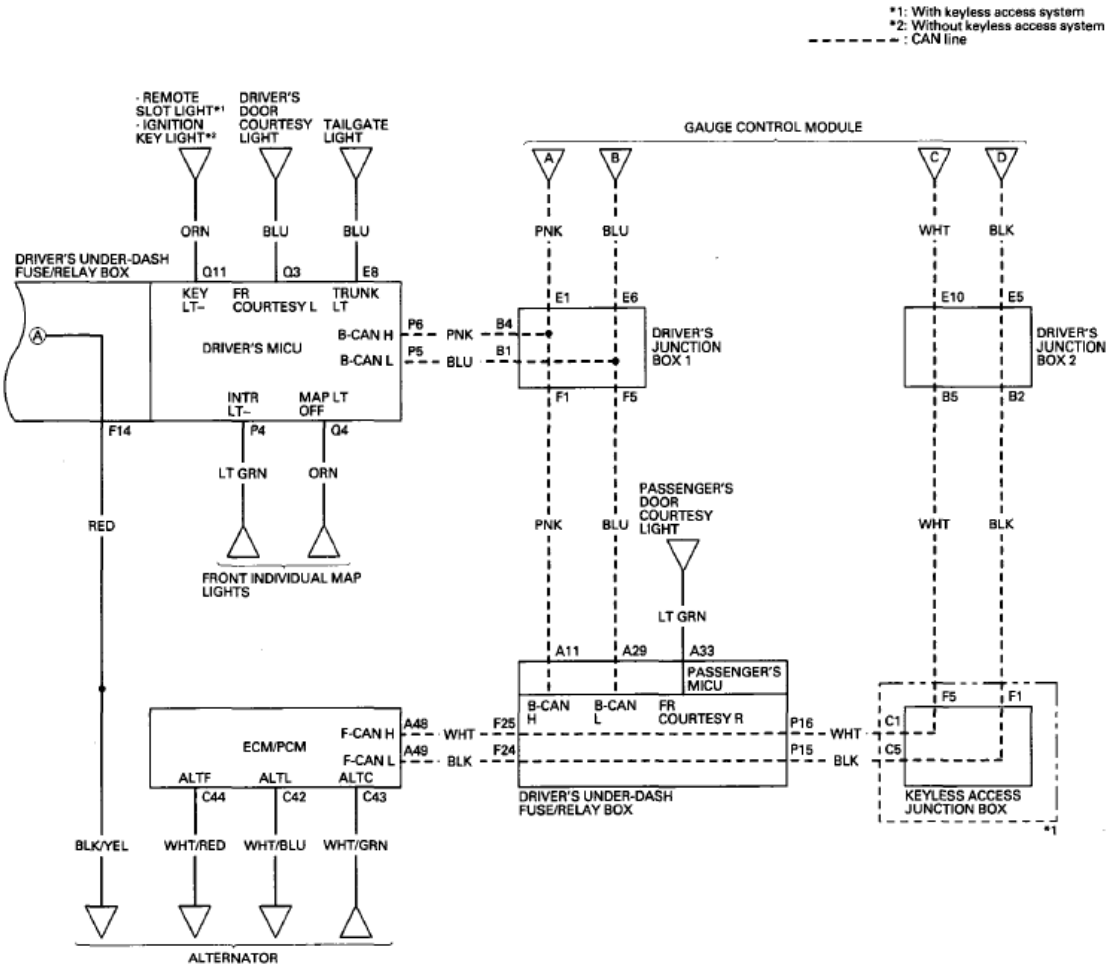


Fig. 7: Battery Management System Circuit Diagram (2 Of 2)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

SYMPTOM TROUBLESHOOTING

MID Indication	Possible cause	Diagnostic procedure	Notes
	• Faulty connector • Faulty wire harness • Faulty battery	1. Inspect the connector to be sure it is making good contact. 2. Check for an open or high resistance in the wire. 3. Disconnect the battery sensor from the battery negative terminal and reconnect it.	The battery sensor is initialized and recalibrated automatically after reconnecting. To do this process quickly, turn off all electrical loads, lock all doors with the transmitter, and remove the No. 12 (7.5 A) fuse from the under-hood fuse/relay box. Then disconnect

	sensor	4. Check for DTCs. 5. Replace the battery sensor.	the battery sensor 2P connector, wait 5 seconds, reconnect it, and reinstall the fuse. The battery sensor is initialized and recalibrated within 10 minutes.
	Faulty battery	Test the battery (see **BATTERY TEST**).	
 	• Faulty alternator • Low battery voltage • Low battery charge	1. Troubleshoot the charging system (see **CHARGING SYSTEM INDICATOR CIRCUIT TROUBLESHOOTING**). 2. Check for excessive parasitic draw with the ignition switch in LOCK (0) and the key removed, or the vehicle ignition in the OFF mode.	This system may be caused by: • Long-term parking • Frequent short trips • Using the vehicles electrical devices, like the audio system, for long periods with the engine off

BATTERY SENSOR INPUT TEST

NOTE: Before testing, make sure the battery ground cable is installed correctly, and make sure there is continuity between the battery negative terminal and ground terminal G1.

1. Disconnect the 2P connector (A) from the battery sensor (B).

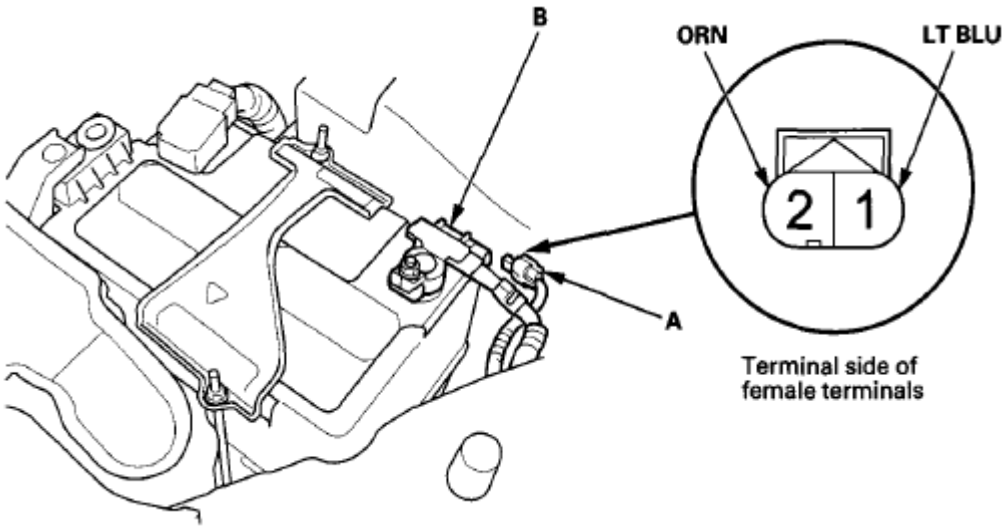


Fig. 8: Identifying 2P Connector And Battery Sensor Connector End View
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Inspect the connector and socket terminals to be sure they are all making good contact.
   - If the terminals are bent, loose, or corroded, repair them as necessary, and recheck the system.
   - If the terminals look OK, go to step 3.
3. With the 2P connector still disconnected, do the following input tests.
   - If any test indicates a problem, find and correct the cause, then recheck the system.
   - If all the input tests prove OK, replace the battery sensor.

Cavity	Wire	Test condition	Test: Desired result	Possible cause if desired result is not obtained
2	ORN	Under all conditions	Measure the voltage to ground: There should be battery voltage.	• Blown No. 12 (7.5 A) fuse in the under-hood fuse/relay box • An open or high resistance in the wire
1	LT BLU	Disconnect the gauge control module 32P connector	Check for continuity between terminal No. 1 and gauge control module 32P connector terminal No. 12: There should be continuity.	An open in the UART wire

2012 ELECTRICAL

Battery - TL

BATTERY TEST

WARNING: A battery can explode if you do not follow the proper procedure, causing serious injury to anyone nearby. Follow all procedures carefully and keep sparks and open flames away from the battery.

SPECIAL TOOLS REQUIRED

Acura Electrical System Analyzer (ED-18 Battery tester): Model Number INB17191845*

Acura Battery Diagnostic Station (GR8): Model Number MTRGR81100PA*

*To order, go to the Acura Tool and Equipment catalog on the iN, or call 888-424-6857

SOFTWARE VERSION

Make sure you have the latest software for the ED-18 and GR8.

To check the software version on the ED-18, do this:

- Press the POWER button.
- Read the version number on the screen. It should appear for about 3 seconds.
- Or you can select: Language> Options> Info> Version. The version number will appear near the top of the screen.

Write down the version number, then call Midtronics at 800-776-1995 to verify you have the latest software version.

To check the software version on the GR8, do this:

- Press the POWER button.
- Read the version number on the screen. It should appear for about 5 seconds.
- Or from the Main Menu, select: Options> Info> I Version. The version number will appear on the screen.

Write down the version number, then call Midtronics at 800-776-1995 to verify you have the latest software version.

USING THE ED-18 BATTERY TESTER

NOTE: For setup, customization, and other available features, refer to the ED-18 user's manual.

1. Connect the leads to the positive and negative terminal of the battery.
2. Use the arrow keys to select the Battery test, then press ENTER, then follow the prompts.

NOTE:

- **Make sure to enter the correct cold cranking ampere (CCA) rating of the battery. You can find the CCA printed on the label on the top of the battery. If the CCA rating is not entered correctly, the test result will not be accurate.**
- **Make sure you select FLOODED for the battery type.**

3. Here are the four possible battery conditions:
   - GOOD BATTERY: The battery has at least 60 percent of its charge and good state of health. No action is required.
   - GR8 DIAGNOSTIC TEST NEEDED: The battery voltage is low. Connect the GR8 and use the diagnostic test to determine if the battery is GOOD or needs to be REPLACED.
   - REPLACE BATTERY: The battery condition is poor. Replace it.
   - BAD CELL: There is a problem with the battery. Replace it.

USING THE GR8 BATTERY DIAGNOSTIC STATION

NOTE:

- **For setup, customization, and other available features, refer to the GR8 user's manual.**
- **On the GR-8, you can select two modes: DEALER INVENTORY or CLIENT VEHICLE.**
  - **DEALER INVENTORY: Use this mode for vehicles in dealer inventory. The GR8 charges the battery to 80% of its state-of-charge. If the battery condition is OK, the GR8 states the battery is GOOD. If you leave the GR8 attached to the battery, it changes to Top Off mode, and continues to charge the battery until it is at 100% of its state-of-charge.**
  - **CLIENT VEHICLE: In order to give a waiting client quicker service, the GR8 charges the battery to 60% of its state-of-charge. If the battery condition is OK, the GR8 states the battery is GOOD. If you leave the GR8 attached to the battery, it changes to Top Off mode, and continues to charge the battery until it is at 100% of its state-of-charge.**

1. Connect the leads to the positive and negative terminal of the battery.
2. Use the arrow keys to select Diagnostic, and follow the prompts.

NOTE:

- **Make sure to enter the correct cold cranking ampere (CCA) rating of the battery. You can find the CCA printed on the label on the top of the battery. If the CCA rating is not entered correctly, the test result will not be accurate.**

- **Make sure you select FLOODED for the battery type.**

3. Here are the three possible battery conditions:
   - GOOD BATTERY: The battery state of health is good and state of charge is at least 60%.
   - REPLACE BATTERY: The battery condition is poor. Replace it.
   - BAD CELL: There is a problem with the battery. Replace it.

BATTERY TERMINAL DISCONNECTION AND RECONNECTION

DISCONNECTION

NOTE: Some systems store data in memory (including seat position, mirror position, etc) that is lost when the battery is disconnected. Do the following procedures before disconnecting the battery.

1. Make sure you have the anti-theft code for the audio system or the audio-navigation unit.
2. Make sure the ignition switch is in LOCK (0), or the vehicle ignition is in the OFF mode.
3. Remove the bulkhead cover (see **ENGINE COMPARTMENT COVER REPLACEMENT**).
4. Disconnect and isolate the negative cable from the battery.

NOTE: Always disconnect the negative cable from the battery first.

5. Disconnect the positive cable from the battery.

RECONNECTION

NOTE: Some systems store data in memory (including seat position, mirror position, etc) that is lost when the battery is disconnected. Do the following procedures to restore the systems back to normal operation.

1. Clean the battery terminals.
2. Test the battery (see **BATTERY TEST**).
3. Reconnect the positive cable (A) to the battery (B) first, then reconnect the negative cable (C) to the battery.

NOTE: Always connect the positive cable to the battery first.

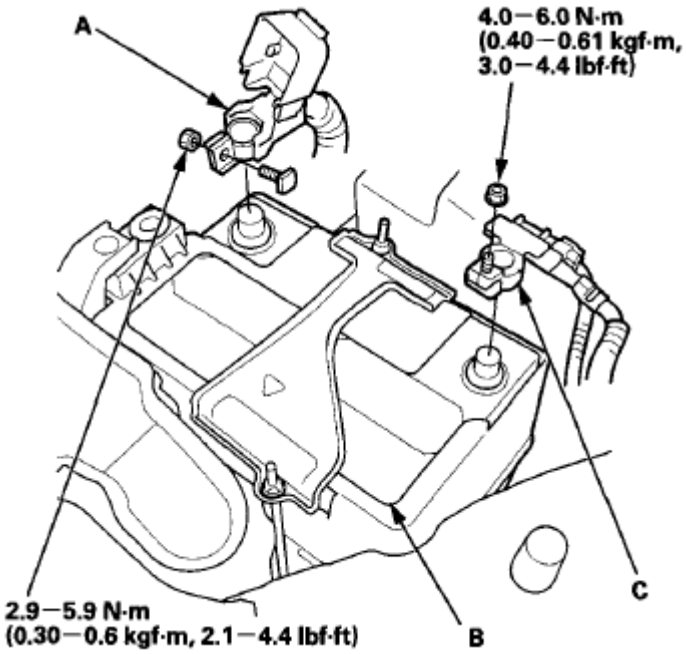


Fig. 1: Identifying Battery, Positive And Negative Cable With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Apply multipurpose grease to the terminals to prevent corrosion.
5. Install the bulkhead cover (see **ENGINE COMPARTMENT COVER REPLACEMENT**).
6. Enter the anti-theft code for the audio system or the audio-navigation unit.
7. Enter the audio presets (if applicable), and enter the XM audio presets (if equipped).
8. Set the clock (for vehicles without navigation).

BATTERY REMOVAL AND INSTALLATION

NOTE: The battery terminal disconnection and reconnection procedure (see BATTERY TERMINAL DISCONNECTION AND RECONNECTION) must be done before and after doing this procedure. Some systems store data in the memory that is lost when the battery is disconnected.

REMOVAL

1. Do the battery terminal disconnection procedure (see **BATTERY TERMINAL DISCONNECTION AND RECONNECTION**).
2. Remove the three clips and air intake duct splash separator (A).

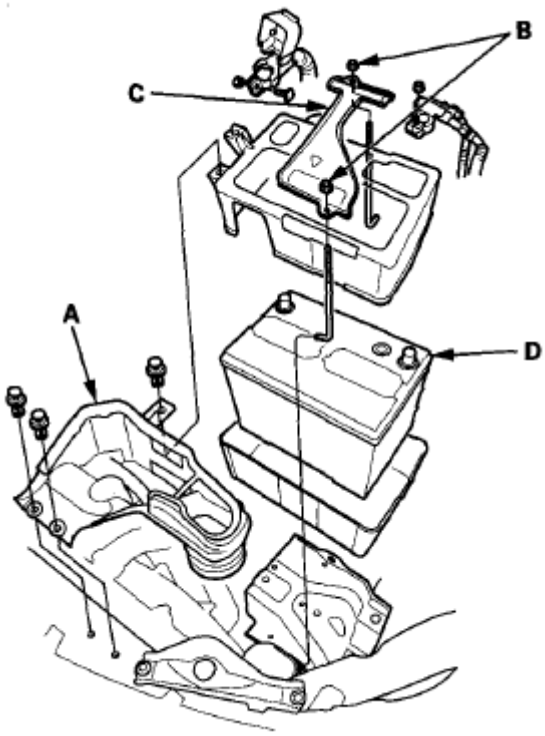


Fig. 2: Identifying Air Intake Duct Splash Separator, Battery, Battery Setting Plate And Nuts
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Remove the two nuts (B) securing the battery setting plate (C), then remove the battery setting plate and the battery (D).

INSTALLATION

1. Install the battery (A), then install the battery setting plate (B).

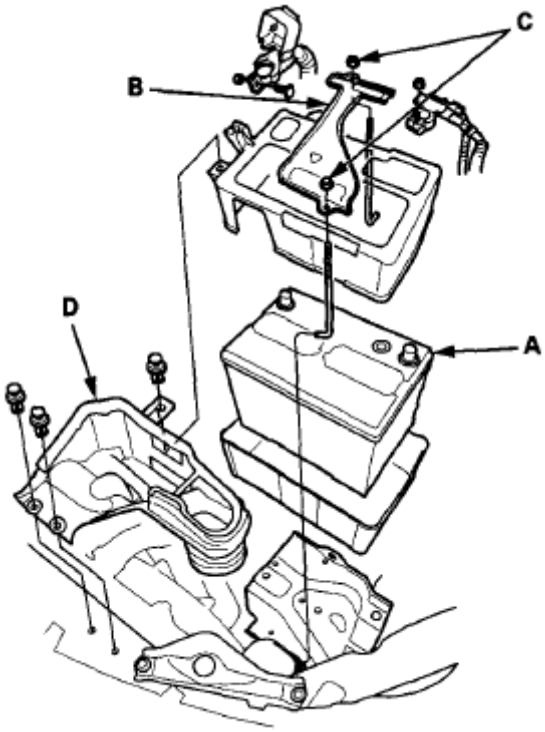


Fig. 3: Identifying Air Intake Duct Splash Separator, Battery, Battery Setting Plate And Nuts
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Tighten the two nuts (C) equally until the battery is stable.

NOTE: Do not deform the battery setting plate by over-tightening the nuts.

3. Install the air intake duct splash separator (D) and three clips.
4. Do the battery terminal reconnection procedure (see **BATTERY TERMINAL DISCONNECTION AND RECONNECTION**).

NOTE: Make sure the battery is correctly installed, and that the positive terminal and the negative terminal are not connected in reverse.

PARASITIC DRAW CHECK

Special Tools Required

LH41 AC/DC low current clamp meter, FLULH41 A*

*: Available through the Honda Tool and Equipment Program, 888-424-6857

1. Make sure the battery is fully charged, and that all the vehicle's electrical accessories are turned off.
   - With security, go to step 2.

- Without security, go to step 4.

2. Open the hood.
3. Disconnect the security hood switch 2P connector to allow the security system to arm itself with the hood open.
4. Turn the ignition switch to ON (II).
5. Turn the ignition switch to LOCK (0), and remove the ignition key from the ignition switch.
6. Get out of the vehicle, and close all the doors.
7. Lock the doors with the keyless transmitter.
8. Make sure the map lights are turned off and the security alarm system is armed by confirming that the security indicator is flashing.
9. Wait at least 20 minutes.
10. Attach the LH41 AC/DC low current clamp meter (A) to the battery ground cable (B). Follow the equipment manufacturer's instructions, then measure the parasitic draw.

NOTE: If you are using a digital multimeter, go to step 12.

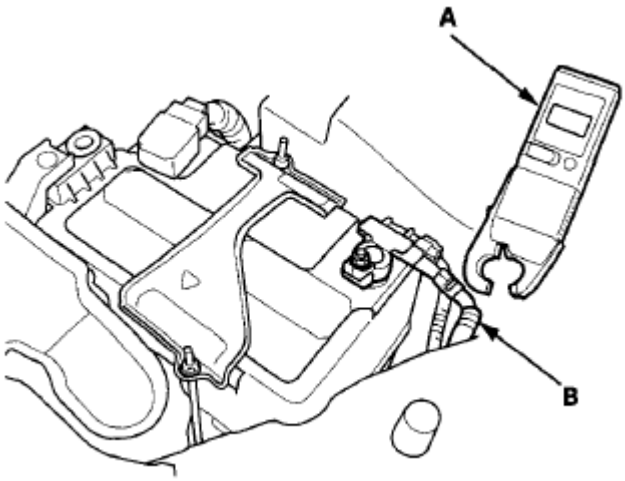


Fig. 4: Identifying Low Current Clamp Meter And Battery Ground Cable
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is the parasitic draw 52 mA or less?

YES - Go to step 18.

NO - Go to step 11.

11. Check for poor connections and loose terminals at the battery and the alternator terminals.

Are the connections OK?

YES - Do the alternator and regulator circuit troubleshooting (see **ALTERNATOR AND**

REGULATOR CIRCUIT TROUBLESHOOTING), and alternator control circuit troubleshooting (see **ALTERNATOR CONTROL CIRCUIT TROUBLESHOOTING**), then recheck. If the system is OK, the battery is flat from self-discharge. Check the battery (see **BATTERY TEST**), then recharge or replace the battery (see **BATTERY REMOVAL AND INSTALLATION**).

NO - Reconnect the terminals, then recheck.

12. Check the following items before measuring:
    - The multimeter dial is set to the DCA (direct current amps) range.
    - The red test probe is plugged into the red A (Amps) jack, and the black test probe is plugged into the COM jack.
    - To avoid blowing an input fuse, start by setting the range above 10 A.
13. Loosen the nut (A) of the battery negative terminal.

NOTE: Follow the instructions exactly to avoid disconnecting the battery ground cable terminal from the battery negative terminal.

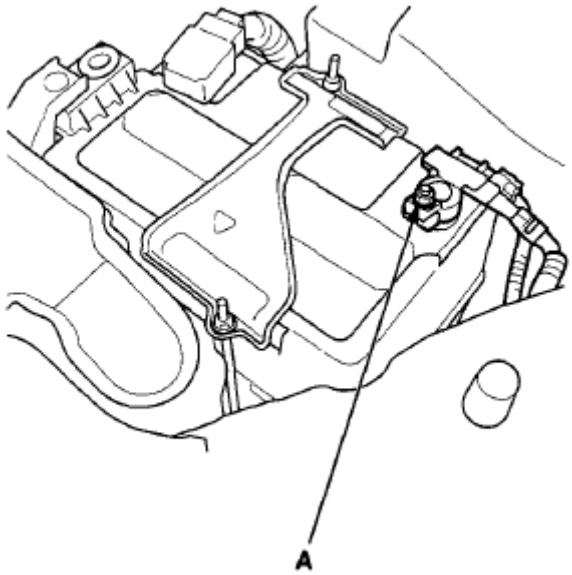


Fig. 5: Identifying Battery Negative Terminal Nut
Courtesy of AMERICAN HONDA MOTOR CO., INC.

14. Connect the red (+) test lead (A) to the negative terminal (B) of the battery ground cable.

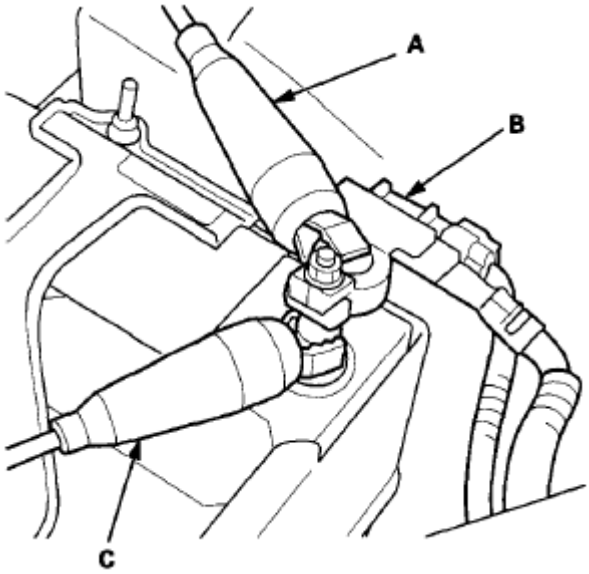


Fig. 6: Identifying Red Test Lead And Negative Terminal
Courtesy of AMERICAN HONDA MOTOR CO., INC.

15. Slide the negative terminal of the battery ground cable upwards from the battery negative terminal so that it still makes contact and avoids disconnection. Then connect the black (-) test lead (C) to the battery negative terminal post.
16. Disconnect the negative terminal (A) of the battery ground cable from the battery negative terminal.

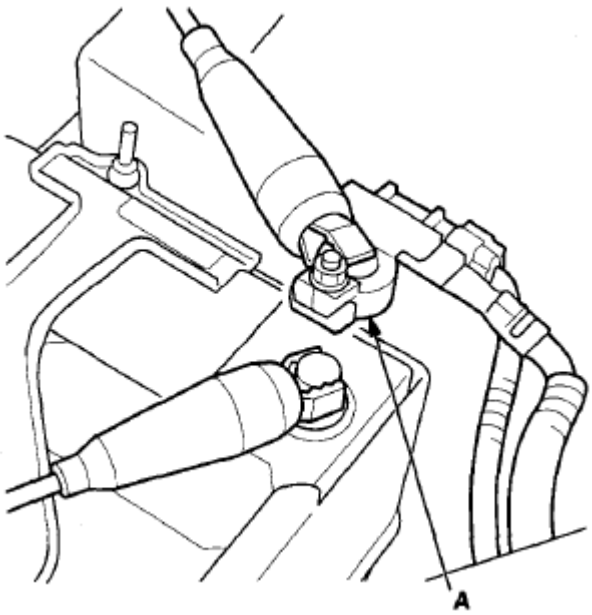


Fig. 7: Identifying Negative Terminal Of Battery Ground Cable
Courtesy of AMERICAN HONDA MOTOR CO., INC.

17. Measure the parasitic draw.

Is the parasitic draw 52 mA or less?

YES - The system is normal at this time.

NO - Go to step 18.

18. Check if there are any aftermarket electrical accessories installed on the vehicle.

    Are there any aftermarket electrical accessories installed?

    YES - Go to step 19.

    NO - Go to step 21.

19. Make sure that the aftermarket electrical accessories have been properly installed.

    Are the aftermarket electrical accessories installed correctly?

    YES - Go to step 20.

    NO - Repair, reinstall, or remove the aftermarket accessories, then recheck.

20. Disconnect the aftermarket electrical accessories one at a time, then measure the parasitic draw.
    1. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode, and then back to LOCK (0), or press the engine start/stop button to select the OFF mode.
    2. Get out of the vehicle and close all doors.
    3. Wait at least 40 seconds.
    4. Measure the parasitic draw.

    Is the parasitic draw 52 mA or less?

    YES - Replace or repair the aftermarket electrical accessory that reduced the parasitic draw to 52 mA or less when disconnected.

    NO - Go to step 21.

21. Remove the No. 15(10 A) fuse in the under-hood fuse/relay box, then measure the parasitic draw.

    Is the parasitic draw 34.5 mA or less?

    YES - Go to step 22.

    NO - Go to step 24.

22. Connect immobilizer-keyless control unit 7P connector terminal No. 4 and body ground with a jumper wire.

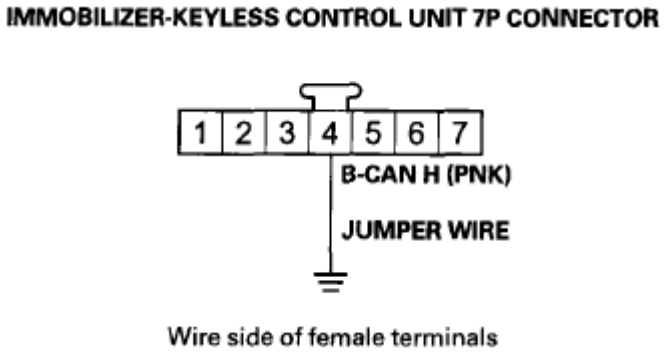


Fig. 8: Connecting Immobilizer-Keyless Control Unit 7P Connector Terminal No. 4 And Body Ground With Jumper Wire Connector End View
Courtesy of AMERICAN HONDA MOTOR CO., INC.

23. Install the No. 15(10 A) fuse to the under-hood fuse/relay box, then measure the parasitic draw.
    1. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode, and then back to LOCK (0), or press the engine start/stop button to select the OFF mode.
    2. Get out of the vehicle and close all doors.
    3. Wait at least 40 seconds.
    4. Measure the parasitic draw.

    Is the parasitic draw 52 mA or less?

    YES - Disconnect the control units from the B-CAN circuit one at a time, perform steps 1 - 4 above, then measure the parasitic draw. Do the input test for the control unit that reduced the parasitic draw to 52 mA or less when disconnected.

    NO - Disconnect the control units from the No. 15(10 A) fuse circuit one at a time, perform steps 1 - 4 above, then measure the parasitic draw. Replace the control unit that reduced the parasitic draw to 52 mA or less when disconnected.

24. Remove the No. A3-1 (IG1 MAIN) (50 A) fuse in the under-hood fuse/relay box, then measure the parasitic draw.
    1. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode, and then back to LOCK(0), or press the engine start/stop button to select the OFF mode.
    2. Get out of the vehicle and close all doors.
    3. Wait at least 40 seconds.
    4. Measure the parasitic draw.

    Is the parasitic draw 52 mA or less?

    YES - Go to step 25.

    NO - Remove the fuses from the fuse box one at a time, perform steps 1- 4 above then, measure the parasitic draw in order to isolate the circuit which contains the fault. If all circuit are OK, check the starter

circuits and do the starter performance test (see **STARTER PERFORMANCE TEST**).

25. Install the No. A3-1 (IG1 MAIN) (50 A) fuse in the under-hood fuse/relay box.
26. With keyless access system: Disconnect power control unit connector B (4P), then measure the parasitic draw.

    Is the parasitic draw 52 mA or less?

    YES - Replace the power control unit (see **RF UNIT REPLACEMENT**).

    NO - Repair a short to ground in the wire between the No. A3-1 (IG1 MAIN) (50 A) fuse in the under-hood fuse/relay box and ignition switch.

27. Without keyless access system: Disconnect the ignition switch 5P connector, then measure the parasitic draw.

    Is the parasitic draw 52 mA or less?

    YES - Replace the ignition switch (see **IGNITION SWITCH TEST**).

    NO - Repair a short to ground in the wire between the No. A3-1 (IG1 MAIN) (50 A) fuse in the under-hood fuse/relay box and power control unit.

SYMPTOM TROUBLESHOOTING

LOW OR DEAD BATTERY

NOTE: A battery might be discharged under these conditions:

- Driving a vehicle 6 miles (10 km) or less per day.
- Leaving a vehicle parked without removing the ignition key from the ignition switch.
- Leaving the vehicle idling high electrical loads such as headlight, seat heaters, wipers, rear window defogger, etc.
- Parking the vehicle with the hood unlatched prevents the security system from arming, which causes excessive parasitic draw.

1. Check the battery (see **BATTERY TEST**). Recharge or replace the battery (see **BATTERY REMOVAL AND INSTALLATION**) if necessary.
2. Start the engine, and check the charging system indicator.

   Does the charging system indicator go off with the engine running?

   YES - Go to step 4.

   NO - Go to step 3.

3. Check for PGM-FI DTCs.

   Are DTCs P0562, P1549, P16BB, and/or P16BC indicated?

   YES - Go to the indicated DTCs troubleshooting.

   NO - Do the drive belt inspection (see **DRIVE BELT INSPECTION**), drive belt auto-tensioner inspection (see **DRIVE BELT REPLACEMENT**), and alternator and regulator circuit troubleshooting (see **ALTERNATOR AND REGULATOR CIRCUIT TROUBLESHOOTING**).

4. Check the following items:
   - The hazard warning switch is off.
   - The front individual map light and interior light switches are off.
   - All of the doors, hood, and trunk are closed.
   - The brake pedal is not pressed.

   Are all of the check items OK?

   YES - Go to step 5.

   NO - Turn off the applicable switch, and check the parasitic draw (see **PARASITIC DRAW CHECK**).

5. Lock the doors with the remote transmitter LOCK button. Make sure the security alarm system arms by confirming that the security indicator is flashing slowly, about once every 3 seconds.

   Is the security alarm system armed?

   YES - Go to step 6.

   NO - Go to the **SYMPTOM TROUBLESHOOTING** for the security alarm system (see **SECURITY ALARM SYSTEM WILL NOT ARM**).

6. Check the following items with the ignition key removed from the ignition switch:
   - The brake lights are off when the brake pedal is not pressed.
   - The courtesy lights are off with all doors closed.
   - The trunk light is off with the trunk closed.
   - The radiator and condenser fans are not running.
   - The audio unit (including navigation) is off.
   - There is no operating sound from the VSA modulator-control unit.
   - The rear window defogger and the power mirror defoggers are off.

   Are all of the check items OK?

   YES - Check the parasitic draw (see **PARASITIC DRAW CHECK**).

NO - Troubleshoot and repair the affected circuits.

2012 ELECTRICAL

Body Electrical (Special Tools) - TL

SPECIAL TOOLS

Ref.No.	Tool Number	Description	Qty
①	07AAC-000A2A1 or 07AAC-000A1A0	Relay Puller	1
②	07AAJ-S3MA100	HID Bulb Test Light	1
③	07TAZ-001020A	Back Probe Adapter, 17 mm	2
④	07WAZ-001010A	MPCS (MCIC) Service Connector	1

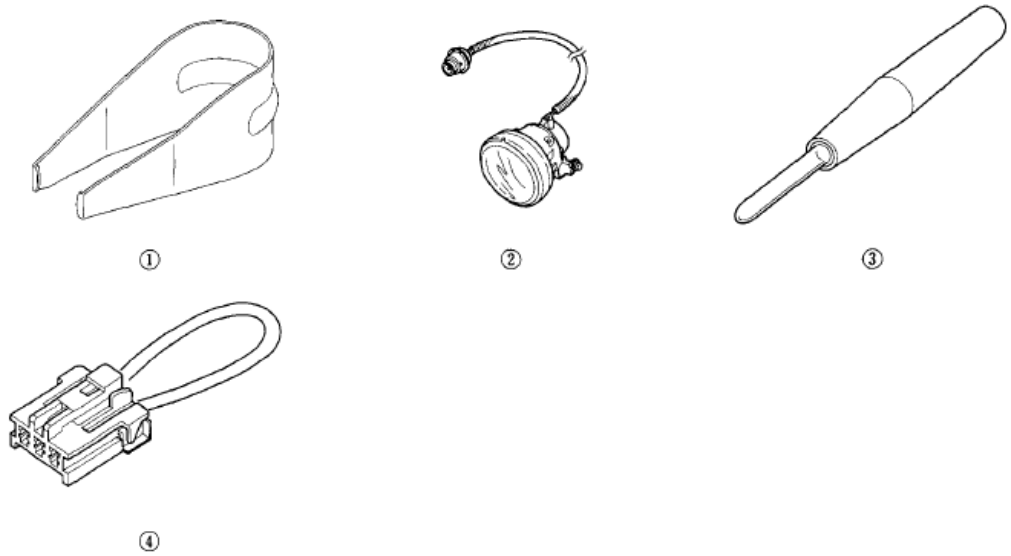


Fig. 1: Identifying Body Electrical Special Tools
Courtesy of AMERICAN HONDA MOTOR CO., INC.

GENERAL TROUBLESHOOTING INFORMATION

TIPS AND PRECAUTIONS

Special Tools Required

Back Probe Adapter, 17 mm 07TAZ-001020A

Before Troubleshooting

1. Check applicable fuses in the appropriate fuse/relay box.
2. Check the battery for damage, state of charge, and clean and tight connections.

NOTE:

- **Do not quick-charge a battery unless the battery ground cable has been disconnected, otherwise you will damage the alternator diodes.**
- **Do not attempt to crank the engine with the battery ground cable loosely**

connected, or you will severely damage the wiring.

Handling Connectors

- Make sure the connectors are clean and have no loose wire terminals.
- Make sure multiple cavity connectors are packed with dielectric grease (except waterproof connectors).
- All connectors have push-down release type locks (A).

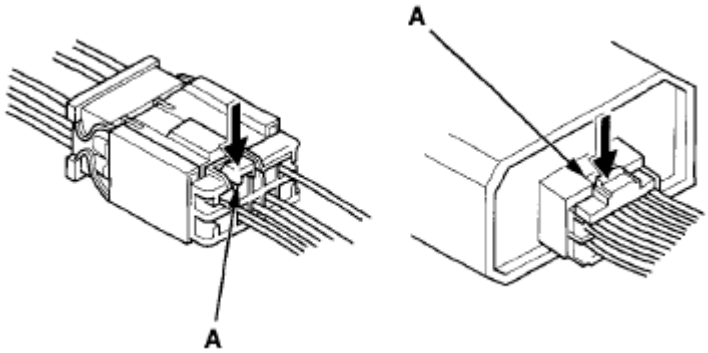


Fig. 2: Identifying Push-Down Release Type Locks Handling Connectors
Courtesy of AMERICAN HONDA MOTOR CO., INC.

- Some connectors have a clip on their side used to attach them to a mount bracket on the body or on another component. This clip has a pull type lock.
- Some mounted connectors cannot be disconnected unless you first release the lock and remove the connector from its mount bracket (A).

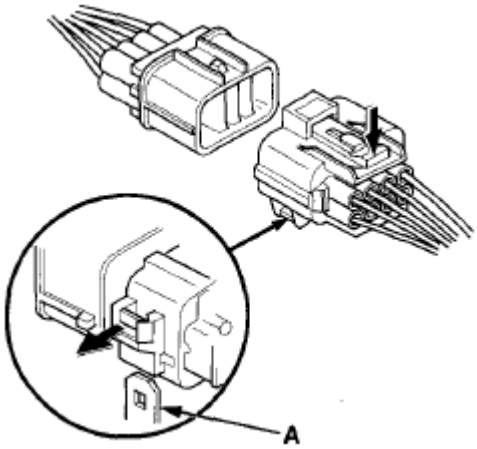


Fig. 3: Removing Connector From Its Mount Bracket
Courtesy of AMERICAN HONDA MOTOR CO., INC.

- Never try to disconnect connectors by pulling on their wires; pull on the connector halves instead.
- Always reinstall plastic covers.

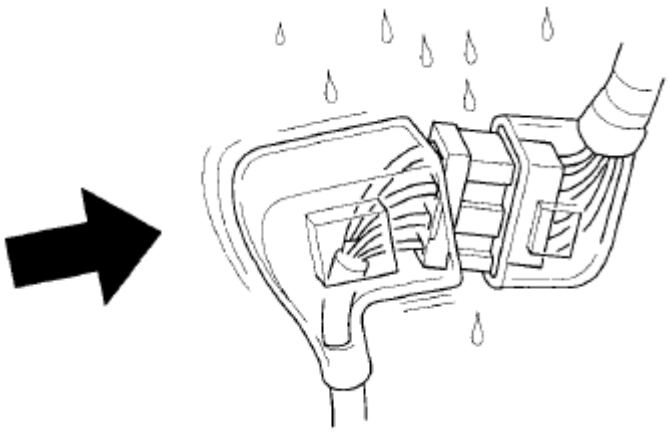


Fig. 4: Installing Plastic Covers
Courtesy of AMERICAN HONDA MOTOR CO., INC.

- Before connecting connectors, make sure the terminals (A) are in place and not bent.

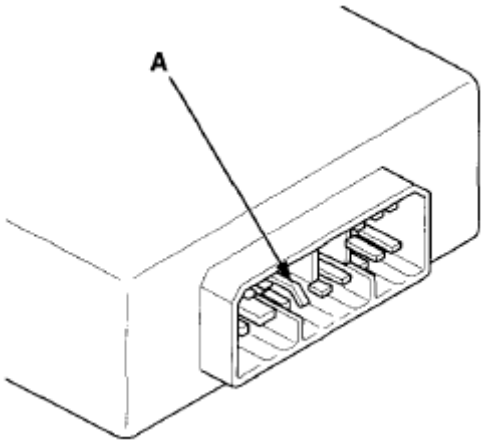


Fig. 5: Checking Terminals Are In Place And Not Bent
Courtesy of AMERICAN HONDA MOTOR CO., INC.

- Check for loose retainers (A) and rubber seals (B).

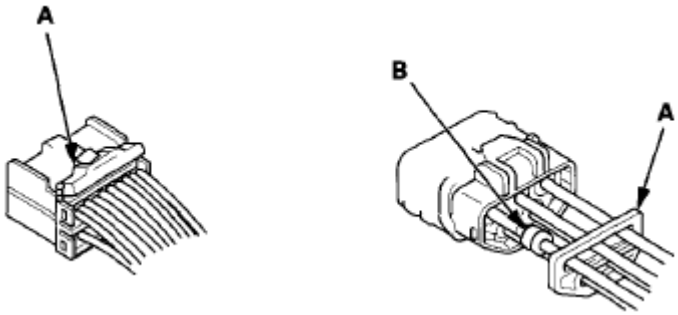


Fig. 6: Identifying Retainers And Rubber Seals
Courtesy of AMERICAN HONDA MOTOR CO., INC.

- The backs of some connectors are packed with dielectric grease. Add grease if necessary. If the grease is contaminated, replace it.

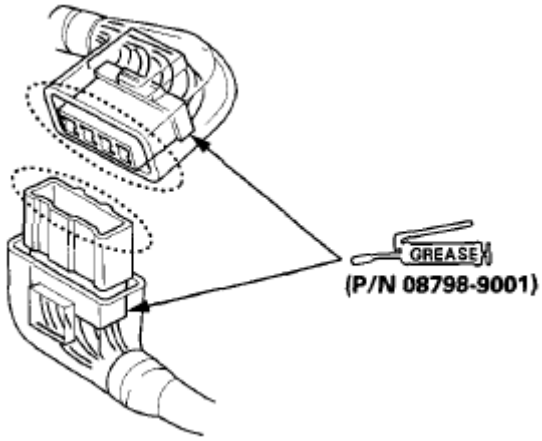


Fig. 7: Checking Grease Contamination At back Of Connectors
Courtesy of AMERICAN HONDA MOTOR CO., INC.

- Insert the connector all the way and make sure it is securely locked.
- Position wires so that the open end of the cover faces down.

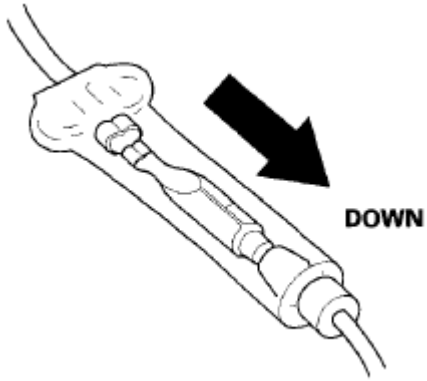


Fig. 8: Positioning Wires So That Open End Of Cover Faces Down
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Handling Wires and Harnesses

- Secure wires and wire harnesses to the frame with their respective wire ties at the designated locations.
- Remove clips carefully; do not damage their locks (A).

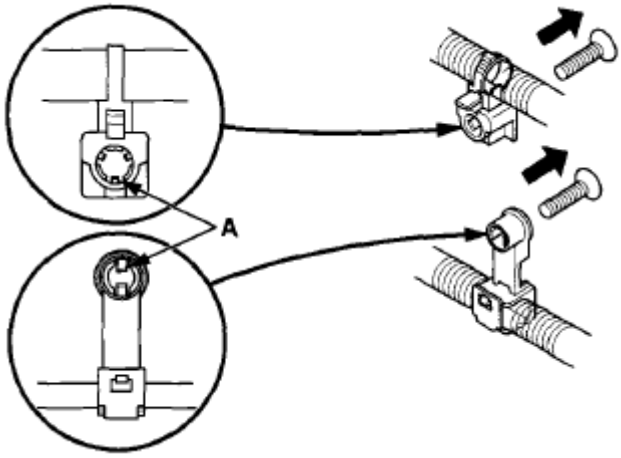


Fig. 9: Identifying Handling Wires And Harnesses Locks
Courtesy of AMERICAN HONDA MOTOR CO., INC.

- After installing harness clips, make sure the harness does not interfere with any moving parts.
- Keep wire harnesses away from exhaust components and other hot parts, from sharp edges of brackets and holes, and from exposed screws and bolts.
- Seat grommets in their grooves properly (A). Do not leave grommets distorted (B).

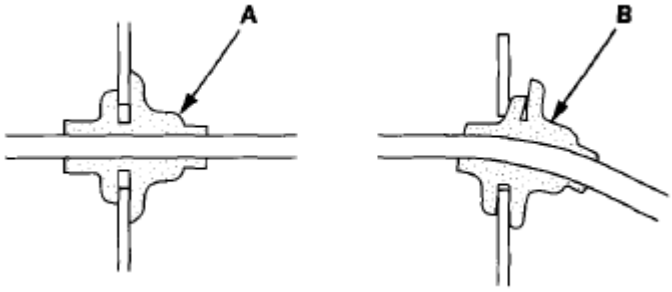


Fig. 10: Identifying Grooves And Grommets
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Testing and Repairs

- Do not use wires or harnesses with broken insulation. Replace them or repair them by wrapping the break with electrical tape or shrink tubing.
- Never attempt to modify, splice, or repair SRS wiring. If there is an open or damage to the SRS wiring or terminals, replace the harness.
- After installing parts, make sure that no wires are pinched under them.
- When using electrical test equipment, follow the manufacturer's instructions and those described in this information.
- If possible, insert the probe of the tester from the wire side (except waterproof connectors).

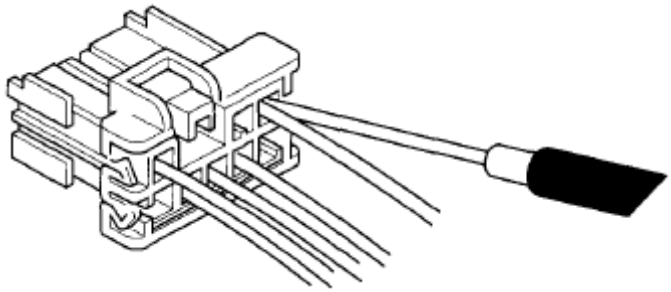


Fig. 11: Inserting Probe Of Tester From Wire Side
Courtesy of AMERICAN HONDA MOTOR CO., INC.

- Use back probe adapter, 17 mm 07TAZ-001020A.

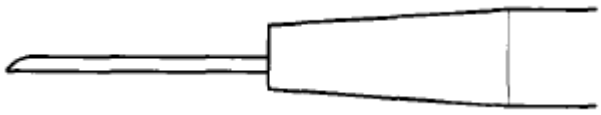


Fig. 12: Identifying Back Probe Adapter
Courtesy of AMERICAN HONDA MOTOR CO., INC.

- Refer to the instructions in the Honda Terminal Kit for identification and replacement of connector terminals.

FIVE-STEP TROUBLESHOOTING

1. Verify The Complaint:

   Turn on all the components in the problem circuit to verify the client complaint. Note the symptoms. Do not begin disassembly or testing until you have narrowed down the problem area.

2. Analyze The Schematic:

   Look up the schematic for the problem circuit. Determine how the circuit is supposed to work by tracing the current paths from the power feed through the circuit components to ground. If several circuits fail at the same time, the fuse or a ground is a likely cause.

   Based on the symptoms and your understanding of the circuit operation, identify one or more possible causes of the problem.

3. Isolate The Problem By Testing The Circuit:

   Make circuit tests to check the diagnosis you made in step 2. Keep in mind that a logical, simple procedure is the key to efficient troubleshooting. Test for the most likely cause of failure first. Try to make tests at points that are easily accessible.

4. Fix The Problem:

Once the specific problem is identified, make the repair. Be sure to use proper tools and safe procedures.

5. Make Sure The Circuit Works:

   Turn on all components in the repaired circuit in all modes to make sure you've fixed the entire problem. If the problem was a blown fuse, be sure to test all of the circuits on the fuse. Make sure no new problems turn up and the original problem does not recur.

WIRE COLOR CODES

The following abbreviations are used to identify wire colors in the circuit schematics:

WHT	White
YEL	Yellow
BLK	Black
BLU	Blue
GRN	Green
RED	Red
ORN	Orange
PNK	Pink
BRN	Brown
GRY	Gray
PUR	Purple
TAN	Tan
LT BLU	Light Blue
LT GRN	Light Green

The wire insulation has one color or one color with another color stripe. The second color is the stripe.

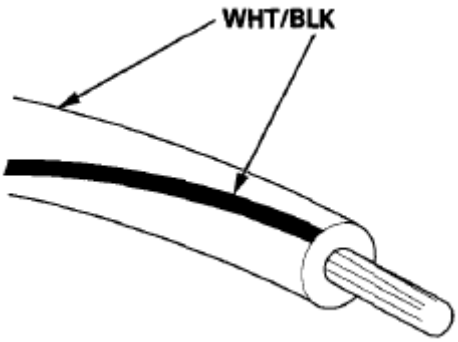


Fig. 13: Identifying Wire Color Codes
Courtesy of AMERICAN HONDA MOTOR CO., INC.

HOW TO CHECK FOR DTCS WITH THE HONDA DIAGNOSTIC SYSTEM (HDS)

NOTE: For specific operations, refer to the user's manual that came with the Honda Diagnostic System (HDS).

Make sure the HDS is loaded with the latest software.

1. Connect the HDS to the data link connector (DLC) (A) located under the driver's side of the dashboard.

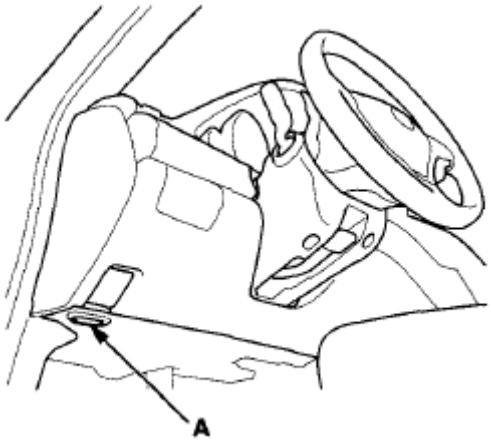


Fig. 14: Identifying Data Link Connector (DLC)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
3. Make sure the HDS communicates with the vehicle, if it does not, troubleshoot the DLC circuit (see **DLC CIRCUIT TROUBLESHOOTING**).
4. Enter the BODY ELECTRICAL then select the desired MODE MENU.
5. Check for DTCs with the HDS.

NOTE: If the DTCs do not pertain to the selected menu, select the All DTC Check icon to view all Body DTCs.

6. If any DTCs are indicated, note them, and go to the indicated DTCs troubleshooting.

2012 ELECTRICAL

Charging System - TL

COMPONENT LOCATION INDEX & DRIVE BELT ROUTING

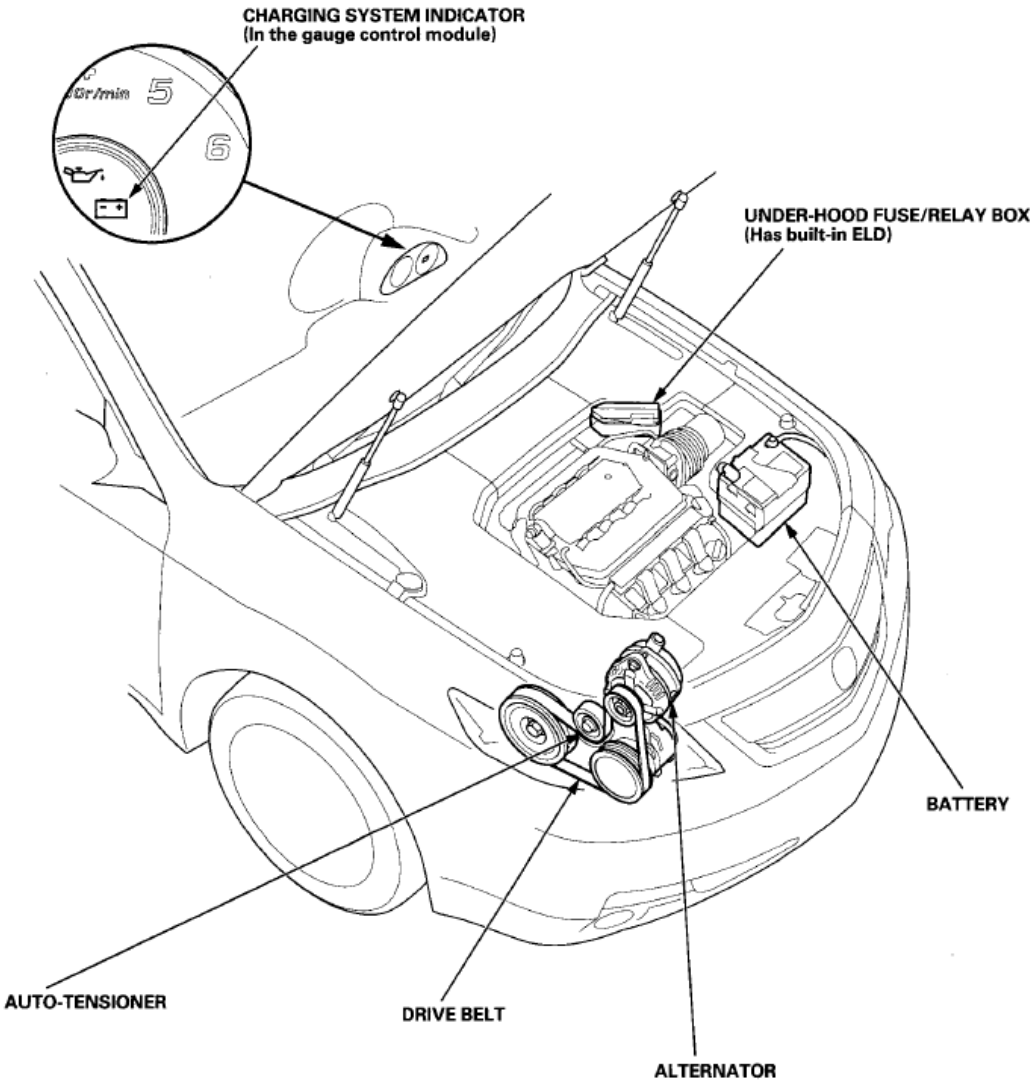


Fig. 1: Charging System Components Location & Drive Belt Routing
Courtesy of AMERICAN HONDA MOTOR CO., INC.

SYMPTOM TROUBLESHOOTING INDEX

Symptom	Diagnostic procedure	Also check for
Charging system indicator does not come on with the ignition switch in ON (II), or the vehicle ignition in the ON mode	Troubleshoot the **charging system indicator circuit**.	
Charging system indicator stays on	1. Check for a **broken drive belt**. 2. Troubleshoot the **charging system indicator circuit**. 3. Check the **drive belt** auto-tensioner. 4. Check for PGM-FI DTCs (see **GENERAL TROUBLESHOOTING INFORMATION**).	
Battery discharged	1. Check for a poor connection at the battery terminal. 2. Test the battery (see **BATTERY TEST**). 3. **Troubleshoot the alternator and regulator circuit**. 4. Check for a **broken drive belt**. 5. Check the **drive belt** auto-tensioner. 6. Check for excessive parasitic electrical current draw with the ignition switch in LOCK (0), or the vehicle ignition in the OFF mode, and the key removed. The multiplex integrated control units may take up to 10 minutes to turn off (sleep mode).	
Battery overcharged	1. Test the battery (see **BATTERY TEST**). 2. **Troubleshoot the alternator and regulator circuit**.	
Low or dead battery	Battery system troubleshooting (see **SYMPTOM TROUBLESHOOTING**).	

CIRCUIT DIAGRAM

WITHOUT KEYLESS ACCESS SYSTEM

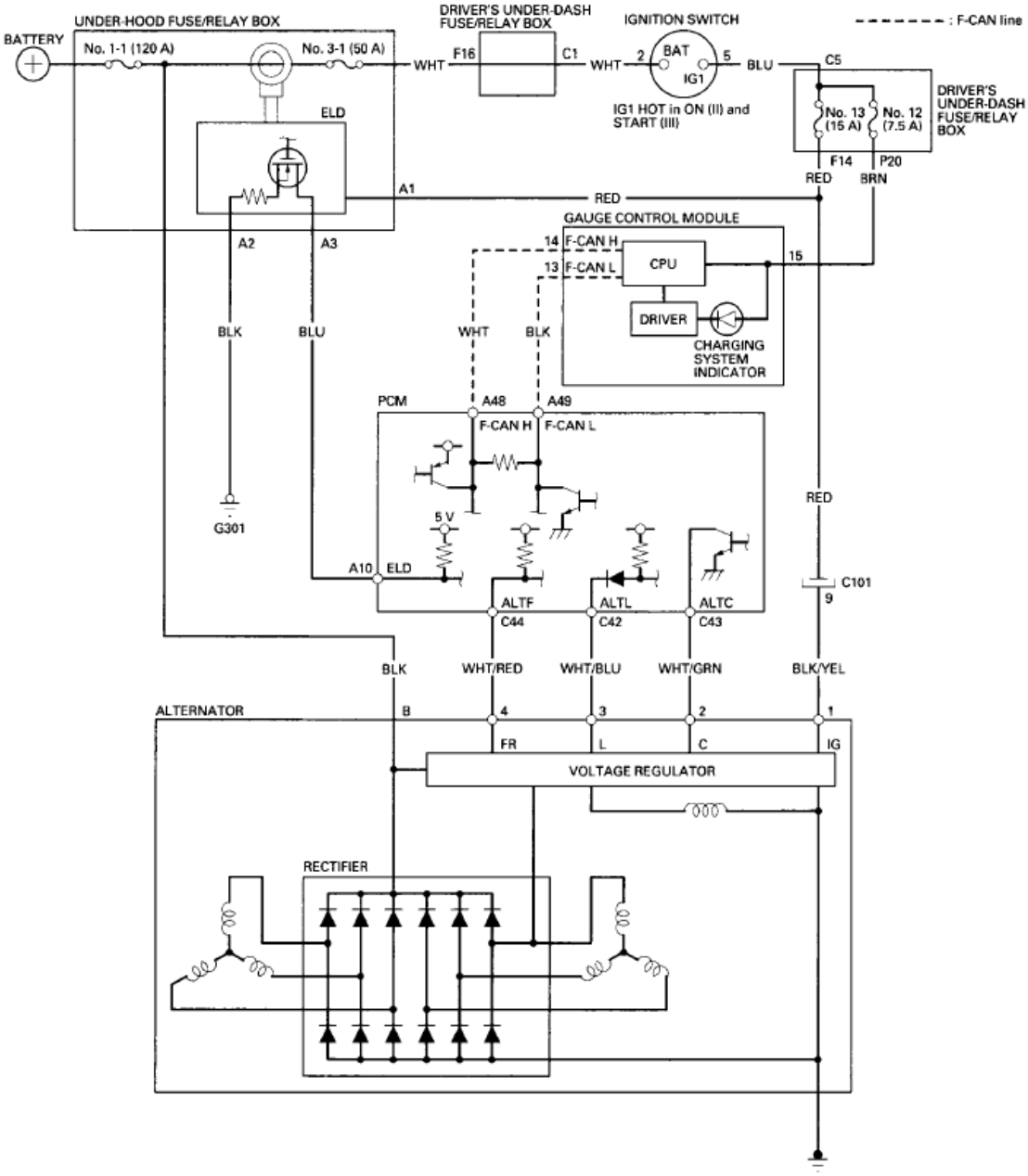


Fig. 2: Charging System - Circuit Diagram (Without Keyless Access System)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

WITH KEYLESS ACCESS SYSTEM

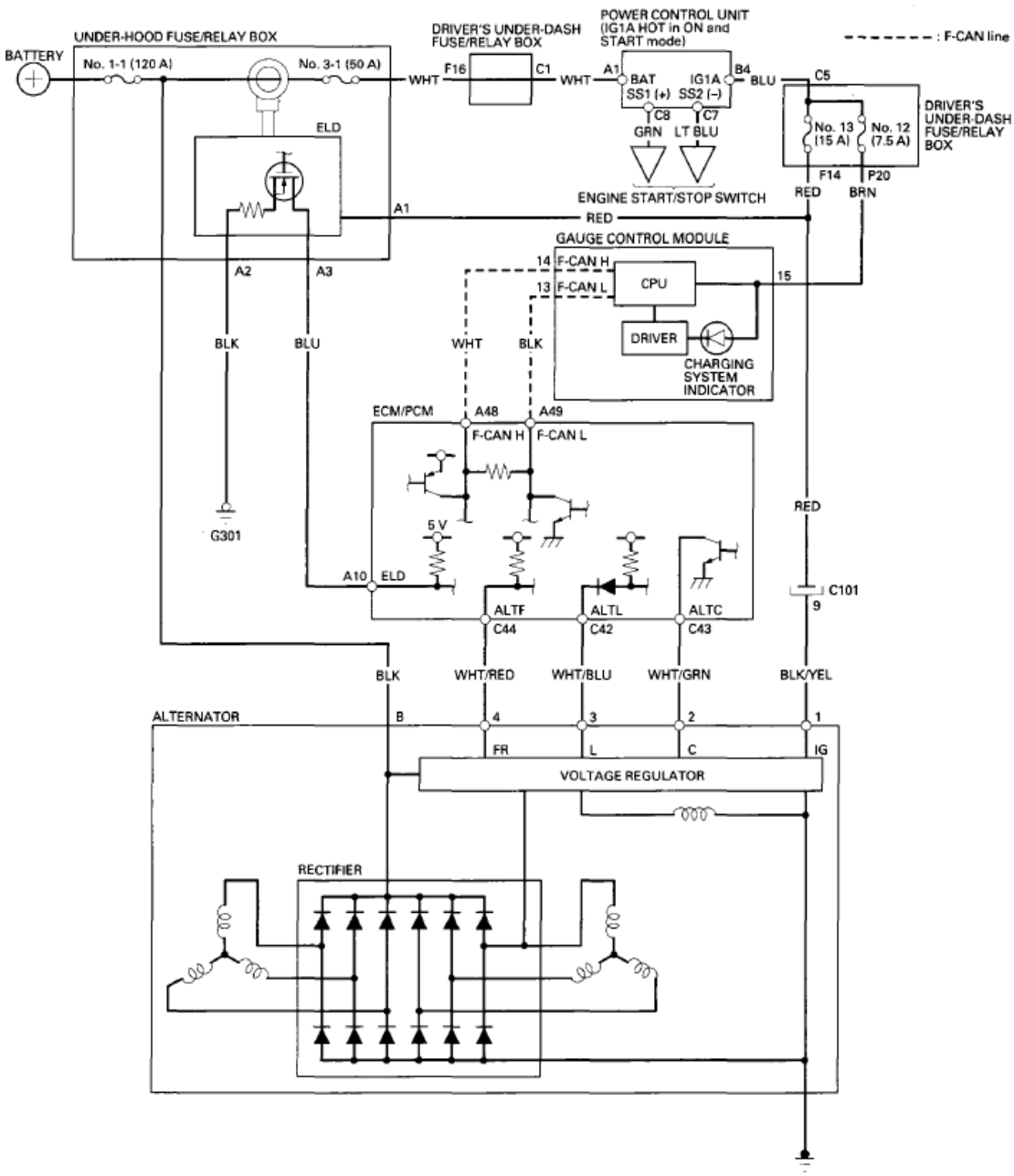


Fig. 3: Charging System - Circuit Diagram (With Keyless Access System)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

CHARGING SYSTEM INDICATOR CIRCUIT TROUBLESHOOTING

NOTE: Check for stored DTCs in the PGM-FI before troubleshooting the charging system indicator.

1. Remove the engine compartment covers (see **ENGINE COMPARTMENT COVER REPLACEMENT**).

2. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.

   Does the charging system indicator come on?

   YES - Go to step 3.

   NO - Go to step 15.

3. Start the engine. Hold the engine speed at 2, 000 RPM for 1 minute.

   Does the charging system indicator go off?

   YES - Charging system indicator circuit is OK. Go to the **alternator and regulator circuit troubleshooting**. •

   NO - Go to step 4.

4. Do the gauge control module self-diagnostic function procedure (see **SELF-DIAGNOSTIC FUNCTION**).

   Does the charging system indicator flash?

   YES - Go to step 5.

   NO - Replace the gauge control module (see **GAUGE CONTROL MODULE REPLACEMENT**). •

5. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
6. Disconnect the alternator 4P connector.
7. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.

   Does the charging system indicator go off?

   YES - **Replace the alternator** or repair the **alternator**. •

   NO - Go to step 8.

8. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
9. Connect the HDS to the DLC (see **HOW TO USE THE HDS (HONDA DIAGNOSTIC SYSTEM)**).
10. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
11. Make sure the HDS communicates with the vehicle and the ECM/PCM. If it does not communicate, troubleshoot the DLC circuit (see **DLC CIRCUIT TROUBLESHOOTING**).
12. Jump the SCS line with the HDS, then turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.

NOTE: This step must be done to protect the ECM/PCM from damage.

13. Disconnect ECM/PCM connector C (49P).
14. Check for continuity between ECM/PCM connector terminal C42 and body ground.

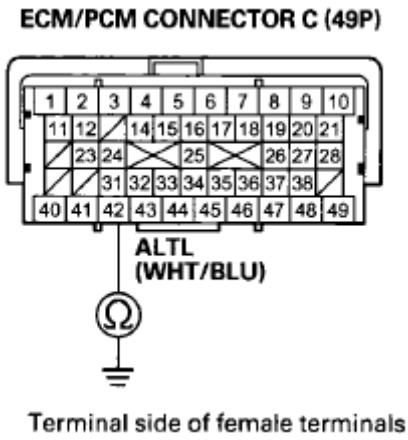


Fig. 4: Checking Continuity Between ECM/PCM Connector Terminal C42 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair a short to ground in the wire between alternator 4P connector terminal No. 3 and ECM/PCM connector terminal C42. •

NO - Update the ECM/PCM if it does not have the latest software (see **ECM/PCM UPDATE**), or substitute a known-good ECM/PCM (see **SUBSTITUTING THE ECM/PCM**), then recheck. If the symptom/indication goes away with a known-good ECM/PCM, replace the original ECM/PCM (see **ECM/PCM REPLACEMENT**). •

15. Do the gauge control module self-diagnostic function procedure (see **SELF-DIAGNOSTIC FUNCTION**).

Does the charging system indicator flash?

YES - Go to step 16.

NO - Replace the gauge control module (see **GAUGE CONTROL MODULE REPLACEMENT**). •

16. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
17. Disconnect the alternator 4P connector.
18. Connect alternator 4P connector terminal No. 3 and body ground with a jumper wire.

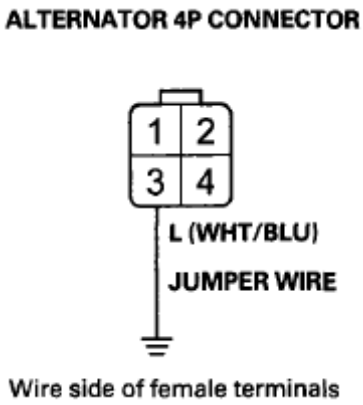


Fig. 5: Connecting Alternator 4P Connector Terminal No. 3 And Body Ground With Jumper Wire
Courtesy of AMERICAN HONDA MOTOR CO., INC.

19. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.

    Does the charging system indicator come on?

    YES - **Replace the alternator** or **repair the alternator**. •

    NO - Disconnect the jumper wire, then go to step 20.

20. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
21. Connect the HDS to the DLC (see **HOW TO USE THE HDS (HONDA DIAGNOSTIC SYSTEM)**).
22. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
23. Make sure the HDS communicates with the vehicle and the ECM/PCM. If it does not communicate, troubleshoot the DLC circuit (see **DLC CIRCUIT TROUBLESHOOTING**).
24. Jump the SCS line with the HDS, then turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.

    NOTE: This step must be done to protect the ECM/PCM from damage.

25. Disconnect ECM/PCM connector C (49P).
26. Check for continuity between ECM/PCM connector terminal C42 and alternator 4P connector terminal No. 3.

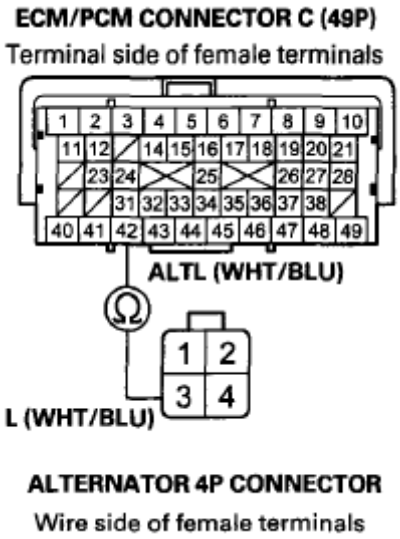


Fig. 6: Checking Continuity Between ECM/PCM Connector Terminal C42 And Alternator 4P Connector Terminal No. 3
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Update the ECM/PCM if it does not have the latest software (see **ECM/PCM UPDATE**), or substitute a known-good ECM/PCM (see **SUBSTITUTING THE ECM/PCM**), then recheck. If the symptom/indication goes away with a known-good ECM/PCM, replace the original ECM/PCM (see **ECM/PCM REPLACEMENT**). •

NO - Repair an open in the wire between alternator 4P connector terminal No. 3 and ECM/PCM connector terminal C42. •

27. Install the engine compartment covers (see **ENGINE COMPARTMENT COVER REPLACEMENT**).

ALTERNATOR AND REGULATOR CIRCUIT TROUBLESHOOTING

Special Tools Required

Alternator, Regulator, Battery, and Starter Tester OTC3131*

* : Available through the Acura Tool and Equipment Program, 888-424-6857.

1. Remove the engine compartment covers (see **ENGINE COMPARTMENT COVER REPLACEMENT**).
2. Make sure the battery connections are good and the battery is sufficiently charged.
3. Connect the alternator, regulator, battery, and starter tester (OTC3131) to the battery as shown.

NOTE: The probe is used for alternator testing.

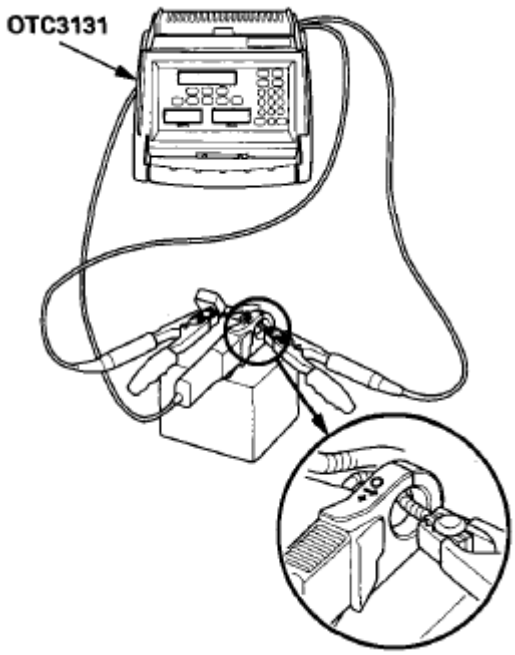


Fig. 7: View Of Alternator And Regulator Circuit
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Start the engine. Hold the engine speed at 3, 000 RPM with no load (in neutral (M/T model) or P or N (A/T model)) until the radiator fan comes on, then let it idle.
5. Do the CHARGING SYSTEM TEST.

   Does the display indicate the voltage is within 13.3-15.3 V and the amperage is 87.5 A or more?

   YES - Go to step 6.

   NO - If the voltage is less than 13.3 V, go to alternator **control circuit troubleshooting**. If the voltage is over 15.3 V and amperage is less than 87.5 A, replace the **alternator** or repair the **alternator**. •

6. Check the diode condition on the display.

   Does the display indicate GOOD?

   YES - The diode is OK. Troubleshooting is complete. •

   NO - If the display indicates BAD, replace the **alternator** or repair the **alternator**, then retest. •

   NOTE: If the display indicates N/A, the diode pattern could not be diagnosed. Repeat the test again. If N/A appears repeatedly, replace the alternator.

7. Install the engine compartment covers (see **ENGINE COMPARTMENT COVER REPLACEMENT**).

ALTERNATOR CONTROL CIRCUIT TROUBLESHOOTING

NOTE: Do this troubleshooting if, in step 5 of the alternator and regulator circuit troubleshooting, the battery voltage is less than 13.3 V.

1. Remove the engine compartment covers (see **ENGINE COMPARTMENT COVER REPLACEMENT**).
2. Connect the HDS to the DLC (see **HOW TO USE THE HDS (HONDA DIAGNOSTIC SYSTEM)**).
3. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
4. Make sure the HDS communicates with the vehicle and the ECM/PCM. If it does not communicate, troubleshoot the DLC circuit (see **DLC CIRCUIT TROUBLESHOOTING**).
5. Check for DTCs (see **GENERAL TROUBLESHOOTING INFORMATION**). If a DTC is present, diagnose and repair the cause before continuing with this test.
6. Disconnect the alternator 4P connector.
7. Start the engine, and turn on the headlights to high beam.
8. Measure the voltage between alternator 4P connector terminal No. 2 and the positive terminal of the battery.

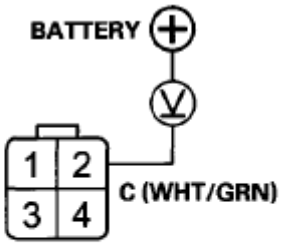


Fig. 8: Measuring Voltage Between Alternator 4P Connector Terminal No. 2 And Positive Terminal Of Battery
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there less than 1 V?

YES - Go to step 12.

NO - Go to step 9.

9. Jump the SCS line with the HDS, then turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.

NOTE: This step must be done to protect the ECM/PCM from damage.

10. Disconnect ECM/PCM connector C (49P).
11. Check for continuity between ECM/PCM connector terminal C43 and body ground.

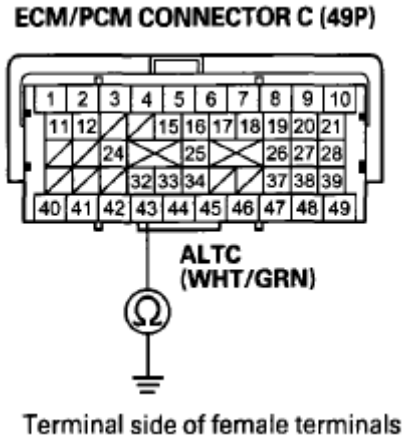


Fig. 9: Checking Continuity Between ECM/PCM Connector Terminal C43 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair a short to ground in the wire between alternator 4P connector terminal No. 2 and ECM/PCM connector terminal C43. •

NO - Update the ECM/PCM if it does not have the latest software (see **ECM/PCM UPDATE**), or substitute a known-good ECM/PCM (see **SUBSTITUTING THE ECM/PCM**), then recheck. If the symptom/indication goes away with a known-good ECM/PCM, replace the original ECM/PCM (see **ECM/PCM REPLACEMENT**). •

12. Jump the SCS line with the HDS, then turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.

NOTE: This step must be done to protect the ECM/PCM from damage.

13. Disconnect ECM/PCM connector C (49P).
14. Check for loose terminals and connectors, then check for continuity between ECM/PCM connector terminal C43 and alternator 4P connector terminal No. 2.

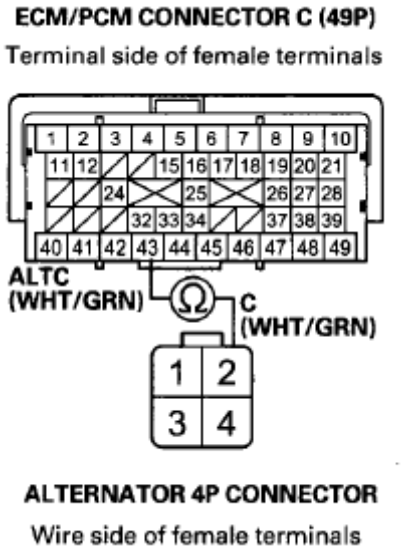


Fig. 10: Checking Continuity Between ECM/PCM Connector Terminal C43 And Alternator 4P Connector Terminal No. 2
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - **Replace the alternator**, or repair the **alternator**. •

NO - Repair an open in the wire between alternator 4P connector terminal No. 2 and ECM/PCM connector terminal C43. •

15. Install the engine compartment covers (see **ENGINE COMPARTMENT COVER REPLACEMENT**).

DRIVE BELT INSPECTION

1. Remove the engine compartment covers (see **ENGINE COMPARTMENT COVER REPLACEMENT**).
2. Inspect the belt for cracks or damage. If the **belt** is cracked or damaged, replace it.
3. Check that the position of the auto-tensioner indicator (A) is within the standard range (B) as shown. If it is out of the standard range, replace the **drive belt**.

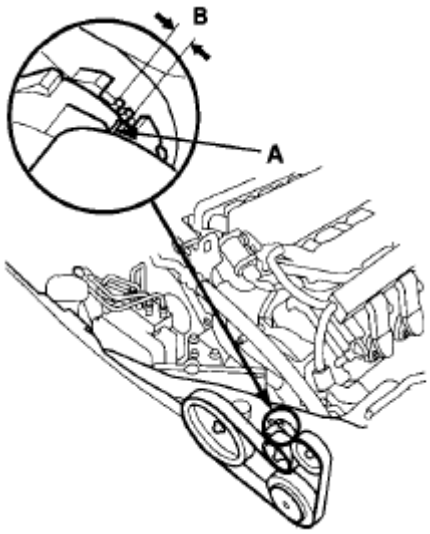


Fig. 11: Identifying Auto-Tensioner Indicator And Standard Range
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Install the engine compartment covers (see **ENGINE COMPARTMENT COVER REPLACEMENT**).

DRIVE BELT REPLACEMENT

Special Tools Required

Belt Tension Release Tool Snap-on TK9317, commercially available

* : Available through the Acura Tool and Equipment Program, 888-424-6857.

1. Remove the engine compartment covers (see **ENGINE COMPARTMENT COVER REPLACEMENT**).
2. Move the auto-tensioner (A) using the belt tension release tool (TK9317) in the direction of the arrow to relieve tension from the drive belt, then remove the drive belt.

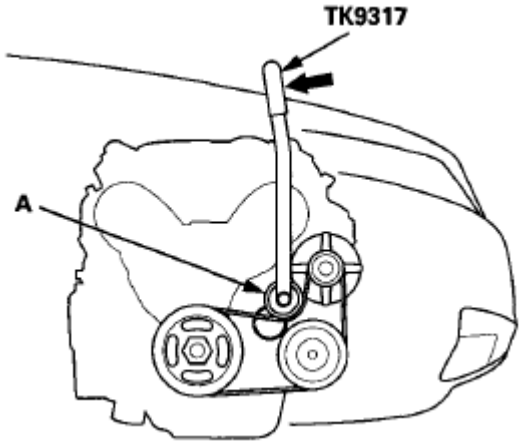


Fig. 12: Moving Auto-Tensioner Using Belt Tension Release Tool
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Install the new drive belt in the reverse order of removal.
4. Install the engine compartment covers (see **ENGINE COMPARTMENT COVER REPLACEMENT**).

DRIVE BELT AUTO-TENSIONER INSPECTION

Special Tools Required

Belt Tension Release Tool Snap-on TK9317, commercially available

* : Available through the Acura Tool and Equipment Program, 888-424-6857.

1. Remove the engine compartment covers (see **ENGINE COMPARTMENT COVER REPLACEMENT**).
2. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode, and make sure to turn the A/C switch OFF, then turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
3. Check the position of the auto-tensioner indicator (A). Start the engine, then check the position again with the engine idling. If the position of the indicator moves or fluctuates a lot, replace the **auto-tensioner**.

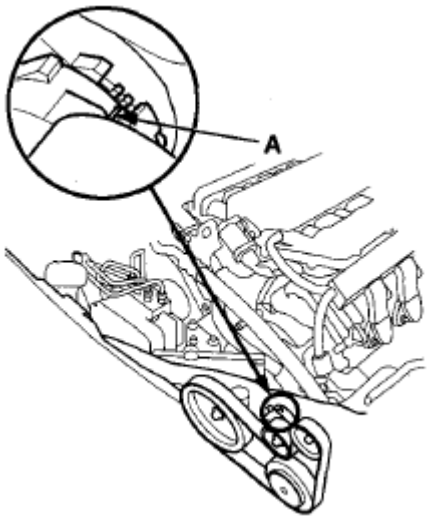


Fig. 13: Identifying Auto-Tensioner Indicator
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Check for abnormal noise from the tensioner pulley. If you hear any abnormal noise, replace the **tensioner pulley**.
5. Remove the **drive belt**.
6. Move the auto-tensioner within its limit using the belt tension release tool (TK9317) in the direction shown. Check that the auto-tensioner moves smoothly and without any abnormal noise. If the auto-

tensioner does not move smoothly, or you hear abnormal noises, replace the **auto-tensioner**.

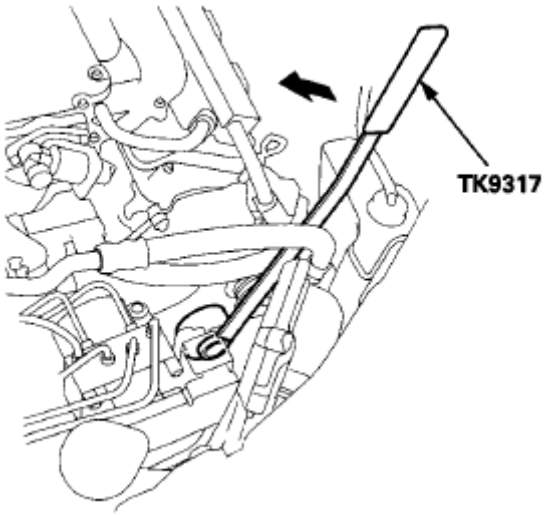


Fig. 14: Moving Auto-Tensioner With In Limits
Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Remove the **auto-tensioner**.
8. Clamp the auto-tensioner (A) by using a 10 mm bolt (B), an 8 mm bolt (C), and a vise (D) as shown. Do not clamp the auto-tensioner itself.

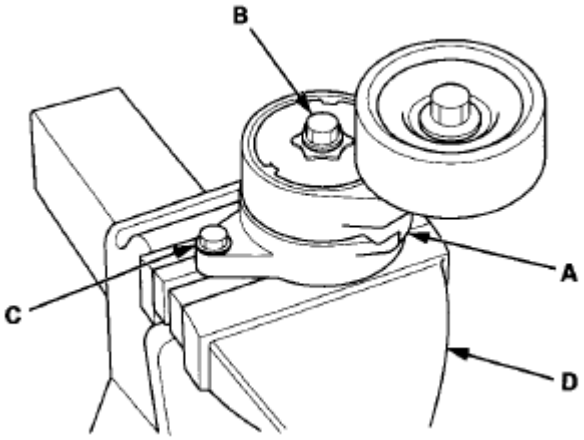


Fig. 15: Identifying Auto-Tensioner, Bolts And Vise
Courtesy of AMERICAN HONDA MOTOR CO., INC.

9. Attach a torque wrench (A) to the pulley bolt. Measure the torque when the tensioner is turned counterclockwise. If the torque is less than the specified value, replace the **auto-tensioner**.

Auto-Tensioner Spring Torque 32.8 N.m (3.34 kgf.m, 24.2 lbf.ft)

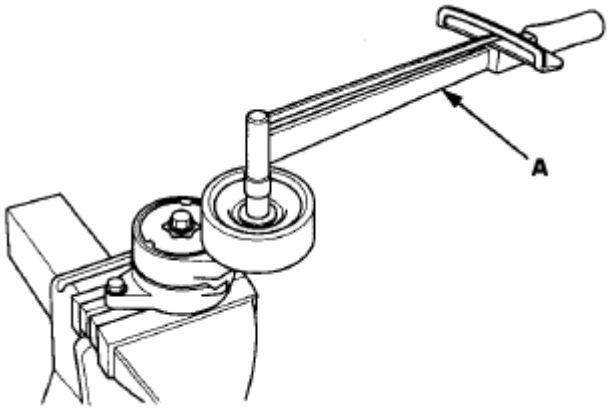


Fig. 16: Identifying Torque Wrench On Pulley Bolt
Courtesy of AMERICAN HONDA MOTOR CO., INC.

10. Install the auto-tensioner in the reverse order of removal.
11. Install the engine compartment covers (see **ENGINE COMPARTMENT COVER REPLACEMENT**).

DRIVE BELT AUTO-TENSIONER REPLACEMENT

1. Remove the **drive belt**.
2. Remove the front splash shield (see **FRONT SPLASH SHIELD REPLACEMENT**).
3. Remove the auto-tensioner.

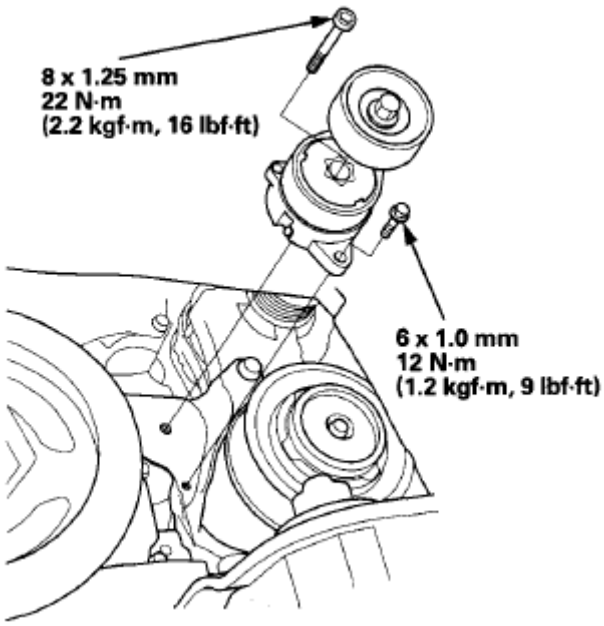


Fig. 17: Identifying Drive Belt Auto-Tensioner And Related Components With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Install the auto-tensioner in the reverse order of removal.

TENSIONER PULLEY REPLACEMENT

1. Remove the **auto-tensioner**.
2. Remove the pulley bolt (A) (left-hand threads), and remove the tensioner pulley (B).

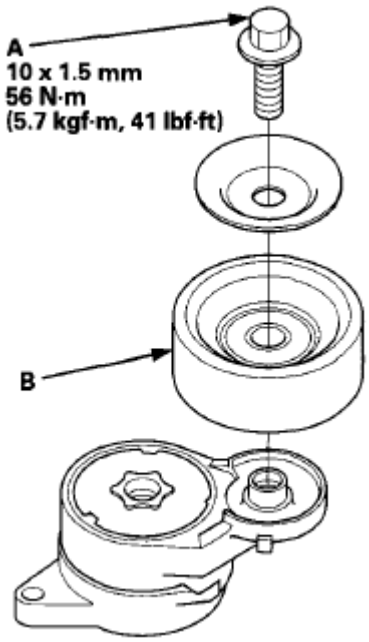


Fig. 18: Identifying Tensioner Pulley With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Install the tensioner pulley in the reverse order of removal.

ALTERNATOR REMOVAL AND INSTALLATION

REMOVAL

1. Remove the engine compartment covers (see **ENGINE COMPARTMENT COVER REPLACEMENT**).
2. Do the battery terminal disconnection procedure (see **BATTERY TERMINAL DISCONNECTION AND RECONNECTION**).
3. Raise the vehicle on the lift.
4. Remove the front splash shield (see **FRONT SPLASH SHIELD REPLACEMENT**).
5. Disconnect the A/C condenser fan motor connector (A), and remove the harness clamp (B).

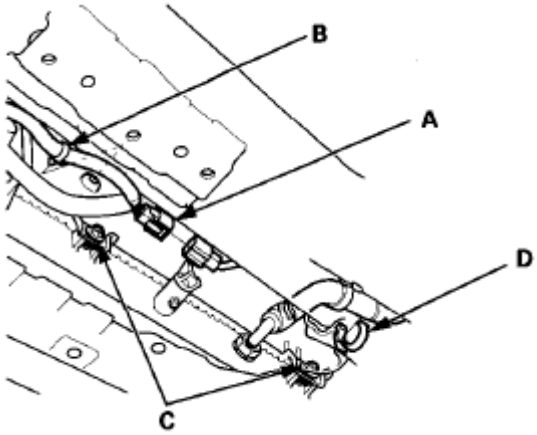


Fig. 19: Identifying Alternator And Related Components
Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Loosen the A/C condenser fan shroud mounting bolts (C).
7. A/T model: Remove the hose clamp (D).
8. Lower the vehicle on the lift.
9. Remove the coolant reservoir (A), then remove the A/C condenser fan shroud assembly (B).

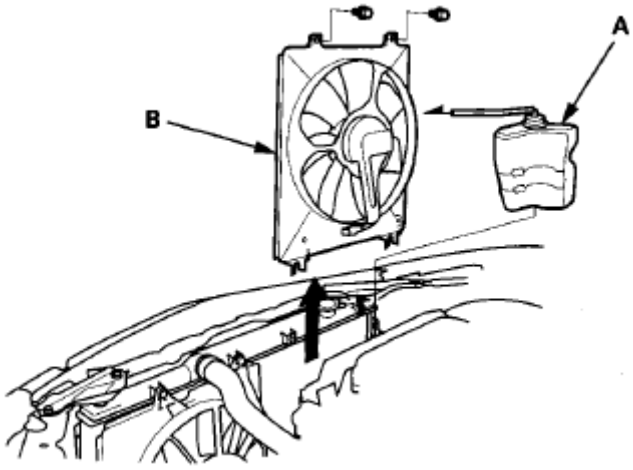


Fig. 20: Identifying Coolant Reservoir And Shroud Assembly
Courtesy of AMERICAN HONDA MOTOR CO., INC.

10. Remove the **auto-tensioner**.
11. Disconnect the alternator connector (A) and the positive alternator cable (B) from the alternator.

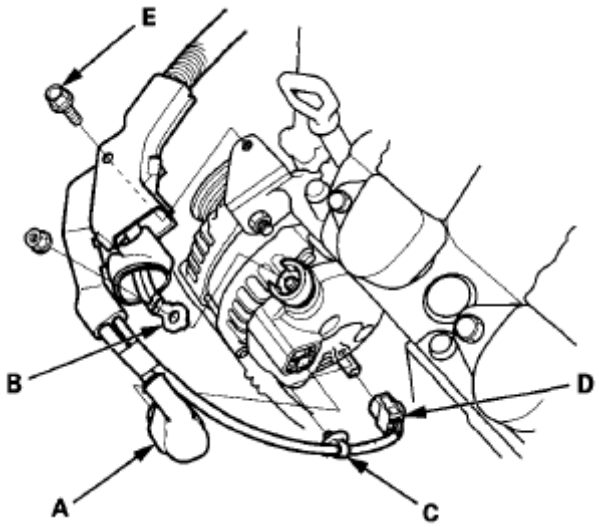


Fig. 21: Identifying Alternator Connector, Cable, Harness Clamp, Clutch Connector And Bolts
Courtesy of AMERICAN HONDA MOTOR CO., INC.

12. Remove the harness clamp (C) from the alternator and disconnect the A/C compressor clutch connector (D) from the A/C compressor.
13. Remove the bolt (E) securing the harness holder.
14. Remove the mounting bolt (A) and the alternator bracket mounting bolt (B), then remove the alternator.

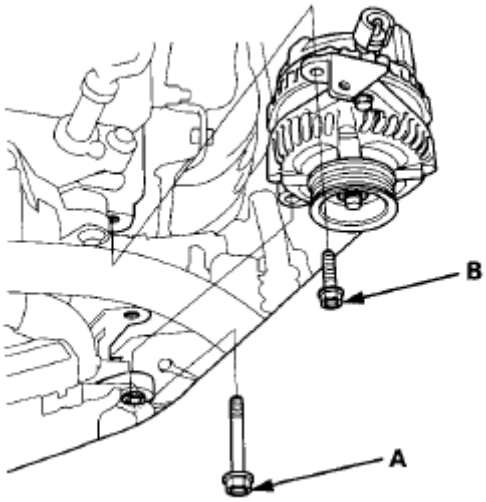


Fig. 22: Identifying Mounting Bolt And Alternator Bracket Mounting Bolt
Courtesy of AMERICAN HONDA MOTOR CO., INC.

INSTALLATION

1. Install the alternator, then tighten the mounting bolt (A) and the alternator bracket mounting bolt (B).

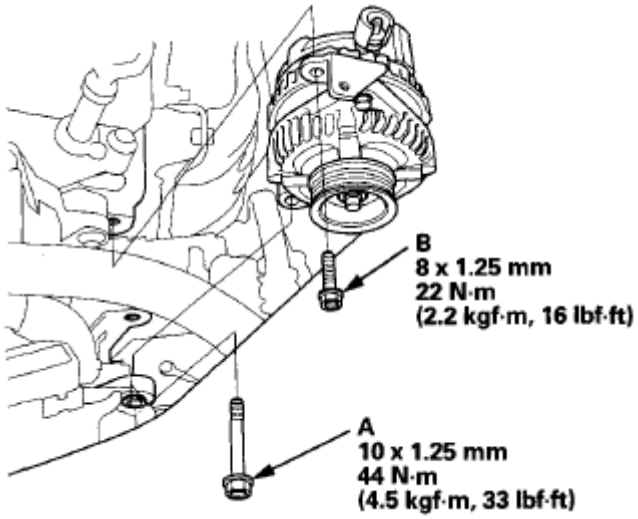


Fig. 23: Identifying Mounting Bolts On Alternator With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Install the bolt (A) securing the harness holder.

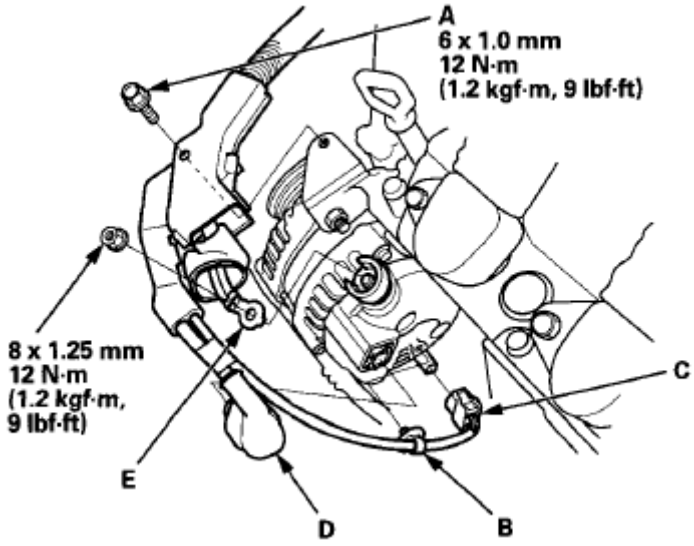


Fig. 24: Identifying Alternator And Related Components With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Install the harness clamp (B) to the alternator and connect the A/C compressor clutch connector (C) to the A/C compressor.
4. Connect the alternator connecter (D) and the positive alternator cable (E) to the alternator. Make sure the crimped side of the ring terminal faces away from the alternator when you connect it.
5. Install the **auto-tensioner**.
6. Install the A/C condenser fan shroud assembly (A), then install the coolant reservoir (B).

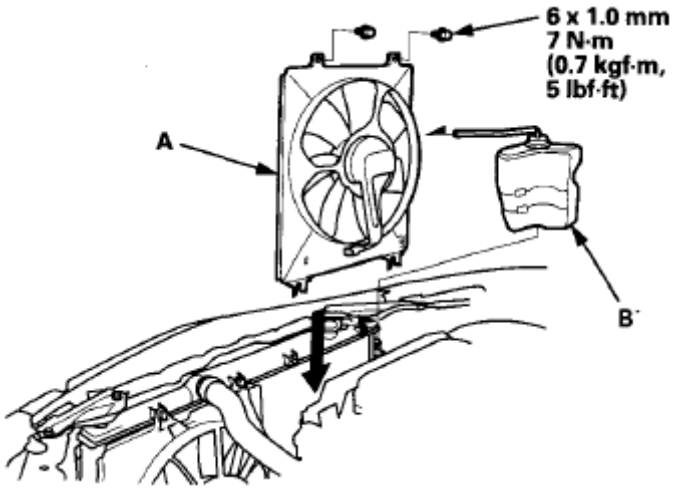


Fig. 25: Identifying Fan Shroud Assembly And Coolant Reservoir With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Raise the vehicle on the lift.
8. A/T model: Install the hose clamp (A).

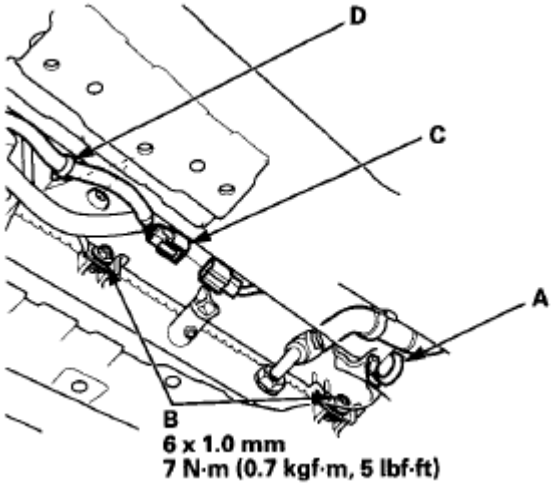


Fig. 26: Identifying Hose Clamp, Mounting Bolts And Motor Connector With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

9. Tighten the A/C condenser fan shroud mounting bolts (B).
10. Connect the A/C condenser fan motor connector (C), and install the harness clamp (D).
11. Install the front splash shield (see **FRONT SPLASH SHIELD REPLACEMENT**).
12. Lower the vehicle on the lift.
13. Do the battery terminal reconnection procedure (see **BATTERY TERMINAL DISCONNECTION AND RECONNECTION**).
14. Install the engine compartment covers (see **ENGINE COMPARTMENT COVER REPLACEMENT**).

ALTERNATOR OVERHAUL

EXPLODED VIEW

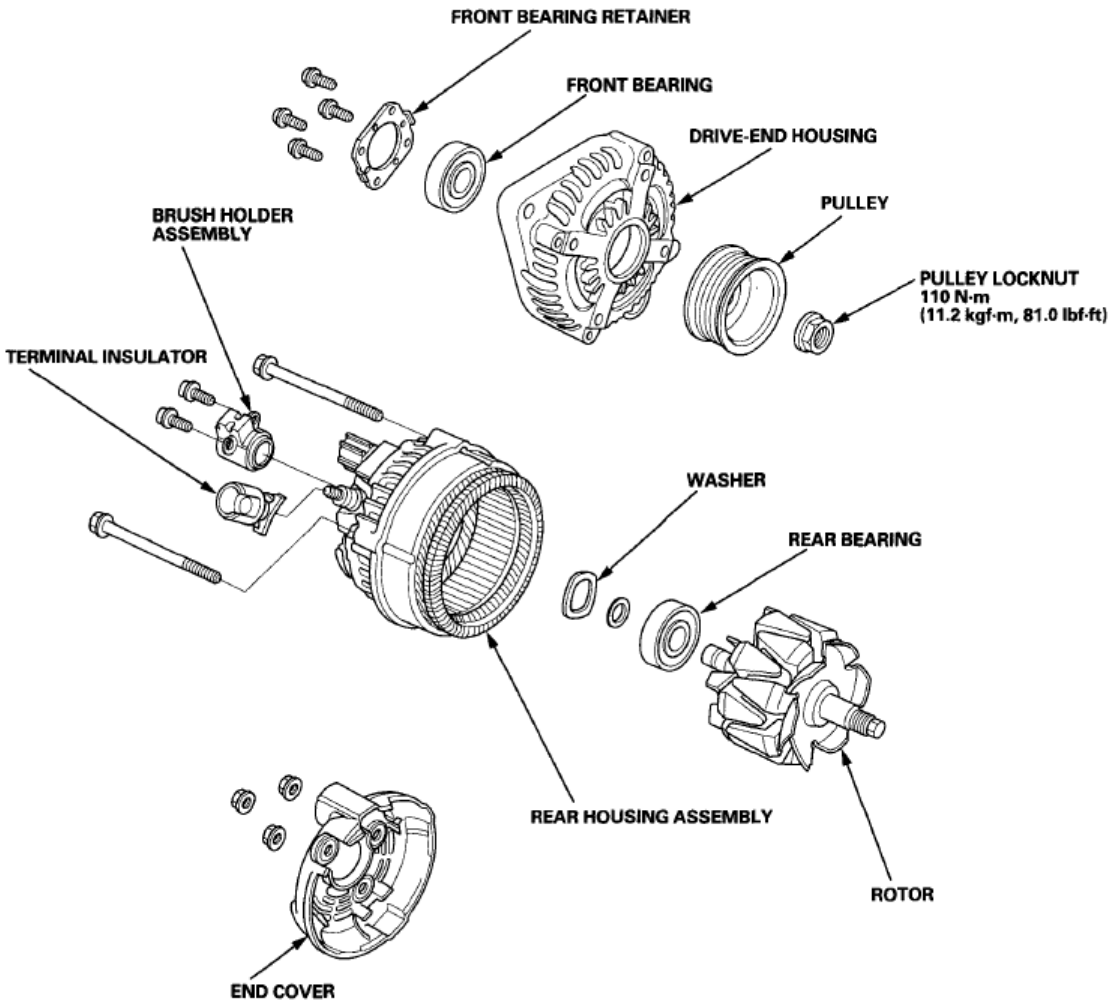


Fig. 27: Exploded View Of Alternator With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Special Tools Required

- Driver Handle, 15 x 135L 07749-0010000
- Bearing Driver Attachment, 42 x 47 mm 07746-0010300

NOTE: Refer to the Exploded View if needed during this procedure.

1. Test the **alternator and regulator** before you remove them.
2. Remove the **alternator**.

Alternator Disassembly

3. If the front bearing needs replacing, remove the pulley locknut with a 10 mm wrench (A) and a 22 mm wrench (B). If necessary, use an impact wrench.

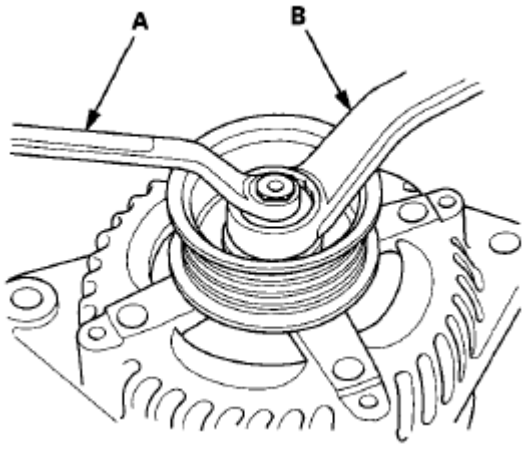


Fig. 28: Identifying Wrenches And Locknut Of Alternator
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Remove the three flange nuts.

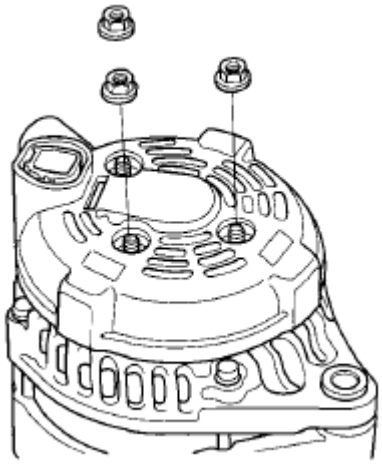


Fig. 29: Identifying Flange Nuts
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Remove the end cover (A) and the terminal insulator (B).

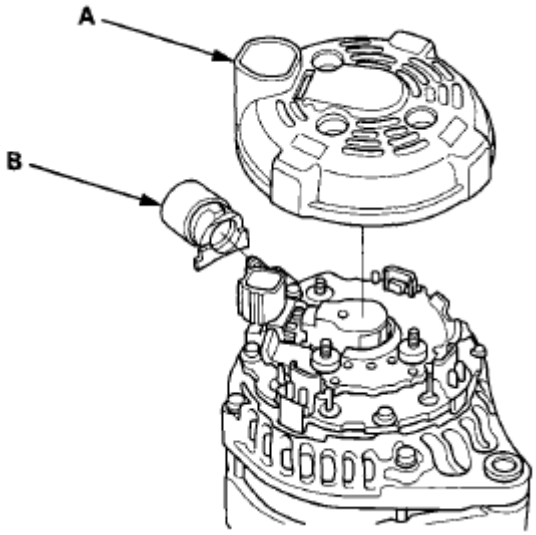


Fig. 30: Identifying End Cover And Terminal Insulator
Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Remove the brush holder assembly (A).

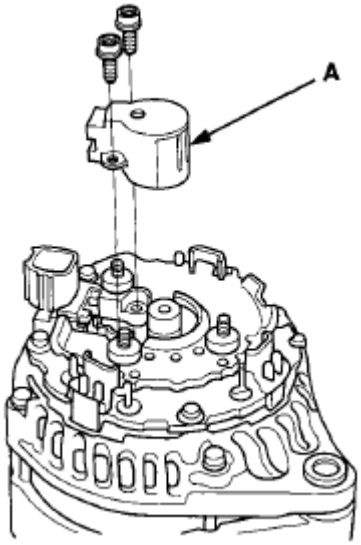


Fig. 31: Identifying Brush Holder Assembly
Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Remove the four through bolts, then remove the rear housing assembly (A) and the washer (B).

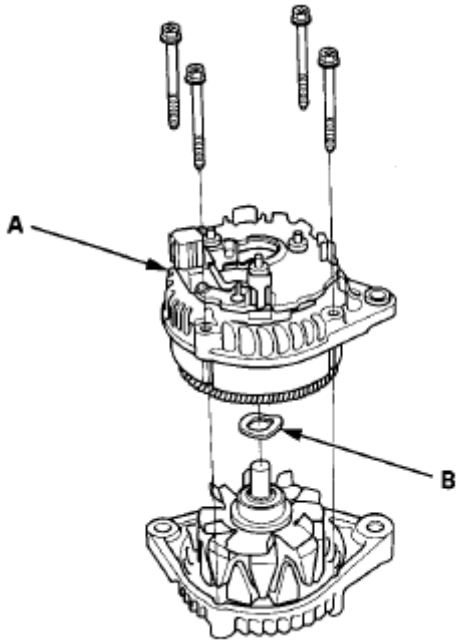


Fig. 32: Identifying Rear Housing Assembly And Washer
Courtesy of AMERICAN HONDA MOTOR CO., INC.

8. If you are not replacing the front bearing, go to step 13. Remove the rotor from the drive-end housing.

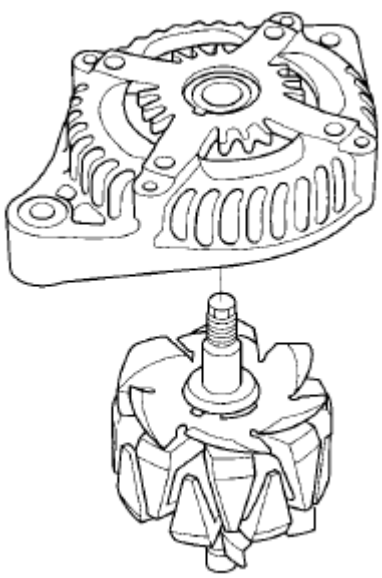


Fig. 33: Identifying Drive End Housing
Courtesy of AMERICAN HONDA MOTOR CO., INC.

9. Inspect the rotor shaft for scoring, and inspect the bearing journal surface in the drive-end housing for seizure marks:
    - If the rotor is damaged, replace the rotor assembly.

- If the rotor is OK, go to step 10.

10. Remove the front bearing retainer.

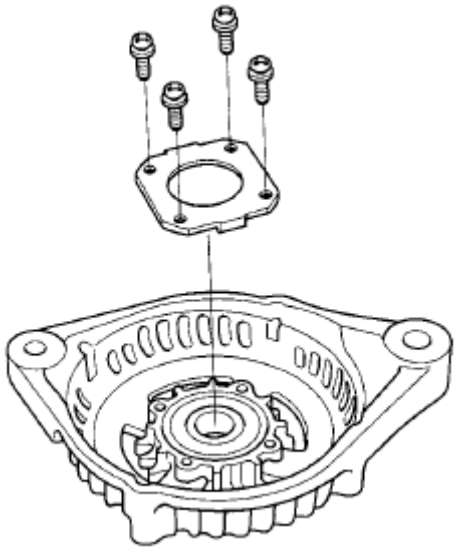


Fig. 34: Identifying Front Bearing Retainer
Courtesy of AMERICAN HONDA MOTOR CO., INC.

11. Drive out the front bearing with a brass drift and a hammer.

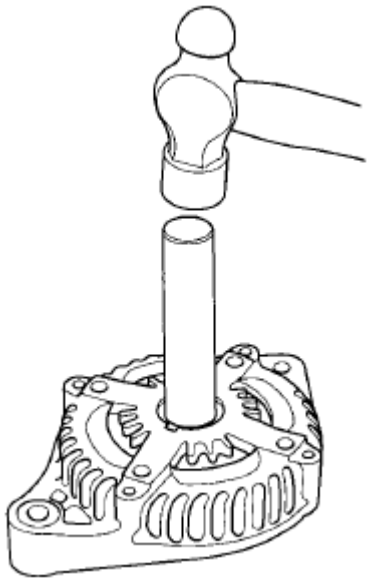


Fig. 35: Driving Out Front Bearing With Brass Drift And Hammer
Courtesy of AMERICAN HONDA MOTOR CO., INC.

12. Install a new front bearing in the drive-end housing with a hammer, the driver handle, 15 x 135L, and the bearing driver attachment, 42 x 47 mm.

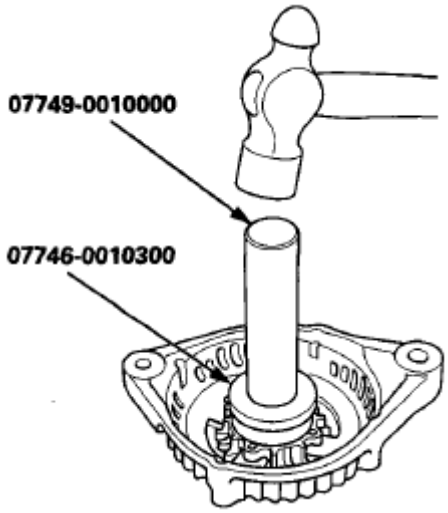


Fig. 36: Installing Front Bearing In Drive End Housing Using Hammer
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Alternator Brush Inspection

13. Measure the length of both brushes (A) with a vernier caliper (B):
    - If either brush is shorter than the service limit, replace the brush holder assembly.
    - If the brush length is OK, go to step 14.

Alternator Brush Length

Standard (New): 10.5 mm (0.413 in)

Service Limit: 1.5 mm (0.059 in)

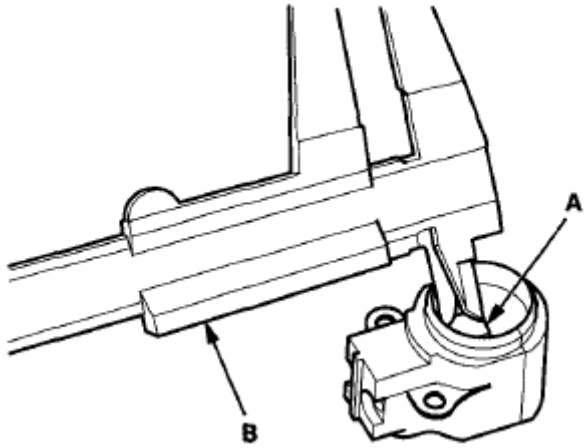


Fig. 37: Identifying Brushes In Alternator
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Rotor Slip Ring Test

14. Check for continuity between the slip rings (A):
    - If there is continuity, go to step 15.
    - If there is no continuity, replace the rotor assembly.

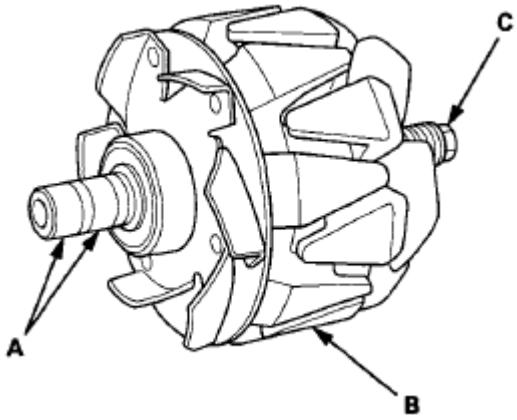


Fig. 38: Identifying Slip Rings, Rotor And Rotor Shaft
Courtesy of AMERICAN HONDA MOTOR CO., INC.

15. Check for continuity between each slip ring and the rotor (B) and the rotor shaft (C):
    - If there is no continuity, go to step 16.
    - If there is continuity, replace the rotor assembly.

Alternator Reassembly

16. If you removed the pulley, put the rotor in the drive-end housing, then torque its locknut to 110 N.m (11.2 kgf.m, 81 lbf.ft).
17. Remove any grease or any oil from the slip rings.
18. Put the rear housing assembly and the drive-end housing/rotor assembly together, tighten the four through bolts.
19. Push the brushes (A) in, then insert a pin or drill bit(B) (about 1.6 mm (1/16 in) diameter) to hold them there.

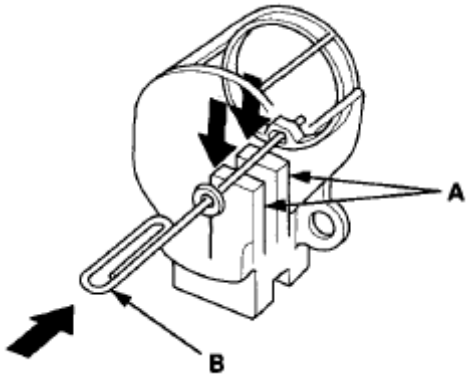


Fig. 39: Pushing Brushes Inwards
Courtesy of AMERICAN HONDA MOTOR CO., INC.

20. Install the brush holder assembly, and pull out the pin or drill bit.

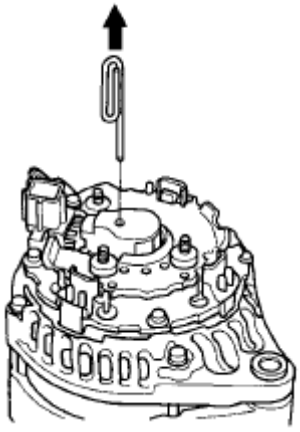


Fig. 40: Pulling Out Pin Or Drill Bit
Courtesy of AMERICAN HONDA MOTOR CO., INC.

21. Install the end cover.
22. After assembling the alternator, turn the pulley by hand to make sure the rotor turns smoothly and without noise.
23. Install the **alternator**.

2012 ELECTRICAL

Connectors And Harnesses - TL

CONNECTOR INDEX

Identification numbers have been assigned to in-line connectors, junction connectors, and terminals. The number is preceded by the letter "C" for connectors, "G" for ground terminals, or "J" for non-ground terminals.

Harness	Location			
	Engine Compartment	Dashboard	Others (Floor, Door, Trunk, and Roof)	Notes
A/C wire harness		C205, C301, C302, C403, C501		Connector to Harness (see **CONNECTOR TO FUSE/RELAY BOX INDEX**)
Audio wire harness		C406, C407, C501 through C510 G501, G502		Connector to Harness (see **CONNECTOR TO FUSE/RELAY BOX INDEX**)
Battery ground cable	(-), G1			Connector to Harness: • **M/T**. • **A/T** (see **CONNECTOR TO FUSE/RELAY BOX INDEX**)
Cable reel subharness			T9	Connector to Harness (see **CONNECTOR TO FUSE/RELAY BOX INDEX**)
Console subharness			C405	Connector to Harness (see **CONNECTOR TO FUSE/RELAY BOX INDEX**)
Dashboard wire harness (view of driver's side)		C304, C305, C306, C401, C402, C751, C752 G401, G402		Connector to Harness (see **CONNECTOR TO FUSE/RELAY BOX INDEX**)
Dashboard wire harness (view of middle to passenger's side)		C206, C207, C208, C403, C406 through C411, C761 G403, G405	C404, C405 G404	Connector to Harness (see **CONNECTOR TO FUSE/RELAY BOX INDEX**)
Driver's door			C753,	Connector to Harness (see **CONNECTOR TO FUSE/RELAY**

subharness			C754, C756	**BOX INDEX**)
Driver's door wire harness		C751, C752	C753, C754, C755	Connector to Harness (see **CONNECTOR TO FUSE/RELAY BOX INDEX**)
Driver's seat wire harness (with seat ventilation)			C701	Connector to Harness (see **CONNECTOR TO FUSE/RELAY BOX INDEX**)
Driver's seat wire harness (without seat ventilation)			C701	Connector to Harness (see **CONNECTOR TO FUSE/RELAY BOX INDEX**)
Engine ground cable	T1, G2			Connector to Harness: • **M/T**. • **A/T** (see **CONNECTOR TO FUSE/RELAY BOX INDEX**)
Engine wire harness (transmission section)				Connector to Harness: • **M/T** (see **CONNECTOR TO FUSE/RELAY BOX INDEX**) • **A/T** (see **CONNECTOR TO FUSE/RELAY BOX INDEX**)
Engine wire harness (engine section)	C101 through C107 T4, T102 G101			Connector to Harness: • **M/T** (see **CONNECTOR TO FUSE/RELAY BOX INDEX**) • **A/T** (see **CONNECTOR TO FUSE/RELAY BOX INDEX**)
EPS subharness	C202, C203 T6, T7, T8			Connector to Harness (see **CONNECTOR TO FUSE/RELAY BOX INDEX**)
Front passenger's door wire harness		C761	C762	Connector to Harness (see **CONNECTOR TO FUSE/RELAY BOX INDEX**)
Front passenger's seat wire harness			C702	Connector to Harness (see **CONNECTOR TO FUSE/RELAY BOX INDEX**)
Knock sensor	C104			Connector to Harness: • **M/T** (see **CONNECTOR TO FUSE/RELAY BOX**

subharness				**INDEX**) • **A/T** (see **CONNECTOR TO FUSE/RELAY BOX INDEX**)
Left engine compartment wire harness (dashboard branch)		C301 through C307 G302		Connector to Harness (see **CONNECTOR TO FUSE/RELAY BOX INDEX**)
Left engine compartment wire harness (engine compartment branch)	C101, C102, C201 G301			Connector to Harness (see **CONNECTOR TO FUSE/RELAY BOX INDEX**)
Left rear door wire harness			C771	Connector to Harness (see **CONNECTOR TO FUSE/RELAY BOX INDEX**)
Left side wire harness (without SH-AWD)		C303, C401	C601, C603, C771 G601, G602, G603	Connector to Harness (see **CONNECTOR TO FUSE/RELAY BOX INDEX**)
Left side wire harness (with SH-AWD)		C303, C401	C601, C602, C603, C771 G601, G602, G603	Connector to Harness (see **CONNECTOR TO FUSE/RELAY BOX INDEX**)
Moonroof subharness			C451	Connector to Harness (see **CONNECTOR TO FUSE/RELAY BOX INDEX**)
Rear differential subharness (with SH-AWD)			C652, C653 T10	Connector to Harness (see **CONNECTOR TO FUSE/RELAY BOX INDEX**)
Rear window defogger ground wire			G801	Connector to Harness: **Without SH-AWD** (see **CONNECTOR TO FUSE/RELAY BOX INDEX**) **With SH-AWD** (see **CONNECTOR TO FUSE/RELAY BOX INDEX**)
Right engine compartment wire harness	C201, C202, C203 G202	C204 through C208 G203, G204		Connector to Harness (see **CONNECTOR TO FUSE/RELAY BOX INDEX**)
Right rear door wire harness			C781	Connector to Harness (see **CONNECTOR TO FUSE/RELAY BOX INDEX**)
Right side wire harness (without		C410, C411,	C601, C781,	Connector to Harness (see **CONNECTOR TO FUSE/RELAY**

SH-AWD)		C509, C510	G651, G653	**BOX INDEX**)
Right side wire harness (with SH-AWD)		C410, C411, C509, C510	C601, C602, C651, C652, C653, C781 G651, G652, G653	Connector to Harness (see **CONNECTOR TO FUSE/RELAY BOX INDEX**)
Roof wire harness			C402, C451	Connector to Harness (see **CONNECTOR TO FUSE/RELAY BOX INDEX**)
SRS floor wire harness			C404, C701, C702 G701, G702	Connector to Harness (see **CONNECTOR TO FUSE/RELAY BOX INDEX**)
Starter cable	(+), T3, T101			Connector to Harness: • **M/T**. • **A/T** (see **CONNECTOR TO FUSE/RELAY BOX INDEX**)
Transmission ground cable	T2, G3			Connector to Harness: • **Table 1. M/T**. • **A/T** (see **CONNECTOR TO FUSE/RELAY BOX INDEX**)

CONNECTOR TO HARNESS INDEX

BATTERY GROUND CABLE (M/T)

Connector or Terminal	Ref	Cavities	Location	Connects to	Notes
(-)	3		Left side of engine compartment	Battery negative terminal	
G1	4		Left side of engine compartment	Body ground, via battery ground cable	

ENGINE GROUND CABLE (M/T)

Connector or Terminal	Ref	Cavities	Location	Connects to	Notes
T1	8		Right side of engine compartment	Engine	
G2	9		Right side of engine compartment	Body ground, via engine ground cable	

TRANSMISSION GROUND CABLE (M/T)

Connector or Terminal	Ref	Cavities	Location	Connects to	Notes
T2	7		Left side of engine compartment	Transmission housing	
G3	6		Left side of engine compartment	Body ground, via transmission ground cable	

STARTER CABLE (M/T)

Connector or Terminal	Ref	Cavities	Location	Connects to	Notes
T3	5		Left side of engine compartment	Starter motor	
T101	1		Left side of engine compartment	Under-hood fuse/relay box	
(+)	2		Left side of engine compartment	Battery positive terminal	

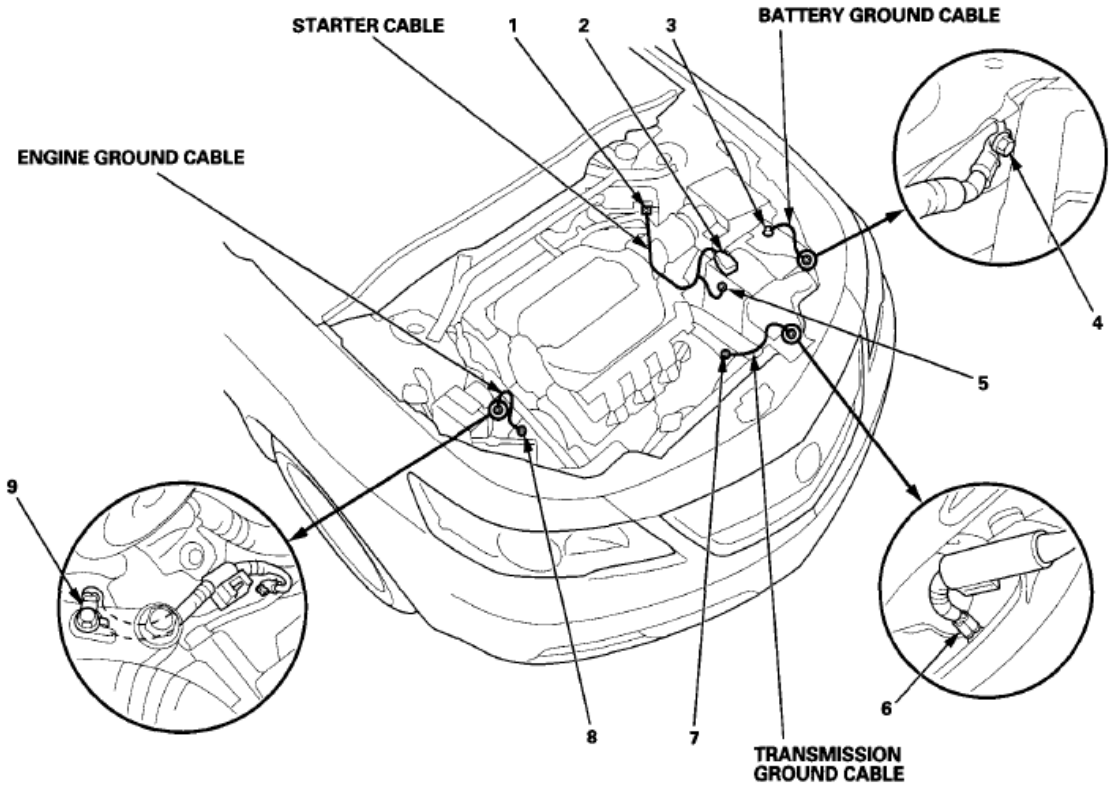


Fig. 1: Identifying Connector And Harness Location (M/T)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

BATTERY GROUND CABLE (A/T)

Connector or Terminal	Ref	Cavities	Location	Connects to	Notes
(-)	4		Left side of engine compartment	Battery negative terminal	
G1	5		Left side of engine	Body ground, via battery ground	

			compartment	cable	

ENGINE GROUND CABLE (A/T)

Connector or Terminal	Ref	Cavities	Location	Connects to	Notes
T1	8		Right side of engine compartment	Engine	
G2	9		Right side of engine compartment	Body ground, via engine ground cable	

TRANSMISSION GROUND CABLE (A/T)

Connector or Terminal	Ref	Cavities	Location	Connects to	Notes
T2	7		Left side of engine compartment	Transmission housing	
G3	6		Left side of engine compartment	Body ground, via transmission ground cable	

STARTER CABLE (A/T

Connector or Terminal	Ref	Cavities	Location	Connects to	Notes
T3	1		Left side of engine compartment	Starter motor	
T101	2		Left side of engine compartment	Under-hood fuse/relay box	
(+)	3		Left side of engine compartment	Battery positive terminal	

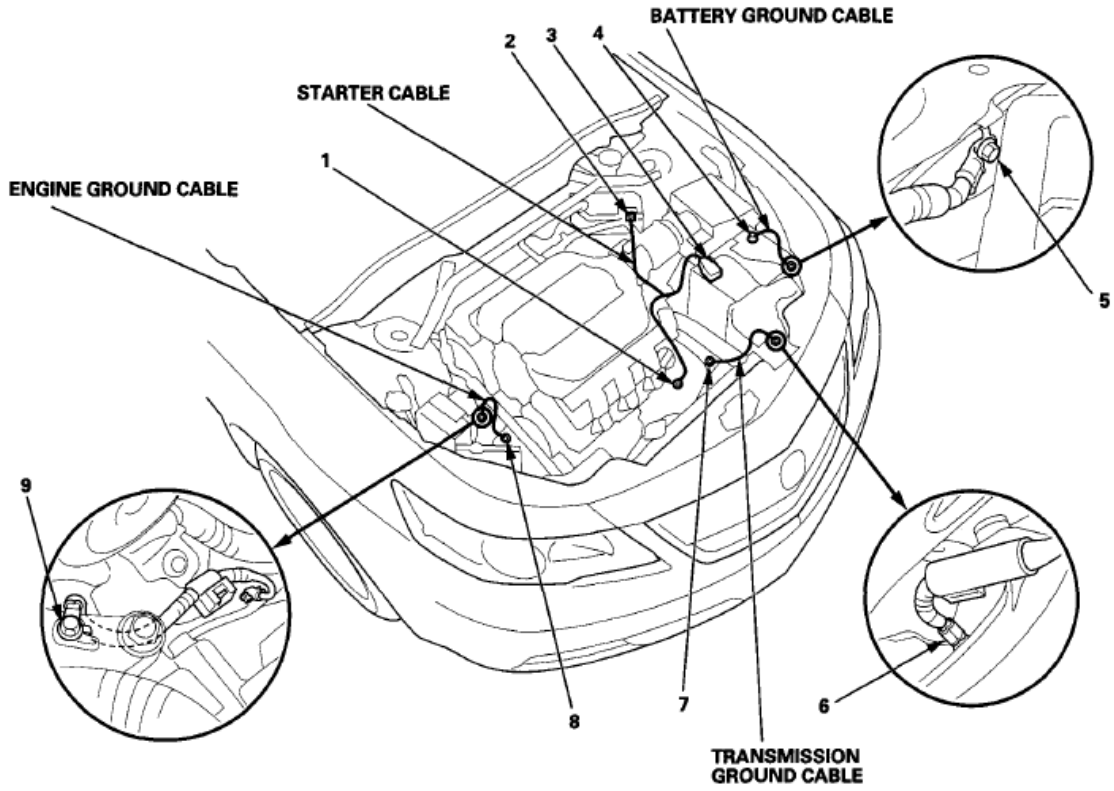
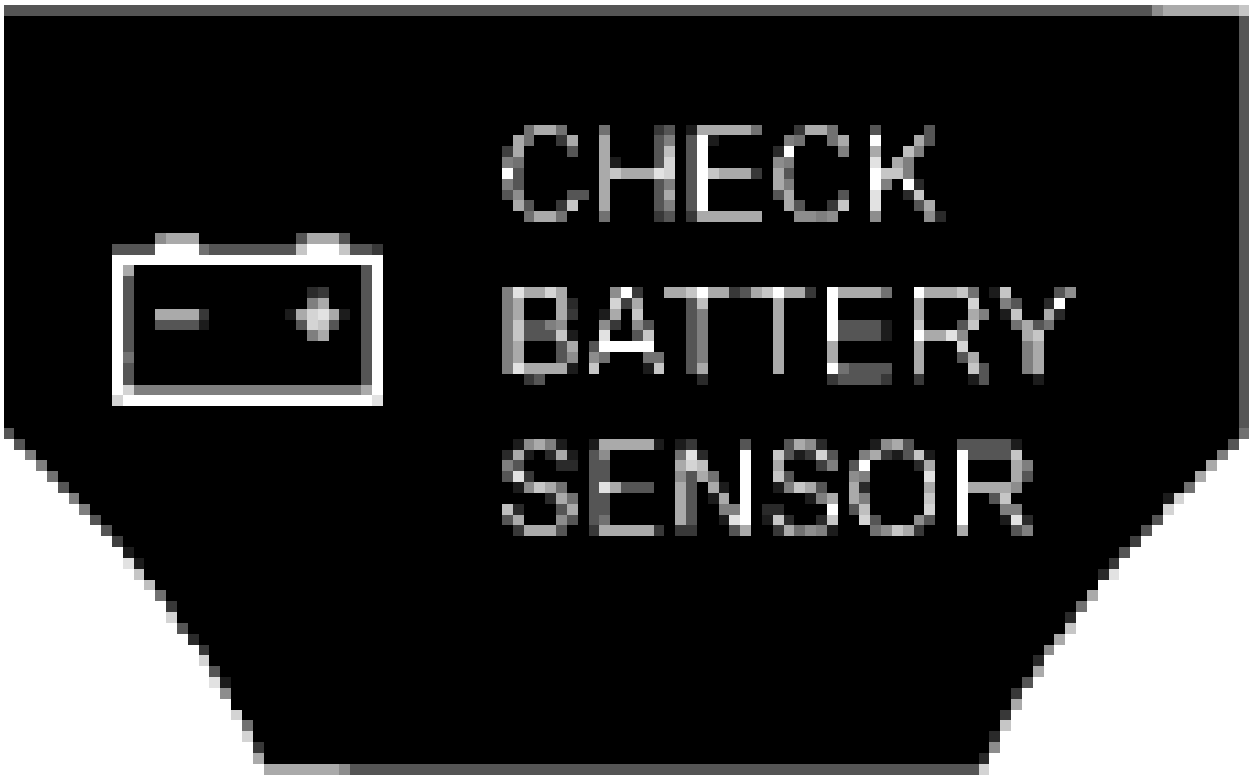


Fig. 2: Identifying Connector And Harness Location (A/T)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

ENGINE WIRE HARNESS (ENGINE SECTION) (M/T)

Connector or Terminal	Ref	Cavities	Location	Connects to	Notes
A/C compressor clutch	31	1	Right side of engine compartment		
Alternator	32	4	Middle of engine compartment		
CKP sensor	13	3	Left side of engine		
CMP sensor	37	3	Right side of engine		
ECM connector B	38	49	Right side of engine compartment		
ECM connector C	39	49	Right side of engine compartment		
Engine coolant temperature (ECT) sensor 1	23	2	Left side of engine		
Engine mount control solenoid	11	2	Left side of engine compartment		
Engine oil pressure switch	42	1	Right side of engine compartment		
EVAP canister purge valve	10	2	Left side of engine compartment		

Exhaust gas recirculation (EGR) valve and position sensor	24	5	Left side of engine compartment	
Front A/F sensor (Bank 2, Sensor 1) (1)	29	6	Exhaust (front bank)	
Front secondary heated oxygen sensor (secondary HO2S) (Bank 2, Sensor 2)	28	4	Exhaust (front bank)	
Ignition coil No. 1	3	3	Middle of engine	
Ignition coil No. 2	5	3	Middle of engine	
Ignition coil No. 3	8	3	Middle of engine	
Ignition coil No. 4	35	3	Middle of engine	
Ignition coil No. 5	30	3	Middle of engine	
Ignition coil No. 6	27	3	Middle of engine	
Injector No. 1	2	2	Middle of engine	
Injector No. 2	4	2	Middle of engine	
Injector No. 3	7	2	Middle of engine	
Injector No. 4	36	2	Middle of engine	
Injector No. 5	33	2	Middle of engine	
Injector No. 6	25	2	Middle of engine	
Intake manifold tuning (IMT) actuator	1	5	Middle of engine	
Manifold absolute pressure (MAP) sensor	14	3	Left side of engine compartment	
Mass air flow (MAF) sensor/Intake air temperature (IAT) sensor	17	5	Left side of engine compartment	
Rear A/F sensor (Bank 1, Sensor	9	6	Exhaust (rear bank)	
Rear secondary heated oxygen sensor (secondary HO2S) (Bank 1, Sensor 2)	12	4	Exhaust (rear bank)	
Reverse lockout solenoid	22	2	Left side of engine compartment	
Rocker arm oil control solenoid	41	1	Right side of engine	
Rocker arm oil pressure switch	43	2	Right side of engine	
Throttle position sensor/Throttle actuator	15	6	Left side of engine compartment	



C101	19	13	Left side of engine compartment	Left engine compartment wire harness (engine compartment branch)	
C102	18	1	Left side of engine compartment	Left engine compartment wire harness (engine compartment branch)	
C103 (junction connector)	6	24	Middle of engine compartment		
C104	40	1	Middle of engine	Knock sensor subharness	
C106 (junction connector)	20	24	Left side of engine compartment		
C107 (junction connector)	21	24	Left side of engine compartment		
T4	34		Right side of engine	Alternator +B terminal compartment	
T102	16		Left side of engine	Under-hood fuse/relay compartment box	
G101	44		Middle of engine	Body ground, via engine compartment wire harness	

KNOCK SENSOR SUBHARNESS (M/T)

Connector or Terminal	Ref	Cavities	Location	Connects to	Notes
Knock sensor	26	1		Middle of engine	
C104	40	1	Middle of engine	Engine wire harness (engine section)	

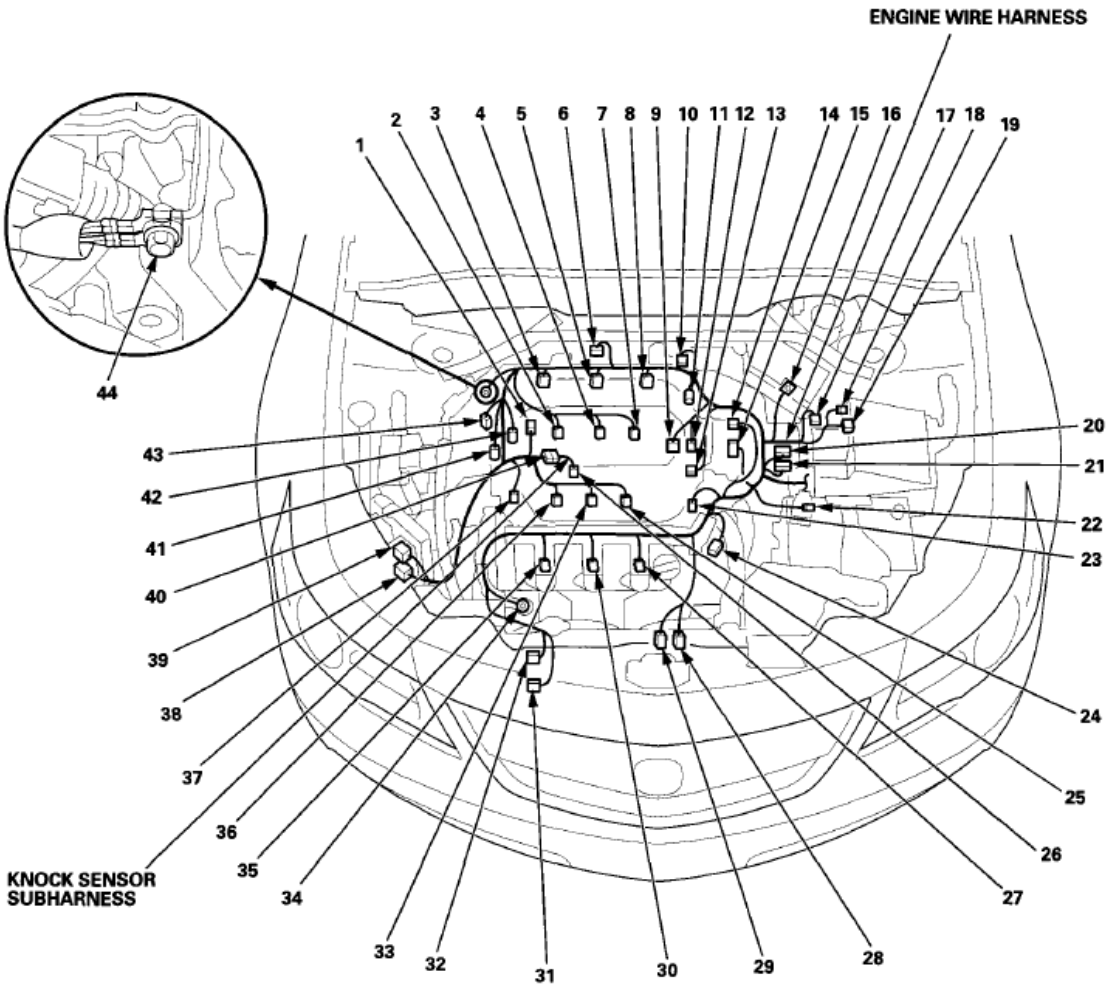


Fig. 3: Identifying Knock Sensor Subharness And Connectors (M/T)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

ENGINE WIRE HARNESS (TRANSMISSION SECTION) (M/T)

Connector or Terminal	Ref	Cavities	Location	Connects to	Notes
Back-up lights switch	3	2	Transmission housing		
Front secondary heated oxygen sensor (secondary HO2S) (Bank 2, Sensor 2)	5	4	Transmission housing		
Input shaft (mainshaft) speed sensor	4	3	Transmission housing		
Output shaft (countershaft) speed sensor	1	3	Transmission housing		
Starter solenoid	2	1	Left side of engine compartment		

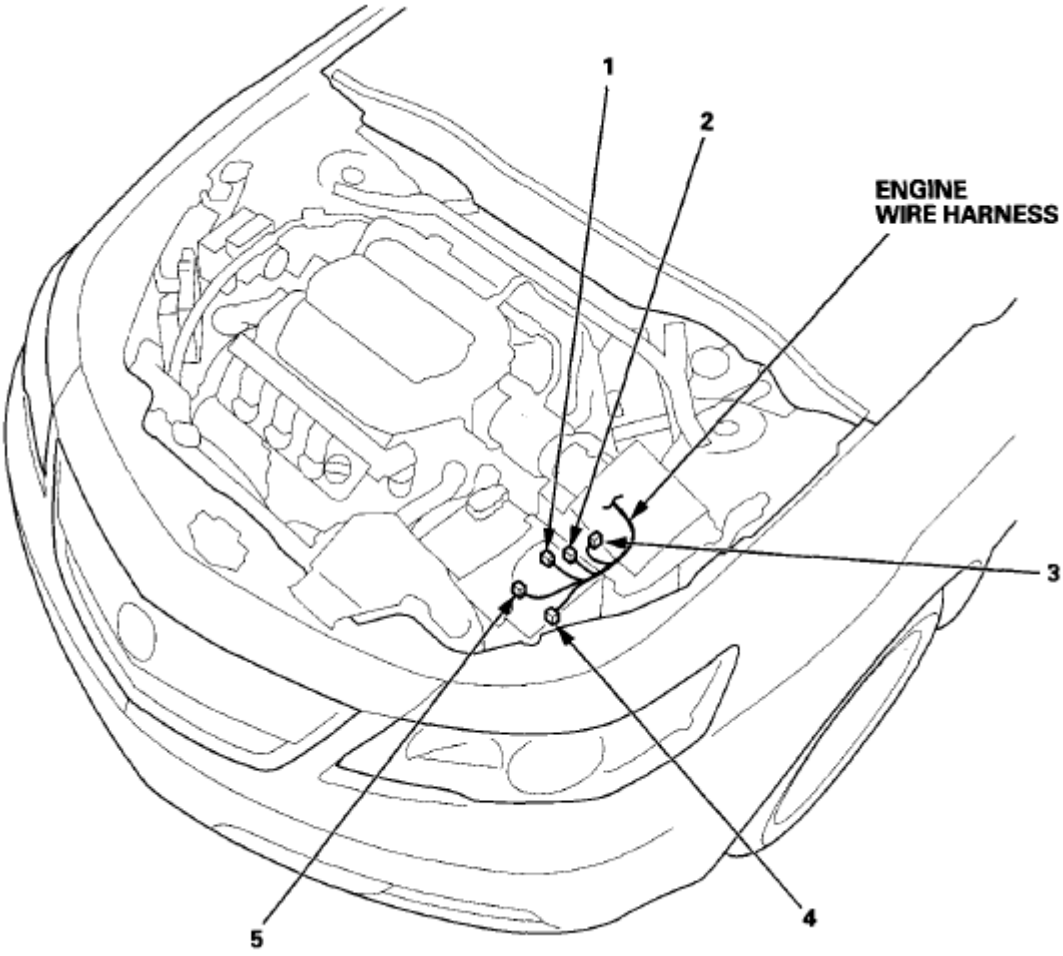


Fig. 4: Identifying Engine Wire Harness (Transmission Section) And Connectors (M/T)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

ENGINE WIRE HARNESS (ENGINE SECTION) (A/T)

Connector or Terminal	Ref	Cavities	Location	Connects to	Notes
A/C compressor clutch	35	1	Right side of engine compartment		
Alternator	36	4	Middle of engine compartment		
CKP sensor	24	3	Left side of engine		
CMP sensor	39	3	Right side of engine		
Engine coolant temperature (ECT) sensor 1	25	2	Left side of engine		
Engine mount control solenoid	13	2	Left side of engine compartment		
Engine oil pressure switch	44	1	Right side of engine compartment		
EVAP canister purge valve	12	2	Left side of engine compartment		

Exhaust gas recirculation (EGR) valve and position sensor	26	5	Left side of engine compartment		
Front A/F sensor (Bank 2, Sensor 1)	30	6	Front of engine compartment		
Front secondary heated oxygen sensor (secondary HO2S) (Bank 2, Sensor 2)	29	4	Front of engine compartment		
Ignition coil No. 1	3	3	Middle of engine		
Ignition coil No. 2	6	3	Middle of engine		
Ignition coil No. 3	10	3	Middle of engine		
Ignition coil No. 4	38	3	Middle of engine		
Ignition coil No. 5	32	3	Middle of engine		
Ignition coil No. 6	28	3	Middle of engine		
Injector No. 1	2	2	Middle of engine		
Injector No. 2	5	2	Middle of engine		
Injector No. 3	9	2	Middle of engine		
Injector No. 4	34	2	Middle of engine		
Injector No. 5	31	2	Middle of engine		
Injector No. 6	27	2	Middle of engine		
Intake manifold tuning (IMT) actuator	1	5	Middle of engine		
Manifold absolute pressure (MAP) sensor	17	3	Left side of engine compartment		
Mass air flow (MAF) sensor/Intake air temperature (IAT) sensor	19	5	Left side of engine compartment		
PCM connector B	40	49	Right side of engine compartment		
PCM connector C	41	49	Right side of engine compartment		
Rear A/F sensor (Bank 1, Sensor 1)	11	6	Rear of engine compartment		
Rear secondary heated oxygen sensor (secondary HO2S) (Bank 1, Sensor 2)	14	4	Rear of engine compartment		
Rocker arm oil control solenoid	43	1	Right side of engine		
Rocker arm oil pressure switch	45	2	Right side of engine		
Throttle position sensor/Throttle actuator	22	6	Left side of engine compartment		
Transmission fluid pressure switch A (2nd clutch)	15	1	Transmission housing		
Transmission fluid pressure switch D (5th clutch)	16	1	Transmission housing		

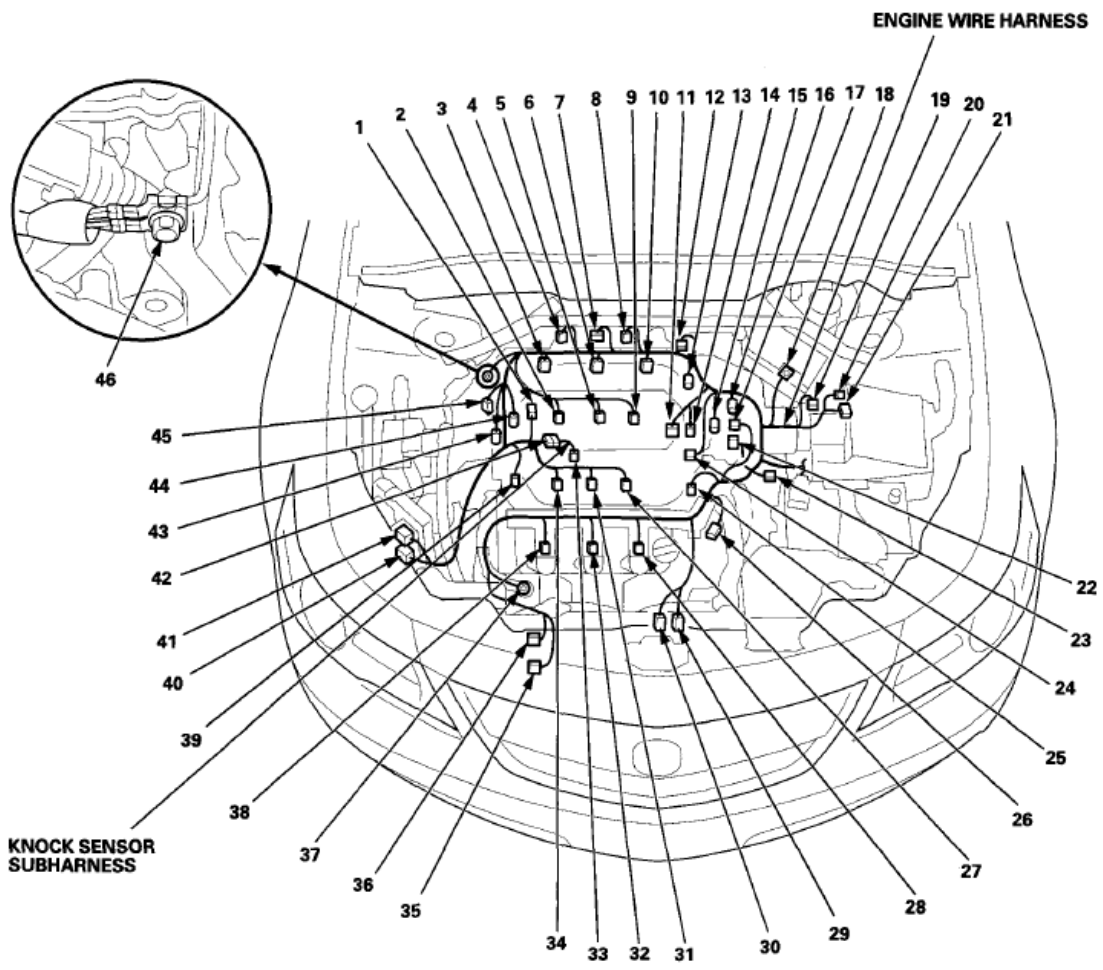


Fig. 5: Identifying Engine Section Wire Harness And Connectors (A/T)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

ENGINE WIRE HARNESS (ENGINE SECTION) (A/T)

Connector or Terminal	Ref	Cavities	Location	Connects to	Notes
C101	21	13	Left side of engine compartment	Left engine compartment wire harness (engine compartment branch)	
C102	20	1	Left side of engine compartment	Left engine compartment wire harness (engine compartment branch)	
C103 (junction connector)	23	24	Left side of engine compartment		
C104	42	1	Middle of engine	Knock sensor subharness	
C105 (junction connector)	4	12	Middle of engine compartment		
C106 (junction connector)	7	24	Middle of engine compartment		
C107 (junction connector)	8	24	Middle of engine compartment		

T4	37		Right side of engine	Alternator +B terminal compartment	
T102	18		Left side of engine compartment	Under-hood fuse/relay box	
G101	46		Middle of engine compartment	Body ground, via engine wire harness	

KNOCK SENSOR SUBHARNESS (A/T)

Connector or Terminal	Ref	Cavities	Location	Connects to	Notes
Knock sensor	33	1	Middle of engine		
C104	42	1	Middle of engine	Engine wire harness (engine section)	

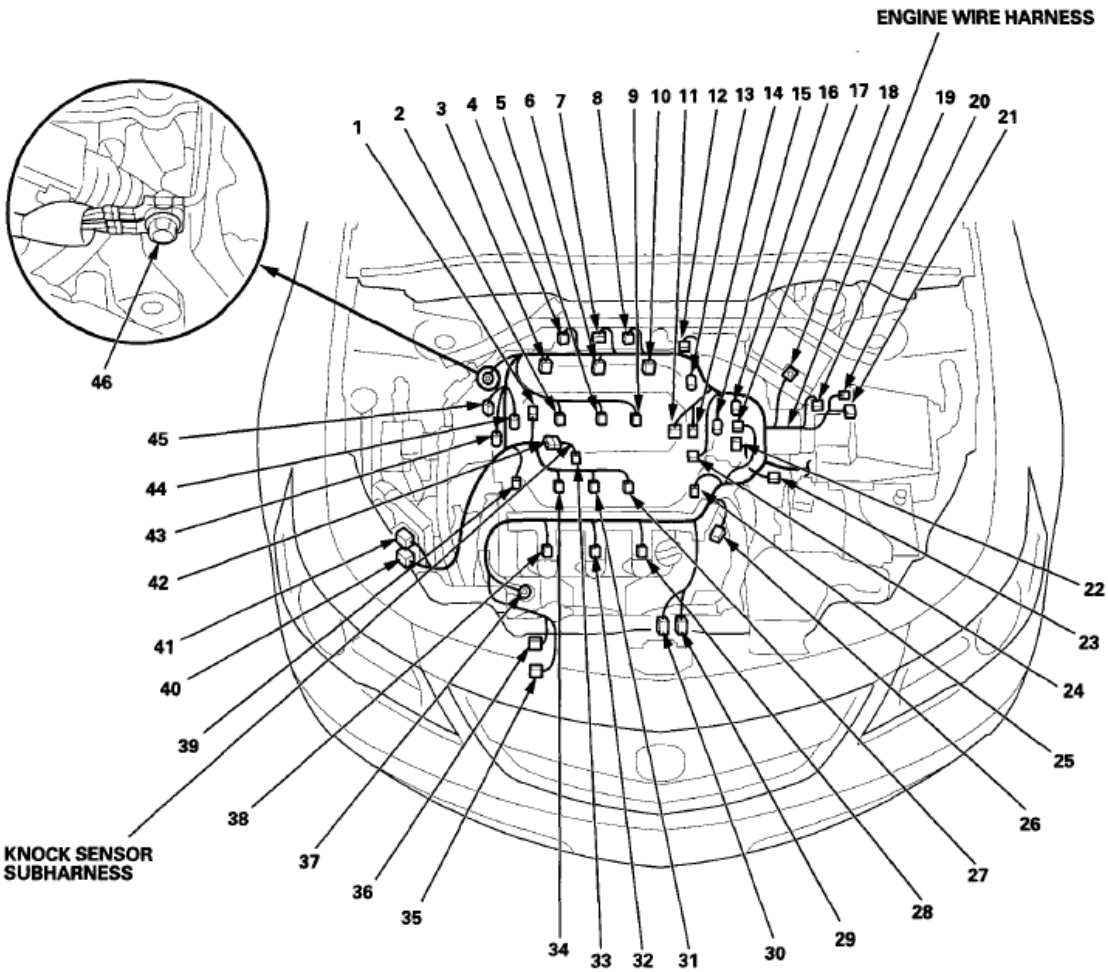


Fig. 6: Identifying Knock Sensor Subharness And Connectors (A/T)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

ENGINE WIRE HARNESS (TRANSMISSION SECTION) (A/T)

Connector or Terminal	Ref	Cavities	Location	Connects to	Notes
A/T clutch pressure control solenoid valve A	9	2	Transmission housing		
A/T clutch pressure control solenoid valve B	10	2	Transmission housing		

A/T clutch pressure control solenoid valve C	11	2	Transmission housing		
A/T clutch pressure control solenoid valve D	8	2	Transmission housing		
ATF temperature sensor	12	2	Transmission housing		
Input shaft (mainshaft) speed sensor	14	3	Transmission housing		
Line pressure solenoid valve A	2	2	Transmission housing		
Line pressure switch	13	1	Transmission housing		
Output shaft (countershaft) speed sensor	15	3	Transmission housing		
Shift solenoid valve A	4	2	Transmission housing		
Shift solenoid valve B	3	2	Transmission housing		
Shift solenoid valve C	1	2	Transmission housing		
Starter solenoid	17	1	Left side of engine		
Transmission fluid pressure switch B (3rd clutch)	7	1	Transmission housing		
Transmission fluid pressure switch C (4th clutch)	16	1	Transmission housing		
Transmission fluid pressure switch E (6th clutch)	6	1	Transmission housing		
Transmission range switch	5	10	Transmission housing		

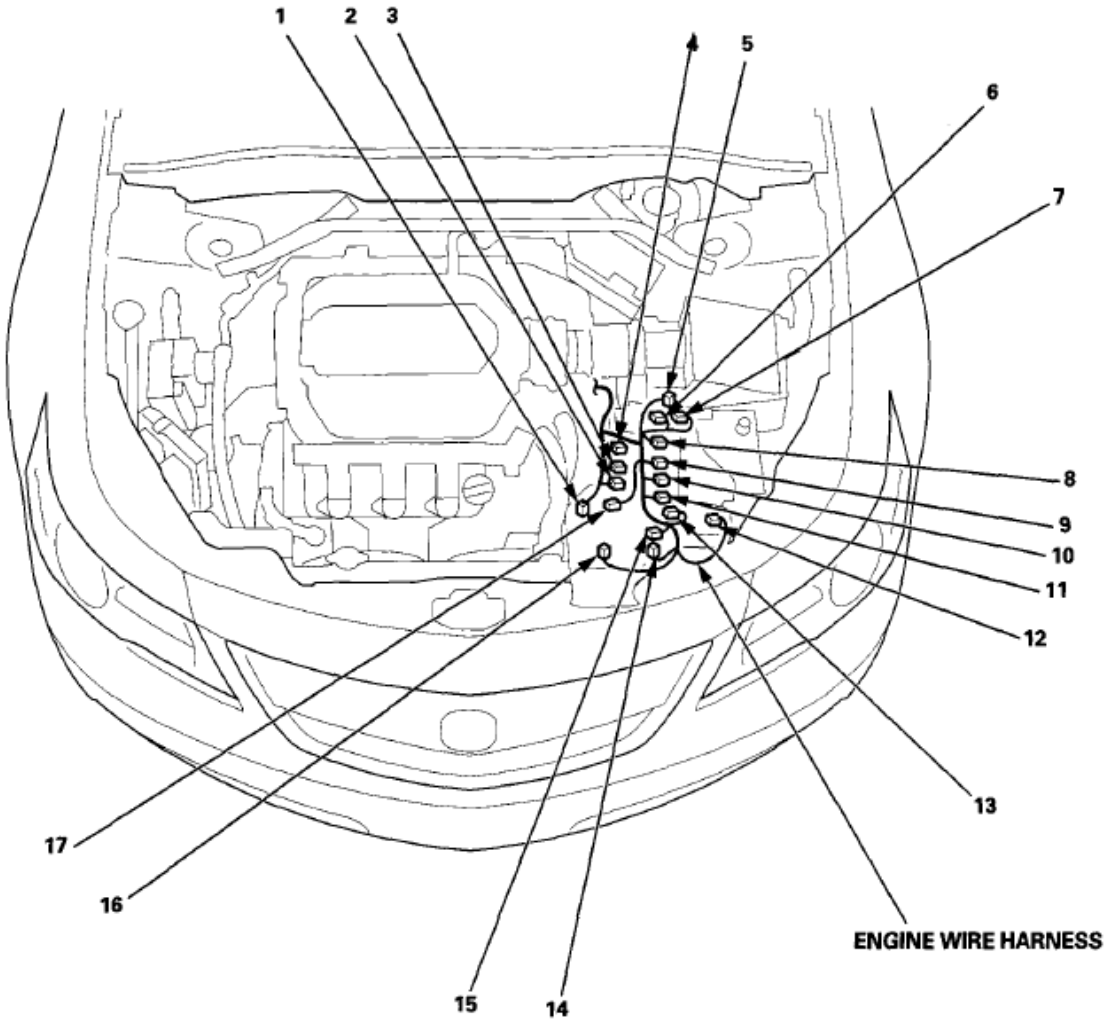


Fig. 7: Identifying Engine Wire Harness (Transmission Section) And Connectors (A/T)

Courtesy of AMERICAN HONDA MOTOR CO., INC.

LEFT ENGINE COMPARTMENT WIRE HARNESS (ENGINE COMPARTMENT BRANCH)

Connector or Terminal	Ref	Cavities	Location	Connects to	Notes
A/C condenser fan motor	23	2	Front of engine compartment		
Battery sensor	13	2	Left side of engine compartment		
Brake fluid level switch	10	2	Left side of engine compartment		
ECM/PCM connector A	1	49	Right side of engine compartment		
Engine coolant temperature (ECT) sensor 2	20	2	Front engine compartment		
Horn (high)	19	1	Behind left side of front bumper		
Horn (low)	25	1	Behind right side of front bumper		
Left fog light	17	2	Behind left side of front bumper		
Left front impact sensor	16	2	Behind left side of front bumper		
Left front parking/turn signal light	18	3	Behind left side of front bumper		
Left front side marker light	14	2	Behind left headlight		
Left front wheel speed sensor	12	2	Left side of engine compartment		
Left headlight (high)	3	2	Behind left headlight		
Left headlight (low)	4	2	Behind left headlight		
Outside air temperature sensor	22	2	Front of engine compartment		
Radiator fan motor	21	2	Front of engine compartment		
Security hood switch	2	2	Front of engine compartment		
Under-hood fuse/relay box connector A (electrical load detector) (see **CONNECTOR TO FUSE/RELAY BOX INDEX**)	9	3	Left side of engine compartment		

Under-hood fuse/relay box connector B (see **CONNECTOR TO FUSE/RELAY BOX INDEX**)	8	14	Left side of engine compartment		
Under-hood fuse/relay box connector C (see **CONNECTOR TO FUSE/RELAY BOX INDEX**)	7	5	Left side of engine compartment		
Windshield wiper motor	11	4	Left side of engine compartment		
C101	5	13	Left side of engine compartment	Engine wire harness (engine section)	
C102	6	1	Left side of engine compartment	Engine wire harness (engine section)	
C201	24	2	Right front of engine compartment	Right engine compartment wire harness	
G301	15		Behind left side of front bumper	Body ground, via left engine compartment wire harness	

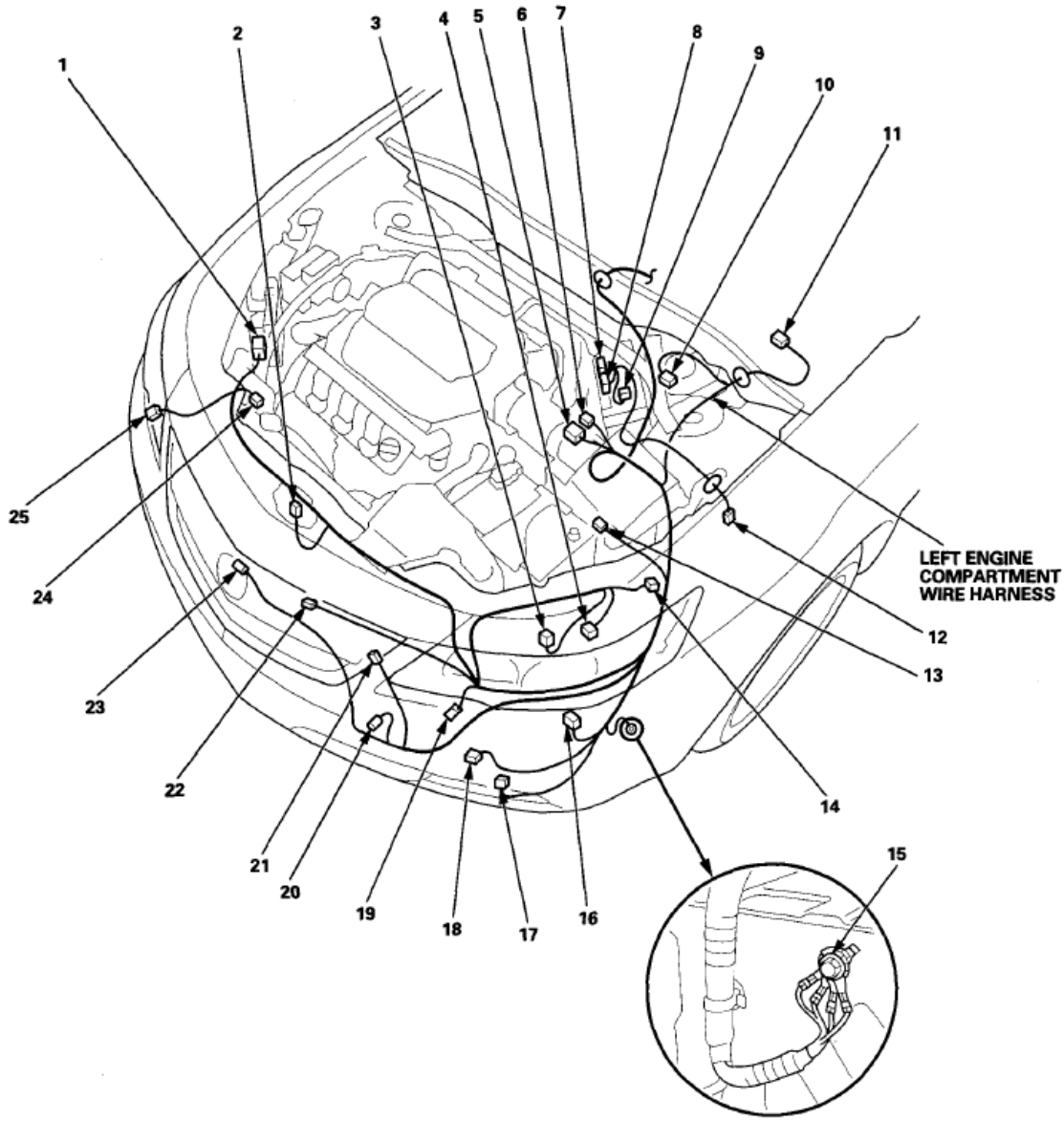


Fig. 8: Identifying Left Engine Compartment Wire Harness And Connectors (Engine Compartment Branch)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

LEFT ENGINE COMPARTMENT WIRE HARNESS (DASHBOARD BRANCH)

Connector or Terminal	Ref	Cavities	Location	Connects to	Notes
Accelerator pedal position sensor	8	6	Under left side of dash		
Brake pedal position switch	9	4	Under left side of dash		
Clutch pedal position switch A (for starter cut)	4	2	Under left side of dash		M/T
Clutch pedal position switch B (for cruise control)	10	3	Under left side of dash		M/T

Driver's under-dash fuse/relay box connector F (see **FUSE TO COMPONENTS INDEX**)	3	33	Under left side of dash		
Driver's under-dash fuse/relay box connector G (see **FUSE TO COMPONENTS INDEX**)	2	13	Under left side of dash		
Left front TPMS initiator	15	3	Left front of fenderwell		
C301	6	2	Under middle of dash	A/C wire harness	
C302	7	2	Under middle of dash	A/C wire harness	
C303	14	12	Under left side of dash	Left side wire harness: • Without SH-AWD • With SH-AWD	
C304	13	2	Under left side of dash	Dashboard wire harness (view of driver's side	(1)
C305	11	4	Under left side of dash	Dashboard wire harness (view of driver's side)	
C306	12	24	Under left side of dash	Dashboard wire harness (view of driver's side)	
C307 (junction connector)	5	12	Under left side of dash		
G302	1		Under left side of dash	Body ground, via left engine compartment wire harness	

(1) With headlight washer

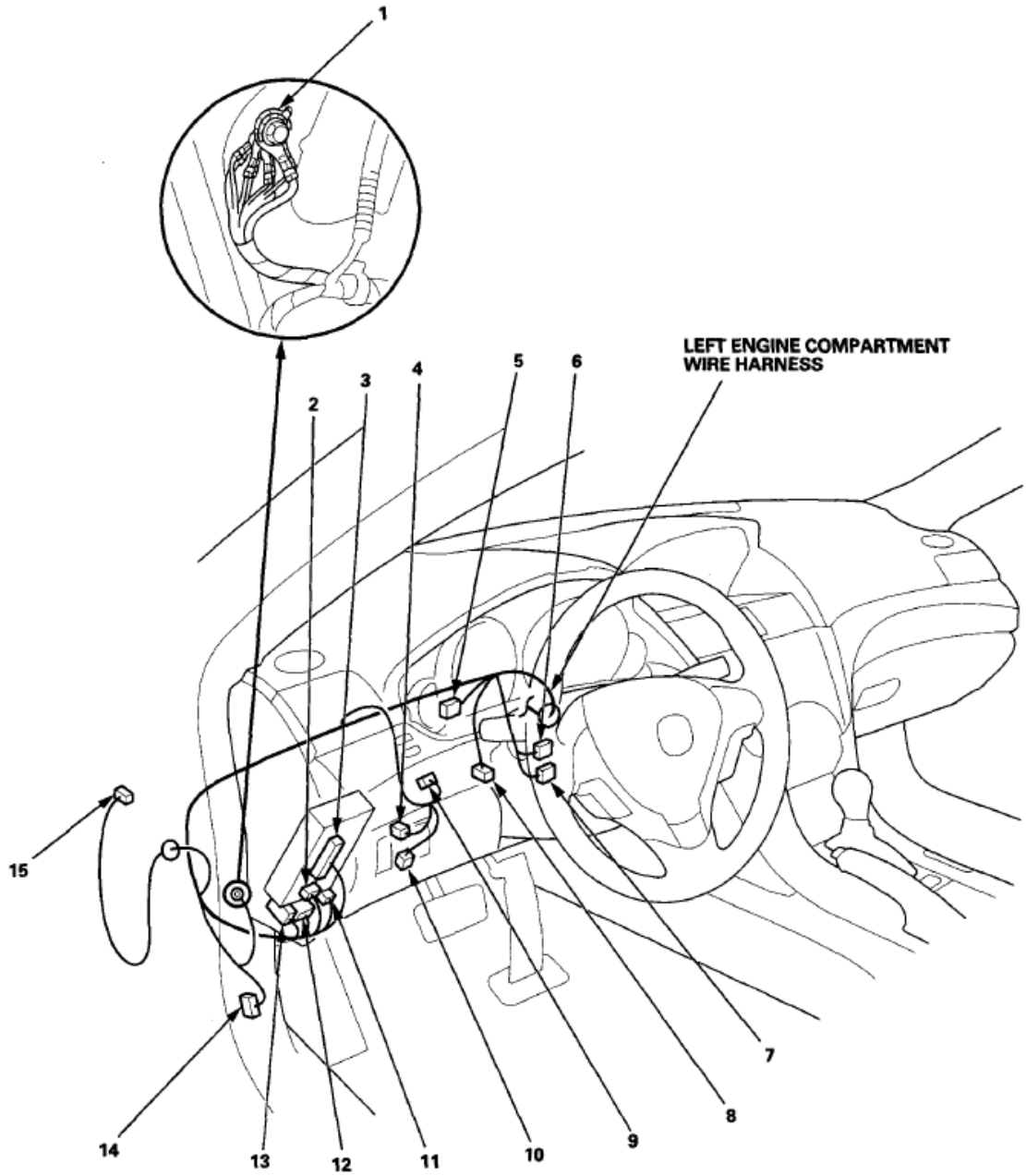


Fig. 9: Identifying Left Engine Compartment Wire Harness And Connectors (Dashboard Branch)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

RIGHT ENGINE COMPARTMENT WIRE HARNESS

Connector or Terminal	Ref	Cavities	Location	Connects to	Notes
A/C pressure sensor	11	3	Right front of engine compartment		
EPS control unit connector A	6	2	Under right side of dash		
			Under right side		

EPS control unit connector B	4	2	of dash		
EPS control unit connector C	3	2	Under right side of dash		
EPS control unit connector D	5	28	Under right side of dash		
Headlight washer motor	21	2	Behind right side of front bumper		(1)
Passenger's under-dash fuse/relay box connector B (see **FUSE TO COMPONENTS INDEX**)	29	1	Under right side of dash		
Passenger's under-dash fuse/relay box connector E (see **FUSE TO COMPONENTS INDEX**)	28	18	Under right side of dash		
Right fog light	18	2	Behind right side of front bumper		
Right front impact sensor	19	2	Behind right side of front bumper		
Right front parking/turn signal light	17	3	Behind right side of front bumper		
Right front side marker light	23	2	Behind right headlight		
Right front TPMS initiator	25	3	Right front of fenderwell		
Right front wheel speed sensor	24	2	Right side of engine compartment		
Right headlight (high)	14	2	Behind right headlight		
Right headlight (low)	13	2	Behind right headlight		
VSA modulator-control unit	12	47	Right side of engine compartment		
Washer fluid level switch	20	2	Behind right side of front bumper		(2)
Windshield washer motor	22	2	Behind right side of front bumper		
C201	15	2	Right side of engine compartment	Left engine compartment wire harness (engine compartment branch)	
C202	10	3	Right side of engine compartment	EPS subharness	
C203	9	12	Right side of engine compartment	EPS subharness	

C204 (junction connector)	8	12	Under right side of dash		
C205	26	2	Under right side of dash	A/C wire harness	
C206	30	20	Under right side of dash	Dashboard wire harness (view of middle to passenger's side)	
C207	7	2	Under right side of dash	Dashboard wire harness (view of middle to passenger's side)	
C208	27	4	Under right side of dash	Dashboard wire harness (view of middle to passenger's side)	
G202	16		Behind right side of front bumper	Body ground, via right engine compartment wire harness	
G203	1		Under right side of dash	Body ground, via right engine compartment wire harness	
G204	2		Under right side of dash	Body ground, via right engine compartment wire harness	

(1) With headlight washer

(2) Canada models

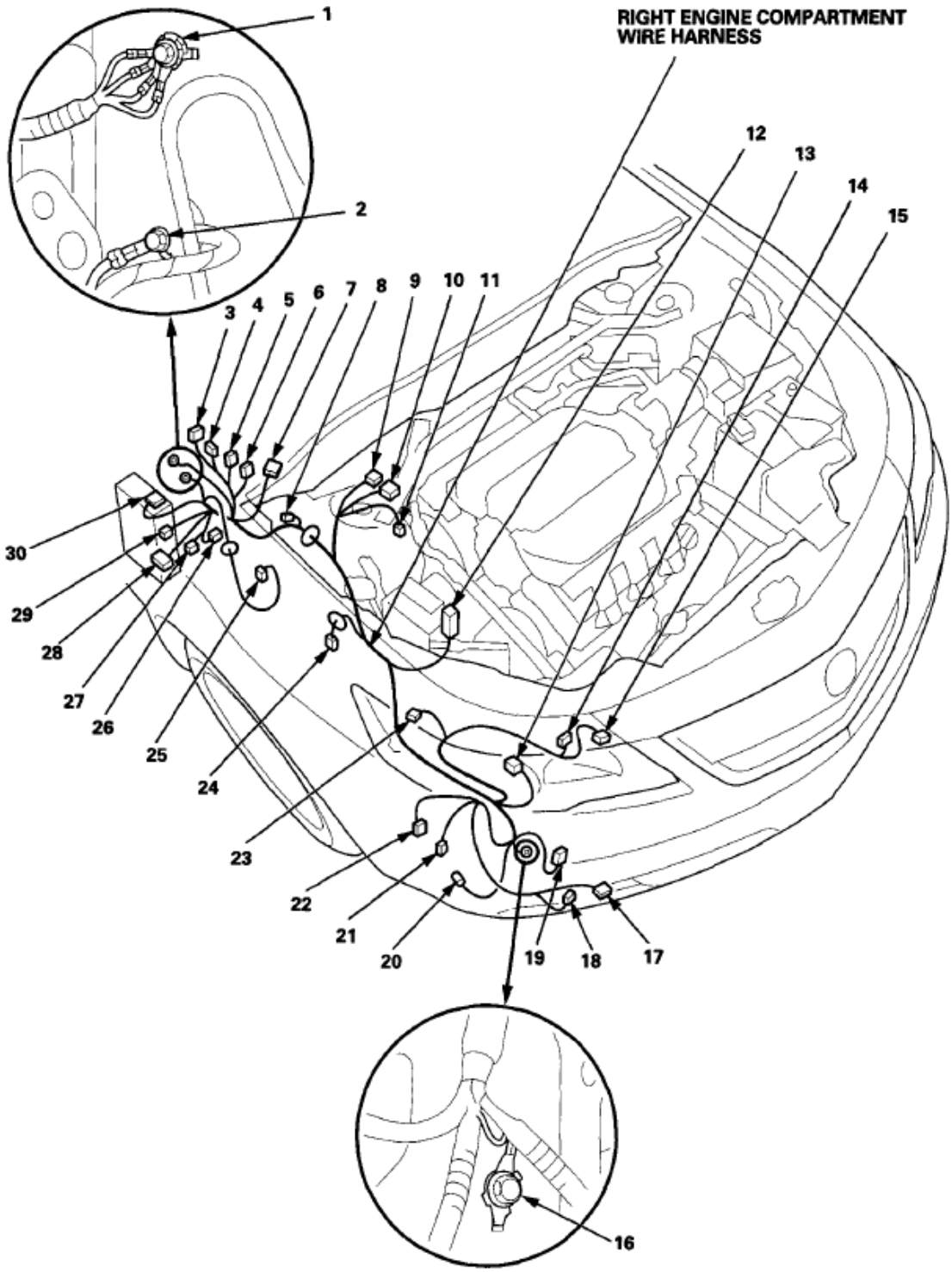


Fig. 10: Identifying Right Engine Compartment Wire Harness And Connectors
Courtesy of AMERICAN HONDA MOTOR CO., INC.

DASHBOARD WIRE HARNESS (VIEW OF DRIVER'S SIDE)

Connector or Terminal	Ref	Cavities	Location	Connects	Notes

				to	
ACC cut relay	44	5	Under left side of dash		(1)
Auxiliary under-dash fuse holder	69	2	Under left side of dash		(1)
BSI OFF switch	57	5	Left side of dashboard		(4)
BSI OFF switch	58	5	Left side of dashboard		(5)
Center junction box connector A	37	4	Behind gauge		
Center junction box connector B	38	4	Behind gauge		
Center junction box connector C	39	4	Behind gauge		
Center junction box connector D	40	6	Behind gauge		
Center junction box connector E	36	6	Behind gauge		
Center junction box connector F	31	6	Behind gauge		
Center junction box connector G	32	6	Behind gauge		
Center junction box connector H	35	4	Behind gauge		
Center junction box connector J	34	8	Behind gauge		
Center junction box connector K	33	10	Behind gauge		
Console accessory power socket relay	41	4	Under left side of dash		
Dashlights brightness controller switch	53	6	Left side of dashboard		
Data link connector (DLC)	64	16	Under left side of dash		
Driver's footwell light	59	2	Under left side of dash		
Driver's junction box 1 connector A	29	6	Behind gauge		
Driver's junction box 1 connector B	30	6	Behind gauge		
Driver's junction box 1 connector C	23	8	Behind gauge		
Driver's junction box 1 connector D	28	4	Behind gauge		
Driver's junction box 1 connector E	24	10	Behind gauge		
Driver's junction box 1 connector F	25	8	Behind gauge		
Driver's junction box 1 connector G	27	10	Behind gauge		
Driver's junction box 1 connector H	26	10	Behind gauge		
Driver's junction box 2 connector A	21	6	Behind gauge		
Driver's junction box 2 connector B	14	6	Behind gauge		
Driver's junction box 2 connector C	15	8	Behind gauge		
Driver's junction box 2 connector D	20	4	Behind gauge		
Driver's junction box 2 connector E	16	10	Behind gauge		
Driver's junction box 2 connector F	17	8	Behind gauge		
Driver's junction box 2 connector G	19	10	Behind gauge		
Driver's junction box 2 connector H	18	10	Behind gauge		
Driver's under-dash fuse/relay box connector B (see			Under left side		

FUSE TO COMPONENTS INDEX)	52	2	of dash		
Driver's under-dash fuse/relay box connector C (see **FUSE TO COMPONENTS INDEX**)	51	5	Under left side of dash		
Driver's under-dash fuse/relay box connector M (see **FUSE TO COMPONENTS INDEX**)	48	4	Under left side of dash		
Driver's under-dash fuse/relay box connector N (see **FUSE TO COMPONENTS INDEX**)	49	16	Under left side of dash		
Driver's under-dash fuse/relay box connector P (see **FUSE TO COMPONENTS INDEX**)	50	20	Under left side of dash		
Driver's under-dash fuse/relay box connector Q (see **FUSE TO COMPONENTS INDEX**)	46	20	Under left side of dash		
Driver's under-dash fuse/relay box connector R (see **FUSE TO COMPONENTS INDEX**)	47	24	Under left side of dash		
Front accessory power socket relay	42	4	Under left side of dash		(2)
Front accessory power socket relay	44	4	Under left side of dash		(3)
Gauge control module	22	32	Behind gauge		
Headlight washer motor relay	42	4	Under left side of dash		(4)
Headlight washer switch	58	6	Left side of dashboard		(6)
IG2 cut relay	45	5	Under left side of dash		(1)

(1) Without keyless access system

(2) Without keyless access system except canada models with SH-AWD

(3) Without keyless access system canada models with SH-AWD

(4) With BSI and headlight washer

(5) With BSI and without headlight washer

(6) With headlight washer

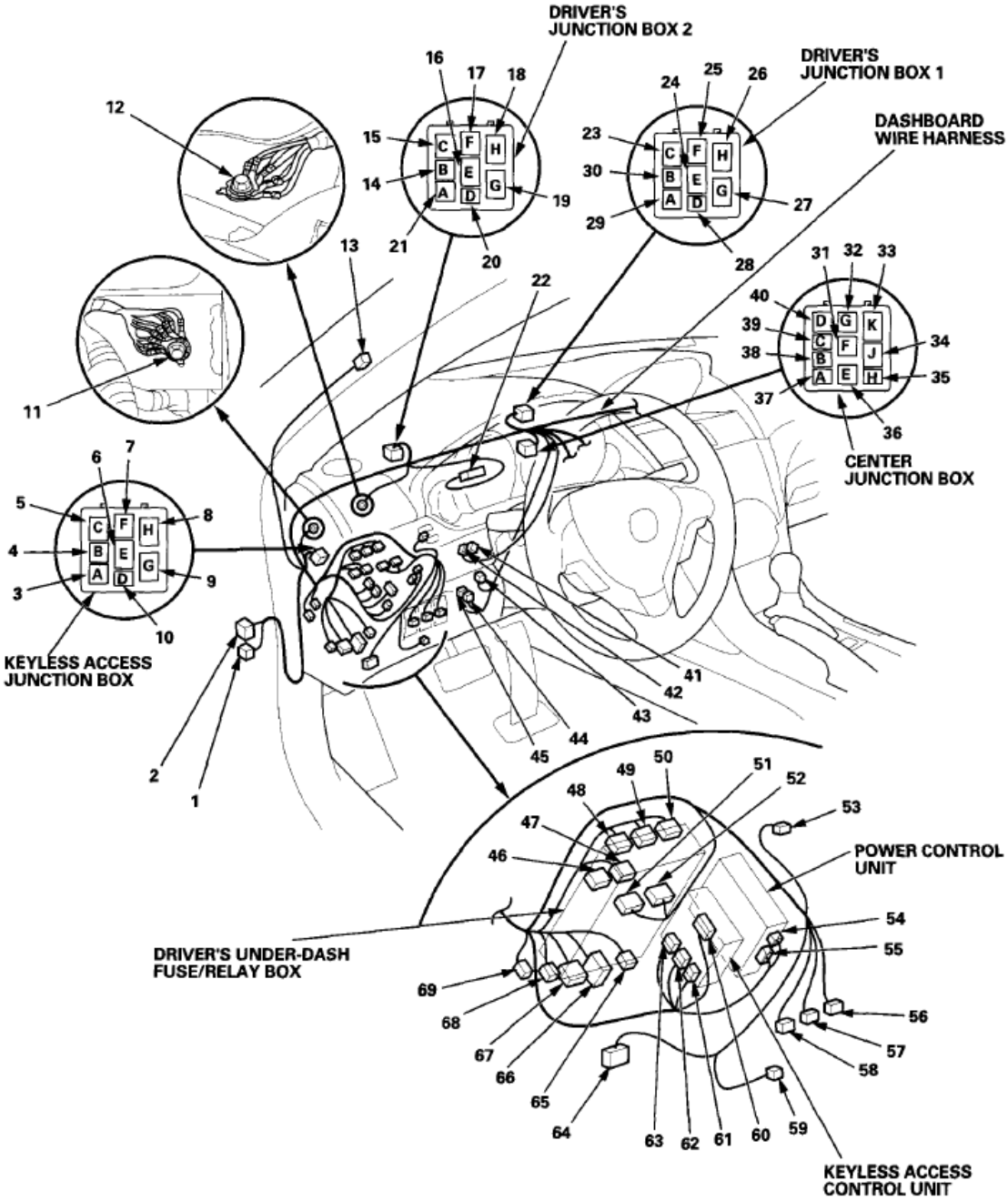


Fig. 11: Identifying Dashboard Engine Compartment Wire Harness And Connectors - Driver's Side (1 Of 2)

Courtesy of AMERICAN HONDA MOTOR CO., INC.

DASHBOARD WIRE HARNESS (VIEW OF DRIVER'S SIDE)

Connector or Terminal	Ref	Cavities	Location	Connects to	Notes
Keyless access control unit connector A	63	36	Under left side of dash		(1)
Keyless access control unit connector B	62	32	Under left side of dash		(1)

Keyless access control unit connector C	61	5	Under left side of dash		(1)
Keyless access junction box connector A	3	6	Under left side of dash		(1)
Keyless access junction box connector B	4	6	Under left side of dash		(1)
Keyless access junction box connector C	5	8	Under left side of dash		(1)
Keyless access junction box connector D	10	4	Under left side of dash		(1)
Keyless access junction box connector E	6	10	Under left side of dash		(1)
Keyless access junction box connector F	7	8	Under left side of dash		(1)
Keyless access junction box connector G	9	10	Under left side of dash		(1)
Keyless access junction box connector H	8	10	Under left side of dash		(1)
Power control unit connector A	55	1	Under left side of dash		(1)
Power control unit connector B	54	4	Under left side of dash		(1)
Power control unit connector C	60	36	Under left side of dash		(1)
TPMS control unit	43	20	Under left side of dash		
VSA OFF switch	56	5	Left side of dashboard		(2)
VSA OFF switch	57	5	Left side of dashboard		(3)
VSA OFF switch	58	5	Left side of dashboard		(4)
+ B cut relay	45	4	Under left side of dash		M/T
C304	68	2	Under left side of dash	Left engine compartment wire harness (dashboard branch)	(5)
C305	65	4	Under left side of dash	Left engine compartment wire harness (dashboard branch)	
C306	66	24	Under left side of dash	Left engine compartment wire harness (dashboard branch)	
C401	67	18	Under left side of dash	Left side wire harness: • Without SH-AWD • With SH-AWD	
C402	13	23	Under left side	Roof wire harness	

			of dash		
C751	2	23	Under left side of dash	Driver's door wire harness	
C752	1	12	Under left side of dash	Driver's door wire harness	
G401	12		Under left side of dash	Body ground, via dashboard wire harness	
G402	11		Under left side of dash	Body ground, via dashboard wire harness	

(1) Without keyless access system

(2) With keyless access system except Canada models with SH-AWD

(3) With keyless access system Canada models with SH-AWD

(4) With BSI and headlight washer

(5) With BSI and without headlight washer

(6) With headlight washer

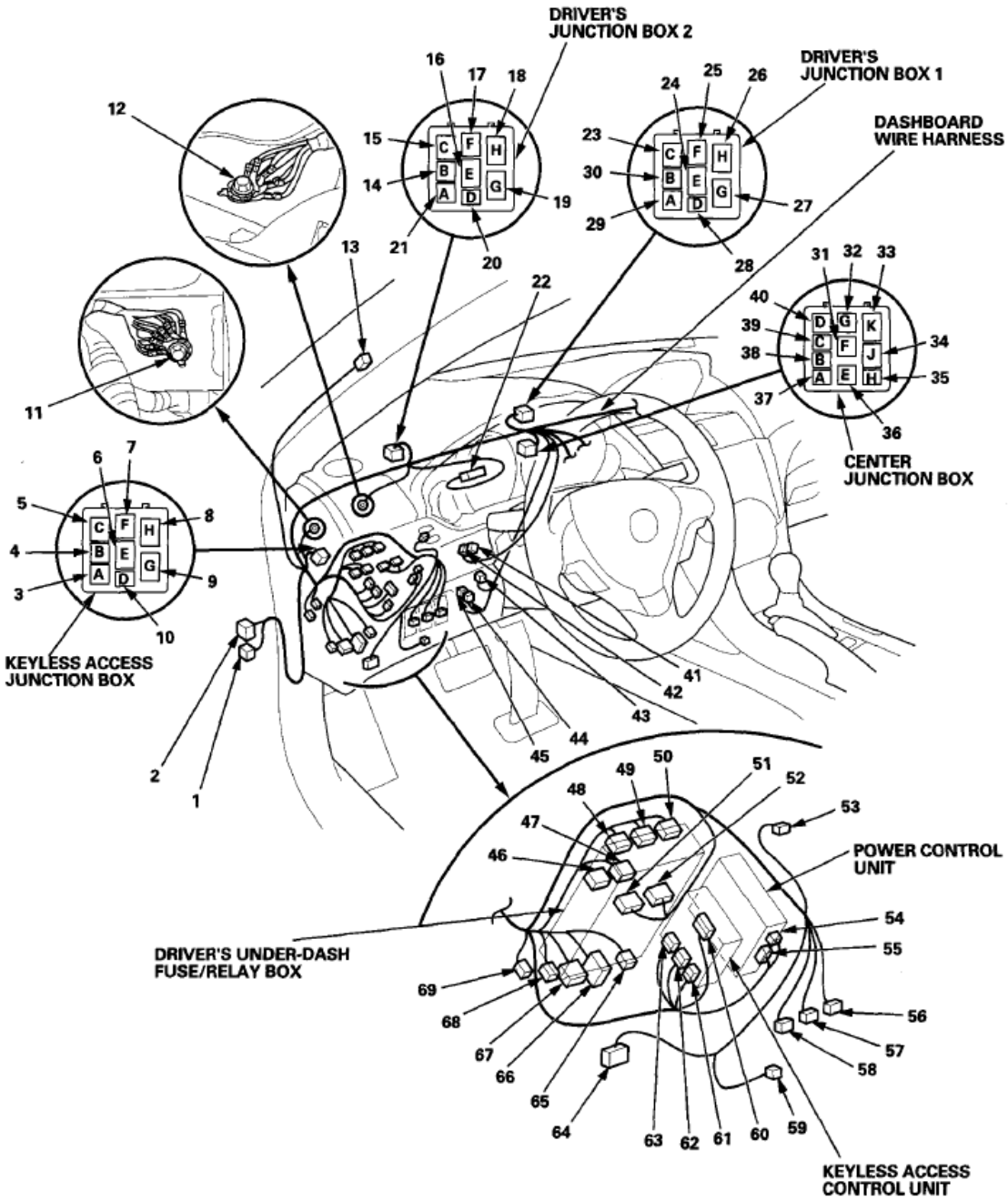


Fig. 12: Identifying Dashboard Engine Compartment Wire Harness And Connectors - Driver's Side (2 Of 2)

Courtesy of AMERICAN HONDA MOTOR CO., INC.

DASHBOARD WIRE HARNESS (VIEW OF MIDDLE TO PASSENGER'S SIDE)

Connector or Terminal	Ref	Cavities	Location	Connects to	Notes
A/T gear position indicator panel light	46	2	Under center console		A/T
A/T shift lock solenoid/park pin switch	43	4	Under center console		A/T

Automatic lighting sensor	14	5	Middle of dash		
Cable reel connector A	4	20	In steering column		
Cable reel connector B	5	4	In steering column	Driver's airbag inflator via cable reel	
Center speaker	11	2	Middle of dash		
Combination light switch	2	12	In steering column		
Driver's climate control switch	12	16	Middle of dash		
Driver's seat heater switch	45	6	Under center console		(6)
Driver's seat ventilation switch	45	16	Under center console		(7)
Electric steering lock	3	12	In steering column		(1)
Engine start/stop switch	10	10	Middle of dash		(1)
Front accessory power socket	34	2	Under center console		
Front passenger's airbag inflator	19	4	Under right side of dash		
Front passenger's seat heater switch	35	7	Under center console		(6)
Front passenger's seat ventilation switch	35	12	Under center console		(7)
Hazard warning switch/Passenger's airbag cutoff indicator	15	6	Middle of dash		
Ignition key switch	50	6	In steering column		(2)
Ignition switch	51	5	In steering column		(2)
Immobilizer-keyless control unit	7	7	In steering column		(2)
In-car temperature sensor	8	4	Middle of dash		
Passenger's under-dash fuse/relay box connector A (see **FUSE TO COMPONENTS INDEX**)	27	38	Under right side of dash		
Remote slot	9	16	Middle of dash		(1)
Remote slot control unit	23	40	Under right side of dash		(1)
RF unit	41	3	Under center console		(1)
Right tweeter	20	2	Under right side of dash		
Seat ventilation control unit	48	37	Under center console		(7)

SRS unit connector A	32	39	Middle of dash		
Steering angle sensor	1	5	In steering column		
Sunlight sensor	13	2	Middle of dash		
USB adapter unit	47	14	Under center console		(3)
Wiper/washer switch	6	8	In steering column		
Yaw rate-lateral acceleration sensor	33	4	Under center console		(4)
Yaw rate-lateral/longitudinal acceleration sensor	33	4	Under center console		(5)

(1) With keyless access system

(2) Without keyless access system

(3) Without navigation

(4) Without SH-AWD

(5) With SH-AWD

(6) Without seat ventilation

(7) With seat ventilation

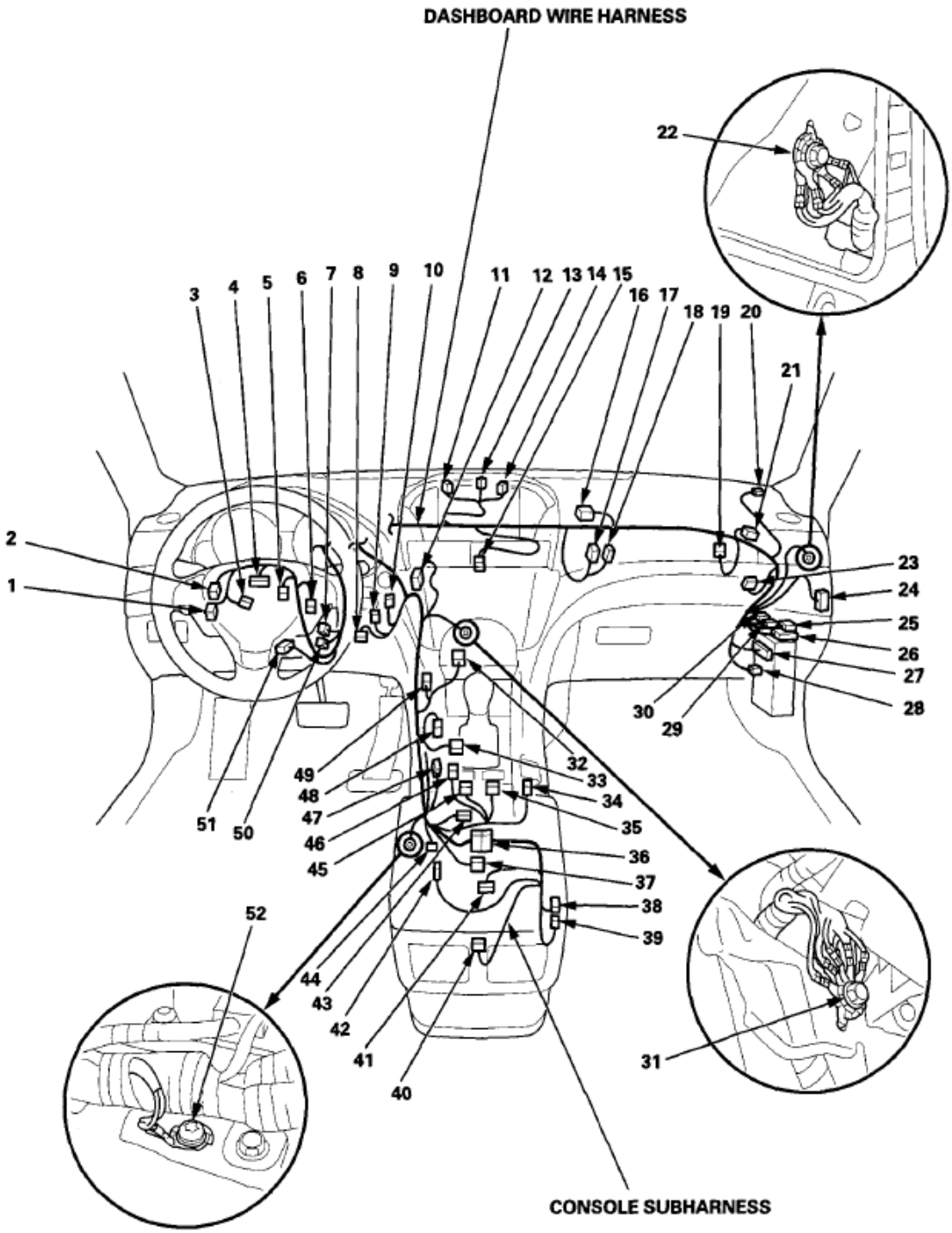


Fig. 13: Identifying Dashboard Engine Compartment Wire Harness And Connectors - Passenger's Side (1 Of 2)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Connector or Terminal	Ref	Cavities	Location	Connects to	Notes
			Under right side of	Right engine compartment wire	

C206	30	20	dash	harness	
C207	29	2	Under right side of dash	Right engine compartment wire harness	
C208	28	4	Under right side of dash	Right engine compartment wire harness	
C403	49	20	Under middle of dash	A/C wire harness	
C404	37	18	Under center console	SRS floor wire harness	(1)
C404	37	23	Under center console	SRS floor wire harness	(2)
C404	44	18	Under center console	SRS floor wire harness	M/T
C405	36	20	Under center console	Console subharness	
C406	17	34	Under right side of dash	Audio wire harness	
C407	18	12	Under right side of dash	Audio wire harness	
C408 (junction connector)	16	12	Under right side of dash		
C409 (junction connector)	21	20	Under right side of dash		
C410	25	8	Under right side of dash	Right side wire harness: • Without SH-AWD • With SH-AWD	
C411	26	12	Under right side of dash	Right side wire harness: • Without SH-AWD • With SH-AWD	
C761	24	28	Under right side of dash	Front passenger's door wire harness	
G403	31		Middle of dash	Body ground, via dashboard wire harness	
G404	52		Under center console	Body ground, via dashboard wire harness	
G405	22		Under right side of dash	Body ground, via dashboard wire harness	

(1) A/T without seat ventilation

(2) A/T with seat ventilation

CONSOLE SUBHARNESS

Connector or Terminal	Ref	Cavities	Location	Connects to	Notes
Auxiliary jack	38	5	Rear of center console		
Console accessory power socket	39	2	Rear of center console		
Console box light	40	2	Rear of center console		
Parking brake switch	42	1	Under center console		

C405	36	20	Under center console	Dashboard wire harness	

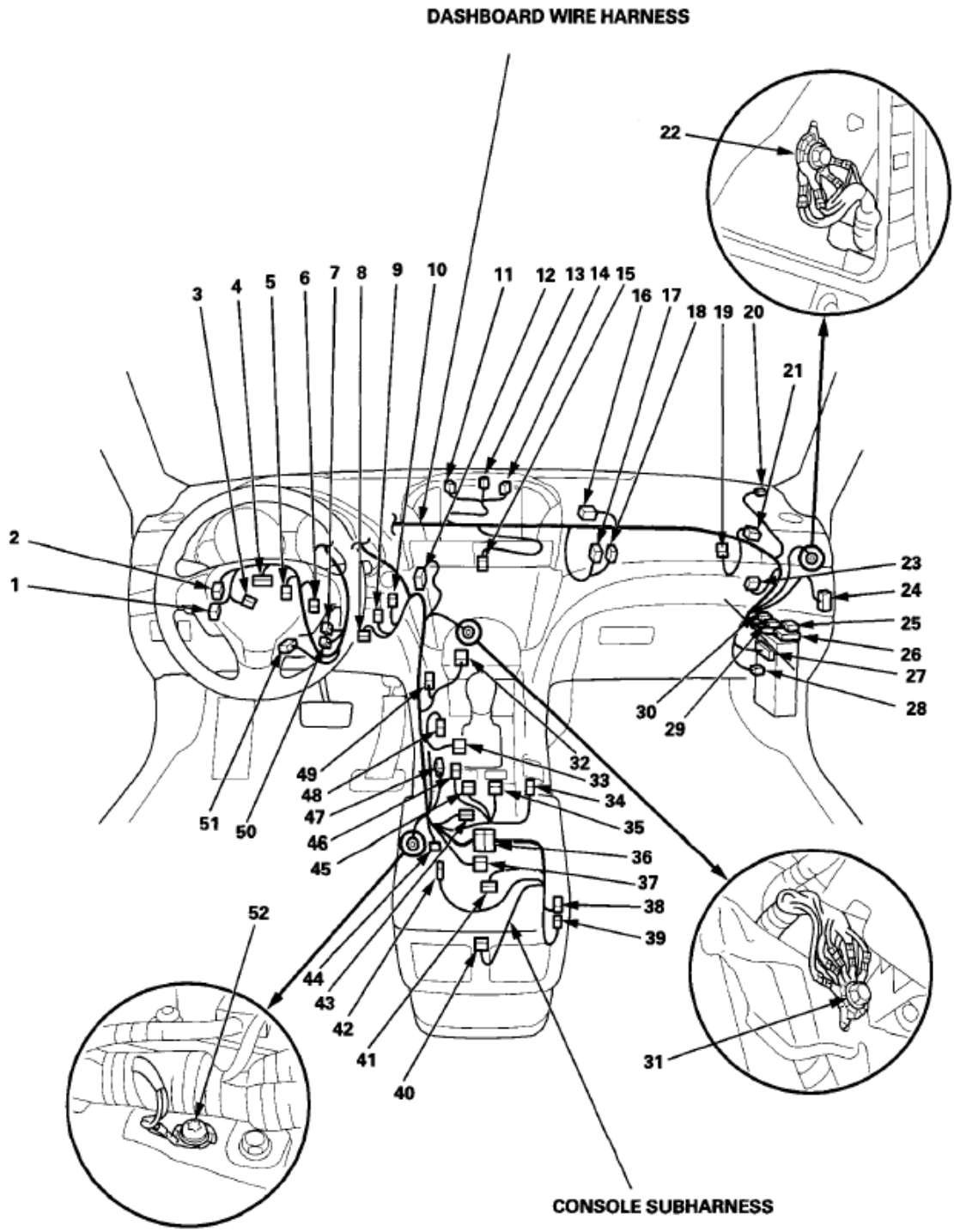


Fig. 14: Identifying Dashboard Engine Compartment Wire Harness And Connectors - Passenger's Side (2 Of 2)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

AUDIO WIRE HARNESS

Connector or Terminal	Ref	Cavities	Location	Connects to	Notes
AcuraLink connector (Female connector)	11	5	Under right side of dash		(1)
AcuraLink connector (Male connector)	7	5	Under right side of dash		(1)
AcuraLink control unit A (XM receiver)	28	32	Under middle of dash		(1)
Audio unit connector A	32	24	Under middle of dash		(2)
Audio unit connector B	31	14	Under middle of dash		(2)
Audio unit connector C	29	14	Under middle of dash		(2)
Audio unit connector D	22	20	Under middle of dash		(2)
Audio-navigation unit connector A	32	24	Under middle of dash		(3)
Audio-navigation unit connector B	31	24	Under middle of dash		(3)
Audio-navigation unit connector C	29	14	Under middle of dash		(3)
Audio-navigation unit connector D	22	36	Under middle of dash		(3)
Audio-navigation unit connector G	33	16	Under middle of dash		(3)
Audio-navigation unit connector H	34	28	Under middle of dash		(3)
Audio-navigation switch panel	30	24	Under middle of dash		(3)
Audio-HVAC display unit	2	12	Under middle of dash		(2)
Front interior LF antenna	27	2	Under middle of dash		(4)
Glove box light	12	2	Glove box		
HandsFreeLink control unit	25	28	Under middle of dash		
Interface dial	26	5	Under middle of dash		(3)
Keyless access system mode switch	14	2	Under right side of dash		(4)
Navigation display unit	2	32	Under middle of dash		(3)
Navigation service check connector	17	2	Under right side of dash		(3)
Passenger's climate control switch	13	16	Under middle		

			of dash		
Passenger's under-dash fuse/relay box connector D (see **FUSE TO COMPONENTS INDEX**)	15	28	Under right side of dash		
Trunk lid opener main switch	16	2	Under right side of dash		
XM receiver	28	14	Under middle of dash		(5)
C406	5	34	Under right side of dash	Dashboard wire harness (view of middle to passenger's side)	
C407	6	12	Under right side of dash	Dashboard wire harness (view of middle to passenger's side)	
C501	21	20	Under middle of dash	A/C wire harness	
C502 (junction connector)	23	12	Under middle of dash		
C503 (junction connector)	24	12	Under middle of dash		
C504 (junction connector)	4	12	Under right side of dash		
C505 (junction connector)	3	12	Under right side of dash		
C506 (junction connector)	8	12	Under right side of dash		
C507 (junction connector)	9	12	Under right side of dash		
C508 (junction connector)	10	12	Under right side of dash		
C509	18	28	Under right side of dash	Right side wire harness: • Without SH-AWD • With SH-AWD	
C510	19	12	Under right side of dash	Right side wire harness: • Without SH-AWD • With SH-AWD	(3)
G501	1		Under middle of dash	Body ground, via audio wire harness	
G502	20		Under middle of dash	Body ground, via audio wire harness	

(1) USA models with navigation

(2) Without navigation

(3) With navigation

(4) With keyless access system

(5) Except USA models with navigation

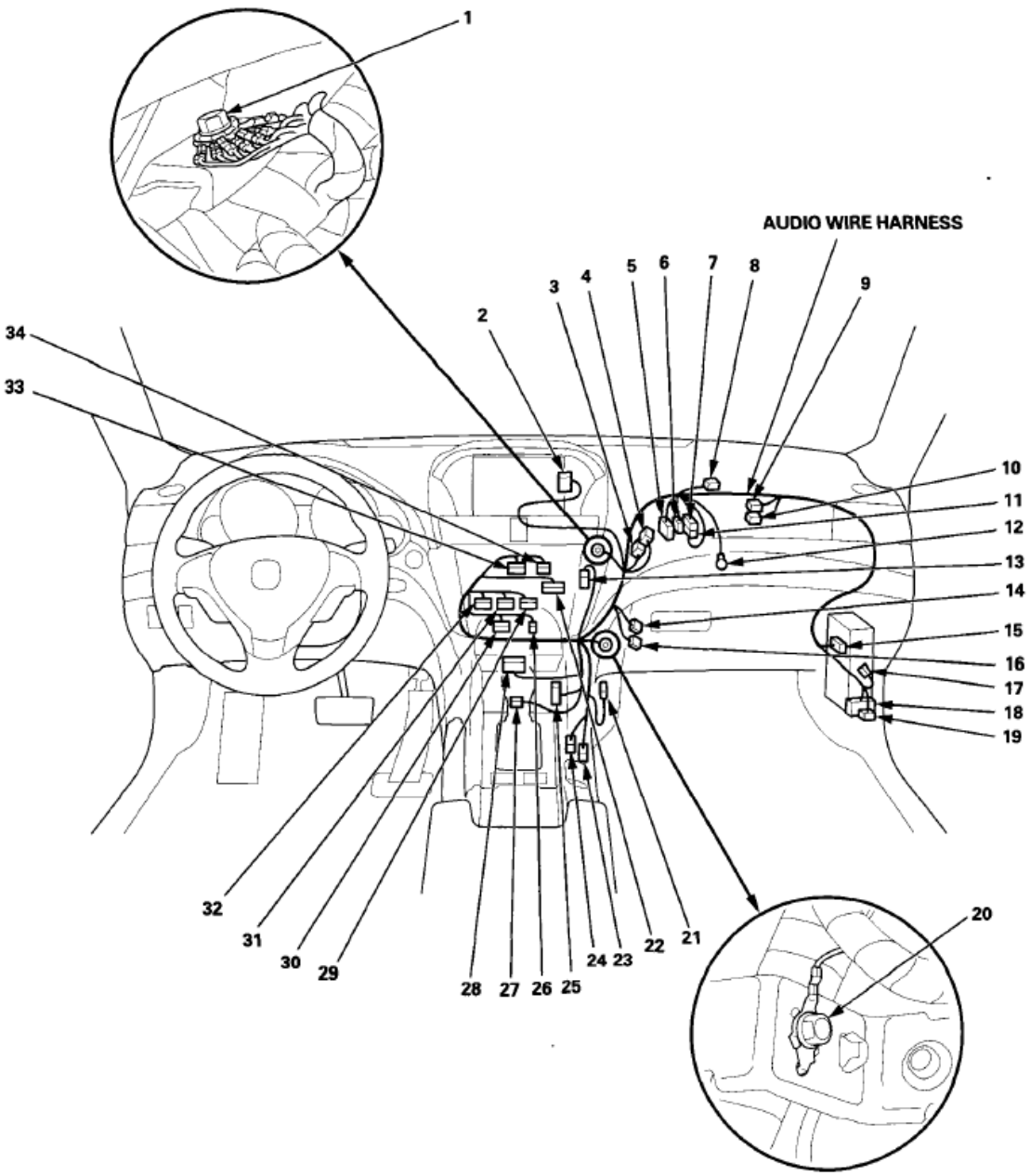


Fig. 15: Identifying Audio Wire Harness And Connectors
Courtesy of AMERICAN HONDA MOTOR CO., INC.

LEFT SIDE WIRE HARNESS (WITHOUT SH-AWD)

Connector or Terminal	Ref	Cavities	Location	Connects to	Notes

Driver's door switch	4	1	Left B-pillar		
Driver's under-dash fuse/relay box connector D (see **FUSE TO COMPONENTS INDEX**)	3	16	Under left side of dash		
Driver's under-dash fuse/relay box connector E (see **FUSE TO COMPONENTS INDEX**)	2	20	Under left side of dash		
BSI control unit	33	16	Left side of trunk		(4)
EVAP canister vent shut valve	34	2	Under floor		
Fuel fill door opener solenoid	32	2	Left side of trunk		
Fuel tank pressure (FTP) sensor	35	3	Under floor		
Fuel tank unit	10	4	Under left side of floor		
Glass antenna coil connector A	8	1	Left C-pillar		
Glass antenna coil connector B	9	1	Left C-pillar		
Keyless buzzer	24	2	Behind rear bumper		
Left back-up light	27	2	Left side of trunk		
Left BSI radar unit	31	6	Behind right side of rear bumper		(4)
Left license plate light	26	2	Behind rear bumper		
Left rear door switch	6	1	Left C-pillar		
Left rear side marker light	30	2	Left side of trunk		
Left rear speaker	13	2	Middle of rear shelf		
Left rear TPMS initiator	37	3	Under floor		
Left rear turn signal light	28	2	Left side of trunk		
Left rear wheel speed sensor	36	2	Under floor		
Left taillight/brake light	14	3	Left side of trunk		
Rear bumper LF antenna	22	2	Behind rear bumper		(1)
Rear interior LF antenna	5	2	Under rear seat		(1)
Rear window defogger connector A (+)	11	1	Left side of rear shelf		
Rear window defogger noise condenser	7	2	Left C-pillar		
			Middle of		

Rearview camera	15	12	trunk		(2)
Right back-up light	20	2	Right side of trunk		
Right BSI radar unit	16	6	Behind left side of rear bumper		(4)
Right license plate light	25	2	Behind rear bumper		
Right rear side marker light	18	2	Right side of trunk		
Right rear turn signal light	19	2	Right side of trunk		
Right taillight/brake light	17	3	Right side of trunk		
Trunk lid release actuator/trunk lid latch switch	21	3	Middle of trunk		
C303	1	12	Under left side of dash	Left engine compartment wire harness (dashboard branch)	
C401	41	18	Under left side of dash	Dashboard wire harness (view of driver's side)	
C601	12	20	Under rear seat	Right side wire harness	(2) (without SH-AWD)
C601	12	13	Under rear seat	Right side wire harness	(3) (without SH-AWD)
C603 (junction connector)	23	12	Middle of trunk		(4)
C771	39	13	Left B-pillar	Left rear door wire harness	
G601	40		Under driver's seat	Body ground, via left side wire harness	
G602	38		Under rear seat	Body ground, via left side wire harness	
G603	29		Left side of rear	Body ground, via left side wire harness	

(1) With keyless access system

(2) With navigation

(3) Without navigation

(4) With BSI

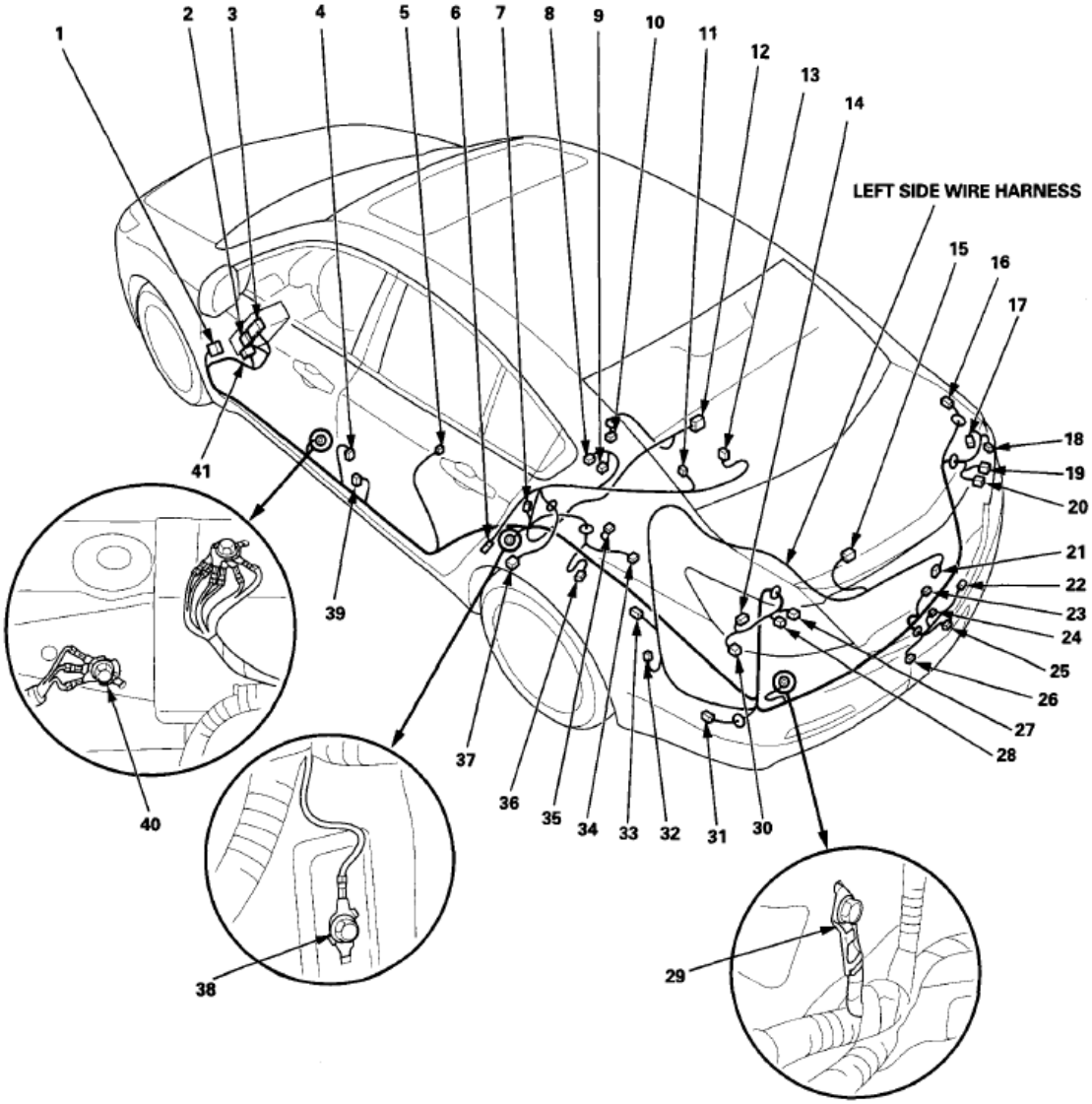


Fig. 16: Identifying Left Side Wire Harness And Connectors (Without SH-AWD)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

LEFT SIDE WIRE HARNESS (WITH SH-AWD)

Connector or Terminal	Ref	Cavities	Location	Connects to	Notes
Condenser (for rear window defogger)	32	2	Left side of trunk		
Driver's door switch	4	1	Left B-pillar		
Driver's under-dash fuse/relay box connector D (see **FUSE TO COMPONENTS INDEX**)	3	16	Under left side of dash		
Driver's under-dash fuse/relay box connector E (see **FUSE TO COMPONENTS INDEX**)	2	20	Under left side of dash		
			Left side of		

BSI control unit	35	16	trunk		(3)
Fuel fill door opener solenoid	34	2	Left side of trunk		
Fuel pump/fuel gauge sending unit	6	4	Under left side of floor		
Glass antenna coil connector A	8	1	Left C-pillar		
Glass antenna coil connector B	9	1	Left C-pillar		
Keyless buzzer	25	2	Behind rear bumper		
Left back-up light	28	2	Left side of trunk		
Left BSI radar unit	33	6	Behind left side of rear bumper		(3)
Left license plate light	27	2	Behind rear bumper		
Left rear door switch	5	1	Left C-pillar		
Left rear side marker light	31	2	Left side of trunk		
Left rear speaker	14	2	Middle of rear shelf		
Left rear TPMS initiator	37	3	Under floor		
Left rear turn signal light	29	2	Left side of trunk		
Left rear wheel speed sensor	36	2	Under floor		
Left taillight/brake light	15	3	Left side of trunk		
Rear bumper LF antenna	23	2	Behind rear bumper		(1)
Rear interior LF antenna	7	2	Under rear seat		(1)
Rear window defogger connector A (+)	13	1	Left side of rear shelf		
Rear window defogger noise condenser	32	2	Left side of trunk		
Rearview camera	16	12	Middle of trunk		(2)
Right back-up light	21	2	Right side of trunk		
Right BSI radar unit	17	6	Behind left side of rear bumper		(3)
Right license plate light	26	2	Behind rear bumper		
Right rear side marker light	19	2	Right side of trunk		
Right rear turn signal light	20	2	Right side of trunk		

Right taillight/brake light	18	3	Right side of trunk		
Secondary fuel gauge sending unit	10	4	Under right side of floor		
Trunk lid release actuator/trunk lid latch switch	22	3	Middle of trunk		
C303	1	12	Under left side of dash	Left engine compartment wire harness (Dashboard branch)	
C401	41	18	Under left side of dash	Dashboard wire harness (View of driver's side)	
C601	12	20	Under rear seat	Right side wire harness (With SH-AWD)	
C602	11	2	Under rear seat	Right side wire harness (With SH-AWD)	
C603 (junction connector)	24	12	Middle of trunk		(3)
C771	39	13	Left B-pillar	Left rear door wire harness	
G601	40		Under driver's seat	Body ground, via left side wire harness	
G602	38		Under rear seat	Body ground, via left side wire harness	
G603	30		Left side of rear	Body ground, via left side wire harness	

(1) With keyless access system

(2) With navigation

(3) With BSI

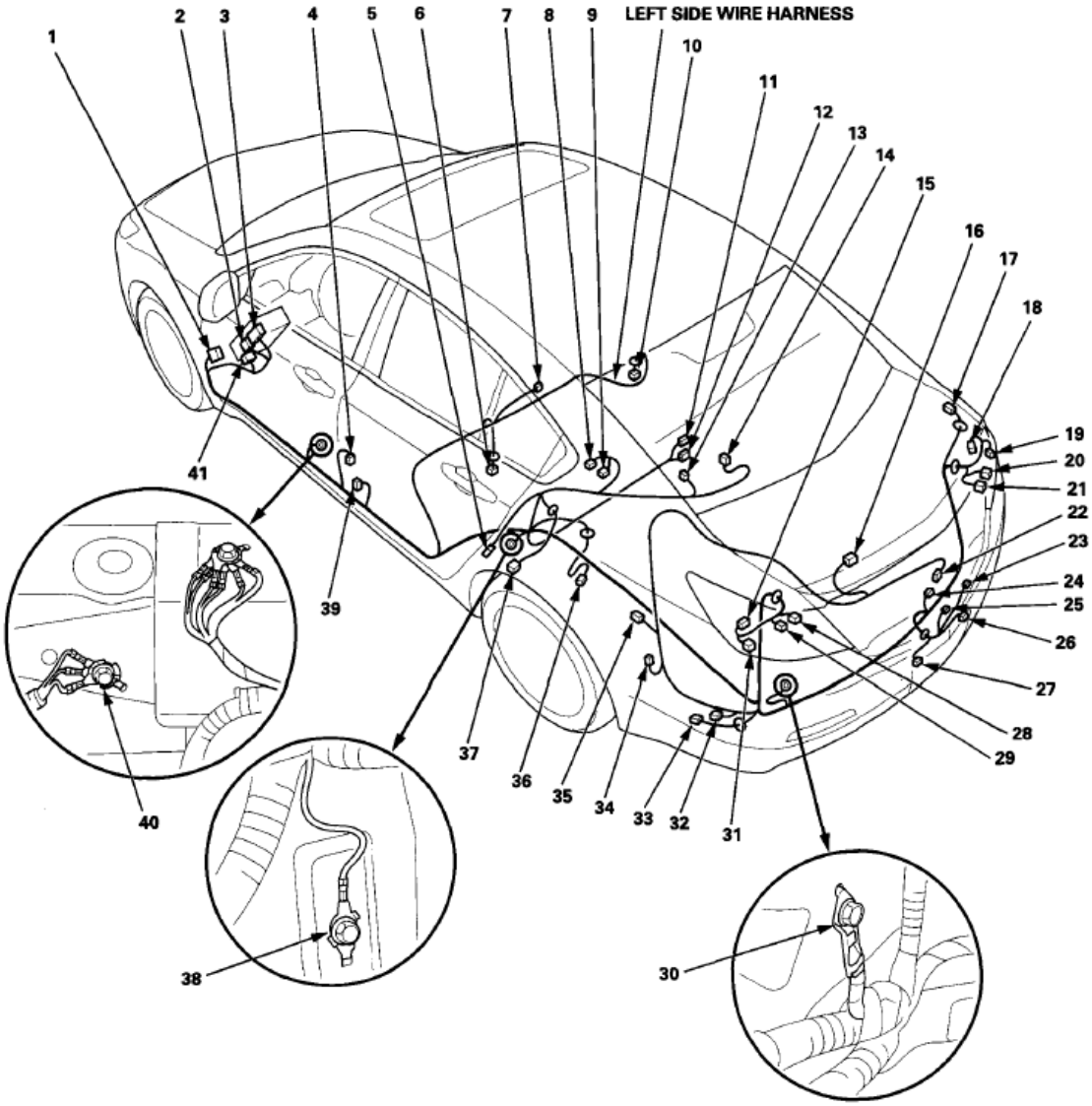


Fig. 17: Identifying Left Side Wire Harness And Connectors (With SH-AWD)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

SRS FLOOR WIRE HARNESS

Connector or Terminal	Ref	Cavities	Location	Connects to	Notes
Driver's seat belt tensioner	10	4	Left B-pillar		
Driver's side airbag inflator	13	2	Under driver's seat		
Front passenger's seat belt tensioner	3	4	Right B-pillar		
Front passenger's side airbag inflator	18	2	Under front passenger's seat		
Left side curtain airbag inflator	8	2	Left C-pillar		

Left side impact sensor (first)	11	4	Left B-pillar		
Left side impact sensor (second)	9	2	Left C-pillar		
Rear safing sensor	7	2	Under rear seat cushion		
Right side curtain airbag inflator	6	2	Right C-pillar		
Right side impact sensor (first)	2	4	Right B-pillar		
Right side impact sensor (second)	5	2	Right C-pillar		
SRS unit connector B	16	39	Under middle of dash		
C404	4	18	Under center console	Dashboard wire harness (view of middle to passenger's side)	(1)
C404	4	23	Under center console	Dashboard wire harness (view of middle to passenger's side)	(2)
C404	15	18	Under center console	Dashboard wire harness (view of middle to passenger's side)	M/T
C701	14	23	Under driver's seat	Driver's seat wire harness • With seat ventilation • Without seat ventilation	
C702	17	18	Under front passenger's seat	Front passenger's seat wire harness	
G701	12		Under driver's seat	Body ground, via SRS floor wire harness	
G702	1		Under front passenger's seat	Body ground, via SRS floor wire harness	

(1) A/T without seat ventilation

(2) A/T with seat ventilation

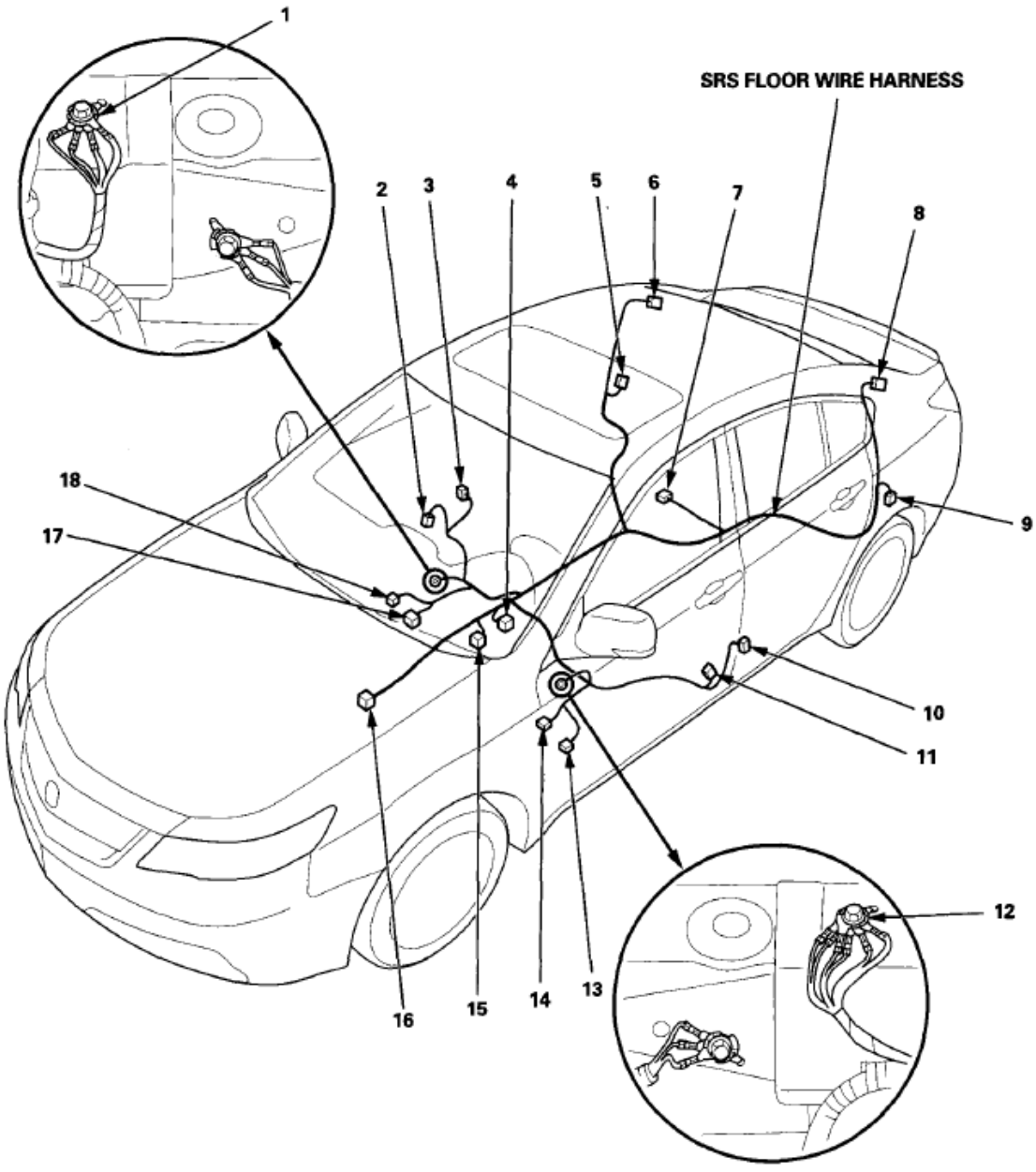


Fig. 18: Identifying SRS Floor Wire Harness And Connectors
Courtesy of AMERICAN HONDA MOTOR CO., INC.

RIGHT SIDE WIRE HARNESS (WITHOUT SH-AWD)

Connector or Terminal	Ref	Cavities	Location	Connects to	Notes
Electrical compass unit	3	6	Under rear shelf		(1)
Front passenger's door switch	10	1	Right B-pillar		
Passenger's under-dash fuse/relay box connector G (see **FUSE TO COMPONENTS INDEX**)	15	16	Under right side of dash		
Rear shelf LF antenna	1	2	Under rear shelf		(2)

Right rear door switch	8	1	Right C-pillar		
Right rear speaker	5	2	Under rear shelf		
Right rear TPMS initiator	17	3	Under right side of floor		
Right rear wheel speed sensor	18	2	Under right side of floor		
Stereo amplifier connector A	20	18	Right side of trunk		
Stereo amplifier connector B	19	28	Right side of trunk		(3)
Stereo amplifier connector B	19	20	Right side of trunk		(1)
Subwoofer	4	2	Under rear shelf		
Trunk light	2	2	Under rear shelf		
C410	11	8	Under right side of dash	Dashboard wire harness (view of middle to passenger's side)	
C411	12	12	Under right side of dash	Dashboard wire harness (view of middle to passenger's side)	
C509	13	28	Under right side of dash	Audio wire harness	
C510	14	12	Under right side of dash	Audio wire harness	(3)
C601	7	20	Under rear seat	Left side wire harness (without SH-AWD)	(3)
C601	7	13	Under rear seat	Left side wire harness (without SH-AWD)	(1)
C781	9	13	Right B-pillar	Right rear door wire harness	
G651	16		Under front passenger's seat	Body ground, via right side wire harness	
G653	21		Right side of rear	Body ground, via right side wire harness	

(1) Without navigation

(2) With keyless access system

(3) With navigation

REAR WINDOW DEFOGGER GROUND WIRE (WITHOUT SH-AWD)

Connector or Terminal	Ref	Cavities	Location	Connects to	Notes
Rear window defogger connector B (-)	6	1	Right C-pillar		
G801	22		Right C-	Body ground, via rear window	

			pillar	defogger ground	

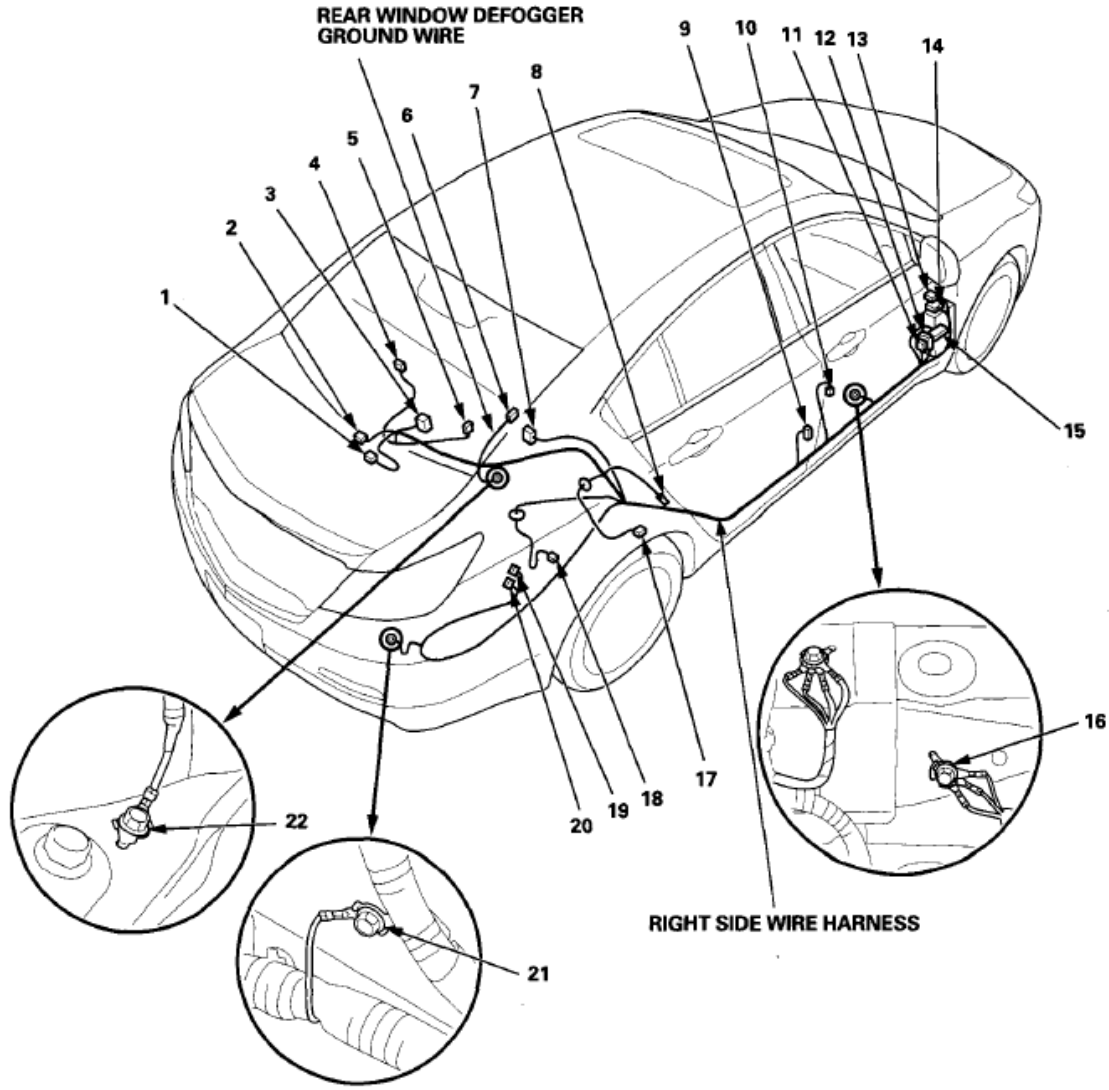


Fig. 19: Identifying Rear Window Defogger Ground Wire And Connectors (Without SH-AWD)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

RIGHT SIDE WIRE HARNESS (WITH SH-AWD)

Connector or Terminal	Ref	Cavities	Location	Connects to	Notes
Electrical compass unit	32	6	Under rear shelf		(1)
EVAP canister vent shut valve	30	2	Under right side of floor		
Front passenger's door switch	14	1	Right B-pillar		
Fuel tank pressure (FTP) sensor	23	3	Under right side of floor		
Passenger's under-dash fuse/relay box connector H (see **FUSE TO**	18	38	Under right side of dash		

COMPONENTS INDEX)					
Rear shelf LF antenna	1	2	Under rear shelf		(2)
Right rear door switch	12	1	Right C-pillar		
Right rear speaker	4	2	Under rear shelf		
Right rear TPMS initiator	22	3	Under right side of floor		
Right rear wheel speed sensor	24	2	Under right side of floor		
SH-AWD control unit connector A	8	20	Under rear seat		
SH-AWD control unit connector B	9	8	Under rear seat		
SH-AWD relay	10	4	Under rear seat		
Stereo amplifier connector A	26	18	Right side of trunk		
Stereo amplifier connector B	25	28	Right side of trunk		(3)
Stereo amplifier connector B	25	20	Right side of trunk		(1)
Subwoofer	3	2	Under rear shelf		
Trunk light	2	2	Under rear shelf		
C410	15	8	Under right side of dash	Dashboard wire harness (view of middle to passenger's side)	
C411	19	12	Under right side of dash	Dashboard wire harness (view of middle to passenger's side)	
C509	16	28	Under right side of dash	Audio wire harness	
C510	17	12	Under right side of dash	Audio wire harness	(3)
C601	5	20	Under rear seat	Left side wire harness (with SH-AWD)	
C602	6	2	Under rear seat	Left side wire harness (with SH-AWD)	
C651 (junction connector)	11	12	Right C-pillar		
C652	27	6	Under right side of floor	Rear differential subharness	
C653	28	6	Under right side of floor	Rear differential subharness	
C781	13	13	Right B-pillar	Right rear door wire harness	
G651	20		Under front passenger's seat	Body ground, via right side wire harness	
G652	21		Right C-pillar	Body ground, via right side wire harness	
			Right side of	Body ground, via right	

G653	29		rear	side wire harness	

(1) Without navigation

(2) With keyless access system

(3) With navigation

REAR WINDOW DEFOGGER GROUND WIRE (WITH SH-AWD)

Connector or Terminal	Ref	Cavities	Location	Connects to	Notes
Rear window defogger connector B (-)	7	1	Right C-pillar		
G801	31		Right C-pillar	Body ground, via rear window defogger ground	

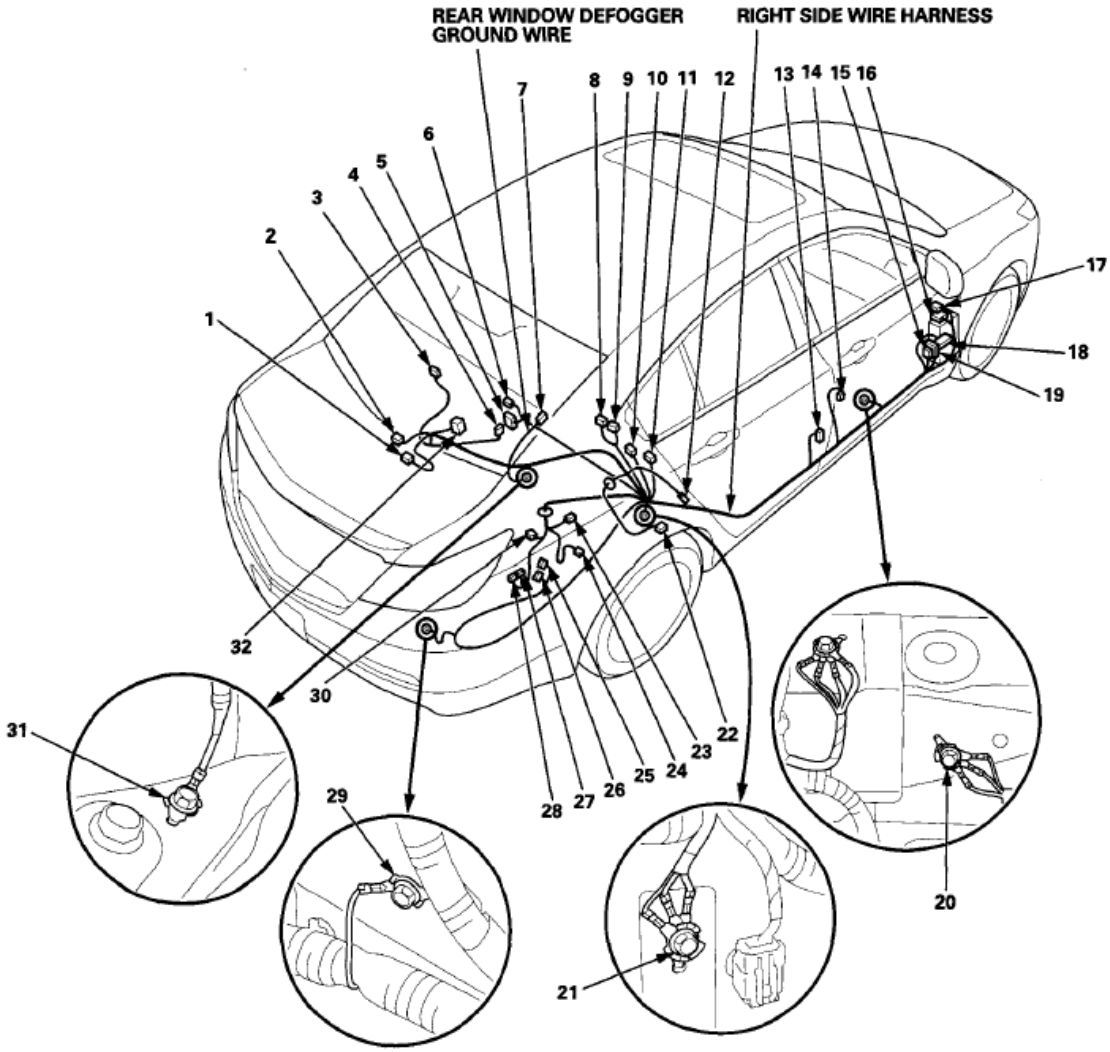


Fig. 20: Identifying Rear Window Defogger Ground Wire And Connectors (With SH-AWD)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

ROOF WIRE HARNESS

Connector or Terminal	Ref	Cavities	Location	Connects to	Notes
Automatic dimming inside mirror	1	7	Front of roof		
Driver's vanity mirror light	7	2	Left front of roof		
Front passenger's vanity mirror light	2	2	Right front of roof		
HFL-navigation microphone	6	7	Front of roof		(1)
Left tweeter	12	2	Front of roof		
Moon roof switch	5	7	Front of roof		
Roof console	3	20	Front of roof		
C402	11	23	Under left side of dash	Dashboard wire harness (view of driver's side)	
C451	4	23	Middle of roof	Moonroof subharness	

(1) With navigation

MOONROOF SUBHARNESS

Connector or Terminal	Ref	Cavities	Location	Connects to	Notes
High mount brake light	9	2	Rear of roof		
Moonroof control unit/motor	10	14	Rear of roof		
Rear individual map light	8	10	Rear of roof		
C451	4	23	Middle of roof	Roof wire harness	

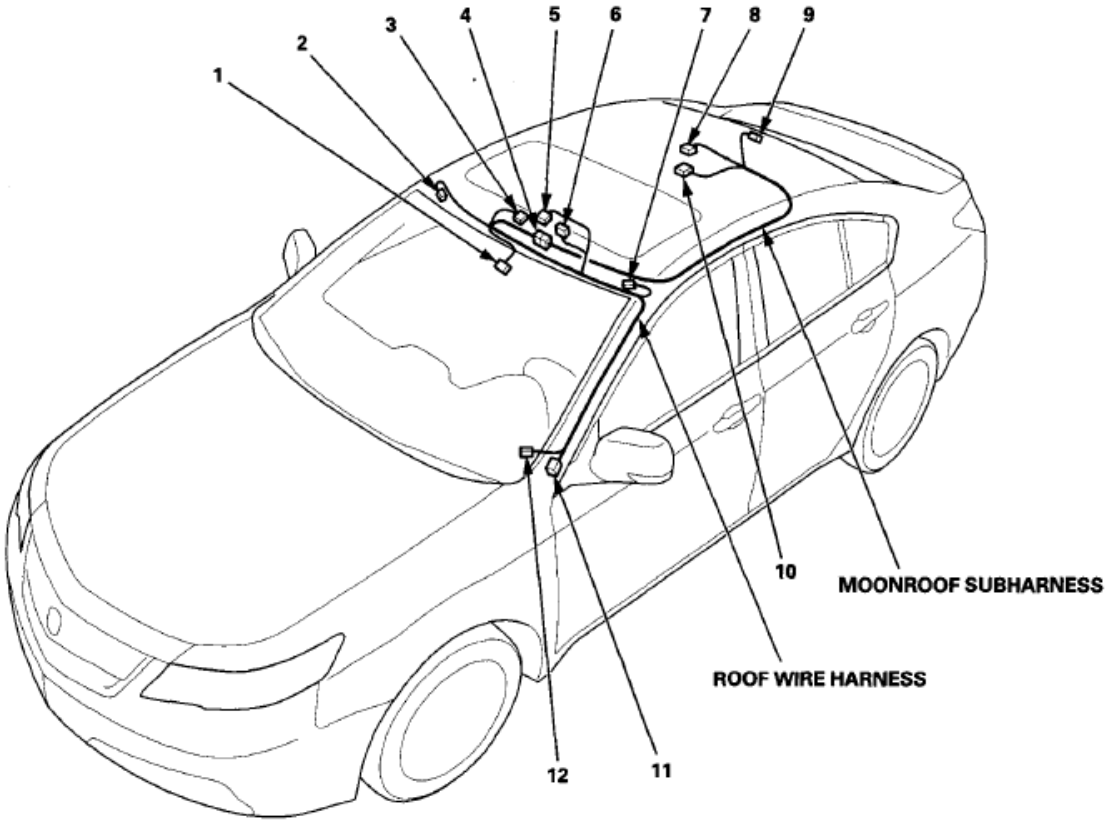


Fig. 21: Identifying Roof Wire Harness, Moonroof Subharness And Connectors
Courtesy of AMERICAN HONDA MOTOR CO., INC.

DRIVER'S DOOR WIRE HARNESS

Connector or Terminal	Ref	Cavities	Location	Connects to	Notes
Left BSI alert indicator	8	2	Driver's door		(1)
Driver's door lock actuator/knob switch/key cylinder switch	18	10	Driver's door		
Driver's door outer handle/lock switch/touch sensor/LF antenna	1	8	Driver's door		(2)
Driver's power window motor	16	6	Driver's door		
Left front speaker	15	2	Driver's door		
Left power mirror	9	16	Driver's door		
C751	12	23	Under left side of dash	Dashboard wire harness (view of driver's side)	
C752	13	12	Under left side of dash	Dashboard wire harness (view of driver's side)	
C753	6	20	Driver's door	Driver's door subharness	
C754	7	20	Driver's door	Driver's door subharness	
C755 (junction connector)	10	12	Driver's door		

(1) With BSI

(2) With keyless access system

DRIVER'S DOOR SUBHARNESS

Connector or Terminal	Ref	Cavities	Location	Connects to	Notes
Driver's door courtesy light	17	2	Driver's door		
Driving position memory switch	3	7	Driver's door		
Power mirror control unit	11	24	Driver's door		
Power mirror switch	5	13	Driver's door		
Power window master switch (door multiplex control unit)	2	37	Driver's door		
Trunk lid opener/fuel fill door opener switch	14	6	Driver's door		
C753	6	20	Driver's door	Driver's door wire harness	
C754	7	20	Driver's door	Driver's door wire harness	
C756 (junction connector)	4	12	Driver's door		

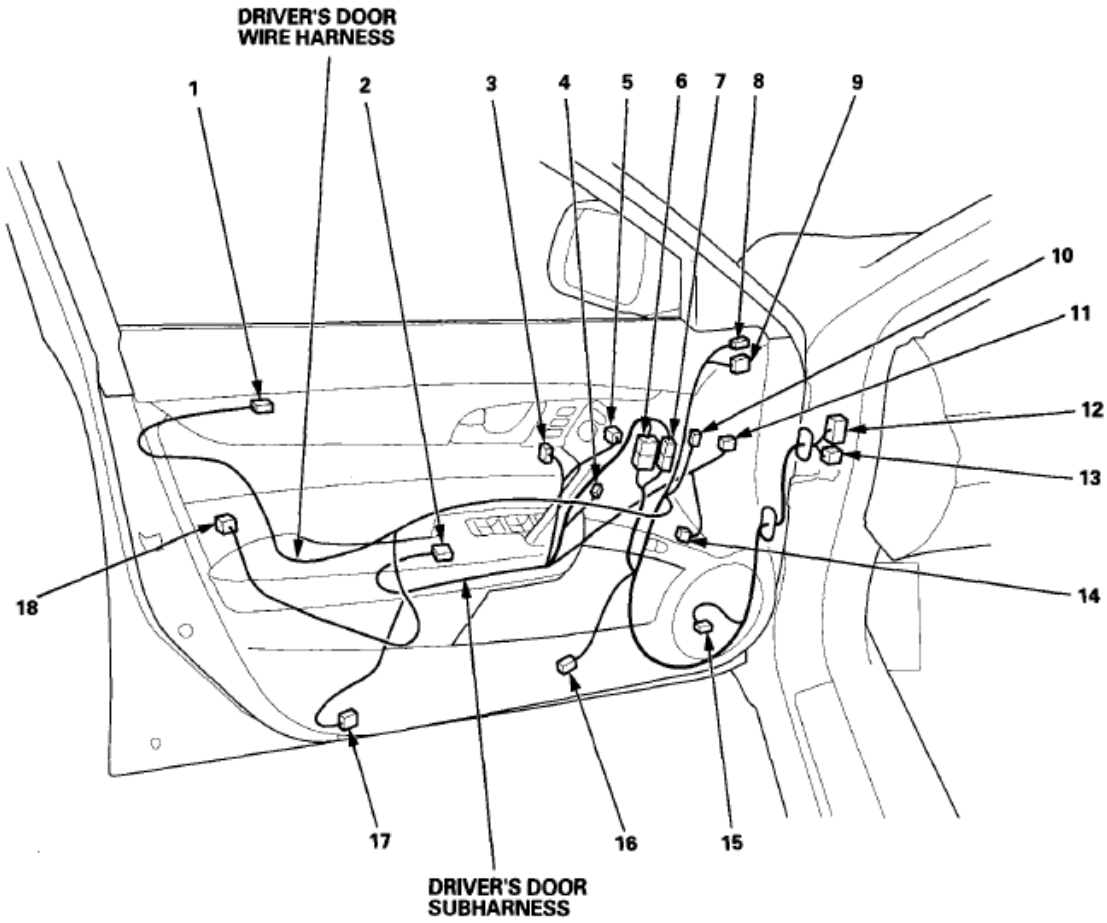


Fig. 22: Identifying Driver's Door Wire Harness, Driver's Door Subharness And Connectors
Courtesy of AMERICAN HONDA MOTOR CO., INC.

FRONT PASSENGER'S DOOR WIRE HARNESS

Connector or Terminal	Ref	Cavities	Location	Connects to	Notes
Right BSI alert indicator	2	2	Front passenger's door		(1)
Front passenger's door courtesy light	7	2	Front passenger's door		
Front passenger's door lock actuator/knob switch	6	10	Front passenger's door		
Front passenger's door outer handle/lock switch/touch sensor/LF antenna	5	8	Front passenger's door		(2)
Front passenger's power window motor	8	6	Front passenger's door		

Front passenger's power window switch	4	37	Front passenger's door		
Right front speaker	9	2	Front passenger's door		
Right power mirror	1	16	Front passenger's door		
C761	10	28	Under right side of dash	Dashboard wire harness (view of middle to passenger's side)	
C762 (junction connector)	3	12	Front passenger's door		

(1) With BSI

(2) With keyless access system

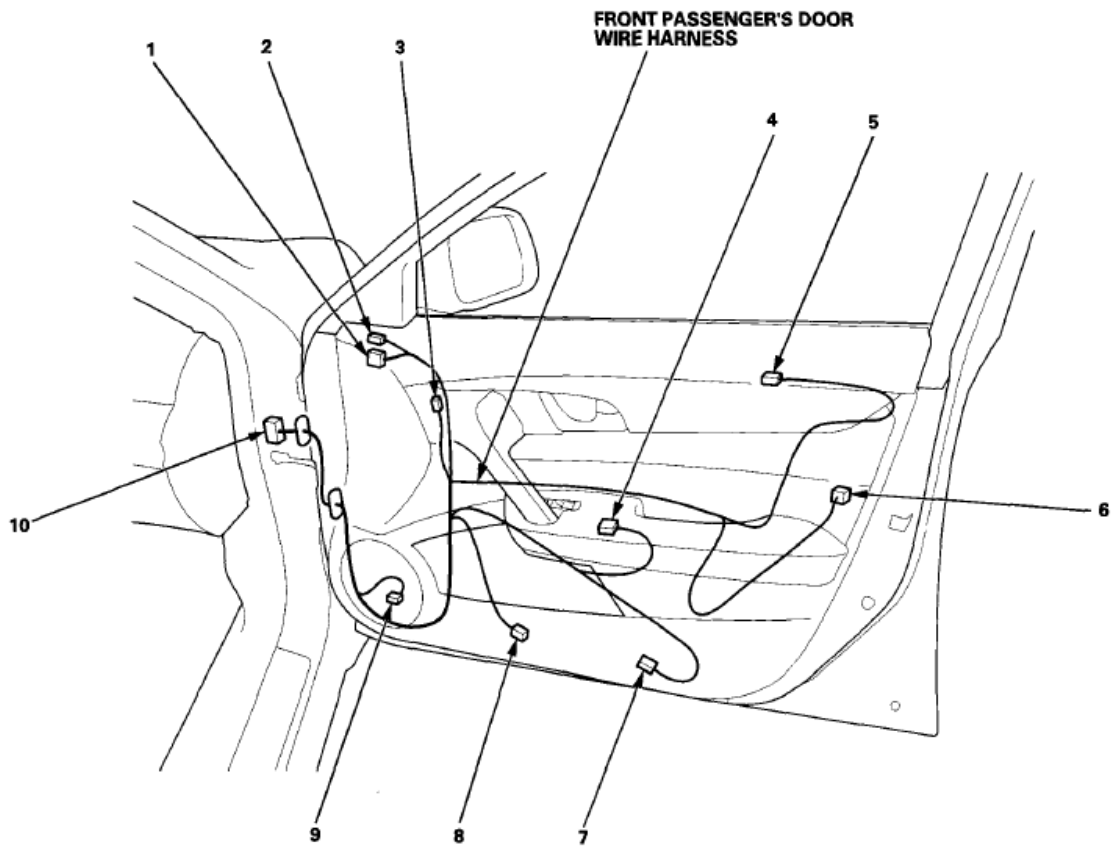


Fig. 23: Identifying Front Passenger's Door Wire Harness And Connectors
Courtesy of AMERICAN HONDA MOTOR CO., INC.

LEFT REAR DOOR WIRE HARNESS

Connector or Terminal	Ref	Cavities	Location	Connects to	Notes
Left rear door lock actuator/knob switch	1	10	Left rear door		
Left rear power window motor	5	2	Left rear door		
Left rear power window switch	2	14	Left rear door		
Left rear speaker	3	2	Left rear door		
				Left side wire harness:	
C771	4	13	Left B-pillar	• Without SH-AWD • With SH-AWD	

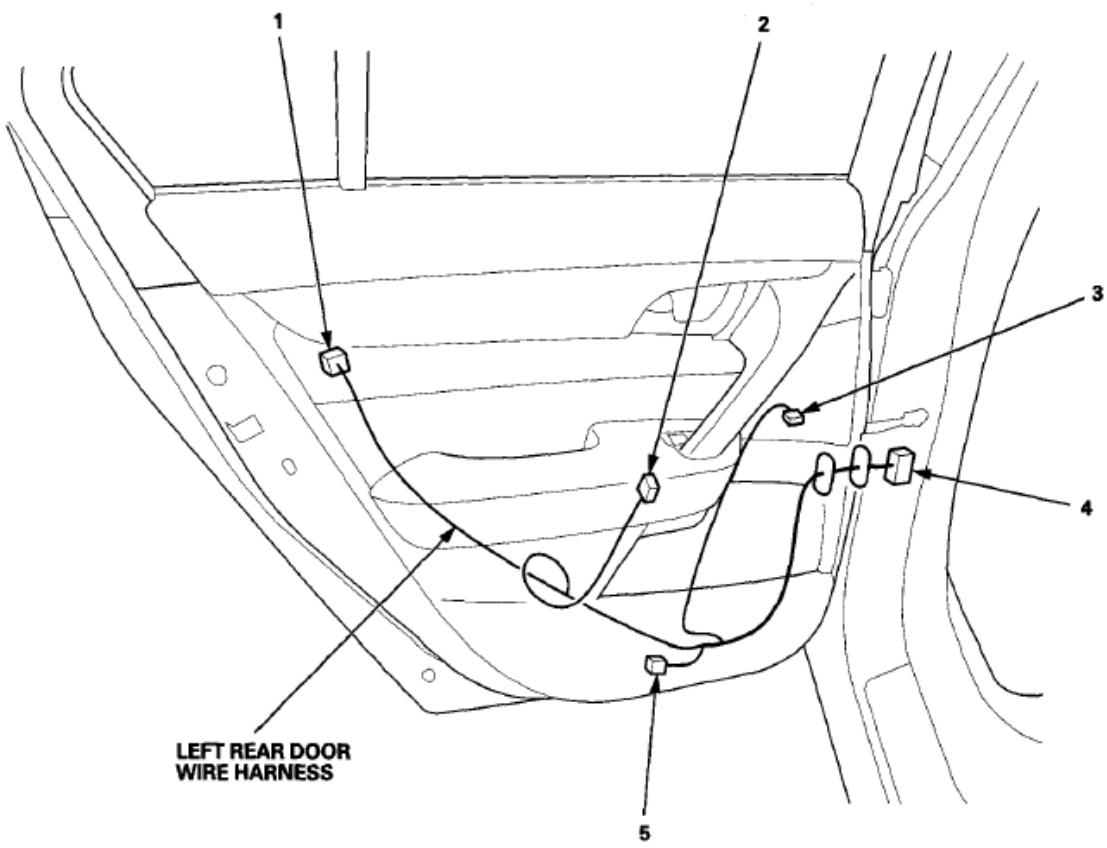


Fig. 24: Identifying Left Rear Door Wire Harness And Connectors
Courtesy of AMERICAN HONDA MOTOR CO., INC.

RIGHT REAR DOOR WIRE HARNESS

Connector or Terminal	Ref	Cavities	Location	Connects to	Notes
Right rear door lock actuator/knob switch	3	10	Right rear door		
Right rear power window motor	4	2	Right rear door		
Right rear power window switch	2	14	Right rear door		
Right rear speaker	1	2	Right rear door		
				Right side wire harness:	

C781	5	13	Right B-pillar	• Without SH-AWD • With SH-AWD	

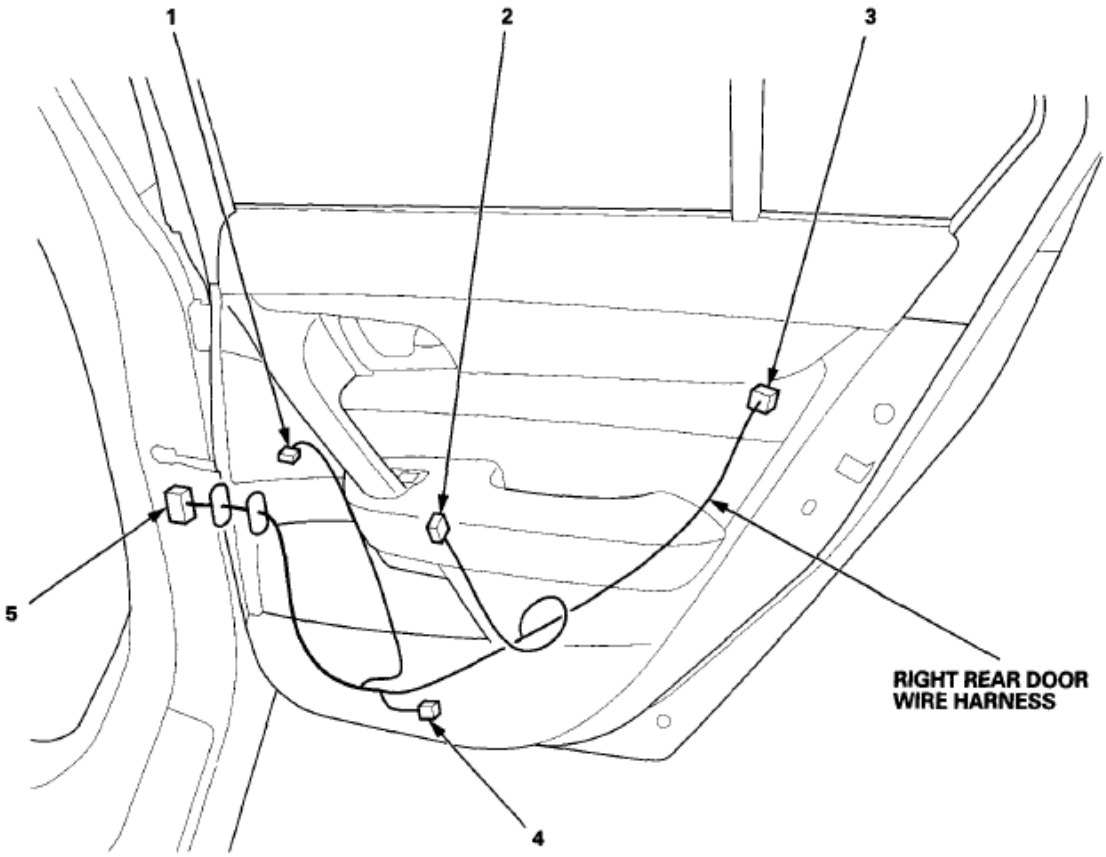


Fig. 25: Identifying Right Rear Door Wire Harness And Connectors
Courtesy of AMERICAN HONDA MOTOR CO., INC.

DRIVER'S SEAT WIRE HARNESS (WITH SEAT VENTILATION)

Connector or Terminal	Ref	Cavities	Location	Connects to	Notes
Driver's lumbar support motor	16	2	Right side of driver's seat-back		
Driver's power lumbar support switch	4	5	Left side of driver's seat		
Driver's power seat adjustment switch	7	12	Left side of driver's seat		
Driver's seat belt buckle switch	11	2	Under driver's seat		
Driver's seat cushion heater	8	3	Under driver's seat		
Driver's seat front up-down motor/position sensor	15	5	Under driver's seat		
Driver's seat heater relay (high)	14	4	Under driver's seat		
Driver's seat heater relay (low)	13	5	Under driver's seat		
Driver's seat position sensor	3	2	Under driver's seat		
Driver's seat rear up-down motor/position sensor	6	5	Under driver's seat		

Driver's seat recline motor/position sensor	2	5	Left side of driver's seat-back		
Driver's seat slide motor/position sensor	5	5	Under driver's seat		
Driver's seat-back heater	1	2	Right side of driver's seat-back		
Power seat control unit connector A	9	18	Under driver's seat		
Power seat control unit connector B	12	40	Under driver's seat		
C701	10	23	Under driver's seat	SRS floor wire harness	

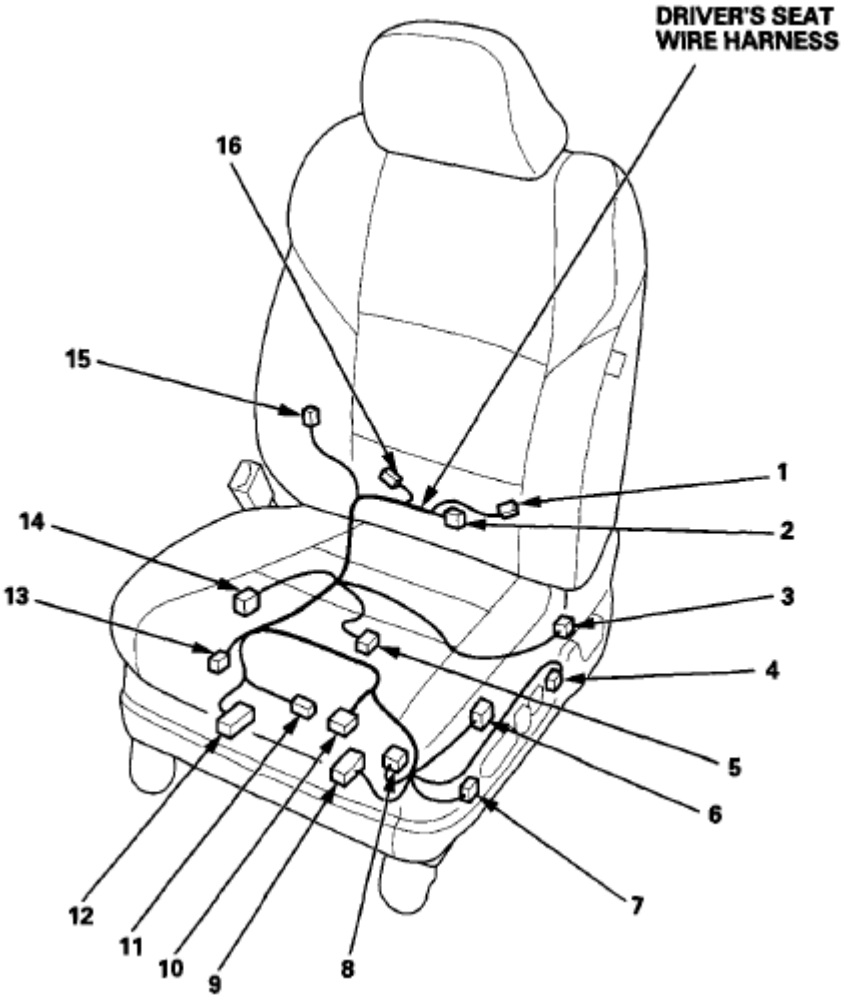


Fig. 26: Identifying Driver's Seat Wire Harness And Connectors (With Seat Ventilation)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

DRIVER'S SEAT WIRE HARNESS (WITHOUT SEAT VENTILATION)

Connector or Terminal	Ref	Cavities	Location	Connects to	Notes
Driver's seat rear up-down motor/position sensor	4	5	Driver's seat Right side of seat-		

Driver's power lumbar support motor	16	2	back		
Driver's power lumbar support switch	5	5	Left side of driver's seat		
Driver's power seat adjustment switch	6	12	Left side of driver's seat		
Driver's seat back heater	1	2	Driver's seat		
Driver's seat belt buckle switch	12	2	Driver's seat		
Driver's seat cushion heater	11	3	Driver's seat		
Driver's seat front up-down motor/position sensor	15	5	Driver's seat		
Driver's seat heater relay (high)	14	4	Driver's seat		
Driver's seat heater relay (low)	13	5	Driver's seat		
Driver's seat position sensor	3	2	Driver's seat		
Driver's seat recline motor/position sensor	2	5	Bottom of seat back		
Driver's seat slide motor/position sensor	9	5	Driver's seat		
Power seat control unit connector A	8	18	Under driver's seat		
Power seat control unit connector B	10	40	Under driver's seat		
C701	7	23	Under driver's seat	SRS floor wire harness	

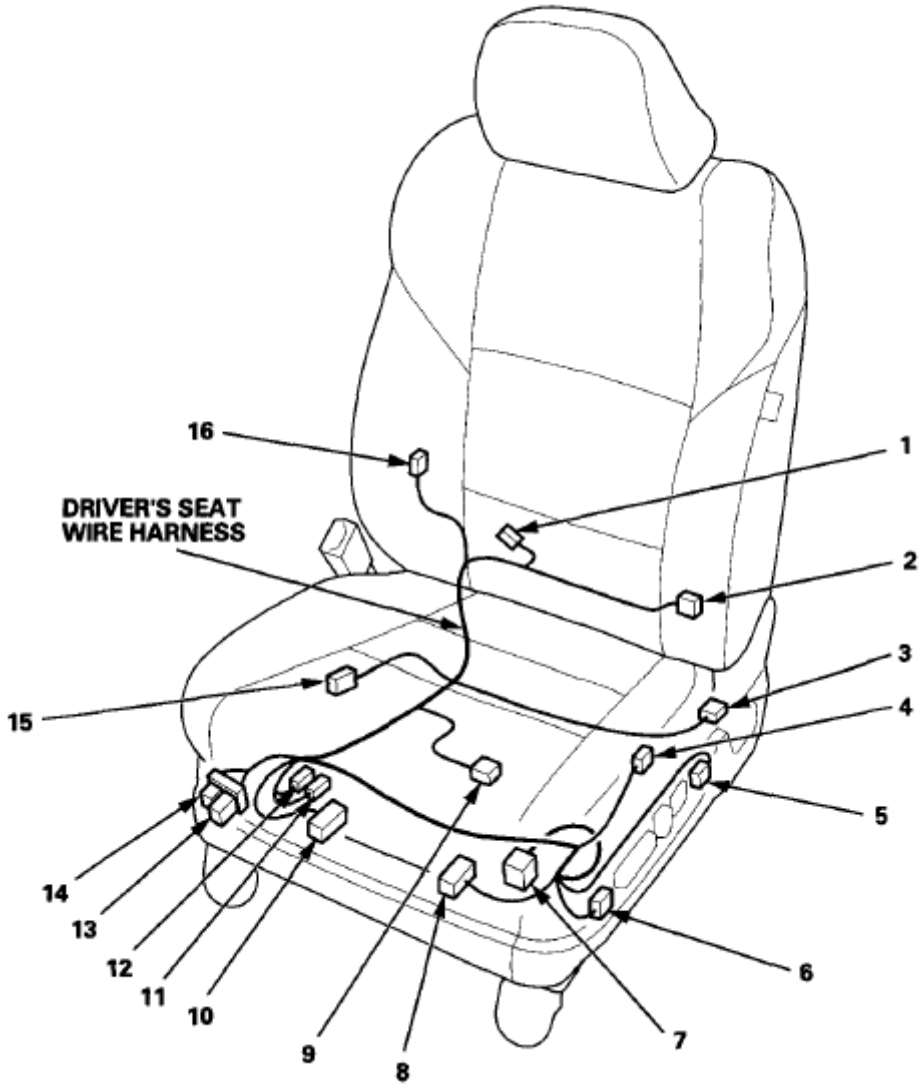


Fig. 27: Identifying Driver's Seat Wire Harness And Connectors (Without Seat Ventilation)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

FRONT PASSENGER'S SEAT WIRE HARNESS

Connector or Terminal	Ref	Cavities	Location	Connects to	Notes
Front passenger's power seat adjustment switch	11	12	Right side of front passenger's seat		
Front passenger's seat belt buckle switch	5	2	Under front passenger's seat		
Front passenger's seat cushion blower motor	3	3	Under front passenger's seat		*1
Front passenger's seat cushion heater	9	4	Under front passenger's seat		
Front passenger's seat front up-down motor	2	2	Under front passenger's seat		
Front passenger's seat heater relay					

(high)	7	4	Under front passenger's seat		*2
Front passenger's seat heater replay (low)	8	5	Under front passenger's seat		*2
Front passenger's seat rear up-down motor	13	2	Under front passenger's seat		
Front passenger's seat recline motor	14	2	Right side of front passenger's seat-back		
Front passenger's seat slide motor	10	5	Under front passenger's seat		
Front passenger's weight sensor (inner side)	4	2	Under front passenger's seat		
Front passenger's weight sensor (outer side)	12	3	Under front passenger's seat		
Front passenger's seat-back blower motor	15	3	Right side of front passenger's seat-back		*1
ODS unit	1	18	Left side of front passenger's seat-back		
C702	6	18	Under front passenger's seat	SRS floor wire harness	

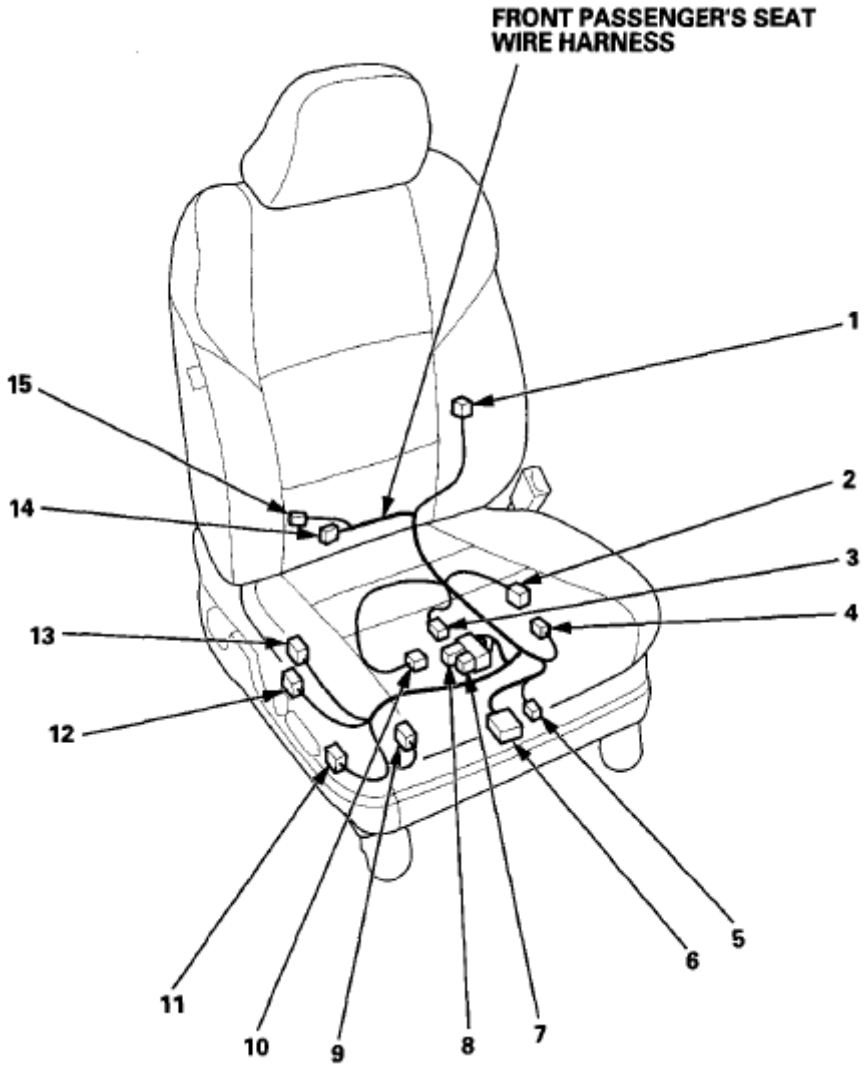


Fig. 28: Identifying Front Passenger's Seat Wire Harness And Connectors
Courtesy of AMERICAN HONDA MOTOR CO., INC.

CABLE REEL SUBHARNESS

Connector or Terminal	Ref	Cavities	Location	Connects to	Notes
Audio remote switch, HFL-navigation voice control switch	1	12	Steering wheel		
Cable reel connector C	3	20	Steering wheel		
Cruise control combination switch/select/reset/information switch	6	12	Steering wheel		
Paddle shifter + (upshift switch)	5	4	Steering wheel		A/T
Paddle shifter - (downshift switch)	2	4	Steering wheel		A/T
Horn switch	7	1	Steering		

T9	4		wheel Steering wheel	Steering wheel	

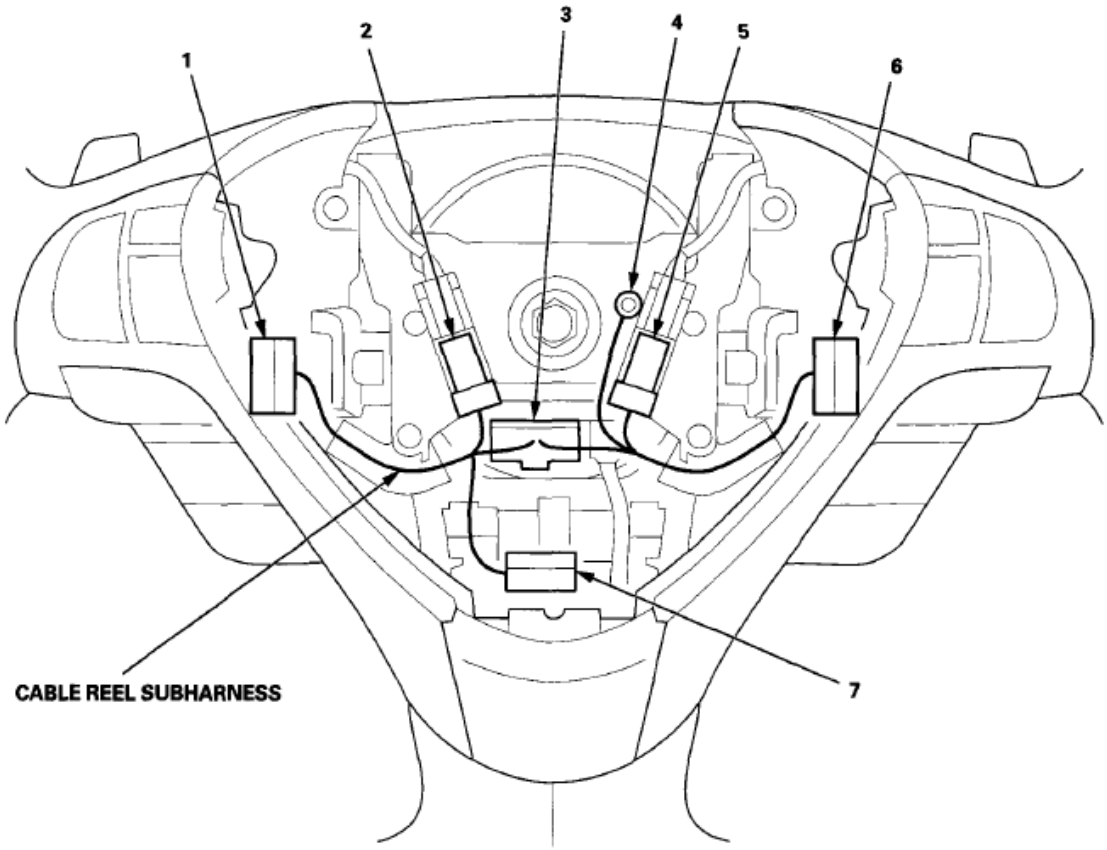


Fig. 29: Identifying Cable Reel Subharness And Connectors
Courtesy of AMERICAN HONDA MOTOR CO., INC.

A/C WIRE HARNESS

Connector or Terminal	Ref	Cavities	Location	Connects to	Notes
Blower motor	7	2	Under right side of dash		
Climate control unit connector A	12	32	Under right side of dash		
Climate control unit connector B	11	24	Under right side of dash		
Climate control unit connector C	9	20	Under right side of dash		
Driver's air mix control motor	15	7	Under middle of dash		
Driver's mode control motor	16	7	Under middle of dash		
Evaporator temperature			Under middle of		

sensor	17	2	dash		
Passenger's footwell light	8	2	Under right side of dash		
Passenger's air mix control motor	13	7	Under middle of dash		
Passenger's mode control motor	5	7	Under middle of dash		
Power transistor	3	5	Under middle of dash		
Recirculation control motor	4	7	Under middle of dash		
C205	6	2	Under right side of dash	Right engine compartment wire harness	
C301	1	2	Under middle of dash	Left engine compartment wire harness (dashboard branch)	
C302	2	2	Under middle of dash	Left engine compartment wire harness (dashboard branch)	
C403	14	20	Under middle of dash	Dashboard wire harness (view of middle to passenger's side)	
C501	10	20	Under middle of dash	Audio wire harness	

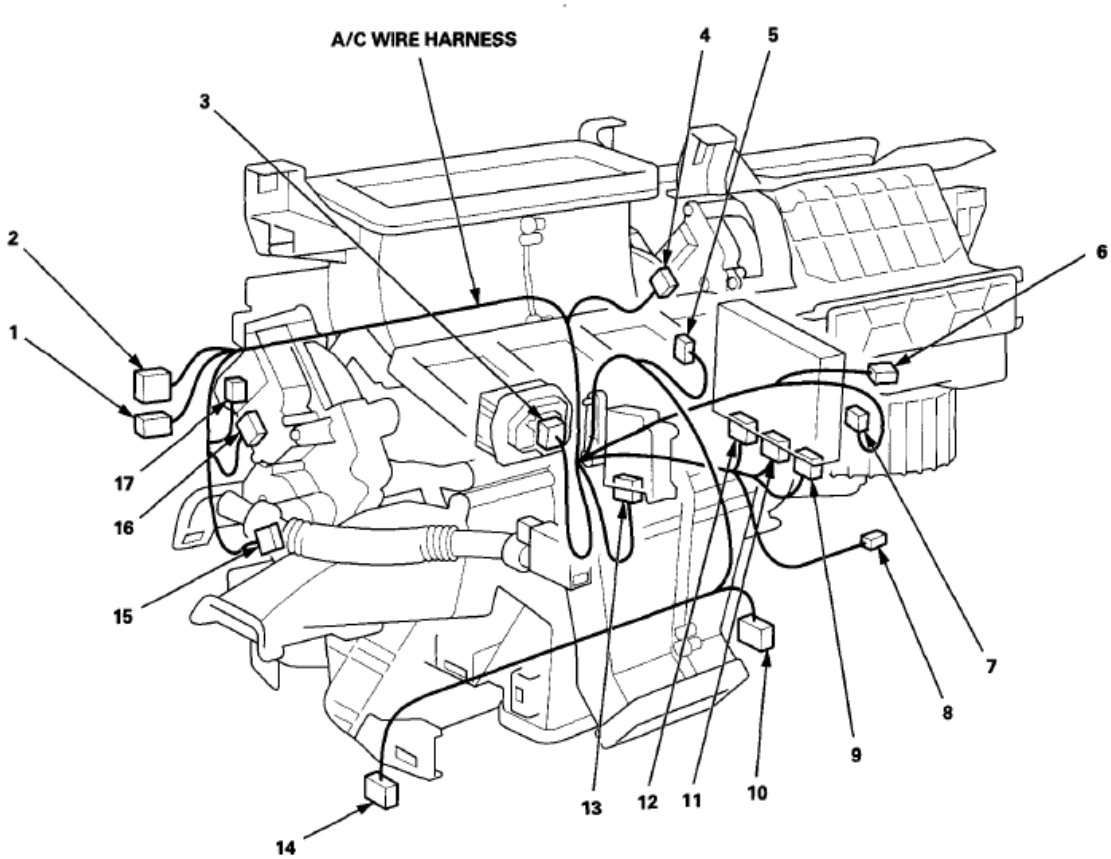


Fig. 30: Identifying A/C Wire Harness And Connectors
Courtesy of AMERICAN HONDA MOTOR CO., INC.

EPS SUBHARNESS

Connector or Terminal	Ref	Cavities	Location	Connects to	Notes
EPS motor	8	3	Middle of engine compartment		
EPS motor angle sensor	3	6	Middle of engine compartment		
Torque sensor	4	3	Middle of engine compartment		
C202	1	3	Right of engine compartment	Right engine compartment wire harness	
C203	2	12	Right of engine compartment	Right engine compartment wire harness	
T6	5		Middle of engine	Steering gearbox compartment	
T7	6		Middle of engine	Steering gearbox compartment	
T8	7		Middle of engine	Steering gearbox compartment	

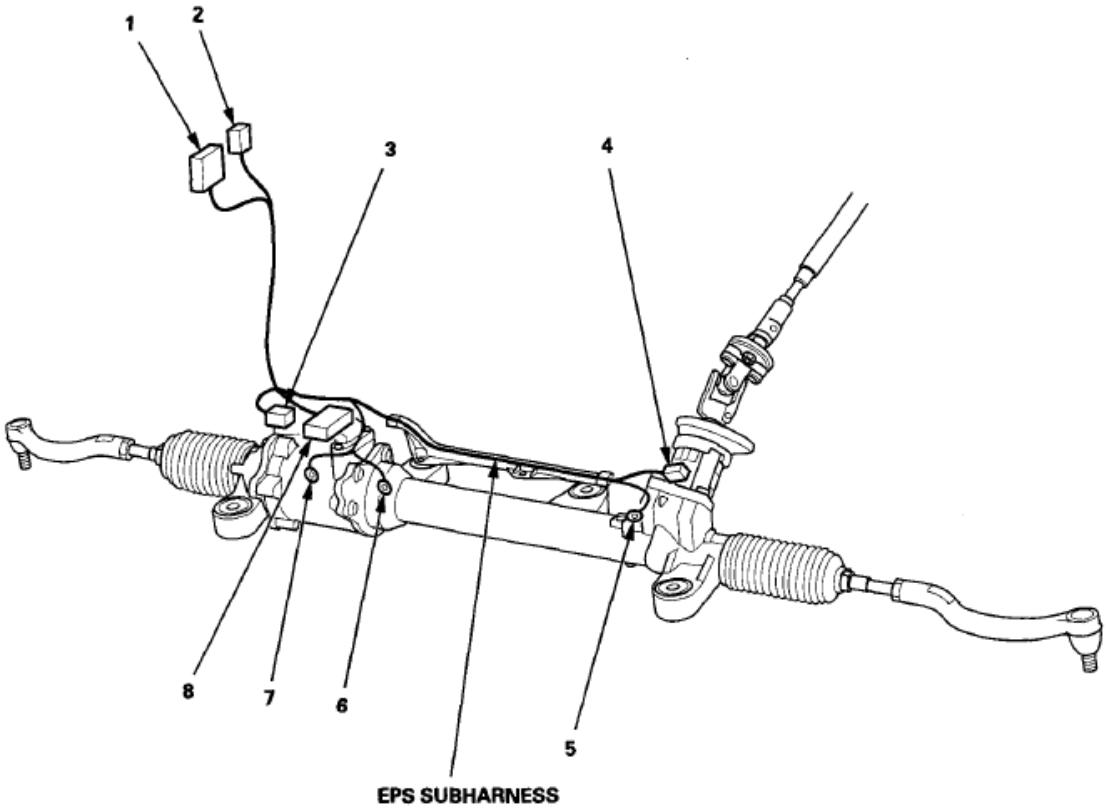


Fig. 31: Identifying EPS Subharness And Connectors
Courtesy of AMERICAN HONDA MOTOR CO., INC.

REAR DIFFERENTIAL SUBHARNESS (WITH SH-AWD)

Connector or Terminal	Ref	Cavities	Location	Connects to	Notes
Differential fluid temperature sensor	6	2	Rear differential		
Left clutch electromagnetic coil/search coil	1	4	Rear differential		
Right clutch electromagnetic coil/search coil	3	4	Rear differential		
C652	5	6	Rear differential	Right side wire harness (with SH-AWD)	
C653	4	6	Rear differential	Right side wire harness (with SH-AWD)	
T10	2		Rear differential		

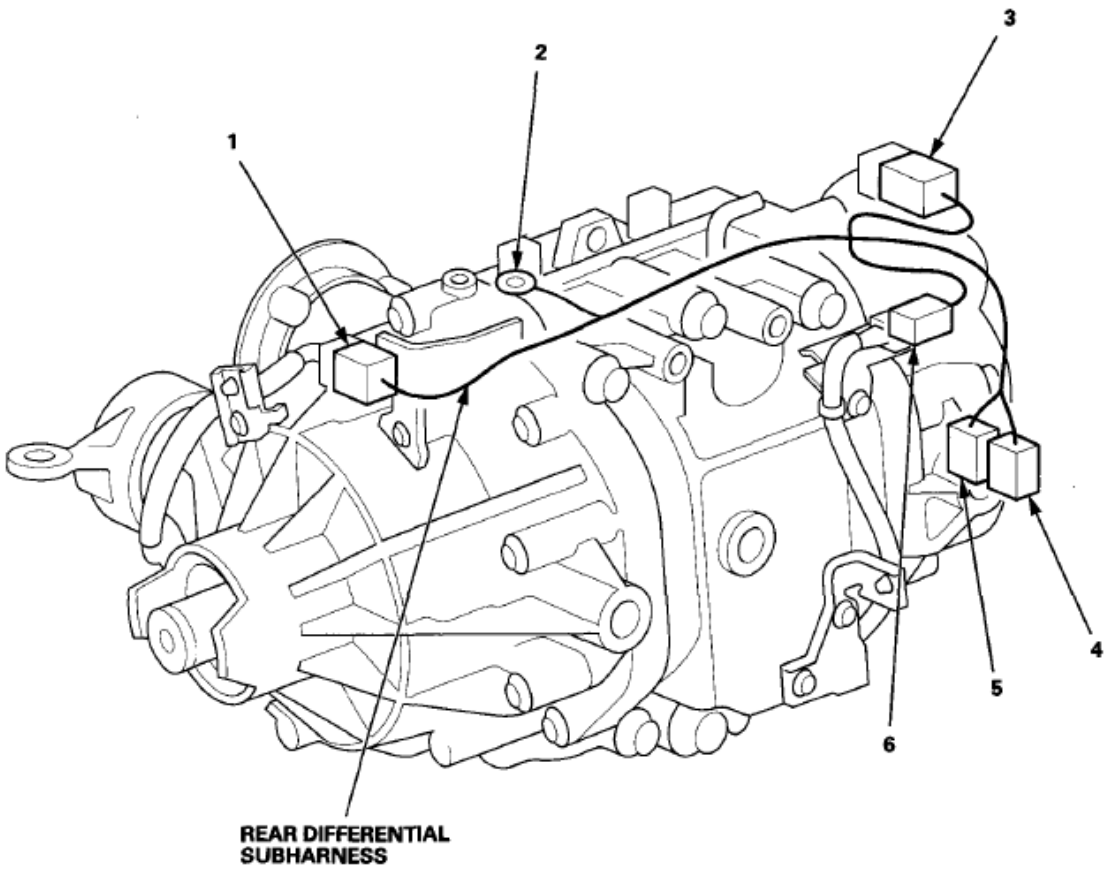


Fig. 32: Identifying Rear Differential Subharness And Connectors (With SH-AWD)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2012 ELECTRICAL

Engine Electrical (Special Tools) - TL

SPECIAL TOOLS

Ref.No.	Tool Number	Description	Qty
①	07746-0010300	Bearing Driver Attachment, 42 x 47 mm	1
②	07749-0010000	Driver Handle, 15 x 135L	1

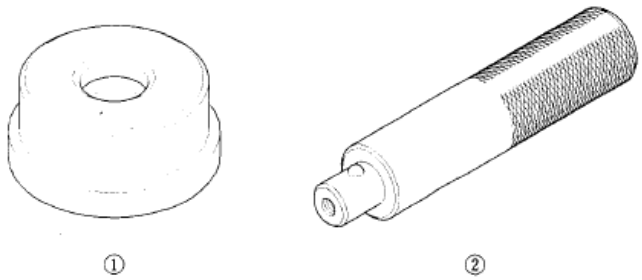


Fig. 1: Identifying Engine Electrical Special Tools
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2012 ELECTRICAL

Fuse/Relay Boxes - TL

CONNECTOR TO FUSE/RELAY BOX INDEX

UNDER-HOOD FUSE/RELAY BOX

Socket	Ref	Terminal	Connects to	Notes
A (electrical load detector (ELD))	12	3	Left engine compartment wire harness (engine compartment branch) (see **CONNECTOR TO HARNESS INDEX**).	
A/C compressor clutch relay	16	4		
A/C condenser fan relay	2	4		
B (relay circuit board)	14	14	Left engine compartment wire harness (engine compartment branch) (see **CONNECTOR TO HARNESS INDEX**)	
Blower motor relay	1	4		
C (relay circuit board)	13	5	Left engine compartment wire harness (engine compartment branch) (see **CONNECTOR TO HARNESS INDEX**)	
ELD	11	3	Connector A (3P)	
Electronic throttle control system (ETCS) control relay	6	4		
Ignition coil relay	5	4		
PGM-FI main relay 1	3	4		
PGM-FI subrelay	4	4		
Rear window defogger relay	8	4		
Relay circuit board	15		Connector B (14P) and connector C (5P)	
Starter cut relay 2	7	4		
T101	9	- -	Starter cable, M/T (see **CONNECTOR TO HARNESS INDEX**), A/T (see **CONNECTOR TO HARNESS INDEX**)	
T102	10	- -	Engine wire harness (engine section), M/T (see **CONNECTOR TO HARNESS INDEX**), A/T (see **CONNECTOR TO HARNESS INDEX**).	

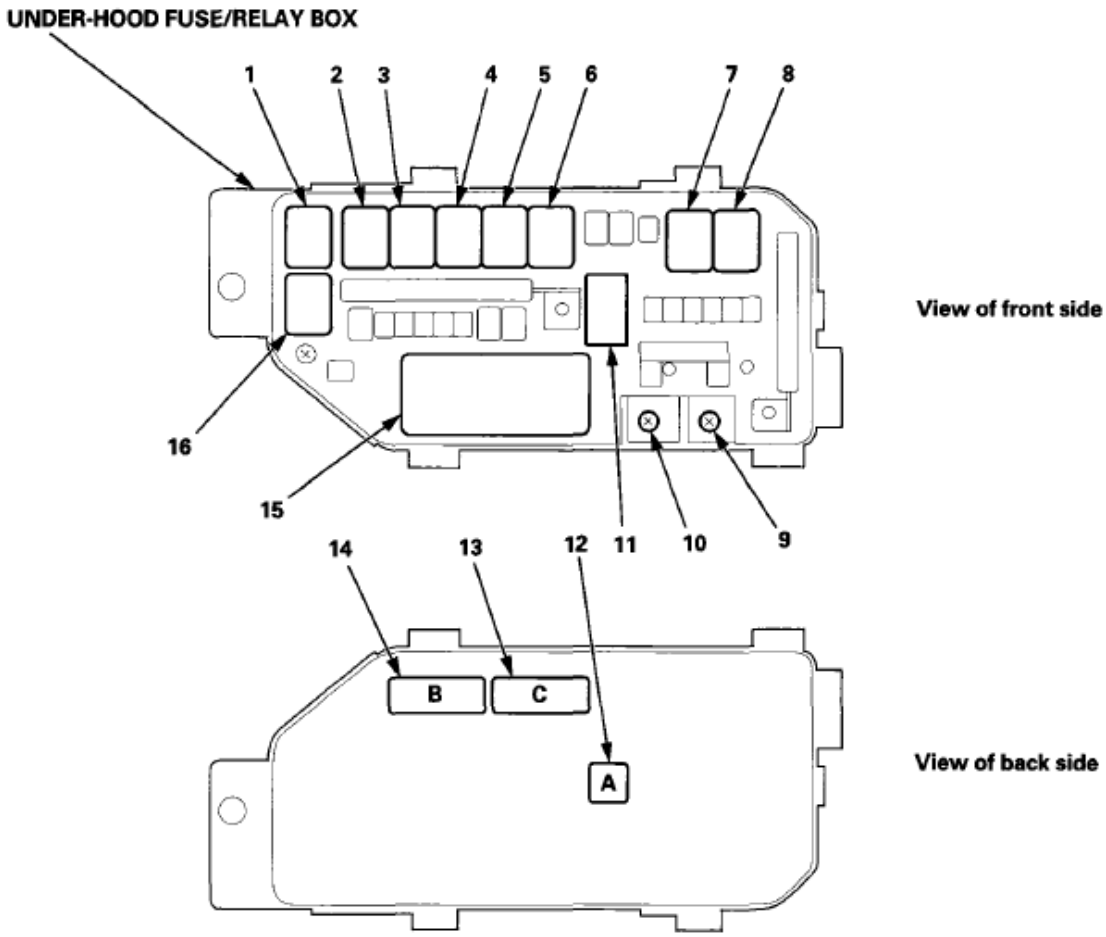


Fig. 1: Identifying Under-Hood Fuse/Relay Box And Terminals
Courtesy of AMERICAN HONDA MOTOR CO., INC.

DRIVER'S UNDER-DASH FUSE/RELAY BOX

Socket	Ref	Terminal	Connects to	Notes
A	1	- -	Not used	
Accessory relay	4	4		(1)
B	2	2	Dashboard wire harness (view of driver's side) (see **CONNECTOR TO HARNESS INDEX**)	
C	3	5	Dashboard wire harness (view of driver's side) (see **CONNECTOR TO HARNESS INDEX**)	
D	11	16	Left side wire harness: • Without SH-AWD (see **CONNECTOR TO HARNESS INDEX**) • With SH-AWD (see **CONNECTOR TO HARNESS INDEX**)	
			Left side wire harness:	

E	10	20	• Without SH-AWD (see **CONNECTOR TO HARNESS INDEX**) • With SH-AWD (see **CONNECTOR TO HARNESS INDEX**)	
F	9	33	Left engine compartment wire harness (dashboard branch) (see **CONNECTOR TO HARNESS INDEX**)	
Front accessory power socket relay	4	4		(2)
G	8	13	Left engine compartment wire harness (dashboard branch) (see **CONNECTOR TO HARNESS INDEX**)	
H (optional connector)	7	12		
K (MICU service check connector)	6	3		
M	13	4	Dashboard wire harness (view of driver's side) (see **CONNECTOR TO HARNESS INDEX**)	
N	14	16	Dashboard wire harness (view of driver's side) (see **CONNECTOR TO HARNESS INDEX**)	
P	15	20	Dashboard wire harness (view of driver's side) (see **CONNECTOR TO HARNESS INDEX**)	
PGM-FI main relay 2	12	4		
Q	17	20	Dashboard wire harness (view of driver's side) (see **CONNECTOR TO HARNESS INDEX**)	
R	16	24	Dashboard wire harness (view of driver's side) (see **CONNECTOR TO HARNESS INDEX**)	
Starter cut relay 1	5	4		

(1) With keyless access system

(2) Without keyless access system

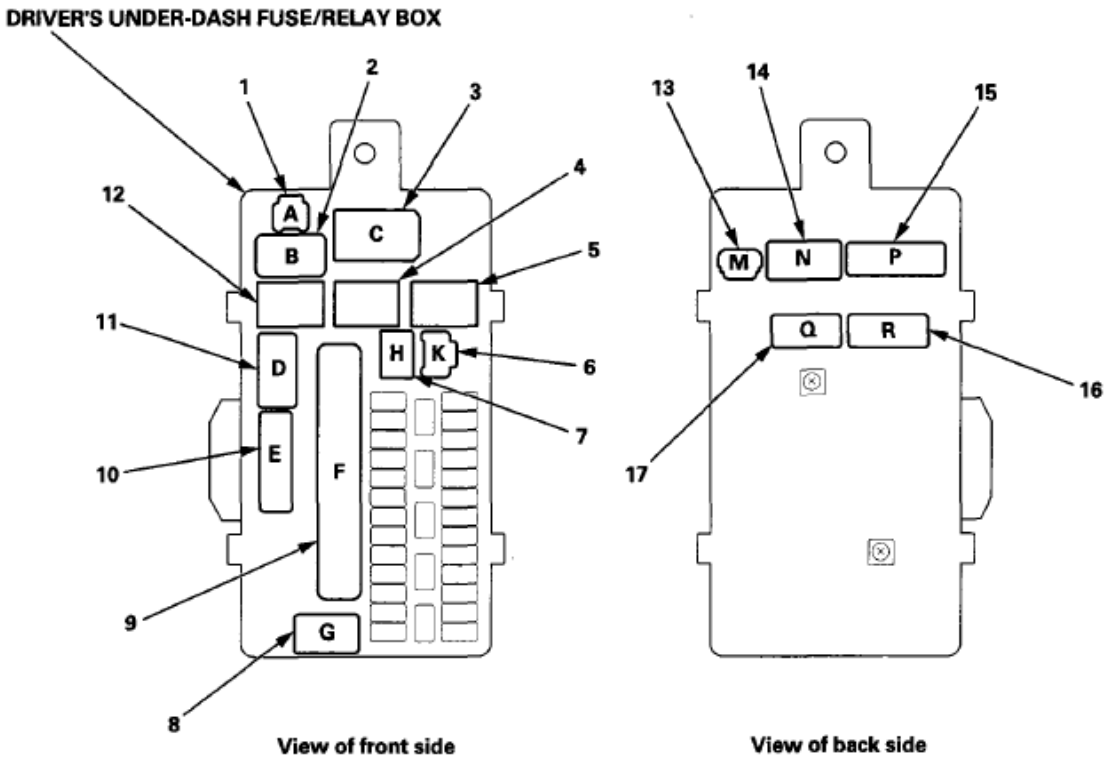


Fig. 2: Identifying Driver'S Under-Dash Fuse/Relay Box And Terminals
Courtesy of AMERICAN HONDA MOTOR CO., INC.

PASSENGER'S UNDER-DASH FUSE/RELAY BOX

Socket	Ref	Terminal	Connects to	Notes
A	1	38	Dashboard wire harness (view of middle to passenger's side) (see **CONNECTOR TO HARNESS INDEX**)	
B	8	1	Right engine compartment wire harness (see **CONNECTOR TO HARNESS INDEX**)	
C	7	12	Not used	
D	2	28	Audio wire harness (see **CONNECTOR TO HARNESS INDEX**)	
E	6	18	Right engine compartment wire harness (see **CONNECTOR TO HARNESS INDEX**)	
F	5	2	Not used	
G	3	16	Right side wire harness (see **CONNECTOR TO HARNESS INDEX**)	(1)
H	4	38	Right side wire harness (see **CONNECTOR TO HARNESS INDEX**)	(2)

(1) Without SH-AWD

(2) With SH-AWD

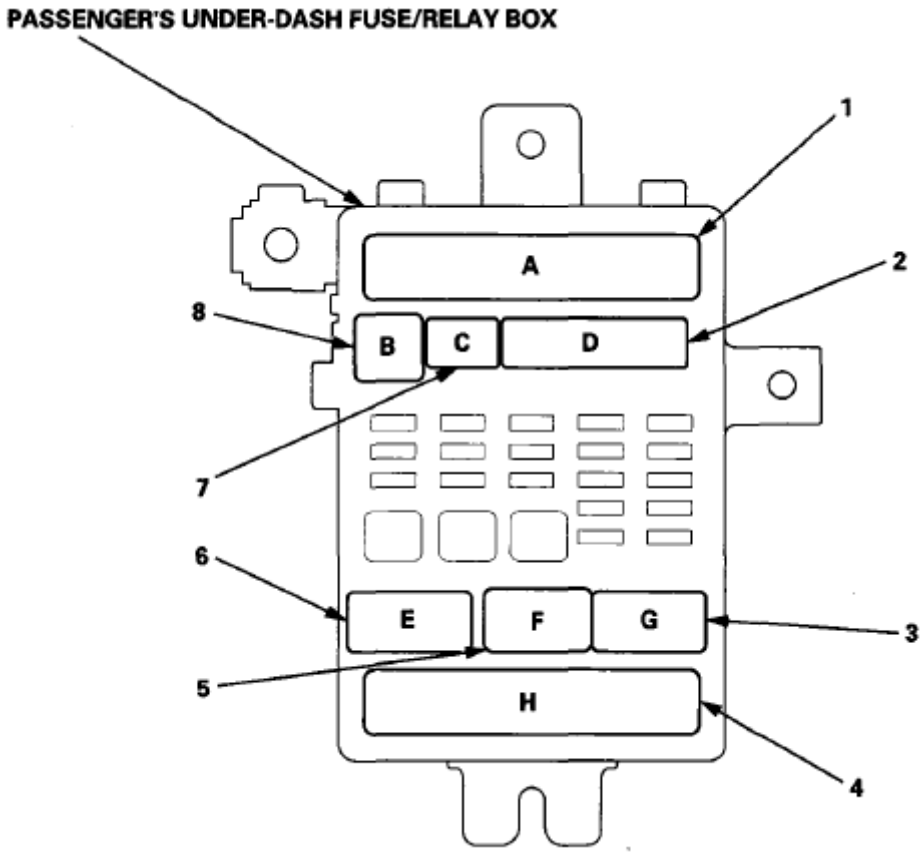


Fig. 3: Identifying Passenger's Under-Dash Fuse/Relay Box And Terminals
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2012 ELECTRICAL

Ground Distribution - TL

GROUND TO COMPONENTS INDEX

Ground	Component or circuit grounded
G1	Battery
G2	Engine
G3	Transmission housing
G101	A/T clutch pressure control solenoid valve A, B, C, D, CKP sensor, CMP sensor, ECM/PCM (PGMETCS), ECM/PCM (LG1), ECM/PCM (LG2), ECM/PCM (PG1), ECM/PCM (PG2), EGR valve. Ignition coils. Line pressure solenoid valve A, Rocker arm oil pressure switch, Shift solenoid valve A, B, C, Transmission range switch, Shielding between the ECM/PCM and the front A/F sensor (Bank 2, Sensor 1), Shielding between the ECM/PCM and the front secondary HO2S (Bank 2, Sensor 2), Shielding between the ECM/PCM and the knock sensor. Shielding between the ECM/PCM and the rear A/F sensor (Bank 1, Sensor 1), Shielding between the ECM/PCM and the rear secondary HO2S (Bank 1, Sensor 2)
G202	VSA modulator-control unit
G203	Headlight washer motor(1). Passenger's MICU (SG), Right fog light, Right front side marker light. Right front turn signal light. Right front parking light, Right headlight (High), Right headlight (Low), Steering gear box (3 wires), Washer fluid level switch(2), Windshield washer motor
G204	EPS control unit (2 wires)
G301	Clutch pedal position switch A(9), Clutch pedal position switch B(9), Driver's under-dash fuse/relay box (starter cut relay 1 circuit)(9). Electrical load detector (ELD), Fan control relay circuit. Radiator fan motor, Under-hood fuse/relay box (wiper relay circuit). Windshield wiper motor
G302	Blower motor relay. Brake fluid level switch. Left fog light. Left front parking light. Left front turn signal light, Left front side marker light. Left headlight (High), Left headlight (Low), Power transistor. Security hood switch
G401	Automatic dimming inside mirror. Cable reel. Data link connector (DLC), Driver's MICU (SG) (2 wires), Driver's door lock knob switch/key cylinder switch, Driver's door outer handle touch sensor(3), Driver's power window motor. Driver's vanity mirror light. Driving position memory switch. Front passenger's power window motor, Front passenger's power window switch. Gauge control module. Headlight washer switch(1), Left power mirror (2 wires), Moonroof switch, HFL-Navigation microphone(4), Paddle shifter- (downshift switch), Passenger's MICU (SG), Passenger's vanity mirror light, Power mirror control unit. Power mirror switch (2 wires), Power window master switch, Rear individual map lights, Roof console. Steering angle sensor(5). Trunk lid opener/Fuel fill door opener switch, VSA OFF switch. Shielding between the driver's under-dash fuse/relay box and the moonroof control unit/motor
	BSI off switch(10), Dashlights brightness controller switch. Gauge control module. High mount brake light. Keyless access control unit (2 wires)'3. Left BSI alert indicator(10), Power window

G402	master switch, Driver's MICU (PG) (2 wires), Data link connector (DLC), MICU service check connector. Power control unit (2 wires)(3)
G403	Climate control unit, Console box light. Driver's climate control switch, Remote slot (2 wires)(3). Front accessory power socket, Front accessory power socket relay. Ignition key switch(8), Moonroof control unit/motor, Park pin switch. Rear accessory power socket, Rear accessory power socket relay, TPMS control unit, Yaw rate-lateral acceleration sensor(6). Yaw rate-lateral/longitudinal acceleration sensor(5), +B cut relay(9)
G404	SRS unit (2 wires)
G405	Cruise control combination switch/select/reset/information switch, Driver's seat heater switch(11). Electric steering lock(3). Engine start/stop switch(3). Remote slot control unit (2 wires)(3). Front passenger's door lock knob switch, Front passenger's door outer handle touch sensor(3), Front passenger's power window switch. Front passenger's seat heater switch(11), Horn switch. Paddle shifter-f- (upshift switch), Passenger's climate control switch. Passenger's MICU (PG), Right BSI alert indicator(10), Right power mirror (2 wires). Seat ventilation control unit(12)
G501	AcuraLink connector(13), AcuraLink control unit (XM receiver)(13), Audio-HVAC display unit(7), Audio-navigation switch panel(4), Glove box light, HandsFreeLink control unit. Interface dial(4). Keyless access system mode switch(3), Navigation display unit(4). Trunk lid opener main switch
G502	Audio-navigation unit(4), Audio unit(7)
G601	Accessory relay(3). Driver's under-dash fuse/relay box (door lock relay circuit). Front accessory power socket relay(8), Left rear door lock knob switch. Left rear power window switch
G602	Fuel pump
G603	BSI control unit(10), Fuel fill door opener solenoid. Keyless buzzer. Left back-up light. Left brake light/taillight. Left BSI radar unit(10). Left rear side marker light. Left rear turn signal light. License plate lights, Rear window defogger noise condenser. Right back-up light. Right brake light/taillight. Right BSI radar unit*10. Right rear side marker light, Right rear turn signal light, Trunk lid latch switch/trunk lid release actuator, Trunk lid spoiler switch(3)
G651	Electrical compass unit(7), Passenger's under-dash fuse/relay box (door lock relay circuit). Rear differential(5). Right rear door lock knob switch, Right rear power window switch
G652	SH-AWD control unit (3 wires)(5), SH-AWD relay(5)
G653	Stereo amplifier
G701	Driver's lumbar support switch (2 wires). Driver's seat belt buckle switch. Driver's seat heater relays. Driver's seat position sensor, Driver's seat-back heater. Driver's seat-back blower motor(12), Driver's seat cushion blower motor(12). Front passenger's seat-back blower motor(12). Front passenger's seat cushion blower motor(12), Power seat control unit (3 wires)
G702	Front passenger's power seat adjustment switch (2 wires). Front passenger's seat belt buckle switch. Front passenger's seat cushion heater. Front passenger's seat neater relays, ODS unit
G801	Rear window defogger

(1) With headlight washer

(2) Canada models

(3) With keyless access system

(4) With navigation

(5) With SH-AWD

(6) Without SH-AWD

(7) Without navigation

(8) Without keyless access system

(9) M/T

(10) With BSI

(11) Without seat ventilation

(12) With seat ventilation

(13) USA models with navigation

2009-11 ELECTRICAL

OEM Wiring Diagram General Information - All Models

HOW TO USE THIS SERVICE INFORMATION

Information below describes how this service information is organized. They also explain what kind of information the articles contain, what the information means, and how to use it to troubleshoot electrical problems.

Circuit schematics break the entire electrical system into individual systems, such as the Back-up Lights. See **Fig. 1**. Only electrical components that work together are shown together, so you will not be distracted by unrelated wires.

Explanations of the abbreviations and symbols used in the schematics begin at **Symbols**. You will need to know what they mean before you can use a schematic effectively.

CIRCUIT SCHEMATICS

Each schematic represents one circuit. A circuit's wires and components are arranged to show current flow, from power at the top of the illustration, to ground at the bottom.

Shared Circuits

Other circuits may share power or ground terminals or wiring with the circuit shown. A wire that connects one circuit to another, for example, is cut short and has an arrowhead at the end of it pointing in the direction of current flow. Next to the arrowhead is the name of the circuit or component which shares that wiring. To quickly check shared wiring, check the operation of a component it serves. If that component works, you know the shared wiring is OK.

Connectors

All in-line and junction connectors are numbered (C725, C416, etc.). Component connectors are not numbered but are identified either by the name of the component if the component only has one connector, or by a capital letter (A, B, C, etc.) if the component has more than one connector.

Below most connector numbers and component names are PHOTO and VIEW numbers. The PHOTO number refers to a photograph in the appropriate OEM COMPONENT LOCATION article of this service information that shows the connector's location on the vehicle. The VIEW number refers to an illustration in OEM CONNECTOR TERMINAL VIEWS article of this service information that shows the connector terminals, wire colors, connector cavity numbers, and other details.

The connector cavity numbering sequence begins at the top left corner of the connector as seen from either of the viewpoints shown in **CONNECTORS - "C"**. Except for the DLC (data link connector), disregard any numbers molded into the connector housing.

Wires

Wires are identified by the abbreviated names of their colors; the second color is the color of the stripe. Wires also are identified by their location in a connector. The number "2" next to the male and female wire terminals at C554, for example, means those terminals join in cavity 2 of connector C554.

Symbols

A complete description of schematic symbols begins in **Symbols**.

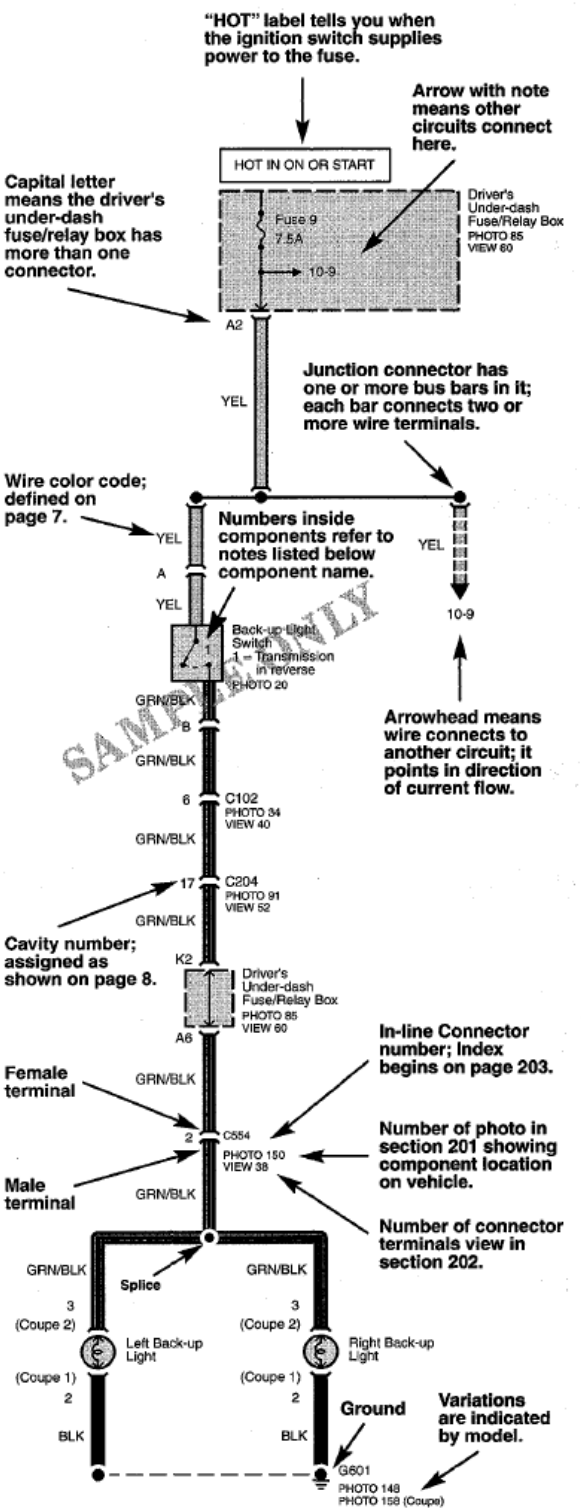


Fig. 1: Circuit Schematics Sample

POWER DISTRIBUTION SCHEMATICS

Power Distribution schematics show how power is supplied from the positive battery terminal to various

circuits in the vehicle. Refer to the appropriate POWER DISTRIBUTION diagram in OEM CIRCUIT DIAGRAMS article to get a more detailed understanding of how power is supplied to the circuit that you are working on.

Individual circuit schematics begin with a fuse. So, if Power Distribution shows that an inoperative circuit and another circuit share a fuse, check a component in the other circuit. If it works, you know the fuse is good and power is available to the inoperative circuit.

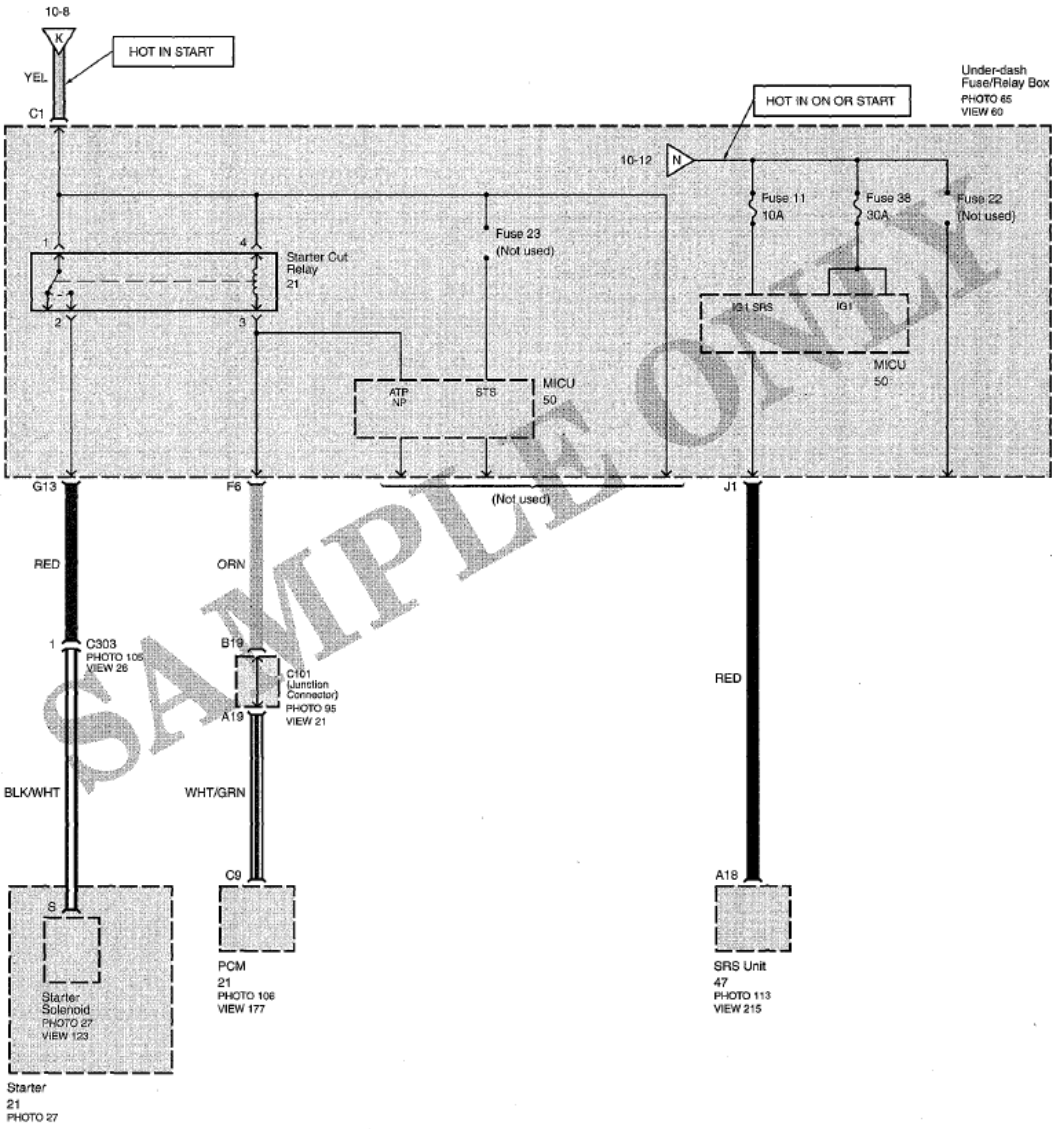


Fig. 2: Power Distribution Schematic Sample

GROUND DISTRIBUTION SCHEMATICS

This sample Ground Distribution schematic shows all of the components that share the same ground point.

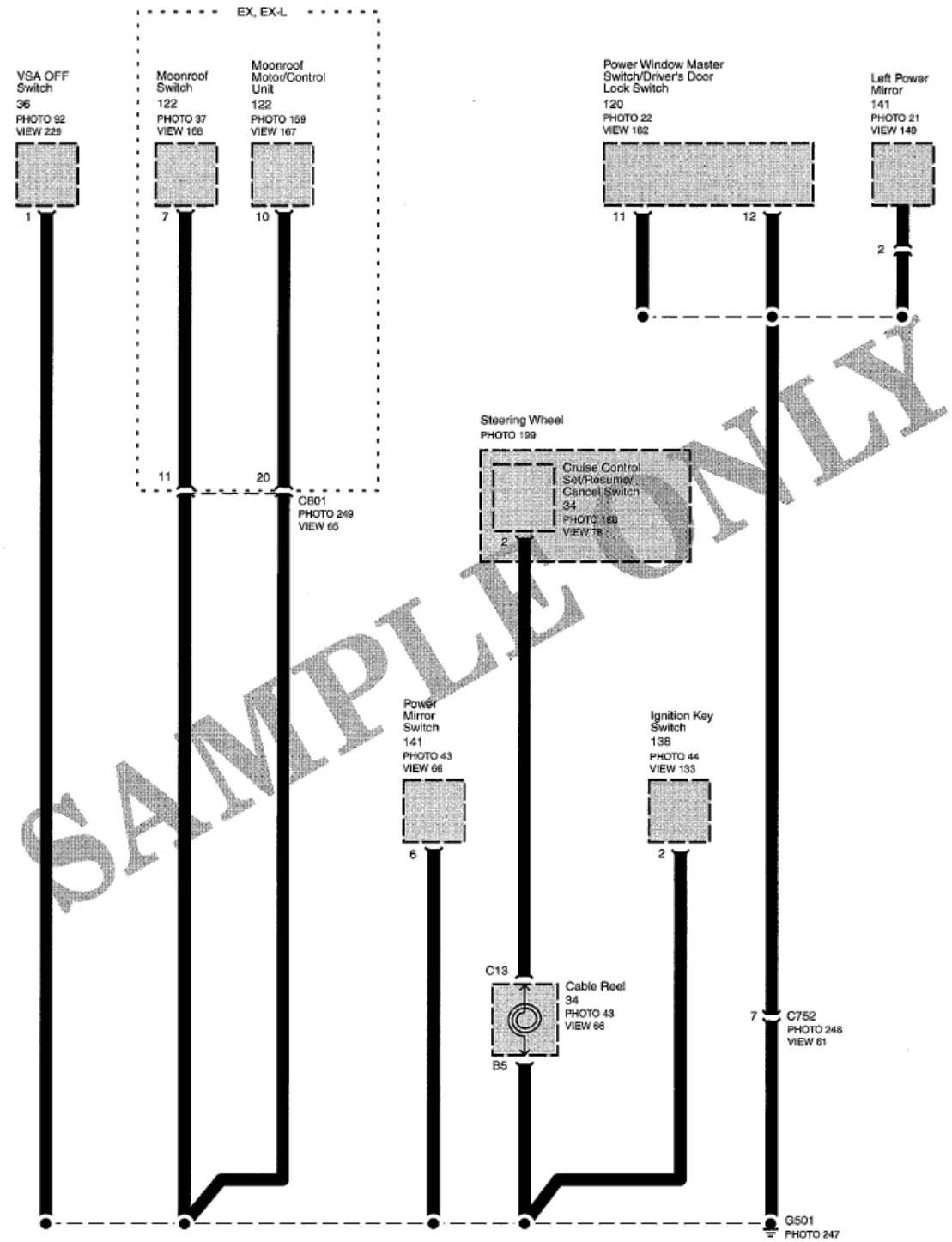


Fig. 3: Ground Distribution Schematic Sample

CONNECTOR LOCATIONS

To see where a component or connector is located on the vehicle, look up its photo number in the appropriate OEM COMPONENT LOCATION article. The photo also will tell you the color of the connector, and how many cavities it has.

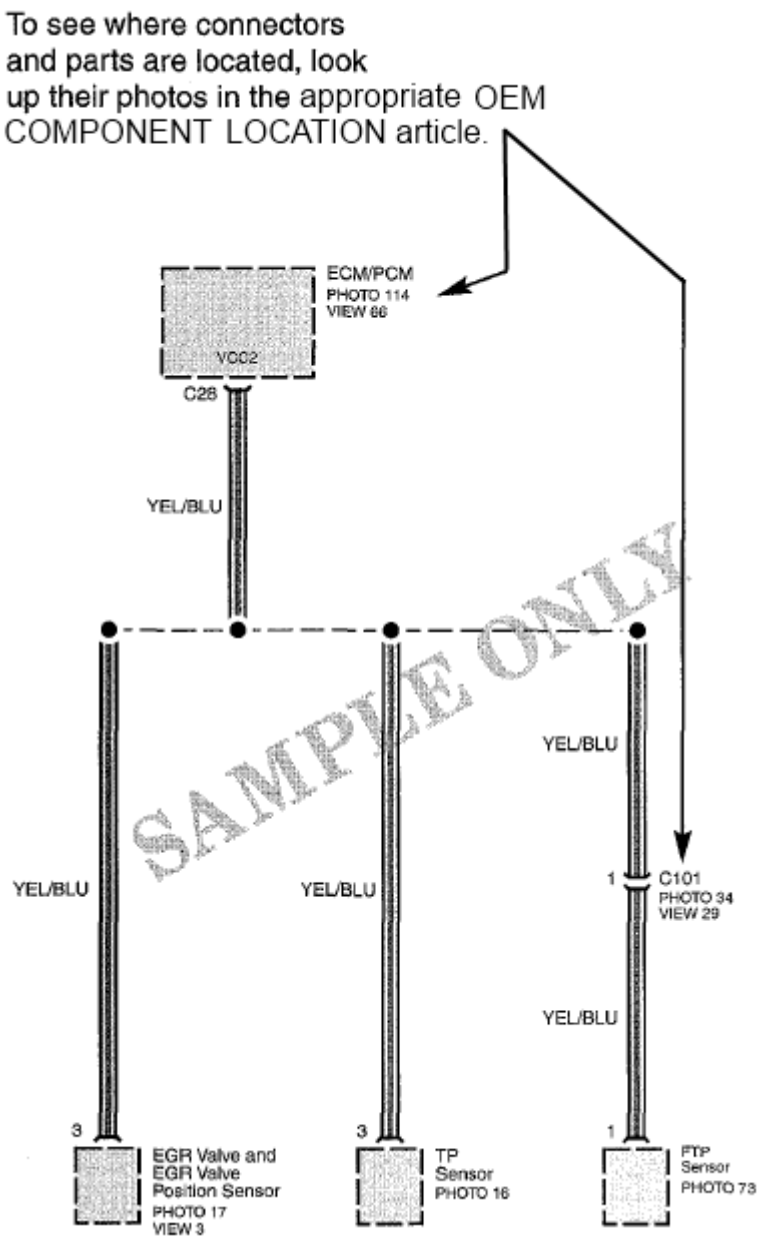


Fig. 4: Connector Location Sample

If there is no photo number below or beside a component name or a connector, ground, or terminal number, look up that name or number in the appropriate OEM CONNECTOR TO HARNESS LOCATIONS article. The chart lists how many cavities a connector has, where it is located, and what it connects to. The related illustration shows the connector's location on the harness and the harness routing.

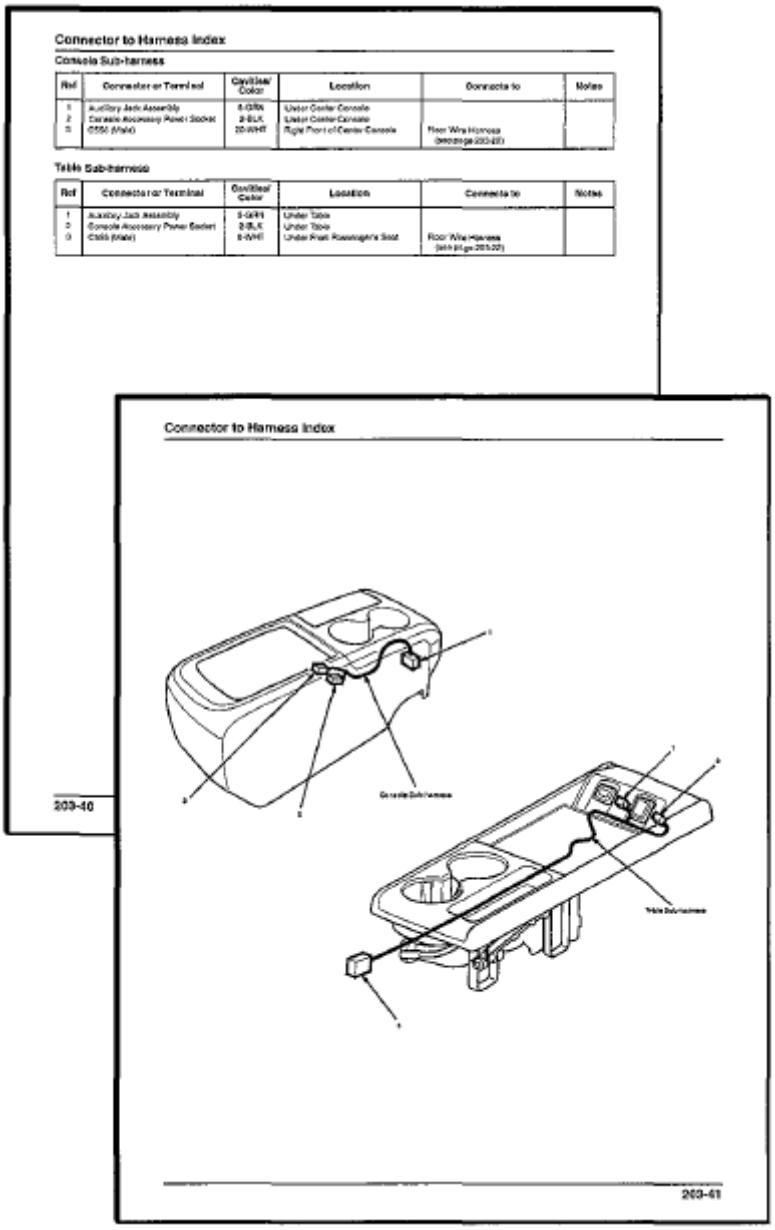


Fig. 5: Connector And Harness Location Sample

CONNECTOR TERMINAL VIEWS

To see the configuration of a connector's cavities, look up its view number in the appropriate OEM CONNECTOR TERMINAL VIEWS article. Each view includes the color of the connector, where it is located, and what it connects to.

Use the connector views to help locate the proper cavity when you need to test a connector. They can be especially helpful if the connector has more than one wire of the same color. A dash symbol (-) indicates that the cavity is empty. The connector views also can be used to help diagnose multiple symptoms in separate circuits that could be caused by a single problem in a connector shared by those circuits. Here is how:

1. Pick one of the multiple symptoms and look up the schematic for that circuit.
2. Make a list of all of the in-line and fuse box connectors in that schematic.
3. Then, in the appropriate OEM CONNECTOR TERMINAL VIEWS article, look up each connector on your list to see if circuits related to the other symptoms run through one of them. If they do, inspect that connector for the problem.

Example: The blower, rear window defogger, and the windshield wiper do not work. List all in-line and fuse box connectors in the blower controls circuit, and then check the appropriate OEM CONNECTOR VIEWS article (sample below). You find that C324 is common to the rear window defogger circuit and wiper/washer circuit, so you inspect C324 and find the problem, damaged terminals.

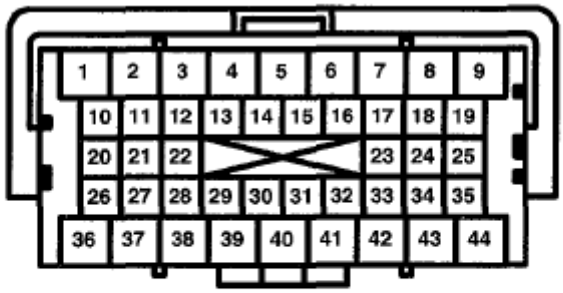
Connector Terminal Views

25. PCM

- Left Side of Engine Compartment

Connector A

- BLK/WHT
- On Left Engine Compartment Wire Harness



1. LT GRN (VBSOL)
2. GRN (MPMON1)
3. —
4. RED (FANL)
5. GRY (FANH)
6. PUR (MRLY)
7. BLU (STS)
8. YEL (IGP1)
9. PNK (SG6)
10. LT GRN (VSV)
11. —
12. LT GRN (STC)
13. BRN (BKSWNC)
14. GRY (ACC)
15. GRN (IMOFPR)
16. BLU (ACPD)
17. YEL (APSA)
18. PUR (APSB)
19. YEL (VCC6)
20. RED (ETCSRLY)
21. ORN (SUBRLY)
22. —
23. PNK (ELD)
24. LT GRN (VCC5)
25. BRN (VCC4)
26. PUR (FTR)
27. GRY (SLS)
28. LT BLU (NEP)
29. BLU (VSSOUT)
30. Paddle Shifters: YEL (SUPP)
31. BRN (SCS)
32. Paddle Shifters: LT GRN (SDNP)
33. WHT (ECT2)
34. LT BLU (SG5)
35. GRN (SG4)
36. WHT (CANH)
37. RED (CANL)
38. GRN (IMACANH)
39. PNK (IMACANL)
40. WHT (BKSW)
41. —
42. ORN (WEN)
43. YEL (IGP2)
44. RED (S-NET5V)

SAMPLE ONLY

Fig. 6: Connector Terminal View Sample

SYMBOLS

Wire Color Abbreviations

The following abbreviations are used to identify wire colors in the circuit schematics:

WIRE COLOR ABBREVIATIONS CHART

BLK	black
BLU	blue
BRN	brown
GRN	green
GRY	gray
LT BLU	light blue
LT GRN	light green
NAT	natural
ORN	orange

PNK	pink
PUR	purple
RED	red
TAN	tan
WHT	white
YEL	yellow

Wires

Wire insulation can be one color, or one color with another color stripe. (The second color is the color of the stripe.)



Fig. 7: Wire Insulation Symbol

This circuit continues on another illustration or at a different location in the same illustration. The arrow shows direction of current flow. To follow the RED/BLK wire in these examples, you would look for the "A" arrow on the following illustration or on the current illustration.



Fig. 8: Current Flow Direction Symbol (Following Illustration)



Fig. 9: Current Flow Direction Symbol (Current Illustration)

This means that the branch of the wire connects to another circuit. The arrow points to the name of the circuit branch where the wire continues.

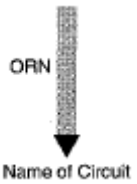


Fig. 10: Wire Circuit Connection Symbol

A broken line means that this part of the circuit is not shown; refer to the appropriate diagram in OEM CIRCUIT DIAGRAMS for the complete schematic.

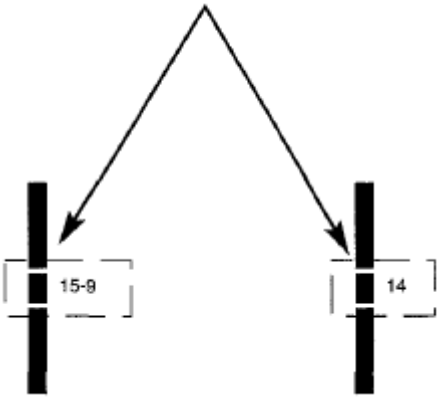


Fig. 11: Broken Line Symbol (Circuit Not Shown)

Where separate wires join, only the splice is shown; for details on the additional wiring, refer to the appropriate diagram in OEM CIRCUIT DIAGRAMS.

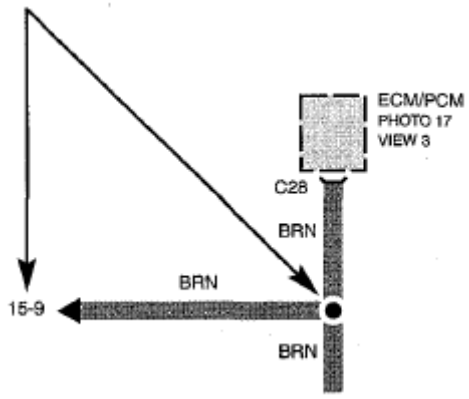


Fig. 12: Separate Wires Connection Symbol

Wire choices for options or different models are labeled and shown with a "choice" bracket like this.

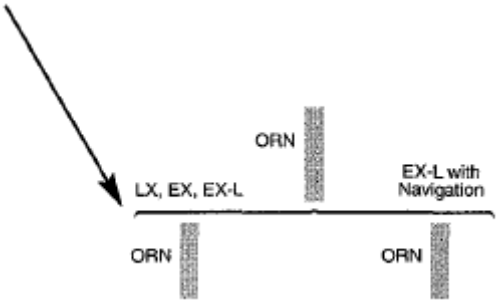


Fig. 13: Wire Choices Symbol

This broken line means that both terminals are in connector C134.

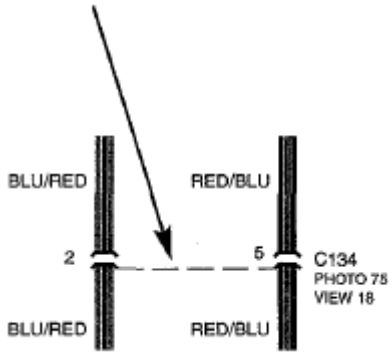


Fig. 14: Broken Line Symbol (Terminals Are In Connector C134)

Connectors - "C"

The cavities and wire terminals in each connector are numbered starting from the upper left (locking tab up), looking at the male terminals from the **terminal** side or looking at the female terminals from the **wire** side. Both views are in the same direction, so the numbers are the same. The gender of the connector is determined by the pins within the connector. All cavities are numbered, even if they have no wire terminals in them.

NOTE: DLC terminals are numbered according to SAE standard J1962, not the Honda standard. The numbers of the four end terminals are molded into the corners of the connector face.

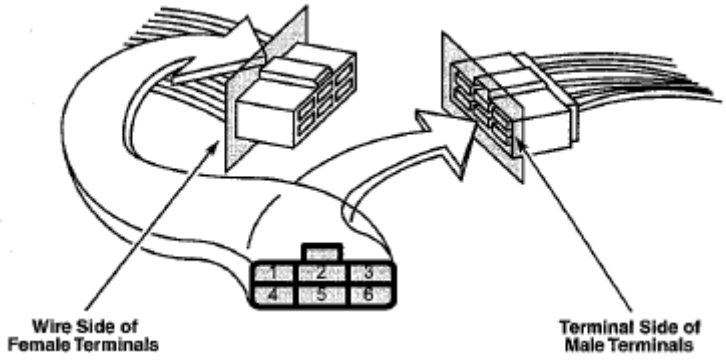


Fig. 15: Connector Male Terminals And Female Terminals Symbol

The connector cavity number is listed next to each terminal on the circuit schematic. The cavity/terminal shown to the right is #6.

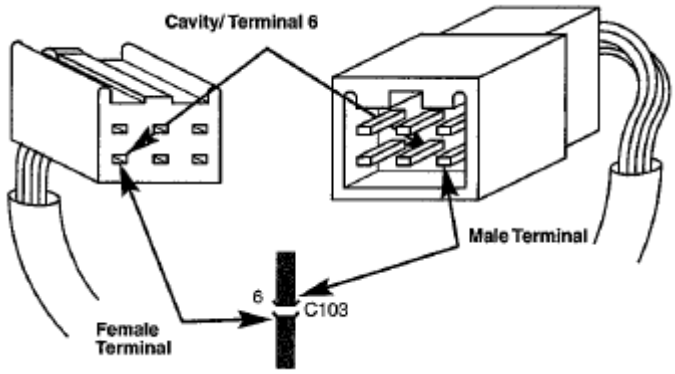


Fig. 16: Cavity/Terminal Symbol

This means that the connector connects directly to the component.

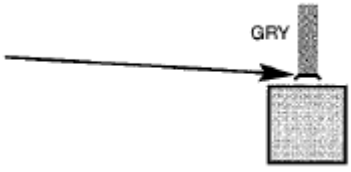


Fig. 17: Connector Symbol - Connects Directly To Component

This means that the connector connects to a lead (pigtail) that is wired directly to the component.

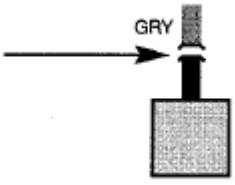


Fig. 18: Connector Symbol - Connects To Lead (Pigtail)

This symbol represents one bus bar inside the cap of a junction connector. A **junction** connector cap may contain several bus bars, but only the one affecting that circuit will be shown. The dots represent tabs on the bar that the wire terminals connect to.

Remaining wires to the same bus bar are represented by a dashed line.

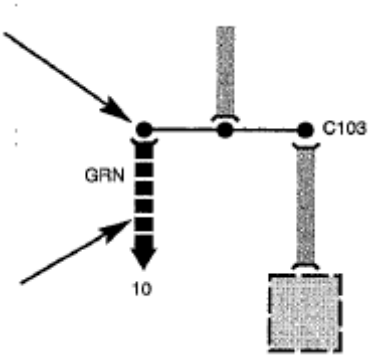


Fig. 19: Junction Connector Symbol

Splices

Splices are shown as a dot. Their location and the number of wires may vary depending on the harness manufacturer.

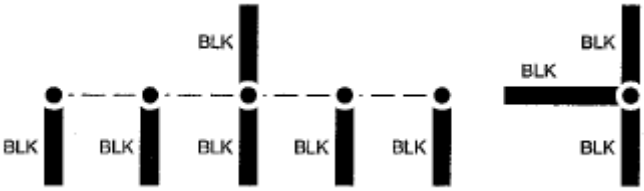


Fig. 20: Splices Symbol

Components

A solid border line means that the entire component is shown.



Fig. 21: Components Symbol (Entire Component Is Shown)

A broken border line indicates that only part of the component is shown.



Fig. 22: Components Symbol (Only Part Of Component Is Shown)

The name of the component appears next to it followed by notes about its function along with any photo and connector view references.



Fig. 23: Component Name And Function Symbol

Ground - "G"

This symbol means that the end of the wire is attached (grounded) to the vehicle's frame or to a metal part connected to the frame.

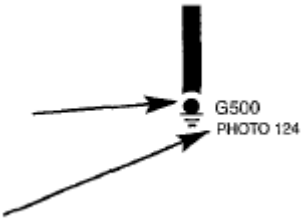


Fig. 24: Wire Ground Symbol

Each wire ground (G) is numbered for reference.

This ground symbol (dot and 3 lines) overlapping the component means that the housing of the component is grounded to the vehicle's frame or to a metal part connected to the frame.

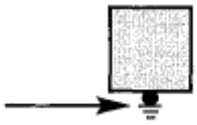


Fig. 25: Ground Symbol (End Of Wire Grounded)

This symbol represents the bus bar inside a **ground** connector. The dots represent tabs on the bus bar that the wire terminals connect to. The ground symbol (large dot) is the connection between the bus bar and metal (grounded) part of the vehicle.

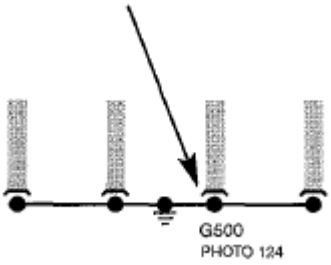


Fig. 26: Ground Symbol (Bus Bar Inside Ground Connector)

Terminals - "T"

Each "T" terminal (ring type) is numbered for reference and location. A "T" terminal is secured with a screw or bolt.

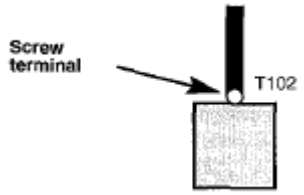


Fig. 27: Terminal Symbol

Shielding

This diagram represents RFI (Radio Frequency Interference) shielding around a wire.

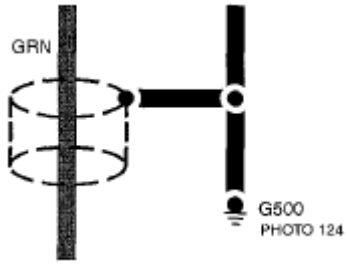


Fig. 28: Shielding Symbol

Switches

These switches move together; the broken straight line between them means that they are mechanically connected.

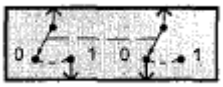


Fig. 29: Switches Symbol (Switches Move Together)

Other types of switches are controlled by a coil or a solid state circuit. Unless otherwise noted, all switches are shown in their normal (rest) position, with power off.

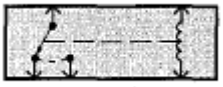


Fig. 30: Switches Symbol (Coil Circuit)

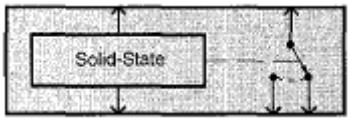


Fig. 31: Switches Symbol (Solid State Circuit)

Fuses

This means that power is supplied when the ignition switch is in ON (II).

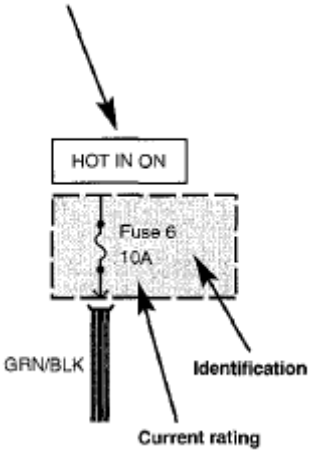


Fig. 32: Fuse Symbol

Diodes

A rectifier diode works like a one way valve. It allows current to flow only in the direction of the arrow.



Fig. 33: Rectifier Diode Symbol

A Zener diode blocks reverse current at normal voltages as does a rectifier diode. At high voltages, however, a Zener diode allows current to flow in reverse.



Fig. 34: Zener Diode Symbol

Light Emitting Diode (LED)

LEDs are special diodes that emit light when connected in a circuit. LEDs work the same as a rectifier diode by allowing current to flow only in one direction.



Fig. 35: Light Emitting Diode Symbol

Light

Light Sockets have two methods of wiring:

1. They can be wired to a connector, which then hooks up to the socket
2. They can be hardwired directly to the socket.



Fig. 36: Light Symbol (Wired To Connector)



Fig. 37: Light Symbol (Hardwired Directly)

Motor

This symbol represents a DC voltage electrical motor. Motors can reverse direction by changing the polarity of the voltage.



Fig. 38: Motor Symbol

Pressure Sensor

A variable resistor is used to monitor the difference in pressure between the intake manifold and outside atmosphere (MAP Sensor). This information is used by the engine computer to monitor engine load (vacuum drops when the engine is under load or at wide open throttle). When the engine is under load, the computer alters spark timing and the fuel mixture to control performance and emissions.

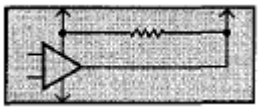


Fig. 39: Pressure Sensor Symbol

NOTE: There is also an FTP (Fuel Tank Pressure) Sensor that is used to monitor EVAP System testing.

Resistor

This symbol represents a component in electrical circuits that resists the flow of electrical current. Resistance is measured in Ohms. Higher resistance results in less current flow. This type of resistor has a fixed resistance value.



Fig. 40: Resistor Symbol

Variable Resistor

This symbol represents a component in electrical circuits that resists the flow of electrical current. Resistance is measured in Ohms. Higher resistance results in less current flow. This type of resistor (thermistor) has a variable resistance value that changes with temperature. The resistance of a thermistor decreases as temperature increases.



Fig. 41: Variable Resistor Symbol

Solenoid

An electromagnet is produced by current flowing through a coil of wire. A plunger inside the wire coil is moved by the electromagnet, turning ON or OFF.



Fig. 42: Solenoid Symbol

Transistors

Transistors are electrical devices that have two key properties:

1. They can amplify an electrical signal, and
2. They can switch ON and OFF, letting current through or blocking it as necessary.



Fig. 43: Transistor Symbol

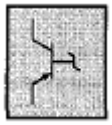


Fig. 44: Transistor Symbol

FIVE STEP TROUBLESHOOTING

Verify the Complaint

Turn on all the of components in the problem circuit to check the accuracy of the customer complaint. Note the symptoms. Do not begin disassembly or testing until you have narrowed down the problem area.

Analyze the Schematic

Look up the schematic for the problem circuit. Determine how the circuit should work by tracing the current paths from the power source through the circuit components to ground (certain circuits contain a "How the Circuit Works" article). Also, trace circuits that share wiring with the problem circuit. The names of circuits that share the same fuse, ground, or switch, and so on, are referred to in each circuit schematic. Try to operate any shared circuits that you did not check in step 1. If the shared circuits work, the shared wiring is OK, and the cause must be in the wiring used only by the problem circuit. If several circuits fail at the same time, the fuse or ground is a likely cause.

Based on the symptoms and your understanding of the circuit's operation, identify one or more possible causes.

Isolate the Problem by Testing the Circuit

Make circuit tests to check the diagnosis that you made in step 2. Keep in mind that a logical, simple procedure is the key to efficient troubleshooting. Test for the most likely cause of failure first. Try to make tests at points that are easily accessible.

Fix the Problem

Once the specific problem is identified, make the repair. Be sure to use proper tools and safe procedures.

Make Sure the Circuit Works

Turn on all components in the repaired circuit in all modes to make sure that you have fixed the entire problem.

If the problem was a blown fuse, be sure to test all of the circuits on that fuse. Make sure that no new problems turn up and that the original problem does not recur.

TEST EQUIPMENT

CAUTION: Most circuits include solid-state devices. Test the voltages in these circuits only with a 10-megaohm or higher impedance digital multimeter. Never use a test light or analog meter on circuits that contain solid-state devices. Damage to the devices may result.

Test Light and DVOM

On circuits without solid-state devices, use a test light to check for voltage. A test light is made up of a 12 volt bulb with a pair of leads attached. After grounding one lead, touch the other lead to various points along the circuit where voltage should be present. The bulb will glow if there is voltage at the point being tested. If you need to know how much voltage is present, use a digital volt/ohmmeter (DVOM). If, in addition, you need to know exactly how much resistance there is between two points, use a digital volt/ohmmeter (DVOM).

In the "OHMS" range, the DVOM will measure resistance between two points along a circuit. Low resistance means good continuity.

Diodes and solid-state devices in a circuit can make a DVOM give a false reading. To check a reading, reverse the leads, and take a second reading. If the readings differ, the component is affecting the measurement.

Jumper Wire

Use a jumper wire to bypass an open circuit. A jumper wire is made up of an in-line fuse holder connected to a set of test leads. It should have a five ampere fuse. Never connect a jumper wire across a short circuit. The direct battery short will blow the fuse.

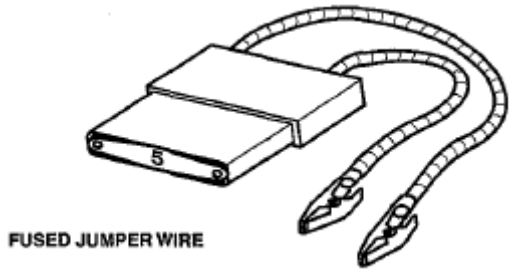


Fig. 45: Identifying Fused Jumper Wire

To order test equipment, contact your local tool supplier. For a list of suppliers and tool numbers, refer to Honda Required Special Tools and Equipment Service Bulletin.

TROUBLESHOOTING PRECAUTIONS

Before Troubleshooting

1. Check the main fuse and the fuse box.
2. Check the battery for damage, state of charge, and clean and tight connections.

CAUTION:

- **Do not quick-charge a battery unless the battery ground cable has been disconnected, or you will damage the alternator diodes.**
- **Do not attempt to crank the engine with the ground cable disconnected, or you will severely damage the wiring.**

While You Are Working

1. Make sure that connectors are clean and have no loose terminals or receptacles.
2. Make sure that connectors without wire seals are packed with dielectric (silicone) grease (Part Number: 08798-9001).

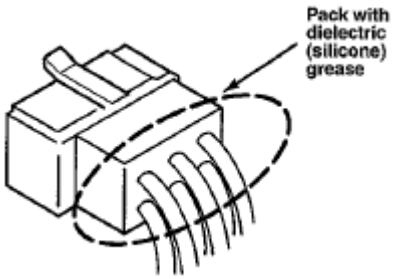


Fig. 46: Identifying Connectors Packed With Dielectric (Silicone Grease)

3. When connecting a connector, push it until it "clicks" into place.

CAUTION:

- **Do not pull on the wires when disconnecting a connector. Pull only on the connector housings.**
- **Most circuits include solid-state devices. Test the voltages in these circuits only with a 10-megaohm or higher impedance digital multimeter. Never use a test light or analog meter on circuits that contain solid-state devices. Damage to the devices may result.**

Testing for Voltage

When testing for voltage at a connector without wire seals, you do not have to separate the two halves of the connector. Instead, probe the connector from the back. Always check both sides of the connector because dirty, corroded, and bent terminals can cause problems (no electrical contact = an open).

1. Connect one lead of the test light to a known good ground, or, if you are using a digital volt ohmmeter (DVOM), place it in the appropriate DC volts range, and connect its negative lead to ground.

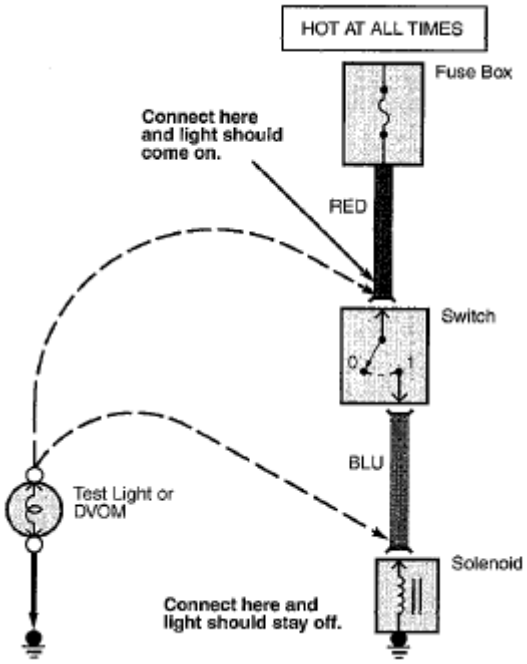


Fig. 47: Testing For Voltage At Connector Without Wire Seals

2. Connect the other lead of the test light or DVOM to the point you want to check.
3. If the test light glows, there is voltage present. If you are using a DVOM, note the voltage reading. It should be within one volt of measured battery voltage. A loss of more than one volt indicates a problem.

NOTE: Always use a DVOM on high impedance circuits. A test light may not glow (even with battery voltage present).

TROUBLESHOOTING TESTS

Testing for Continuity

When testing for continuity at a connector without wire seals, you do not have to separate the two halves of the connector. Instead, probe the connector from the back. Always check both sides of the connector because dirty, corroded, and bent terminals can cause problems (no electrical contact = an open).

1. Disconnect the negative cable from the battery. If you are using a DVOM, place it in the lowest "OHMS" range.
2. Connect one lead of a DVOM to one end of the part of the circuit you want to test.

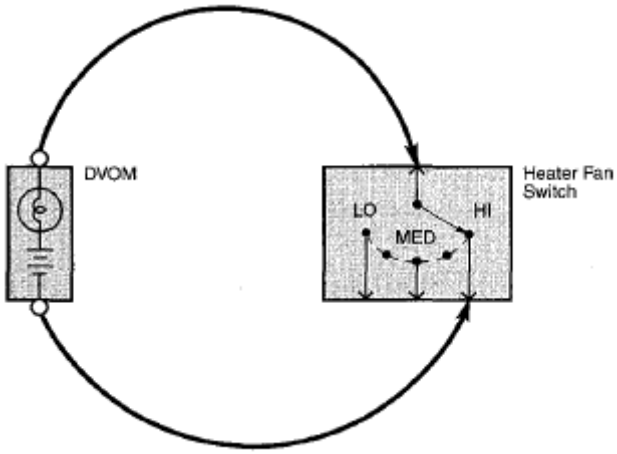


Fig. 48: Testing For Continuity At Connector Without Wire Seals

3. Connect the other lead to the other end.
4. If you are using a DVOM, a low reading or no reading (zero), means good continuity.

Testing for Voltage Drop

Wires, connectors, and switches are designed to conduct current with a minimum loss of voltage. A voltage drop of more than one volt indicates a problem. Circuits must be operating when checking voltage drop.

1. Place the digital volt/ohmmeter (DVOM) in the appropriate DC volts range. Connect the positive lead to the end of the wire (or to the connector or switch) closest to the battery.

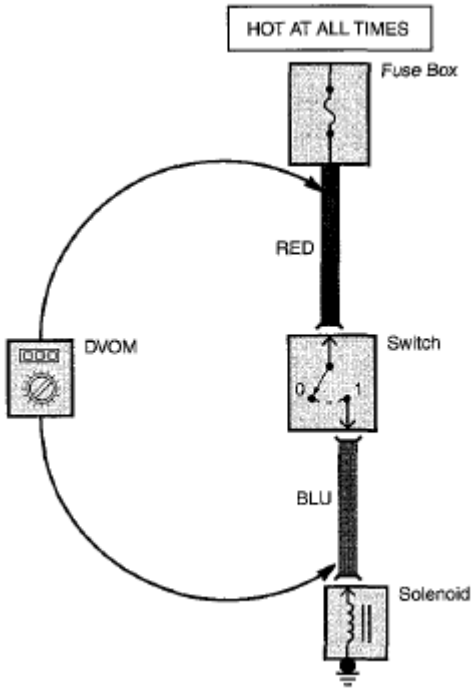


Fig. 49: Testing For Voltage Drop

2. Connect the negative lead to the other end of the wire (or the other side of the connector or switch).
3. Turn on the components in the circuit.
4. The DVOM will show the difference in voltage between the two points. A difference, or drop, of more than one volt indicates a problem. Check the circuit for loose, dirty, or bent terminals.

Testing for a Short with a Test Light or DVOM

1. Remove the blown fuse and disconnect the load.
2. Connect a test light or digital volt/ohmmeter (DVOM), switched to the appropriate DC volts range, across the fuse terminals to make sure voltage is present. You might have to turn the ignition switch to ON; check the schematic to see.

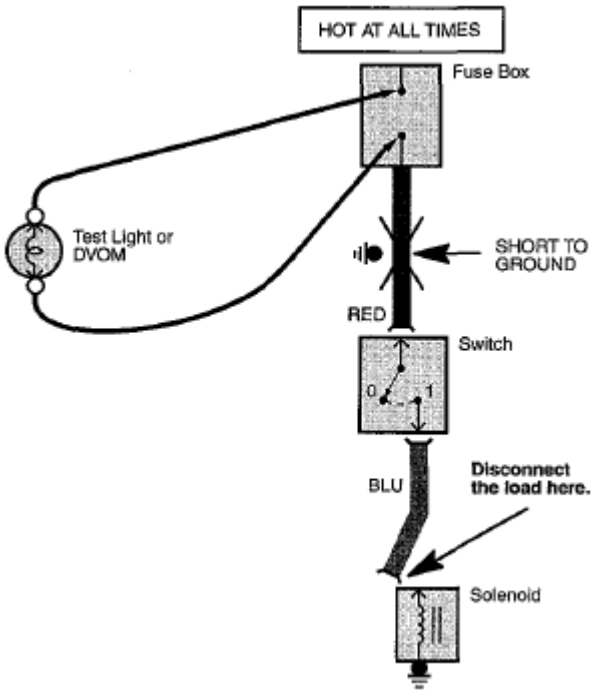


Fig. 50: Testing For Short With Test Light

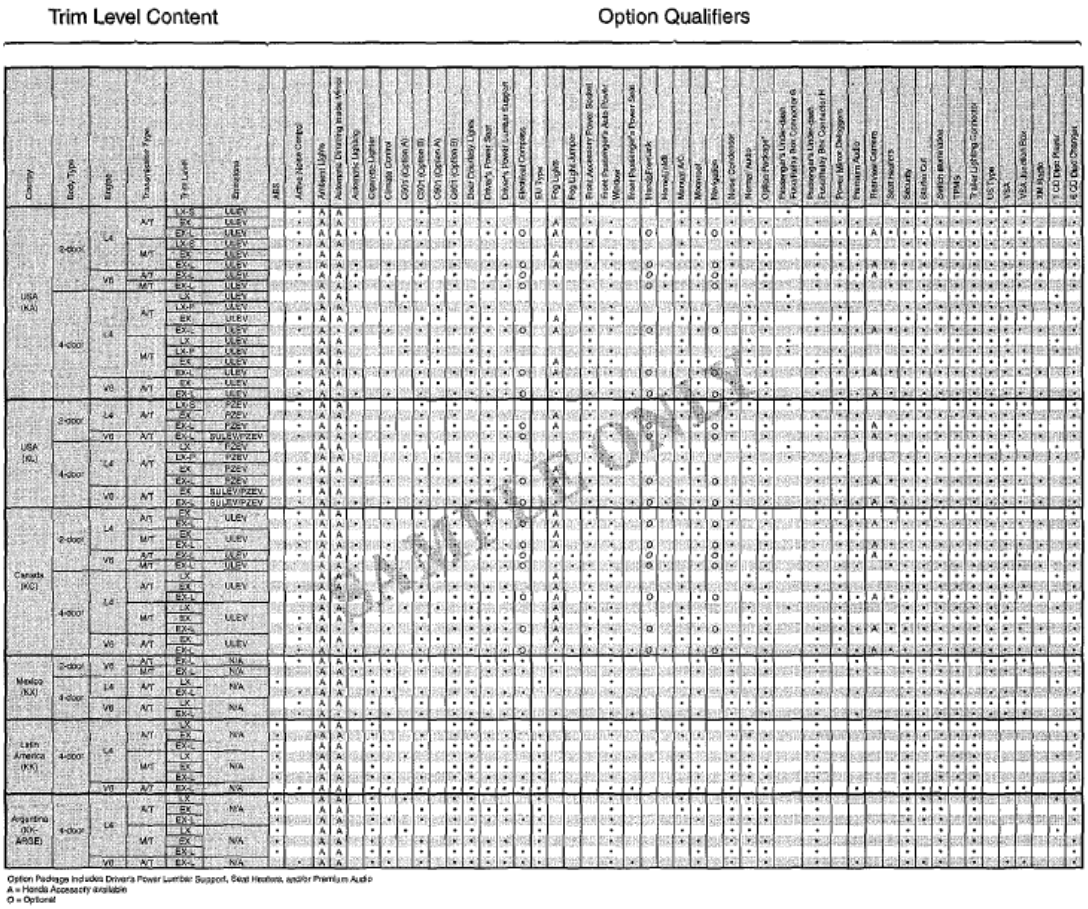
3. Beginning near the fuse box, wiggle the harness. Continue this at convenient points about six inches apart while watching the test light or DVOM.
4. Where the test light goes off, or the DVOM voltage drops to zero, there is a short to ground in the wiring near that point.

NOTE: Always use a DVOM on high impedance circuits. A test light may not glow (even with battery voltage present).

TRIM LEVEL MATRIX

The Trim Level Matrix is used to determine the option content of the various trim levels of a vehicle. Option qualifiers are used to define option content throughout this service information. When an option qualifier is

located, the Trim Level Matrix can be used to determine its application. A dot represents when an option qualifier applies to a certain trim level. An "O" represents an option qualifier is optional on a certain trim level, while an "A" represents an accessory is available for a certain trim level.



Option Package Includes Drivers Power Lumbar Support, Seat Heaters, and/or Premium Audio
A = Honda Accessory Available
O = Optional

Fig. 51: Trim Level Matrix

2012 ELECTRICAL

Power Distribution - TL

FUSE TO COMPONENTS INDEX

UNDER-HOOD FUSE/RELAY BOX

Fuse Number			Amps	Component(s) or Circuits) Protected
1	1-1	MAIN	120 A	Battery, Power supply
	1-2	AS F/B STD	40 A	No. 8, No. 9, No. 10, No. 11, No. 12, and No. 13 fuses in the passenger's under-dash fuse/relay box
2	2-1	EPS	70 A	EPS control unit
	2-2	VSA MTR	40 A	VSA modulator-control unit (MR+B)
	2-3	VSA FSR	30 A	VSA modulator-control unit (FSR+B)
	2-4	AS F/B OP	40 A	No. 15, No. 16, No. 17, No. 18, and No. 19 fuses in the passenger's under-dash fuse/relay box
	2-5	H/L WASHER	30 A	Headlight washer motor relay(1). Headlight washer motor (via headlight washer motor relay)(1)
	2-6	SH-AWD	30 A	SH-AWD control unit (via SH-AWD relay)(2)
3	3-1	IG MAIN	50 A	Ignition switch(3). No. 8 fuse in the driver's under-dash fuse/relay box (via starter cut relay 1), Power control unit(4)
	3-2	- -	40 A	Not used
	3-3	SUB FAN	30 A	A/C condenser fan motor (via A/C condenser fan relay circuit in the relay circuit board)
	3-4	DR F/B STD	60 A	No. 19, No. 20, No. 21, No. 22, No. 23, No. 24, and No. 25 fuses in the driver's under-dash fuse/relay box
	3-5	MAIN FAN	30 A	Radiator fan motor (via radiator fan relay circuit in the relay circuit board)
	3-6	DR LT MAIN	30 A	No. 26, No. 27, No. 28, No. 29, and No. 30 fuses in the driver's under-dash fuse/relay box
	3-7	WIP MTR	30 A	Windshield wiper motor intermittent relay circuit and Windshield wiper motor HIGH/LOW relay circuit in the relay circuit board (via windshield wiper motor relay circuit in the relay circuit board). Windshield wiper motor
	3-8	AS LT MAIN	30 A	No. 1, No. 2, No. 3, and No. 4 fuses in the passenger's under-dash fuse/relay box
4			40A	Rear window defogger (via rear window defogger relay), Rear window defogger noise condenser
5			- -	Not used

6	- -	Not used
7	- -	Not used
8	40 A	Blower motor (via blower motor relay)
9	15A	Driver's MICU (+B HAZARD), Hazard warning switch
10	20 A	Brake pedal position switch, Horn relay circuit in the relay circuit board. Horns (via horn relay circuit in the relay circuit board)
11	7.5 A	No. 18 fuse in the driver's under-dash fuse/relay box (via accessory relay)
12	7.5 A	Battery Sensor
13	15A	Ignition coil relay. Ignition coils (via ignition coil relay circuit)
14	15A	Front A/F sensor (Bank 2, Sensor 1), Front secondary HO2S (Bank 2, Sensor 2), No. 21 fuse in the under-hood fuse/relay box (via PGM-FI subrelay), PGM-FI subrelay. Rear A/F sensor (Bank 1, Sensor 1), Rear secondary HO2S (Bank 1, Sensor 2)
15	10A	AcuraLink control unit (XM receiver)(5). Audio-navigation switch panel(6). Audio-navigation unit(7). Audio unit(7), Audio-HVAC display unit(7). Data link connector (DLC), Driver's door courtesy light. Driver's MICU (VBU), Front passenger's door courtesy light. Gauge control module, HandsFreeLink control unit, HFL-navigation microphone(8), Immobilizer-keyless control unit(3). Navigation display unit(8). Passenger's MICU (VBU), Power window master switch, Power seat control unit, XM receiver(8)
16	7.5 A	Front individual map lights (in the roof console). Ignition key light. Rear individual map lights. Trunk light. Vanity mirror lights
17	15A	CKP sensor (via PGM-FI main relay 1), CMP sensor (via PGM-FI main relay 1), Electronic throttle control system (ETCS) control relay, ECM/PCM (IGP) (via PGM-FI main relay 1), MAF sensor (via PGM-FI main relay 1), Injectors (via PGM-FI main relay 1), PGM-FI main relay 1, PGM-FI main relay 2 (via PGM-FI main relay 1)
18	15A	ECM/PCM (IG1) (via electronic throttle control system (ETCS) control relay)
19	7.5 A	ECM/PCM (VBUM)
20	7.5 A	A/C compressor clutch (via A/C compressor clutch relay)
21	7.5 A	Radiator fan relay circuit

(1) With headlight washer

(2) With SH-AWD

(3) Without keyless access system

(4) With keyless access system

(5) USA models with navigation

(6) With navigation

(7) Without navigation

(8) Except USA models with navigation

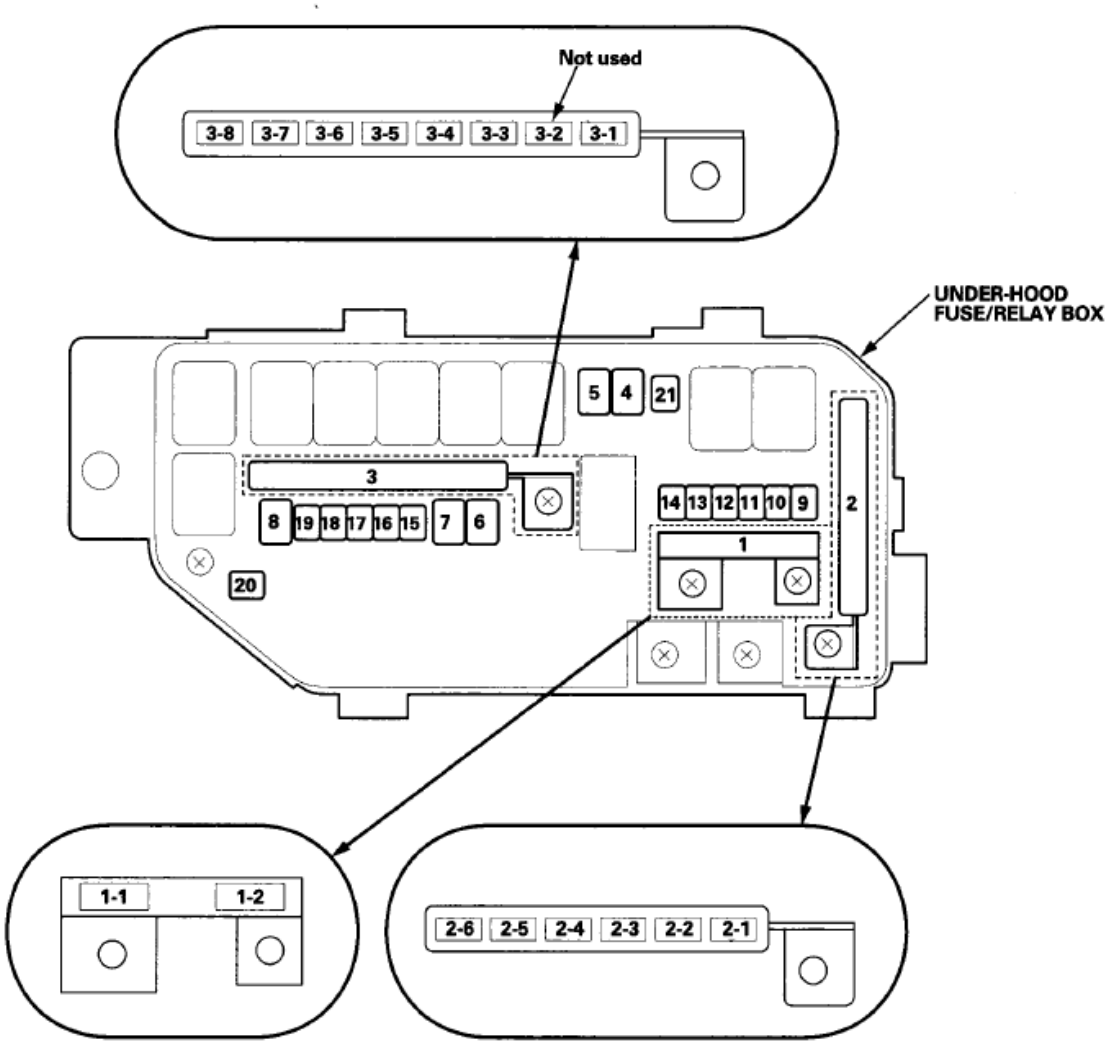


Fig. 1: Identifying Under-Hood Fuse/Relay Box And Terminals
Courtesy of AMERICAN HONDA MOTOR CO., INC.

DRIVER'S UNDER-DASH FUSE/RELAY BOX

Fuse Number	Amps	Component(s) or Circuit(s) Protected
1	7.5 A	BSI control unit (IG1)(1), Left radar unit(1). Right radar unit(1)
2	7.5 A	SH-AWD control unit(2)
3	20 A	Windshield washer motor. Windshield washer relay circuit (in the passenger's under-dash fuse/relay box)
4	7.5 A	Windshield wiper motor relay circuit in the relay circuit board (in the under-hood fuse/relay box)
5	7.5 A	ODS unit. Passenger's airbag cutoff indicator, SRS unit
6	7.5 A	EPS control unit, Steering angle sensor(2), VSA modulator-control unit. Yaw rate-lateral acceleration sensor(3). Yaw rate-lateral/Longitudinal acceleration sensor(2)
7	- -	Not used

8	7.5 A	ECM/PCM (STRLD)
9	20 A	ECM/PCM (IG1), Electric steering lock control unit(4). Fuel pump (via PGM-FI main relay 2), Immobilizer-keyless control unit(5), Keyless access control unit(3). Remote slot control unit(4)
10	10A	PCM (VBSOL2) (A/T)
11	10A	SRS unit
12	7.5 A	AcuraLink control unit (XM receiver)(6), Audio-navigation unit (via back-up light switch/reverse relay circuit)(8). Automatic dimming inside mirror (IG1), Automatic dimming inside mirror (via back-up light switch(9)/reverse relay circuit(10)), Back-up lights (via back-up light switch(9)/reverse relay circuit(10)), Driver's MICU (BACK LT-) (via back-up light switch(9)/reverse relay circuit(10)). Driver's MICU (IG1), Electrical compass unit(7). Gauge control module. Navigation display unit(6) (via back-up light switch(9)/reverse relay circuit(10)), Passenger's MICU (IG1), Power mirror control unit, Power seat control unit, Reverse relay circuit, Shift lock solenoid, TPMS control unit
13	15A	Alternator, Brake pedal position switch, PCM (VBASOL1), Electrical load detector (ELD), Engine mount control solenoid valve, EVAP canister purge valve
14	- -	Not used
15	7.5 A	Driver's MICU (IG2 DAY LT)
16	7.5 A	Audio-HVAC subdisplay unit(7), Audio-Navigation switch panel(8), Climate control unit. Door multiplex control unit (Power window master switch), Driver's climate control switch. Driver's seat heater switch(11). Driver's seat ventilation switch(12). Front passenger's seat heater switch(11), Front passenger's ventilation switch(12). Passenger's climate control switch, Power mirror switch. Seat ventilation control unit (IG1)(12)
17	7.5 A	Driver's MICU (ACC KEY LOCK)(5)
18	7.5 A	AcuraLink control unit (XM receiver)(6), Audio/audio-navigation unit(8). Audio unit(5). Console accessory power socket relay. Front accessory power socket relay(4). Driver's MICU (ACC KEY LOCK)(3), HandsFreeLink control unit, HandsFreeLink microphone (7), HandsFreeLink-Navigation microphone(8). Interface dial(8). Key interlock solenoid (5), Keyless access control unit(4). Navigation display unit(8). Remote slot control unit(4)
19	20 A	Power seat control unit
20	20 A	Moonroof control unit/motor
21	20 A	Power seat control unit
22	20 A	Left rear power window relay circuit. Left rear power window switch (via left power window relay circuit)
23	15A	Front accessory power socket (via front accessory power socket relay)
24	20 A	Power window master switch (Door multiplex control unit)
25	15A	Driver's door lock actuator (via power door lock relay circuit (LOCK) in the driver's under-dash fuse/relay box), Driver's door lock actuator (via power door lock relay circuit (DR UNLOCK) in the driver's under-dash fuse/relay box). Fuel fill door open relay circuit, Fuel fill door opener solenoid. Left rear door lock actuator. Power door lock relay circuit (DR UNLOCK), Power door lock relay circuit (LOCK), Power door lock

		relay circuit (UNLOCK), Trunk lid release actuator. Trunk lid release actuator relay circuit
26	10A	Driver's MICU (FR FOG LT L+)
27	10A	Driver's MICU (PARKING DR RLY CL-)
28	10A	Driver's MICU (H/L-HID
29	7.5 A	TPMS control unit
30	15A	Driver's MICU (H/L-LOL)
31	- -	Not used

(1) With BSI

(2) With SH-AWD

(3) Without SH-AWD

(4) With keyless access system

(5) Without keyless access system

(6) USA models with navigation

(7) Without navigation

(8) With navigation

(9) M/T

(10) A/T

(11) Without seat ventilation

(12) With seat ventilation

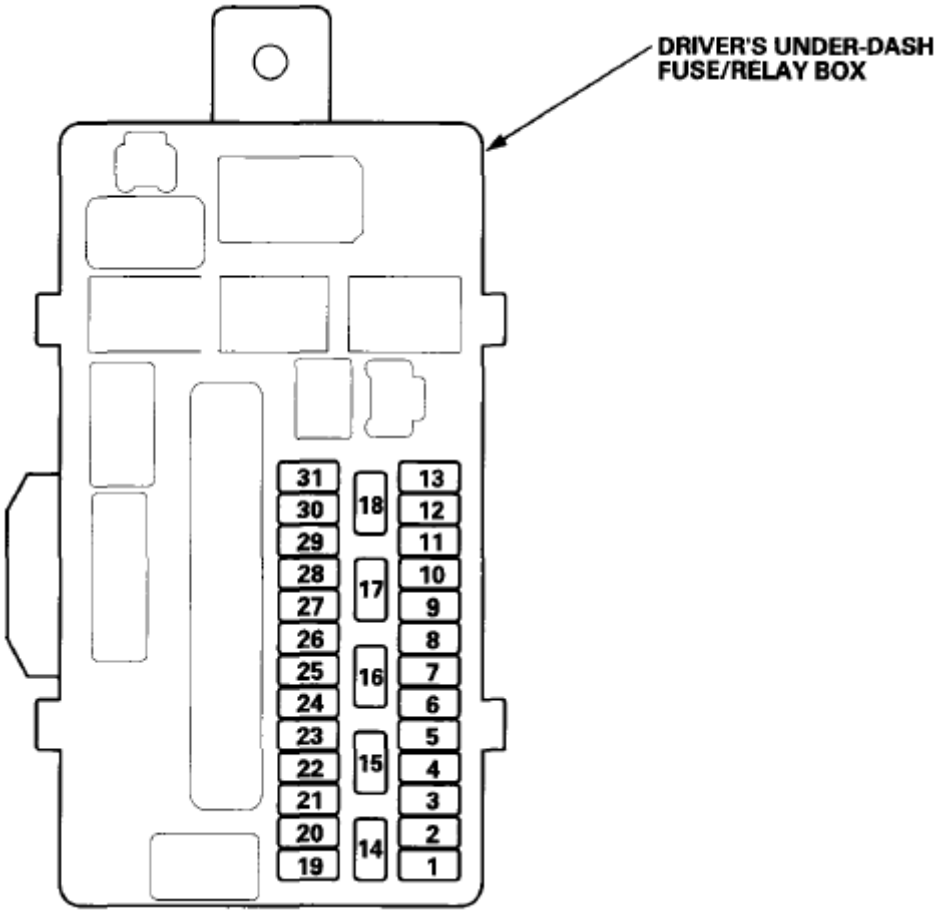


Fig. 2: Identifying Driver's Under-Dash Fuse/Relay Box And Terminals
Courtesy of AMERICAN HONDA MOTOR CO., INC.

PASSENGER'S UNDER-DASH FUSE/RELAY BOX

Fuse Number	Amps	Component(s) or Circuit(s) Protected
1	10A	Passenger's MICU (H/L-HI R)
2	10A	Passenger's MICU (PARKING AS RLY CL-)
3	10A	Passenger's MICU (FR FOG LT R+)
4	15A	Passenger's MICU (H/L-LO R)
5	- -	Not used
6	7.5 A	A/T gear position indicator panel light (A/T), Audio unit(1), Audio-HVAC display unit (1), BSI off switch light(3). Climate control unit light, Console box light, Dashlights brightness controller switch light. Driver's climate control switch, Driver's footwell light. Driver's seat heater switch light(6). Driver's seat ventilation switch light(7), Front passenger's airbag cutoff switch light, Front passenger's seat heater switch light(6). Front passenger's seat ventilation switch light(7), Glove box light. Hazard warning switch light. Headlight washer switch light(4), Moonroof switch light, Navigation display unit(2), Passenger's footwell light, Passenger's climate control switch, Rear individual map

		lights, Roof console, Steering wheel switch lights, VSA OFF switch light
7	- -	Not used
8	20 A	Front passenger's power seat recline motor (via front passenger's power seat adjustment switch). Front passenger's power seat rear up-down motor (via front passenger's power seat adjustment switch)
9	20 A	Front passenger's power seat front up-down motor (via front passenger's power seat adjustment switch). Front passenger's power seat slide motor (via front passenger's power seat adjustment switch)
10	10A	Front passenger's door lock actuator. Power door lock relay circuit (LOCK) (in the passenger's under-dash fuse/relay box), Power door lock relay circuit (UNLOCK) (in the passenger's under-dash fuse/relay box), Right rear door lock actuator
11	20 A	Right rear power window relay circuit (in the passenger's under-dash fuse/relay box), Right rear power window motor
12	10A	Electric steering lock control unit(5), Engine start/stop switch(5), Power control unit(4). Remote slot(5), Remote slot control unit(4). Starter cut relay 2 (via + B cut relay) (M/T)
13	20 A	Front passenger's power window switch
14	- -	Not used
15	20 A	Stereo amplifier
16	15A	Console accessory power socket (via console accessory power socket relay)
17	- -	Not used
18	7.5 A	Driver's lumbar support motor (via driver's lumbar support switch)
19	20 A	Driver's seat cushion blower motor (via seat ventilation relay)(7). Driver's seat heater (via driver's seat heater relay)(7). Driver's seat heater switch (via driver's seat heater relays)(6), Driver's seat-back blower motor (via seat ventilation relay)(7), Front passenger's seat heater switch (via front passenger's heater relays)(6), Front passenger's seat cushion blower passenger's seat-back blower motor (via seat ventilation relay)(7), Seat ventilation control unit (via seat ventilation relay)(7)
20	- -	Not used
21	- -	Not used
22	- -	Not used

(1) Without navigation

(2) With navigation

(3) With BSI

(4) With headlight washer

(5) With keyless access system

(6) Without seat ventilation

(7) With seat ventilation

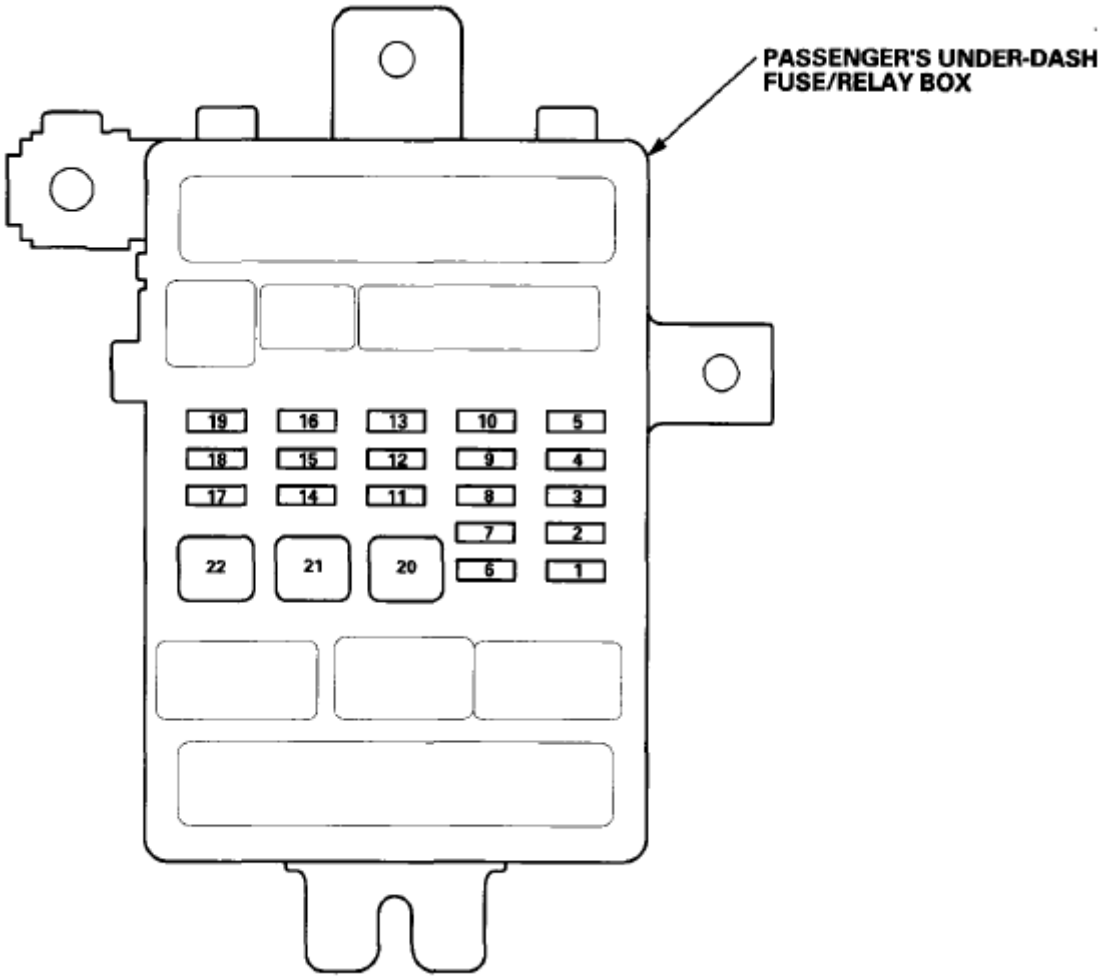


Fig. 3: Identifying Passenger's Under-Dash Fuse/Relay Box And Terminals
Courtesy of AMERICAN HONDA MOTOR CO., INC.

AUXILIARY UNDER-DASH FUSE HOLDER (WITHOUT KEYLESS ACCESS SYSTEM)

Fuse Number	Amps	Wire Color	Component(s) or Circuit(s) Protected
STS	7.5 A	YEL	Ignition switch (ST)
		LT GRN	ECM/PCM (STS)

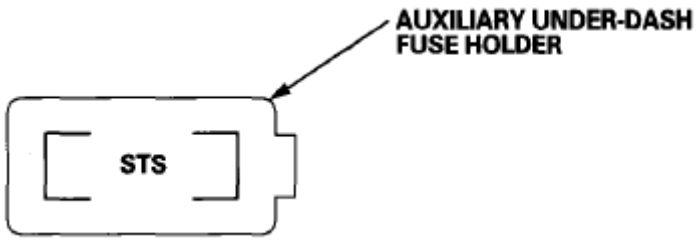


Fig. 4: Identifying Auxiliary Under-Dash Fuse Holder
Courtesy of AMERICAN HONDA MOTOR CO., INC.

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FUSE TO COMPONENTS INDEX

UNDER-HOOD FUSE/RELAY BOX

Fuse Number			Amps	Component(s) or Circuits) Protected
1	1-1	MAIN	120 A	Battery, Power supply
	1-2	AS F/B STD	40 A	No. 8, No. 9, No. 10, No. 11, No. 12, and No. 13 fuses in the passenger's under-dash fuse/relay box
2	2-1	EPS	70 A	EPS control unit
	2-2	VSA MTR	40 A	VSA modulator-control unit (MR+B)
	2-3	VSA FSR	30 A	VSA modulator-control unit (FSR+B)
	2-4	AS F/B OP	40 A	No. 15, No. 16, No. 17, No. 18, and No. 19 fuses in the passenger's under-dash fuse/relay box
	2-5	H/L WASHER	30 A	Headlight washer motor relay(1). Headlight washer motor (via headlight washer motor relay)(1)
	2-6	SH-AWD	30 A	SH-AWD control unit (via SH-AWD relay)(2)
3	3-1	IG MAIN	50 A	Ignition switch(3). No. 8 fuse in the driver's under-dash fuse/relay box (via starter cut relay 1), Power control unit(4)
	3-2	- -	40 A	Not used
	3-3	SUB FAN	30 A	A/C condenser fan motor (via A/C condenser fan relay circuit in the relay circuit board)
	3-4	DR F/B STD	60 A	No. 19, No. 20, No. 21, No. 22, No. 23, No. 24, and No. 25 fuses in the driver's under-dash fuse/relay box
	3-5	MAIN FAN	30 A	Radiator fan motor (via radiator fan relay circuit in the relay circuit board)
	3-6	DR LT MAIN	30 A	No. 26, No. 27, No. 28, No. 29, and No. 30 fuses in the driver's under-dash fuse/relay box
	3-7	WIP MTR	30 A	Windshield wiper motor intermittent relay circuit and Windshield wiper motor HIGH/LOW relay circuit in the relay circuit board (via windshield wiper motor relay circuit in the relay circuit board). Windshield wiper motor
	3-8	AS LT MAIN	30 A	No. 1, No. 2, No. 3, and No. 4 fuses in the passenger's under-dash fuse/relay box
4			40A	Rear window defogger (via rear window defogger relay), Rear window defogger noise condenser
5			- -	Not used

6	- -	Not used
7	- -	Not used
8	40 A	Blower motor (via blower motor relay)
9	15A	Driver's MICU (+B HAZARD), Hazard warning switch
10	20 A	Brake pedal position switch, Horn relay circuit in the relay circuit board. Horns (via horn relay circuit in the relay circuit board)
11	7.5 A	No. 18 fuse in the driver's under-dash fuse/relay box (via accessory relay)
12	7.5 A	Battery Sensor
13	15A	Ignition coil relay. Ignition coils (via ignition coil relay circuit)
14	15A	Front A/F sensor (Bank 2, Sensor 1), Front secondary HO2S (Bank 2, Sensor 2), No. 21 fuse in the under-hood fuse/relay box (via PGM-FI subrelay), PGM-FI subrelay. Rear A/F sensor (Bank 1, Sensor 1), Rear secondary HO2S (Bank 1, Sensor 2)
15	10A	AcuraLink control unit (XM receiver)(5). Audio-navigation switch panel(6). Audio-navigation unit(7). Audio unit(7), Audio-HVAC display unit(7). Data link connector (DLC), Driver's door courtesy light. Driver's MICU (VBU), Front passenger's door courtesy light. Gauge control module, HandsFreeLink control unit, HFL-navigation microphone(8), Immobilizer-keyless control unit(3). Navigation display unit(8). Passenger's MICU (VBU), Power window master switch, Power seat control unit, XM receiver(8)
16	7.5 A	Front individual map lights (in the roof console). Ignition key light. Rear individual map lights. Trunk light. Vanity mirror lights
17	15A	CKP sensor (via PGM-FI main relay 1), CMP sensor (via PGM-FI main relay 1), Electronic throttle control system (ETCS) control relay, ECM/PCM (IGP) (via PGM-FI main relay 1), MAF sensor (via PGM-FI main relay 1), Injectors (via PGM-FI main relay 1), PGM-FI main relay 1, PGM-FI main relay 2 (via PGM-FI main relay 1)
18	15A	ECM/PCM (IG1) (via electronic throttle control system (ETCS) control relay)
19	7.5 A	ECM/PCM (VBUM)
20	7.5 A	A/C compressor clutch (via A/C compressor clutch relay)
21	7.5 A	Radiator fan relay circuit

(1) With headlight washer

(2) With SH-AWD

(3) Without keyless access system

(4) With keyless access system

(5) USA models with navigation

(6) With navigation

(7) Without navigation

(8) Except USA models with navigation

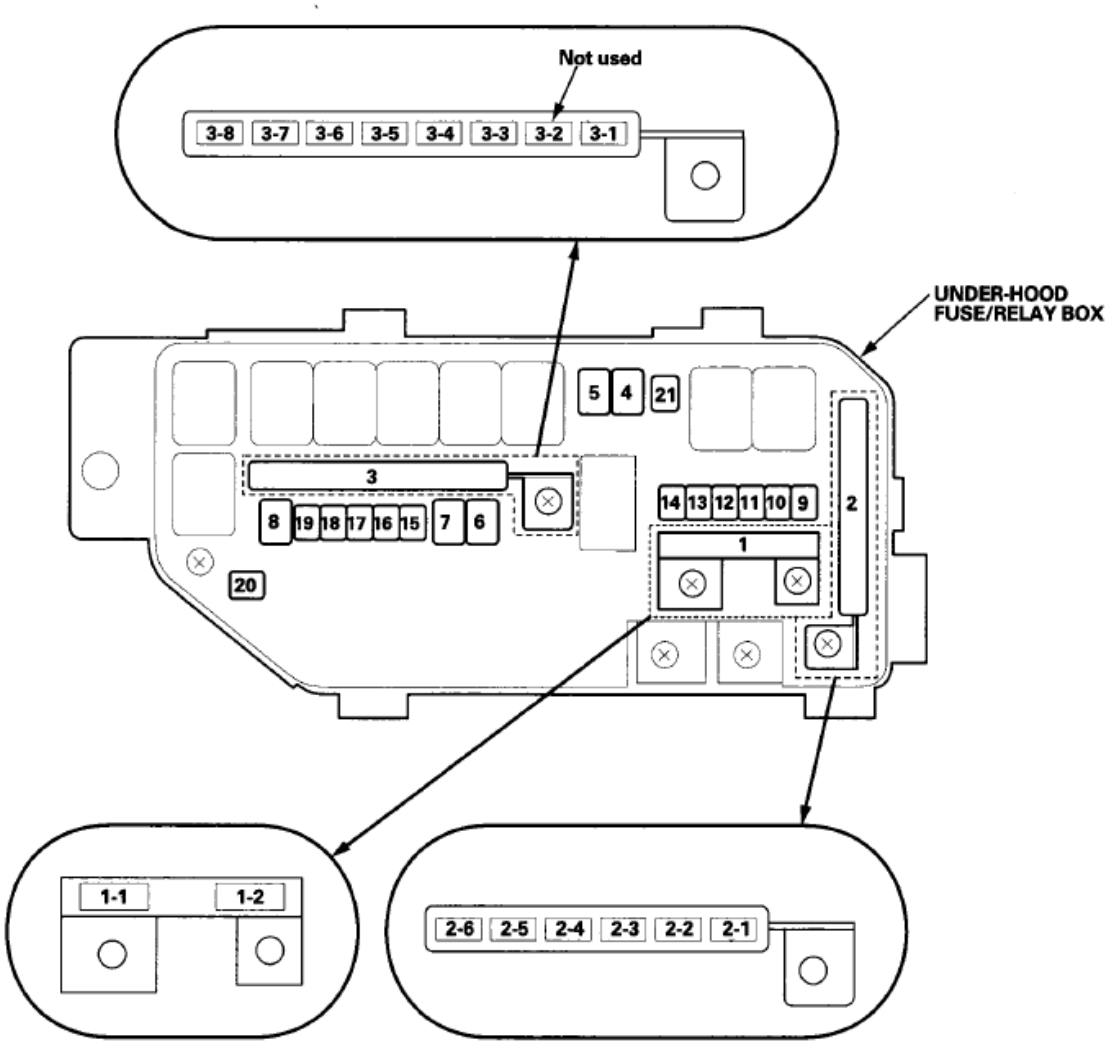


Fig. 1: Identifying Under-Hood Fuse/Relay Box And Terminals
Courtesy of AMERICAN HONDA MOTOR CO., INC.

DRIVER'S UNDER-DASH FUSE/RELAY BOX

Fuse Number	Amps	Component(s) or Circuit(s) Protected
1	7.5 A	BSI control unit (IG1)(1), Left radar unit(1). Right radar unit(1)
2	7.5 A	SH-AWD control unit(2)
3	20 A	Windshield washer motor. Windshield washer relay circuit (in the passenger's under-dash fuse/relay box)
4	7.5 A	Windshield wiper motor relay circuit in the relay circuit board (in the under-hood fuse/relay box)
5	7.5 A	ODS unit. Passenger's airbag cutoff indicator, SRS unit
6	7.5 A	EPS control unit, Steering angle sensor(2), VSA modulator-control unit. Yaw rate-lateral acceleration sensor(3). Yaw rate-lateral/Longitudinal acceleration sensor(2)
7	- -	Not used

8	7.5 A	ECM/PCM (STRLD)
9	20 A	ECM/PCM (IG1), Electric steering lock control unit(4). Fuel pump (via PGM-FI main relay 2), Immobilizer-keyless control unit(5), Keyless access control unit(3). Remote slot control unit(4)
10	10A	PCM (VBSOL2) (A/T)
11	10A	SRS unit
12	7.5 A	AcuraLink control unit (XM receiver)(6), Audio-navigation unit (via back-up light switch/reverse relay circuit)(8). Automatic dimming inside mirror (IG1), Automatic dimming inside mirror (via back-up light switch(9)/reverse relay circuit(10)), Back-up lights (via back-up light switch(9)/reverse relay circuit(10)), Driver's MICU (BACK LT-) (via back-up light switch(9)/reverse relay circuit(10)). Driver's MICU (IG1), Electrical compass unit(7). Gauge control module. Navigation display unit(6) (via back-up light switch(9)/reverse relay circuit(10)), Passenger's MICU (IG1), Power mirror control unit, Power seat control unit, Reverse relay circuit, Shift lock solenoid, TPMS control unit
13	15A	Alternator, Brake pedal position switch, PCM (VBASOL1), Electrical load detector (ELD), Engine mount control solenoid valve, EVAP canister purge valve
14	- -	Not used
15	7.5 A	Driver's MICU (IG2 DAY LT)
16	7.5 A	Audio-HVAC subdisplay unit(7), Audio-Navigation switch panel(8), Climate control unit. Door multiplex control unit (Power window master switch), Driver's climate control switch. Driver's seat heater switch(11). Driver's seat ventilation switch(12). Front passenger's seat heater switch(11), Front passenger's ventilation switch(12). Passenger's climate control switch, Power mirror switch. Seat ventilation control unit (IG1)(12)
17	7.5 A	Driver's MICU (ACC KEY LOCK)(5)
18	7.5 A	AcuraLink control unit (XM receiver)(6), Audio/audio-navigation unit(8). Audio unit(5). Console accessory power socket relay. Front accessory power socket relay(4). Driver's MICU (ACC KEY LOCK)(3), HandsFreeLink control unit, HandsFreeLink microphone (7), HandsFreeLink-Navigation microphone(8). Interface dial(8). Key interlock solenoid (5), Keyless access control unit(4). Navigation display unit(8). Remote slot control unit(4)
19	20 A	Power seat control unit
20	20 A	Moonroof control unit/motor
21	20 A	Power seat control unit
22	20 A	Left rear power window relay circuit. Left rear power window switch (via left power window relay circuit)
23	15A	Front accessory power socket (via front accessory power socket relay)
24	20 A	Power window master switch (Door multiplex control unit)
25	15A	Driver's door lock actuator (via power door lock relay circuit (LOCK) in the driver's under-dash fuse/relay box), Driver's door lock actuator (via power door lock relay circuit (DR UNLOCK) in the driver's under-dash fuse/relay box). Fuel fill door open relay circuit, Fuel fill door opener solenoid. Left rear door lock actuator. Power door lock relay circuit (DR UNLOCK), Power door lock relay circuit (LOCK), Power door lock

		relay circuit (UNLOCK), Trunk lid release actuator. Trunk lid release actuator relay circuit
26	10A	Driver's MICU (FR FOG LT L+)
27	10A	Driver's MICU (PARKING DR RLY CL-)
28	10A	Driver's MICU (H/L-HID
29	7.5 A	TPMS control unit
30	15A	Driver's MICU (H/L-LOL)
31	- -	Not used

(1) With BSI

(2) With SH-AWD

(3) Without SH-AWD

(4) With keyless access system

(5) Without keyless access system

(6) USA models with navigation

(7) Without navigation

(8) With navigation

(9) M/T

(10) A/T

(11) Without seat ventilation

(12) With seat ventilation

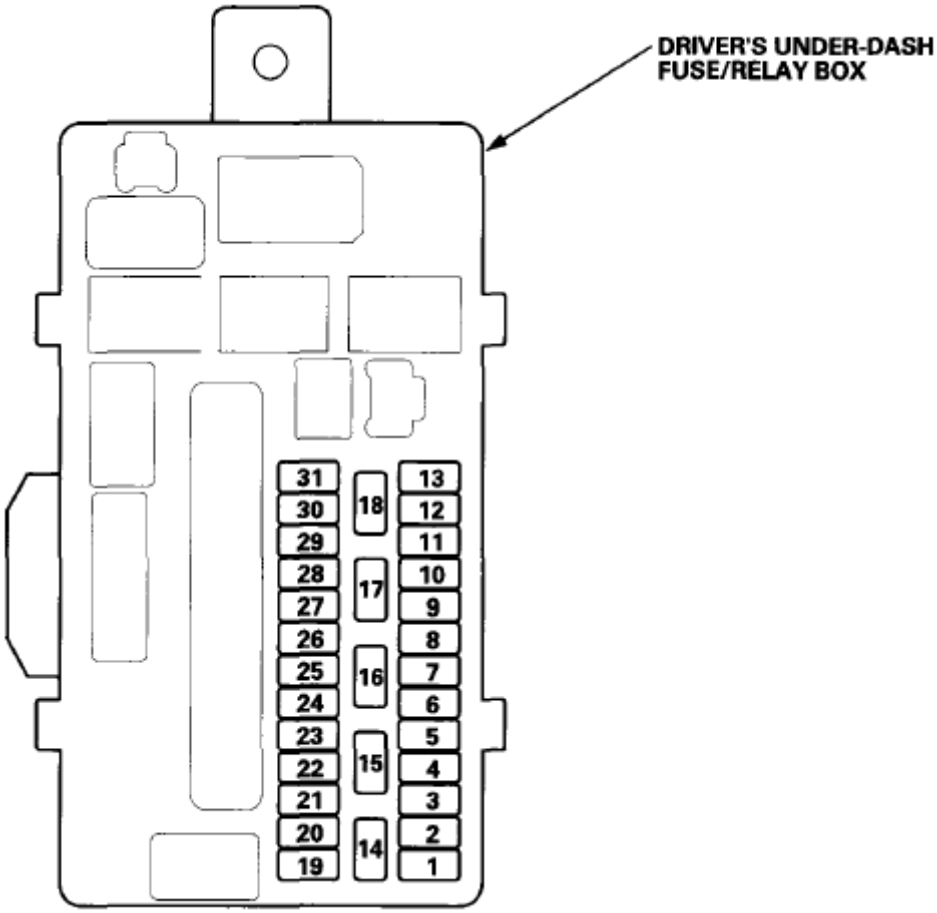


Fig. 2: Identifying Driver's Under-Dash Fuse/Relay Box And Terminals
Courtesy of AMERICAN HONDA MOTOR CO., INC.

PASSENGER'S UNDER-DASH FUSE/RELAY BOX

Fuse Number	Amps	Component(s) or Circuit(s) Protected
1	10A	Passenger's MICU (H/L-HI R)
2	10A	Passenger's MICU (PARKING AS RLY CL-)
3	10A	Passenger's MICU (FR FOG LT R+)
4	15A	Passenger's MICU (H/L-LO R)
5	- -	Not used
6	7.5 A	A/T gear position indicator panel light (A/T), Audio unit(1), Audio-HVAC display unit (1), BSI off switch light(3). Climate control unit light, Console box light, Dashlights brightness controller switch light. Driver's climate control switch, Driver's footwell light. Driver's seat heater switch light(6). Driver's seat ventilation switch light(7), Front passenger's airbag cutoff switch light, Front passenger's seat heater switch light(6). Front passenger's seat ventilation switch light(7), Glove box light. Hazard warning switch light. Headlight washer switch light(4), Moonroof switch light, Navigation display unit(2), Passenger's footwell light, Passenger's climate control switch, Rear individual map

		lights, Roof console, Steering wheel switch lights, VSA OFF switch light
7	- -	Not used
8	20 A	Front passenger's power seat recline motor (via front passenger's power seat adjustment switch). Front passenger's power seat rear up-down motor (via front passenger's power seat adjustment switch)
9	20 A	Front passenger's power seat front up-down motor (via front passenger's power seat adjustment switch). Front passenger's power seat slide motor (via front passenger's power seat adjustment switch)
10	10A	Front passenger's door lock actuator. Power door lock relay circuit (LOCK) (in the passenger's under-dash fuse/relay box), Power door lock relay circuit (UNLOCK) (in the passenger's under-dash fuse/relay box), Right rear door lock actuator
11	20 A	Right rear power window relay circuit (in the passenger's under-dash fuse/relay box), Right rear power window motor
12	10A	Electric steering lock control unit(5), Engine start/stop switch(5), Power control unit(4). Remote slot(5), Remote slot control unit(4). Starter cut relay 2 (via + B cut relay) (M/T)
13	20 A	Front passenger's power window switch
14	- -	Not used
15	20 A	Stereo amplifier
16	15A	Console accessory power socket (via console accessory power socket relay)
17	- -	Not used
18	7.5 A	Driver's lumbar support motor (via driver's lumbar support switch)
19	20 A	Driver's seat cushion blower motor (via seat ventilation relay)(7). Driver's seat heater (via driver's seat heater relay)(7). Driver's seat heater switch (via driver's seat heater relays)(6), Driver's seat-back blower motor (via seat ventilation relay)(7), Front passenger's seat heater switch (via front passenger's heater relays)(6), Front passenger's seat cushion blower passenger's seat-back blower motor (via seat ventilation relay)(7), Seat ventilation control unit (via seat ventilation relay)(7)
20	- -	Not used
21	- -	Not used
22	- -	Not used

(1) Without navigation

(2) With navigation

(3) With BSI

(4) With headlight washer

(5) With keyless access system

(6) Without seat ventilation

(7) With seat ventilation

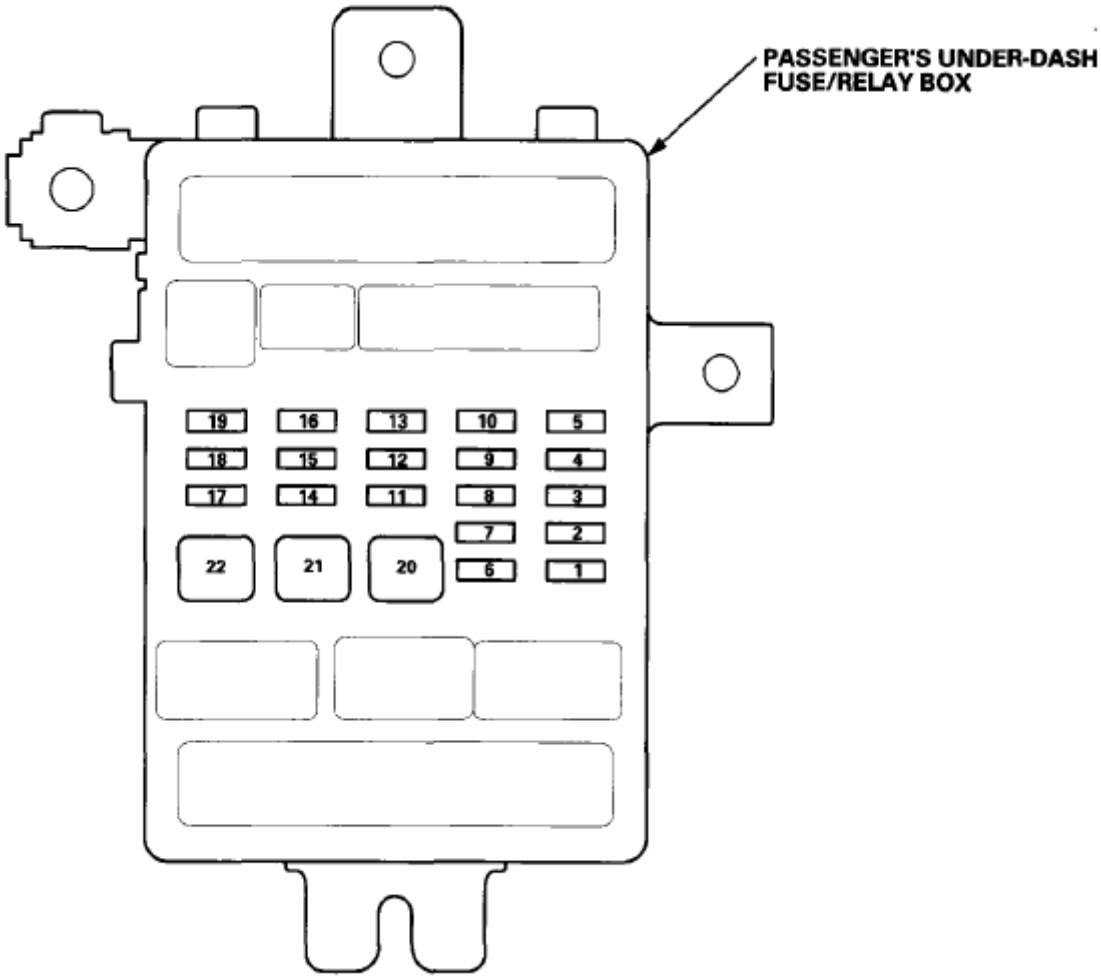


Fig. 3: Identifying Passenger's Under-Dash Fuse/Relay Box And Terminals
Courtesy of AMERICAN HONDA MOTOR CO., INC.

AUXILIARY UNDER-DASH FUSE HOLDER (WITHOUT KEYLESS ACCESS SYSTEM)

Fuse Number	Amps	Wire Color	Component(s) or Circuit(s) Protected
STS	7.5 A	YEL	Ignition switch (ST)
		LT GRN	ECM/PCM (STS)

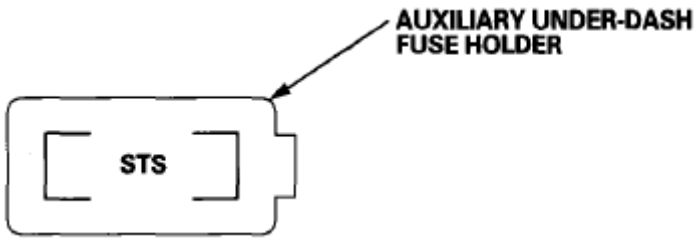


Fig. 4: Identifying Auxiliary Under-Dash Fuse Holder
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2012 ELECTRICAL

Relay And Control Unit Locations - TL

ENGINE COMPARTMENT

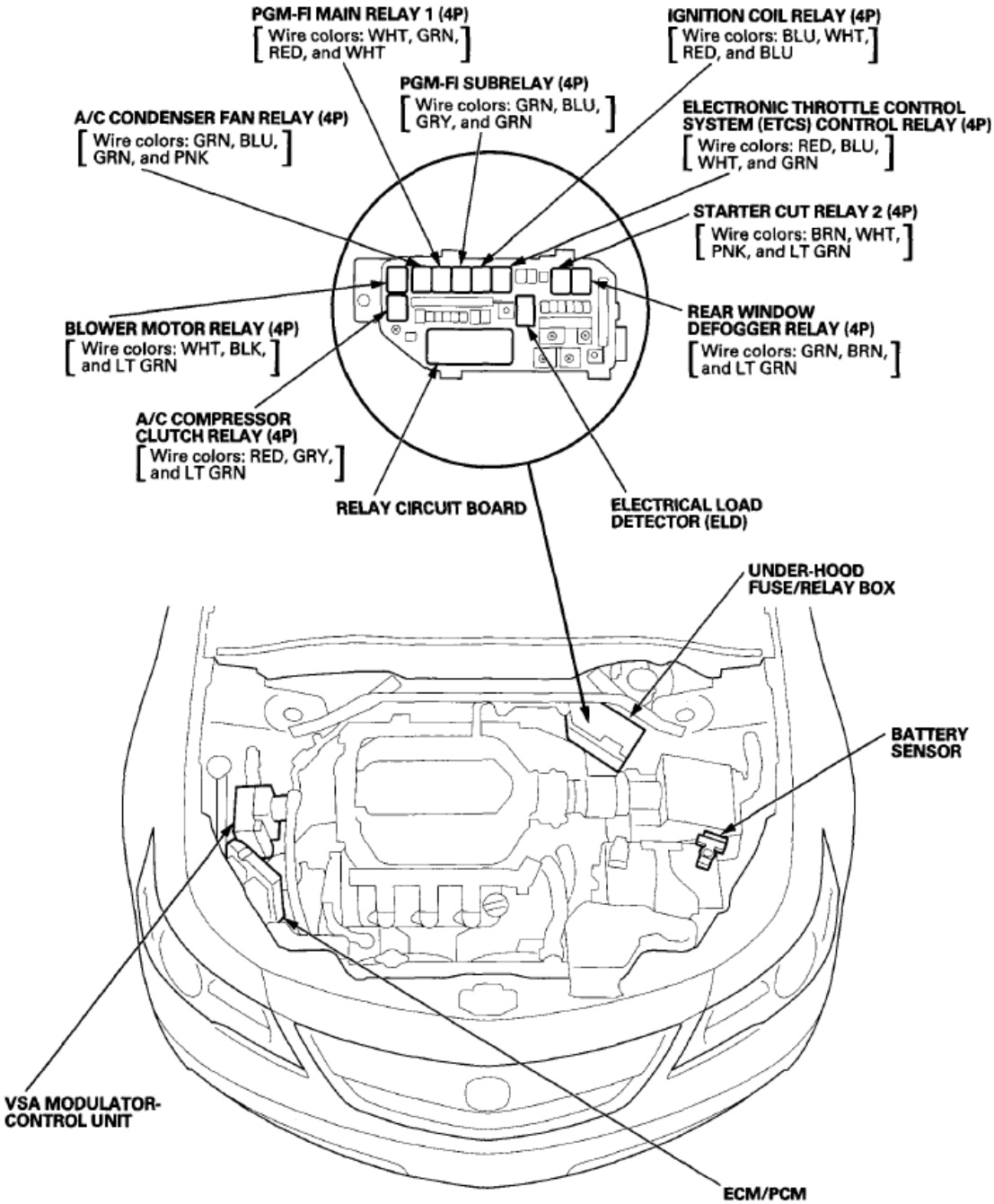


Fig. 1: Engine Compartment Components Location
Courtesy of AMERICAN HONDA MOTOR CO., INC.

DASHBOARD

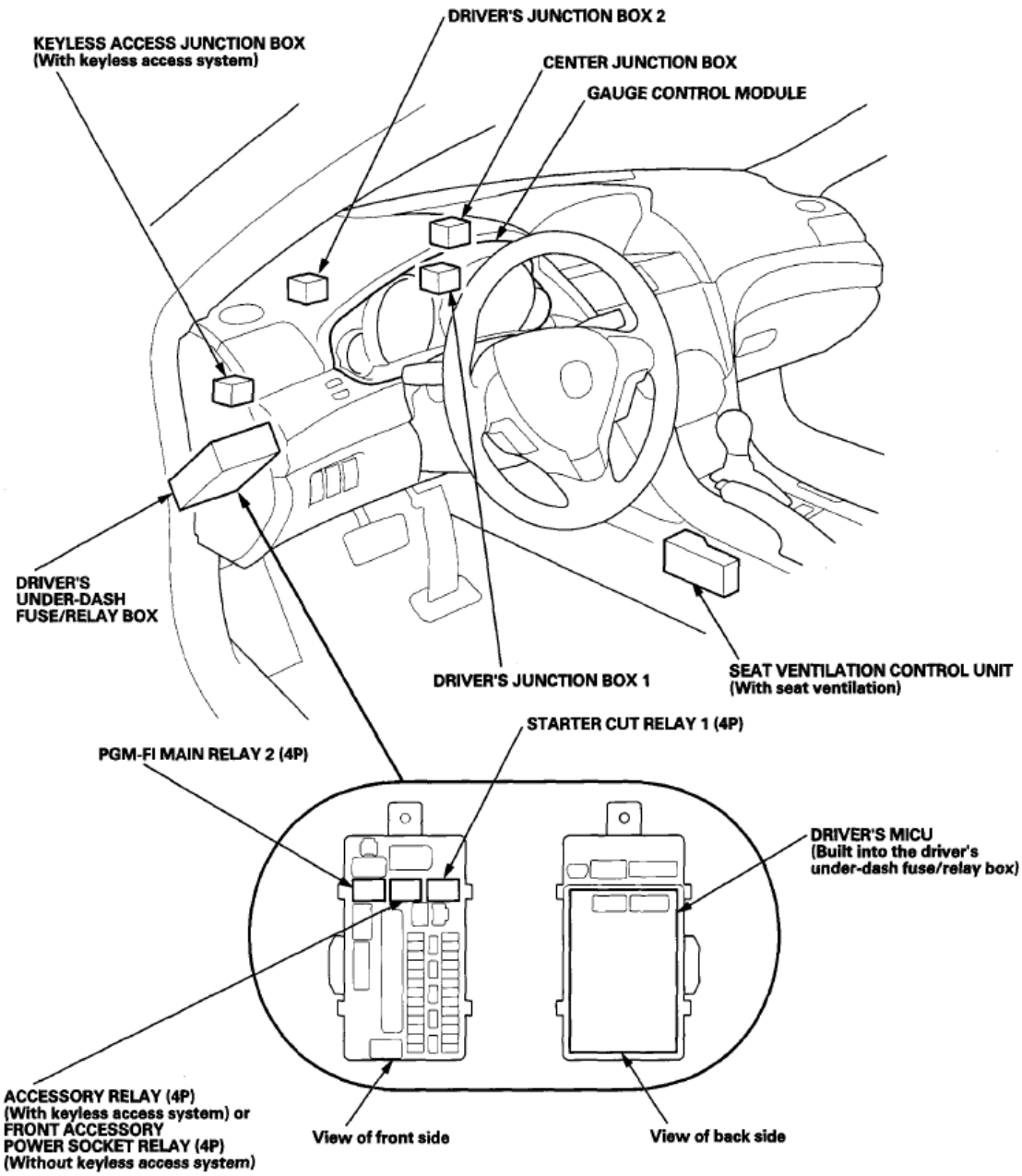


Fig. 2: Dashboard Components Location
Courtesy of AMERICAN HONDA MOTOR CO., INC.

WITH KEYLESS ACCESS SYSTEM

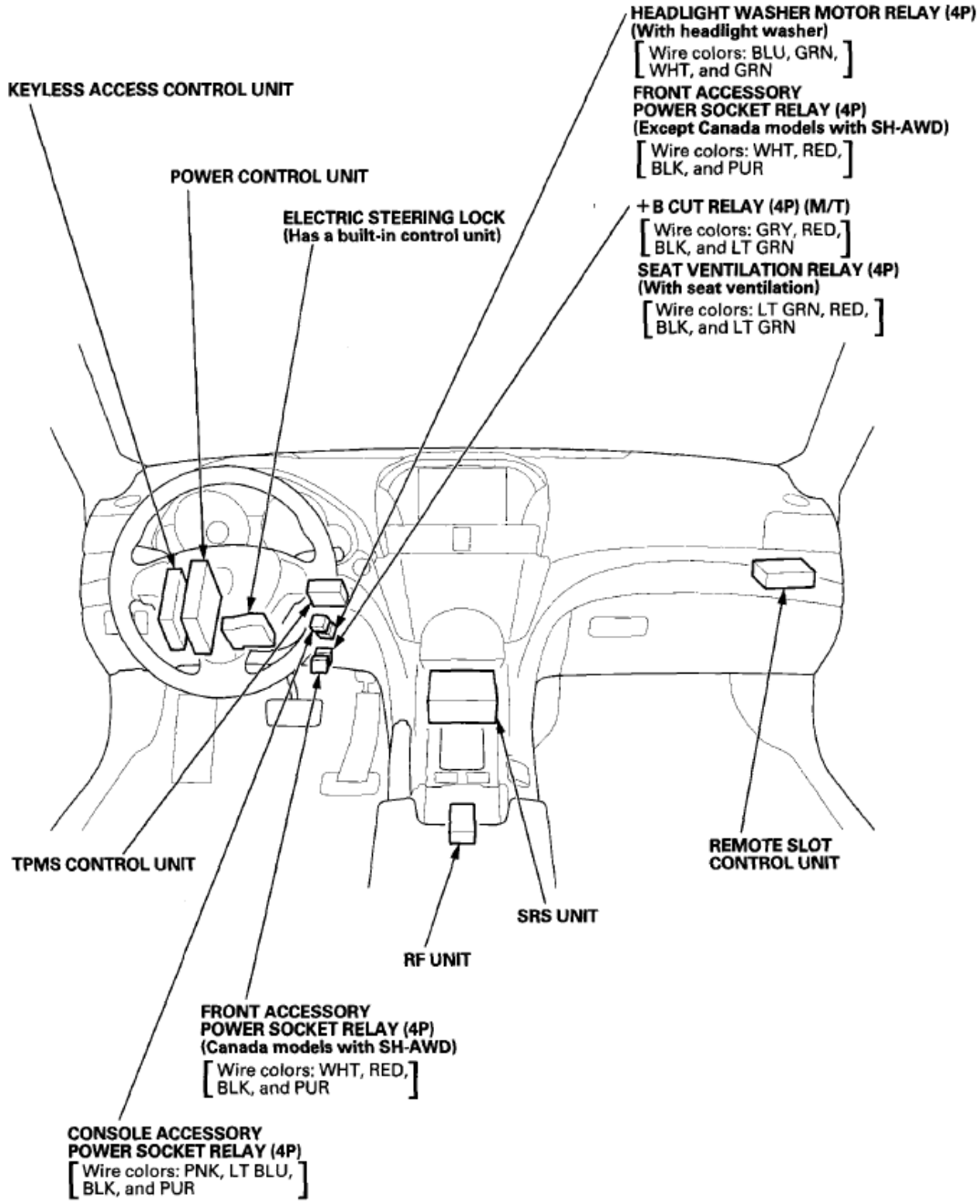


Fig. 3: Identifying Dashboard With Keyless Access System
Courtesy of AMERICAN HONDA MOTOR CO., INC.

WITHOUT KEYLESS ACCESS SYSTEM

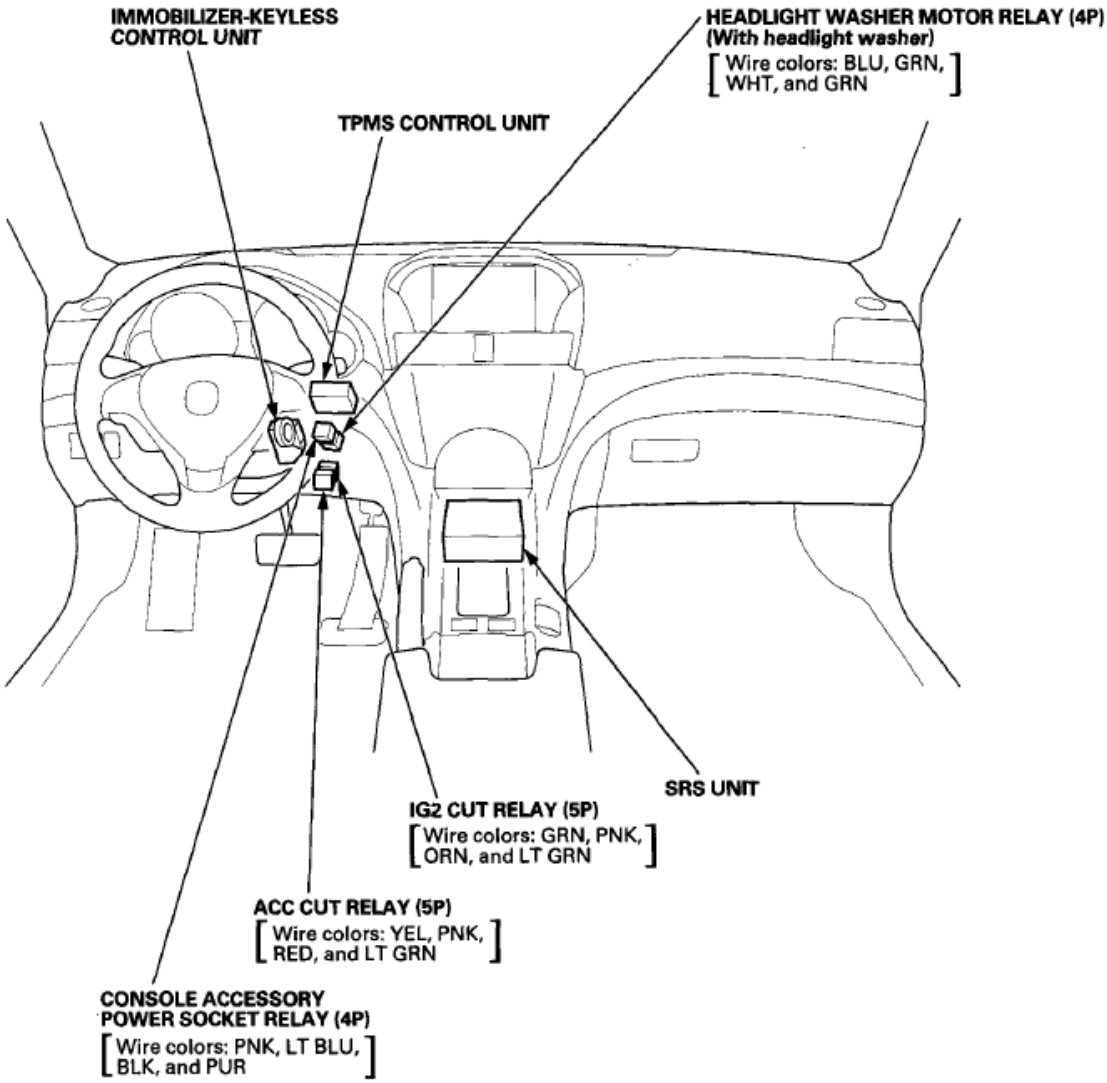


Fig. 4: Identifying Dashboard Without Keyless Access System
Courtesy of AMERICAN HONDA MOTOR CO., INC.

WITH NAVIGATION

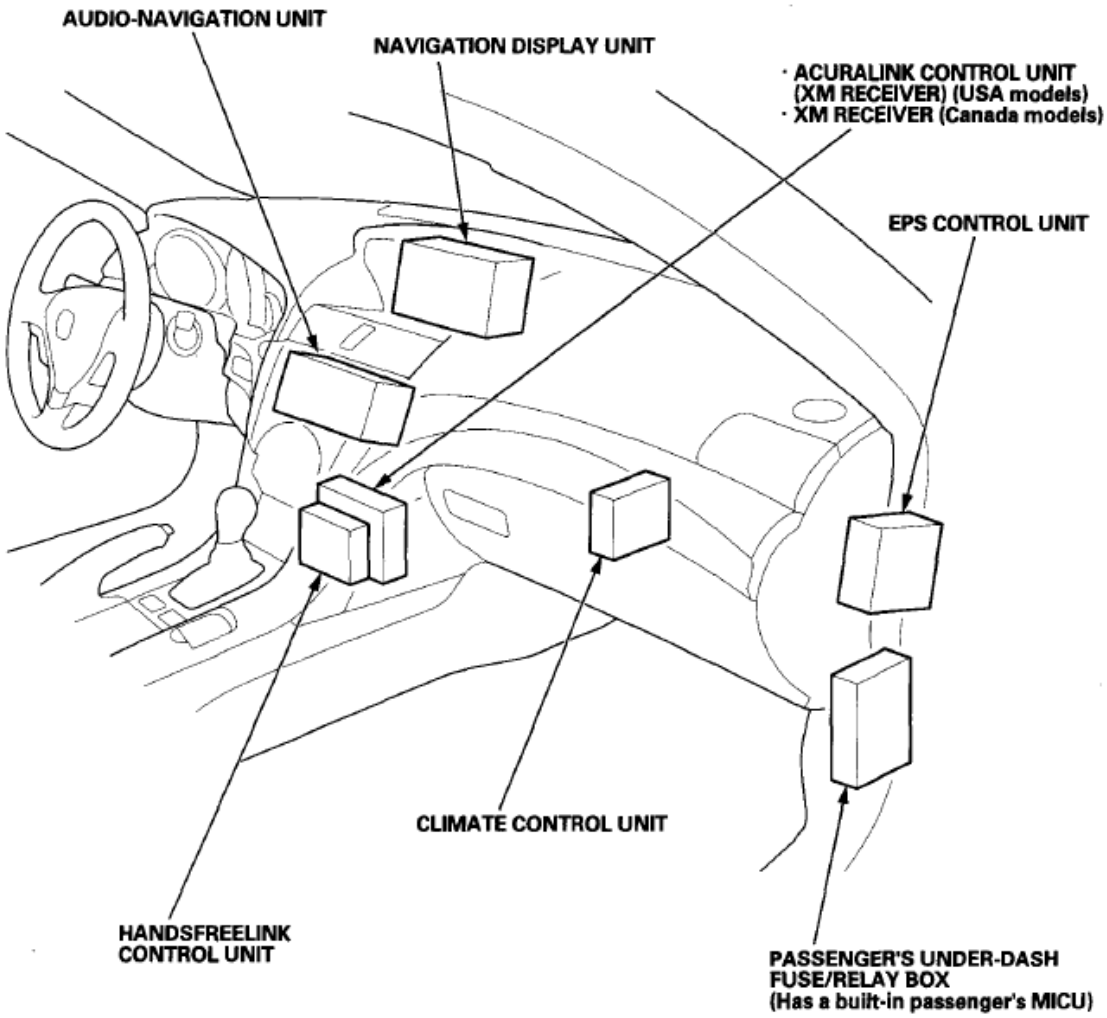


Fig. 5: Identifying Dashboard With Navigation
Courtesy of AMERICAN HONDA MOTOR CO., INC.

WITHOUT NAVIGATION

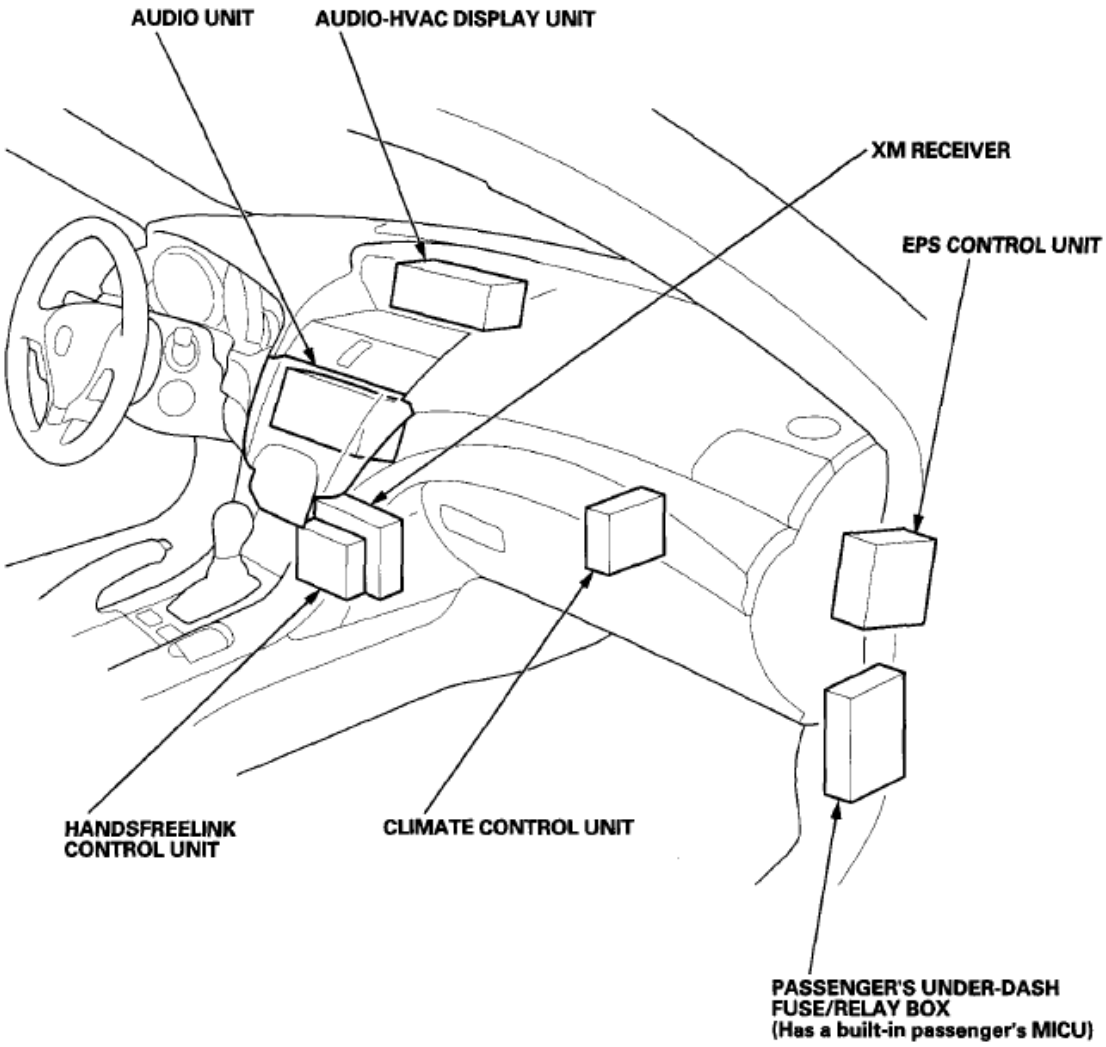


Fig. 6: Identifying Dashboard Without Navigation
Courtesy of AMERICAN HONDA MOTOR CO., INC.

DOOR

DRIVER'S DOOR

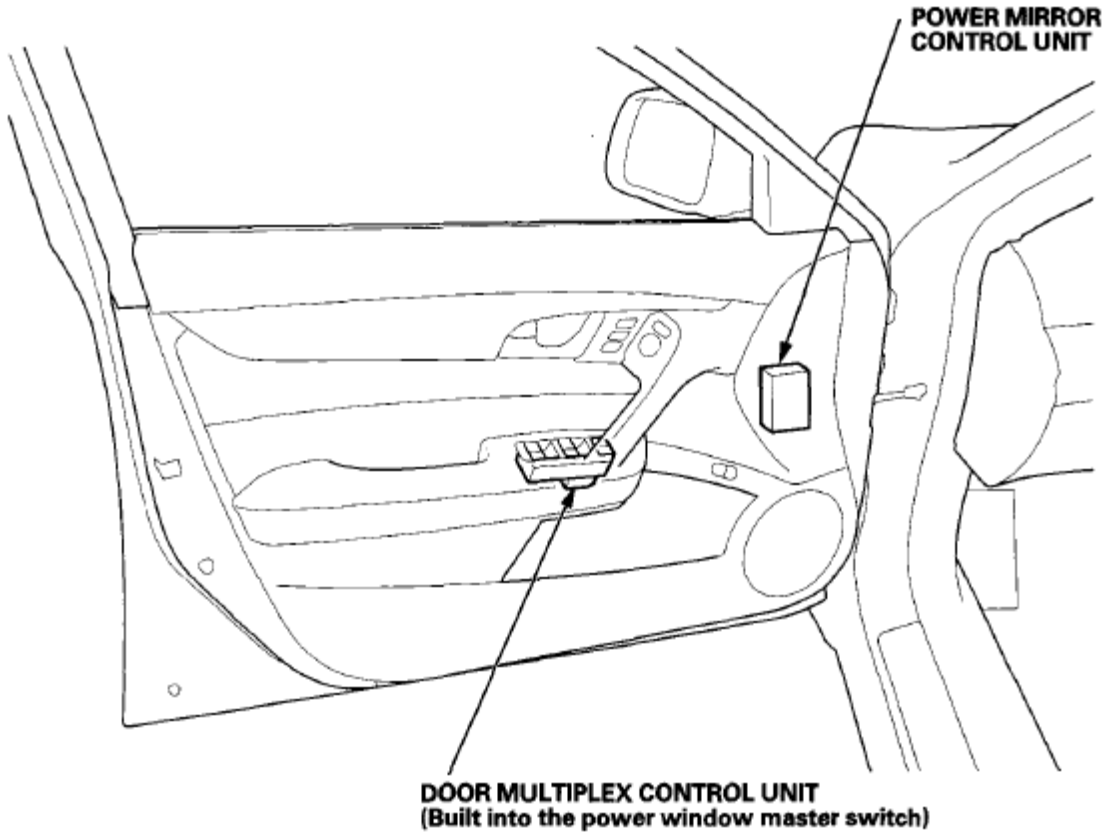


Fig. 7: Identifying Driver's Door Components Location
Courtesy of AMERICAN HONDA MOTOR CO., INC.

FRONT PASSENGER'S DOOR

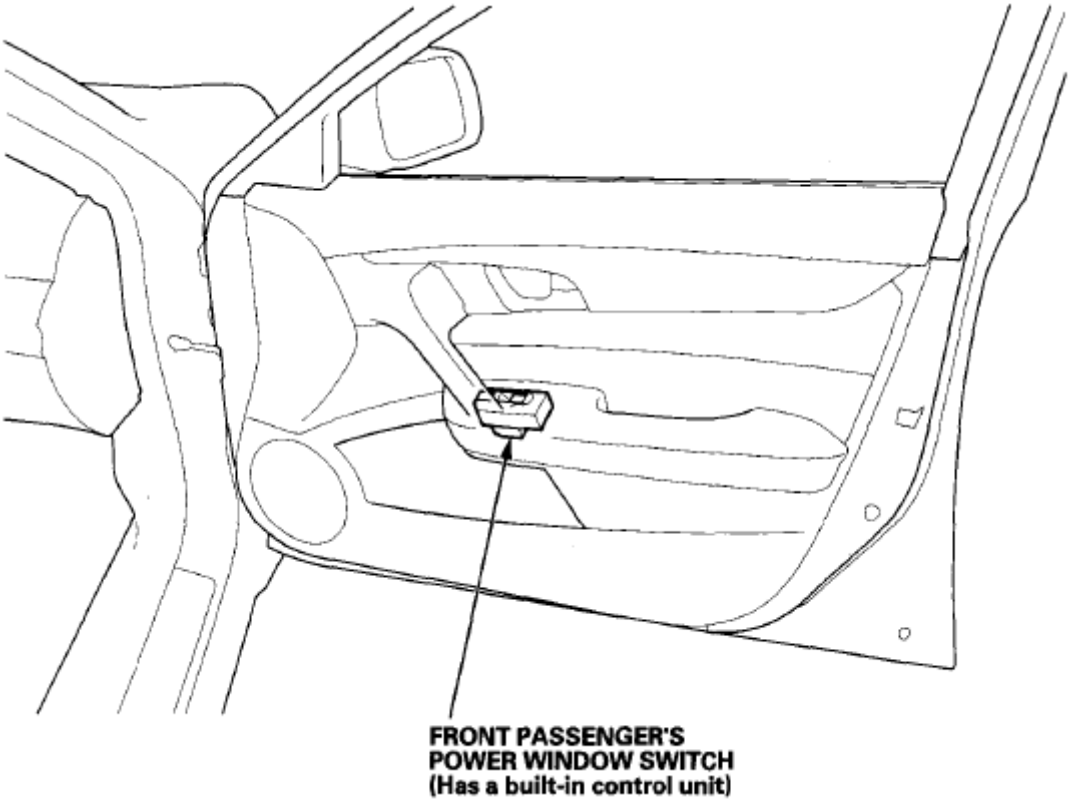


Fig. 8: Identifying Front Passenger's Door Components Location
Courtesy of AMERICAN HONDA MOTOR CO., INC.

ROOF AND TRUNK

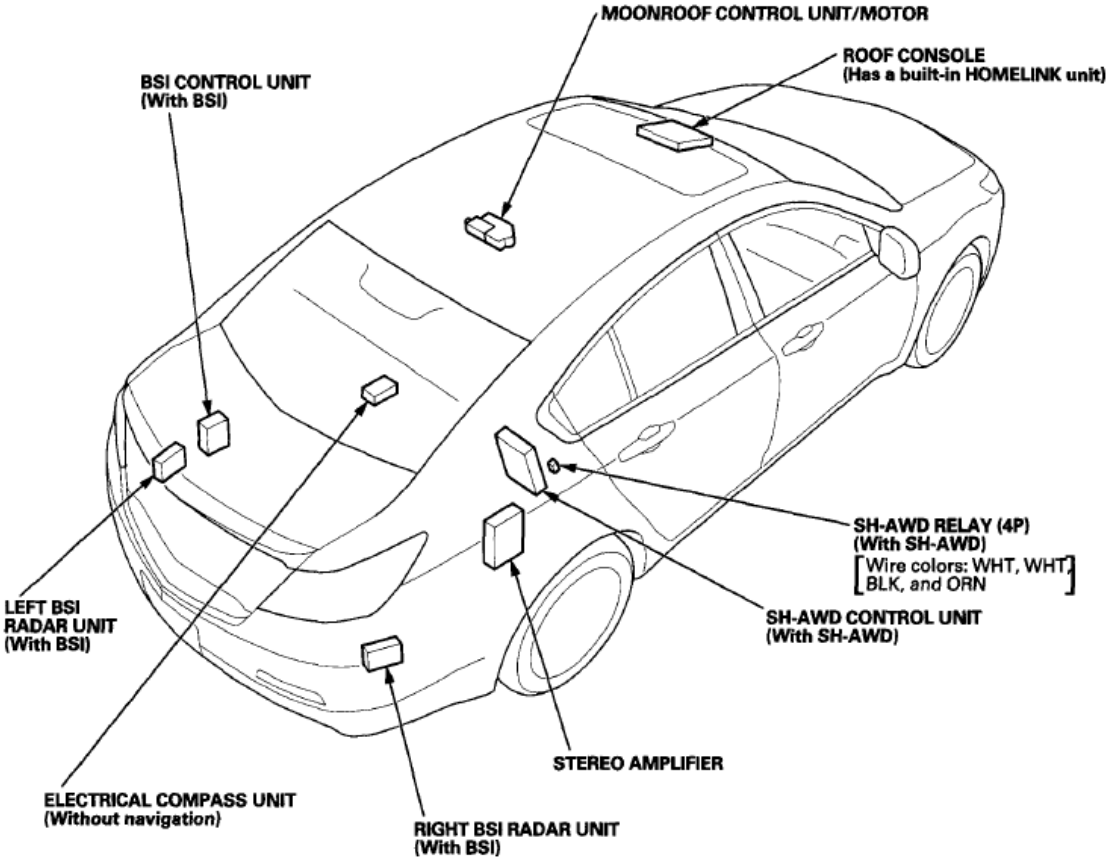


Fig. 9: Identifying Roof And Trunk Components Location
Courtesy of AMERICAN HONDA MOTOR CO., INC.

SEAT

DRIVER'S SEAT

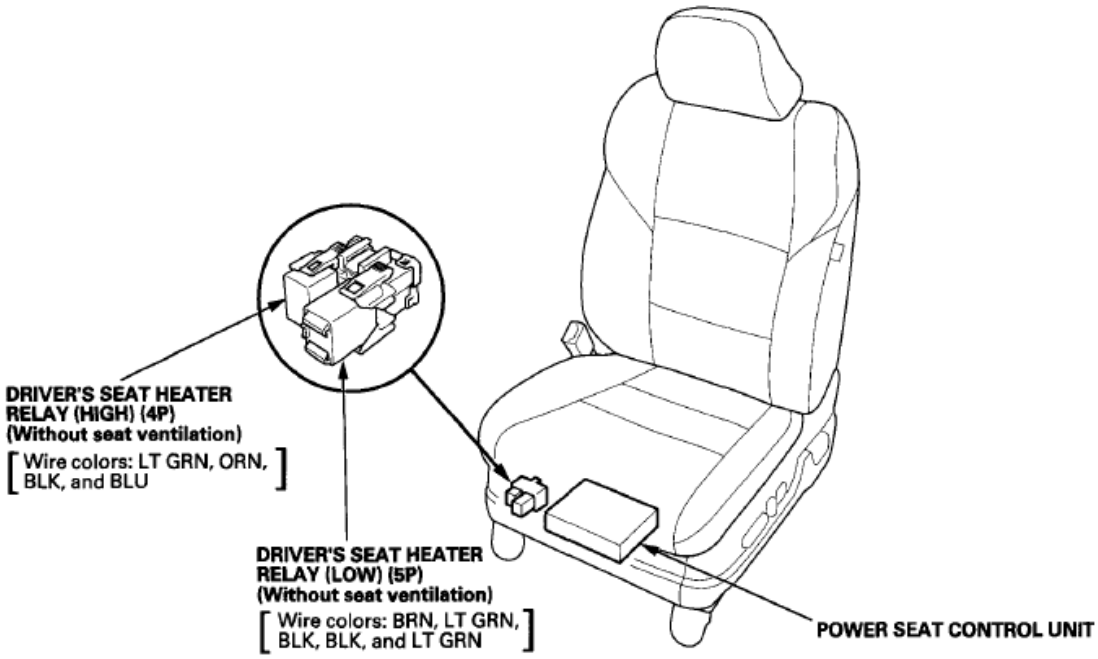


Fig. 10: Identifying Driver's Seat Components Location
Courtesy of AMERICAN HONDA MOTOR CO., INC.

FRONT PASSENGER'S SEAT

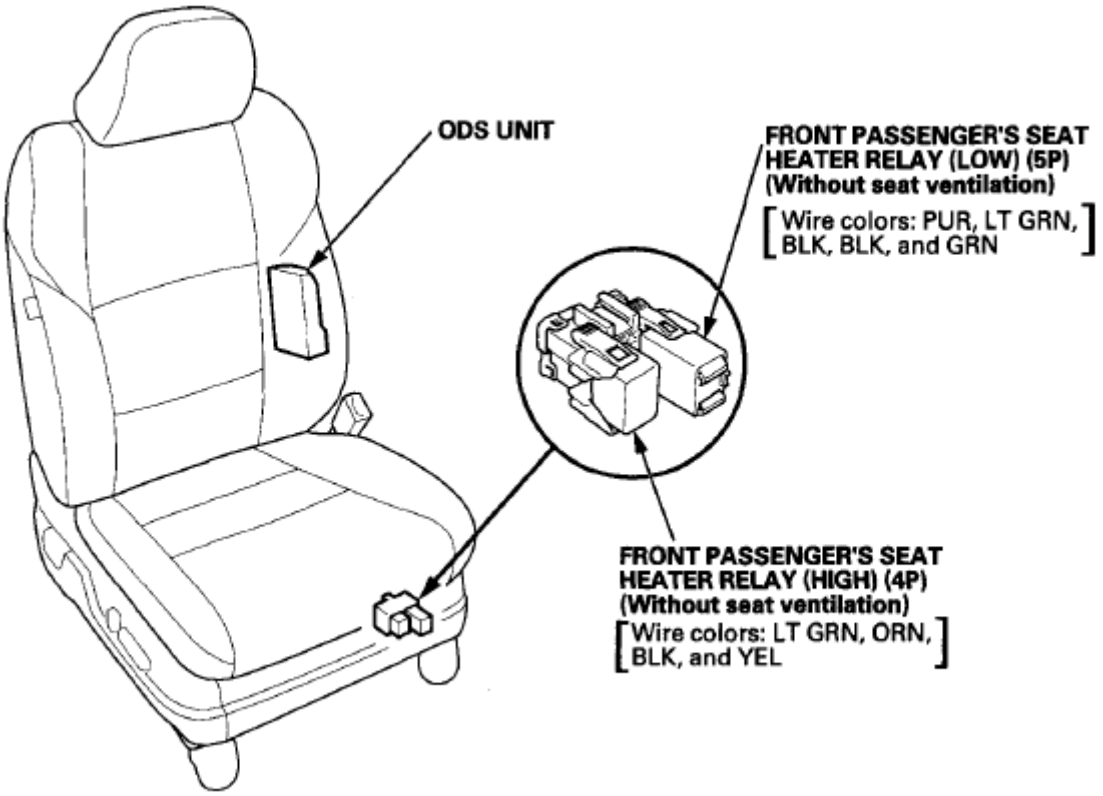


Fig. 11: Identifying Front Seat Components Location
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2012 ELECTRICAL

Relays - TL

POWER RELAY TEST

Special Tools Required

Relay Puller 07AAC-000A2A1 or 07AAC-000A1A0

Use this chart to identify the type of relay, then do the test listed for it.

Relay	Test
Accessory relay (with keyless access system)	Normally-open four-terminal type
A/C condenser fan relay(1)	
A/C compressor clutch relay(1)	
Blower motor relay(1)	
Console accessory power socket	
Driver's seat heater relay (high)(1)	
Electronic throttle control system (ETCS) control relay(1)	
Front accessory power socket relay* (with keyless access system)	
Front accessory power socket relay (without keyless access system)	
Headlight washer motor relay* (With headlight washer)	
Ignition coil relay(1)	
Front passenger's seat heater relay (high)(1)	
PGM-FI main relay 1(1)	
PGM-FI main relay 2(1)	
PGM-FI subrelay(1)	
Rear window defogger relay(1)	
Starter cut relay 1	
Starter cut relay 2(1)	
Seat ventilation relay* (with seat ventilation)	
SH-AWD relay* (with SH-AWD)	
+ B cut relay (M/T)	
ACC cut relay* (without keyless access system)	Five-terminal type
IG2 cut relay* (without keyless access system)	
Driver's seat heater relay (low)(1)	
Front passenger's seat heater relay (low)(1)	
(1) Carefully remove the relay from fuse/relay box using the relay puller. Do not use pliers. Pliers will damage the relay.	

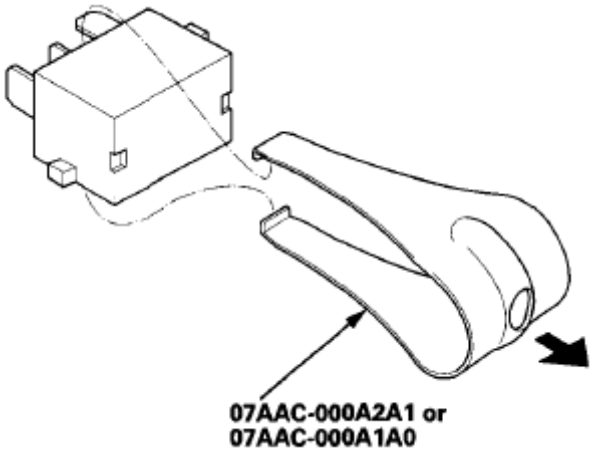


Fig. 1: Identifying Relay Puller, Relay Box & Relay
Courtesy of AMERICAN HONDA MOTOR CO., INC.

NORMALLY-OPEN FOUR-TERMINAL TYPE

Check for continuity between the terminals:

- There should be continuity between terminals No. 1 and No. 2 when battery power is connected to terminal No. 4, and body ground is connected to terminal No. 3.
- There should be no continuity between terminals No. 1 and No. 2 when power is disconnected.

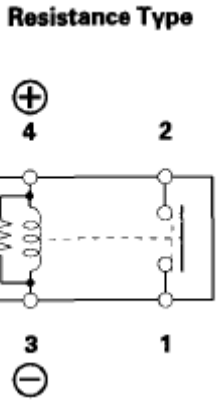


Fig. 2: Checking Continuity Between Open Four Terminals - Resistance Type
Courtesy of AMERICAN HONDA MOTOR CO., INC.

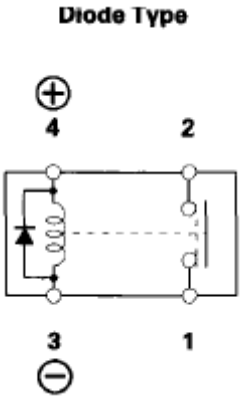


Fig. 3: Checking Continuity Between Open Four Terminals - Diode Type
Courtesy of AMERICAN HONDA MOTOR CO., INC.

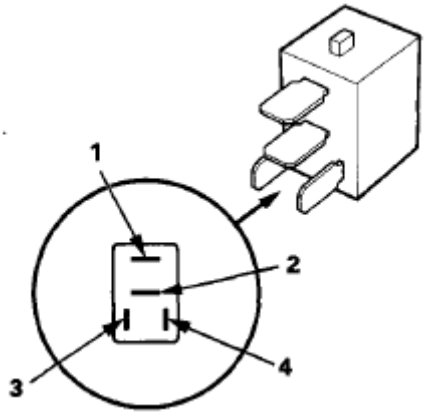


Fig. 4: Checking Continuity Between Open Four Terminals - Relay Type
Courtesy of AMERICAN HONDA MOTOR CO., INC.

FIVE-TERMINAL TYPE

Check for continuity between the terminals:

- There should be continuity between terminals No. 1 and No. 2 when battery power is connected to terminal No. 5, and body ground is connected to terminal No. 3.
- There should be continuity between terminals No. 1 and No. 4 when power is disconnected.

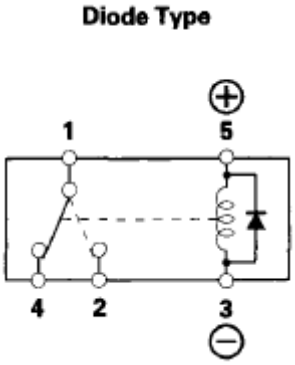


Fig. 5: Checking Continuity Between Five Terminals - Diode Type
Courtesy of AMERICAN HONDA MOTOR CO., INC.

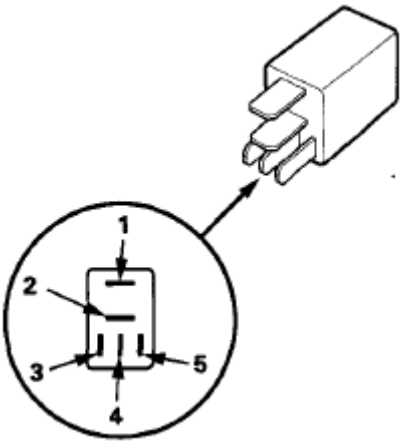


Fig. 6: Checking Continuity Between Five Terminals - Relay Type
Courtesy of AMERICAN HONDA MOTOR CO., INC.

RELAY CIRCUIT BOARD TEST

The relay circuit board is part of the under-hood fuse/relay box, and it contains these relays:

- Radiator fan relay
- Fan control relay
- Horn relay
- Windshield wiper motor relay
- Windshield wiper intermittent relay
- Windshield wiper high/low relay

1. Do the battery terminal disconnection procedure (see **BATTERY TERMINAL DISCONNECTION AND RECONNECTION**).
2. Disconnect under-hood fuse/relay box connectors B (14P) and C(5P).

CONNECTOR B (14P)

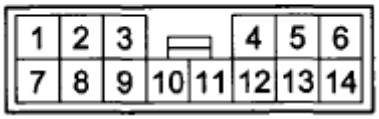


Fig. 7: Identifying Under-Hood Fuse/Relay Box Connector B (14P) Connector End View
Courtesy of AMERICAN HONDA MOTOR CO., INC.

CONNECTOR C (5P)

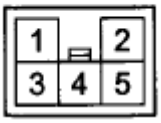


Fig. 8: Identifying Under-Hood Fuse/Relay Box Connector C(5P) Connector End View
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Test each relay circuit as shown:

   Radiator fan relay:

   There should be continuity between terminals C1 and C3 when battery power is connected to terminal B9, and battery ground is connected to terminal B10. There should be no continuity between terminals C1 and C3 when power is disconnected.

   Fan control relay:

   There should be continuity between terminals C2 and C5 when battery power is connected to terminal B1, (B2 or B8), and battery ground is connected to terminal B10. There should be continuity between terminals C1 and C5 when power is disconnected.

   Horn relay:

   There should be battery voltage at terminal B11 when battery power is connected to terminal B3, and battery ground is connected to terminal B7. There should be no continuity between terminals B3 and B11 when power is disconnected.

   Windshield wiper motor relay:

   There should be continuity between terminals C4 and B13, and terminals C4 and B14 when battery power is connected to terminal B12, and battery ground is connected to terminal B4. There should be no continuity between terminals C4 and B13, and terminals C4 and B14 when power is disconnected.

   Windshield wiper intermittent relay:

There should be battery voltage at terminal B6 when battery power is connected to terminals C4 and B12, and battery ground is connected to terminals B4 and B13. There should be no voltage at terminal B6 when terminal B13 is disconnected.

Windshield wiper high/low relay:

There should be battery voltage at terminal B5 when battery power is connected to terminals C4 and B12, and battery ground is connected to terminals B4, B13, and B14. There should be no voltage at terminal B5 when terminal B14 is disconnected.

Radiator fan relay. Fan control relay

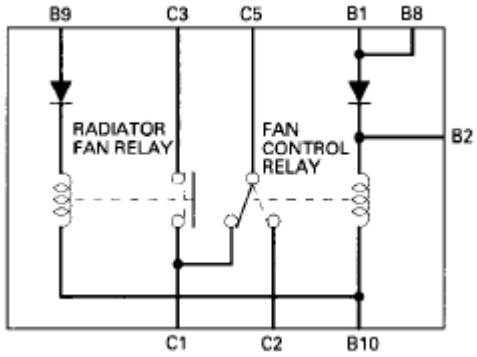


Fig. 9: Testing Relay Circuit - Radiator Fan Relay And Fan Control Relay
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Horn relay

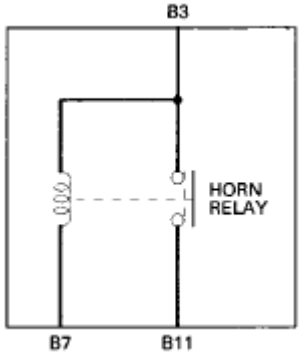


Fig. 10: Testing Relay Circuit - Horn Relay
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Windshield wiper motor relay. Windshield wiper intermittent relay. Windshield wiper high/low relay

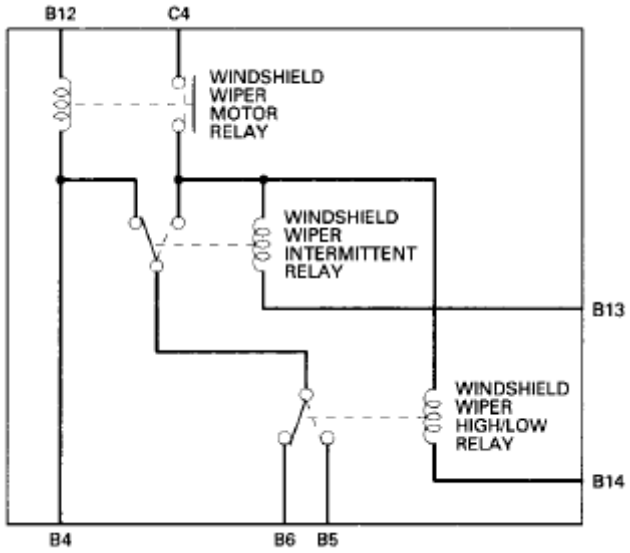


Fig. 11: Testing Relay Circuit - Windshield Wiper Motor Relay, Intermittent Relay, High/Low Relay
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. If any of these relay circuit fails the test, replace the relay circuit board.
5. Reinstall all removed parts.
6. Do the battery terminal reconnection procedure (see **BATTERY TERMINAL DISCONNECTION AND RECONNECTION**).

2012 GENERAL INFORMATION

Specifications - TL

STANDARDS AND SERVICE LIMITS

ENGINE ELECTRICAL (J35Z6)

Item	Measurement	Qualification	Standard or New	Service Limit
Ignition coil	Rated voltage		12V	
	Firing order		1- 4- 2- 5- 3- 6	
Sparkplug	Type	NGK	DILZKR7A11G	
	Gap		1.0- 1.1 mm (0.039- 0.043 in)	-
Ignition timing	At idle Check the red mark	In N or P	10+2°BTDC	
Drive belt	Tension		Auto-tensioner	
Alternator	Output	At 13.5 V and normal engine temperature	130A	
	Coil (rotor) resistance	At 68°F (20°C)	2.5ohms	
	Slip ring O.D.		14.4 mm (0.567 in)	14.0 mm (0.551 in)
	Brush length		10.5 mm (0.413 in)	1.5 mm (0.059 in)
Starter	Output		1.8 kW	
	Commutator mica depth		0.50- 0.90 mm (0.0197- 0.0354 in)	0.20 mm (0.0079 in)
	Commutator runout		0.02 mm (0.0008 in) max.	0.05 mm (0.0020 in)
	Commutator O.D.		28.9- 29.0 mm (1.138- 1.142 in)	28.0 mm (1.102 in)
	Brush length		15.0- 16.0 mm (0.591 - 0.630 in)	9.0 mm (0.354 in)
	Brush spring tension		22.3- 27.1 N (2.27- 2.76 kgf, 5.00- 6.08 lbf)	-

ENGINE ELECTRICAL (J37A4)

Item	Measurement	Qualification	Standard or New	Service Limit
Ignition coil	Rated voltage		12V	
	Firing order		1- 4- 2- 5- 3- 6	
Spark plug	Type	NGK	ILZKR7B- 11S	
		DENSO	SXU22HCR11S	

	Gap		1.0- 1.1 mm (0.039- 0.043 in) -	
Ignition timing	At idle Check the red mark	M/T in neutral, A/Tin Nor P	10+2°BTDC	
Drive belt	Tension		Auto-tensioner	
Alternator	Output	At 13.5 V and normal engine temperature	130A	
	Coil (rotor) resistance	At 68°F (20°C)	2.5 ohms	
	Slip ring O.D.		14.4 mm (0.567 in)	14.0 mm (0.551 in)
	Brush length		10.5 mm (0.413 in)	1.5 mm (0.059 in)
Starter (M/T)		Output	1.6 kohms	
	Commutator mica depth		0.4- 0.5 mm (0.016- 0.020 in)	0.15 mm (0.0059 in)
	Commutator runout		0.02 mm (0.0008 in) max.	0.05 mm (0.0020 in)
	Commutator O.D.		28.0- 28.1 mm (1.102- 1.106 in)	27.5 mm (1.083 in)
	Brush length		15.8- 16.2 mm (0.622- 0.638 in)	11.0 mm (0.433 in)
Starter (A/T)	Output		1.8 kohms	
	Commutator mica depth		0.50- 0.90 mm (0.0197- 0.0354 in)	0.20 mm (0.0079 in)
	Commutator runout		0.02 mm (0.0008 in) max.	0.05 mm (0.0020 in)
	Commutator O.D.		28.9- 29.0 mm (1.138- 1.142 in)	28.0 mm (1.102 in)
	Brush length		15.0- 16.0 mm (0.591- 0.630 in)	9.0 mm (0.354 in)
	Brush spring tension		22.3- 27.1 N (2.27- 2.76 kgf, 5.00- 6.08 lbf)	-

ENGINE ASSEMBLY (J35Z6, J37A4)

Item	Measurement	Qualification	Standard or New	Service Limit
Compression	Pressure (checked with engine starter cranking at wide-open throttle)	Minimum	-	930 kPa (9.48 kgf/cm^2 , 134.8 psi)
		Maximum variation	-	200 kPa (2.04 kgf/cm^2 , 29.0 psi)

CYLINDER HEAD (J35Z6)

Item	Measurement	Qualification	Standard or New	Service Limit
Head	Warpage		-	0.05 mm (0.002 in)
	Height		120.95- 121.05 mm (4.7618- 4.7657 in)	120.8 mm (4.756 in)
Camshaft	End play		0.05- 0.20 mm (0.0020- 0.0079 in)	0.20 mm (0.0079 in)
	Camshaft-to-holder oil clearance		0.050- 0.089 mm (0.00197- 0.00350 in)	0.15 mm (0.0059 in)
	Total runout		0.03 mm (0.0012 in) max.	0.04 mm (0.0016 in)
	Cam lobe height	Intake PRI	34.299 mm (1.35035 in)	-
		Intake SEC	35.621 mm (1.40240 in)	-
		Exhaust	36.760 mm (1.44724 in)	-
Valve	Clearance (cold)	Intake	0.20- 0.24 mm (0.008- 0.009 in)	-
		Exhaust	0.28- 0.32 mm (0.011- 0.012 in)	-
	Stem O.D.	Intake	5.485- 5.495 mm (0.21594- 0.21634 in)	5.455 mm (0.21476 in)
		Exhaust	5.450- 5.460 mm (0.21457- 0.21496 in)	5.420 mm (0.21339 in)
	Stem-to-guide clearance	Intake	0.020- 0.045 mm (0.00079- 0.00177 in)	0.08 mm (0.0031 in)
		Exhaust	0.055- 0.080 mm (0.00217- 0.00315 in)	0.11 mm (0.0043 in)
Valve seat	Width	Intake	1.25- 1.55 mm (0.0492- 0.0610 in)	2.00 mm (0.0787 in)
		Exhaust	1.25- 1.55 mm (0.0492- 0.0610 in)	2.00 mm (0.0787 in)
	Stem installed height	Intake	46.75- 47.55 mm (1.8405- 1.8720 in)	47.80 mm (1.8819 in)
		Exhaust	46.68- 47.48 mm (1.8378- 1.8693 in)	47.73 mm (1.8791 in)
Valve guide	Installed height	Intake	21.20- 22.20 mm (0.8346- 0.8740 in)	-
		Exhaust	20.60- 21.60 mm (0.8110- 0.8504 in)	-
Rocker arm	Arm-to-shaft clearance	Intake	0.015- 0.046 mm (0.00059- 0.00181 in)	0.046 mm (0.00181 in)
		Exhaust	0.018- 0.047 mm (0.00071 - 0.00185 in)	0.047 mm (0.00185 in)

CYLINDER HEAD (J37A4)

Item	Measurement	Qualification	Standard or New	Service Limit
Head	Warpage		-	0.05 mm (0.002 in)
	Height		120.95- 121.05 mm (4.7618- 4.7657 in)	120.8 mm (4.756 in)
Camshaft	End play		0.05- 0.20 mm (0.0020- 0.0079 in)	0.20 mm (0.0079 in)
	Camshaft-to-holder oil clearance		0.050- 0.089 mm (0.00197- 0.00350 in)	0.15 mm (0.0059 in)
	Total runout		0.03 mm (0.0012 in) max.	0.04 mm (0.0016 in)
	Cam lobe height	Intake PRI	34.299 mm (1.35035 in)	-
		Intake SEC	35.932 mm (1.41464 in)	-
		Exhaust PRI	36.734 mm (1.44622 in)	-
		Exhaust SEC	37.370 mm (1.47126 in)	-
Valve	Clearance (cold)	Intake	0.20- 0.24 mm (0.008- 0.009 in)	-
		Exhaust	0.28- 0.32 mm (0.011- 0.012 in)	-
	Stem O.D.	Intake	5.485- 5.495 mm (0.21594- 0.21634 in)	5.455 mm (0.21476 in)
		Exhaust	5.450- 5.460 mm (0.21457- 0.21496 in)	5.420 mm (0.21339 in)
	Stem-to-guide clearance	Intake	0.020- 0.045 mm (0.00079- 0.00177 in)	0.08 mm (0.0031 in)
		Exhaust	0.055- 0.080 mm (0.00217- 0.00315 in)	0.11 mm (0.0043 in)
Valve seat	Width	Intake	1.25- 1.55 mm (0.0492- 0.0610 in)	2.00 mm (0.0787 in)
		Exhaust	1.25- 1.55 mm (0.0492- 0.0610 in)	2.00 mm (0.0787 in)
	Stem installed height	Intake	46.75- 47.55 mm (1.8405- 1.8720 in)	47.80 mm (1.8819 in)
		Exhaust	46.68- 47.48 mm (1.8378- 1.8693 in)	47.73 mm (1.8791 in)
Valve guide	Installed height	Intake	21.20- 22.20 mm (0.8346- 0.8740 in)	-
		Exhaust	20.60- 21.60 mm (0.8110- 0.8504 in)	-
Rocker arm	Arm-to-shaft clearance	Intake	0.015- 0.046 mm (0.00059- 0.00181 in)	0.046 mm (0.00181 in)
		Exhaust	0.015- 0.046 mm (0.00059- 0.00181 in)	0.046 mm (0.00181 in)

ENGINE BLOCK (J35Z6)

Item	Measurement	Qualification	Standard or New	Service Limit
Block	Warpage of deck		0.07 mm (0.002 in) max.	0.10 mm (0.003 in)
	Bore diameter		89.000- 89.015 mm (3.50393- 3.50452 in)	89.065 mm (3.50649 in)
	Bore taper	Difference between first and third measurement	-	0.05 mm (0.0020 in)
	Reboring limit		-	0.25 mm (0.0098 in)
Piston	Skirt O.D. at 16 mm (0.63 in) from bottom of skirt		88.975- 88.985 mm (3.50295- 3.50334 in)	88.965 mm (3.50255 in)
	Clearance in cylinder		0.015- 0.040 mm (0.001- 0.001 in)	0.08 mm (0.003 in)
Piston ring	Ring-to-groove clearance	Top	0.055- 0.080 mm (0.003- 0.003 in)	0.15 mm (0.005 in)
		Second	0.030- 0.055 mm (0.002- 0.002 in)	0.13 mm (0.005 in)
	Ring end gap	Top	0.20- 0.35 mm (0.008- 0.013 in)	0.60 mm (0.023 in)
		Second	0.40- 0.55 mm (0.016- 0.021 in)	0.70 mm (0.027 in)
		Oil	0.20- 0.70 mm (0.008- 0.027 in)	0.80 mm (0.031 in)
Piston pin	O.D.		21.962- 21.965 mm (0.86464- 0.86476 in)	21.954 mm (0.86433 in)
	Pin-to-piston clearance		- 0.005- 0.001 mm (- 0.00020- 0.00004 in)	0.004 mm (0.00016 in)
Connecting rod	Pin-to-rod clearance		0.005- 0.014 mm (0.00020- 0.00055 in)	0.019 mm (0.00075 in)
	Small end bore diameter		21.970- 21.976 mm (0.86496- 0.86520 in)	-
	Big end bore diameter		58.0 mm (2.283 in)	-
	End play		0.15- 0.35 mm (0.006- 0.013 in)	0.45 mm (0.017 in)
	Main journal diameter		71.976- 72.000 mm (2.83370- 2.83464 in)	-
			54.976- 55.000 mm	

Crankshaft	Rod journal diameter		(2.16441- 2.16535 in)	-
	Rod/main journal taper		0.005 mm (0.00020 in) max.	0.010 mm (0.00039 in)
	Rod/main journal out-of-round		0.005 mm (0.00020 in) max.	0.010 mm (0.00039 in)
	End play		0.10- 0.35 mm (0.0039- 0.0138 in)	0.45 mm (0.0177 in)
	Total runout		0.025 mm (0.00098 in) max.	0.030 mm (0.00118 in)
Crankshaft bearing	Main bearing-to-journal oil clearance		0.019- 0.045 mm (0.00075- 0.00177 in)	0.050 mm (0.00197 in)
	Connecting rod bearing-to-journal oil clearance		0.020- 0.044 mm (0.00079- 0.00173 in)	0.050 mm (0.00197 in)

ENGINE BLOCK (J37A4)

Item	Measurement	Qualification	Standard or New	Service Limit
Block	Warpage of deck		0.07 mm (0.002 in) max.	0.10 mm (0.003 in)
	Bore diameter		90.000- 90.015 mm (3.54330- 3.54389 in)	90.065 mm (3.54586 in)
	Bore taper	Difference between first and third measurement	-	0.05 mm (0.0020 in)
Piston	Skirt O.D. at 16 mm (0.63 in) from bottom of skirt		89.983- 89.996 mm (3.54263- 3.54314 in)	89.975 mm (3.54232 in)
	Clearance in cylinder		0.004- 0.032 mm (0.001- 0.001 in)	0.07 mm (0.002 in)
Piston ring	Ring-to-groove clearance	Top	0.055- 0.085 mm (0.003- 0.003 in)	0.15 mm (0.005 in)
		Second	0.030- 0.060 mm (0.002- 0.002 in)	0.13 mm (0.005 in)
	Ring end gap	Top	0.30- 0.40 mm (0.012- 0.015 in)	0.60 mm (0.023 in)
		Second	0.40- 0.55 mm (0.016- 0.021 in)	0.70 mm (0.027 in)
		Oil	0.20- 0.35 mm (0.008- 0.013 in)	0.45 mm (0.017 in)
Piston pin	O.D.		21.962- 21.965 mm (0.86464- 0.86476 in)	21.954 mm (0.86433 in)

	Pin-to-piston clearance		- 0.005- 0.003 mm (- 0.00020- 0.00012 in)	0.004 mm (0.00016 in)
Connecting rod	Pin-to-rod clearance		0.005- 0.014 mm (0.00020- 0.00055 in)	0.019 mm (0.00075 in)
	Small end bore diameter		21.970- 21.976 mm (0.86496- 0.86520 in)	-
	Big end bore diameter		60.0 mm (2.362 in)	-
	End play		0.15- 0.35 mm (0.006- 0.013 in)	0.45 mm (0.017 in)
Crankshaft	Main journal diameter		71.976- 72.000 mm (2.83370- 2.83464 in)	-
	Rod journal diameter		56.976- 57.000 mm (2.24315- 2.24409 in)	-
	Rod/main journal taper		0.005 mm (0.00020 in) max.	0.010 mm (0.00039 in)
	Rod/main journal out-of-round		0.005 mm (0.00020 in) max.	0.010 mm (0.00039 in)
	End play		0.10- 0.35 mm (0.0039- 0.0138 in)	0.45 mm (0.0177 in)
	Total runout		0.025 mm (0.00098 in) max.	0.030 mm (0.00118 in)
Crankshaft bearing	Main bearing-to-journal oil clearance		0.019- 0.045 mm (0.00075- 0.00177 in)	0.050 mm (0.00197 in)
	Connecting rod bearing-to-journal oil clearance		0.020- 0.044 mm (0.00079- 0.00173 in)	0.050 mm (0.00197 in)

ENGINE LUBRICATION (J35Z6, J37A4)

Item	Measurement	Qualification	Standard or New	Service Limit
Engine oil	Capacity	Engine overhaul	5.0 L (5.3 US qt)	-
		Oil change including filter	4.3 L (4.5 US qt)	-
		Oil change without filter	4.0 L (4.2 US qt)	-
	Inner rotor-to-outer rotor radial clearance		0.04- 0.16 mm (0.002- 0.006 in)	0.20 mm (0.007 in)
	Pump housing-to-outer rotor radial clearance		0.07- 0.19 mm (0.003- 0.007 in)	0.20 mm (0.007 in)

Oil pump	Pump housing-to-rotor axial clearance		0.02- 0.07 mm (0.001 - 0.002 in)	0.12 mm (0.004 in)
	Oil pressure with oil temperature at 176°F (80°C)	At idle	70 kPa (0.71 kgf/cm^2 , 10.1 psi) min.	-
		At 3, 000 RPM	490 kPa (5.00 kgf/cm^2 , 71.1 psi) min.	-

COOLING SYSTEM (J35Z6, J37A4)

Item	Measurement	Qualification	Standard or New	Service Limit
Radiator	Coolant capacities (including engine, heater, hoses, and reservoir)	Engine overhaul	8.3 L (2.19 US gal)	-
		Coolant change	6.3 L (1.66 US gal)	-
	Coolant type		Acura Long Life Antifreeze/Coolant Type 2	
Coolant reservoir	Coolant capacity		0.69 L (0.182 US gal)	-
Radiator cap	Opening pressure		93- 123 kPa (0.95- 1.25 kgf/cm^2 , 13.5 - 17.8 psi)	-
Thermostat	Opening temperature	Begins to open	169- 176°F (76- 80°C)	-
		Fully open	194°F (90°C)	-
	Valve lift at fully open		10.0 mm (0.394 in) min.	-

FUEL AND EMISSIONS (J35Z6)

Item	Measurement	Qualification	Standard or New	Service Limit
Fuel pressure regulator	Pressure with fuel pressure gauge connected		390- 440 kPa (4.0- 4.5 kgf/cm^2 , 57- 64 psi)	-
Fuel tank	Capacity		70.0 L (18.49 US gal)	-
Engine idle	Idle speed without load	In N or P	680 ± 50 RPM	
	Idle speed with high electrical load (A/C switch on, temperature set to max cool, blower fan on high, rear window defogger on, and headlights on high beam)	In N or P	680 ± 50 RPM	

FUEL AND EMISSIONS (J37A4)

Item	Measurement	Qualification	Standard or New	Service Limit
Fuel pressure regulator	Pressure with fuel pressure gauge connected		390- 440 kPa (4.0- 4.5 kgf/cm^2 , 57- 64 psi)	-
Fuel tank	Capacity		70.0 L (18.49 US gal)	-
Engine idle	Idle speed without load	M/T in neutral	750 ± 50 RPM	
		A/T in N or P	700 ± 50 RPM	
	Idle speed with high electrical load (A/C switch on, temperature set to max cool, blower fan on high, rear window defogger on, and headlights on high beam)	M/T in neutral	750 ± 50 RPM	
		A/T in N or P	700 ± 50 RPM	

CLUTCH

Item	Measurement	Qualification	Standard or New	Service Limit
Clutch pedal	Height from floor		156 mm (6.14 in)	-
	Stroke		130- 140 mm (5.12- 5.51 in)	-
Flywheel	Runout on clutch mating surface		0.3 mm (0.012 in) max.	0.4 mm (0.016 in)
Clutch disc	Rivet head depth		1.35- 1.95 mm (0.0531 - 0.0768 in)	0.7 mm (0.028 in)
	Thickness		7.9- 8.5 mm (0.311- 0.335 in)	6.0 mm (0.236 in)
Pressure plate	Warpage		0.02 mm (0.001 in)	0.15 mm (0.005 in)
	Evenness of the height of the diaphragm spring fingers		0.6 mm (0.024 in) max.	0.8 mm (0.031 in)

MANUAL TRANSMISSION AND M/T DIFFERENTIAL

Item	Measurement	Qualification	Standard or New	Service Limit
Manual transmission fluid	Capacity: use Acura MTF	Fluid change	2.1 L (2.2US qt)	-
		Overhaul	2.5L (2.6US qt)	-
	End play		0.14- 0.21 mm (0.0055- 0.0083 in)	Adjust
	Diameter of ball bearing contact area (clutch housing side)		28.002- 28.015 mm (1.10244- 1.10295 in)	27.95 mm (1.1004 in)

Mainshaft	Diameter of needle bearing contact area		47.984- 48.000 mm (1.88913- 1.88976 in)	47.93 mm (1.8870 in)
	Diameter of ball bearing contact area (transmission housing side)		38.984- 39.000 mm (1.53480- 1.53543 in)	38.93 mm (1.5327 in)
	Diameter of 4th/5th gear distance collar contact area		41.984- 42.000 mm (1.65291 - 1.65354 in)	41.93 mm (1.6508 in)
	Diameter of 6th gear distance collar contact area		38.984- 39.000 mm (1.53480- 1.53543 in)	38.93 mm (1.5327 in)
	Runout		0.02 mm (0.0008 in) max.	0.05 mm (0.0020 in)
	Diameter of pilot bearing contact area		19.967- 19.980 mm (0.78610- 0.78661 in)	19.91 mm (0.7839 in)
Mainshaft 3rd gear	I.D.		53.010- 53.029 mm (2.08700- 2.08775 in)	-
	Clearance	2nd-3rd	0.06- 0.19 mm (0.002- 0.007 in)	0.3 mm (0.011 in)
	Thickness		23.89- 23.97 mm (0.9405- 0.9437 in)	23.8 mm (0.937 in)
Mainshaft 4th, 5th gear	I.D.		53.010- 53.029 mm (2.08700- 2.08775 in)	-
	End play (4th/5th gear distance collar side)		0.06- 0.19 mm (0.0024- 0.0075 in)	0.3 mm (0.012 in)
	Thickness		22.39- 22.47 mm (0.8815- 0.8846 in)	22.3 mm (0.878 in)
Mainshaft 6th gear	I.D.		53.010- 53.029 mm (2.08700- 2.08775 in)	53.08 mm (2.0898 in)
	End play		0.06- 0.19 mm (0.0024- 0.0075 in)	0.3 mm (0.012 in)
	Thickness		25.89- 25.97 mm (1.0193- 1.0224 in)	25.8 mm (1.016 in)
Mainshaft 4th/5th gear distance collar	I.D.		42.002- 42.012 mm (1.65362- 1.65401 in)	-
	O.D.		47.989- 48.000 mm (1.88933- 1.88976 in)	-
	Overall length		49.95- 50.05 mm	-

			(1.9665- 1.9705 in)	
	Length of needle bearing contact area	4th, 5th	22.53- 22.58 mm (0.8870- 0.8890 in)	-
Mainshaft 6th gear distance collar	I.D.		39.002- 39.012 mm (1.53551 - 1.53590 in)	39.06 mm (1.5378 in)
	O.D.		47.989- 48.000 mm (1.88933- 1.88976 in)	47.94 mm (1.8874 in)
	Length		26.03- 26.08 mm (1.0248- 1.0268 in)	-
Countershaft	Diameter of needle bearing contact area (clutch housing side)		43.974- 43.990 mm (1.73126- 1.73189 in)	43.92 mm (1.7291 in)
	Diameter of ball bearing contact area (transmission housing side)		30.002- 30.015 mm (1.18118- 1.18169 in)	29.95 mm (1.1791 in)
	Diameter of 2nd gear distance collar contact area		42.975- 42.991 mm (1.69193- 1.69256 in)	42.92 mm (1.6898 in)
	Runout		0.02 mm (0.0008 in) max.	0.05 mm (0.0020 in)
	35 mm shim-to-bearing inner race clearance		0.04- 0.10 mm (0.002- 0.003 in)	Adjust
	Diameter of countershaft reverse gear contact area		45.934- 45.950 mm (1.80842- 1.80905 in)	45.88 mm (1.8063 in)
Countershaft 1st gear	I.D.		59.010- 59.029 mm (2.32322- 2.32397 in)	59.08 mm (2.3260 in)
	End play (reverse gear side)		0.04- 0.17 mm (0.0016- 0.0067 in)	0.28 mm (0.0110 in)
	Thickness		22.91- 22.99 mm (0.9020- 0.9051 in)	22.86 mm (0.9000 in)
Countershaft 2nd gear	I.D.		57.010- 57.029 mm (2.24448- 2.24523 in)	57.08 mm (2.2472 in)
	Clearance		2nd-3rd 0.04- 0.17 mm (0.002- 0.006 in)	0.28 mm (0.011 in)
	Thickness		22.91 - 22.99 mm (0.9020- 0.9051 in)	22.86 mm (0.9000 in)
	I.D.		45.970- 45.988 mm (1.80984- 1.81055 in)	46.04 mm (1.8126 in)

Countershaft reverse gear	O.D.		53.987- 54.000 mm (2.12547- 2.12598 in)	53.93 mm (2.1232 in)
	Length		23.03- 23.08 mm (0.9067- 0.9087 in)	-
Countershaft 2nd gear distance collar	I.D.		42.990- 43.000 mm (1.69252- 1.69291 in)	43.05 mm (1.6949 in)
	O.D.		51.989- 52.000 mm (2.04681- 2.04724 in)	51.94 mm (2.0449 in)
	Length		23.03- 23.08 mm (0.9067- 0.9087 in)	-
Reverse idler gear	O.D.		19.989- 20.000 mm (0.78697- 0.78740 in)	19.93 mm (0.7846 in)
Reverse drive/driven gear	I.D.		30.007- 30.020 mm (1.18138- 1.18189 in)	25.07 mm (0.9870 in)
5th synchro ring	Ring-to-gear clearance (ring pushed against gear)		0.70- 1.49 mm (0.028- 0.058 in)	0.4 mm (0.016 in)
6th synchro ring	Ring-to-gear clearance (ring pushed against gear)		0.73- 1.44 mm (0.029- 0.056 in)	0.4 mm (0.016 in)
3rd double cone synchro	Outer synchro ring-to-synchro cone clearance (ring pushed against gear)		0.68- 1.19 mm (0.027- 0.046 in)	0.3 mm (0.012 in)
	Synchro cone-to-gear clearance (ring pushed against gear)		0.48- 1.04 mm (0.019- 0.040 in)	0.3 mm (0.012 in)
	Outer synchro ring-to-gear clearance (ring pushed against gear)		0.95- 1.68 mm (0.037- 0.066 in)	0.6 mm (0.024 in)
4th double cone synchro	Outer synchro ring-to-synchro cone clearance (ring pushed against gear)		0.70- 1.19 mm (0.028- 0.046 in)	0.3 mm (0.012 in)
	Synchro cone-to-gear clearance (ring pushed against gear)		0.50- 1.14 mm (0.020- 0.044 in)	0.3 mm (0.012 in)
	Outer synchro ring-to-gear clearance (ring pushed against gear)		0.95- 1.68 mm (0.037- 0.066 in)	0.6 mm (0.024 in)
1st triple cone synchro	Outer synchro ring-to-synchro cone clearance (ring pushed against gear)		0.70- 1.19 mm (0.028- 0.046 in)	0.3 mm (0.012 in)
	Synchro cone-to-gear clearance (ring pushed against gear)		0.70- 1.88 mm (0.028- 0.074 in)	0.3 mm (0.012 in)
	Outer synchro ring-to-gear		1.12- 1.68 mm	0.6 mm

	clearance (ring pushed against gear)		(0.044- 0.066 in)	(0.024 in)
2nd triple cone synchro	Outer synchro ring-to-synchro cone clearance (ring pushed against gear)		0.70- 1.19 mm (0.028- 0.046 in)	0.3 mm (0.012 in)
	Synchro cone-to-gear clearance (ring pushed against gear)		0.70- 1.88 mm (0.028- 0.074 in)	0.3 mm (0.012 in)
	Outer synchro ring-to-gear clearance (ring pushed against gear)		1.12- 1.68 mm (0.044- 0.066 in)	0.6 mm (0.024 in)
Shift fork	Finger thickness	1st/2nd, 3rd/4th, 5th/6th	7.4- 7.6 mm (0.291 - 0.299 in)	-
		Reverse	6.2- 6.4 mm (0.244- 0.252 in)	-
	Fork-to-synchro sleeve clearance		0.35- 0.65 mm (0.014- 0.025 in)	1.0 mm (0.039 in)
Reverse shift lever	Finger width		6.50- 6.75 mm (0.2559- 0.2657 in)	-
	Shift lever-to-reverse shift piece clearance		0- 0.4 mm (0- 0.015 in)	0.5 mm (0.019 in)
	Shift lever width at contact area (reverse shift piece side)		13.0- 13.2 mm (0.512- 0.520 in)	-
	Shift lever-to-reverse shift fork clearance		0.15- 0.60 mm (0.006- 0.023 in)	0.7 mm (0.027 in)
Detent ball spring	Free length	1st/2nd	26.1 mm (1.028 in)	When worn or damaged
		3rd/4th, 5th/6th	27.4 mm (1.079 in)	When worn or damaged
Steel ball	Ball size		7.94 mm (0.3126 in)	When worn or damaged
Shift arm	I.D.		15.973- 16.005 mm (0.62886- 0.63012 in)	-
	Shift arm-to-shift piece clearance		0.26- 0.57 mm (0.010- 0.022 in)	0.75 mm (0.029 in)
	Shift piece width at contact area		13.6- 13.8 mm (0.535- 0.543 in)	-
M/T differential carrier	Backlash (measured with final driven gear)		0.6- 1.2 mm (0.024- 0.047 in)	-
	Carrier bearing starting torque (preload)		3.4- 4.5 N.m (35- 46 kgf.cm, 30- 40 lbf.in)	Adjust
	Inner rotor-to-outer rotor clearance		0.14 mm (0.006 in) max.	0.2 mm (0.007 in)
			17.1- 17.2 mm	

Oil pump	Oil pump inner rotor I.D.		(0.673- 0.677 in)	-
	Oil pump shaft O.D.		16.8- 17.0 mm (0.661 - 0.669 in)	-
	Oil pump thrust clearance		0.03- 0.13 mm (0.001 - 0.005 in)	0.15 mm (0.005 in)
	Outer rotor-to-clutch housing clearance		0.1 - 0.2 mm (0.004- 0.007 in)	0.22 mm (0.008 in)
Shift piece	I.D.		14.000- 14.068 mm (0.55118- 0.55386 in)	-
	Shift fork width at contact area		12.8- 13.0 mm (0.504- 0.512 in)	-
	Shift piece-to-shift fork clearance		0.2- 0.6 mm (0.008- 0.023 in)	0.7 mm (0.027 in)
Select arm	I.D.		11.01- 11.05 mm (0.4335- 0.4350 in)	-
	Interlock width at contact area		12.9- 13.0 mm (0.508- 0.512 in)	-
	Select arm-to-interlock clearance		0.05- 0.25 mm (0.002- 0.009 in)	0.5 mm (0.019 in)
Transfer output shaft	Diameter of bearing contact area	Transmission housing side	21.977- 21.990 mm (0.86523- 0.86575 in)	21.92 mm (0.8630 in)
		Clucks housing side	40.002- 40.018 mm (1.57488- 1.57551 in)	39.95 mm (1.5728 in)
	Thrust clearance		0.08- 0.17 mm (0.003- 0.006 in)	-
Transfer assembly	Diameter of transfer hypoid drive gear/shaft assembly at tapered roller bearing contact area	At transfer cover side	50.002- 50.018 mm (1.96858- 1.96921 in)	49.95 mm (1.9665 in)
		At transfer gear side	24.987- 25.000 mm (0.98374- 0.98425 in)	24.93 mm (0.9815 in)
	Diameter of transfer output shaft (hypoid gear) at tapered roller bearing contact area	At transfer gear side	40.002- 40.018 mm (1.57488- 1.57551 in)	39.95 mm (1.5728 in)
		At companion flange side	31.975- 31.988 mm (1.25886- 1.25937 in)	31.92 mm (1.2567 in)
	Transfer gear backlash		0.06- 0.16 mm (0.0024- 0.0063 in)	Adjust
	Tapered roller bearing total starting torque (preload)		2.64- 4.23 N.m (26.9- 43.1 kgf.cm, 23.3- 37.4 lbf.in)	Adjust

Transfer assembly fluid	Capacity: Hypoid gear oil SAE 90 viscosity, API classified GL 4 or GL 5 only	Fluid change	0.43 L (0.45 US qt)	-
		Overhaul	0.45 L (0.48 US qt)	-

AUTOMATIC TRANSMISSION AND A/T DIFFERENTIAL

Item	Measurement	Qualification	Standard or New	Service Limit
Automatic transmission fluid	Capacity: use Acura ATF DW-1 (with SH-AWD)	Fluid change	3.1 L (3.3 US qt)	-
		Overhaul	7.8 L (8.2 US qt)	-
	Capacity: use Acura ATF DW-1 (without SH-AWD)	Fluid change	3.1 L (3.3US qt)	-
		Overhaul	7.1 L (7.5US qt)	-
ATF pressure	Line pressure (Low) (APP Sensor opening less than 25 % in D with Line Pressure Sol VLV. A ON)	ATF temperature between 122°F and 212°F (50°C and 100°C)	667- 716 kPa (6.80- 7.30 kgf/cm^2 , 96.7 - 103.8 psi)	Lower limit: 618 kPa (6.30 kgf/cm^2 , 89.6 psi) Upper limit: 765 kPa (7.80 kgf/cm^2 , 111.0 psi)
	Line pressure (Normal)	At 2, 000 RPM in N or P	1, 164- 1, 285 kPa (11.87- 13.10 kgf/cm^2 , 168.8- 186.3 psi)	1, 079 kPa (11.00 kgf/cm^2 , 156.5 psi)
	1st clutch pressure	At 2, 000 RPM in 1st gear	1, 123- 1, 172 kPa (11.45- 11.95 kgf/cm^2 , 162.9- 170.0 psi)	1, 079 kPa (11.00 kgf/cm^2 , 156.5 psi)
	2nd clutch pressure	At 2, 000 RPM in 2nd gear	1, 123- 1, 172 kPa (11.45- 11.95 kgf/cm^2 , 162.9- 170.0 psi)	1, 079 kPa (11.00 kgf/cm^2 , 156.5 psi)
	3rd clutch pressure	At 2, 000 RPM in 3rd gear	1, 123- 1, 172 kPa (11.45- 11.95 kgf/cm^2 , 162.9- 170.0 psi)	1, 079 kPa (11.00 kgf/cm^2 , 156.5 psi)
	4th clutch pressure	At 2, 000 RPM in 4th gear	1, 123- 1, 172 kPa (11.45- 11.95 kgf/cm^2 , 162.9- 170.0	1, 079 kPa (11.00 kgf/cm^2 , 156.5 psi)

			psi)	
	5th clutch pressure	At 2, 000 RPM in 5th gear	1, 123- 1, 172 kPa (11.45- 11.95 kgf/cm^2 , 162.9- 170.0 psi)	1, 079 kPa (11.00 kgf/cm^2 , 156.5 psi)
	6th clutch pressure	At 2, 000 RPM in 6th gear	1, 123- 1, 172 kPa (11.45- 11.95 kgf/cm^2 , 162.9- 170.0 psi)	1, 079 kPa (11.00 kgf/cm^2 , 156.5 psi)
	Torque converter clutch pressure	At 4, 000 RPM in 2nd gear (Lock-up condition)	294 kPa (3.00 kgf/cm^2 , 42.7 psi) or more	245 kPa (2.50 kgf/cm^2 , 35.6 psi)
Torque converter	Stall speed Check with vehicle on level ground		2, 000 RPM	-
		Service limit	1, 800- 2, 100 RPM	-
Clutch	Clearance between clutch end-plate and top disc	1st	1.50- 1.70 mm (0.0591 - 0.0669 in)	-
		2nd	1.25- 1.45 mm (0.0492- 0.0571 in)	-
		3rd	1.25- 1.45 mm (0.0492- 0.0571 in)	-
		4th	1.50- 1.70 mm (0.0591 - 0.0669 in)	-
		5th	1.25- 1.45 mm (0.0492- 0.0571 in)	-
		6th	1.25- 1.45 mm (0.0492- 0.0571 in)	-
	Diameter of stator shaft needle bearing contact area		31.984- 32.000 mm (1.25921- 1.25984 in)	When worn or damaged
	3rd gear I.D.		49.000- 49.016 mm (1.92913- 1.92976 in)	When worn or damaged
	3rd gear axial clearance		0.10- 0.21 mm (0.0039- 0.0083 in)	-
			41.962- 41.978	

Mainshaft	3rd gear collar diameter of needle bearing contact area		mm (1.65204- 1.65267 in)	When worn or damaged
	3rd gear collar width		29.00- 29.05 mm (1.1417- 1.1437 in)	-
	Sealing ring thickness (41 mm)		1.91- 1.96 mm (0.0752- 0.0772 in)	-
	Sealing ring groove width		2.025- 2.060 mm (0.07972- 0.08110 in)	-
Countershaft	Diameter of needle bearing contact area at torque converter housing		40.505- 40.515 mm (1.59468- 1.59508 in)	When worn or damaged
	Diameter of 1st gear at needle bearing contact area		57.000- 57.019 mm (2.24409- 2.24484 in)	When worn or damaged
	Diameter of park gear at needle bearing contact area		52.971 - 52.990 mm (2.08547- 2.08622 in)	When worn or damaged
	Axial clearance of gears	1st gear	0.07- 0.30 mm (0.0028- 0.0118 in)	-
		2nd and 5th gear (total)	0.04- 0.10 mm (0.002- 0.003 in)	-
	Thrust shim thickness (42.5 mm)	A	1.82 mm (0.0717 in)	When worn or damaged
		B	1.86 mm (0.0732 in)	When worn or damaged
		C	1.90 mm (0.0748 in)	When worn or damaged
		D	1.94 mm (0.0764 in)	When worn or damaged
		E	1.98 mm (0.0780 in)	When worn or damaged
		F	2.02 mm (0.0795 in)	When worn or damaged
		G	2.06 mm (0.0811 in)	When worn or damaged
		H	2.10 mm (0.0827 in)	When worn or damaged
		I	2.14 mm (0.0843 in)	When worn or damaged
			2.18 mm	When worn or

		J	(0.0858 in)	damaged
		K	2.22 mm (0.0874 in)	When worn or damaged
		L	2.26 mm (0.0890 in)	When worn or damaged
	5th gear collar width		65.55- 66.50 mm (2.5807- 2.6181 in)	When worn or damaged
Secondary shaft	Diameter of bearing contact area	At 1st gear	31.986- 31.999 mm (1.25929- 1.25980 in)	When worn or damaged
		At torque converter housing bearing	32.002- 32.015 mm (1.25992- 1.26043 in)	When worn or damaged
		At torque converter housing (shaft end side)	28.5935- 28.6065 mm (1.125726- 1.126238 in)	When worn or damaged
	I.D. of gears	1st gear	38.000- 38.016 mm (1.49606- 1.49669 in)	When worn or damaged
		2nd gear	44.000- 44.016 mm (1.73228- 1.73291 in)	When worn or damaged
		5th gear	50.000- 50.016 mm (1.96850- 1.96913 in)	When worn or damaged
	Axial clearance of gears	1st gear	0.16- 0.40 mm (0.0063- 0.0157 in)	-
		2nd and 5th gear	0.05- 0.12 mm (0.002- 0.004 in)	-
	Diameter of gear collars at needle bearing contact area	2nd gear collar	37.975- 37.991 mm (1.49508- 1.49571 in)	When worn or damaged
		5th gear collar	44.962- 44.978 mm (1.77015- 1.77078 in)	When worn or damaged
		A	0.85 mm (0.0335 in)	When worn or damaged
		B	0.92 mm (0.0362 in)	When worn or damaged
		C	0.99 mm (0.0390 in)	When worn or damaged

	Thrust shim thickness (89 mm)	D	1.06 mm (0.0417 in)	When worn or damaged
		E	1.13 mm (0.0445 in)	When worn or damaged
		F	1.20 mm (0.0472 in)	When worn or damaged
		G	1.27 mm (0.0500 in)	When worn or damaged
		H	1.34 mm (0.0528 in)	When worn or damaged
		I	1.41 mm (0.0555 in)	When worn or damaged
		J	1.48 mm (0.0583 in)	When worn or damaged
		K	1.55 mm (0.0610 in)	When worn or damaged
		L	1.62 mm (0.0638 in)	When worn or damaged
		M	1.69 mm (0.0665 in)	When worn or damaged
		N	1.76 mm (0.0693 in)	When worn or damaged
		O	1.83 mm (0.0720 in)	When worn or damaged
		P	1.90 mm (0.0748 in)	When worn or damaged
		Q	1.97 mm (0.0776 in)	When worn or damaged
		R	2.04 mm (0.0803 in)	When worn or damaged
		S	2.11 mm (0.0831 in)	When worn or damaged
		T	2.18 mm (0.0858 in)	When worn or damaged
	2nd gear collar thickness	A	32.89 mm (1.2949 in)	When worn or damaged
		B	32.94 mm (1.2968 in)	When worn or damaged
		C	32.99 mm (1.2988 in)	When worn or damaged
		D	33.04 mm (1.3008 in)	When worn or damaged
		E	33.09 mm (1.3028 in)	When worn or damaged

		F	33.14 mm (1.3047 in)	When worn or damaged
		G	33.19 mm (1.3067 in)	When worn or damaged
		H	33.24 mm (1.3087 in)	When worn or damaged
	5th gear collar width		28.00- 28.05 mm (1.1024- 1.1043 in)	-
Secondary shaft (cont'd)	Sealing ring thickness (30 mm)		1.74- 1.80 mm (0.0685- 0.0709 in)	-
	Sealing ring groove width		1.875- 1.910 mm (0.07382- 0.07520 in)	-
	ATF feed pipe O.D.		5.97- 5.98 mm (0.2350- 0.2354 in)	5.95 mm (0.2343 in)
	ATF feed pipe bushing I.D.		6.018- 6.030 mm (0.23693- 0.23740 in)	6.045 mm (0.23799 in)
	Diameter of needle bearing contact area	At 4th gear collar	44.986- 44.999 mm (1.77110- 1.77161 in)	When worn or damaged
		At 6th gear collar	36.986- 36.999 mm (1.45614- 1.45665 in)	When worn or damaged
	I.D. of gears	4th gear	50.000- 50.016 mm (1.96850- 1.96913 in)	When worn or damaged
		6th gear	42.000- 42.016 mm (1.65354- 1.65417 in)	When worn or damaged
		Reverse gear	41.000- 41.016 mm (1.61417- 1.61480 in)	When worn or damaged
	Diameter of reverse gear collar at needle bearing contact area		34.975- 34.991 mm (1.37697- 1.37760 in)	When worn or damaged
	Axial clearance	4th gear	0.115- 0.350 mm (0.00453- 0.01378 in)	-
		6th gear	0.045- 0.420 mm (0.002- 0.016 in)	-

Third shaft		Reverse gear	0.1 - 0.2 mm (0.004- 0.008 in)	-
	Reverse gear collar width		51.50- 51.55 mm (2.0276- 2.0295 in)	-
	Cotter thickness		2.99- 3.02 mm (0.1177- 0.1189 in)	-
	Sealing ring thickness (35 mm)		1.90- 1.97 mm (0.0748- 0.0776 in)	-
	Sealing ring groove width		2.025- 2.060 mm (0.07972- 0.08110 in)	-
	Reverse selector hub O.D.		51.60- 51.75 mm (2.0315- 2.0374 in)	When worn or damaged
	4th gear washer thickness	A	8.515 mm (0.33524 in)	When worn or damaged
		B	8.540 mm (0.33622 in)	When worn or damaged
		C	8.565 mm (0.33720 in)	When worn or damaged
		D	8.590 mm (0.33819 in)	When worn or damaged
		E	8.615 mm (0.33917 in)	When worn or damaged
		F	8.640 mm (0.34016 in)	When worn or damaged
	Diameter of needle bearing contact area	At transmission housing bearing (shaft end side)	22.995- 23.005 mm (0.90531- 0.90571 in)	When worn or damaged
	Cotter thickness		2.49- 2.52 mm (0.0980- 0.0992 in)	-
		A	1.26 mm (0.0496 in)	When worn or damaged
		B	1.30 mm (0.0512 in)	When worn or damaged
		C	1.34 mm (0.0528 in)	When worn or damaged
		D	1.38 mm (0.0543 in)	When worn or damaged
			1.42 mm	When worn or

Idler gear shaft	Washer thickness (41.5 mm)	E	(0.0559 in)	damaged
		F	1.46 mm (0.0575 in)	When worn or damaged
		G	1.50 mm (0.0591 in)	When worn or damaged
		H	1.54 mm (0.0606 in)	When worn or damaged
		I	1.58 mm (0.0622 in)	When worn or damaged
		J	1.62 mm (0.0638 in)	When worn or damaged
		K	1.66 mm (0.0654 in)	When worn or damaged
		L	1.70 mm (0.0669 in)	When worn or damaged
		M	1.74 mm (0.0685 in)	When worn or damaged
		N	1.78 mm (0.0701 in)	When worn or damaged
		O	1.82 mm (0.0717 in)	When worn or damaged
		P	1.86 mm (0.0732 in)	When worn or damaged
		Q	1.90 mm (0.0748 in)	When worn or damaged
		R	1.94 mm (0.0764 in)	When worn or damaged
		S	1.98 mm (0.0780 in)	When worn or damaged
		T	2.02 mm (0.0795 in)	When worn or damaged
		U	2.06 mm (0.0811 in)	When worn or damaged
Reverse idler gear shaft	Diameter of needle bearing contact area		17.991 - 17.999 mm (0.70831 - 0.70862 in)	When worn or damaged
	I.D. of gear	Reverse idler gear	24.000- 24.013 mm (0.94488- 0.94539 in)	When worn or damaged
	Axial clearance		0.07- 0.27 mm (0.0028- 0.0106 in)	-
	I.D. of transmission housing at reverse idler gear shaft contact area		32.002- 32.020 mm (1.25992- 1.26063 in)	-

	Reverse idler gear shaft thrust washer thickness		1.50- 1.55 mm (0.0591- 0.0610 in)	-
ATF pump	ATF pump thrust clearance		0.04- 0.07 mm (0.002- 0.002 in)	0.07 mm (0.002 in)
	Clearance between ATF pump gear and main valve body	Drive gear	0.210- 0.265 mm (0.009- 0.010 in)	-
		Driven gear	0.070- 0.125 mm (0.003- 0.004 in)	-
	ATF pump driven gear I.D.		14.016- 14.034 mm (0.55181- 0.55252 in)	When worn or damaged
	ATF pump driven gear shaft O.D.		13.980- 13.990 mm (0.55039- 0.55079 in)	When worn or damaged
Stator shaft	I.D. at needle bearing contact area	At torque converter side	28.000- 28.021 mm (1.10236- 1.10319 in)	When worn or damaged
		At ATF pump side	40.000- 40.025 mm (1.57480- 1.57578 in)	-
	I.D. at mainshaft sealing ring contact area		41.000- 41.025 mm (1.61417- 1.61515 in)	41.05 mm (1.6161 in)
Reverse shift fork	Fork finger thickness		5.90- 6.00 mm (0.2323- 0.2362 in)	5.4 mm (0.213 in)
Park gear and pawl	-		-	When worn or damaged
Regulator valve body	I.D. of shift fork shaft contact area	At shaft part	14.000- 14.010 mm (0.55118- 0.55157 in)	-
		At valve part	37.000- 37.039 mm (1.45669- 1.45823 in)	37.045 mm (1.45846 in)
Main valve body	Third shaft sealing ring contact I.D.		35.000- 35.025 mm (1.37795- 1.37893 in)	35.05 mm (1.3799 in)
ATF guide collar	Secondary shaft sealing ring contact 1. D.		30.000- 30.021 mm (1.18110- 1.18193 in)	30.05 mm (1.1831 in)
	Driveshaft/intermediate shaft		32.025- 32.055	

A/T differential carrier	contact area I.D.		mm (1.26082- 1.26201 in)	-
	Clearance between carrier and driveshaft		0.045- 0.096 mm (0.00177- 0.00378 in)	0.13 mm (0.0051 in)
	Clearance between carrier and intermediate shaft		0.080- 0.126 mm (0.00315- 0.00496 in)	-
	Carrier bearing starting torque (preload)	For new bearing	3.9- 5.6 N.m (40- 57 kgf.cm, 35- 49 lbf.in)	Adjust
		For reused bearing	3.6- 5.3 N.m (37- 54 kgf.cm, 32- 47 lbf.in)	Adjust
A/T differential pinion gear	Backlash		0.05- 0.15 mm (0.0020- 0.0059 in)	-
	I.D.		18.042- 18.066 mm (0.71031- 0.71126 in)	-
	Clearance between pinion gear and pinion shaft		0.055- 0.095 mm (0.00217- 0.00374 in)	0.12 mm (0.0047 in)
	Diameter of bearing contact area	At transmission housing side	21.977- 21.990 mm (0.86523- 0.86575 in)	21.92 mm (0.8630 in)
		At torque converter housing side	40.002- 40.018 mm (1.57488- 1.57551 in)	39.95 mm (1.5728 in)
	Axial clearance		0- 0.44 mm (0- 0.0173 in)	-
		A	1.82 mm (0.0717 in)	When worn or damaged
		B	1.84 mm (0.0724 in)	When worn or damaged
		C	1.86 mm (0.0732 in)	When worn or damaged
		D	1.88 mm (0.0740 in)	When worn or damaged
		E	1.90 mm (0.0748 in)	When worn or damaged
		F	1.92 mm (0.0756 in)	When worn or damaged
		G	1.94 mm (0.0764 in)	When worn or damaged

Transfer output shaft	Thrust shim thickness (28.5 mm)	H	1.96 mm (0.0772 in)	When worn or damaged
		I	1.98 mm (0.0780 in)	When worn or damaged
		J	2.00 mm (0.0787 in)	When worn or damaged
		K	2.02 mm (0.0795 in)	When worn or damaged
		L	2.04 mm (0.0803 in)	When worn or damaged
		M	2.06 mm (0.0811 in)	When worn or damaged
		N	2.08 mm (0.0819 in)	When worn or damaged
		O	2.10 mm (0.0827 in)	When worn or damaged
		P	2.12 mm (0.0835 in)	When worn or damaged
		Q	2.14 mm (0.0843 in)	When worn or damaged
		R	2.16 mm (0.0850 in)	When worn or damaged
		S	2.18 mm (0.0858 in)	When worn or damaged
		T	2.20 mm (0.0866 in)	When worn or damaged
		U	2.22 mm (0.0874 in)	When worn or damaged
		V	2.24 mm (0.0882 in)	When worn or damaged
		W	2.26 mm (0.0890 in)	When worn or damaged
		X	2.28 mm (0.0898 in)	When worn or damaged
		Y	2.30 mm (0.0906 in)	When worn or damaged
		Z	2.32 mm (0.0913 in)	When worn or damaged
		AA	2.34 mm (0.0921 in)	When worn or damaged
		AB	1.78 mm (0.0701 in)	When worn or damaged
		AC	1.80 mm (0.0709 in)	When worn or damaged

Transfer assembly fluid	Capacity: Hypoid gear oil SAE 90 viscosity, API classified GL 4 or GL 5 only	Fluid change	0.43 L (0.45 US qt)	-
		Overhaul	0.45 L (0.48 US qt)	-
Transfer assembly	Diameter of transfer hypoid drive gear/shaft assembly at tapered roller bearing contact area	At transfer cover side	50.002- 50.018 mm (1.96858- 1.96921 in)	49.95 mm (1.9665 in)
		At transfer gear side	24.987- 25.000 mm (0.98374- 0.98425 in)	24.93 mm (0.9815 in)
	Diameter of transfer output shaft (hypoid gear) at tapered roller bearing contact area	At transfer gear side	40.002- 40.018 mm (1.57488- 1.57551 in)	39.95 mm (1.5728 in)
		At companion flange side	31.975- 31.988 mm (1.25886- 1.25937 in)	31.92 mm (1.2567 in)
	Transfer gear backlash		0.06- 0.16 mm (0.0024- 0.0063 in)	-
	Tapered roller bearing total starting torque (preload)		2.64- 4.23 N.m (26.9- 43.1 kgf.cm, 23.3- 37.4 lbf.in)	-

REAR DIFFERENTIAL

Item	Measurement	Qualification	Standard or New	Service Limit
Rear differential fluid	Capacity: use Acura All-Wheel Drive Fluid (DPSF)	Fluid change	2.53 L (2.67 US qt)	-
		Overhaul	2.77 L (2.93 US qt)	-

STEERING

Item	Measurement	Qualification	Standard or New	Service Limit
Steering wheel	Rotational play measured at outside edge		0- 10 mm (0- 0.39 in)	-
	Initial turning load measured at outside edge with engine running		29 N (3.0 kgf, 6.6 lbf)	-
Gearbox	Angle of rack guide screw loosened from locked position		10+5°	

SUSPENSION

Item	Measurement	Qualification	Standard or New	Service Limit
Wheel alignment	Camber	Front	- 0°30'$^{+30'}_{-45'}$ ·	
		Rear	- 1 °00'$^{+30'}_{-45'}$ ·	
	Caster	Front	3 ° 48 ' ±45 '	
	Total toe-in	Front	0±2mm (0+0.08 in)	
		Rear	2 ± 2 mm (0.08 ± 0.08 in)	
	Front wheel turning angle	Inward	38° 06' ±2°	
		Outward (reference)	30° 24' ± 1 °	
Wheel	Runout	Axial	0- 0.7 mm (0- 0.028 in)	2.0 mm (0.079 in)
		Radial	0- 0.7 mm (0- 0.028 in)	1.5 mm (0.059 in)
Wheel bearing	End play	Front	0- 0.05 mm (0- 0.0020 in)	-
		Rear	0- 0.05 mm (0- 0.0020 in)	-

BRAKES

Item	Measurement	Qualification	Standard or New	Service Limit
Parking brake	Number of clicks when lever pulled with 196 N (20.0 kgf, 44.1 lbf) of force		6 to 8 clicks	
	Drum I.D.		189.9- 190.0 mm (7.476- 7.480 in)	191.0 mm (7.520 in)
	Shoe lining thickness		3.4 mm (0.134 in)	1.0 mm (0.039 in)
Brake pedal	Height from floor	M/T	156 mm (6.14 in)	-
		A/T	155 mm (6.10 in)	-
	Free play		1 - 5 mm (0.04- 0.20 in)	-
Brake disc	Thickness	Front	27.9- 28.1 mm (1.098- 1.106 in)	26.0 mm (1.024 in)
		Rear	10.9- 11.1 mm (0.429- 0.437 in)	9.0 mm (0.354 in)
	Runout		-	0.04 mm (0.0016 in)
	Parallelism		-	0.015 mm (0.00059 in)
Brake pad	Thickness	Front	11.5- 12.2 mm (0.453- 0.480 in)	1.6 mm (0.063 in)
		Rear	9.6- 10.2 mm (0.378- 0.402 in)	1.6 mm (0.063 in)

AIR CONDITIONING

Item	Measurement	Qualification	Standard or New	Service Limit
Refrigerant	Type		HFC- 134a (R- 134a)	
	Capacity of system		505- 555 g (17.8- 19.6 oz)	-
Refrigerant oil	Type		DENSO ND- OIL 8 (P/N 38897- PR7- A01 AH)	
	Capacity of components	Condenser (including dryer desiccant)	35mL (1 1/5 fl.oz)	
		Evaporator	35mL (1 1/5 fl.oz)	
		Each line and hose	10mL (1/3 fl.oz)	
		Dryer desiccant	10mL (1/3 fl.oz)	
		Compressor	70- 82 mL (2 3/8- 2 7/9 fl.oz)	
Compressor	Field coil resistance	At 68°F (20°C)	3.9- 4.3 ohms	
	Pulley-to-pressure plate clearance		0.35- 0.60 mm (0.014- 0.023 in)	-

TORQUE SUMMARY

TORQUE SPECIFICATIONS

NOTE:

- **Refer to the appropriate Service information for the precautions and complete procedures.**
- **Refer to the appropriate Service information for the bolts/nuts not indicated here.**

Engine Electrical

Location	Item		Remark	Torque
Starting system	Starter bolts	M/T model		74 N.m (7.5 kgf.m, 54 lbf.ft)
		A/T model		44 N.m (4.5 kgf.m, 33 lbf.ft)
	Starter harness clamp nut			9 N.m (0.9 kgf.m, 7 lbf.ft)
Ignition system	Spark plugs			22 N.m (2.2 kgf.m, 16 lbf.ft)
Charging system	Alternator bolt (8 mm)			22 N.m (2.2 kgf.m, 16 lbf.ft)
	Alternator bolt (10 mm)			44 N.m (4.5 kgf.m, 33 lbf.ft)
	Alternator cable nut			12 N.m (1.2 kgf.m, 8.7 lbf.ft)
	Drive belt auto-tensioner bolt			22 N.m (2.2 kgf.m, 16 lbf.ft)
	Drive belt auto-tensioner pulley bolt			56 N.m (5.7 kgf.m, 41 lbf.ft)

NOTE:

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Engine Mechanical

Location	Item		Remark	Torque
Engine assembly	Power steering pump bracket bolts			22 N.m (2.2 kgf.m, 16 lbf.ft)
	Front engine mount bracket bolts		Use new bolts	54 N.m (5.5 kgf.m, 40 lbf.ft)
	Front engine mount bolts		Use new bolts	54 N.m (5.5 kgf.m, 40 lbf.ft)
	Front engine mount stop nuts		Use new nuts	64 N.m (6.5 kgf.m, 47 lbf.ft)
	Rear engine mount bracket bolts		Use new bolts	78 N.m (8.0 kgf.m, 58 lbf.ft)
	Rear engine mount bolts (10 mm) Qty 4		Use new bolts	54 N.m (5.5 kgf.m, 40 lbf.ft)
	Rear engine mount bolt (14 mm) Qty 1	M/T model	Use new bolt	88 N.m (9.0 kgf.m, 65 lbf.ft)
	Rear engine mount stop nuts	A/T model	Use new nuts	64 N.m (6.5 kgf.m, 47 lbf.ft)
	Side engine mount bracket bolts (10 mm) Qty 3		Use new bolts	44 N.m (4.5 kgf.m, 33 lbf.ft)
	Side engine mount bracket bolts (10 mm) Qty 2 (2)		Use new bolts	54 N.m (5.5 kgf.m, 40 lbf.ft)
	Side engine mount bolt (12 mm) Qty 1 (2)			64 N.m (6.5 kgf.m, 47 lbf.ft)
	Side engine mount bolts (10 mm) Qty 2		Use new bolts	64 N.m (6.5 kgf.m, 47 lbf.ft)
	Upper transmission mount bracket bolts		Use new bolts	59 N.m (6.0 kgf.m, 43 lbf.ft)
	Upper transmission mount bolts			54 N.m (5.5 kgf.m, 40 lbf.ft)
	Lower transmission mount bracket bolts	M/T model	Use new bolts	54 N.m (5.5 kgf.m, 40 lbf.ft)
		A/T model	Use new bolts	39 N.m (4.0 kgf.m, 29 lbf.ft)
	Lower transmission mount nuts			44 N.m (4.5 kgf.m, 33 lbf.ft)
	Lower transmission mount bolt		Use new bolt	54 N.m (5.5 kgf.m, 40 lbf.ft)
			• Use new O-ring	22 N.m (2.2

Engine lubrication	Oil pressure switch	• Apply liquid gasket	kgf.m, 16 lbf.ft)
	Oil pan drain bolt	Use new washer	39 N.m (4.0 kgf.m, 29 lbf.ft)
	Oil filter		12 N.m (1.2 kgf.m, 9 lbf.ft)
	Oil filter feed pipe	Use oil on threads	35 N.m (3.6 kgf.m, 26 lbf.ft)
Intake manifold and exhaust system	Intake manifold bolts (1)		22 N.m (2.2 kgf.m, 16 lbf.ft)
	Intake manifold nuts (1)		22 N.m (2.2 kgf.m, 16 lbf.ft)
	Injector base bolts (1)		22 N.m (2.2 kgf.m, 16 lbf.ft)
	Injector base nuts (1)		22 N.m (2.2 kgf.m, 16 lbf.ft)
	Exhaust pipe A self-locking nuts (10 mm) Qty 3 (warm up TWC side) (2)	Use new nuts	54 N.m (5.5 kgf.m, 40 lbf.ft)
	Exhaust pipe A self-locking nuts (10 mm) Qty 3 (under-floor TWC side) (2)	Use new nuts	33 N.m (3.4 kgf.m, 25 lbf.ft)
	Exhaust pipe B self-locking nuts (10 mm) Qty 3 (2)	Use new nuts	33 N.m (3.4 kgf.m, 25 lbf.ft)
	Exhaust pipe B self-locking nuts (10 mm) Qty 2	Use new nuts	54 N.m (5.5 kgf.m, 40 lbf.ft)
(1) Parts to be tightened in a particular order.			
(2) Follow the S/M procedures closely for torque, sequence, and special steps.			

NOTE:

- **Refer to the appropriate Service information for the precautions and complete procedures.**
- **Refer to the appropriate Service information for the bolts/nuts not indicated here.**

Engine Cooling

Location	Item	Remark	Torque
Cooling system	Water passage bolts		22 N.m (2.2 kgf.m, 16 lbf.ft)
	Water passage nuts		22 N.m (2.2 kgf.m, 16 lbf.ft)

Fuel and Emissions

Location	Item	Remark	Torque

Fuel and emissions	A/F sensor			44 N.m (4.5 kgf.m, 33 lbf.ft)
	EGR pipe bolts		Use new gasket	22 N.m (2.2 kgf.m, 16 lbf.ft)
	EGR pipe nuts		Use new gasket	22 N.m (2.2 kgf.m, 16 lbf.ft)
	EGR valve nuts		Use new gasket	22 N.m (2.2 kgf.m, 16 lbf.ft)
	Fuel joint hose mounting bolt			22 N.m (2.2 kgf.m, 16 lbf.ft)
	Fuel tank locknut (1)		Use new locknut, locknut plate, and base gasket	70 N.m (7.1 kgf.m, 51 lbf.ft)
	Fuel tank support straps bolts			38 N.m (3.9 kgf.m, 28 lbf.ft)
	Knock sensor			31 N.m (3.2 kgf.m, 23 lbf.ft)
	Rocker arm oil pressure switch		Use new O-ring	22 N.m (2.2 kgf.m, 16 lbf.ft)
	Secondary HO2S			44 N.m (4.5 kgf.m, 33 lbf.ft)
	Secondary fuel gauge sending unit locknut (1)		Use new locknut, locknut plate, and base gasket	70 N.m (7.1 kgf.m, 51 lbf.ft)
	Throttle body bolts		Use new gasket	22 N.m (2.2 kgf.m, 16 lbf.ft)
	Under floor TWC self locking nuts	Without SH-AWD	Use new gaskets and nuts	33 N.m (3.4 kgf.m, 25 lbf.ft)
	Under floor TWC self locking nuts (front side)	With SH-AWD	Use new gaskets and nuts	33 N.m (3.4 kgf.m, 25 lbf.ft)
	Under floor TWC self locking nuts (rear side)	With SH-AWD	Use new gaskets and nuts	54 N.m (5.5 kgf.m, 40 lbf.ft)
	Warm up TWC (front bank) bracket bolts			45 N.m (4.5 kgf.m, 33 lbf.ft)
	Warm up TWC (rear bank) bracket bolts			22 N.m (2.2 kgf.m, 16 lbf.ft)
	Warm up TWC (front bank) upper self locking nuts		Use new nuts	31 N.m (3.2 kgf.m, 23 lbf.ft)
	Warm up TWC (rear bank) upper self locking nuts		Use new nuts	31 N.m (3.2 kgf.m, 23 lbf.ft)
(1) Follow the S/M procedures closely for torque, sequence, and special steps.				

Clutch

Location	Item	Remark	Torque

Clutch	Clutch push rod locknut		17 N.m (1.7 kgf.m, 12 lbf.ft)
	Clutch pedal position switch A locknut		9.8 N.m (1.0 kgf.m, 7 lbf.ft)
	Clutch pedal position switch B locknut		9.8 N.m (1.0 kgf.m, 7 lbf.ft)
	Clutch pedal bolt		22 N.m (2.2 kgf.m, 16 lbf.ft)
	Master cylinder nuts		13 N.m (1.3 kgf.m, 9 lbf.ft)
	Slave cylinder bolts		22 N.m (2.2 kgf.m, 16 lbf.ft)
	Flywheel bolts		103 N.m (10.5 kgf.m, 76 lbf.ft)
	Pressure plate bolts (1)		25 N.m (2.6 kgf.m, 19 lbf.ft)
	Release fork bolt		29 N.m (3.0 kgf.m, 22 lbf.ft)
(1) Parts to be tightened in a particular order.			

Manual Transmission

Location	Item	Remark	Torque
Manual transmission	MTF drain plug	Use new sealing washer	44 N.m (4.5 kgf.m, 33 lbf.ft)
	MTF filler plug	Use new sealing washer	44 N.m (4.5 kgf.m, 33 lbf.ft)
	Back-up light switch	Use liquid gasket on threads	29 N.m (3.0 kgf.m, 22 lbf.ft)
	Upper transmission bolts		74 N.m (7.5 kgf.m, 54 lbf.ft)
	Lower transmission bolts		74 N.m (7.5 kgf.m, 54 lbf.ft)
	Shift lever housing bolts		22 N.m (2.2 kgf.m, 16 lbf.ft)
	Shift cable bracket bolts		27 N.m (2.8 kgf.m, 20 lbf.ft)

Automatic Transmission

Location	Item	Remark	Torque
Automatic transmission	ATF drain plug	Use new sealing washer	49 N.m (5.0 kgf.m, 36 lbf.ft)
	ATF filler bolt	Use new sealing washer	44 N.m (4.5 kgf.m, 33 lbf.ft)
	Clutch pressure inspection port sealing bolts (line/1st/5th/torque converter)		20 N.m (2.0 kgf.m, 14 lbf.ft)
	Clutch pressure inspection port sealing bolts (3rd/6th)		27 N.m (2.8 kgf.m, 20 lbf.ft)
	Transmission fluid pressure switches	Use new sealing washers	0 N.m (2.0 kgf.m, 14 lbf.ft)
	Line pressure switch	Use new sealing washer	20 N.m (2.0 kgf.m, 14 lbf.ft)
	Drive plate bolts (1)		74 N.m (7.5 kgf.m, 54 lbf.ft)
	Lower transmission housing mounting bolts		74 N.m (7.5 kgf.m, 54 lbf.ft)
	Upper transmission housing mounting bolts		64 N.m (6.5

			kgf.m, 47 lbf.ft)
	Transfer assembly mounting bolts		51 N.m (5.2 kgf.m, 38 lbf.ft)
	Transmission ground terminal bracket bolt		26 N.m (2.7 kgf.m, 20 lbf.ft)
	Shift lever assembly bolts		22 N.m (2.2 kgf.m, 16 lbf.ft)
	Shift cable end nut		22 N.m (2.2 kgf.m, 16 lbf.ft)
	Shift lever bracket base bolts		22 N.m (2.2 kgf.m, 16 lbf.ft)
Transfer assembly	Transfer assembly fluid drain plug	Use new sealing washer	44 N.m (4.5 kgf.m, 33 lbf.ft)
	Transfer assembly fluid filler plug	Use new sealing washer	44 N.m (4.5 kgf.m, 33 lbf.ft)
(1) Follow the S/M procedures closely for torque, sequence, and special steps.			

NOTE:

- **Refer to the appropriate Service information for the precautions and complete procedures.**
- **Refer to the appropriate Service information for the bolts/nuts not indicated here.**

Rear Differential

Location	Item	Remark	Torque
Rear differential	Rear differential fluid drain plug	Use new sealing washer	47 N.m (4.8 kgf.m, 35 lbf.ft)
	Rear differential fluid filler plug	Use new sealing washer	47 N.m (4.8 kgf.m, 35 lbf.ft)
	Rear differential front mounting bracket nuts (1)	Use new nuts	44 N.m (4.5 kgf.m, 33 lbf.ft)
	Rear differential front mounting bracket bolts (1)	Use new bolts	74 N.m (7.5 kgf.m, 54 lbf.ft)
	Rear differential rear mount bolts (1)	Use new bolts	74 N.m (7.5 kgf.m, 54 lbf.ft)
(1) Follow the S/M procedures closely for torque, sequence, and special steps.			

Driveline/Axle

Location	Item	Remark	Torque
	Driveshaft spindle nut (24	• Use oil on the seating surface	245 N.m (25.0 kgf.m, 181

	mm)	• Use new nut	lbf.ft)
	Driveshaft spindle nut (26 mm)	• Use oil on the seating surface • Use new nut	329 N.m (33.5 kgf.m, 242 lbf.ft)
	Intermediate shaft dowel bolts		39 N.m (4.0 kgf.m, 29 lbf.ft)
Driveline/axle	Intermediate shaft flange bolt		39 N.m (4.0 kgf.m, 29 lbf.ft)
	Heat shield bolts		22 N.m (2.2 kgf.m, 16 lbf.ft)
	No. 1 propeller shaft nuts	Use new nuts	72 N.m (7.3 kgf.m, 53 lbf.ft)
	No. 3 propeller shaft bolts	Use new bolts	72 N.m (7.3 kgf.m, 53 lbf.ft)
	No. 1 support bearing bolts (1)	Use new bolts	39 N.m (4.0 kgf.m, 29 lbf.ft)
	No. 2 support bearing bolts (1)	Use new bolts	39 N.m (4.0 kgf.m, 29 lbf.ft)
(1) Follow the S/M procedures closely for torque, sequence, and special steps.			

Steering

Location	Item	Remark	Torque
Steering	Steering wheel bolt		39 N.m (4.0 kgf.m, 29 lbf.ft)
	Steering joint bolts		28 N.m (2.9 kgf.m, 21 lbf.ft)
	Steering column nuts		16 N.m (1.6 kgf.m, 12 lbf.ft)
	Steering column bolts		16 N.m (1.6 kgf.m, 12 lbf.ft)
	Steering gearbox bolts	Use new bolts	74 N.m (7.5 kgf.m, 54 lbf.ft)
	Tie-rod end ball joint nuts	Use new nuts	60 N.m (6.1 kgf.m, 44 lbf.ft)
	Tie-rod end locking nuts		44 N.m (4.5 kgf.m, 33 lbf.ft)

Suspension

Location	Item	Remark	Torque
Front suspension	Wheel nuts		127 N.m (13.0 kgf.m, 94.0 lbf.ft)
	Upper arm castle nut		44- 52 N.m (4.5- 5.3 kgf.m, 33- 38 lbf.ft)
	Upper arm bolts	Use new bolts	31 N.m (3.2 kgf.m, 23 lbf.ft)
	Knuckle ball joint castle nut	Use new nut	93- 103 N.m (9.5- 10.5 kgf.m, 69- 75.9 lbf.ft)
	Lower arm bolt (12mm)	Use new bolt	74 N.m (7.5 kgf.m, 54 lbf.ft)
	Lower arm bolt (12mm)	Use new bolt	83 N.m (8.5 kgf.m, 61 lbf.ft)
	Stabilizer bar bolts		55 N.m (5.6 kgf.m, 41 lbf.ft)
	Stabilizer link nuts		78 N.m (8.0 kgf.m, 58 lbf.ft)

	Damper nuts	Use new nuts	55 N.m (5.6 kgf.m, 41 lbf.ft)
	Damper pinch bolt		49 N.m (5.0 kgf.m, 36 lbf.ft)
	Damper fork bolt/nut	Use new bolt/nut	64 N.m (6.5 kgf.m, 47 lbf.ft)
	Damper self-locking	nut Use new nut	29 N.m (3.0 kgf.m, 22 lbf.ft)
Rear suspension	Wheel nuts		127 N.m (13.0 kgf.m, 94.0 lbf.ft)
	Upper arm castle nut	Use new nut	69- 78 N.m (7.0- 8.0 kgf.m, 51 - 58 lbf.ft)
	Upper arm bolts	Use new bolts	59 N.m (6.0 kgf.m, 43 lbf.ft)
	Lower arm A bolts	Use new bolts	59 N.m (6.0 kgf.m, 43 lbf.ft)
	Control arm self-locking nut	Use new nut	59 N.m (6.0 kgf.m, 43 lbf.ft)
	Control arm self-locking nut/adjusting bolt	Use new nut	57 N.m (5.8 kgf.m, 42 lbf.ft)
	Lower arm B bolts	Use new bolts	59 N.m (6.0 kgf.m, 43 lbf.ft)
	Stabilizer bar bolts		22 N.m (2.2 kgf.m, 16 lbf.ft)
	Stabilizer link nut	Use new nut	38 N.m (3.9 kgf.m, 28 lbf.ft)
	Stabilizer link self-locking nut	Use new nut	44 N.m (4.5 kgf.m, 33 lbf.ft)
	Damper nuts	Use new nuts	55 N.m (5.6 kgf.m, 41 lbf.ft)
	Damper lower bolt	Use new bolt	64 N.m (6.5 kgf.m, 47 lbf.ft)
	Damper self-locking nut	Use new nut	29 N.m (3.0 kgf.m, 22 lbf.ft)

Brakes

Location	Item	Remark	Torque
Conventional brake	Front brake caliper bolts		72 N.m (7.3 kgf.m, 53 lbf.ft)
	Front brake caliper bracket bolts		137 N.m (14.0 kgf.m, 101 lbf.ft)
	Front brake hose bracket bolt		22 N.m (2.2 kgf.m, 16 lbf.ft)
	Front brake hose banjo bolt	Use new washers	35 N.m (3.6 kgf.m, 26 lbf.ft)
	Brake booster/brake pedal nuts		12 N.m (1.2 kgf.m, 8.7 lbf.ft)
	Master cylinder nuts		15 N.m (1.5 kgf.m, 11 lbf.ft)
	Master cylinder brake lines		22 N.m (2.2 kgf.m, 16 lbf.ft)
	Rear brake caliper bolts		22 N.m (2.2 kgf.m, 16 lbf.ft)
	Rear brake caliper bracket bolts		88 N.m (9.0 kgf.m, 65 lbf.ft)

	Rear brake hose bracket bolt		22 N.m (2.2 kgf.m, 16 lbf.ft)
	Rear brake hose banjo bolt	Use new washers	35 N.m (3.6 kgf.m, 26 lbf.ft)
	Parking brake lever bolts		32 N.m (3.3 kgf.m, 24 lbf.ft)
	Parking brake cable bolts		22 N.m (2.2 kgf.m, 16 lbf.ft)
	Equalizer cover bolts		32 N.m (3.3 kgf.m, 24 lbf.ft)
	Brake pedal bolts		22 N.m (2.2 kgf.m, 16 lbf.ft)
VSA	VSA modulator-control unit brake line (10 mm)		15 N.m (1.5 kgf.m, 11 lbf.ft)
	VSA modulator-control unit brake line (12 mm)		22 N.m (2.2 kgf.m, 16 lbf.ft)

NOTE:

- **Refer to the appropriate Service information for the precautions and complete procedures.**
- **Refer to the appropriate Service information for the bolts/nuts not indicated here.**

BODY

Location	Item	Remark	Torque
Frame	Strut brace nuts		22 N.m (2.2 kgf.m, 16 lbf.ft)
	Strut brace bolts		22 N.m (2.2 kgf.m, 16 lbf.ft)
	Front subframe front stiffener bolts (12 mm) (1)		54 N.m (5.5 kgf.m, 40 lbf.ft)
	Front subframe front stiffener bolts (14 mm) (1)	Use new bolts	103 N.m (10.5 kgf.m, 76 lbf.ft)
	Front subframe middle rubber mount bolts (10 mm) (1)	Use new bolts	49 N.m (5.0 kgf.m, 36 lbf.ft)
	Front subframe middle rubber mount bolts (12 mm) (1)	Use new bolts	44 N.m (4.5 kgf.m, 33 lbf.ft)
	Front subframe rear stiffener bolts (12 mm) (1)	Use new bolts	93 N.m (9.5 kgf.m, 69 lbf.ft)
	Front subframe rear stiffener bolts (14 mm) (1)	Use new bolts	103 N.m (10.5 kgf.m, 76 lbf.ft)
	Rear engine mounting base bracket bolts	Use new bolts	54 N.m (5.5 kgf.m, 40 lbf.ft)
	Rear subframe mounting front stay bolts (8 mm)		27 N.m (2.75 kgf.m, 20 lbf.ft)
		Use new	103 N.m (10.5 kgf.m, 76

	Rear subframe mounting front stay bolts (14 mm)	bolts	lbf.ft)
	Rear subframe mounting rear stay bolts (8 mm)		27 N.m (2.75 kgf.m, 20 lbf.ft)
	Rear subframe mounting rear stay bolts (14 mm)	Use new bolts	103 N.m (10.5 kgf.m, 76 lbf.ft)
(1) Parts to be tightened in a particular order.			

HEATING, VENTILATION, AND AIR CONDITIONING

Location	Item	Remark	Torque
A/C compressor	A/C compressor bracket bolts		45 N.m (4.5 kgf.m, 33 lbf.ft)
	A/C compressor bolts		22 N.m (2.2 kgf.m, 16 lbf.ft)
	A/C compressor center bolt		18 N.m (1.8 kgf.m, 13 lbf.ft)
	A/C compressor relief valve		13 N.m (1.35 kgf.m, 9.7 lbf.ft)
Receiver line	A/C pressure sensor		11 N.m (1.1 kgf.m, 8.0 lbf.ft)

BODY ELECTRICAL

Location	Item	Remark	Torque
Wipers/washers	Windshield wiper arm nut		30 N.m (3.0 kgf.m, 21.7 lbf.ft)
	Windshield wiper linkage nut		31.4 N.m (3.2 kgf.m, 23.2 lbf.ft)

DESIGN SPECIFICATIONS

Item	Measurement	Qualification	Specification
DIMENSIONS	Overall length		4, 966 mm (195.5 in)
	Overall width		1, 880 mm (74.0 in)
	Overall height		1, 452 mm (57.2 in)
	Wheelbase		2, 775 mm (109.3 in)
	Track	Front	1, 606 mm (63.2 in)
		Rear	1, 620 mm (63.8 in)
	Seating capacity		Five (5)
WEIGHT	Gross Vehicle Weight Rating (GVWR)	Without SH-AWD	2, 130 kg (4, 696 lbs)
		With SH-AWD	2, 235 kg (4, 927 lbs)
ENGINE (J35Z6)	Type		Water-cooled, 4-stroke SOHC VTEC gasoline engine
	Cylinder arrangement		60 ° V6-cylinder, transverse
	Bore and stroke		89.0 x 93.0 mm (3.504 x 3.661 in)
	Displacement		3, 471 cm^3 (211.8 cu in)
	Compression ratio		11.2
	Valve train		Belt drive, SOHC VTEC 4 valves

			per cylinder
	Lubrication system		Forced, wet sump, with trochoid pump
	Fuel required		Premium UNLEADED gasoline with 91 Pump Octane Number or higher
ENGINE (J37A4)	Type		Water-cooled, 4- stroke SOHC VTEC gasoline engine
	Cylinder arrangement		60 ° V6- cylinder, transverse
	Bore and stroke		90.0 x 96.0 mm (3.543 x 3.780 in)
	Displacement		3, 664 cm^3 (223.6 cu in)
	Compression ratio		11.2
	Valve train		Belt drive, SOHC VTEC 4 valves per cylinder
	Lubrication system		Forced, wet sump, with trochoid pump
	Fuel required		Premium UNLEADED gasoline with 91 Pump Octane Number or higher
STARTER	Type		Gear reduction
	Nominal output	M/T	1.6 kW
		A/T	1.8 kW
	Nominal voltage		12V
	Hour rating		30 seconds
	Direction of rotation		Counterclockwise as viewed from drive end
CLUTCH	Type		Single plate dry, diaphragm spring
MANUAL TRANSMISSION	Type		Synchronized, six-speed forward, one reverse
	Primary reduction		Direct 1:1
	Gear ratio	1st	3.625
		2nd	2.115
		3rd	1.529
		4th	1.125
		5th	0.847
		6th	0.686
		Reverse	3.656
	Final reduction	Type	Single helical gear
		Gear ratio	3.842
	Type		Electronically-controlled automatic, six-speed forward, one reverse
	Primary reduction		Direct 1:1

AUTOMATIC TRANSMISSION	Gear ratio	1st	3.359
		2nd	2.094
		3rd	1.484
		4th	1.065
		5th	0.754
		6th	0.555
		Reverse	2.269
	Final reduction	Type	Single helical gear
		Gear ratio	3.722
STEERING	Type		Electrical power-assisted rack and pinion
	Overall ratio		13.96
	Turns, lock-to-lock		2.7
	Steering wheel diameter	Without SH-AWD	370 mm (14.57 in)
		With SH-AWD	374 mm (14.72 in)
SUSPENSION	Type	Front	Independent double wishbone with stabilizer, coil spring
		Rear	Independent multilink with stabilizer, coil spring
	Shock absorber	Front and rear	Telescopic, hydraulic, nitrogen gas-filled
TIRES	Size (without SH-AWD)	Front and rear	P245/50R17 98V
			P245/45R18 96V
		Spare	T135/80D17 103M
	Size (with SH-AWD)	Front and rear	P245/45R18 96V
			245/40ZR19 94V (Optional)
		Spare	T135/80D17 103M
WHEEL ALIGNMENT	Camber	Front	- 0°30'
		Rear	- 1°00'
	Caster	Front	3° 48'
	Total toe-in	Front	0 mm (0 in)
		Rear	2 mm (0.08 in)
	Front wheel turning angle	Inward	38 ° 06'
		Outward (reference)	30 ° 24'
BRAKES	Type of service brake	Front	Power-assisted self-adjusting ventilated disc
		Rear	Power-assisted self-adjusting solid disc
	Type of parking brake		Mechanical actuating, rear wheels
	Pad friction surface area (swept area)	Front	59.2 cm^2 (9.18 sq in) x 2
		Rear	34.4 cm^2 (5.33 sq in) x 2
	Parking brake shoe		

	friction surface area		45.6 cm^2 (7.07 sq in) x 2
AIR CONDITIONING	Compressor	Type	Swash plate/DENSO
		Capacity	154.4 mL (9.42 cu in)/rev
		Maximum speed	7, 600 RPM
		Lubricant capacity	70 mL (2 3/8 fl.oz)
		Lubricant type	DENSO ND-OIL 8
	Condenser	Type	Corrugated fin
	Evaporator	Type	Corrugated fin
	Blower	Type	Radial
		Motor input	300W/12V
		Speed control	Infinitely variable
		Maximum capacity	545 m^3 (19, 246 cu ft)/h
	Temperature control		Air-mix type
	Compressor clutch	Type	Dry, single plate, poly V- belt drive
		Electrical power consumption at 68°F (20°C)	35 W maximum at 12 V
	Refrigerant	Type	HFC-134a (R-134a)
		Capacity	505- 555 g (17.8- 19.6 oz)
ELECTRICAL RATINGS	Battery		12 V- 65 Ah/20 HR (12V- 55 Ah/5 HR)
	Fuses	Under-hood fuse/relay box	120 A, 70 A, 60 A, 50 A, 40 A, 30 A, 20 A, 15 A, 10 A, 7.5 A
		Driver's under-dash fuse/relay box	20 A, 15 A, 10 A, 7.5 A
		Passenger's under-dash fuse/relay box	20 A, 15 A, 10 A, 7.5 A
		Auxiliary under-dash fuse/relay box	7.5 A
		Headlight high beam	12V- 60W (HB3)
		Headlight low beam (HID)	12V- 35W (D2S)
		Fog lights	12V- 55W (H11)
		Front turn signal/parking lights	12 V- 24/2.2CP (Amber)
		Side turn signal lights	LED
		Front side marker lights	12V- 3CP
		Rear turn signal lights	12V- 21 W (Amber)
		Brake lights/taillights	LED
		Rear side marker lights	12V- 3CP
		High mount brake light	LED

	Light bulbs	Back-up lights	12V- 16W
		License plate lights	12V- 5W
		Ambient light	LED
		Trunk light	12V- 5W
		Front individual map lights	LED
		Rear individual map lights	LED
		Door courtesy lights	12V- 3.4W
		Glove box light	12V- 1.4W
		Vanity mirror lights	12V- 2W
		Gauge lights	LED
		Indicator lights	LED
		Console box light	12V- 1.4W
		Footwell lights	LED

BODY SPECIFICATIONS

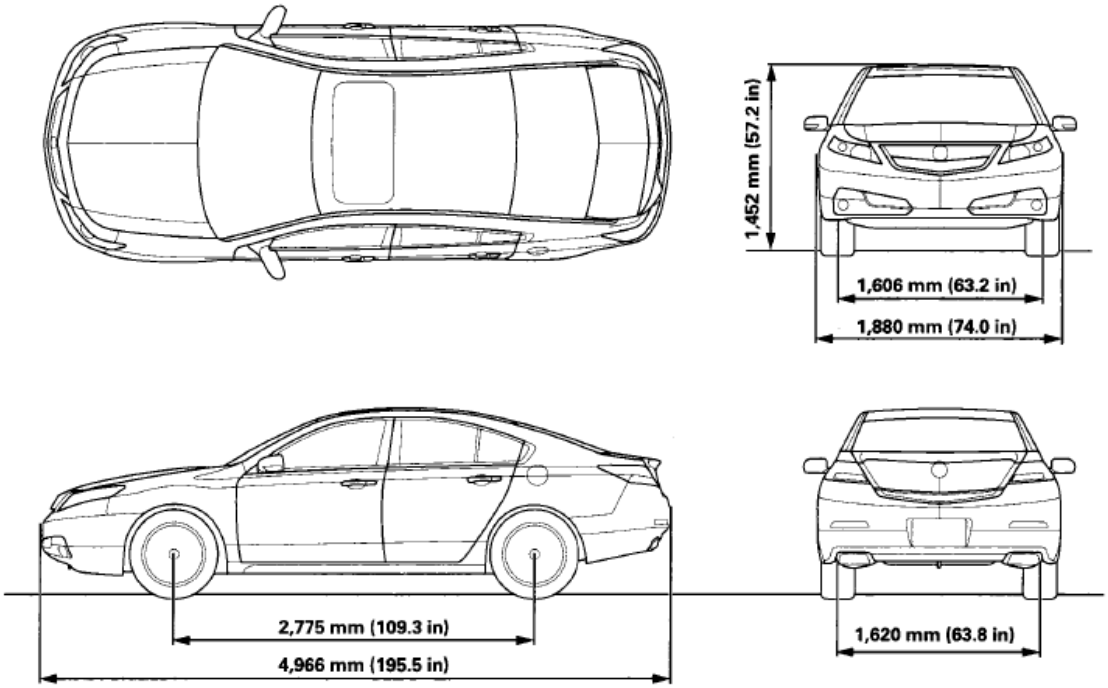


Fig. 1: Identifying Body Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2012 ELECTRICAL

Under-Dash Fuse/Relay Box - TL

DRIVER'S UNDER-DASH FUSE/RELAY BOX (MICU) REMOVAL AND INSTALLATION

Special Tools Required

Relay Puller 07AAC-000A2A1 or 07AAC-000A1A0

NOTE: SRS components are located in this area. Review the SRS component locations (see COMPONENT LOCATION INDEX), and precautions and procedures (see PRECAUTIONS AND PROCEDURES) before doing repairs or servicing.

REMOVAL

1. Do the battery terminal disconnection procedure (see **BATTERY TERMINAL DISCONNECTION AND RECONNECTION**).
2. Remove these items:
   - Driver's dashboard trim (see **DRIVER'S DASHBOARD TRIM REMOVAL/INSTALLATION**)
   - Driver's switch panel (see **DRIVER'S SWITCH PANEL REMOVAL/INSTALLATION**)
   - Driver's dashboard undercover (see **DRIVER'S DASHBOARD UNDERCOVER REMOVAL/INSTALLATION**)
   - Driver's kick panel (see **TRIM REMOVAL/INSTALLATION - DOOR AREAS**)
3. Loosen the bolt (A), then remove the bolt (B) and the bracket (C) from dashboard/steering hanger beam.

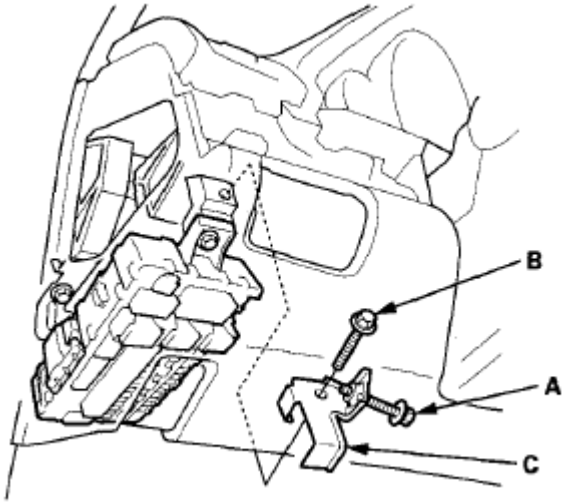


Fig. 1: Identifying Bolts And Bracket
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. USA models with keyless access system and Canada models without keyless access system: Remove the screws and cover (A) from the driver's under-dash fuse/relay box.

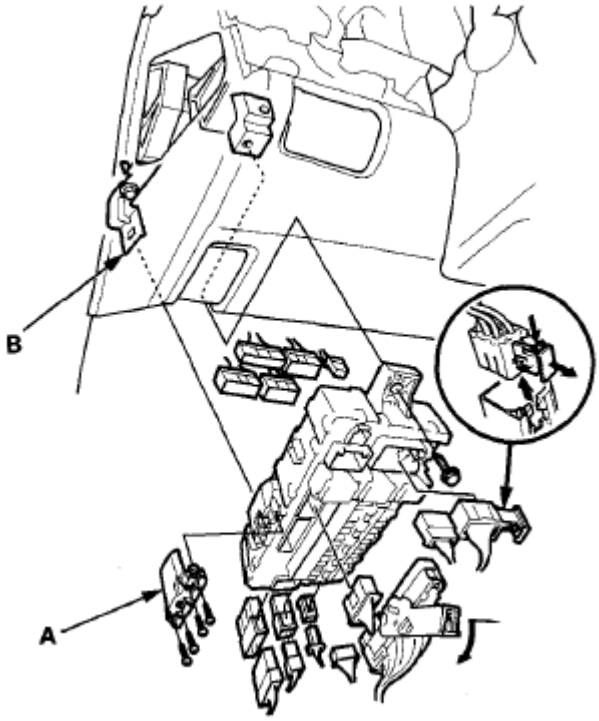


Fig. 2: Identifying Cover And Tab
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Remove the mounting bolt, release the tab (B), and pull the driver's under-dash fuse/relay box away from the body.
6. Disconnect the connectors from the fuse side of the driver's under-dash fuse/relay box.
7. Disconnect the connectors from the back side of the driver's under-dash fuse/relay box, then remove the driver's under-dash fuse/relay box.
8. Carefully remove the relays by prying under the base of the relay (see **POWER RELAY TEST**).

NOTE: Do not use pliers. Pliers will damage the relays, which could cause the engine to stall or not start or cause other functions to fail.

INSTALLATION

NOTE: The imoes unit is built into the driver's MICU which is part of the driver's under-dash fuse/relay box. Further more, vehicles with the keyless access do the imoes certification by communicating with the remote slot control unit. Because of this construction, the imoes must be registered, or the vehicle will not start.

1. Install the relays and connect the connectors to the driver's under-dash fuse/relay box, then install the driver's under-dash fuse/relay box in the reverse order of removal.

2. Install the removed parts in the reverse order of removal.
3. Do the battery terminal reconnection procedure steps 1 to 4 (see **BATTERY TERMINAL DISCONNECTION AND RECONNECTION**).
4. Register the immobilizer system with the HDS:
   - With keyless access system (see **KEYLESS ACCESS SYSTEM REGISTRATION**)
   - Without keyless access system (see **IMMOBILIZER KEY REGISTRATION**)
5. Do the remaining steps of battery terminal reconnection procedure (see **BATTERY TERMINAL DISCONNECTION AND RECONNECTION**).
6. Confirm that all systems work properly.

PASSENGER'S UNDER-DASH FUSE/RELAY BOX (MICU) REMOVAL AND INSTALLATION

NOTE: SRS components are located in this area. Review the SRS component locations (see COMPONENT LOCATION INDEX), and precautions and procedures (see PRECAUTIONS AND PROCEDURES) before doing repairs or servicing.

REMOVAL

1. Do the battery terminal disconnection procedure (see **BATTERY TERMINAL DISCONNECTION AND RECONNECTION**).
2. Remove the passenger's kick panel (see **TRIM REMOVAL/INSTALLATION - DOOR AREAS**).
3. Disconnect the connectors from the passenger's under-dash fuse/relay box (A).

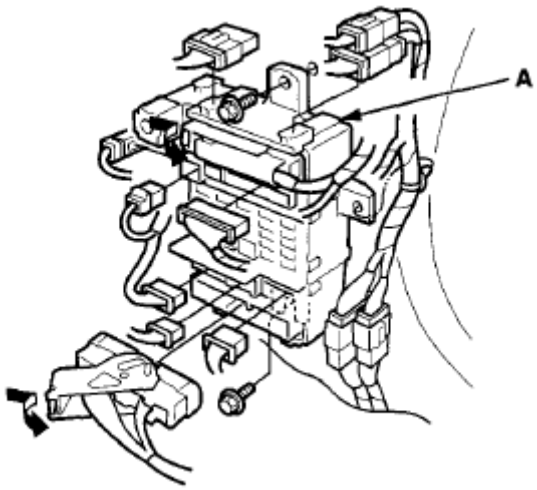


Fig. 3: Identifying Connectors & Passenger's Under-Dash Fuse/Relay Box
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Loosen the mounting bolt from the lower side of passenger's under-dash fuse/relay box.
5. Remove the mounting bolt from the upper side of passenger's under-dash fuse/relay box, and remove the

passenger's under-dash fuse/relay box.

INSTALLATION

1. Install the relays and connect the connectors to the passenger's under-dash fuse/relay box, then install the passenger's under-dash fuse/relay box in the reverse order of removal.
2. Install the removed parts in the reverse order of removal.
3. Do the battery terminal reconnection procedure (see **BATTERY TERMINAL DISCONNECTION AND RECONNECTION**).
4. Confirm that all systems work properly.

2012 ELECTRICAL

Under-Hood Fuse/Relay Box - TL

REMOVAL AND INSTALLATION

Special Tools Required

Relay Puller 07AAC-000A2A1 or 07AAC-000A1A0

NOTE: The under-hood fuse/relay box is a part of the left engine compartment wire harness, and it cannot be replaced by itself.

REMOVAL

1. Do the battery terminal disconnection procedure (see **BATTERY TERMINAL DISCONNECTION AND RECONNECTION**).
2. Open the cover (A), then remove the bolts (B) for the alternator and battery cable terminals.

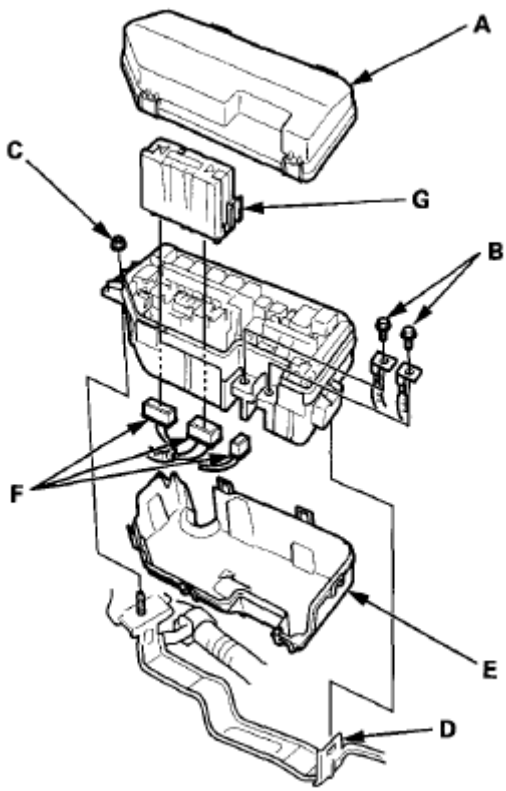


Fig. 1: Identifying Circuit Board, Connectors, Covers, Tab, Nut And Bolts
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Remove the nut (C) and release the tab (D), then remove the bottom cover (E) from the under-hood fuse/relay box.

4. Disconnect the connectors (F) from the under-hood fuse/relay box.
5. Remove the relay circuit board (G) from the under-hood fuse/relay box.
6. Carefully remove the relays by prying under the base of the relay (see **POWER RELAY TEST**).

NOTE: Do not use pliers. Pliers will damage the relays, which could cause the engine to stall or not start or cause other functions to fail.

INSTALLATION

1. Install the relays and connect the connectors to the under-hood fuse/relay box, then install the under-hood fuse/relay box in the reverse order of removal.
2. Install the removed parts in the reverse order of removal.
3. Do the battery terminal reconnection procedure (see **BATTERY TERMINAL DISCONNECTION AND RECONNECTION**).
4. Confirm that all systems work properly.

2012 ENGINE

Cooling System - TL

COMPONENT LOCATION INDEX

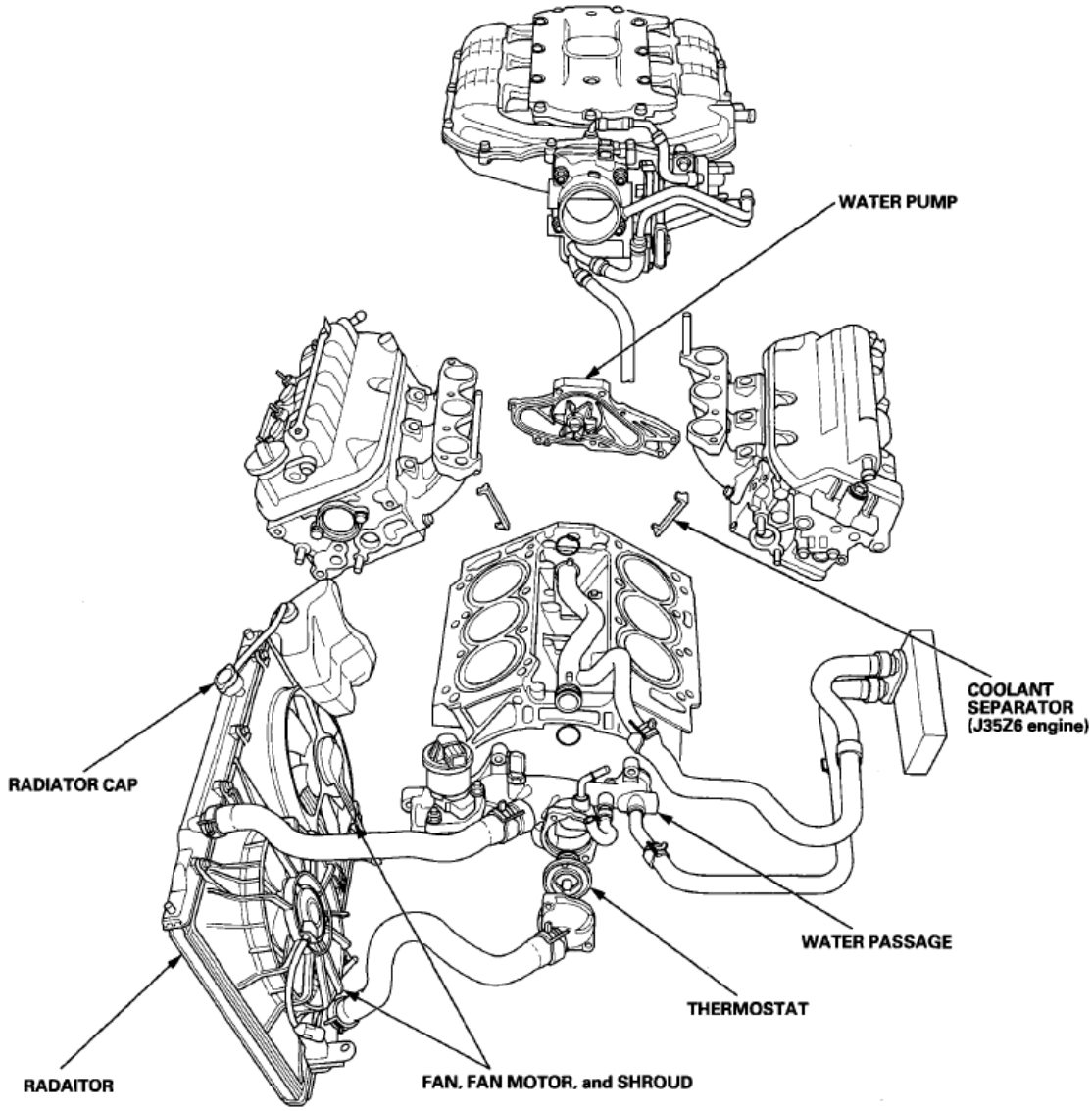


Fig. 1: Cooling System Components Location
Courtesy of AMERICAN HONDA MOTOR CO., INC.

RADIATOR CAP TEST

1. Remove the engine compartment covers (see **ENGINE COMPARTMENT COVER REPLACEMENT**).

2. Wait until the engine is cool, then carefully remove the radiator cap (A). Wet the radiator cap seal with engine coolant, then install it on a commercially available pressure tester (B).

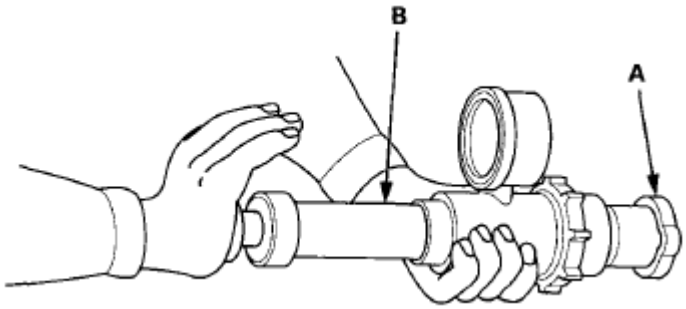


Fig. 2: Installing Wet Radiator Cap Seal On Pressure Tester
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Apply a pressure of 93- 123 kPa (0.95- 1.25 kgf/cm^2 , 13.5- 17.8 psi)
4. Check for a drop in pressure.
5. If the pressure drops, replace the radiator cap.
6. Install the engine compartment covers (see **ENGINE COMPARTMENT COVER REPLACEMENT**).

RADIATOR TEST

1. Remove the engine compartment covers (see **ENGINE COMPARTMENT COVER REPLACEMENT**).
2. Wait until the engine is cool, then carefully remove the radiator cap, and fill the radiator with engine coolant to the base of the filler neck.
3. Attach a commercially available pressure tester (A) to the radiator, and apply a pressure of 93- 123 kPa (0.95- 1.25 kgf/cm^2 , 13.5- 17.8 psi).

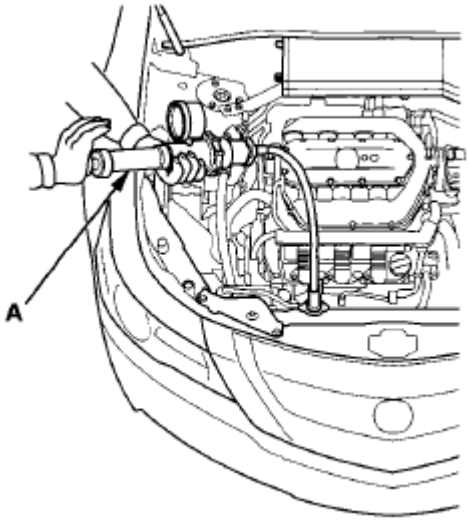


Fig. 3: Identifying Pressure Tester
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Inspect for engine coolant leaks and a drop in pressure.
5. Remove the tester, then reinstall the radiator cap.
6. Install the engine compartment covers (see **ENGINE COMPARTMENT COVER REPLACEMENT**).

FAN MOTOR TEST

1. Remove the engine compartment covers (see **ENGINE COMPARTMENT COVER REPLACEMENT**).
2. Disconnect the 2P connectors from the radiator fan motor (A) and the A/C condenser fan motor (B).

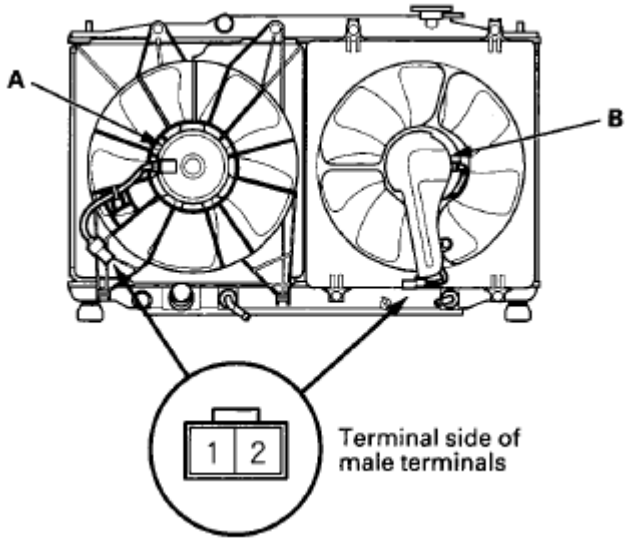


Fig. 4: Identifying Radiator Fan Motor And A/C Condenser Fan Motor
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Test each motor by connecting battery power to terminal No. 2 and ground to terminal No. 1.
4. If either motor fails to run or does not run smoothly, replace it (see **FAN, FAN MOTOR, AND SHROUD REMOVAL AND INSTALLATION**).
5. Install the engine compartment covers (see **ENGINE COMPARTMENT COVER REPLACEMENT**).

THERMOSTAT TEST

Replace the thermostat if it is stuck in the open position at room temperature.

To test a closed thermostat:

1. Suspend the thermostat (A) in a container of water. Do not let the thermostat and the thermometer (B) touch the bottom of the hot container.

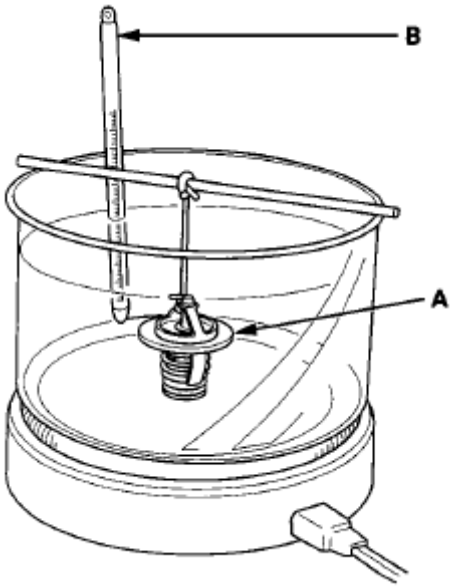


Fig. 5: Identifying Thermostat And Thermometer In Container Of Water
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Heat the water and check the temperature with a thermometer. Check the temperature at which the thermostat first opens, and at which it is fully open.
3. Measure the lift height of the thermostat when it is fully open.

Standard Thermostat

Lift Height: Above 10.0 mm (0.394 in)

Starts Opening: 169- 176°F (76- 80°C)

Fully Open: 194°F (90°C)

WATER PUMP INSPECTION

1. Remove the timing belt:
   - J35Z6 engine (see **TIMING BELT REMOVAL**)
   - J37A4 engine (see **TIMING BELT REMOVAL**)
2. Turn the water pump pulley counterclockwise, and check that it turns freely. If it does not turn freely, replace the water pump (see **WATER PUMP REPLACEMENT**).

NOTE: When you check the water pump, you may see a small amount of "weeping" from the bleed holes (A). This is normal.

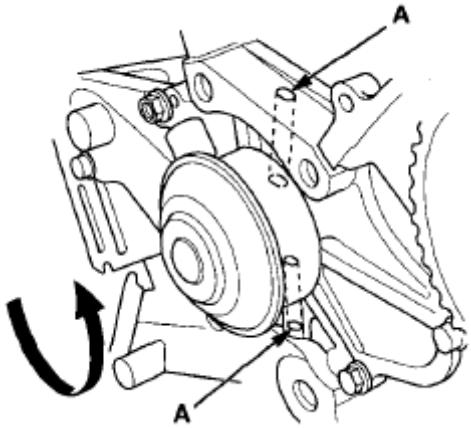


Fig. 6: Identifying Bleed Holes
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Install the timing belt:
   - J35Z6 engine (see **TIMING BELT INSTALLATION**)
   - J37A4 engine (see **TIMING BELT INSTALLATION**)

WATER PUMP REPLACEMENT

1. Drain the engine coolant (see **COOLANT CHECK**).
2. Remove the timing belt:
   - J35Z6 engine (see **TIMING BELT REMOVAL**)
   - J37A4 engine (see **TIMING BELT REMOVAL**)
3. Remove the timing belt adjuster:
   - J35Z6 engine (see **TIMING BELT ADJUSTER REPLACEMENT**)
   - J37A4 engine (see **TIMING BELT ADJUSTER REPLACEMENT**)
4. Remove the five bolts securing the water pump (A), then remove the water pump.

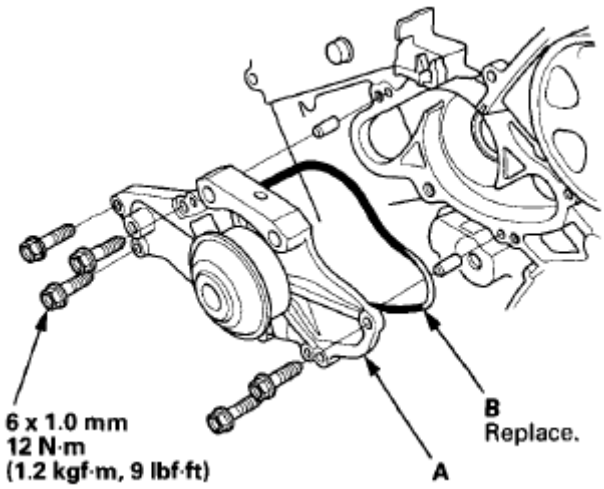


Fig. 7: Identifying Water Pump And O-Ring With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Inspect and clean the mating surface of the engine block.
6. Install the water pump with a new O-ring (B).
7. Clean up any spilled engine coolant.
8. Install the timing belt adjuster:
   - J35Z6 engine (see **TIMING BELT ADJUSTER REPLACEMENT**)
   - J37A4 engine (see **TIMING BELT ADJUSTER REPLACEMENT**)
9. Install the timing belt:
   - J35Z6 engine (see **TIMING BELT INSTALLATION**)
   - J37A4 engine (see **TIMING BELT INSTALLATION**)
10. Refill the radiator with engine coolant, then bleed the air from the cooling system (see **COOLANT CHECK**).

COOLANT CHECK

1. Remove the engine compartment covers (see **ENGINE COMPARTMENT COVER REPLACEMENT**).
2. Check the coolant level in the coolant reservoir. Make sure it is between the MAX mark (A) and the MIN mark (B).

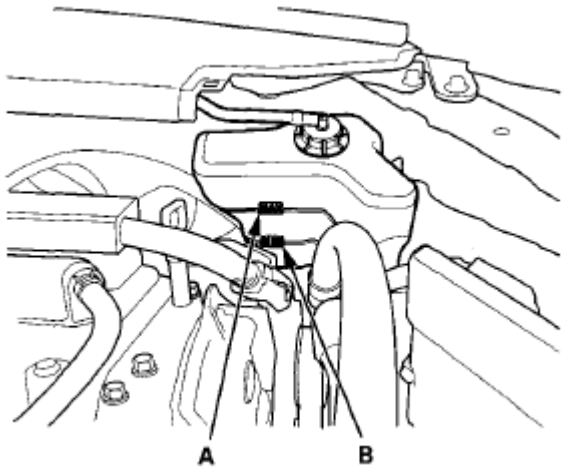


Fig. 8: Identifying MAX And MIN Marks On Coolant Reservoir
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. If the coolant level in the coolant reservoir is at or below the MIN mark, add coolant to bring it between the MIN and MAX marks, then inspect the cooling system for leaks.
4. Check the coolant level in the radiator, and add Acura Long Life Antifreeze/Coolant Type 2 into the radiator up to the base of the filler neck, if needed.

NOTE:

- **Always use Acura Long Life Antifreeze/Coolant Type 2. Using a non-Acura coolant can result in corrosion, causing the cooling system to malfunction or fail.**
- **Acura Long Life Antifreeze/Coolant Type 2 is a mixture of 50 % antifreeze and 50 % water. Do not add water.**

5. Install the engine compartment covers (see **ENGINE COMPARTMENT COVER REPLACEMENT**).

COOLANT REPLACEMENT

1. Remove the engine compartment covers (see **ENGINE COMPARTMENT COVER REPLACEMENT**).
2. Wait until the engine is cool, then carefully remove the radiator cap.
3. Loosen the drain plug (A), and drain the coolant.

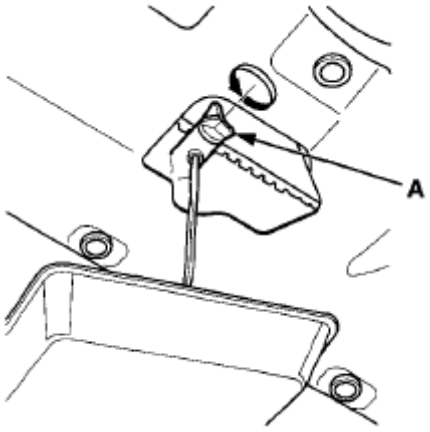


Fig. 9: Identifying Drain Plug
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Install a rubber hose (A) on the drain bolt (B) located at the rear of the engine block, then loosen the drain bolt.

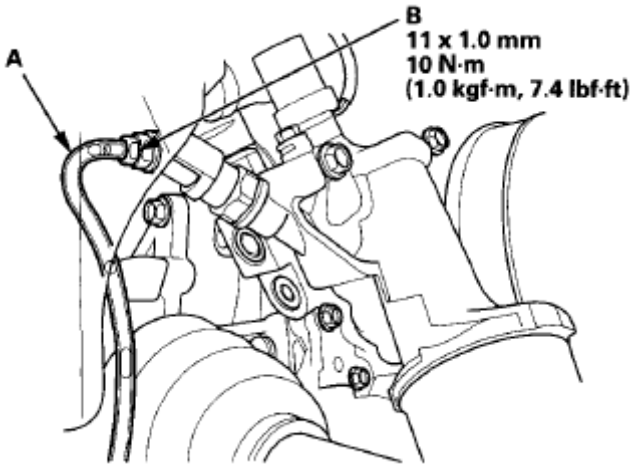


Fig. 10: Identifying Rubber Hose And Drain Bolt With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. When the coolant stops draining, tighten the drain bolt. Remove the rubber hose.
6. Tighten the radiator drain plug securely.
7. Remove, drain, and reinstall the coolant reservoir.
8. Fill the coolant reservoir to the MAX mark (A) with Acura Long Life Antifreeze/Coolant Type 2.

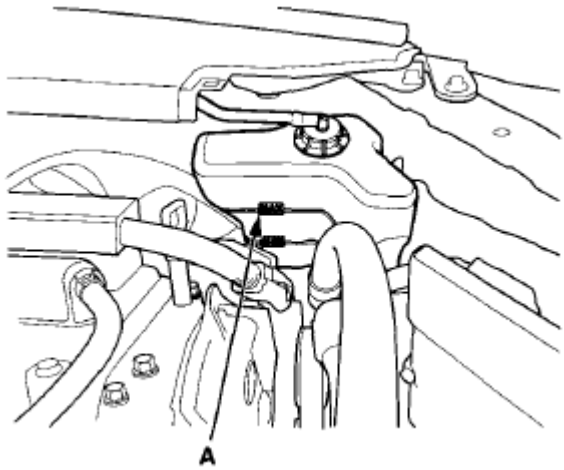


Fig. 11: Identifying MAX Mark With Acura Long Life Antifreeze/Coolant
Courtesy of AMERICAN HONDA MOTOR CO., INC.

9. Pour Acura Long Life Antifreeze/Coolant Type 2 into the radiator up to the base of the filler neck.

NOTE:

- **Always use Acura Long Life Antifreeze/Coolant Type 2. Using a non-Acura coolant can result in corrosion, causing the cooling system to malfunction or fail.**
- **Acura Long Life Antifreeze/Coolant Type 2 is a mixture of 50 % antifreeze and 50 % water. Do not add water.**

Engine Coolant Refill Capacities (Including the coolant reservoir capacity of 0.69 L (0.182 US gal)) At Coolant Change:

6.3 L (1.66 US gal)

After Engine Overhaul:

8.3 L (2.19 US gal)

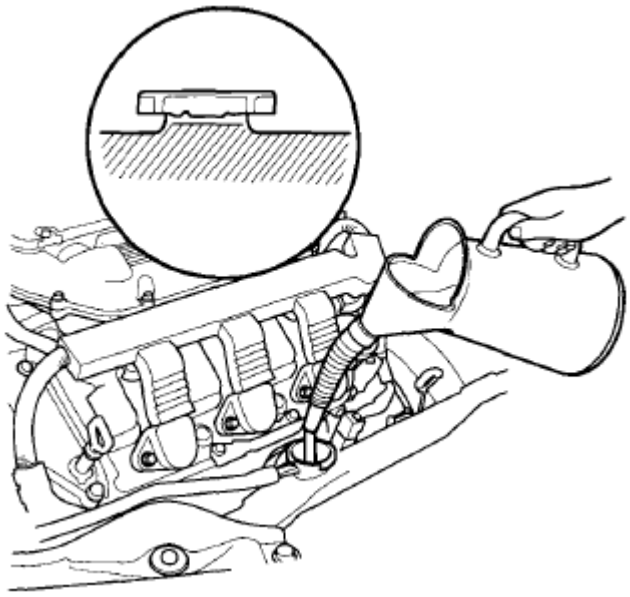


Fig. 12: Refilling Coolant Reservoir With Acura Long Life Antifeeze/Coolant
Courtesy of AMERICAN HONDA MOTOR CO., INC.

10. Loosely install the radiator cap.
11. Set the heater temperature control to maximum heat.
12. Start the engine, and let it run until it warms up (the radiator fan comes on at least twice).
13. Turn off the engine. Check the level in the radiator, and add the recommended coolant, if needed.
14. Put the radiator cap on securely, then run the engine again, and check for leaks.
15. Clean up any spilled engine coolant.
16. Install the engine compartment covers (see **ENGINE COMPARTMENT COVER REPLACEMENT**).
17. If the Maintenance Minder required replacing the engine coolant, reset the Maintenance Minder (see **RESETTING THE MAINTENANCE MINDER**), and this procedure is complete. If the Maintenance Minder did not require engine coolant replacement, go to step 18.
18. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
19. Connect the HDS to the DLC (see **HOW TO USE THE HDS (HONDA DIAGNOSTIC SYSTEM)**).
20. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
21. Make sure the HDS communicates with the vehicle and the ECM/PCM. If it does not communicate, troubleshoot the DLC circuit (see **DLC CIRCUIT TROUBLESHOOTING**).

22. Select GAUGES in the BODY ELECTRICAL with the HDS.
23. Select ADJUSTMENT in the GAUGES with the HDS.
24. Select MAINTENANCE MINDER in the ADJUSTMENT with the HDS.
25. Select RESET in the MAINTENANCE MINDER with the HDS.
26. Select MAINTENANCE SUB ITEM 5 RESET with the HDS.

THERMOSTAT REPLACEMENT

1. Remove the engine compartment covers (see **ENGINE COMPARTMENT COVER REPLACEMENT**).
2. Drain the engine coolant (see **COOLANT CHECK**).
3. Do the battery removal procedure (see **BATTERY REMOVAL AND INSTALLATION**).
4. A/T model: Remove harness clamps (A) and disconnect the positive starter cable (B).

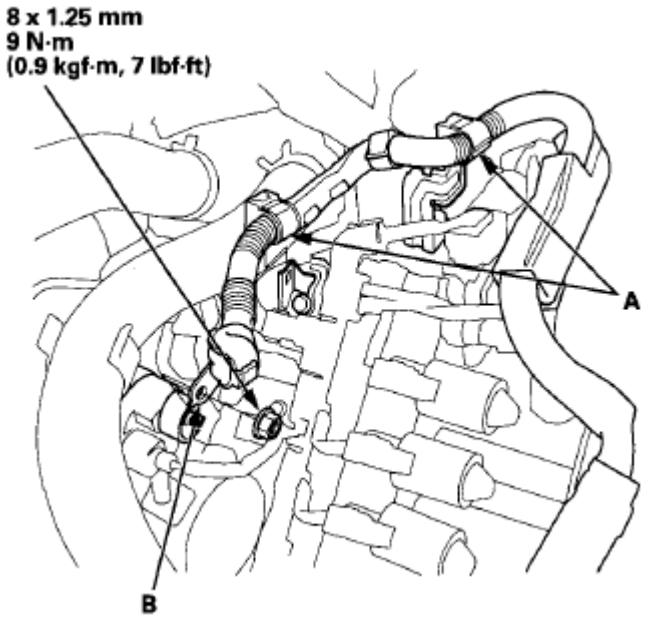


Fig. 13: Identifying Harness Clamp And Starter Cable With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. A/T model: Remove the bolt (A) and the harness holder (B).

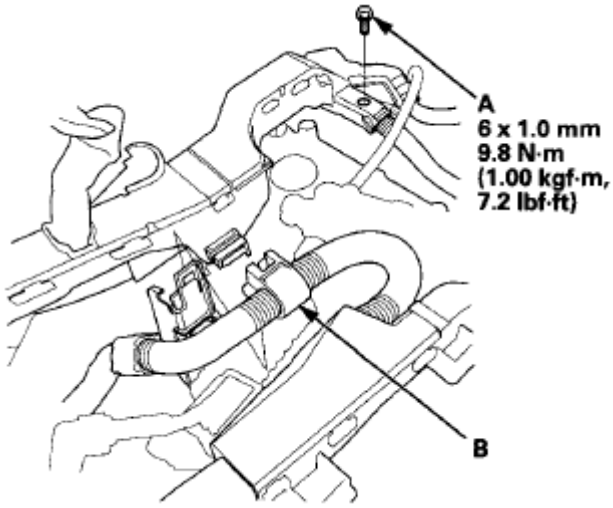


Fig. 14: Identifying Harness Holder And Bolt With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Remove the thermostat cover (A), then remove the thermostat (B).

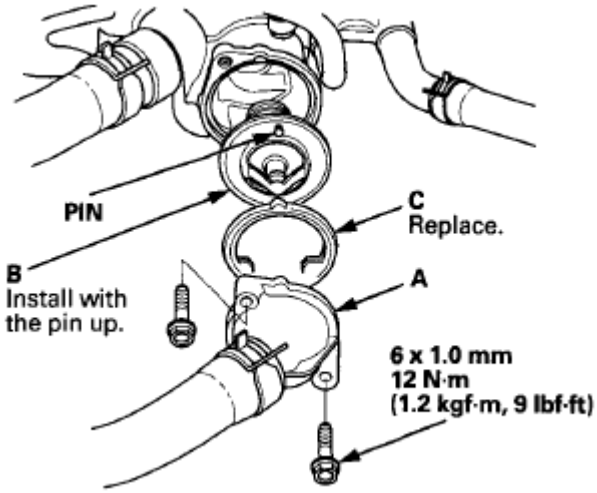


Fig. 15: Identifying Thermostat Cover, Thermostat And Rubber Seal With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Install the new thermostat with a new rubber seal (C) in the reverse order of the removal.
8. Do the battery installation procedure (see **BATTERY REMOVAL AND INSTALLATION**).
9. Refill the radiator with engine coolant, and bleed the air from the cooling system (see **COOLANT CHECK**).
10. Clean up any spilled engine coolant.
11. Install the engine compartment covers (see **ENGINE COMPARTMENT COVER REPLACEMENT**).

WATER PASSAGE REPLACEMENT

1. Remove the engine compartment covers (see **ENGINE COMPARTMENT COVER REPLACEMENT**).
2. Drain the engine coolant (see **COOLANT CHECK**).
3. Do the battery removal procedure (see **BATTERY REMOVAL AND INSTALLATION**).
4. Remove the intake manifold (see **REMOVAL**).
5. Disconnect the upper radiator hose (A), the lower radiator hose (B), the ECT sensor 1 connector (C), and the EGR valve connector (D).

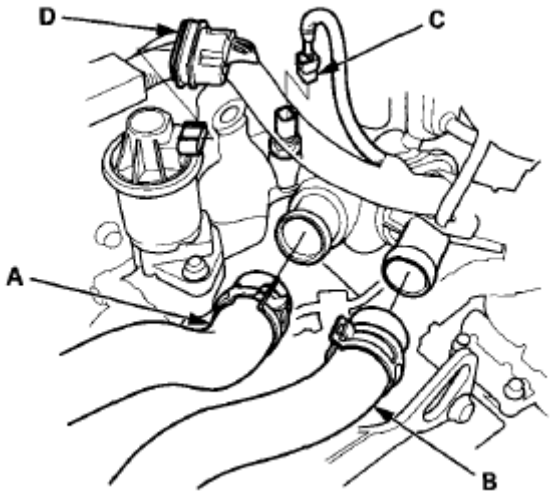


Fig. 16: Identifying Upper And Lower Radiator Hose, ECT Sensor Connector And EGR Valve Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Disconnect the water bypass hose (A) and the heater hose(B).

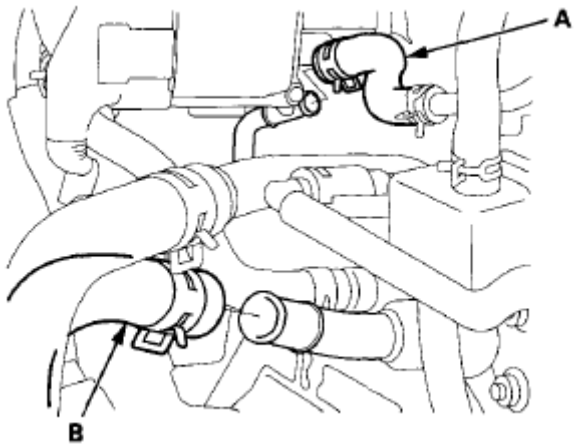


Fig. 17: Identifying Water By-Pass Hose And Heater Hose
Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Remove the EGR pipe (see **EGR VALVE REPLACEMENT**).

8. Remove the water passage (A), then remove the EGR valve (B), the ECT sensor 1 (C), and the water bypass hose (D).

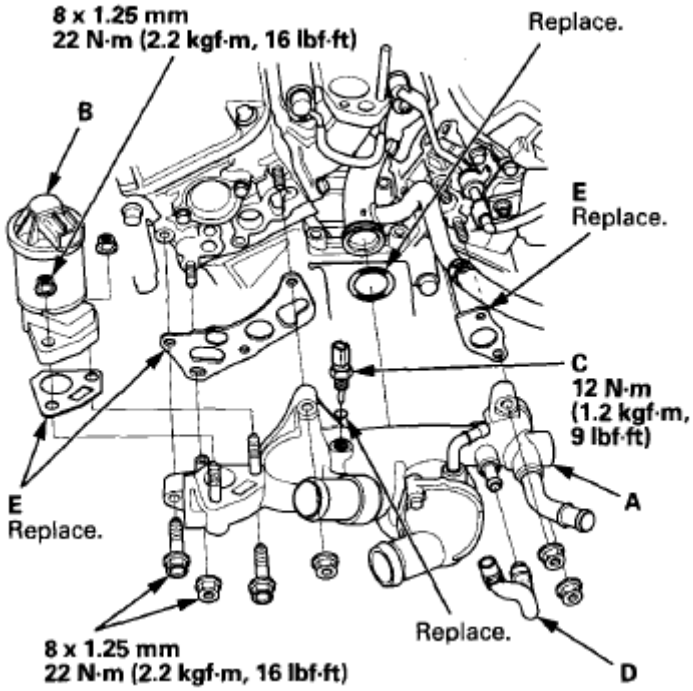


Fig. 18: Identifying Water Passage, EGR Valve, ECT Sensor And Water Bypass Hose With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

9. Install the water passage with new gaskets (E) in the reverse order of the removal.
10. Do the battery installation procedure (see **BATTERY REMOVAL AND INSTALLATION**).
11. Refill the radiator with engine coolant, and bleed the air from the cooling system (see **COOLANT CHECK**).
12. Clean up any spilled engine coolant.
13. Install the engine compartment covers (see **ENGINE COMPARTMENT COVER REPLACEMENT**).

FAN, FAN MOTOR, AND SHROUD REMOVAL AND INSTALLATION

REMOVAL

1. Remove the engine compartment covers (see **ENGINE COMPARTMENT COVER REPLACEMENT**).
2. Do the battery removal procedure (see **BATTERY REMOVAL AND INSTALLATION**).
3. Remove the battery base (see **BATTERY REMOVAL AND INSTALLATION**).
4. Remove the air intake duct splash separator (see **ENGINE REMOVAL**).
5. Raise the vehicle on the lift.

6. Remove the front splash shield (see **FRONT SPLASH SHIELD REPLACEMENT**).
7. Disconnect the A/C condenser fan motor connector (A), and remove the harness clamps (B).

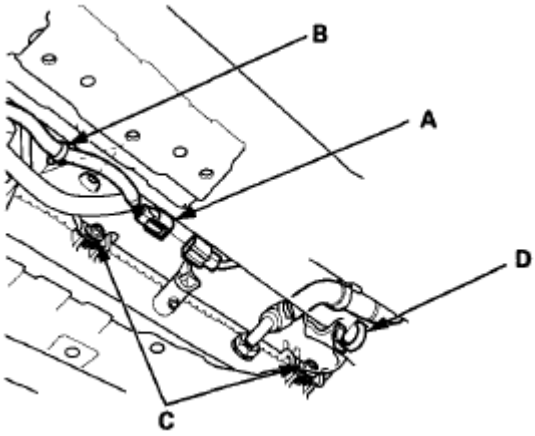


Fig. 19: Identifying Fan Motor Connector, Harness Clamps And Mounting Bolts
Courtesy of AMERICAN HONDA MOTOR CO., INC.

8. Loosen the A/C condenser fan shroud mounting bolts (C).
9. A/T model: Remove the harness clamps (D).
10. Disconnect the radiator fan motor connector (A), and remove the harness clamps (B).

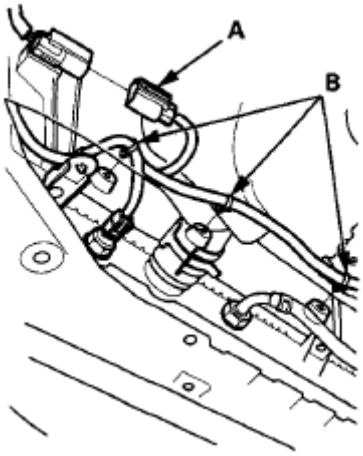


Fig. 20: Identifying Radiator Fan Motor Connector And Harness Clamps
Courtesy of AMERICAN HONDA MOTOR CO., INC.

11. Lower the vehicle on the lift.
12. Remove the coolant reservoir (A), then remove the A/C condenser fan shroud assembly (B).

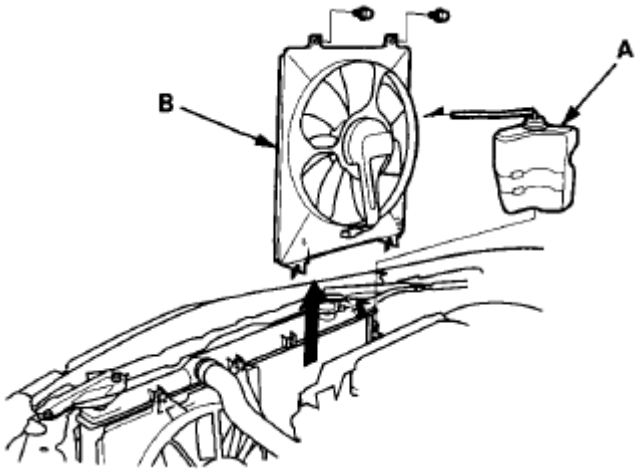


Fig. 21: Identifying Coolant Reservoir And Fan Shroud Assembly
Courtesy of AMERICAN HONDA MOTOR CO., INC.

13. Remove the upper brackets (A). A

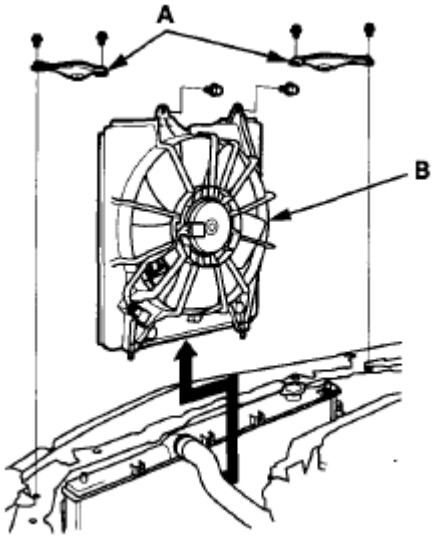


Fig. 22: Identifying Upper Brackets And Fan Shroud Assembly
Courtesy of AMERICAN HONDA MOTOR CO., INC.

14. Remove the radiator fan shroud assembly (B).

NOTE: Pull up the radiator, then move the radiator fan shroud assembly toward the right side of the vehicle to allow for enough space to lift it up and away from the A/C condenser fan shroud assembly.

15. Disassemble the fan shrouds.

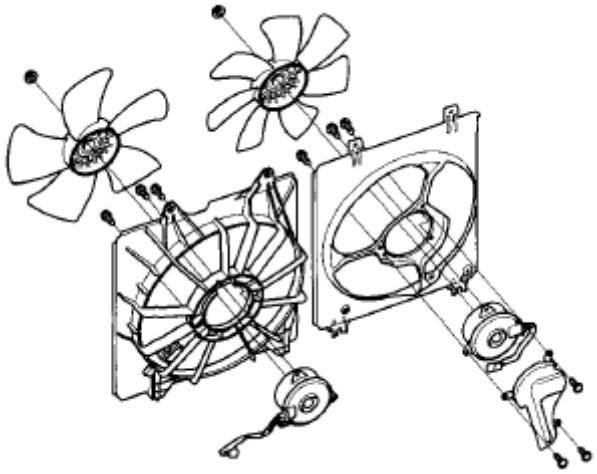


Fig. 23: Disassembling Fan Shrouds
Courtesy of AMERICAN HONDA MOTOR CO., INC.

INSTALLATION

1. Assemble the fan shrouds.

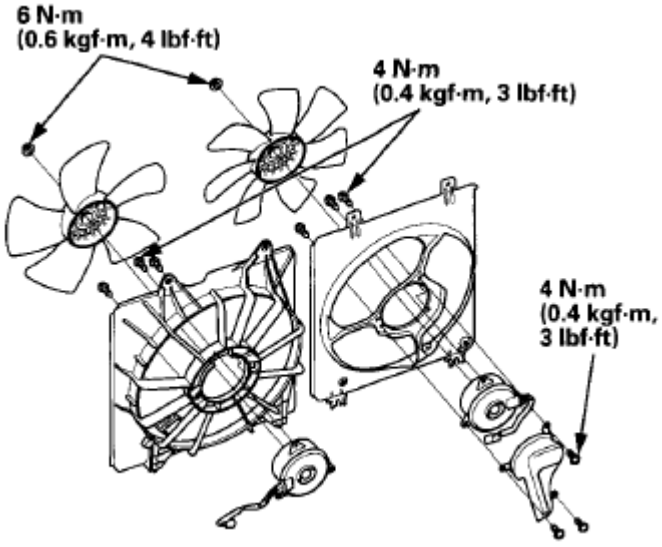


Fig. 24: Assembling Fan Shrouds With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Install the radiator fan shroud assembly (A).

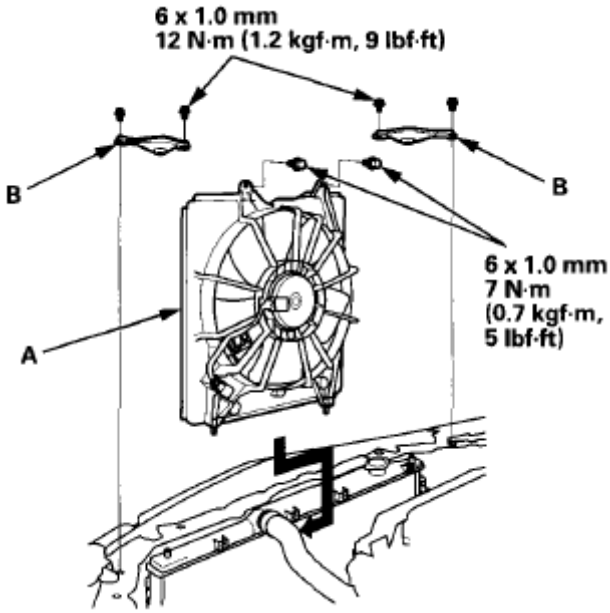


Fig. 25: Identifying Radiator Fan Shroud Assembly And Upper Brackets With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Install the upper brackets (B).
4. Install the A/C condenser fan shroud assembly (A), then install the coolant reservoir (B).

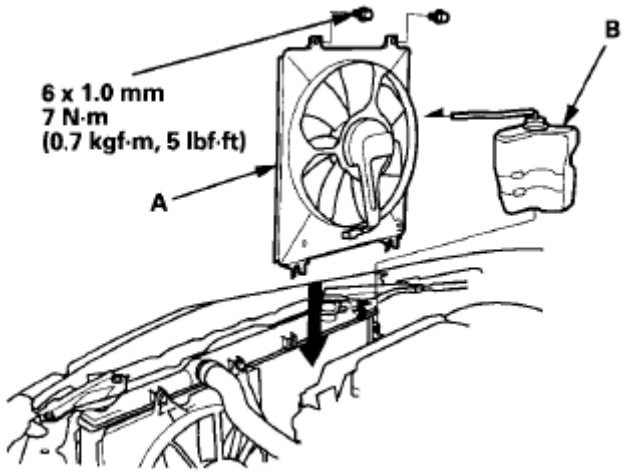


Fig. 26: Identifying A/C Condenser Fan Shroud Assembly And Coolant Reservoir With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Raise the vehicle on the lift.
6. Connect the radiator fan motor connector (A), and install the harness clamps (B).

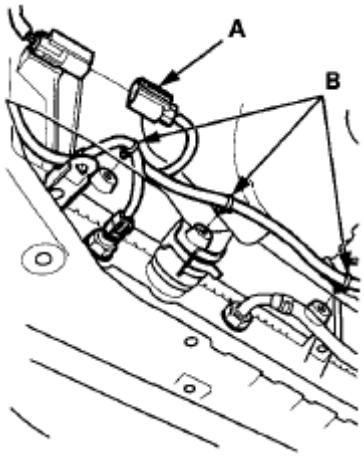


Fig. 27: Identifying Radiator Fan Motor Connector And Harness Clamps
Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. A/T model: Install the harness clamp (A).

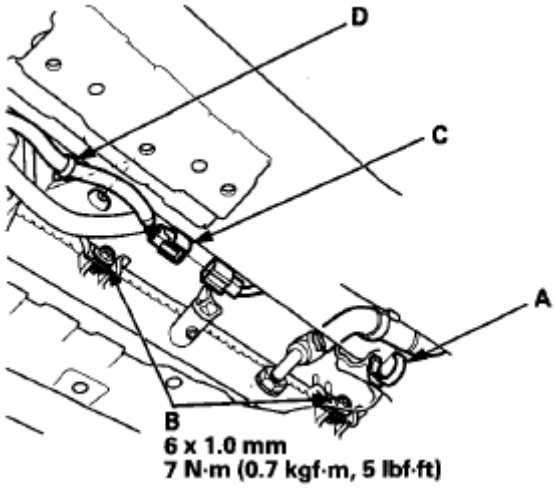


Fig. 28: Identifying Harness Clamps, Mounting Bolts And Motor Connector With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

8. Tighten the A/C condenser fan shroud mounting bolts (B).
9. Connect the A/C condenser fan motor connector (C), and install the harness clamp (D).
10. Install the front splash shield (see **FRONT SPLASH SHIELD REPLACEMENT**).
11. Lower the vehicle on the lift.
12. Install the air intake duct splash separator (see **ENGINE INSTALLATION**).
13. Install the battery base (see **BATTERY REMOVAL AND INSTALLATION**).
14. Do the battery installation procedure (see **BATTERY REMOVAL AND INSTALLATION**).
15. Install the engine compartment covers (see **ENGINE COMPARTMENT COVER REPLACEMENT**).

RADIATOR REPLACEMENT

1. Remove the engine compartment covers (see **ENGINE COMPARTMENT COVER REPLACEMENT**).
2. Drain the engine coolant (see **COOLANT CHECK**).
3. Remove the air intake duct splash separator (see **ENGINE REMOVAL**).
4. Raise the vehicle on the lift.
5. Remove the front splash shield (see **FRONT SPLASH SHIELD REPLACEMENT**).
6. Disconnect the A/C condenser fan motor connector (A), and remove the harness clamp (B).

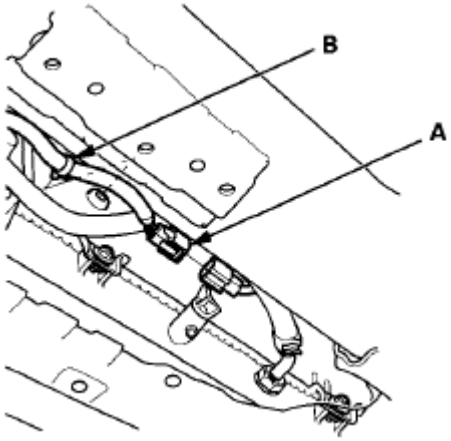


Fig. 29: Identifying A/C Condenser Fan Motor Connector And Harness Clamp
Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Disconnect the radiator fan motor connector (A) and the ECT sensor 2 connector (B), then remove the harness clamps (C).

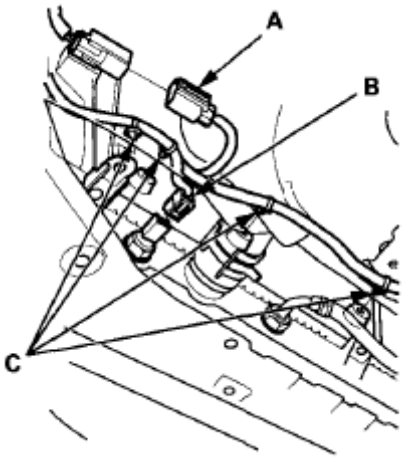


Fig. 30: Identifying Radiator Fan Motor Connector, ECT Sensor Connector And Harness Clamps
Courtesy of AMERICAN HONDA MOTOR CO., INC.

8. Disconnect the lower radiator hose (A).

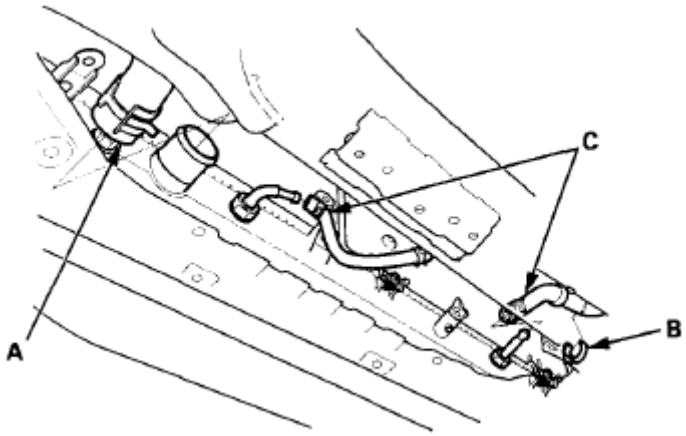


Fig. 31: Identifying Lower Radiator Hose, Clamp And ATF Cooler Hoses
Courtesy of AMERICAN HONDA MOTOR CO., INC.

9. A/T model: Remove the harness clamp (B). Disconnect the ATF cooler hoses (C) from the radiator, then plug the cooler hoses and the lines (see **ATF COOLER HOSE REPLACEMENT**).
10. Lower the vehicle on the lift.
11. Disconnect the upper radiator hose (A) and remove the coolant reservoir (B).

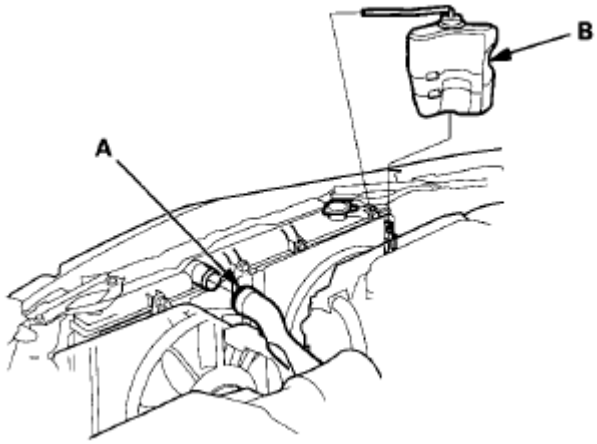


Fig. 32: Identifying Upper Radiator Hose And Coolant Reservoir
Courtesy of AMERICAN HONDA MOTOR CO., INC.

12. Remove the upper brackets (A), then pull up the radiator (B) with fan shrouds (C).

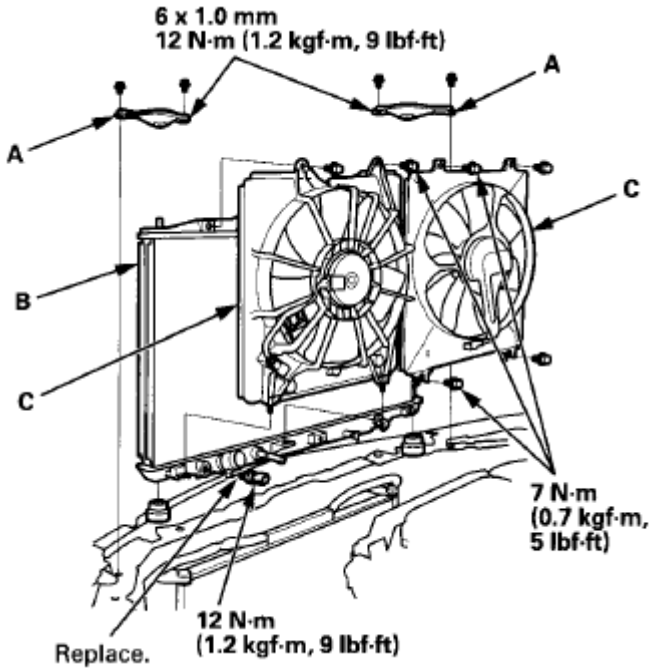


Fig. 33: Identifying Upper Brackets, Radiator And Fan Shrouds With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

13. Remove the fan shrouds and other parts from the radiator.
14. Install the radiator in the reverse order of removal. Make sure the upper and lower cushions are set securely.
15. A/T model: Refill the transmission with ATF (see **ATF REPLACEMENT**).
16. Fill the radiator with engine coolant, and bleed the air from the cooling system (see **COOLANT CHECK**).
17. Clean up any spilled engine coolant.
18. Install the engine compartment covers (see **ENGINE COMPARTMENT COVER REPLACEMENT**).

2012 ENGINE

Cylinder Head (J35Z6) - TL

SPECIAL TOOLS

Ref.No.	Tool Number	Description	Qty
①	070AJ-001A101	VCM Air Adapter	1
②	07742-0010100	Valve Guide Driver, 5.35 x 9.7 mm	1
③	07757-PJ1010A	Valve Spring Compressor Attachment	1
④	07AAJ-PNAA101	Air Pressure Regulator	1
⑤	07AAJ-R70A100	VTEC Air Stop Tool A	1
⑥	07AAJ-R70A200	VTEC Air Stop Tool B	1
⑦	07GAF-SD40330	Ball Joint Remover/Installer	1
⑧	07HAH-PJ7A100	Valve Guide Reamer, 5.5 mm	1
⑨	07JAA-001020A	Socket, 19 mm	1
⑩	07JAB-001020B	Holder Handle	1
⑪	07MAB-PY3010A	Holder Attachment, 50 mm, Offset	1
⑫	07PAD-0010000	Stem Seal Driver	1

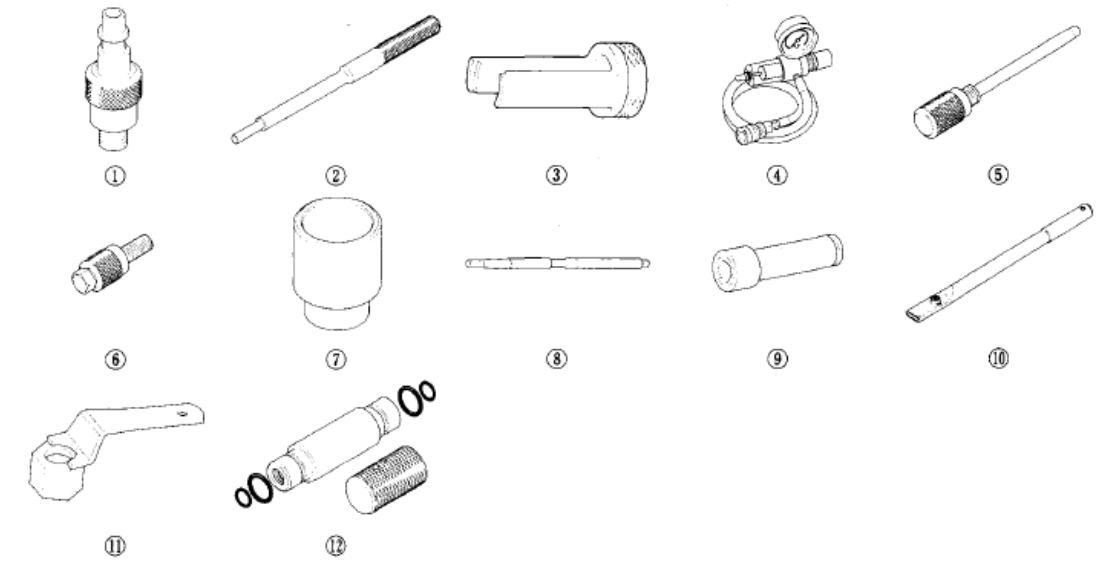


Fig. 1: Identifying Cylinder Head Special Tools
Courtesy of AMERICAN HONDA MOTOR CO., INC.

COMPONENT LOCATION INDEX

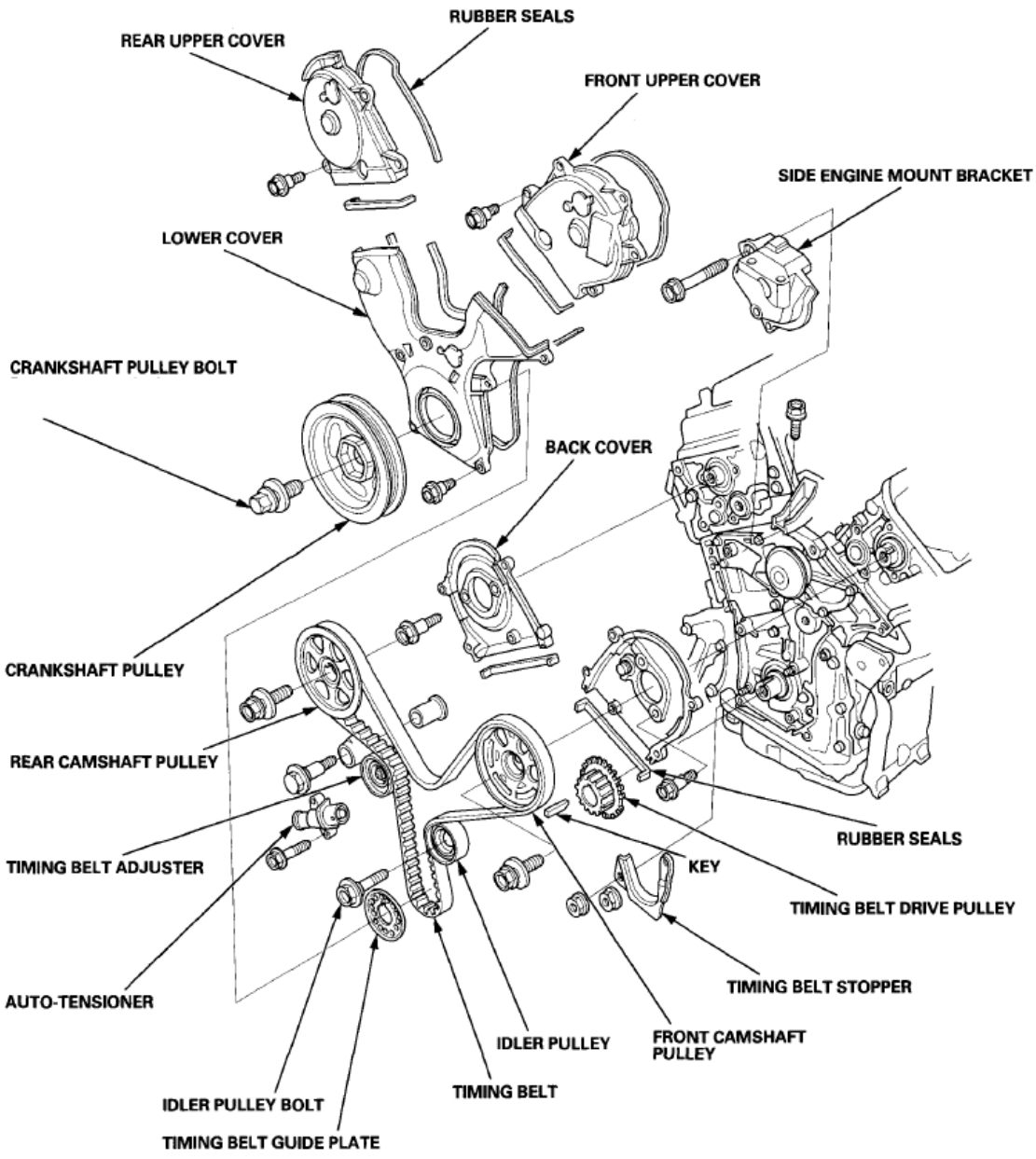


Fig. 2: Cylinder Head Components Location (1 Of 2)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

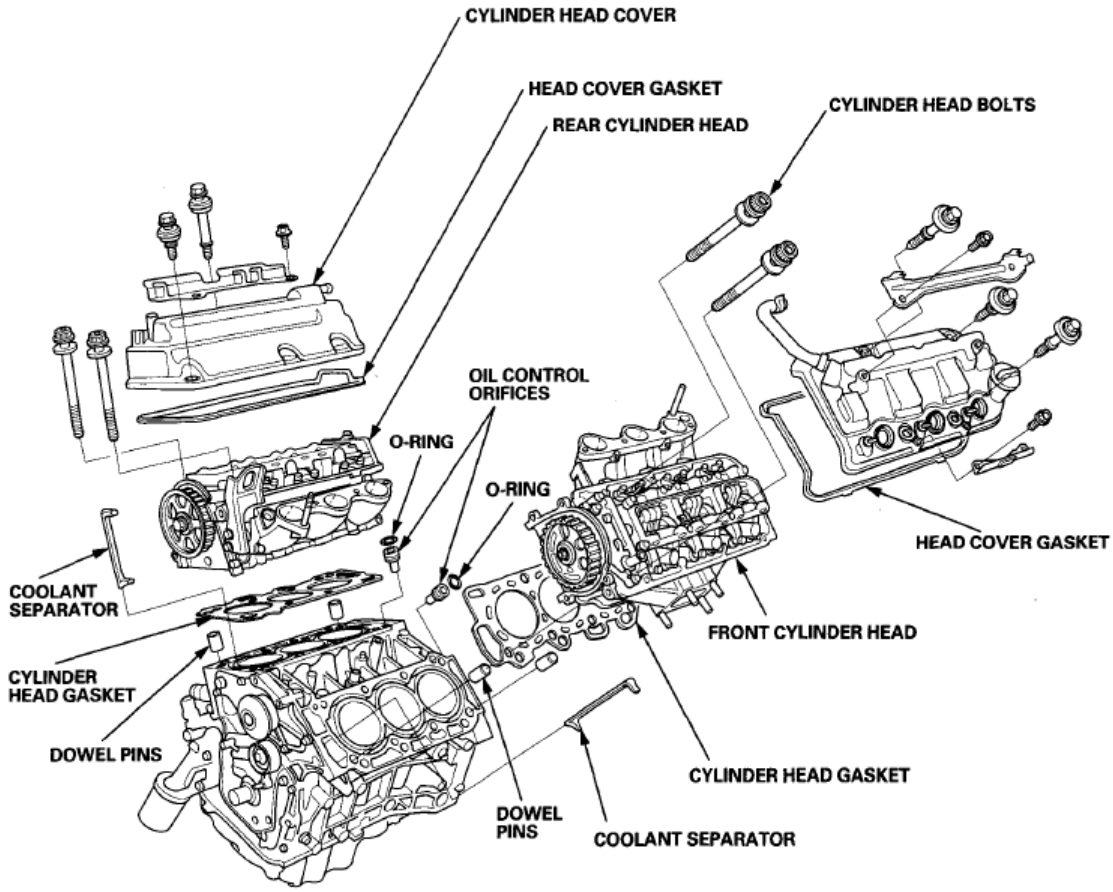


Fig. 3: Cylinder Head Components Location (2 Of 2)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

FRONT

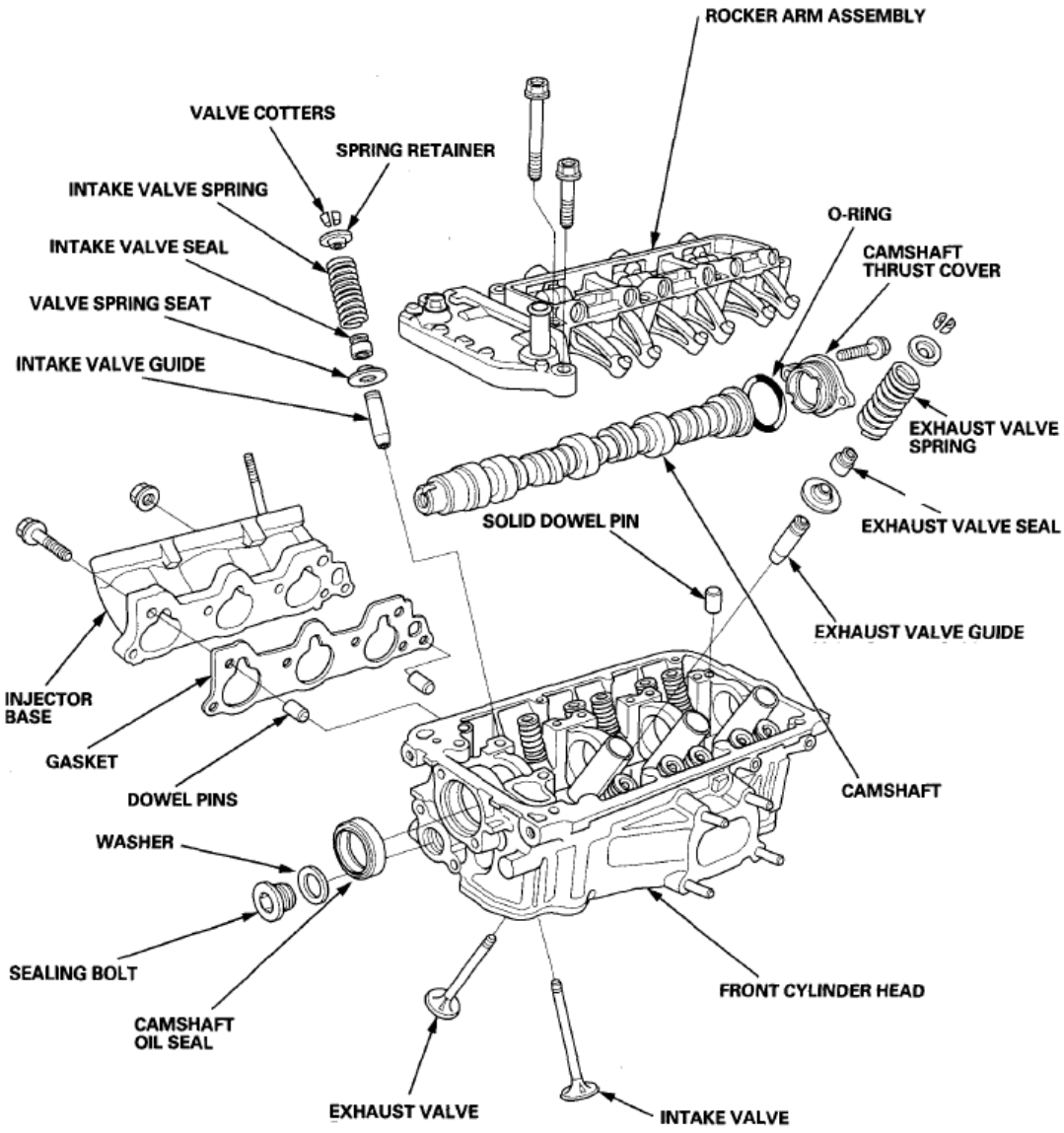


Fig. 4: Exploded View Of Cylinder Head - Front
Courtesy of AMERICAN HONDA MOTOR CO., INC.

REAR

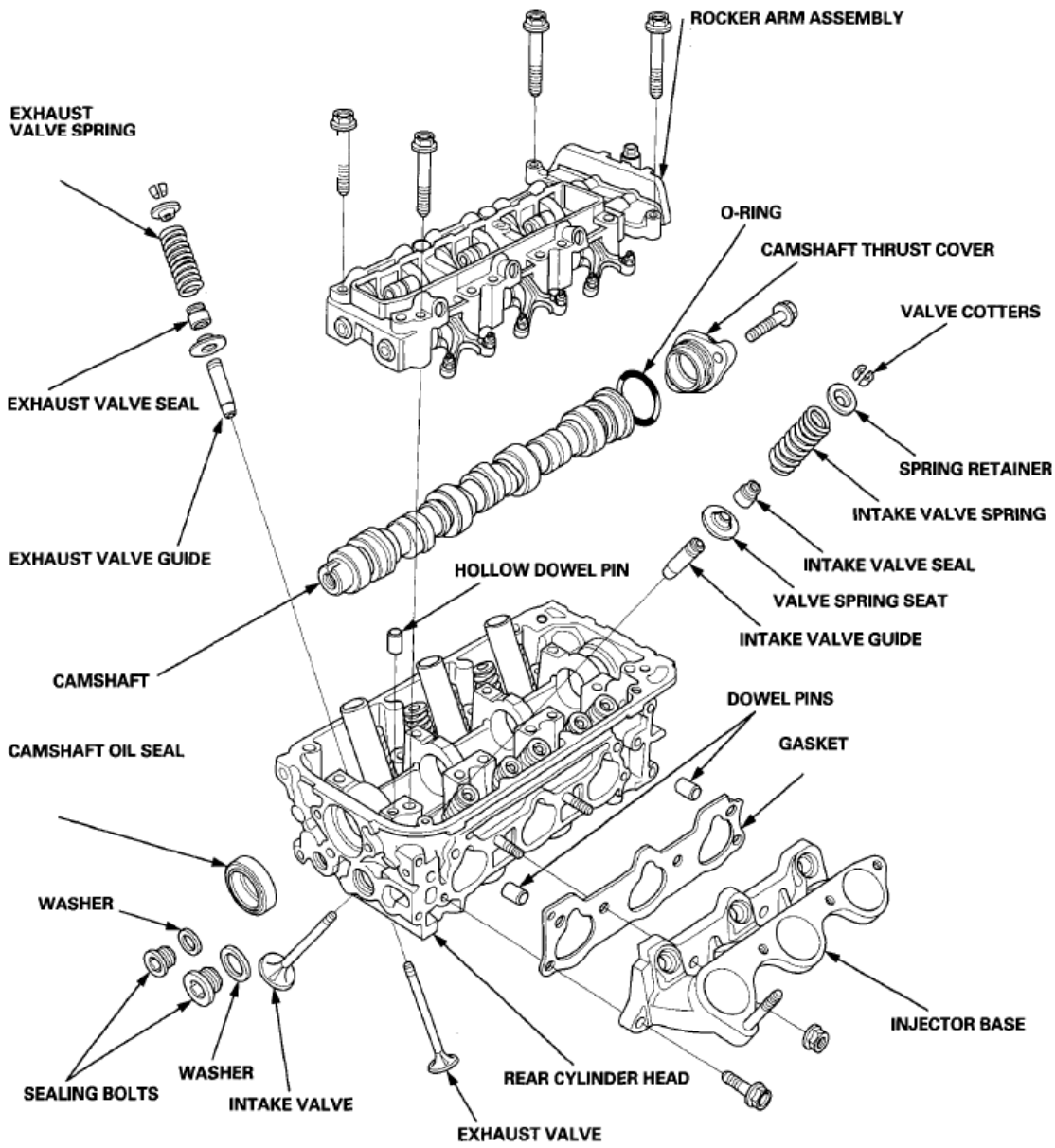


Fig. 5: Exploded View Of Cylinder Head - Rear
Courtesy of AMERICAN HONDA MOTOR CO., INC.

ENGINE COMPRESSION INSPECTION

NOTE: After the inspection, you must reset the PCM. Otherwise, the PCM will continue to stop the fuel injectors from operating.

1. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
2. Connect the HDS to the DLC (see **HOW TO USE THE HDS (HONDA DIAGNOSTIC SYSTEM)**).
3. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.

4. Make sure the HDS communicates with the vehicle and the PCM. If it does not communicate, troubleshoot the DLC circuit (see **DLC CIRCUIT TROUBLESHOOTING**).
5. Select ALL INJECTORS STOP in the PGM-FI INSPECTION menu with the HDS.
6. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
7. Remove the six ignition coils and the six spark plugs (see **IGNITION COIL AND SPARK PLUG REMOVAL/INSTALLATION**).
8. Attach the compression gauge to a spark plug hole.

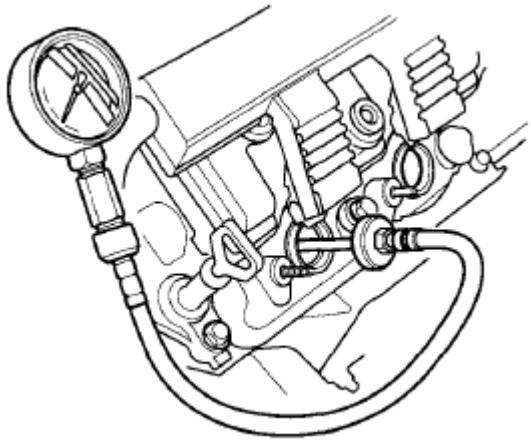


Fig. 6: Identifying Compression Gauge And Spark Plug Hole
Courtesy of AMERICAN HONDA MOTOR CO., INC.

9. Step on the accelerator pedal to open the throttle fully, then crank the engine with the starter motor, and measure the compression.

   Compression Pressure:

   Above 930 kPa (9.48 kgf/cm^2 , 134.8 psi)

10. Measure the compression on the remaining cylinders.

    Maximum Variation:

    Within 200 kPa (2.04 kgf/cm^2 , 29.0 psi)

11. If the compression is not within specifications, perform a cylinder leak down test to determine the problem area. Then check the following items, and remeasure the compression.
    - Incorrect valve clearance
    - Confirmation of cam timing
    - Damaged or worn cam lobes
    - Damaged or worn valves and seats
    - Damaged cylinder head gaskets

- Damaged or worn piston rings
- Damaged or worn piston and cylinder bore

12. Remove the compression gauge from the spark plug hole.
13. Install the six spark plugs.
14. Install the six spark plugs and the six ignition coils (see **IGNITION COIL AND SPARK PLUG REMOVAL/INSTALLATION**).
15. Select PCM reset (see **HDS CLEAR COMMAND**) in the PGM-FI INSPECTION menu to cancel ALL INJECTORS STOP with the HDS.

VTEC ROCKER ARM TEST

Special Tools Required

- VTEC Air Stop Tool B 07AAJ-R70A200
- VCM Air Adapter 070AJ-001A101
- Air Pressure Regulator 07AAJ-PNAA101
- VTEC Air Stop Tool A 07AAJ-R70A100

1. Remove the six ignition coils and the six spark plugs (see **IGNITION COIL AND SPARK PLUG REMOVAL/INSTALLATION**).
2. Remove the cylinder head covers (see **TIMING BELT DRIVE PULLEY REPLACEMENT**).
3. Rotate the crankshaft pulley clockwise. Make sure that the intake primary rocker arm (A) and the intake secondary rocker arm (B) are separated and that the intake primary rocker arm should move independently:
   - If the intake primary rocker arm and the intake secondary rocker arm move together, remove the intake primary rocker arm and the intake secondary rocker arm as an assembly, and check that the pistons in the rocker arms move smoothly. If any intake rocker arm needs replacing, replace the primary and secondary rocker arms as an assembly, then retest.
   - If the intake primary rocker arm and the intake secondary rocker arm move independently, go to step 4.

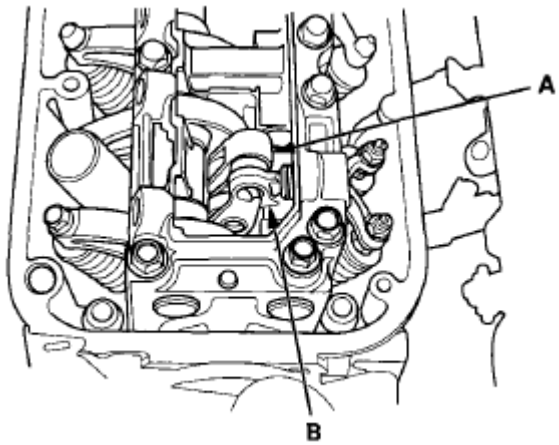


Fig. 7: Identifying Primary And Secondary Rocker Arm
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Check that the air pressure on the shop air compressor gauge indicates over 981 kPa (10.00 kgf/cm^2 , 142.3 psi).
5. Inspect the valve clearance (see **VALVE CLEARANCE ADJUSTMENT**).
6. Remove the sealing bolts, then install VTEC air stop tool B and the VCM air adapter (A) to the inspection hole, then connect the air pressure regulator (C) as shown.

FRONT

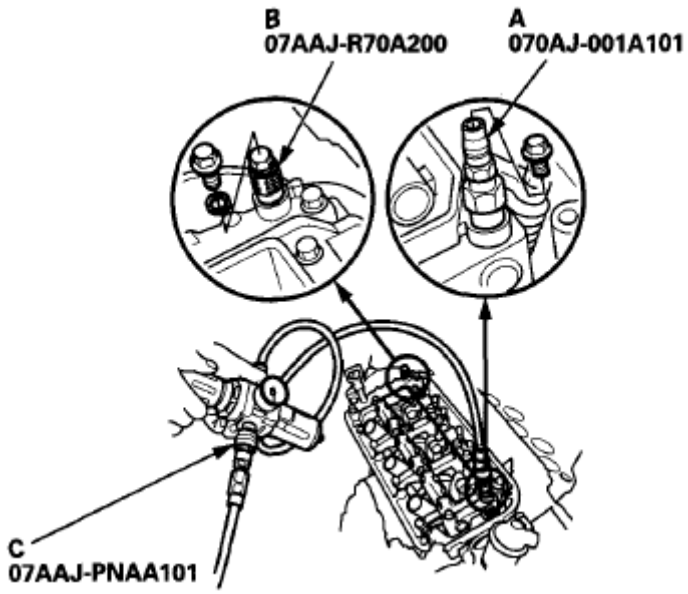


Fig. 8: Identifying VCM Air Adapter And Air Pressure Adapter - Front
Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Remove the sealing bolts, then install VTEC air stop tool A and the VCM air adapter (B) to the inspection hole, then connect the air pressure regulator (C) as shown.

REAR

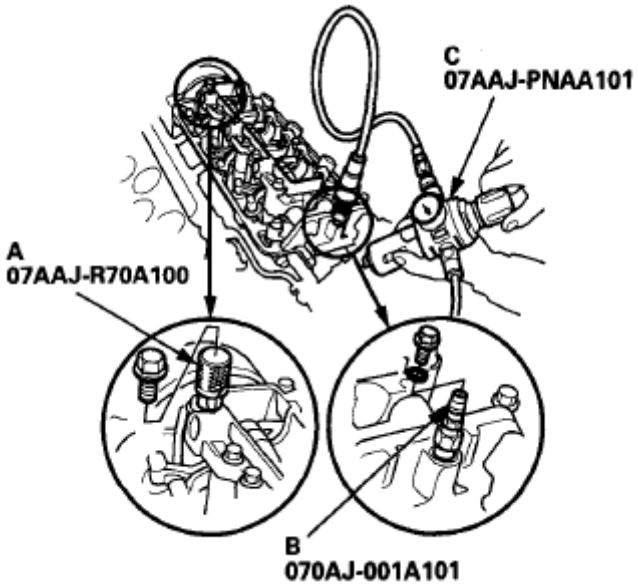


Fig. 9: Identifying VCM Air Adapter And Air Pressure Adapter - Rear
Courtesy of AMERICAN HONDA MOTOR CO., INC.

8. Loosen the valve on the regulator, and apply the specified air pressure.

   Specified Air Pressure:

   550 - 690 kPa (5.61-7.04 kgf/cm^2 , 79.8-100.1 psi)

9. With the specified air pressure applied, rotate the crankshaft pulley clockwise. The intake primary rocker arm (A) should move together with the intake secondary rocker arm (B):
   - If the intake primary rocker arm and the intake secondary rocker arm move independently, remove the intake primary rocker arm and the intake secondary rocker arm as an assembly, and check that the pistons in the rocker arms move smoothly. If any intake rocker arm needs replacing, replace the primary and secondary rocker arms as an assembly, then retest.
   - If the intake primary rocker arm and the intake secondary rocker arm move together, go to step 10.

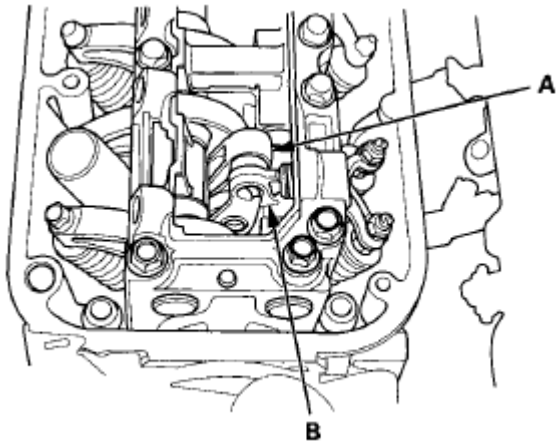


Fig. 10: Identifying Primary And Secondary Rocker Arm
Courtesy of AMERICAN HONDA MOTOR CO., INC.

10. Remove the air pressure regulator, the VCM air adapter, VTEC air stop tool A, and VTEC air stop tool B.
11. Torque the sealing bolts to 22 N.m (2.2 kgf.m, 16 lbf.ft).
12. Install the cylinder head covers (see **CYLINDER HEAD COVER INSTALLATION**).
13. Install the six spark plugs.

VALVE CLEARANCE ADJUSTMENT

NOTE: Connect the HDS to the DLC (see HOW TO USE THE HDS (HONDA DIAGNOSTIC SYSTEM)), and monitor ECT SENSOR 1. Adjust the valve clearance only when the engine coolant temperature is less than 100°F (38°C).

1. Remove the cylinder head covers (see **TIMING BELT DRIVE PULLEY REPLACEMENT**).
2. Set the No. 1 piston at top dead center (TDC). Align the pointer (A) on the front upper cover with the No. 1 piston TDC mark (B) on the front camshaft pulley.

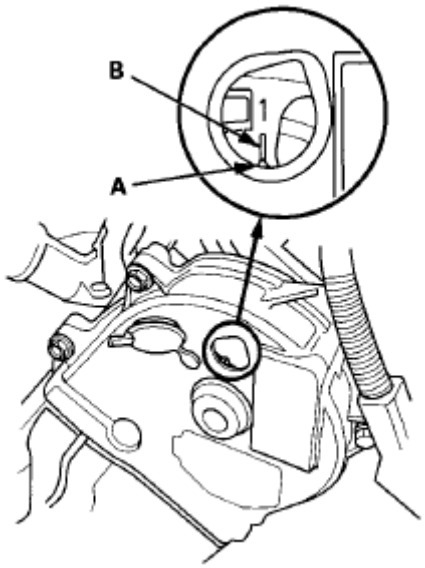


Fig. 11: Identifying Pointer And TDC Mark
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Select the correct feeler gauge for the valve clearance you are going to check.

Valve Clearance

Intake: 0.20-0.24 mm (0.008-0.009 in)

Exhaust: 0.28-0.32 mm (0.011-0.012 in)

REAR

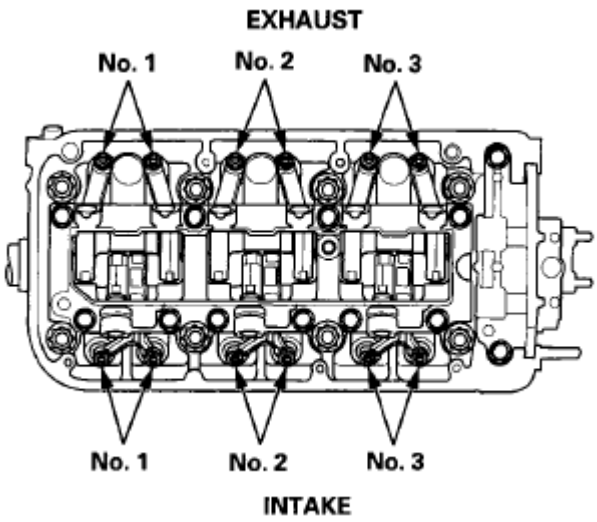


Fig. 12: Adjusting Rear Valve Clearance
Courtesy of AMERICAN HONDA MOTOR CO., INC.

FRONT

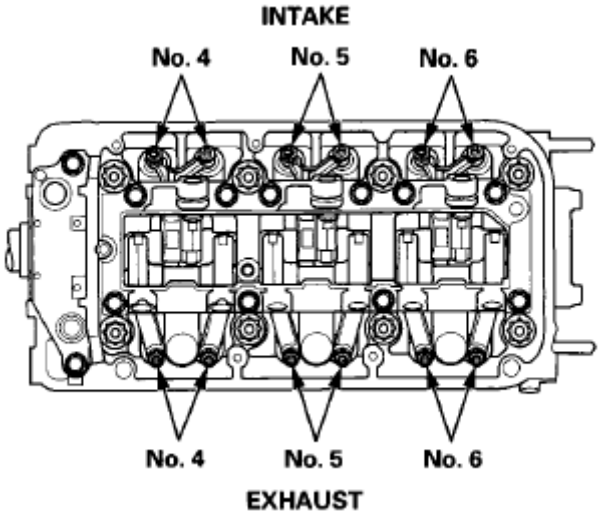


Fig. 13: Adjusting Front Valve Clearance
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Insert the feeler gauge (A) between the adjusting screw and the end of the valve stem on the No. 1 cylinder, and slide it back and forth; you should feel a slight amount of drag.

INTAKE

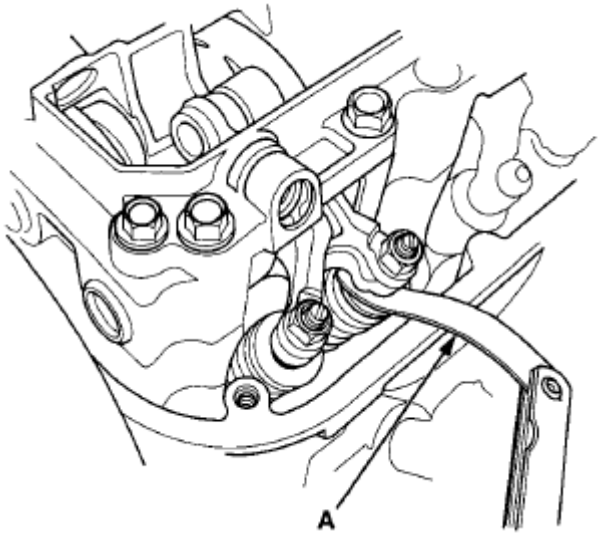


Fig. 14: Inserting Feeler Gauge In Intake Valve
Courtesy of AMERICAN HONDA MOTOR CO., INC.

EXHAUST

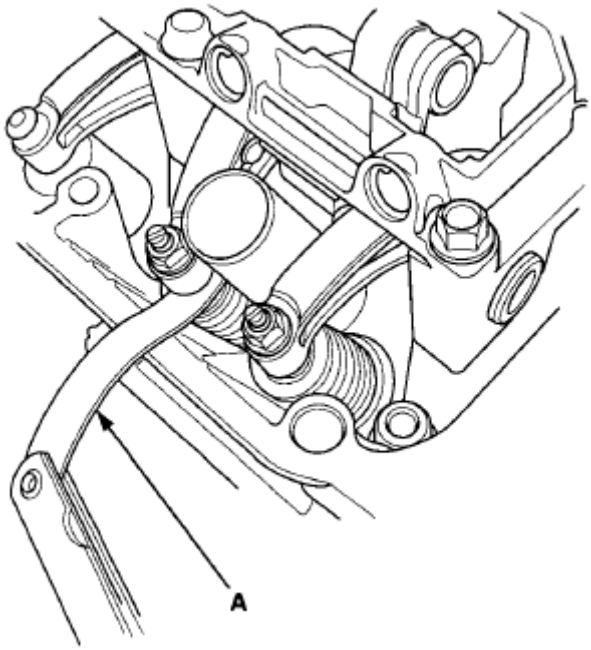


Fig. 15: Inserting Feeler Gauge In Exhaust Valve
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. If you feel too much or too little drag, loosen the locknut, and turn the adjusting screw until the drag on the feeler gauge is correct.

INTAKE

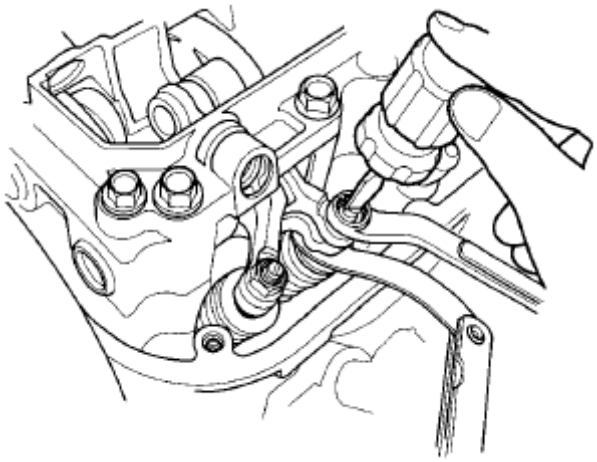


Fig. 16: Turning Adjusting Screw (Intake Valve)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

EXHAUST

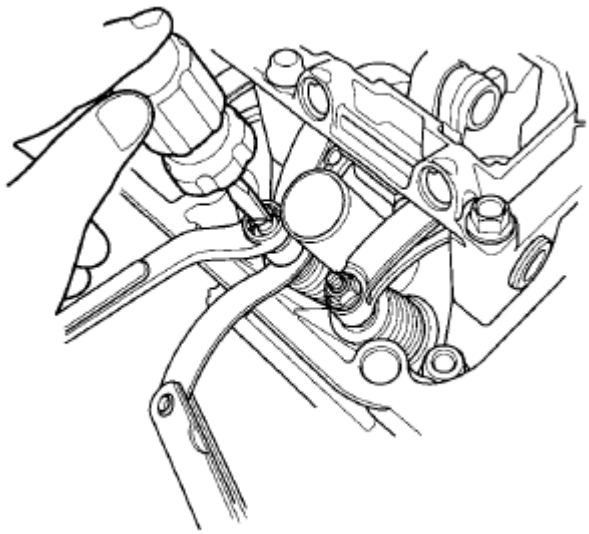


Fig. 17: Turning Adjusting Screw (Exhaust Valve)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. While holding the adjusting screw with the screw driver, tighten the locknut, then recheck the clearance. Repeat the adjustment, if necessary.

Specified Torque

Intake: 20 N.m (2.0 kgf.m, 14 lbf.ft)

Apply new engine oil to the nut threads.

Exhaust: 14 N.m (1.4 kgf.m, 10 lbf.ft)

Apply new engine oil to the nut threads.

7. Rotate the crankshaft clockwise. Align the pointer (A) on the front upper cover with the No. 4 piston TDC mark (B) on the front camshaft pulley.

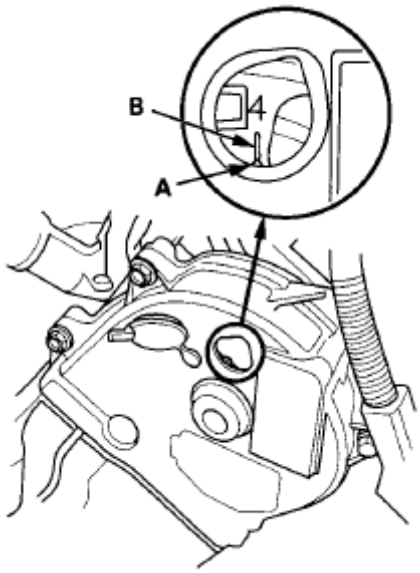


Fig. 18: Identifying Pointer And TDC Mark On Piston No. 4
Courtesy of AMERICAN HONDA MOTOR CO., INC.

8. Check and, if necessary, adjust the valve clearance on the No. 4 cylinder.
9. Rotate the crankshaft clockwise. Align the pointer (A) on the front upper cover with the No. 2 piston TDC mark (B) on the front camshaft pulley.

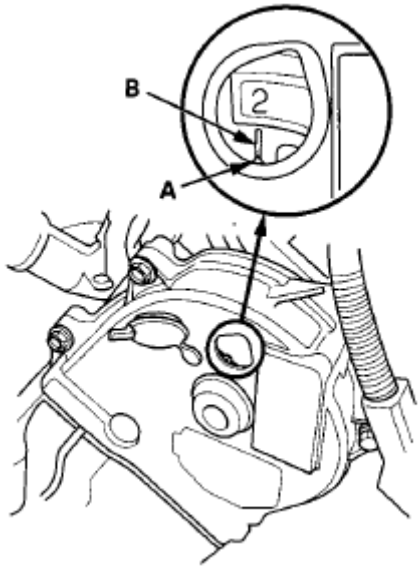


Fig. 19: Identifying Pointer And TDC Mark On Piston No. 2
Courtesy of AMERICAN HONDA MOTOR CO., INC.

10. Check and, if necessary, adjust the valve clearance on the No. 2 cylinder.
11. Rotate the crankshaft clockwise. Align the pointer (A) on the front upper cover with the No. 5 piston TDC mark (B) on the front camshaft pulley.

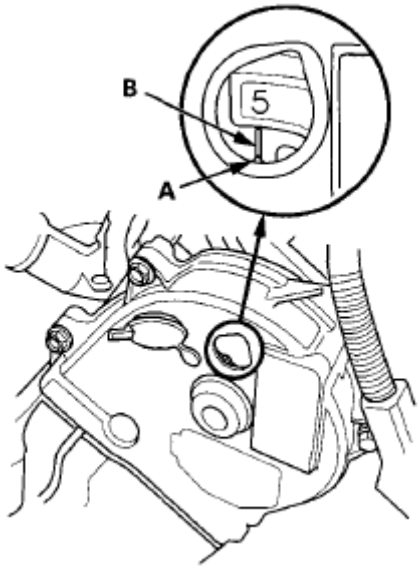


Fig. 20: Identifying Pointer And TDC Mark On Piston No. 5
Courtesy of AMERICAN HONDA MOTOR CO., INC.

12. Check and, if necessary, adjust the valve clearance on the No. 5 cylinder.
13. Rotate the crankshaft clockwise. Align the pointer (A) on the front upper cover with the No. 3 piston TDC mark (B) on the front camshaft pulley.

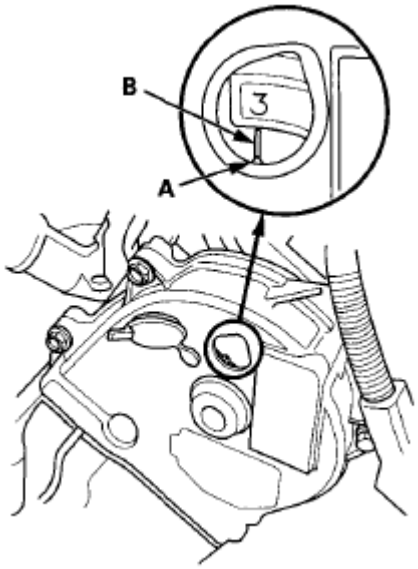


Fig. 21: Identifying Pointer And TDC Mark On Piston No. 3
Courtesy of AMERICAN HONDA MOTOR CO., INC.

14. Check and, if necessary, adjust the valve clearance on the No. 3 cylinder.
15. Rotate the crankshaft clockwise. Align the pointer (A) on the front upper cover with the No. 6 piston TDC mark (B) on the front camshaft pulley.

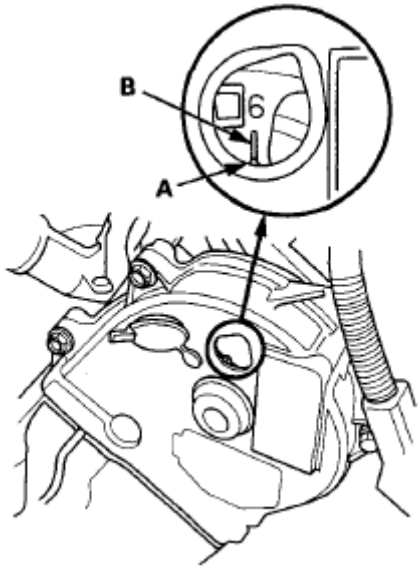


Fig. 22: Identifying Pointer And TDC Mark On Piston No. 6
Courtesy of AMERICAN HONDA MOTOR CO., INC.

16. Check and, if necessary, adjust the valve clearance on the No. 6 cylinder.
17. Install the cylinder head covers (see **CYLINDER HEAD COVER INSTALLATION**).

CRANKSHAFT PULLEY REMOVAL AND INSTALLATION

Special Tools Required

- Holder Handle 07JAB-001020B
- Holder Attachment, 50 mm, Offset 07MAB-PY3010A
- Socket, 19 mm 07JAA-001020A or equivalent

REMOVAL

1. Raise the vehicle on the lift.
2. Remove the right front wheel.
3. Remove the front splash shield (see **FRONT SPLASH SHIELD REPLACEMENT**).
4. Remove the drive belt (see **DRIVE BELT REPLACEMENT**).
5. Hold the pulley with the holder handle (A) and the holder attachment, 50 mm, offset (B).

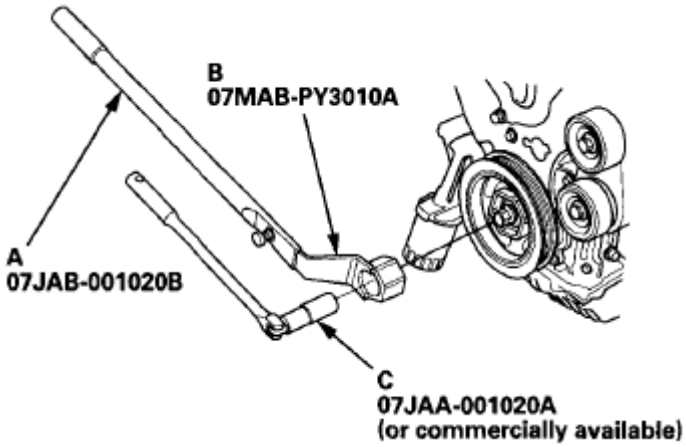


Fig. 23: Identifying Holder Handle, Holder Attachment And Offset Of Pulley
Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Remove the bolt with a heavy duty socket, 19 mm (C) and a breaker bar, then remove the crankshaft pulley.

INSTALLATION

1. Remove any oil and clean the pulleys (A), the crankshaft (B), the bolt (C), and the washer (D). Lubricate with new engine oil as shown.

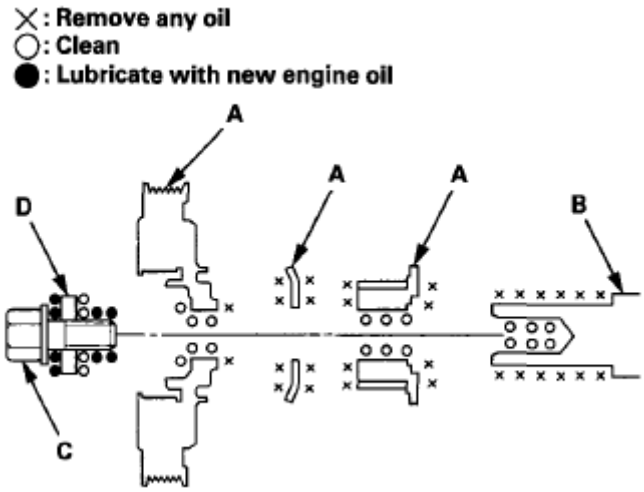


Fig. 24: Identifying Pulleys, Crankshaft, Washer And Bolt
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Install the crankshaft pulley, and tighten the bolt. Do not use an impact wrench.
    1. Hold the pulley with the holder handle (A) and the holder attachment (B). Torque the bolt to 64 N.m (6.5 kgf.m, 47 lbf-ft) with a torque wrench and the heavy duty 19 mm (C).
    2. Tighten the bolt an additional 60 °.

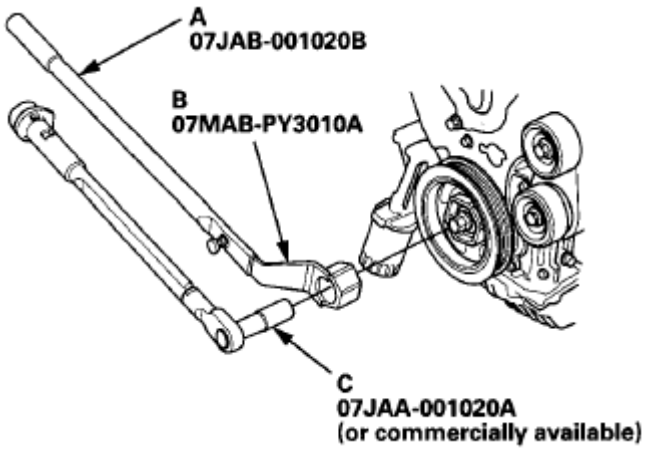


Fig. 25: Identifying Holder Handle, Holder Attachment And Offset Of Pulley
Courtesy of AMERICAN HONDA MOTOR CO., INC.

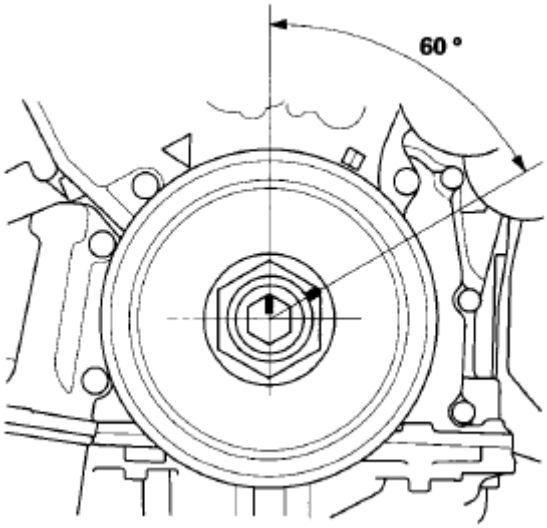


Fig. 26: Identifying Tightening Bolt An Additional 60°
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Install the drive belt (see **DRIVE BELT REPLACEMENT**).
4. Install the front splash shield (see **FRONT SPLASH SHIELD REPLACEMENT**).
5. Install the right front wheel.

TIMING BELT INSPECTION

1. Remove the drive belt (see **DRIVE BELT REPLACEMENT**).
2. Remove the front upper cover.

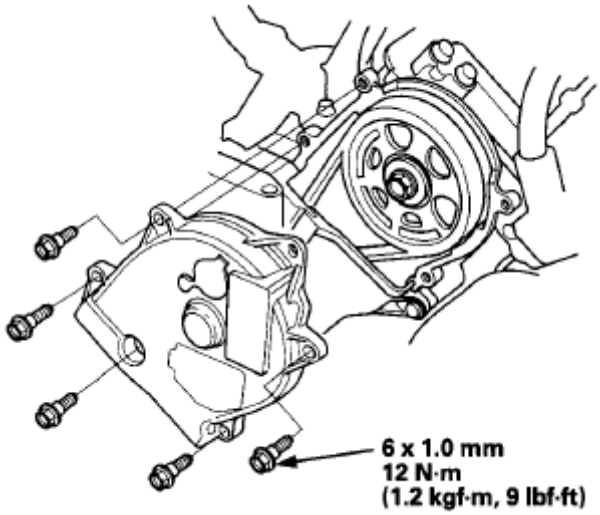


Fig. 27: Identifying Front Upper Cover And Bolts With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Inspect the timing belt for cracks and oil or coolant contamination. Replace the belt if it is cracked, or contaminated with oil or coolant. Wipe off any oil or solvent that gets on the belt pulleys.

NOTE: If there is any leakage, repair them before replacing the timing belt.

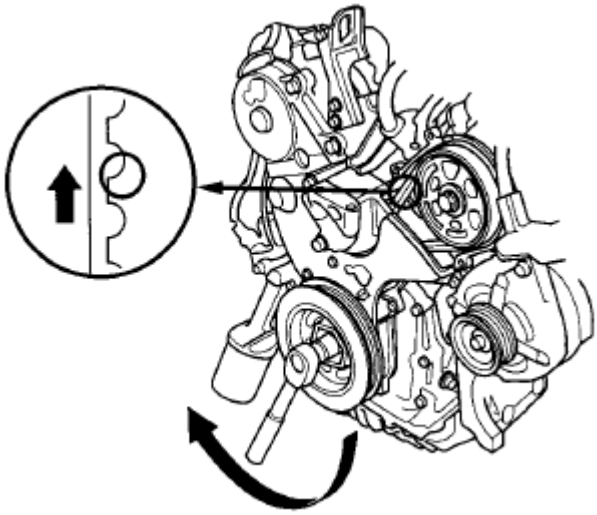


Fig. 28: Inspecting Timing Belt For Cracks And Oil Or Coolant Contamination
Courtesy of AMERICAN HONDA MOTOR CO., INC.

TIMING BELT REMOVAL

1. Remove the engine compartment covers (see **ENGINE COMPARTMENT COVER REPLACEMENT**).
2. Turn the crankshaft so its white mark (A) on the crankshaft pulley lines up with the pointer (B).

NOTE: The other pointer (C) is not used.

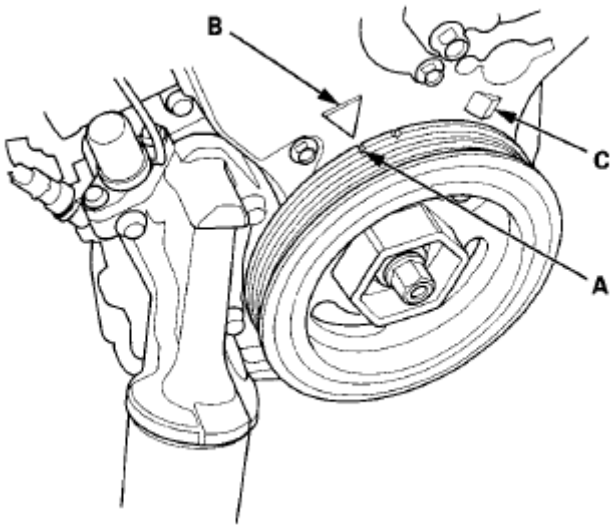


Fig. 29: Identifying White Mark And Pointers On Crankshaft Pulley
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Check that the No. 1 piston top dead center (TDC) mark (A) on the front camshaft pulley and the pointer (B) on the front upper cover are aligned.

NOTE: If the marks are not aligned, rotate the crankshaft 360 degrees, and recheck the camshaft pulley mark.

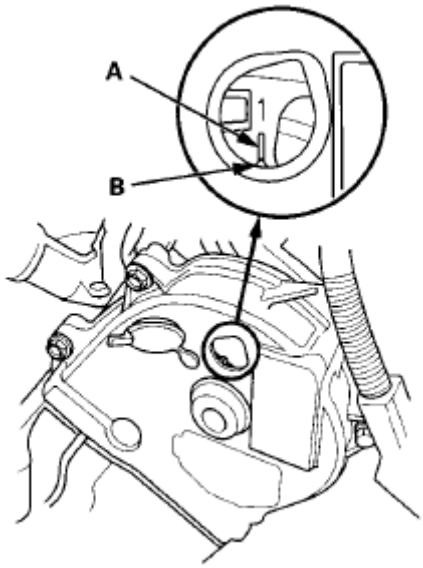


Fig. 30: Identifying TDC Mark And Pointer On Camshaft
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Raise the vehicle on the lift, then remove the right front wheel.
5. Remove the front splash shield (see **FRONT SPLASH SHIELD REPLACEMENT**).
6. Remove the drive belt auto-tensioner (see **DRIVE BELT AUTO-TENSIONER REPLACEMENT**).
7. Support the engine with a jack and a wood block under the oil pan.
8. Remove the ground cable (A), then remove the upper half of the side engine mount bracket (B).

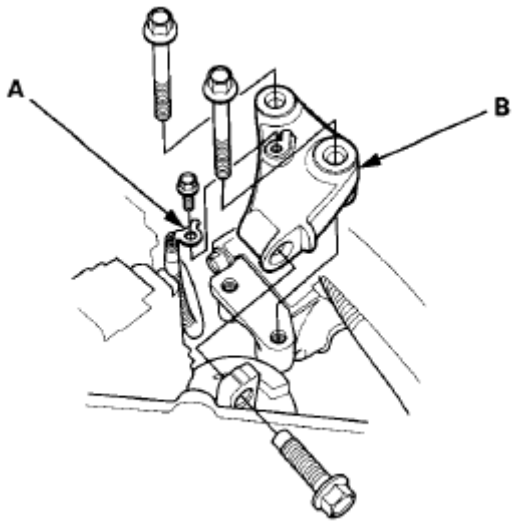


Fig. 31: Identifying Ground Cable And Engine Mount Bracket
Courtesy of AMERICAN HONDA MOTOR CO., INC.

9. Remove the crankshaft pulley (see **CRANKSHAFT PULLEY REMOVAL AND INSTALLATION**).
10. Remove the front upper cover (A) and the rear upper cover (B).

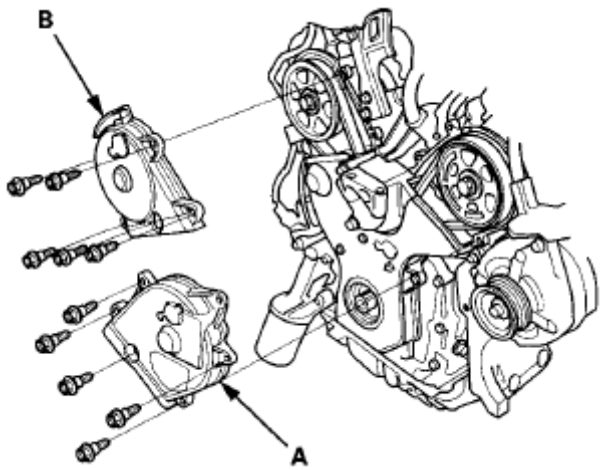


Fig. 32: Identifying Front And Rear Upper Cover
Courtesy of AMERICAN HONDA MOTOR CO., INC.

11. Remove the lower cover.

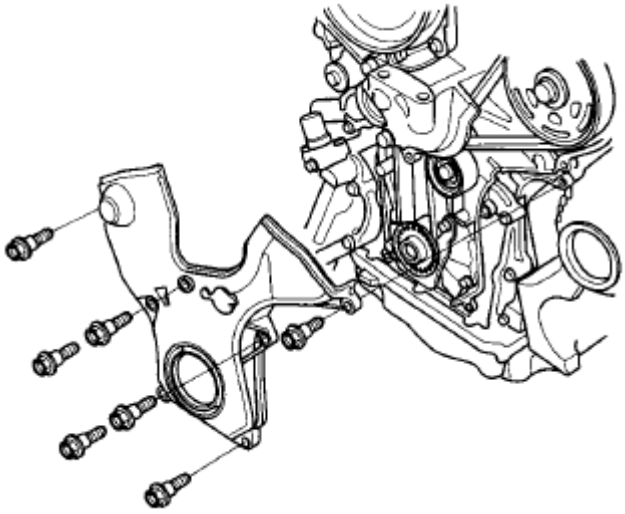


Fig. 33: Identifying Lower Cover And Bolts
Courtesy of AMERICAN HONDA MOTOR CO., INC.

12. Remove one of the battery clamp bolts from the battery tray, and grind the end of it as shown.

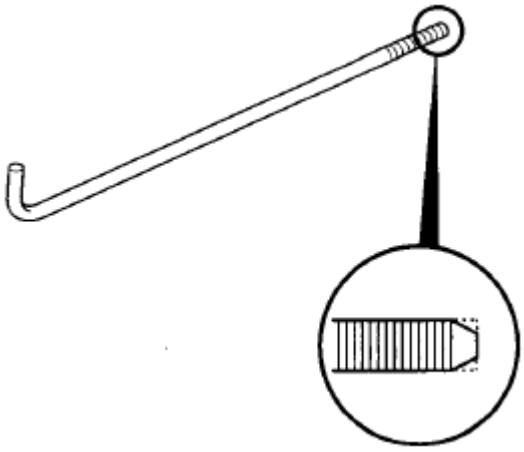


Fig. 34: Identifying Grind End Of Battery Bolt
Courtesy of AMERICAN HONDA MOTOR CO., INC.

13. Thread the battery clamp bolt in as shown to hold the timing belt adjuster in its current position. Tighten it by hand, do not use a wrench.

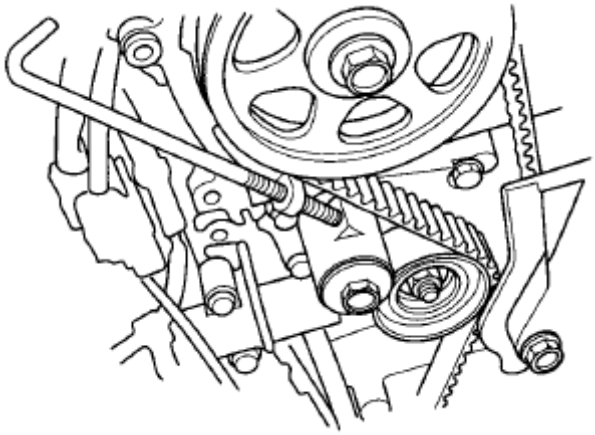


Fig. 35: Holding Timing Belt Adjuster In Current Position
Courtesy of AMERICAN HONDA MOTOR CO., INC.

14. Remove the timing belt guide plate (A).

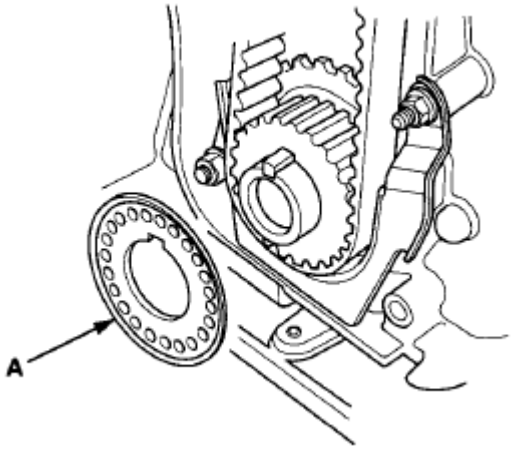


Fig. 36: Identifying Timing Belt Guide Plate
Courtesy of AMERICAN HONDA MOTOR CO., INC.

15. Remove the lower half of the side engine mount bracket.

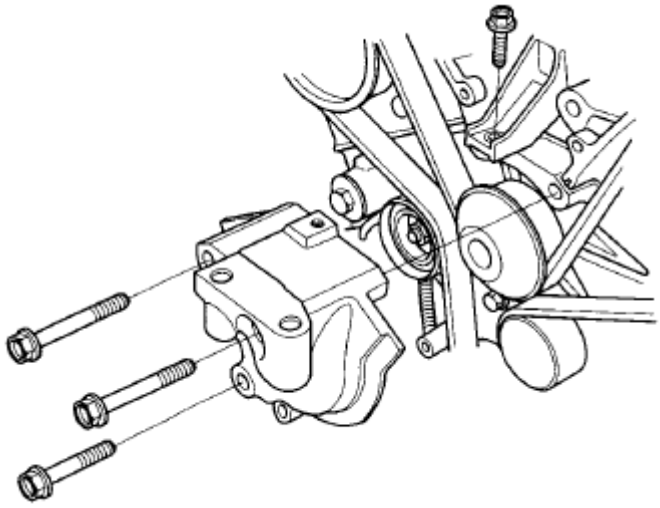


Fig. 37: Identifying Engine Mount Bracket
Courtesy of AMERICAN HONDA MOTOR CO., INC.

16. Remove the idler pulley bolt (A) and the idler pulley (B), then remove the timing belt. Discard the idler pulley bolt.

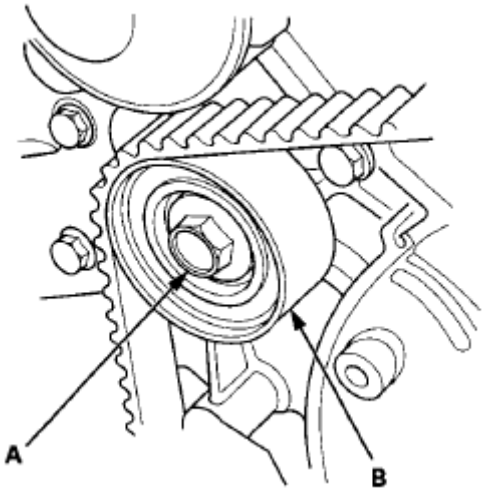


Fig. 38: Identifying Idler Pulley And Idler Pulley Bolt
Courtesy of AMERICAN HONDA MOTOR CO., INC.

TIMING BELT INSTALLATION

NOTE: The following procedure is for installation of a used timing belt. If you are installing a new belt, refer to the TIMING BELT REPLACEMENT PROCEDURE.

1. Clean the timing belt pulleys, the timing belt guide plate, and the upper and lower covers.
2. Set the timing belt drive pulley to top dead center (TDC) by aligning the TDC mark (A) on the tooth of the timing belt drive pulley with the pointer (B) on the oil pump.

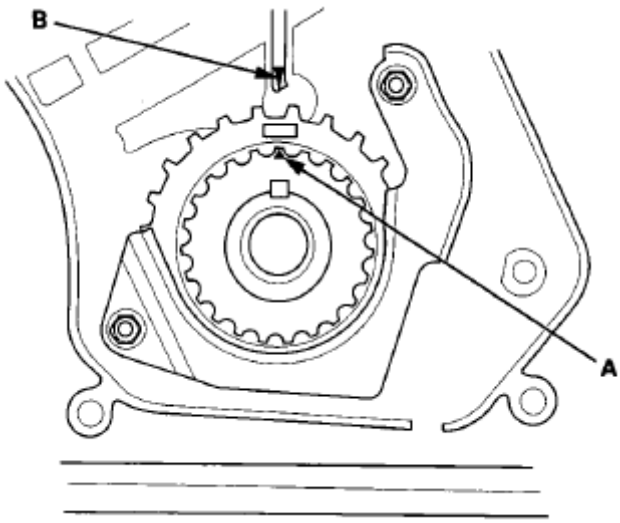


Fig. 39: Identifying TDC Mark And Pointer On Oil Pump
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Set the camshaft pulleys to TDC by aligning the TDC marks (A) on the camshaft pulleys with the pointers (B) on the back covers.

FRONT

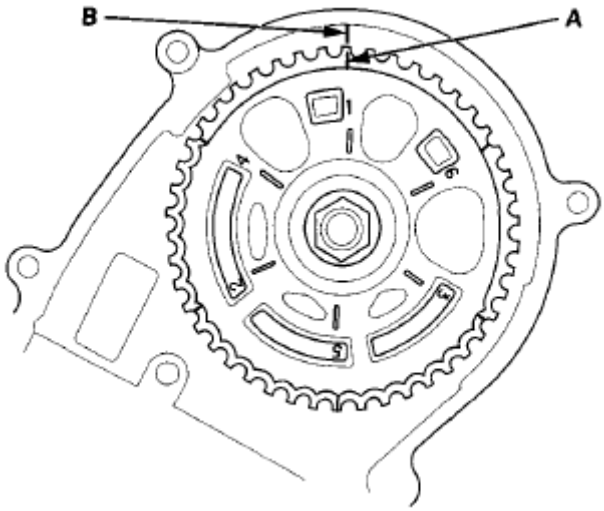


Fig. 40: Identifying TDC Marks And Pointers On Camshaft Pulley - Front
Courtesy of AMERICAN HONDA MOTOR CO., INC.

REAR

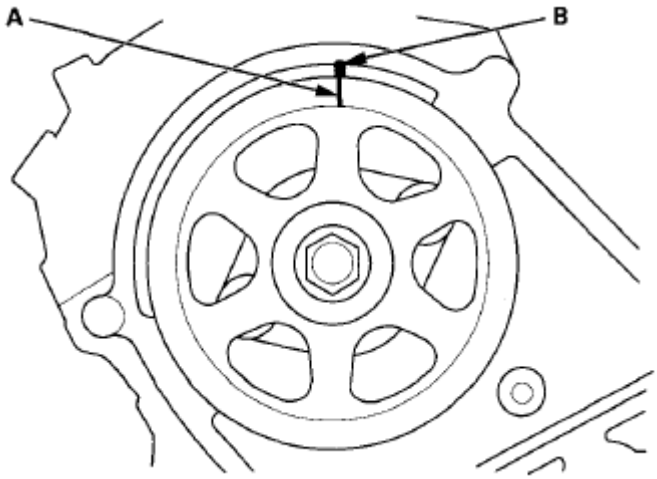


Fig. 41: Identifying TDC Marks And Pointers On Camshaft Pulley - Rear
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Loosely install the idler pulley with a new idler pulley bolt so the pulley can move but does not come off.
5. If the auto-tensioner has extended and the timing belt cannot be installed, do the timing belt replacement procedure (see **TIMING BELT REPLACEMENT**).
6. Install the timing belt in a counterclockwise sequence starting with the drive pulley. Take care not to damage the timing belt during installation:
    1. Drive pulley (A)
    2. Idler pulley (B)
    3. Front camshaft pulley (C)
    4. Water pump pulley (D)
    5. Rear camshaft pulley (E)
    6. Adjusting pulley (F)

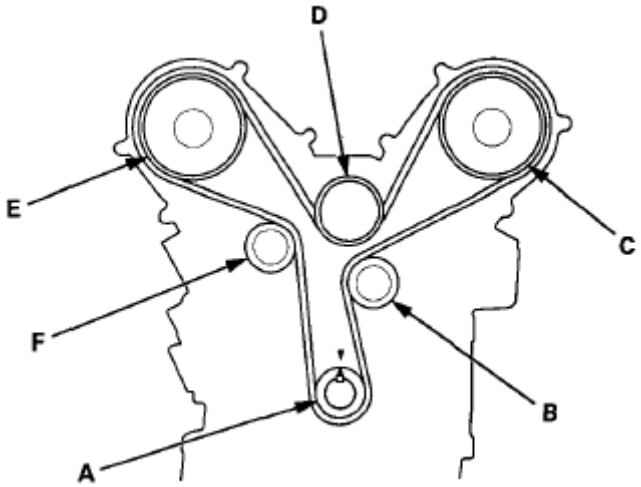


Fig. 42: Identifying Timing Belt And Related Components
Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Tighten the idler pulley bolt.

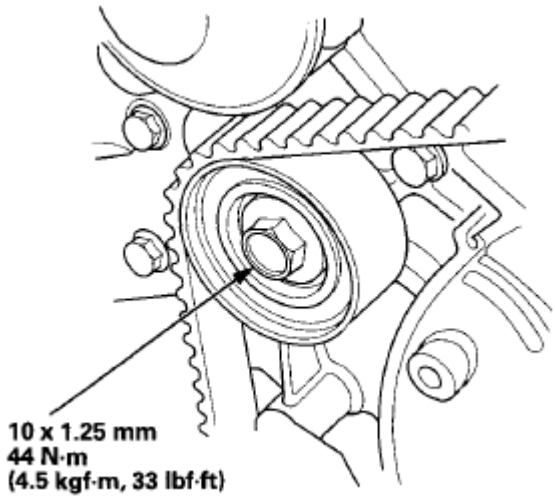


Fig. 43: Identifying Idler Pulley Bolt With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

8. Remove the battery clamp bolt from the back cover.

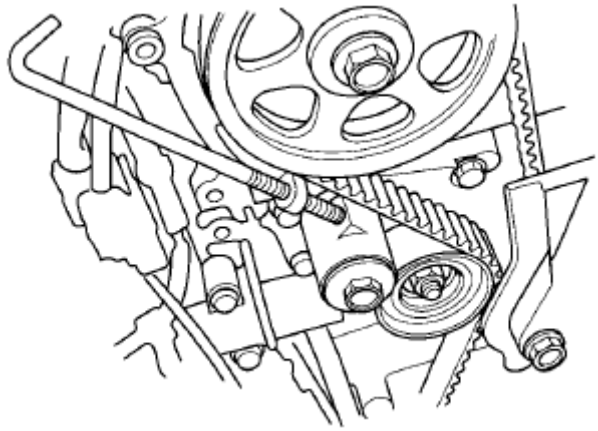


Fig. 44: Identifying Battery Clamp Bolt
Courtesy of AMERICAN HONDA MOTOR CO., INC.

9. Install the lower half of the side engine mount bracket using new bolts (A) and the bolt (B).

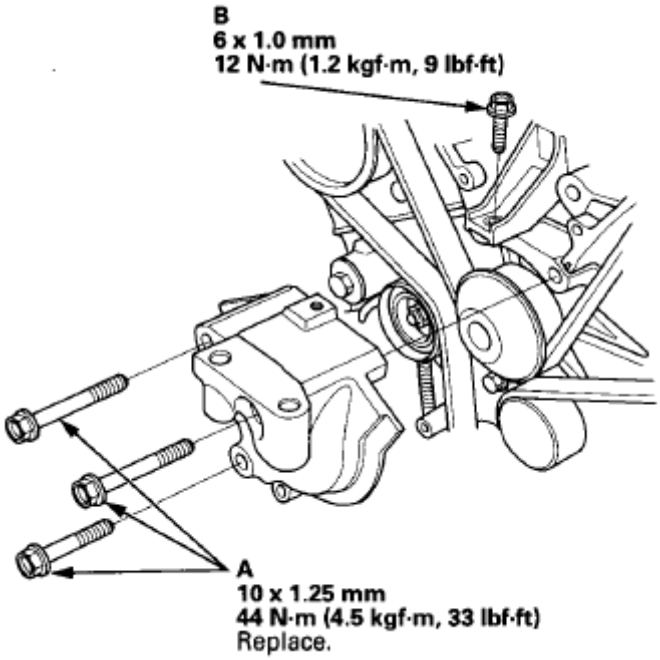


Fig. 45: Identifying Engine Mount Bracket Bolts With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

10. Install the timing belt guide plate (A) as shown.

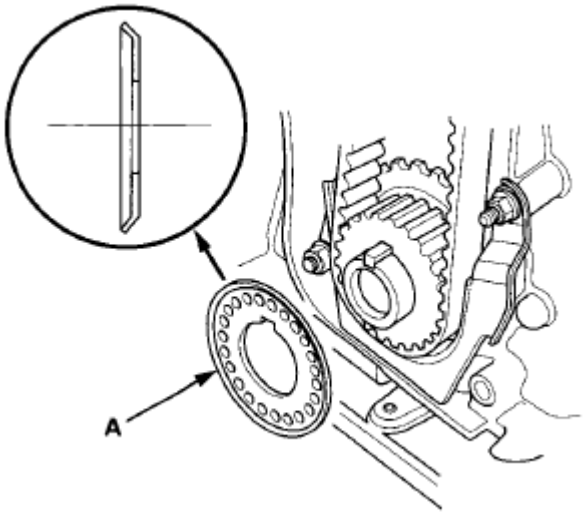


Fig. 46: Identifying Timing Belt Guide Plate
Courtesy of AMERICAN HONDA MOTOR CO., INC.

11. Install the lower cover.

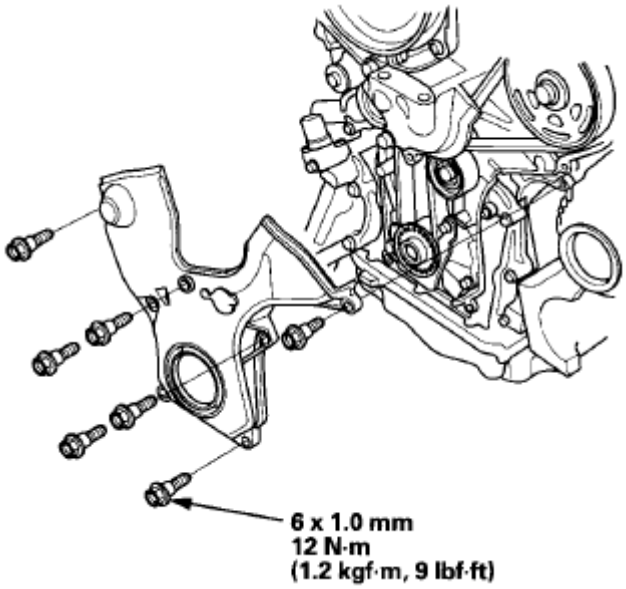


Fig. 47: Identifying Lower Cover And Bolts With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

12. Install the front upper cover (A) and the rear upper cover (B).

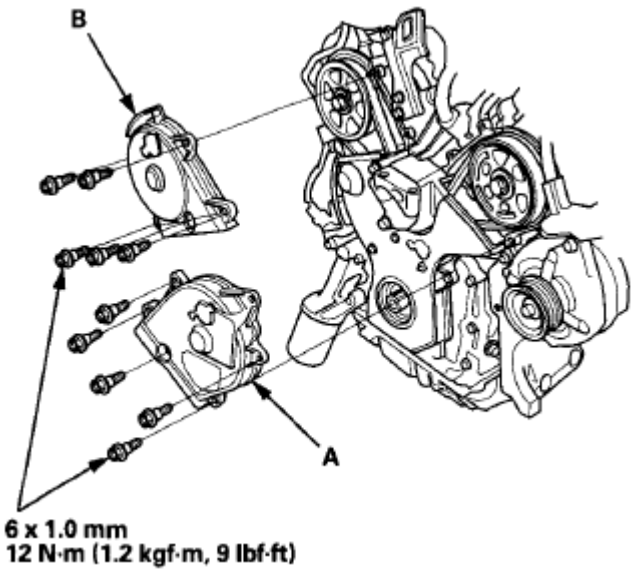


Fig. 48: Identifying Front And Rear Upper Cover With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

13. Install the crankshaft pulley (see **CRANKSHAFT PULLEY REMOVAL AND INSTALLATION**).
14. Rotate the crankshaft pulley about six turns clockwise so the timing belt positions itself on the pulleys.
15. Turn the crankshaft pulley so its white mark (A) lines up with the pointer (B).

NOTE: The other pointer (C) is not used.

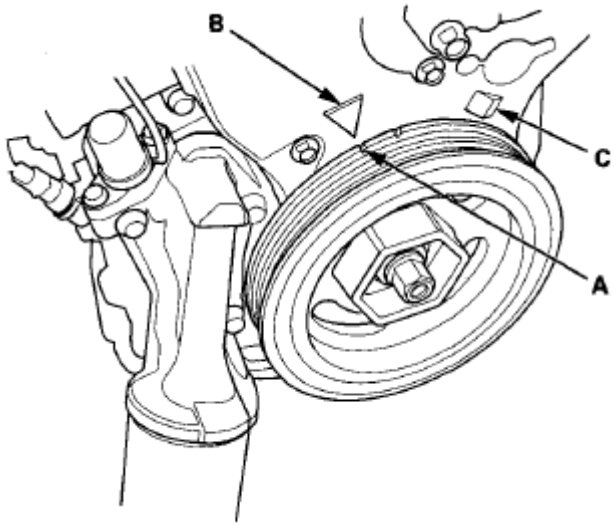


Fig. 49: Identifying White Marks And Pointers On Crankshaft Pulley
Courtesy of AMERICAN HONDA MOTOR CO., INC.

16. Check the camshaft pulley marks.

NOTE: If the marks are not aligned, rotate the crankshaft 360 degrees, and recheck the camshaft pulley mark:

- **If the camshaft pulley marks are at TDC, go to step 17.**
- **If the camshaft pulley marks are not at TDC, remove the timing belt and repeat steps 2 through 16.**

FRONT

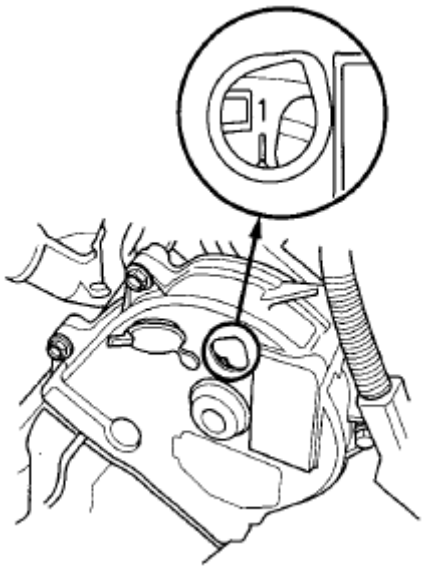


Fig. 50: Identifying Camshaft Pulley Marks - Front

Courtesy of AMERICAN HONDA MOTOR CO., INC.

REAR

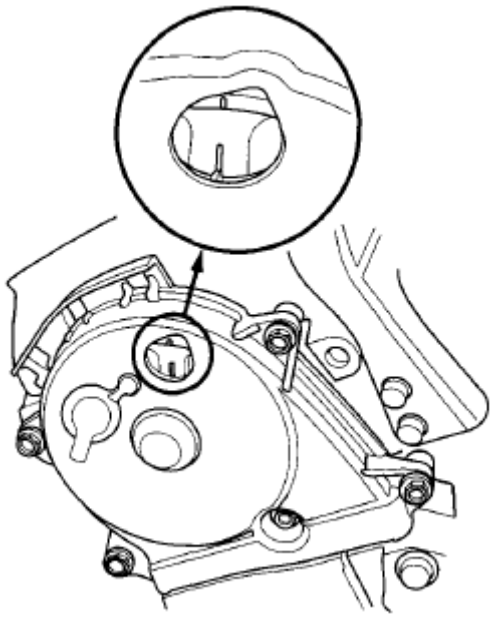


Fig. 51: Identifying Camshaft Pulley Marks - Rear
Courtesy of AMERICAN HONDA MOTOR CO., INC.

17. Loosely install the upper half of the side engine mount bracket (A) using new bolts, then install the ground cable (B).

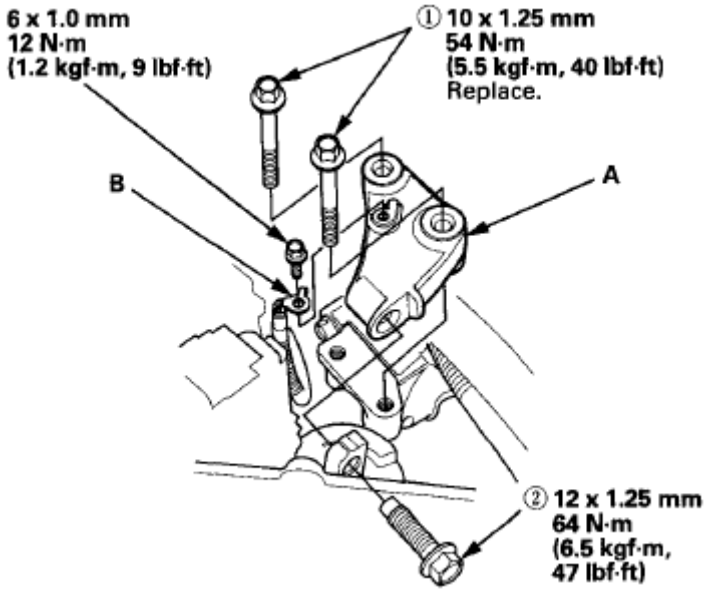


Fig. 52: Identifying Engine Mount Bracket, Bolts And Cable With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

18. Remove the jack and the wood block.
19. Tighten the mounting bolts in the numbered sequence shown.
20. Install the drive belt auto-tensioner (see **DRIVE BELT AUTO-TENSIONER REPLACEMENT**).
21. Install the front splash shield (see **FRONT SPLASH SHIELD REPLACEMENT**).
22. Install the right front wheel.
23. Install the engine compartment covers (see **ENGINE COMPARTMENT COVER REPLACEMENT**).
24. Do the CKP pattern clear/CKP pattern learn procedure (see **CKP PATTERN CLEAR/CKP PATTERN LEARN**).

TIMING BELT REPLACEMENT

NOTE: The following procedure is for installation of a new timing belt. If you are installing a used belt, refer to the TIMING BELT INSTALLATION PROCEDURE.

1. Remove the timing belt (see **TIMING BELT REMOVAL**).
2. Clean the timing belt pulleys, the timing belt guide plate, and the upper and lower covers.
3. Set the timing belt drive pulley to top dead center (TDC) by aligning the TDC mark (A) on the tooth of the timing belt drive pulley with the pointer (B) on the oil pump.

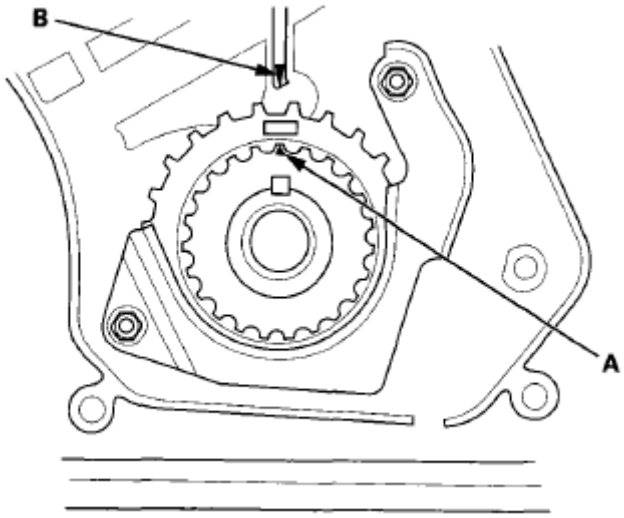


Fig. 53: Identifying TDC Mark And Pointer On Oil Pump
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Set the camshaft pulleys to TDC by aligning the TDC marks (A) on the camshaft pulleys with the pointers (B) on the back covers.

FRONT

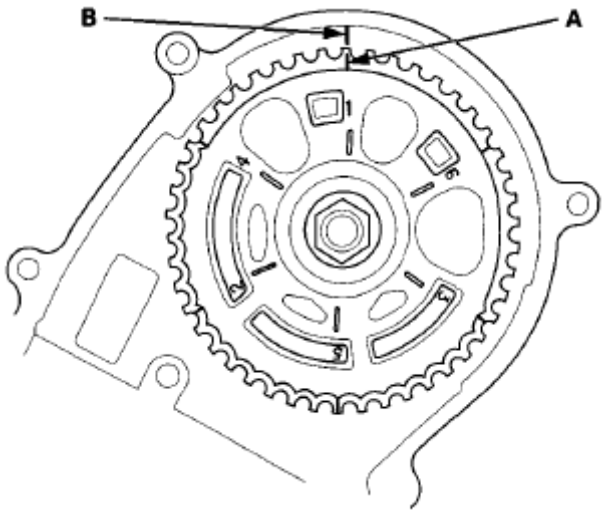


Fig. 54: Identifying TDC Marks On Crankshaft Pulley And Pointers On Back Cover - Front
Courtesy of AMERICAN HONDA MOTOR CO., INC.

REAR

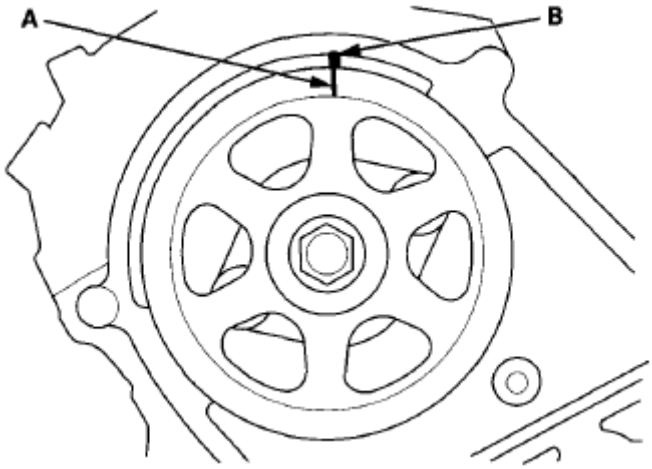


Fig. 55: Identifying TDC Marks On Crankshaft Pulley And Pointers On Back Cover - Rear
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Remove the battery clamp bolt from the back cover.
6. Remove the auto-tensioner.

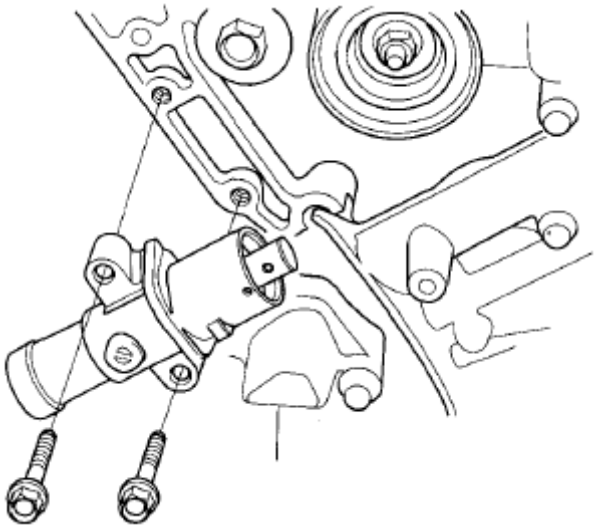


Fig. 56: Identifying Auto-Tensioner
Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Align the holes on the rod and the housing of the auto-tensioner.

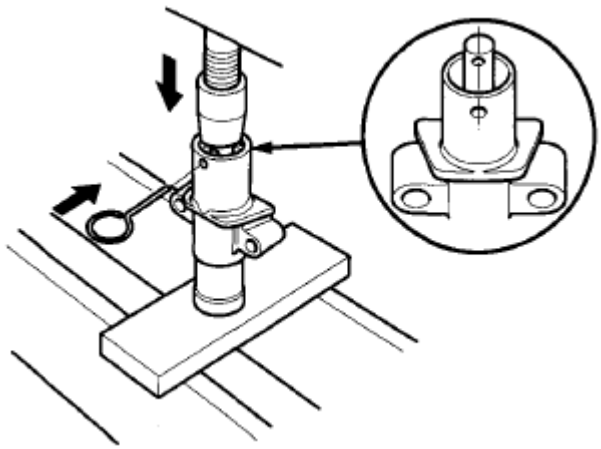


Fig. 57: Aligning Holes On Rod And Housing Of Auto-Tensioner
Courtesy of AMERICAN HONDA MOTOR CO., INC.

8. Use a hydraulic press to slowly compress the auto-tensioner. Insert a 2.0 mm (5/64 in) pin through the housing and the rod.

NOTE: The compression pressure should not exceed 9, 800 N (999.3 kgf, 2, 203.1 lbf).

9. Install the auto-tensioner.

NOTE: Make sure the pin stays in place.

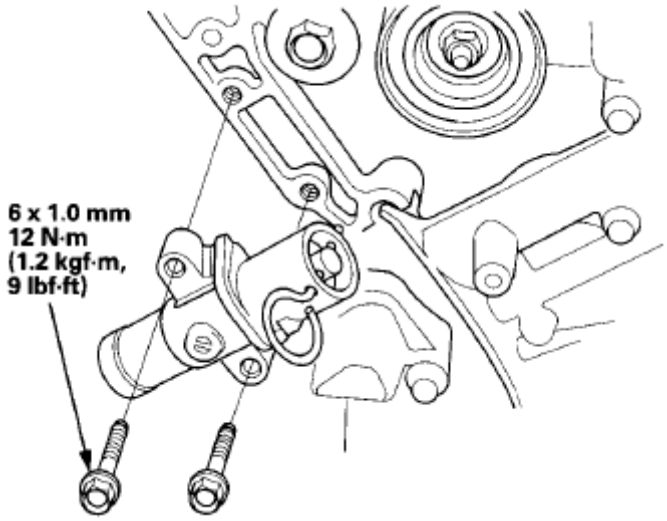


Fig. 58: Identifying Bolts Of Auto-Tensioner With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

10. Thread the battery clamp bolt in as shown to hold the timing belt adjuster. Tighten it by hand, do not use a wrench.

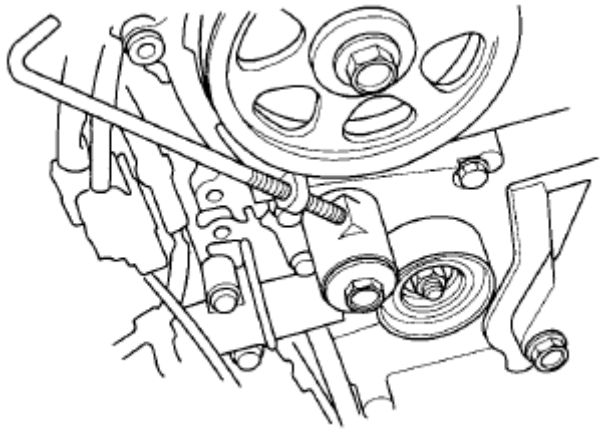


Fig. 59: Identifying Battery Clamp Bolt
Courtesy of AMERICAN HONDA MOTOR CO., INC.

11. Loosely install the idler pulley with a new idler pulley bolt so the pulley can move but does not come off.
12. Install the timing belt in a counterclockwise sequence starting with the drive pulley:
    1. Drive pulley (A)
    2. Idler pulley (B)
    3. Front camshaft pulley (C)
    4. Water pump pulley (D)
    5. Rear camshaft pulley (E)
    6. Adjusting pulley (F)

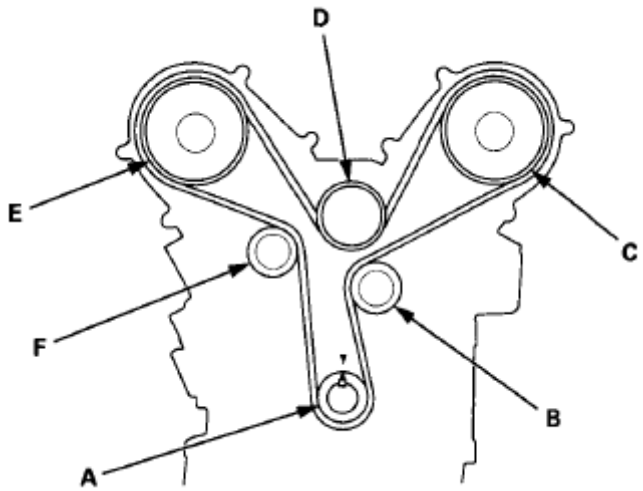


Fig. 60: Identifying Timing Belt And Related Parts
Courtesy of AMERICAN HONDA MOTOR CO., INC.

13. Tighten the idler pulley bolt.

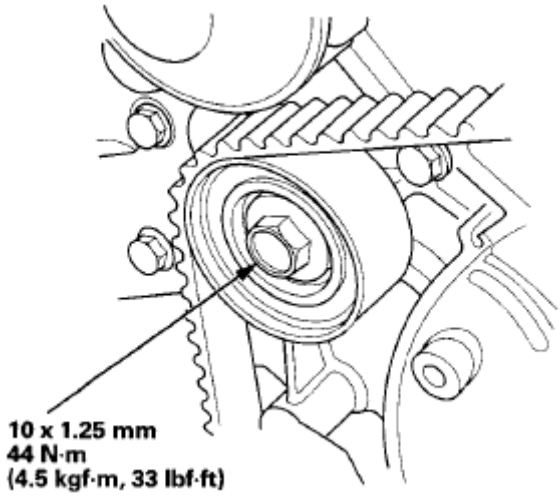


Fig. 61: Identifying Idler Pulley Bolt With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

14. Remove the pin from the auto-tensioner.

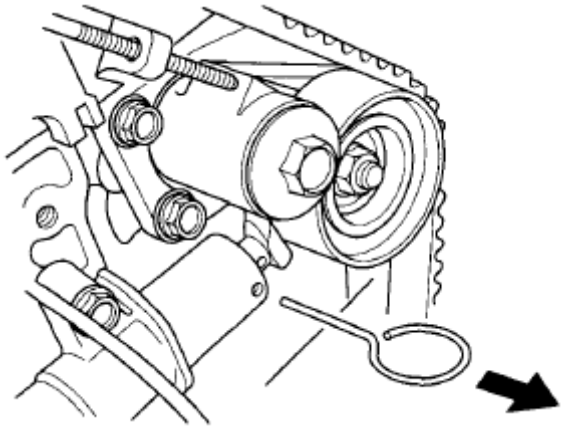


Fig. 62: Removing Pin From Auto-Tensioner
Courtesy of AMERICAN HONDA MOTOR CO., INC.

15. Remove the battery clamp bolt from the back cover.
16. Install the lower half of the side engine mount bracket using new bolts (A) and the bolt (B).

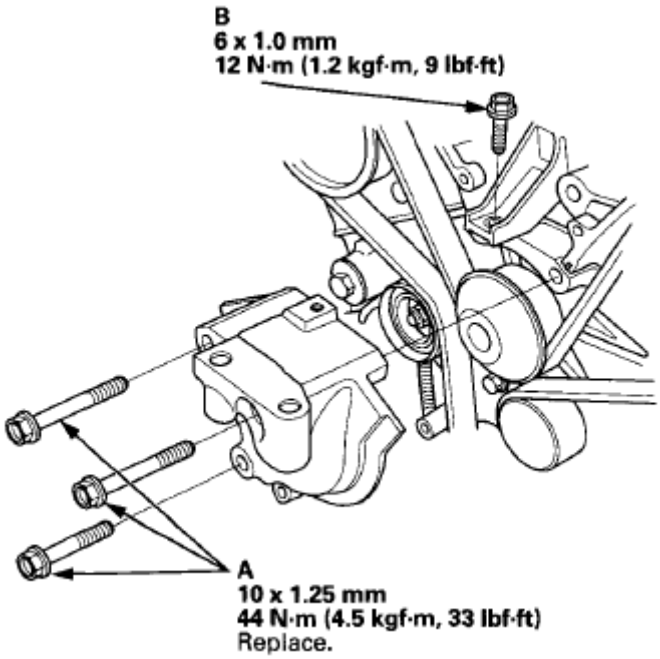


Fig. 63: Identifying Engine Mount Bracket Bolts With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

17. Install the timing belt guide plate (A) as shown.

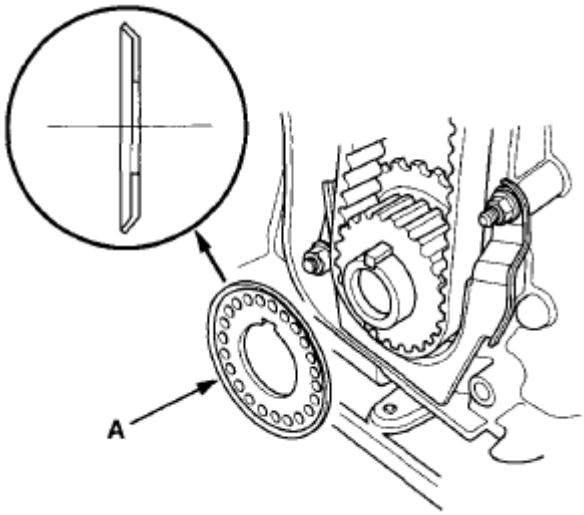


Fig. 64: Identifying Timing Belt Guide Plate
Courtesy of AMERICAN HONDA MOTOR CO., INC.

18. Install the lower cover.

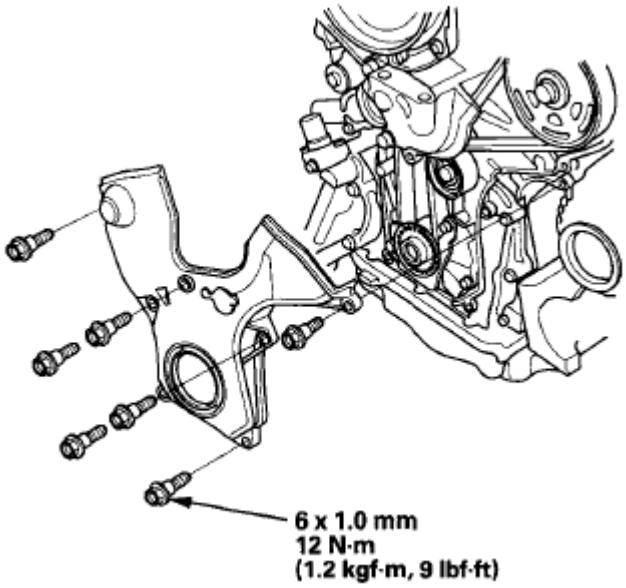


Fig. 65: Identifying Lower Cover And Bolts With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

19. Install the front upper cover (A) and the rear upper cover (B).

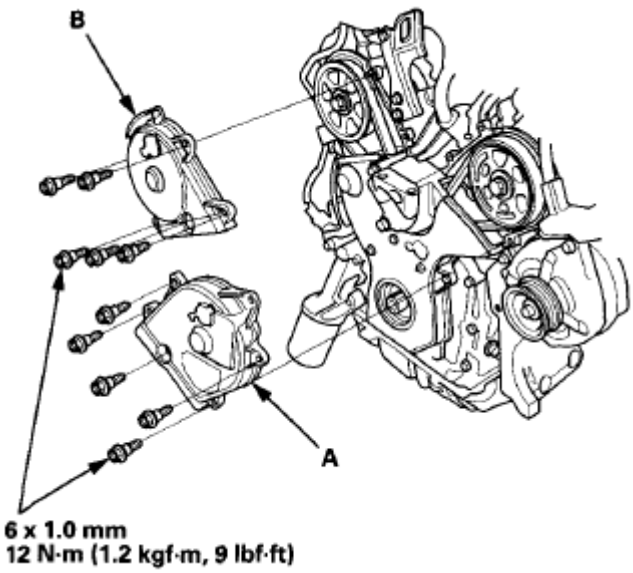


Fig. 66: Identifying Front And Rear Upper Cover With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

20. Install the crankshaft pulley (see **CRANKSHAFT PULLEY REMOVAL AND INSTALLATION**).
21. Rotate the crankshaft pulley about six turns clockwise so the timing belt positions itself on the pulleys.
22. Turn the crankshaft pulley so its white mark (A) lines up with the pointer (B).

NOTE: The other pointer (C) is not used.

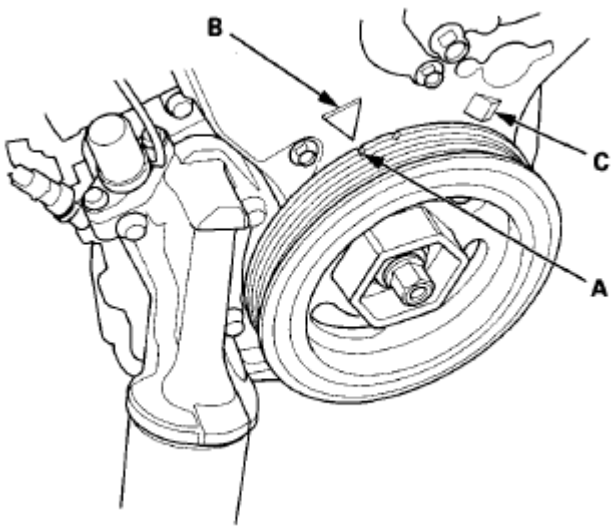


Fig. 67: Identifying White Mark And Pointer On Crankshaft Pulley
Courtesy of AMERICAN HONDA MOTOR CO., INC.

23. Check the camshaft pulley marks.

NOTE: If the marks are not aligned, rotate the crankshaft 360 degrees, and recheck the camshaft pulley mark:

- If the camshaft pulley marks are at TDC, go to step 24.
- If the camshaft pulley marks are not at TDC, remove the timing belt and repeat steps 3 through 23.

FRONT

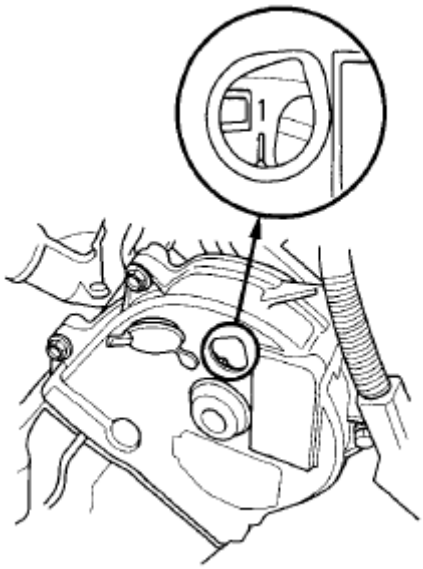


Fig. 68: Identifying Camshaft Pulley Marks - Front
Courtesy of AMERICAN HONDA MOTOR CO., INC.

REAR

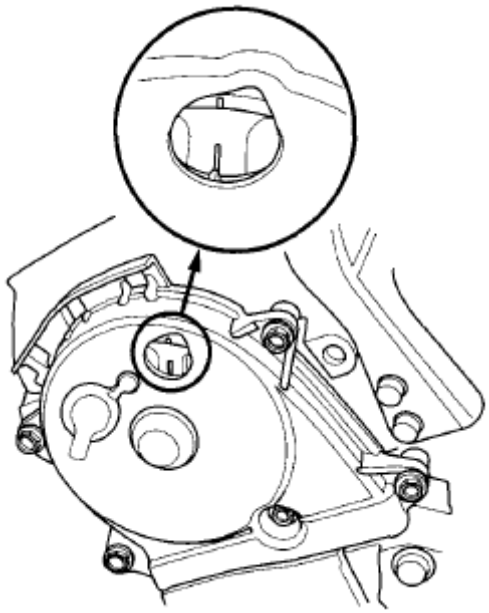


Fig. 69: Identifying Camshaft Pulley Marks - Rear
Courtesy of AMERICAN HONDA MOTOR CO., INC.

24. Loosely install the upper half of the side engine mount bracket (A) using new bolts, then install the ground cable (B).

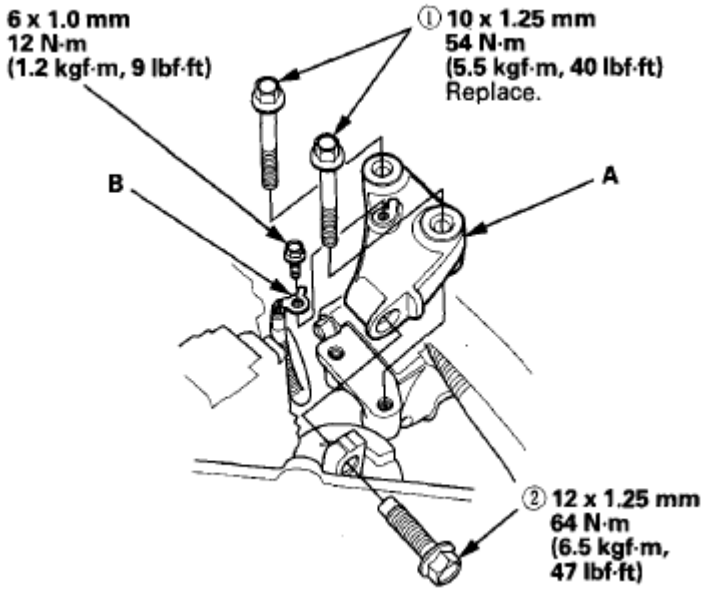


Fig. 70: Identifying Engine Mount Bracket And Ground Cable With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

25. Remove the jack and the wood block.
26. Tighten the mounting bolts in the numbered sequence shown.
27. Install the drive belt auto-tensioner (see **DRIVE BELT AUTO-TENSIONER REPLACEMENT**).

28. Install the front splash shield (see **FRONT SPLASH SHIELD REPLACEMENT**).
29. Install the right front wheel.
30. Install the engine compartment covers (see **ENGINE COMPARTMENT COVER REPLACEMENT**).
31. Do the CKP pattern clear/CKP pattern learn procedure (see **CKP PATTERN CLEAR/CKP PATTERN LEARN**).

TIMING BELT ADJUSTER REPLACEMENT

1. Remove the timing belt (see **TIMING BELT REMOVAL**).
2. Remove the battery clamp bolt from the back cover.
3. Remove the auto-tensioner (see step 6).
4. Remove the bolt (A), then remove the timing belt adjuster (B) and the collar (C).

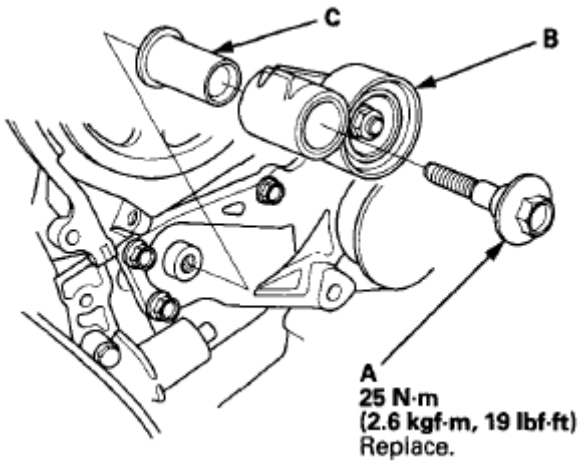


Fig. 71: Identifying Timing Belt Adjuster, Collar And Bolt With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Install the timing belt adjuster using new bolt in the reverse order of removal.
6. Install the timing belt (see **TIMING BELT INSTALLATION**).

TIMING BELT DRIVE PULLEY REPLACEMENT

1. Remove the timing belt (see **TIMING BELT REMOVAL**).
2. Remove the timing belt stopper (A), then remove the timing belt drive pulley (B) and the key (C).

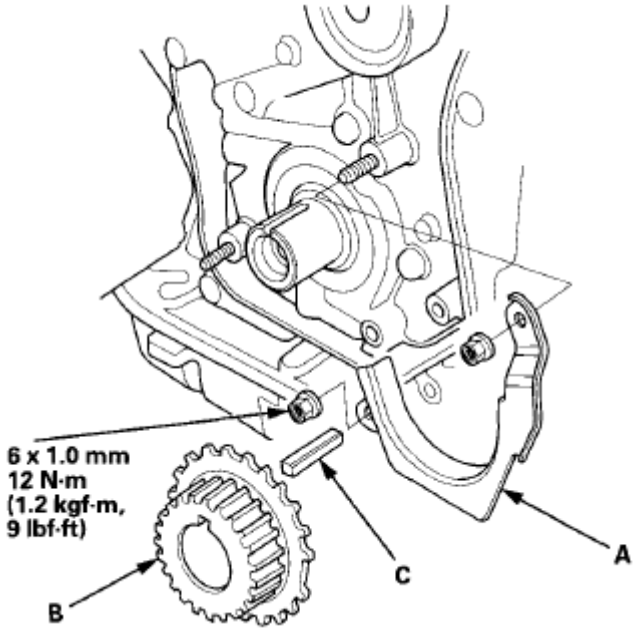


Fig. 72: Identifying Timing Belt Stopper, Driver Pulley And Key With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Inspect the timing belt drive pulley and the key for damage. If it is cracked or damaged, replace the timing belt drive pulley.
4. Install the new timing belt drive pulley and the key, then install the timing belt stopper.
5. Install the timing belt (see **TIMING BELT INSTALLATION**).
6. Do the CKP pattern clear/CKP pattern learn procedure (see **CKP PATTERN CLEAR/CKP PATTERN LEARN**).

CYLINDER HEAD COVER REMOVAL

FRONT

1. Remove the intake manifold (see **REMOVAL**).
2. Remove the three ignition coils from the front cylinder head (see **IGNITION COIL AND SPARK PLUG REMOVAL/INSTALLATION**).
3. Disconnect the EGR valve connector (A) and remove the harness holder mounting bolt (B) and the harness clamp (C).

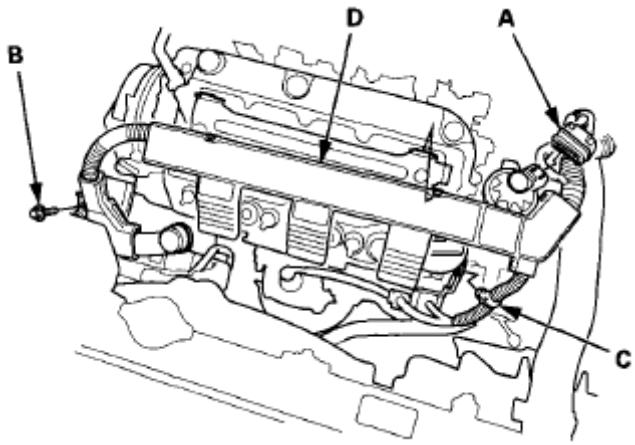


Fig. 73: Identifying EGR Valve Connector, Mounting Bolt And Harness Clamp
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Remove the harness holder (D) from the bracket.
5. Remove the front cylinder head cover.

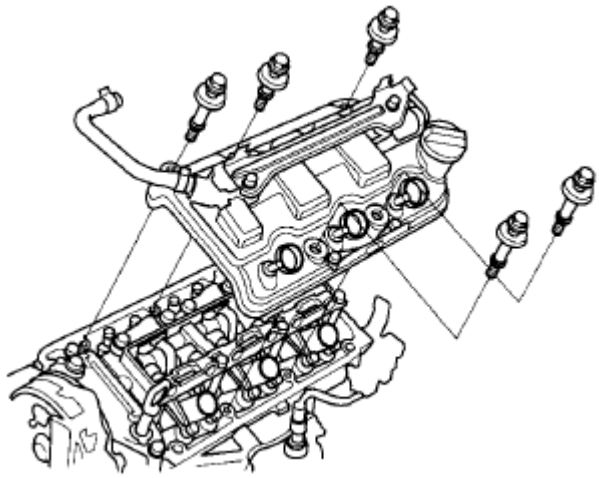


Fig. 74: Removing Front Cylinder Head Cover
Courtesy of AMERICAN HONDA MOTOR CO., INC.

REAR

1. Remove the strut brace (see **FRAME BRACE REPLACEMENT**).
2. Remove the intake manifold (see **REMOVAL**).
3. Remove the three ignition coils from the rear cylinder head (see **IGNITION COIL AND SPARK PLUG REMOVAL/INSTALLATION**).
4. Remove the harness holder mounting bolts (A) and the engine ground cable (B).

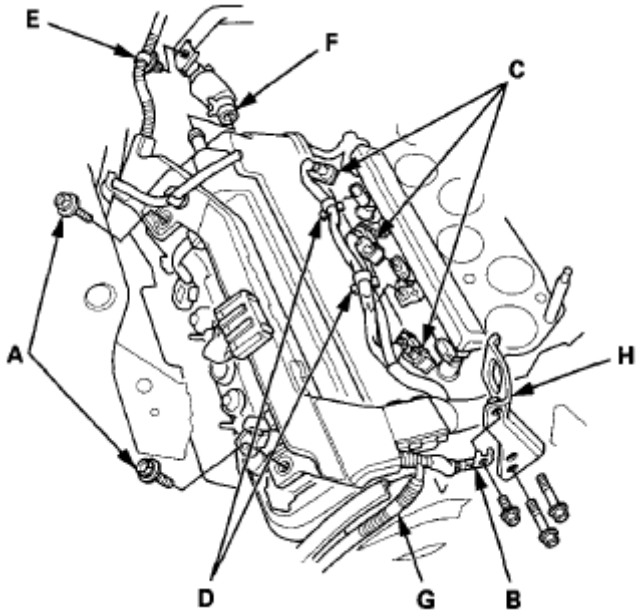


Fig. 75: Identifying Cylinder Head Cover And Related Components
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Disconnect the three injector connectors (C) and the two harness clamps (D).
6. Remove the harness clamp (E) and disconnect the breather hose (F).
7. Remove the harness (G) from the upper cover.
8. Remove the engine hanger bracket (H).
9. Remove the harness holder mounting bolts (A) and disconnect the knock sensor connector (B) and the CMP sensor connector (C).

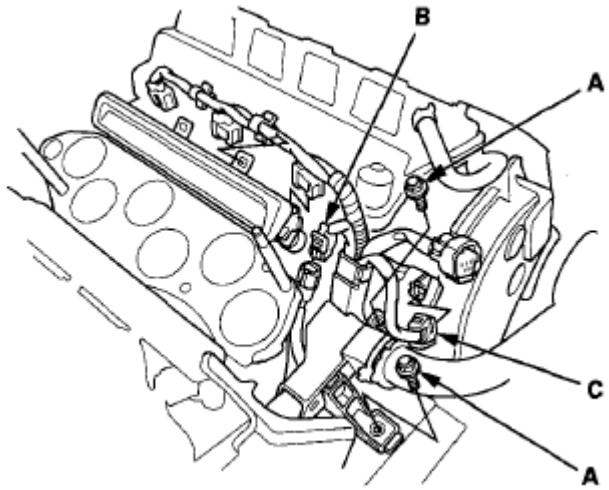


Fig. 76: Identifying Mounting Bolts, Knock Sensor Connector And CMP Sensor Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

10. Remove the rear cylinder head cover.

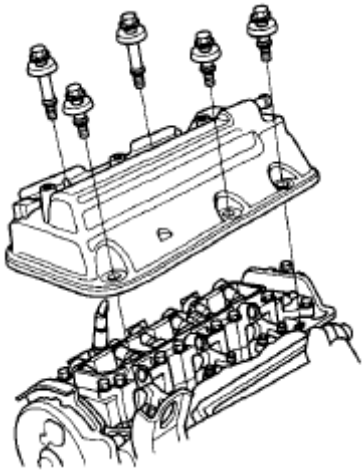


Fig. 77: Identifying Rear Cylinder Head Cover
Courtesy of AMERICAN HONDA MOTOR CO., INC.

CYLINDER HEAD COVER INSTALLATION

FRONT

1. Check the spark plug seals for damage. If any seals are damaged, replace it.
2. Thoroughly clean the head cover gasket and the groove.
3. Install the head cover gasket (A) in the groove of the cylinder head cover (B). Make sure the head cover gasket is seated securely.

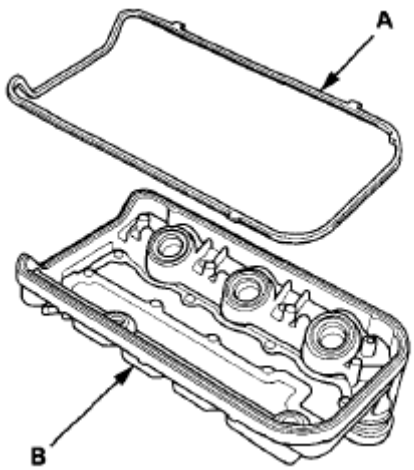


Fig. 78: Identifying Head Cover Gasket And Cylinder Head Cover (Front)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Remove all of the old liquid gasket from the rocker shaft holder and the cylinder head.
5. Clean the head cover contacting surfaces with a shop towel.
6. Apply liquid gasket, P/N 08717-0004, 08718-0003, 08718-0004 or 08718-0009 to the rocker shaft holder

mating areas (A). Install the component within 5 minutes of applying the liquid gasket.

NOTE:

- **If you apply liquid gasket P/N 08718-0012, the component must be installed within 4 minutes.**
- **If too much time has passed after applying the liquid gasket, remove the old liquid gasket and residue, then reapply the new liquid gasket.**

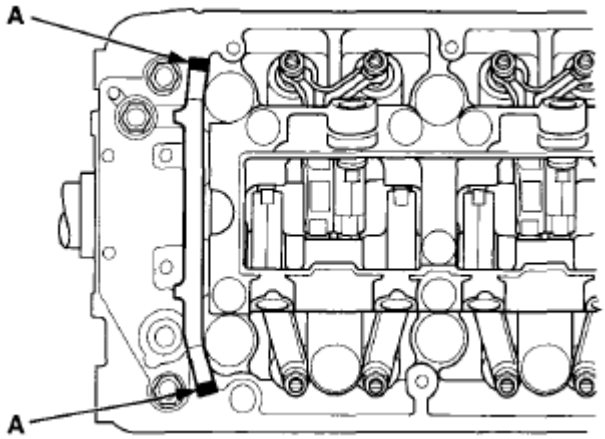


Fig. 79: Locating Shaft Holder Mating Areas
Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Set the spark plug seals (A) on the spark plug tubes, and install the front cylinder head cover (B).

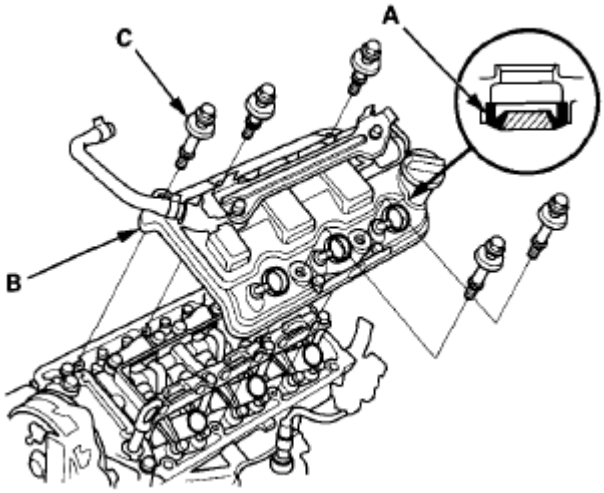


Fig. 80: Identifying Spark Plug Seal, Head Cover And Cover Washers
Courtesy of AMERICAN HONDA MOTOR CO., INC.

8. Inspect the spark plug seals for damage.
9. Inspect the cover washers (C). Replace any washer that is damaged or deteriorated.
10. Tighten the bolts in three steps. In the final step torque all bolts, in sequence, 12 N.m (1.2 kgf.m, 9 lbf.ft).

NOTE:

- **Wait at least 30 minutes before filling the engine with oil.**
- **Do not run the engine for at least 3 hours after installing the cylinder head cover.**

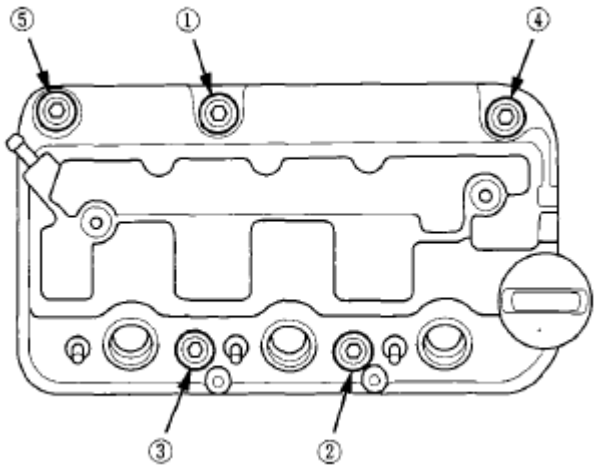


Fig. 81: Identifying Bolts On Cylinder Head Cover
Courtesy of AMERICAN HONDA MOTOR CO., INC.

11. Install the harness holder (A) to the bracket.

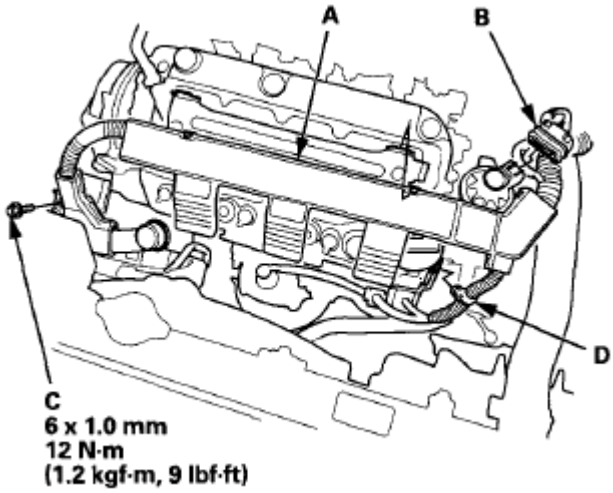


Fig. 82: Identifying Harness Holder, Mounting Bolt, EGR Valve Connector And Clamp With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

12. Connect the EGR valve connector (B) and tighten the harness holder mounting bolt (C) and the harness clamp (D).
13. Install the three ignition coils to the front cylinder head (see **IGNITION COIL AND SPARK PLUG REMOVAL/INSTALLATION**).
14. Install the intake manifold (see **INSTALLATION**).

REAR

1. Check the spark plug seals for damage. If any seals are damaged, replace it.
2. Thoroughly clean the head cover gasket and the groove.
3. Install the head cover gasket (A) in the groove of the cylinder head cover (B). Make sure the head cover gasket is seated securely.

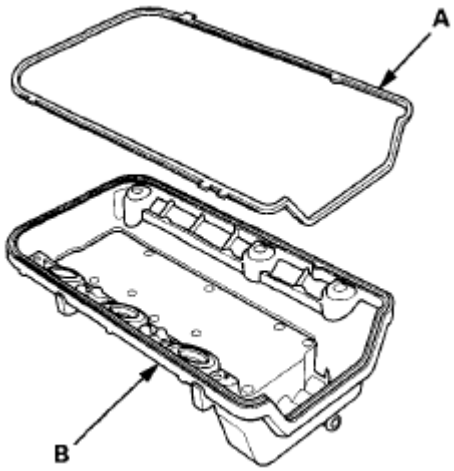


Fig. 83: Identifying Head Cover Gasket And Cylinder Head Cover
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Remove all of the old liquid gasket from the rocker shaft holder and the cylinder head.
5. Clean the head cover contacting surfaces with a shop towel.
6. Apply liquid gasket, P/N 08717-0004, 08718-0003 08718-0004, or 08718-0009 to the rocker shaft holder mating areas (A). Install the component within 5 minutes of applying the liquid gasket.

NOTE:

- **If you apply liquid gasket P/N 08718-0012, the component must be installed within 4 minutes.**
- **If too much time has passed after applying the liquid gasket, remove the old liquid gasket and residue, then reapply the new liquid gasket.**

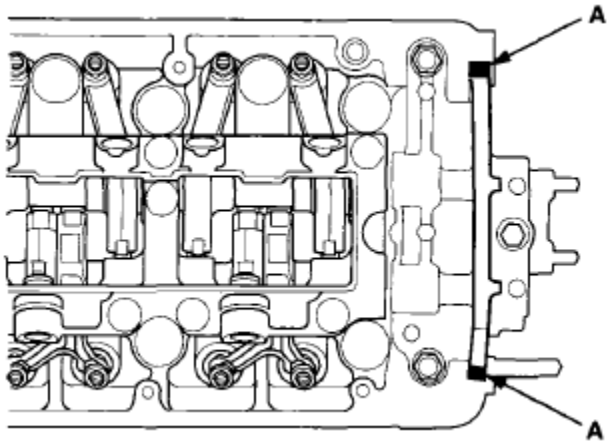


Fig. 84: Locating Shaft Holder Mating Areas
Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Set the spark plug seals (A) on the spark plug tubes, and install the rear cylinder head cover (B).

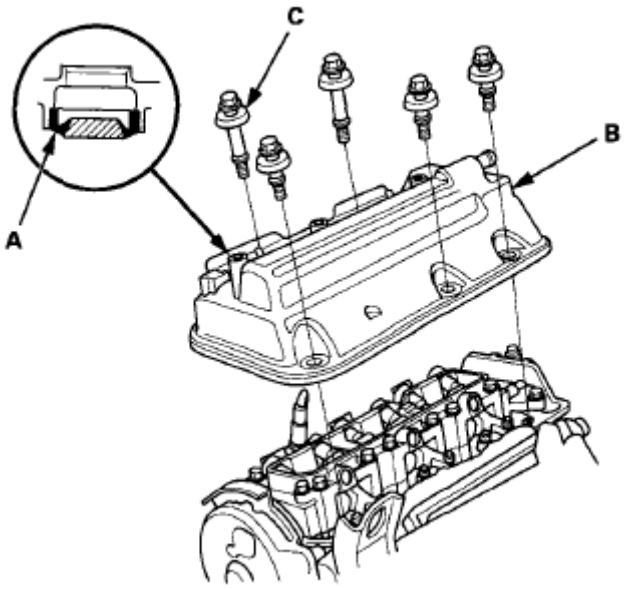


Fig. 85: Identifying Spark Plug Seals, Cylinder Head Cover And Cover Washers
Courtesy of AMERICAN HONDA MOTOR CO., INC.

8. Inspect the spark plug seals for damage.
9. Inspect the cover washers (C). Replace any washer that is damaged or deteriorated.
10. Tighten the bolts in three steps. In the final step torque all bolts, in sequence, 12 N.m (1.2 kgf.m, 9 lbf.ft).

NOTE:

- **Wait at least 30 minutes before filling the engine with oil.**
- **Do not run the engine for at least 3 hours after installing the cylinder head cover.**

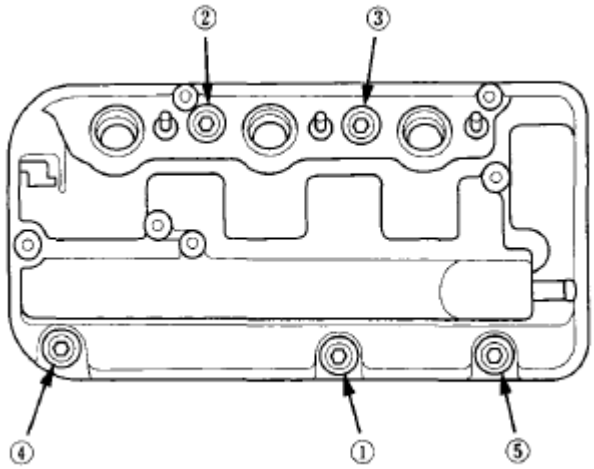


Fig. 86: Identifying Bolts On Cylinder Head Cover
Courtesy of AMERICAN HONDA MOTOR CO., INC.

11. Connect the knock sensor connector (A) and the CMP sensor connector (B) and install the harness holder mounting bolts (C).

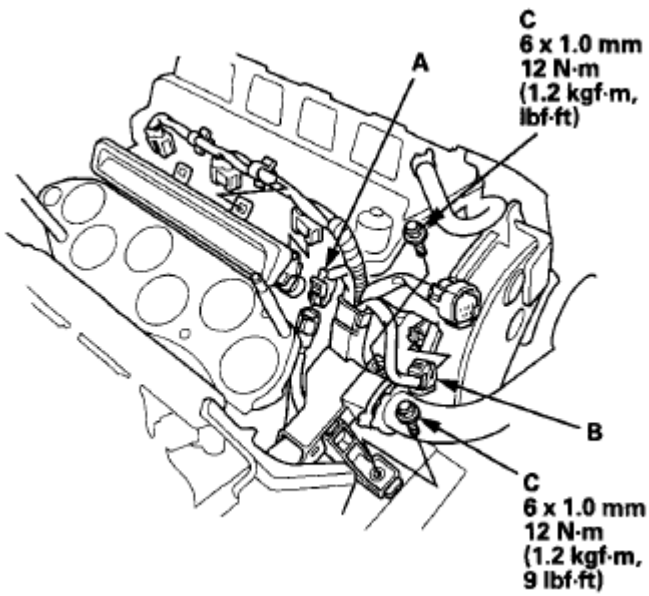


Fig. 87: Identifying Knock Sensor Connector, CMP Sensor Connector And Mounting Bolts With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

12. Install the engine hanger bracket (A). D-

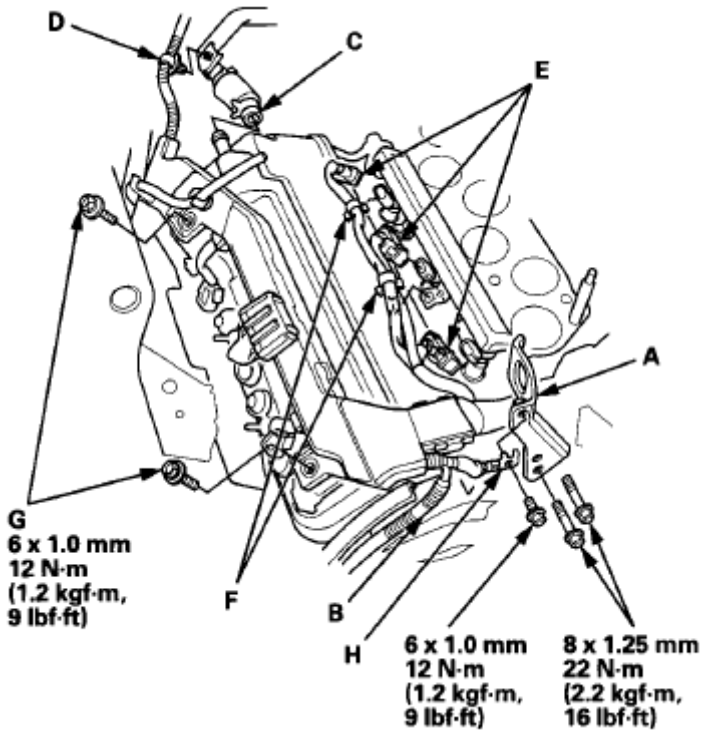


Fig. 88: Identifying Hanger Brackets, Upper Cover, Breather Hose, Connectors, Harness Clamps, Ground Cable & Fasteners With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

13. Install the harness (B) to the upper cover.
14. Connect the breather hose (C) and install the harness clamp (D).
15. Connect the three injector connectors (E) and the two harness clamps (F).
16. Install the harness holder mounting bolts (G) and the engine ground cable (H).
17. Install the three ignition coils to the rear cylinder head (see **IGNITION COIL AND SPARK PLUG REMOVAL/INSTALLATION**).
18. Install the intake manifold (see **INSTALLATION**).
19. Install the strut brace (see **FRAME BRACE REPLACEMENT**).

CYLINDER HEAD REMOVAL

NOTE:

- **Use fender covers to avoid damaging painted surfaces.**
- **To avoid damaging the wiring and terminals, unplug the wiring connectors carefully while holding the connector portion.**
- **Connect the HDS to the DLC (see HOW TO USE THE HDS (HONDA DIAGNOSTIC SYSTEM)), and monitor ECT SENSOR 1. To avoid damaging the cylinder head, wait until the engine coolant temperature drops below 100°F (38°C) before loosening the cylinder head bolts.**
- **Mark all wiring and hoses to avoid misconnection. Also, be sure that they**

do not contact any other wiring or hoses, or interfere with any other parts.

1. Remove the engine compartment covers (see **ENGINE COMPARTMENT COVER REPLACEMENT**).
2. Relieve the fuel pressure (see **FUEL PRESSURE RELIEVING**).
3. Do the battery terminal disconnection procedure (see **BATTERY TERMINAL DISCONNECTION AND RECONNECTION**).
4. Drain the engine coolant (see **COOLANT CHECK**).
5. Remove the six ignition coils (see **IGNITION COIL AND SPARK PLUG REMOVAL/INSTALLATION**).
6. Remove the alternator (see **ALTERNATOR REMOVAL AND INSTALLATION**).
7. Remove the intake manifold (see **INTAKE MANIFOLD REMOVAL AND INSTALLATION**).
8. Disconnect the following engine wire harness connectors, and remove the wire harness clamps from the cylinder head:
   - Six injector connectors
   - Knock sensor connector
   - ECT sensor 1 connector
   - Engine mount control solenoid valve connector
   - EGR valve connector
   - CMP sensor connector
   - Rocker arm oil control solenoid connector
   - Rocker arm oil pressure switch connector
   - Two A/F sensor connectors
   - Two secondary HO2S connectors
9. Remove the front warm up TWC (see **WARM UP TWC REMOVAL/INSTALLATION**) and the rear warm up TWC (see **REAR (BANK 1)**).
10. Remove the quick-connect fitting cover (A), then disconnect the fuel feed hose (B) (see **FUEL LINE/QUICK-CONNECT FITTING REMOVAL**).

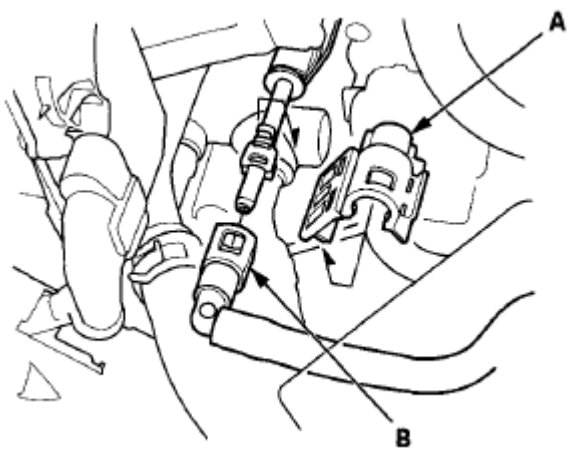


Fig. 89: Identifying Quick Connect Fitting Cover And Fuel Feed Hose
Courtesy of AMERICAN HONDA MOTOR CO., INC.

11. Remove the connector bracket (A) from the front cylinder head.

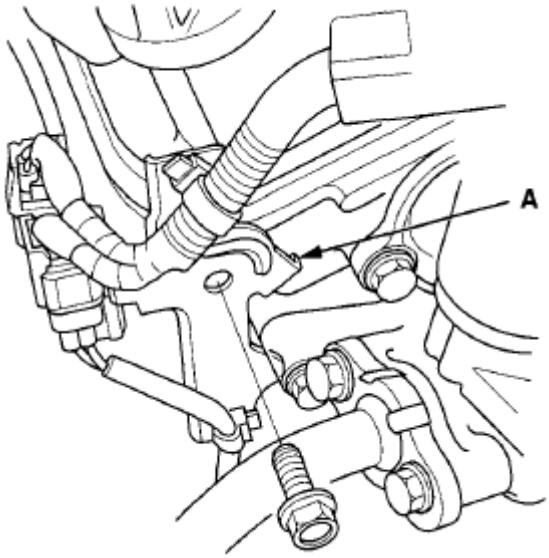


Fig. 90: Identifying Connector Bracket
Courtesy of AMERICAN HONDA MOTOR CO., INC.

12. Remove the engine mount control solenoid valve bracket (A) from the rear cylinder head.

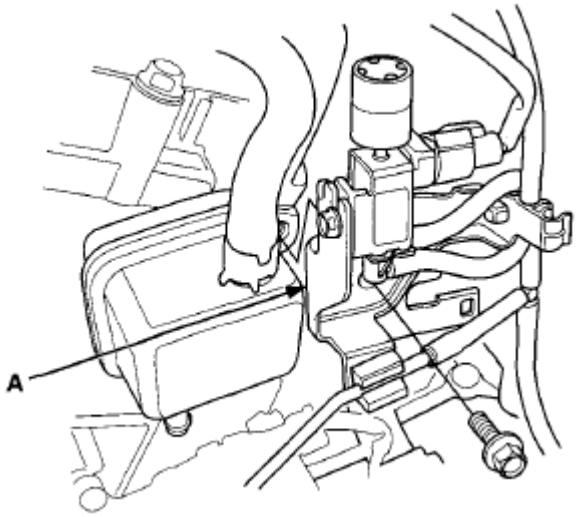


Fig. 91: Identifying Engine Mount Control Solenoid Valve Bracket
Courtesy of AMERICAN HONDA MOTOR CO., INC.

13. Remove the EVAP canister joint with the bracket (see step 9).
14. Remove the injector bases (see **INJECTOR BASE REMOVAL AND INSTALLATION**).

15. Remove the water passage (see **WATER PASSAGE REPLACEMENT**).
16. Remove the timing belt (see **TIMING BELT REMOVAL**).
17. Remove the camshaft pulleys (A) and the back covers (B).

FRONT

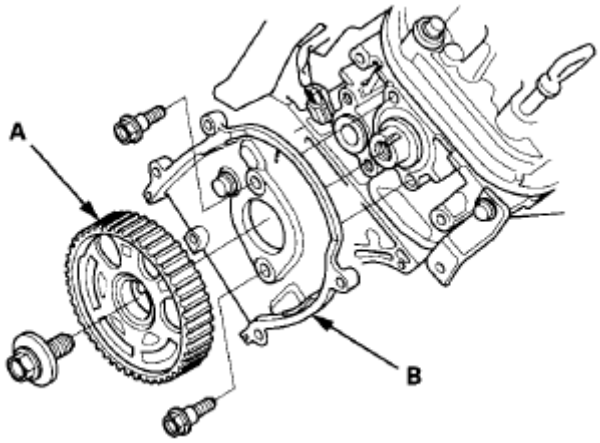


Fig. 92: Identifying Camshaft Pulleys And Back Covers (Front)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

REAR

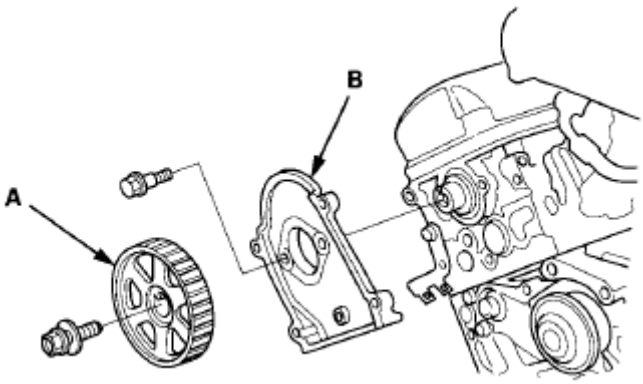


Fig. 93: Identifying Camshaft Pulleys And Back Covers (Rear)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

18. Remove the cylinder head covers (see **TIMING BELT DRIVE PULLEY REPLACEMENT**).
19. Remove the cylinder head bolts. To prevent warpage, loosen the bolts in sequence 1/3 turn at a time; repeat the sequence until all bolts are loosened.

FRONT

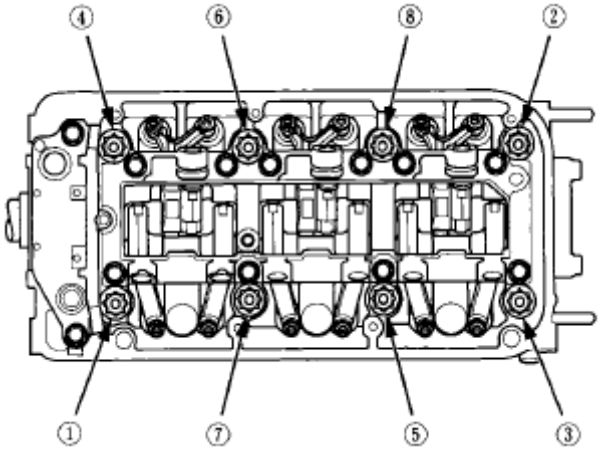


Fig. 94: Identifying Cylinder Head Bolts (Front)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

REAR

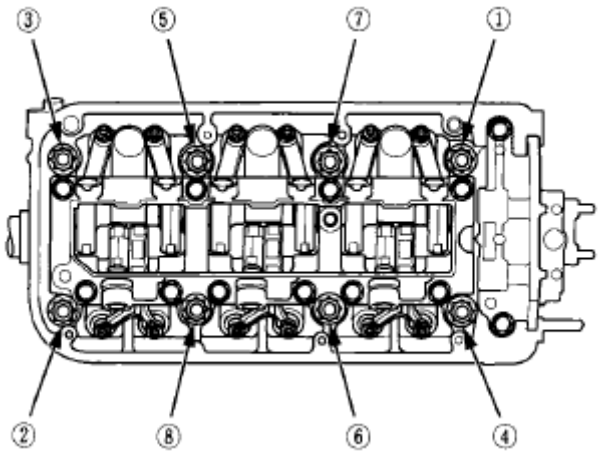


Fig. 95: Identifying Cylinder Head Bolts (Rear)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

20. Remove the cylinder heads.

CAMSHAFT REPLACEMENT

FRONT

1. Remove the engine compartment covers (see **ENGINE COMPARTMENT COVER REPLACEMENT**).
2. Do the battery removal procedure (see **BATTERY REMOVAL AND INSTALLATION**).
3. Drain the engine coolant (see **COOLANT CHECK**).
4. Disconnect the radiator hoses (A).

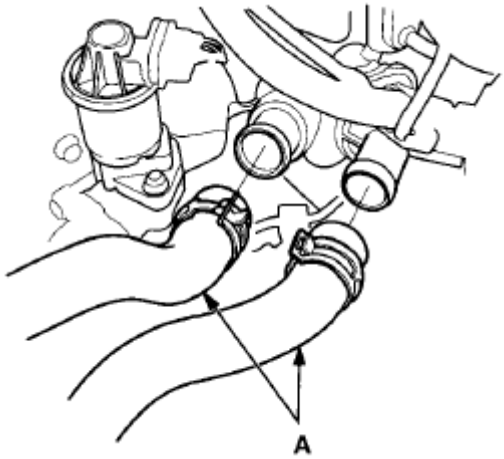


Fig. 96: Identifying Radiator Hoses
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Remove the EGR valve (see **EGR VALVE REPLACEMENT**).
6. Remove the EGR valve stud bolts (A).

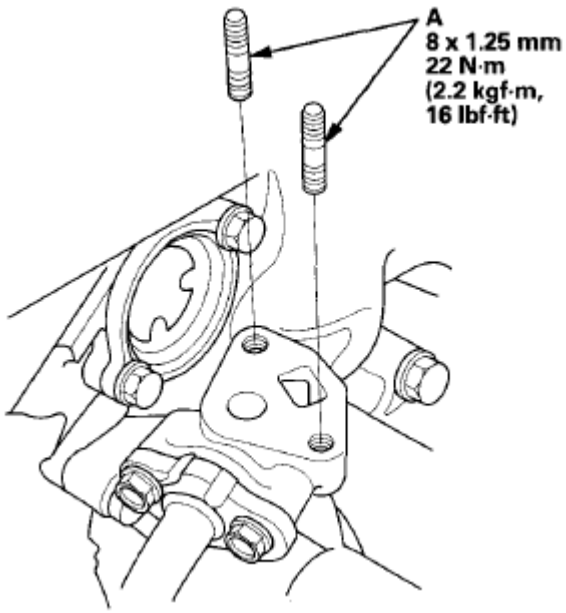


Fig. 97: Identifying EGR Valve Stud Bolts With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Remove the timing belt (see **TIMING BELT REMOVAL**).
8. Remove the front rocker arm assembly (see **ROCKER ARM ASSEMBLY REMOVAL**).
9. Remove the front camshaft pulley (see step 17).
10. Remove the thrust cover (A), then remove the front camshaft (B).

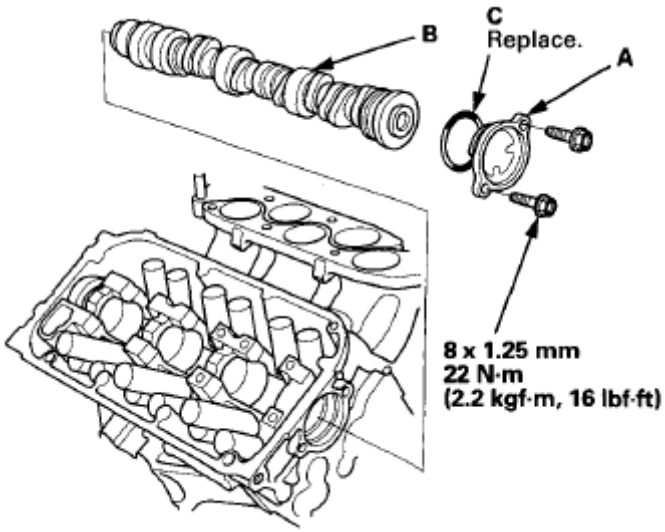


Fig. 98: Identifying Thrust Cover, Front Camshaft And O-Ring With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

11. Install the front camshaft in the reverse order of removal. Always use a new O-ring (C). Apply new engine oil to the journals and the cam lobes.
12. Apply new engine oil to the threads of the camshaft pulley mounting bolt, then install the front camshaft pulley (see step 15).
13. Install the front rocker arm assembly, then tighten the mounting bolts (see step 13).
14. Install the timing belt (see **TIMING BELT INSTALLATION**).
15. Adjust the valve clearance (see **VALVE CLEARANCE ADJUSTMENT**).
16. Install the EGR valve stud bolts, then install the EGR valve (see **EGR VALVE REPLACEMENT**).
17. Connect the radiator hoses.
18. Do the battery installation procedure (see **BATTERY REMOVAL AND INSTALLATION**).
19. Fill the radiator with engine coolant, and bleed the air from the cooling system (see **COOLANT CHECK**).
20. Install the engine compartment covers (see **ENGINE COMPARTMENT COVER REPLACEMENT**).
21. Do the CKP pattern clear/CKP pattern learn procedure (see **CKP PATTERN CLEAR/CKP PATTERN LEARN**).

REAR

1. Remove the engine compartment covers (see **ENGINE COMPARTMENT COVER REPLACEMENT**).
2. Relieve the fuel pressure (see **FUEL PRESSURE RELIEVING**).
3. Do the battery removal procedure (see **BATTERY REMOVAL AND INSTALLATION**).
4. Drain the engine coolant (see **COOLANT CHECK**).
5. Remove the under-hood fuse/relay box from the bracket.
6. Remove the air cleaner (see **THROTTLE BODY CLEANING**).

7. Remove the quick-connect fitting cover, then disconnect the fuel feed hose (see step 10).
8. Disconnect the heater hoses (A).

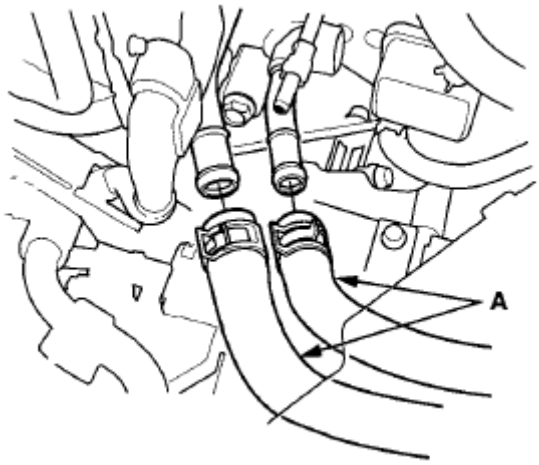


Fig. 99: Identifying Heater Hoses
Courtesy of AMERICAN HONDA MOTOR CO., INC.

9. Disconnect the EVAP canister hose (A), then remove the EVAP canister joint (B) with the bracket.

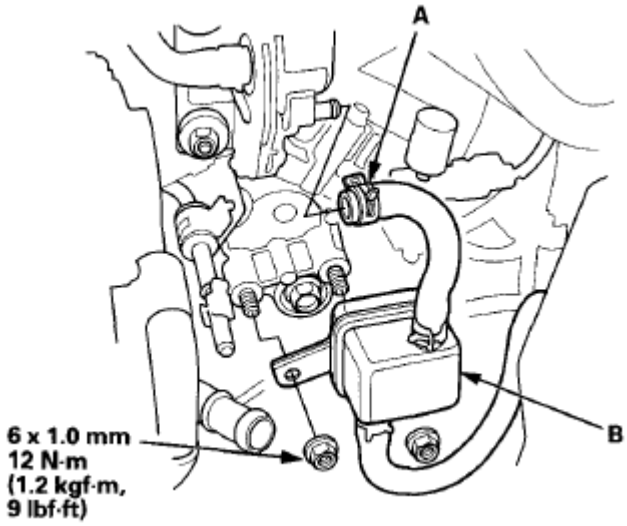


Fig. 100: Identifying EVAP Canister Hose And Joint With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

10. Remove the timing belt (see **TIMING BELT REMOVAL**).
11. Remove the rear rocker arm assembly (see **ROCKER ARM ASSEMBLY REMOVAL**).
12. Remove the rear camshaft pulley.
13. Remove the thrust cover (A), then remove the rear camshaft (B).

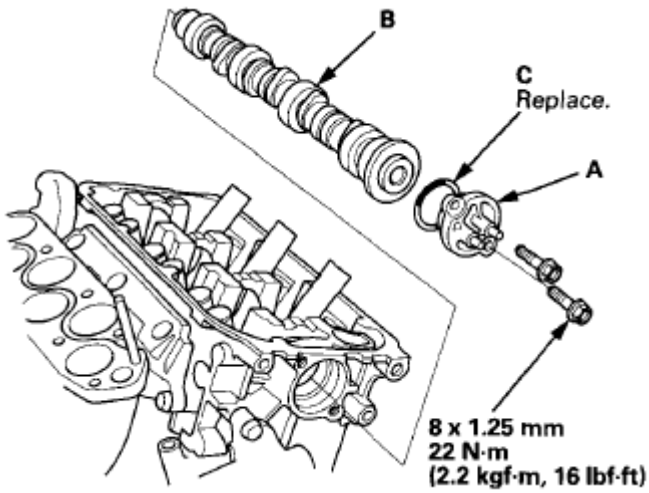


Fig. 101: Identifying Thrust Cover, Rear Camshaft And O-Ring With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

14. Install the rear camshaft in the reverse order of removal. Always use a new O-ring (C). Apply new engine oil to the journals and cam lobes.
15. Apply new engine oil to the threads of the camshaft pulley mounting bolt, then install the rear camshaft pulley (see step 15).
16. Install the rear rocker arm assembly, then tighten the mounting bolts (see step 13).
17. Install the timing belt (see **TIMING BELT INSTALLATION**).
18. Adjust the valve clearance (see **VALVE CLEARANCE ADJUSTMENT**).
19. Install the EVAP canister joint with the bracket, then connect the EVAP canister hose.
20. Connect the heater hoses.
21. Connect the fuel feed hose, then install the quick-connect fitting cover (see step 21).
22. Install the air cleaner (see **THROTTLE BODY CLEANING**).
23. Install the under-hood fuse/relay box to the bracket.
24. Do the battery installation procedure (see **BATTERY REMOVAL AND INSTALLATION**).
25. Inspect for fuel leaks. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode (do not operate the starter) so the fuel pump runs for about 2 seconds and pressurizes the fuel line. Repeat this operation three times, then check for fuel leakage at any point in the fuel line.
26. Fill the radiator with engine coolant, and bleed the air from the cooling system (see **COOLANT CHECK**).
27. Install the engine compartment covers (see **ENGINE COMPARTMENT COVER REPLACEMENT**).
28. Do the CKP pattern clear/CKP pattern learn procedure (see **CKP PATTERN CLEAR/CKP PATTERN LEARN**).

CYLINDER HEAD INSPECTION FOR WARPAGE

1. Remove the cylinder head (see **CYLINDER HEAD REMOVAL**).
2. Inspect the camshaft (see **CAMSHAFT INSPECTION**).

3. Check the cylinder head for warpage. Measure along the edges, and three ways across the center:
   - If warpage is less than 0.05 mm (0.002 in), cylinder head resurfacing is not required.
   - If warpage is between 0.05 mm (0.002 in) and 0.2 mm (0.008 in), resurface the cylinder head.
   - Maximum resurface limit is 0.2 mm (0.008 in) based on a height of 121 mm (4.76 in).

   Cylinder Head Warpage

   Standard (New): 0.05 mm (0.002 in) max.

   Cylinder Head Height

   Standard (New): 120.95-121.05 mm (4.762-4.765 in)

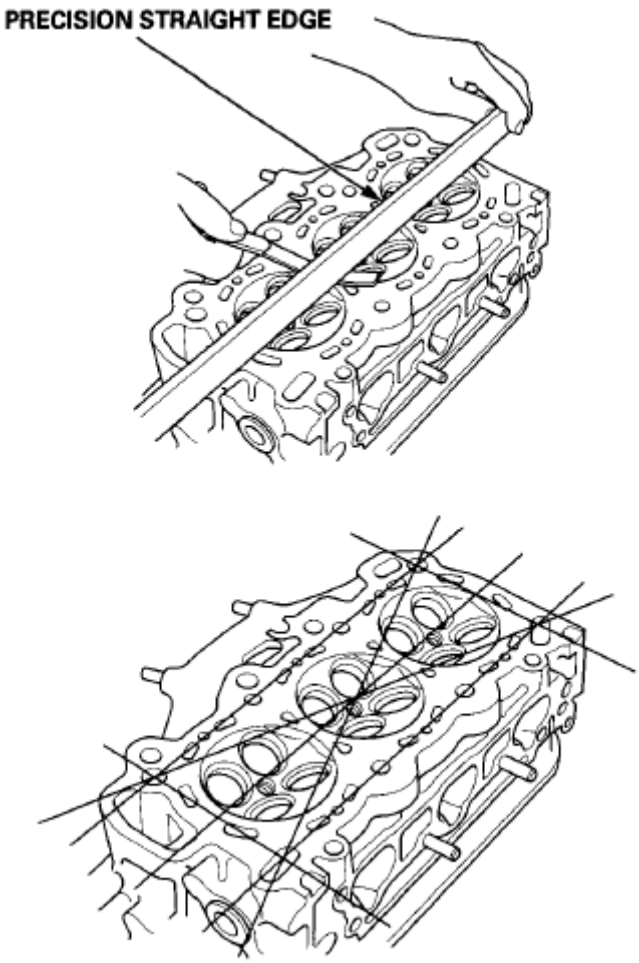


Fig. 102: Inspecting Cylinder Head Warpage
Courtesy of AMERICAN HONDA MOTOR CO., INC.

ROCKER ARM ASSEMBLY REMOVAL

Front

1. Remove the cylinder head cover (see **TIMING BELT DRIVE PULLEY REPLACEMENT**).
2. Loosen the locknuts and the adjusting screws (A).

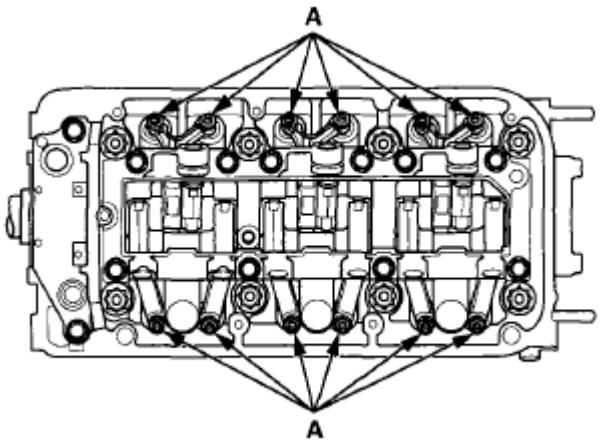


Fig. 103: Identifying Locknuts And Adjusting Screws (Front)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Remove the rocker shaft bridge mounting bolts, the rocker shaft holder mounting bolts, and the rocker arm assembly.
    1. Loosen the rocker shaft bridge mounting bolts and the rocker shaft holder mounting bolts in sequence two turns at a time, to prevent damaging the valves or the rocker arm assembly.
    2. When removing the rocker arm assembly, do not remove the rocker shaft bridge mounting bolts and the rocker shaft holder mounting bolts. The bolts will keep the rocker arms on the shafts.

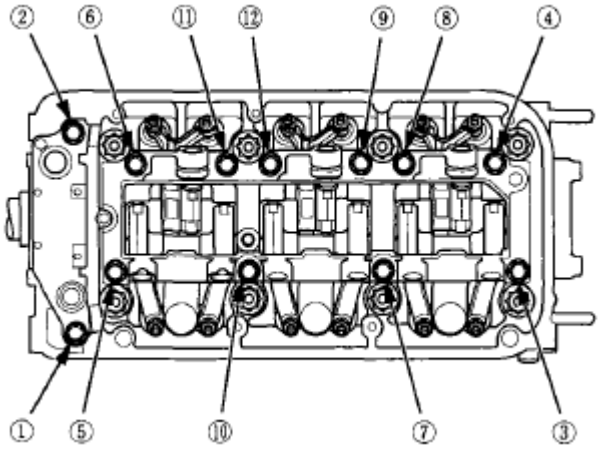


Fig. 104: Identifying Bolts On Rocker Arm Assembly (Front) With Loosening Sequence
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Rear

4. Remove the cylinder head cover (see **TIMING BELT DRIVE PULLEY REPLACEMENT**).
5. Loosen the locknuts and the adjusting screws (A).

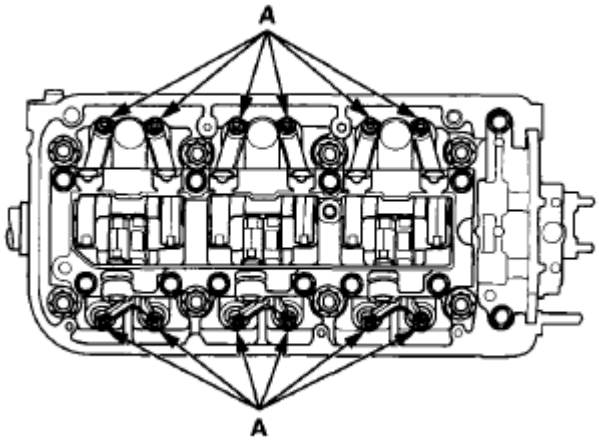


Fig. 105: Identifying Locknuts And Adjusting Screws (Rear)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Remove the rocker shaft bridge mounting bolts, the rocker shaft holder mounting bolts, and the rocker arm assembly.
    1. Loosen the rocker shaft bridge mounting bolts and the rocker shaft holder mounting bolts in sequence two turns at a time, to prevent damaging the valves or the rocker arm assembly.
    2. When removing the rocker arm assembly, do not remove the rocker shaft bridge mounting bolts and the rocker shaft holder mounting bolts. The bolts will keep the rocker arms on the shafts.

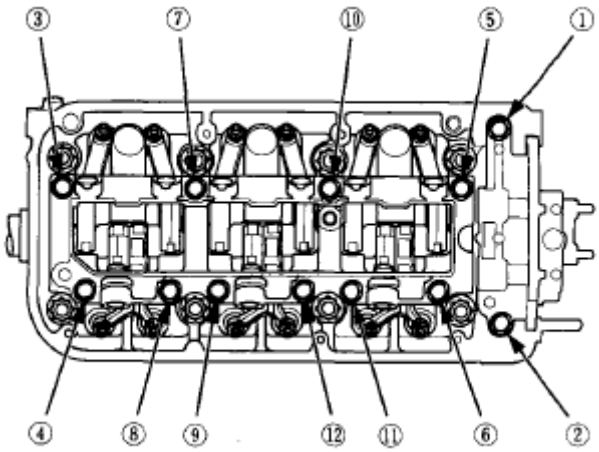


Fig. 106: Identifying Bolts On Rocker Arm Assembly (Rear) With Loosening Sequence
Courtesy of AMERICAN HONDA MOTOR CO., INC.

ROCKER ARM AND SHAFT DISASSEMBLY/REASSEMBLY

FRONT

NOTE:

- **Identify parts as they are removed so they can be reinstalled in their original locations.**
- **Inspect the rocker shafts and the rocker arms (see ROCKER ARM AND SHAFT INSPECTION).**
- **If reused, the rocker arms must be installed in their original locations.**
- **When removing or installing the rocker arm assembly, do not remove the mounting bolts. The bolts will keep the rocker arms, the rocker shaft bridge, and the rocker shaft holder on the shaft.**
- **If the rocker shaft cannot be removed or installed by hand, remove or install the rocker shaft by heating the rocker shaft bridge.**
- **Bundle the rocker arms with rubber bands to keep them together as a set, and remove the bands after the rocker arms have been installed.**
- **Prior to reassembling, clean all the parts in solvent, dry them, and apply new engine oil to all contact points and bearing surfaces, and the lost motion assembly.**
- **When replacing the rocker arm assembly, remove the fastening hardware from the new rocker arm assembly.**
- **Never remove any of the circlips that retain the lost motion assemblies in the rocker shaft bridge. The circlips are not available separately, and are factory installed in the rocker shaft bridge. To remove the lost motion assemblies, first remove the rocker shafts and the rocker arms.**

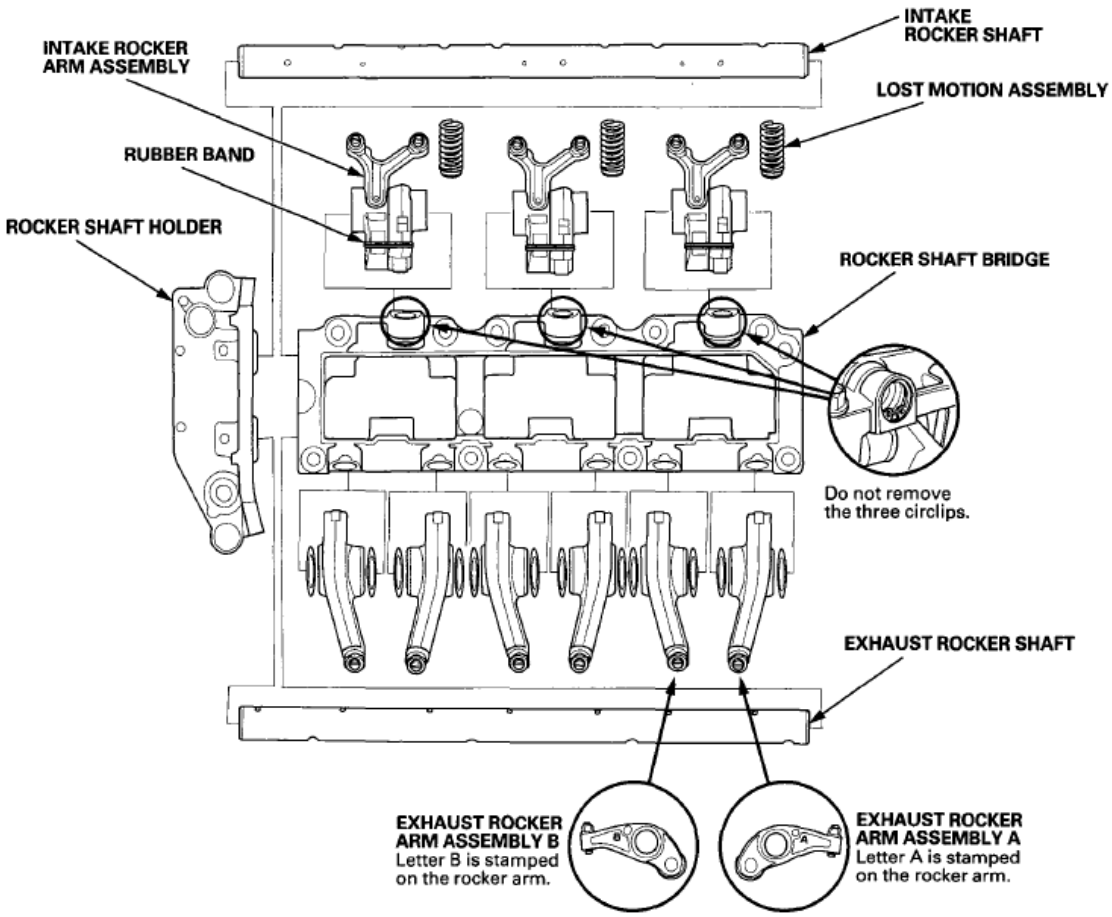


Fig. 107: Identifying Rocker Arm And Shaft And Related Components (Front)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

REAR

NOTE:

- **Identify parts as they are removed so they can be reinstalled in their original locations.**
- **Inspect the rocker shafts and the rocker arms (see ROCKER ARM AND SHAFT INSPECTION).**
- **If reused, the rocker arms must be installed in their original locations.**
- **When removing or installing the rocker arm assembly, do not remove the mounting bolts. The bolts will keep the rocker arms, the rocker shaft bridge, and the rocker shaft holder on the shaft.**
- **If the rocker shaft cannot be removed or installed by hand, remove or install the rocker shaft by heating the rocker shaft bridge.**
- **Bundle the rocker arms with rubber bands to keep them together as a set, and remove the bands after the rocker arms have been installed.**
- **Prior to reassembling, clean all the parts in solvent, dry them, and apply**

new engine oil to all contact points and bearing surfaces, and the lost motion assembly.

- **When replacing the rocker arm assembly, remove the fastening hardware from the new rocker arm assembly.**
- **Never remove any of the circlips that retain the lost motion assemblies in the rocker shaft bridge. The circlips are not available separately, and are factory installed in the rocker shaft bridge. To remove the lost motion assemblies, first remove the rocker shafts and the rocker arms.**

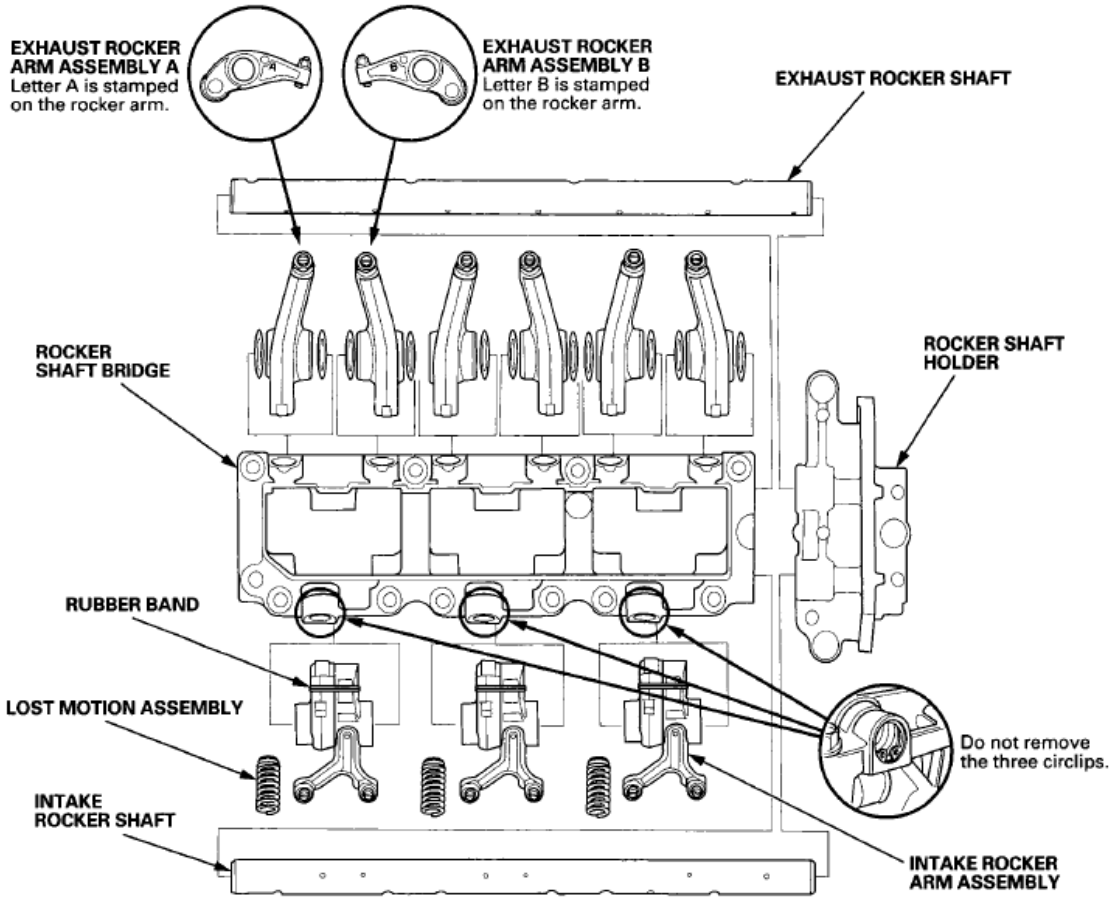


Fig. 108: Identifying Rocker Arm And Shaft And Related Components (Rear)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

ROCKER ARM AND SHAFT INSPECTION

1. Remove the rocker arm assembly (see **ROCKER ARM ASSEMBLY REMOVAL**).
2. Disassemble the rocker arm assembly (see **ROCKER ARM AND SHAFT DISASSEMBLY/REASSEMBLY**).
3. Measure the diameter of the shaft at the first rocker location.

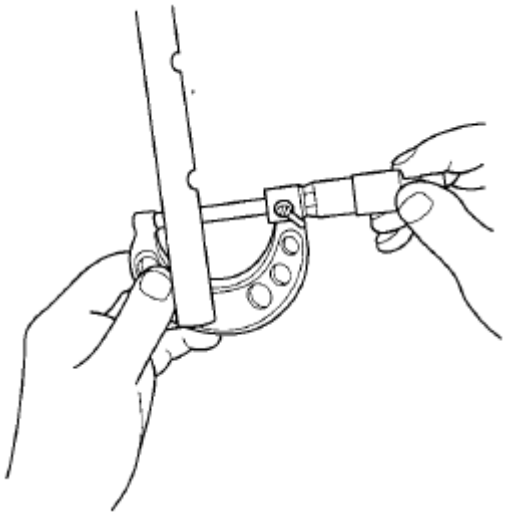


Fig. 109: Measuring Diameter Of Shaft At First Rocker Location
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Zero the dial gauge (A) to the shaft diameter.

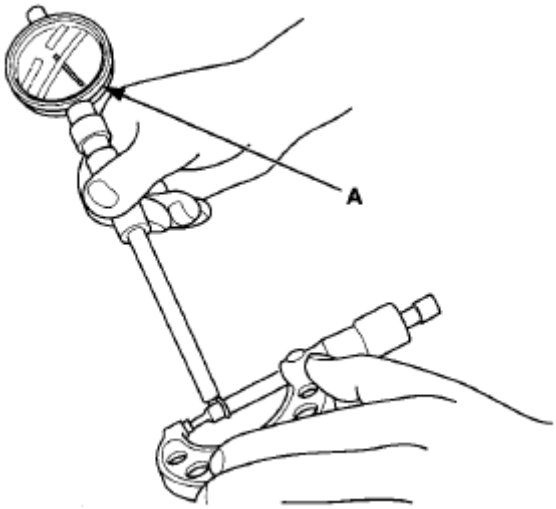


Fig. 110: Identifying Dial Gauge
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Measure the inside diameter of the rocker arm, and check it for an out-of-round condition.

   Intake Rocker Arm-to-Shaft Clearance:

   Standard (New): 0.015-0.046 mm (0.00059-0.00181 in)

   Service Limit: 0.046 mm (0.00181 in)

   Exhaust Rocker Arm-to-Shaft Clearance:

Standard (New): 0.018-0.047 mm (0.00071-0.00185 in)

Service Limit: 0.047 mm (0.00185 in)

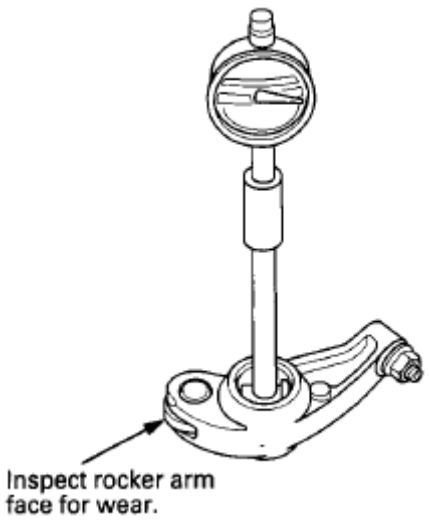


Fig. 111: Measuring Inside Diameter Of Rocker Arm And Check For Out-Of-Round Condition
Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Repeat for all rockers and both shafts. If the clearance is over the limit, replace the rocker shaft and all over-tolerance rocker arms. If any intake rocker arm needs replacement, replace all rocker arms in that set (primary and secondary).

VTEC Rocker Arms

7. Inspect the rocker arm piston (A). Slide them into the rocker arms. If they do not move smoothly, replace the rocker arm set.

NOTE:

- **Apply new engine oil to the rocker arm piston when reassembling.**
- **When removing the rocker arm piston from the intake secondary rocker arm (B), carefully apply air pressure to the oil passage of the rocker arm.**

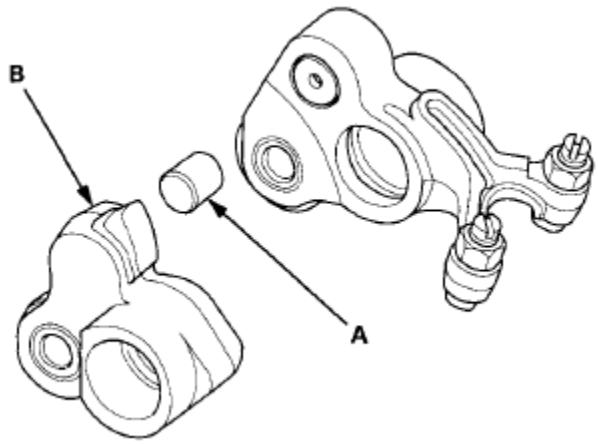


Fig. 112: Identifying Rocker Arm Piston And Intake Secondary Rocker Arm
Courtesy of AMERICAN HONDA MOTOR CO., INC.

8. Reassemble the rocker arm assembly (see **ROCKER ARM AND SHAFT DISASSEMBLY/REASSEMBLY**).
9. Install the rocker arm assembly (see **CAMSHAFT, ROCKER ARM ASSEMBLY, CAMSHAFT SEAL, AND PULLEY INSTALLATION**).

CAMSHAFT INSPECTION

1. Remove the cylinder head (see **CYLINDER HEAD REMOVAL**).
2. Remove the rocker arm assembly (see **ROCKER ARM ASSEMBLY REMOVAL**).
3. Disassemble the rocker arm assembly (see **ROCKER ARM AND SHAFT DISASSEMBLY/REASSEMBLY**).
4. Front: Put the rocker shafts bridge and the rocker shaft holder on the front cylinder head, then tighten the bolts to the specified torque.

   Specified Torque

   8 x 1.25 mm: 22 N.m (2.2 kgf.m, 16 lbf.ft)

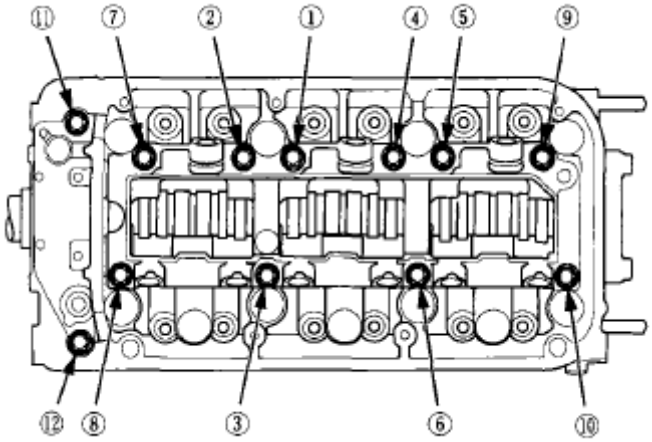


Fig. 113: Identifying Rocker Shaft Holder-To-Front Cylinder Head Bolts With Tightening Sequence
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Rear: Put the rocker shaft bridge and the rocker shaft holder on the rear cylinder head, then tighten the bolts to the specified torque.

   Specified Torque

   8 x 1.25 mm: 22 N.m (2.2 kgf.m, 16 lbf.ft)

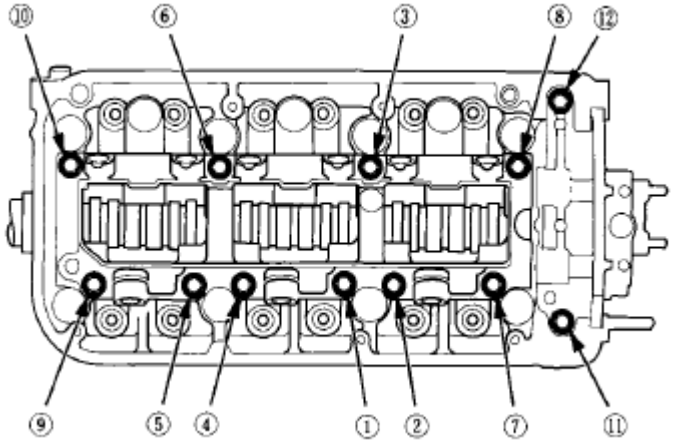


Fig. 114: Identifying Rocker Shaft Holder-To-Rear Cylinder Head Bolts With Tightening Sequence
Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Seat the camshaft by pushing it toward the rear of the cylinder head.
7. Zero the dial gauge against the end of the camshaft. Push the camshaft back and forth and read the end play. If the end play is beyond the service limit, replace the thrust cover and recheck. If it is still beyond the service limit, replace the cylinder head. If it is still beyond the service limit, replace the camshaft.

   Camshaft End Play

Standard (New): 0.05-0.20 mm (0.0020-0.0079 in)

Service Limit: 0.20 mm (0.0079 in)

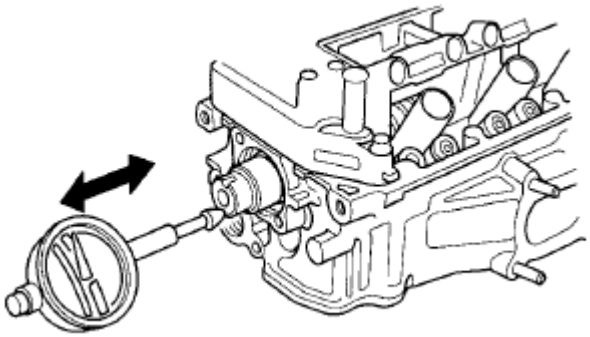


Fig. 115: Inspecting Camshaft Using Dial Gauge
Courtesy of AMERICAN HONDA MOTOR CO., INC.

8. Remove the camshaft thrust cover (A), then pull out the camshaft (B).

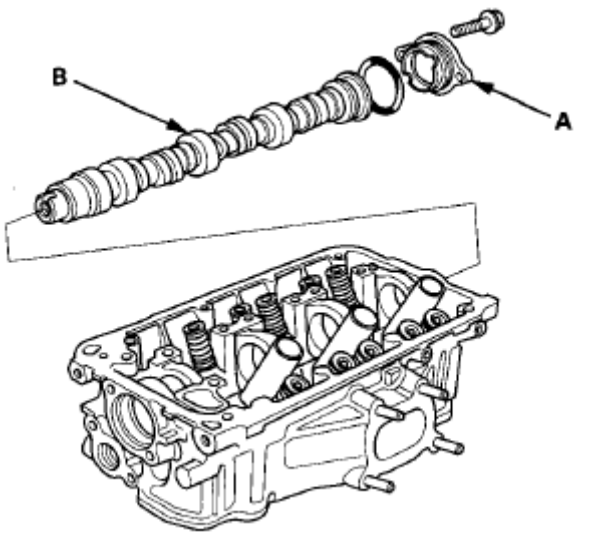


Fig. 116: Identifying Camshaft Thrust Cover And Camshaft
Courtesy of AMERICAN HONDA MOTOR CO., INC.

9. Wipe the camshaft clean, then inspect the lift ramps. Replace the camshaft if any lobes are pitted, scored, or excessively worn.
10. Measure the diameter of each camshaft journal.

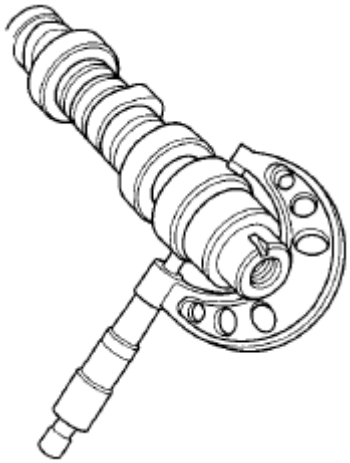


Fig. 117: Measuring Diameter Of Each Camshaft Journal
Courtesy of AMERICAN HONDA MOTOR CO., INC.

11. Zero the dial gauge (A) to the journal diameter.

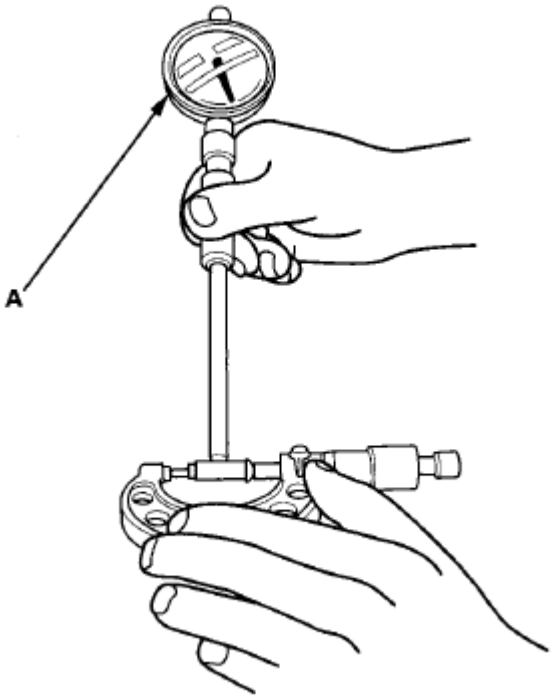


Fig. 118: Identifying Dial Gauge
Courtesy of AMERICAN HONDA MOTOR CO., INC.

12. Clean the camshaft bearing surfaces in the cylinder head. Measure the inside diameter of each camshaft bearing surface, and check for an out-of-round condition:
    - If the camshaft-to-holder clearance is within limits, go to step 14.
    - If the camshaft-to-holder clearance is beyond the service limit and the camshaft has been replaced, replace the cylinder head.

- If the camshaft-to-holder clearance is beyond the service limit and the camshaft has not been replaced, go to step 13.

Camshaft-to-Holder Oil Clearance

Standard (New): 0.050- 0.089 mm (0.00197- 0.00350 in)

Service Limit: 0.15 mm (0.0059 in)

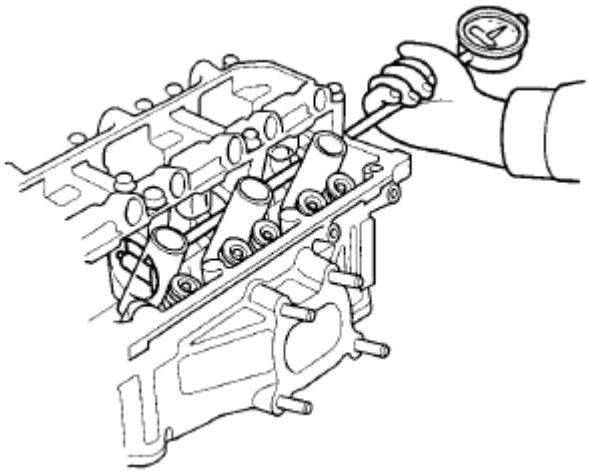


Fig. 119: Measuring Inside Diameter Of Each Camshaft Bearing Surface
Courtesy of AMERICAN HONDA MOTOR CO., INC.

13. Check total runout with the camshaft supported on V-blocks:
    - If the total runout of the camshaft is within the service limit, replace the cylinder head.
    - If the total runout is beyond the service limit, replace the camshaft and recheck the oil clearance. If the oil clearance is still out of tolerance, replace the cylinder head.

Camshaft Total Runout

Standard (New): 0.03 mm (0.0012 in) max.

Service Limit: 0.04 mm (0.0016 in)

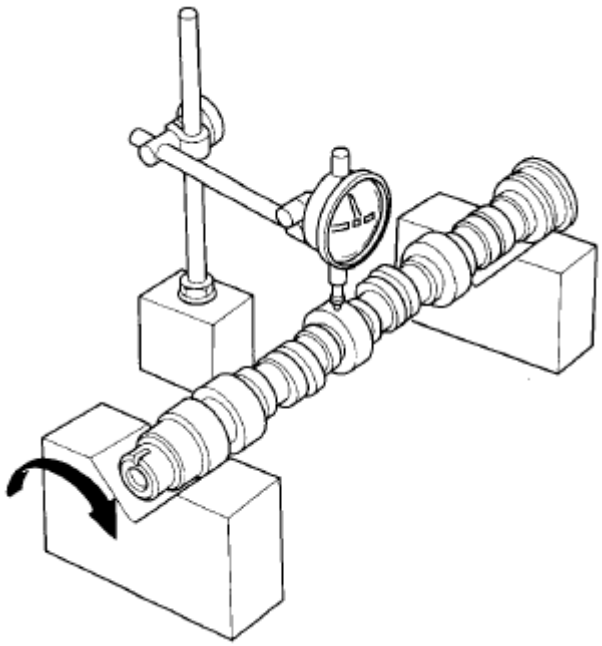


Fig. 120: Turning Camshaft For Inspection Using Dial Gauge
Courtesy of AMERICAN HONDA MOTOR CO., INC.

14. Measure the cam lobe height.

CAM LOBE HEIGHT STANDARD (NEW)

	INTAKE	EXHAUST
PRI	34.299 mm (1.35035 in)	36.760 mm (1.44724 in)
SEC	35.621 mm (1.40240 in)	

FRONT

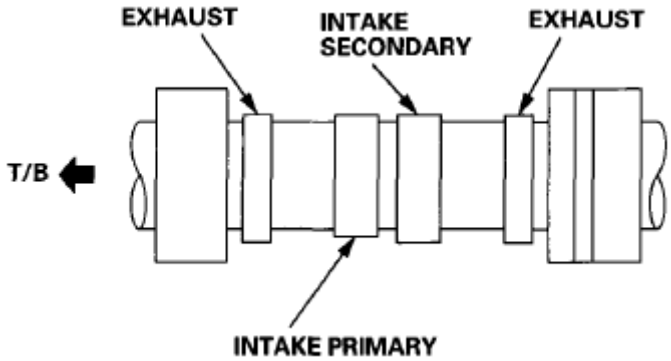


Fig. 121: Identifying Front Of Camshaft
Courtesy of AMERICAN HONDA MOTOR CO., INC.

REAR

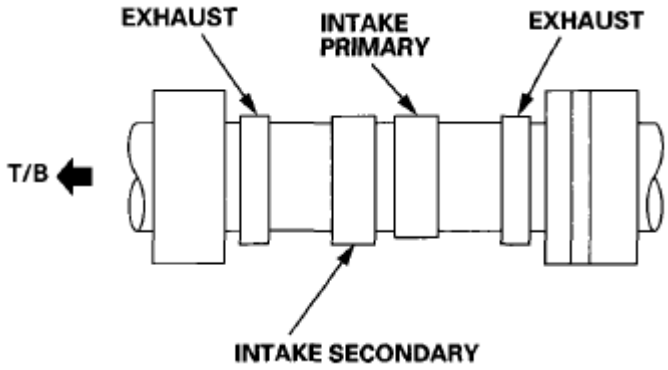


Fig. 122: Identifying Rear Of Camshaft
Courtesy of AMERICAN HONDA MOTOR CO., INC.

VALVE, SPRING, AND VALVE SEAL REMOVAL

Special Tools Required

Valve Spring Compressor Attachment 07757-PJ1010A

NOTE: Identify the valves and the valve springs as they are removed so that each item can be reinstalled in its original position.

1. Remove the cylinder head (see **CYLINDER HEAD REMOVAL**).
2. Remove the rocker arm assembly (see **ROCKER ARM ASSEMBLY REMOVAL**).
3. Using an appropriate-sized socket (A) and a plastic mallet (B), lightly tap the spring retainer to loosen the valve cotters.

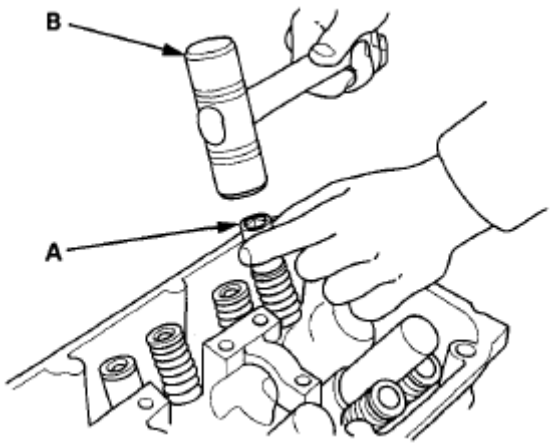


Fig. 123: Identifying Socket And Plastic Mallet
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Install the valve spring compressor attachment and the valve spring compressor. Compress the spring and remove the valve cotters.

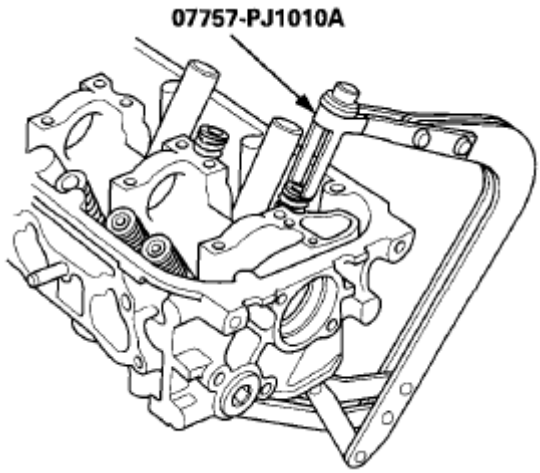


Fig. 124: Compressing Spring To Release Valve Cotters
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Remove the valve spring compressor and the valve spring compressor attachment, then remove the spring retainer, the valve spring, and the valve.
6. Install the valve guide seal remover (A).

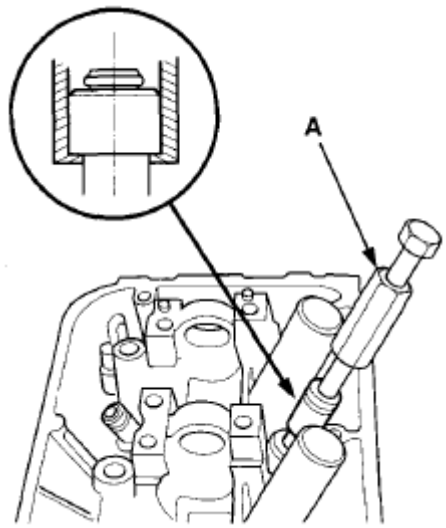


Fig. 125: Identifying Valve Guide Seal Remover
Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Remove the valve seal.

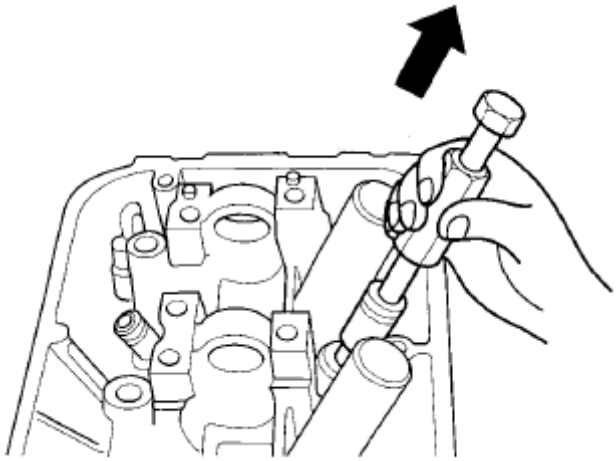


Fig. 126: Removing Seal
Courtesy of AMERICAN HONDA MOTOR CO., INC.

8. Remove the valve spring seat.

VALVE INSPECTION

1. Remove the valves (see **VALVE, SPRING, AND VALVE SEAL REMOVAL**).
2. Measure the valve in these areas.

Intake Valve Dimensions

A Standard (New): 35.90-36.01 mm (1.4134-1.4177 in)

B Standard (New): 116.55-117.15 mm (4.5886-4.6122 in)

C Standard (New): 5.485-5.495 mm (0.21594-0.21634 in)

C Service Limit: 5.455 mm (0.21476 in)

Exhaust Valve Dimensions

A Standard (New): 29.90-30.10 mm (1.1772-1.1850 in)

B Standard (New): 113.90-114.50 mm (4.4842-4.5079 in)

C Standard (New): 5.450-5.460 mm (0.21457-0.21496 in)

C Service Limit: 5.420 mm (0.21339 in)

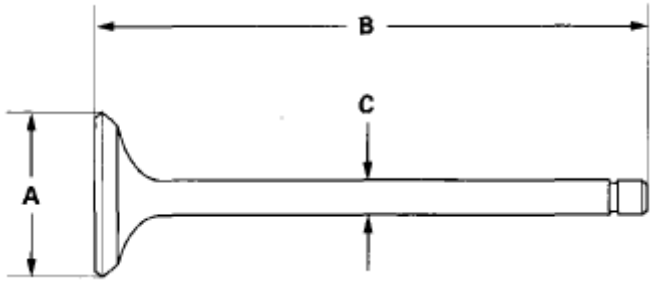


Fig. 127: Measuring Intake Valve Dimensions
Courtesy of AMERICAN HONDA MOTOR CO., INC.

VALVE STEM-TO-GUIDE CLEARANCE INSPECTION

1. Remove the valves (see **VALVE, SPRING, AND VALVE SEAL REMOVAL**).
2. Subtract the O.D. of the valve stem, measured with a micrometer, from the I.D. of the valve guide, measured with an inside micrometer or a ball gauge. Take the measurements in three places along the valve stem and three places inside the valve guide. The difference between the largest guide measurement and the smallest stem measurement should not exceed the service limit.

   Intake Valve Stem-to-Guide Clearance

   Standard (New): 0.020-0.045 mm (0.00079-0.00177 in)

   Service Limit: 0.08 mm (0.0031 in)

   Exhaust Valve Stem-to-Guide Clearance

   Standard (New): 0.055-0.080 mm (0.00217-0.00315 in)

   Service Limit: 0.11 mm (0.0043 in)

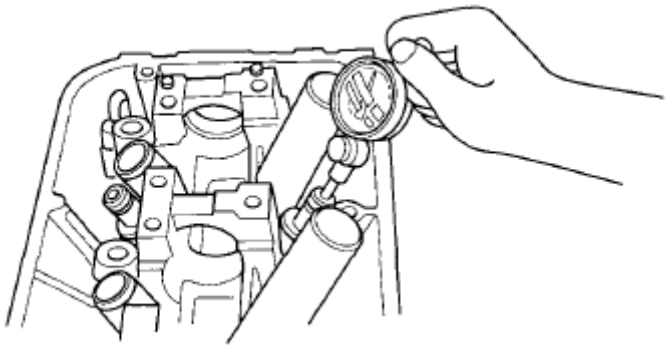


Fig. 128: Identifying Valve Stem To Guide Clearances
Courtesy of AMERICAN HONDA MOTOR CO., INC.

VALVE GUIDE REPLACEMENT

Special Tools Required

- Valve Guide Driver, 5.35 x 9.7 mm 07742-0010100
- Valve Guide Reamer, 5.5 mm 07HAH-PJ7A100

1. Inspect the valve stem-to-guide clearance (see **VALVE STEM-TO-GUIDE CLEARANCE INSPECTION**).
2. As illustrated, use a commercially available air-impact valve guide driver (A) modified to fit the diameter of the valve guides. In most cases, the same procedure can be done using the valve guide driver, 5.35 x 9.7 mm and a conventional hammer.

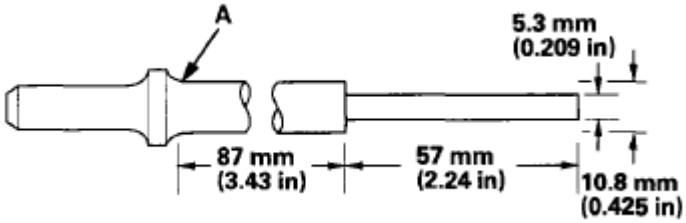


Fig. 129: Identifying Air-Impact Valve Guide Driver
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Select the proper replacement guides, and chill them in the freezer section of a refrigerator for at least an hour.
4. Use a hot plate or oven to evenly heat the cylinder head to 300°F (150°C). Monitor the temperature with a cooking thermometer. Do not get the head hotter than 300°F (150°C); excessive heat may loosen the valve seats.

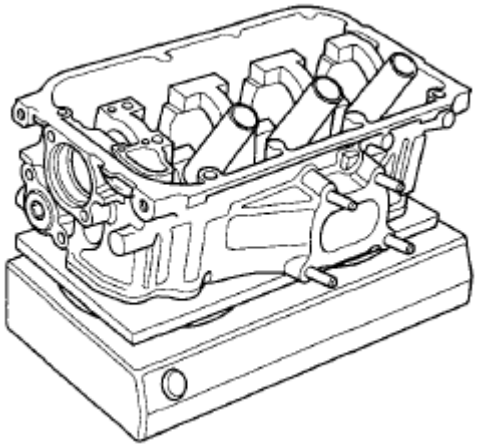


Fig. 130: Monitoring Temperature Of Cylinder Head With Cooking Thermometer
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Working from the camshaft side, use the driver and an air hammer to drive the guide about 2 mm (0.08 in) towards the combustion chamber. This will knock off some of the carbon and make removal easier. Hold the air hammer directly in line with the valve guide to prevent damaging the driver. Wear safety

goggles or a face shield.

6. Turn the head over, and drive the guide out toward the camshaft side of the head.

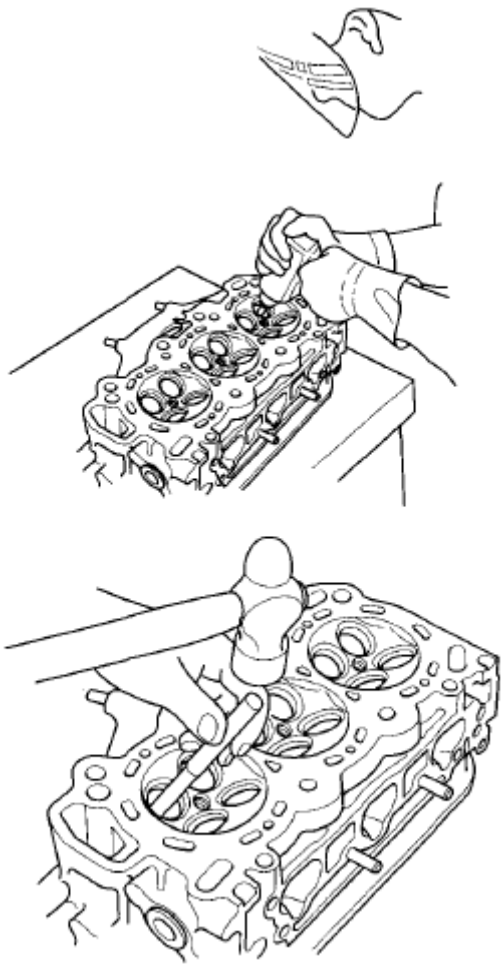


Fig. 131: Turning Head Over And Drive Guide Out Toward Camshaft Side Of Head
Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. If a valve guide still will not move, drill it out with an 8 mm (5/16 in) drill bit, then try again.

NOTE: Drill guides only in extreme cases; you could damage the cylinder head if the guide breaks.

8. Remove the new guide(s) from the freezer, one at a time, as you need them.
9. Apply a thin coat of new engine oil to the outside of the new valve guide. Install the guide from the camshaft side of the head; use the valve guide driver to drive the guide to the specified installed height (A) of the guide (B). If you have all 12 guides to do, you may have to reheat the head.

Valve Guide Installed Height

Intake: 21.20-22.20 mm (0.8346-0.8740 in)

Exhaust: 20.60-21.60 mm (0.8110-0.8504 in)

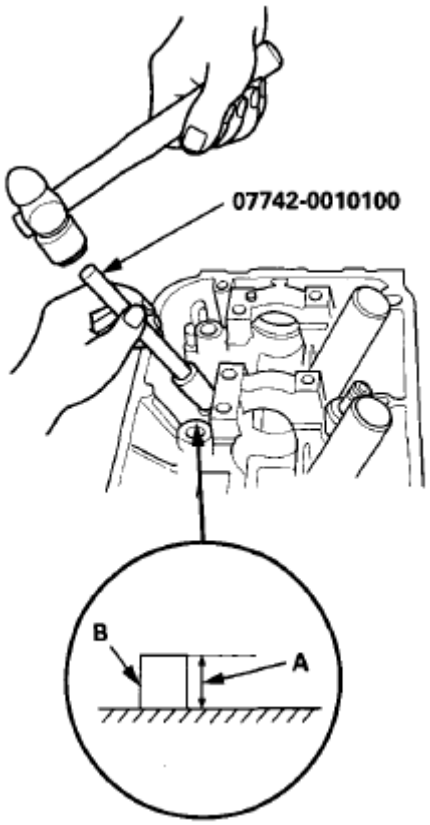


Fig. 132: Identifying Dimensions Of Valve Driver Guide
Courtesy of AMERICAN HONDA MOTOR CO., INC.

10. Coat both the valve guide reamer, 5.5 mm and the valve guide with cutting oil.
11. Rotate the reamer clockwise the full length of the valve guide bore.

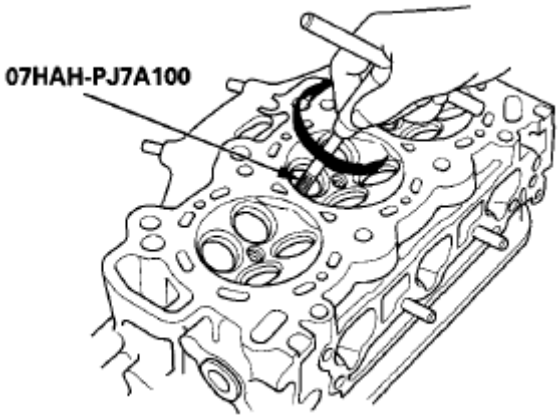


Fig. 133: Rotating Reamer Clockwise Full Length Of Valve Guide Bore
Courtesy of AMERICAN HONDA MOTOR CO., INC.

12. Continue to rotate the reamer clockwise while removing it from the bore.
13. Thoroughly wash the guide in detergent and water to remove any cutting residue.
14. Check the clearance with a valve (see **VALVE STEM-TO-GUIDE CLEARANCE INSPECTION**). Verify that a valve slides into the intake and exhaust valve guides without sticking.
15. Inspect the valve seating (see **VALVE SEAT RECONDITIONING**). If necessary renew the valve seat using a valve seat cutter.

VALVE SEAT RECONDITIONING

1. Inspect valve stem-to-guide clearance (see **VALVE STEM-TO-GUIDE CLEARANCE INSPECTION**). If the valve guides are worn, replace them (see **VALVE GUIDE REPLACEMENT**) before cutting the valve seats.
2. Renew the valve seats in the cylinder head using a valve seat cutter.

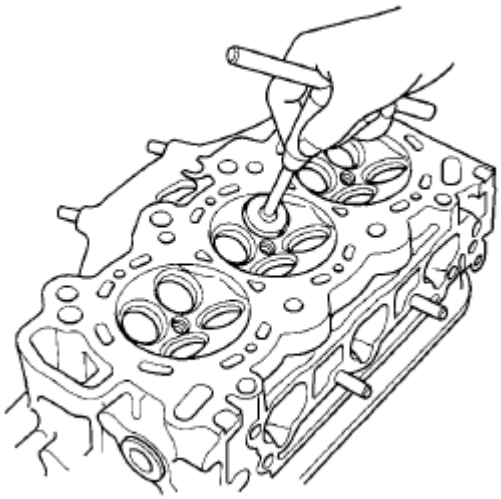


Fig. 134: Renewing Valve Seats In Cylinder Head Using Valve Seat Cutter
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Carefully cut a 45 ° seat, removing only enough material to ensure a smooth and concentric seat.
4. Bevel the upper and lower edges at the angles shown in the illustration. Check the width of the seat and adjust accordingly.

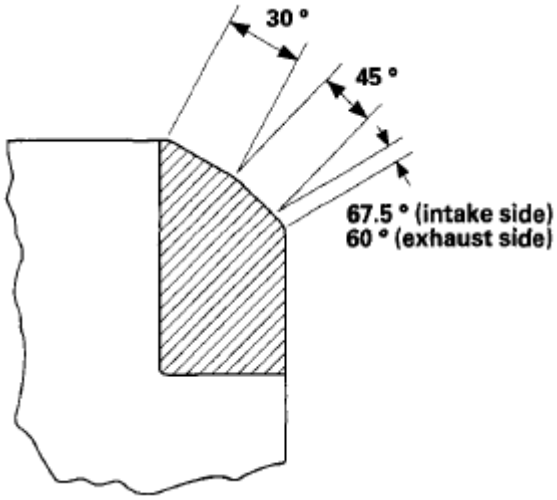


Fig. 135: Identifying Width Of Seat And Adjust Accordingly
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Make one more very light passes with the 45 ° cutter to remove any possible burrs caused by the other cutters.

   Valve Seat Width

   Standard (New): 1.25-1.55 mm (0.0492-0.0610 in)

   Service Limit: 2.00 mm (0.0787 in)

6. After resurfacing the seat, inspect it for even valve seating. Apply Prussian Blue compound (A) to the valve face. Insert the valve in its original location in the head, then lift it and snap it closed against the seat several times.

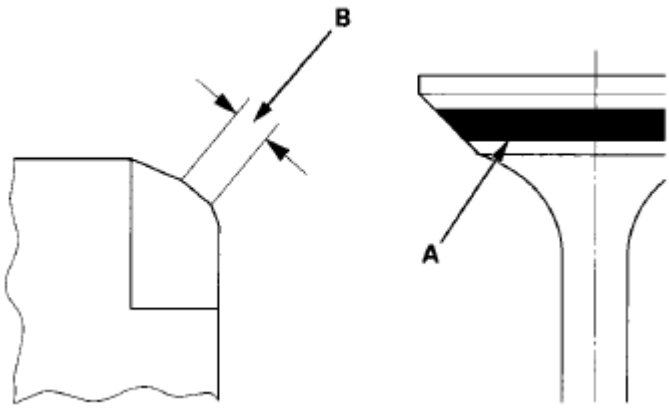


Fig. 136: Identifying Prussian Blue Compound And Actual Valve Seating Surface
Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. The actual valve seating surface (B), as shown by the blue compound, should be centered on the seat:

- If it is too high (closer to the valve stem), you must make a second cut with the 67.5 ° cutter (intake seat) or the 60 ° cutter (exhaust seat) to move it down, then one more cut with the 45 ° cutter to restore seat width.
- If it is too low (closer to the valve edge), you must make a second cut with the 30 ° cutter to move it up, then one more cut with the 45 ° cutter to restore seat width.

NOTE: The final cut should always be made with the 45 ° cutter.

8. Insert the intake and exhaust valves in the head, and measure the valve stem installed height (A).

   Intake Valve Stem Installed Height

   Standard (New): 46.75-47.55 mm (1.8405-1.8720 in)

   Service Limit: 47.80 mm (1.8819 in)

   Exhaust Valve Stem Installed Height

   Standard (New): 46.68-47.48 mm (1.8378-1.8693 in)

   Service Limit: 47.73 mm (1.8791 in)

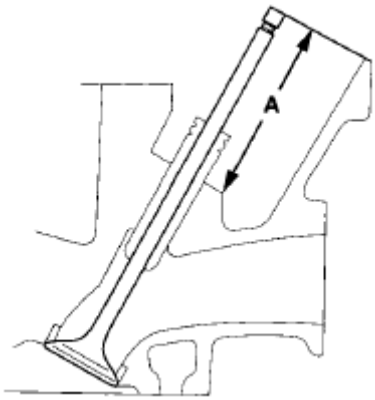


Fig. 137: Identifying Valve Stem Installed Height
Courtesy of AMERICAN HONDA MOTOR CO., INC.

9. If the valve stem installed height is over the service limit, replace the valve and recheck. If it is still over the service limit, replace the cylinder head; the valve seat in the head is too deep.

VALVE, SPRING, AND VALVE SEAL INSTALLATION

Special Tools Required

- Stem Seal Driver 07PAD-0010000
- Valve Spring Compressor Attachment 07757-PJ1010A

1. Coat the valve stems with new engine oil. Install the valves in the valve guides.
2. Check that the valves move up and down smoothly.
3. Install the spring seats on the cylinder head.
4. Install the new valve seals (A) using the 5.5 mm side of the stem seal driver (B).

NOTE: The exhaust valve seal (C) have a black spring (D) and intake valve seal (E) have a white or silver spring (F); They are not interchangeable.

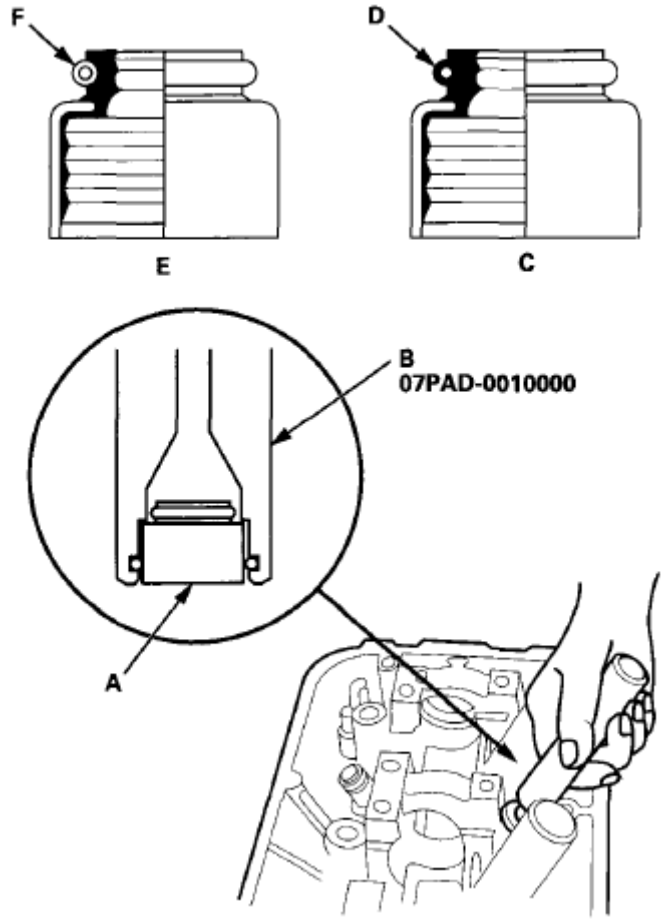


Fig. 138: Identifying Valve, Spring And Valve Seal
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Install the valve spring and the spring retainer. Place the end of the valve spring with the closely wound coils toward the cylinder head.
6. Install the valve spring compressor attachment and the valve spring compressor. Compress the spring and install the valve cotters.

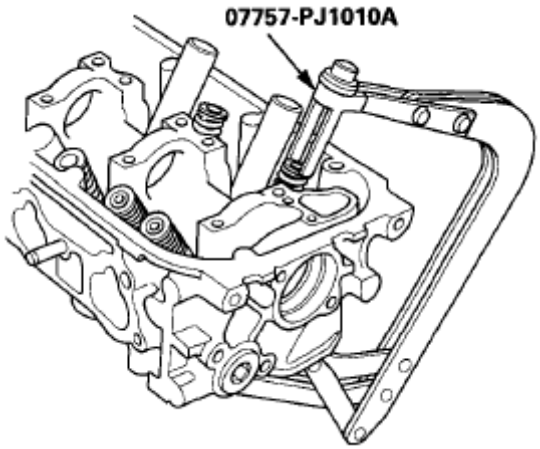


Fig. 139: Identifying Valve Spring Compressor Attachment
Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Remove the valve spring compressor and the valve spring compressor attachment.
8. Lightly tap the end of each valve stem two or three times with a plastic mallet (A) to ensure proper seating of the valve and valve cotters. Tap the valve stem only along its axis so you do not bend the stem.

NOTE: Be sure to raise the head off the work bench so the valve is not possibly damaged.

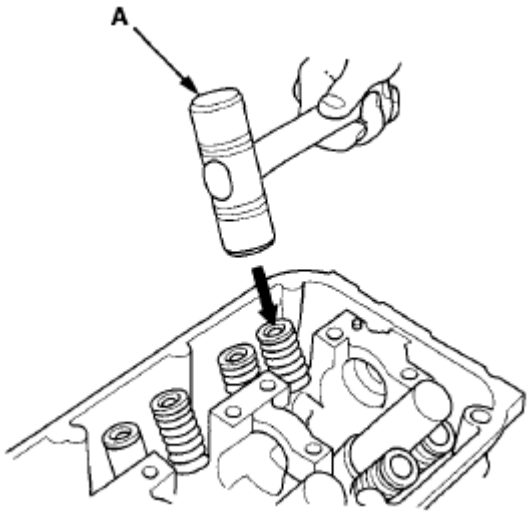


Fig. 140: Tapping Valve Stem With Plastic Mallet To Ensure Proper Seating Of Valve And Valve Cotters
Courtesy of AMERICAN HONDA MOTOR CO., INC.

CAMSHAFT, ROCKER ARM ASSEMBLY, CAMSHAFT SEAL, AND PULLEY INSTALLATION

FRONT

1. Loosen the locknuts and the adjusting screws.
2. Dry the camshaft oil seal housing.
3. Apply a light coat of new engine oil to the lip of the camshaft oil seal.
4. Gently tap the new camshaft oil seal (A) squarely into the cylinder head to the specified installed height.

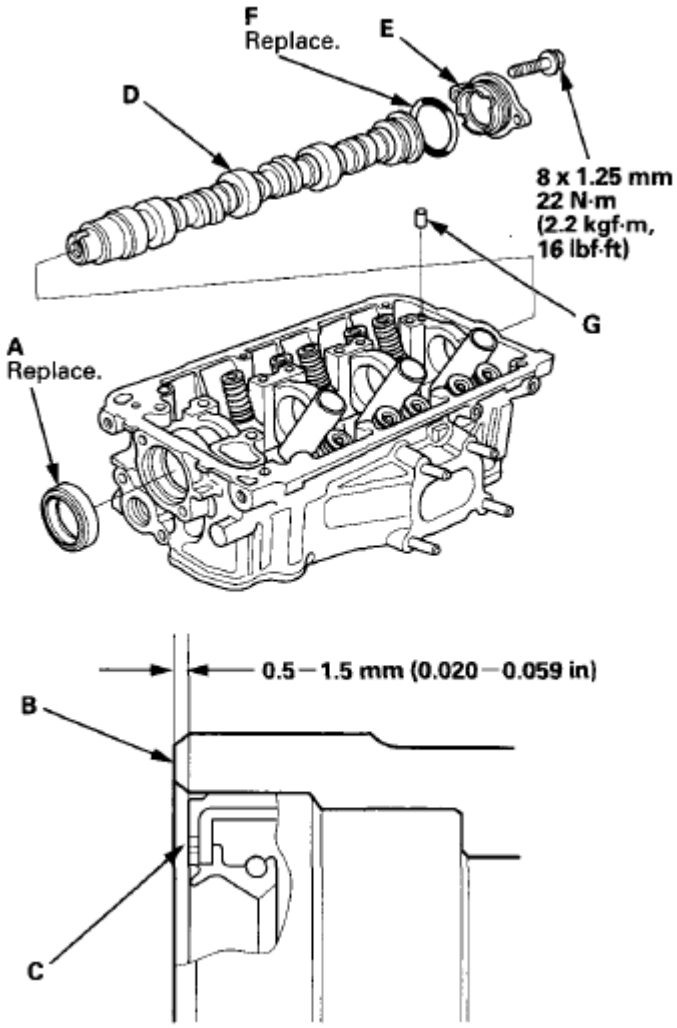


Fig. 141: Identifying Camshaft Oil Seal, Cylinder Head Surface, Oil Seal, Camshaft, Thrust Cover And O-Ring With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Measure the distance between the cylinder head surface (B) and the oil seal (C).

   Oil Seal Installed Height

   0.5-1.5 mm (0.020-0.059 in)

6. Insert the camshaft (D) into the cylinder head, then install the camshaft thrust cover (E). Always use a new O-ring (F). Apply new engine oil to the journals and the cam lobes.

7. Clean the excess oil off the camshaft, check that the oil seal lip is distorted.
8. Install the solid dowel pin (G).
9. If the rocker arm assembly is disassembled, reassemble the rocker arm assembly (see **ROCKER ARM AND SHAFT DISASSEMBLY/REASSEMBLY**).
10. Remove all of the old liquid gasket from the rocker shaft holder and the cylinder head.
11. Apply liquid gasket, P/N 08717-0004, 08718-0003, 08718-0004, or 08718-0009 to the rocker shaft holder mating surface of the cylinder head. Install the component within 5 minutes of applying the liquid gasket.

NOTE:

- **Apply a 2.5 mm (0.098 in) diameter bead of liquid gasket along the broken line (A).**
- **If you apply liquid gasket P/N 08718-0012, the component must be installed within 4 minutes.**
- **If too much time has passed after applying the liquid gasket, remove the old liquid gasket and residue, then reapply the new liquid gasket.**

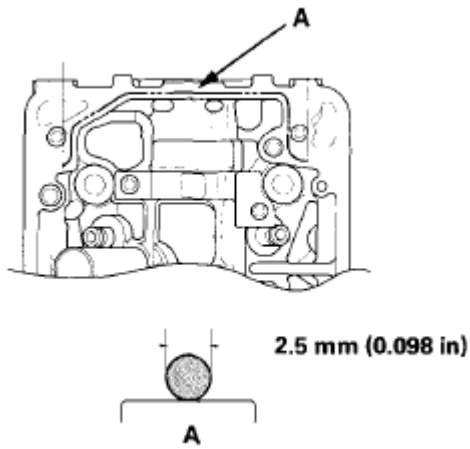


Fig. 142: Identifying Broken Line Of Liquid Gasket
Courtesy of AMERICAN HONDA MOTOR CO., INC.

12. Set the rocker arm assembly in place, and loosely install the bolts. Make sure that the rocker arms are properly positioned on the valve stems.

NOTE:

- **Wait at least 30 minutes before filling the engine with oil.**
- **Do not run the engine for at least 3 hours after installing the rocker arm assembly.**

13. Tighten each bolt two turns at a time in the sequence shown to ensure that the rockers do not bind on the valves.

Specified Torque

8 x 1.25 mm: 22 N.m (2.2 kgf m, 16 lbf.ft)

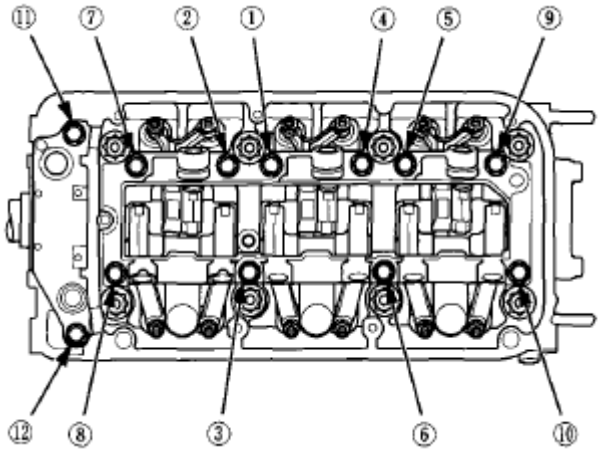


Fig. 143: Identifying Rocker Bolts With Tightening Sequence
Courtesy of AMERICAN HONDA MOTOR CO., INC.

14. Install the injector base (A). Always use a new gasket (B).

NOTE: The front injector base gasket is different from the rear one. Do the mix injector base gasket types.

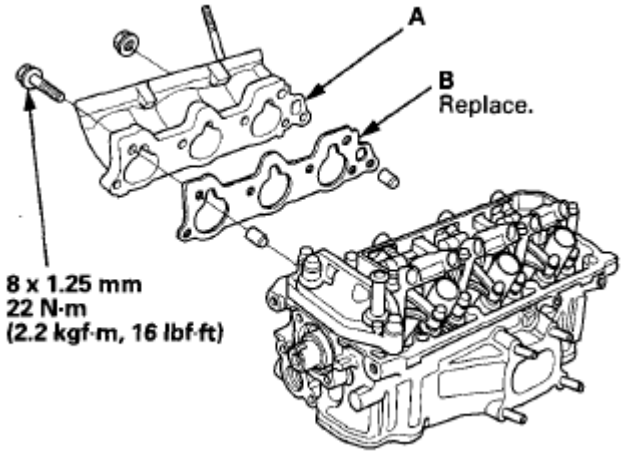


Fig. 144: Identifying Injector Base And Gasket With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

15. Apply new engine oil to the threads of the camshaft pulley mounting bolt (A). Install the back cover (B), then install the camshaft pulley (C).

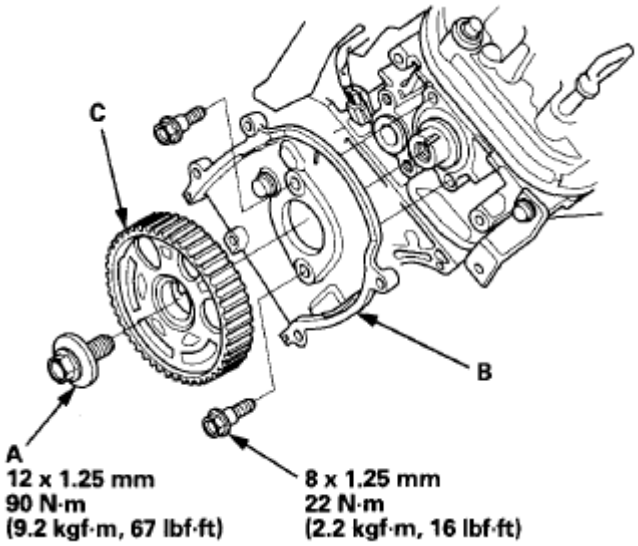


Fig. 145: Identifying Camshaft Pulley, Back Cover And Mounting Bolt With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

16. Set the camshaft pulleys to top dead center (TDC) before bolting them onto the engine block (see step 6).

REAR

1. Loosen the locknuts and the adjusting screws.
2. Dry the camshaft oil seal housing.
3. Apply a light coat of new engine oil to the lip of the camshaft oil seal.
4. Gently tap the new camshaft oil seal (A) into the cylinder head.
    1. Tap the camshaft oil seal in squarely.
    2. Install the oil seal about 0.5-1.5 mm (0.020-0.059 in) below the surface of the cylinder head.

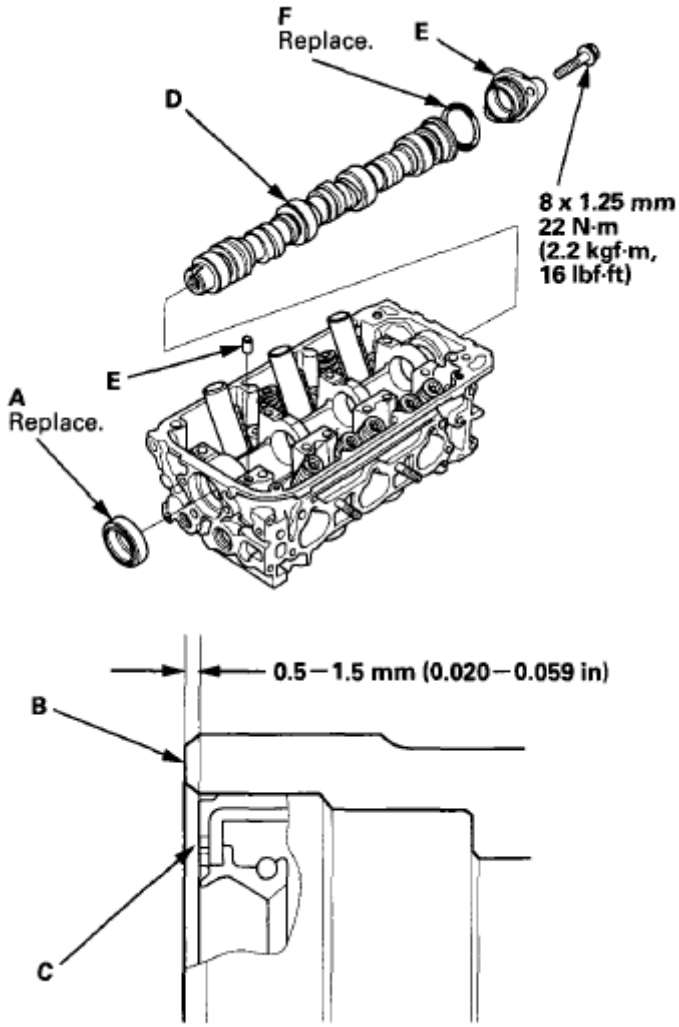


Fig. 146: Identifying Camshaft Oil Seal, Cylinder Head Surface, Camshaft Thrust Cover And O-Ring With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Measure the distance between the cylinder head surface (B) and the oil seal (C).

   Oil Seal Installed Height 0.5-1.5 mm (0.020-0.059 in)

6. Insert the camshaft (D) into the cylinder head, then install the camshaft thrust cover (E). Always use a new O-ring (F). Apply new engine oil to the journals and the cam lobes.
7. Clean the excess oil off the camshaft, check that the oil seal lip is distorted.
8. Install the hollow dowel pin (G).
9. If the rocker arm assembly is disassembled, reassemble the rocker arm assembly (see **ROCKER ARM AND SHAFT DISASSEMBLY/REASSEMBLY**).
10. Remove all of the old liquid gasket from the rocker shaft holder and the cylinder head.
11. Apply liquid gasket, P/N 08717-0004, 08718-0003, 08718-0004, or 08718-0009 to the rocker shaft holder mating surface of the cylinder head. Install the component within 5 minutes of applying the liquid gasket.

NOTE:

- **Apply a 2.5 mm (0.098 in) diameter bead of liquid gasket along the broken line (A).**
- **If you apply liquid gasket P/N 08718-0012, the component must be installed within 4 minutes.**
- **If too much time has passed after applying the liquid gasket, remove the old liquid gasket and residue, then reapply the new liquid gasket.**

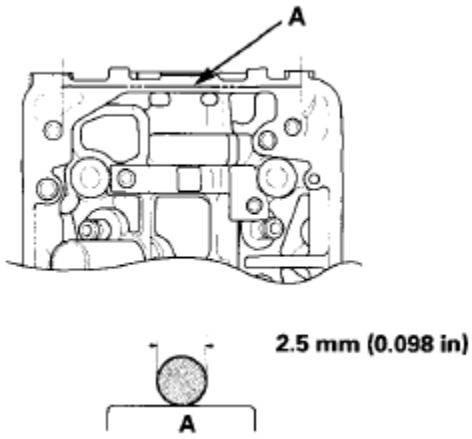


Fig. 147: Identifying Broken Line Of Liquid Gasket
Courtesy of AMERICAN HONDA MOTOR CO., INC.

12. Set the rocker arm assembly in place, and loosely install the bolts. Make sure that the rocker arms are properly positioned on the valve stems.

NOTE:

- **Wait at least 30 minutes before filling the engine with oil.**
- **Do not run the engine for at least 3 hours after installing the rocker arm assembly.**

13. Tighten each bolt two turns at a time in the sequence shown to ensure that the rockers do not bind on the valves.

Specified Torque

8 x 1.25 mm: 22 N.m (2.2 kgf.m, 16 lbf.ft)

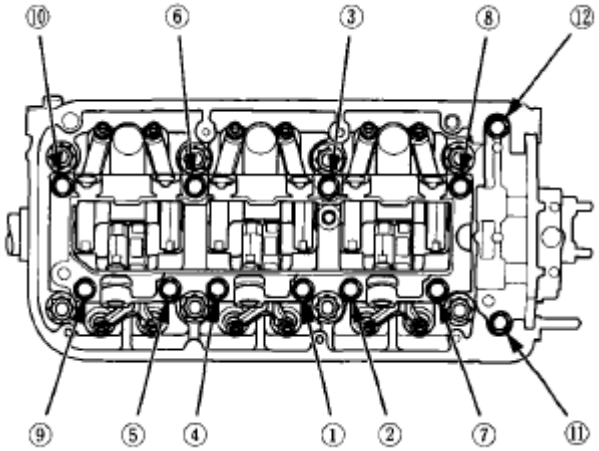


Fig. 148: Identifying Rocker Bolts With Tightening Sequence
Courtesy of AMERICAN HONDA MOTOR CO., INC.

14. Install the injector base (A). Always use a new gasket (B).

NOTE: The rear injector base gasket is different from the front one. Do the mix injector base gasket types.

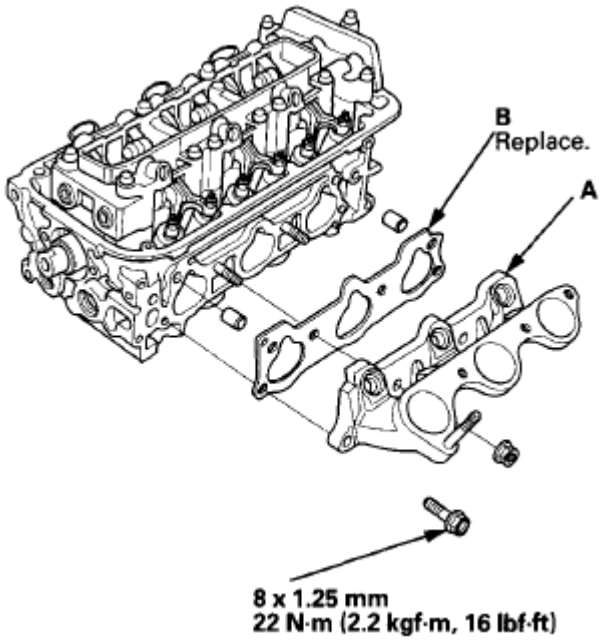


Fig. 149: Identifying Injector Base And Gasket With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

15. Apply new engine oil to the threads of the camshaft pulley mounting bolt (A). Install the back cover (B), then install the camshaft pulley (C).

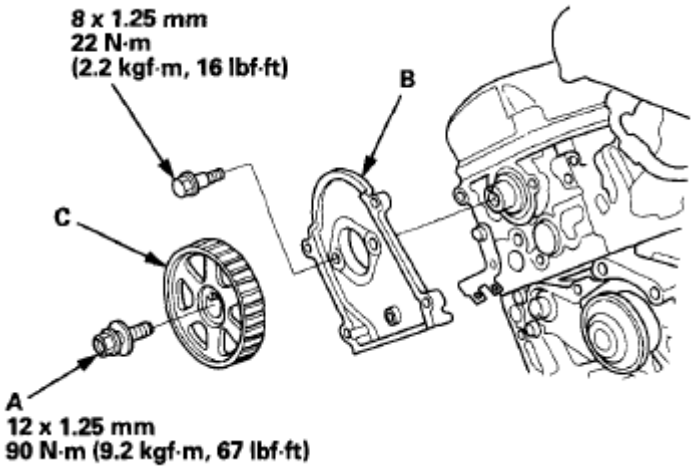


Fig. 150: Identifying Mounting Bolt, Back Cover And Camshaft Pulley With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

16. Set the camshaft pulleys to TDC before bolting them onto the engine block (see step 6).

CYLINDER HEAD INSTALLATION

1. Clean the cylinder head and the engine block surface.
2. Clean and install the oil control orifices (A) with new O-rings (B).

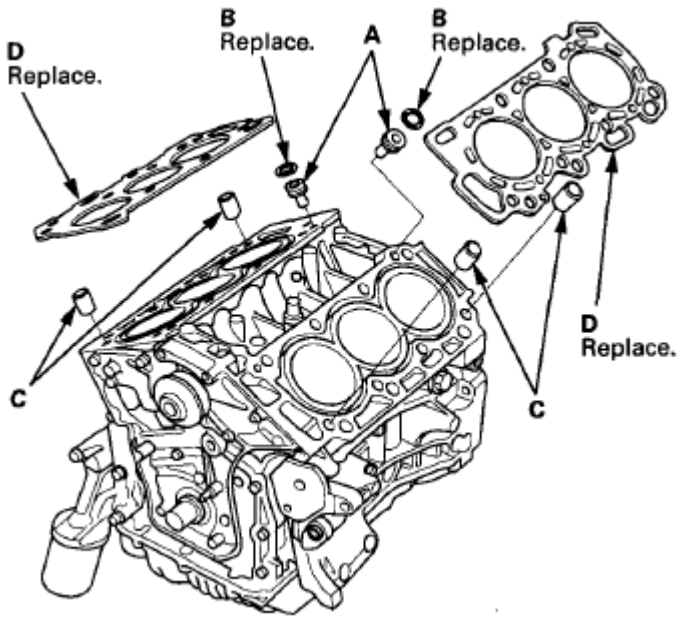


Fig. 151: Identifying Oil Control Orifices, O-Rings, Dowel Pins And Head Gasket
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Install the dowel pins (C) and the new cylinder head gaskets (D).
4. Clean the timing belt pulleys, the timing belt guide plate, and the upper and lower covers.

5. Set the timing belt drive pulley to top dead center (TDC) by aligning the TDC mark (A) on the tooth of the timing belt drive pulley with the pointer (B) on the oil pump.

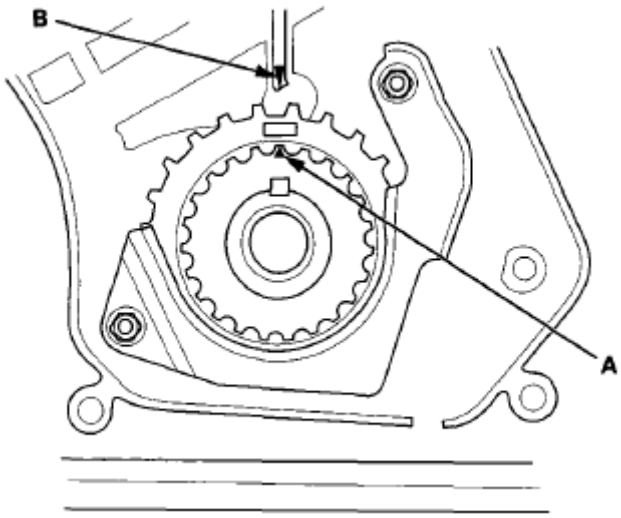


Fig. 152: Identifying TDC Mark And Pointer On Oil Pump
Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Set the camshaft pulleys to TDC by aligning the TDC marks (A) on the camshaft pulleys with the pointers (B) on the back covers.

FRONT

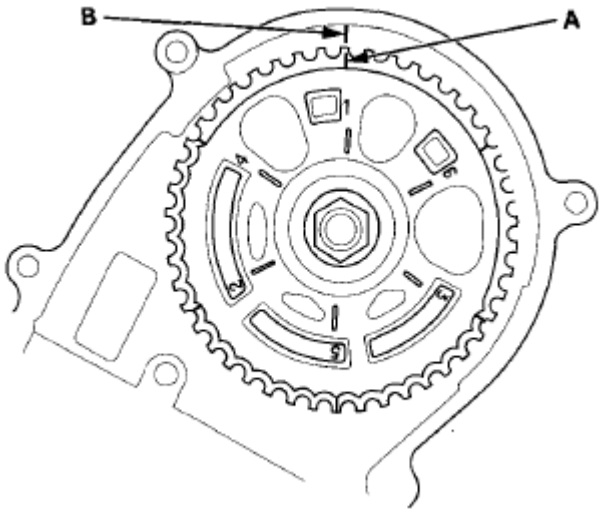


Fig. 153: Identifying TDC Marks And Pointers On Camshaft Pulley (Front)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

REAR

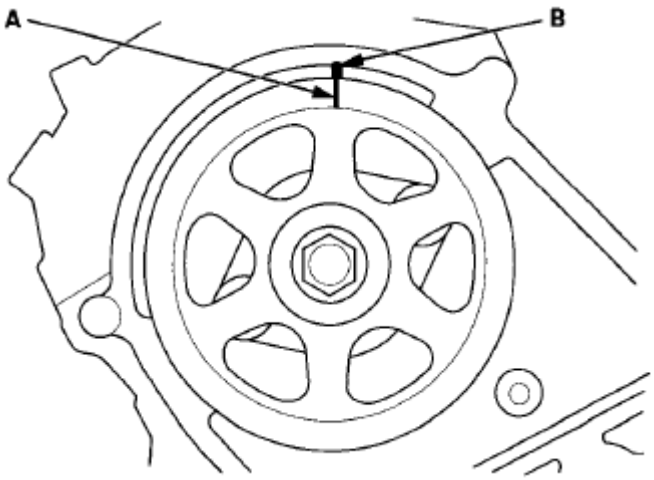


Fig. 154: Identifying TDC Marks And Pointers On Camshaft Pulley (Rear)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Install the cylinder heads on the engine block.
8. Measure the diameter of each cylinder head bolt at point A and point B.

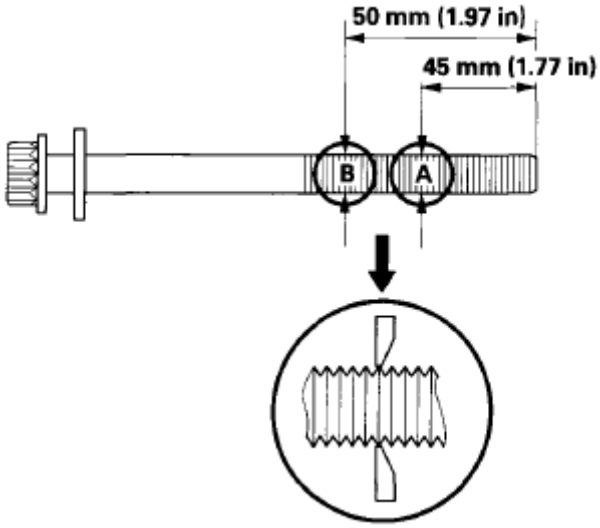


Fig. 155: Measuring Diameter Of Each Cylinder Head Bolt At Point A And Point B
Courtesy of AMERICAN HONDA MOTOR CO., INC.

9. If either diameter is less than 11.3 mm (0.445 in), replace the cylinder head bolt.
10. Apply new engine oil to the threads and under the bolt heads of all cylinder head bolts.
11. Torque the cylinder head bolts in sequence to 29 N.m (3.0 kgf.m, 22 lbf.ft) using a beam-type torque wrench. When using a preset click-type torque wrench, be sure to tighten slowly and do not overtighten. If a bolt makes any noise while you are torquing it, loosen the bolt and retighten it from the first step.

FRONT

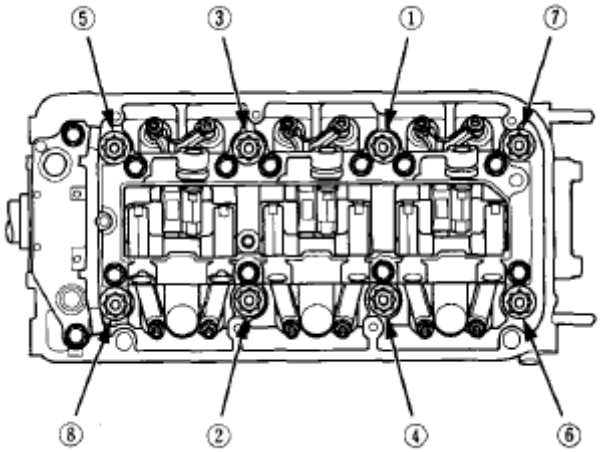


Fig. 156: Identifying Cylinder Head Bolts With Tightening Sequence (Front)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

REAR

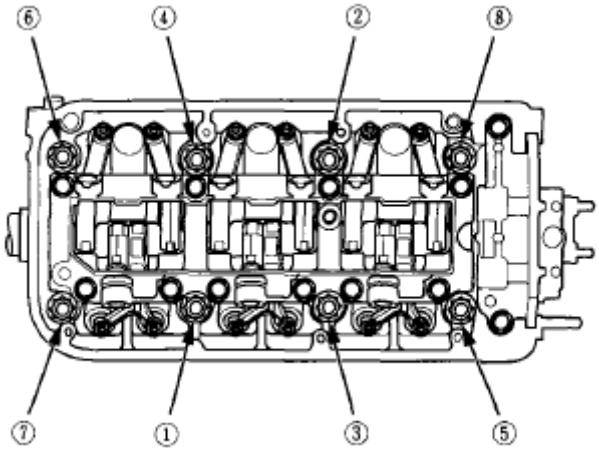


Fig. 157: Identifying Cylinder Head Bolts With Tightening Sequence (Rear)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

12. After torquing, tighten all cylinder head bolts in two steps (90 ° per step) using the sequence shown in step 11. If you are using a new cylinder head bolt, tighten the bolt an extra 90 °.

NOTE: Remove the cylinder head bolt if you tightened it beyond the specified angle, and go back to step 8 of the procedure. Do not loosen it back to the specified angle.

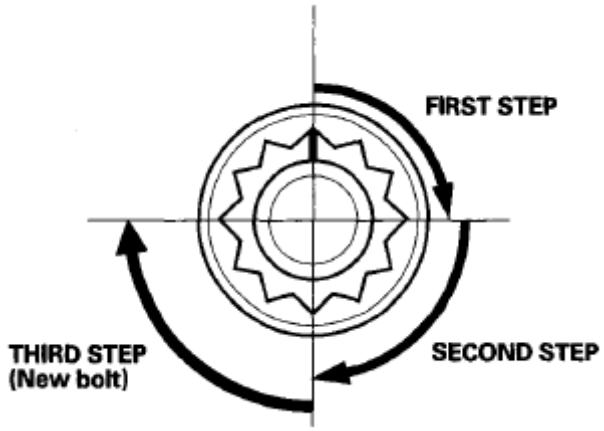


Fig. 158: Identifying Cylinder Head Bolt Tightening Graph
Courtesy of AMERICAN HONDA MOTOR CO., INC.

13. Install the timing belt (see **TIMING BELT INSTALLATION**).
14. Adjust the valve clearance (see **VALVE CLEARANCE ADJUSTMENT**).
15. Install the cylinder head covers (see **CYLINDER HEAD COVER INSTALLATION**).
16. Install the water passage (see **WATER PASSAGE REPLACEMENT**).
17. Install the injector bases (see **INJECTOR BASE REMOVAL AND INSTALLATION**).
18. Install the connector bracket (A) to the front cylinder head.

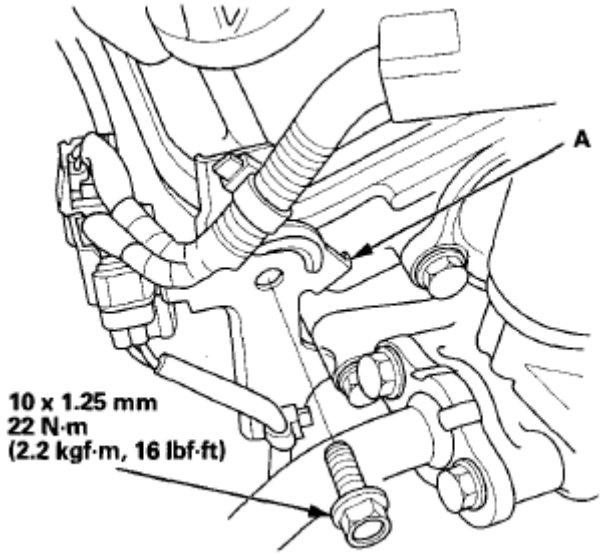


Fig. 159: Identifying Connector Bracket With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

19. Install the EVAP canister joint with the bracket (see step 9).
20. Install the engine mount control solenoid valve bracket (A) to the rear cylinder head.

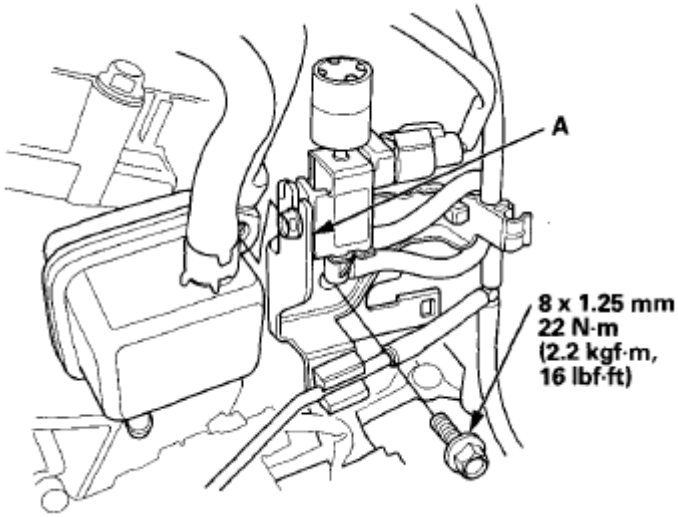


Fig. 160: Identifying Engine Mount Control Solenoid Valve Bracket With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

21. Connect the fuel feed hose (A), then install the quick-connect fitting cover (B) (see **FUEL LINE/QUICK-CONNECT FITTING INSTALLATION**).

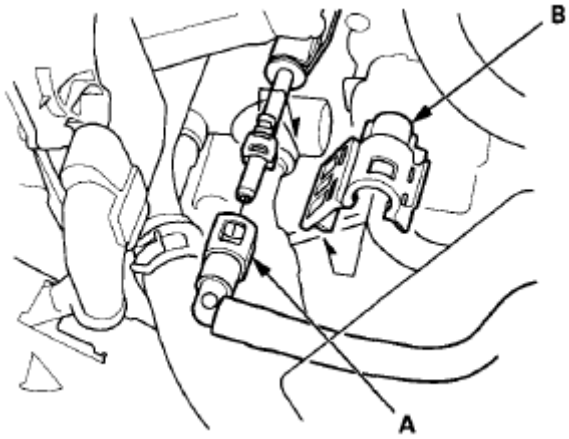


Fig. 161: Identifying Fuel Feed Hose And Fitting Cover
Courtesy of AMERICAN HONDA MOTOR CO., INC.

22. Install the front warm up TWC (see **WARM UP TWC REMOVAL/INSTALLATION**) and the rear warm up TWC (see **REAR (BANK 1)**).
23. Connect the following engine wire harness connectors, and install the wire harness clamps to the cylinder head:
    - Six injector connectors
    - Knock sensor connector
    - ECT sensor 1 connector
    - Engine mount control solenoid valve connector
    - EGR valve connector

- CMP sensor connector
- Rocker arm oil control solenoid connector
- Rocker arm oil pressure switch connector
- Two A/F sensor connectors
- Two secondary HO2S connectors

24. Install the intake manifold (see **INSTALLATION**).
25. Install the alternator (see **INSTALLATION**).
26. Install the six ignition coils (see **IGNITION COIL AND SPARK PLUG REMOVAL/INSTALLATION**).
27. Do the battery terminal reconnection procedure (see **BATTERY TERMINAL DISCONNECTION AND RECONNECTION**).
28. After installation, check that all tubes, hoses, and connectors are installed correctly.
29. Inspect for fuel leaks. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode (do not operate the starter) so the fuel pump runs for about 2 seconds and pressurizes the fuel line. Repeat this operation three times, then check for fuel leakage at any point in the fuel line.
30. Refill the radiator with engine coolant, and bleed the air from the cooling system (see **COOLANT CHECK**).
31. Check for fluid leaks.
32. Do the PCM idle learn procedure (see **ECM/PCM IDLE LEARN PROCEDURE**).
33. Do the CKP pattern clear/CKP pattern learn procedure (see **CKP PATTERN CLEAR/CKP PATTERN LEARN**).
34. Inspect the idle speed (see **IDLE SPEED INSPECTION**).
35. Inspect the ignition timing (see **IGNITION TIMING INSPECTION**).
36. Install the engine compartment covers (see **ENGINE COMPARTMENT COVER REPLACEMENT**).

CAMSHAFT OIL SEAL INSTALLATION - IN CAR

Special Tools Required

Ball Joint Remover/Installer 07GAF-SD40330

1. Remove the timing belt (see **TIMING BELT REMOVAL**).
2. Remove the camshaft pulley and the back cover (see step 17).
3. Remove the camshaft oil seal.
4. Clean and dry the camshaft oil seal housing.
5. Apply a light coat of new engine oil to the lip of the camshaft oil seal.
6. Using the ball joint remover/installer (A), a washer (B), and a 12x75 x 1.25 mm bolt (C), press in the new camshaft oil seal (D) squarely into the cylinder head to the specified installed height.

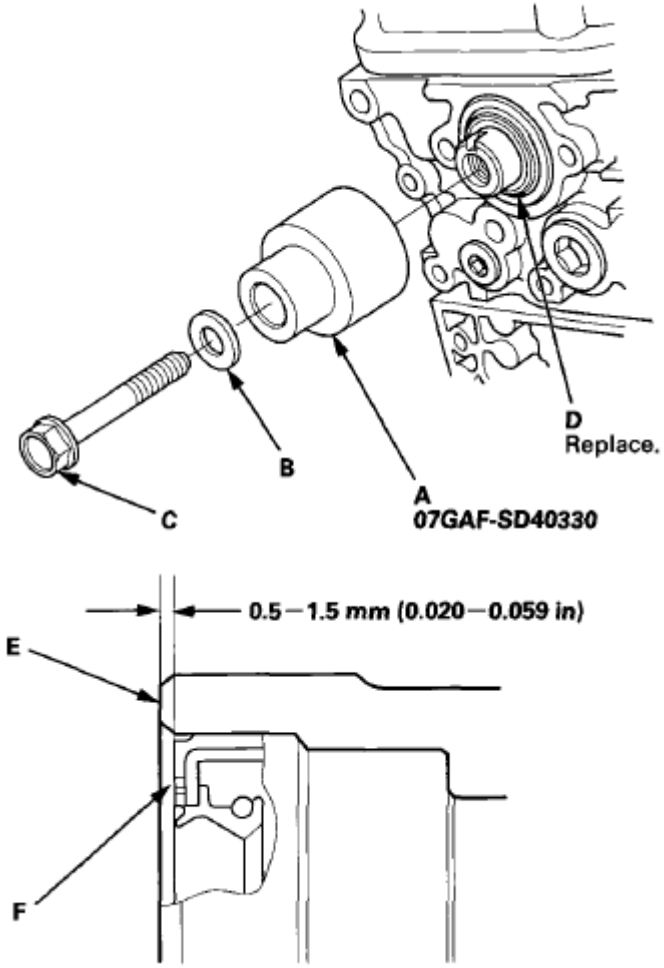


Fig. 162: Identifying Camshaft Oil Seal And Related Components
Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Measure the distance between the cylinder head surface (E) and the oil seal (F).

   Oil Seal Installed Height 0.5-1.5 mm (0.020-0.059 in)

8. Clean the excess oil off the camshaft, and check that the oil seal is not distorted.
9. Apply new engine oil to the threads of the camshaft pulley mounting bolt. Install the back cover, then install the camshaft pulley:
   - Front (see step 15)
   - Rear (see step 15)
10. Install the timing belt (see **TIMING BELT INSTALLATION**).

SEALING BOLT INSTALLATION

NOTE: When installing the sealing bolts (A), always use new washers (B).

FRONT

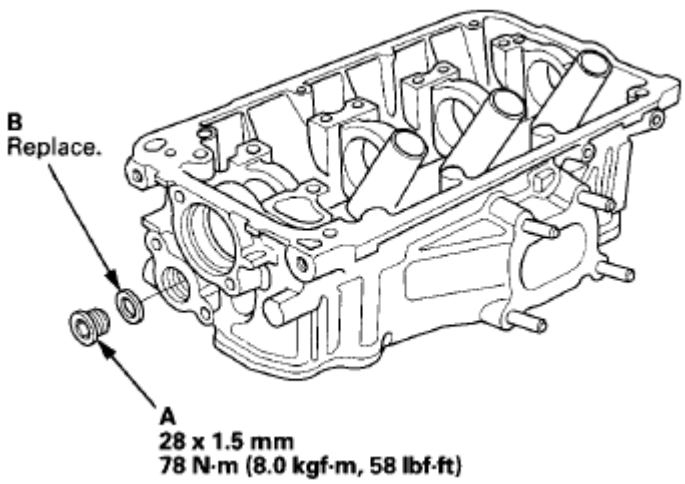


Fig. 163: Identifying Sealing Bolt And Washer (Front) With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

REAR

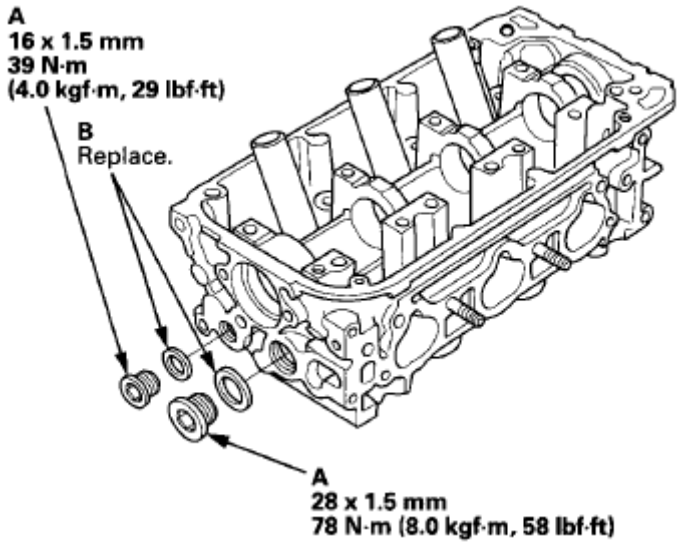


Fig. 164: Identifying Sealing Bolt And Washer (Rear) With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2012 ENGINE

Cylinder Head (J37A4) - TL

SPECIAL TOOLS

Ref.No.	Tool Number	Description	Qty
①	070AJ-001A101	VCM Air Adapter	1
②	07742-0010100	Valve Guide Driver, 5.35 x 9.7 mm	1
③	07757-PJ1010A	Valve Spring Compressor Attachment	1
④	07AAJ-PNAA101	Air Pressure Regulator	1
⑤	07AAJ-R70A100	VTEC Air Stop Tool A	1
⑥	07AAJ-R70A200	VTEC Air Stop Tool B	1
⑦	07GAF-SD40330	Ball Joint Remover/Installer	1
⑧	07HAH-PJ7A100	Valve Guide Reamer, 5.5 mm	1
⑨	07JAA-001020A	Socket, 19 mm	1
⑩	07JAB-001020B	Holder Handle	1
⑪	07MAB-PY3010A	Holder Attachment, 50 mm, Offset	1
⑫	07PAD-0010000	Stem Seal Driver	1

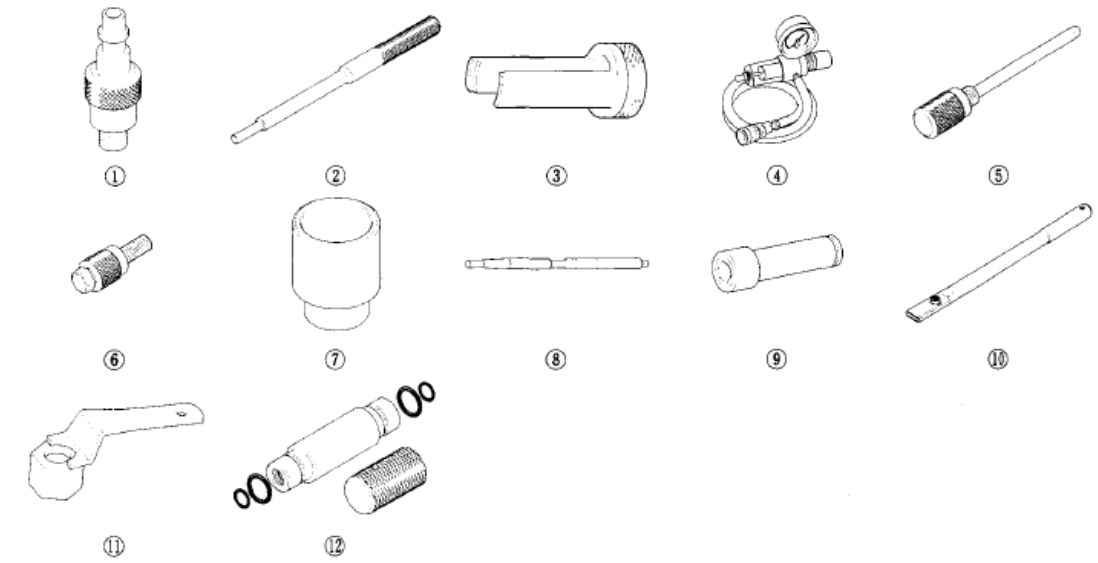


Fig. 1: Identifying Cylinder Head Special Tools
Courtesy of AMERICAN HONDA MOTOR CO., INC.

COMPONENT LOCATION INDEX

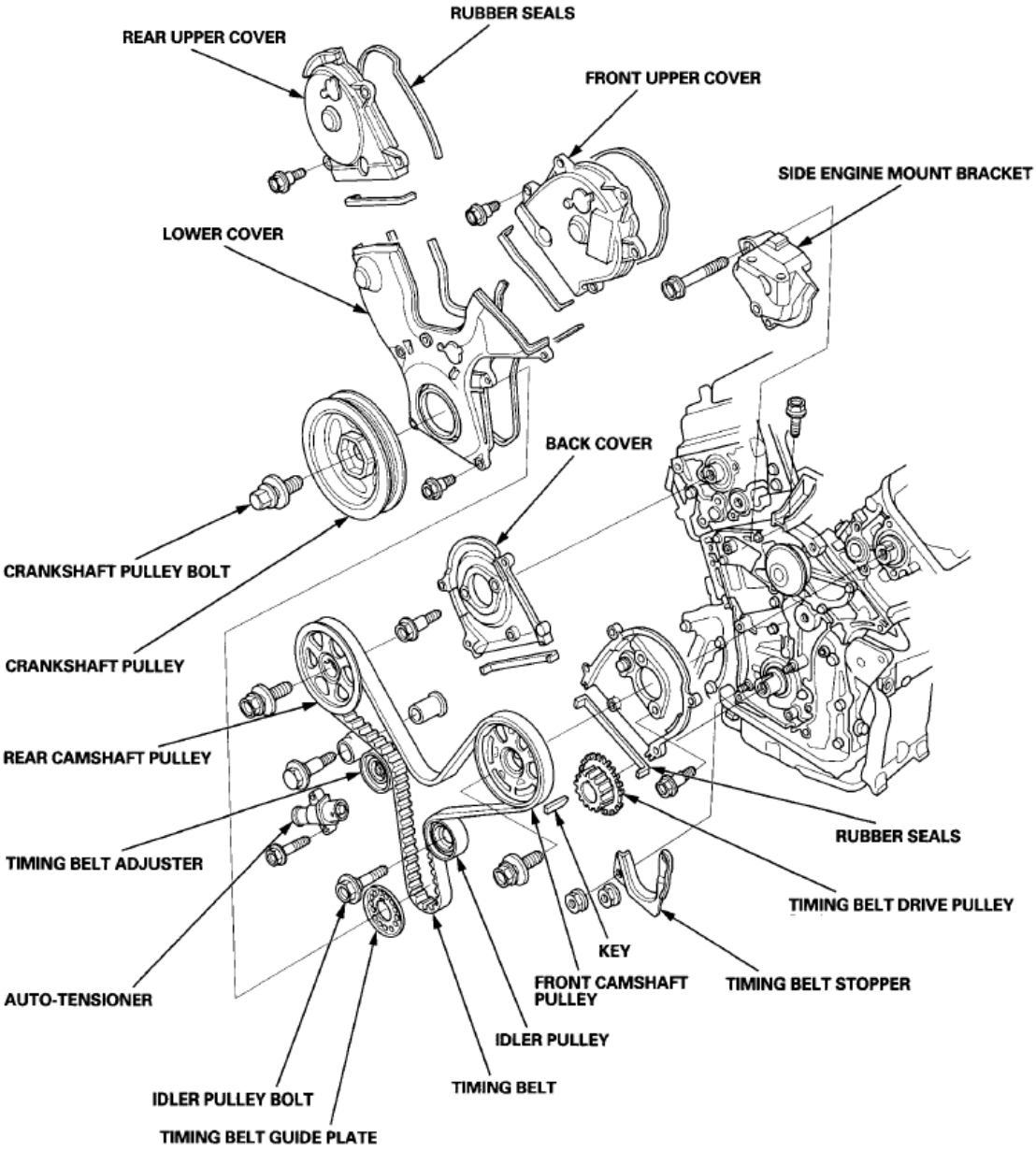


Fig. 2: Cylinder Head Components Location (1 Of 2)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

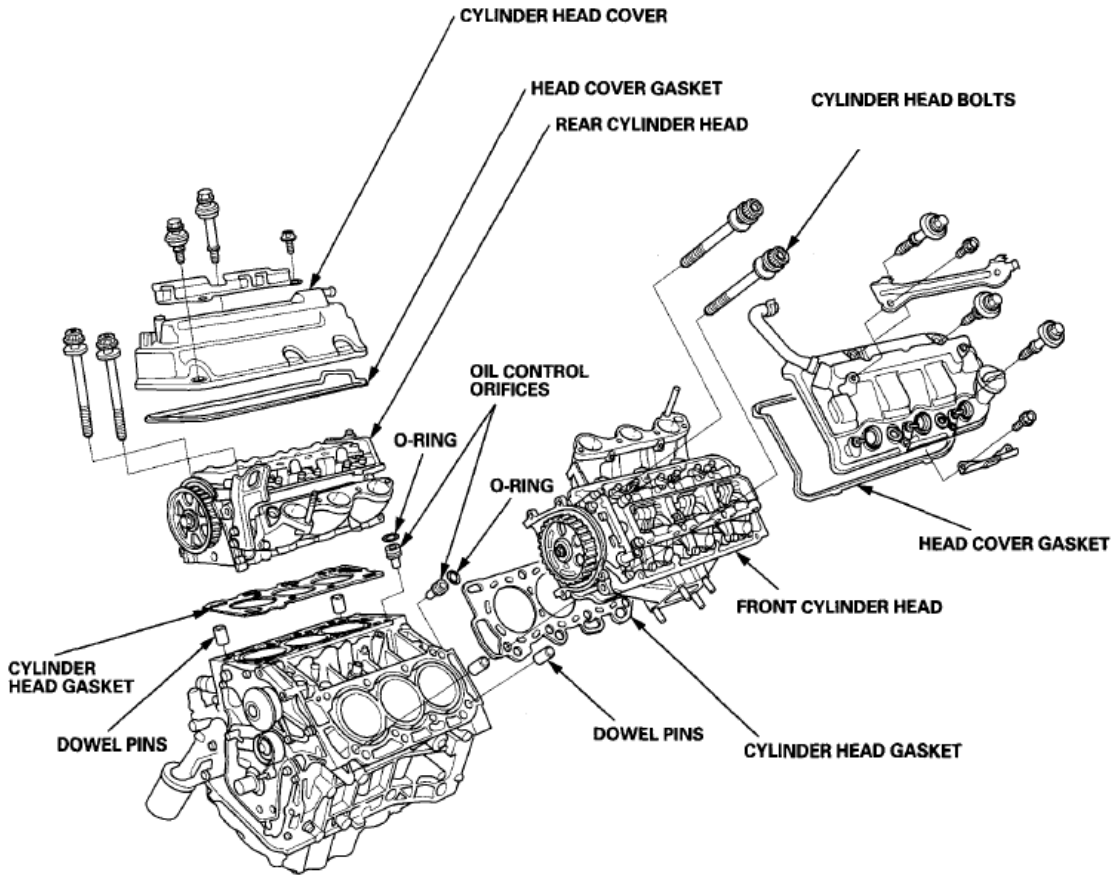


Fig. 3: Cylinder Head Components Location (2 Of 2)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

FRONT

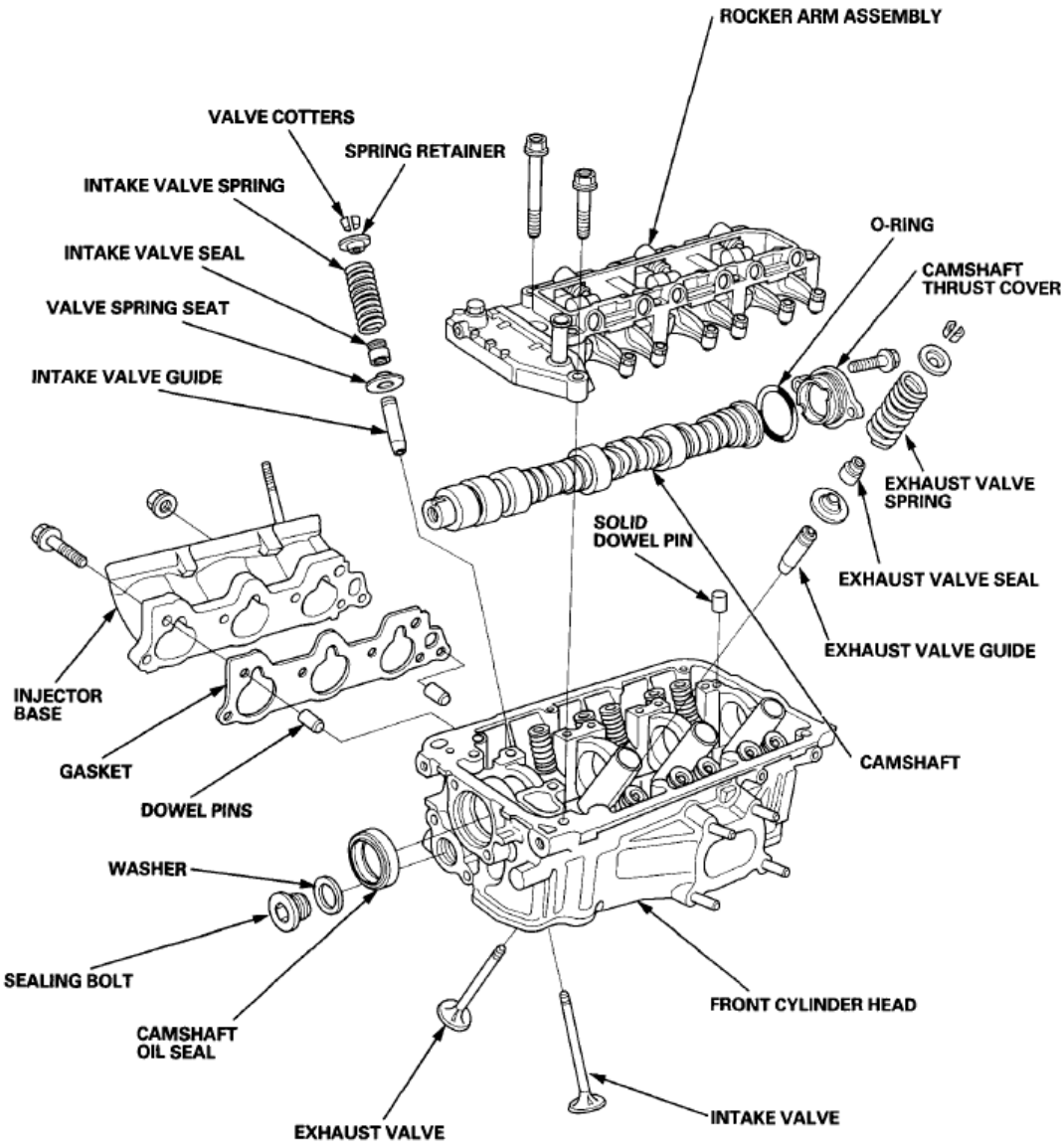


Fig. 4: Cylinder Head Components Location (Front)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

REAR

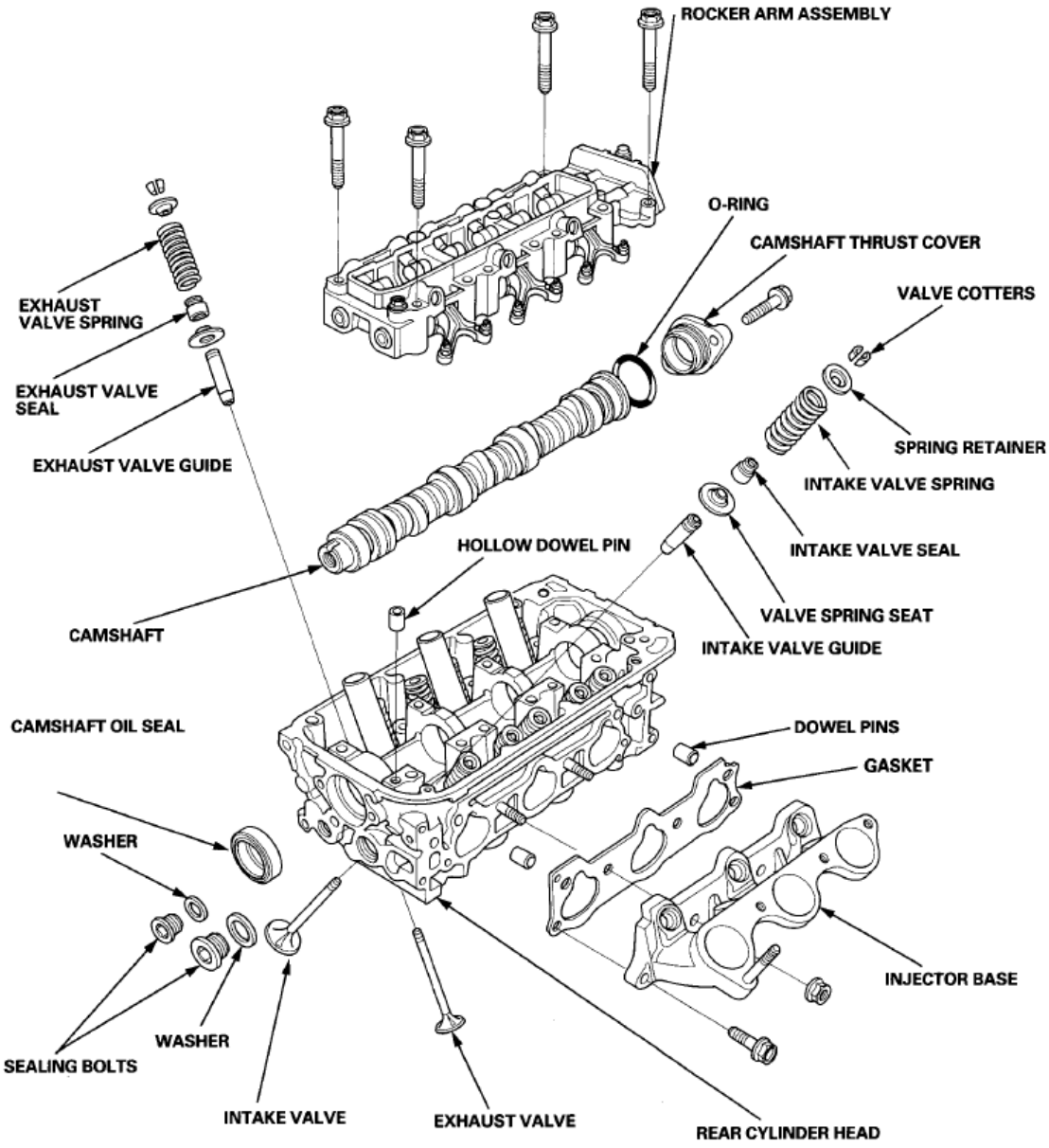


Fig. 5: Cylinder Head Components Location (Rear)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

ENGINE COMPRESSION INSPECTION

NOTE: After the inspection, you must reset the ECM/PCM. Otherwise, the ECM/PCM will continue to stop the fuel injectors from operating.

1. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
2. Connect the HDS to the DLC (see **HOW TO USE THE HDS (HONDA DIAGNOSTIC SYSTEM)**).
3. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.

4. Make sure the HDS communicates with the vehicle and the ECM/PCM. If it does not communicate, troubleshoot the DLC circuit (see **DLC CIRCUIT TROUBLESHOOTING**).
5. Select ALL INJECTORS STOP in the PGM-FI INSPECTION menu with the HDS.
6. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
7. Remove the six ignition coils and the six spark plugs (see **IGNITION COIL AND SPARK PLUG REMOVAL/INSTALLATION**).
8. Attach the compression gauge to a spark plug hole.

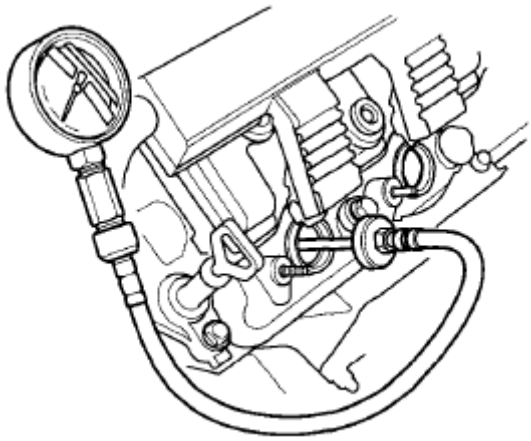


Fig. 6: Measuring Engine Compression Using Compression Gauge
Courtesy of AMERICAN HONDA MOTOR CO., INC.

9. Step on the accelerator pedal to open the throttle fully, then crank the engine with the starter motor, and measure the compression.

   Compression Pressure:

   Above 930 kPa (9.48 kgf/cm^2 , 134.8 psi)

10. Measure the compression on the remaining cylinders.

    Maximum Variation:

    Within 200 kPa (2.04 kgf/cm^2 , 29.0 psi)

11. If the compression is not within the specifications, perform a cylinder leak down test to determine the problem area. Then check the following items, and remeasure the compression:
    - Incorrect valve clearance
    - Confirmation of cam timing
    - Damaged or worn cam lobes
    - Damaged or worn valves and seats
    - Damaged cylinder head gaskets

- Damaged or worn piston rings
- Damaged or worn piston and cylinder bore

12. Remove the compression gauge from the spark plug hole.
13. Install the six spark plugs and the six ignition coils (see **IGNITION COIL AND SPARK PLUG REMOVAL/INSTALLATION**).
14. Select ECM/PCM reset (see **HDS CLEAR COMMAND**) in the PGM-FI INSPECTION menu to cancel ALL INJECTORS STOP with the HDS.

VTEC ROCKER ARM TEST

Special Tools Required

- VTEC Air Stop Tool B 07AAJ-R70A200
- VCM Air Adapter 070AJ-001A101
- Air Pressure Regulator 07AAJ-PNAA101
- VTEC Air Stop Tool A 07AAJ-R70A100

1. Remove the six ignition coils and the six spark plugs, (see **IGNITION COIL AND SPARK PLUG REMOVAL/INSTALLATION**)
2. Remove the **cylinder head covers**.
3. Rotate the crankshaft pulley clockwise. Make sure that the intake primary rocker arm (A) and the intake secondary rocker arm (B) are separated and that the intake primary rocker arm should move independently:
   - If the intake primary rocker arm and the intake secondary rocker arm move together, remove the intake primary rocker arm and the intake secondary rocker arm as an assembly, and check that the pistons in the rocker arms move smoothly. If any intake rocker arm needs replacing, replace the primary and secondary rocker arms as an assembly, then retest.
   - If the intake primary rocker arm and the intake secondary rocker arm move independently, go to step 4.

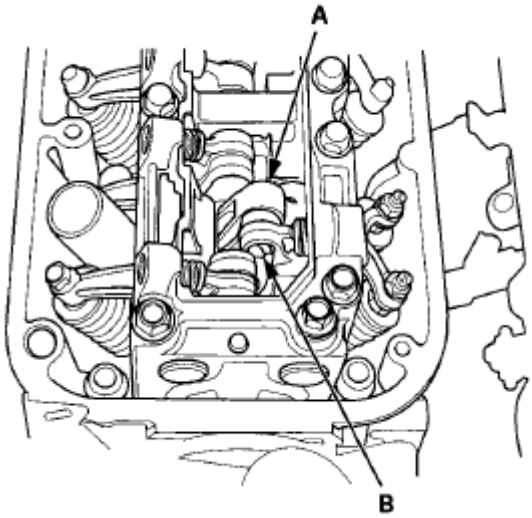


Fig. 7: Identifying Intake Primary And Secondary Rocker Arm
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Rotate the crankshaft pulley clockwise, and visually check all the exhaust primary rocker arms (A) and the exhaust secondary rocker arms (B) move independently:
   - If the exhaust primary rocker arm and the exhaust primary rocker arm move together, remove the exhaust primary rocker arm and the exhaust secondary rocker arm as an assembly, and check that the pistons in the rocker arms move smoothly. If any exhaust rocker arm needs replacing, replace the primary and secondary rocker arms as an assembly, then retest.
   - If the exhaust primary rocker arm and the exhaust secondary rocker arm move independently, go to step 5.

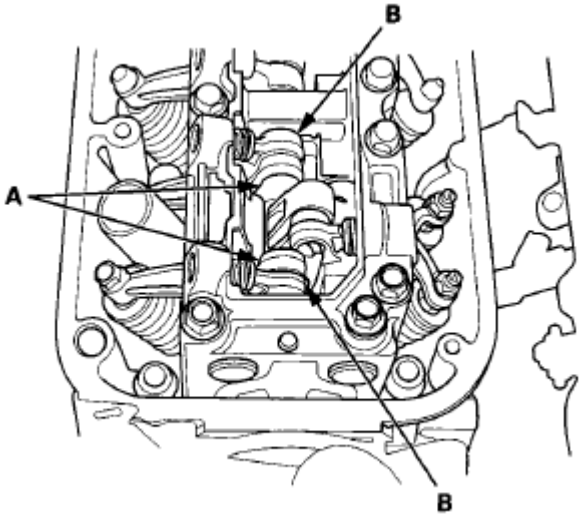


Fig. 8: Identifying Exhaust Primary And Secondary Rocker Arm
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Check that the air pressure on the shop air compressor gauge indicates over 981 kPa (10.00 kgf/cm^2 ,

142.3 psi).

6. Inspect the **valve clearance**.
7. Remove the sealing bolts, then install VTEC air stop tool B (A) and the VCM air adapter (B) to the inspection hole, then connect the air pressure regulator (C) as shown.

FRONT

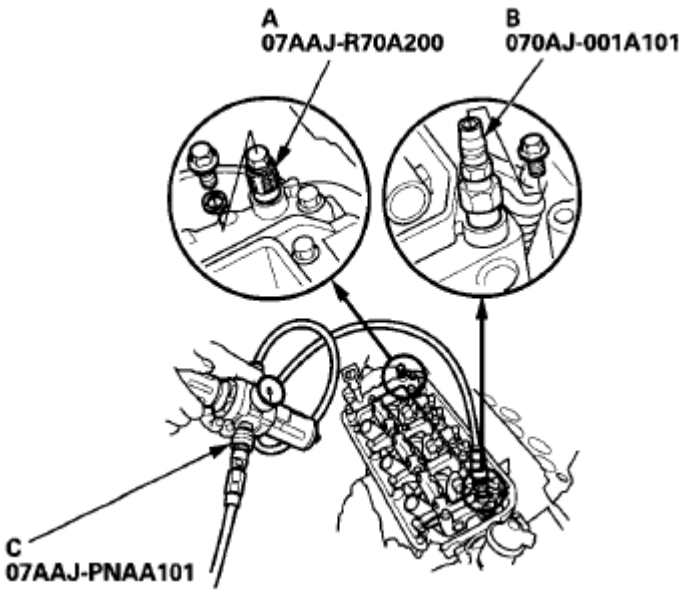


Fig. 9: Identifying Air Pressure Regulator Connection With VCM Air Adapter (Front)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

8. Remove the sealing bolts, then install VTEC air stop tool A (A) and the VCM air adapter (B) to the inspection hole, then connect the air pressure regulator (C) as shown.

REAR

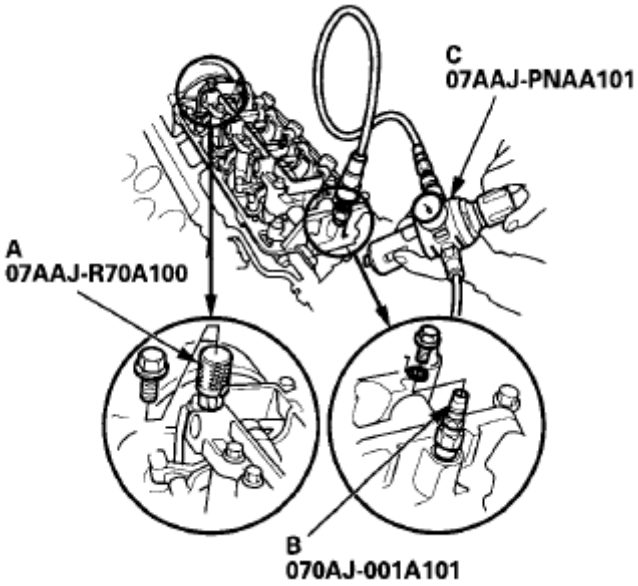


Fig. 10: Identifying Air Pressure Regulator Connection With VCM Air Adapter (Rear)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

9. Loosen the valve on the regulator, and apply the specified air pressure.

   Specified Air Pressure:

   550-690 kPa (5.61-7.04 kgf/cm^2 , 79.8-100.1 psi)

10. With the specified air pressure applied, rotate the crankshaft pulley clockwise. The intake primary rocker arm (A) should move together with the intake secondary rocker arm (B):
    - If the intake primary rocker arm and the intake secondary rocker arm move independently, remove the intake primary rocker arm and the intake secondary rocker arm as an assembly, and check that the pistons in the rocker arms move smoothly. If any intake rocker arm needs replacing, replace the primary and secondary rocker arms as an assembly, then retest.
    - If the intake primary rocker arm and the intake secondary rocker arm move together, go to step 11.

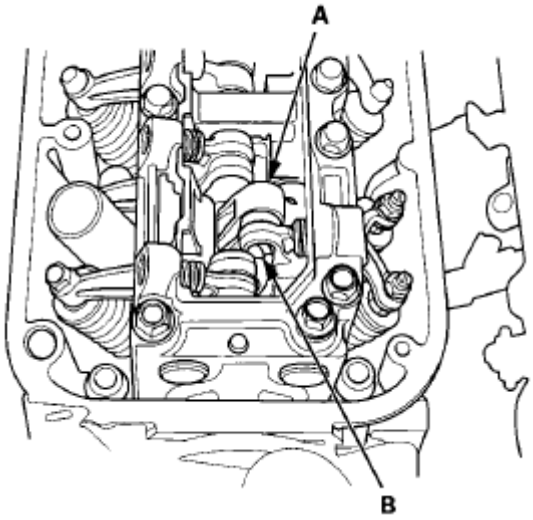


Fig. 11: Identifying Intake Primary And Secondary Rocker Arm
Courtesy of AMERICAN HONDA MOTOR CO., INC.

11. With the specified air pressure applied, rotate the crankshaft pulley clockwise. The exhaust primary rocker arm (A) should move together with the exhaust secondary rocker arm (B):
    - If the exhaust primary rocker arm and the exhaust secondary rocker arm move independently, remove the exhaust primary rocker arm and the exhaust secondary rocker arm as an assembly, and check that the pistons in the rocker arms move smoothly. If any exhaust rocker arm needs replacing, replace the primary and secondary rocker arms as an assembly, then retest.
    - If the exhaust primary rocker arm and the exhaust secondary rocker arm move together, go to step 12.

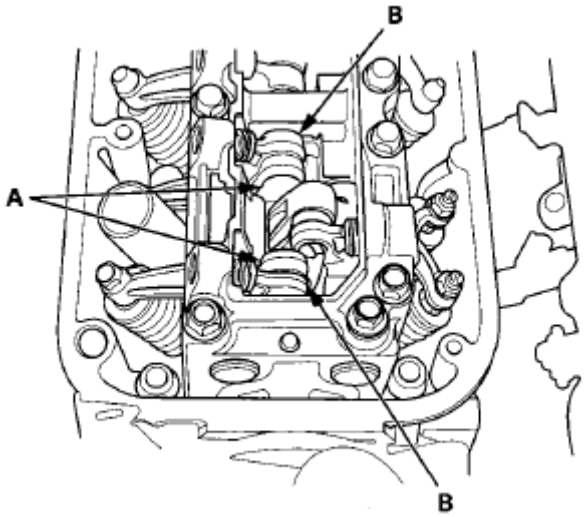


Fig. 12: Identifying Exhaust Primary And Secondary Rocker Arm
Courtesy of AMERICAN HONDA MOTOR CO., INC.

12. Remove the air pressure regulator, the VCM air adapter, VTEC air stop tool A, and VTEC air stop tool B.

13. Torque the sealing bolts to 22 N.m (2.2 kgf.m, 16 lbf.ft).
14. Install the **cylinder head covers**.
15. Install the six spark plugs.

VALVE CLEARANCE ADJUSTMENT

NOTE: Connect the HDS to the DLC, and monitor ECT SENSOR 1. Adjust the valve clearance only when the engine coolant temperature is less than 100°F (38°C).

1. Remove the **cylinder head covers**.
2. Set the No. 1 piston at top dead center (TDC). Align the pointer (A) on the front upper cover with the No. 1 piston TDC mark (B) on the front camshaft pulley.

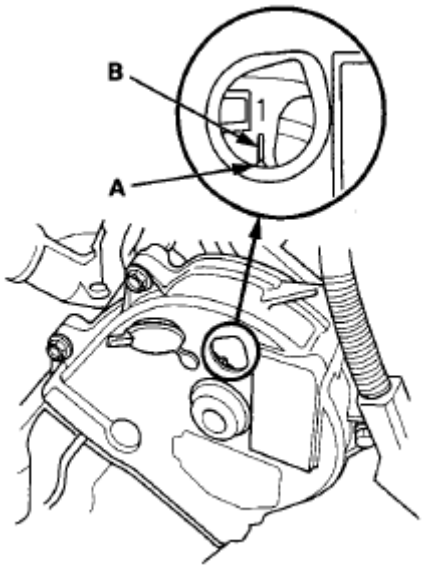


Fig. 13: Identifying Pointer And No. 1 Piston TDC Mark
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Select the correct feeler gauge for the valve clearance you are going to check.

Valve Clearance

Intake: 0.20-0.24 mm (0.008-0.009 in)

Exhaust: 0.28-0.32 mm (0.011-0.012 in)

REAR

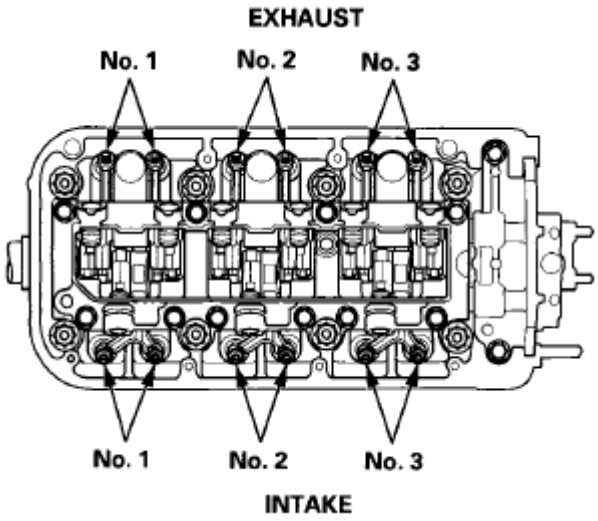


Fig. 14: Identifying Valves (Rear)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

FRONT

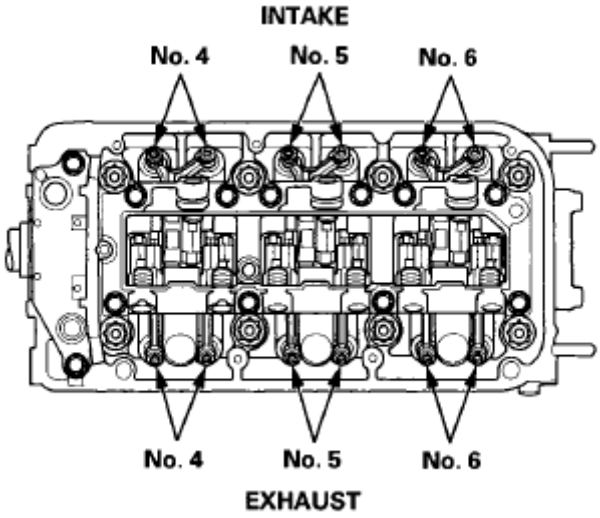


Fig. 15: Identifying Valves (Front)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Insert the feeler gauge (A) between the adjusting screw and the end of the valve stem on the No. 1 cylinder, and slide it back and forth; you should feel a slight amount of drag.

INTAKE

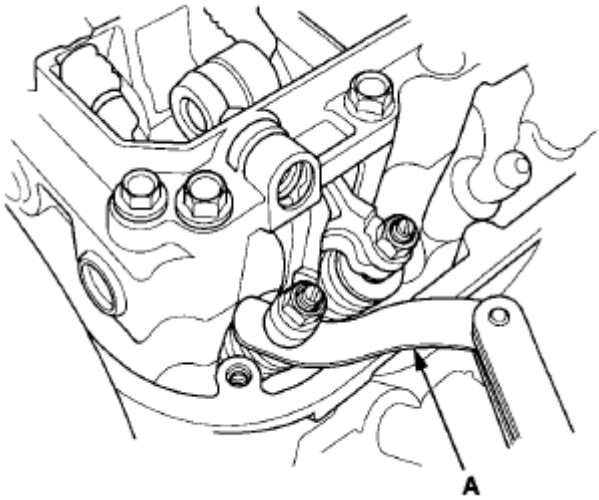


Fig. 16: Checking Valve Clearance Using Feeler Gauge (Intake)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

EXHAUST

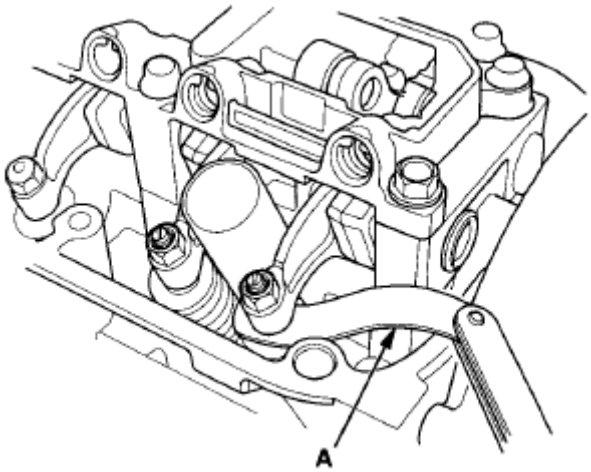


Fig. 17: Checking Valve Clearance Using Feeler Gauge (Exhaust)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. If you feel too much or too little drag, loosen the locknut, and turn the adjusting screw until the drag on the feeler gauge is correct.

INTAKE

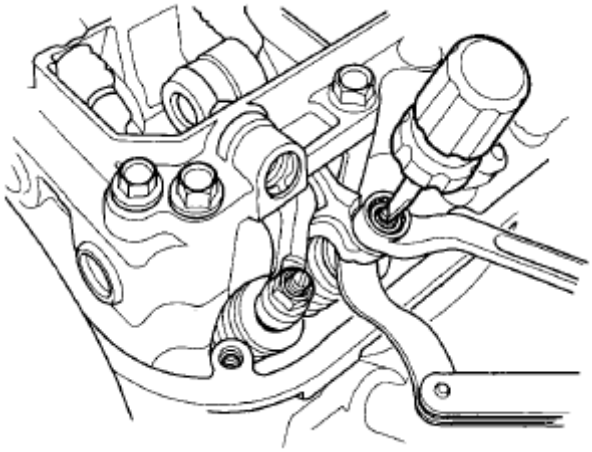


Fig. 18: Adjusting Valve Clearance Using Feeler Gauge (Intake)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

EXHAUST

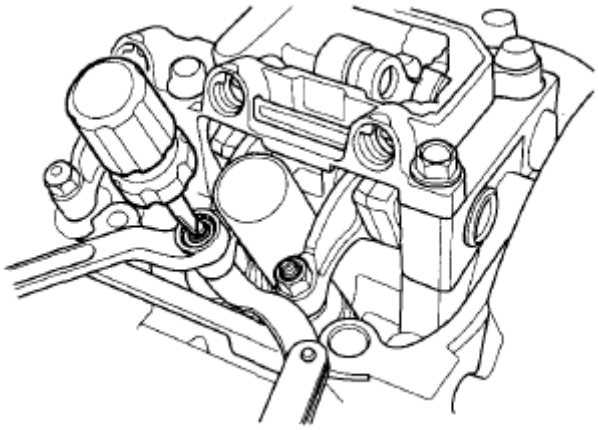


Fig. 19: Adjusting Valve Clearance Using Feeler Gauge (Exhaust)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. While holding the adjusting screw with the screw driver, tighten the locknut, then recheck the clearance. Repeat the adjustment, if necessary.

   Specified Torque

   20 N.m (2.0 kgf.m, 14 lbf.ft)

   Apply new engine oil to the nut threads.

7. Rotate the crankshaft clockwise. Align the pointer (A) on the front upper cover with the No. 4 piston TDC mark (B) on the front camshaft pulley.

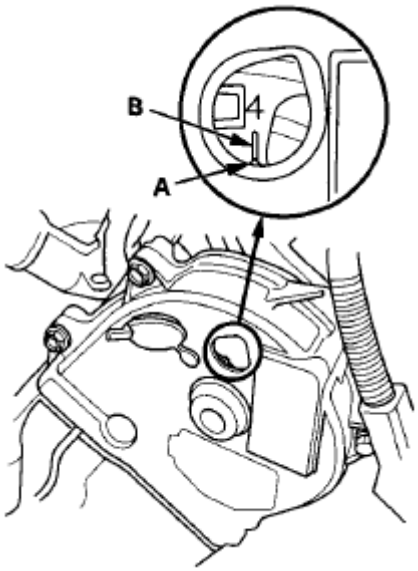


Fig. 20: Identifying Front Upper Cover Pointer And No. 4 Piston TDC Mark
Courtesy of AMERICAN HONDA MOTOR CO., INC.

8. Check and, if necessary, adjust the valve clearance on the No. 4 cylinder.
9. Rotate the crankshaft clockwise. Align the pointer (A) on the front upper cover with the No. 2 piston TDC mark (B) on the front camshaft pulley.

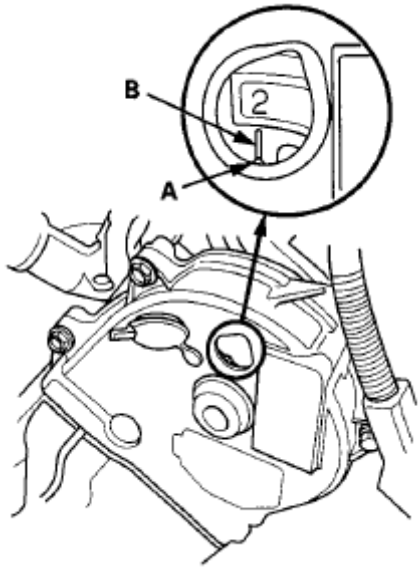


Fig. 21: Identifying Front Upper Cover Pointer And No. 2 Piston TDC Mark
Courtesy of AMERICAN HONDA MOTOR CO., INC.

10. Check and, if necessary, adjust the valve clearance on the No. 2 cylinder.
11. Rotate the crankshaft clockwise. Align the pointer (A) on the front upper cover with the No. 5 piston TDC mark (B) on the front camshaft pulley.

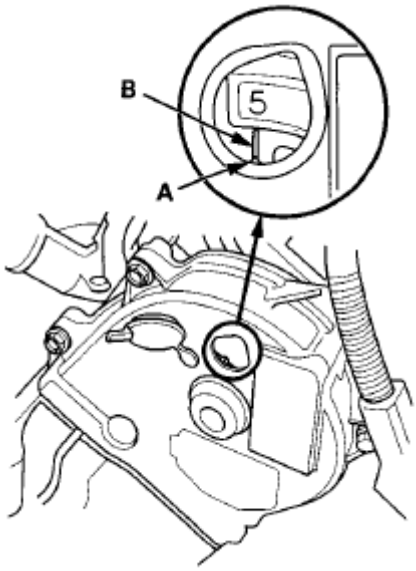


Fig. 22: Identifying Front Upper Cover Pointer And No. 5 Piston TDC Mark
Courtesy of AMERICAN HONDA MOTOR CO., INC.

12. Check and, if necessary, adjust the valve clearance on the No. 5 cylinder.
13. Rotate the crankshaft clockwise. Align the pointer (A) on the front upper cover with the No. 3 piston TDC mark (B) on the front camshaft pulley.

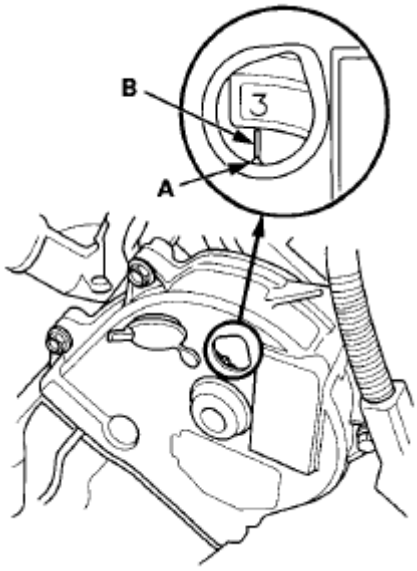


Fig. 23: Identifying Front Upper Cover Pointer And No. 3 Piston TDC Mark
Courtesy of AMERICAN HONDA MOTOR CO., INC.

14. Check and, if necessary, adjust the valve clearance on the No. 3 cylinder.
15. Rotate the crankshaft clockwise. Align the pointer (A) on the front upper cover with the No. 6 piston TDC mark (B) on the front camshaft pulley.

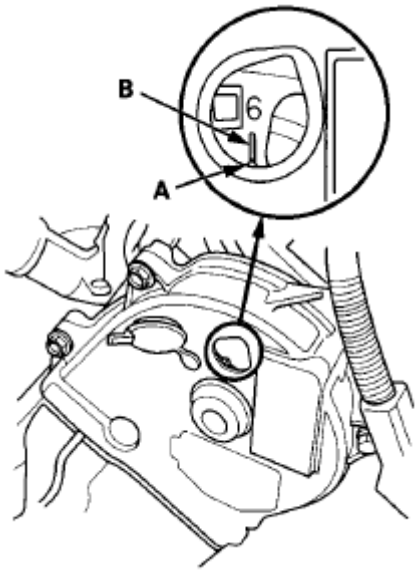


Fig. 24: Identifying Front Upper Cover Pointer And No. 6 Piston TDC Mark
Courtesy of AMERICAN HONDA MOTOR CO., INC.

16. Check and, if necessary, adjust the valve clearance on the No. 6 cylinder.
17. Install the **cylinder head covers**.

CRANKSHAFT PULLEY REMOVAL AND INSTALLATION

Special Tools Required

- Holder Handle 07JAB-001020B
- Holder Attachment, 50 mm, Offset 07MAB-PY3010A
- Socket, 19 mm 07JAA-001020A or equivalent

REMOVAL

1. Raise the vehicle on the lift.
2. Remove the right front wheel.
3. Remove the front splash shield (see **FRONT SPLASH SHIELD REPLACEMENT**).
4. Remove the drive belt (see **DRIVE BELT REPLACEMENT**).
5. Hold the pulley with the holder handle (A) and the holder attachment, 50 mm, offset (B).

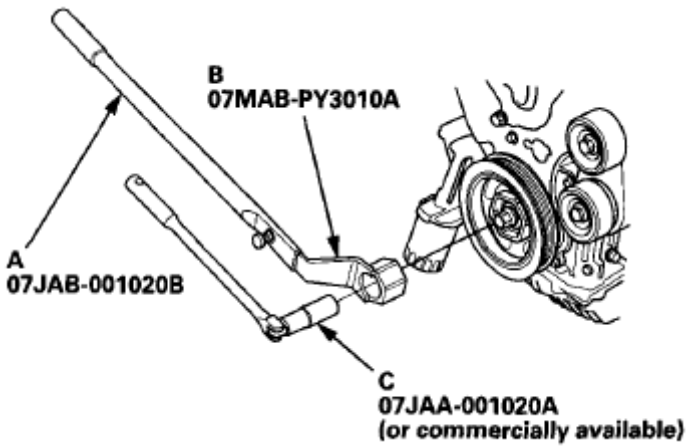


Fig. 25: Identifying Holder Handle And Holder Attachment Offset Of Crankshaft Pulley
Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Remove the bolt with a heavy duty socket, 19 mm (C) and a breaker bar, then remove the crankshaft pulley.

INSTALLATION

1. Remove any oil and clean the pulleys (A), the crankshaft (B), the bolt (C), and the washer (D). Lubricate with new engine oil as shown.

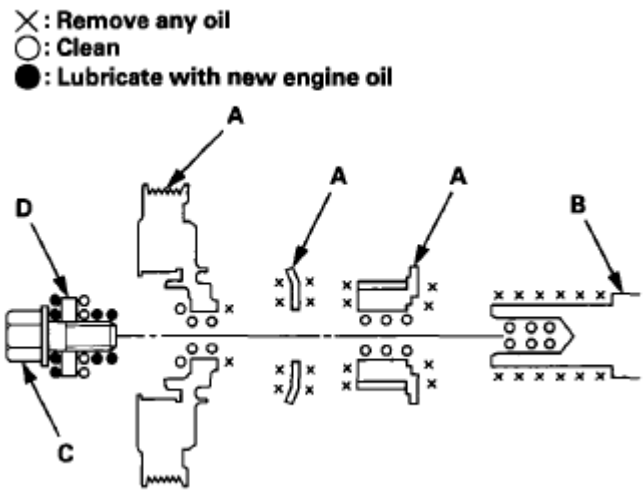


Fig. 26: Positions For Installing Crankshaft Pulley
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Install the crankshaft pulley, and tighten the bolt. Do not use an impact wrench.
    1. Hold the pulley with the holder handle (A) and the holder attachment (B). Torque the bolt to 64 N.m (6.5 kgf.m, 47 lbf.ft) with a torque wrench and the heavy duty socket, 19 mm (C).
    2. Tighten the bolt an additional 60 °.

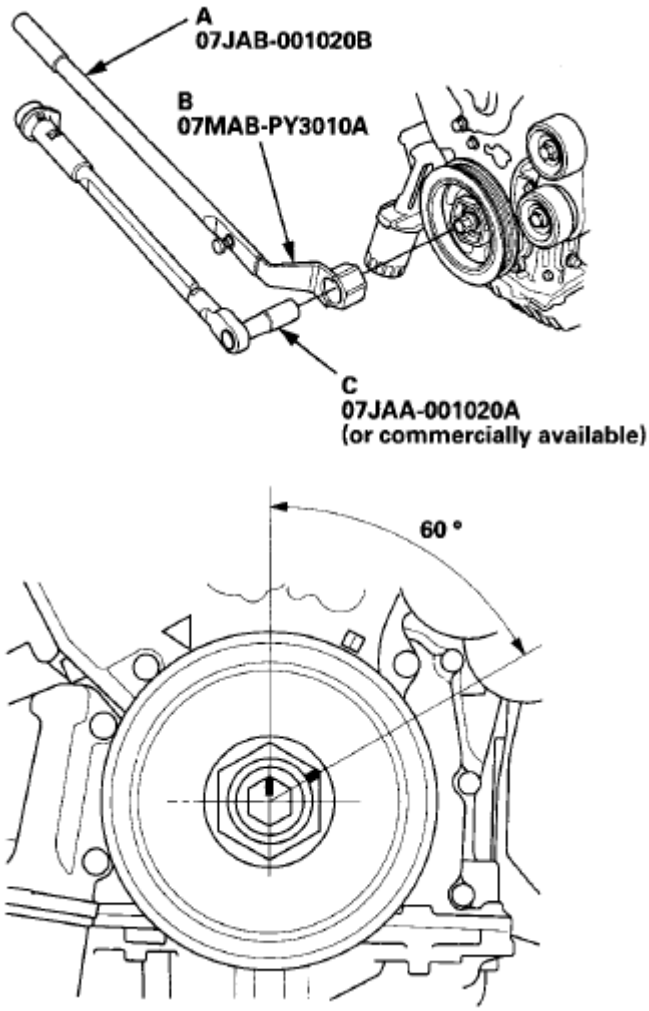


Fig. 27: Position For Installing Crankshaft Pulley Bolt
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Install the drive belt (see **DRIVE BELT REPLACEMENT**).
4. Install the front splash shield (see **FRONT SPLASH SHIELD REPLACEMENT**).
5. Install the right front wheel.

TIMING BELT INSPECTION

1. Remove the drive belt (see **DRIVE BELT REPLACEMENT**).
2. Remove the front upper cover.

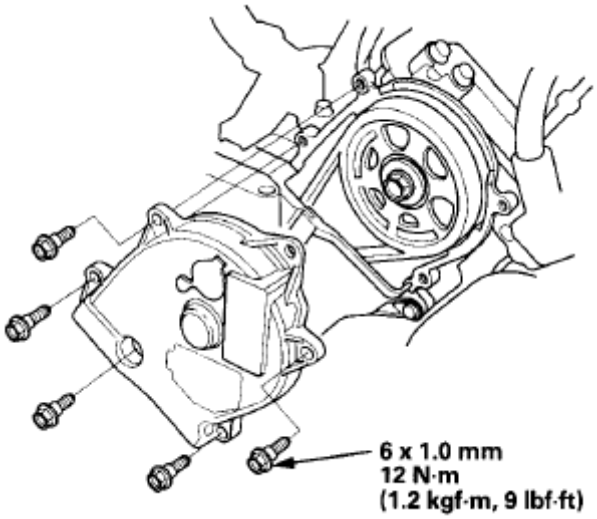


Fig. 28: Identifying Front Upper Cover Bolt With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Inspect the timing belt for cracks and oil or coolant contamination. Replace the belt if it is cracked, or contaminated with oil or coolant. Wipe off any oil or solvent that gets on the belt pulleys.

NOTE: If there is any leakage, repair them before replacing the timing belt.

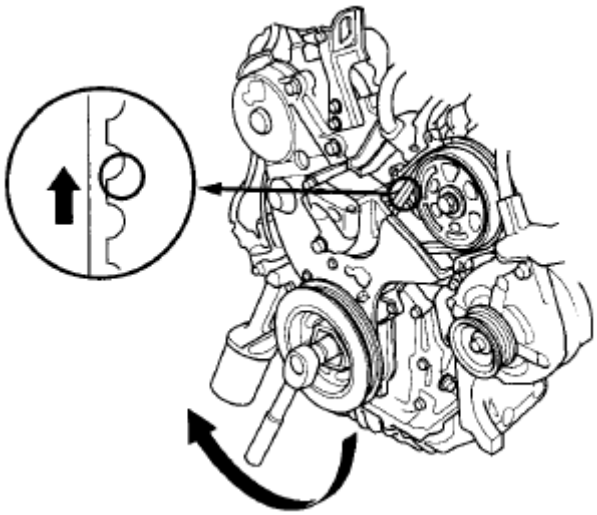


Fig. 29: Inspecting Timing Belt For Cracks And Oil Or Coolant Contamination
Courtesy of AMERICAN HONDA MOTOR CO., INC.

TIMING BELT REMOVAL

1. Remove the engine compartment covers (see **ENGINE COMPARTMENT COVER REPLACEMENT**).
2. Turn the crankshaft so its white mark (A) on the crankshaft pulley lines up with the pointer (B).

NOTE: The other pointer (C) is not used.

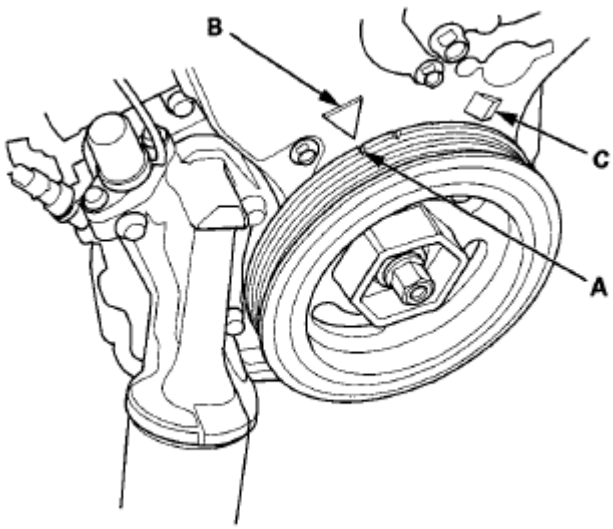


Fig. 30: Identifying White Mark On Crankshaft Pulley And Pointer
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Check that the No. 1 piston top dead center (TDC) mark (A) on the front camshaft pulley and the pointer (B) on the front upper cover are aligned.

NOTE: If the marks are not aligned, rotate the crankshaft 360 degrees, and recheck the camshaft pulley mark.

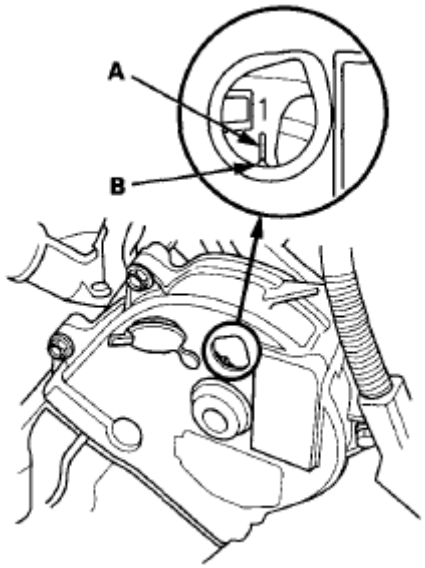


Fig. 31: Identifying No. 1 Piston Top Dead Center (TDC) Mark And Pointer
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Raise the vehicle on the lift, then remove the right front wheel.
5. Remove the front splash shield (see **FRONT SPLASH SHIELD REPLACEMENT**).
6. Remove the drive belt auto-tensioner (see **DRIVE BELT AUTO-TENSIONER REPLACEMENT**).
7. Support the engine with a jack and a wood block under the oil pan.
8. Remove the ground cable (A), then remove the upper half of the side engine mount bracket (B).

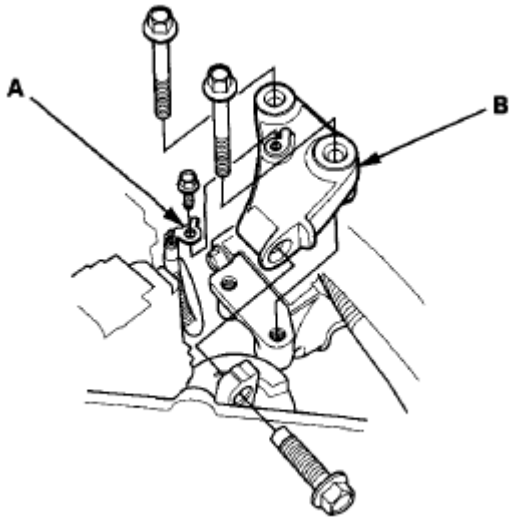


Fig. 32: Identifying Engine Mount Bracket And Ground Cable
Courtesy of AMERICAN HONDA MOTOR CO., INC.

9. Remove the **crankshaft pulley**.
10. Remove the front upper cover (A) and the rear upper cover (B).

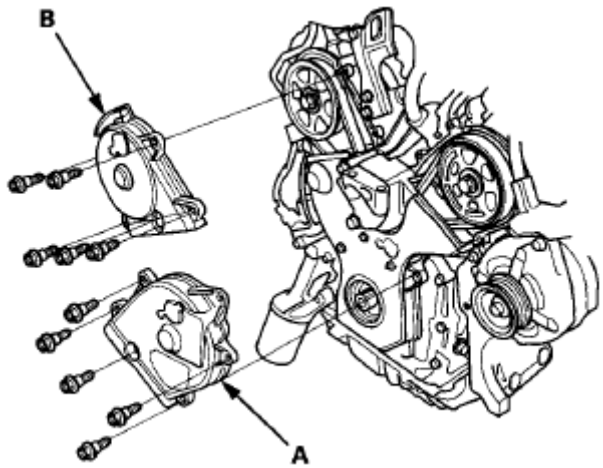


Fig. 33: Identifying Front And Rear Upper Cover
Courtesy of AMERICAN HONDA MOTOR CO., INC.

11. Remove the lower cover.

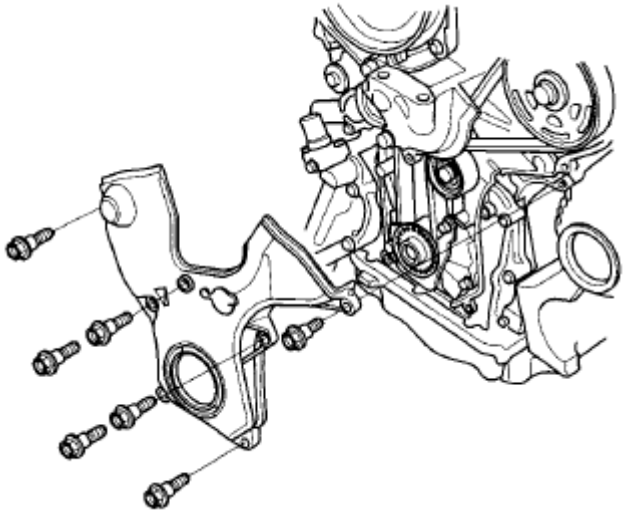


Fig. 34: Identifying Lower Cover
Courtesy of AMERICAN HONDA MOTOR CO., INC.

12. Remove one of the battery clamp bolts from the battery tray, and grind the end of it as shown.

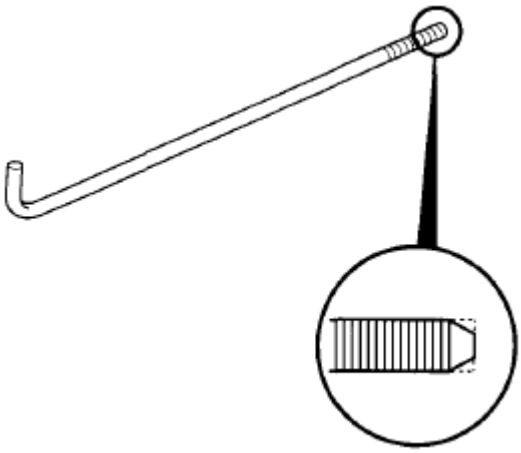


Fig. 35: Identifying Grind At End Of Battery Clamp Bolt
Courtesy of AMERICAN HONDA MOTOR CO., INC.

13. Thread the battery clamp bolt in as shown to hold the timing belt adjuster in its current position. Tighten it by hand, do not use a wrench.

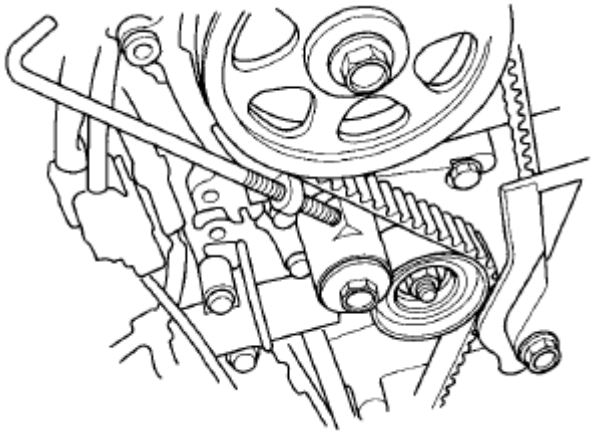


Fig. 36: Identifying Battery Clamp Bolt
Courtesy of AMERICAN HONDA MOTOR CO., INC.

14. Remove the timing belt guide plate (A).

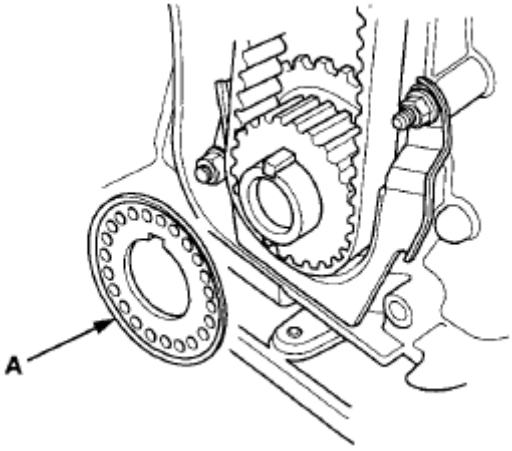


Fig. 37: Identifying Timing Belt Guide Plate
Courtesy of AMERICAN HONDA MOTOR CO., INC.

15. Remove the lower half of the side engine mount bracket.

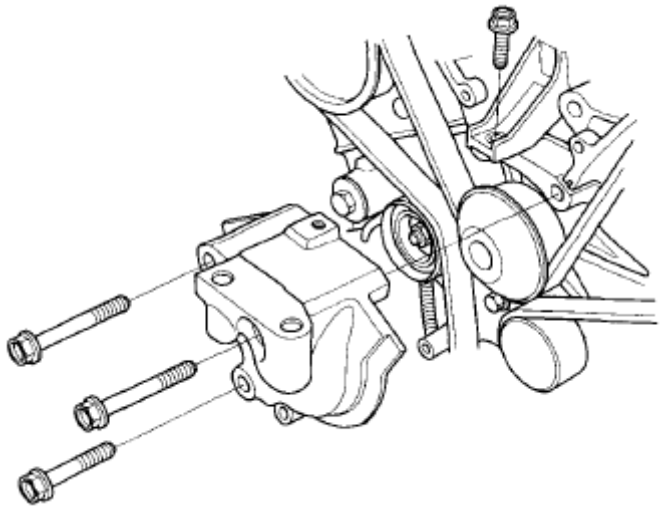


Fig. 38: Identifying Lower Half Of Side Engine Mount Bracket
Courtesy of AMERICAN HONDA MOTOR CO., INC.

16. Remove the idler pulley bolt (A) and the idler pulley (B), then remove the timing belt. Discard the idler pulley bolt.

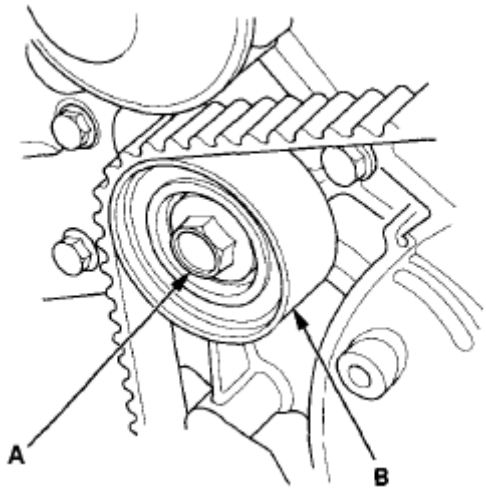


Fig. 39: Identifying Idler Pulley And Idler Pulley Bolt
Courtesy of AMERICAN HONDA MOTOR CO., INC.

TIMING BELT INSTALLATION

NOTE: The following procedure is for installation of a used timing belt. If you are installing a new belt, refer to the timing belt replacement procedure.

1. Clean the timing belt pulleys, the timing belt guide plate, and the upper and lower covers.
2. Set the timing belt drive pulley to top dead center (TDC) by aligning the TDC mark (A) on the tooth of the timing belt drive pulley with the pointer (B) on the oil pump.

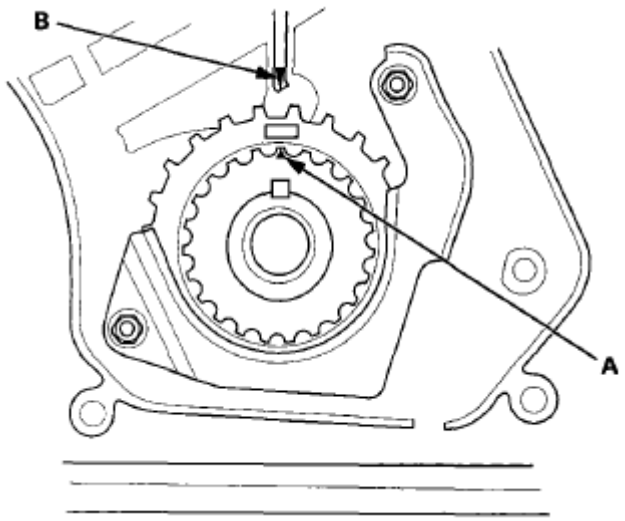


Fig. 40: Identifying TDC Mark On Tooth Of Timing Belt Drive Pulley And Pointer On Oil Pump
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Set the camshaft pulleys to TDC by aligning the TDC marks (A) on the camshaft pulleys with the pointers (B) on the back covers.

FRONT

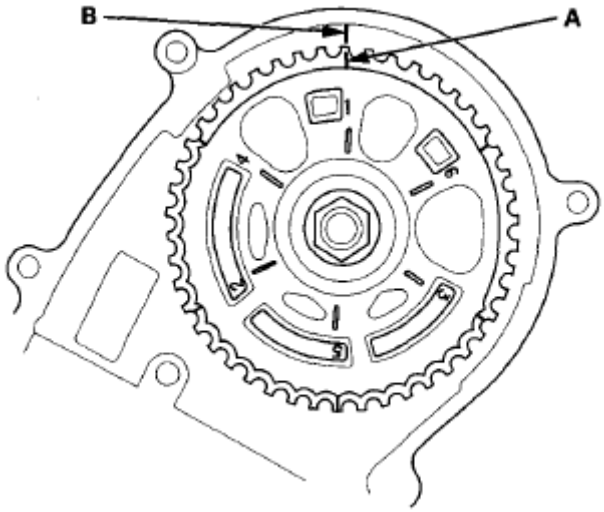


Fig. 41: Identifying TDC Mark On Camshaft Pulleys And Pointer On Back Covers - Front
Courtesy of AMERICAN HONDA MOTOR CO., INC.

REAR

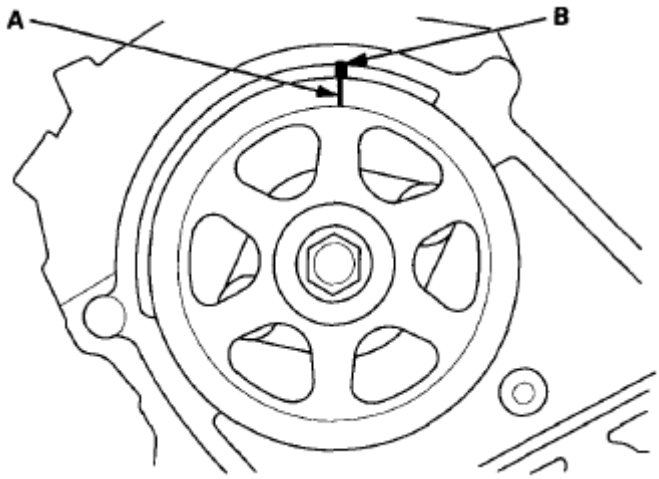


Fig. 42: Identifying TDC Mark On Camshaft Pulleys And Pointer On Back Covers - Rear
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Loosely install the idler pulley with a new idler pulley bolt so the pulley can move but does not come off.
5. If the auto-tensioner has extended and the timing belt cannot be installed, do the **timing belt replacement** procedure.
6. Install the timing belt in a counterclockwise sequence starting with the drive pulley. Take care not to damage the timing belt during installation:
    1. Drive pulley (A)
    2. Idler pulley (B)
    3. Front camshaft pulley (C)
    4. Water pump pulley (D)
    5. Rear camshaft pulley (E)
    6. Adjusting pulley (F)

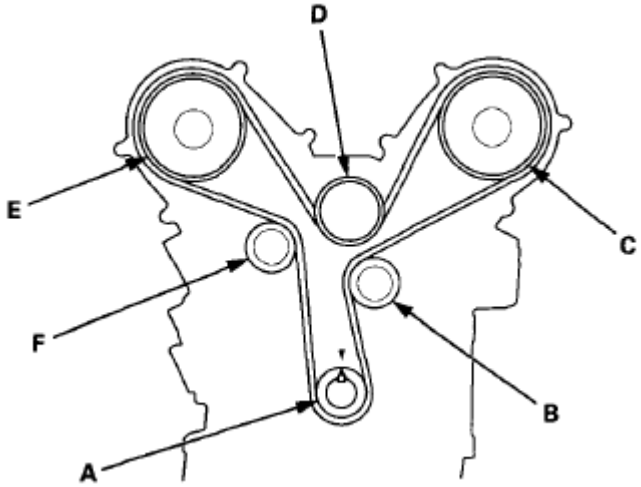


Fig. 43: Identifying Various Types Of Pulley
Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Tighten the idler pulley bolt.

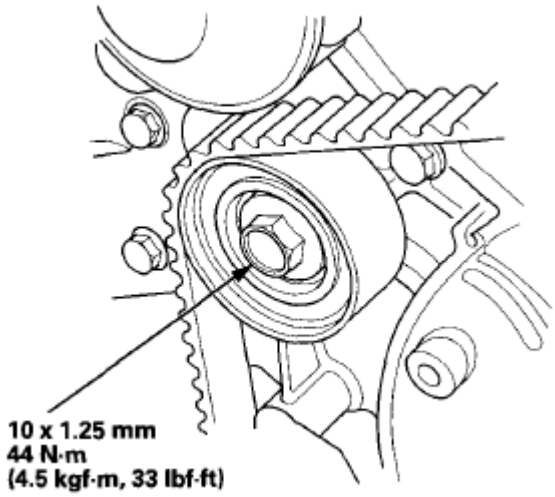


Fig. 44: Identifying Idler Pulley Bolt With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

8. Remove the battery clamp bolt from the back cover.

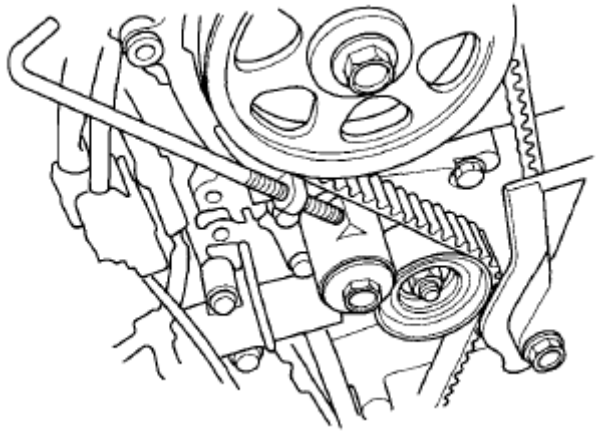


Fig. 45: Identifying Battery Clamp Bolt
Courtesy of AMERICAN HONDA MOTOR CO., INC.

9. Install the lower half of the side engine mount bracket using new bolts (A) and the bolt (B).

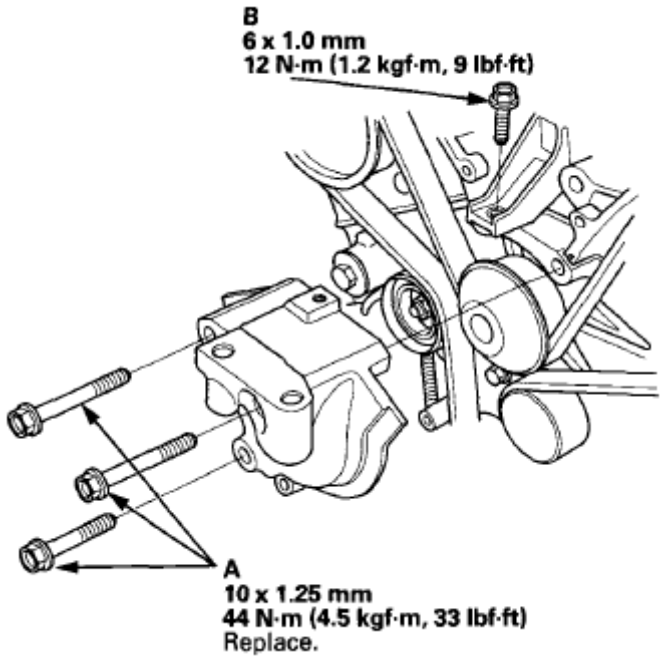


Fig. 46: Identifying Bolts With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

10. Install the timing belt guide plate (A) as shown

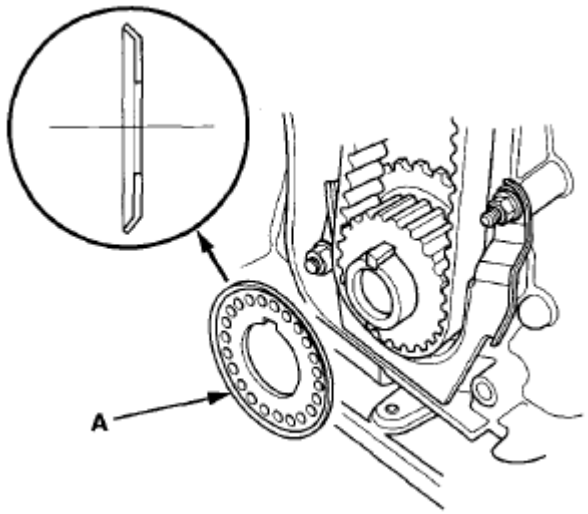


Fig. 47: Identifying Timing Belt Guide Plate
Courtesy of AMERICAN HONDA MOTOR CO., INC.

11. Install the lower cover.

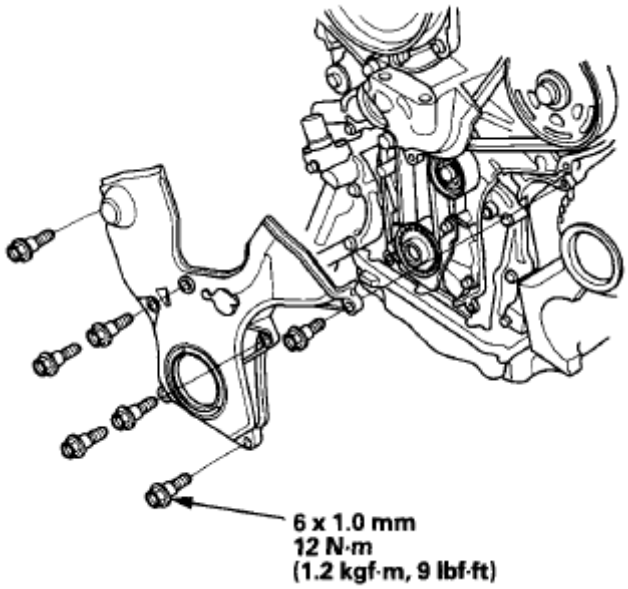


Fig. 48: Identifying Lower Cover Bolts With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

12. Install the front upper cover (A) and the rear upper cover (B).

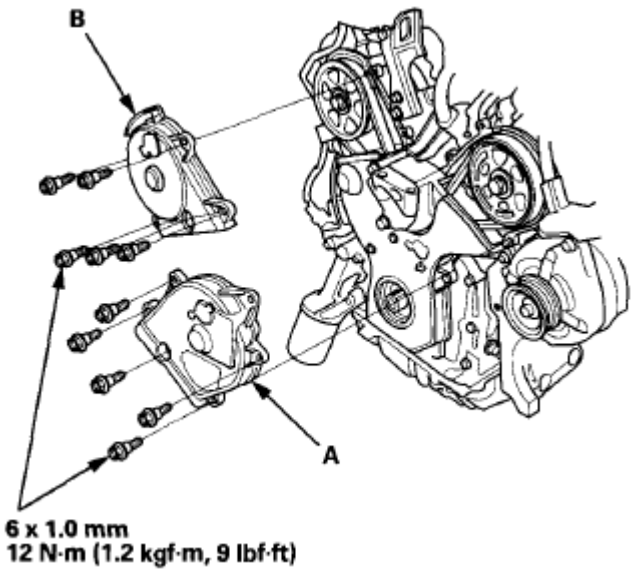


Fig. 49: Identifying Front Upper Cover And Rear Upper Cover With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

13. Install the **crankshaft pulley**.
14. Rotate the crankshaft pulley about six turns clockwise so the timing belt positions itself on the pulleys.
15. Turn the crankshaft pulley so its white mark (A) lines up with the pointer (B).

NOTE: The other pointer (C) is not used.

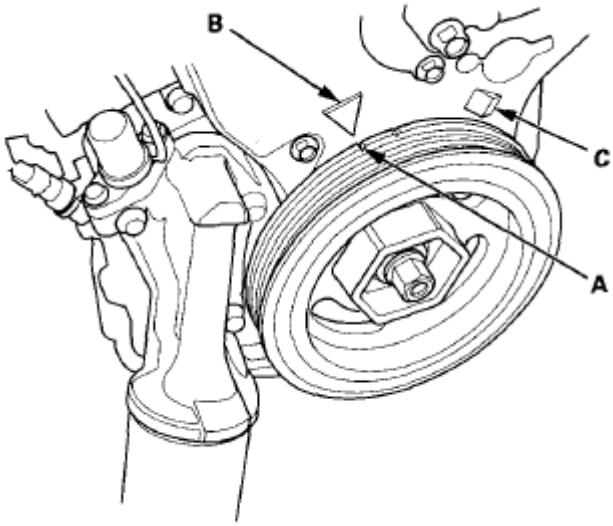


Fig. 50: Identifying Crankshaft Pulley White Mark And Pointer
Courtesy of AMERICAN HONDA MOTOR CO., INC.

16. Check the camshaft pulley marks.

NOTE: If the marks are not aligned, rotate the crankshaft 360 degrees, and recheck the camshaft pulley mark:

- If the camshaft pulley marks are at TDC, go to step 17.
- If the camshaft pulley marks are not at TDC, remove the timing belt and repeat steps 2 through 16.

FRONT

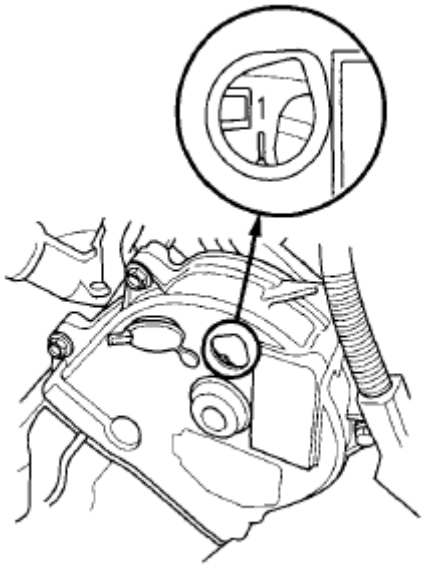


Fig. 51: Identifying Camshaft Pulley Mark - Front
Courtesy of AMERICAN HONDA MOTOR CO., INC.

REAR

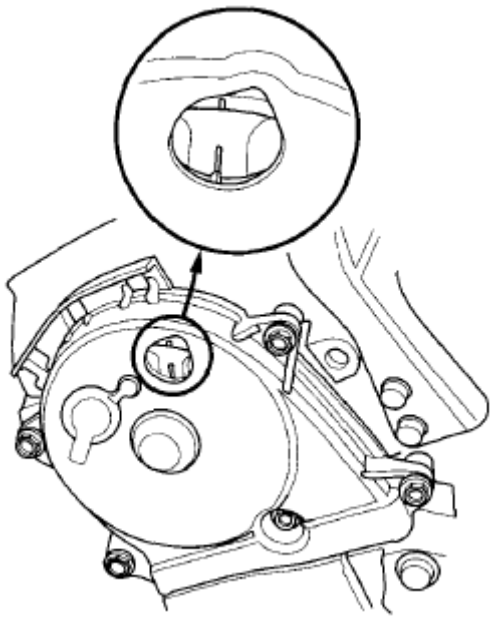


Fig. 52: Identifying Camshaft Pulley Mark - Rear
Courtesy of AMERICAN HONDA MOTOR CO., INC.

17. Loosely install the upper half of the side engine mount bracket (A) using new bolts, then install the ground cable (B).

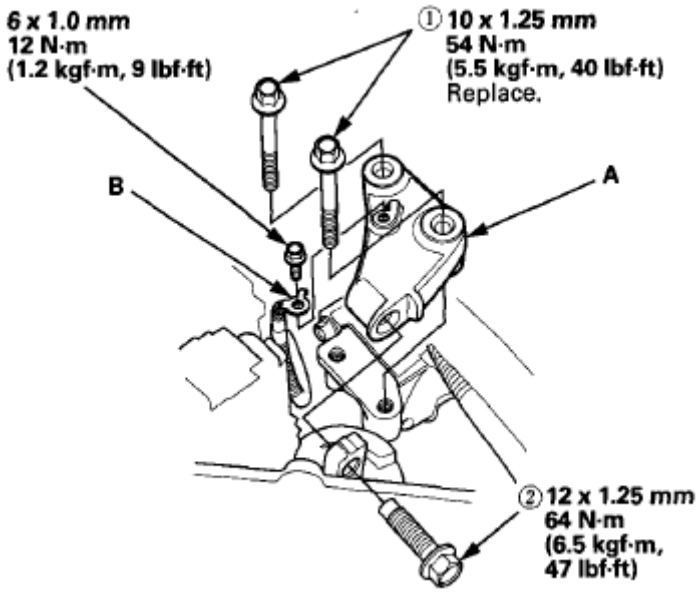


Fig. 53: Identifying Side Engine Mount Bracket And Ground Cable With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

18. Remove the jack and the wood block.

19. Tighten the mounting bolts in the numbered sequence shown.
20. Install the drive belt auto-tensioner (see **DRIVE BELT AUTO-TENSIONER REPLACEMENT**).
21. Install the front splash shield (see **FRONT SPLASH SHIELD REPLACEMENT**).
22. Install the right front wheel.
23. Install the engine compartment covers (see **ENGINE COMPARTMENT COVER REPLACEMENT**).
24. Do the CKP pattern clear/CKP pattern learn procedure (see **CKP PATTERN CLEAR/CKP PATTERN LEARN**).

TIMING BELT REPLACEMENT

NOTE: The following procedure is for installation of a new timing belt. If you are installing a used belt, refer to the timing belt installation procedure.

1. Remove the **timing belt**.
2. Clean the timing belt pulleys, the timing belt guide plate, and the upper and lower covers.
3. Set the timing belt drive pulley to top dead center (TDC) by aligning the TDC mark (A) on the tooth of the timing belt drive pulley with the pointer (B) on the oil pump.

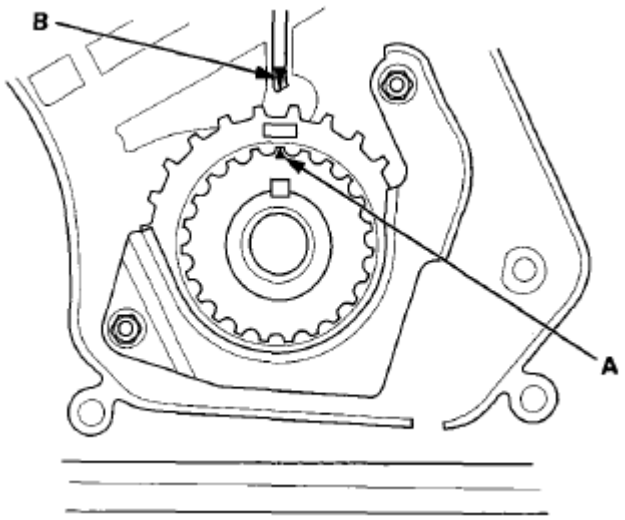


Fig. 54: Identifying TDC Mark On Tooth Of Timing Belt Drive Pulley And Pointer On Oil Pump
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Set the camshaft pulleys to TDC by aligning the TDC marks (A) on the camshaft pulleys with the pointers (B) on the back covers.

FRONT

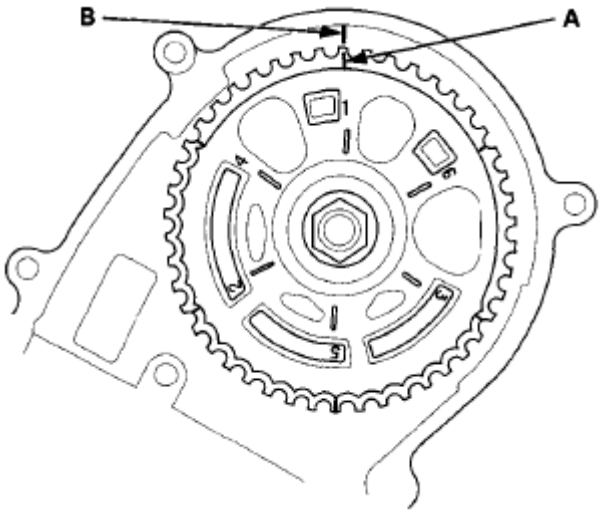


Fig. 55: Identifying TDC Marks On Camshaft Pulleys And Pointers On Back Covers - Front
Courtesy of AMERICAN HONDA MOTOR CO., INC.

REAR

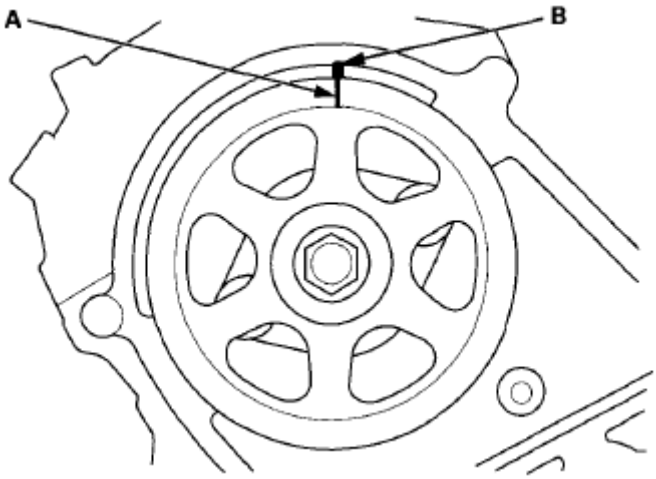


Fig. 56: Identifying TDC Marks On Camshaft Pulleys And Pointers On Back Covers - Rear
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Remove the battery clamp bolt from the back cover.
6. Remove the auto-tensioner.

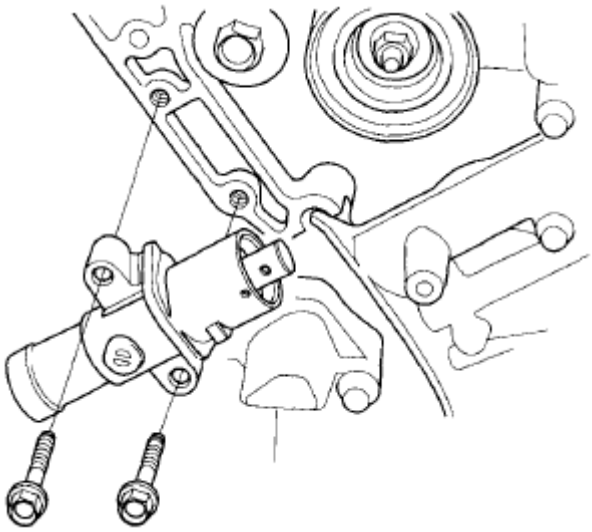


Fig. 57: Identifying Auto-Tensioner
Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Align the holes on the rod and the housing of the auto-tensioner.

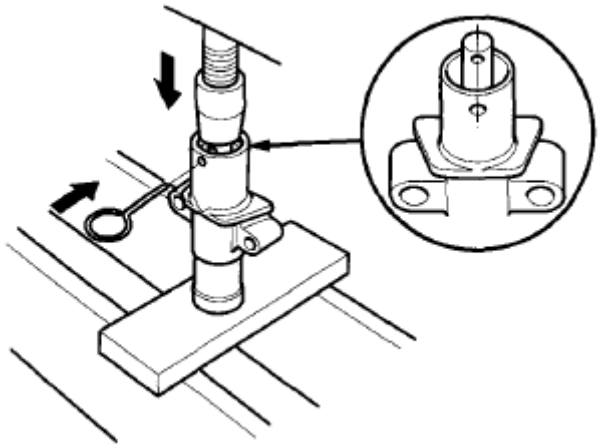


Fig. 58: Aligning Holes On Rod And Housing Of Auto-Tensioner
Courtesy of AMERICAN HONDA MOTOR CO., INC.

8. Use a hydraulic press to slowly compress the auto-tensioner. Insert a 2.0 mm (5/64 in) pin through the housing and the rod.

NOTE: The compression pressure should not exceed 9, 800 N (999.3 kgf, 2, 203.1 lbf).

9. Install the auto-tensioner.

NOTE: Make sure the pin stays in place.

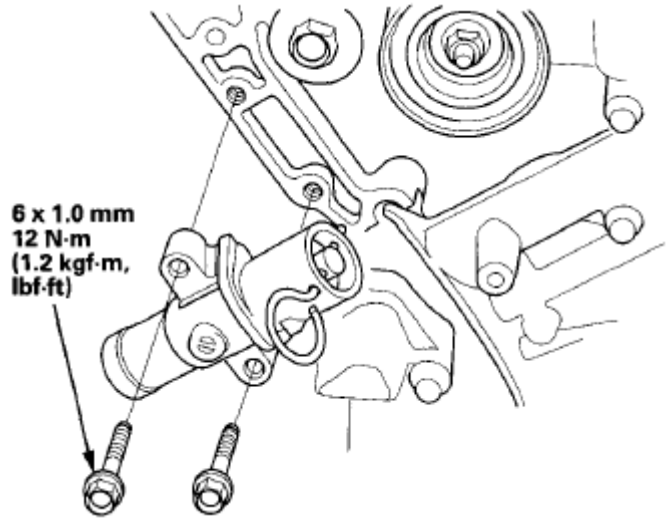


Fig. 59: Identifying Auto-Tensioner With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

10. Thread the battery clamp bolt in as shown to hold the timing belt adjuster. Tighten it by hand, do not use a wrench.

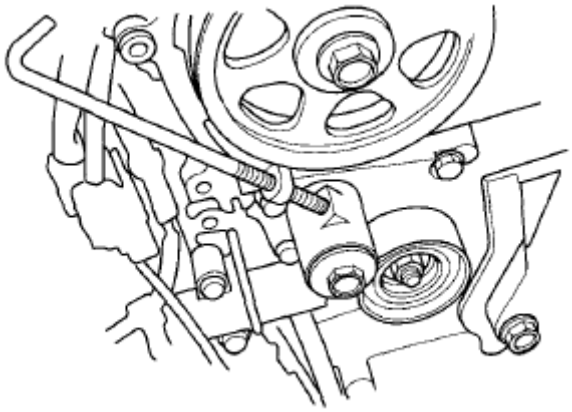


Fig. 60: Identifying Battery Clamp Bolt To Hold Timing Belt Adjuster
Courtesy of AMERICAN HONDA MOTOR CO., INC.

11. Loosely install the idler pulley with a new idler pulley bolt so the pulley can move but does not come off.
12. Install the timing belt in a counterclockwise sequence starting with the drive pulley:
    1. Drive pulley (A)
    2. Idler pulley (B)
    3. Front camshaft pulley (C)
    4. Water pump pulley (D)
    5. Rear camshaft pulley (E)
    6. Adjusting pulley (F)

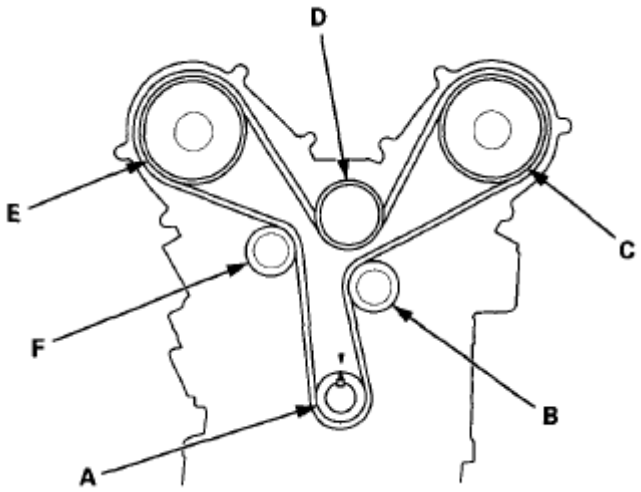


Fig. 61: Identifying Timing Belt & Related Components
Courtesy of AMERICAN HONDA MOTOR CO., INC.

13. Tighten the idler pulley bolt.

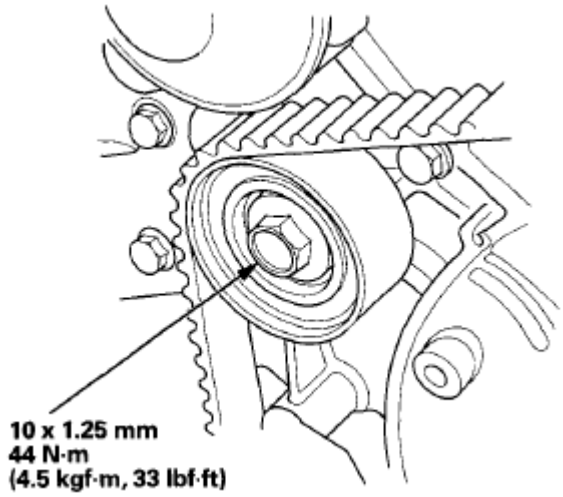


Fig. 62: Identifying Idler Pulley Bolt With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

14. Remove the pin from the auto-tensioner.

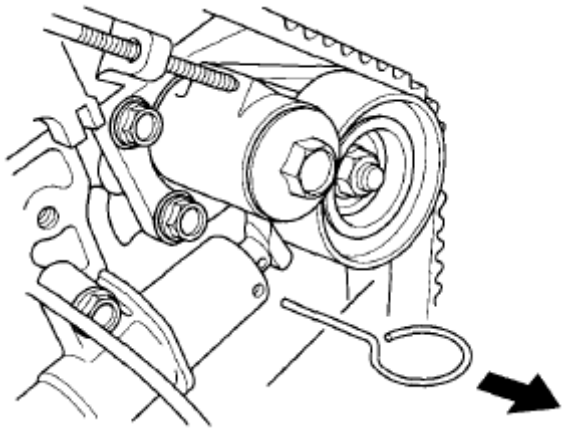


Fig. 63: Removing Pin From Auto-Tensioner
Courtesy of AMERICAN HONDA MOTOR CO., INC.

15. Remove the battery clamp bolt from the back cover.
16. Install the lower half of the side engine mount bracket using new bolts (A) and the bolt (B).

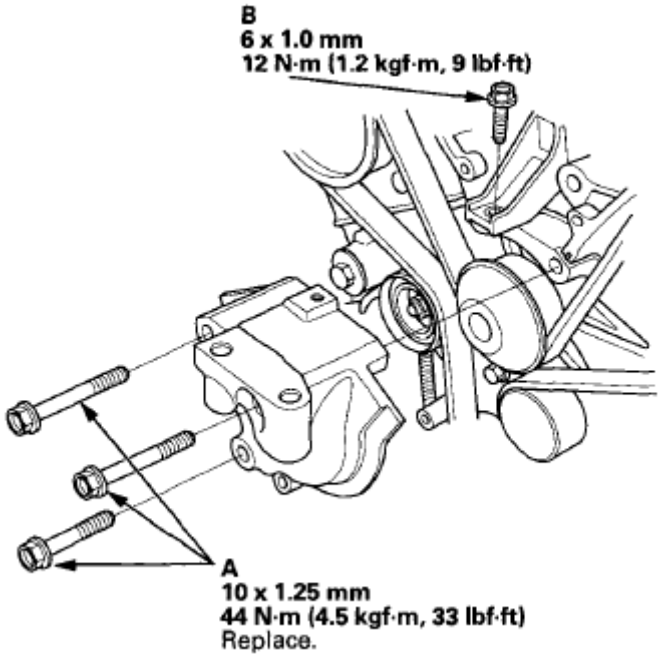


Fig. 64: Identifying Lower Half Of The Side Engine Mount Bracket & Fasteners With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

17. Install the timing belt guide plate (A) as shown.

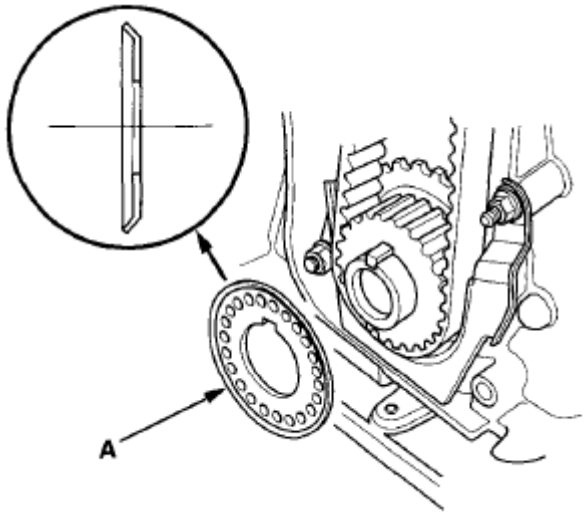


Fig. 65: Identifying Timing Belt Guide Plate
Courtesy of AMERICAN HONDA MOTOR CO., INC.

18. Install the lower cover.

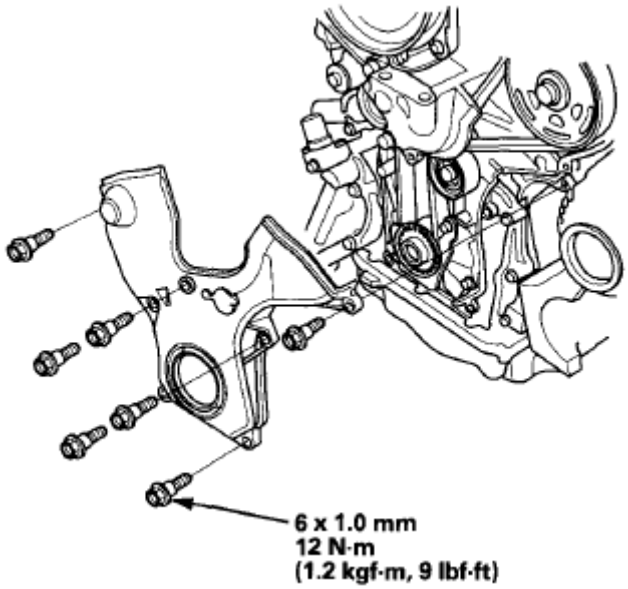


Fig. 66: Identifying Lower Cover Bolts With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

19. Install the front upper cover (A) and the rear upper cover (B).

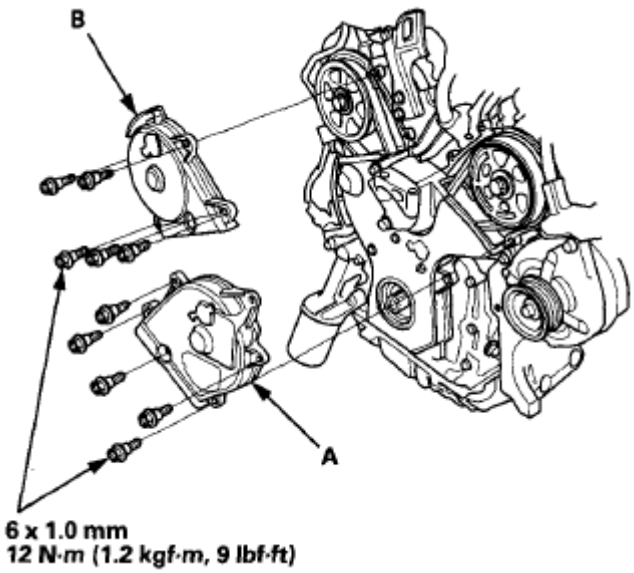


Fig. 67: Identifying Front And Rear Upper Cover With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

20. Install the **crankshaft pulley**.
21. Rotate the crankshaft pulley about six turns clockwise so the timing belt positions itself on the pulleys.
22. Turn the crankshaft pulley so its white mark (A) lines up with the pointer (B).

NOTE: The other pointer (C) is not used.

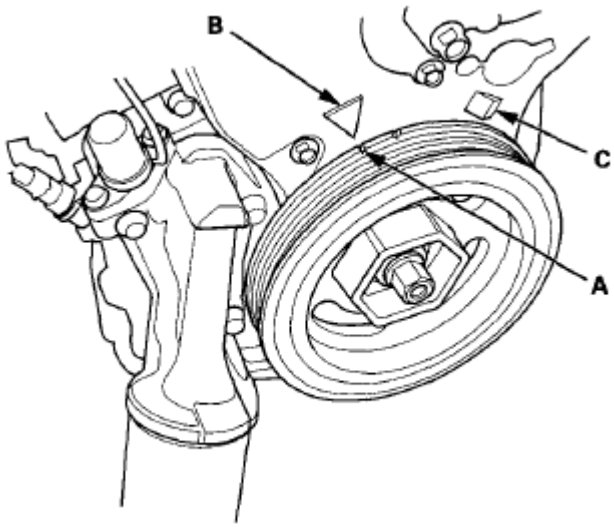


Fig. 68: Identifying Crankshaft Pulley White Mark And Pointer
Courtesy of AMERICAN HONDA MOTOR CO., INC.

23. Check the camshaft pulley marks.

NOTE: If the marks are not aligned, rotate the crankshaft 360 degrees, and recheck the camshaft pulley mark:

- If the camshaft pulley marks are at TDC, go to step 24.
- If the camshaft pulley marks are not at TDC, remove the timing belt and repeat steps 3 through 23.

FRONT

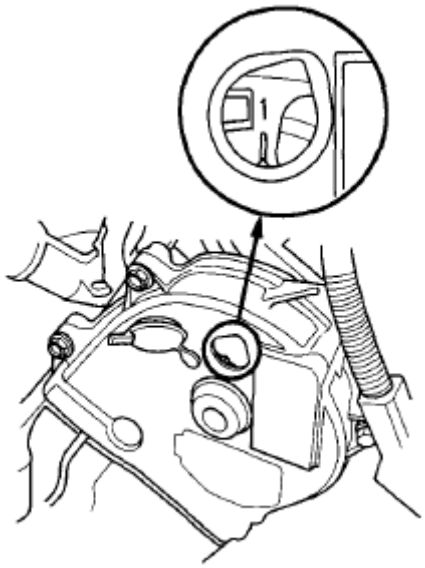


Fig. 69: Identifying Camshaft Pulley Mark - Front
Courtesy of AMERICAN HONDA MOTOR CO., INC.

REAR

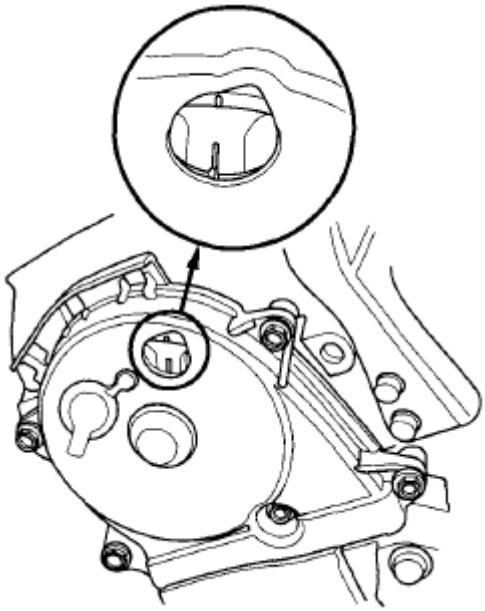


Fig. 70: Identifying Camshaft Pulley Mark - Rear
Courtesy of AMERICAN HONDA MOTOR CO., INC.

24. Loosely install the upper half of the side engine mount bracket (A) using new bolts, then install the ground cable (B).

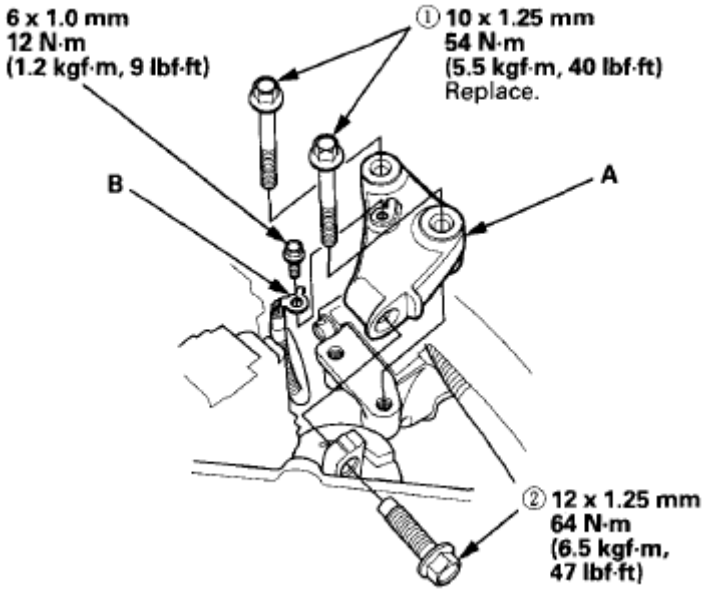


Fig. 71: Identifying Side Engine Mount Bracket And Ground Cable With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

25. Remove the jack and the wood block.
26. Tighten the mounting bolts in the numbered sequence shown.
27. Install the drive belt auto-tensioner (see **DRIVE BELT AUTO-TENSIONER REPLACEMENT**).

28. Install the front splash shield (see **FRONT SPLASH SHIELD REPLACEMENT**).
29. Install the right front wheel.
30. Install the engine compartment covers (see **ENGINE COMPARTMENT COVER REPLACEMENT**).
31. Do the CKP pattern clear/CKP pattern learn procedure (see **CKP PATTERN CLEAR/CKP PATTERN LEARN**).

TIMING BELT ADJUSTER REPLACEMENT

1. Remove the **timing belt**.
2. Remove the battery clamp bolt from the back cover.
3. Remove the auto-tensioner (see step 6).
4. Remove the bolt (A), then remove the timing belt adjuster (B) and the collar (C).

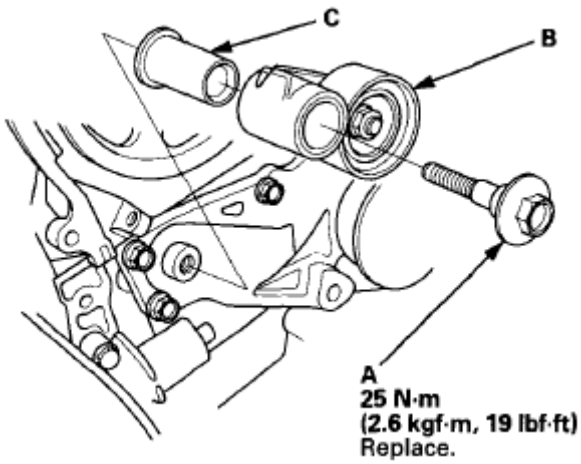


Fig. 72: Identifying Timing Belt Adjuster, Collar And Bolt With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Install the timing belt adjuster using new bolt in the reverse order of removal.
6. Install the **timing belt**.

TIMING BELT DRIVE PULLEY REPLACEMENT

1. Remove the **timing belt**.
2. Remove the timing belt stopper (A), then remove the timing belt drive pulley (B) and the key (C).

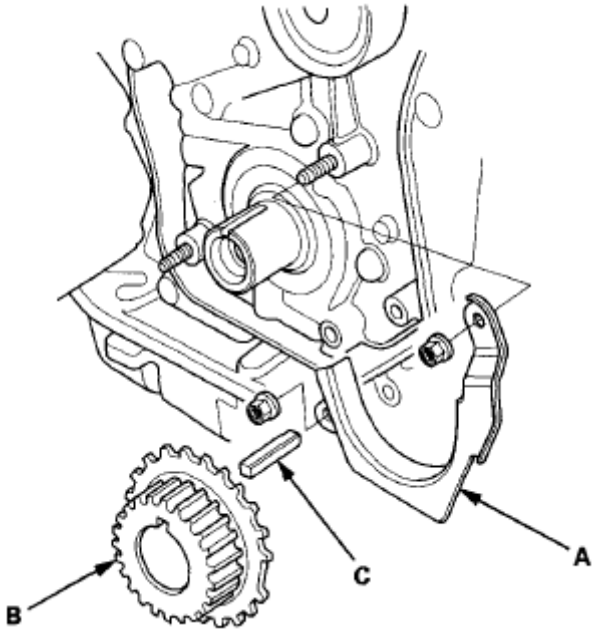


Fig. 73: Identifying Timing Belt Stopper, Timing Belt Drive Pulley And Key
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Inspect the timing belt drive pulley and the key for damage. If it is cracked or damaged, replace the timing belt drive pulley.
4. Install the new timing belt drive pulley and the key, then install the timing belt stopper.
5. Install the **timing belt**.
6. Do the CKP pattern clear/CKP pattern learn procedure (see **CKP PATTERN CLEAR/CKP PATTERN LEARN**).

CYLINDER HEAD COVER REMOVAL

FRONT

1. Remove the intake manifold (see **REMOVAL**).
2. Remove the three ignition coils from the front cylinder head (see **IGNITION COIL AND SPARK PLUG REMOVAL/INSTALLATION**).
3. Disconnect the EGR valve connector (A) and remove the harness holder mounting bolt (B) and the harness clamp (C).

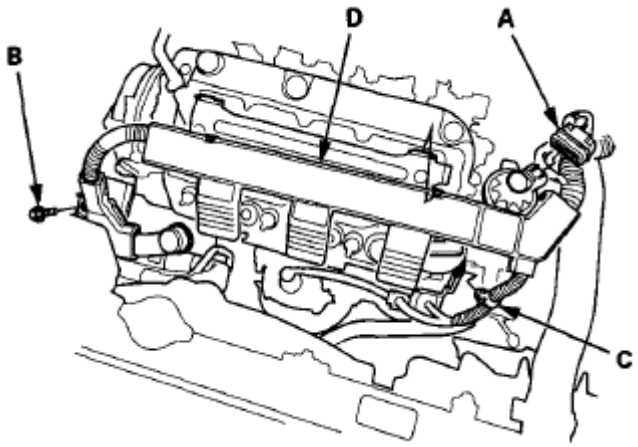


Fig. 74: Identifying EGR Valve Connector, Harness Clamp, Harness Holder And Mounting Bolt
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Remove the harness holder (D) from the bracket.
5. Remove the front cylinder head cover.

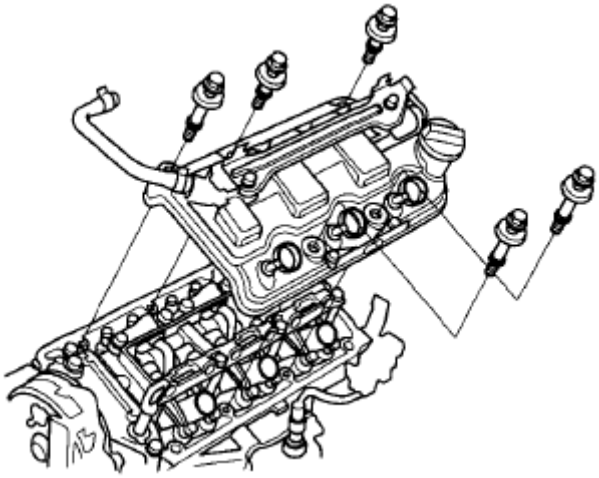


Fig. 75: Identifying Front Cylinder Head Cover
Courtesy of AMERICAN HONDA MOTOR CO., INC.

REAR

1. Remove the strut brace (see **FRAME BRACE REPLACEMENT**).
2. Remove the intake manifold (see **REMOVAL**).
3. Remove the three ignition coils from the rear cylinder head (see **IGNITION COIL AND SPARK PLUG REMOVAL/INSTALLATION**).
4. Remove the harness holder mounting bolts (A) and the engine ground cable (B).

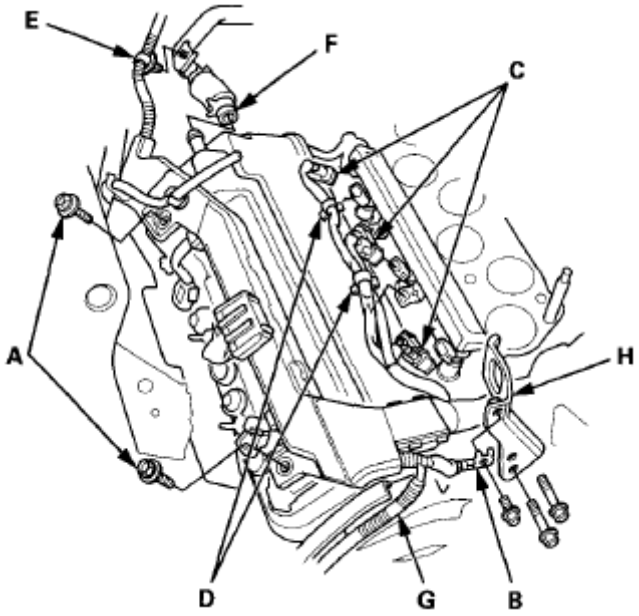


Fig. 76: Identifying Injector Connectors, Breather Hose, Hanger Bracket, Harness Clamps, Engine Ground Cable And Mounting Bolts
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Disconnect the three injector connectors (C) and the two harness clamps (D).
6. Remove the harness clamp (E) and disconnect the breather hose (F).
7. Remove the harness (G) from the upper cover.
8. Remove the engine hanger bracket (H).
9. Remove the harness holder mounting bolts (A) and disconnect the knock sensor connector (B) and the CMP sensor connector (C).

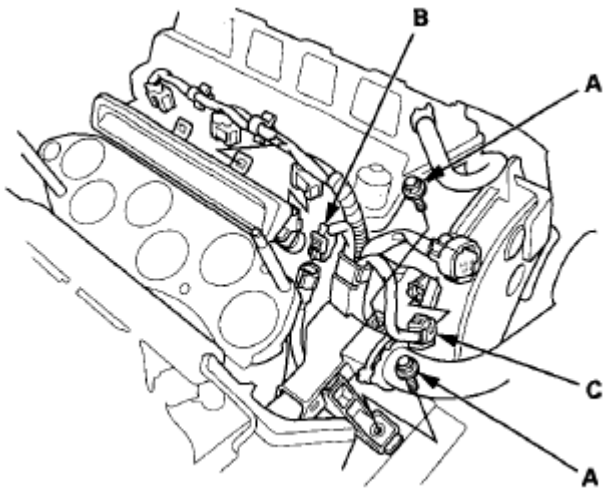


Fig. 77: Identifying Knock Sensor Connector, CMP Sensor Connector And Harness Holder Mounting Bolts
Courtesy of AMERICAN HONDA MOTOR CO., INC.

10. Remove the rear cylinder head cover.

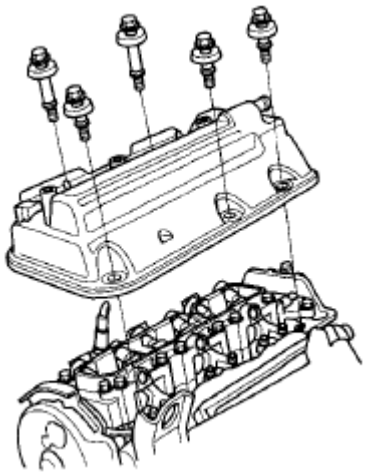


Fig. 78: Identifying Rear Cylinder Head Cover
Courtesy of AMERICAN HONDA MOTOR CO., INC.

CYLINDER HEAD COVER INSTALLATION

FRONT

1. Check the spark plug seals for damage. If any seals are damaged, replace it.
2. Thoroughly clean the head cover gasket and the groove.
3. Install the head cover gasket (A) in the groove of the cylinder head cover (B). Make sure the head cover gasket is seated securely.

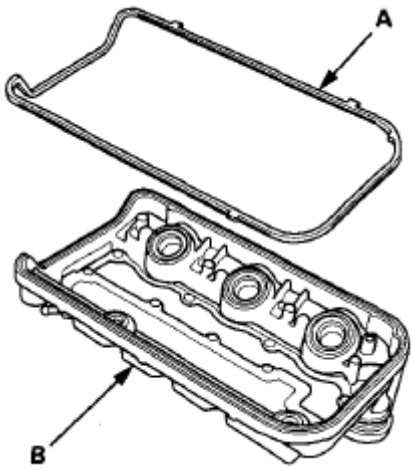


Fig. 79: Identifying Head Cover Gasket And Cylinder Head Cover
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Remove all of the old liquid gasket from the rocker shaft holder and the cylinder head.

5. Clean the head cover contacting surfaces with a shop towel.
6. Apply liquid gasket, P/N 08717-0004, 08718-0003, 08718-0004, or 08718-0009 to the rocker shaft holder mating areas (A). Install the component within 5 minutes of applying the liquid gasket.

NOTE:

- **If you apply liquid gasket P/N 08718-0012, the component must be installed within 4 minutes.**
- **If too much time has passed after applying the liquid gasket, remove the old liquid gasket and residue, then reapply the new liquid gasket.**

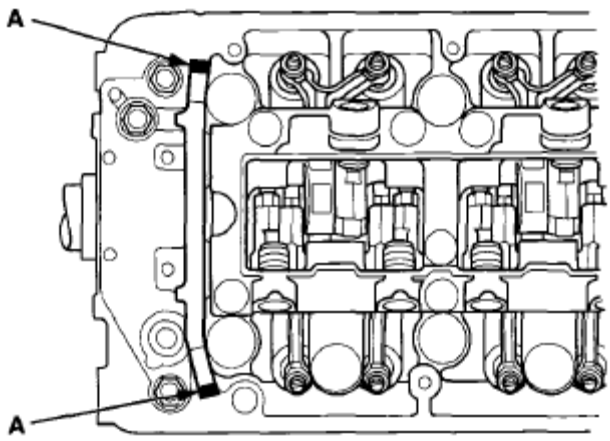


Fig. 80: Identifying Rocker Shaft Holder Mating Areas
Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Set the spark plug seals (A) on the spark plug tubes, and install the front cylinder head cover (B).

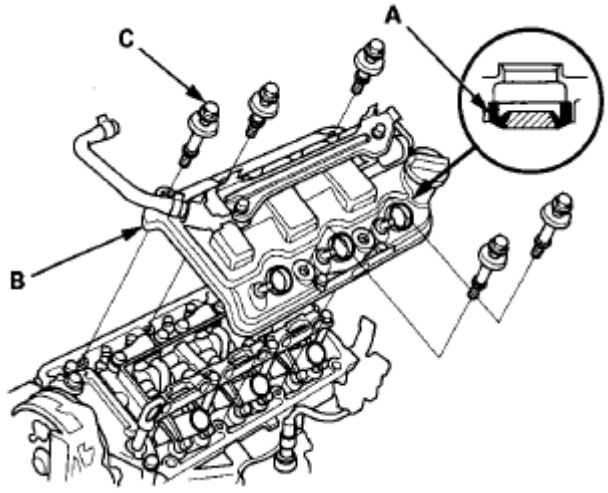


Fig. 81: Identifying Spark Plug Seals And Front Cylinder Head Cover
Courtesy of AMERICAN HONDA MOTOR CO., INC.

8. Inspect the spark plug seals for damage.

9. Inspect the cover washers (C). Replace any washer that is damaged or deteriorated.
10. Tighten the bolts in three steps. In the final step torque all bolts, in sequence, 12 N.m (1.2 kgf.m, 9 lbf.ft).

NOTE:

- **Wait at least 30 minutes before filling the engine with oil.**
- **Do not run the engine for at least 3 hours after installing the cylinder head cover.**

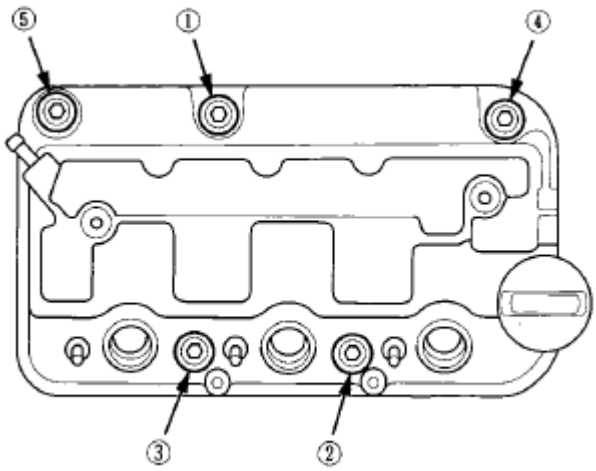


Fig. 82: Identifying Front Cylinder Head Cover Bolts With Tightening Sequence
Courtesy of AMERICAN HONDA MOTOR CO., INC.

11. Install the harness holder (A) to the bracket.

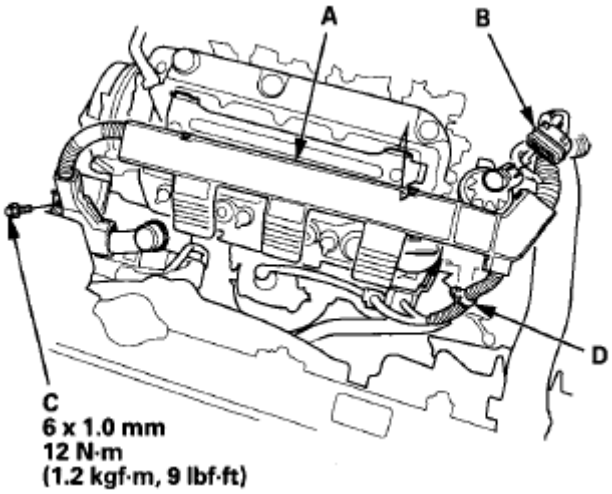


Fig. 83: Identifying EGR Valve Connector, Harness Holder, Clamp And Mounting Bolt With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

12. Connect the EGR valve connector (B) and tighten the harness holder mounting bolt (C) and the harness

clamp (D).

13. Install the three ignition coils to the front cylinder head (see **IGNITION COIL AND SPARK PLUG REMOVAL/INSTALLATION**).
14. Install the intake manifold (see **INSTALLATION**).

REAR

1. Check the spark plug seals for damage. If any seals are damaged, replace it.
2. Thoroughly clean the head cover gasket and the groove.
3. Install the head cover gasket (A) in the groove of the cylinder head cover (B). Make sure the head cover gasket is seated securely.

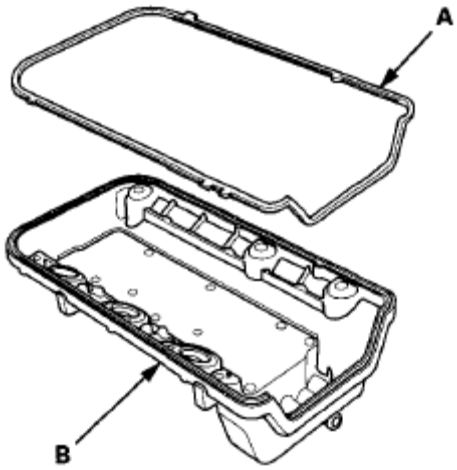


Fig. 84: Identifying Head Cover Gasket And Cylinder Head Cover
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Remove all of the old liquid gasket from the rocker shaft holder and the cylinder head.
5. Clean the head cover contacting surfaces with a shop towel.
6. Apply liquid gasket, P/N 08717-0004, 08718-0003, 08718-0004, or 08718-0009 to the rocker shaft holder mating areas (A). Install the component within 5 minutes of applying the liquid gasket.

NOTE:

- **If you apply liquid gasket P/N 08718-0012, the component must be installed within 4 minutes.**
- **If too much time has passed after applying the liquid gasket, remove the old liquid gasket and residue, then reapply the new liquid gasket.**

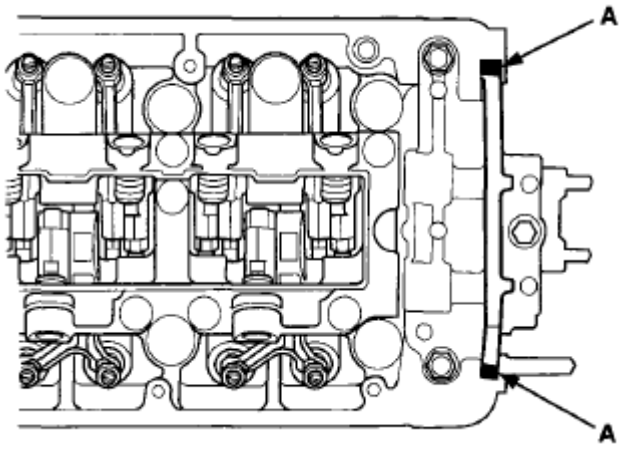


Fig. 85: Identifying Rocker Shaft Holder Mating Areas
Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Set the spark plug seals (A) on the spark plug tubes, and install the rear cylinder head cover (B).

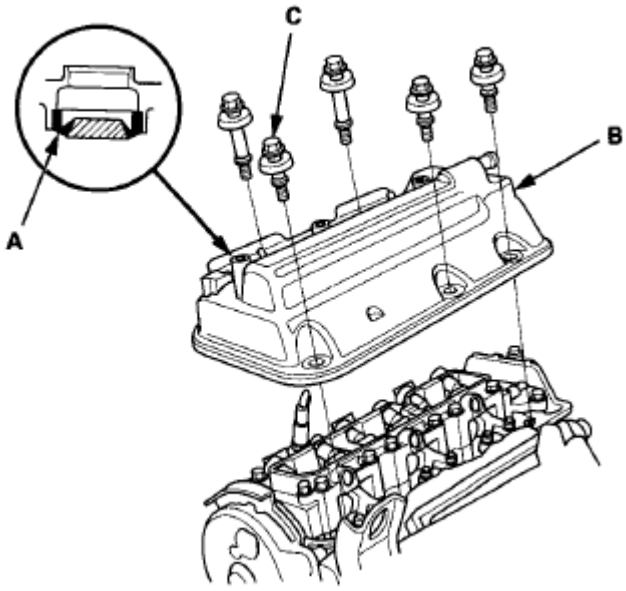


Fig. 86: Identifying Spark Plug Seals, Rear Cylinder Head Cover And Cover Washers
Courtesy of AMERICAN HONDA MOTOR CO., INC.

8. Inspect the spark plug seals for damage.
9. Inspect the cover washers (C). Replace any washer that is damaged or deteriorated.
10. Tighten the bolts in three steps. In the final step torque all bolts, in sequence, 12 N.m (1.2 kgf.m, 9 lbf.ft).

NOTE:

- **Wait at least 30 minutes before filling the engine with oil.**
- **Do not run the engine for at least 3 hours after installing the cylinder head cover.**

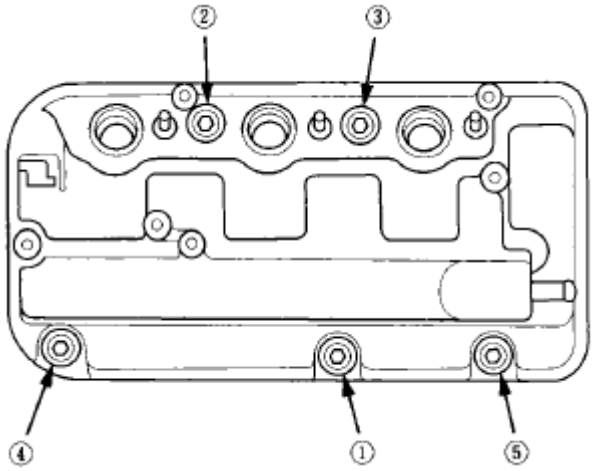


Fig. 87: Identifying Rear Cylinder Head Cover Bolts With Tightening Sequence
Courtesy of AMERICAN HONDA MOTOR CO., INC.

11. Connect the knock sensor connector (A) and the CMP sensor connector (B) and install the harness holder mounting bolts (C).

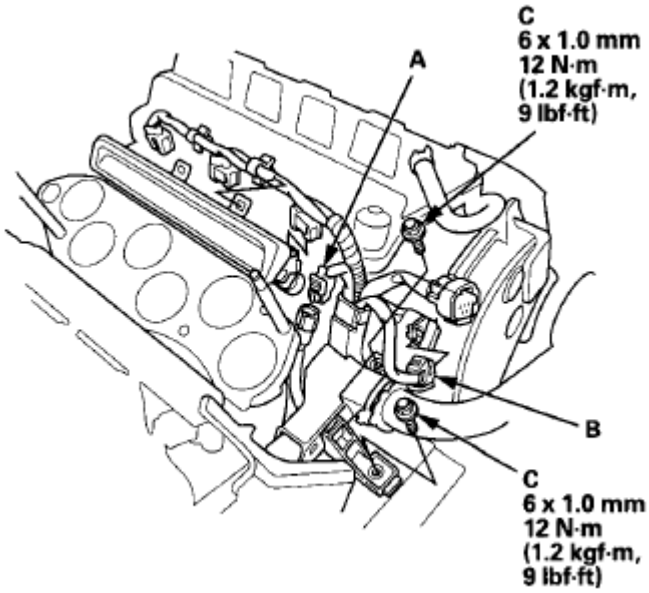


Fig. 88: Identifying Knock Sensor Connector, CMP Sensor Connector And Mounting Bolts With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

12. Install the engine hanger bracket (A).

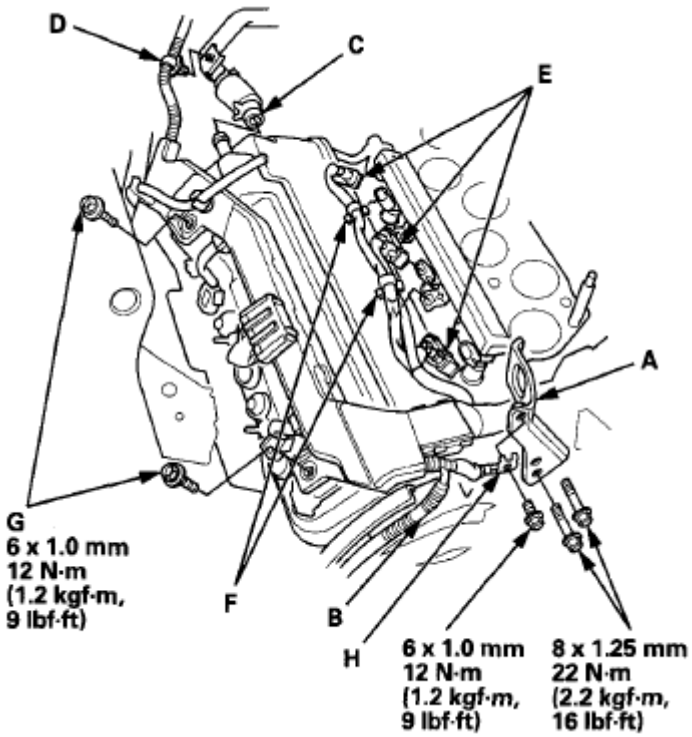


Fig. 89: Identifying Engine Hanger Bracket, Breather Hose, Injector Connectors, Harness Clamps, Engine Ground Cable And Harness Holder Mounting Bolts With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

13. Install the harness (B) to the upper cover.
14. Connect the breather hose (C) and install the harness clamp (D).
15. Reconnect the three injector connectors (E) and the two harness clamps (F).
16. Install the harness holder mounting bolts (G) and engine ground cable (H).
17. Install the three ignition coils to the rear cylinder head (see **IGNITION COIL AND SPARK PLUG REMOVAL/INSTALLATION**).
18. Install the intake manifold (see **INSTALLATION**).
19. Install the strut brace (see **FRAME BRACE REPLACEMENT**).

CYLINDER HEAD REMOVAL

NOTE:

- **Use fender covers to avoid damaging painted surfaces.**
- **To avoid damaging the wiring and terminals, unplug the wiring connectors carefully while holding the connector portion.**
- **Connect the HDS to the DLC (see HOW TO USE THE HDS (HONDA DIAGNOSTIC SYSTEM)), and monitor ECT SENSOR 1. To avoid damaging the cylinder head, wait until the engine coolant temperature drops below 100°F (38°C) before loosening the cylinder head bolts.**
- **Mark all wiring and hoses to avoid misconnection. Also, be sure that they**

do not contact any other wiring or hoses, or interfere with any other parts.

1. Remove the engine compartment covers (see **ENGINE COMPARTMENT COVER REPLACEMENT**).
2. Relieve the fuel pressure (see **FUEL PRESSURE RELIEVING**).
3. Do the battery terminal disconnection procedure (see **BATTERY TERMINAL DISCONNECTION AND RECONNECTION**).
4. Drain the engine coolant (see **COOLANT CHECK**).
5. Remove the six ignition coils (see **IGNITION COIL AND SPARK PLUG REMOVAL/INSTALLATION**).
6. Remove the alternator (see **ALTERNATOR REMOVAL AND INSTALLATION**).
7. Remove the intake manifold (see **REMOVAL**).
8. Remove the **timing belt**.
9. Disconnect the following engine wire harness connectors, and remove the wire harness clamps from the cylinder head:
   - Six injector connectors
   - Knock sensor connector
   - ECT sensor 1 connector
   - Engine mount control solenoid valve connector
   - EGR valve connector
   - CMP sensor connector
   - Rocker arm oil control solenoid connector
   - Rocker arm oil pressure switch connector
   - Two A/F sensor connectors
   - Two secondary HO2S connectors
10. Remove the front warm up TWC (see **WARM UP TWC REMOVAL/INSTALLATION**) and the rear warm up TWC (see **REAR (BANK 1)**).
11. Remove the quick-connect fitting cover (A), then disconnect the fuel feed hose (B) (see **FUEL LINE/QUICK-CONNECT FITTING REMOVAL**).

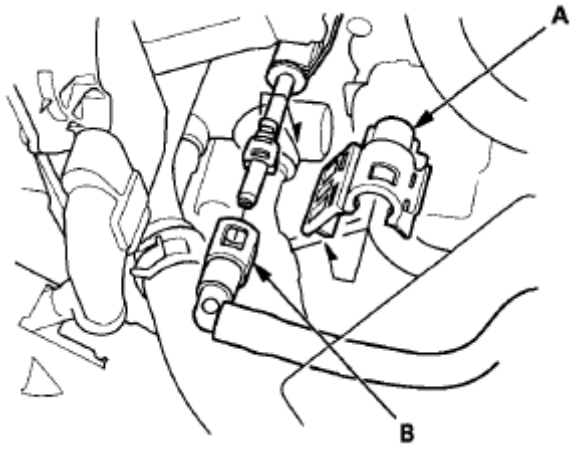


Fig. 90: Identifying Quick-Connect Fitting Cover And Fuel Feed Hose
Courtesy of AMERICAN HONDA MOTOR CO., INC.

12. Remove the connector bracket (A) from the front cylinder head.

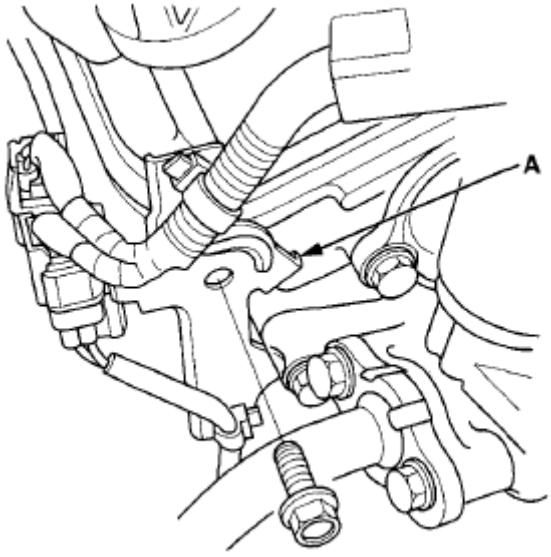


Fig. 91: Identifying Connector Bracket
Courtesy of AMERICAN HONDA MOTOR CO., INC.

13. Remove the engine mount control solenoid valve bracket (A) from the rear cylinder head.

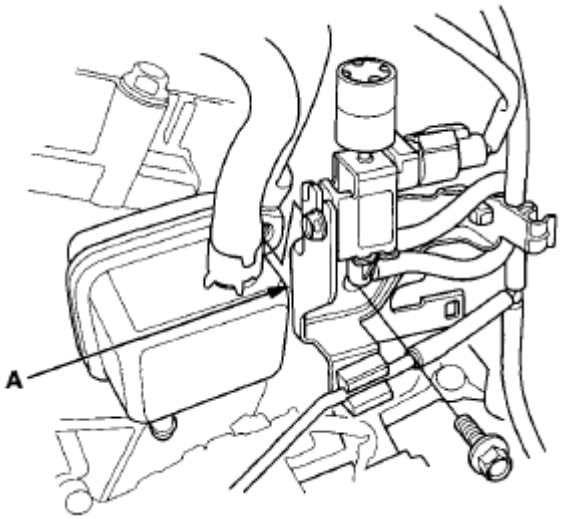


Fig. 92: Identifying Engine Mount Control Solenoid Valve Bracket
Courtesy of AMERICAN HONDA MOTOR CO., INC.

14. Remove the EVAP canister joint with the bracket (see step 9).
15. Remove the injector bases (see **INJECTOR BASE REMOVAL AND INSTALLATION**).
16. Remove the water passage (see **WATER PASSAGE REPLACEMENT**).
17. Remove the **timing belt**.
18. Remove the camshaft pulleys (A) and the back covers (B).

FRONT

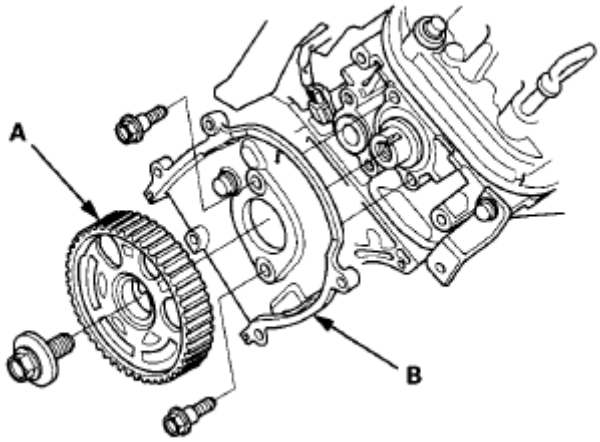


Fig. 93: Identifying Camshaft Pulleys And Back Covers - Front
Courtesy of AMERICAN HONDA MOTOR CO., INC.

REAR

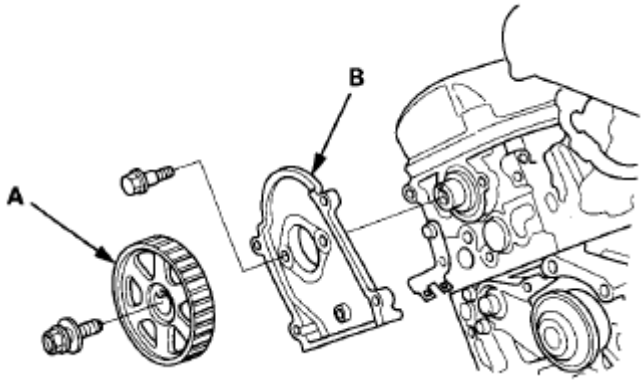


Fig. 94: Identifying Camshaft Pulleys And Back Covers - Rear
Courtesy of AMERICAN HONDA MOTOR CO., INC.

19. Remove the **cylinder head covers**.
20. Remove the cylinder head bolts. To prevent warpage, loosen the bolts in sequence 1/3 turn at a time; repeat the sequence until all bolts are loosened.

FRONT

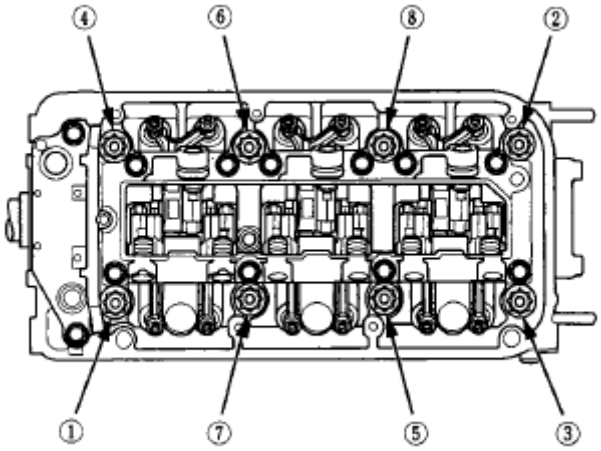


Fig. 95: Identifying Cylinder Head Bolts With Loosening Sequence (Front)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

REAR

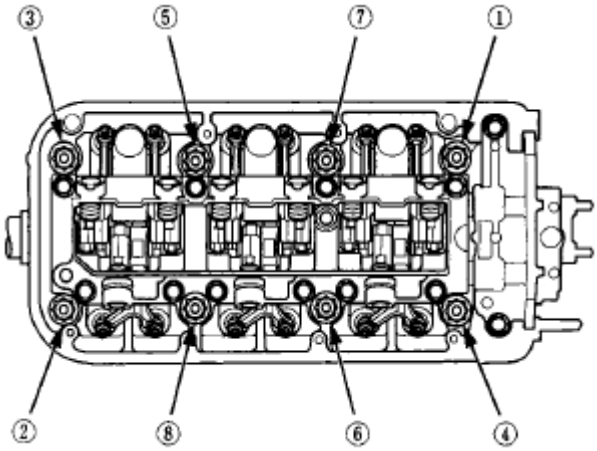


Fig. 96: Identifying Cylinder Head Bolts With Loosening Sequence (Rear)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

21. Remove the cylinder heads.

CAMSHAFT REPLACEMENT

FRONT

1. Remove the engine compartment covers (see **ENGINE COMPARTMENT COVER REPLACEMENT**).
2. Do the battery removal procedure (see **BATTERY REMOVAL AND INSTALLATION**).
3. Drain the engine coolant (see **COOLANT CHECK**).
4. Disconnect the radiator hoses (A).

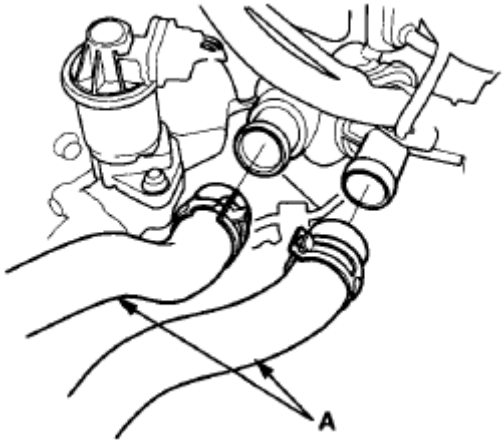


Fig. 97: Identifying Radiator Hoses
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Remove the EGR valve (see **EGR VALVE REPLACEMENT**).

6. Remove the EGR valve stud bolts (A).

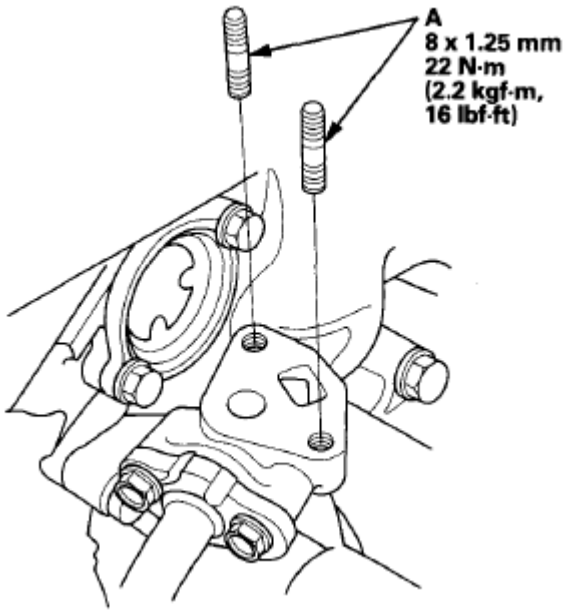


Fig. 98: Identifying EGR Valve Stud Bolts With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Remove the **timing belt**.
8. Remove the front **rocker arm assembly**.
9. Remove the front camshaft pulley (see step 18).
10. Remove the thrust cover (A), then remove the front camshaft (B).

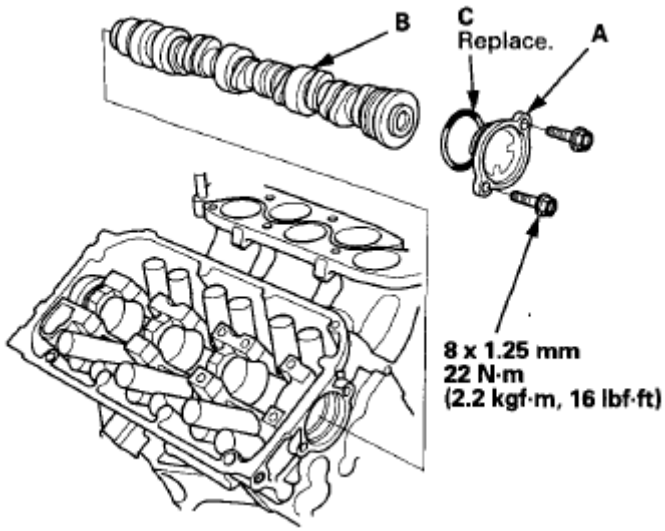


Fig. 99: Identifying Thrust Cover, Camshaft And O-Ring With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

11. Install the front camshaft in the reverse order of removal. Always use a new O-ring (C). Apply new engine oil to the journals and the cam lobes.
12. Apply new engine oil to the threads of the camshaft pulley mounting bolt, then install the front camshaft pulley (see step 15).
13. Install the front rocker arm assembly, then tighten the mounting bolts (see step 13).
14. Install the **timing belt**.
15. Adjust the **valve clearance**.
16. Install the EGR valve stud bolts, then install the EGR valve (see **EGR VALVE REPLACEMENT**).
17. Connect the radiator hoses.
18. Do the battery installation procedure (see **BATTERY REMOVAL AND INSTALLATION**).
19. Fill the radiator with engine coolant, and bleed the air from the cooling system (see **COOLANT CHECK**).
20. Install the engine compartment covers (see **ENGINE COMPARTMENT COVER REPLACEMENT**).
21. Do the CKP pattern clear/CKP pattern learn procedure (see **CKP PATTERN CLEAR/CKP PATTERN LEARN**).

REAR

1. Remove the engine compartment covers (see **ENGINE COMPARTMENT COVER REPLACEMENT**).
2. Relieve the fuel pressure (see **FUEL PRESSURE RELIEVING**).
3. Do the battery removal procedure (see **BATTERY REMOVAL AND INSTALLATION**).
4. Drain the engine coolant (see **COOLANT CHECK**).
5. Remove the under-hood fuse/relay box from the bracket.
6. Remove the air cleaner (see **THROTTLE BODY CLEANING**).
7. Remove the quick-connect fitting cover, then disconnect the fuel feed hose (see step 11).
8. Disconnect the heater hoses (A).

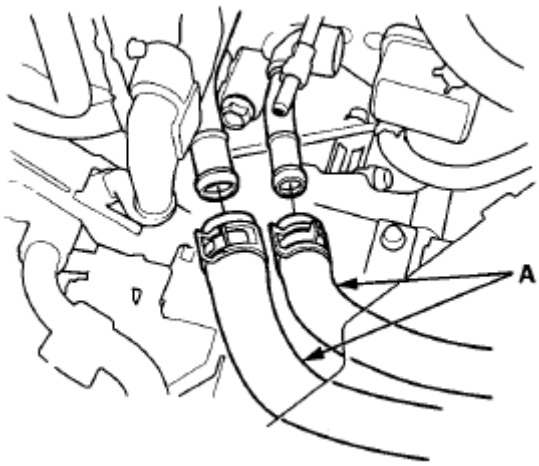


Fig. 100: Identifying Heater Hoses

Courtesy of AMERICAN HONDA MOTOR CO., INC.

9. Disconnect the EVAP canister hose (A), then remove the EVAP canister joint (B) with the bracket.

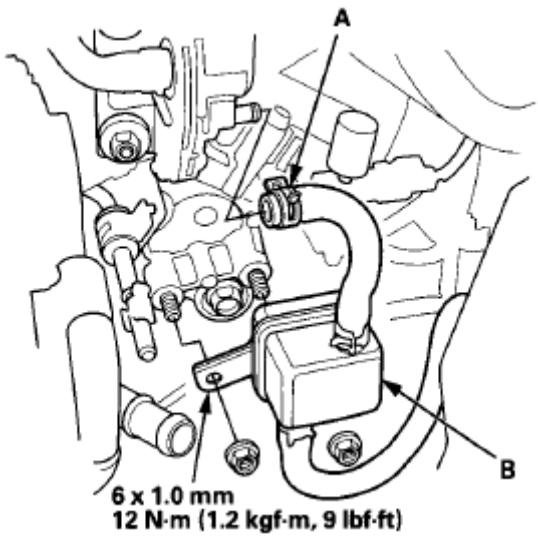


Fig. 101: Identifying EVAP Canister Hose And EVAP Canister Joint With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

10. Remove the **timing belt**.
11. Remove the rear **rocker arm assembly**.
12. Remove the rear camshaft pulley (see step 18).
13. Remove the thrust cover (A), then remove the rear camshaft (B).

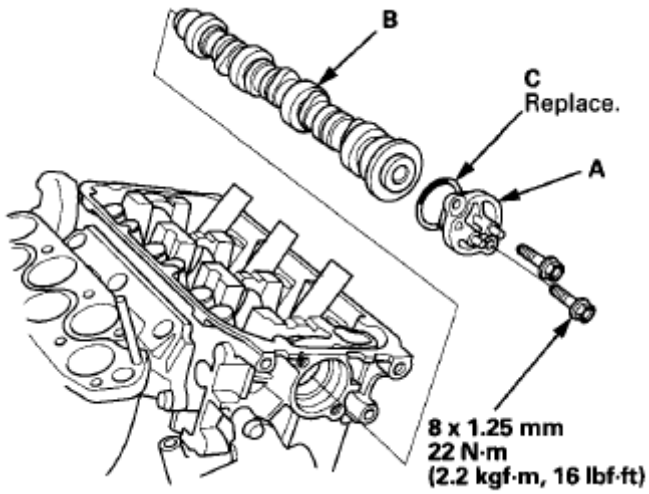


Fig. 102: Identifying Thrust Cover, Rear Camshaft And O-Ring With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

14. Install the rear camshaft in the reverse order of removal. Always use a new O-ring (C). Apply new engine

oil to the journals and cam lobes.

15. Apply new engine oil to the threads of the camshaft pulley mounting bolt, then install the rear camshaft pulley (see step 15).
16. Install the rear rocker arm assembly, then tighten the mounting bolts (see step 13).
17. Install the **timing belt**.
18. Adjust the **valve clearance**.
19. Install the EVAP canister joint with the bracket, then connect the EVAP canister hose.
20. Connect the heater hoses.
21. Connect the fuel feed hose, then install the quick-connect fitting cover (see step 21).
22. Install the air cleaner (see **THROTTLE BODY CLEANING**).
23. Install the under-hood fuse/relay box to the bracket.
24. Do the battery installation procedure (see **BATTERY REMOVAL AND INSTALLATION**).
25. Inspect for fuel leaks. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode (do not operate the starter) so the fuel pump runs for about 2 seconds and pressurizes the fuel line. Repeat this operation three times, then check for fuel leakage at any point in the fuel line.
26. Fill the radiator with engine coolant, and bleed the air from the cooling system (see **COOLANT CHECK**).
27. Install the engine compartment covers (see **ENGINE COMPARTMENT COVER REPLACEMENT**).
28. Do the CKP pattern clear/CKP pattern learn procedure (see **CKP PATTERN CLEAR/CKP PATTERN LEARN**).

CYLINDER HEAD INSPECTION FOR WARPAGE

1. Remove the **cylinder head**.
2. Inspect the **camshaft**.
3. Check the cylinder head for warpage. Measure along the edges, and three ways across the center:
    - If warpage is less than 0.05 mm (0.002 in), cylinder head resurfacing is not required.
    - If warpage is between 0.05 mm (0.002 in) and 0.2 mm (0.008 in), resurface the cylinder head.
    - Maximum resurface limit is 0.2 mm (0.008 in) based on a height of 121 mm (4.76 in).

    Cylinder Head Warpage

    Standard (New): 0.05 mm (0.002 in) max.

    Cylinder Head Height

    Standard (New): 120.95-121.05 mm (4.762-4.765 in)

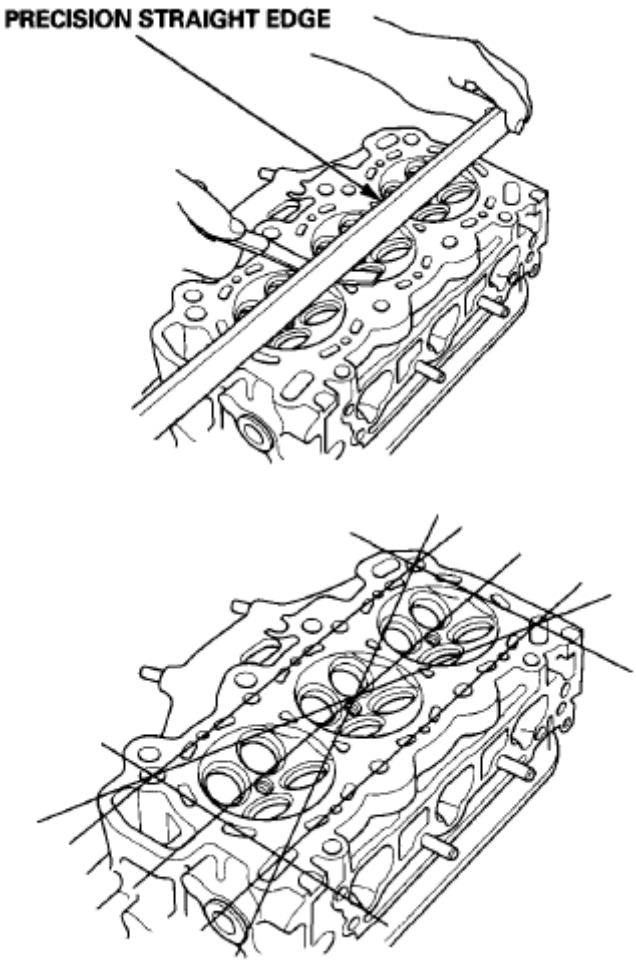


Fig. 103: Checking Cylinder Head For Warpage Along Edges And Three Ways Across Center
Courtesy of AMERICAN HONDA MOTOR CO., INC.

ROCKER ARM ASSEMBLY REMOVAL

Front

1. Remove the **cylinder head cover**.
2. Loosen the locknuts and the adjusting screws (A).

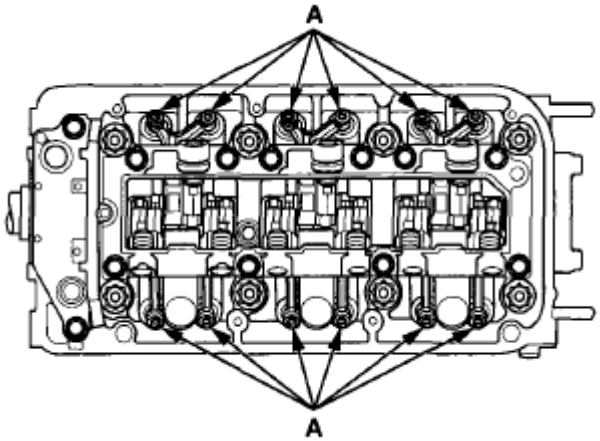


Fig. 104: Identifying Adjusting Screws (Front)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Remove the rocker shaft bridge mounting bolts, the rocker shaft holder mounting bolts, and the rocker arm assembly.
    1. Loosen the rocker shaft bridge mounting bolts and the rocker shaft holder mounting bolts in sequence two turns at a time, to prevent damaging the valves or the rocker arm assembly.
    2. When removing the rocker arm assembly, do not remove the rocker shaft bridge mounting bolts and the rocker shaft holder mounting bolts. The bolts will keep the rocker arms on the shafts.

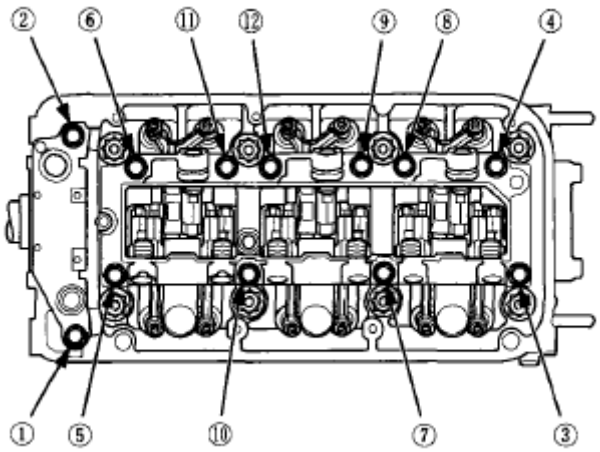


Fig. 105: Identifying Rocker Bolts With Loosening Sequence (Front)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Rear

4. Remove the **cylinder head cover**.
5. Loosen the locknuts and the adjusting screws (A).

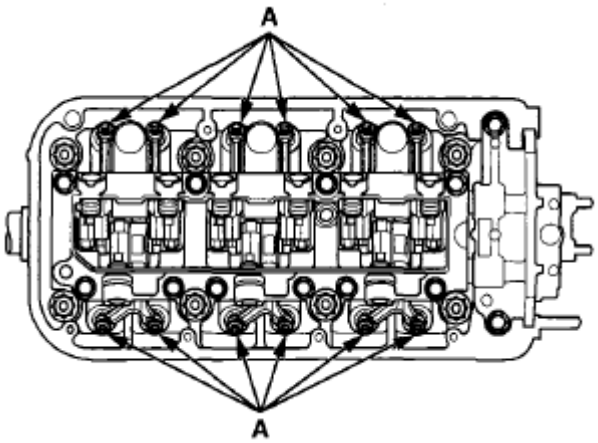


Fig. 106: Identifying Adjusting Screws - Rear
Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Remove the rocker shaft bridge mounting bolts, the rocker shaft holder mounting bolts, and the rocker arm assembly.
    1. Loosen the rocker shaft bridge mounting bolts and the rocker shaft holder mounting bolts in sequence two turns at a time, to prevent damaging the valves or the rocker arm assembly.
    2. When removing the rocker arm assembly, do not remove the rocker shaft bridge mounting bolts and the rocker shaft holder mounting bolts. The bolts will keep the rocker arms on the shafts.

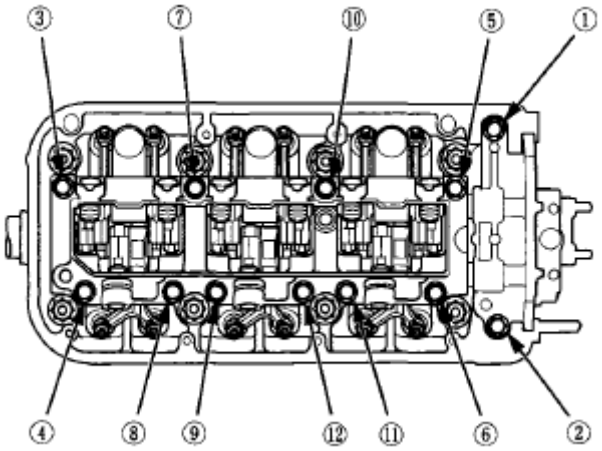


Fig. 107: Identifying Rocker Bolts With Loosening Sequence (Rear)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

ROCKER ARM AND SHAFT DISASSEMBLY/REASSEMBLY

FRONT

NOTE:

- **Identify parts as they are removed so they can be reinstalled in their original locations.**

- **Inspect the rocker shafts and the rocker arms.**
- **If reused, the rocker arms must be installed in their original locations.**
- **When removing or installing the rocker arm assembly, do not remove the mounting bolts. The bolts will keep the rocker arms, the rocker shaft bridge, and the rocker shaft holder on the shaft.**
- **If the rocker shaft cannot be removed or installed by hand, remove or install the rocker shaft by heating the rocker shaft bridge.**
- **Bundle the rocker arms with rubber bands to keep them together as a set, and remove the bands after the rocker arms have been installed.**
- **Prior to reassembling, clean all the parts in solvent, dry them, and apply new engine oil to all contact points and bearing surfaces, and the lost motion assembly.**
- **When replacing the rocker arm assembly, remove the fastening hardware from the new rocker arm assembly.**
- **Never remove any of the circlips that retain the lost motion assemblies in the rocker shaft bridge. The circlips are not available separately, and are factory installed in the rocker shaft bridge. To remove the lost motion assemblies, first remove the rocker shafts and the rocker arms.**

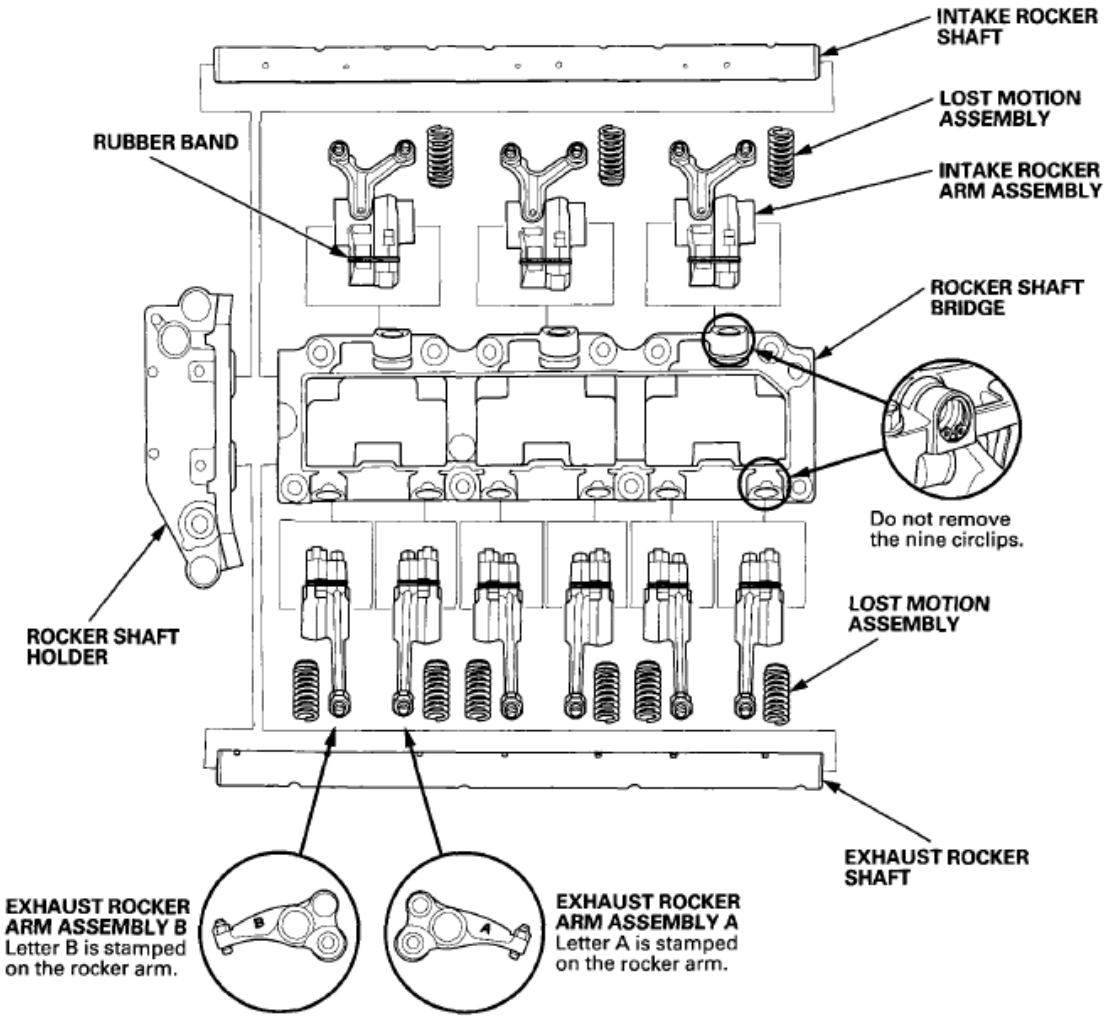


Fig. 108: Identifying Rocker Arm And Shaft Components Location (Front)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

REAR

NOTE:

- **Identify parts as they are removed so they can be reinstalled in their original locations.**
- **Inspect the rocker shafts and the rocker arms.**
- **If reused, the rocker arms must be installed in their original locations.**
- **When removing or installing the rocker arm assembly, do not remove the mounting bolts. The bolts will keep the rocker arms, the rocker shaft bridge, and the rocker shaft holder on the shaft.**
- **If the rocker shaft cannot be removed or installed by hand, remove or install the rocker shaft by heating the rocker shaft bridge.**
- **Bundle the rocker arms with rubber bands to keep them together as a set, and remove the bands after the rocker arms have been installed.**

- **Prior to reassembling, clean all the parts in solvent, dry them, and apply new engine oil to all contact points and bearing surfaces, and the lost motion assembly.**
- **When replacing the rocker arm assembly, remove the fastening hardware from the new rocker arm assembly.**
- **Never remove any of the circlips that retain the lost motion assemblies in the rocker shaft bridge. The circlips are not available separately, and are factory installed in the rocker shaft bridge. To remove the lost motion assemblies, first remove the rocker shafts and the rocker arms.**

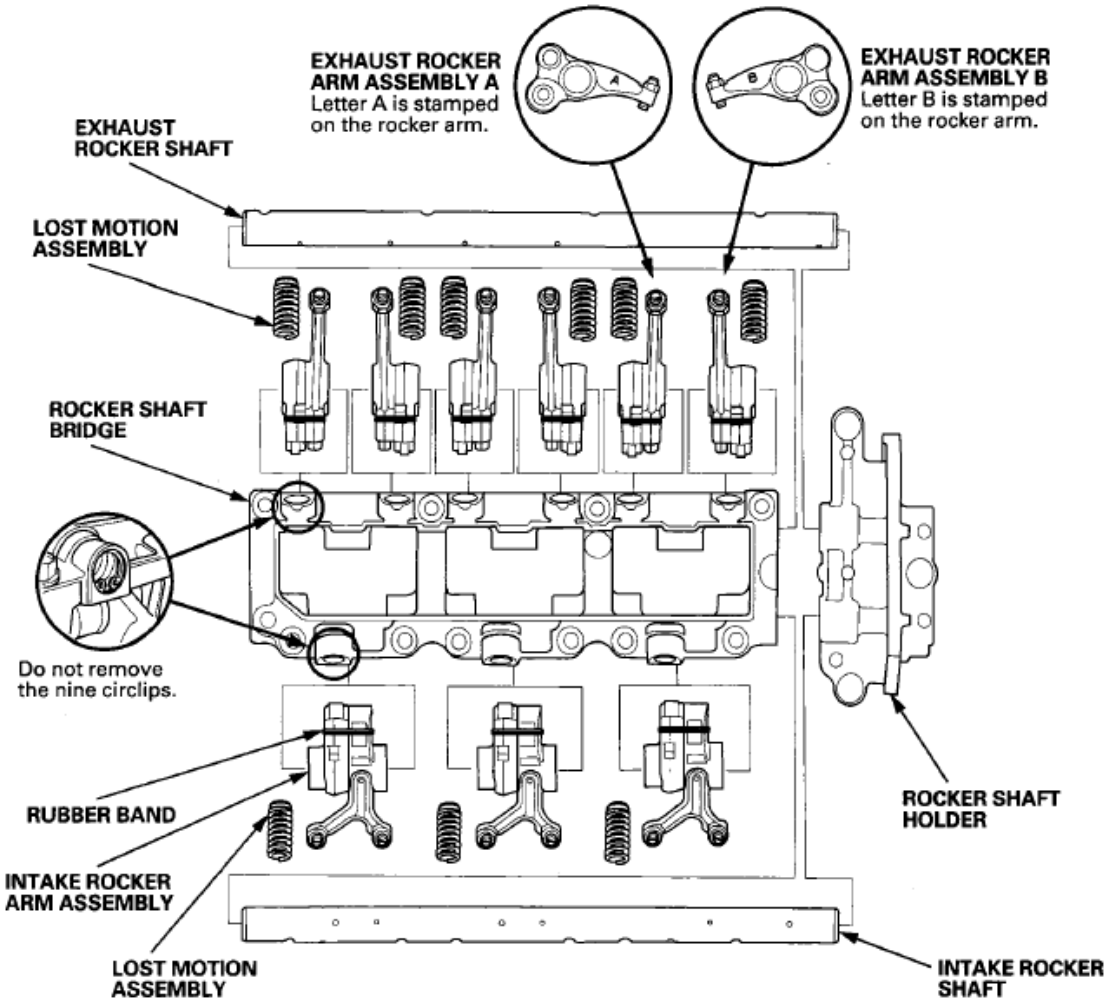


Fig. 109: Identifying Rocker Arm And Shaft Components Location (Rear)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

ROCKER ARM AND SHAFT INSPECTION

1. Remove the **rocker arm assembly**.
2. Disassemble the **rocker arm assembly**.

3. Measure the diameter of the shaft at the first rocker location.

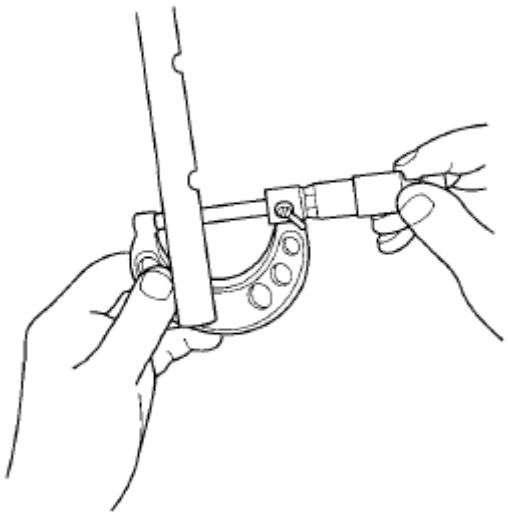


Fig. 110: Measuring Diameter Of Shaft At First Rocker Location
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Zero the dial gauge (A) to the shaft diameter.

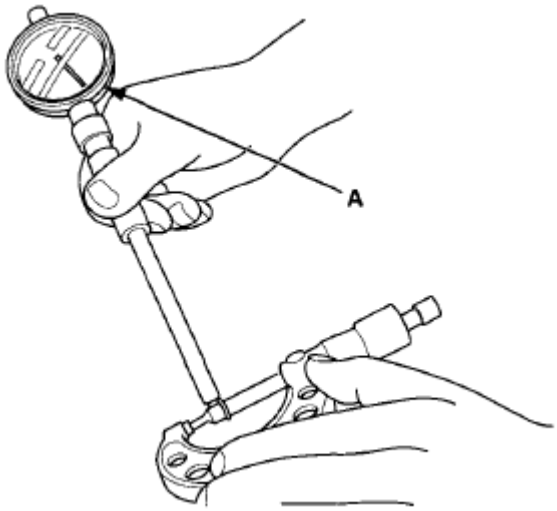


Fig. 111: Setting Dial Gauge To Zero Corresponding To Shaft Diameter
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Measure the inside diameter of the rocker arm, and check it for an out-of-round condition.

Intake Rocker Arm-to-Shaft Clearance:

Standard (New): 0.015-0.046 mm (0.00059-0.00181 in)

Service Limit: 0.046 mm (0.00181 in)

Exhaust Rocker Arm-to-Shaft Clearance:

Standard (New): 0.015-0.046 mm (0.00059-0.00181 in)

Service Limit: 0.046 mm (0.00181 in)

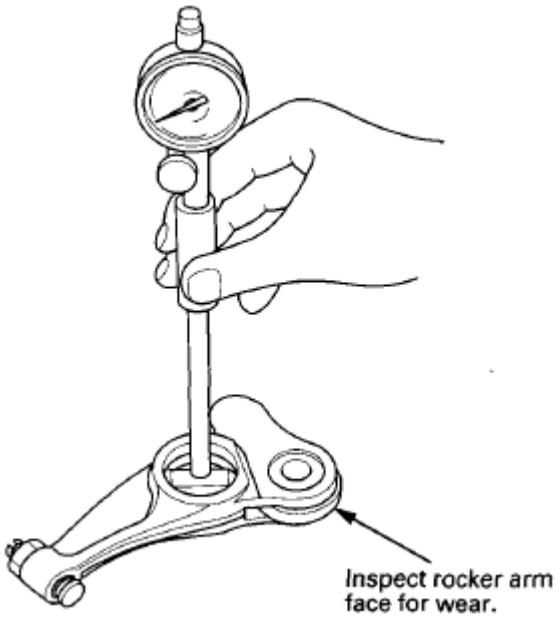


Fig. 112: Measuring Intake Rocker Arm-To-Shaft Clearance Using Dial Gauge
Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Repeat for all rockers and both shafts. If the clearance is over the limit, replace the rocker shaft and all over-tolerance rocker arms. If any VTEC rocker arm needs replacement, replace all rocker arms in that set (primary and secondary).

VTEC Rocker Arms

7. Inspect the rocker arm piston (A). Slide them into the rocker arms. If they do not move smoothly, replace the rocker arm set.

NOTE:

- **Apply new engine oil to the rocker arm piston when reassembling.**
- **When removing the rocker arm piston from the intake secondary (B), and or the exhaust primary rocker arm (C), carefully apply air pressure to the oil passage of the rocker arm.**

INTAKE

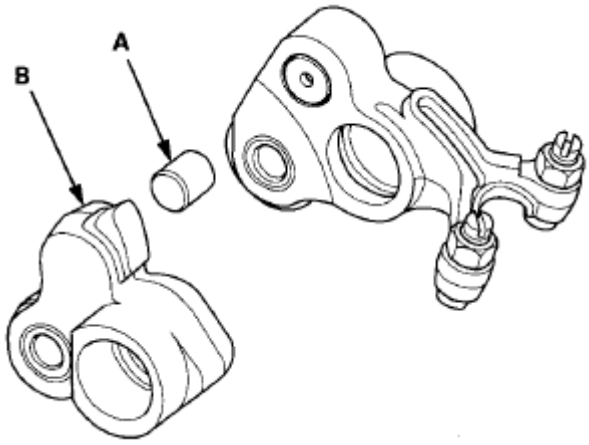


Fig. 113: Identifying Rocker Arm Piston And Intake Secondary
Courtesy of AMERICAN HONDA MOTOR CO., INC.

EXHAUST

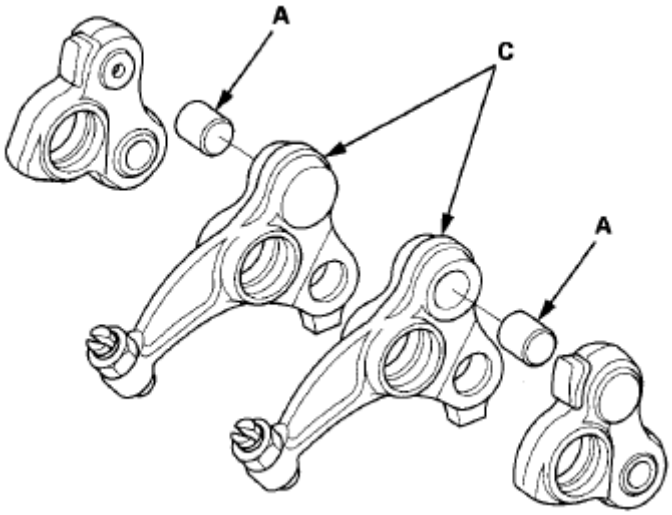


Fig. 114: Identifying Rocker Arm Piston And Exhaust Primary Rocker Arm
Courtesy of AMERICAN HONDA MOTOR CO., INC.

8. Reassemble the **rocker arm assembly**.
9. Install the **rocker arm assembly**.

CAMSHAFT INSPECTION

1. Remove the **cylinder head**.
2. Remove the **rocker arm assembly**.
3. Disassemble the **rocker arm assembly**.
4. Front: Put the rocker shafts bridge and the rocker shaft holder on the front cylinder head, then tighten the bolts to the specified torque.

Specified Torque

8 x 1.25 mm: 22 N.m (2.2 kgf.m, 16 lbf.ft)

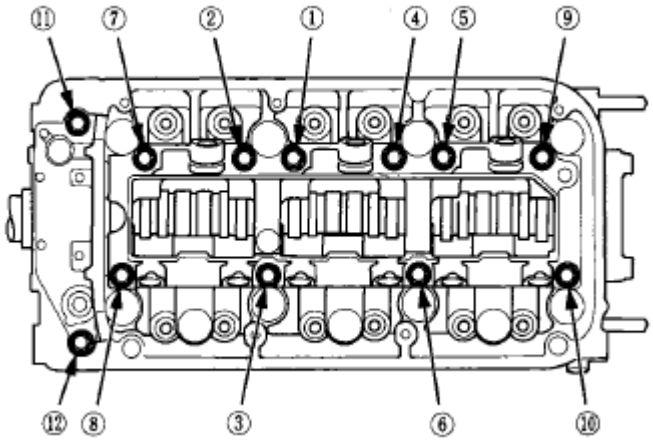


Fig. 115: Identifying Rocker Bolts With Tightening Sequence (Front)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Rear: Put the rocker shaft bridge and the rocker shaft holder on the rear cylinder head, then tighten the bolts to the specified torque.

Specified Torque

8 x 1.25 mm: 22 N.m (2.2 kgf.m, 16 lbf.ft)

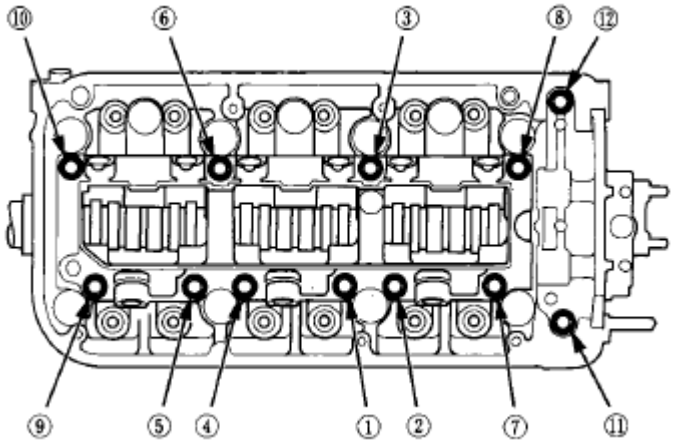


Fig. 116: Identifying Rocker Bolts With Tightening Sequence (Rear)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Seat the camshaft by pushing it toward the rear of the cylinder head.
7. Zero the dial gauge against the end of the camshaft. Push the camshaft back and forth and read the end play. If the end play is beyond the service limit, replace the thrust cover and recheck. If it is still beyond

the service limit, replace the cylinder head. If it is still beyond the service limit, replace the camshaft.

Camshaft End Play

Standard (New): 0.05-0.20 mm (0.0020-0.0079 in)

Service Limit: 0.20 mm (0.0079 in)

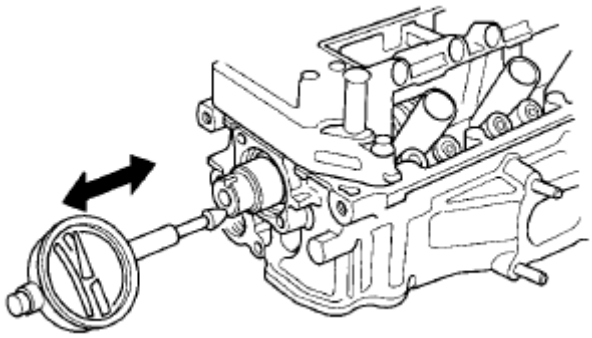


Fig. 117: Measuring Camshaft End Play Using Dial Gauge
Courtesy of AMERICAN HONDA MOTOR CO., INC.

8. Remove the camshaft thrust cover (A), then pull out the camshaft (B).

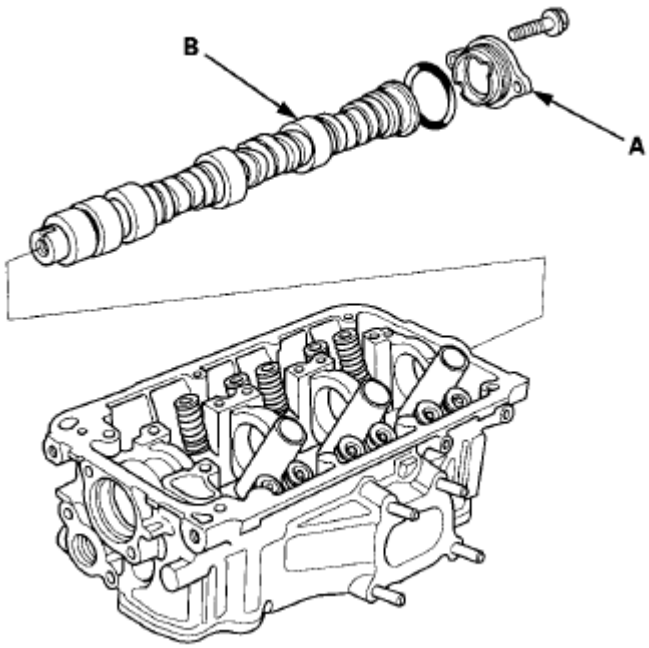


Fig. 118: Identifying Camshaft Thrust Cover And Camshaft
Courtesy of AMERICAN HONDA MOTOR CO., INC.

9. Wipe the camshaft clean, then inspect the lift ramps. Replace the camshaft if any lobes are pitted, scored, or excessively worn.

10. Measure the diameter of each camshaft journal.

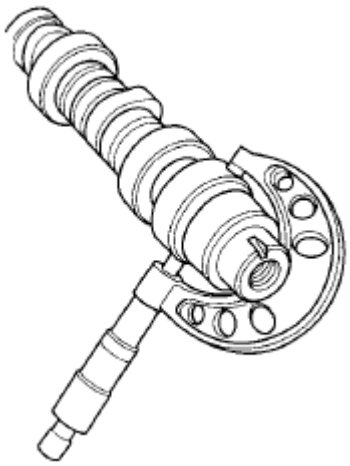


Fig. 119: Measuring Diameter Of Camshaft Journal
Courtesy of AMERICAN HONDA MOTOR CO., INC.

11. Zero the dial gauge (A) to the journal diameter.

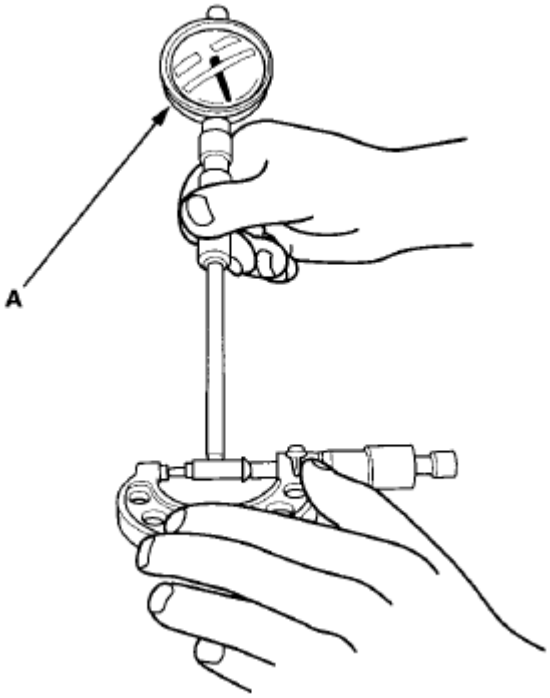


Fig. 120: Setting Dial Gauge To Zero Corresponding To Journal Diameter
Courtesy of AMERICAN HONDA MOTOR CO., INC.

12. Clean the camshaft bearing surfaces in the cylinder head. Measure the inside diameter of each camshaft bearing surface, and check for an out-of-round condition:
    - If the camshaft-to-holder clearance is within limits, go to step 14.

- If the camshaft-to-holder clearance is beyond the service limit and the camshaft has been replaced, replace the cylinder head.
- If the camshaft-to-holder clearance is beyond the service limit and the camshaft has not been replaced, go to step 13.

Camshaft-to-Holder Oil Clearance

Standard (New): 0.050-0.089 mm (0.00197-0.00350 in)

Service Limit: 0.15 mm (0.0059 in)

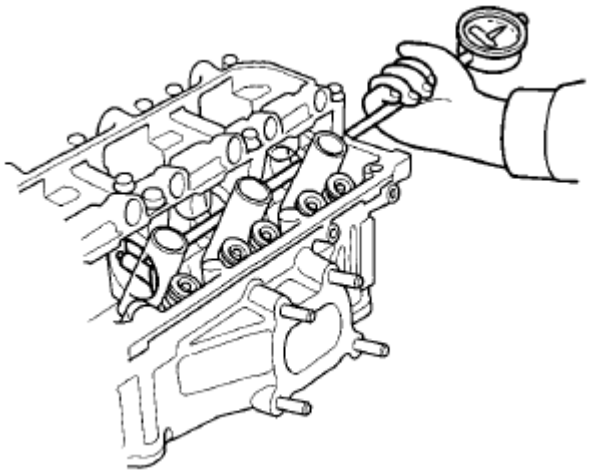


Fig. 121: Measuring Camshaft-To-Holder Oil Clearance Using Dial Gauge
Courtesy of AMERICAN HONDA MOTOR CO., INC.

13. Check total runout with the camshaft supported on V-blocks:
    - If the total runout of the camshaft is within the service limit, replace the cylinder head.
    - If the total runout is beyond the service limit, replace the camshaft and recheck the oil clearance. If the oil clearance is still out of tolerance, replace the cylinder head.

Camshaft Total Runout

Standard (New): 0.03 mm (0.0012 in) max.

Service Limit: 0.04 mm (0.0016 in)

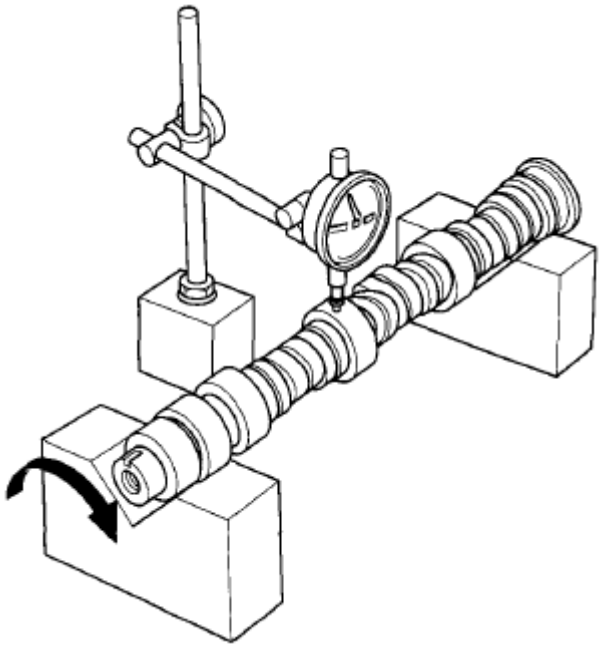


Fig. 122: Checking Camshaft Total Runout Using Dial Gauge
Courtesy of AMERICAN HONDA MOTOR CO., INC.

14. Measure the cam lobe height.

CAM LOBE HEIGHT STANDARD (NEW)

	INTAKE	EXHAUST
PRI	34.299 mm (1.35035 in)	36.734 mm (1.44622 in)
SEC	35.932 mm (1.41464 in)	37.370 mm (1.47126 in)

FRONT

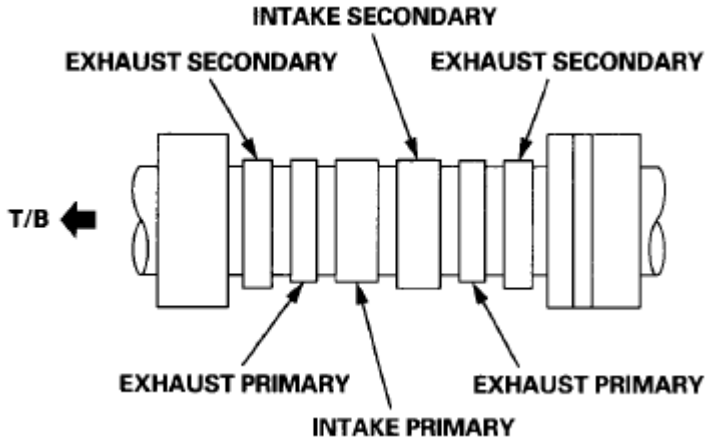


Fig. 123: Measuring Cam Lobe Height For Intake And Secondary Exhaust - Front
Courtesy of AMERICAN HONDA MOTOR CO., INC.

REAR

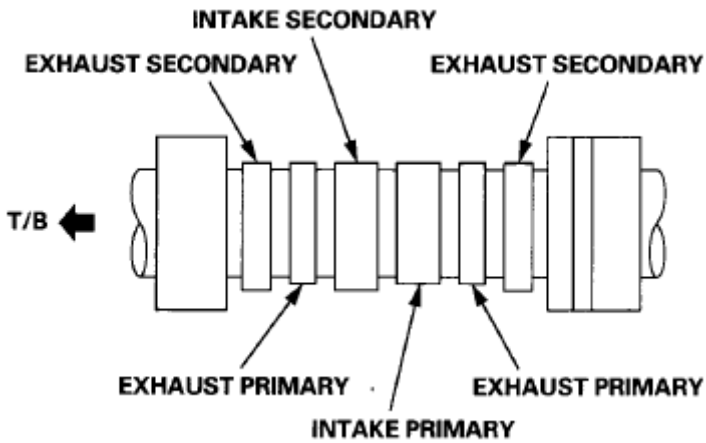


Fig. 124: Measuring Cam Lobe Height For Intake And Secondary Exhaust - Rear
Courtesy of AMERICAN HONDA MOTOR CO., INC.

VALVE, SPRING, AND VALVE SEAL REMOVAL

Special Tools Required

Valve Spring Compressor Attachment 07757-PJ1010A

NOTE: Identify the valves and the valve springs as they are removed so that each item can be reinstalled in its original position.

1. Remove the **cylinder head**.
2. Remove the **rocker arm assembly**.
3. Using an appropriate-sized socket (A) and a plastic mallet (B), lightly tap the spring retainer to loosen the valve cotters.

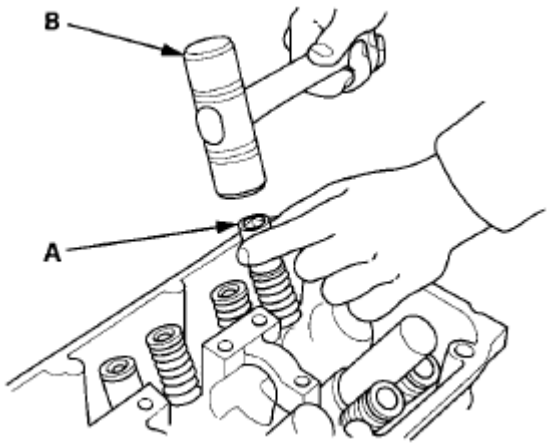


Fig. 125: Tapping Spring Retainer To Loosen Valve Cotters Using Socket And Plastic Mallet

Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Install the valve spring compressor attachment and the valve spring compressor. Compress the spring and remove the valve cotters.

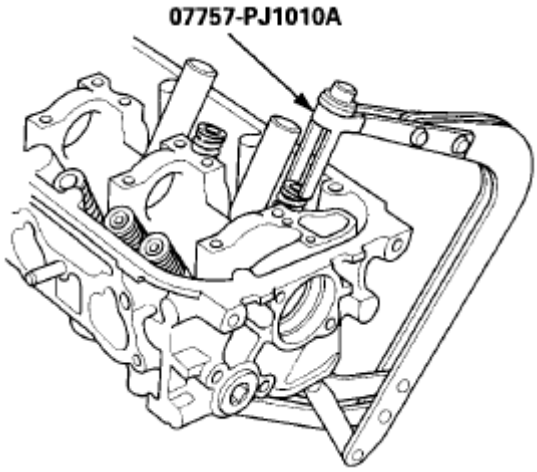


Fig. 126: Installing Valve Spring Compressor Attachment And Valve Spring Compressor
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Remove the valve spring compressor and the valve spring compressor attachment, then remove the spring retainer, the valve spring, and the valve.
6. Install the valve guide seal remover (A).

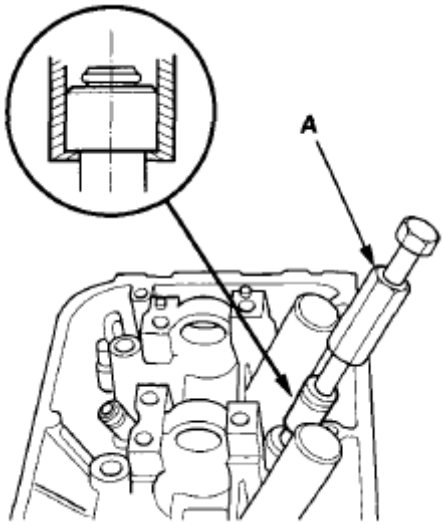


Fig. 127: Identifying Valve Guide Seal Remover
Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Remove the valve seal.

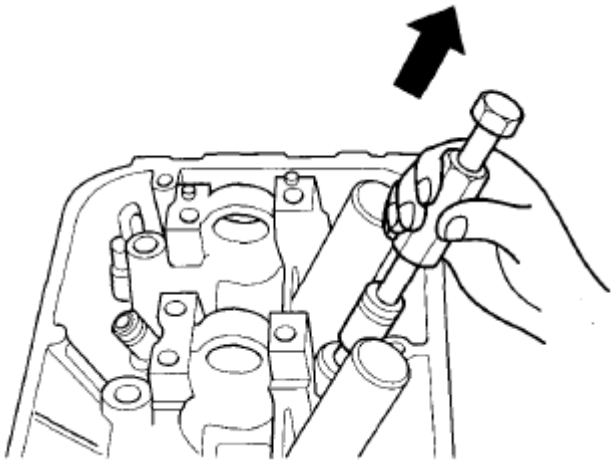


Fig. 128: Removing Valve Seal
Courtesy of AMERICAN HONDA MOTOR CO., INC.

8. Remove the valve spring seat.

VALVE INSPECTION

1. Remove the **valves**.
2. Measure the valve in these areas.

Intake Valve Dimensions

A Standard (New): 35.90-36.01 mm (1.413-1.421 in)

B Standard (New): 116.55-117.15 mm (4.589-4.612 in)

C Standard (New): 5.485-5.495 mm (0.21594-0.21634 in)

C Service Limit: 5.455 mm (0.21476 in)

Exhaust Valve Dimensions

A Standard (New): 29.90-30.10 mm (1.177-1.185 in)

B Standard (New): 113.90-114.50 mm (4.484-4.508 in)

C Standard (New): 5.450-5.460 mm (0.21457-0.21496 in)

C Service Limit: 5.420 mm (0.21339 in)

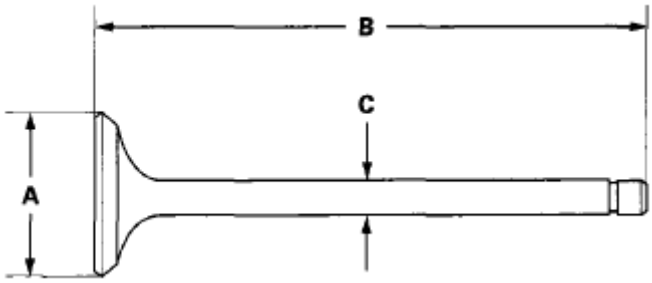


Fig. 129: Measuring Intake And Exhaust Valve Dimensions
Courtesy of AMERICAN HONDA MOTOR CO., INC.

VALVE STEM-TO-GUIDE CLEARANCE INSPECTION

1. Remove the **valves**.
2. Subtract the O.D. of the valve stem, measured with a micrometer, from the I.D. of the valve guide, measured with an inside micrometer or a ball gauge. Take the measurements in three places along the valve stem and three places inside the valve guide. The difference between the largest guide measurement and the smallest stem measurement should not exceed the service limit.

   Intake Valve Stem-to-Guide Clearance

   Standard (New): 0.020-0.045 mm (0.00079-0.00177 in)

   Service Limit: 0.08 mm (0.0031 in)

   Exhaust Valve Stem-to-Guide Clearance Standard (New): 0.055-0.080 mm (0.00217-0.00315 in)

   Service Limit: 0.11 mm (0.0043 in)

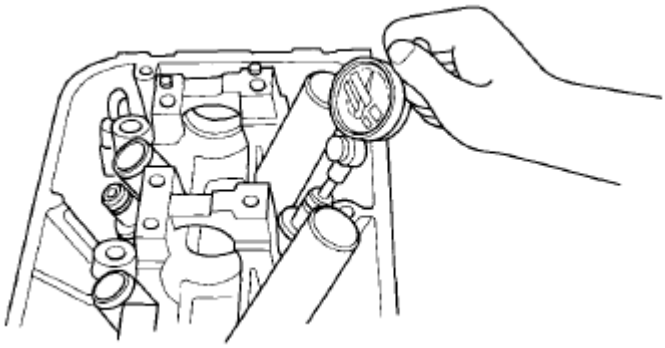


Fig. 130: Measuring Valve Stem-To-Guide Clearance Using Micrometer
Courtesy of AMERICAN HONDA MOTOR CO., INC.

VALVE GUIDE REPLACEMENT

Special Tools Required

- Valve Guide Driver, 5.35 x 9.7 mm 07742-0010100
- Valve Guide Reamer, 5.5 mm 07HAH-PJ7A100

1. Inspect the **valve stem-to-guide clearance**.
2. As illustrated, use a commercially available air-impact valve guide driver (A) modified to fit the diameter of the valve guides. In most cases, the same procedure can be done using the valve guide driver, 5.35 x 9.7 mm and a conventional hammer.

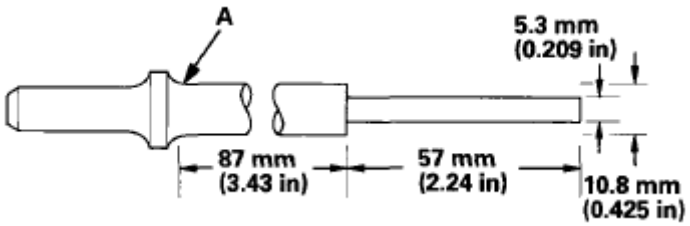


Fig. 131: Identifying Air-Impact Valve Guide Driver
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Select the proper replacement guides, and chill them in the freezer section of a refrigerator for at least an hour.
4. Use a hot plate or oven to evenly heat the cylinder head to 300°F (150°C). Monitor the temperature with a cooking thermometer. Do not get the head hotter than 300°F (150°C); excessive heat may loosen the valve seats.

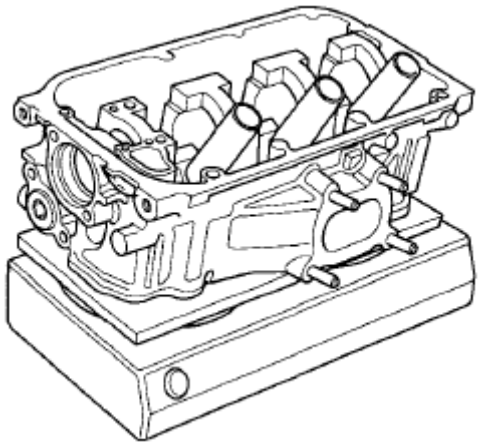


Fig. 132: Using Hot Plate Or Oven To Evenly Heat Cylinder Head
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Working from the camshaft side, use the driver and an air hammer to drive the guide about 2 mm (0.08 in) towards the combustion chamber. This will knock off some of the carbon and make removal easier. Hold the air hammer directly in line with the valve guide to prevent damaging the driver. Wear safety goggles or a face shield.
6. Turn the head over, and drive the guide out toward the camshaft side of the head.

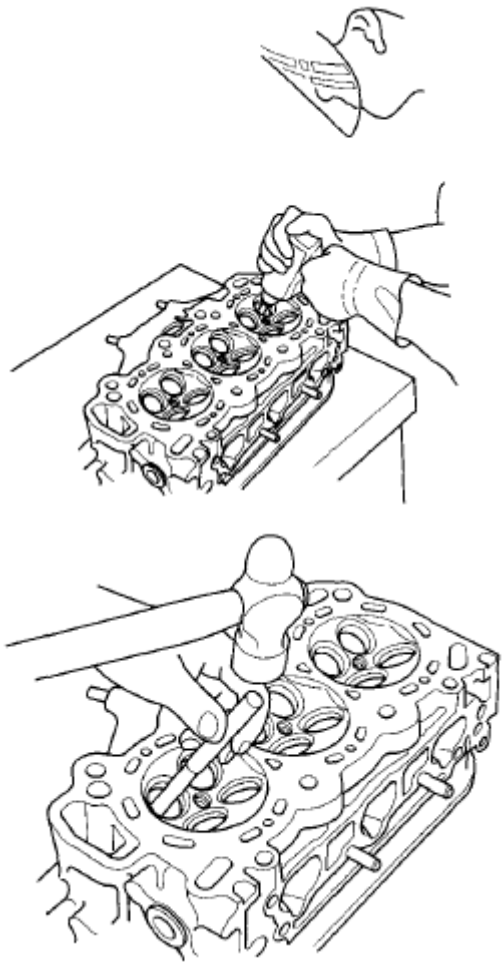


Fig. 133: Turning Head Over And Driving Guide Out Toward Camshaft Side Of Head
Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. If a valve guide still will not move, drill it out with an 8 mm (5/16 in) drill bit, then try again.

NOTE: Drill guides only in extreme cases; you could damage the cylinder head if the guide breaks.

8. Remove the new guide(s) from the freezer, one at a time, as you need them.
9. Apply a thin coat of new engine oil to the outside of the new valve guide. Install the guide from the camshaft side of the head; use the valve guide driver to drive the guide to the specified installed height (A) of the guide (B). If you have all 12 guides to do, you may have to reheat the head.

Valve Guide Installed Height

Intake: 21.20-22.20 mm (0.8346-0.8740 in)

Exhaust: 20.60-21.60 mm (0.8110-0.8504 in)

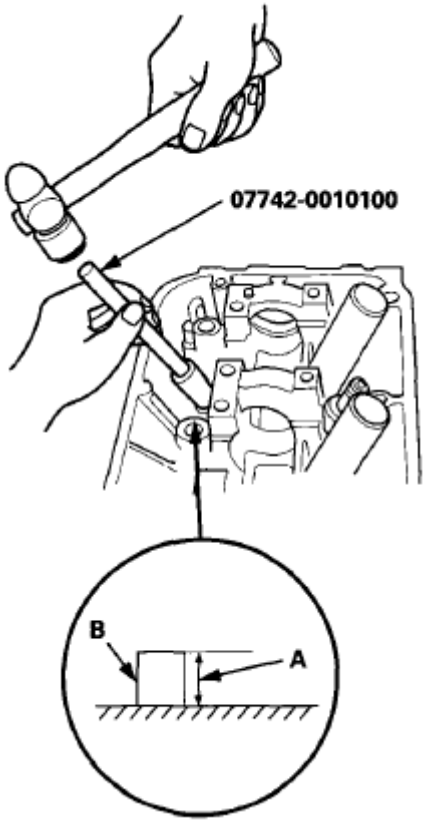


Fig. 134: Installing Guide To Specified Height From Camshaft Side Of Head Using Valve Guide Driver
Courtesy of AMERICAN HONDA MOTOR CO., INC.

10. Coat both the valve guide reamer, 5.5 mm and the valve guide with cutting oil.
11. Rotate the reamer clockwise the full length of the valve guide bore.

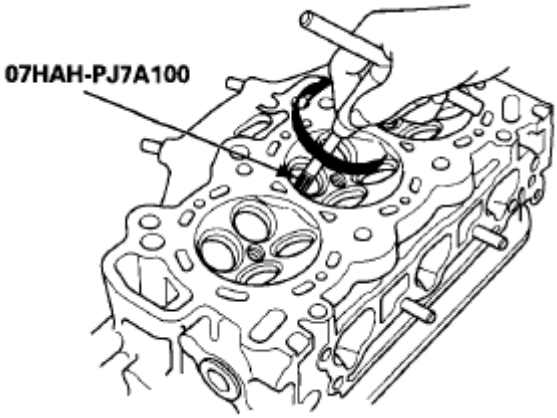


Fig. 135: Rotating Reamer Clockwise Full Length Of Valve Guide Bore
Courtesy of AMERICAN HONDA MOTOR CO., INC.

12. Continue to rotate the reamer clockwise while removing it from the bore.

13. Thoroughly wash the guide in detergent and water to remove any cutting residue.
14. Check the **clearance with a valve**. Verify that a valve slides into the intake and exhaust valve guides without sticking.
15. Inspect the **valve seating**. If necessary renew the valve seat using a valve seat cutter.

VALVE SEAT RECONDITIONING

1. Inspect **valve stem-to-guide clearance**. If the valve guides are worn, replace them before cutting the valve seats.
2. Renew the valve seats in the cylinder head using a valve seat cutter.

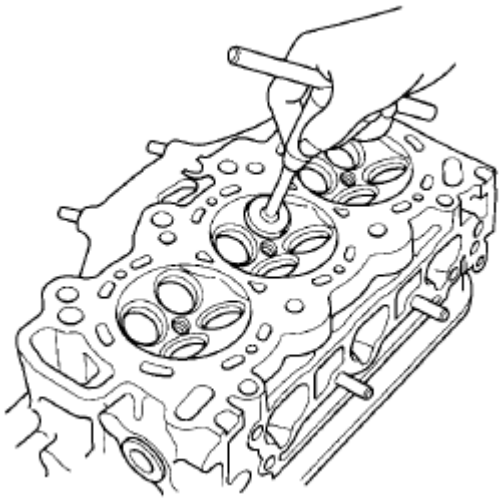


Fig. 136: Renewing Valve Seats In Cylinder Head Using Valve Seat Cutter
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Carefully cut a 45 ° seat, removing only enough material to ensure a smooth and concentric seat.
4. Bevel the upper and lower edges at the angles shown in the illustration. Check the width of the seat and adjust accordingly.

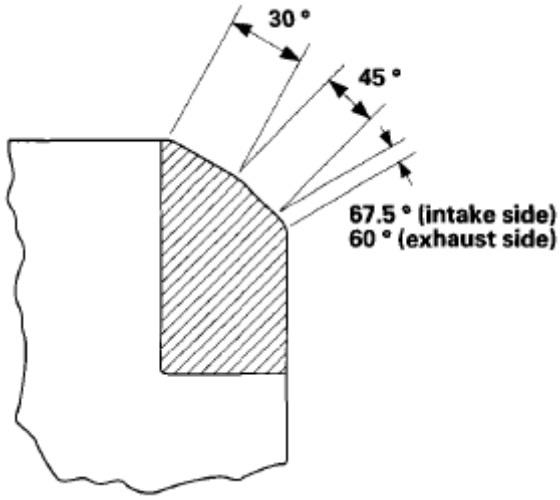


Fig. 137: Bevelling Upper And Lower Edges At Specified Angles
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Make one more very light pass with the 45 ° cutter to remove any possible burrs caused by the other cutters.

   Valve Seat Width

   Standard (New): 1.25-1.55 mm (0.0492-0.0610 in)

   Service Limit: 2.00 mm (0.0787 in)

6. After resurfacing the seat, inspect it for even valve seating. Apply Prussian Blue compound (A) to the valve face. Insert the valve in its original location in the head, then lift it and snap it closed against the seat several times.

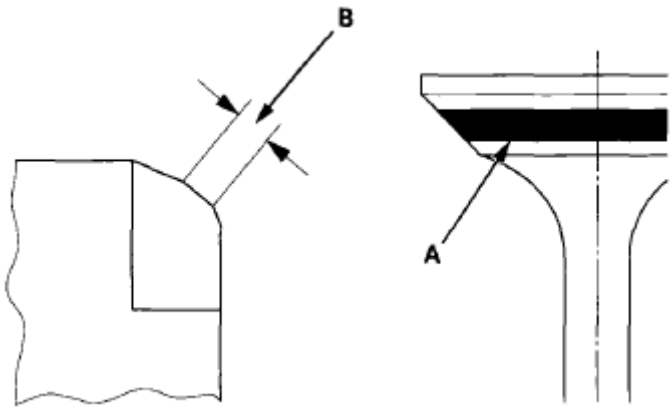


Fig. 138: Identifying Valve Seating Surface And Prussian Blue Compound
Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. The actual valve seating surface (B), as shown by the blue compound, should be centered on the seat:

- If it is too high (closer to the valve stem), you must make a second cut with the 67.5 ° cutter (intake seat) or the 60 ° cutter (exhaust seat) to move it down, then one more cut with the 45 ° cutter to restore seat width.
- If it is too low (closer to the valve edge), you must make a second cut with the 30 ° cutter to move it up, then one more cut with the 45 ° cutter to restore seat width.

NOTE: The final cut should always be made with the 45 ° cutter.

8. Insert the intake and exhaust valves in the head, and measure the valve stem installed height (A).

   Intake Valve Stem Installed Height Standard (New): 46.75-47.55 mm (1.8405-1.8720 in)

   Service Limit: 47.80 mm (1.8819 in)

   Exhaust Valve Stem Installed Height Standard (New): 46.68-47.48 mm (1.8378-1.8693 in)

   Service Limit: 47.73 mm (1.8791 in)

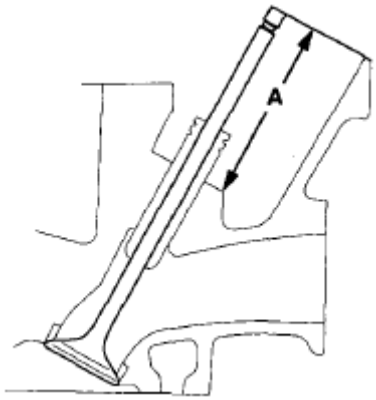


Fig. 139: Measuring Intake Valve Stem Installed Height
Courtesy of AMERICAN HONDA MOTOR CO., INC.

9. If the valve stem installed height is over the service limit, replace the valve and recheck. If it is still over the service limit, replace the cylinder head; the valve seat in the head is too deep.

VALVE, SPRING, AND VALVE SEAL INSTALLATION

Special Tools Required

- Stem Seal Driver 07PAD-0010000
- Valve Spring Compressor Attachment 07757-PJ1010A

1. Coat the valve stems with new engine oil. Install the valves in the valve guides.
2. Check that the valves move up and down smoothly.

3. Install the spring seats on the cylinder head.
4. Install the new valve seals (A) using the 5.5 mm side of the stem seal driver (B).

NOTE: The exhaust valve seal (C) have a black spring (D) and intake valve seal (E) have a white or silver spring (F); they are not interchangeable.

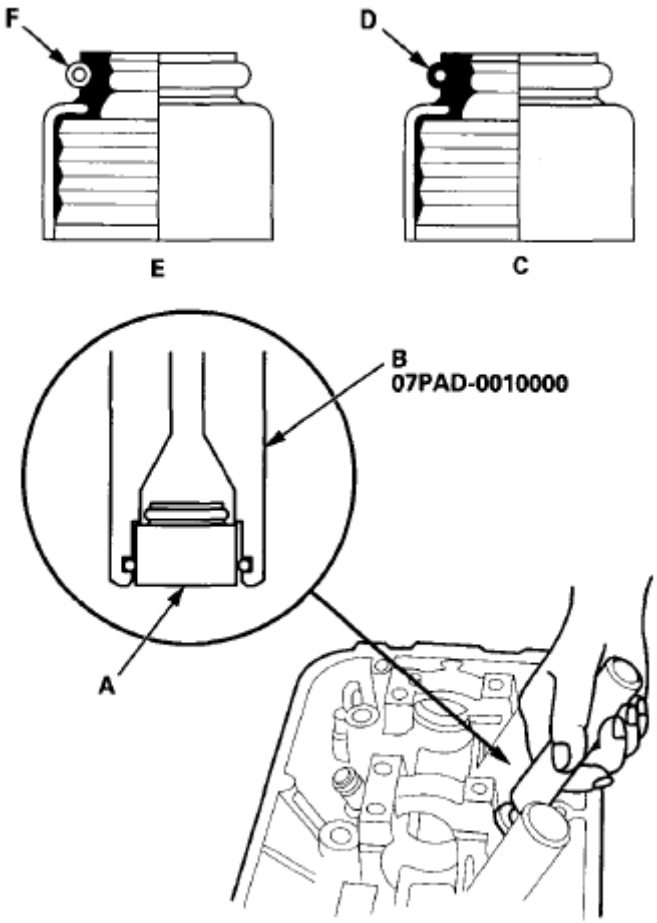


Fig. 140: Installing Valve Seals Using Side Of Stem Seal Driver
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Install the valve spring and the spring retainer. Place the end of the valve spring with the closely wound coils toward the cylinder head.
6. Install the valve spring compressor attachment and the valve spring compressor. Compress the spring and install the valve cotters.

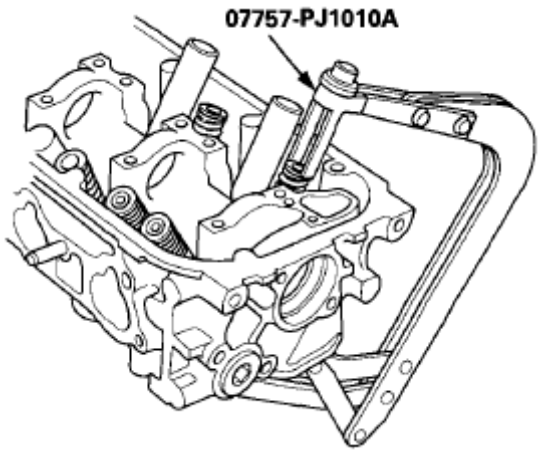


Fig. 141: Installing Valve Spring Compressor Attachment And Valve Spring Compressor
Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Remove the valve spring compressor and the valve spring compressor attachment.
8. Lightly tap the end of each valve stem two or three times with a plastic mallet (A) to ensure proper seating of the valve and valve cotters. Tap the valve stem only along its axis so you do not bend the stem.

NOTE: Be sure to raise the head off the work bench so the valve is not possibly damaged.

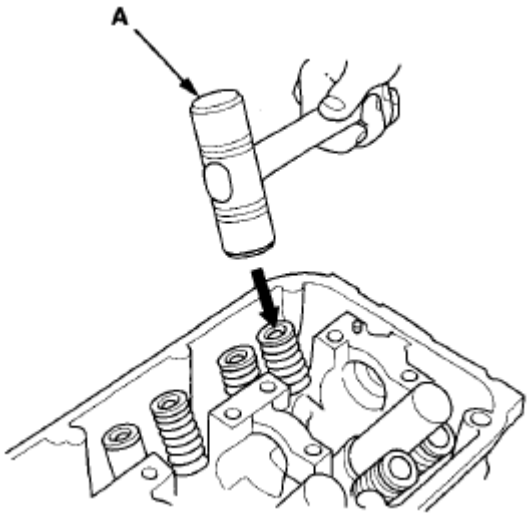


Fig. 142: Tapping End Of Valve Stem With Plastic Mallet
Courtesy of AMERICAN HONDA MOTOR CO., INC.

CAMSHAFT, ROCKER ARM ASSEMBLY, CAMSHAFT SEAL, AND PULLEY INSTALLATION

FRONT

1. Loosen the locknuts and the adjusting screws.
2. Dry the camshaft oil seal housing.
3. Apply a light coat of new engine oil to the lip of the camshaft oil seal.
4. Gently tap the new camshaft oil seal (A) squarely into the cylinder head to the specified installed height.

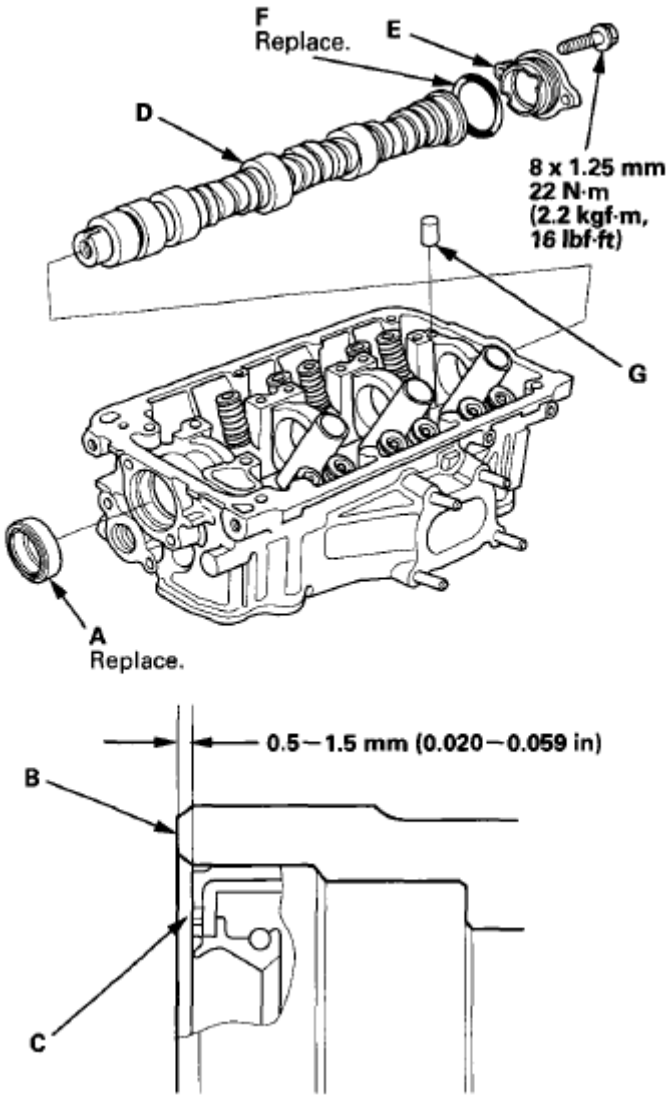


Fig. 143: Identifying Camshaft Oil Seal And Distance Between Cylinder Head Surface And Oil Seal With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Measure the distance between the cylinder head surface (B) and the oil seal (C).

   Oil Seal Installed Height 0.5-1.5 mm (0.020-0.059 in)

6. Insert the camshaft (D) into the cylinder head, then install the camshaft thrust cover (E). Always use a new O-ring (F). Apply new engine oil to the journals and the cam lobes.

7. Clean the excess oil off the camshaft, and check that the oil seal lip is not distorted.
8. Install the solid dowel pin (G).
9. If the rocker arm assembly is disassembled, reassemble the **rocker arm assembly**.
10. Remove all of the old liquid gasket from the rocker shaft holder and the cylinder head.
11. Apply liquid gasket, P/N 08717-0004, 08718-0003, 08718-0004, or 08718-0009 to the rocker shaft holder mating surface of the cylinder head. Install the component within 5 minutes of applying the liquid gasket.

NOTE:

- **Apply a 2.5 mm (0.098 in) diameter bead of liquid gasket along the broken line (A).**
- **If you apply liquid gasket P/N 08718-0012, the component must be installed within 4 minutes.**
- **If too much time has passed after applying the liquid gasket, remove the old liquid gasket and residue, then reapply the new liquid gasket.**

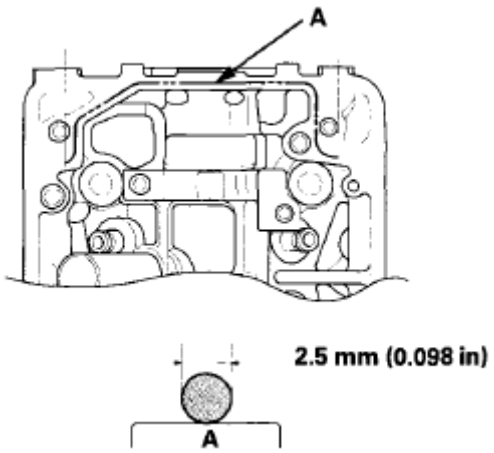


Fig. 144: Identifying Broken Line
Courtesy of AMERICAN HONDA MOTOR CO., INC.

12. Set the rocker arm assembly in place, and loosely install the bolts. Make sure that the rocker arms are properly positioned on the valve stems.

NOTE:

- **Wait at least 30 minutes before filling the engine with oil.**
- **Do not run the engine for at least 3 hours after installing the rocker arm assembly.**

13. Tighten each bolt two turns at a time in the sequence shown to ensure that the rockers do not bind on the valves.

Specified Torque

8 x 1.25 mm: 22 N.m (2.2 kgf.m, 16 lbf.ft)

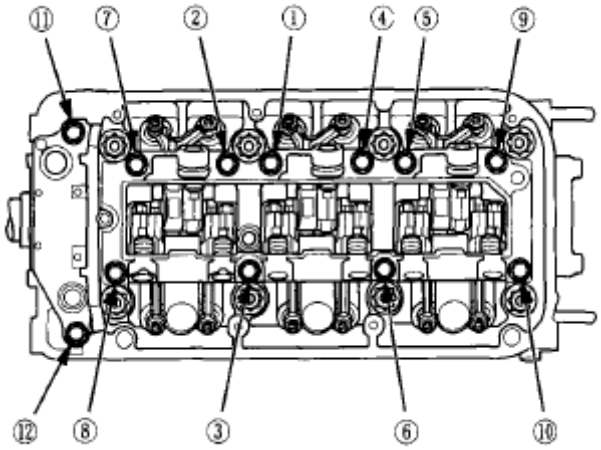


Fig. 145: Identifying Rocker Bolts With Tightening Sequence
Courtesy of AMERICAN HONDA MOTOR CO., INC.

14. Install the injector base (A). Always use a new gasket (B).

NOTE: The front injector base gasket is different from the rear one. Do the mix injector base gasket types.

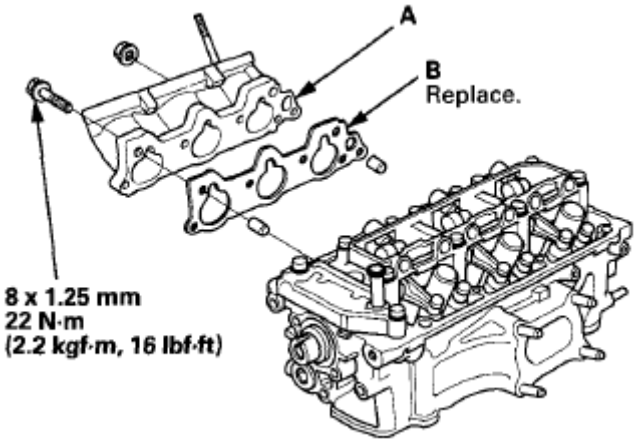


Fig. 146: Identifying Injector Base And Gasket With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

15. Apply new engine oil to the threads of the camshaft pulley mounting bolt (A). Install the back cover (B), then install the camshaft pulley (C).

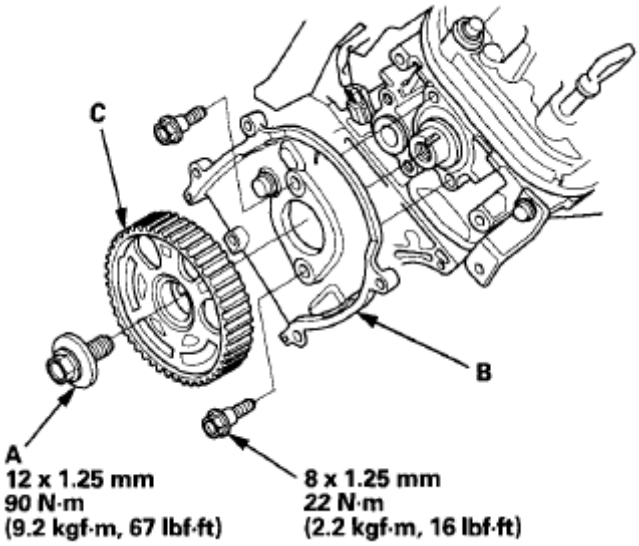


Fig. 147: Identifying Camshaft Pulley, Back Cover And Mounting Bolt With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

16. Set the camshaft pulleys to top dead center (TDC) before bolting them onto the engine block (see step 6).

REAR

1. Loosen the locknuts and the adjusting screws.
2. Dry the camshaft oil seal housing.
3. Apply a light coat of new engine oil to the lip of the camshaft oil seal.
4. Gently tap the new camshaft oil seal (A) squarely into the cylinder head to the specified installed height.

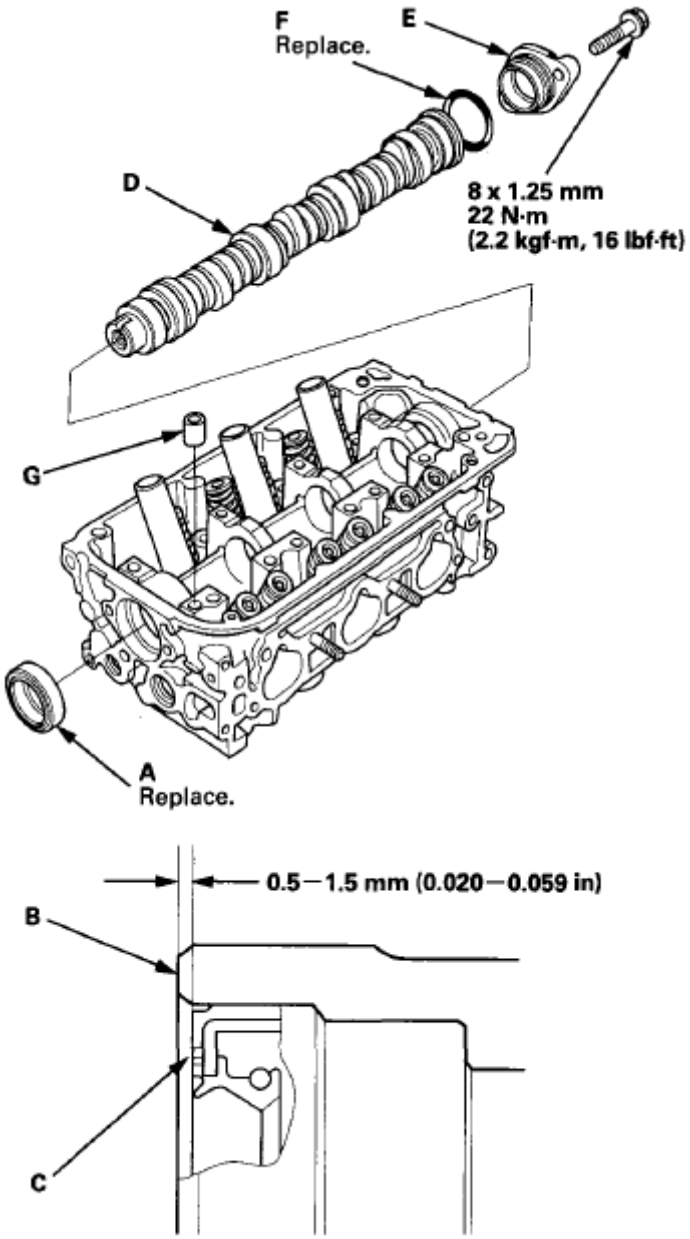


Fig. 148: Identifying Camshaft Oil Seal And Distance Between Cylinder Head Surface And Oil Seal With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Measure the distance between the cylinder head surface (B) and the oil seal (C).

   Oil Seal Installed Height 0.5-1.5 mm (0.020-0.059 in)

6. Insert the camshaft (D) into the cylinder head, then install the camshaft thrust cover (E). Always use a new O-ring (F). Apply new engine oil to the journals and the cam lobes.
7. Clean the excess oil off the camshaft, and check that the oil seal lip is not distorted.
8. Install the hollow dowel pin (G).

9. If the rocker arm assembly is disassembled, reassemble the **rocker arm assembly**.
10. Remove all of the old liquid gasket from the rocker shaft holder and the cylinder head.
11. Apply liquid gasket, P/N 08717-0004, 08718-0003, 08718-0004, or 08718-0009 to the rocker shaft holder mating surface of the cylinder head. Install the component within 5 minutes of applying the liquid gasket.

NOTE:

- **Apply a 2.5 mm (0.098 in) diameter bead of liquid gasket along the broken line (A).**
- **If you apply liquid gasket P/N 08718-0012, the component must be installed within 4 minutes.**
- **If too much time has passed after applying the liquid gasket, remove the old liquid gasket and residue, then reapply the new liquid gasket.**

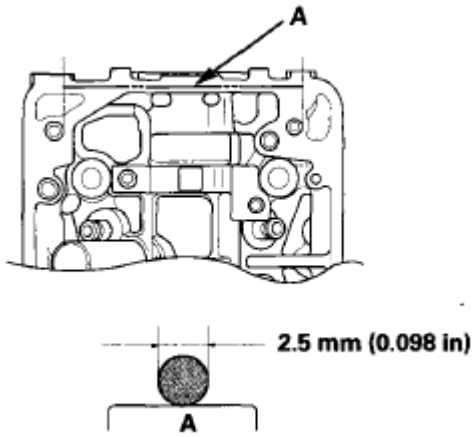


Fig. 149: Identifying Broken Line
Courtesy of AMERICAN HONDA MOTOR CO., INC.

12. Set the rocker arm assembly in place, and loosely install the bolts. Make sure that the rocker arms are properly positioned on the valve stems.

NOTE:

- **Wait at least 30 minutes before filling the engine with oil.**
- **Do not run the engine for at least 3 hours after installing the rocker arm assembly.**

13. Tighten each bolt two turns at a time in the sequence shown to ensure that the rockers do not bind on the valves.

Specified Torque

8 x 1.25 mm: 22 N.m (2.2 kgf.m, 16 lbf.ft)

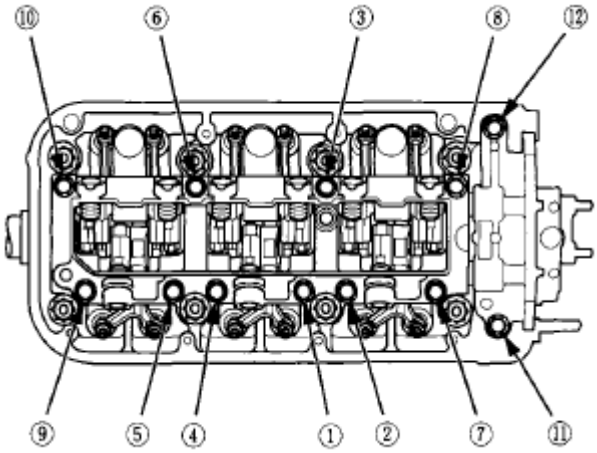


Fig. 150: Identifying Rocker Bolts With Tightening Sequence
Courtesy of AMERICAN HONDA MOTOR CO., INC.

14. Install the injector base (A). Always use a new gasket (B).

NOTE: The rear injector base gasket is different from the front one. Do the mix injector base gasket types.

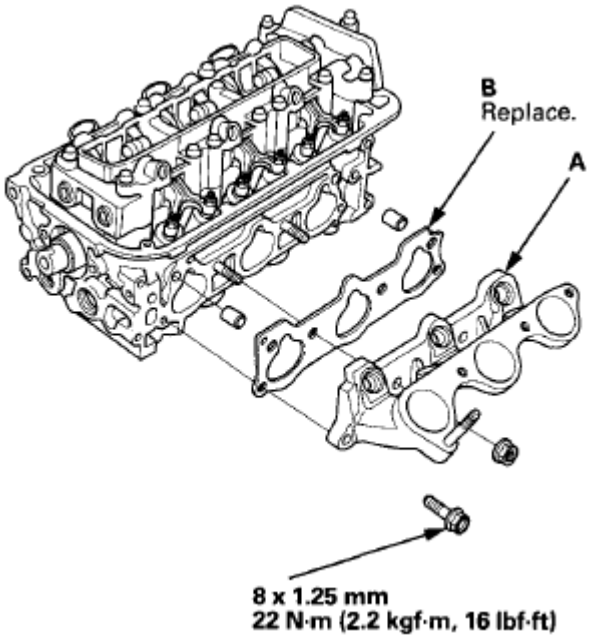


Fig. 151: Identifying Injector Base And Gasket With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

15. Apply new engine oil to the threads of the camshaft pulley mounting bolt (A). Install the back cover (B), then install the camshaft pulley (C).

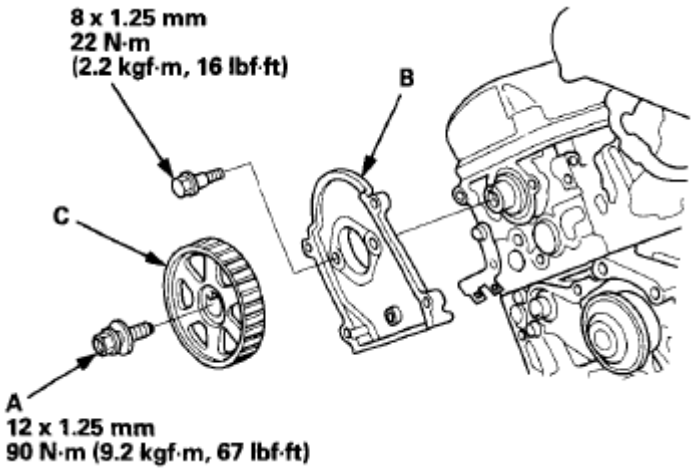


Fig. 152: Identifying Camshaft Pulley, Back Cover And Bolt With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

16. Set the camshaft pulleys to TDC before bolting them onto the engine block (see step 6).

CYLINDER HEAD INSTALLATION

1. Clean the cylinder head and the engine block surface.
2. Clean and install the oil control orifices (A) with new O-rings (B).

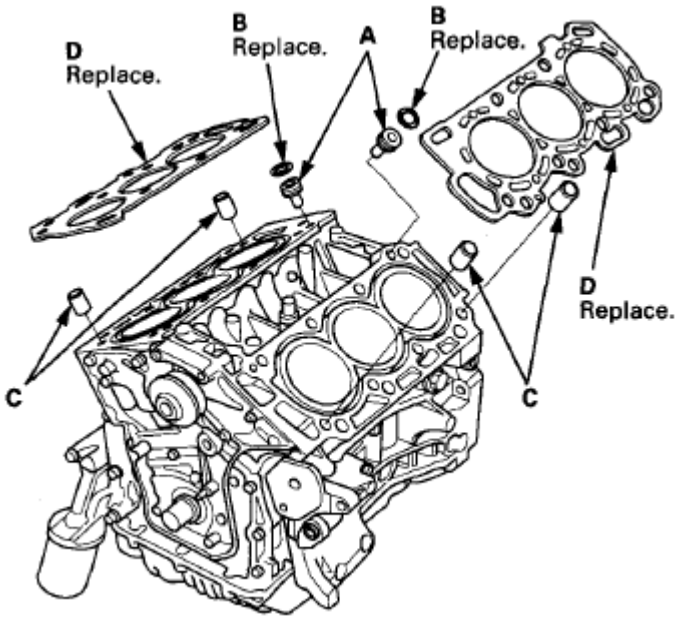


Fig. 153: Identifying Cylinder Head Gaskets, Oil Control Orifices, O-Rings And Dowel Pins
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Install the dowel pins (C) and the new cylinder head gaskets (D).
4. Clean the timing belt pulleys, the timing belt guide plate, and the upper and lower covers.

5. Set the timing belt drive pulley to top dead center (TDC) by aligning the TDC mark (A) on the tooth of the timing belt drive pulley with the pointer (B) on the oil pump.

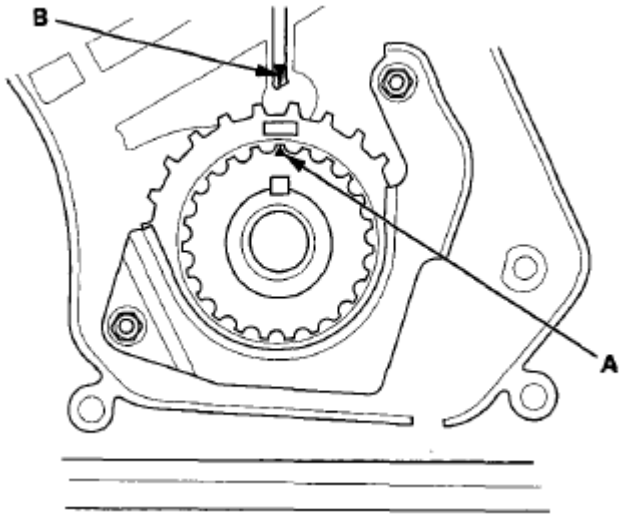


Fig. 154: Identifying TDC Mark And Pointer
Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Set the camshaft pulleys to TDC by aligning the TDC marks (A) on the camshaft pulleys with the pointers (B) on the back covers.

FRONT

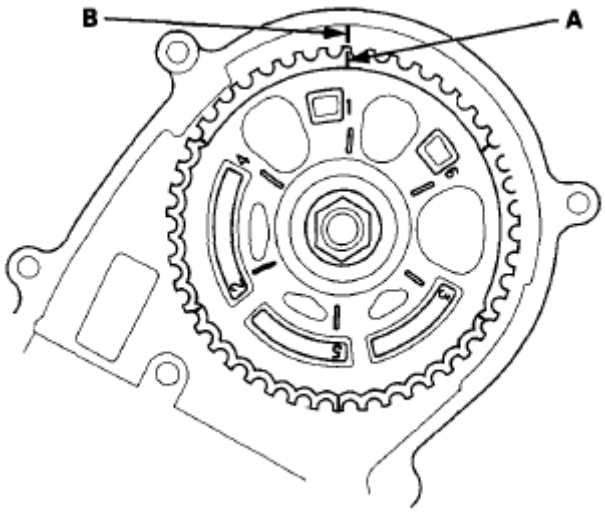


Fig. 155: Identifying TDC Marks On Camshaft Pulleys And Pointers On Back Covers - Front
Courtesy of AMERICAN HONDA MOTOR CO., INC.

REAR

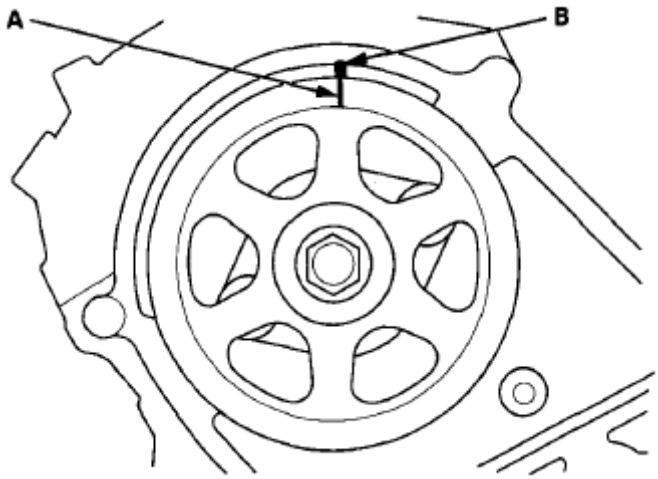


Fig. 156: Identifying TDC Marks On Camshaft Pulleys And Pointers On Back Covers - Rear
Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Install the cylinder heads on the engine block.
8. Measure the diameter of each cylinder head bolt at point A and point B.

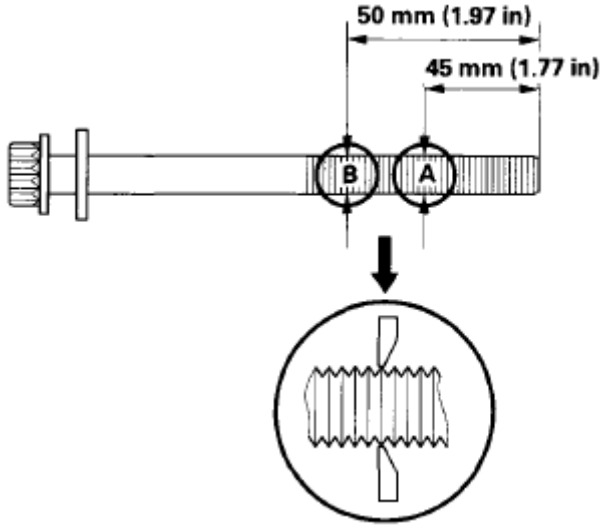


Fig. 157: Identifying Cylinder Head Bolt Diameter At Point A And B
Courtesy of AMERICAN HONDA MOTOR CO., INC.

9. If either diameter is less than 11.3 mm (0.445 in), replace the cylinder head bolt.
10. Apply new engine oil to the threads and under the bolt heads of all cylinder head bolts.
11. Torque the cylinder head bolts in sequence to 29 N.m (3.0 kgf.m, 22 lbf.ft) using a beam-type torque wrench. When using a preset click-type torque wrench, be sure to tighten slowly and do not overtighten. If a bolt makes any noise while you are torquing it, loosen the bolt and retighten it from the first step.

FRONT

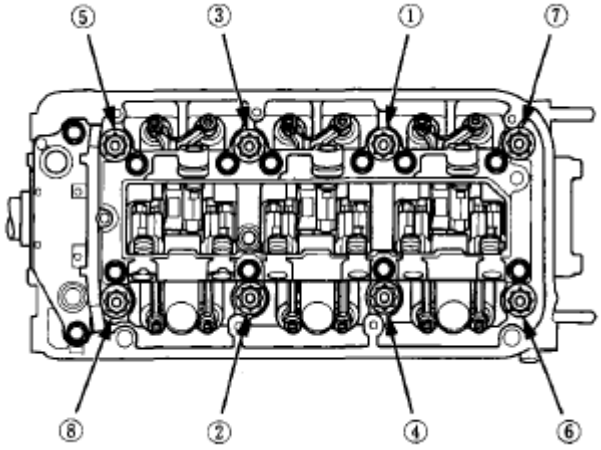


Fig. 158: Identifying Cylinder Head Bolts With Tightening Sequence (Front)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

REAR

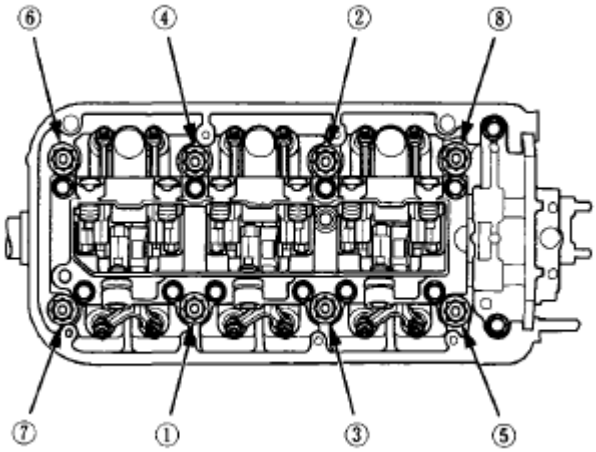


Fig. 159: Identifying Cylinder Head Bolts With Tightening Sequence (Rear)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

12. After torquing, tighten all cylinder head bolts in two steps (90 ° per step) using the sequence shown in step 11. If you are using a new cylinder head bolt, tighten the bolt an extra 90 °.

NOTE: Remove the cylinder head bolt if you tightened it beyond the specified angle, and go back to step 8 of the procedure. Do not loosen it back to the specified angle.

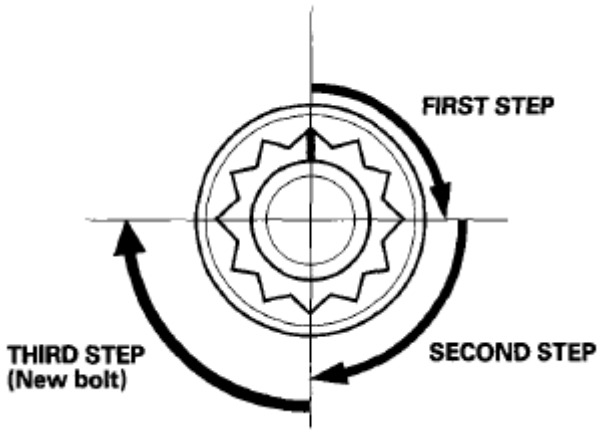


Fig. 160: Identifying Cylinder Head Bolts Tightening Steps
Courtesy of AMERICAN HONDA MOTOR CO., INC.

13. Install the **timing belt**.
14. Adjust the **valve clearance**.
15. Install the **cylinder head covers**.
16. Install the water passage (see **WATER PASSAGE REPLACEMENT**).
17. Install the injector bases (see **INJECTOR BASE REMOVAL AND INSTALLATION**).
18. Install the connector bracket (A) to the front cylinder head.

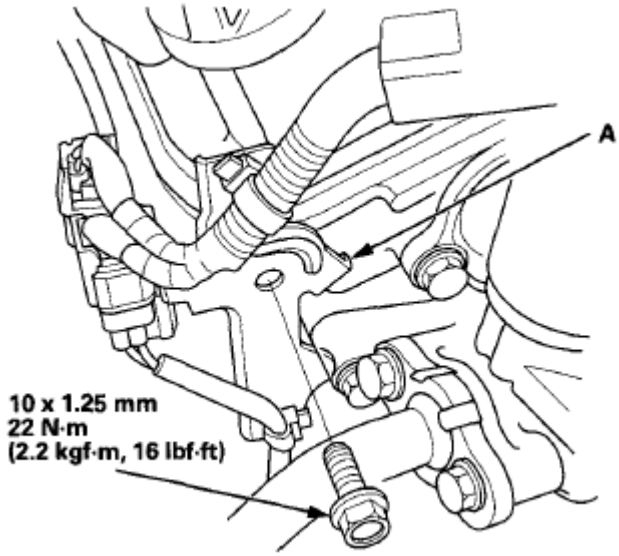


Fig. 161: Identifying Connector Bracket With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

19. Install the EVAP canister joint with the bracket (see step 9).
20. Install the engine mount control solenoid valve bracket (A) to the rear cylinder head.

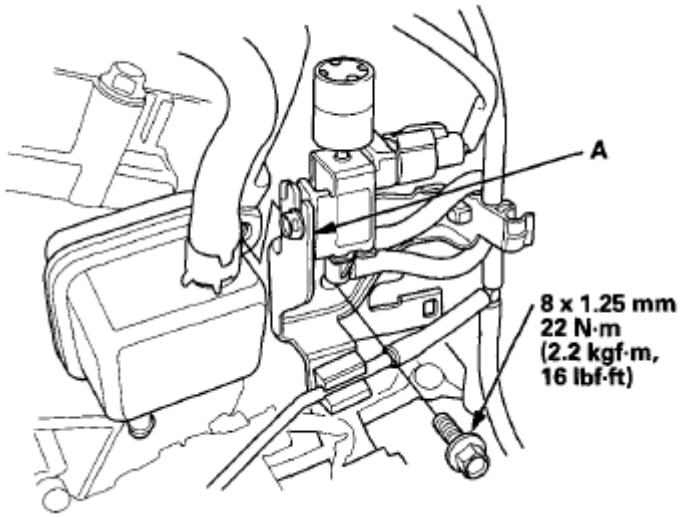


Fig. 162: Identifying Control Solenoid Valve Bracket With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

21. Connect the fuel feed hose (A), then install the quick-connect fitting cover (B) (see **FUEL LINE/QUICK-CONNECT FITTING INSTALLATION**).

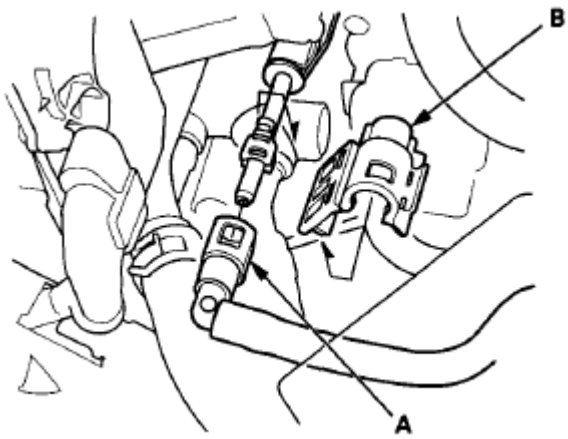


Fig. 163: Identifying Fuel Feed Hose And Quick-Connect Fitting Cover
Courtesy of AMERICAN HONDA MOTOR CO., INC.

22. Install the front warm up TWC (see **WARM UP TWC REMOVAL/INSTALLATION**) and the rear warm up TWC (see **REAR (BANK 1)**).
23. Connect the following engine wire harness connectors, and install the wire harness clamps to the cylinder head:
    - Six injector connectors
    - Knock sensor connector
    - ECT sensor 1 connector
    - Engine mount control solenoid valve connector
    - EGR valve connector

- CMP sensor connector
- Rocker arm oil control solenoid connector
- Rocker arm oil pressure switch connector
- Two A/F sensor connectors
- Two secondary HO2S connectors

24. Install the intake manifold (see **INSTALLATION**).
25. Install the alternator (see **INSTALLATION**).
26. Install the six ignition coils (see **IGNITION COIL AND SPARK PLUG REMOVAL/INSTALLATION**).
27. Do the battery terminal reconnection procedure (see **BATTERY TERMINAL DISCONNECTION AND RECONNECTION**).
28. After installation, check that all tubes, hoses, and connectors are installed correctly.
29. Inspect for fuel leaks. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode (do not operate the starter) so the fuel pump runs for about 2 seconds and pressurizes the fuel line. Repeat this operation three times, then check for fuel leakage at any point in the fuel line.
30. Refill the radiator with engine coolant, and bleed the air from the cooling system (see **COOLANT CHECK**).
31. Check for fluid leaks.
32. Do the ECM/PCM idle learn procedure (see **ECM/PCM IDLE LEARN PROCEDURE**).
33. Do the CKP pattern clear/CKP pattern learn procedure (see **CKP PATTERN CLEAR/CKP PATTERN LEARN**).
34. Inspect the idle speed (see **IDLE SPEED INSPECTION**).
35. Inspect the ignition timing (see **IGNITION TIMING INSPECTION**).
36. Install the engine compartment covers (see **ENGINE COMPARTMENT COVER REPLACEMENT**).

CAMSHAFT OIL SEAL INSTALLATION - IN CAR

Special Tools Required

Ball Joint Remover/Installer 07GAF-SD40330

1. Remove the **timing belt**.
2. Remove the camshaft pulley and the back cover (see step 18).
3. Remove the camshaft oil seal.
4. Clean and dry the camshaft oil seal housing.
5. Apply a light coat of new engine oil to the lip of the camshaft oil seal.
6. Using the ball joint remover/installer (A), a washer (B), and a 12 x 75 x 1.25 mm bolt (C), press in the new camshaft oil seal (D) squarely into the cylinder head to the specified installed height.

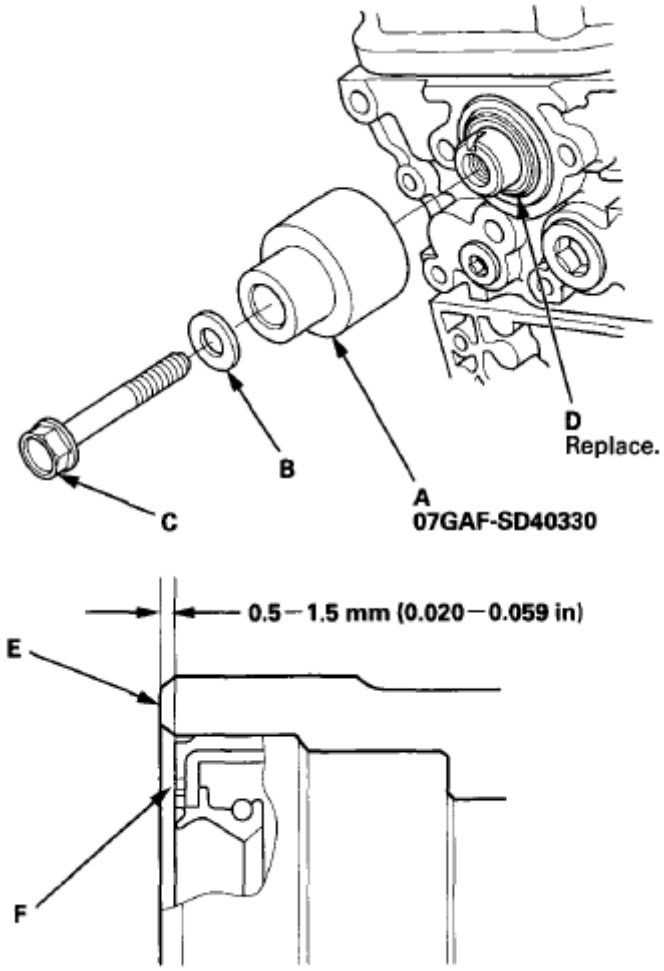


Fig. 164: Identifying Ball Joint Remover/Installer, Camshaft Oil Seal And Distance Between Cylinder Head Surface And Oil Seal
Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Measure the distance between the cylinder head surface (E) and the oil seal (F).

   Oil Seal Installed Height 0.5-1.5 mm (0.020-0.059 in)

8. Clean the excess oil off the camshaft, and check that the oil seal is not distorted.
9. Apply new engine oil to the threads of the camshaft pulley mounting bolt. Install the back cover, then install the camshaft pulley:
   - Front (see step 15)
   - Rear (see step 15)
10. Install the **timing belt**.

SEALING BOLT INSTALLATION

NOTE: When installing the sealing bolts (A), always use a new washers (B).

FRONT

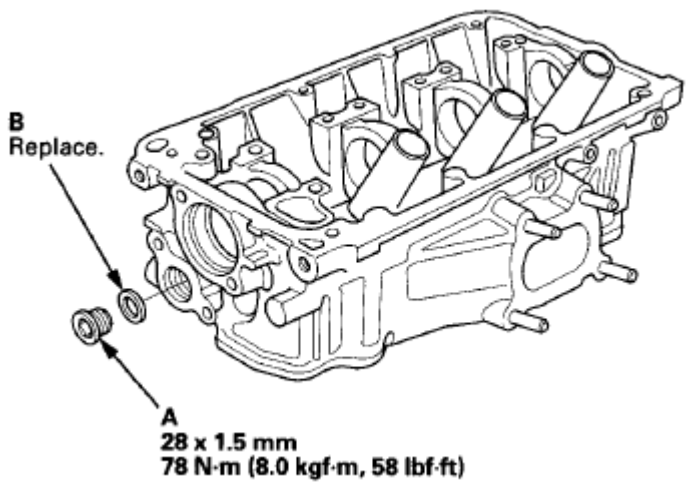


Fig. 165: Identifying Washers And Sealing Bolts With Torque Specification (Front)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

REAR

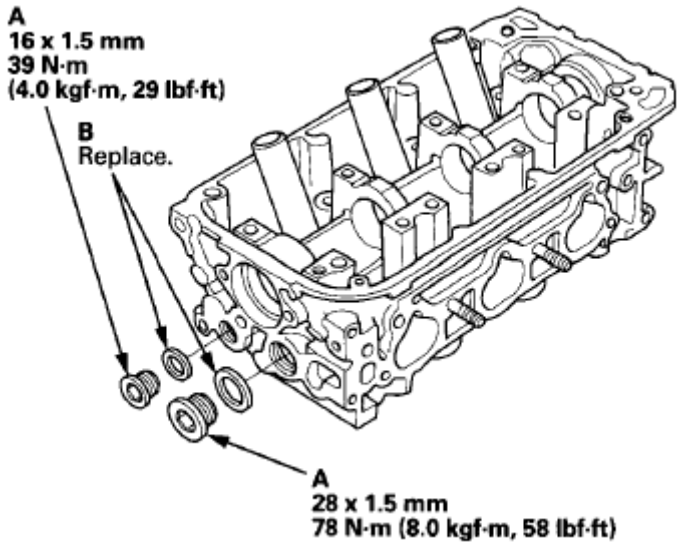


Fig. 166: Identifying Washers And Sealing Bolts With Torque Specification (Rear)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2012 ENGINE

Engine Assembly - TL

ENGINE REMOVAL

Special Tools Required

- 2008 V6 Attachment Arm SIL02C000033*
- Engine Support Hanger, A and Reds AAR-T1256*
- Engine Hanger Balance Bar VSB02C000019*
- Subframe Adapter VSB02C000016*

*: Available through the Acura Tool and Equipment Program, 888-424-6857.

NOTE:

- **Use fender covers to avoid damaging painted surfaces.**
- **To avoid damaging the wiring and terminals, unplug the wiring connectors carefully while holding the connector portion.**
- **Mark all wiring and hoses to avoid misconnection. Also, be sure that they do not contact other wiring or hoses, or interfere with other parts.**

1. Disconnect the support struts from both sides of the pivot ball (bolted to the hood). Secure the hood in a vertical position. Install the right side pivot ball into the lower threaded hole.

NOTE: Do not attempt to close the hood with the support strut in the vertical position, as it will damage the support strut and hood.

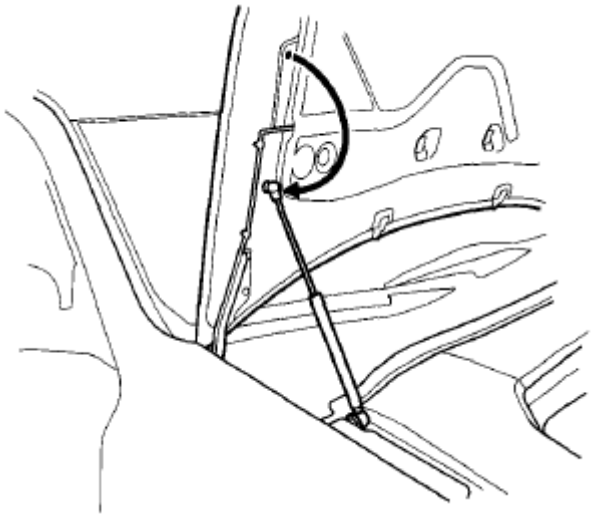


Fig. 1: Installing Right Side Pivot Ball Into Lower Threaded Hole
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Relieve the fuel pressure (see **FUEL PRESSURE RELIEVING**).
3. Remove the engine compartment covers (see **ENGINE COMPARTMENT COVER REPLACEMENT**).
4. Remove the air intake duct splash separator.

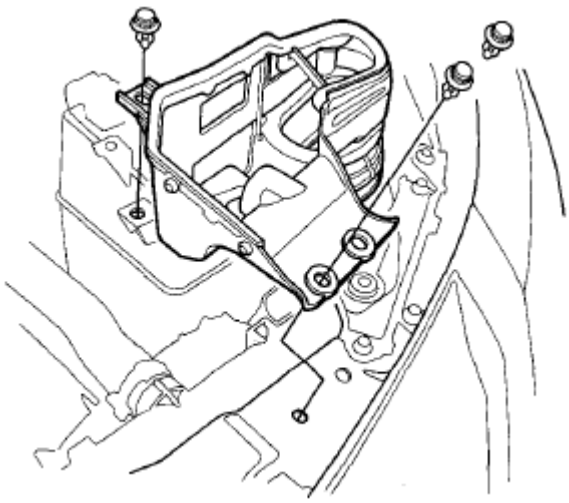


Fig. 2: Identifying Air Intake Duct Splash Separator And Related Components
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Do the battery removal procedure (see **BATTERY REMOVAL AND INSTALLATION**).
6. Remove the air cleaner (see **THROTTLE BODY CLEANING**).
7. Remove the harness clamp (A) from the battery base (B).

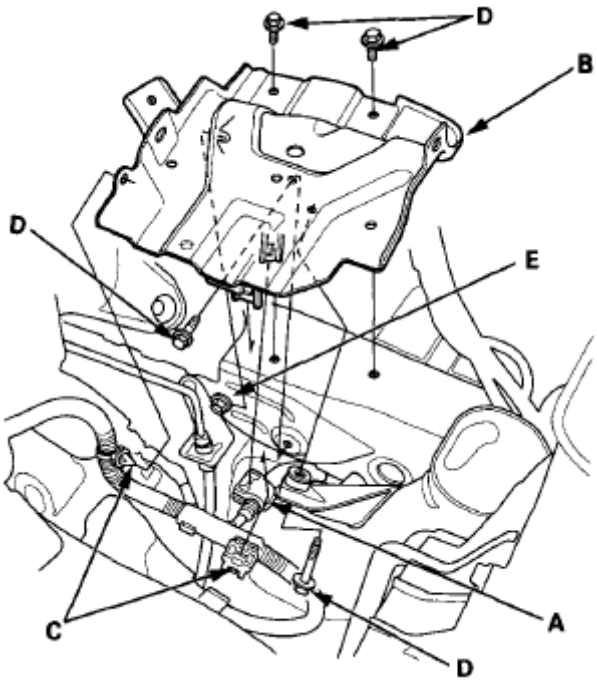


Fig. 3: Exploded View Of Engine Assembly And Related Parts
Courtesy of AMERICAN HONDA MOTOR CO., INC.

8. M/T model: Remove the harness clamps (C) from the battery base.
9. Remove the bolts (D), and loosen the bolt (E), then remove the battery base.
10. M/T model: Remove the harness clamp (A) and the ground cable (B), then disconnect the positive starter cable (C).

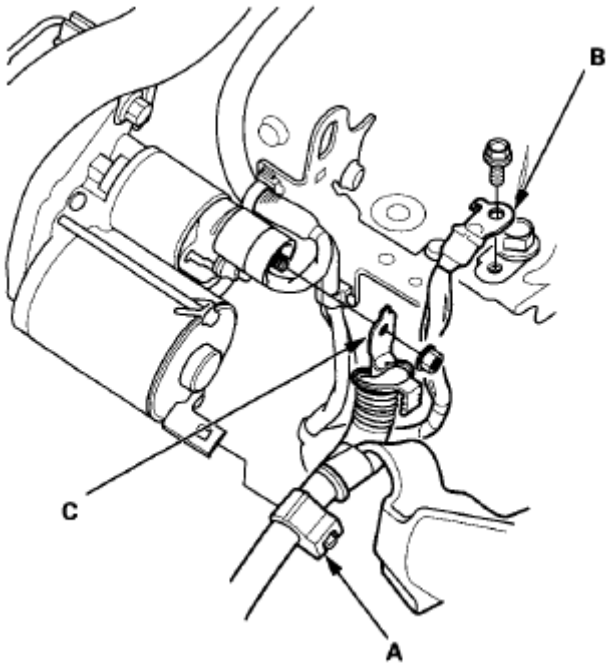


Fig. 4: Identifying Harness Clamp, Ground Cable And Positive Starter Cable
Courtesy of AMERICAN HONDA MOTOR CO., INC.

11. A/T model: Remove the harness clamps (A), then disconnect the positive starter cable (B).

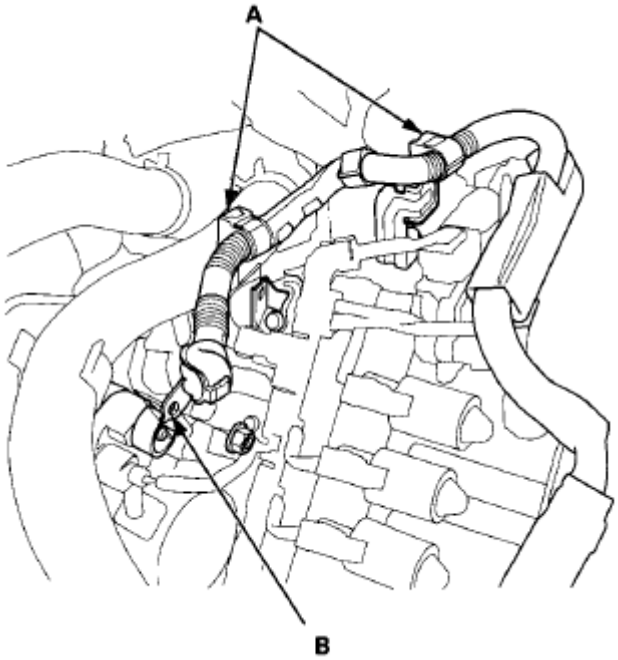


Fig. 5: Identifying Harness Clamp And Positive Starter Cable
Courtesy of AMERICAN HONDA MOTOR CO., INC.

12. Remove the strut brace (see **FRAME BRACE REPLACEMENT**).
13. Disconnect the battery cable (A) from the under-hood fuse/relay box.

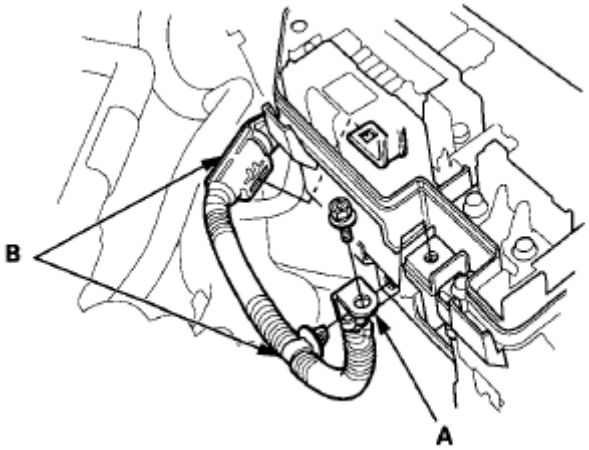


Fig. 6: Identifying Battery Cable From Under-Hood Fuse/Relay Box And Harness Clamp
Courtesy of AMERICAN HONDA MOTOR CO., INC.

14. Remove the harness clamps (B).
15. Remove the harness clamp (A), then disconnect the harness connectors (B).

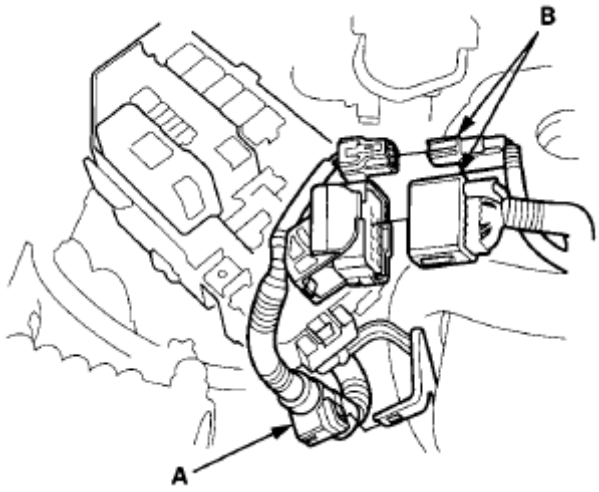


Fig. 7: Identifying Harness Clamp And Connectors
Courtesy of AMERICAN HONDA MOTOR CO., INC.

16. Remove the harness clamp (A), then disconnect the ECM/PCM connectors (B).

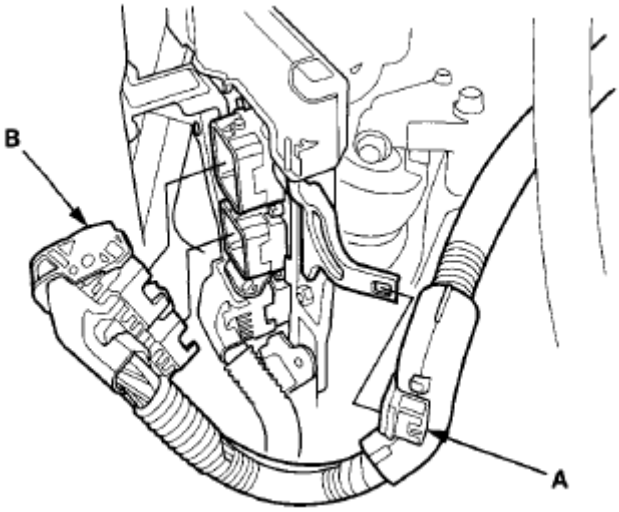


Fig. 8: Identifying Harness Clamp And ECM/PCM Connectors
Courtesy of AMERICAN HONDA MOTOR CO., INC.

17. Remove the quick-connect fitting cover (A), then disconnect the fuel feed hose (B) (see **FUEL LINE/QUICK-CONNECT FITTING REMOVAL**).

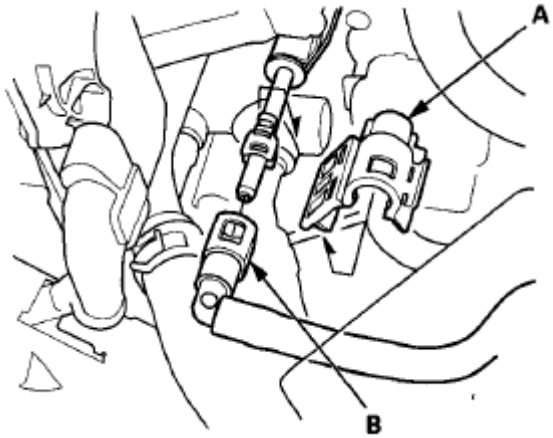


Fig. 9: Identifying Quick-Connect Fitting Cover And Fuel Feed Hose
Courtesy of AMERICAN HONDA MOTOR CO., INC.

18. Disconnect the brake booster vacuum hose (A) and the EVAP canister hose (B).

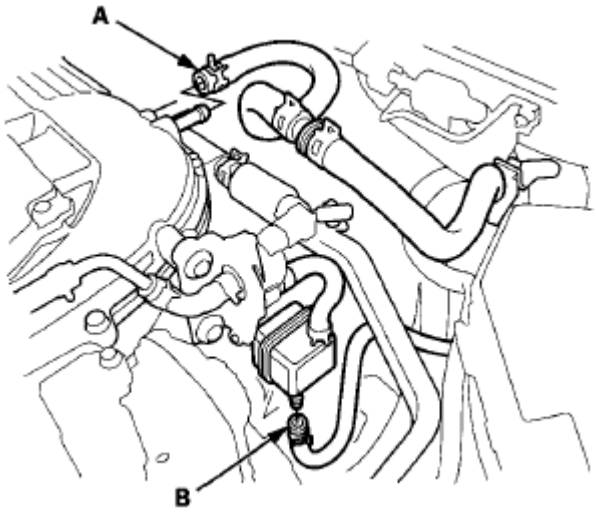


Fig. 10: Identifying Vacuum Hose And EVAP Canister Hose
Courtesy of AMERICAN HONDA MOTOR CO., INC.

19. M/T model: Remove the three bolts securing the shift cable holder, then remove the shift cable and the select cable (see step 23 under **TRANSMISSION REMOVAL**). Do not bend the cables excessively.
20. M/T model: Remove the clutch slave cylinder and the clutch line bracket mounting nut (see step 24 under **TRANSMISSION REMOVAL**). Do not operate the clutch pedal once the slave cylinder has been removed.
21. A/T model: Remove the shift cable (see **SHIFT CABLE REPLACEMENT**). Do not bend the shift cable excessively.
22. Remove the drive belt (see **DRIVE BELT REPLACEMENT**).
23. Disconnect the EPS connectors (A).

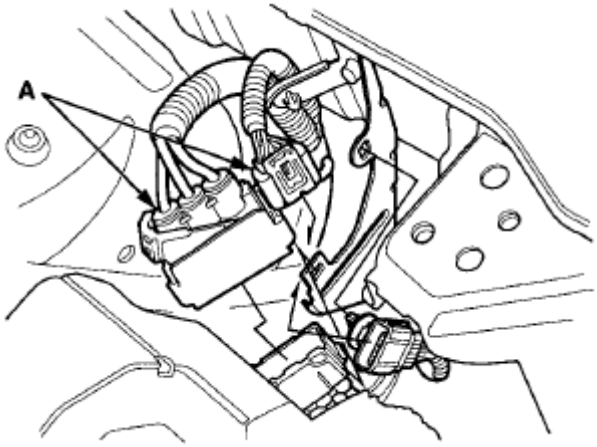


Fig. 11: Identifying EPS Connectors
Courtesy of AMERICAN HONDA MOTOR CO., INC.

24. Remove the steering joint cover (A).

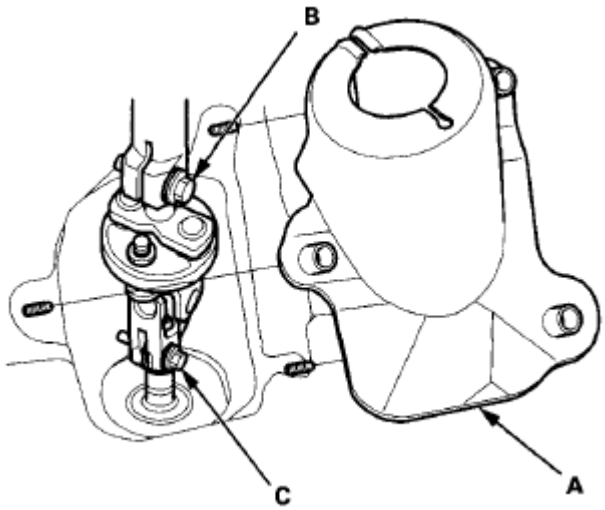


Fig. 12: Identifying Steering Joint Cover
Courtesy of AMERICAN HONDA MOTOR CO., INC.

25. Loosen the upper steering joint bolt (B) and the lower steering bolt (C).
26. Center the steering wheel spokes, and install a commercially available steering wheel holder tool (A).

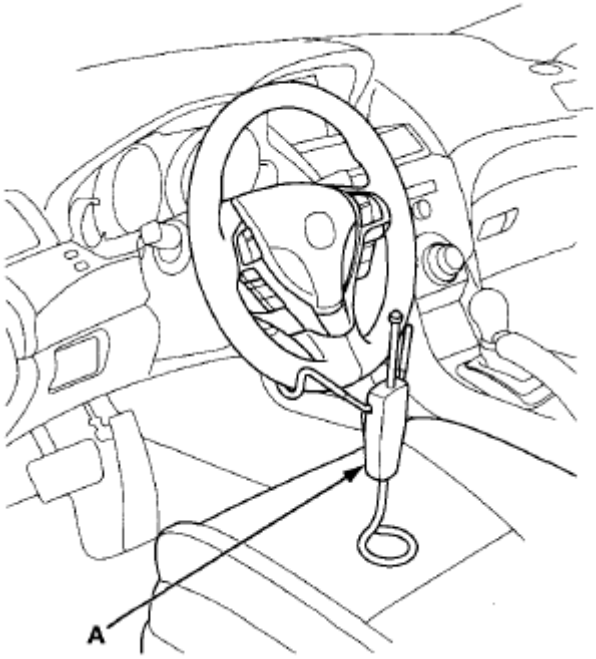


Fig. 13: Identifying Steering Wheel Holder Tool
Courtesy of AMERICAN HONDA MOTOR CO., INC.

27. Remove the lower steering joint bolt (A). Disconnect the steering joint (B) by sliding the steering joint into the column shaft (C). Tighten the upper steering joint bolt (D) to hold the steering joint in place.

NOTE: Do not disconnect the steering joint from the column shaft.

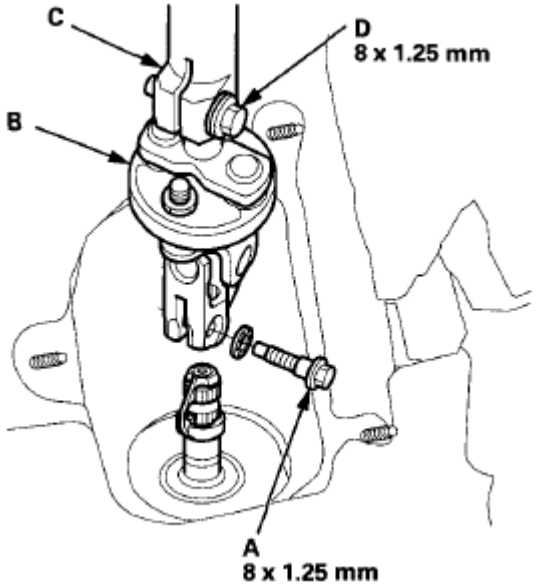


Fig. 14: Identifying Steering Joint, Column Shaft, Upper And Lower Steering Joint Bolt
Courtesy of AMERICAN HONDA MOTOR CO., INC.

28. Remove the center guide (A) (if equipped) from the top of the pinion shaft (B), and discard it.

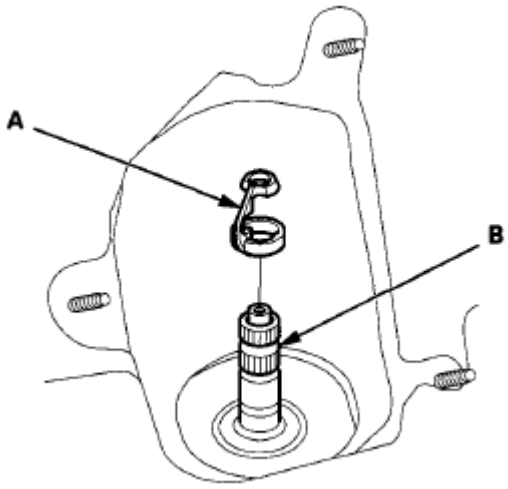


Fig. 15: Identifying Center Guide And Pinion Shaft
Courtesy of AMERICAN HONDA MOTOR CO., INC.

29. Wrap vinyl tape over the splines on the pinion shaft.
30. Wait until the engine is cool, then carefully remove the radiator cap.
31. Raise the vehicle on the lift.
32. Remove the front wheels.
33. Remove the front splash shield (see **FRONT SPLASH SHIELD REPLACEMENT**).
34. Loosen the drain plug in the radiator, and drain the engine coolant (see **COOLANT CHECK**).
35. Drain the transmission fluid:
    - Manual transmission (see **TRANSMISSION FLUID INSPECTION AND REPLACEMENT**)
    - Automatic transmission (see **ATF REPLACEMENT**)
36. Drain the engine oil (see **ENGINE OIL LEVEL CHECK**).
37. Remove the damper fork (see step 4 under **DAMPER/SPRING REMOVAL AND INSTALLATION**).
38. Separate the tie-rod end ball joints from the knuckles (see step 13 under **RACK END REMOVAL AND INSTALLATION**).
39. Separate the knuckles from the suspension lower arms (see step 7 under **LOWER ARM REMOVAL/INSTALLATION**).
40. Remove the driveshafts (see **DRIVESHAFT INSPECTION**). Coat all precision-finished surfaces with new engine oil. Tie plastic bags over the driveshaft ends.
41. Remove the front subframe stiffener.

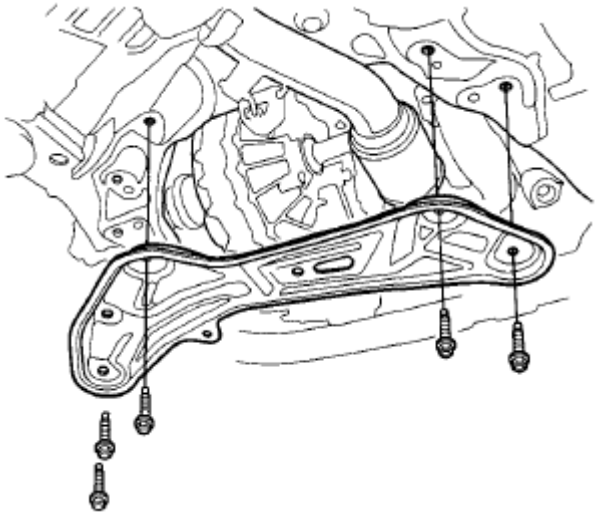


Fig. 16: Identifying Front Subframe Stiffener With Mounting Bolts
Courtesy of AMERICAN HONDA MOTOR CO., INC.

42. Remove exhaust pipe A. With SH-AWD

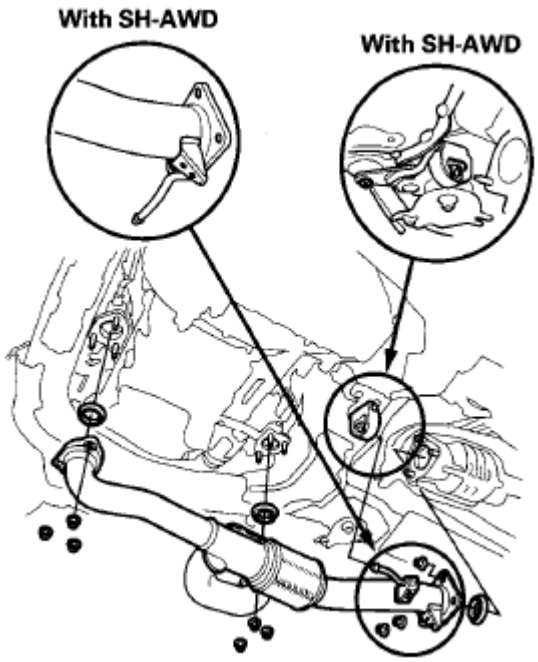


Fig. 17: Identifying Exhaust Pipe And Related Components
Courtesy of AMERICAN HONDA MOTOR CO., INC.

43. With SH-AWD: Remove the propeller shaft (see **PROPELLER SHAFT REMOVAL**).
44. With SH-AWD: Remove the transfer assembly:
    - Manual transmission (see **TRANSFER ASSEMBLY FLUID INSPECTION AND REPLACEMENT**)

- Automatic transmission (see **TRANSFER ASSEMBLY REMOVAL**)

45. A/T model: Disconnect the ATF cooler hoses from the transmission, then plug the ATF cooler hoses and the lines (see step 44 under **TRANSMISSION REMOVAL**).
46. Lower the vehicle on the lift.
47. Disconnect the upper radiator hose (A) and the lower radiator hose (B).

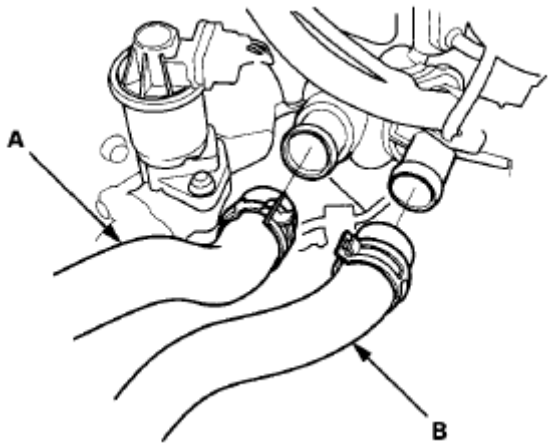


Fig. 18: Identifying Upper And Lower Radiator Hose
Courtesy of AMERICAN HONDA MOTOR CO., INC.

48. Disconnect the heater hoses.

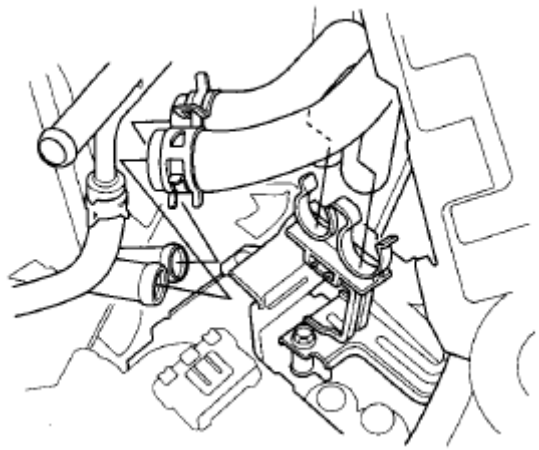


Fig. 19: Identifying Radiator Hoses And Related Components
Courtesy of AMERICAN HONDA MOTOR CO., INC.

49. Remove the radiator (see **RADIATOR REPLACEMENT**).
50. Disconnect the A/C compressor clutch connector (A), and remove the harness clamp (B).

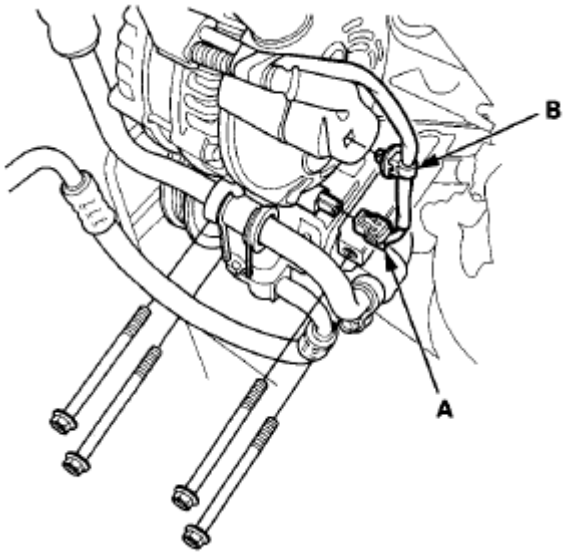


Fig. 20: Identifying A/C Compressor Clutch Connector And Harness Clamp With Mounting Bolts
Courtesy of AMERICAN HONDA MOTOR CO., INC.

51. Remove the A/C compressor without disconnecting the A/C hoses. Do not bend the A/C hoses excessively.

NOTE: Hang the A/C compressor with a wire tie.

52. Remove the bolt (A) securing the connector bracket (B) from the front cylinder head; use the bracket bolt hole (C) to attach the engine hanger balance bar front arm.

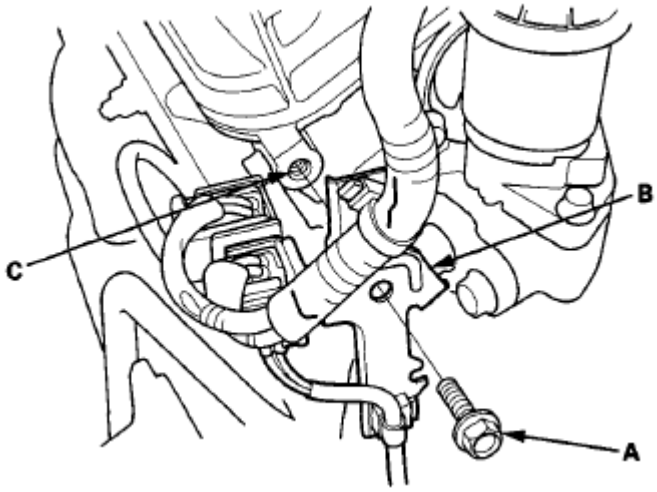


Fig. 21: Identifying Connector Bracket, Bracket Bolt Hole And Bolt
Courtesy of AMERICAN HONDA MOTOR CO., INC.

53. Remove the harness clamp (A), then remove the bolt (B) securing the engine mount control solenoid valve bracket (C) from the rear cylinder head; use the bracket bolt hole (D) to attach the 2008 V6

attachment arm.

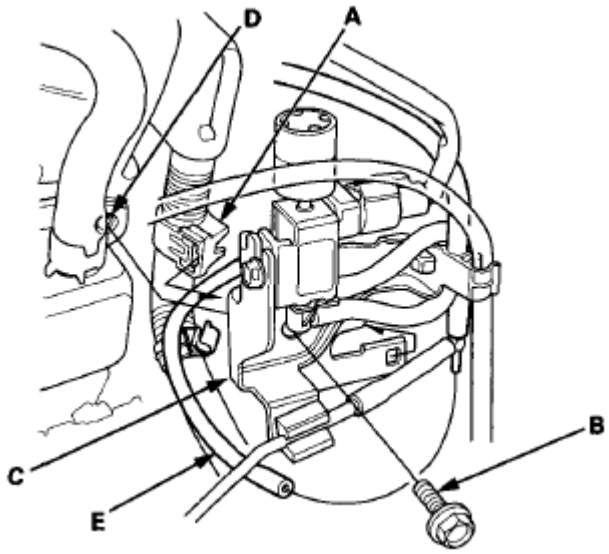


Fig. 22: Identifying Solenoid Valve Bracket, Harness Clamp, Bracket Bolt Hole, Vacuum Hose And Bolt
Courtesy of AMERICAN HONDA MOTOR CO., INC.

54. A/T model: Disconnect the vacuum hose (E).
55. Install the engine hanger balance bar (VSB02C000019). Attach the front arm (A) to the front cylinder head with a 10 mm (0.39 in) spacer (B) and a 10 x 1.25 mm bolt (C). Remove the rear arm from the engine hanger balance bar, then install the 2008 V6 attachment arm (SIL02C000033). Attach the 2008 V6 attachment arm to the rear cylinder head with a 10 mm (0.39 in) spacer (D) and an 8 x 1.25 mm bolt (E).

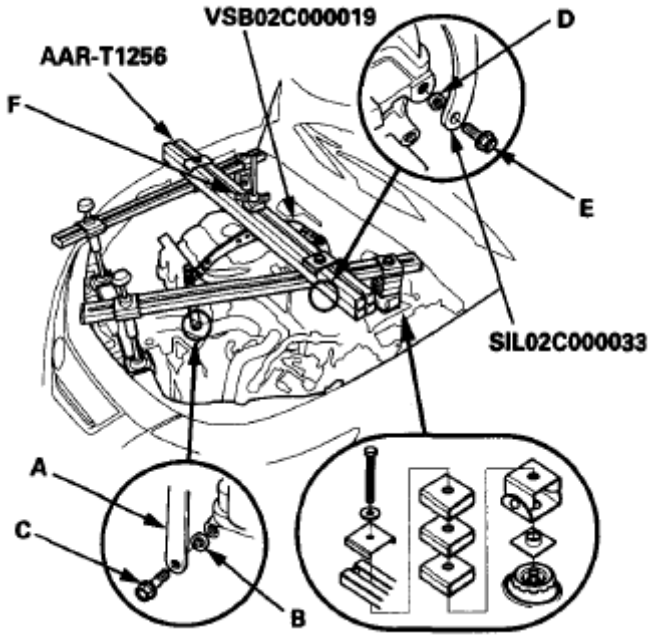


Fig. 23: Identifying Front Arm, Spacer, Bolts And Wing Nut
Courtesy of AMERICAN HONDA MOTOR CO., INC.

56. Install the engine support hanger (AAR-T1256) onto the vehicle as shown, and attach the hook to the slotted hole in the engine hanger balance bar. Tighten the wing nut (F) by hand, and lift and support the engine/transmission.

NOTE:

- **Be careful when working around the windshield.**
- **AAR-T1256 two sets required for stacking two cross section bars.**

57. M/T model: Remove the front engine mount (see **FRONT ENGINE MOUNT REMOVAL AND INSTALLATION**).
58. A/T model: Disconnect the vacuum hose (A) and remove the front engine mount stop (B), then remove the front engine mount bolt (C).

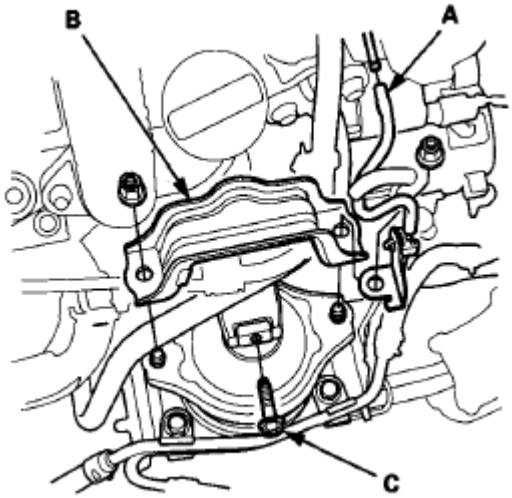


Fig. 24: Identifying Vacuum Hose, Front Engine Mount Stop And Engine Mounting Bolt
Courtesy of AMERICAN HONDA MOTOR CO., INC.

59. M/T model: Remove the rear engine mount bolt (A).

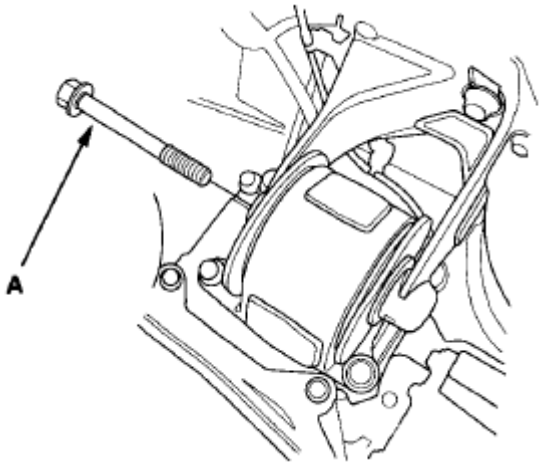


Fig. 25: Identifying Rear Engine Mount Bolt
Courtesy of AMERICAN HONDA MOTOR CO., INC.

60. A/T model: Remove the rear engine mount stop (A), then remove the rear engine mount bolt (B).

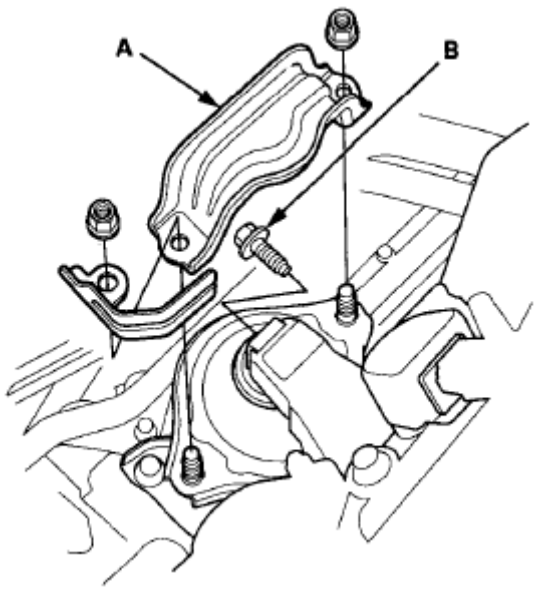


Fig. 26: Identifying Rear Engine Mount Stop And Engine Mounting Bolts
Courtesy of AMERICAN HONDA MOTOR CO., INC.

61. Raise the vehicle on the lift.
62. Loosen the subframe middle mount bolts.

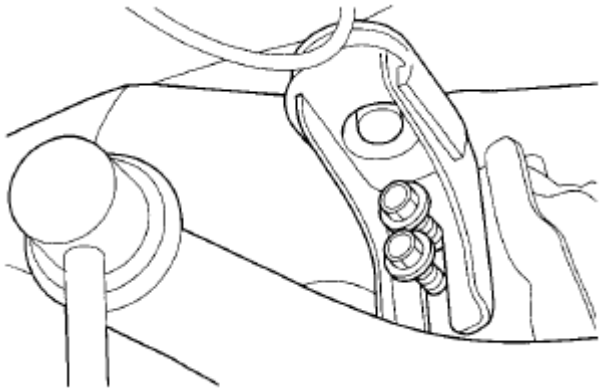


Fig. 27: Identifying Subframe Middle Mount Bolts
Courtesy of AMERICAN HONDA MOTOR CO., INC.

63. Remove the lower transmission mount nuts (A).

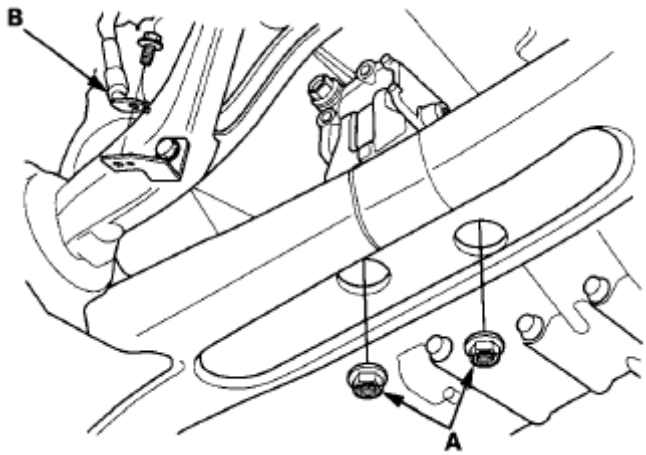


Fig. 28: Identifying Ground Cable And Lower Transmission Mount Nuts
Courtesy of AMERICAN HONDA MOTOR CO., INC.

64. A/T model: Remove the ground cable (B).
65. Attach the subframe adapter (VSB02C000016) to the front subframe by looping the belt (A) over the front of the subframe (B), then secure the belt with its stop (C).

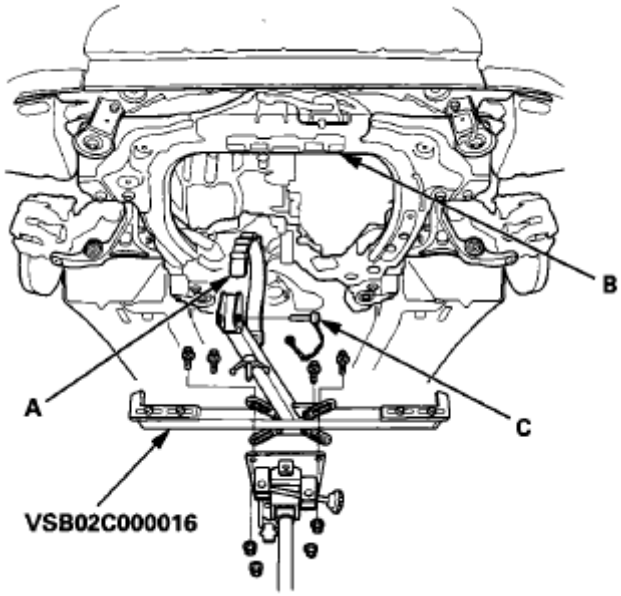


Fig. 29: Identifying Subframe, Subframe Adapter, Belt And Belt Stop
Courtesy of AMERICAN HONDA MOTOR CO., INC.

66. Raise the transmission jack and line up the slots in the subframe adapter arms with the bolt holes on the jack base, then securely attach them with four bolts.
67. Remove the four 12 x 1.25 mm bolts (A) securing the subframe stiffeners (B), the four subframe mounting bolts (C), and the stiffeners, then lower the front subframe (D).

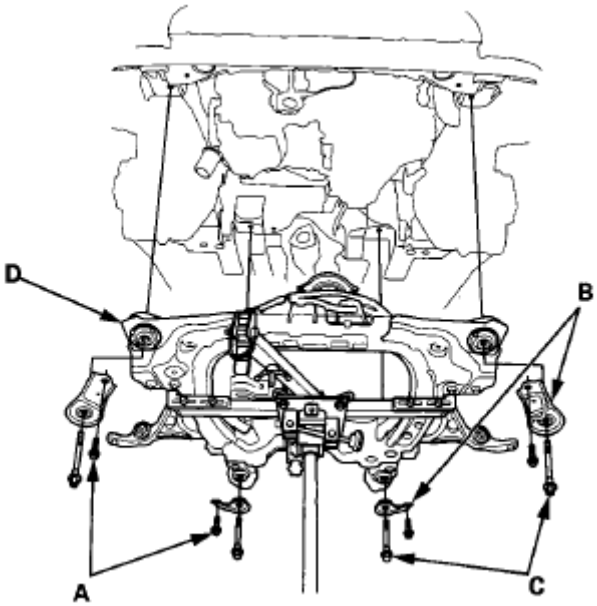


Fig. 30: Identifying Front Subframe, Subframe Stiffeners, Subframe Mounting Bolts
Courtesy of AMERICAN HONDA MOTOR CO., INC.

68. Lower the vehicle on the lift.

69. Attach a chain hoist (A) to the engine hanger (B) and the transmission hanger (C), then lift the engine/transmission until it's securely supported by the chain hoist and remove the engine support hanger, the engine hanger balance bar, and the 2008 V6 attachment arm.

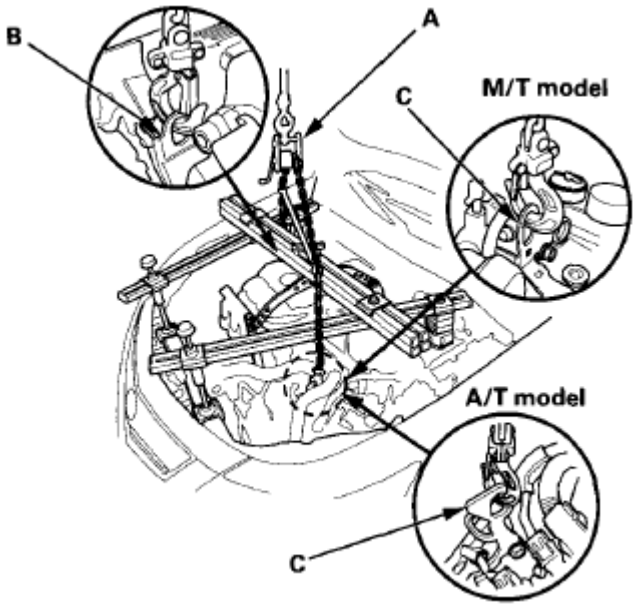


Fig. 31: Identifying Chain Hoist, Engine Hanger And Transmission Hanger
Courtesy of AMERICAN HONDA MOTOR CO., INC.

70. Remove the mounting bolts from the upper half of the side engine mount bracket.

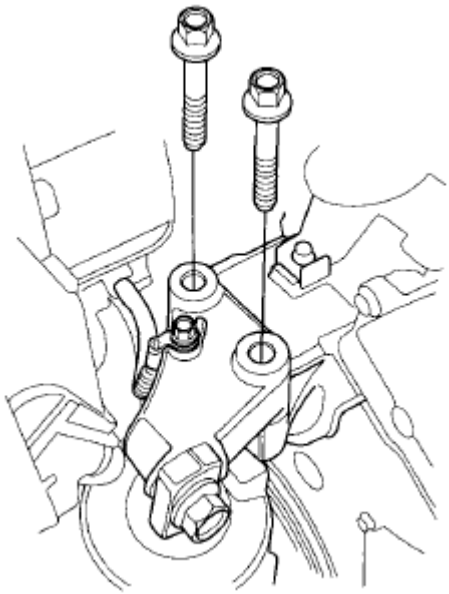


Fig. 32: Identifying Mounting Bolts Of Side Engine Mount Bracket
Courtesy of AMERICAN HONDA MOTOR CO., INC.

71. Remove the upper transmission mount bracket mounting bolts.

NOTE: Do not remove the bolt (A) from the. upper transmission mount. If the bolt is removed, the upper transmission mount must be replaced as an assembly.

M/T model

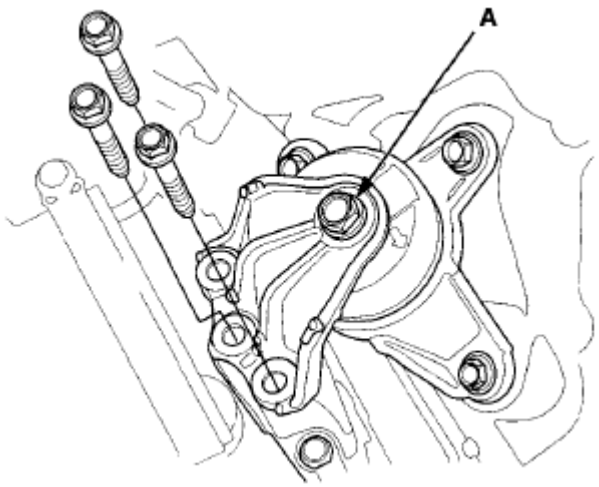


Fig. 33: Identifying Bracket Mounting Bolts (M/T Model)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

A/T model

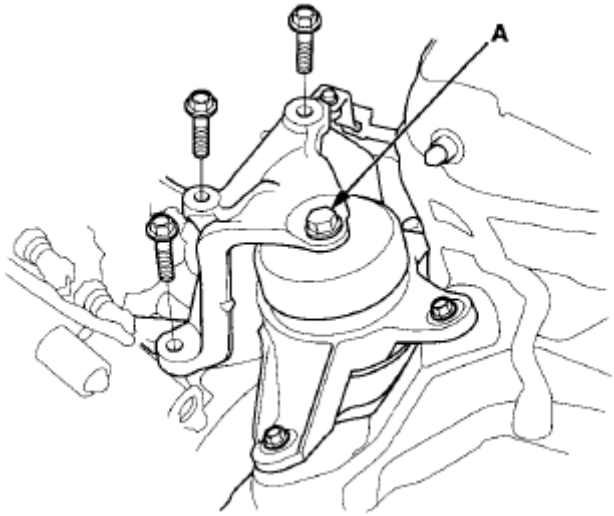


Fig. 34: Identifying Bracket Mounting Bolts (A/T Model)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

72. Check that the engine/transmission is completely free of the vacuum hoses, the fuel hoses, the coolant

hoses, and the electrical wiring.

73. Slowly lower the engine/transmission about 150 mm (6 in). Check once again that all the hoses and the electrical wiring are disconnected and free from the engine/transmission, then lower it all the way and support it.
74. Disconnect the chain hoist from the engine/transmission.
75. Raise the vehicle, and remove the engine/transmission from under the vehicle.

ENGINE INSTALLATION

Special Tools Required

- Engine Support Hanger, A and Reds AAR-T1256*
- Engine Hanger Balance Bar VSB02C000019*
- 2008 V6 Attachment Arm SIL02C000033*
- Subframe Adapter VSB02C000016*

*: Available through the Acura Tool and Equipment Program, 888-424-6857.

1. Install the engine mount brackets and the accessory brackets and tighten their bolts to the specified torque.

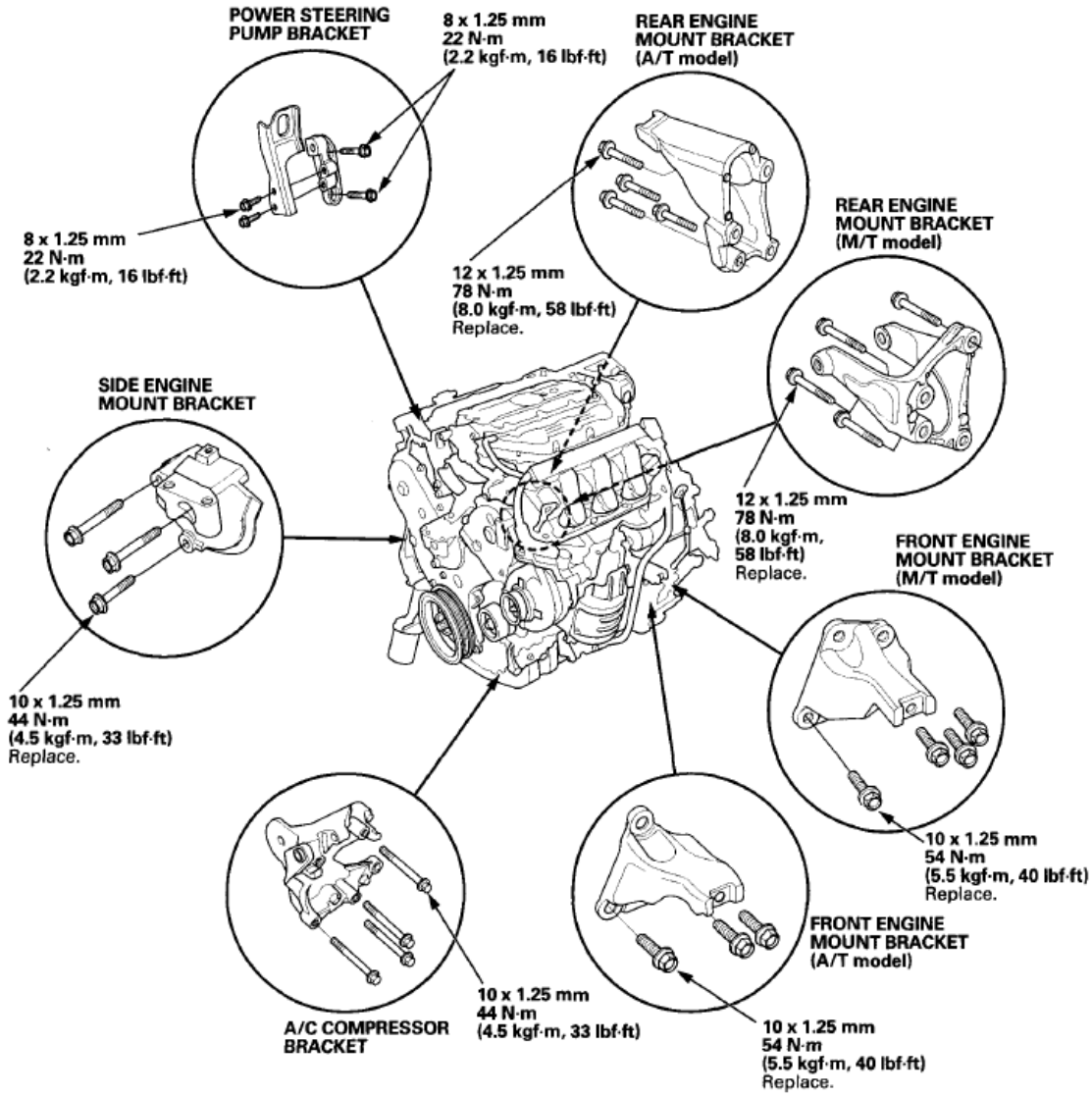


Fig. 35: Identifying Engine Mount Brackets And Accessory Brackets With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Position the engine/transmission under the vehicle. Be sure that they are properly aligned. Carefully lower the vehicle until the engine/transmission are properly positioned in the engine compartment. Make sure the vehicle is not resting on any part of the engine/transmission. Support the engine/transmission with a chain hoist (A) and carefully raise the engine/transmission into place.

NOTE: Reinstall the mounting bolts/support nuts in the sequence given in the following steps. Failure to follow this sequence may cause excessive noise and vibration, and reduce engine mount life.

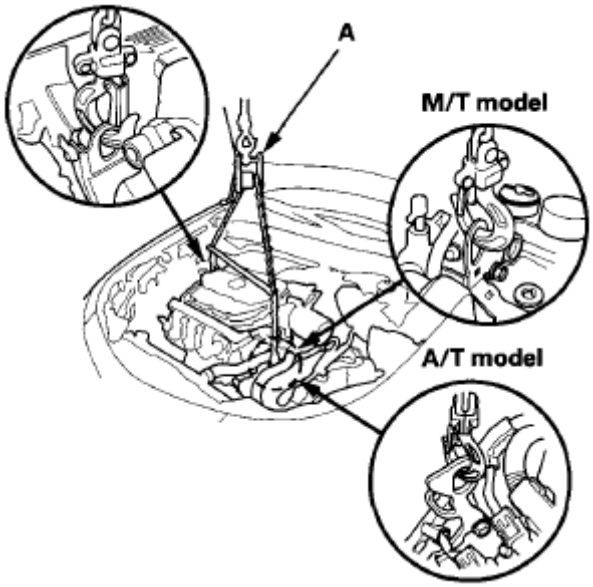


Fig. 36: Identifying Chain Hoist With Related Components
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Install the new mounting bolts into the upper half of the side engine mount bracket. Tighten the bolts to the specified torque.

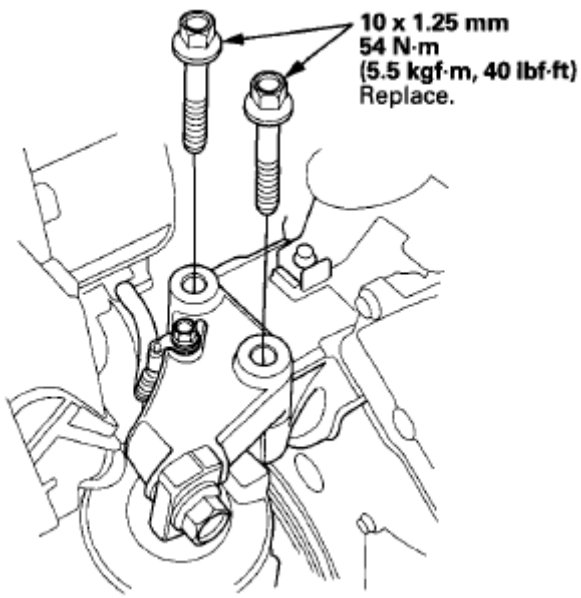


Fig. 37: Identifying Mounting Bolts Into Upper Half Of Side Engine Mount Bracket With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Tighten the new upper transmission mount bracket mounting bolts to the specified torque.

NOTE: **If bolt (A) was removed by mistake during removal, the upper transmission mount bracket must be replaced as an assembly.**

M/T model

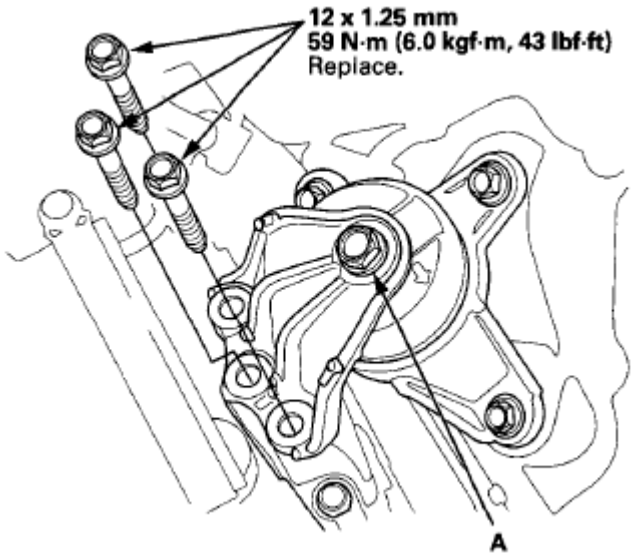


Fig. 38: Identifying Bracket Mounting Bolts (M/T Model) With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

A/T model

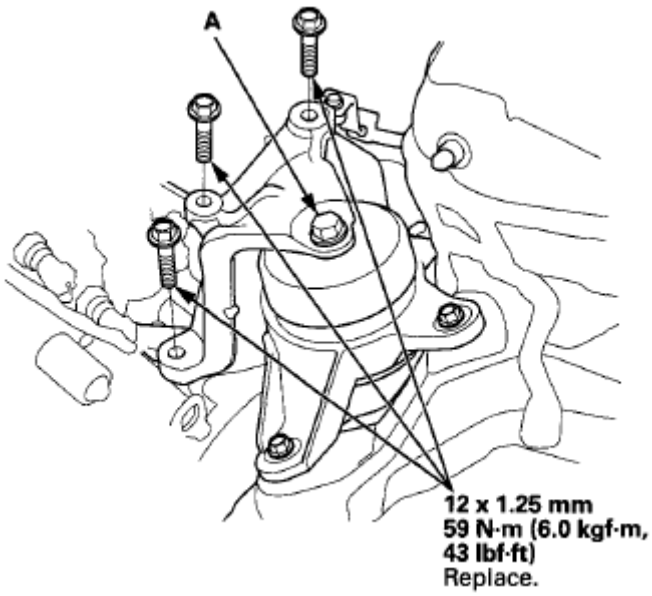


Fig. 39: Identifying Bracket Mounting Bolts (A/T Model) With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Install the engine hanger balance bar (VSB02C000019). Attach the front arm (A) to the front cylinder head with a 10 mm (0.39 in) spacer (B) and a 10 x 1.25 mm bolt (C). Remove the rear arm from the engine hanger balance bar, then install the 2008 V6 attachment arm (SIL02C000033). Attach the 2008 V6 attachment arm to the rear cylinder head with a 10 mm (0.39 in) spacer (D) and an 8 x 1.25 mm bolt (E).

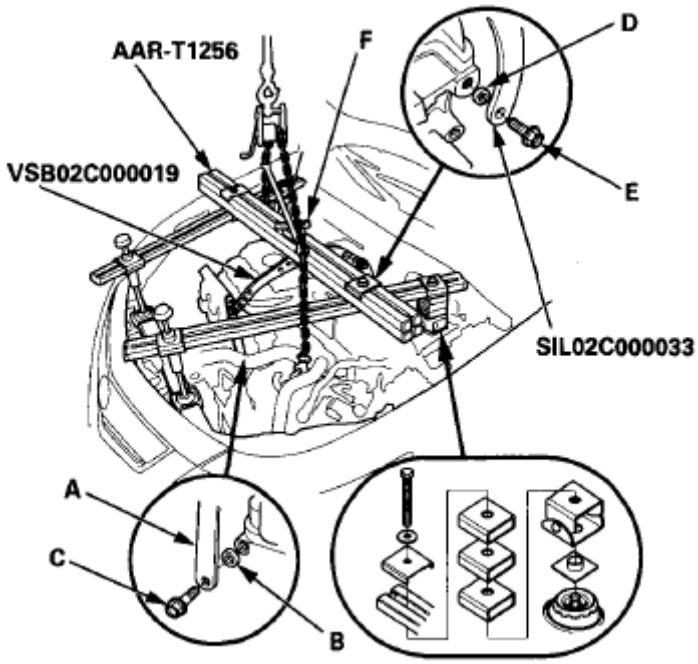


Fig. 40: Identifying Front Arm, Spacers And Bolts Of Engine Hanger Balance Bar
Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Install the engine support hanger (AAR-T1256) onto the vehicle as shown, and attach the hook to the slotted hole in the engine hanger balance bar. Tighten the wing nut (F) by hand, and lift and support the engine/transmission.

NOTE:

- **Be careful when working around the windshield.**
- **AAR-T1256 two sets required for stacking additional cross section bar.**

7. Remove the chain hoist, then raise the vehicle on the lift.
8. Attach the subframe adapter (VSB02C000016) to the subframe by looping the belt (A) over the front of the front subframe (B), then secure the belt with its stop (C).

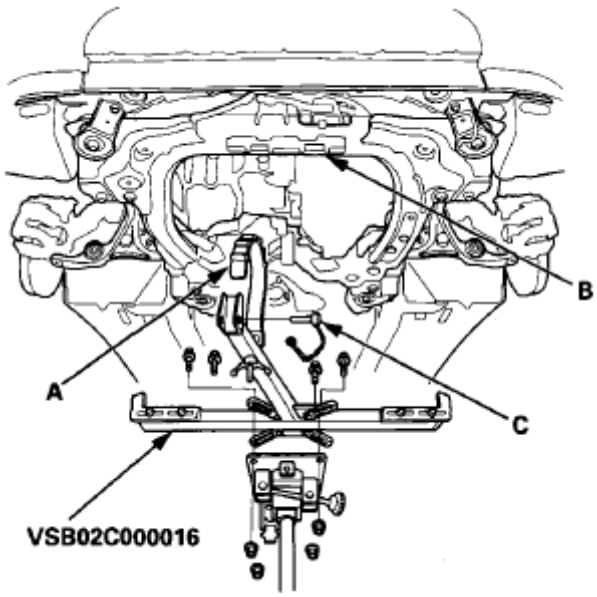


Fig. 41: Identifying Front Subframe, Belt And Belt Stop
Courtesy of AMERICAN HONDA MOTOR CO., INC.

9. Line up the slots in the subframe adapter arms with the bolt holes on the jack base, then securely attach them with four bolts, then raise the front subframe up to the body.
10. Loosely install the new subframe mounting bolts (four) (A), the 12 x 1.25 mm bolts (two) (B), the new 12 x 1.25 mm (two) (C), and the stiffeners (D).

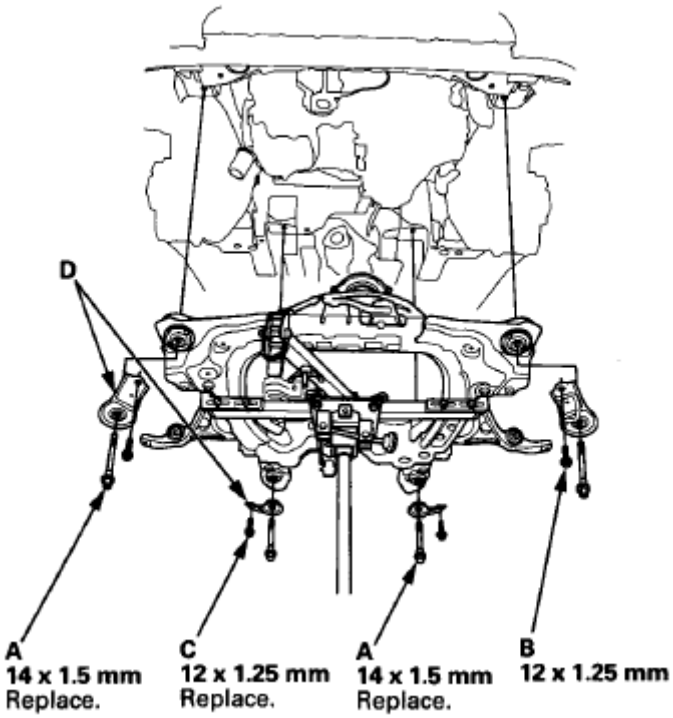


Fig. 42: Identifying Subframe Mounting Stiffeners And Bolts

Courtesy of AMERICAN HONDA MOTOR CO., INC.

11. Align the front subframe with the subframe alignment pin (see **FRONT SUBFRAME ALIGNMENT**).
12. Remove the transmission jack and the front subframe adapter.
13. Tighten the bolts securing the subframe middle mount.

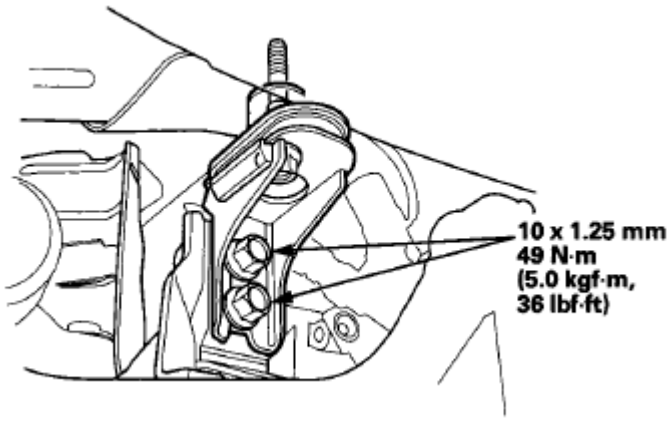


Fig. 43: Identifying Subframe Middle Mount & Bolts With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

14. Tighten the lower transmission mount nuts (A).

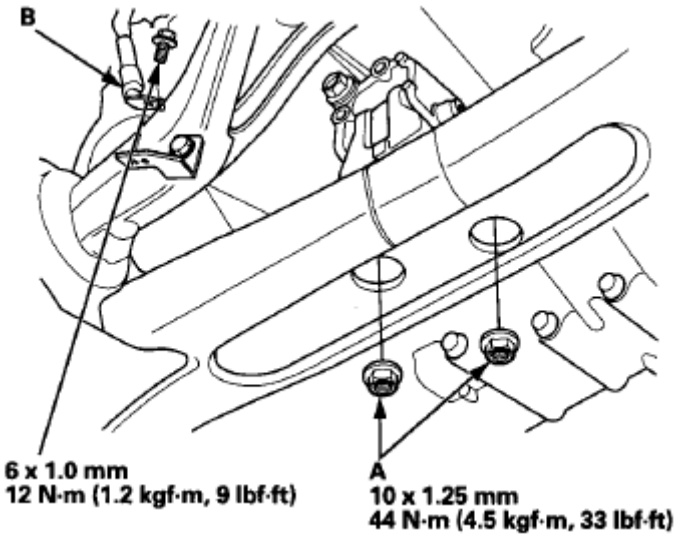


Fig. 44: Identifying Lower Transmission Mount With Nuts And Ground Cable With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

15. A/T model: Install the ground cable (B).
16. Lower the vehicle on the lift.
17. Remove the engine support hanger, the engine hanger balance bar, and the 2008 V6 attachment arm.

18. M/T model: Install the front engine mount (see **FRONT ENGINE MOUNT REMOVAL AND INSTALLATION**).
19. A/T model: Tighten the new front engine mount bolt (A), then install the front engine mount stop (B) and connect the vacuum hose (C).

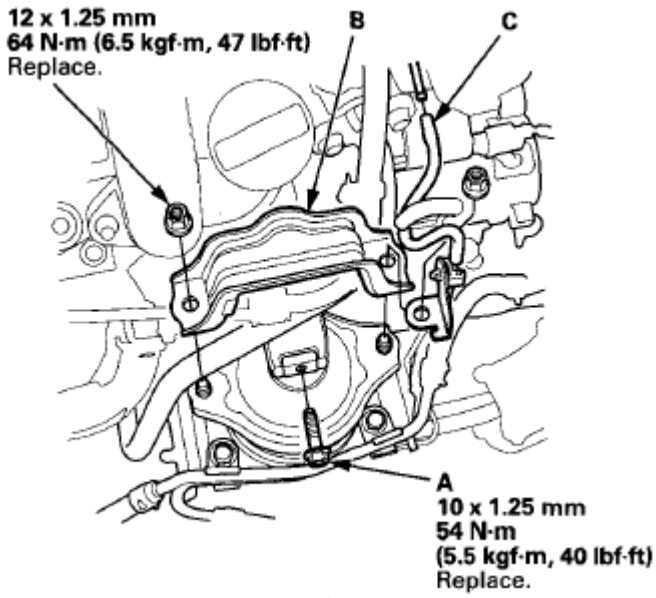


Fig. 45: Identifying Vacuum Hose, Front Engine Mounting Bolt And Engine Mount Stop (A/T Model) With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

20. M/T model: Tighten the new rear engine mount bolt.

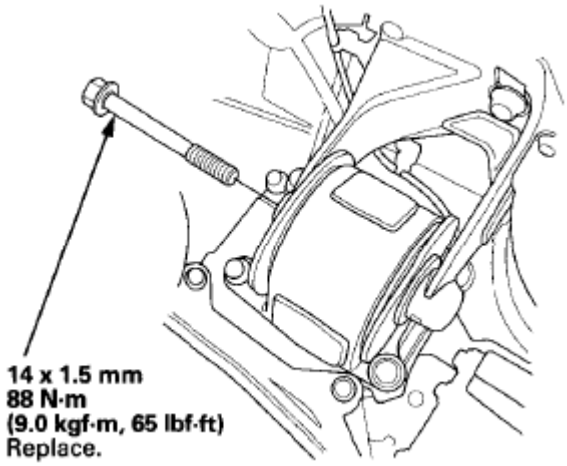


Fig. 46: Identifying Rear Engine Mount Bolt (M/T Model) With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

21. A/T model: Tighten the new rear engine mount bolt (A), then install the rear engine mount stop (B) using

new nuts (C).

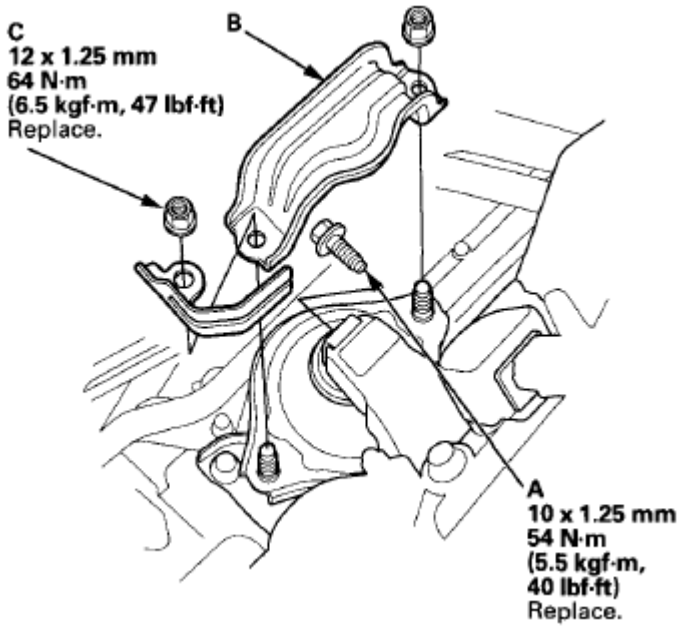


Fig. 47: Identifying Rear Engine Mount Bolt, Engine Mount Stop And Nuts (A/T Model) With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

22. Loosen the mounting bolts for the upper half of the side engine mount bracket, then retighten them in the numbered sequence shown.

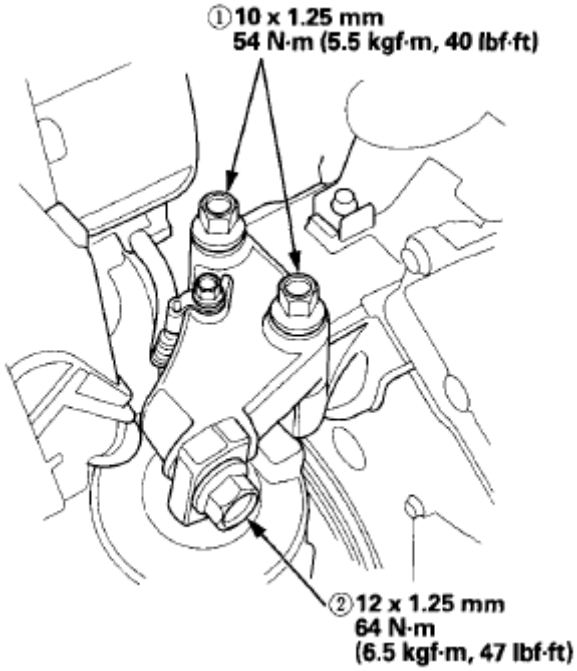


Fig. 48: Identifying Mounting Bolts Of Side Engine Mount Bracket With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

23. Loosen the mounting bolts for the upper transmission mount bracket, then retighten them to the specified torque.

M/T model

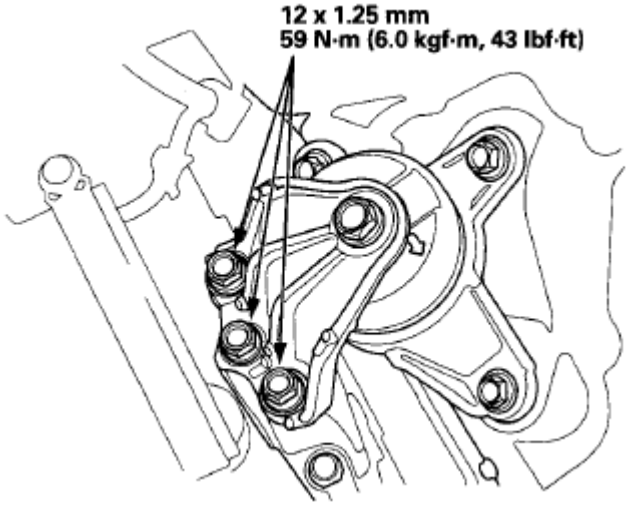


Fig. 49: Identifying Mounting Bolts For Upper Transmission Mount Bracket (M/T Model) With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

A/T model

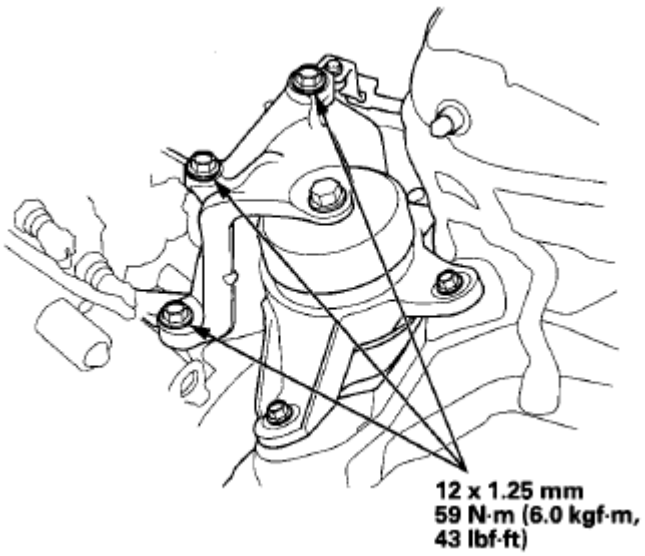


Fig. 50: Identifying Mounting Bolts For Upper Transmission Mount Bracket (A/T Model) With Torque Specifications

Courtesy of AMERICAN HONDA MOTOR CO., INC.

24. Install the connector bracket to the front cylinder head.

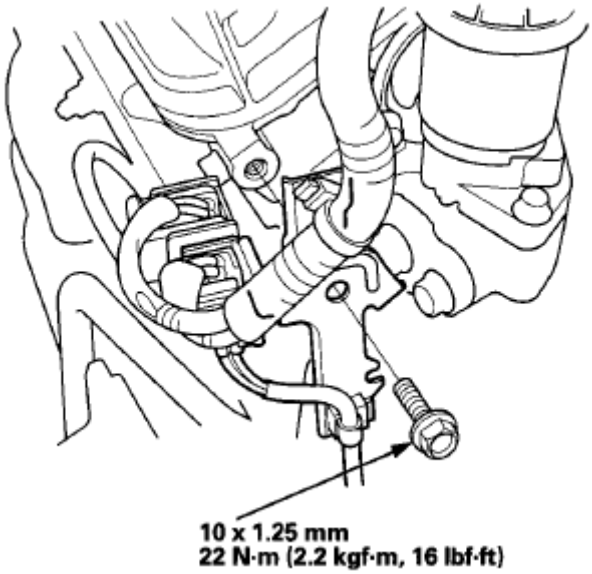


Fig. 51: Identifying Connector Bracket To Front Cylinder Head With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

25. Install the engine mount control solenoid valve bracket to the rear cylinder head, then install the harness clamp (A).

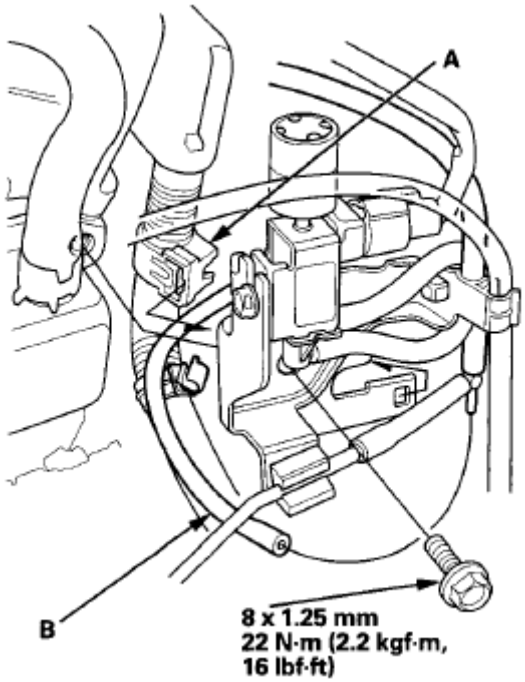


Fig. 52: Identifying Harness Clamp And Vacuum Hose Of Engine Mount Control Solenoid Valve

Bracket With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

26. A/T model: Connect the vacuum hose (B).
27. Install the A/C compressor, then install the harness clamp (A) and connect the A/C compressor clutch connector (B).

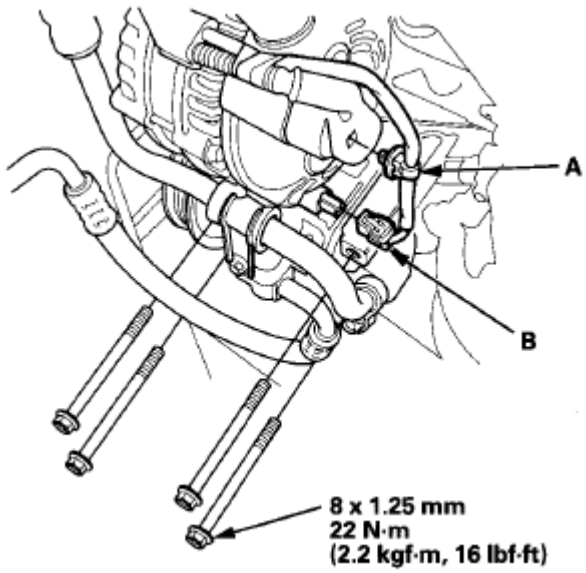


Fig. 53: Identifying Harness Clamp And Clutch Connector Of A/C Compressor With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

28. Install the radiator (see **RADIATOR REPLACEMENT**).
29. Connect the heater hoses (A).

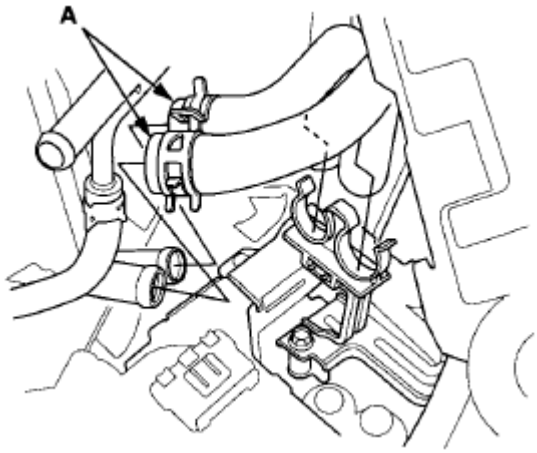


Fig. 54: Identifying Heater Hoses
Courtesy of AMERICAN HONDA MOTOR CO., INC.

30. Connect the upper radiator hose (A) and the lower radiator hose (B).

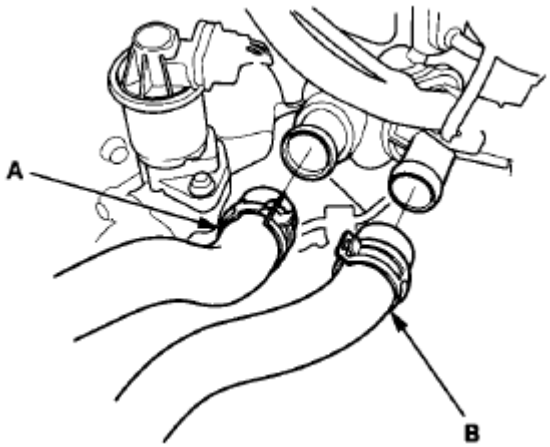


Fig. 55: Identifying Upper And Lower Radiator Hose
Courtesy of AMERICAN HONDA MOTOR CO., INC.

31. Raise the vehicle on the lift.
32. A/T model: Connect the ATF cooler hoses to the transmission (see step 30 under **TRANSMISSION INSTALLATION**).
33. With SH-AWD: Install the transfer assembly:
    - Manual transmission (see **TRANSFER ASSEMBLY INSTALLATION**)
    - Automatic transmission (see **TRANSFER ASSEMBLY INSTALLATION**)
34. With SH-AWD: Install the propeller shaft (see **PROPELLER SHAFT INSTALLATION**).
35. Install exhaust pipe A using new gaskets (6) and new self-locking nuts (C).

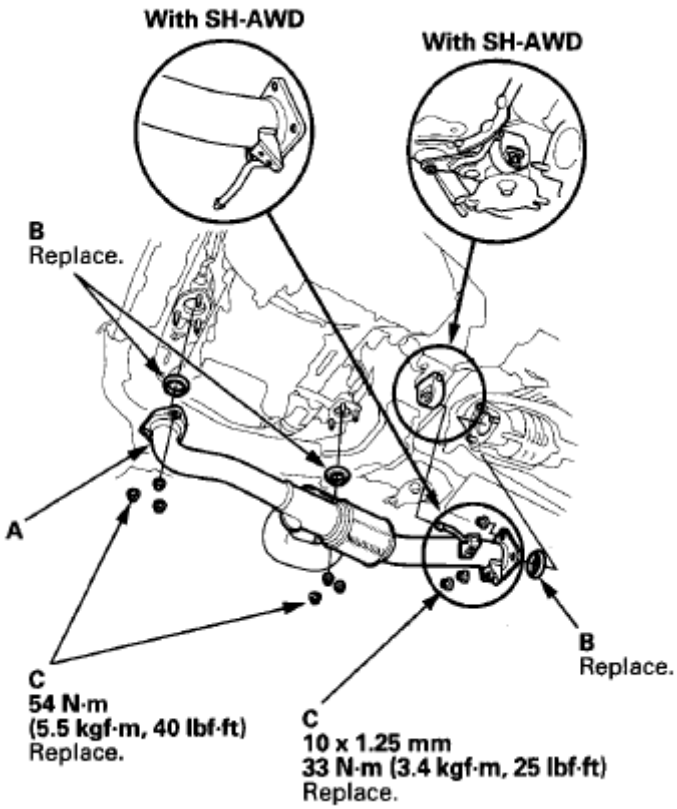


Fig. 56: Identifying Exhaust Pipe, Gaskets And Self-Locking Nuts With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

36. Install the front subframe stiffener (A) using new bolts (B).

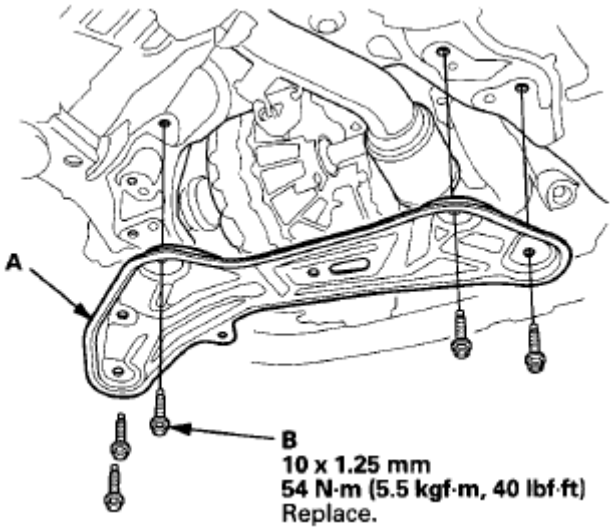


Fig. 57: Identifying Front Subframe Stiffener And Bolts With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

37. Install a new set ring on the end of each driveshaft, then install the driveshafts (see **FRONT**

DRIVESHAFT INSTALLATION). Make sure each ring "clicks" into place in the differential and the intermediate shaft.

38. Connect the suspension lower arm to the knuckles (see step 7 under **LOWER ARM REMOVAL/INSTALLATION**).
39. Connect the tie-rod end ball joints to the knuckles (see step 42 under **STEERING GEARBOX REMOVAL AND INSTALLATION**).
40. Install the damper fork (see step 4 under **DAMPER/SPRING REMOVAL AND INSTALLATION**).
41. Install the front splash shield (see **FRONT SPLASH SHIELD REPLACEMENT**).
42. Install the front wheels.
43. Lower the vehicle on the lift.
44. Loosen the upper steering joint bolt (A), and slip the lower end of the steering joint (B) onto the pinion shaft (C).

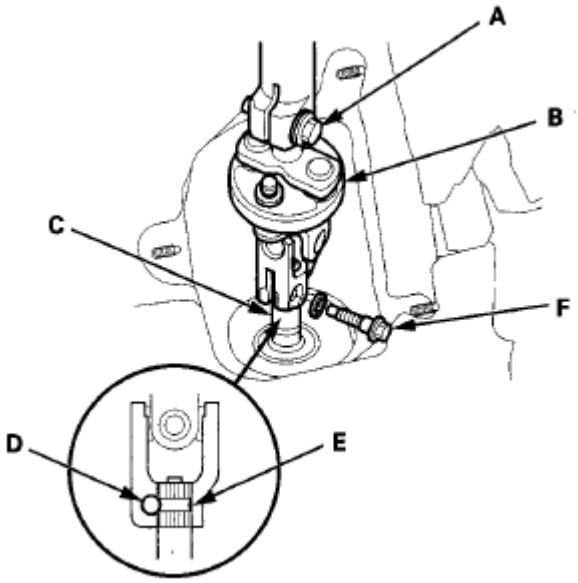


Fig. 58: Identifying Pinion Shaft, Steering Joint, Groove, Bolt Hole, Upper And Lower Steering Joint Bolt
Courtesy of AMERICAN HONDA MOTOR CO., INC.

45. Align the bolt hole (D) on the steering joint with the groove (E) around the pinion shaft, then loosely install the lower steering joint bolt (F). Be sure that the joint bolt is securely in the groove in the pinion shaft.
46. Remove the steering wheel holder tool (A).

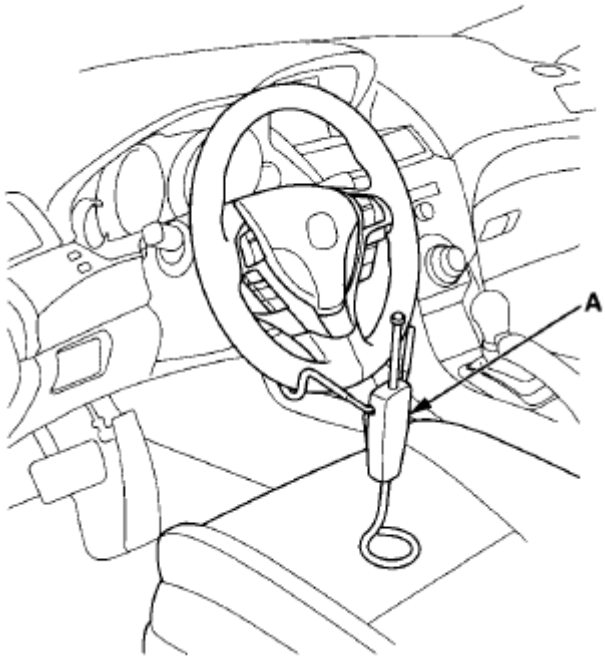


Fig. 59: Identifying Steering Wheel Holder Tool
Courtesy of AMERICAN HONDA MOTOR CO., INC.

47. Tighten the upper and lower steering joint bolts (A) to the specified torque.

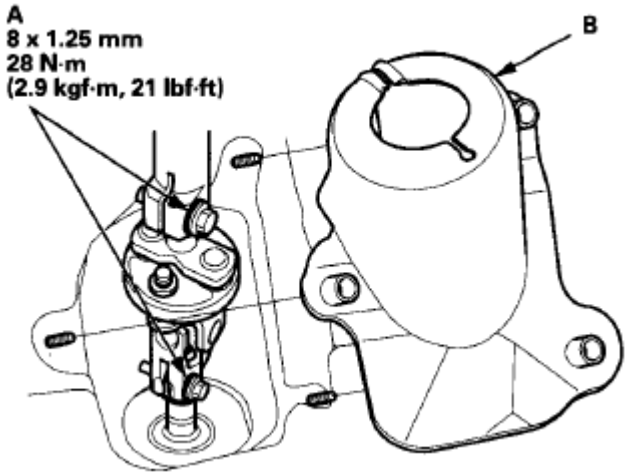


Fig. 60: Identifying Steering Joint Cover, Upper And Lower Steering Joint Bolts With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

48. Install the steering joint cover (B).
49. Install the drive belt (see **DRIVE BELT REPLACEMENT**).
50. Connect the EPS connectors (A).

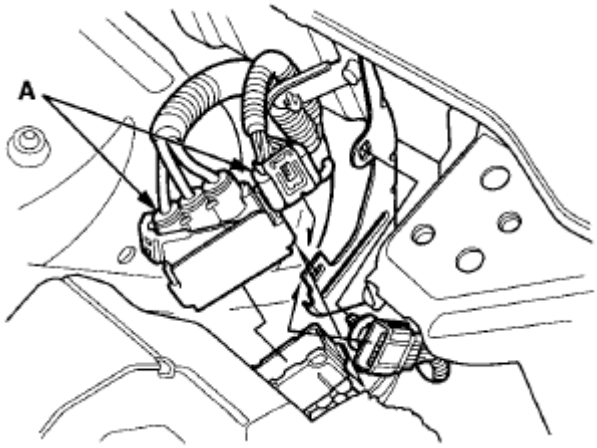


Fig. 61: Identifying EPS Connectors
Courtesy of AMERICAN HONDA MOTOR CO., INC.

51. A/T model: Install the shift cable (see **SHIFT CABLE REPLACEMENT**).
52. M/T model: Install the clutch slave cylinder and the clutch line bracket mounting bolt (see step 49 under **TRANSMISSION INSTALLATION**).
53. M/T model: Install the shift cable and the select cable, then tighten the three bolts securing the shift cable holder (see step 50 under **TRANSMISSION INSTALLATION**).
54. Connect the brake booster vacuum hose (A) and the EVAP canister hose (B).

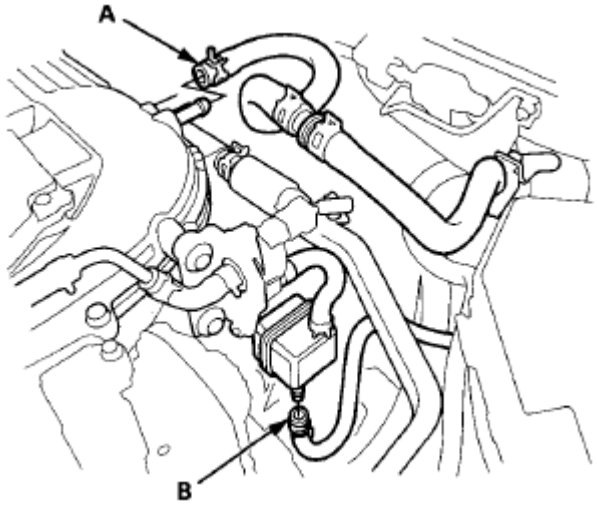


Fig. 62: Identifying Brake Booster Vacuum Hose And EVAP Canister Hose
Courtesy of AMERICAN HONDA MOTOR CO., INC.

55. Connect the fuel feed hose (A), then install the quick-connect fitting cover (B) (see **FUEL LINE/QUICK-CONNECT FITTING INSTALLATION**).

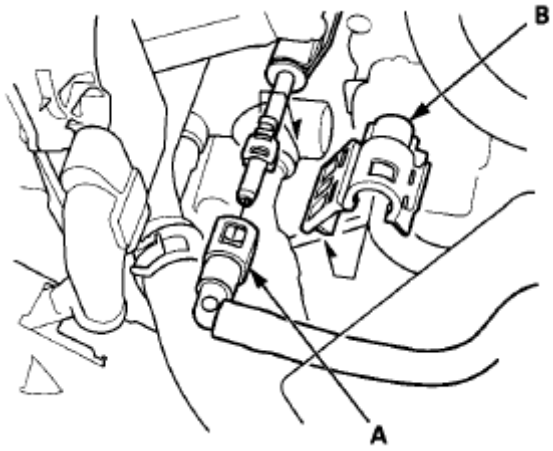


Fig. 63: Identifying Fuel Feed Hose And Quick-Connect Fitting Cover
Courtesy of AMERICAN HONDA MOTOR CO., INC.

56. Connect the ECM/PCM connectors (A), then install the harness clamp (B).

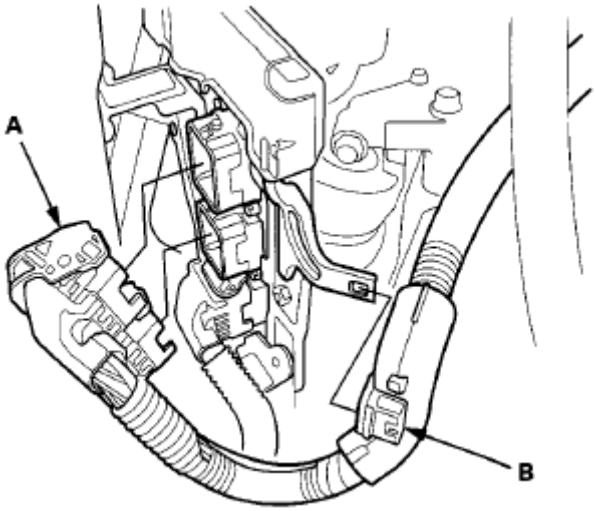


Fig. 64: Identifying ECM/PCM Connectors And Harness Clamp
Courtesy of AMERICAN HONDA MOTOR CO., INC.

57. Connect the harness connectors (A), then install the harness clamp (B).

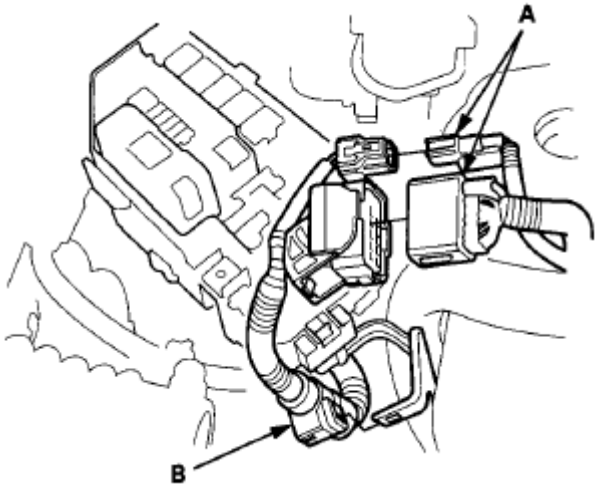


Fig. 65: Identifying Harness Connectors And Harness Clamp
Courtesy of AMERICAN HONDA MOTOR CO., INC.

58. Install the harness clamps (A).

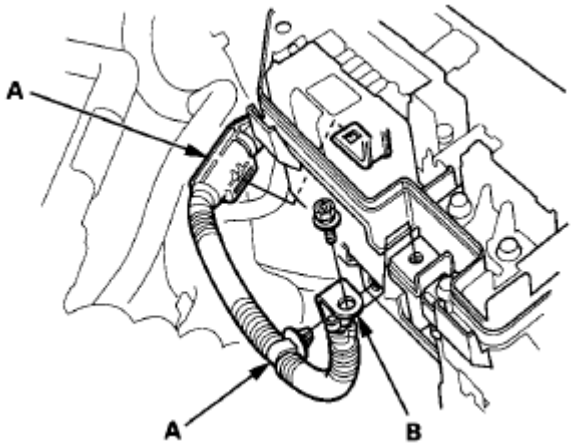


Fig. 66: Identifying Harness Clamps And Battery Cable
Courtesy of AMERICAN HONDA MOTOR CO., INC.

59. Connect the battery cable (B) to the under-hood fuse/relay box.
60. Install the strut brace (see **FRAME BRACE REPLACEMENT**).
61. M/T model: Connect the positive starter cable (A), then install the harness clamp (B). Make sure the crimped side of the ring terminal face away from the starter when you connect it.

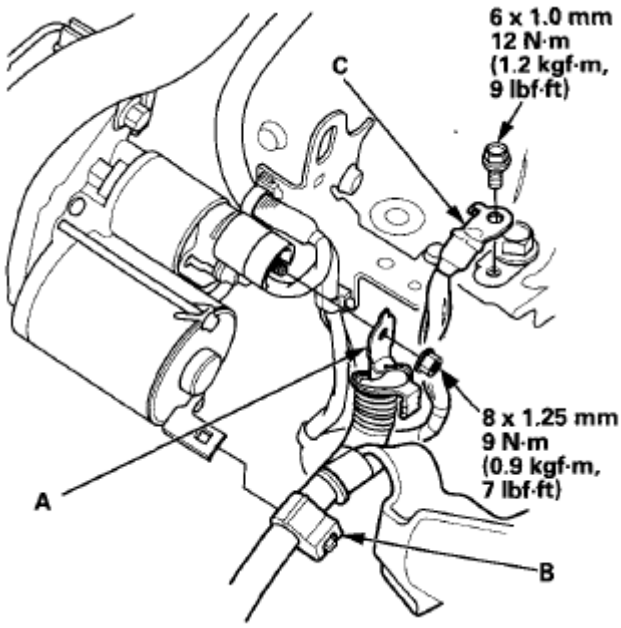


Fig. 67: Identifying Positive Starter Cable, Harness Clamp And Ground Cable (M/T Model) With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

62. M/T model: Install the ground cable (C).
63. A/T model: Connect the positive starter cable (A), then install the harness clamps (B). Make sure the crimped side of the ring terminal face away from the starter when you connect it.

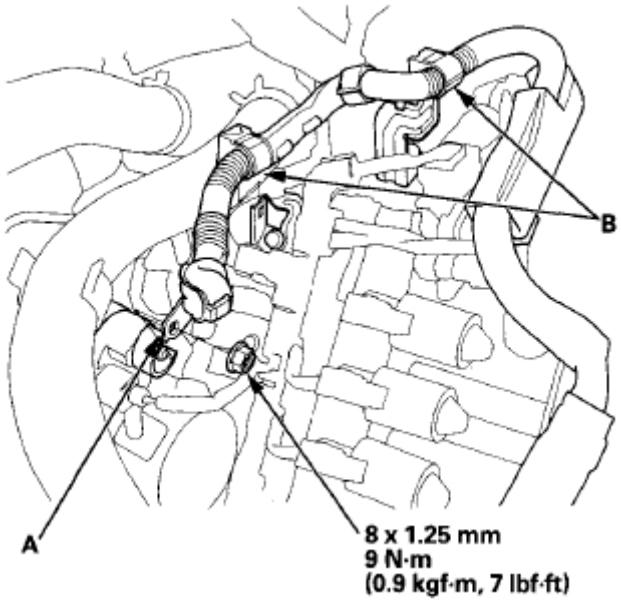


Fig. 68: Identifying Positive Starter Cable, Harness Clamps (A/T Model) With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

64. Install the battery base (A), then install the harness clamp (B).

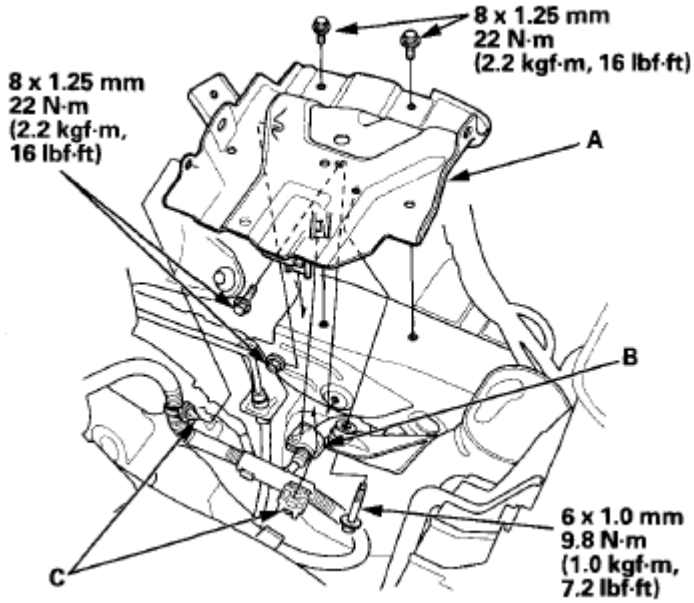


Fig. 69: Identifying Battery Base And Harness Clamps With Torque Specification (M/T Model) With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

65. M/T model: Install the harness clamps (C).
66. Install the air cleaner (see **THROTTLE BODY CLEANING**).
67. Do the battery installation procedure (see **BATTERY REMOVAL AND INSTALLATION**).
68. Install the air intake duct splash separator.

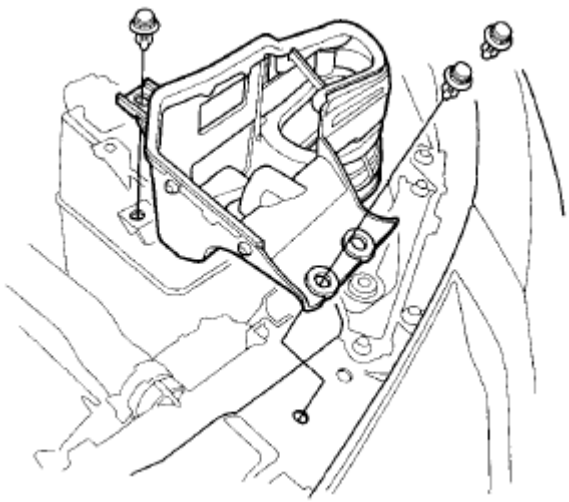


Fig. 70: Identifying Air Intake Duct Splash Separator With Mounting Bolts
Courtesy of AMERICAN HONDA MOTOR CO., INC.

69. Inspect for fuel leaks. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode (do not operate the starter) so the fuel pump runs for about 2 seconds and pressurizes the fuel line. Repeat this operation three times, then check for fuel leaks at any point in the fuel line.
70. Refill the engine with engine oil (see **ENGINE OIL LEVEL CHECK**).
71. Refill the transmission with fluid:
    - Manual transmission (see **TRANSMISSION FLUID INSPECTION AND REPLACEMENT**)
    - Automatic transmission (see **ATF REPLACEMENT**)
72. M/T model: Check that the transmission shifts into all gears smoothly.
73. A/T model: Move the shift lever to each gear, and verify that the A/T gear position indicator follows the transmission range switch.
74. Refill the radiator with engine coolant, and bleed the air from the cooling system (see **COOLANT CHECK**).
75. Check for fluid leaks.
76. Do the ECM/PCM reset procedure (see **HDS CLEAR COMMAND**).
77. Do the CKP pattern clear/CKP pattern learn procedure (see **CKP PATTERN CLEAR/CKP PATTERN LEARN**).
78. Inspect the idle speed (see **IDLE SPEED INSPECTION**).
79. Inspect the ignition timing (see **IGNITION TIMING INSPECTION**).
80. Install the engine compartment covers (see **ENGINE COMPARTMENT COVER REPLACEMENT**).
81. Check the wheel alignment (see **WHEEL ALIGNMENT**).

SIDE ENGINE MOUNT REMOVAL AND INSTALLATION

REMOVAL

1. Remove the engine compartment covers (see **ENGINE COMPARTMENT COVER REPLACEMENT**).
2. Lift and support the engine with a jack and a wood block under the oil pan.
3. Remove the ground cable (A), then remove the upper half of the side engine mount bracket (B).

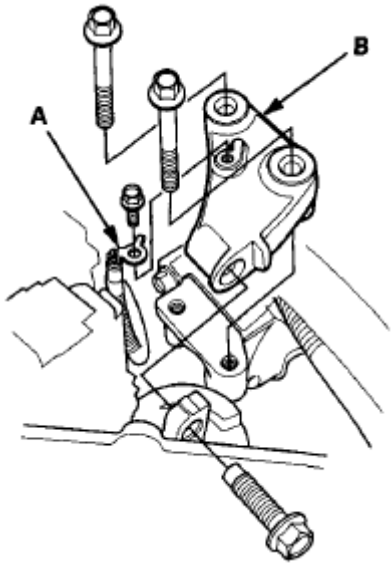


Fig. 71: Identifying Ground Cable And Engine Mount Bracket With Mounting Bolts
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Remove the side engine mount.

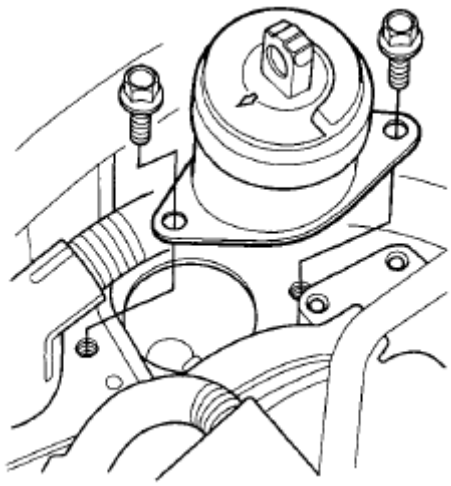


Fig. 72: Identifying Side Engine Mount With Mounting Bolts
Courtesy of AMERICAN HONDA MOTOR CO., INC.

INSTALLATION

1. Install the side engine mount using new bolts.

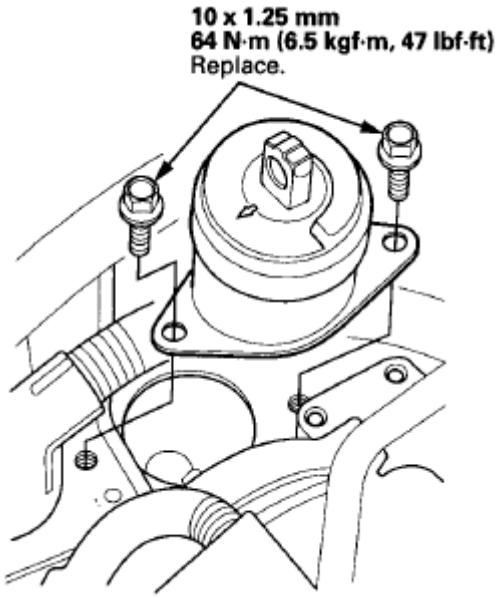


Fig. 73: Identifying Side Engine Mount & Bolts With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Loosely install the upper half of the side engine mount bracket (A) using new bolts.

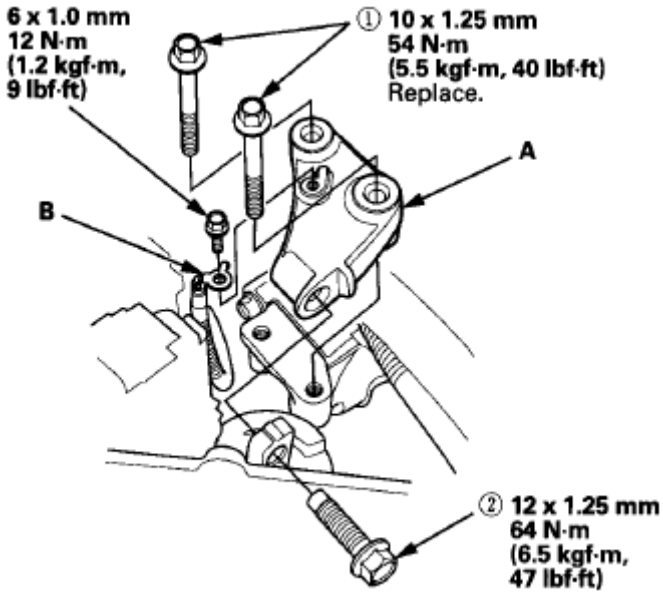


Fig. 74: Identifying Engine Mount Bracket, Ground Cable And Tightening Sequence Of Bolts With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Remove the jack and the wood block.
4. Tighten the bolts in the numbered sequence shown.
5. Install the ground cable (B).

6. Install the engine compartment covers (see **ENGINE COMPARTMENT COVER REPLACEMENT**).

FRONT ENGINE MOUNT REMOVAL AND INSTALLATION

REMOVAL

1. Remove the engine compartment covers (see **ENGINE COMPARTMENT COVER REPLACEMENT**).
2. Remove the front warm up TWC (see **WARM UP TWC REMOVAL/INSTALLATION**).
3. Remove the front engine mount stop (A), then remove the front engine mount bolt (B).

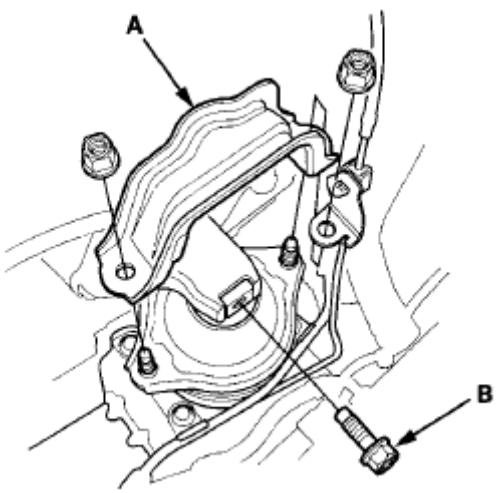


Fig. 75: Identifying Front Engine Mount Stop And Front Engine Mount Bolt
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Remove the front engine mount mounting bolts (A). A-

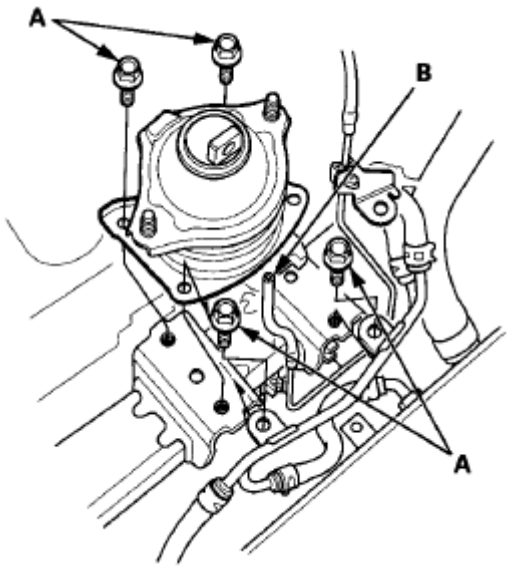


Fig. 76: Identifying Front Engine Mount Mounting Bolts And Vacuum Hose
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Lift and support the engine with a jack and a wood block under the engine/transmission.
6. Remove the front engine mount and disconnect the vacuum hose (B).

NOTE: A/T model: Do not bend the ATF cooler pipe when removing the front engine mount.

INSTALLATION

1. Connect the vacuum hose (A), then align the front engine mount with its mounting holes and install the new front engine mount mounting bolts (B).

NOTE: A/T model: Do not bend the ATF cooler pipe when installing the front engine mount.

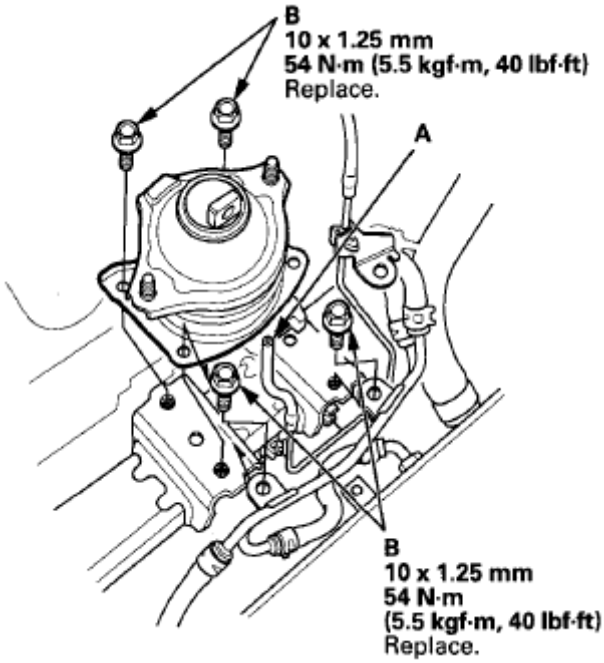


Fig. 77: Identifying Vacuum Hose, Front Engine Mount Mounting Bolts With Torque Specifications (A/T Model)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Remove the jack and the wood block.
3. Tighten the new front engine mount bolt (A), then install the front engine mount stop (B) using new nuts.

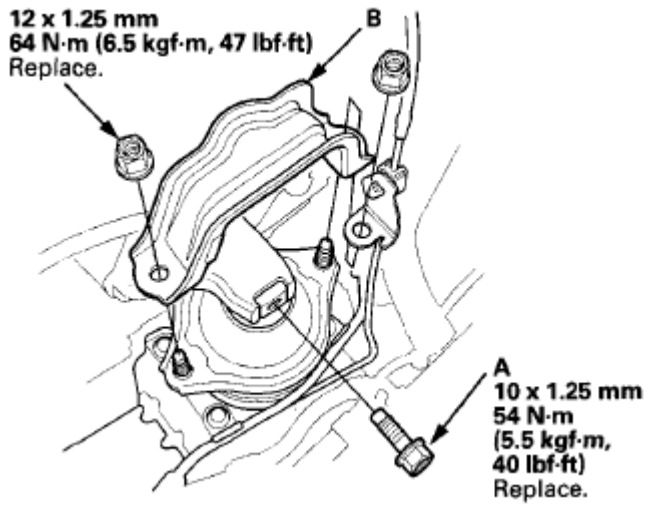


Fig. 78: Identifying Front Engine Mount Bolt And Front Engine Mount Stop With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Install the front warm up TWC (see **WARM UP TWC REMOVAL/INSTALLATION**).
5. Install the engine compartment covers (see **ENGINE COMPARTMENT COVER REPLACEMENT**).

REAR ENGINE MOUNT REMOVAL AND INSTALLATION

REMOVAL-M/T MODEL

1. Remove the engine compartment covers (see **ENGINE COMPARTMENT COVER REPLACEMENT**).
2. Do the battery removal procedure (see **BATTERY REMOVAL AND INSTALLATION**).
3. Remove the air cleaner (see **THROTTLE BODY CLEANING**).
4. Remove the cowl cover (see **FRONT BULKHEAD BRACE COVER REPLACEMENT**).
5. Remove the strut brace (see **FRAME BRACE REPLACEMENT**).
6. Remove the harness clamp (A), then disconnect the harness connectors (B) on the left strut tower.

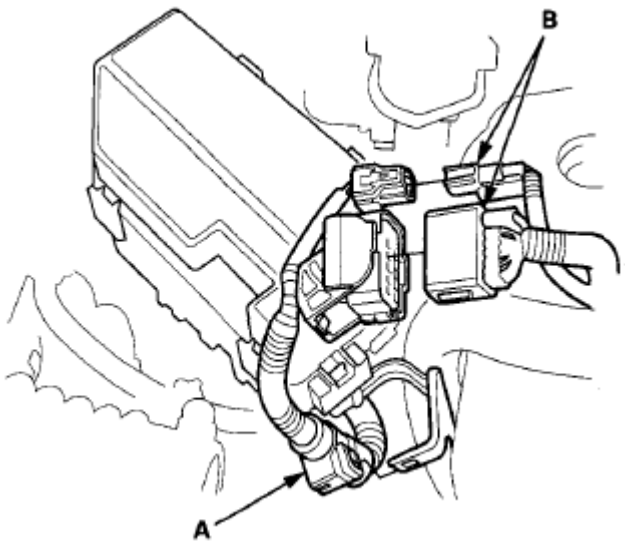


Fig. 79: Identifying Harness Clamp, Harness Connectors On Left Strut Tower
Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Remove the two harness clamps (A) and the brake booster vacuum hose clamp (B) from the under-hood fuse/relay box mounting bracket (C).

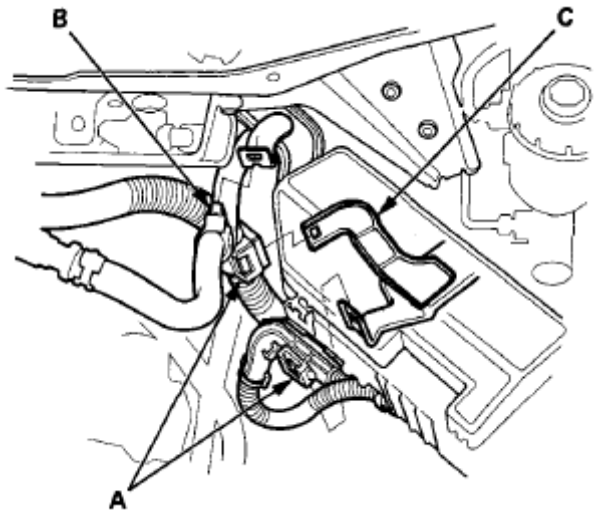


Fig. 80: Identifying Harness Clamp, Brake Booster Vacuum Hose Clamp And Mounting Bracket
Courtesy of AMERICAN HONDA MOTOR CO., INC.

8. Remove the mounting bolt (A) and the two mounting nuts (B) from the under-hood fuse/relay box mounting bracket, then tilt the under-hood fuse/relay box forward.

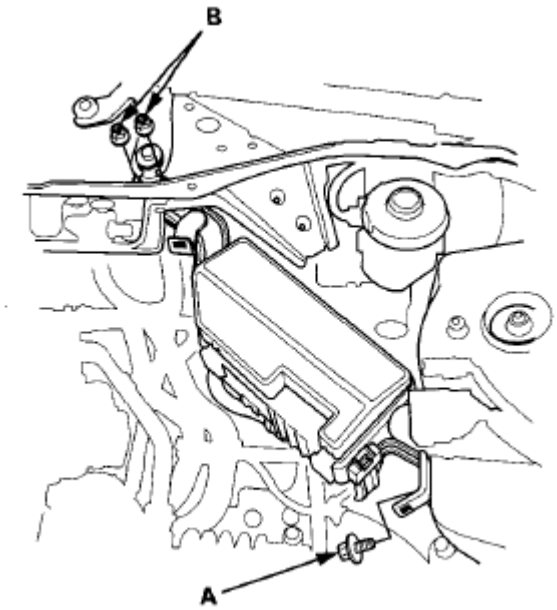


Fig. 81: Identifying Mounting Bolt And Nuts
Courtesy of AMERICAN HONDA MOTOR CO., INC.

9. Raise the vehicle on the lift.
10. Remove the front splash shield (see **FRONT SPLASH SHIELD REPLACEMENT**).
11. Remove the front subframe stiffener (see step 41).
12. Remove exhaust pipe A (see step 42).
13. Remove the two rear engine mount bracket mounting bolts (A).

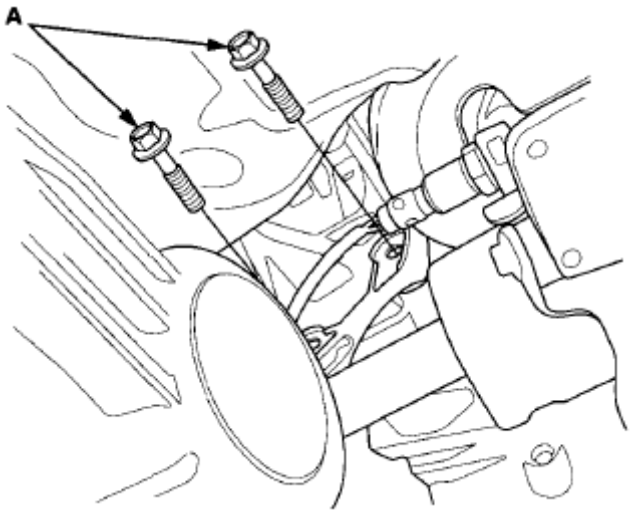


Fig. 82: Identifying Rear Engine Mount Bracket Mounting Bolts
Courtesy of AMERICAN HONDA MOTOR CO., INC.

14. Lower the vehicle on the lift.
15. Lift and support the engine with a jack and a wood block under the engine/transmission.
16. Remove the harness bracket (A).

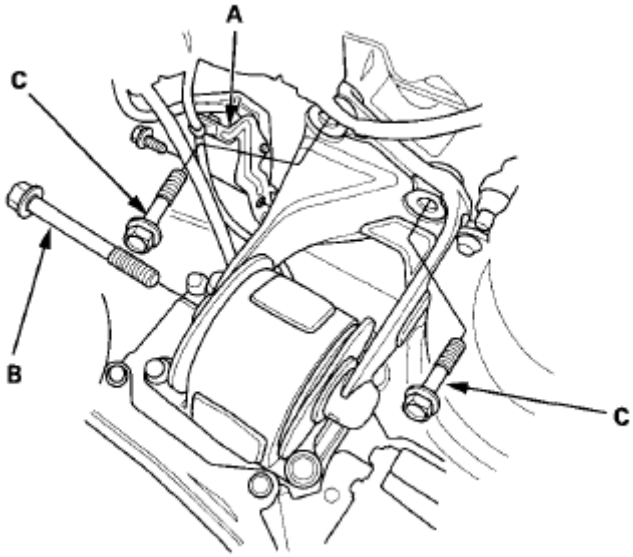


Fig. 83: Identifying Harness Bracket And Mounting Bolts
Courtesy of AMERICAN HONDA MOTOR CO., INC.

17. Remove the rear engine mount mounting bolt (B), then remove the two rear engine mount bracket mounting bolts (C).
18. Remove the rear engine mount bracket (A) from the top by sliding it out, and lifting it out from the driver's side.

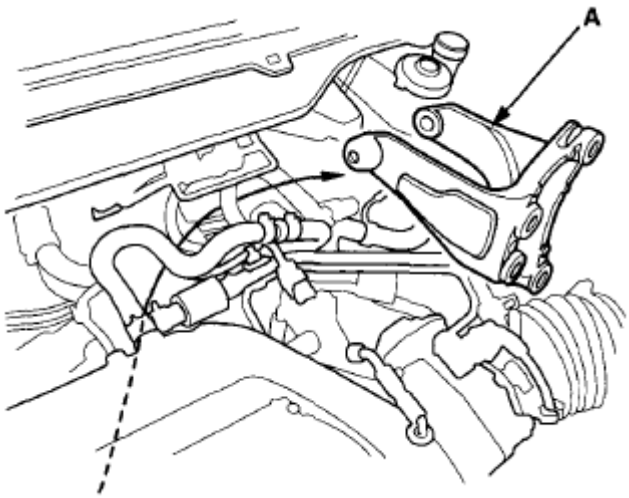


Fig. 84: Identifying Rear Engine Mount Bracket
Courtesy of AMERICAN HONDA MOTOR CO., INC.

19. Remove the rear engine mount mounting bolts (A).

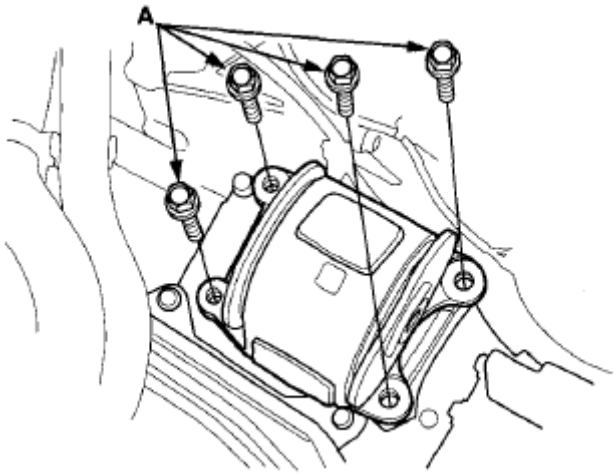


Fig. 85: Identifying Rear Engine Mounting Bolts
Courtesy of AMERICAN HONDA MOTOR CO., INC.

20. Remove the rear engine mount (A).

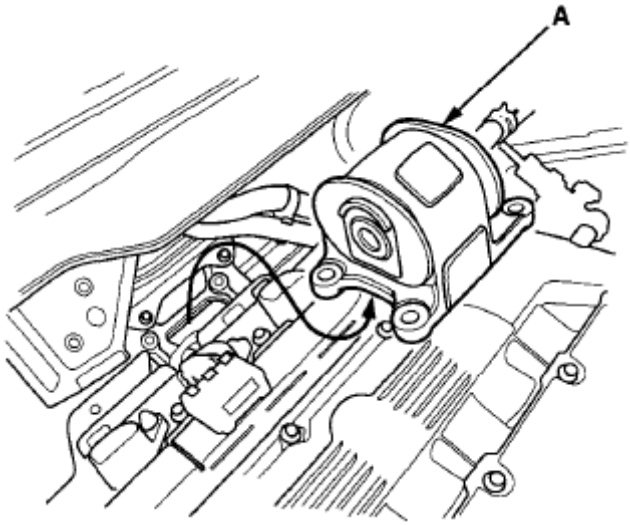


Fig. 86: Identifying Rear Engine Mount
Courtesy of AMERICAN HONDA MOTOR CO., INC.

INSTALLATION-M/T MODEL

1. Install the rear engine mount (A).

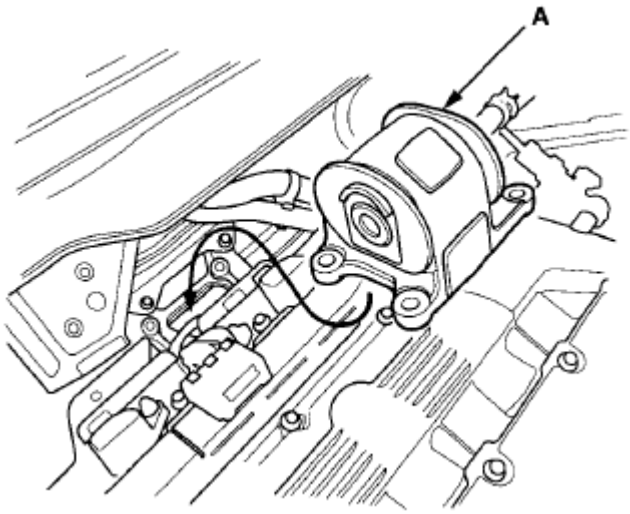


Fig. 87: Identifying Rear Engine Mount (M/T Model)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Align the rear engine mount with its mounting holes and install the new rear engine mount mounting bolts (A).

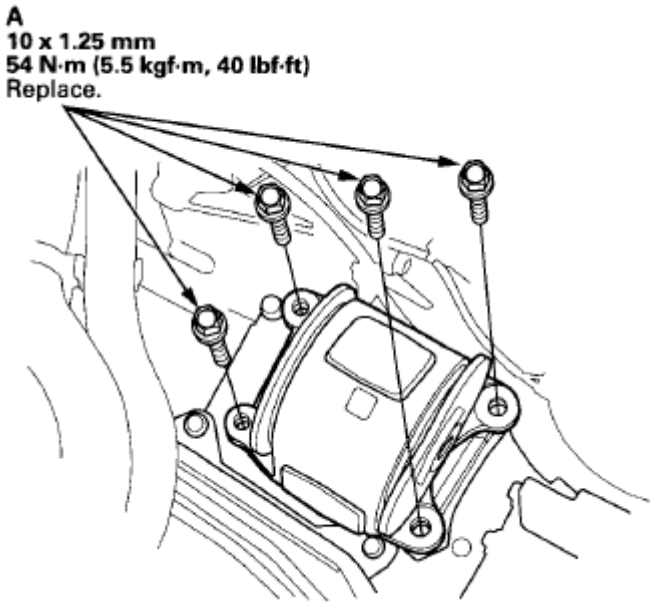


Fig. 88: Identifying Rear Engine Mounting Bolts (M/T Model) With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Install the rear engine mount bracket (A) from the top by sliding it into place from the driver's side.

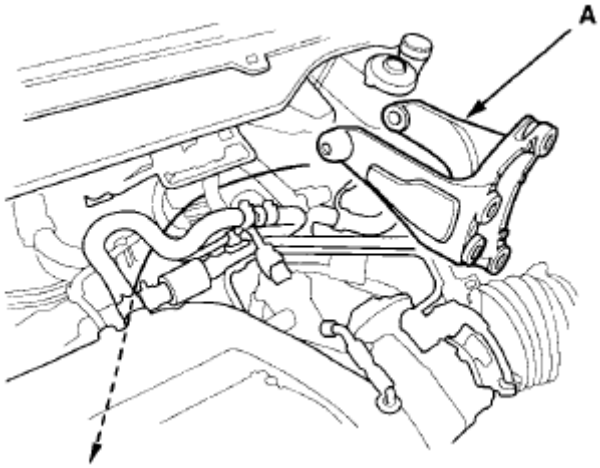


Fig. 89: Identifying Rear Engine Mount Bracket (M/T Model)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Loosely install the new two rear engine mount bracket mounting bolts (A) and the new rear engine mount mounting bolt (B).

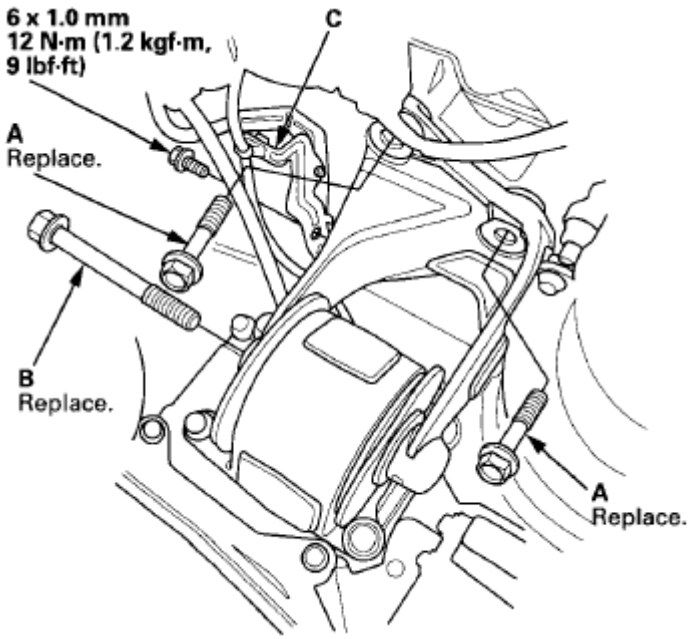


Fig. 90: Identifying Harness Bracket And Mounting Bolts (M/T Model) With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Install the harness bracket (C).
6. Remove the jack and the wood block, then raise the vehicle on the lift.
7. Tighten the new two rear engine mount bracket mounting bolts (A).

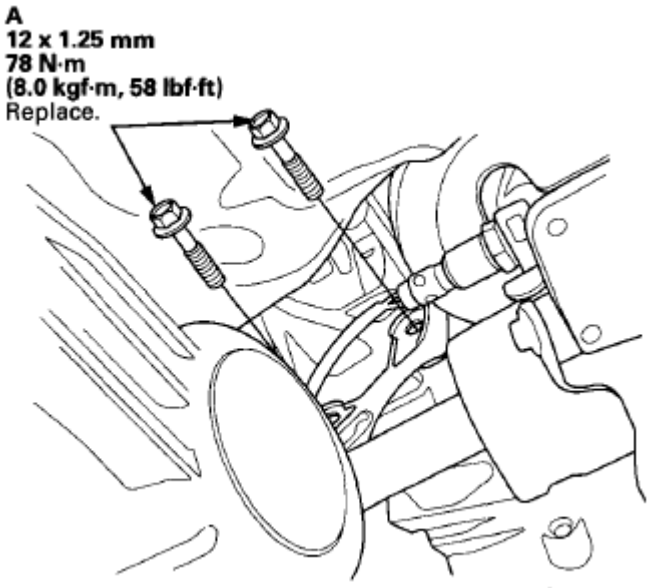


Fig. 91: Identifying Rear Engine Mount Bracket Mounting Bolts (M/T Model) With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

8. Install exhaust pipe A (see step 35).
9. Install the front subframe stiffener (see step 36).
10. Install the front splash shield (see **FRONT SPLASH SHIELD REPLACEMENT**).
11. Lower the vehicle on the lift.
12. Tighten the two rear engine mount bracket mounting bolts (A), then tighten the rear engine mount mounting bolt (B).

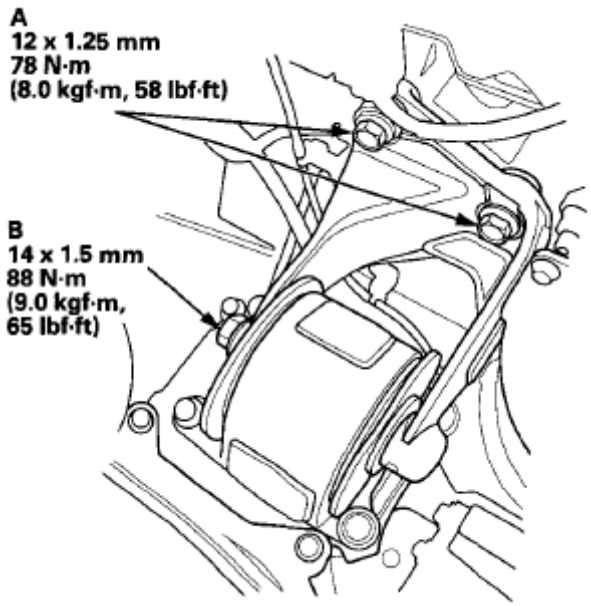


Fig. 92: Identifying Rear Engine Mount Bracket Mounting Bolts And Mount Mounting Bolt (M/T Model) With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

13. Install the under-hood fuse/relay box with the mounting bracket, and tighten the two mounting nuts (A) and the mounting bolt (B).

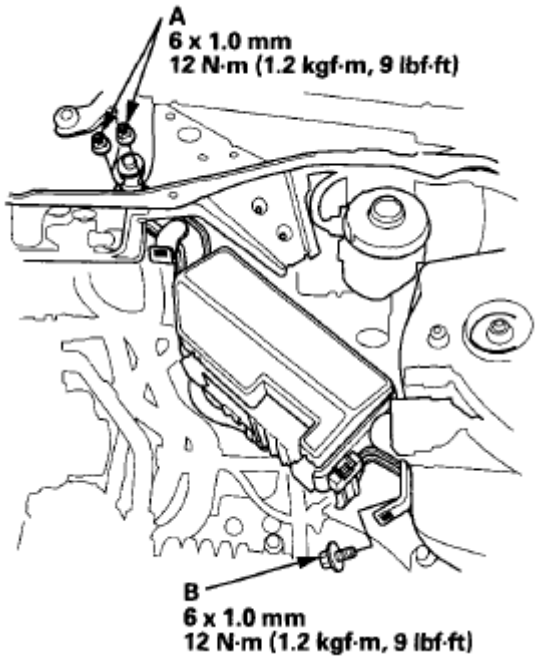


Fig. 93: Identifying Mounting Nuts And Mounting Bolt Of Mounting Bracket (M/T Model) With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

14. Install the two harness clamps (A) and the brake booster vacuum hose clamp (B) to the under-hood fuse/relay box mounting bracket (C).

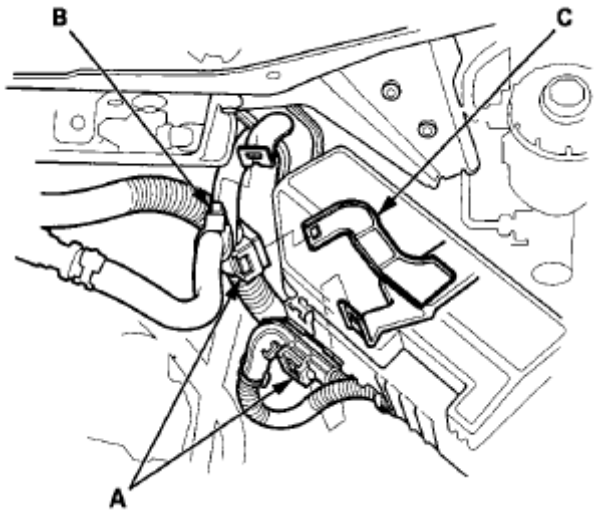


Fig. 94: Identifying Harness Clamps, Hose Clamp And Mounting Bracket (M/T Model)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

15. Connect the harness connectors (A), then install the harness clamp (B) on the left strut tower.

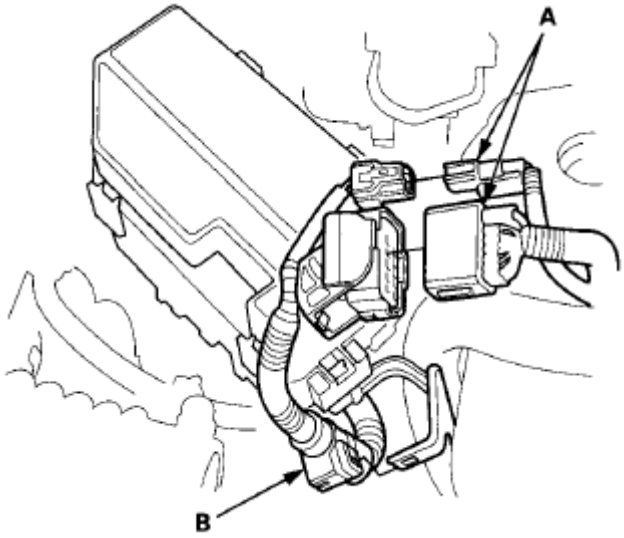


Fig. 95: Identifying Harness Connectors And Harness Clamps On Left Strut Tower (M/T Model)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

16. Install the strut brace (see **FRAME BRACE REPLACEMENT**).
17. Install the cowl cover (see **FRONT BULKHEAD BRACE COVER REPLACEMENT**).
18. Install the air cleaner (see **THROTTLE BODY CLEANING**).
19. Do the battery installation procedure (see **BATTERY REMOVAL AND INSTALLATION**).
20. Install the engine compartment covers (see **ENGINE COMPARTMENT COVER REPLACEMENT**).

REMOVAL-A/T MODEL

1. Remove the engine compartment covers (see **ENGINE COMPARTMENT COVER REPLACEMENT**).
2. Do the battery removal procedure (see **BATTERY REMOVAL AND INSTALLATION**).
3. Remove the air cleaner (see **THROTTLE BODY CLEANING**).
4. Remove the cowl cover (see **FRONT BULKHEAD BRACE COVER REPLACEMENT**).
5. Remove the strut brace (see **FRAME BRACE REPLACEMENT**).
6. Remove the harness clamp (A), then disconnect the harness connectors (B) on the left strut tower.

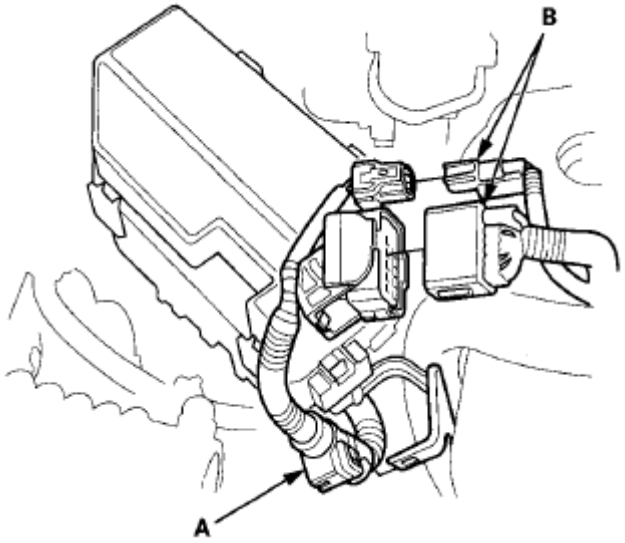


Fig. 96: Identifying Harness Connectors And Harness Clamps On Left Strut Tower (A/T Model)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Remove the two harness clamps (A) and the brake booster vacuum hose clamp (B) from the under-hood fuse/relay box mounting bracket (C).

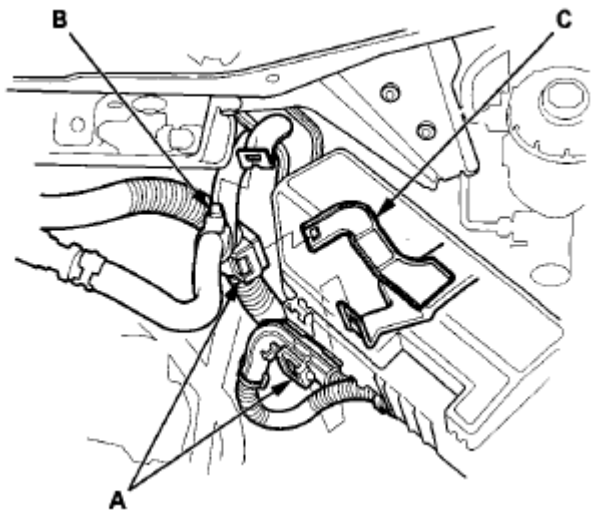


Fig. 97: Identifying Mounting Bracket, Harness Clamps And Hose Clamp (A/T Model)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

8. Remove the mounting bolt (A) and the two mounting nuts (B) from the under-hood fuse/relay box mounting bracket, then tilt the under-hood fuse/relay box forward.

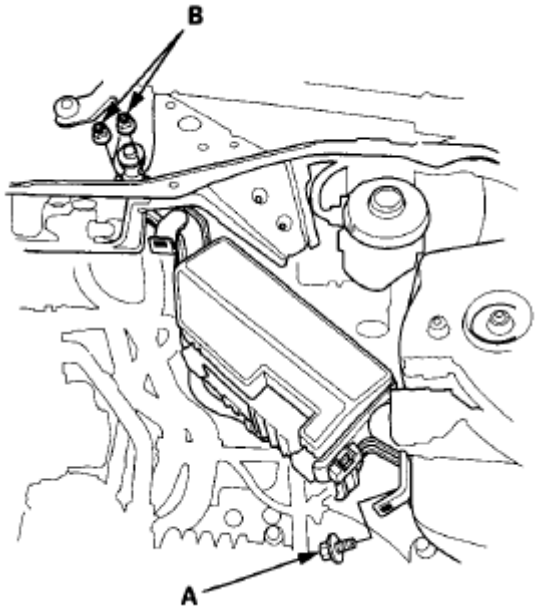


Fig. 98: Identifying Mounting Nuts And Bolts (A/T Model)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

9. Remove the vacuum hose (A) from the clamp (B) and disconnect the vacuum hose from the three way valve (C).

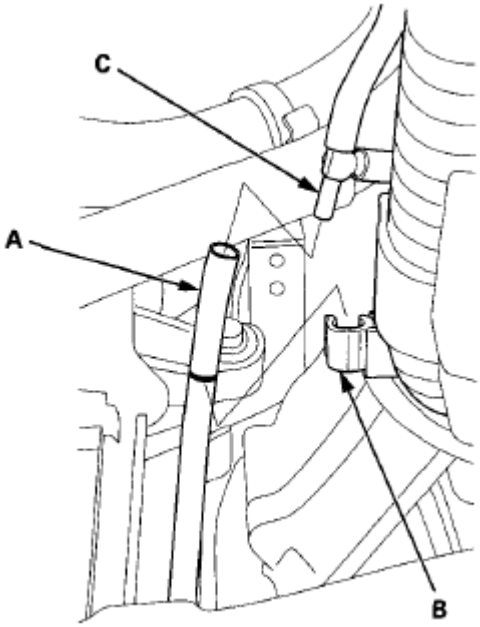


Fig. 99: Identifying Vacuum Hose And Clamp (A/T Model)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

10. Remove the rear engine mount stop (A), then remove the rear engine mount bolt (B).

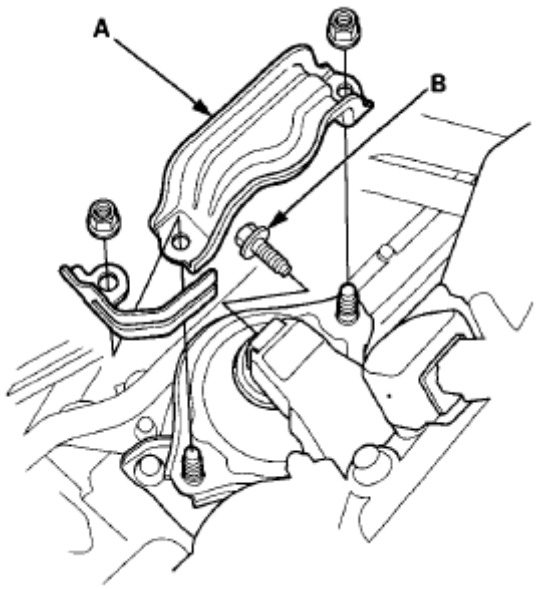


Fig. 100: Identifying Rear Engine Mount Stop And Mount Bolt (A/T Model)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

11. Remove the rear engine mount mounting bolts (A). A

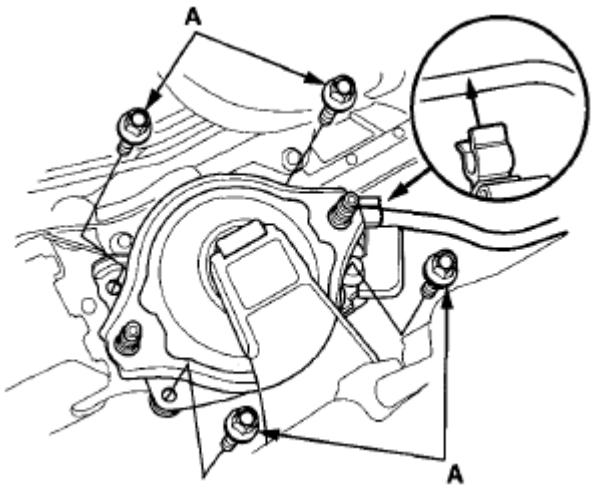


Fig. 101: Identifying Rear Engine Mount Mounting Bolts (A/T Model)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

12. Lift and support the engine with a jack and a wood block under the engine/transmission.
13. Remove the rear engine mount (A) from the top by sliding it out, and lifting it out from the driver's side.

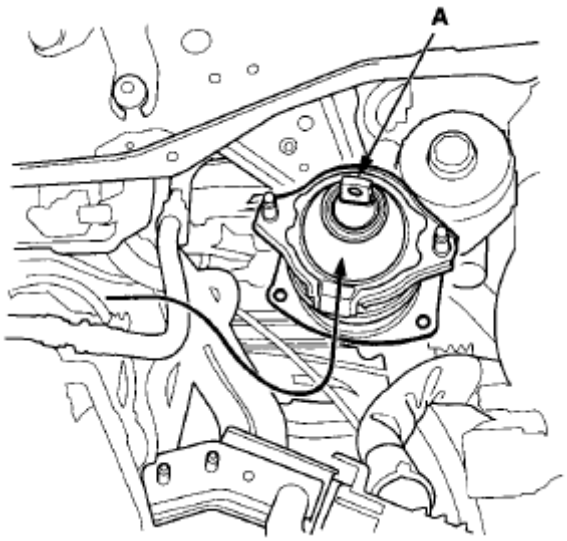


Fig. 102: Identifying Rear Engine Mount (A/T Model)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

INSTALLATION-A/T MODEL

1. Install the rear engine mount (A) from the top by sliding it into place from the driver's side and route the vacuum hose (B) through the hole in the mount base bracket (C).

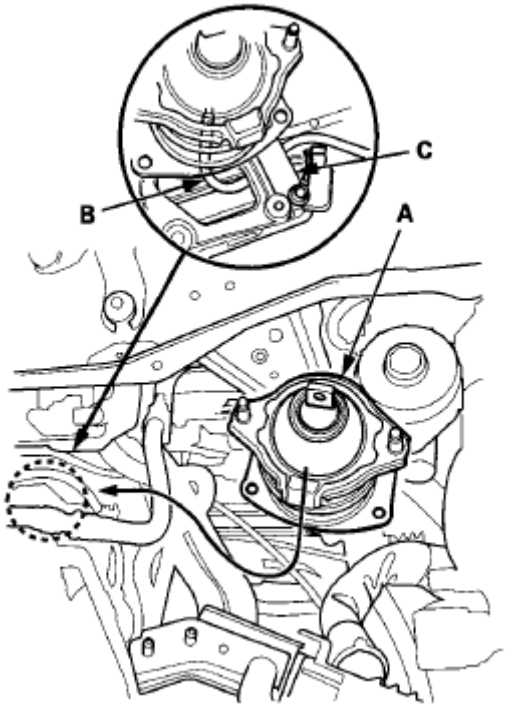


Fig. 103: Identifying Rear Engine Mount, Vacuum Hose And Base Bracket (A/T Model)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Align the rear engine mount with its mounting holes and install the new rear engine mount mounting bolts (A).

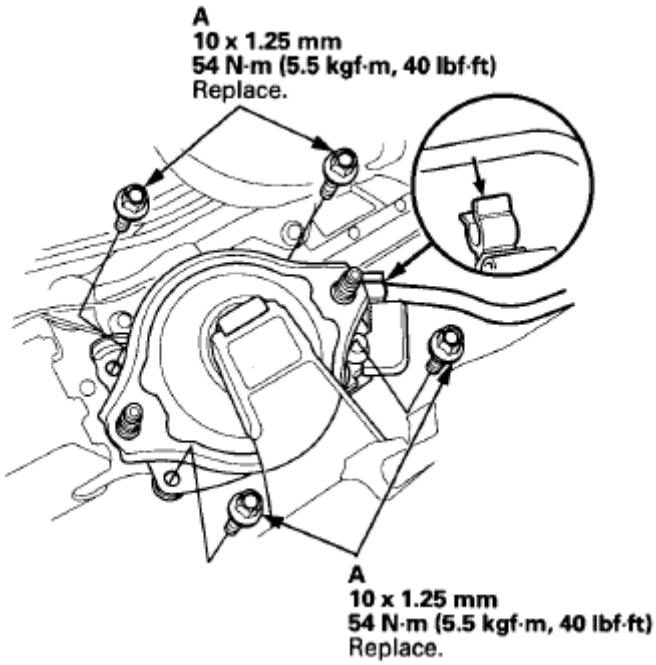


Fig. 104: Identifying Rear Engine Mount Mounting Bolts (A/T Model) With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Remove the jack and the wood block.
4. Tighten the new rear engine mount bolt (A), then install the rear engine mount stop (B) using new nuts.

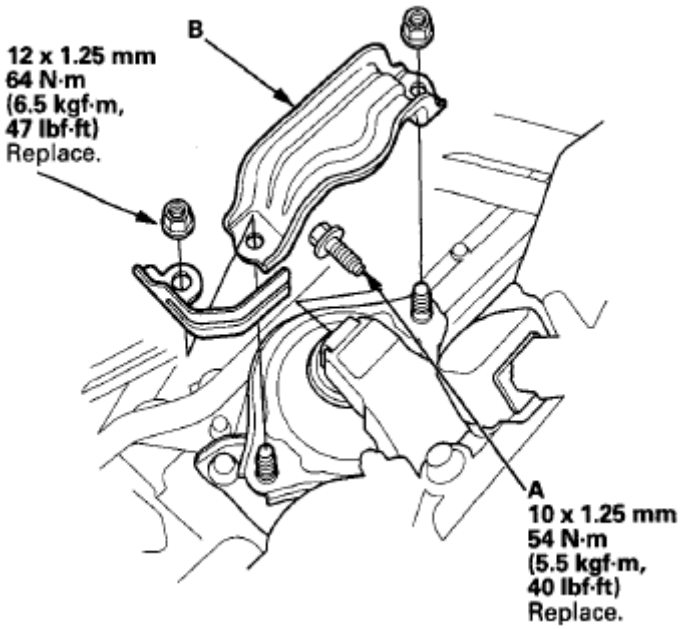


Fig. 105: Identifying Rear Engine Mount Bolt And Mount Stop (A/T Model) With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Connect the vacuum hose (A) to the three way valve (B) and install the vacuum hose on its clamp (C) at the mark (D).

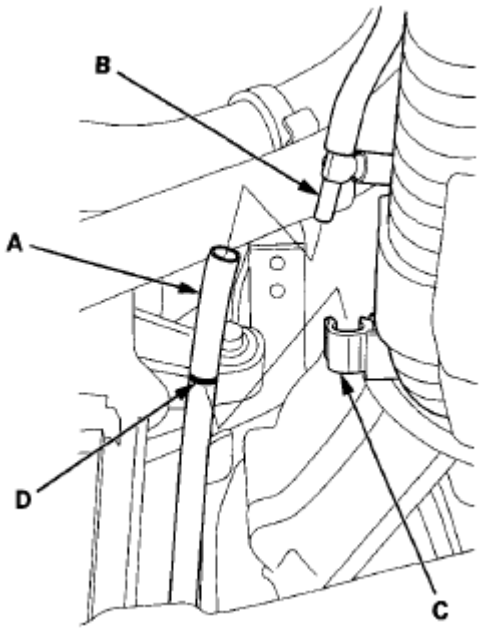


Fig. 106: Identifying Vacuum Hose, Three Way Valve, Clamp And Mark On Vacuum Hose (A/T Model)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Install the under-hood fuse/relay box with the mounting bracket, and tighten the two mounting nuts (A) and the mounting bolt (B).

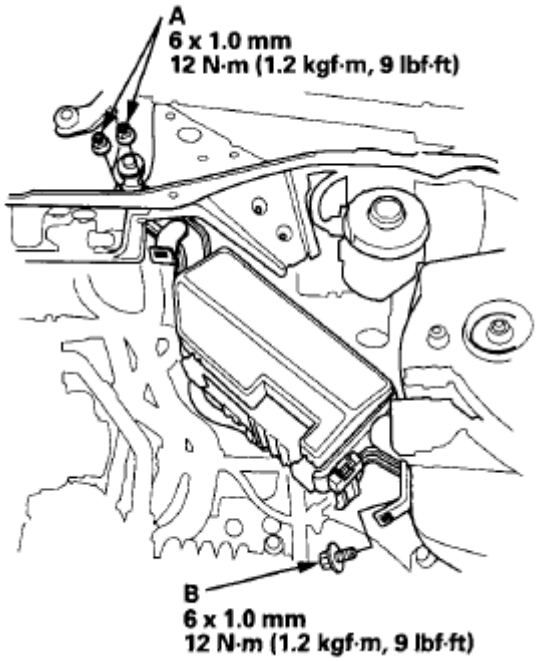


Fig. 107: Identifying Mounting Nuts And Mounting Bolt (A/T Model) With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Install the two harness clamps (A) and the brake booster vacuum hose clamp (B) to the under-hood fuse/relay box mounting bracket (C).

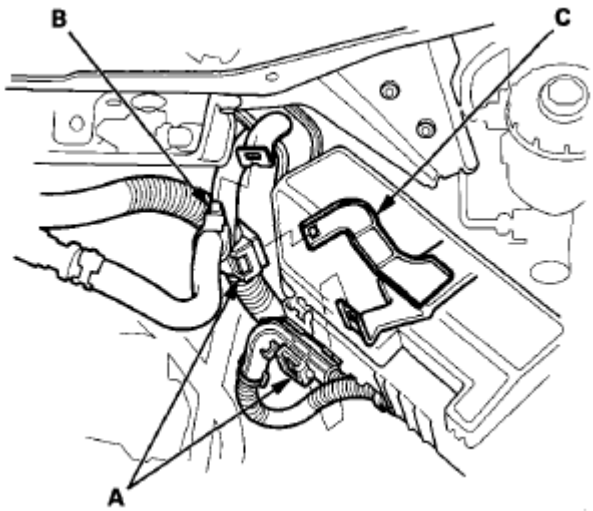


Fig. 108: Identifying Harness Clamps, Hose Clamp And Mounting Bracket (A/T Model)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

8. Connect the harness connectors (A), then install the harness clamp (B) on the left strut tower.

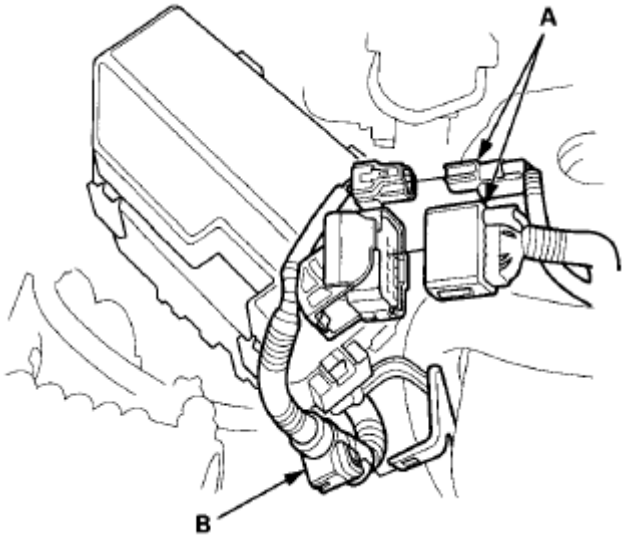


Fig. 109: Identifying Harness Connectors And Harness Clamp On Left Strut Tower (A/T Model)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

9. Install the strut brace (see **FRAME BRACE REPLACEMENT**).
10. Install the cowl cover (see **FRONT BULKHEAD BRACE COVER REPLACEMENT**).
11. Install the air cleaner (see **THROTTLE BODY CLEANING**).
12. Do the battery installation procedure (see **BATTERY REMOVAL AND INSTALLATION**).
13. Install the engine compartment covers (see **ENGINE COMPARTMENT COVER REPLACEMENT**).

UPPER TRANSMISSION MOUNT REMOVAL AND INSTALLATION

REMOVAL-M/T MODEL

1. Remove the front splash shield (see **FRONT SPLASH SHIELD REPLACEMENT**).
2. Remove the engine compartment covers (see **ENGINE COMPARTMENT COVER REPLACEMENT**).
3. Remove the air cleaner (see **THROTTLE BODY CLEANING**).
4. Lift and support the engine with a jack and a wood block under the transmission.
5. Remove the upper transmission mount bracket mounting bolts.

NOTE: Do not remove the bolt (A) from the upper transmission mount. If the bolt is removed, the upper transmission mount must be replaced as an assembly.

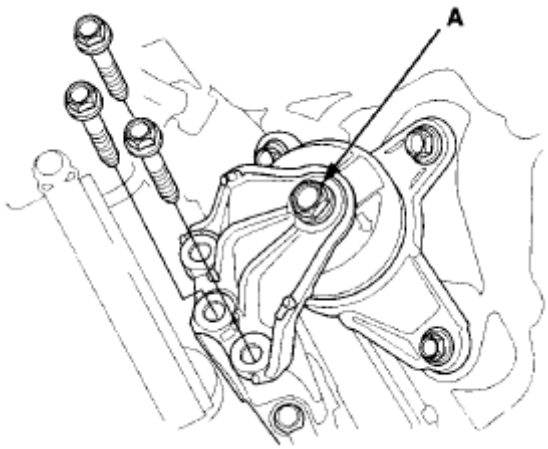


Fig. 110: Identifying Upper Transmission Mounting Bolts (M/T Model)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Remove the upper transmission mount.

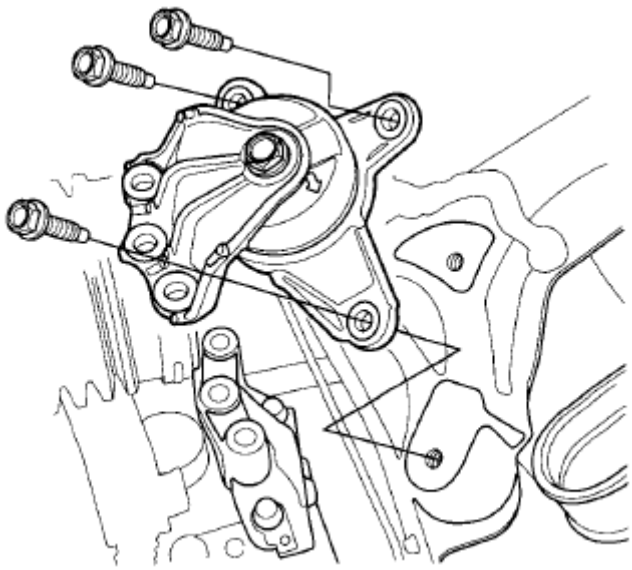


Fig. 111: Identifying Upper Transmission Mount (M/T Model)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

INSTALLATION-M/T MODEL

1. Install the upper transmission mount.

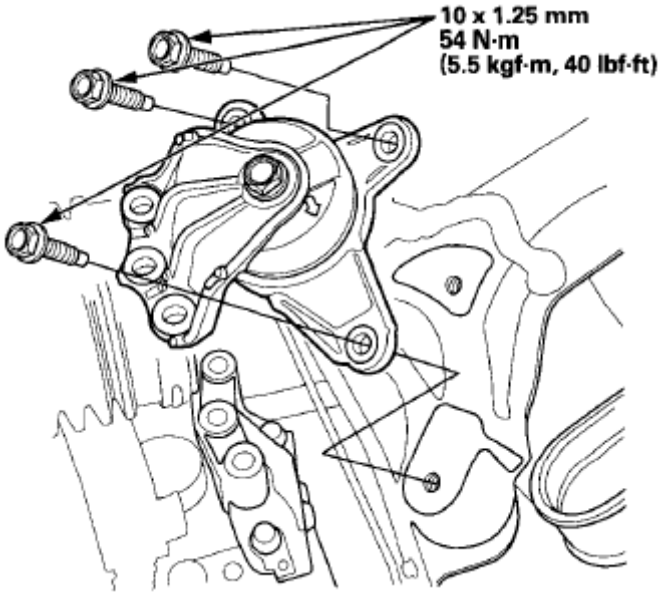


Fig. 112: Identifying Upper Transmission Mount (M/T Model) With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Loosely install the new upper transmission mount bracket mounting bolts.

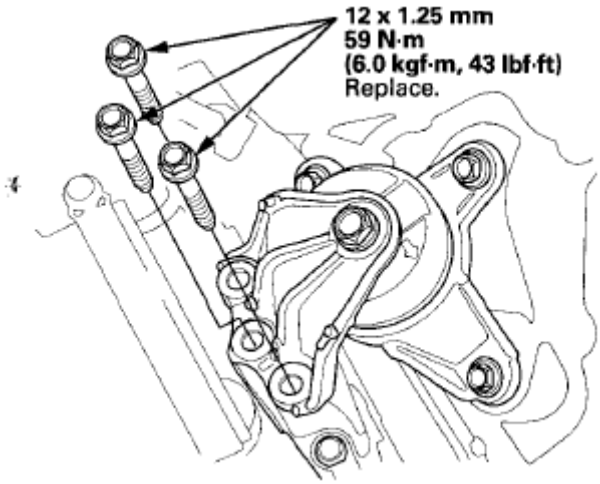


Fig. 113: Identifying Upper Transmission Mount Bracket Mounting Bolts With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Remove the jack and the wood block.
4. Tighten the upper transmission mount bracket mounting bolts.
5. Install the air cleaner (see **THROTTLE BODY CLEANING**).
6. Install the engine compartment covers (see **ENGINE COMPARTMENT COVER REPLACEMENT**).
7. Install the front splash shield (see **FRONT SPLASH SHIELD REPLACEMENT**).

REMOVAL-A/T MODEL

1. Remove the front splash shield (see **FRONT SPLASH SHIELD REPLACEMENT**).
2. Remove the engine compartment covers (see **ENGINE COMPARTMENT COVER REPLACEMENT**).
3. Remove the air cleaner (see **THROTTLE BODY CLEANING**).
4. Lift and support the engine with a jack and a wood block under the transmission.
5. Disconnect the transmission fluid pressure switch E (6th clutch) connector (A). Remove the harness bracket (B), then remove the upper transmission mount bracket mounting bolts.

NOTE: Do not remove the bolt (C) from the upper transmission mount. If the bolt is removed, the upper transmission mount must be replaced as an assembly.

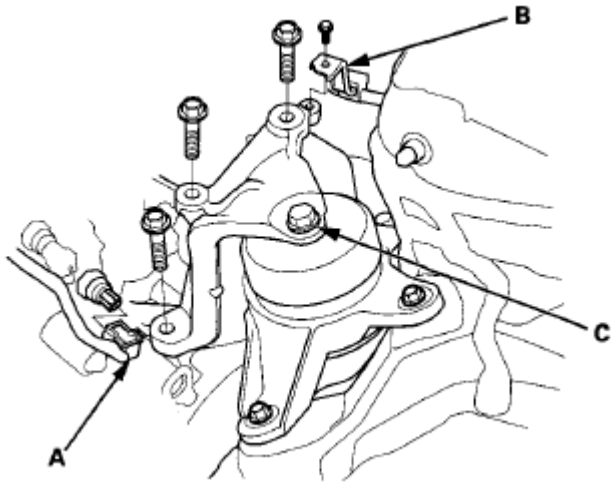


Fig. 114: Identifying Connector, Harness Bracket And Bolts (A/T Model)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Remove the upper transmission mount.

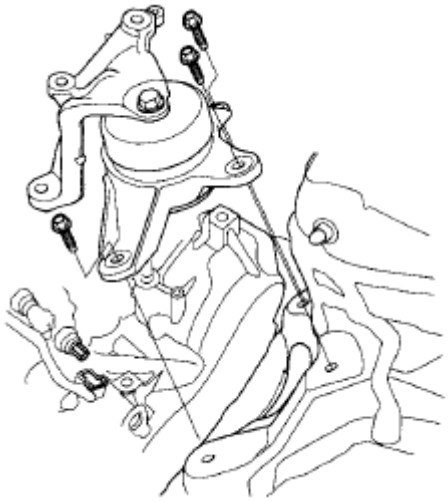


Fig. 115: Identifying Upper Transmission Mount With Mounting Bolts (A/T Model)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

INSTALLATION-A/T MODEL

1. Install the upper transmission mount.

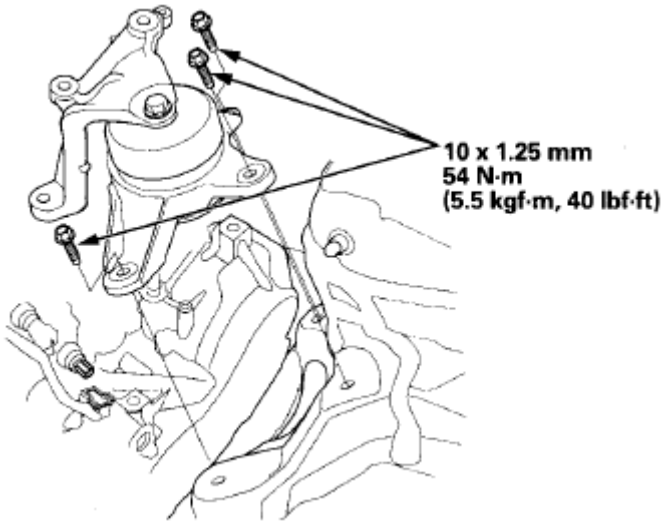


Fig. 116: Identifying Upper Transmission Mount With Mounting Bolts (A/T Model) With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Loosely install the new upper transmission mount bracket mounting bolts, then install the harness bracket (A). Connect the transmission fluid pressure switch E (6th clutch) connector (B).

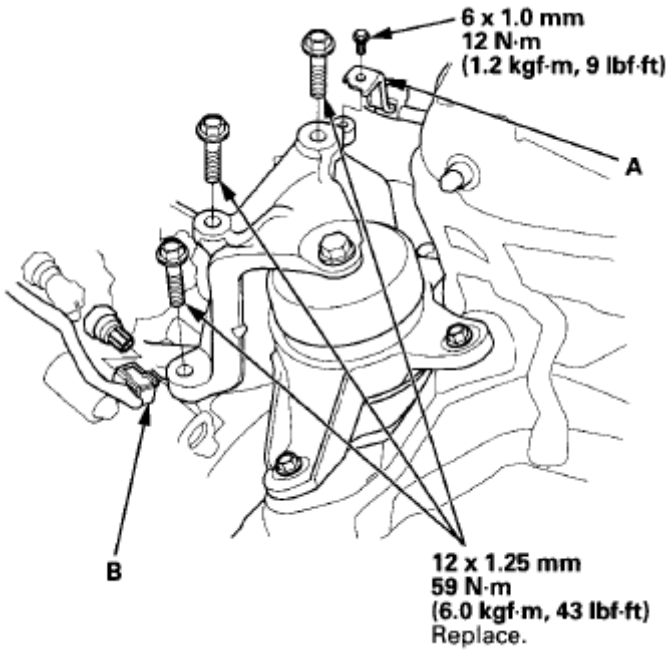


Fig. 117: Identifying Harness Bracket And Connector With Torque Specification Of Bolts (A/T Model) With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Remove the jack and the wood block.
4. Tighten the upper transmission mount bracket mounting bolts.
5. Install the air cleaner (see **THROTTLE BODY CLEANING**).
6. Install the engine compartment covers (see **ENGINE COMPARTMENT COVER REPLACEMENT**).
7. Install the front splash shield (see **FRONT SPLASH SHIELD REPLACEMENT**).

LOWER TRANSMISSION MOUNT REMOVAL AND INSTALLATION

REMOVAL-M/T MODEL

1. Remove the front splash shield (see **FRONT SPLASH SHIELD REPLACEMENT**).
2. Support the engine/transmission with a transmission jack.
3. Remove the lower transmission mount bracket (A), then remove the lower transmission mount (B).

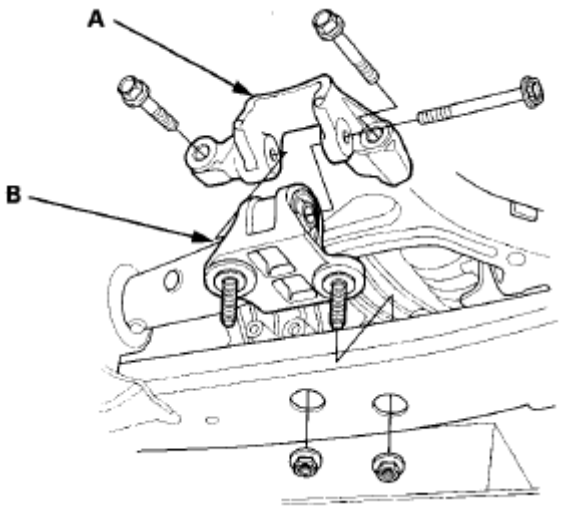


Fig. 118: Identifying Lower Transmission Mount Bracket And Transmission Mount (M/T Model)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

INSTALLATION-M/T MODEL

1. Install the lower transmission mount (A).

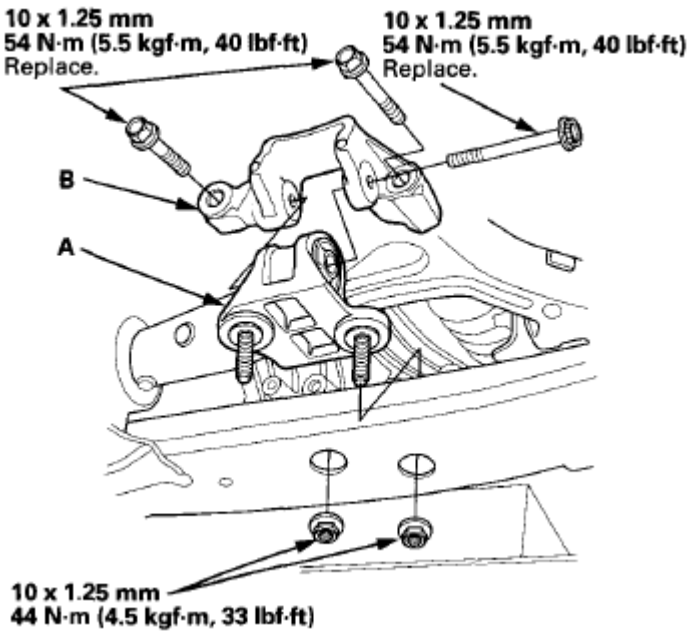


Fig. 119: Identifying Lower Transmission Mount Bracket And Transmission Mount (M/T Model) With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Loosely install the lower transmission mount bracket (B) using new bolts.
3. Remove the transmission jack.
4. Tighten the lower transmission mount bracket mounting bolts and the lower transmission mount

mounting nuts.

5. Install the front splash shield (see **FRONT SPLASH SHIELD REPLACEMENT**).

REMOVAL-A/T MODEL

1. Remove the front splash shield (see **FRONT SPLASH SHIELD REPLACEMENT**).
2. Lift and support the engine with a transmission jack and a wood block under the transmission.
3. Remove the lower transmission mount bracket (A), then remove the lower transmission mount (B).

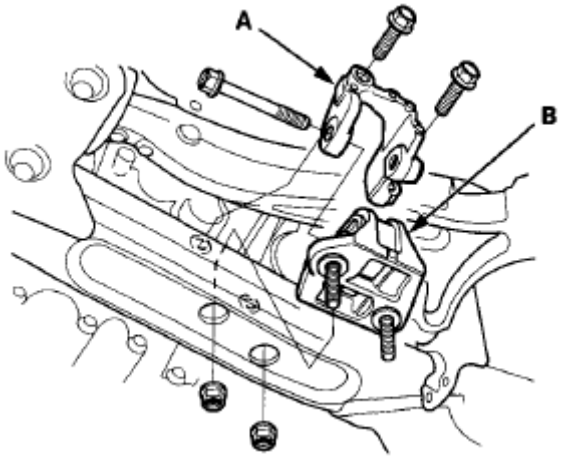


Fig. 120: Identifying Lower Transmission Mount Bracket And Transmission Mount (A/T Model)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

INSTALLATION-A/T MODEL

1. Install the lower transmission mount (A).

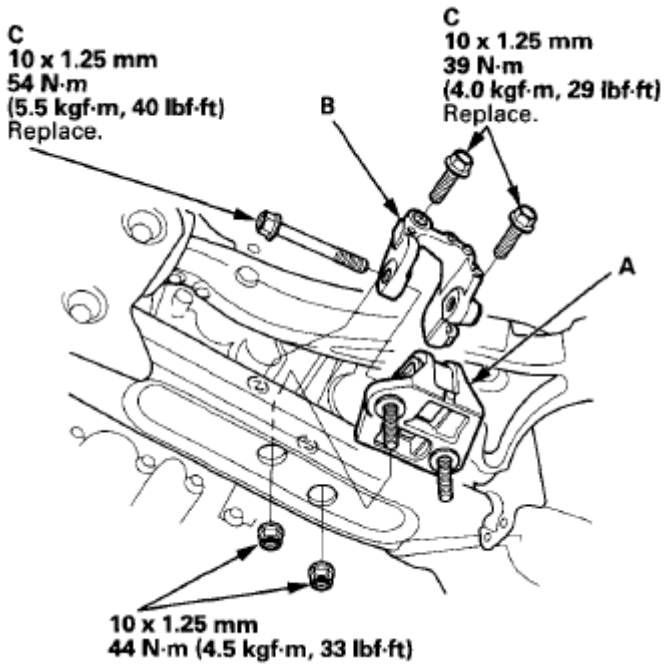


Fig. 121: Identifying Lower Transmission Mount Bracket And Transmission Mount (A/T Model) With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Loosely install the lower transmission mount bracket (B) using new bolts (C).
3. Remove the transmission jack and the wood block.
4. Tighten the lower transmission mount bracket mounting bolts and the lower transmission mount mounting nuts.
5. Install the front splash shield (see **FRONT SPLASH SHIELD REPLACEMENT**).

2012 ENGINE

Engine Block - TL

SPECIAL TOOLS

Ref.No.	Tool Number	Description	Qty
①	070AD-RCA0200	Oil Seal Driver Attachment, 106 mm	1
②	07749-0010000	Driver Handle, 15 x 135L	1
③	07OAD-RCAA100	Oil Seal Driver, 64 mm	1

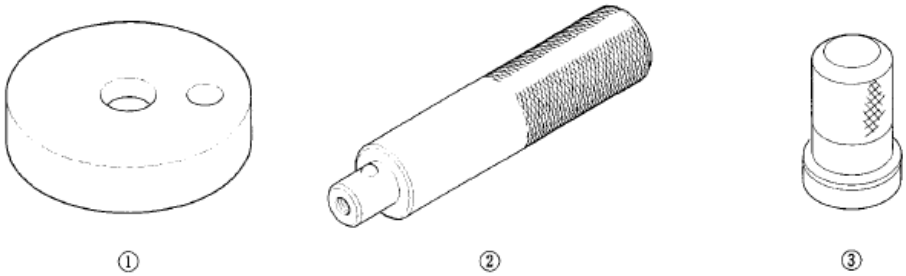


Fig. 1: Identifying Driver Handle, Oil Seal Driver And Attachment
Courtesy of AMERICAN HONDA MOTOR CO., INC.

COMPONENT LOCATION INDEX

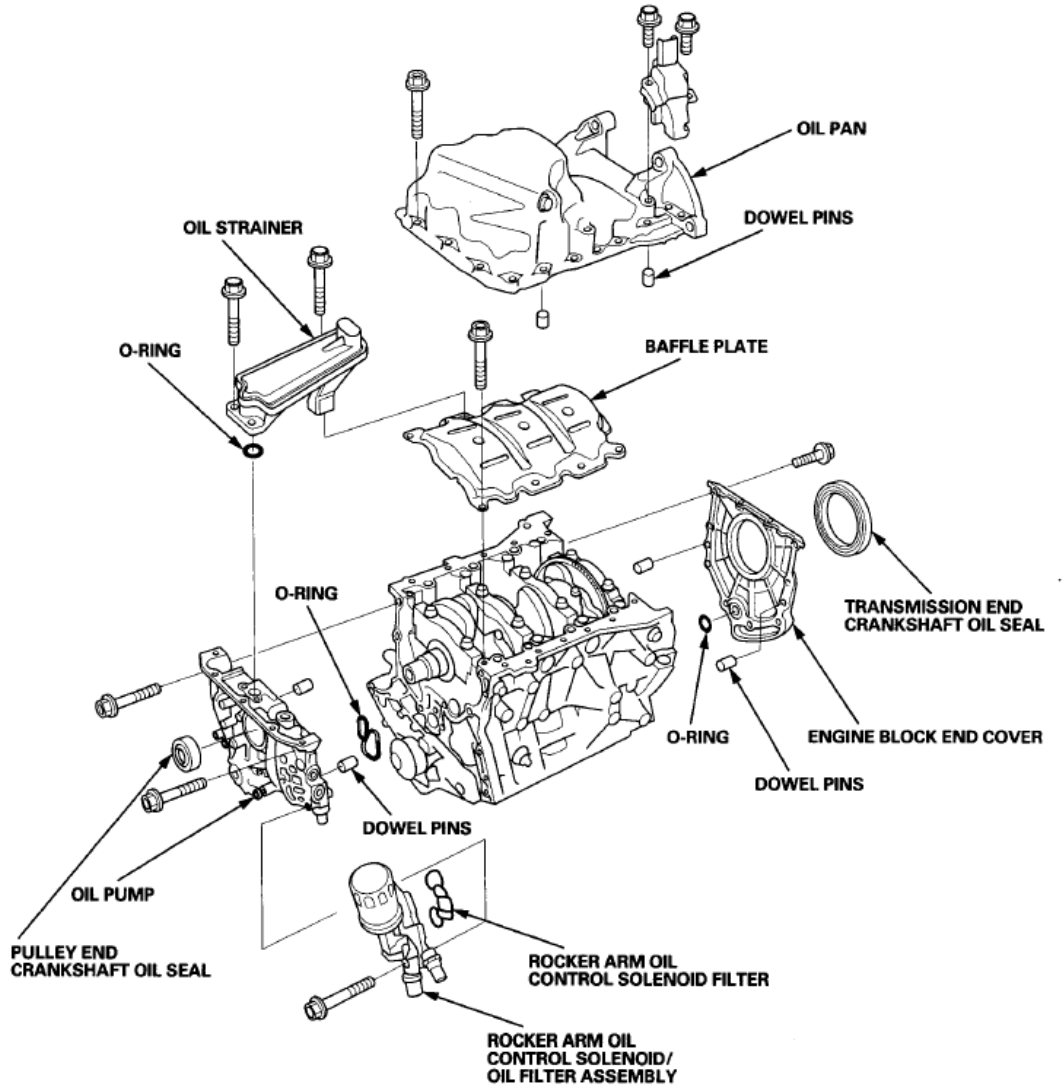


Fig. 2: Identifying Engine Block Components (1 Of 3)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

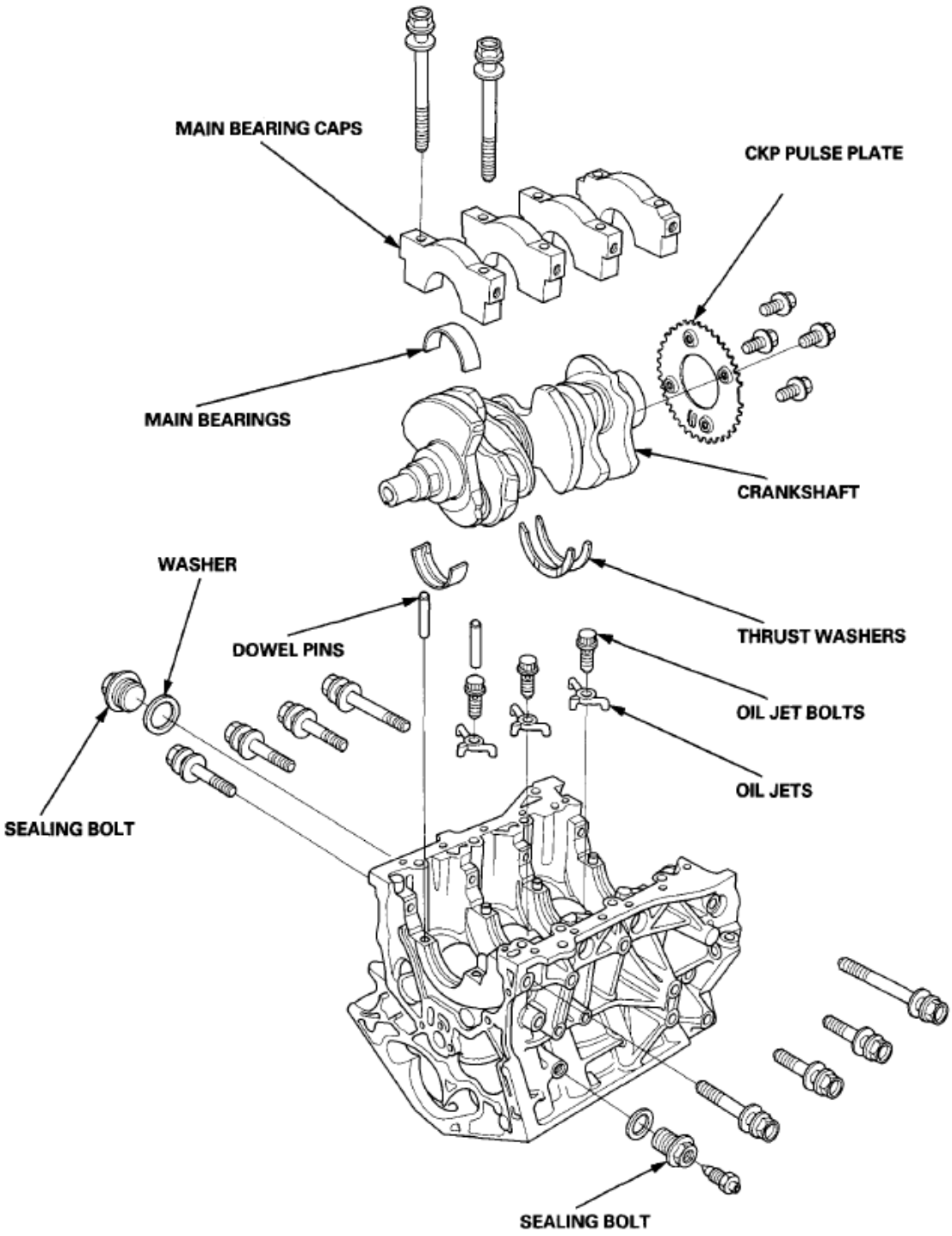


Fig. 3: Identifying Engine Block Components (2 Of 3)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

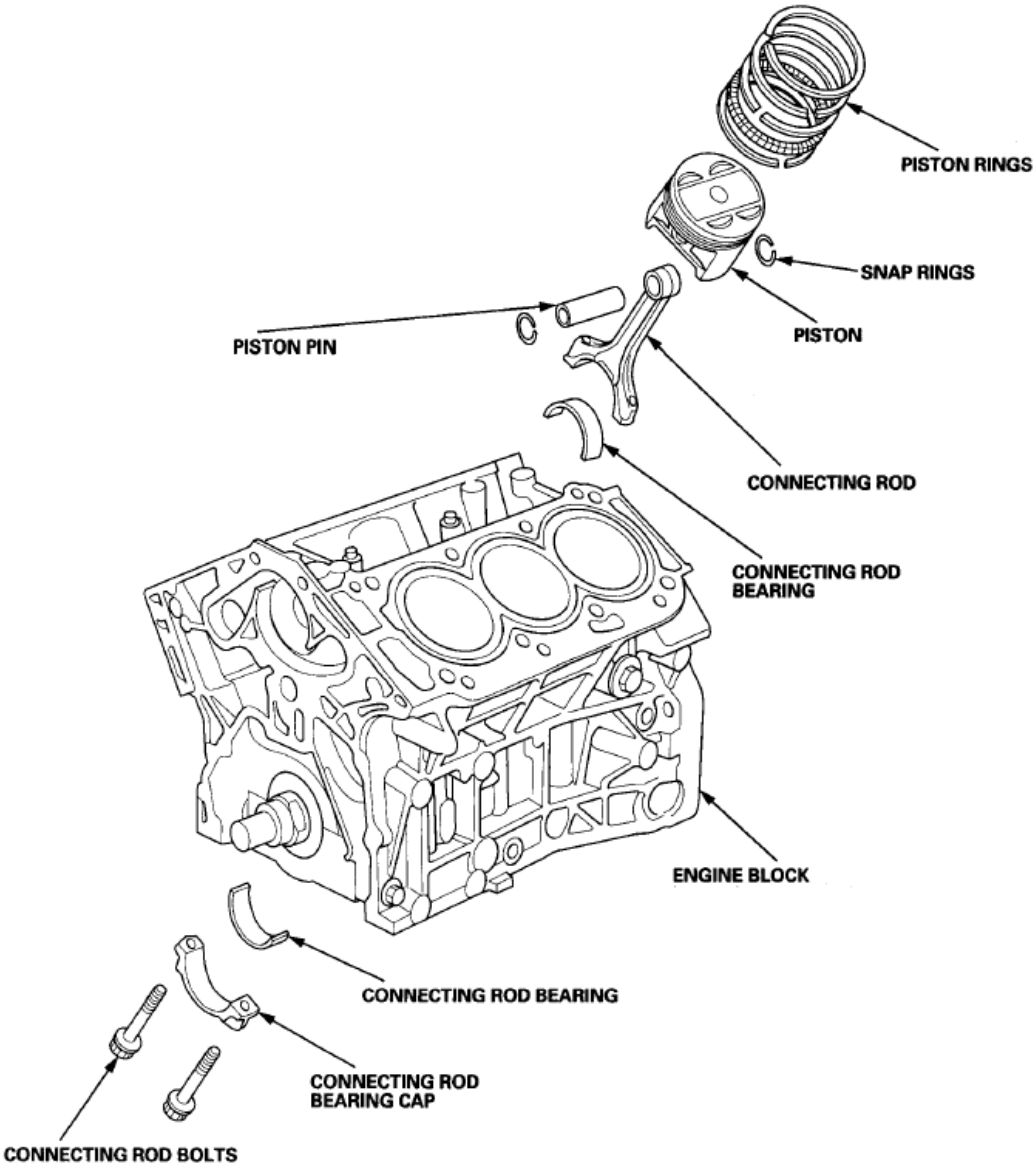


Fig. 4: Identifying Engine Block Components (3 Of 3)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

CONNECTING ROD AND CRANKSHAFT END PLAY INSPECTION

1. Remove the oil pump (see **REMOVAL**).
2. Remove the baffle plate (see step 10).
3. Measure the connecting rod end play with a feeler gauge (A) between the connecting rod (B) and the crankshaft (C).

   Connecting Rod End Play

   Standard (New): 0.15- 0.35 mm (0.006- 0.013 in)

Service Limit: 0.45 mm (0.017 in)

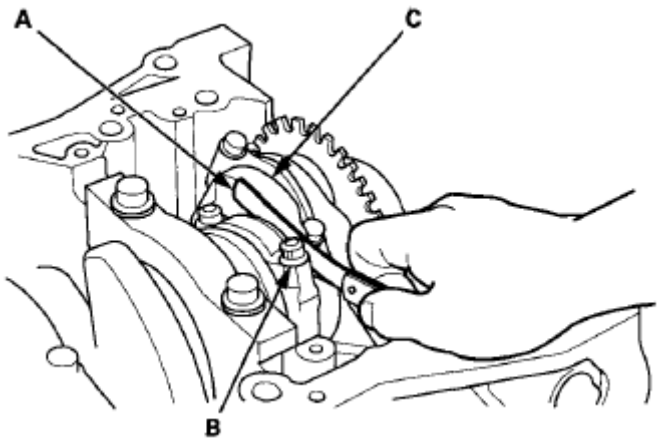


Fig. 5: Measuring Connecting Rod End Play Using Feeler Gauge Between Connecting Rod And Crankshaft
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. If the connecting rod end play is beyond the service limit, install a new connecting rod and recheck. If it is still beyond the service limit, replace the **crankshaft**.
5. Push the crankshaft firmly away from the dial indicator by prying, and zero the dial against the end of the crankshaft. Then pull the crankshaft firmly back toward the indicator by prying; the dial reading should not exceed the service limit.

Crankshaft End Play

Standard (New): 0.10- 0.35 mm (0.0039- 0.0138 in)

Service Limit: 0.45 mm (0.0177 in)

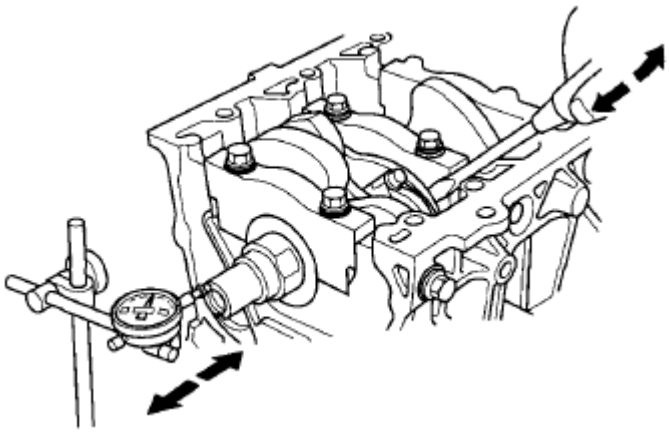


Fig. 6: Measuring Crankshaft End Play
Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. If the crankshaft end play is beyond the service limit, replace the thrust washers and recheck. If it is still beyond the service limit, replace the **crankshaft**.

CRANKSHAFT MAIN BEARING REPLACEMENT

MAIN BEARING CLEARANCE INSPECTION

1. Remove the main bearing caps and the **bearing halves**.
2. Clean each main journal and bearing half with a clean shop towel.
3. Place one strip of plastigage across each main journal.

NOTE: If the engine is still in the vehicle when you bolt the main cap down to check the clearance, the weight of the crankshaft and the drive plate will flatten the plastigage further than just the torque on the cap bolt and give you an incorrect reading. For an accurate reading, support the crank with a jack under the counterweights, and check only one bearing at a time.

4. Reinstall the bearings and the bearing caps, then torque the bearing cap bolts to 74 N.m (7.5 kgf.m, 54 lbf.ft), and the bearing cap side bolts to 49 N.m (5.0 kgf.m, 36 lbf.ft) in the proper sequence (see step 22).

NOTE:
- **Apply new engine oil to the bolt threads and flanges.**
- **Do not rotate the crankshaft during inspection.**

5. Remove the bearing cap and the bearing half, and measure the widest part of the plastigage.

Main Bearing-to-Journal Oil Clearance

Standard (New): 0.019- 0.045 mm (0.00075- 0.00177 in)

Service Limit: 0.050 mm (0.00197 in)

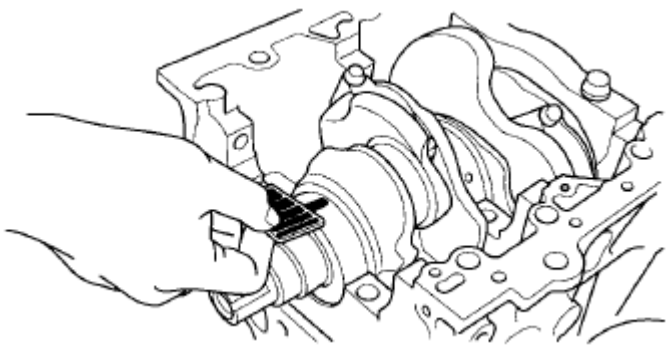


Fig. 7: Measuring Widest Part Of Plastigage
Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. If the plastigage measures too wide or too narrow, remove the crankshaft, and remove the upper half of

the bearing. Install a new, complete bearing with the same color code, and recheck the clearance. Do not file, shim, or scrape the bearings or the caps to adjust clearance.

7. If the plastigage shows the clearance is still incorrect, try the next larger or smaller bearing (the color listed above or below that one), and check the clearance again. If the proper clearance cannot be obtained by using the appropriate larger or smaller bearings, replace the **crankshaft and start over**.

MAIN BEARING SELECTION

Block Bore Code Location

Letters or bars have been stamped on the end of the engine block as a code for the size of each of the four main journal bores.

Use them, and the numbers or bars stamped on the crankshaft (codes for main journal size), to choose the correct bearings. If the codes are indecipherable because of an accumulation of dirt and dust, do not scrub them with a wire brush or scraper. Clean them only with solvent or detergent.

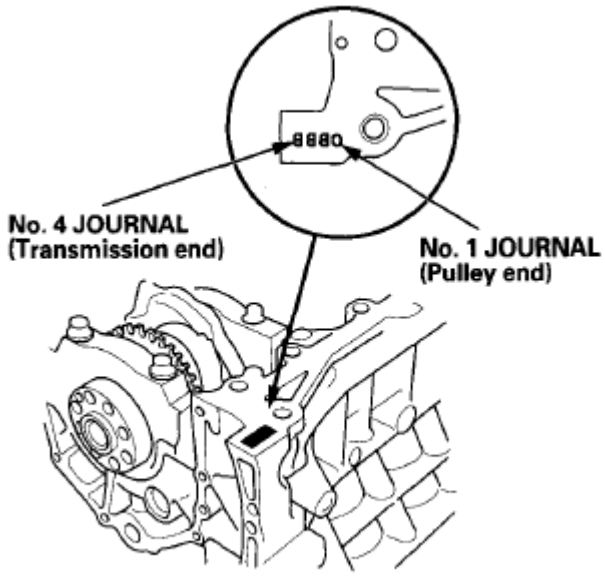


Fig. 8: Identifying Block Bore Code Location
Courtesy of AMERICAN HONDA MOTOR CO., INC.

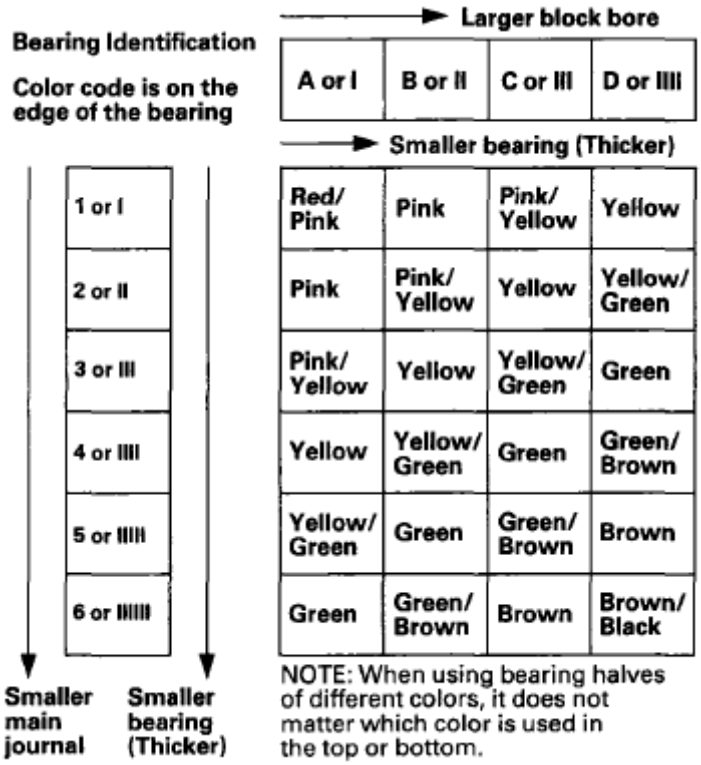


Fig. 9: Color Coded Bearing Identification Table
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Main Journal Code Locations (Numbers or Bars)

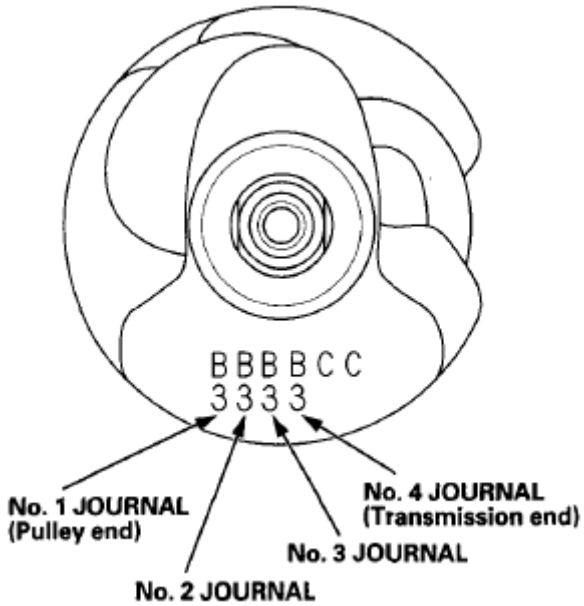


Fig. 10: Identifying Main Journal Code Locations (Numbers Or Bars)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

CONNECTING ROD BEARING REPLACEMENT

CONNECTING ROD BEARING CLEARANCE INSPECTION

1. Remove the connecting rod cap and the **bearing half**.
2. Clean the connecting rod journal and the bearing half with a clean shop towel.
3. Place a strip of plastigage across the rod journal.
4. Reinstall the bearing half and the rod cap, and tighten the bolts.

NOTE:

- **Apply new engine oil to the bolt threads and flanges.**
- **Do not rotate the crankshaft during inspection.**

Tightening Torque:

20 N.m (2.0 kgf.m, 14 lbf.ft) + 90 °

5. Remove the rod cap and the bearing half and measure the widest part of the plastigage.

Connecting Rod Bearing-to-Journal Oil

Clearance

Standard (New): 0.020- 0.044 mm (0.00079- 0.00173 in)

Service Limit: 0.050 mm (0.00197 in)

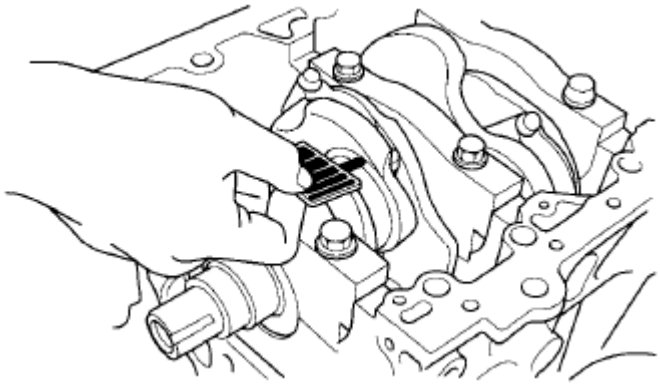


Fig. 11: Measuring Widest Part Of Plastigage
Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. If the plastigage measures too wide or too narrow, remove the upper half of the bearing, then install a new, complete bearing with the same color code, and recheck the clearance. Do not file, shim, or scrape the bearings or the caps to adjust clearance.
7. If the plastigage shows the clearance is still incorrect, try the next larger or smaller bearing (the color

listed above or below that one), and check the clearance again. If the proper clearance cannot be obtained by using the appropriate larger or smaller bearings, replace the **crankshaft and start over**.

CONNECTING ROD BEARING SELECTION

Each connecting rod falls into one of four tolerance ranges (from 0 to 0.024 mm (0.0009 in), in 0.006 mm (0.0002 in) increments) depending on the size of its big end bore.

It is then stamped with a number or bar (1, 2, 3, or 4/I, II, III, or IIII) indicating the range. You may find any combination of 1, 2, 3, or 4/I, II, III, or IIII in any engine.

Big End Bore Size

J35Z6 engine: 58.0 mm (2.283 in)

J37A4 engine: 60.0 mm (2.362 in)

Inspect the connecting rod for cracks and heat damage.

Big End Bore Code Locations

Numbers or bars have been stamped on the side of each connecting rod as a code for the size of the big end. Use them, and the letters or bars stamped on the crank (codes for rod journal size), to choose the correct bearings. If the codes are indecipherable because of an accumulation of dirt and dust, do not scrub them with a wire brush or scraper. Clean them only with solvent or detergent.

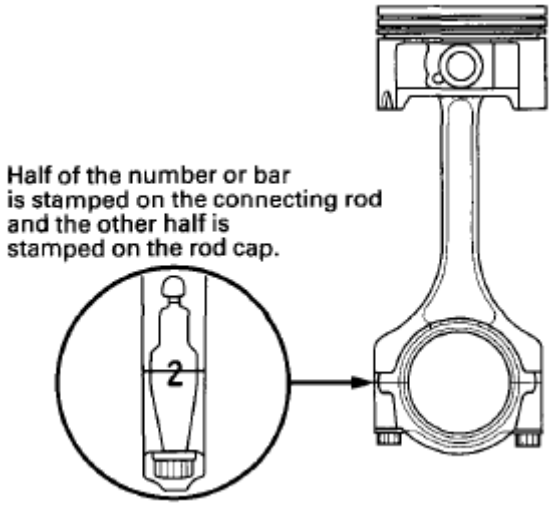


Fig. 12: Identifying Big End Bore Code Locations
Courtesy of AMERICAN HONDA MOTOR CO., INC.

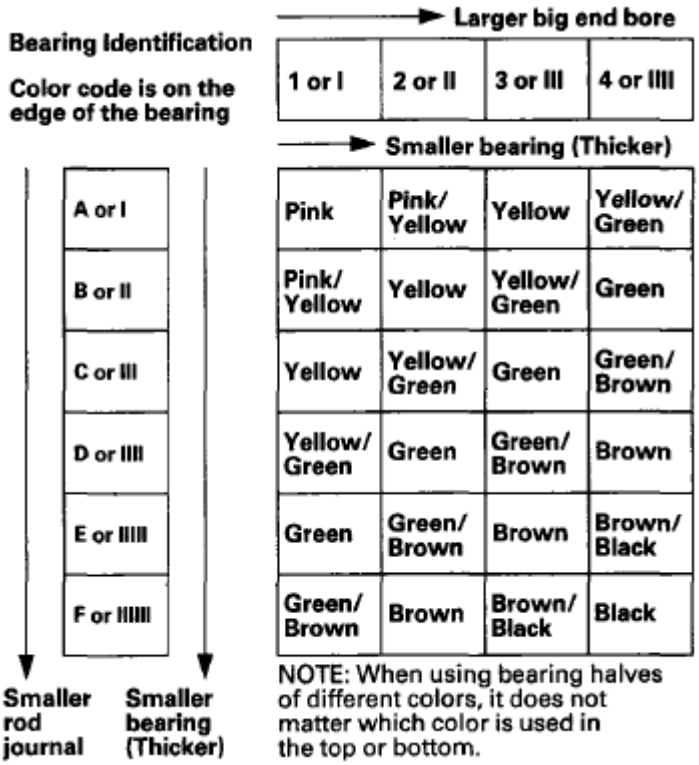


Fig. 13: Color Coded Bearing Identification Table
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Connecting Rod Journal Code Locations (Letters or Bars)

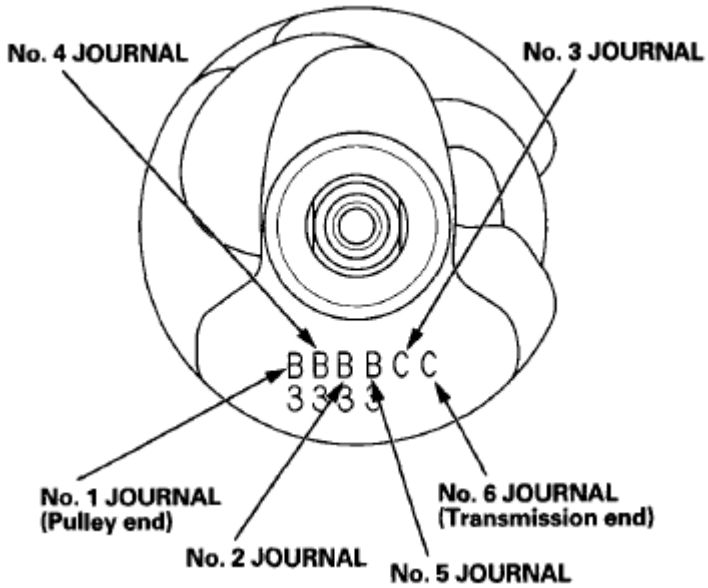


Fig. 14: Identifying Connecting Rod Journal Code Locations (Letters Or Bars)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

OIL PAN REMOVAL

1. If the engine is already out of the vehicle, go to step 6.
2. Raise the vehicle on the lift.
3. Drain the engine oil (see **ENGINE OIL LEVEL CHECK**).
4. Remove the front splash shield (see **FRONT SPLASH SHIELD REPLACEMENT**).
5. Remove exhaust pipe A (see step 42 **ENGINE REMOVAL**).
6. Remove the rear warm up TWC bracket.

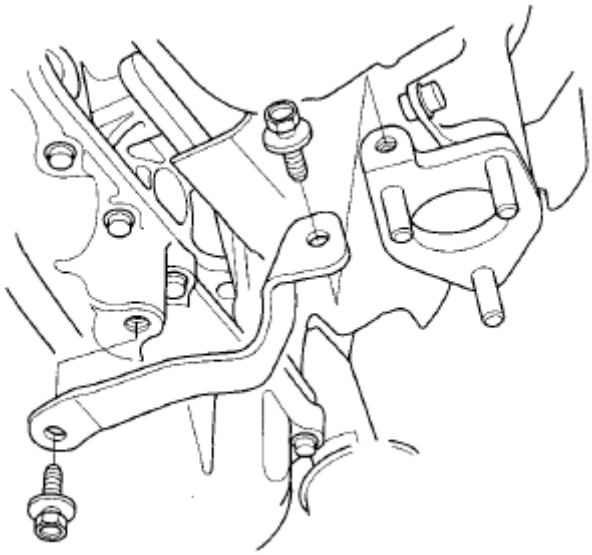


Fig. 15: Identifying Rear Warm Up TWC Bracket
Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Remove the CKP sensor cover (A) and the bolt (B), then disconnect the CKP sensor connector (C).

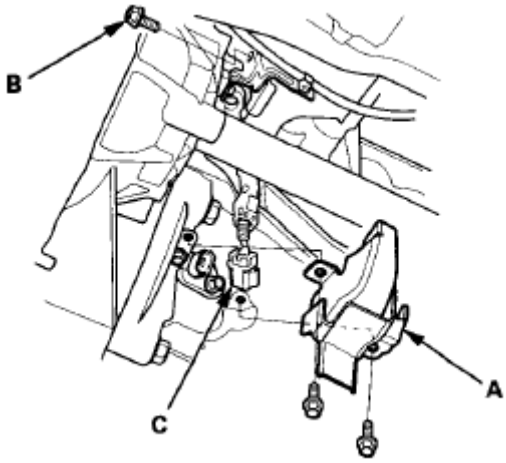


Fig. 16: Identifying CKP Sensor Cover, Connector And Bolt
Courtesy of AMERICAN HONDA MOTOR CO., INC.

8. Remove the torque converter case cover (A) and the four bolts (B) securing the transmission.

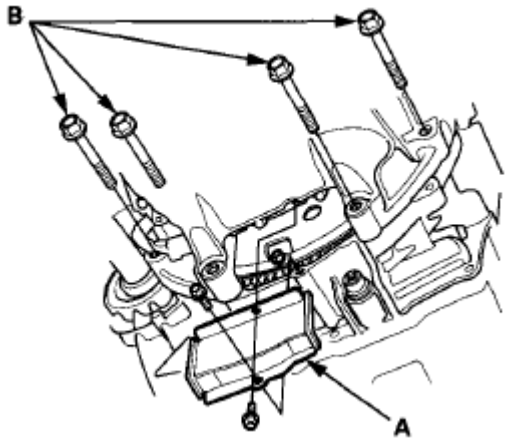


Fig. 17: Identifying Torque Converter Case Cover And Bolts
Courtesy of AMERICAN HONDA MOTOR CO., INC.

9. Remove the bolts securing the oil pan.
10. Using a flat blade screwdriver, separate the oil pan from the engine block in the places shown in illustration below.

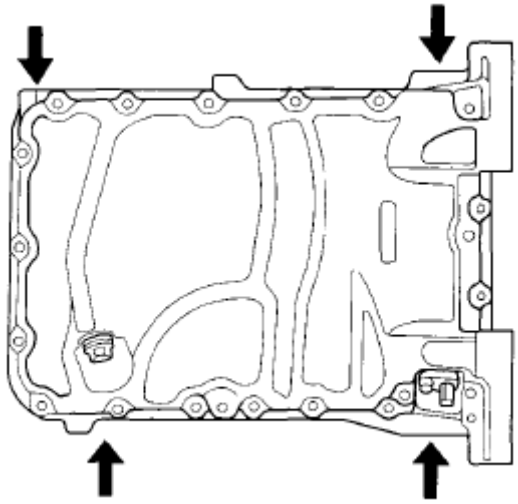


Fig. 18: Identifying Oil Pan & Screwdriver Pry Points
Courtesy of AMERICAN HONDA MOTOR CO., INC.

11. Remove the oil pan.

CRANKSHAFT AND PISTON REMOVAL

1. Remove the engine/transmission (see **ENGINE REMOVAL**).
2. Remove the transmission:

- Manual transmission (see **TRANSMISSION REMOVAL**)
- Automatic transmission (see **TRANSMISSION REMOVAL**)

3. M/T model: Remove the flywheel (see **TRANSMISSION SIDE**).
4. A/T model: Remove the drive plate (see **DRIVE PLATE REMOVAL AND INSTALLATION**).
5. Remove the cylinder heads:
   - J35Z6 engine (see **CYLINDER HEAD REMOVAL**)
   - J37A4 engine (see **CYLINDER HEAD REMOVAL**)
6. Remove the timing belt drive pulley from the crankshaft:
   - J35Z6 engine (see **TIMING BELT DRIVE PULLEY REPLACEMENT**)
   - J37A4 engine (see **TIMING BELT DRIVE PULLEY REPLACEMENT**)
7. Remove the **oil pan**.
8. Remove the engine block end cover.

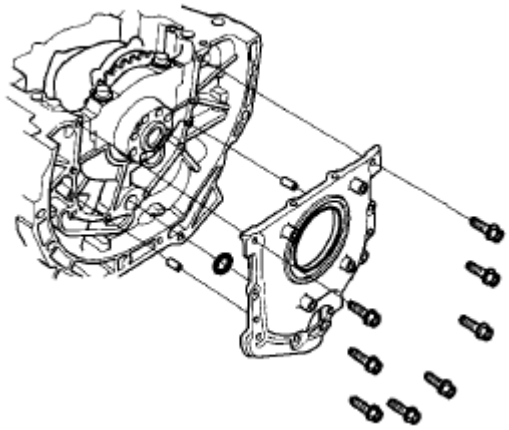


Fig. 19: Identifying Engine Block End Cover With Mounting Bolts
Courtesy of AMERICAN HONDA MOTOR CO., INC.

9. Remove the rocker arm oil control solenoid/oil filter assembly.

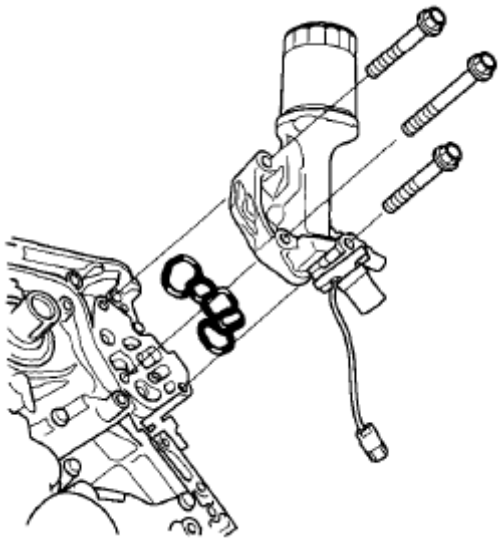


Fig. 20: Identifying Rocker Arm Oil Control Solenoid/Oil Filter Assembly
Courtesy of AMERICAN HONDA MOTOR CO., INC.

10. Remove the oil strainer (A), the baffle plate (B), and the oil pump (C).

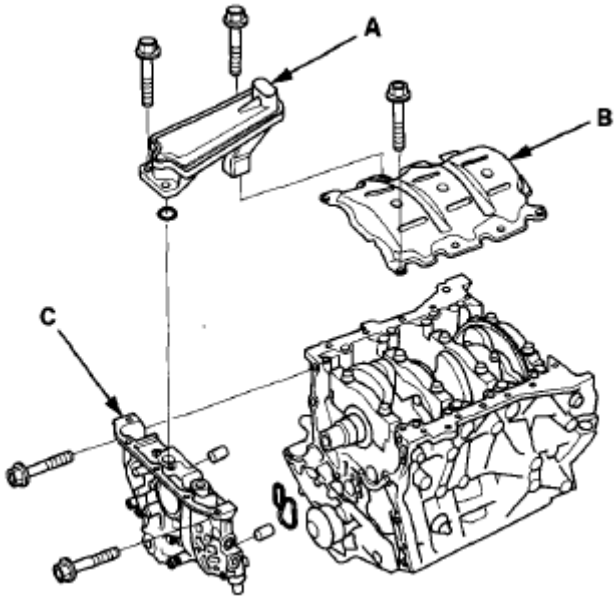


Fig. 21: Identifying Oil Strainer, Baffle Plate, And Oil Pump
Courtesy of AMERICAN HONDA MOTOR CO., INC.

11. J35Z6 engine: If you can feel a ridge of metal or hard carbon around the top of any cylinder, remove it with a ridge reamer (A). Follow the reamer manufacturer's instructions. If the ridge is not removed, it may damage the piston as it's pushed out.

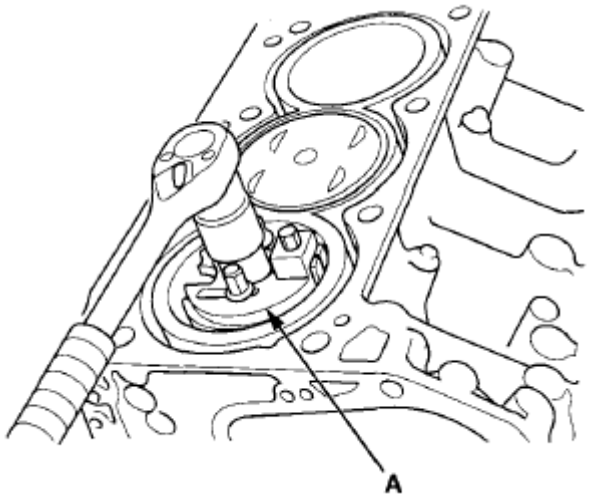


Fig. 22: Removing Ridge Of Metal Or Hard Carbon Around Top Of Cylinder By Using Ridge Reamer
Courtesy of AMERICAN HONDA MOTOR CO., INC.

12. Remove the connecting rod caps after setting the connecting rod journal at bottom dead center (BDC) for each cylinder. Remove the piston/connecting rod assembly by pushing on the connecting rod. Take care not to damage the oil jets, the connecting rod journal, or the cylinder with the connecting rod.

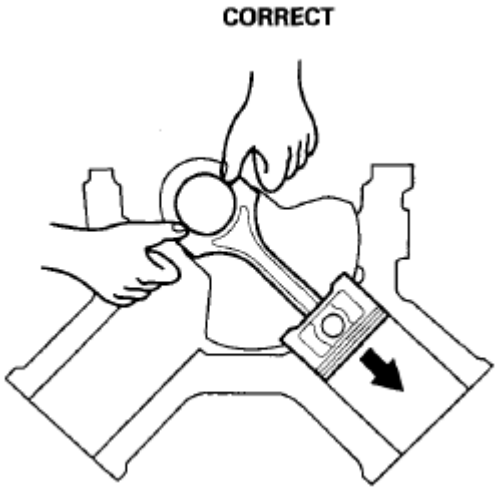


Fig. 23: Pushing Connecting Rod In Correct Direction
Courtesy of AMERICAN HONDA MOTOR CO., INC.

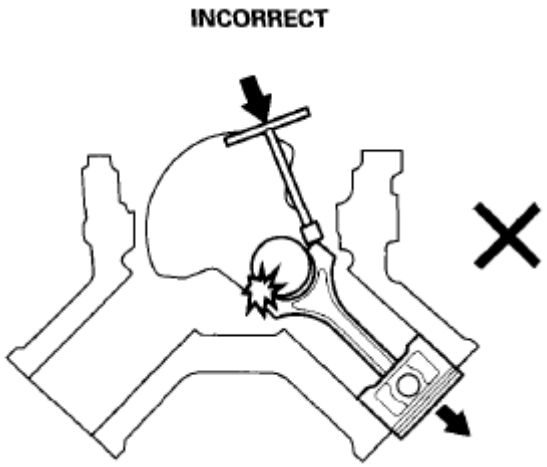


Fig. 24: Pushing Connecting Rod In Incorrect Direction
Courtesy of AMERICAN HONDA MOTOR CO., INC.

13. Remove the bearing from the rod cap. Keep all caps/bearings in order.
14. Remove the upper bearing halves from the connecting rods, and set them aside with their respective caps.
15. After removing a piston/connecting rod assembly, reinstall the rod cap on the rod.
16. To avoid confusion during reassembly, mark each piston/connecting rod assembly with its cylinder number.
17. Loosen the bearing cap bolts and the bearing cap side bolts in sequence 1/3 turn at a time; repeat the sequence until all bolts are loosened.

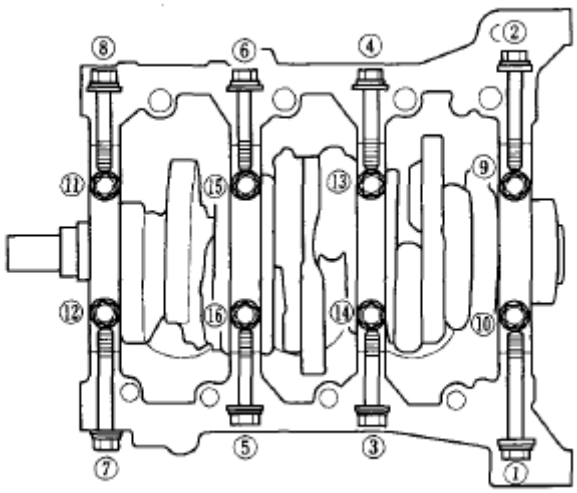


Fig. 25: Identifying Bearing Cap Bolts And Side Bolts With Loosening Sequence
Courtesy of AMERICAN HONDA MOTOR CO., INC.

18. Remove the bearing cap bolts (A) and the bearing cap side bolts (B), then remove the main bearing caps (C).

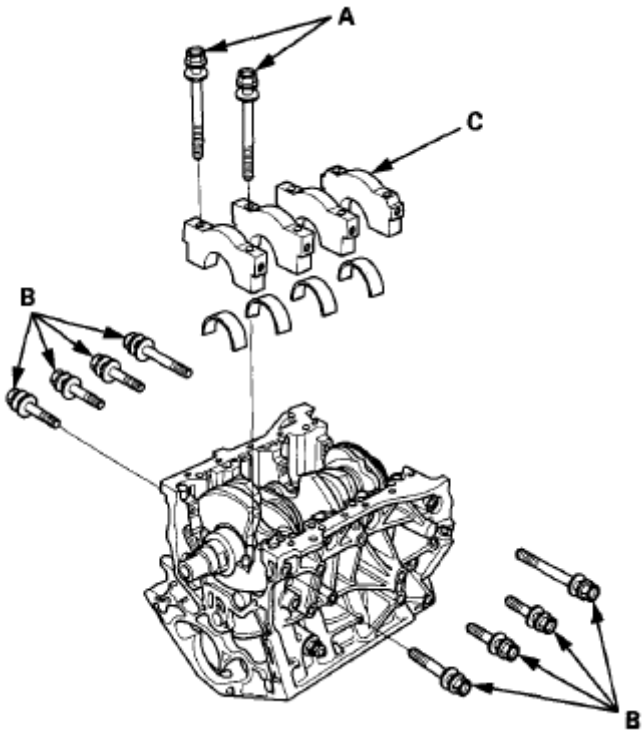


Fig. 26: Identifying Main Bearing Caps, Bearing Cap Bolts And Side Bolts
Courtesy of AMERICAN HONDA MOTOR CO., INC.

19. Lift the crankshaft (A) out of the engine block, being careful not to damage the journals and the CKP pulse plate (B).

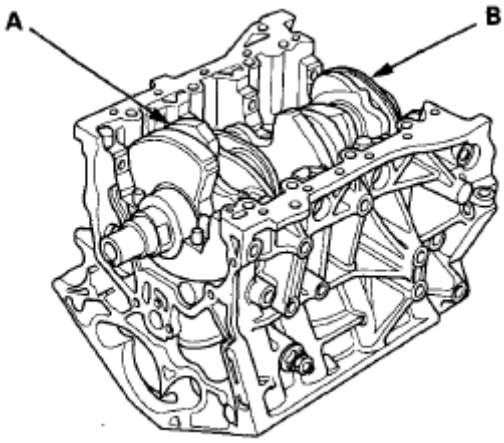


Fig. 27: Identifying Crankshaft And CKP Pulse Plate
Courtesy of AMERICAN HONDA MOTOR CO., INC.

20. Remove the CKP pulse plate from the **crankshaft**.
21. Reinstall the main caps and the bearings on the engine block in the proper order.

CRANKSHAFT INSPECTION

Out-of-Round and Taper

1. Remove the **crankshaft from the engine block**.
2. Remove the **CKP pulse plate from the crankshaft**.
3. Clean the crankshaft oil passages with pipe cleaners or a suitable brush.
4. Check the keyway slot and the threaded holes for damage.
5. Measure the out-of-round at the middle of each rod and the main journal in two places. The difference between measurements on each journal must not be more than the service limit.

   Journal Out-of-Round

   Standard (New): 0.005 mm (0.00020 in) max.

   Service Limit: 0.010 mm (0.00039 in)

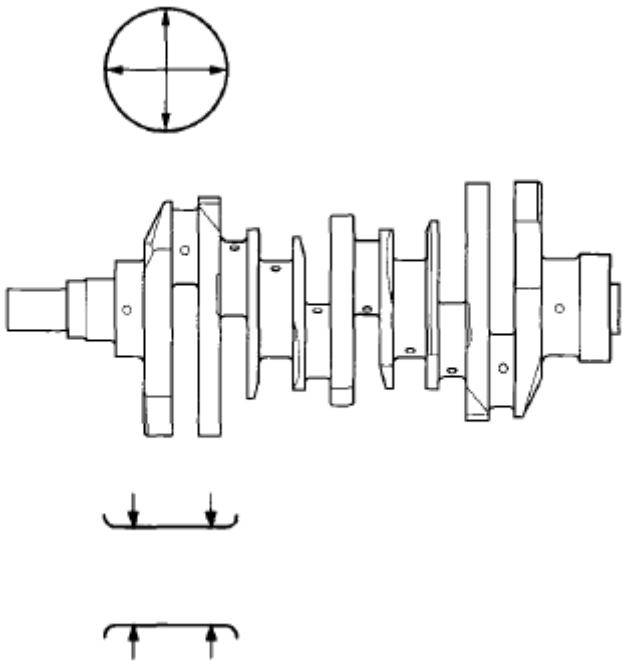


Fig. 28: Identifying Journal Out-Of-Round At Middle Of Each Rod
Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Measure the taper at the edges of each rod and main journal. The difference between measurements on each journal must not be more than the service limit.

   Journal Taper

   Standard (New): 0.005 mm (0.00020 in) max.

   Service Limit: 0.010 mm (0.00039 in)

Straightness

7. Place the V-blocks on a flat surface.
8. Check the total runout with the crankshaft supported on V-blocks.
9. Measure the runout on all of the main journals. Rotate the crankshaft two complete revolutions. The difference between measurements on each journal must not be more than the service limit.

Crankshaft Total Runout

Standard (New): 0.025 mm (0.00098 in) max.

Service Limit: 0.030 mm (0.00118 in)

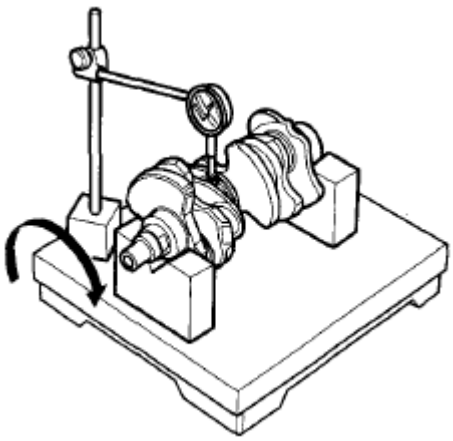


Fig. 29: Measuring Runout On All Of Main Journals
Courtesy of AMERICAN HONDA MOTOR CO., INC.

BLOCK AND PISTON INSPECTION

1. Remove the pistons from the **engine block**.
2. Check the pistons for distortion or cracks.
3. Measure the piston skirt diameter at a point 16 mm (0.63 in) from the bottom of the skirt.

J35Z6 engine

Piston Skirt Diameter

Standard (New): 88.975- 88.985 mm (3.50295- 3.50334 in)

Service Limit: 88.965 mm (3.50255 in)

Oversize Piston Skirt Diameter

0.25: 89.225- 89.235 mm (3.51279- 3.51318 in)

J37A4 engine

Piston Skirt Diameter

Standard (New): 89.983- 89.996 mm (3.54263- 3.54314 in)

Service Limit: 89.975 mm (3.54232 in)

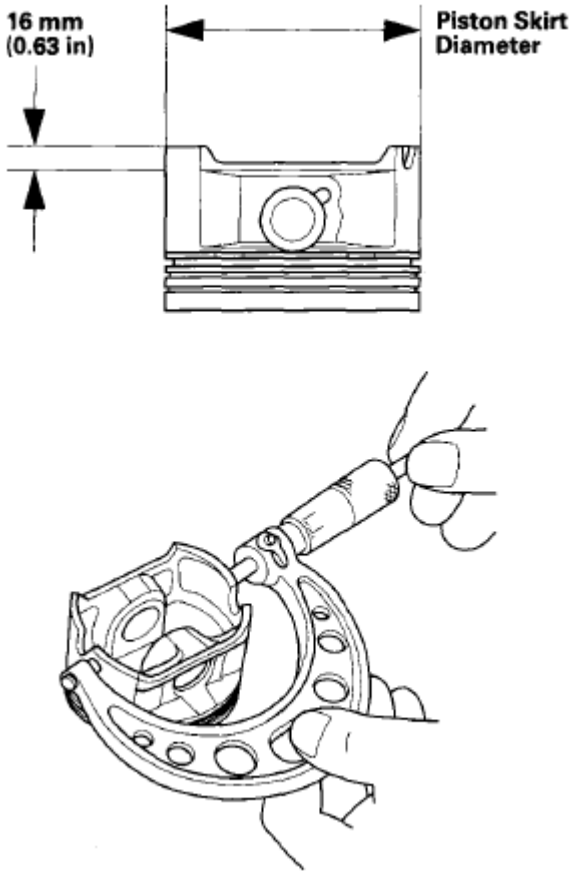


Fig. 30: Measuring Piston Skirt Diameter From Bottom Of Skirt
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Measure the wear and taper in direction X and Y at three levels in each cylinder as shown in illustration above.
5. J35Z6 engine: If the measurements in any cylinder are beyond the oversize bore service limit, replace the engine block. If the engine block has to be rebored, refer to step 8 after reboring.

   J37A4 engine: If the measurements in any cylinder are beyond the service limit, replace the engine block. The J37A4 engine block can not be rebored.

J35Z6 engine

Cylinder Bore Size

Standard (New): 89.000- 89.015 mm (3.50393- 3.50452 in)

Service Limit: 89.065 mm (3.50649 in)

Oversize

0.25: 89.250- 89.265 mm (3.51377- 3.51436 in)

Reboring Limit: 0.25 mm (0.0098 in)

Bore Taper

Limit: (Difference between first and third measurement) 0.05 mm (0.0020 in)

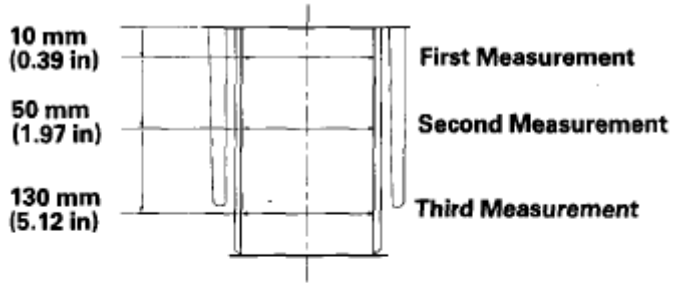
J37A4 engine Cylinder Bore Size

Standard (New): 90.000- 90.015 mm (3.54330- 3.54389 in)

Service Limit: 90.065 mm (3.54586 in)

Bore Taper

Limit: (Difference between first and third measurement) 0.05 mm (0.0020 in)



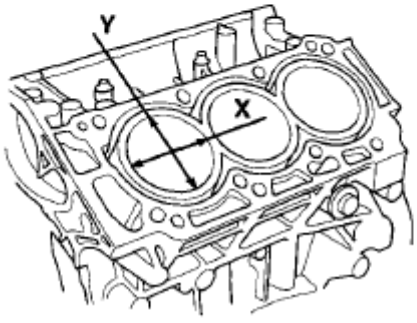


Fig. 31: Measuring Wear And Taper In Direction X And Y At Three Levels In Each Cylinder
Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. **J35Z6 engine**: Hone any scored or scratched cylinder bores.

NOTE: The J37A4 engine can not be honed. If the cylinders are damaged, the engine block must be replaced.

7. Check the top of the engine block for warpage. Measure along the edges and across the center as shown in illustration below.

Engine Block Warpage

Standard (New): 0.07 mm (0.002 in) max.

Service Limit: 0.10 mm (0.003 in)

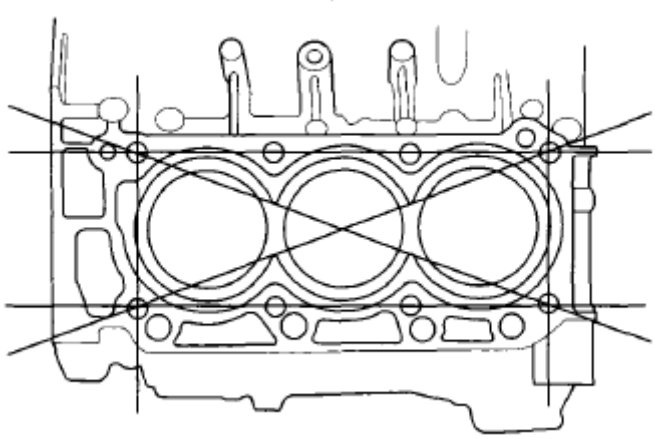


Fig. 32: Identifying Top Of Engine Block For Warpage
Courtesy of AMERICAN HONDA MOTOR CO., INC.

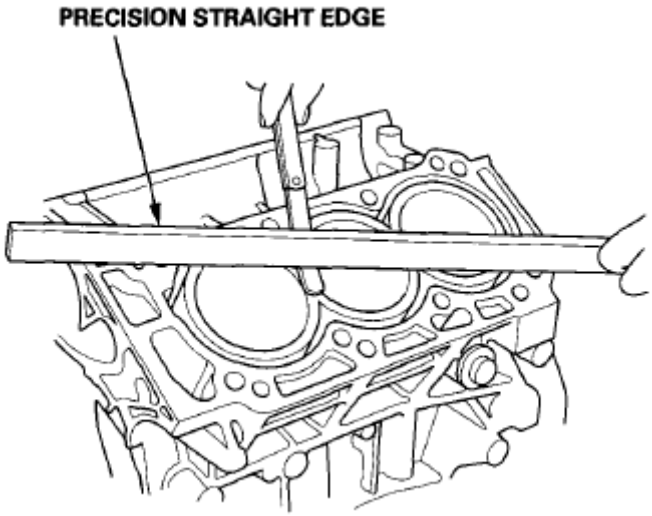


Fig. 33: Checking Top Of Engine Block For Warpage Using Precision Straight Edge

Courtesy of AMERICAN HONDA MOTOR CO., INC.

8. Calculate the difference between the cylinder bore diameter and the piston diameter. If the clearance is near or exceeds the service limit, inspect the piston and the cylinder bore for excessive wear.

J35Z6 engine

Piston-to-Cylinder Bore Clearance

Standard (New): 0.015- 0.040 mm (0.001- 0.001 in)

Service Limit: 0.08 mm (0.003 in)

J37A4 engine

Piston-to-Cylinder Bore Clearance

Standard (New): 0.004- 0.032 mm (0.001- 0.001 in)

Service Limit: 0.07 mm (0.002 in)

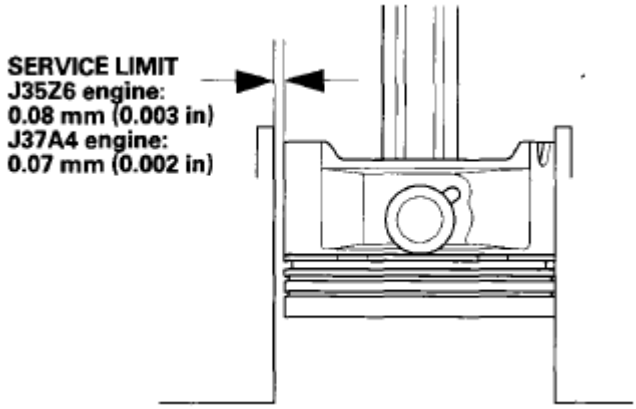


Fig. 34: Identifying Difference Between Cylinder Bore Diameter And Piston Diameter
Courtesy of AMERICAN HONDA MOTOR CO., INC.

CYLINDER BORE HONING

J35Z6 ENGINE

NOTE: The J37A4 engine can not be honed. If the cylinders are damaged, the engine block must be replaced.

1. Measure the cylinder bores (see step 4). If the engine block is to be reused, hone the cylinders and remeasure the bores. Only scored or scratched cylinder bores must be honed.
2. Remove the oil jets (see **OIL JET REPLACEMENT**).

3. Hone the cylinder bores with honing oil and a fine (400 grit) stone in a 60 degree Crosshatch pattern.

NOTE:

- **Use only a rigid hone with 400 grit or finer stone, such as Sunnen, Ammco, or equivalent.**
- **Do not use stones that are worn or broken.**

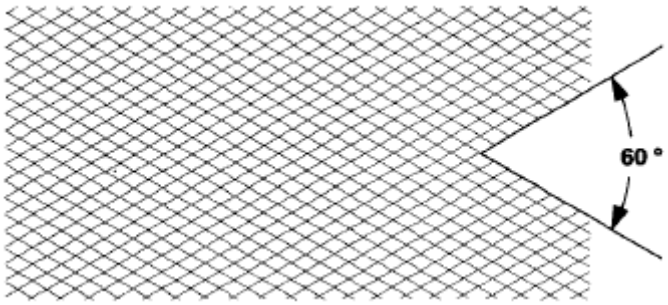


Fig. 35: Identifying 60° Crosshatch Pattern Of Cylinder Bores
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. When honing is complete, thoroughly clean the engine block of all metal particles. Wash the cylinder bores with hot soapy water, then dry and oil them immediately to prevent rusting.

NOTE: Never use solvent, it will only redistribute the grit on the cylinder walls.

5. If scoring or scratches are still present in the cylinder bores after honing to the service limit, rebore the engine block. Some light vertical scoring and scratching is acceptable if it is not deep enough to catch your fingernail and does not run the full length of the bore.
6. Install the oil jets (see **OIL JET REPLACEMENT**).

PISTON, PIN, AND CONNECTING ROD REPLACEMENT

DISASSEMBLY

1. Remove the pistons from the **engine block**.
2. Apply new engine oil to the piston pin snap rings (A) and turn them in the ring grooves until the end gaps are lined up with the cutouts in the piston pin bores (B).

NOTE: Take care not to damage the ring grooves.

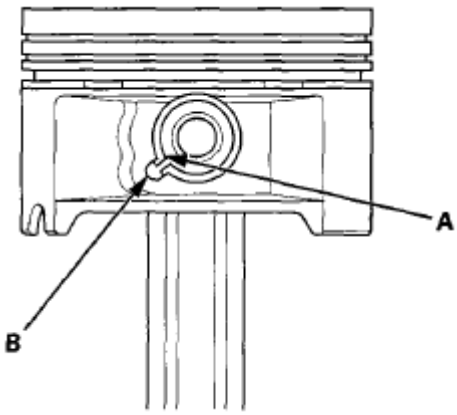


Fig. 36: Identifying Piston Pin Snap Rings And Piston Pin Bores
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Remove the snap rings (A) from both sides of each piston. Start at the cutout in the piston pin bore. Remove the snap rings carefully so they do not go flying or get lost. Wear eye protection.

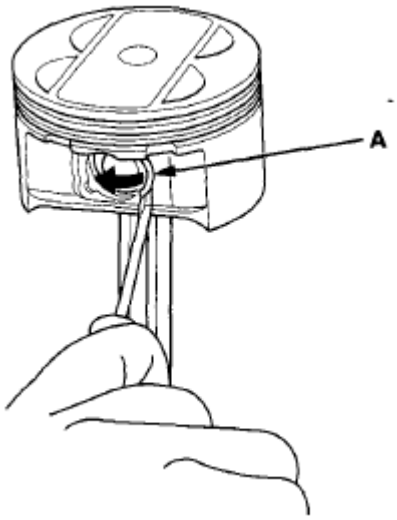


Fig. 37: Identifying Snap Rings From Both Sides Of Each Piston
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Separately heat each piston and connecting rod assembly to about 158 CF (70 °C), then remove the piston pin.

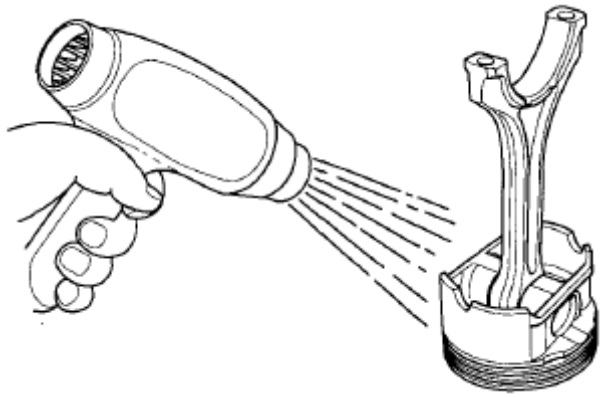


Fig. 38: Removing Piston Pin To Separate Heat On Each Piston And Connecting Rod Assembly
Courtesy of AMERICAN HONDA MOTOR CO., INC.

INSPECTION

NOTE: Inspect the piston, the piston pin, and the connecting rod when they are at room temperature.

1. Measure the diameter of the piston pin.

   Piston Pin Diameter

   Standard (New): 21.962- 21.965 mm (0.86464- 0.86476 in)

   Service Limit: 21.954 mm (0.86433 in)

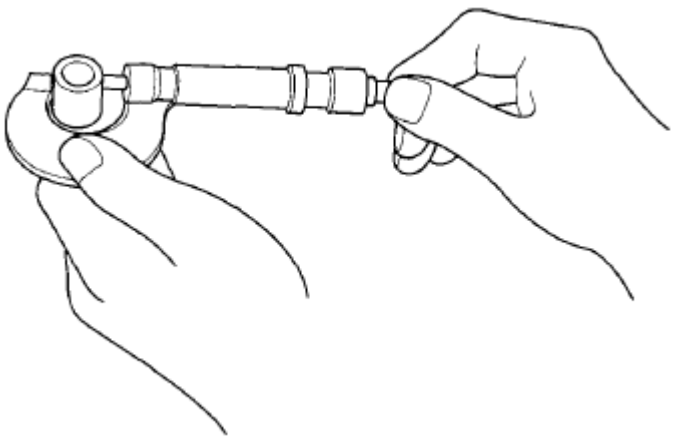


Fig. 39: Measuring Piston Pin Diameter
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Zero the dial gauge (A) to the piston pin diameter.

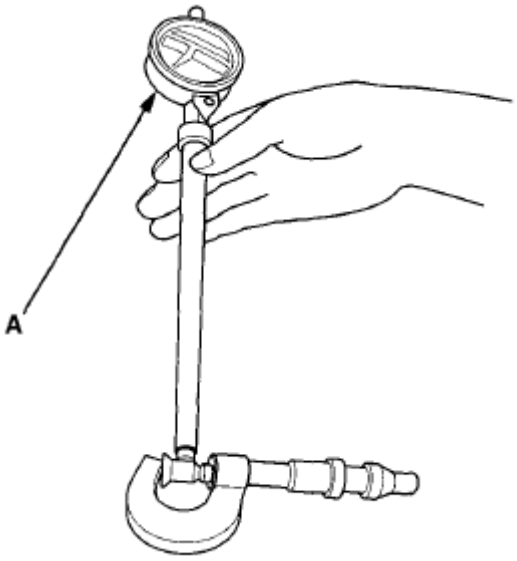


Fig. 40: Measuring Piston Pin Diameter
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Check the difference between the piston pin diameter and the piston pin hole diameter on the piston.

   J35Z6 engine

   Piston Pin-to-Piston Clearance

   Standard (New): -0.005- 0.001 mm (-0.00020- 0.00004 in)

   Service Limit: 0.004 mm (0.00016 in)

   J37A4 engine

   Piston Pin-to-Piston Clearance

   Standard (New): -0.005- 0.003 mm (-0.00020- 0.00012 in)

   Service Limit: 0.004 mm (0.00016 in)

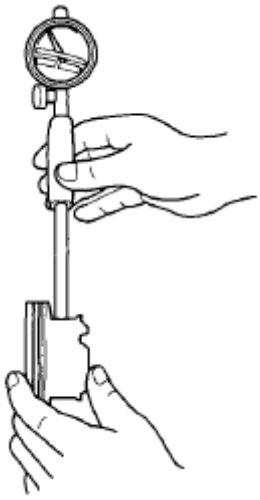


Fig. 41: Checking Piston Pin-To-Piston Clearance
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Measure the piston pin-to-connecting rod clearance.

   Piston Pin-to-Connecting Rod Clearance

   Standard (New): 0.005- 0.014 mm (0.00020- 0.00055 in)

   Service Limit: 0.019 mm (0.00075 in)

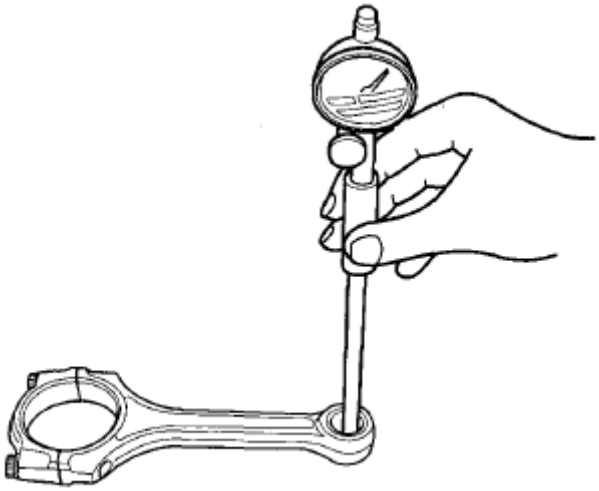


Fig. 42: Measuring Piston Pin-To-Connecting Rod Clearance
Courtesy of AMERICAN HONDA MOTOR CO., INC.

REASSEMBLY

1. Install a piston pin snap ring (A) only on one side.

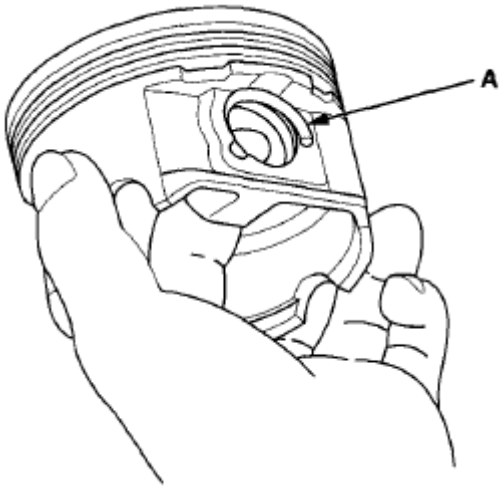


Fig. 43: Installing Piston Pin Snap Ring
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Coat the piston pin bore in the piston, the bore in the connecting rod, and the piston pin with new engine oil.
3. Heat the piston to about 158 °F (70 °C).

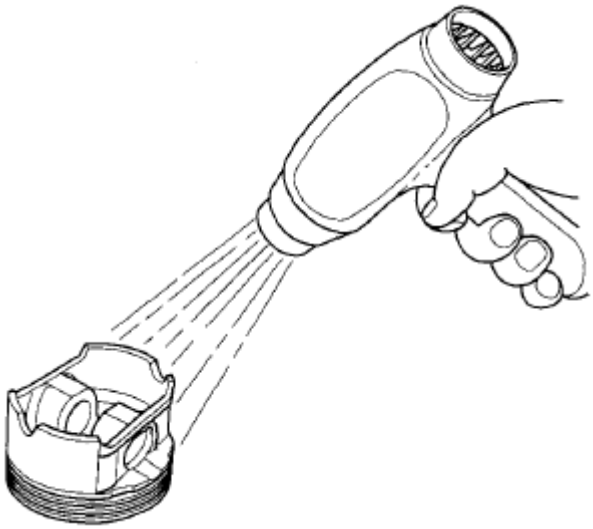


Fig. 44: Heating Piston
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Assemble the piston (A) and the connecting rod (B) with the embossed marks (C) on the same side. Install the piston pin (D).

NOTE: Apply new engine oil to the piston pin.

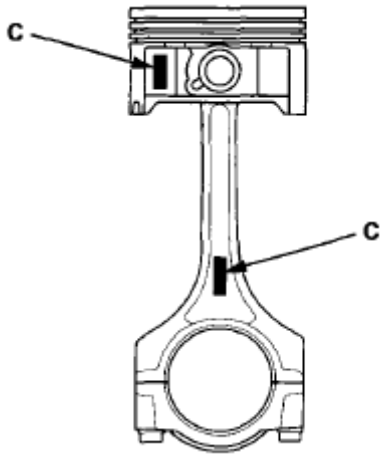


Fig. 45: Identifying Embossed Marks On Piston And Connecting Rod
Courtesy of AMERICAN HONDA MOTOR CO., INC.

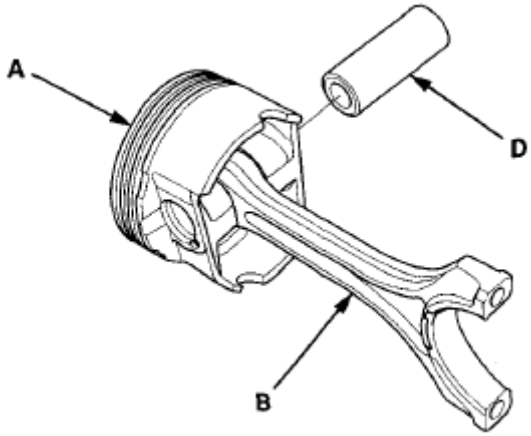


Fig. 46: Identifying Piston, Connecting Rod And Piston Pin
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Install the remaining snap ring.
6. Reassemble the other pistons the same way.

PISTON RING REPLACEMENT

1. Remove the pistons from the **engine block**.
2. Using a ring expander (A), remove the old piston rings (B).

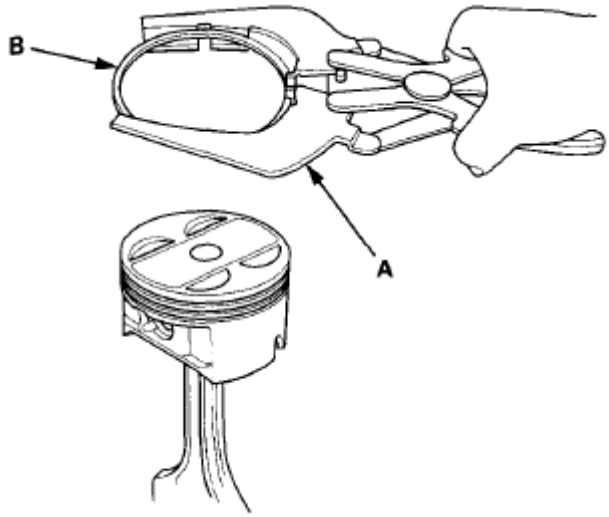


Fig. 47: Removing Piston Rings Using Ring Expander
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Clean all the ring grooves thoroughly with a squared-off broken ring, or a ring groove cleaner with a blade to fit the piston grooves. File down the blade, if necessary. The top ring and second ring grooves are 1.2 mm (0.047 in) wide, and the oil ring groove is 2.8 mm (0.110 in) (J35Z6 engine) or 2.0 mm (0.079 in) (J37A4 engine) wide. Do not use a wire brush to clean the ring grooves, or cut the ring grooves deeper with the cleaning tool.

NOTE: If the piston is to be separated from the connecting rod, do not install new rings yet.

4. Using a piston, push a new ring (A) into the cylinder bore 15- 20 mm (0.59- 0.79 in) from the bottom.

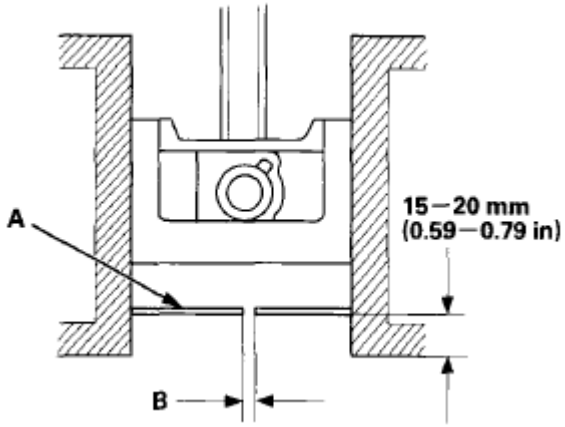


Fig. 48: Identifying Piston Ring Position
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Measure the piston ring end-gap (B) with a feeler gauge:
   - If the gap is too small, check to see if you have the proper rings for your engine.

- If the gap is too large, recheck the cylinder bore diameter against the wear limits (see step 4).

6. J35Z6 engine: If the bore is over the service limit, the engine block must be rebored.

J35Z6 engine

Piston Ring End-Gap

Top Ring:

Standard (New): 0.20- 0.35 mm (0.008- 0.013 in)

Service Limit: 0.60 mm (0.023 in)

Second Ring:

Standard (New): 0.40- 0.S5 mm (0.016- 0.021 in)

Service Limit: 0.70 mm (0.027 in)

Oil Ring:

Standard (New): 0.20- 0.70 mm (0.008- 0.027 in)

Service Limit: 0.80 mm (0.031 in)

J37A4 engine

Piston Ring End-Gap

Top Ring:

Standard (New): 0.30- 0.40 mm (0.012- 0.015 in)

Service Limit: 0.60 mm (0.023 in)

Second Ring:

Standard (New): 0.40- 0.55 mm (0.016- 0.021 in)

Service Limit: 0.70 mm (0.027 in)

Oil Ring:

Standard (New): 0.20- 0.35 mm (0.008- 0.013 in)

Service Limit: 0.45 mm (0.017 in)

7. Install the rings as shown in illustration below. The top ring (A) has a 1D or 1R mark (J35Z6 engine) or 1E mark (J37A4 engine) and the second ring (B) has a 2X or 2R mark (J35Z6 engine) or 2E mark (J37A4 engine). The manufacturing marks (C) must be facing upward.

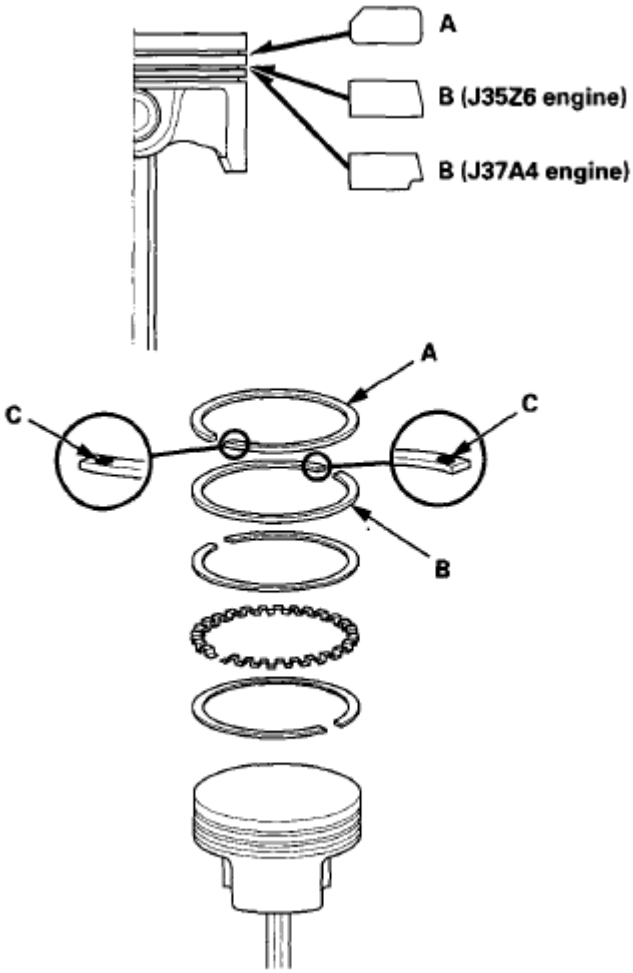


Fig. 49: Identifying Top Ring, Second Ring With Manufacturing Marks
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Piston Ring Dimensions:

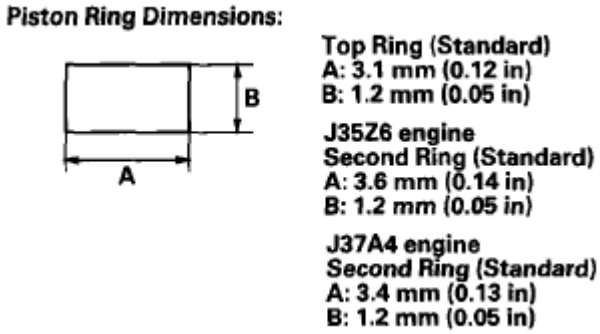


Fig. 50: Identifying Piston Ring Dimensions
Courtesy of AMERICAN HONDA MOTOR CO., INC.

8. After installing a new set of rings, measure the ring-to-groove clearance:

J35Z6 engine

Top Ring Clearance

Standard (New): 0.055- 0.080 mm (0.003- 0.003 in)

Service Limit: 0.15 mm (0.005 in)

Second Ring Clearance

Standard (New): 0.030- 0.055 mm (0.002- 0.002 in)

Service Limit: 0.13 mm (0.005 in)

J37A4 engine

Top Ring Clearance

Standard (New): 0.055- 0.085 mm (0.003- 0.003 in)

Service Limit: 0.15 mm (0.005 in)

Second Ring Clearance

Standard (New): 0.030- 0.060 mm (0.002- 0.002 in)

Service Limit: 0.13 mm (0.005 in)



Fig. 51: Measuring Ring-To-Groove Clearance

Courtesy of AMERICAN HONDA MOTOR CO., INC.

9. Rotate the rings in their grooves to make sure they do not bind.
10. Position the ring end gaps as shown in illustration below.

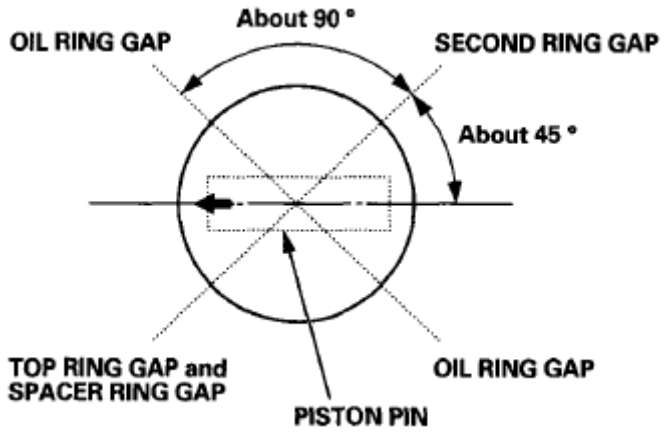


Fig. 52: Positioning Ring End Gaps
Courtesy of AMERICAN HONDA MOTOR CO., INC.

CRANKSHAFT AND PISTON INSTALLATION

Special Tools Required

- Driver Handle, 15 x 135L 07749-0010000
- Oil Seal Driver Attachment, 106 mm 070AD-RCA0200

1. Check the **main bearing clearance** with plastigage.
2. Check the **connecting rod bearing clearance** with plastigage.
3. Install the bearing halves in the engine block and the connecting rods.
4. Apply new engine oil to the inside of the main bearings and the rod bearings.
5. Install the **CKP pulse plate to the crankshaft**.
6. Lower the crankshaft (A) into the engine block, being careful not to damage the journals and the CKP pulse plate (B).

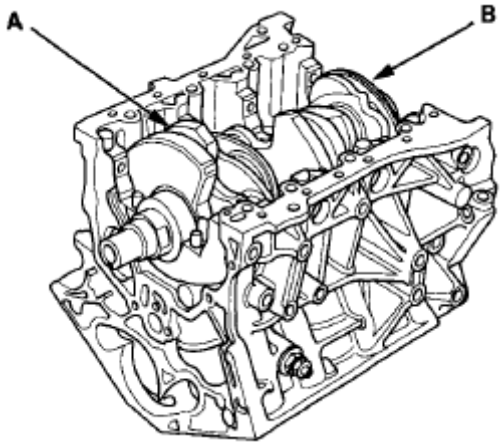


Fig. 53: Identifying Crankshaft And CKP Pulse Plate
Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Apply new engine oil to the side with the thrust washer groove. Install the thrust washers (A) in the No. 3 journal.

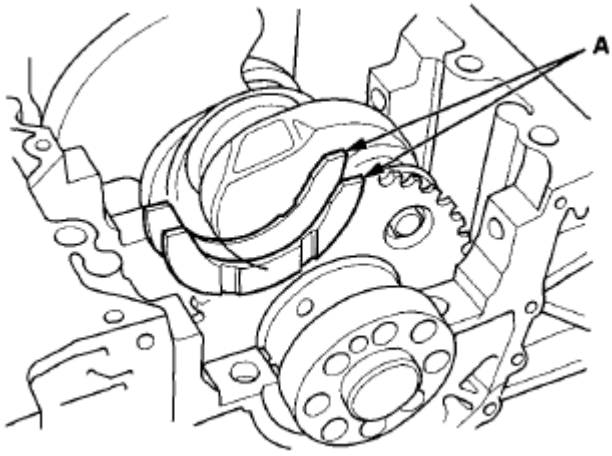


Fig. 54: Identifying Thrust Washers
Courtesy of AMERICAN HONDA MOTOR CO., INC.

8. Install the bearings (A) and the main bearing caps (B) with the arrow (C) facing the timing belt side of the engine block.

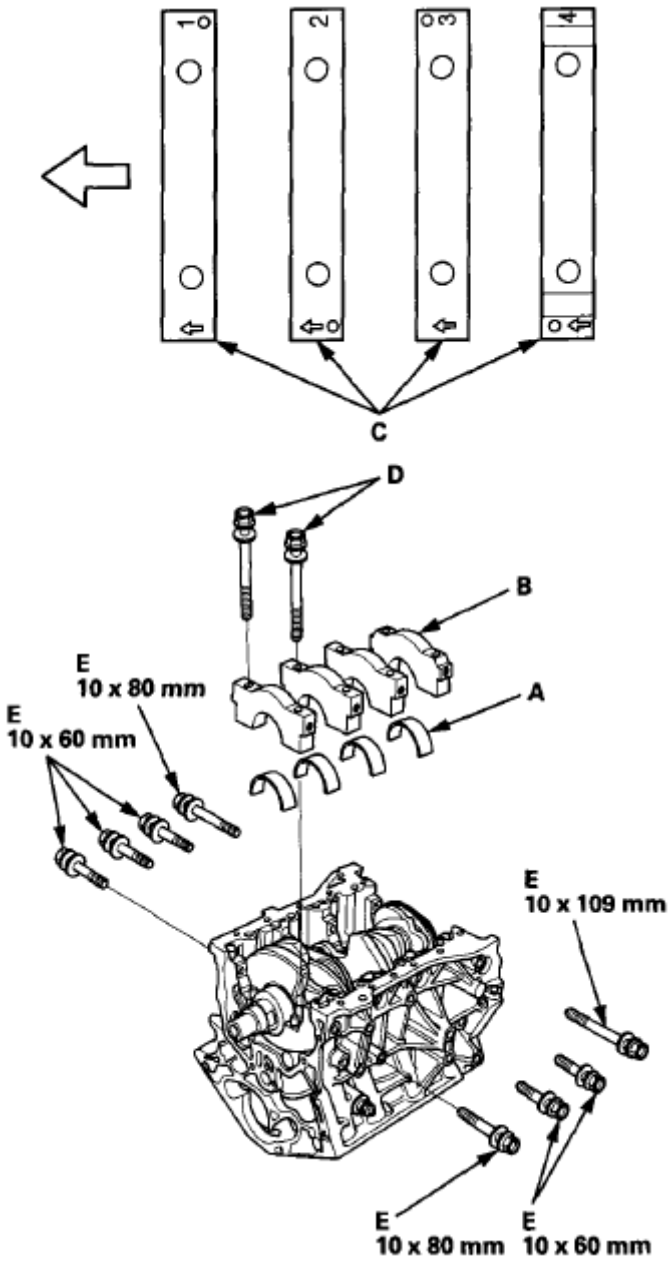


Fig. 55: Identifying Bearings And Main Bearing Caps Installation Position
Courtesy of AMERICAN HONDA MOTOR CO., INC.

9. Apply new engine oil to the bolt threads and flanges, then loosely install the bearing cap bolts (D) and the bearing cap side bolts (E).
10. Set the crankshaft to bottom dead center (BDC) for the cylinder you are installing the piston in.
11. Apply new engine oil to the piston, the inside of the ring compressor, and the cylinder bore.
12. Attach the ring compressor to the piston/connecting rod assembly, and check that the bearing is securely in place.
13. Position the piston/connecting rod assembly with the arrow (A) facing the timing belt side of the engine block.

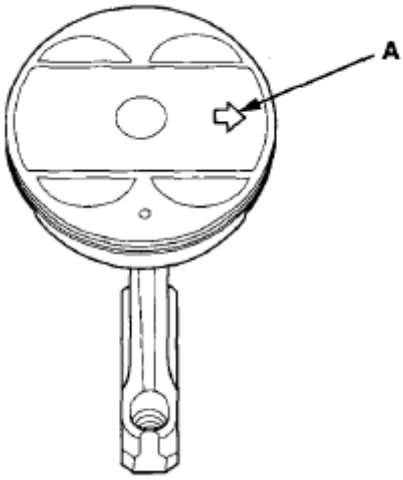


Fig. 56: Positioning Piston/Connecting Rod Assembly With Arrow
Courtesy of AMERICAN HONDA MOTOR CO., INC.

14. Position the piston/connecting rod assembly in the cylinder, and tap it in using the wooden handle of a hammer (A). Maintain downward force on the ring compressor (B) to prevent the rings from expanding before entering the cylinder bore.

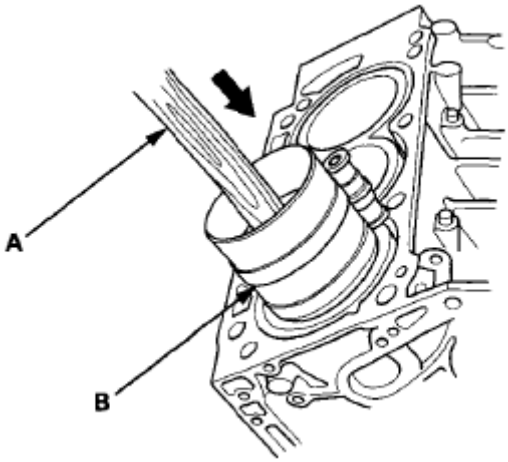


Fig. 57: Pushing Downward Force On Ring Compressor By Using Wooden Handle Of Hammer
Courtesy of AMERICAN HONDA MOTOR CO., INC.

15. Stop after the ring compressor pops free, and check the connecting rod-to-rod journal alignment before pushing the piston into place.
16. Measure the diameter of each connecting rod bolt at point A and point B.

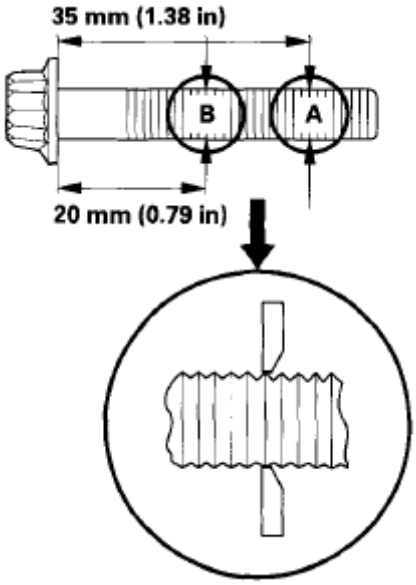


Fig. 58: Identifying Connecting Rod Bolt Diameter At Point A And B
Courtesy of AMERICAN HONDA MOTOR CO., INC.

17. Calculate the difference in diameter between point A and point B.

    Point A- Point B = Difference in Diameter

    Difference in Diameter

    Specification: 0- 0.1 mm (0- 0.004 in)

18. If the difference in diameter is out of tolerance, replace the connecting rod bolt.
19. Install the bearing (A), then line up the mark (B) on the connecting rod (C) and the rod cap (D).

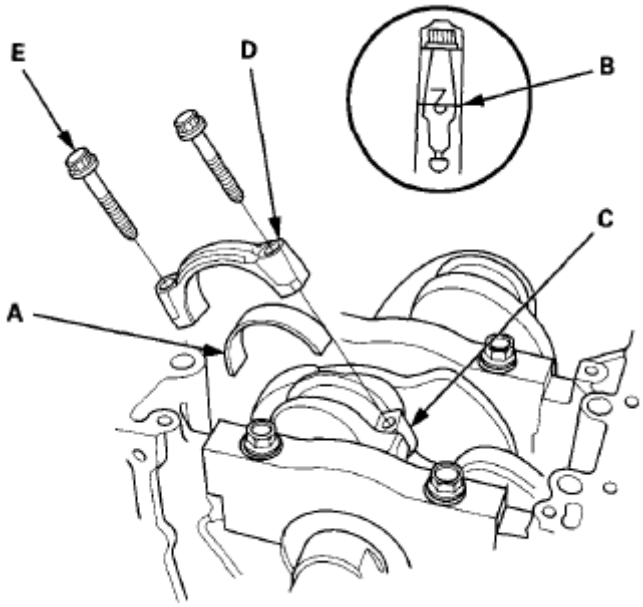


Fig. 59: Identifying Bearing, Connecting Rod, Rod Cap, Bearing Mark And Bolts
Courtesy of AMERICAN HONDA MOTOR CO., INC.

20. Apply new engine oil to the bolt threads and flanges. Torque the bolts (E) to 20 N.m (2.0 kgf.m, 15 lbf.ft).
21. Tighten the connecting rod bolt an additional 90 °.

NOTE: Remove the connecting rod bolt if you tightened it beyond the specified angle, and go back to step 16 of the procedure. Do not loosen it back to the specified angle. Repeat steps 10 to 21 for the remaining cylinders.

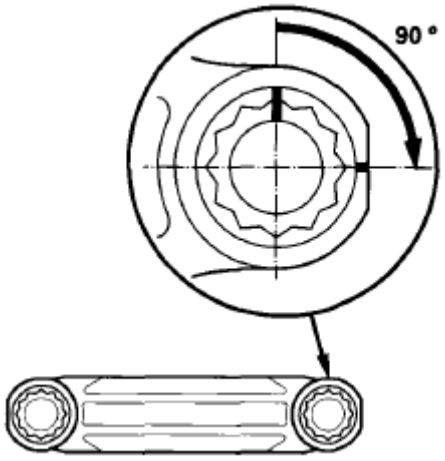


Fig. 60: Identifying Specified Angle For Tightening Connecting Rod Bolt
Courtesy of AMERICAN HONDA MOTOR CO., INC.

22. Tighten the main bearing cap bolts, then tighten the main bearing cap side bolts to the specified torque in

the sequence as shown in illustration below. Repeat the torque sequence again to ensure the bolts are properly torqued.

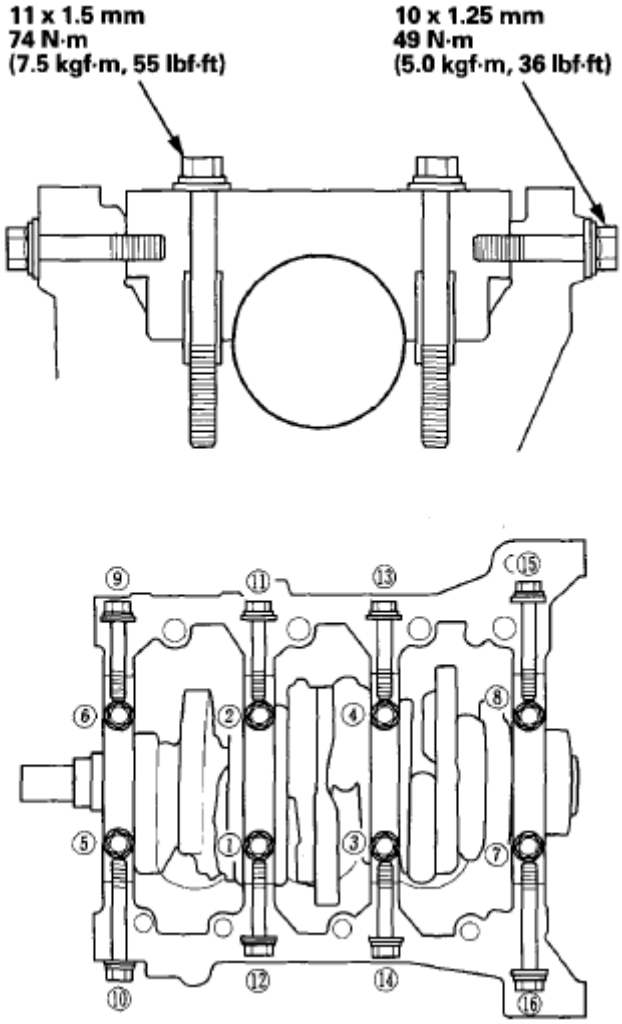


Fig. 61: Identifying Main Bearing Cap Side Bolts With Tightening Sequence With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

23. Remove ail of the old liquid gasket from the engine block end cover mating surfaces, the bolts, and the bolt holes.
24. Clean and dry the engine block end cover mating surfaces.
25. Apply a light coat of new engine oil to the lip of the crankshaft oil seal.
26. Using the driver handle, 15 x135 L and the oil seal driver attachment, 106 mm, drive in the new crankshaft oil seal (A) until the oil seal driver attachment bottoms on the engine block end cover.

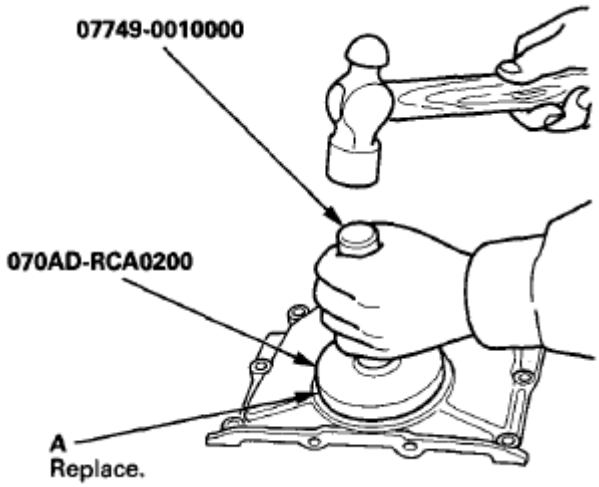


Fig. 62: Installing Crankshaft Oil Seal Using Driver Handle And Attachment
Courtesy of AMERICAN HONDA MOTOR CO., INC.

27. Apply liquid gasket, P/N 08717-0004, 08718-0003, 08718-0004, or 08718-0009 to the engine block mating surface of the engine block end cover and to the inside edge of the threaded bolt holes. Install the component within 5 minutes of applying the liquid gasket.

NOTE:

- **Apply a 2.5 mm (0.098 in) diameter bead of liquid gasket along the broken line (A).**
- **If you apply liquid gasket P/N 08718-0012, the component must be installed within 4 minutes.**
- **If too much time has passed after applying the liquid gasket, remove the old liquid gasket and residue, then reapply the new liquid gasket.**

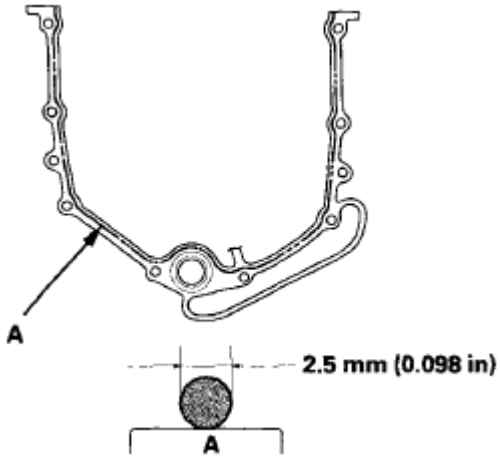


Fig. 63: Identifying Diameter Bead Of Liquid Gasket
Courtesy of AMERICAN HONDA MOTOR CO., INC.

28. Install the dowel pins (A), a new O-ring (B), and the engine block end cover (C) on the engine block.

NOTE:

- **Wait at least 30 minutes before filling the engine with oil.**
- **Do not run the engine for at least 3 hours after installing the engine block end cover.**

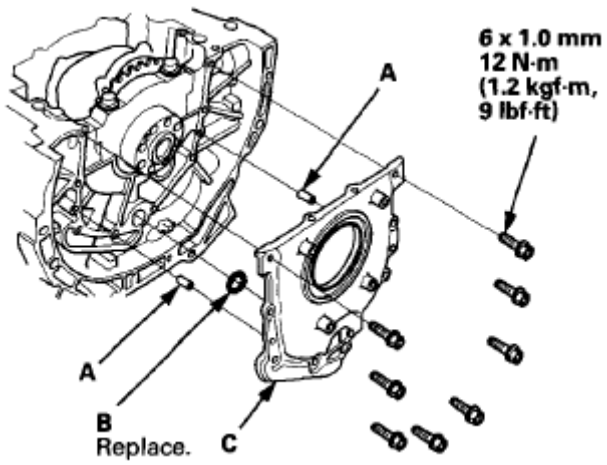


Fig. 64: Identifying Dowel Pins, O-Rings And Engine Block End Cover On Engine Block With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

29. Clean the excess oil off the crankshaft, and check that the oil seal lip is not distorted.
30. Install a new crankshaft oil seal in the oil pump (see **OIL PUMP OVERHAUL**).
31. Remove all of the old liquid gasket from the oil pump mating surfaces, the bolts, and the bolt holes.
32. Clean and dry the oil pump mating surfaces.
33. Apply liquid gasket, P/N 08717-0004, 08718-0003, 08718-0004, or 08718-0009 to the engine block mating surface of the oil pump and to the inside edge of the threaded bolt holes. Install the component within 5 minutes of applying the liquid gasket.

NOTE:

- **Apply a 2.5 mm (0.098 in) diameter bead of liquid gasket along the broken line (A).**
- **If you apply liquid gasket P/N 08718-0012, the component must be installed within 4 minutes.**
- **If too much time has passed after applying the liquid gasket, remove the old liquid gasket and residue, then reapply the new liquid gasket.**

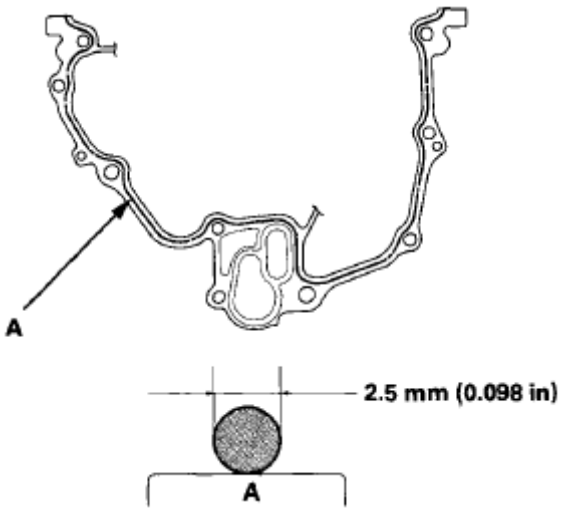


Fig. 65: Identifying Diameter Bead Of Liquid Gasket
Courtesy of AMERICAN HONDA MOTOR CO., INC.

34. Apply a light coat of new engine oil to the lip of the crankshaft oil seal, and apply new engine oil to the new O-ring (A).

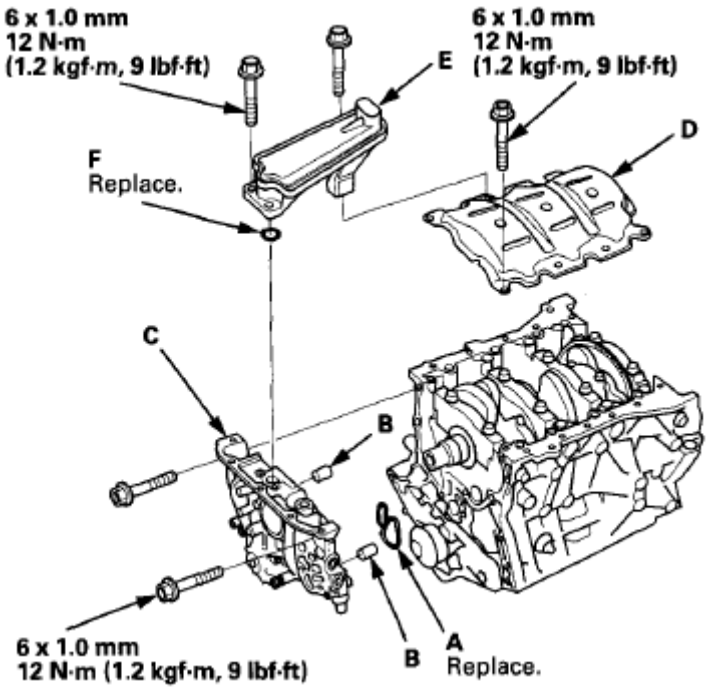


Fig. 66: Identifying O-Rings, Dowel Pins, Oil Pump, Baffle Plate, Oil Retainer With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

35. Install the dowel pins (B), then align the inner rotor with the crankshaft, and install the oil pump (C).
36. Clean the excess oil off the crankshaft, and check that the oil seal is not distorted.

37. Install the baffle plate (0), then install the oil strainer (E) with a new O-ring (F).

NOTE:

- **Wait at least 30 minutes before filling the engine with oil.**
- **Do not run the engine for at least 3 hours after installing the oil pump.**

38. Install the rocker arm oil control solenoid/oil filter assembly (A), with a new rocker arm oil control solenoid filter (B).

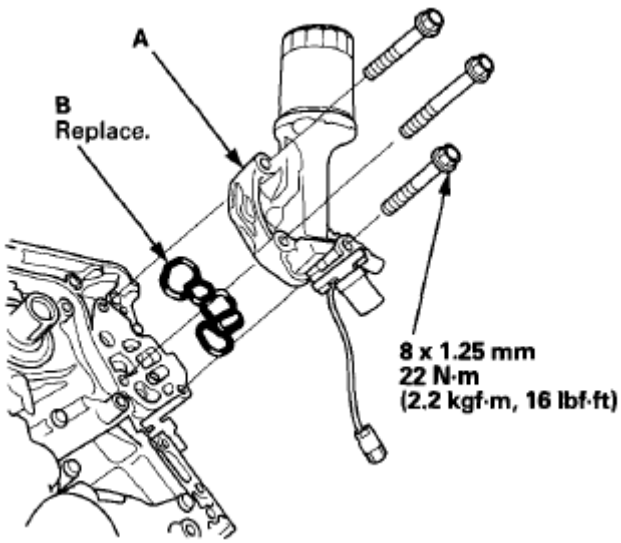


Fig. 67: Identifying Rocker Arm Oil Control Solenoid/Oil Filter Assembly And Solenoid Filter With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

39. Install the **oil pan**.
40. Install the timing belt drive pulley to the crankshaft:
    - J35Z6 engine (see **TIMING BELT DRIVE PULLEY REPLACEMENT**)
    - J37A4 engine (see **TIMING BELT DRIVE PULLEY REPLACEMENT**)
41. Install the cylinder heads:
    - J35Z6 engine (see **CYLINDER HEAD INSTALLATION**)
    - J37A4 engine (see **CYLINDER HEAD INSTALLATION**)
42. M/T model: Install the flywheel (see **TRANSMISSION SIDE**).
43. A/T model: Install drive plate (see **DRIVE PLATE REMOVAL AND INSTALLATION**).
44. Install the transmission:
    - Manual transmission (see **TRANSMISSION INSTALLATION**)
    - Automatic transmission (see **DRIVE PLATE REMOVAL AND INSTALLATION**)
45. Install the engine/transmission (see **ENGINE INSTALLATION**).

NOTE: When any crankshaft main or connecting rod bearing is replaced, run the engine at idle until it reaches normal operating temperature, then continue to run it for about 15 minutes.

CKP PULSE PLATE REPLACEMENT

1. Remove the **crankshaft** from the engine block.
2. Remove the CKP pulse plate (A) from the crankshaft.

NOTE: Be careful not to damage the journals and the CKP pulse plate.

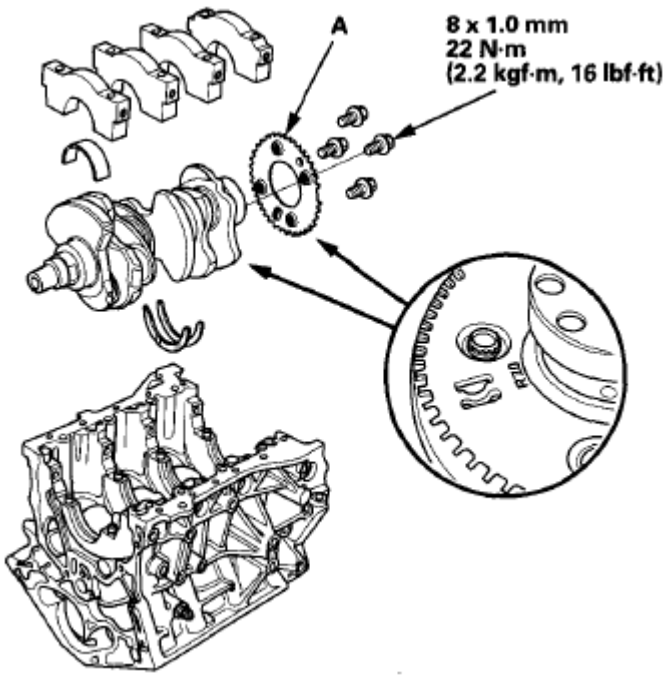


Fig. 68: Identifying CKP Pulse Plate With Mounting Bolts With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Install the CKP pulse plate in the reverse order of removal.

NOTE: When installing the crankshaft, refer to the crankshaft and piston installation procedure.

OIL PAN INSTALLATION

1. Remove all of the old liquid gasket from the oil pan mating surfaces, the bolts, and the bolt holes.
2. Clean and dry the oil pan mating surfaces.
3. Apply liquid gasket, P/N 08717-0004, 08718-0003, 08718-0004, or 08718-0009 to the oil pan mating surface of the engine block and to the inside edge of the threaded bolt holes. Install the component within

5 minutes of applying the liquid gasket.

NOTE:

- **Apply a 2.5 mm (0.098 in) diameter bead of liquid gasket along the broken line (A).**
- **If you apply liquid gasket P/N 08718-0012, the component must be installed within 4 minutes.**
- **If too much time has passed after applying the liquid gasket, remove the old liquid gasket and residue, then reapply the new liquid gasket.**

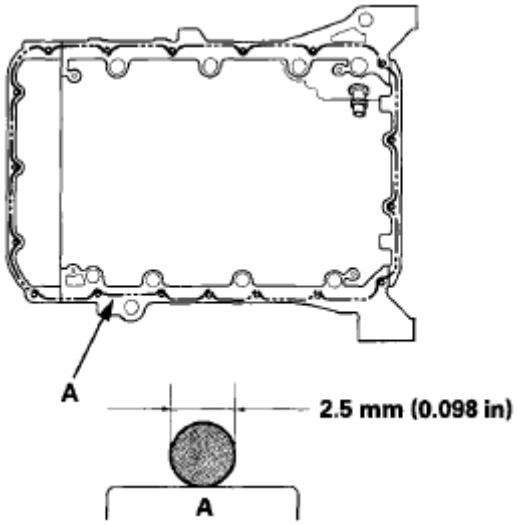


Fig. 69: Identifying Diameter Bead Of Liquid Gasket Along Broken Line
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Install the oil pan on the engine block.
5. Tighten the bolts in three steps. In the final step, torque all bolts, in sequence, to 12 N.m (1.2 kgf.m, 9 lbf.ft).

NOTE:

- **Wait at least 30 minutes before filling the engine with oil.**
- **Do not run the engine for at least 3 hours after installing the oil pan.**

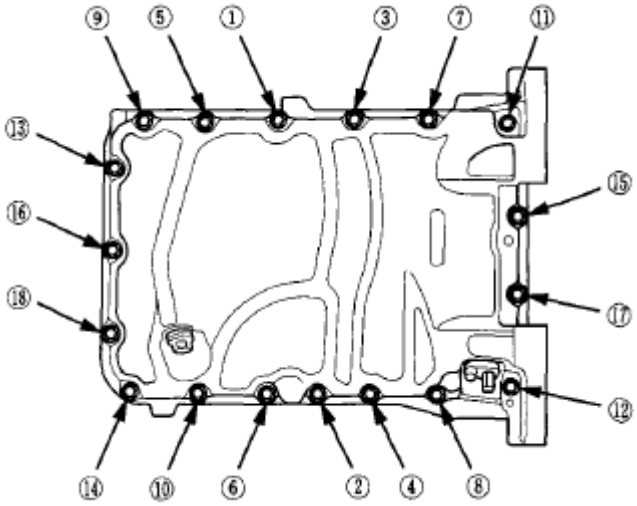


Fig. 70: Identifying Oil Pan Bolts With Tightening Sequence
Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Tighten the four bolts (A) securing the transmission, then install the torque converter case cover (B).

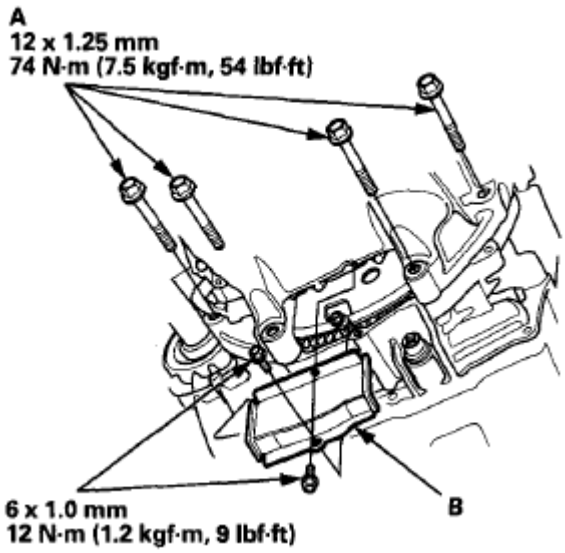


Fig. 71: Identifying Transmission Bolts With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Connect the CKP sensor connector (A), then install the CKP sensor cover (B) and the bolt (C).

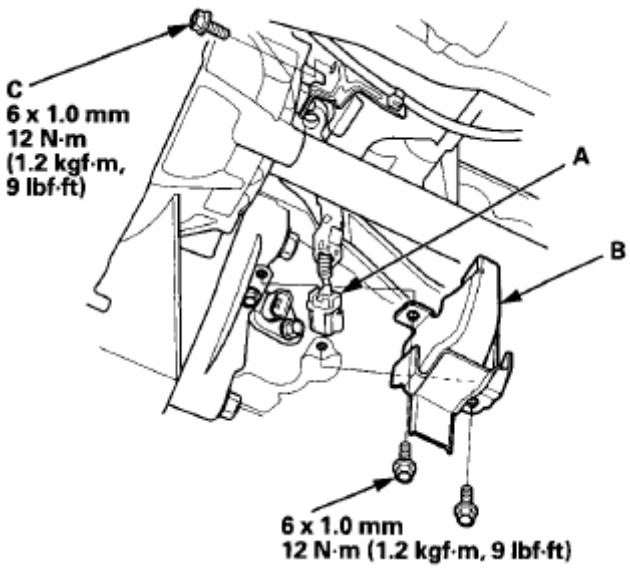


Fig. 72: Identifying CKP Sensor Connector, CKP Sensor Cover & Mounting Bolt With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

8. Install the rear warm up TWC bracket.

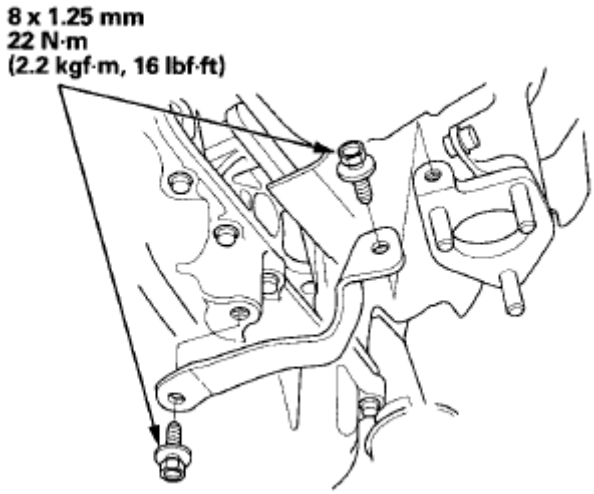


Fig. 73: Identifying Rear Warm Up TWC Bracket With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

9. If the engine is still in the vehicle, do the following steps.
10. Install exhaust pipe A using new gaskets and new self-locking nuts (see step 35 **ENGINE INSTALLATION**).
11. Install the front splash shield (see **FRONT SPLASH SHIELD REPLACEMENT**).
12. Refill the engine with engine oil (see **ENGINE OIL LEVEL CHECK**).

PULLEY END CRANKSHAFT OIL SEAL INSTALLATION - IN CAR

Special Tools Required

Oil Seal Driver, 64 mm 07OAD-RCAA100

1. Remove the timing belt drive pulley:
   - J35Z6 engine (see **TIMING BELT DRIVE PULLEY REPLACEMENT**)
   - J37A4 engine (see **TIMING BELT DRIVE PULLEY REPLACEMENT**)
2. Remove the pulley end crankshaft oil seal.
3. Clean and dry the crankshaft oil seal housing.
4. Apply a light coat of new engine oil to the lip of the crankshaft oil seal.
5. Using the oil seal driver, 64 mm, drive in the new crankshaft oil seal (A) until the oil seal driver bottoms on the oil pump.

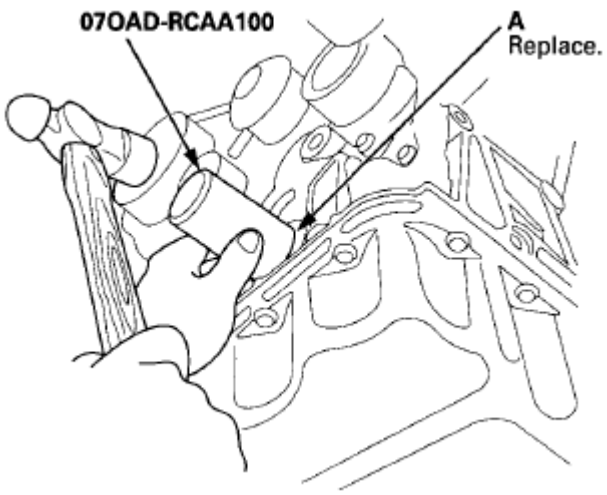


Fig. 74: Installing End Crankshaft Oil Seal Using Oil Seal Driver
Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Clean the excess oil off the crankshaft, and check that the oil seal lip is not distorted.
7. Install the timing belt drive pulley:
   - J35Z6 engine (see **TIMING BELT DRIVE PULLEY REPLACEMENT**)
   - J37A4 engine (see **TIMING BELT DRIVE PULLEY REPLACEMENT**)

TRANSMISSION END CRANKSHAFT OIL SEAL INSTALLATION - IN CAR

Special Tools Required

- Driver Handle, 15 x 135L 07749-0010000
- Oil Seal Driver Attachment, 106 mm 070AD-RCA0200

1. M/T model: Remove the transmission (see **TRANSMISSION REMOVAL**), and the flywheel (see **TRANSMISSION SIDE**).
2. A/T model: Remove the transmission (see **TRANSMISSION REMOVAL**), and the drive plate (see **DRIVE PLATE REMOVAL AND INSTALLATION**).
3. Remove the transmission end crankshaft oil seal.
4. Clean and dry the crankshaft oil seal housing.
5. Apply a light coat of new engine oil to the lip of the crankshaft oil seal.
6. Using the driver handle, 15x 135 Land the oil seal driver attachment, 106 mm, drive in the new crankshaft oil seal (A) until the oil seal driver attachment bottoms on the engine block end cover. Align the hole in the oil seal driver attachment with the pin on the crankshaft.

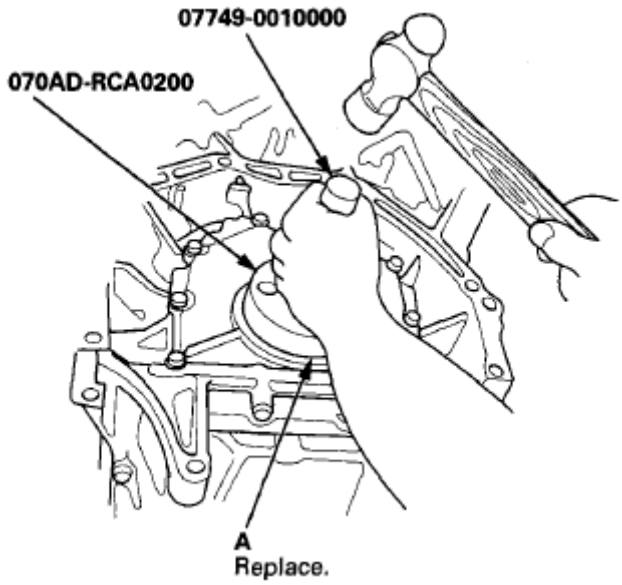


Fig. 75: Installing Transmission End Crankshaft Oil Seal Using Driver Handle
Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Clean the excess oil off the crankshaft, and check that the oil seal lip is not distorted.
8. M/T model: Install the flywheel (see **TRANSMISSION SIDE**), and the transmission (see **TRANSMISSION INSTALLATION**).
9. A/T model: Install the drive plate (see **DRIVE PLATE REMOVAL AND INSTALLATION**), and the transmission (see **DRIVE PLATE REMOVAL AND INSTALLATION**).

SEALING BOLT INSTALLATION

NOTE: When installing the sealing bolts (A), always use new washers (B).

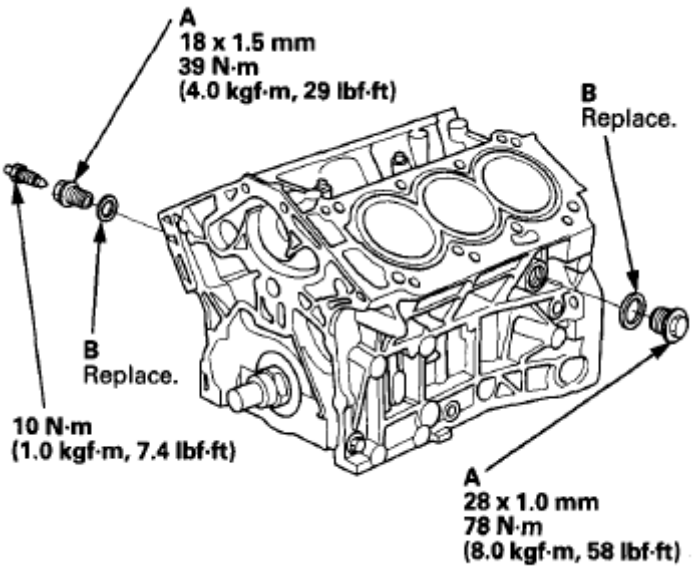


Fig. 76: Identifying Sealing Bolts And Washers With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2012 ENGINE

Engine Lubrication - TL

SPECIAL TOOLS

Ref.No.	Tool Number	Description	Qty
①	07406-0070301	A/T Low Pressure Gauge w/Panel	1
②	07AAA-PLCA100	Oil Filter Wrench	1
③	07AAJ-PY4A100	AT Pressure Test Hose	1
④	07MAJ-PY40120	A/T Pressure Adapter	1
⑤	07NAJ-P07010A	Pressure Gauge Adapter	1
⑥	07OAD-RCAA100	Oil Seal Driver, 64 mm	1
⑦	07ZAJ-S5AA200	Oil Pressure Hose	1

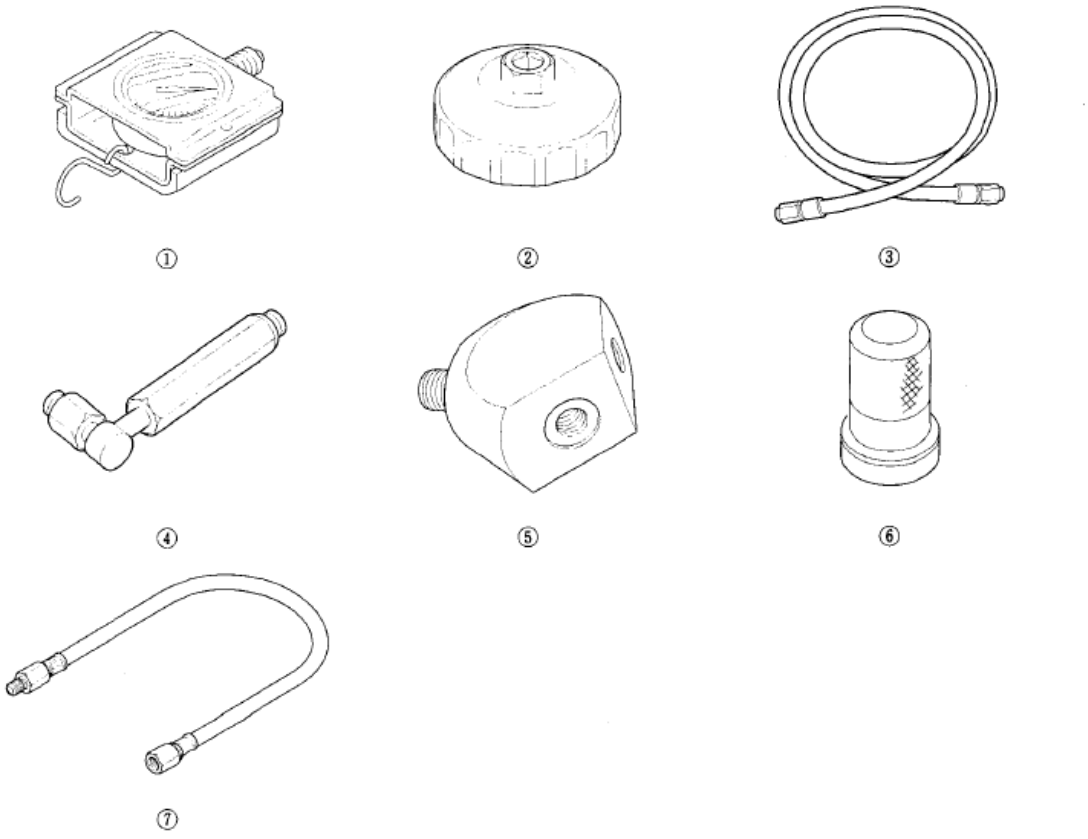


Fig. 1: Identifying Engine Lubrication Special Tools
Courtesy of AMERICAN HONDA MOTOR CO., INC.

COMPONENT LOCATION INDEX

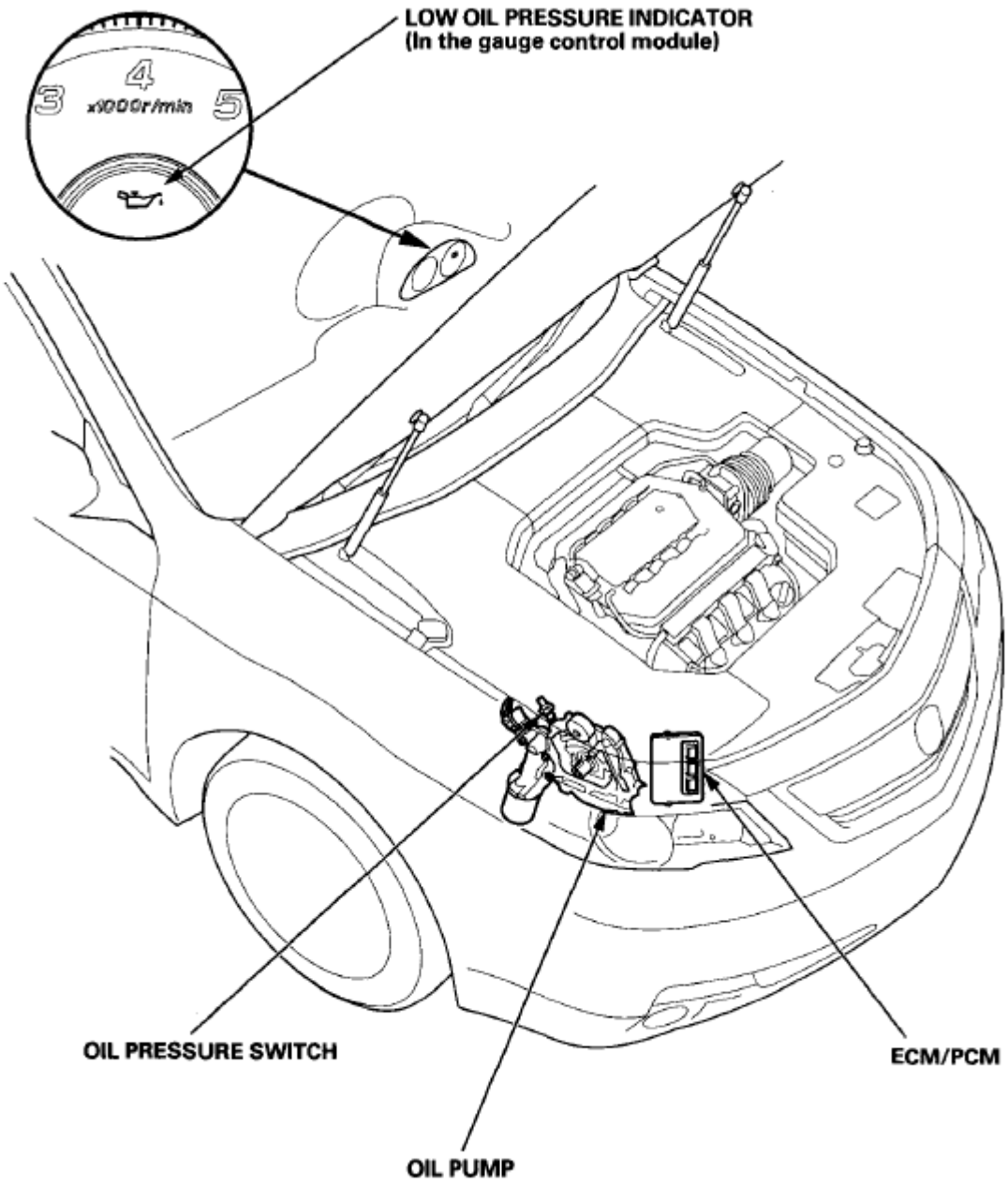


Fig. 2: Engine Lubrication Components Location (1 Of 2)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

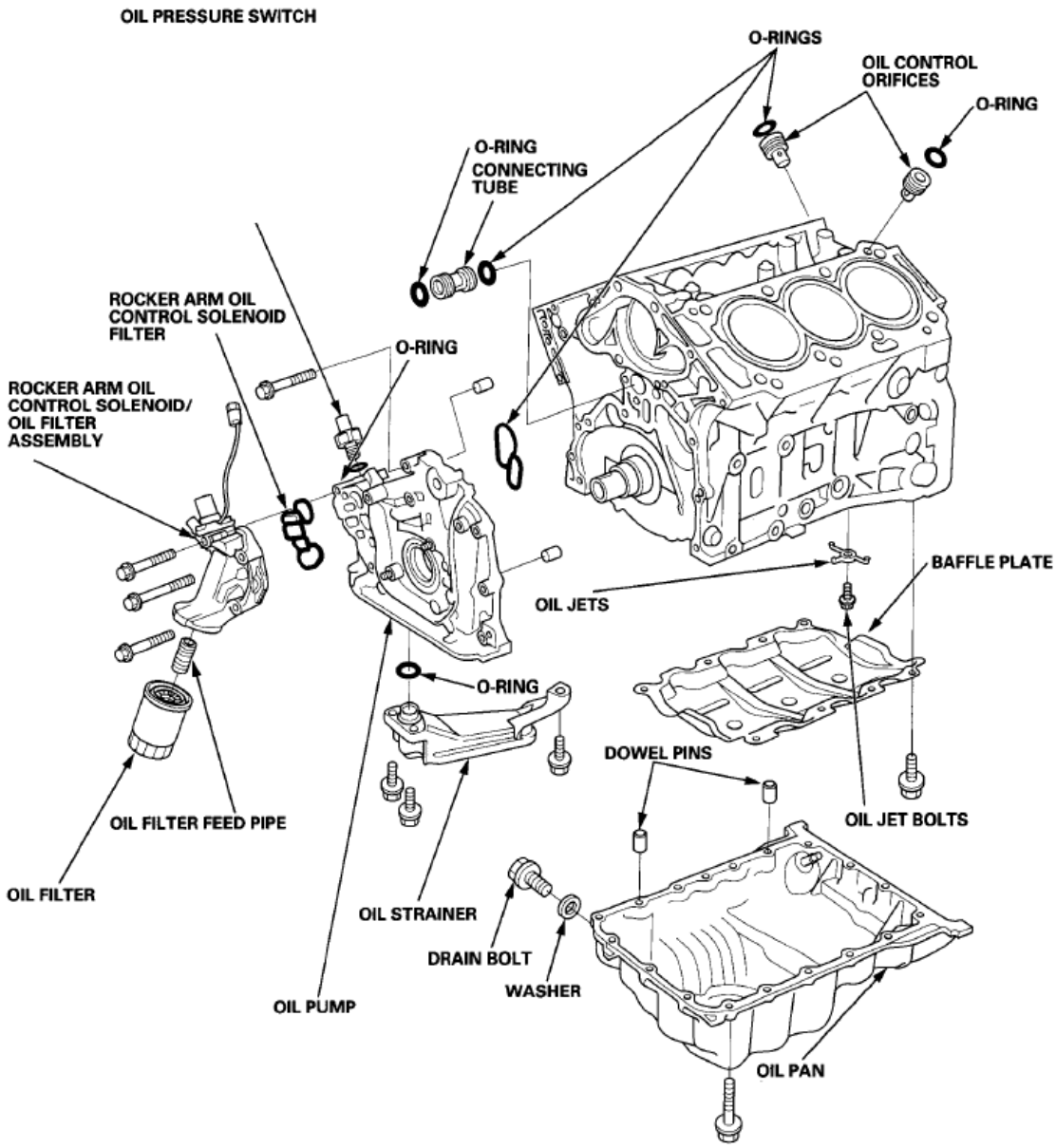


Fig. 3: Engine Lubrication Components Location (2 Of 2)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

SYMPTOM TROUBLESHOOTING INDEX

Symptom	Diagnostic procedure	Also check for
	1. Verify the engine oil filler cap, the oil drain bolt, and the oil filter are tight. 2. Check for oil leaks. 3. Check for worn valve guide(s): • J35Z6 engine (see **VALVE**	

Excessive engine oil consumption	**STEM-TO-GUIDE CLEARANCE INSPECTION**) • J37A4 engine (see **VALVE STEM-TO-GUIDE CLEARANCE INSPECTION**) or worn seal(s): • J35Z6 engine (see **VALVE, SPRING, AND VALVE SEAL REMOVAL**) • J37A4 engine (see **VALVE INSPECTION**) 4. Check for damaged or worn piston ring (s) (see **PISTON RING REPLACEMENT**). 5. Check for damaged or worn engine internal parts (cylinder wall, pistons, etc.) (see **BLOCK AND PISTON INSPECTION**).	Check the maintenance records as engine oil that is worn out bums off at a higher rate
Low oil pressure indicator stays on	1. Check the **engine oil level**. 2. Do the **low oil pressure indicator circuit troubleshooting** (Open) procedure.	An open in the wire between the ECM/PCM and the oil pressure switch
Low oil pressure indicator does not come on with the ignition switch in ON (II), or the vehicle ignition in the ON mode	1. Do the **low oil pressure indicator circuit troubleshooting** (Short) procedure. 2. Test the **oil pressure switch**.	A wire shorted to ground between the ECM/PCM and the oil pressure switch

LOW OIL PRESSURE INDICATOR CIRCUIT DIAGRAM

WITHOUT KEYLESS ACCESS SYSTEM

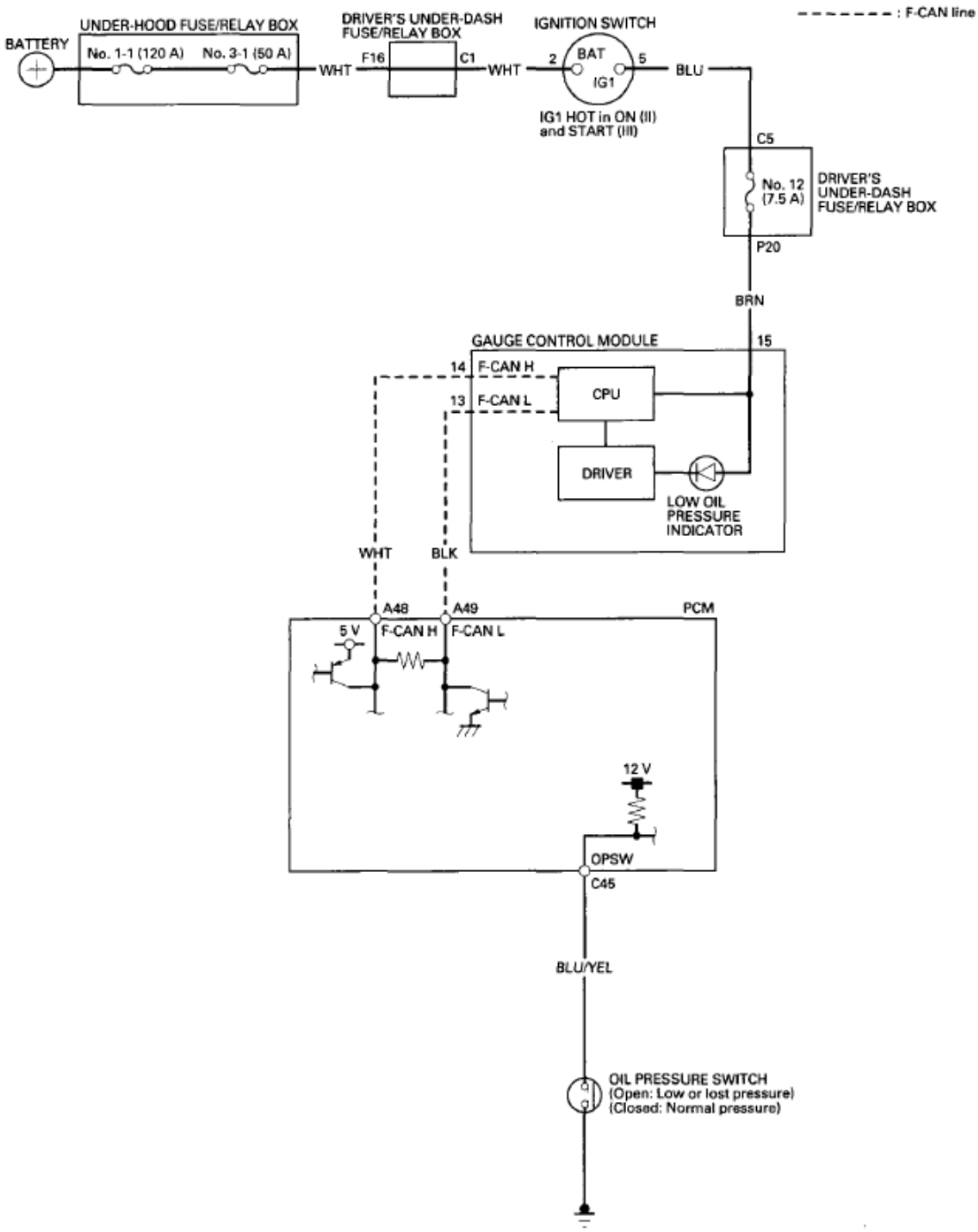


Fig. 4: Low Oil Pressure Indicator - Circuit Diagram (Without Keyless Access System)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

WITH KEYLESS ACCESS SYSTEM

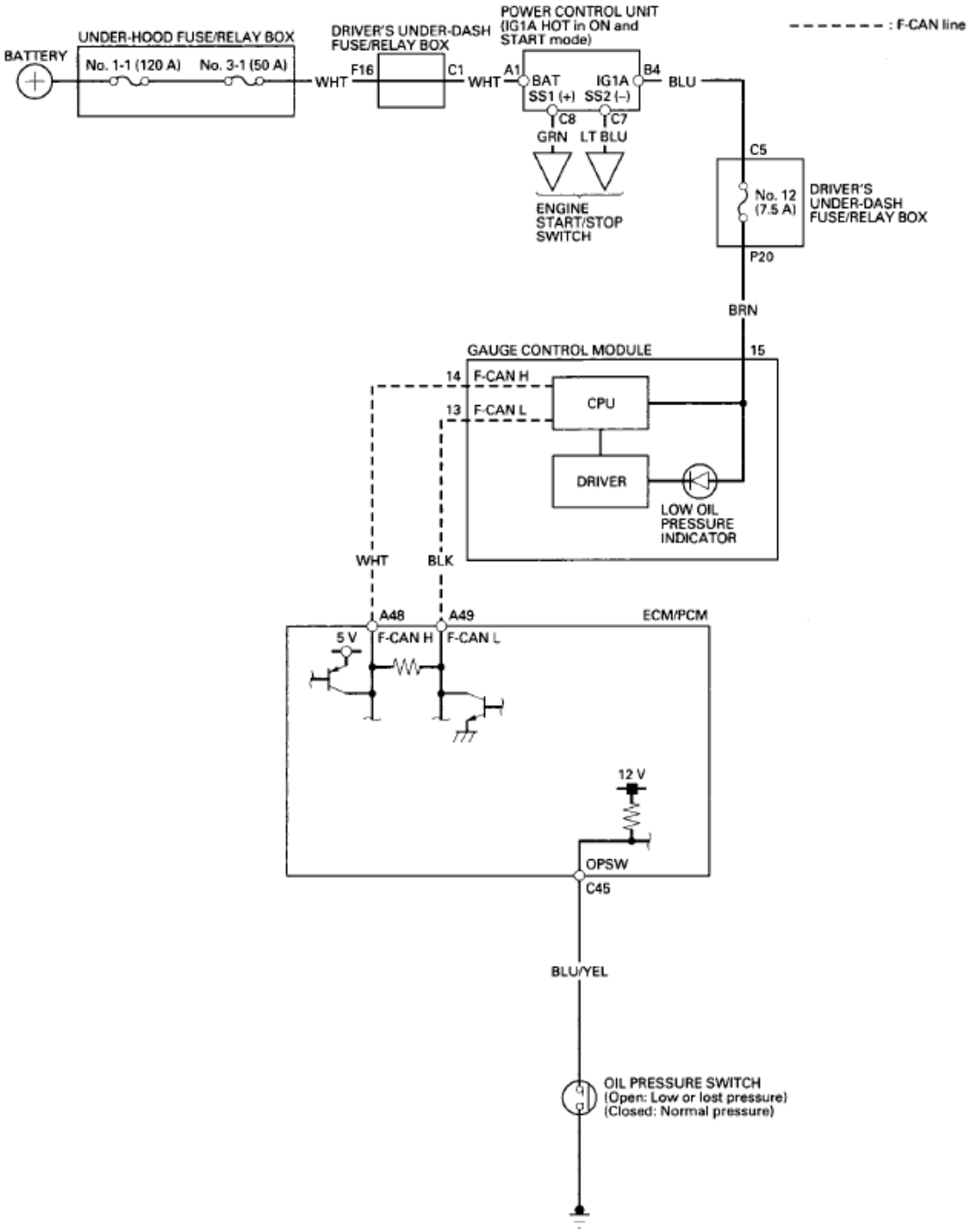


Fig. 5: Low Oil Pressure Indicator - Circuit Diagram (With Keyless Access System)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

LOW OIL PRESSURE INDICATOR CIRCUIT TROUBLESHOOTING (OPEN)

1. Connect the HDS to the DLC (see **HOW TO USE THE HDS (HONDA DIAGNOSTIC SYSTEM)**).
2. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.

3. Make sure the HDS communicates with the vehicle and the ECM/PCM. If it does not communicate, troubleshoot the DLC circuit (see **DLC CIRCUIT TROUBLESHOOTING**).
4. Check for DTCs (see **GENERAL TROUBLESHOOTING INFORMATION**). If a DTC is present, diagnose, and repair the cause before continuing with this test.
5. Start the engine, and check the OIL PRESSURE SWITCH in the PGM-FI DATA LIST with the HDS.

   Is ON indicated?

   YES - Replace the gauge control module (see **GAUGE CONTROL MODULE REPLACEMENT**).•

   NO - Go to step 6.

6. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
7. Check the **oil pressure switch**.

   Is the oil pressure switch OK?

   YES - Go to step 8.

   NO - Do the **oil pressure test**. If the oil pressure is OK, replace the **oil pressure switch**.•

8. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode, and jump the SCS line with the HDS, then turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.

   NOTE: This step must be done to protect the ECM/PCM from damage.

9. Disconnect ECM/PCM connector C (49P) and the oil pressure switch connector.
10. Check for continuity between ECM/PCM connector terminal C45 and the oil pressure switch connector.

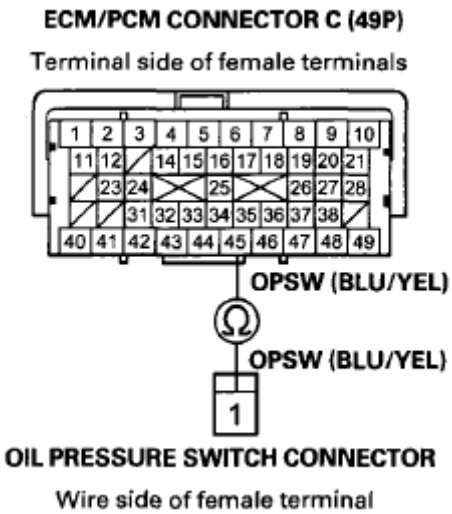


Fig. 6: Checking Continuity Between ECM/PCM Connector Terminal C45 And Oil Pressure

Switch Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Update the ECM/PCM if it does not have the latest software (see **ECM/PCM UPDATE**), or substitute a known-good ECM/PCM (see **SUBSTITUTING THE ECM/PCM**), then recheck. If the symptom/indication goes away with a known-good ECM/PCM, replace the original ECM/PCM (see **ECM/PCM REPLACEMENT**).•

NO - Repair an open in the wire between the oil pressure switch and ECM/PCM connector terminal C45.
•

LOW OIL PRESSURE INDICATOR CIRCUIT TROUBLESHOOTING (SHORT)

1. Connect the HDS to the DLC (see **HOW TO USE THE HDS (HONDA DIAGNOSTIC SYSTEM)**).
2. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
3. Make sure the HDS communicates with the vehicle and the ECM/PCM. If it does not communicate, troubleshoot the DLC circuit (see **DLC CIRCUIT TROUBLESHOOTING**).
4. Check for DTCs (see **GENERAL TROUBLESHOOTING INFORMATION**). If a DTC is present, diagnose, and repair the cause before continuing with this test.
5. Turn the ignition switch ON (II), or press the engine start/stop button to select the ON mode, and check the OIL PRESSURE SWITCH in the PGM-FI DATA LIST with the HDS.

   Is OFF indicated?

   YES - Replace the gauge control module (see **GAUGE CONTROL MODULE REPLACEMENT**).•

   NO - Go to step 6.

6. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
7. Check the **oil pressure switch**.

   Is the oil pressure switch OK?

   YES - Go to step 8.

   NO - Replace the **oil pressure switch**.•

8. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode, and jump the SCS line with the HDS, then turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.

   NOTE: This step must be done to protect the ECM/PCM from damage.

9. Disconnect ECM/PCM connector C (49P).
10. Check for continuity between the oil pressure switch connector and body ground.

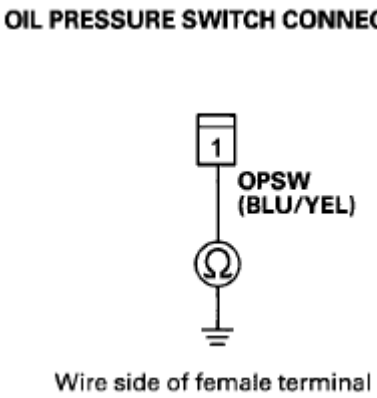


Fig. 7: Checking Continuity Between Oil Pressure Switch Connector And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair a short to ground in the wire between the oil pressure switch and ECM/PCM connector terminal C45. •

NO - Update the ECM/PCM if it does not have the latest software (see **ECM/PCM UPDATE**), or substitute a known-good ECM/PCM (see **SUBSTITUTING THE ECM/PCM**), then recheck. If the symptom/indication goes away with a known-good ECM/PCM, replace the original ECM/PCM (see **ECM/PCM REPLACEMENT**).•

OIL PRESSURE SWITCH TEST

1. Disconnect the oil pressure switch connector (A) from the oil pressure switch (B).

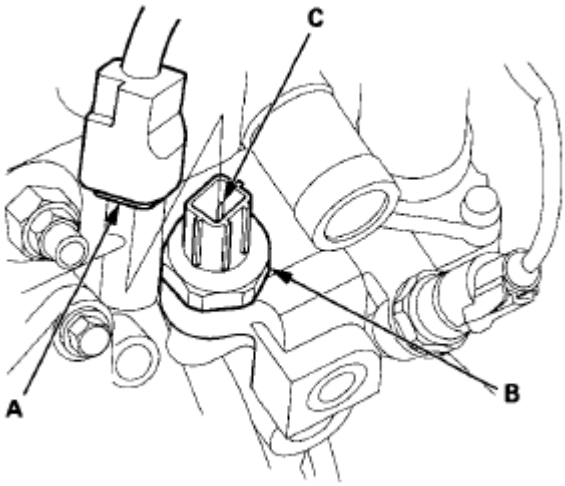


Fig. 8: Identifying Oil Pressure Switch Connector, Switch Terminal And Oil Pressure Switch
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Check for continuity between the oil pressure switch terminal (C) and the engine (ground). There should be no continuity with the engine stopped. There should be continuity with the engine running.

OIL PRESSURE SWITCH REPLACEMENT

1. Disconnect the oil pressure switch connector (A), then remove the oil pressure switch (B).

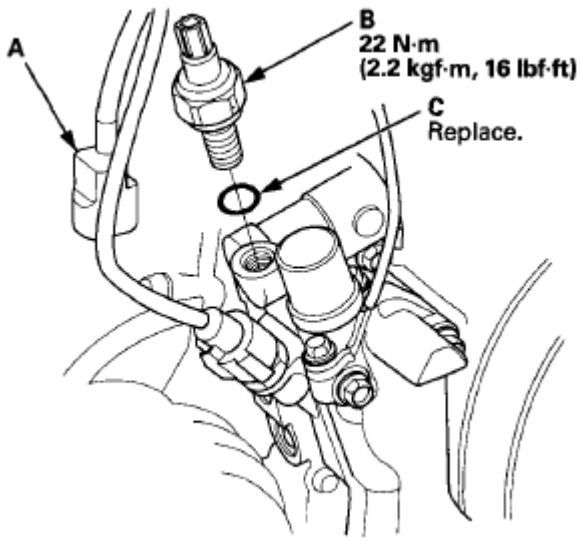


Fig. 9: Identifying Oil Pressure Switch Connector And Switch And O-Ring With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Remove all of the old liquid gasket from the oil pressure switch mounting hole.
3. Clean and dry the oil pressure switch mounting hole.
4. Apply liquid gasket (P/N 08717-0004, 08718-0003, 08718-0004, or 08718-0009) to the new oil pressure switch threads. Install the component within 5 minutes of applying the liquid gasket:

NOTE:

- **Using too much liquid gasket may cause liquid gasket to enter the oil passage or the end of the oil pressure switch.**
- **If too much time has passed after applying the liquid gasket, remove the old liquid gasket and residue, then reapply the new liquid gasket.**

5. Install the oil pressure switch with a new O-ring (C).
6. Connect the oil pressure switch connector.

OIL PRESSURE TEST

Special Tools Required

- Oil Pressure Hose 07ZAJ-S5AA200
- A/T Low Pressure Gauge w/Panel 07406-0070301
- AT Pressure Test Hose 07AAJ-PY4A100
- A/T Pressure Adapter 07MAJ-PY40120
- Pressure Gauge Adapter 07NAJ-P07010A

If the low oil pressure indicator stays on with the engine running, check the **engine oil level**. If the oil level is correct:

1. Remove the **oil pressure switch**.
2. Install the oil pressure hose, the A/T low pressure gauge w/panel, the A/T pressure test hose, and the A/T pressure adapter as shown, then install the oil pressure switch and/or rocker arm oil pressure switch to the pressure gauge adapter.

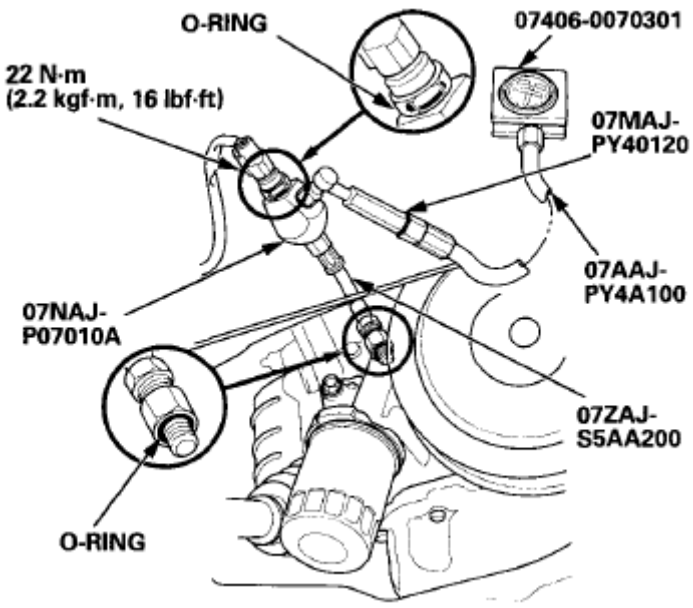


Fig. 10: Identifying O-Ring And Pressure Hoses With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Start the engine. Shut it off immediately if the gauge registers no oil pressure. Repair the problem before continuing.
4. Allow the engine to reach operating temperature (fan comes on at least twice). The pressure should be:

   Engine Oil Temperature: 176°F (80°C)

   Engine Oil Pressure:

   At Idle: 70 kPa (0.71 kgf/cm^2 , 10.1 psi) min.

At 3, 000 RPM: 490 kPa (5.00 kgf/cm^2 , 71.1 psi) min.

5. If oil pressure is not within specifications, inspect these items:
   - Blocking of oil filter.
   - Blocking of oil strainer.
   - Inspect the **oil pressure relief valve**.
   - Inspect the **oil pump**.
6. Install the **oil pressure switch**.

ENGINE OIL LEVEL CHECK

1. Park the vehicle on level ground, and start the engine. Hold the engine speed at 3, 000 RPM with no load (in neutral (M/T model) or P or N (A/T model)) until the radiator fan comes on, then turn off the engine, and wait a few minutes.
2. Remove the dipstick, and wipe off the dipstick, then reinstall the dipstick.
3. Remove the dipstick, and check the engine oil level. It should be between the upper mark (A) and the lower mark (B).

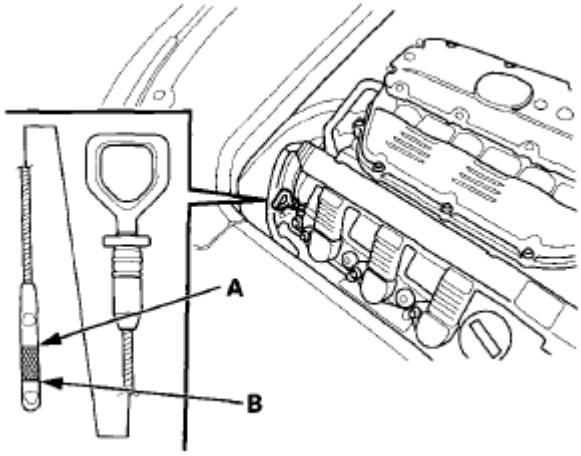


Fig. 11: Identifying Upper Mark And Lower Mark On Oil Level Check
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. If the engine oil level is near or below the lower mark, check for oil leakage, and add the engine oil (see step 4) to bring it to the upper mark.

ENGINE OIL REPLACEMENT

1. Allow the engine to reach operating temperature (fan comes on at least twice).
2. Remove the drain bolt (A), and drain the engine oil.

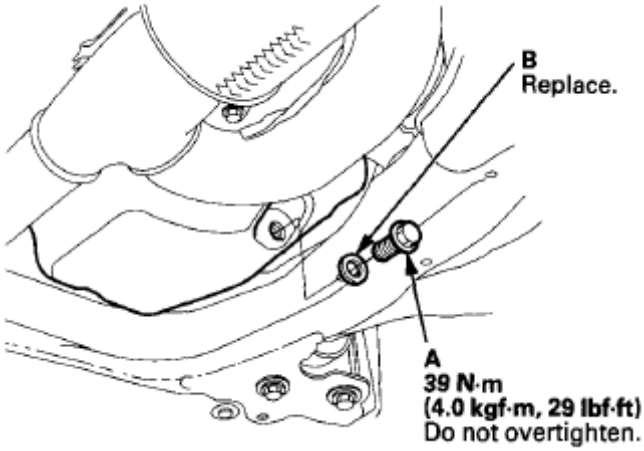


Fig. 12: Identifying Drain Bolt And Washer With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Reinstall the drain bolt with a new washer (B) and torque to specification.
4. Refill the engine with the recommended engine oil (see **MAINTENANCE**).

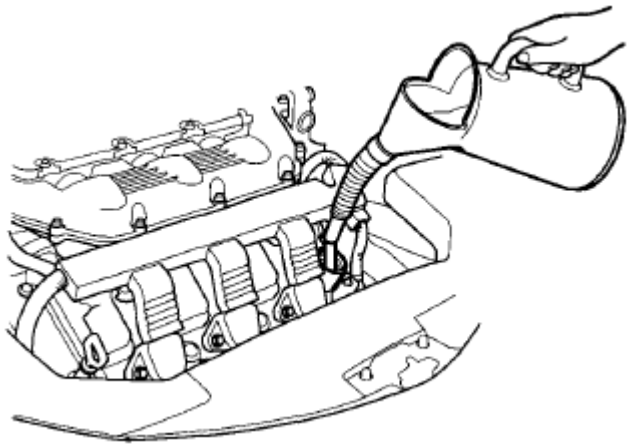


Fig. 13: Refilling Engine With Engine Oil
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Capacity

At Oil Change:

4.0 L (4.2 US qt)

At Oil Change including Filter:

4.3 L (4.5 US qt)

After Engine Overhaul:

5.0 L (5.3 US qt)

5. Run the engine for more than 3 minutes, then check the **oil level** and oil leakage.
6. If the Maintenance Minder required replacing the engine oil, reset the Maintenance Minder (see **RESETTING THE MAINTENANCE MINDER**), and this procedure is complete. If the Maintenance Minder did not require engine oil replacement, go to step 7.
7. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
8. Connect the HDS to the DLC (see **HOW TO USE THE HDS (HONDA DIAGNOSTIC SYSTEM)**).
9. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
10. Make sure the HDS communicates with the vehicle and the ECM/PCM. If it does not communicate, troubleshoot the DLC circuit (see **DLC CIRCUIT TROUBLESHOOTING**).
11. Select GAUGES in the BODY ELECTRICAL with the HDS.
12. Select ADJUSTMENT in the GAUGES with the HDS.
13. Select MAINTENANCE MINDER in the ADJUSTMENT with the HDS.
14. Select RESET in the MAINTENANCE MINDER with the HDS.
15. Select RESETTING THE ENGINE OIL LIFE with the HDS.

ENGINE OIL FILTER REPLACEMENT

Special Tools Required

Oil Filter Wrench 07AAA-PLCA100

1. Remove the oil filter with the oil filter wrench.
2. Inspect the filter to make sure the rubber seal is not stuck to the oil filter seating surface of the engine.
3. Inspect the threads (A) and the rubber seal (B) on the new filter. Clean the seat on the oil filter base, then apply a light coat of new engine oil to the oil filter rubber seal. Use only filters with a built-in bypass system.

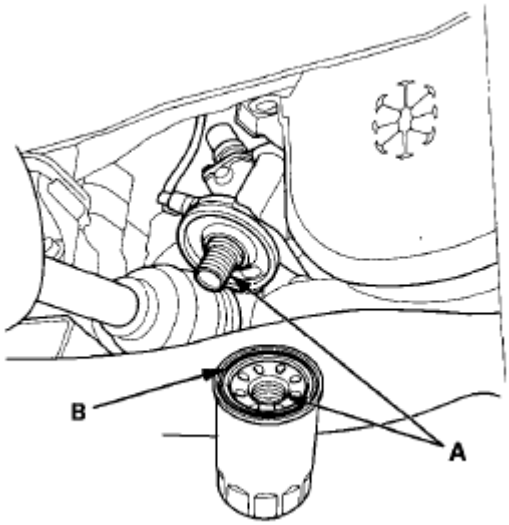


Fig. 14: Identifying Threads And Rubber Seal On Filter
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Install the oil filter by hand.
5. After the rubber seal seats, tighten the oil filter clockwise with the oil filter wrench.

   Tighten: 3/4 Turn Clockwise

   Tightening Torque: 12 N.m (1.2 kgf.m, 9 lbf.ft)

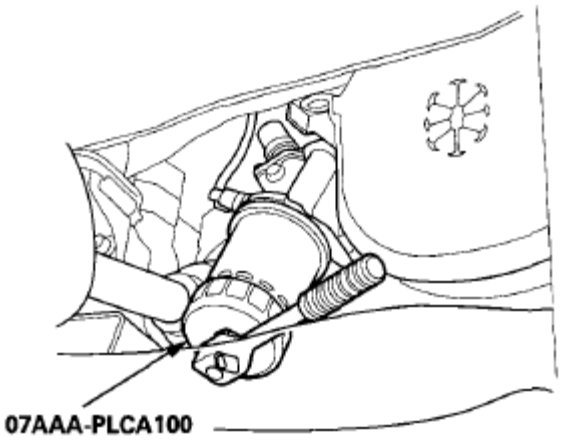


Fig. 15: Turning Oil Filter Clockwise With Oil Filter Wrench
Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. If four numbers or marks (1 to 4 or ˇ to ˇˇˇˇ) are printed around the outside of the filter, you can use the following procedure to tighten the filter:
   - Spin the filter on until its seal lightly seats against the oil filter base, and note which number or mark is at the bottom.
   - Tighten the filter by turning it clockwise three numbers or marks from the one you noted. For example, if mark ˇ is at the bottom when the seal is lightly seated, tighten the filter until the mark ˇˇˇˇ comes around to the bottom.

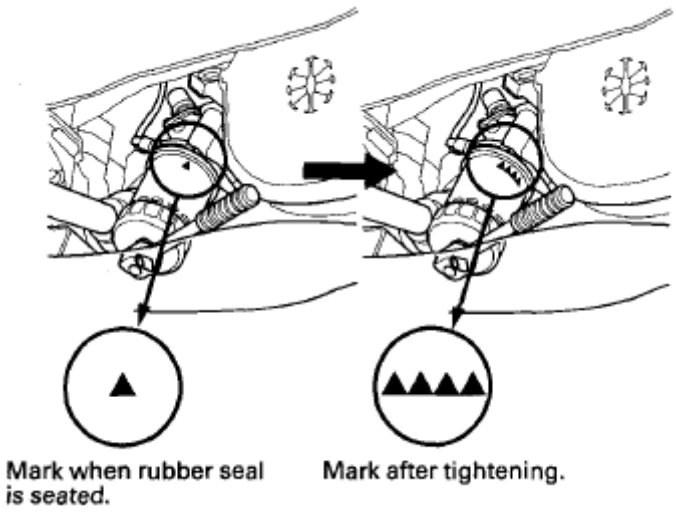


Fig. 16: Identifying Tightening Marks On Engine Oil Filter
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Mark when rubber seal is seated.

Mark after tightening.

Number or Mark when rubber seal is seated	1 or ˇ	2 or ˇˇ	3 or ˇˇˇ	4 or ˇˇˇˇ
Number or Mark after tightening	4 or ˇˇˇˇ	1 or ˇ	2 or ˇˇ	3 or ˇˇˇ

7. After installation, fill the engine with **engine oil** to the specified level, run the engine for more than 3 minutes, then check for oil leakage.

OIL FILTER FEED PIPE REPLACEMENT

1. Remove the **oil filter**.
2. Remove the oil filter feed pipe.

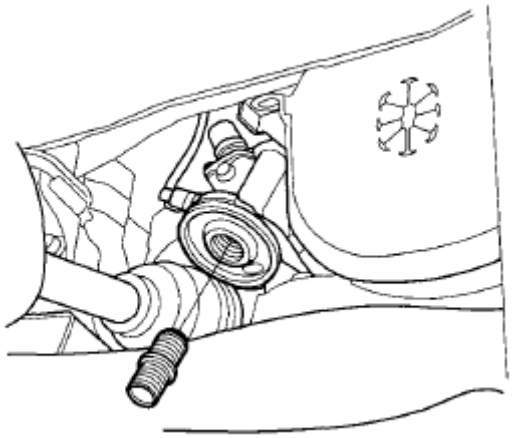


Fig. 17: Removing Oil Filter Feed Pipe
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Install two 20 x 1.5 mm nuts (A) onto the new oil filter feed pipe, and hold one nut with a wrench, then tighten the other nut.

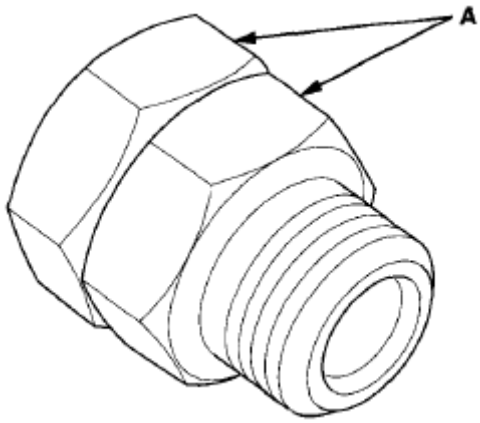


Fig. 18: Identifying Oil Filter Feed Pipe Nut
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Apply new engine oil to the oil filter feed pipe threads, then torque the oil filter feed pipe to 35 N.m (3.6 kgf.m, 26 lbf.ft), then remove the nuts from the oil filter feed pipe.
5. Install the **oil filter**.

OIL JET REPLACEMENT

1. Remove the crankshaft from the engine block (see **CRANKSHAFT AND PISTON REMOVAL**).
2. Remove the oil jet bolt (A), then remove the oil jet (B).

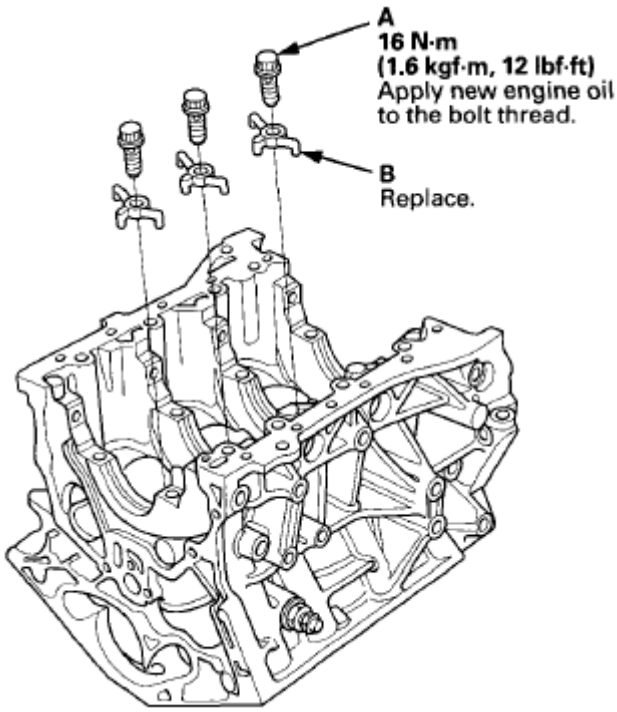


Fig. 19: Identifying Oil Jet Bolt And Oil Jet With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Carefully install the new oil jet and tighten the oil jet bolt.
4. Install the crankshaft (see **CRANKSHAFT AND PISTON INSTALLATION**).

OIL JET BOLT INSPECTION

1. Remove the **oil jet bolt**.
2. Inspect the oil jet bolt as follows:
   - Make sure that a 0.6 mm (1/64 in) diameter drill bit will go through the oil intake (0.7 mm (0.028 in) diameter). Make sure the check ball (A) moves smoothly and has a stroke of about 4.0 mm (0.157 in).
   - Check the oil jet bolt operation with an air nozzle. It should take at least 120 kPa (1.22 kgf/cm^2 , 17.4 psi) to unseat the check ball.

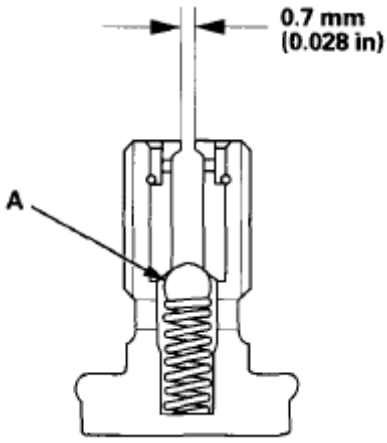


Fig. 20: Identifying Ball In Oil Jet
Courtesy of AMERICAN HONDA MOTOR CO., INC.

OIL PUMP OVERHAUL

EXPLODED VIEW

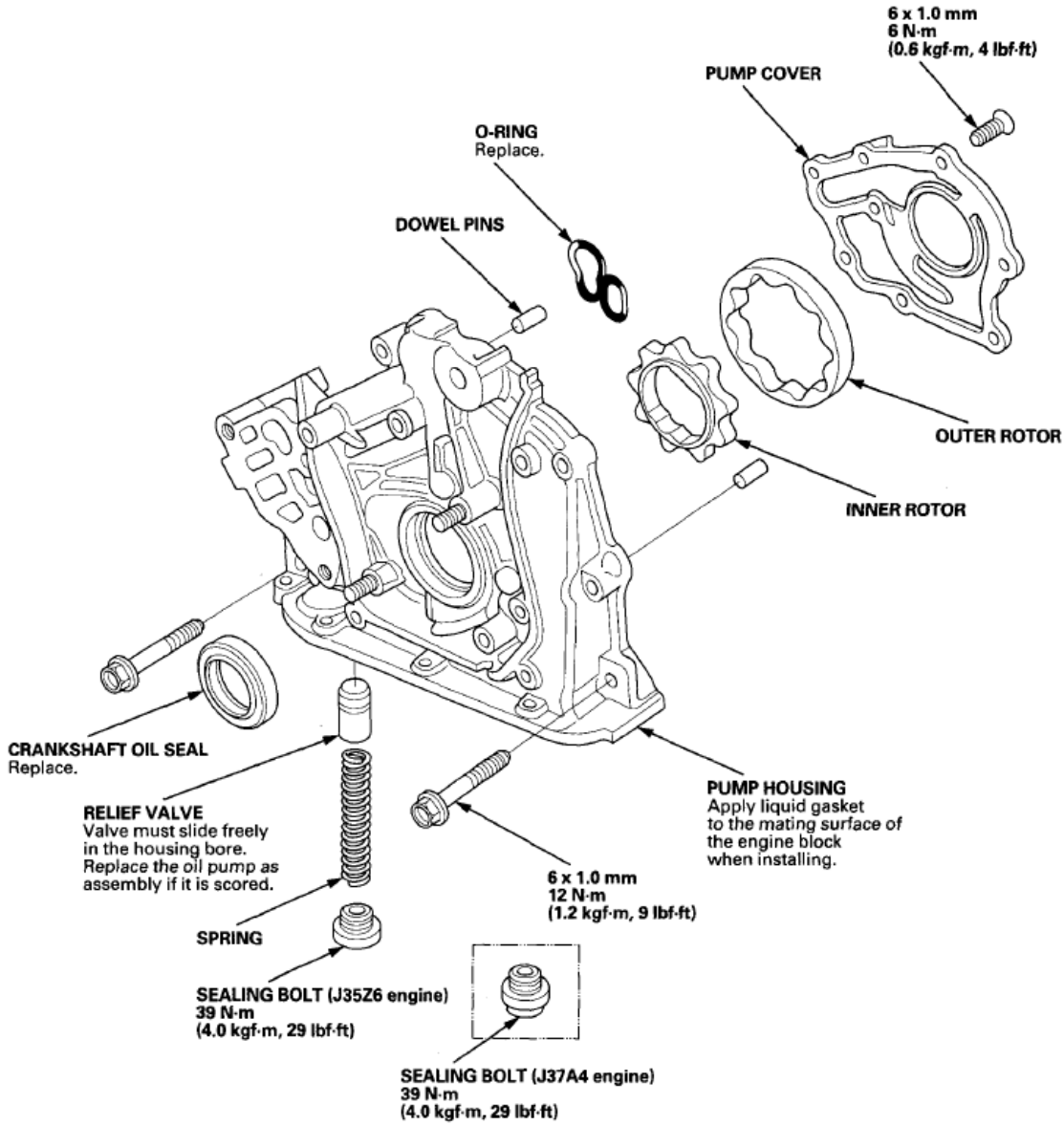


Fig. 21: Exploded View Of Oil Pump With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Special Tools Required

- Oil Seal Driver, 64 mm 07OAD-RCAA100
- Engine Support Hanger, A and Reds AAR-T1256*

*: Available through the Acura Tool and Equipment Program, 888-424-6857.

REMOVAL

1. Disconnect the support struts from both sides of the pivot ball (bolted to the hood). Secure the hood in a vertical position. Install the right side pivot ball into the lower threaded hole.

NOTE: **Do not attempt to close the hood with the support strut in the vertical position, as it will damage the support strut and hood.**

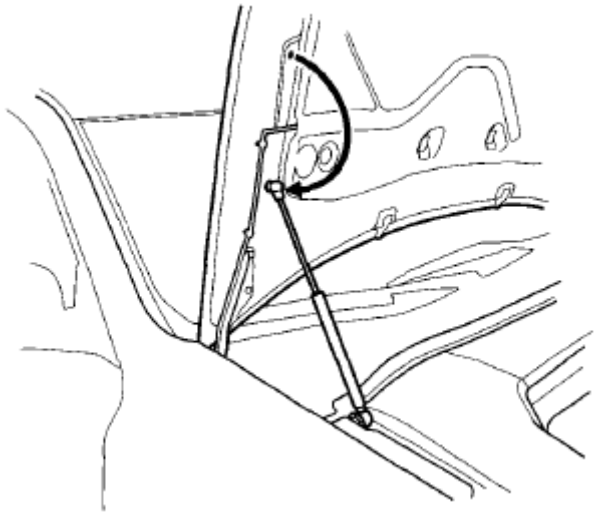


Fig. 22: Installing Right Side Pivot Ball Into Lower Threaded Hole
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Drain the **engine oil**.
3. Install the engine support hanger (AAR-T1256) onto the vehicle as shown, and attach the hook (A) to the engine hanger (B). Tighten the wing nut (C) by hand, and lift and support the engine/transmission.

NOTE:

- **Be careful when working around the windshield.**
- **AAR-T1256 two sets required for stacking two cross section bars.**

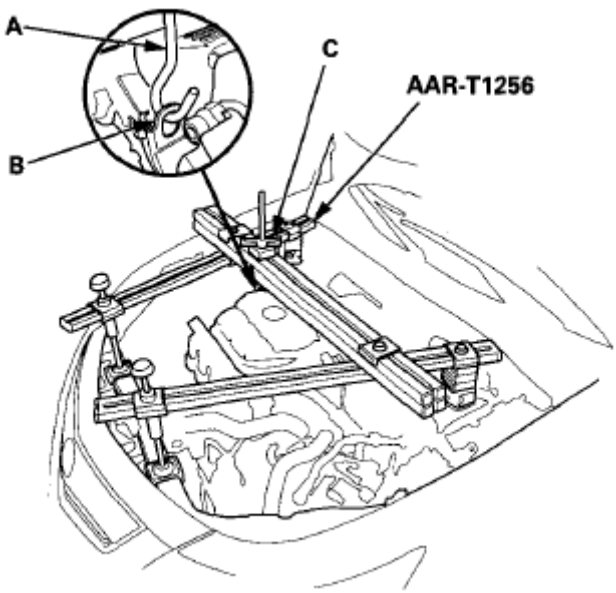


Fig. 23: Identifying Hook, Engine Hanger And Wing Nut Of Engine Support Hanger
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Remove the timing belt:
   - J35Z6 engine (see **TIMING BELT REMOVAL**)
   - J37A4 engine (see **TIMING BELT REMOVAL**)
5. Remove the timing belt drive pulley from the crankshaft:
   - J35Z6 engine (see **TIMING BELT DRIVE PULLEY REPLACEMENT**)
   - J37A4 engine (see **TIMING BELT DRIVE PULLEY REPLACEMENT**)
6. Remove the rocker arm oil control solenoid/oil filter assembly (see **CRANKSHAFT AND PISTON REMOVAL**).
7. Remove the oil pan (see **OIL PAN REMOVAL**).
8. Remove the oil strainer (A).

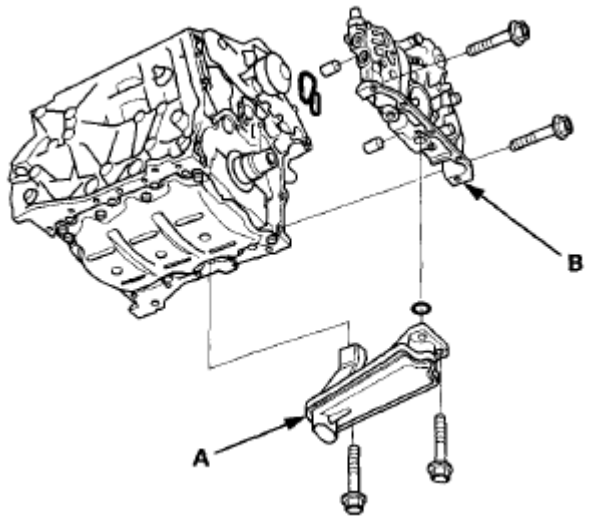


Fig. 24: Identifying Oil Strainer And Oil Pump Assembly
Courtesy of AMERICAN HONDA MOTOR CO., INC.

9. Remove the mounting bolts, then remove the oil pump assembly (B).

INSPECTION

NOTE: Refer to the Exploded View if needed during this procedure.

1. Remove the screws from the pump housing, then separate the pump housing and the cover.
2. Check the inner rotor-to-outer rotor radial clearance between the inner rotor (A) and the outer rotor (B). If the inner-to-outer rotor radial clearance exceeds the service limit, replace the oil pump assembly.

   Inner Rotor-to-Outer Rotor Radial Clearance Standard (New): 0.04- 0.16 mm (0.002- 0.006 in)
   Service Limit: 0.20 mm (0.007 in)

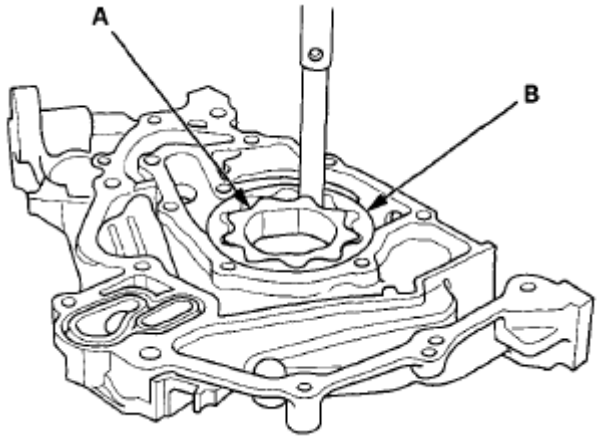


Fig. 25: Identifying Inner And Outer Rotor
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Check the pump housing-to-rotor axial clearance between the rotors (A) and the pump housing (B). If the pump housing-to-rotor axial clearance exceeds the service limit, replace the oil pump assembly.

   Pump Housing-to-Rotor Axial Clearance Standard (New): 0.02- 0.07 mm (0.001- 0.002 in) Service Limit: 0.12 mm (0.004 in)

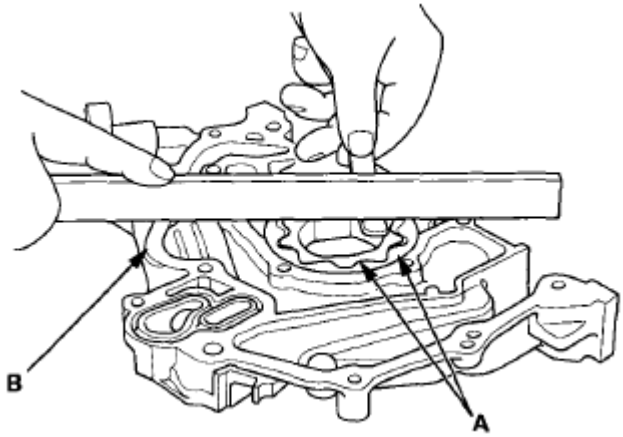


Fig. 26: Identifying Rotor And Pump Housing
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Check the pump housing-to-outer rotor radial clearance between the outer rotor (A) and the pump housing (B). If the pump housing-to-outer rotor radial clearance exceeds the service limit, replace the oil pump assembly.

   Pump Housing-to-Outer Rotor Radial Clearance Standard (New): 0.07- 0.19 mm (0.003- 0.007 in) Service Limit: 0.20 mm (0.007 in)

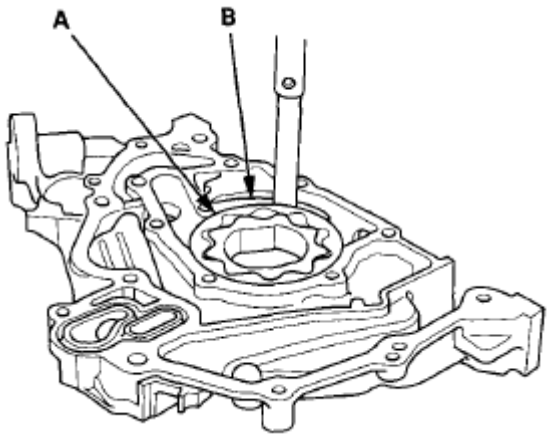


Fig. 27: Identifying Outer Rotor And Pump Housing
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Inspect both rotors and the pump housing for scoring or other damage. Replace the oil pump assembly, if necessary.
6. Apply liquid thread lock to the pump housing screws, then install the oil pump cover.
7. Check that the oil pump turns freely.

INSTALLATION

1. Remove the old oil seal from the oil pump.
2. Clean and dry the crankshaft oil seal housing.
3. Using the oil seal driver, 64 mm, drive in the new crankshaft oil seal (A) until the oil seal driver bottoms on the pump.

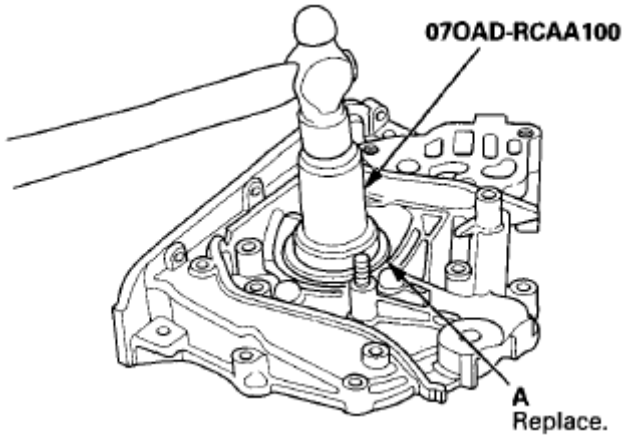


Fig. 28: Identifying Crankshaft Oil Seal
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Remove all of the old liquid gasket from the oil pump mating surfaces, the bolts, and the bolt holes.
5. Clean and dry the oil pump mating surfaces.

6. Apply liquid gasket, P/N 08717-0004, 08718-0003, 08718-0004, or 08718-0009, to the engine block mating surface of the oil pump and to the inside edge of the threaded bolt holes. Install the component within 5 minutes of applying the liquid gasket.

NOTE:

- **Apply a 2.3 mm (0.091 in) diameter bead of liquid gasket along the broken line (A).**
- **If you apply liquid gasket P/N 08718-0012, the component must be installed within 4 minutes.**
- **If too much time has passed after applying the liquid gasket, remove all of the old liquid gasket and residue, then reapply the new liquid gasket.**

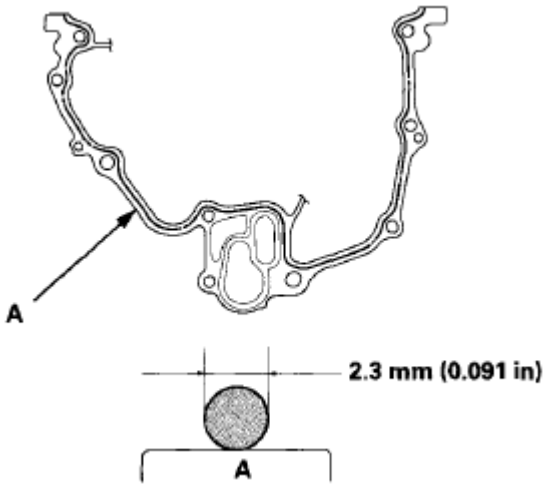


Fig. 29: Identifying Broken Line Of Bead Of Liquid Gasket
Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Apply a light coat of new engine oil to the lip of the crankshaft oil seal, and apply new engine oil to the new O-ring (A).

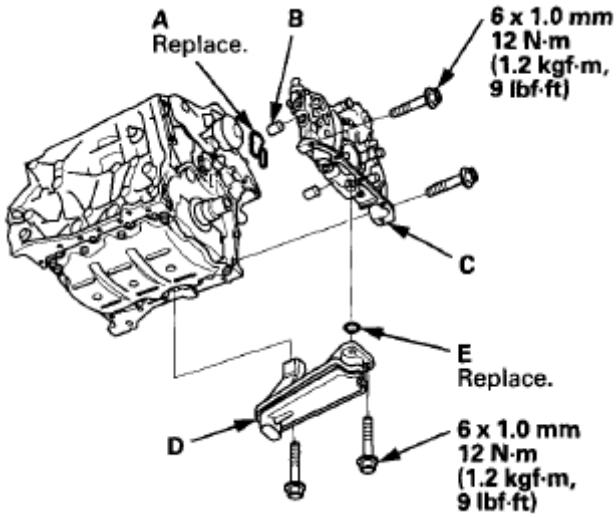


Fig. 30: Identifying O-Ring, Dowel Pins, Oil Pump And Oil Strainer With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

8. Install the dowel pins (B), then align the inner rotor with the crankshaft, and install the oil pump (C).

NOTE:

- **Wait at least 30 minutes before filling the engine with oil.**
- **Do not run the engine for at least 3 hours after installing the oil pump.**

9. Clean the excess oil off the crankshaft, and check that the oil seal lip is not distorted.
10. Install the oil strainer (D) with a new O-ring (E).
11. Install the oil pan (see **OIL PAN INSTALLATION**).
12. Install the rocker arm oil control solenoid/oil filter assembly with a new rocker arm oil control solenoid filter (see **CRANKSHAFT AND PISTON INSTALLATION**).
13. Install the timing belt drive pulley to the crankshaft:
    - J35Z6 engine (see **TIMING BELT DRIVE PULLEY REPLACEMENT**)
    - J37A4 engine (see **TIMING BELT DRIVE PULLEY REPLACEMENT**)
14. Support the engine with a jack and a wood block under the oil pan.
15. Remove the engine support hanger.
16. Install the timing belt:
    - J35Z6 engine (see **TIMING BELT INSTALLATION**)
    - J37A4 engine (see **TIMING BELT INSTALLATION**)
17. Refill the engine with **engine oil**.

2012 ENGINE

Engine Mount Control System - TL

COMPONENT LOCATION INDEX

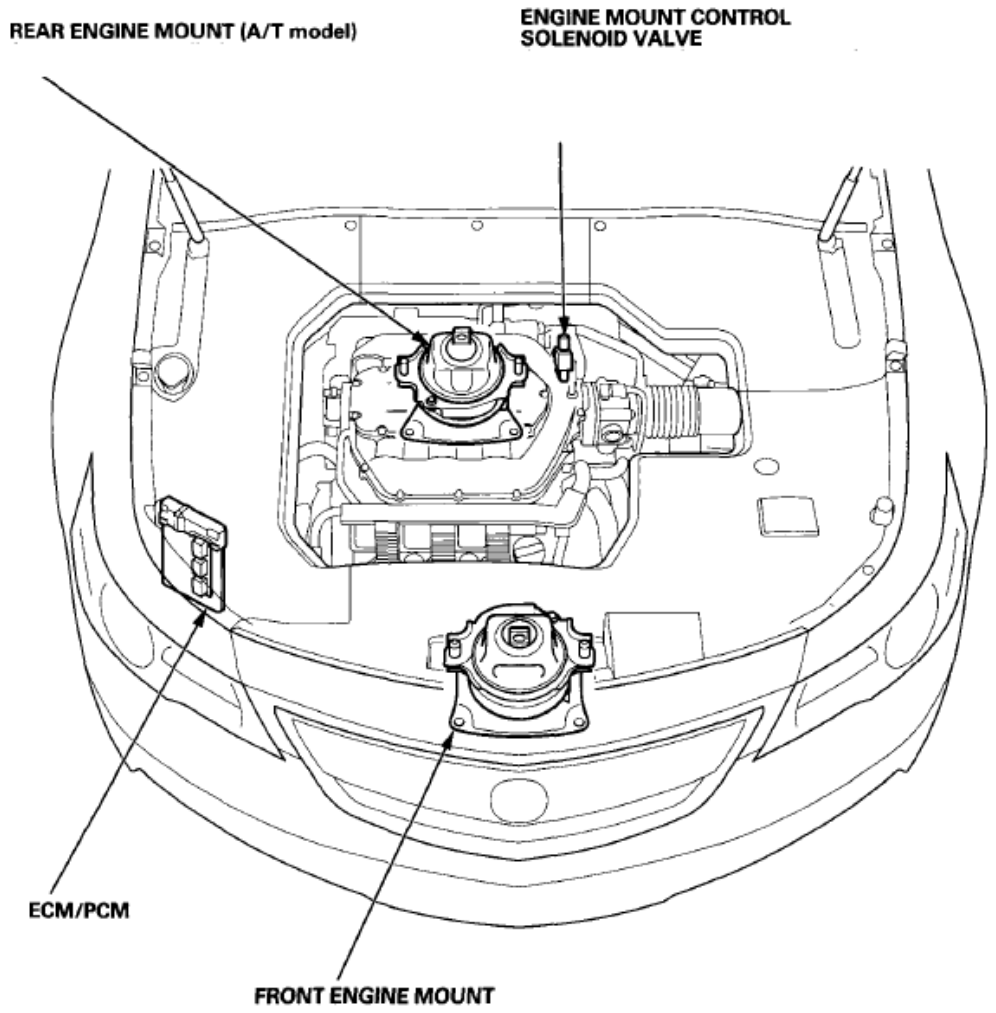


Fig. 1: Engine Mount Control System Components Location
Courtesy of AMERICAN HONDA MOTOR CO., INC.

CIRCUIT DIAGRAM

WITHOUT KEYLESS ACCESS SYSTEM

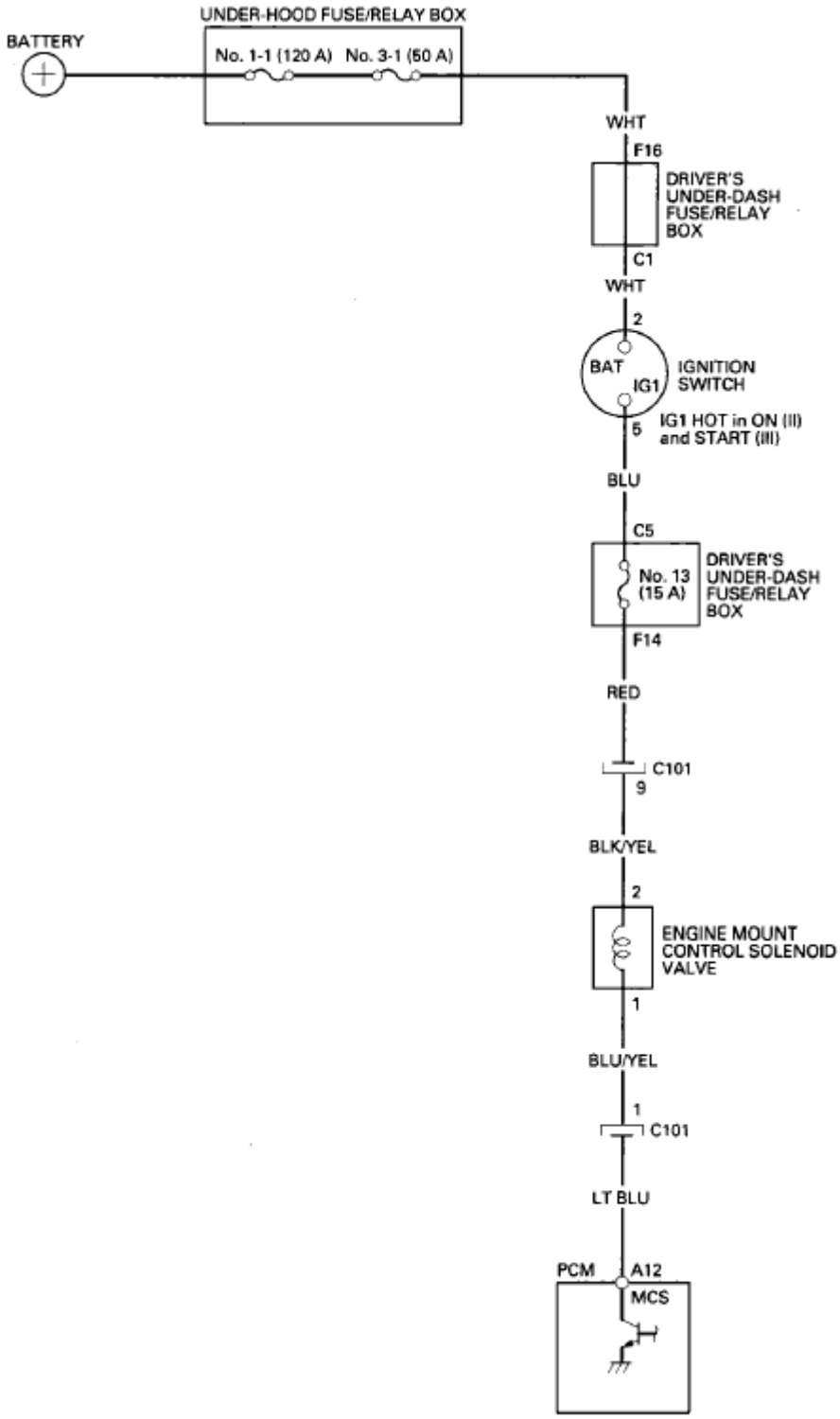


Fig. 2: Engine Mount Control System - Circuit Diagram (Without Keyless Access System)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

WITH KEYLESS ACCESS SYSTEM

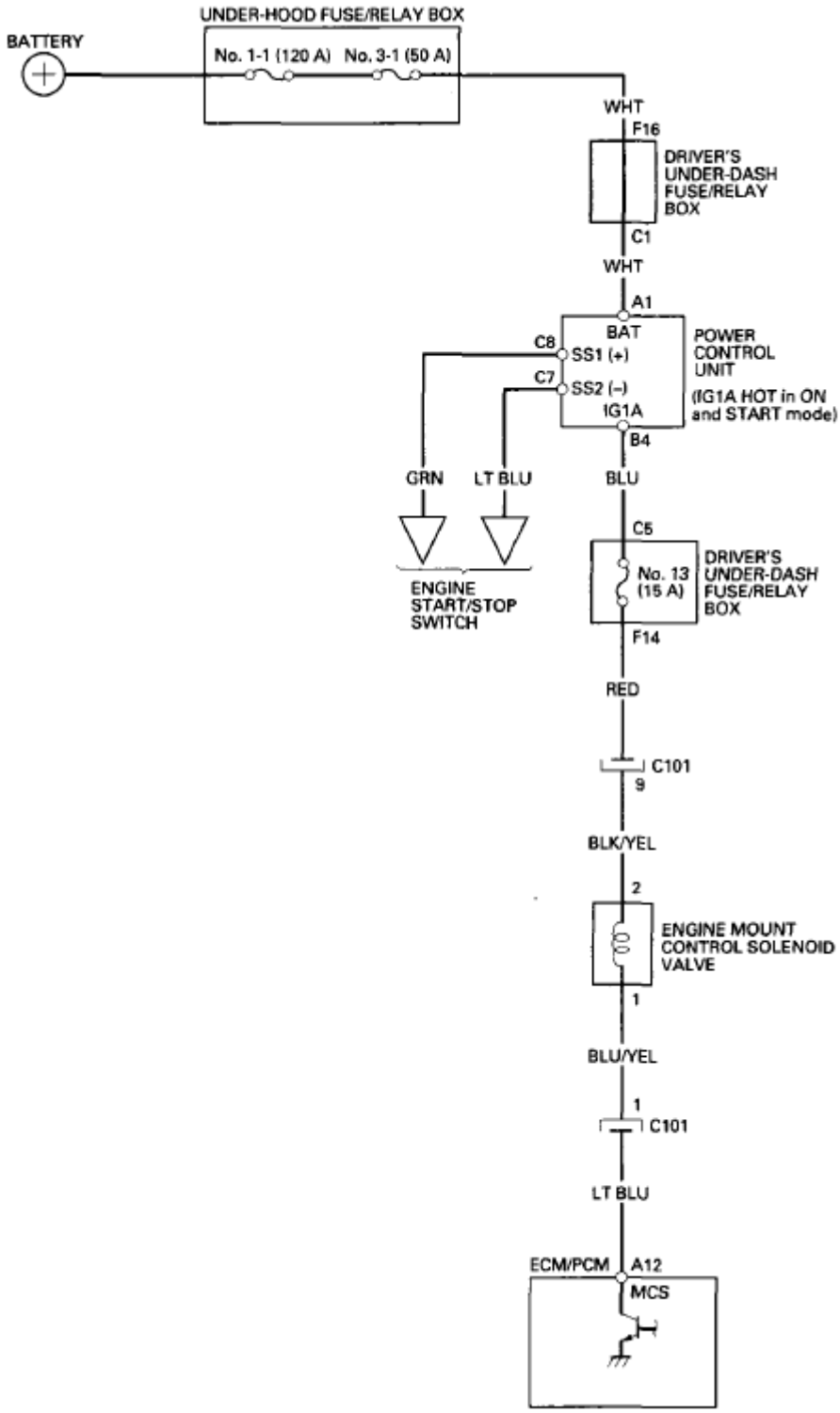


Fig. 3: Engine Mount Control System - Circuit Diagram (With Keyless Access System)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

TROUBLESHOOTING

Special Tools Required

Vacuum Pump/Gauge, 0-30 inHg Snap-on YA4000A or equivalent, commercially available

M/T MODEL

NOTE:

- **Check the vacuum hoses and lines for damage and proper connections before troubleshooting.**
- **Check the liquid filled engine mount for damage. The rubber mount should have dimples in it. This is normal. If the internal bladder ruptures, the rubber mount will look like it is bulging. Replace it (see INSTALLATION).**

Follow this procedure if the engine vibrates excessively when idling.

1. Remove the engine compartment cover (see **ENGINE COMPARTMENT COVER REPLACEMENT**).
2. Start the engine, and let it idle.
3. Raise the engine speed from idling to 2, 000 RPM.
4. Check the MOUNT CTRL SOL in the PGM-FI DATA LIST with the HDS.

   Is ON indicated at idling and OFF indicated at 2, 000 RPM?

   YES - Go to step 5.

   NO - Update the ECM if it does not have the latest software (see **ECM/PCM UPDATE**), or substitute a known-good ECM (see **SUBSTITUTING THE ECM/PCM**), then recheck. If the engine mount control system works properly, and the ECM was updated, the troubleshooting is complete. If the ECM was substituted, replace the original ECM (see **ECM/PCM REPLACEMENT**).

5. Press the engine start/stop button to select the OFF mode.
6. Disconnect the engine mount control solenoid valve 2P connector from the engine mount control solenoid valve.
7. Press the engine start/stop button to select the ON mode.
8. Measure the voltage between engine mount control solenoid valve 2P connector terminal No. 2 and body ground.

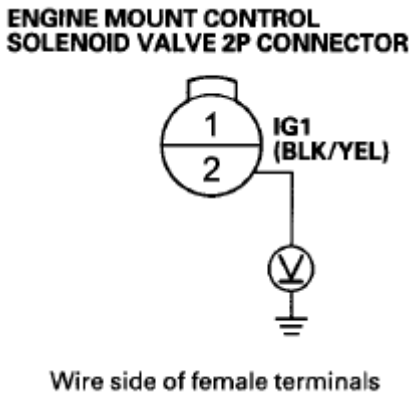


Fig. 4: Measuring Voltage Between Engine Mount Control Solenoid Valve 2P Connector Terminal No. 2 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there battery voltage?

YES - Go to step 9.

NO - Repair an open in the wire between engine mount control solenoid valve 2P connector terminal No. 2 and No. 13 (15 A) fuse in the driver's under-dash fuse/relay box.

9. Start the engine, and let it idle.
10. Measure the voltage between engine mount control solenoid valve 2P connector terminals No. 1 and No. 2, with the engine at idle.

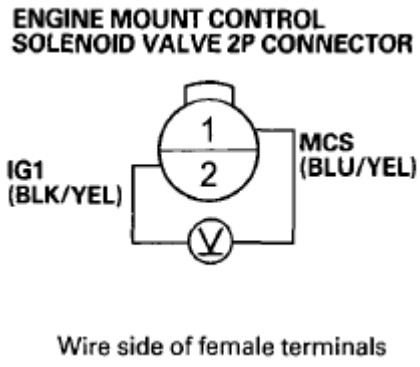


Fig. 5: Measuring Voltage Between Engine Mount Control Solenoid Valve 2P Connector Terminals No. 1 And No. 2
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there battery voltage?

YES - Go to step 11.

NO - Repair an open in the wire between ECM connector terminal A12 and engine mount control

solenoid valve 2P connector terminal No. 1. If the wire is OK, update the ECM if it does not have the latest software (see **ECM/PCM UPDATE**), or substitute a known-good ECM (see **SUBSTITUTING THE ECM/PCM**), and recheck. If the engine mount control system works properly, and the ECM was updated, the troubleshooting is complete. If the ECM was substituted, replace the original ECM (see **ECM/PCM REPLACEMENT**).

11. Raise the engine speed above 2, 000 RPM.
12. Measure the voltage between engine mount control solenoid valve 2P connector terminals No. 1 and No. 2.

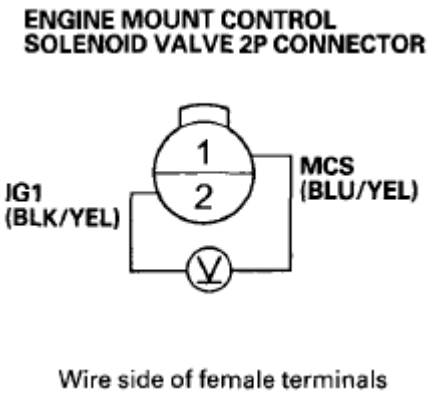


Fig. 6: Measuring Voltage Between Engine Mount Control Solenoid Valve 2P Connector Terminals No. 1 And No. 2
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there battery voltage?

YES - Repair a short to body ground in the wire between ECM connector terminal A12 and the engine mount control solenoid valve. If the wire is OK, update the ECM if it does not have the latest software (see **ECM/PCM UPDATE**), or substitute a known-good ECM (see **SUBSTITUTING THE ECM/PCM**), and recheck. If the engine mount control system works properly, and the ECM was updated, the troubleshooting is complete. If the ECM was substituted, replace the original ECM (see **ECM/PCM REPLACEMENT**).

NO - Reconnect the engine mount control solenoid valve 2P connector, then go to step 14.

13. Press the engine start/stop button to select the OFF mode.
14. Disconnect the vacuum hose (A) from the engine mount control solenoid valve (B), and connect a vacuum pump/gauge, 0-30 inHg, to the vacuum hose. Apply about 20 inHg of vacuum, and wait for 20 seconds.

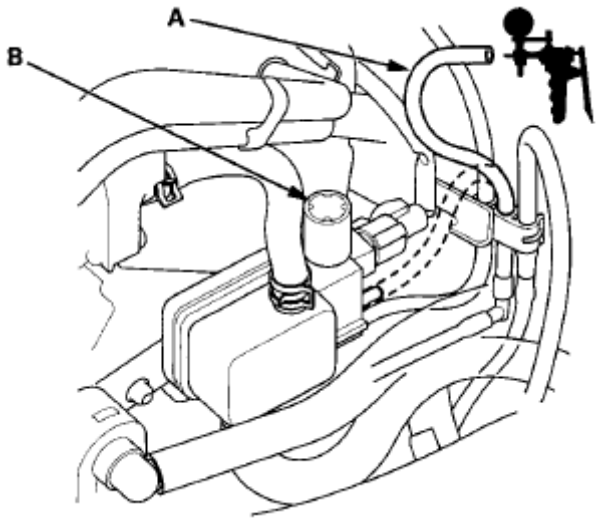


Fig. 7: Identifying Vacuum Hose And Engine Mount Control Solenoid Valve
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Does the engine mount hold vacuum?

YES - Reconnect the vacuum hose, then go to step 16.

NO - Reconnect the vacuum hose, then go to step 15.

15. Disconnect the vacuum hose (A) from the two way valve, and connect a vacuum pump/gauge to the hose. Apply about 20 inHg vacuum, and wait 20 seconds.

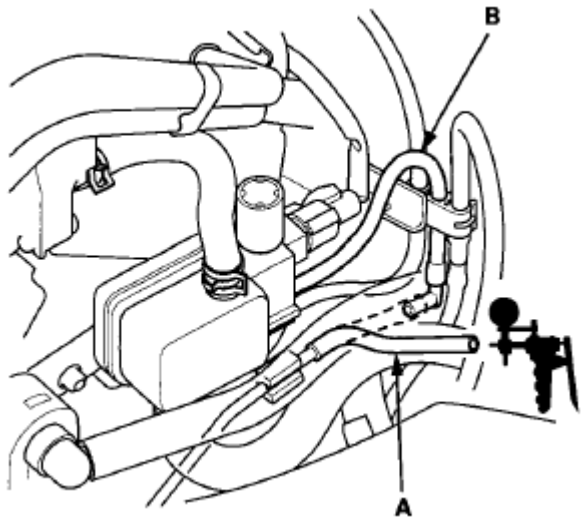


Fig. 8: Identifying Vacuum Hoses
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Does the engine mount hold vacuum?

YES - Repair the vacuum hose (B) between the engine mount control solenoid valve and the two way valve.

NO - The vacuum hose or the front engine mount has a vacuum leak. Repair as needed.

16. Disconnect the vacuum hose (A) from the two way valve, then connect the vacuum pump/gauge to the vacuum hose.

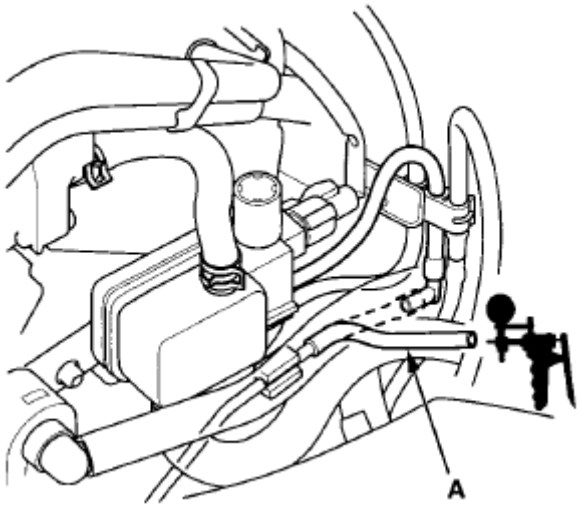


Fig. 9: Identifying Vacuum Hose
Courtesy of AMERICAN HONDA MOTOR CO., INC.

17. Start the engine and let it idle, then apply vacuum to the mount.

    Is there a noticeable change in idle smoothness with and without vacuum applied?

    YES - Reconnect the vacuum hose to the two way valve, then go to step 18.

    NO - Replace the front engine mount (see **INSTALLATION**).

18. Disconnect the vacuum hose (A) from the engine mount control solenoid valve (B), then connect a vacuum pump/gauge to the engine mount control solenoid valve.

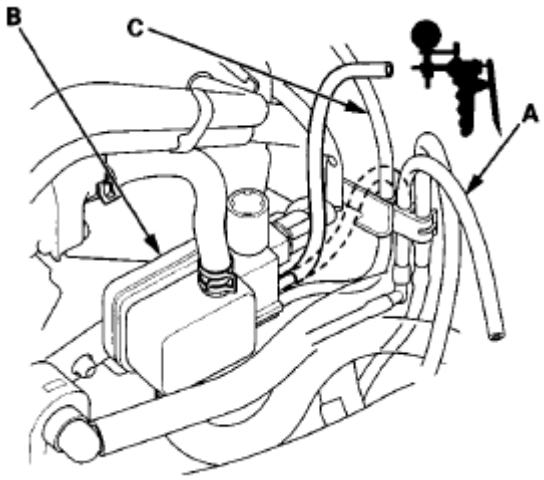


Fig. 10: Identifying Vacuum Hoses And Engine Mount Control Solenoid Valve
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there manifold vacuum at idle, and a decrease in manifold vacuum when you raise the engine speed above 2, 000 RPM?

YES - The system is OK.

NO - Repair the vacuum hose (C) between the intake manifold and the engine mount control solenoid valve. If the vacuum hose is OK, replace the engine mount control solenoid valve.

Special Tools Required

Vacuum Pump/Gauge, 0-30 inHg Snap-on YA4000A or equivalent, commercially available

A/T MODEL

NOTE:

- **Check the vacuum hoses and lines for damage and proper connections before troubleshooting.**
- **The rubber mount should have dimples in it. This is normal. If the internal bladder ruptures, the rubber mount looks like it is bulging, replace it:**
  - **Front engine mount (see INSTALLATION)**
  - **Rear engine mount (see REMOVAL-A/T MODEL)**

Follow this procedure if the engine vibrates excessively when idling.

1. Remove the engine compartment covers (see **ENGINE COMPARTMENT COVER REPLACEMENT**).
2. Start the engine, and let it idle.
3. Raise the engine speed from idling to 2, 000 RPM.
4. Check the MOUNT CTRL SOL in the PGM-FI DATA LIST with the HDS.

Is ON indicated at idling and OFF indicated at 2, 000 RPM?

YES - Go to step 5.

NO - Update the PCM if it does not have the latest software (see **ECM/PCM UPDATE**), or substitute a known-good PCM (see **SUBSTITUTING THE ECM/PCM**), then recheck. If the engine mount control system works properly, and the PCM was updated, the troubleshooting is complete. If the PCM was substituted, replace the original PCM (see **ECM/PCM REPLACEMENT**).

5. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
6. Disconnect the engine mount control solenoid valve 2P connector from the engine mount control solenoid valve.
7. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
8. Measure the voltage between engine mount control solenoid valve 2P connector terminal No. 2 and body ground.

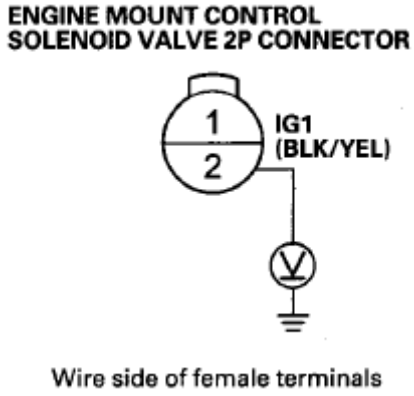


Fig. 11: Measuring Voltage Between Engine Mount Control Solenoid Valve 2P Connector Terminal No. 2 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there battery voltage?

YES - Go to step 9.

NO - Repair an open in the wire between engine mount control solenoid valve 2P connector terminal No. 2 and No. 13(15 A) fuse in the driver's under-dash fuse/relay box.

9. Start the engine, and let it idle.
10. Measure the voltage between engine mount control solenoid valve 2P connector terminals No. 1 and No. 2, with the engine at idle.

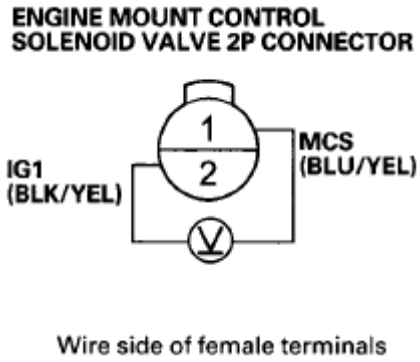


Fig. 12: Measuring Voltage Between Engine Mount Control Solenoid Valve 2P Connector Terminals No. 1 And No. 2
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there battery voltage?

YES - Go to step 11.

NO - Repair an open in the wire between PCM terminal A12 and engine mount control solenoid valve 2P connector terminal No. 1. If the wire is OK, update the PCM if it does not have the latest software (see **ECM/PCM UPDATE**), or substitute a known-good PCM (see **SUBSTITUTING THE ECM/PCM**), and recheck. If the engine mount control system works properly, and the PCM was updated, the troubleshooting is complete. If the PCM was substituted, replace the original PCM (see **ECM/PCM REPLACEMENT**).

11. Raise the engine speed above 2, 000 RPM.
12. Measure the voltage between engine mount control solenoid valve 2P connector terminals No. 1 and No. 2.

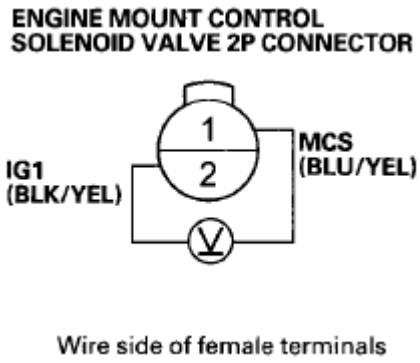


Fig. 13: Measuring Voltage Between Engine Mount Control Solenoid Valve 2P Connector Terminals No. 1 And No. 2
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there battery voltage?

YES - Repair a short to body ground in the wire between PCM terminal A12 and the engine mount

control solenoid valve. If the wire is OK, update the PCM if it does not have the latest software (see **ECM/PCM UPDATE**), or substitute a known-good PCM (see **SUBSTITUTING THE ECM/PCM**), and recheck. If the engine mount control system works properly, and the PCM was updated, the troubleshooting is complete. If the PCM was substituted, replace the original PCM (see **ECM/PCM REPLACEMENT**).

NO - Reconnect the engine mount control solenoid valve 2P connector, then go to step 13.

13. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
14. Disconnect the vacuum hose (A) from the engine mount control solenoid valve (B), and connect a vacuum pump/gauge, 0-30 inHg, to the vacuum hose. Apply about 20 inHg of vacuum, and wait for 20 seconds.

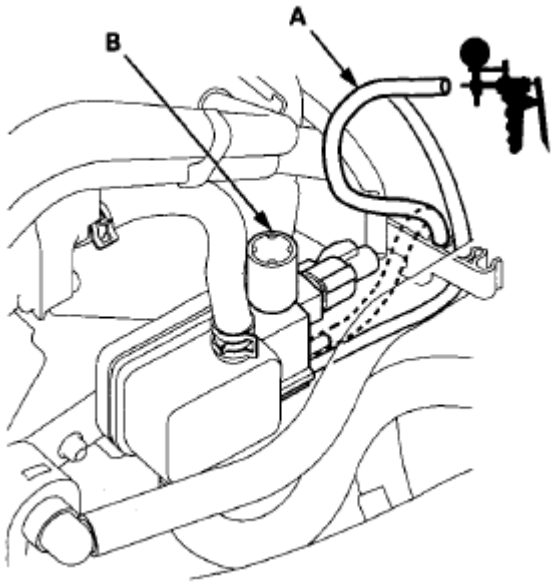


Fig. 14: Identifying Vacuum Hose And Engine Mount Control Solenoid Valve
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Do both engine mounts hold vacuum?

YES - Reconnect the vacuum hose, then go to step 17.

NO - Reconnect the vacuum hose, then go to step 15.

15. Disconnect the vacuum hose (A) from the three way valve, and connect a vacuum pump/gauge to the vacuum hose. Apply about 20 inHg of vacuum, and wait for 20 seconds.

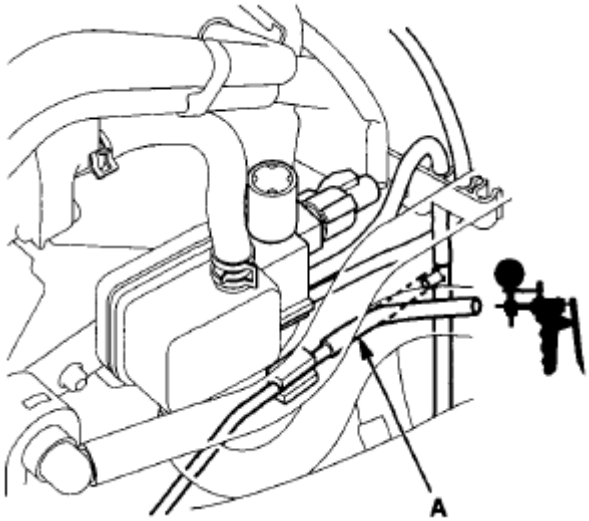


Fig. 15: Identifying Vacuum Hose From Three Way Valve
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Does the front engine mount hold vacuum?

YES - Go to step 16.

NO - The vacuum hose or the front engine mount has a vacuum leak. Repair as needed.

16. Disconnect the vacuum hose (A) from the three way valve, and connect a vacuum pump/gauge to the hose. Apply about 20 inHg of vacuum, and wait for 20 seconds.

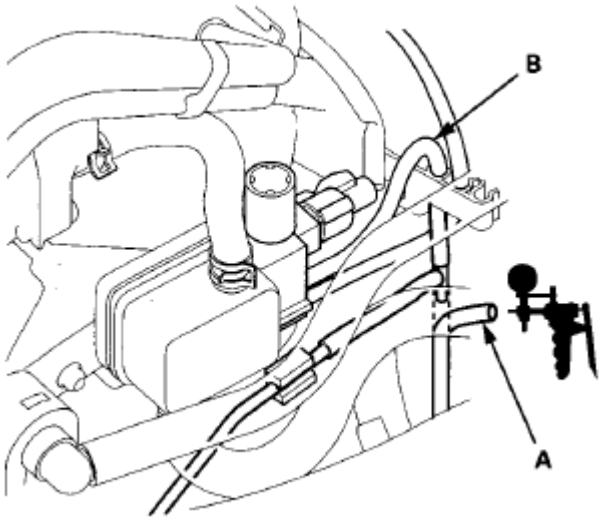


Fig. 16: Identifying Vacuum Hoses
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Does the rear engine mount hold vacuum?

YES - Repair the vacuum hose (B) between the engine mount control solenoid valve and the three way valve.

NO - The vacuum hose or the rear engine mount has a vacuum leak. Repair as needed.

17. Disconnect the vacuum hose (A) from the three way valve. Block the open port, then connect the vacuum pump/gauge to the vacuum hose.

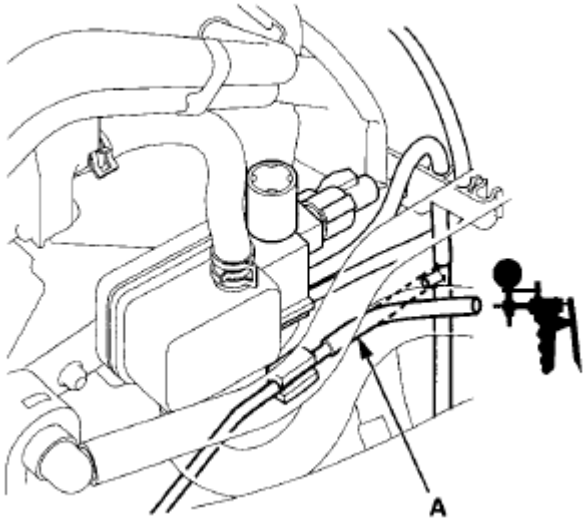


Fig. 17: Identifying Vacuum Hose From Three Way Valve
Courtesy of AMERICAN HONDA MOTOR CO., INC.

18. Start the engine and let it idle, then apply vacuum to the mount.

    Is there a noticeable change in idle smoothness with and without vacuum applied?

    YES - Reconnect the vacuum hose to the three way valve, then go to step 19.

    NO - Replace the front engine mount (see **INSTALLATION**).

19. Disconnect the vacuum hose (A) from the three way valve. Block the open port, then connect the vacuum pump/gauge to the vacuum hose.

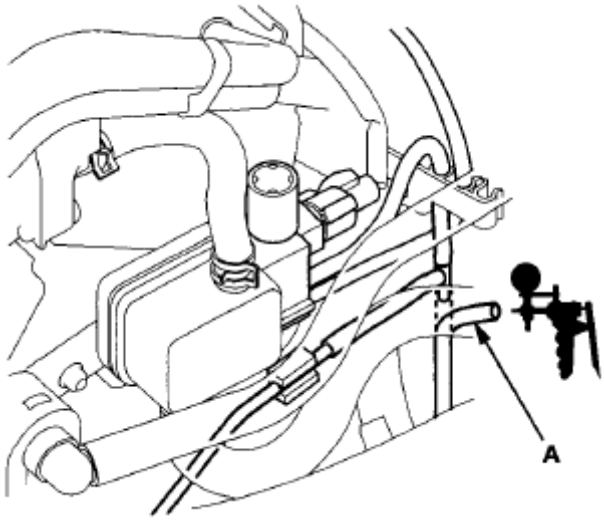


Fig. 18: Identifying Vacuum Hose
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there a noticeable change in idle smoothness with and without vacuum applied?

YES - Reconnect the vacuum hose to the three way valve, then go to step 20.

NO - Replace the rear engine mount (see **REMOVAL-A/T MODEL**).

20. Disconnect the vacuum hose (A) from the engine mount control solenoid valve (B), then connect a vacuum pump/gauge to the engine mount control solenoid valve.

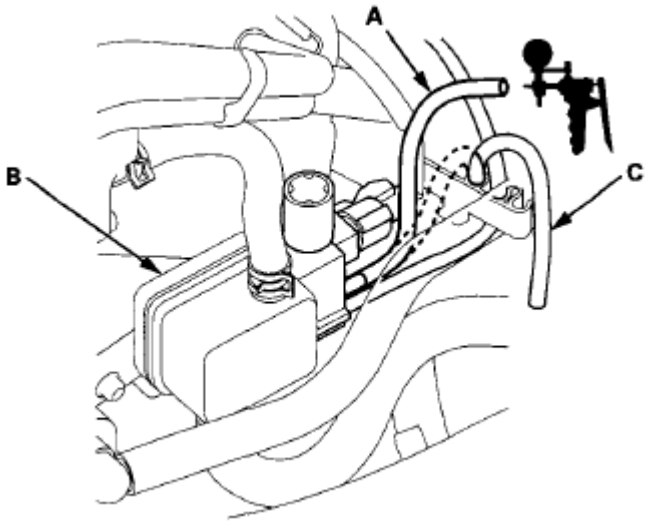


Fig. 19: Identifying Vacuum Hose, Engine Mount Control Solenoid Valve And Vacuum Pump
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there manifold vacuum at idle, and a decrease in manifold vacuum when you raise the engine speed above 2, 000 RPM?

YES - The system is OK.

NO - Repair the vacuum hose (C) between the intake manifold and the engine mount control solenoid. If the vacuum hose is OK, replace the engine mount control solenoid valve.

2012 ENGINE

Fan Controls - TL

COMPONENT LOCATION INDEX

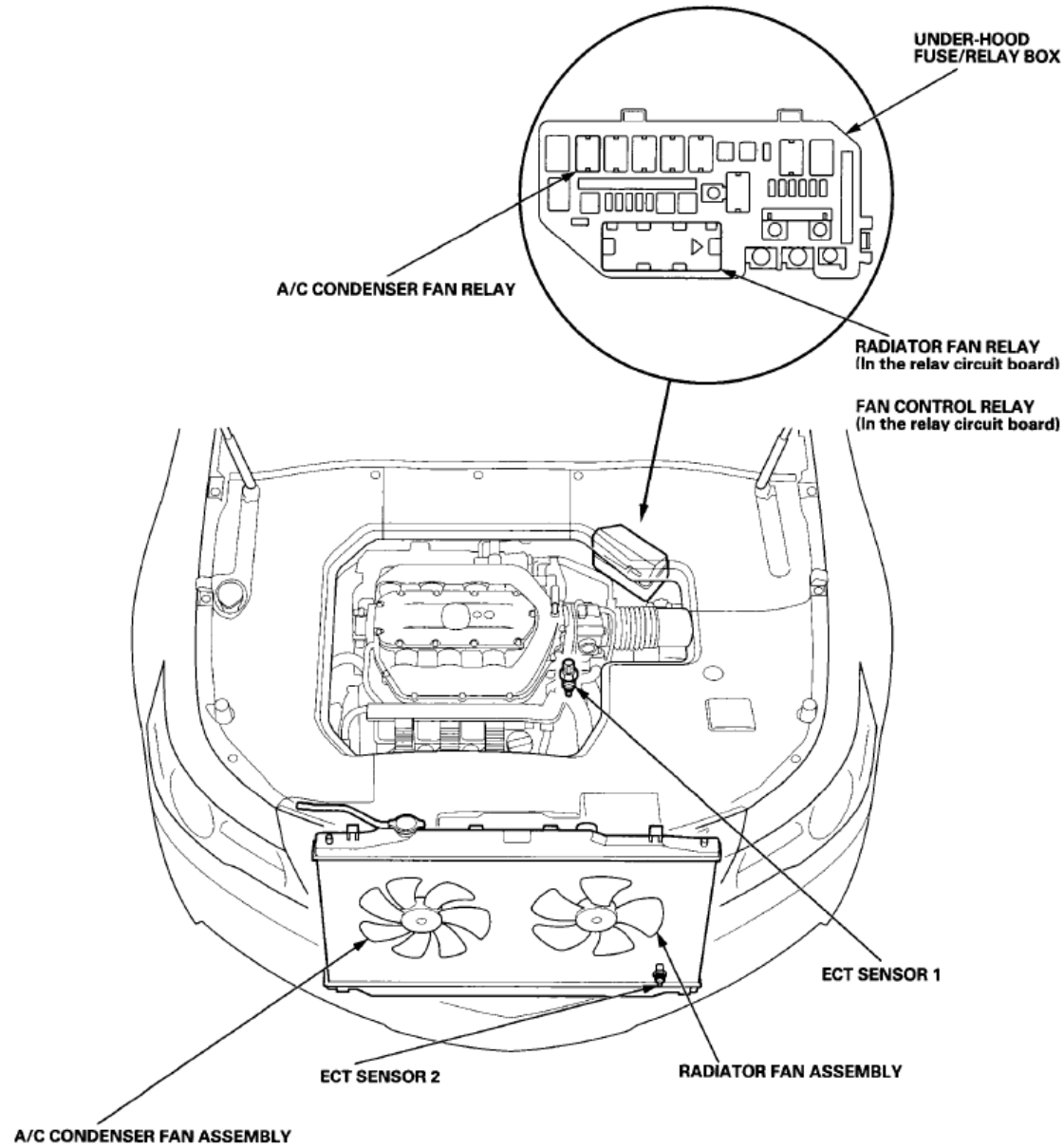


Fig. 1: Fan Controls Components Location
Courtesy of AMERICAN HONDA MOTOR CO., INC.

SYMPTOM TROUBLESHOOTING INDEX

Symptom	Diagnostic Procedure	Also check for
Engine overheats	1. Check the coolant level. 2. Check for any engine coolant leakage (from gaskets, hoses, O-rings, etc.). 3. Check for dirt, leaves, or insects on the radiator and A/C condenser. 4. Check for deteriorated coolant. 5. Check for damaged or deformed fan shrouds. 6. Check the fan motors are operating properly (air should be blowing toward the engine). 7. Inspect the fan motors (see **FAN MOTOR TEST**) or fan relays: • A/C condenser fan relay (see **POWER RELAY TEST**) • Relay circuit board (see **FIVE-TERMINAL TYPE**) 8. Check the radiator cap (see **RADIATOR CAP TEST**). 9. Check the thermostat (see **FAN MOTOR TEST**). 10. Inspect the water pump (see **WATER PUMP INSPECTION**). 11. Check for plugged or deteriorated radiator hoses. 12. Check for a plugged heater core or hoses. 13. Check for a damaged cylinder head gasket.	Check the radiator and A/C condenser fan are operating properly
The radiator fan does not run at high speed	Radiator fan high speed circuit troubleshooting (see **RADIATOR FAN HIGH SPEED CIRCUIT TROUBLESHOOTING**).	Check the connectors are properly connected and the terminals are making good contact
Both the radiator fan and the A/C condenser fan do not run at low speed	Radiator and A/C condenser fans low speed circuit troubleshooting (see **RADIATOR AND A/C CONDENSER FAN LOW SPEED CIRCUIT TROUBLESHOOTING**).	Check the connectors are properly connected and the terminals are making good contact
The A/C condenser fan does not run at high speed	A/C condenser fan high speed circuit troubleshooting (see **A/C CONDENSER FAN HIGH SPEED CIRCUIT TROUBLESHOOTING**).	Check the connectors are properly connected and the terminals are making good contact

CIRCUIT DIAGRAM

WITHOUT KEYLESS ACCESS SYSTEM

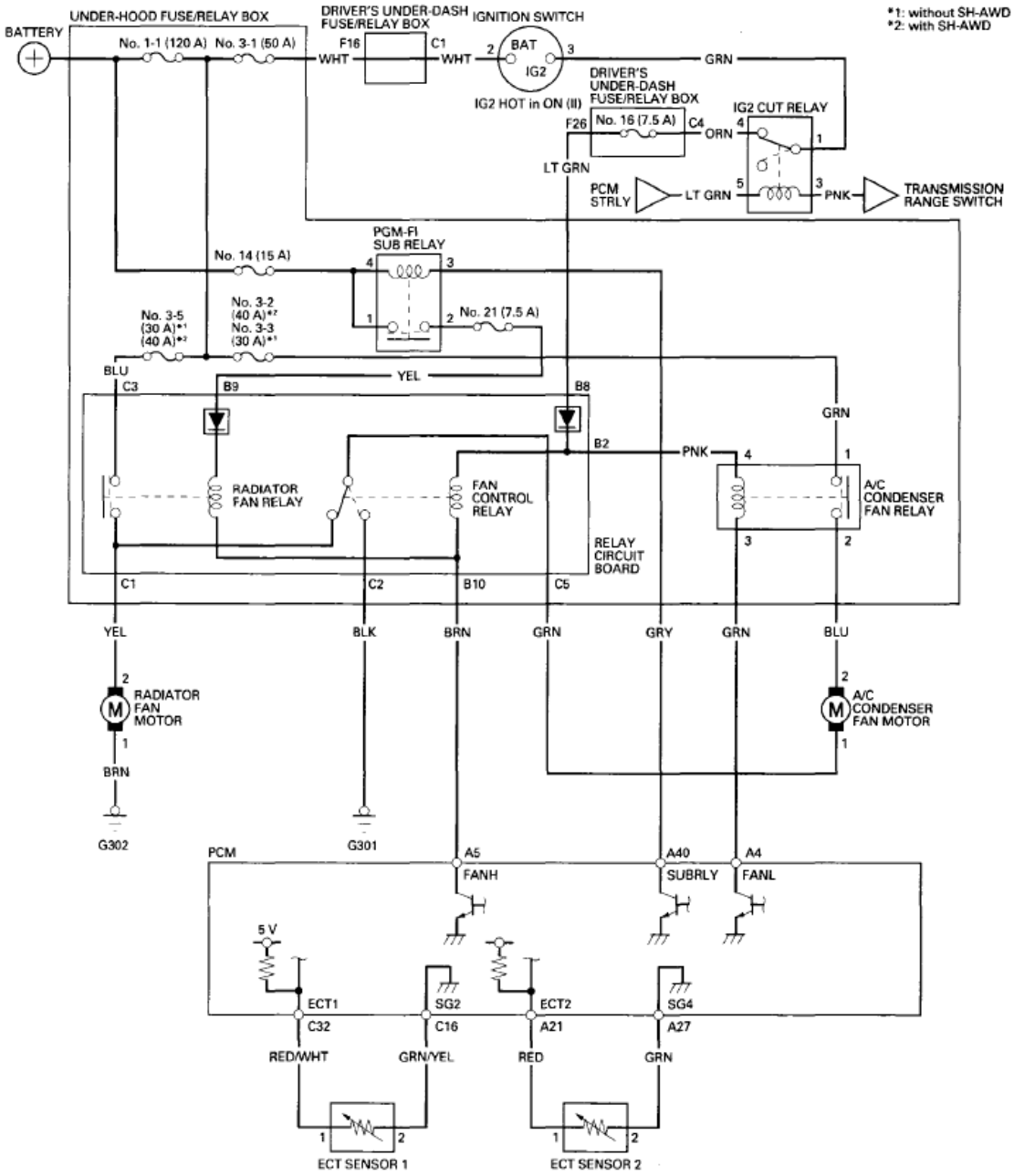


Fig. 2: Fan Controls - Circuit Diagram (Without Keyless Access System)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

WITH KEYLESS ACCESS SYSTEM

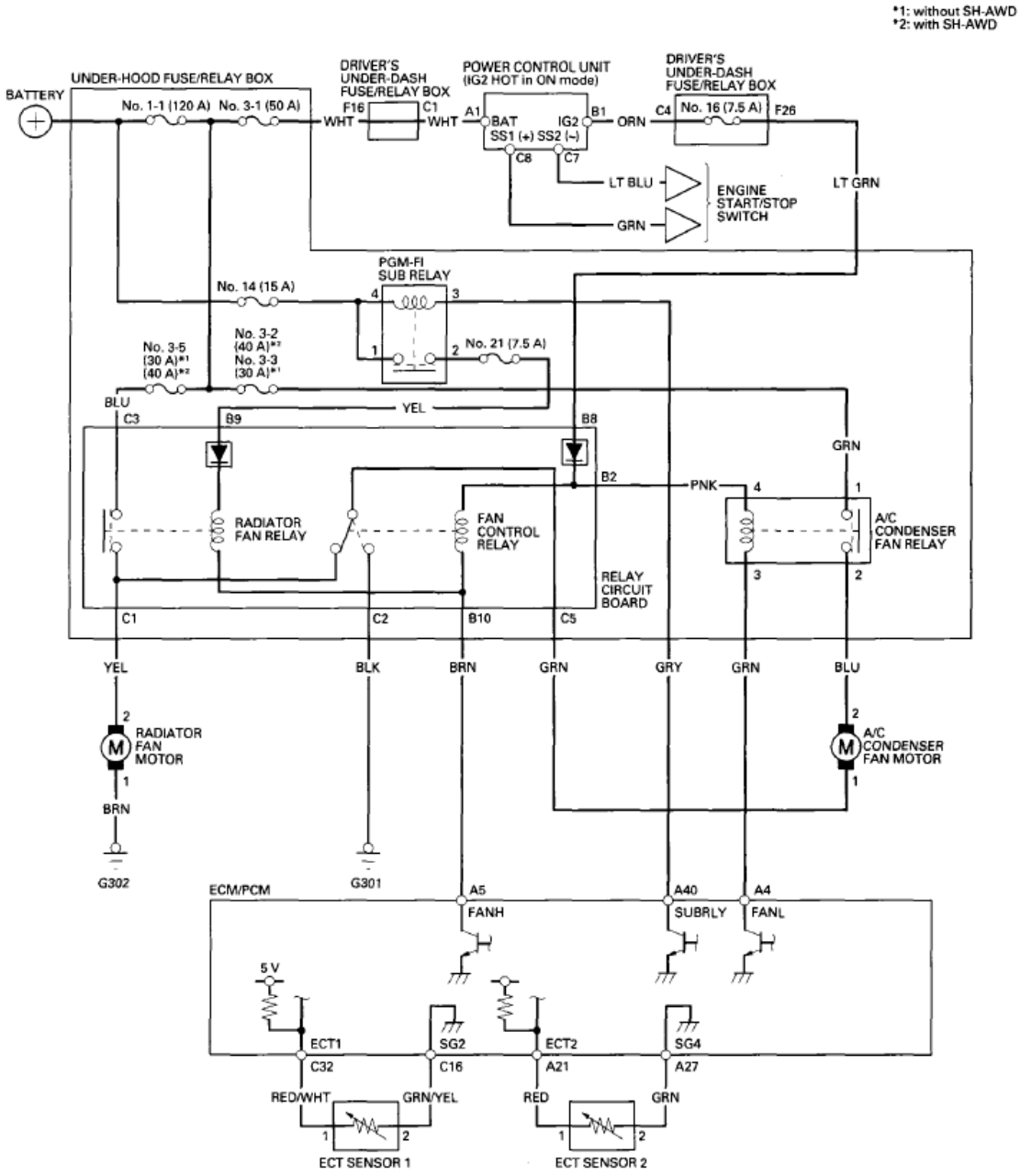


Fig. 3: Fan Controls - Circuit Diagram (With Keyless Access System)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

RADIATOR FAN HIGH SPEED CIRCUIT TROUBLESHOOTING

NOTE: Information marked with an asterisk (*1) applies to without SH-AWD and (*2) applies to with SH-AWD.

1. Check the No. 3-5 (30 A) (*1), (40 A) (*2) fuse, the No. 14 (15 A) fuse, and the No. 21 (7.5 A) fuse in the under-hood fuse/relay box, and the No. 16(7.5 A) fuse in the driver's under-dash fuse/relay box.

Are the fuse(s) OK?

YES - Reinstall the fuses, then go to step 2.

NO - Replace the fuse(s) and recheck. If the fuse(s) blow again, repair the short to ground on the No. 3-5 (30A) (*1), (40 A) (*2) fuse, the No. 14 (15A) fuse, the No. 21 (7.5A) fuse, and the No. 16 (7.5A) fuse circuit.

2. Disconnect and remove the relay circuit board from the under-hood fuse/relay box, and test it (see **FIVE-TERMINAL TYPE**).

   Is the relay circuit board OK?

   YES - Go to step 3.

   NO - Replace the relay circuit board (see **REMOVAL AND INSTALLATION**).

3. Measure the voltage between under-hood fuse/relay box connector terminal C3 and body ground.

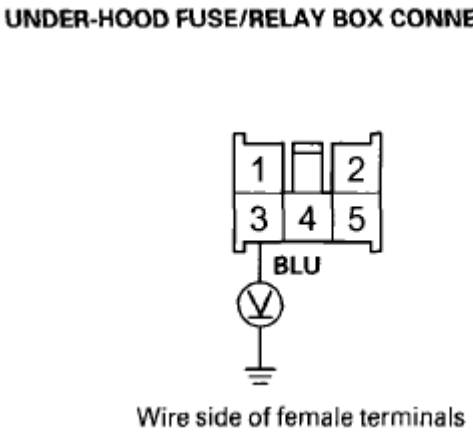


Fig. 4: Measuring Voltage Between Under-Hood Fuse/Relay Box Connector Terminal C3 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

   Is there battery voltage?

   YES - Go to step 4.

   NO - Replace the under-hood fuse/relay box (see **REMOVAL AND INSTALLATION**).

4. Connect under-hood fuse/relay box connector terminals C1 and C3 with a jumper wire.

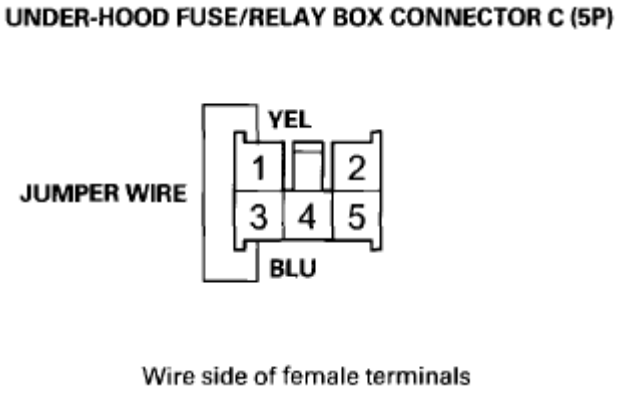


Fig. 5: Connecting Under-Hood Fuse/Relay Box Connector Terminals C1 And C3 With Jumper Wire
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Does the radiator fan run at high speed?

YES - Go to step 8.

NO - Go to step 5.

5. Disconnect the radiator fan motor 2P connector, then test the fan motor (see **FAN MOTOR TEST**).

   Is the fan motor OK?

   YES - Go to step 6.

   NO - Replace the radiator fan motor (see **FAN, FAN MOTOR, AND SHROUD REMOVAL AND INSTALLATION**).

6. Check for continuity between under-hood fuse/relay box connector terminal C1 and radiator fan motor 2P connector terminal No. 2.

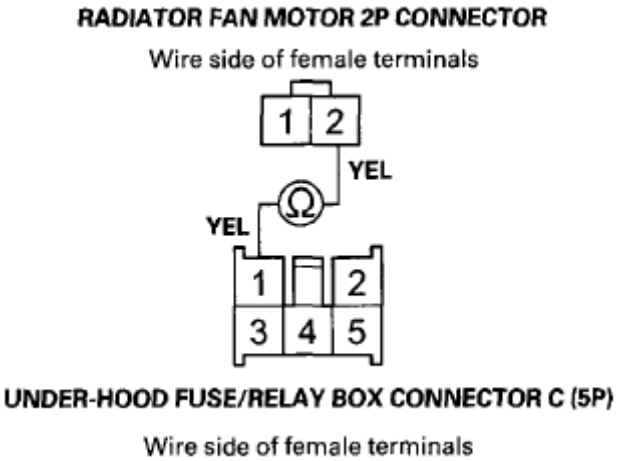


Fig. 6: Checking Continuity Between Under-Hood Fuse/Relay Box Connector And Radiator Fan Motor 2P Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 7.

NO - Repair an open in the wire between under-hood fuse/relay box connector terminal C1 and radiator fan motor 2P connector terminal No. 2.

7. Check for continuity between radiator fan motor 2P connector terminal No. 1 and body ground.

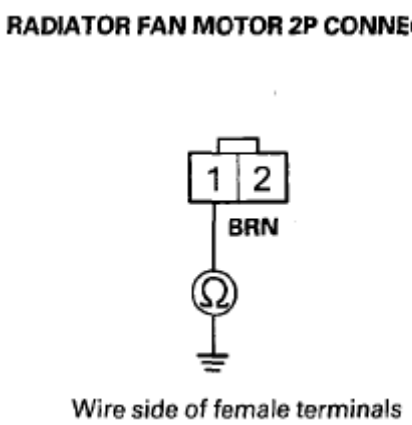


Fig. 7: Checking Continuity Between Radiator Fan Motor 2P Connector Terminal No. 1 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Check for poor connections or loose terminals at the radiator fan motor and body ground G302.

NO - Repair an open in the wire between radiator fan motor 2P connector terminal No. 1 and body ground.

8. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
9. Measure the voltage between under-hood fuse/relay box connector terminal B8 and body ground.

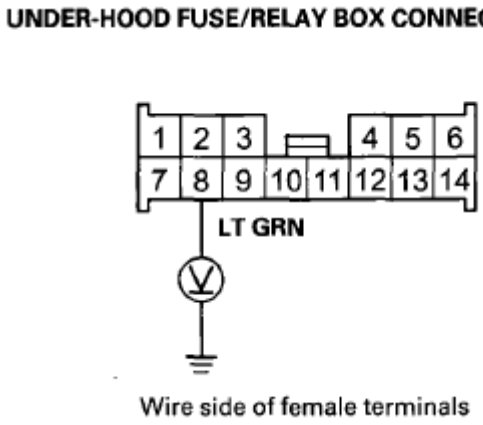


Fig. 8: Measuring Voltage Between Under-Hood Fuse/Relay Box Connector Terminal B8 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there battery voltage?

YES - Go to step 10.

NO - Repair an open in the wire between driver's under-dash fuse/relay box connector terminal F26 and under-hood fuse/relay box connector terminal B8.

10. Measure the voltage between under-hood fuse/relay box connector terminal B9 and body ground.

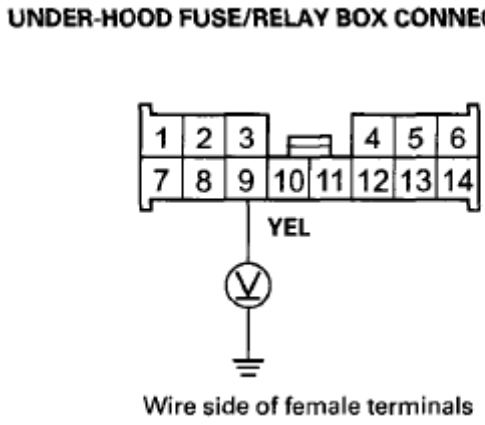


Fig. 9: Measuring Voltage Between Under-Hood Fuse/Relay Box Connector Terminal B9 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there battery voltage?

YES - Go to step 11.

NO - Check the PGM-FI subrelay. If the relay is OK, replace the under-hood fuse/relay box (see

REMOVAL AND INSTALLATION).

11. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
12. Connect the HDS to the DLC (see **HOW TO USE THE HDS (HONDA DIAGNOSTIC SYSTEM)**).
13. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
14. Make sure the HDS communicates with the vehicle and the ECM/PCM. If it does not communicate, troubleshoot the DLC circuit (see **DLC CIRCUIT TROUBLESHOOTING**).
15. Jump the SCS line with the HDS, then turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.

NOTE: This step must be done to protect the ECM/PCM from damage.

16. Disconnect ECM/PCM connector A (49P).
17. Check for continuity between ECM/PCM connector terminal A5 and under-hood fuse/relay box connector terminal B10.

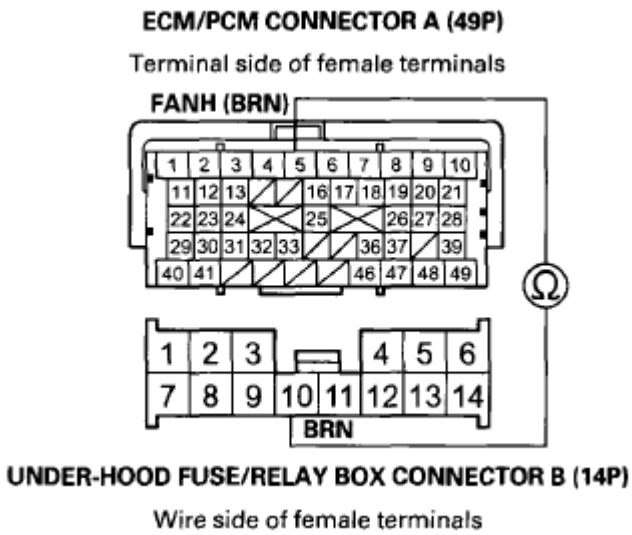


Fig. 10: Checking Continuity Between ECM/PCM Connector Terminal A5 And Under-Hood Fuse/Relay Box Connector Terminal B10
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Update the ECM/PCM if it does not have the latest software (see **ECM/PCM UPDATE**), or substitute a known-good ECM/PCM (see **SUBSTITUTING THE ECM/PCM**), then recheck. If the symptom/indication goes away with a known-good ECM/PCM, replace the original ECM/PCM (see **ECM/PCM REPLACEMENT**).

NO - Repair an open in the wire between under-hood fuse/relay box connector terminal B10 and ECM/PCM connector terminal A5.

2012 ENGINE

Ignition System - TL

COMPONENT LOCATION INDEX

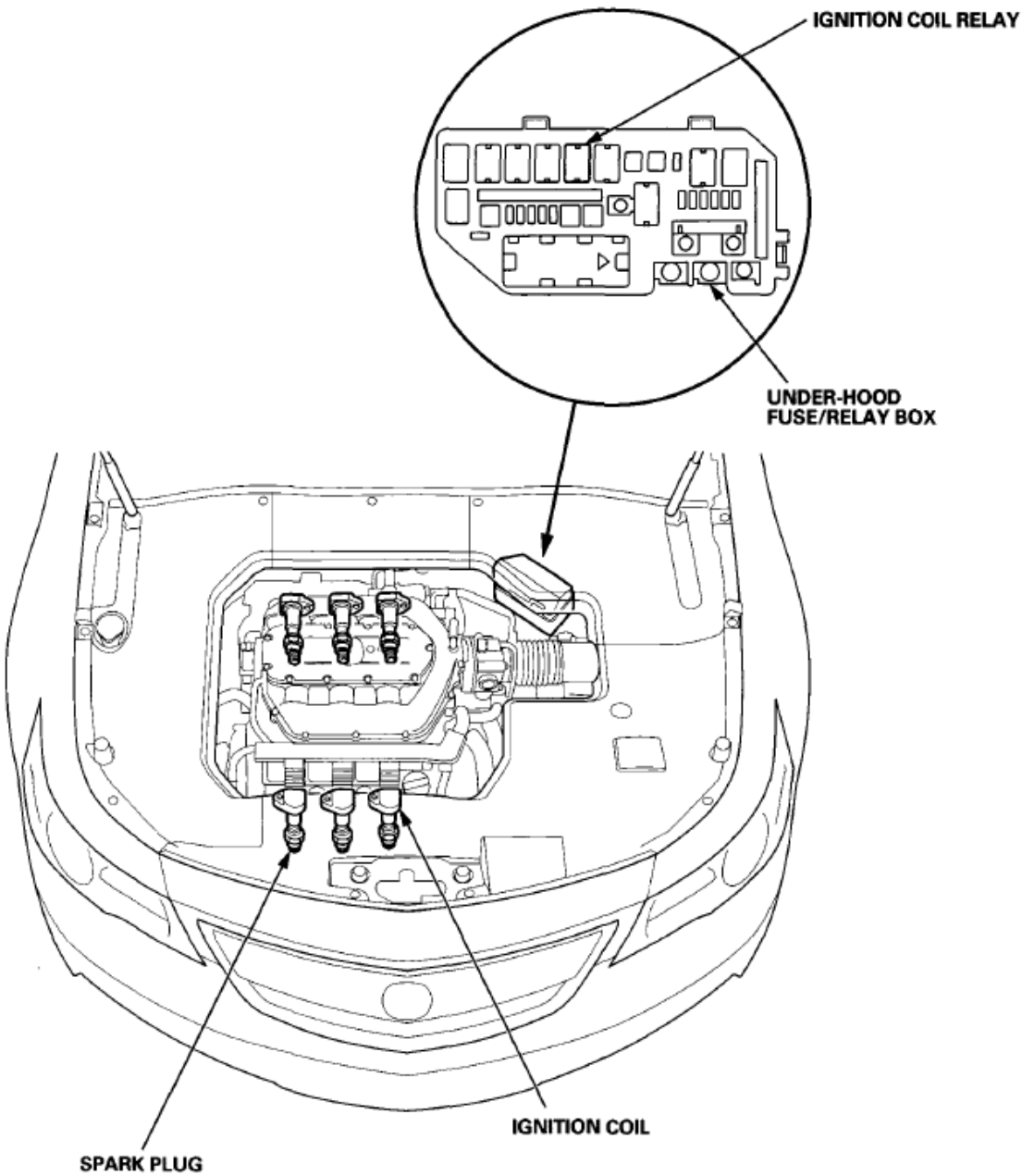


Fig. 1: Ignition System Components Location
Courtesy of AMERICAN HONDA MOTOR CO., INC.

IGNITION TIMING INSPECTION

1. Remove the engine compartment covers (see **ENGINE COMPARTMENT COVER REPLACEMENT**).
2. Connect the HDS to the DLC (see **HOW TO USE THE HDS (HONDA DIAGNOSTIC SYSTEM)**).
3. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
4. Make sure the HDS communicates with the vehicle and the ECM/PCM. If it does not communicate, troubleshoot the DLC circuit (see **DLC CIRCUIT TROUBLESHOOTING**).
5. Check for DTCs (see **GENERAL TROUBLESHOOTING INFORMATION**). If a DTC is present, diagnose and repair the cause before continuing with this test.
6. Start the engine. Hold the engine speed at 3, 000 RPM with no load in neutral (M/T model) or P or N (A/T model) until the radiator fan comes on, then let it idle.
7. Check the idle speed (see **IDLE SPEED INSPECTION**).
8. Jump the SCS line with the HDS.
9. Connect the timing light to the No. 1 ignition coil harness.

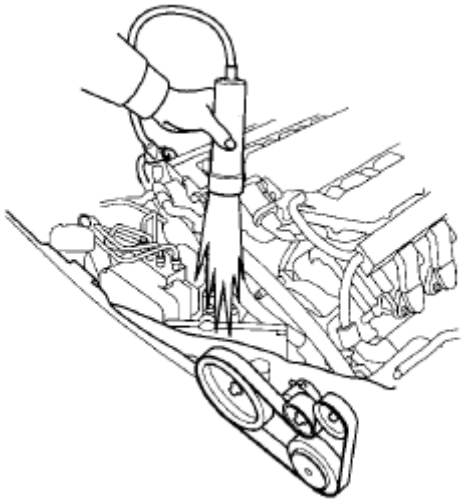


Fig. 2: Identifying Timing Light At No. 1 Ignition Coil Harness
Courtesy of AMERICAN HONDA MOTOR CO., INC.

10. Aim the light toward the pointer (A) on the timing belt lower cover. Check the ignition timing under a no load condition (headlights, blower fan, rear window defogger, and air conditioner are turned off).

NOTE: The other pointer (B) is not used.

Ignition Timing

M/T model: 10 ± 2 ° BTDC (RED mark (C)) at idle in neutral

A/T model: 10 ±2 ° BTDC (RED mark (C)) at idle in P or N

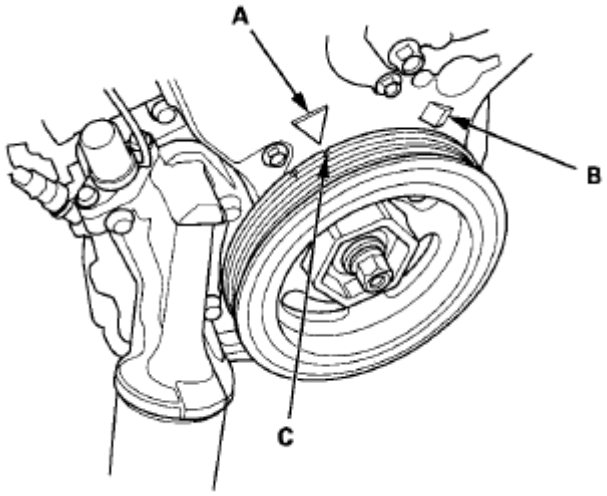


Fig. 3: Identifying Pointers And Red Marks For Ignition Timing
Courtesy of AMERICAN HONDA MOTOR CO., INC.

11. If the ignition timing differs from the specification, check the cam timing. If the cam timing is OK, update the ECM/PCM if it does not have the latest software (see **ECM/PCM UPDATE**), or substitute a known-good ECM/PCM (see **SUBSTITUTING THE ECM/PCM**), then recheck. If the system works properly, and the ECM/PCM was substituted, replace the original ECM/PCM (see **ECM/PCM REPLACEMENT**).
12. Disconnect the HDS and the timing light.
13. Install the engine compartment covers (see **ENGINE COMPARTMENT COVER REPLACEMENT**).

IGNITION COIL AND SPARK PLUG REMOVAL/INSTALLATION

FRONT

1. Remove the engine compartment covers (see **ENGINE COMPARTMENT COVER REPLACEMENT**).
2. Remove the harness clamp (A) and the bolt (B), then remove the harness holder (C) from the bracket.

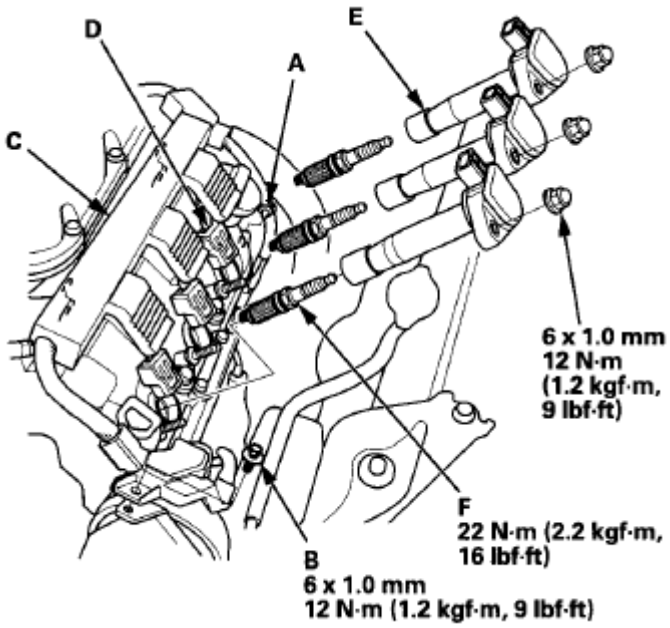


Fig. 4: Identifying Harness Clamp, Bolt, Holder, Ignition Coils And Coil Connectors With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Disconnect the ignition coil connectors (D), then remove the front ignition coils (E).
4. Remove the **spark plugs (F) and inspect** them.
5. Apply a small amount of anti-seize compound to the plug threads, and screw the plugs into the cylinder head, finger tight, then tighten the plugs to the specified torque.

   Specified Torque: 22 N.m (2.2 kgf.m, 16 lbf.ft)

6. Install the ignition coils in the reverse order of removal.

REAR

1. Remove the engine compartment covers (see **ENGINE COMPARTMENT COVER REPLACEMENT**).
2. Remove the strut brace (see **FRAME BRACE REPLACEMENT**).
3. Disconnect the ignition coil connectors (A), then remove the rear ignition coils (B).

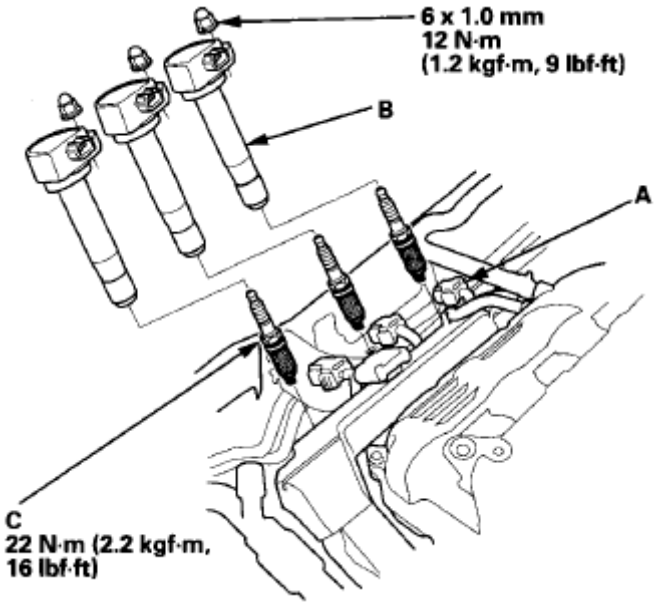


Fig. 5: Identifying Ignition Coil Connectors, Ignition Coils And Spark Plugs With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Remove the **spark plugs (C) and inspect** them.
5. Apply a small amount of anti-seize compound to the plug threads, and screw the plugs into the cylinder head, finger-tight, then tighten the plugs to the specified torque.

   Specified Torque: 22 N.m (2.2 kgf.m, 16 lbf.ft)

6. Install the ignition coils in the reverse order of removal.

SPARK PLUG INSPECTION

1. Remove the ignition coils and the **spark plugs**.
2. Inspect the electrodes and the ceramic insulator.
   - Burned or worn electrodes may be caused by these conditions:
     - Advanced ignition timing
     - Loose spark plug
     - Plug heat range too hot
     - Insufficient cooling
   - Fouled plugs may be caused by these conditions:
     - Retarded ignition timing
     - Oil in combustion chamber
     - Incorrect spark plug gap
     - Plug heat range too cold

- Excessive idling/low speed running
- Clogged air cleaner element
- Deteriorated ignition coils

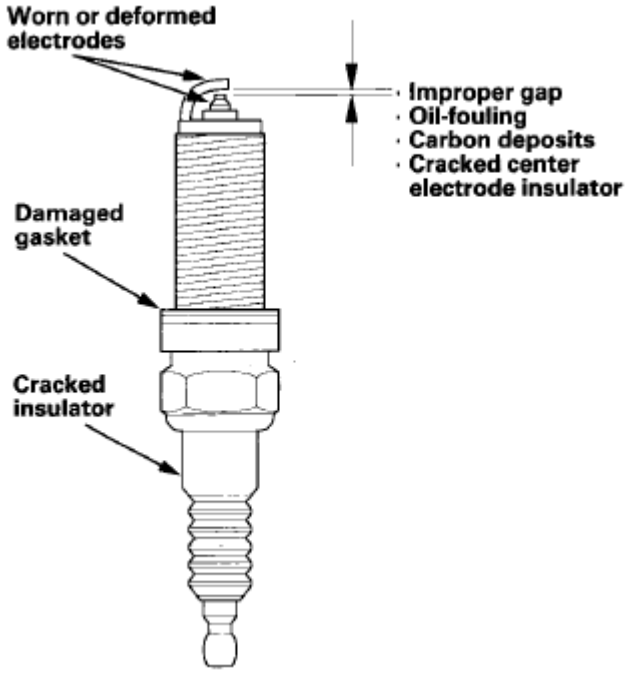


Fig. 6: Identifying Spark Plug
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Replace the plug at the specified interval, or if the center electrode (A) is rounded, or if the spark plug gap (B) is out of specification, or if the spark plug electrode is dirty or contaminated. Use only the spark plugs listed.

NOTE:

- **Do not adjust the gap of iridium tip plugs.**
- **Do not use a plug cleaner.**

J35Z6 engine

Spark Plugs

NGK: DILZKR7A11G

Electrode Gap

Standard (New): 1.0- 1.1 mm (0.039- 0.043 in)

J37A4 engine

Spark Plugs

NGK: ILZKR7B-11S

DENSO: SXU22HCR11S

Electrode Gap

Standard (New): 1.0- 1.1 mm (0.039- 0.043 in)

J35Z6 engine

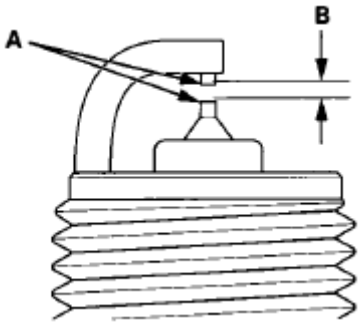


Fig. 7: Identifying Electrode Gap In J35Z6 Engine
Courtesy of AMERICAN HONDA MOTOR CO., INC.

J37A4 engine

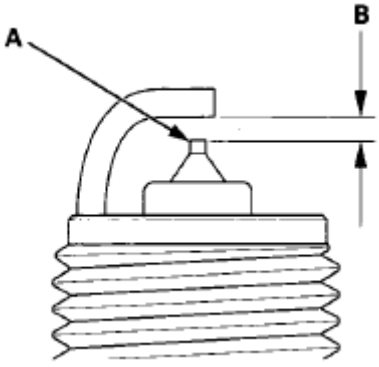


Fig. 8: Identifying Electrode Gap In J37A4 Engine
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Install the **spark plugs** and the ignition coils.

2012 ENGINE

Intake Manifold And Exhaust System - TL

COMPONENT LOCATION INDEX

J35Z6 ENGINE (WITHOUT SH-AWD)

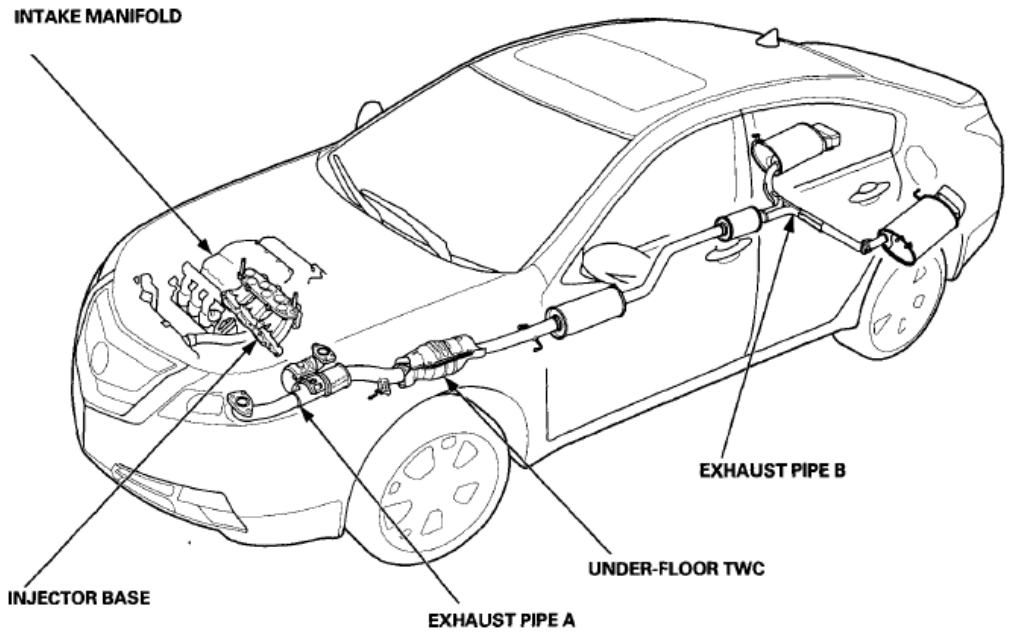


Fig. 1: Intake Manifold And Exhaust System Components Location (without SH-AWD)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

J37A4 ENGINE (WITH SH-AWD)

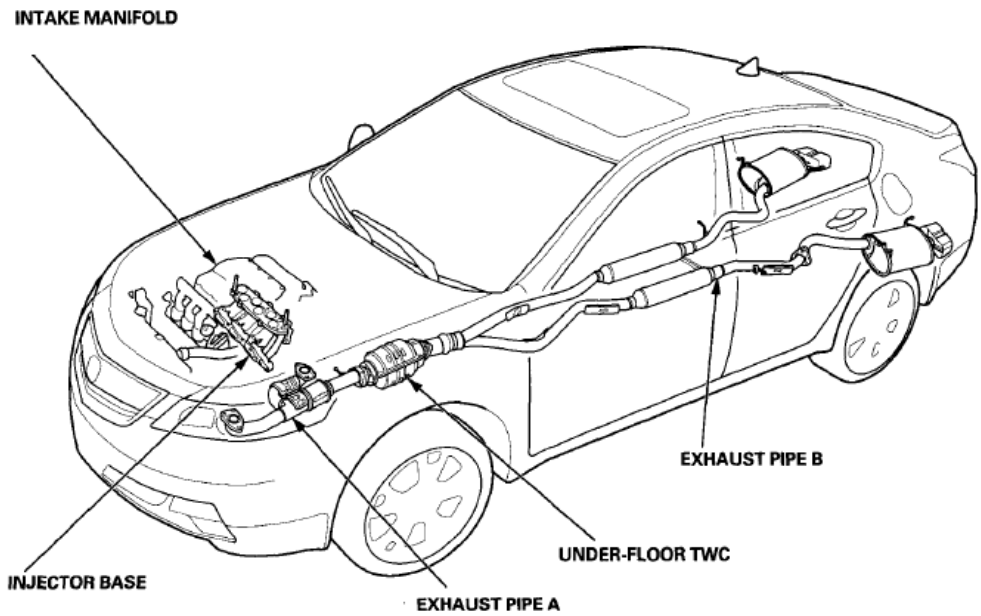


Fig. 2: Intake Manifold And Exhaust System Components Location (with SH-AWD)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

INTAKE MANIFOLD REMOVAL AND INSTALLATION

EXPLODED VIEW

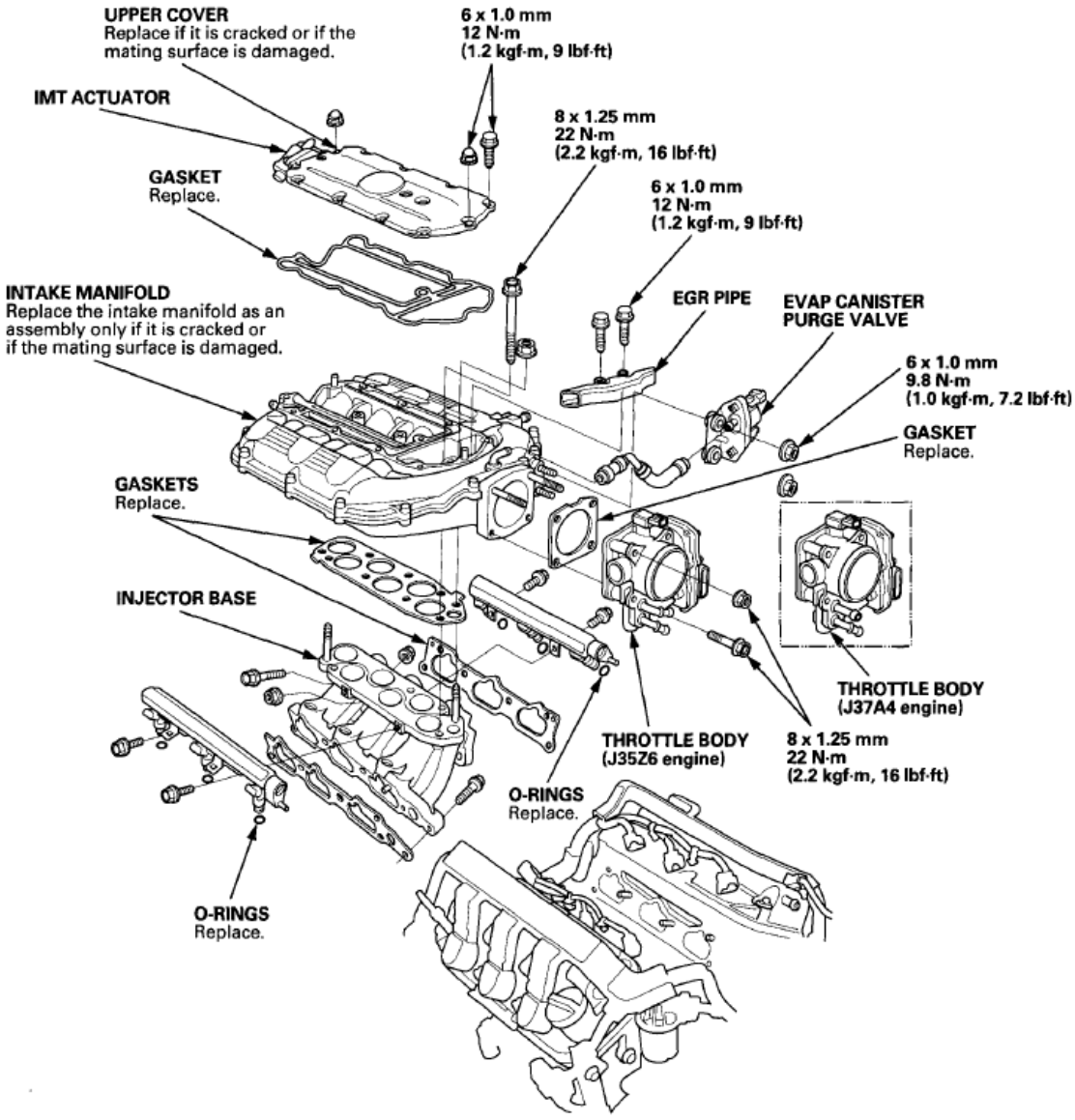


Fig. 3: Exploded View Of Intake Manifold With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

NOTE: Refer to the Exploded View if needed during this procedure.

REMOVAL

1. Remove the engine compartment covers (see **ENGINE COMPARTMENT COVER REPLACEMENT**).
2. Disconnect the MAP sensor connector (A) and the breather pipe (B), then remove the intake air duct (C).

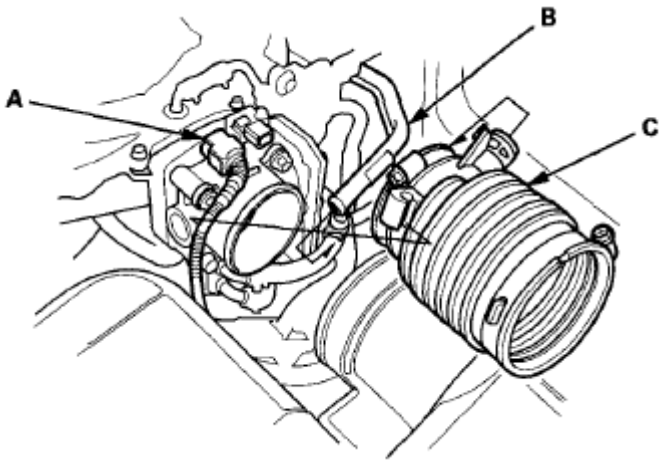
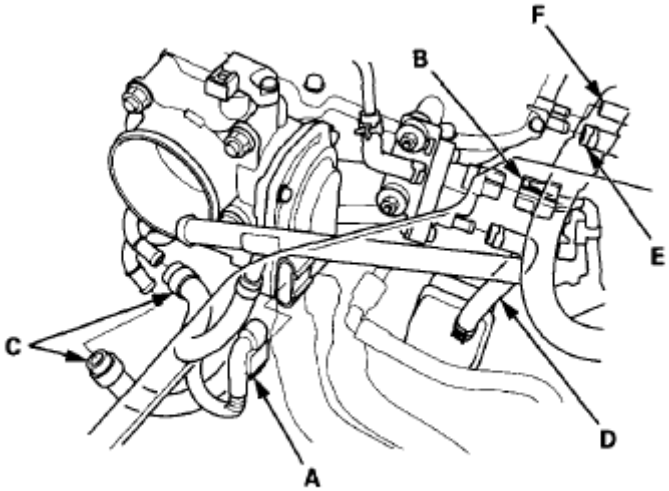


Fig. 4: Identifying MAP Sensor Connector, Breather Pipe And Intake Air Duct
Courtesy of AMERICAN HONDA MOTOR CO., INC.

* : This illustration shows J35Z6 engine.

3. Disconnect the throttle actuator connector (A), the EVAP canister purge valve connector (B), the water bypass hoses (C), the EVAP canister hose (D), the brake booster vacuum hose (E), and the vacuum hose (F).



*: This illustration shows J35Z6 engine.

Fig. 5: Identifying Throttle Actuator Connector, EVAP Canister Hose And Purge Valve Connector, Bypass Hose, Vacuum Hose
Courtesy of AMERICAN HONDA MOTOR CO., INC.

* : This illustration shows J35Z6 engine.

4. Disconnect the PCV hose (A) and the IMT actuator connector (B).

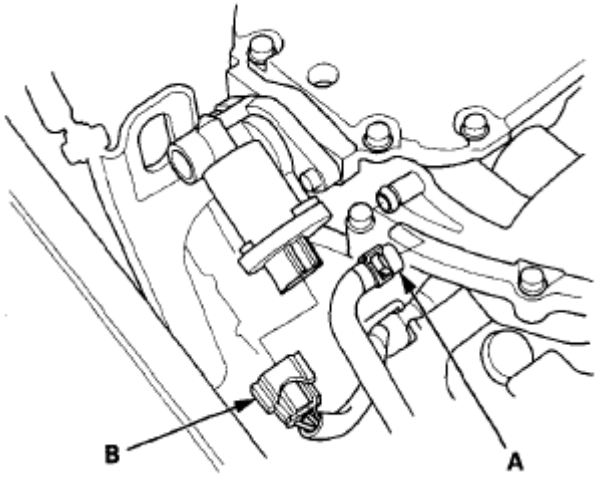


Fig. 6: Identifying PCV Hose And IMT Actuator Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Remove the upper cover mounting bolts and nuts sequentially in three steps, then remove the upper cover.

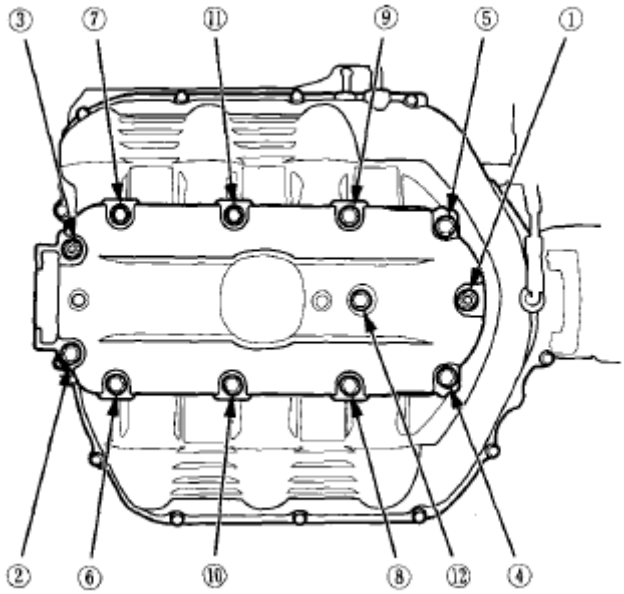


Fig. 7: Identifying Bolts And Nuts Of Upper Cover With Loosening Sequence
Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Remove the intake manifold mounting bolts and nuts sequentially in three steps, then remove the intake manifold.

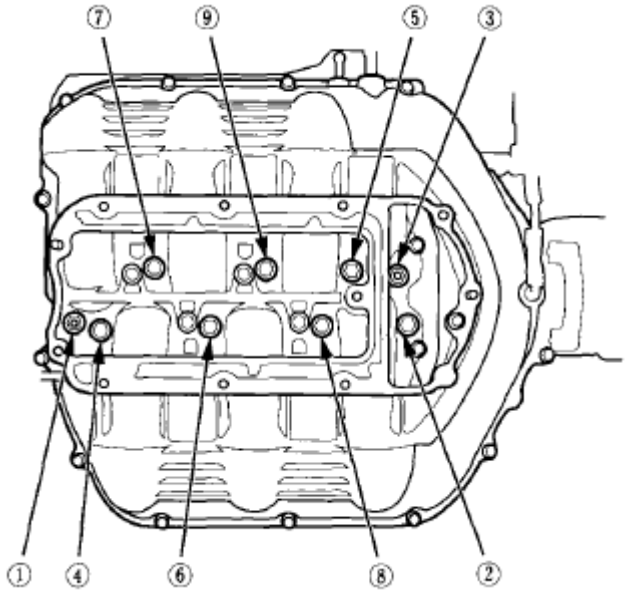


Fig. 8: Identifying Bolts And Nuts Of Intake Manifold With Loosening Sequence
Courtesy of AMERICAN HONDA MOTOR CO., INC.

INSTALLATION

1. Install the intake manifold. Tighten the mounting bolts and nuts sequentially in three steps. Always use a new intake manifold gasket.

   Specified Torque

   8 x 1.25 mm: 22 N.m (2.2 kgf.m, 16 lbf.ft)

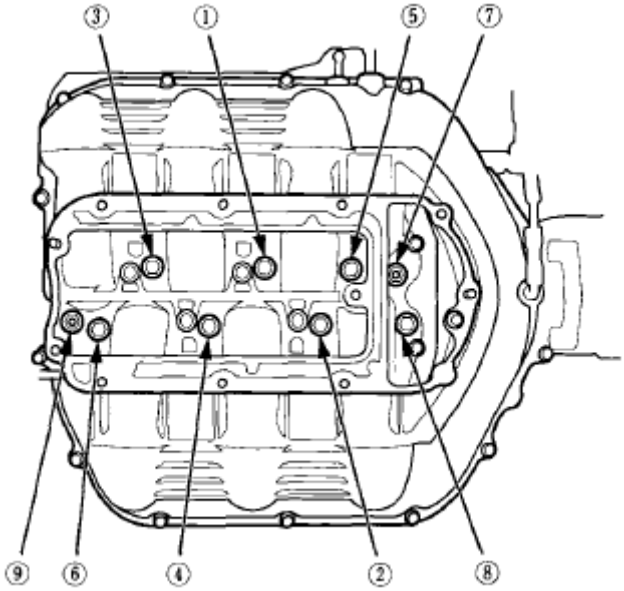


Fig. 9: Identifying Bolts And Nuts Of Intake Manifold With Tightening Sequence

Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Install the upper cover. Tighten the mounting bolts and nuts sequentially in three steps. Always use a new gasket.

Specified Torque

6 x 1.0 mm: 12 N.m (1.2 kgf.m, 9 lbf.ft)

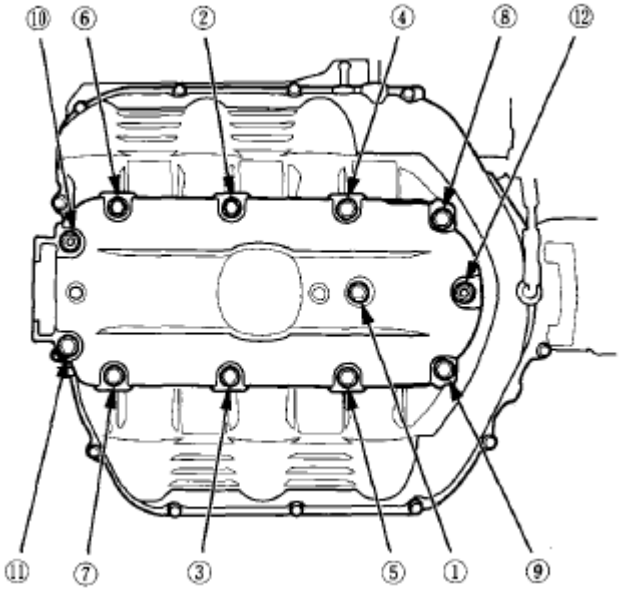


Fig. 10: Identifying Bolts And Nuts Of Upper Cover With Tightening Sequence
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Connect the PCV hose (A) and the IMT actuator connector (B).

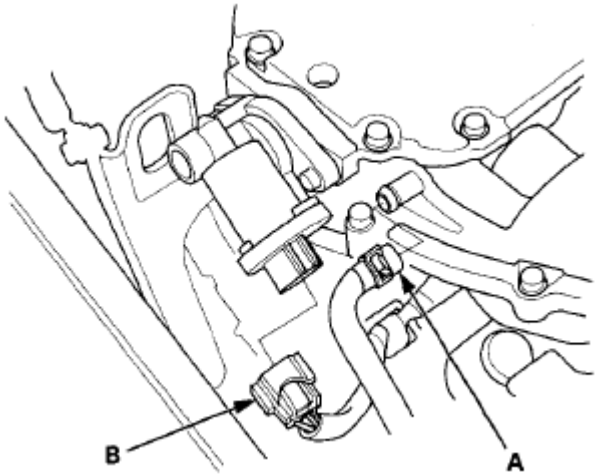
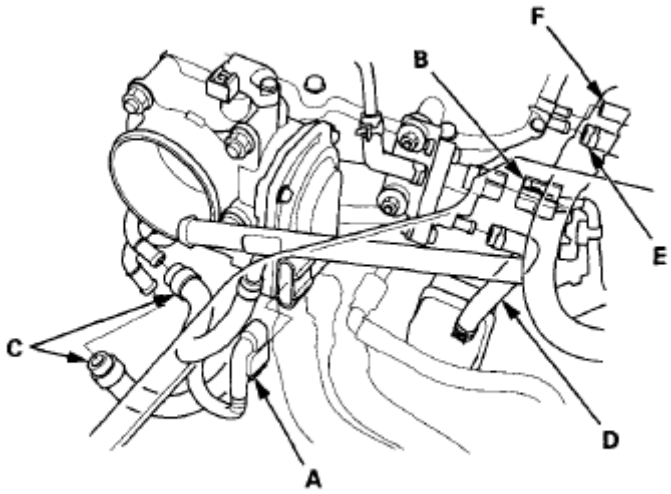


Fig. 11: Identifying IMT Actuator And Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Connect the throttle actuator connector (A), the EVAP canister purge valve connector (B), the water bypass hoses (C), the EVAP canister hose (D), the brake booster vacuum hose (E), and the vacuum hose (F).



*: This illustration shows J35Z6 engine.

Fig. 12: Identifying Intake Manifold And Related Components
Courtesy of AMERICAN HONDA MOTOR CO., INC.

* : This illustration shows J35Z6 engine.

5. Install the intake air duct (A), then connect the breather pipe (B) and the MAP sensor connector (C).

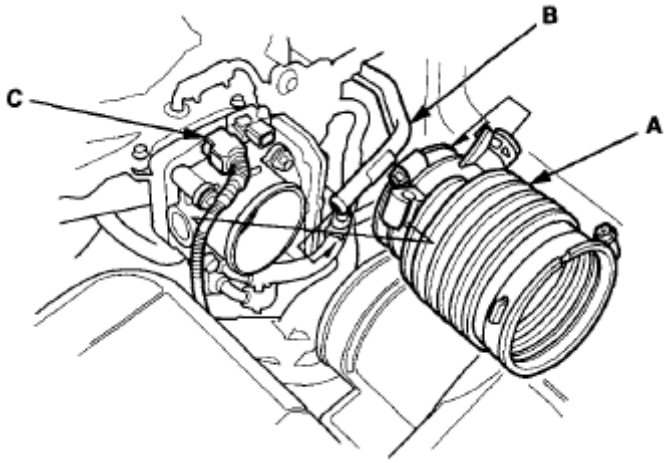


Fig. 13: Identifying Intake Air Duct, Breather Pipe And MAP Sensor Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

* : This illustration shows J35Z6 engine.

6. Clean up any spilled engine coolant.

7. After installation, check that all tubes, hoses, and connectors are installed correctly.
8. Refill the radiator with engine coolant, and bleed the air from the cooling system (see **COOLANT CHECK**).
9. Install the engine compartment covers (see **ENGINE COMPARTMENT COVER REPLACEMENT**).

INJECTOR BASE REMOVAL AND INSTALLATION

REMOVAL

1. Relieve the fuel pressure (see **FUEL PRESSURE RELIEVING**).
2. Remove the **intake manifold**.
3. Remove the injectors (see **INJECTOR REPLACEMENT**).
4. Remove the harness holder mounting bolts (A) and disconnect the knock sensor connector (B).

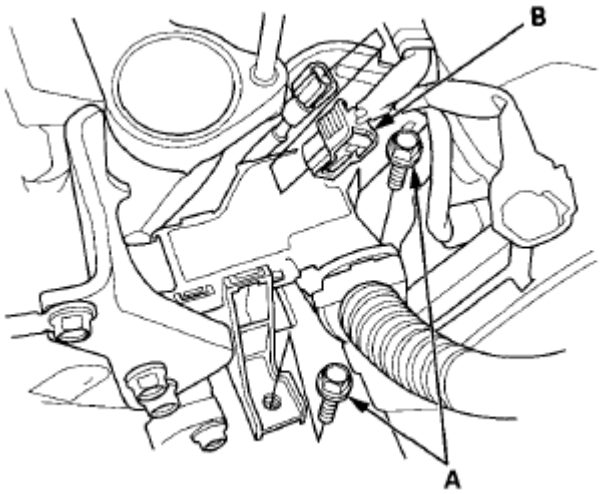


Fig. 14: Identifying Mounting Bolt And Knock Sensor Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Remove the injector base mounting bolts/nuts (A), then remove the front injector base (B) and the rear injector base (C).

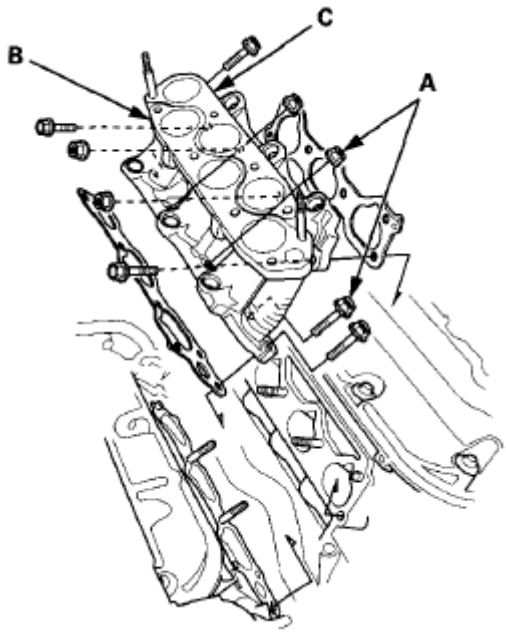


Fig. 15: Identifying Mounting Bolts, Front And Rear Injector Base
Courtesy of AMERICAN HONDA MOTOR CO., INC.

INSTALLATION

1. Install the front injector base (A) and the rear injector base (B) with new gaskets (C), and tighten the injector base mounting bolts/nuts (D) in a crisscross pattern in three steps, beginning with the inner nuts.

NOTE: The front injector base gasket is different from the rear one. Do not mix injector base gasket types.

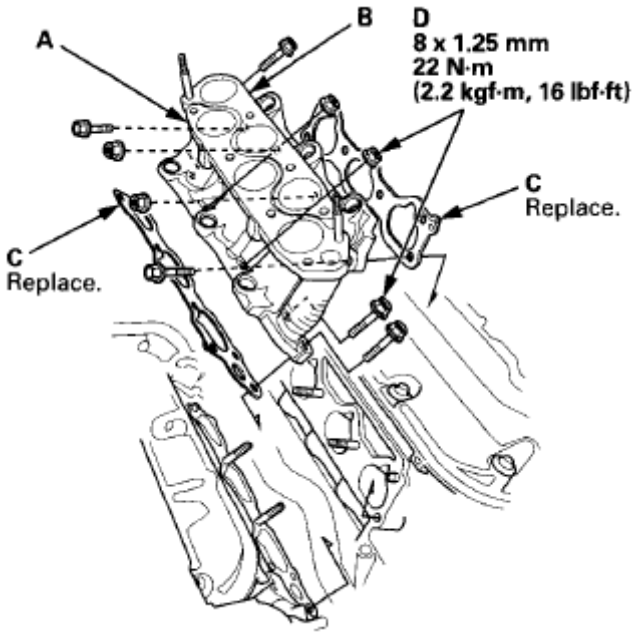


Fig. 16: Identifying Front And Rear Injector Base And Gasket With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Connect the knock sensor connector (A), then install the harness holder mounting bolts (B).

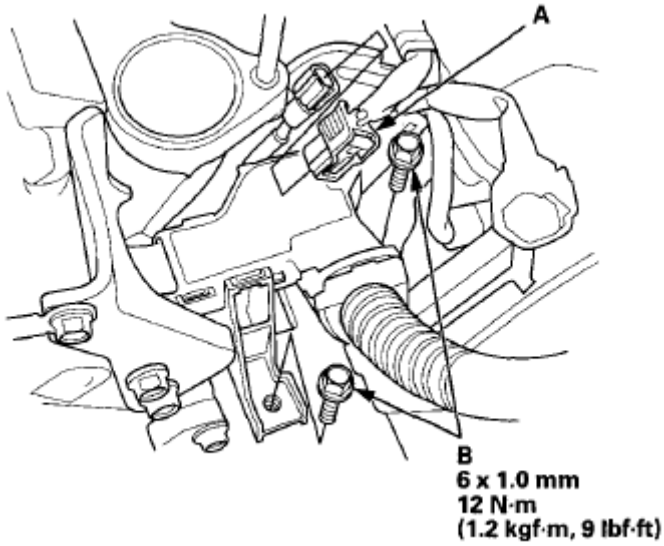


Fig. 17: Identifying Knock Sensor Connector And Holder Mounting Bolts With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Install the injectors (see **INJECTOR REPLACEMENT**).
4. Install the **intake manifold**.
5. Inspect for fuel leaks. Turn the ignition switch to ON (II), or press the engine start/stop button to select

the ON mode (do not operate the starter) so the fuel pump runs for about 2 seconds and pressurizes the fuel line. Repeat this operation three times, then check for fuel leakage at any point in the fuel line.

EXHAUST PIPE AND MUFFLER REPLACEMENT

J35Z6 ENGINE (WITHOUT SH-AWD)

NOTE: Use new gaskets and new self-locking nuts when reassembling.

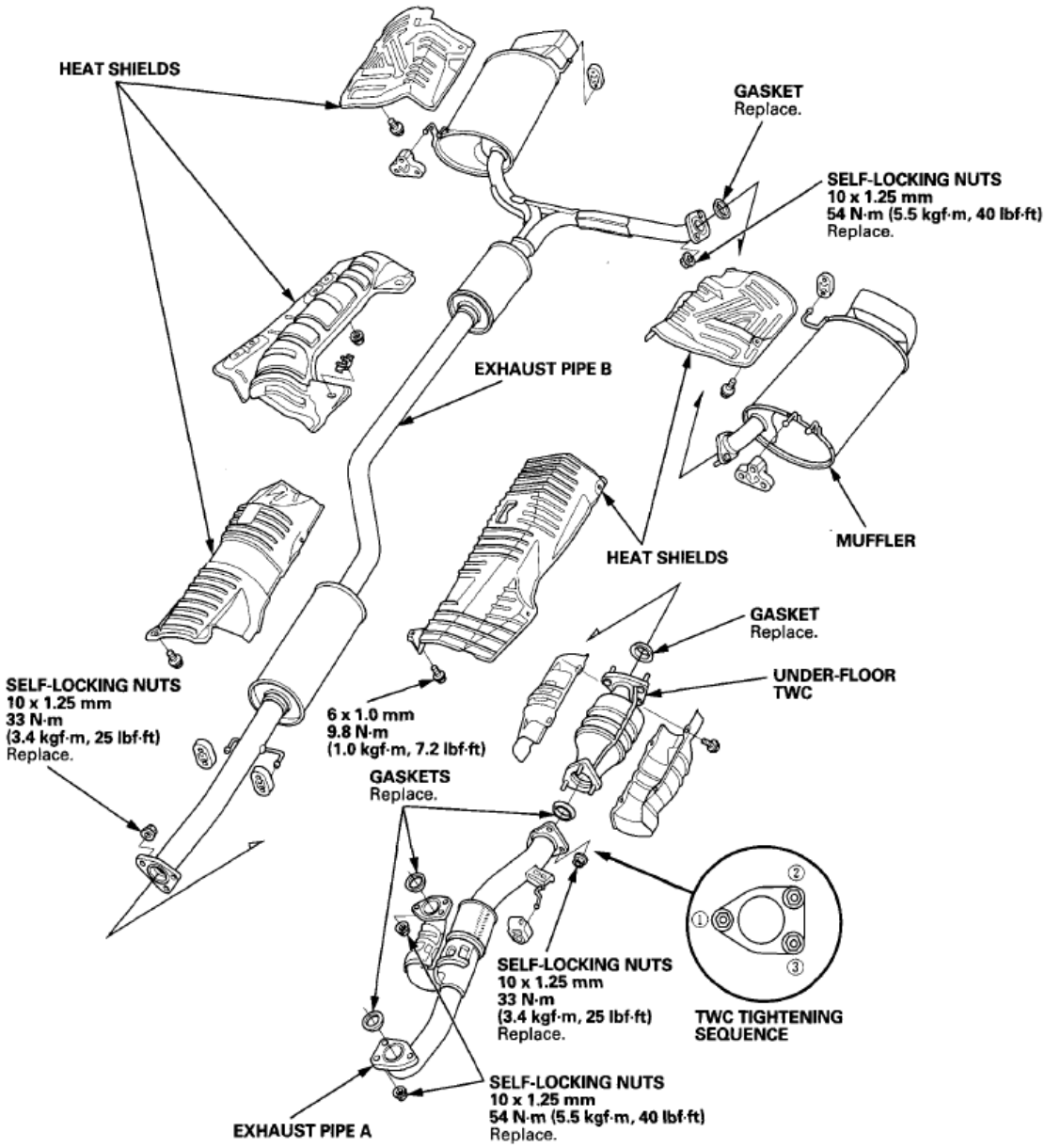


Fig. 18: Identifying Exhaust Pipe And Muffler And Related Components With Torque Specifications (1 Of 2)

Courtesy of AMERICAN HONDA MOTOR CO., INC.

J37A4 ENGINE (WITH SH-AWD)

NOTE: Use new gaskets and new self-locking nuts when reassembling.

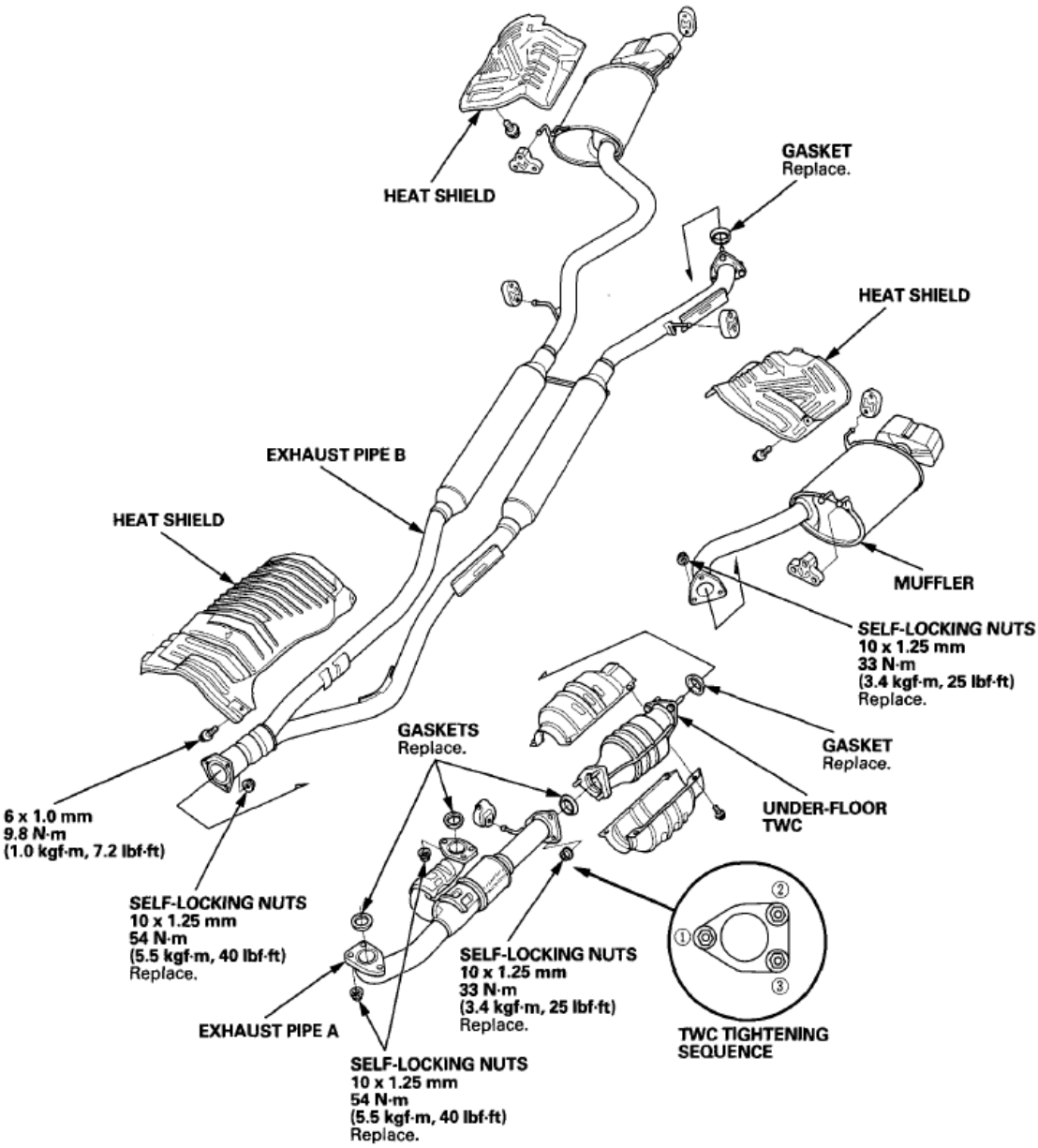


Fig. 19: Identifying Exhaust Pipe And Muffler And Related Components With Torque Specifications (2 Of 2)

Courtesy of AMERICAN HONDA MOTOR CO., INC.

2012 GENERAL INFORMATION

Specifications - TL

STANDARDS AND SERVICE LIMITS

ENGINE ELECTRICAL (J35Z6)

Item	Measurement	Qualification	Standard or New	Service Limit
Ignition coil	Rated voltage		12V	
	Firing order		1- 4- 2- 5- 3- 6	
Sparkplug	Type	NGK	DILZKR7A11G	
	Gap		1.0- 1.1 mm (0.039- 0.043 in)	-
Ignition timing	At idle Check the red mark	In N or P	10+2°BTDC	
Drive belt	Tension		Auto-tensioner	
Alternator	Output	At 13.5 V and normal engine temperature	130A	
	Coil (rotor) resistance	At 68°F (20°C)	2.5ohms	
	Slip ring O.D.		14.4 mm (0.567 in)	14.0 mm (0.551 in)
	Brush length		10.5 mm (0.413 in)	1.5 mm (0.059 in)
Starter	Output		1.8 kW	
	Commutator mica depth		0.50- 0.90 mm (0.0197- 0.0354 in)	0.20 mm (0.0079 in)
	Commutator runout		0.02 mm (0.0008 in) max.	0.05 mm (0.0020 in)
	Commutator O.D.		28.9- 29.0 mm (1.138- 1.142 in)	28.0 mm (1.102 in)
	Brush length		15.0- 16.0 mm (0.591 - 0.630 in)	9.0 mm (0.354 in)
	Brush spring tension		22.3- 27.1 N (2.27- 2.76 kgf, 5.00- 6.08 lbf)	-

ENGINE ELECTRICAL (J37A4)

Item	Measurement	Qualification	Standard or New	Service Limit
Ignition coil	Rated voltage		12V	
	Firing order		1- 4- 2- 5- 3- 6	
Spark plug	Type	NGK	ILZKR7B- 11S	
		DENSO	SXU22HCR11S	

	Gap		1.0- 1.1 mm (0.039- 0.043 in) -	
Ignition timing	At idle Check the red mark	M/T in neutral, A/Tin Nor P	10+2°BTDC	
Drive belt	Tension		Auto-tensioner	
Alternator	Output	At 13.5 V and normal engine temperature	130A	
	Coil (rotor) resistance	At 68°F (20°C)	2.5 ohms	
	Slip ring O.D.		14.4 mm (0.567 in)	14.0 mm (0.551 in)
	Brush length		10.5 mm (0.413 in)	1.5 mm (0.059 in)
Starter (M/T)		Output	1.6 kohms	
	Commutator mica depth		0.4- 0.5 mm (0.016- 0.020 in)	0.15 mm (0.0059 in)
	Commutator runout		0.02 mm (0.0008 in) max.	0.05 mm (0.0020 in)
	Commutator O.D.		28.0- 28.1 mm (1.102- 1.106 in)	27.5 mm (1.083 in)
	Brush length		15.8- 16.2 mm (0.622- 0.638 in)	11.0 mm (0.433 in)
Starter (A/T)	Output		1.8 kohms	
	Commutator mica depth		0.50- 0.90 mm (0.0197- 0.0354 in)	0.20 mm (0.0079 in)
	Commutator runout		0.02 mm (0.0008 in) max.	0.05 mm (0.0020 in)
	Commutator O.D.		28.9- 29.0 mm (1.138- 1.142 in)	28.0 mm (1.102 in)
	Brush length		15.0- 16.0 mm (0.591- 0.630 in)	9.0 mm (0.354 in)
	Brush spring tension		22.3- 27.1 N (2.27- 2.76 kgf, 5.00- 6.08 lbf)	-

ENGINE ASSEMBLY (J35Z6, J37A4)

Item	Measurement	Qualification	Standard or New	Service Limit
Compression	Pressure (checked with engine starter cranking at wide-open throttle)	Minimum	-	930 kPa (9.48 kgf/cm^2 , 134.8 psi)
		Maximum variation	-	200 kPa (2.04 kgf/cm^2 , 29.0 psi)

CYLINDER HEAD (J35Z6)

Item	Measurement	Qualification	Standard or New	Service Limit
Head	Warpage		-	0.05 mm (0.002 in)
	Height		120.95- 121.05 mm (4.7618- 4.7657 in)	120.8 mm (4.756 in)
Camshaft	End play		0.05- 0.20 mm (0.0020- 0.0079 in)	0.20 mm (0.0079 in)
	Camshaft-to-holder oil clearance		0.050- 0.089 mm (0.00197- 0.00350 in)	0.15 mm (0.0059 in)
	Total runout		0.03 mm (0.0012 in) max.	0.04 mm (0.0016 in)
	Cam lobe height	Intake PRI	34.299 mm (1.35035 in)	-
		Intake SEC	35.621 mm (1.40240 in)	-
		Exhaust	36.760 mm (1.44724 in)	-
Valve	Clearance (cold)	Intake	0.20- 0.24 mm (0.008- 0.009 in)	-
		Exhaust	0.28- 0.32 mm (0.011- 0.012 in)	-
	Stem O.D.	Intake	5.485- 5.495 mm (0.21594- 0.21634 in)	5.455 mm (0.21476 in)
		Exhaust	5.450- 5.460 mm (0.21457- 0.21496 in)	5.420 mm (0.21339 in)
	Stem-to-guide clearance	Intake	0.020- 0.045 mm (0.00079- 0.00177 in)	0.08 mm (0.0031 in)
		Exhaust	0.055- 0.080 mm (0.00217- 0.00315 in)	0.11 mm (0.0043 in)
Valve seat	Width	Intake	1.25- 1.55 mm (0.0492- 0.0610 in)	2.00 mm (0.0787 in)
		Exhaust	1.25- 1.55 mm (0.0492- 0.0610 in)	2.00 mm (0.0787 in)
	Stem installed height	Intake	46.75- 47.55 mm (1.8405- 1.8720 in)	47.80 mm (1.8819 in)
		Exhaust	46.68- 47.48 mm (1.8378- 1.8693 in)	47.73 mm (1.8791 in)
Valve guide	Installed height	Intake	21.20- 22.20 mm (0.8346- 0.8740 in)	-
		Exhaust	20.60- 21.60 mm (0.8110- 0.8504 in)	-
Rocker arm	Arm-to-shaft clearance	Intake	0.015- 0.046 mm (0.00059- 0.00181 in)	0.046 mm (0.00181 in)
		Exhaust	0.018- 0.047 mm (0.00071 - 0.00185 in)	0.047 mm (0.00185 in)

CYLINDER HEAD (J37A4)

Item	Measurement	Qualification	Standard or New	Service Limit
Head	Warpage		-	0.05 mm (0.002 in)
	Height		120.95- 121.05 mm (4.7618- 4.7657 in)	120.8 mm (4.756 in)
Camshaft	End play		0.05- 0.20 mm (0.0020- 0.0079 in)	0.20 mm (0.0079 in)
	Camshaft-to-holder oil clearance		0.050- 0.089 mm (0.00197- 0.00350 in)	0.15 mm (0.0059 in)
	Total runout		0.03 mm (0.0012 in) max.	0.04 mm (0.0016 in)
	Cam lobe height	Intake PRI	34.299 mm (1.35035 in)	-
		Intake SEC	35.932 mm (1.41464 in)	-
		Exhaust PRI	36.734 mm (1.44622 in)	-
		Exhaust SEC	37.370 mm (1.47126 in)	-
Valve	Clearance (cold)	Intake	0.20- 0.24 mm (0.008- 0.009 in)	-
		Exhaust	0.28- 0.32 mm (0.011- 0.012 in)	-
	Stem O.D.	Intake	5.485- 5.495 mm (0.21594- 0.21634 in)	5.455 mm (0.21476 in)
		Exhaust	5.450- 5.460 mm (0.21457- 0.21496 in)	5.420 mm (0.21339 in)
	Stem-to-guide clearance	Intake	0.020- 0.045 mm (0.00079- 0.00177 in)	0.08 mm (0.0031 in)
		Exhaust	0.055- 0.080 mm (0.00217- 0.00315 in)	0.11 mm (0.0043 in)
Valve seat	Width	Intake	1.25- 1.55 mm (0.0492- 0.0610 in)	2.00 mm (0.0787 in)
		Exhaust	1.25- 1.55 mm (0.0492- 0.0610 in)	2.00 mm (0.0787 in)
	Stem installed height	Intake	46.75- 47.55 mm (1.8405- 1.8720 in)	47.80 mm (1.8819 in)
		Exhaust	46.68- 47.48 mm (1.8378- 1.8693 in)	47.73 mm (1.8791 in)
Valve guide	Installed height	Intake	21.20- 22.20 mm (0.8346- 0.8740 in)	-
		Exhaust	20.60- 21.60 mm (0.8110- 0.8504 in)	-
Rocker arm	Arm-to-shaft clearance	Intake	0.015- 0.046 mm (0.00059- 0.00181 in)	0.046 mm (0.00181 in)
		Exhaust	0.015- 0.046 mm (0.00059- 0.00181 in)	0.046 mm (0.00181 in)

ENGINE BLOCK (J35Z6)

Item	Measurement	Qualification	Standard or New	Service Limit
Block	Warpage of deck		0.07 mm (0.002 in) max.	0.10 mm (0.003 in)
	Bore diameter		89.000- 89.015 mm (3.50393- 3.50452 in)	89.065 mm (3.50649 in)
	Bore taper	Difference between first and third measurement	-	0.05 mm (0.0020 in)
	Reboring limit		-	0.25 mm (0.0098 in)
Piston	Skirt O.D. at 16 mm (0.63 in) from bottom of skirt		88.975- 88.985 mm (3.50295- 3.50334 in)	88.965 mm (3.50255 in)
	Clearance in cylinder		0.015- 0.040 mm (0.001- 0.001 in)	0.08 mm (0.003 in)
Piston ring	Ring-to-groove clearance	Top	0.055- 0.080 mm (0.003- 0.003 in)	0.15 mm (0.005 in)
		Second	0.030- 0.055 mm (0.002- 0.002 in)	0.13 mm (0.005 in)
	Ring end gap	Top	0.20- 0.35 mm (0.008- 0.013 in)	0.60 mm (0.023 in)
		Second	0.40- 0.55 mm (0.016- 0.021 in)	0.70 mm (0.027 in)
		Oil	0.20- 0.70 mm (0.008- 0.027 in)	0.80 mm (0.031 in)
Piston pin	O.D.		21.962- 21.965 mm (0.86464- 0.86476 in)	21.954 mm (0.86433 in)
	Pin-to-piston clearance		- 0.005- 0.001 mm (- 0.00020- 0.00004 in)	0.004 mm (0.00016 in)
Connecting rod	Pin-to-rod clearance		0.005- 0.014 mm (0.00020- 0.00055 in)	0.019 mm (0.00075 in)
	Small end bore diameter		21.970- 21.976 mm (0.86496- 0.86520 in)	-
	Big end bore diameter		58.0 mm (2.283 in)	-
	End play		0.15- 0.35 mm (0.006- 0.013 in)	0.45 mm (0.017 in)
	Main journal diameter		71.976- 72.000 mm (2.83370- 2.83464 in)	-
			54.976- 55.000 mm	

Crankshaft	Rod journal diameter		(2.16441- 2.16535 in)	-
	Rod/main journal taper		0.005 mm (0.00020 in) max.	0.010 mm (0.00039 in)
	Rod/main journal out-of-round		0.005 mm (0.00020 in) max.	0.010 mm (0.00039 in)
	End play		0.10- 0.35 mm (0.0039- 0.0138 in)	0.45 mm (0.0177 in)
	Total runout		0.025 mm (0.00098 in) max.	0.030 mm (0.00118 in)
Crankshaft bearing	Main bearing-to-journal oil clearance		0.019- 0.045 mm (0.00075- 0.00177 in)	0.050 mm (0.00197 in)
	Connecting rod bearing-to-journal oil clearance		0.020- 0.044 mm (0.00079- 0.00173 in)	0.050 mm (0.00197 in)

ENGINE BLOCK (J37A4)

Item	Measurement	Qualification	Standard or New	Service Limit
Block	Warpage of deck		0.07 mm (0.002 in) max.	0.10 mm (0.003 in)
	Bore diameter		90.000- 90.015 mm (3.54330- 3.54389 in)	90.065 mm (3.54586 in)
	Bore taper	Difference between first and third measurement	-	0.05 mm (0.0020 in)
Piston	Skirt O.D. at 16 mm (0.63 in) from bottom of skirt		89.983- 89.996 mm (3.54263- 3.54314 in)	89.975 mm (3.54232 in)
	Clearance in cylinder		0.004- 0.032 mm (0.001- 0.001 in)	0.07 mm (0.002 in)
Piston ring	Ring-to-groove clearance	Top	0.055- 0.085 mm (0.003- 0.003 in)	0.15 mm (0.005 in)
		Second	0.030- 0.060 mm (0.002- 0.002 in)	0.13 mm (0.005 in)
	Ring end gap	Top	0.30- 0.40 mm (0.012- 0.015 in)	0.60 mm (0.023 in)
		Second	0.40- 0.55 mm (0.016- 0.021 in)	0.70 mm (0.027 in)
		Oil	0.20- 0.35 mm (0.008- 0.013 in)	0.45 mm (0.017 in)
Piston pin	O.D.		21.962- 21.965 mm (0.86464- 0.86476 in)	21.954 mm (0.86433 in)

	Pin-to-piston clearance		- 0.005- 0.003 mm (- 0.00020- 0.00012 in)	0.004 mm (0.00016 in)
Connecting rod	Pin-to-rod clearance		0.005- 0.014 mm (0.00020- 0.00055 in)	0.019 mm (0.00075 in)
	Small end bore diameter		21.970- 21.976 mm (0.86496- 0.86520 in)	-
	Big end bore diameter		60.0 mm (2.362 in)	-
	End play		0.15- 0.35 mm (0.006- 0.013 in)	0.45 mm (0.017 in)
Crankshaft	Main journal diameter		71.976- 72.000 mm (2.83370- 2.83464 in)	-
	Rod journal diameter		56.976- 57.000 mm (2.24315- 2.24409 in)	-
	Rod/main journal taper		0.005 mm (0.00020 in) max.	0.010 mm (0.00039 in)
	Rod/main journal out-of-round		0.005 mm (0.00020 in) max.	0.010 mm (0.00039 in)
	End play		0.10- 0.35 mm (0.0039- 0.0138 in)	0.45 mm (0.0177 in)
	Total runout		0.025 mm (0.00098 in) max.	0.030 mm (0.00118 in)
Crankshaft bearing	Main bearing-to-journal oil clearance		0.019- 0.045 mm (0.00075- 0.00177 in)	0.050 mm (0.00197 in)
	Connecting rod bearing-to-journal oil clearance		0.020- 0.044 mm (0.00079- 0.00173 in)	0.050 mm (0.00197 in)

ENGINE LUBRICATION (J35Z6, J37A4)

Item	Measurement	Qualification	Standard or New	Service Limit
Engine oil	Capacity	Engine overhaul	5.0 L (5.3 US qt)	-
		Oil change including filter	4.3 L (4.5 US qt)	-
		Oil change without filter	4.0 L (4.2 US qt)	-
	Inner rotor-to-outer rotor radial clearance		0.04- 0.16 mm (0.002- 0.006 in)	0.20 mm (0.007 in)
	Pump housing-to-outer rotor radial clearance		0.07- 0.19 mm (0.003- 0.007 in)	0.20 mm (0.007 in)

Oil pump	Pump housing-to-rotor axial clearance		0.02- 0.07 mm (0.001 - 0.002 in)	0.12 mm (0.004 in)
	Oil pressure with oil temperature at 176°F (80°C)	At idle	70 kPa (0.71 kgf/cm^2 , 10.1 psi) min.	-
		At 3, 000 RPM	490 kPa (5.00 kgf/cm^2 , 71.1 psi) min.	-

COOLING SYSTEM (J35Z6, J37A4)

Item	Measurement	Qualification	Standard or New	Service Limit
Radiator	Coolant capacities (including engine, heater, hoses, and reservoir)	Engine overhaul	8.3 L (2.19 US gal)	-
		Coolant change	6.3 L (1.66 US gal)	-
	Coolant type		Acura Long Life Antifreeze/Coolant Type 2	
Coolant reservoir	Coolant capacity		0.69 L (0.182 US gal)	-
Radiator cap	Opening pressure		93- 123 kPa (0.95- 1.25 kgf/cm^2 , 13.5 - 17.8 psi)	-
Thermostat	Opening temperature	Begins to open	169- 176°F (76- 80°C)	-
		Fully open	194°F (90°C)	-
	Valve lift at fully open		10.0 mm (0.394 in) min.	-

FUEL AND EMISSIONS (J35Z6)

Item	Measurement	Qualification	Standard or New	Service Limit
Fuel pressure regulator	Pressure with fuel pressure gauge connected		390- 440 kPa (4.0- 4.5 kgf/cm^2 , 57- 64 psi)	-
Fuel tank	Capacity		70.0 L (18.49 US gal)	-
Engine idle	Idle speed without load	In N or P	680 ± 50 RPM	
	Idle speed with high electrical load (A/C switch on, temperature set to max cool, blower fan on high, rear window defogger on, and headlights on high beam)	In N or P	680 ± 50 RPM	

FUEL AND EMISSIONS (J37A4)

Item	Measurement	Qualification	Standard or New	Service Limit
Fuel pressure regulator	Pressure with fuel pressure gauge connected		390- 440 kPa (4.0- 4.5 kgf/cm^2 , 57- 64 psi)	-
Fuel tank	Capacity		70.0 L (18.49 US gal)	-
Engine idle	Idle speed without load	M/T in neutral	750 ± 50 RPM	
		A/T in N or P	700 ± 50 RPM	
	Idle speed with high electrical load (A/C switch on, temperature set to max cool, blower fan on high, rear window defogger on, and headlights on high beam)	M/T in neutral	750 ± 50 RPM	
		A/T in N or P	700 ± 50 RPM	

CLUTCH

Item	Measurement	Qualification	Standard or New	Service Limit
Clutch pedal	Height from floor		156 mm (6.14 in)	-
	Stroke		130- 140 mm (5.12- 5.51 in)	-
Flywheel	Runout on clutch mating surface		0.3 mm (0.012 in) max.	0.4 mm (0.016 in)
Clutch disc	Rivet head depth		1.35- 1.95 mm (0.0531 - 0.0768 in)	0.7 mm (0.028 in)
	Thickness		7.9- 8.5 mm (0.311- 0.335 in)	6.0 mm (0.236 in)
Pressure plate	Warpage		0.02 mm (0.001 in)	0.15 mm (0.005 in)
	Evenness of the height of the diaphragm spring fingers		0.6 mm (0.024 in) max.	0.8 mm (0.031 in)

MANUAL TRANSMISSION AND M/T DIFFERENTIAL

Item	Measurement	Qualification	Standard or New	Service Limit
Manual transmission fluid	Capacity: use Acura MTF	Fluid change	2.1 L (2.2US qt)	-
		Overhaul	2.5L (2.6US qt)	-
	End play		0.14- 0.21 mm (0.0055- 0.0083 in)	Adjust
	Diameter of ball bearing contact area (clutch housing side)		28.002- 28.015 mm (1.10244- 1.10295 in)	27.95 mm (1.1004 in)

Mainshaft	Diameter of needle bearing contact area		47.984- 48.000 mm (1.88913- 1.88976 in)	47.93 mm (1.8870 in)
	Diameter of ball bearing contact area (transmission housing side)		38.984- 39.000 mm (1.53480- 1.53543 in)	38.93 mm (1.5327 in)
	Diameter of 4th/5th gear distance collar contact area		41.984- 42.000 mm (1.65291 - 1.65354 in)	41.93 mm (1.6508 in)
	Diameter of 6th gear distance collar contact area		38.984- 39.000 mm (1.53480- 1.53543 in)	38.93 mm (1.5327 in)
	Runout		0.02 mm (0.0008 in) max.	0.05 mm (0.0020 in)
	Diameter of pilot bearing contact area		19.967- 19.980 mm (0.78610- 0.78661 in)	19.91 mm (0.7839 in)
Mainshaft 3rd gear	I.D.		53.010- 53.029 mm (2.08700- 2.08775 in)	-
	Clearance	2nd-3rd	0.06- 0.19 mm (0.002- 0.007 in)	0.3 mm (0.011 in)
	Thickness		23.89- 23.97 mm (0.9405- 0.9437 in)	23.8 mm (0.937 in)
Mainshaft 4th, 5th gear	I.D.		53.010- 53.029 mm (2.08700- 2.08775 in)	-
	End play (4th/5th gear distance collar side)		0.06- 0.19 mm (0.0024- 0.0075 in)	0.3 mm (0.012 in)
	Thickness		22.39- 22.47 mm (0.8815- 0.8846 in)	22.3 mm (0.878 in)
Mainshaft 6th gear	I.D.		53.010- 53.029 mm (2.08700- 2.08775 in)	53.08 mm (2.0898 in)
	End play		0.06- 0.19 mm (0.0024- 0.0075 in)	0.3 mm (0.012 in)
	Thickness		25.89- 25.97 mm (1.0193- 1.0224 in)	25.8 mm (1.016 in)
Mainshaft 4th/5th gear distance collar	I.D.		42.002- 42.012 mm (1.65362- 1.65401 in)	-
	O.D.		47.989- 48.000 mm (1.88933- 1.88976 in)	-
	Overall length		49.95- 50.05 mm	-

			(1.9665- 1.9705 in)	
	Length of needle bearing contact area	4th, 5th	22.53- 22.58 mm (0.8870- 0.8890 in)	-
Mainshaft 6th gear distance collar	I.D.		39.002- 39.012 mm (1.53551 - 1.53590 in)	39.06 mm (1.5378 in)
	O.D.		47.989- 48.000 mm (1.88933- 1.88976 in)	47.94 mm (1.8874 in)
	Length		26.03- 26.08 mm (1.0248- 1.0268 in)	-
Countershaft	Diameter of needle bearing contact area (clutch housing side)		43.974- 43.990 mm (1.73126- 1.73189 in)	43.92 mm (1.7291 in)
	Diameter of ball bearing contact area (transmission housing side)		30.002- 30.015 mm (1.18118- 1.18169 in)	29.95 mm (1.1791 in)
	Diameter of 2nd gear distance collar contact area		42.975- 42.991 mm (1.69193- 1.69256 in)	42.92 mm (1.6898 in)
	Runout		0.02 mm (0.0008 in) max.	0.05 mm (0.0020 in)
	35 mm shim-to-bearing inner race clearance		0.04- 0.10 mm (0.002- 0.003 in)	Adjust
	Diameter of countershaft reverse gear contact area		45.934- 45.950 mm (1.80842- 1.80905 in)	45.88 mm (1.8063 in)
Countershaft 1st gear	I.D.		59.010- 59.029 mm (2.32322- 2.32397 in)	59.08 mm (2.3260 in)
	End play (reverse gear side)		0.04- 0.17 mm (0.0016- 0.0067 in)	0.28 mm (0.0110 in)
	Thickness		22.91- 22.99 mm (0.9020- 0.9051 in)	22.86 mm (0.9000 in)
Countershaft 2nd gear	I.D.		57.010- 57.029 mm (2.24448- 2.24523 in)	57.08 mm (2.2472 in)
	Clearance		2nd-3rd 0.04- 0.17 mm (0.002- 0.006 in)	0.28 mm (0.011 in)
	Thickness		22.91 - 22.99 mm (0.9020- 0.9051 in)	22.86 mm (0.9000 in)
	I.D.		45.970- 45.988 mm (1.80984- 1.81055 in)	46.04 mm (1.8126 in)

Countershaft reverse gear	O.D.		53.987- 54.000 mm (2.12547- 2.12598 in)	53.93 mm (2.1232 in)
	Length		23.03- 23.08 mm (0.9067- 0.9087 in)	-
Countershaft 2nd gear distance collar	I.D.		42.990- 43.000 mm (1.69252- 1.69291 in)	43.05 mm (1.6949 in)
	O.D.		51.989- 52.000 mm (2.04681- 2.04724 in)	51.94 mm (2.0449 in)
	Length		23.03- 23.08 mm (0.9067- 0.9087 in)	-
Reverse idler gear	O.D.		19.989- 20.000 mm (0.78697- 0.78740 in)	19.93 mm (0.7846 in)
Reverse drive/driven gear	I.D.		30.007- 30.020 mm (1.18138- 1.18189 in)	25.07 mm (0.9870 in)
5th synchro ring	Ring-to-gear clearance (ring pushed against gear)		0.70- 1.49 mm (0.028- 0.058 in)	0.4 mm (0.016 in)
6th synchro ring	Ring-to-gear clearance (ring pushed against gear)		0.73- 1.44 mm (0.029- 0.056 in)	0.4 mm (0.016 in)
3rd double cone synchro	Outer synchro ring-to-synchro cone clearance (ring pushed against gear)		0.68- 1.19 mm (0.027- 0.046 in)	0.3 mm (0.012 in)
	Synchro cone-to-gear clearance (ring pushed against gear)		0.48- 1.04 mm (0.019- 0.040 in)	0.3 mm (0.012 in)
	Outer synchro ring-to-gear clearance (ring pushed against gear)		0.95- 1.68 mm (0.037- 0.066 in)	0.6 mm (0.024 in)
4th double cone synchro	Outer synchro ring-to-synchro cone clearance (ring pushed against gear)		0.70- 1.19 mm (0.028- 0.046 in)	0.3 mm (0.012 in)
	Synchro cone-to-gear clearance (ring pushed against gear)		0.50- 1.14 mm (0.020- 0.044 in)	0.3 mm (0.012 in)
	Outer synchro ring-to-gear clearance (ring pushed against gear)		0.95- 1.68 mm (0.037- 0.066 in)	0.6 mm (0.024 in)
1st triple cone synchro	Outer synchro ring-to-synchro cone clearance (ring pushed against gear)		0.70- 1.19 mm (0.028- 0.046 in)	0.3 mm (0.012 in)
	Synchro cone-to-gear clearance (ring pushed against gear)		0.70- 1.88 mm (0.028- 0.074 in)	0.3 mm (0.012 in)
	Outer synchro ring-to-gear		1.12- 1.68 mm	0.6 mm

	clearance (ring pushed against gear)		(0.044- 0.066 in)	(0.024 in)
2nd triple cone synchro	Outer synchro ring-to-synchro cone clearance (ring pushed against gear)		0.70- 1.19 mm (0.028- 0.046 in)	0.3 mm (0.012 in)
	Synchro cone-to-gear clearance (ring pushed against gear)		0.70- 1.88 mm (0.028- 0.074 in)	0.3 mm (0.012 in)
	Outer synchro ring-to-gear clearance (ring pushed against gear)		1.12- 1.68 mm (0.044- 0.066 in)	0.6 mm (0.024 in)
Shift fork	Finger thickness	1st/2nd, 3rd/4th, 5th/6th	7.4- 7.6 mm (0.291 - 0.299 in)	-
		Reverse	6.2- 6.4 mm (0.244- 0.252 in)	-
	Fork-to-synchro sleeve clearance		0.35- 0.65 mm (0.014- 0.025 in)	1.0 mm (0.039 in)
Reverse shift lever	Finger width		6.50- 6.75 mm (0.2559- 0.2657 in)	-
	Shift lever-to-reverse shift piece clearance		0- 0.4 mm (0- 0.015 in)	0.5 mm (0.019 in)
	Shift lever width at contact area (reverse shift piece side)		13.0- 13.2 mm (0.512- 0.520 in)	-
	Shift lever-to-reverse shift fork clearance		0.15- 0.60 mm (0.006- 0.023 in)	0.7 mm (0.027 in)
Detent ball spring	Free length	1st/2nd	26.1 mm (1.028 in)	When worn or damaged
		3rd/4th, 5th/6th	27.4 mm (1.079 in)	When worn or damaged
Steel ball	Ball size		7.94 mm (0.3126 in)	When worn or damaged
Shift arm	I.D.		15.973- 16.005 mm (0.62886- 0.63012 in)	-
	Shift arm-to-shift piece clearance		0.26- 0.57 mm (0.010- 0.022 in)	0.75 mm (0.029 in)
	Shift piece width at contact area		13.6- 13.8 mm (0.535- 0.543 in)	-
M/T differential carrier	Backlash (measured with final driven gear)		0.6- 1.2 mm (0.024- 0.047 in)	-
	Carrier bearing starting torque (preload)		3.4- 4.5 N.m (35- 46 kgf.cm, 30- 40 lbf.in)	Adjust
	Inner rotor-to-outer rotor clearance		0.14 mm (0.006 in) max.	0.2 mm (0.007 in)
			17.1- 17.2 mm	

Oil pump	Oil pump inner rotor I.D.		(0.673- 0.677 in)	-
	Oil pump shaft O.D.		16.8- 17.0 mm (0.661 - 0.669 in)	-
	Oil pump thrust clearance		0.03- 0.13 mm (0.001 - 0.005 in)	0.15 mm (0.005 in)
	Outer rotor-to-clutch housing clearance		0.1 - 0.2 mm (0.004- 0.007 in)	0.22 mm (0.008 in)
Shift piece	I.D.		14.000- 14.068 mm (0.55118- 0.55386 in)	-
	Shift fork width at contact area		12.8- 13.0 mm (0.504- 0.512 in)	-
	Shift piece-to-shift fork clearance		0.2- 0.6 mm (0.008- 0.023 in)	0.7 mm (0.027 in)
Select arm	I.D.		11.01- 11.05 mm (0.4335- 0.4350 in)	-
	Interlock width at contact area		12.9- 13.0 mm (0.508- 0.512 in)	-
	Select arm-to-interlock clearance		0.05- 0.25 mm (0.002- 0.009 in)	0.5 mm (0.019 in)
Transfer output shaft	Diameter of bearing contact area	Transmission housing side	21.977- 21.990 mm (0.86523- 0.86575 in)	21.92 mm (0.8630 in)
		Clucks housing side	40.002- 40.018 mm (1.57488- 1.57551 in)	39.95 mm (1.5728 in)
	Thrust clearance		0.08- 0.17 mm (0.003- 0.006 in)	-
Transfer assembly	Diameter of transfer hypoid drive gear/shaft assembly at tapered roller bearing contact area	At transfer cover side	50.002- 50.018 mm (1.96858- 1.96921 in)	49.95 mm (1.9665 in)
		At transfer gear side	24.987- 25.000 mm (0.98374- 0.98425 in)	24.93 mm (0.9815 in)
	Diameter of transfer output shaft (hypoid gear) at tapered roller bearing contact area	At transfer gear side	40.002- 40.018 mm (1.57488- 1.57551 in)	39.95 mm (1.5728 in)
		At companion flange side	31.975- 31.988 mm (1.25886- 1.25937 in)	31.92 mm (1.2567 in)
	Transfer gear backlash		0.06- 0.16 mm (0.0024- 0.0063 in)	Adjust
	Tapered roller bearing total starting torque (preload)		2.64- 4.23 N.m (26.9- 43.1 kgf.cm, 23.3- 37.4 lbf.in)	Adjust

Transfer assembly fluid	Capacity: Hypoid gear oil SAE 90 viscosity, API classified GL 4 or GL 5 only	Fluid change	0.43 L (0.45 US qt)	-
		Overhaul	0.45 L (0.48 US qt)	-

AUTOMATIC TRANSMISSION AND A/T DIFFERENTIAL

Item	Measurement	Qualification	Standard or New	Service Limit
Automatic transmission fluid	Capacity: use Acura ATF DW-1 (with SH-AWD)	Fluid change	3.1 L (3.3 US qt)	-
		Overhaul	7.8 L (8.2 US qt)	-
	Capacity: use Acura ATF DW-1 (without SH-AWD)	Fluid change	3.1 L (3.3US qt)	-
		Overhaul	7.1 L (7.5US qt)	-
ATF pressure	Line pressure (Low) (APP Sensor opening less than 25 % in D with Line Pressure Sol VLV. A ON)	ATF temperature between 122°F and 212°F (50°C and 100°C)	667- 716 kPa (6.80- 7.30 kgf/cm^2 , 96.7 - 103.8 psi)	Lower limit: 618 kPa (6.30 kgf/cm^2 , 89.6 psi) Upper limit: 765 kPa (7.80 kgf/cm^2 , 111.0 psi)
	Line pressure (Normal)	At 2, 000 RPM in N or P	1, 164- 1, 285 kPa (11.87- 13.10 kgf/cm^2 , 168.8- 186.3 psi)	1, 079 kPa (11.00 kgf/cm^2 , 156.5 psi)
	1st clutch pressure	At 2, 000 RPM in 1st gear	1, 123- 1, 172 kPa (11.45- 11.95 kgf/cm^2 , 162.9- 170.0 psi)	1, 079 kPa (11.00 kgf/cm^2 , 156.5 psi)
	2nd clutch pressure	At 2, 000 RPM in 2nd gear	1, 123- 1, 172 kPa (11.45- 11.95 kgf/cm^2 , 162.9- 170.0 psi)	1, 079 kPa (11.00 kgf/cm^2 , 156.5 psi)
	3rd clutch pressure	At 2, 000 RPM in 3rd gear	1, 123- 1, 172 kPa (11.45- 11.95 kgf/cm^2 , 162.9- 170.0 psi)	1, 079 kPa (11.00 kgf/cm^2 , 156.5 psi)
	4th clutch pressure	At 2, 000 RPM in 4th gear	1, 123- 1, 172 kPa (11.45- 11.95 kgf/cm^2 , 162.9- 170.0	1, 079 kPa (11.00 kgf/cm^2 , 156.5 psi)

			psi)	
	5th clutch pressure	At 2, 000 RPM in 5th gear	1, 123- 1, 172 kPa (11.45- 11.95 kgf/cm^2 , 162.9- 170.0 psi)	1, 079 kPa (11.00 kgf/cm^2 , 156.5 psi)
	6th clutch pressure	At 2, 000 RPM in 6th gear	1, 123- 1, 172 kPa (11.45- 11.95 kgf/cm^2 , 162.9- 170.0 psi)	1, 079 kPa (11.00 kgf/cm^2 , 156.5 psi)
	Torque converter clutch pressure	At 4, 000 RPM in 2nd gear (Lock-up condition)	294 kPa (3.00 kgf/cm^2 , 42.7 psi) or more	245 kPa (2.50 kgf/cm^2 , 35.6 psi)
Torque converter	Stall speed Check with vehicle on level ground		2, 000 RPM	-
		Service limit	1, 800- 2, 100 RPM	-
Clutch	Clearance between clutch end-plate and top disc	1st	1.50- 1.70 mm (0.0591 - 0.0669 in)	-
		2nd	1.25- 1.45 mm (0.0492- 0.0571 in)	-
		3rd	1.25- 1.45 mm (0.0492- 0.0571 in)	-
		4th	1.50- 1.70 mm (0.0591 - 0.0669 in)	-
		5th	1.25- 1.45 mm (0.0492- 0.0571 in)	-
		6th	1.25- 1.45 mm (0.0492- 0.0571 in)	-
	Diameter of stator shaft needle bearing contact area		31.984- 32.000 mm (1.25921- 1.25984 in)	When worn or damaged
	3rd gear I.D.		49.000- 49.016 mm (1.92913- 1.92976 in)	When worn or damaged
	3rd gear axial clearance		0.10- 0.21 mm (0.0039- 0.0083 in)	-
			41.962- 41.978	

Mainshaft	3rd gear collar diameter of needle bearing contact area		mm (1.65204- 1.65267 in)	When worn or damaged
	3rd gear collar width		29.00- 29.05 mm (1.1417- 1.1437 in)	-
	Sealing ring thickness (41 mm)		1.91- 1.96 mm (0.0752- 0.0772 in)	-
	Sealing ring groove width		2.025- 2.060 mm (0.07972- 0.08110 in)	-
Countershaft	Diameter of needle bearing contact area at torque converter housing		40.505- 40.515 mm (1.59468- 1.59508 in)	When worn or damaged
	Diameter of 1st gear at needle bearing contact area		57.000- 57.019 mm (2.24409- 2.24484 in)	When worn or damaged
	Diameter of park gear at needle bearing contact area		52.971 - 52.990 mm (2.08547- 2.08622 in)	When worn or damaged
	Axial clearance of gears	1st gear	0.07- 0.30 mm (0.0028- 0.0118 in)	-
		2nd and 5th gear (total)	0.04- 0.10 mm (0.002- 0.003 in)	-
	Thrust shim thickness (42.5 mm)	A	1.82 mm (0.0717 in)	When worn or damaged
		B	1.86 mm (0.0732 in)	When worn or damaged
		C	1.90 mm (0.0748 in)	When worn or damaged
		D	1.94 mm (0.0764 in)	When worn or damaged
		E	1.98 mm (0.0780 in)	When worn or damaged
		F	2.02 mm (0.0795 in)	When worn or damaged
		G	2.06 mm (0.0811 in)	When worn or damaged
		H	2.10 mm (0.0827 in)	When worn or damaged
		I	2.14 mm (0.0843 in)	When worn or damaged
			2.18 mm	When worn or

		J	(0.0858 in)	damaged
		K	2.22 mm (0.0874 in)	When worn or damaged
		L	2.26 mm (0.0890 in)	When worn or damaged
	5th gear collar width		65.55- 66.50 mm (2.5807- 2.6181 in)	When worn or damaged
Secondary shaft	Diameter of bearing contact area	At 1st gear	31.986- 31.999 mm (1.25929- 1.25980 in)	When worn or damaged
		At torque converter housing bearing	32.002- 32.015 mm (1.25992- 1.26043 in)	When worn or damaged
		At torque converter housing (shaft end side)	28.5935- 28.6065 mm (1.125726- 1.126238 in)	When worn or damaged
	I.D. of gears	1st gear	38.000- 38.016 mm (1.49606- 1.49669 in)	When worn or damaged
		2nd gear	44.000- 44.016 mm (1.73228- 1.73291 in)	When worn or damaged
		5th gear	50.000- 50.016 mm (1.96850- 1.96913 in)	When worn or damaged
	Axial clearance of gears	1st gear	0.16- 0.40 mm (0.0063- 0.0157 in)	-
		2nd and 5th gear	0.05- 0.12 mm (0.002- 0.004 in)	-
	Diameter of gear collars at needle bearing contact area	2nd gear collar	37.975- 37.991 mm (1.49508- 1.49571 in)	When worn or damaged
		5th gear collar	44.962- 44.978 mm (1.77015- 1.77078 in)	When worn or damaged
		A	0.85 mm (0.0335 in)	When worn or damaged
		B	0.92 mm (0.0362 in)	When worn or damaged
		C	0.99 mm (0.0390 in)	When worn or damaged

	Thrust shim thickness (89 mm)	D	1.06 mm (0.0417 in)	When worn or damaged
		E	1.13 mm (0.0445 in)	When worn or damaged
		F	1.20 mm (0.0472 in)	When worn or damaged
		G	1.27 mm (0.0500 in)	When worn or damaged
		H	1.34 mm (0.0528 in)	When worn or damaged
		I	1.41 mm (0.0555 in)	When worn or damaged
		J	1.48 mm (0.0583 in)	When worn or damaged
		K	1.55 mm (0.0610 in)	When worn or damaged
		L	1.62 mm (0.0638 in)	When worn or damaged
		M	1.69 mm (0.0665 in)	When worn or damaged
		N	1.76 mm (0.0693 in)	When worn or damaged
		O	1.83 mm (0.0720 in)	When worn or damaged
		P	1.90 mm (0.0748 in)	When worn or damaged
		Q	1.97 mm (0.0776 in)	When worn or damaged
		R	2.04 mm (0.0803 in)	When worn or damaged
		S	2.11 mm (0.0831 in)	When worn or damaged
		T	2.18 mm (0.0858 in)	When worn or damaged
	2nd gear collar thickness	A	32.89 mm (1.2949 in)	When worn or damaged
		B	32.94 mm (1.2968 in)	When worn or damaged
		C	32.99 mm (1.2988 in)	When worn or damaged
		D	33.04 mm (1.3008 in)	When worn or damaged
		E	33.09 mm (1.3028 in)	When worn or damaged

		F	33.14 mm (1.3047 in)	When worn or damaged
		G	33.19 mm (1.3067 in)	When worn or damaged
		H	33.24 mm (1.3087 in)	When worn or damaged
	5th gear collar width		28.00- 28.05 mm (1.1024- 1.1043 in)	-
Secondary shaft (cont'd)	Sealing ring thickness (30 mm)		1.74- 1.80 mm (0.0685- 0.0709 in)	-
	Sealing ring groove width		1.875- 1.910 mm (0.07382- 0.07520 in)	-
	ATF feed pipe O.D.		5.97- 5.98 mm (0.2350- 0.2354 in)	5.95 mm (0.2343 in)
	ATF feed pipe bushing I.D.		6.018- 6.030 mm (0.23693- 0.23740 in)	6.045 mm (0.23799 in)
	Diameter of needle bearing contact area	At 4th gear collar	44.986- 44.999 mm (1.77110- 1.77161 in)	When worn or damaged
		At 6th gear collar	36.986- 36.999 mm (1.45614- 1.45665 in)	When worn or damaged
	I.D. of gears	4th gear	50.000- 50.016 mm (1.96850- 1.96913 in)	When worn or damaged
		6th gear	42.000- 42.016 mm (1.65354- 1.65417 in)	When worn or damaged
		Reverse gear	41.000- 41.016 mm (1.61417- 1.61480 in)	When worn or damaged
	Diameter of reverse gear collar at needle bearing contact area		34.975- 34.991 mm (1.37697- 1.37760 in)	When worn or damaged
	Axial clearance	4th gear	0.115- 0.350 mm (0.00453- 0.01378 in)	-
		6th gear	0.045- 0.420 mm (0.002- 0.016 in)	-

Third shaft		Reverse gear	0.1 - 0.2 mm (0.004- 0.008 in)	-
	Reverse gear collar width		51.50- 51.55 mm (2.0276- 2.0295 in)	-
	Cotter thickness		2.99- 3.02 mm (0.1177- 0.1189 in)	-
	Sealing ring thickness (35 mm)		1.90- 1.97 mm (0.0748- 0.0776 in)	-
	Sealing ring groove width		2.025- 2.060 mm (0.07972- 0.08110 in)	-
	Reverse selector hub O.D.		51.60- 51.75 mm (2.0315- 2.0374 in)	When worn or damaged
	4th gear washer thickness	A	8.515 mm (0.33524 in)	When worn or damaged
		B	8.540 mm (0.33622 in)	When worn or damaged
		C	8.565 mm (0.33720 in)	When worn or damaged
		D	8.590 mm (0.33819 in)	When worn or damaged
		E	8.615 mm (0.33917 in)	When worn or damaged
		F	8.640 mm (0.34016 in)	When worn or damaged
	Diameter of needle bearing contact area	At transmission housing bearing (shaft end side)	22.995- 23.005 mm (0.90531- 0.90571 in)	When worn or damaged
	Cotter thickness		2.49- 2.52 mm (0.0980- 0.0992 in)	-
		A	1.26 mm (0.0496 in)	When worn or damaged
		B	1.30 mm (0.0512 in)	When worn or damaged
		C	1.34 mm (0.0528 in)	When worn or damaged
		D	1.38 mm (0.0543 in)	When worn or damaged
			1.42 mm	When worn or

Idler gear shaft	Washer thickness (41.5 mm)	E	(0.0559 in)	damaged
		F	1.46 mm (0.0575 in)	When worn or damaged
		G	1.50 mm (0.0591 in)	When worn or damaged
		H	1.54 mm (0.0606 in)	When worn or damaged
		I	1.58 mm (0.0622 in)	When worn or damaged
		J	1.62 mm (0.0638 in)	When worn or damaged
		K	1.66 mm (0.0654 in)	When worn or damaged
		L	1.70 mm (0.0669 in)	When worn or damaged
		M	1.74 mm (0.0685 in)	When worn or damaged
		N	1.78 mm (0.0701 in)	When worn or damaged
		O	1.82 mm (0.0717 in)	When worn or damaged
		P	1.86 mm (0.0732 in)	When worn or damaged
		Q	1.90 mm (0.0748 in)	When worn or damaged
		R	1.94 mm (0.0764 in)	When worn or damaged
		S	1.98 mm (0.0780 in)	When worn or damaged
		T	2.02 mm (0.0795 in)	When worn or damaged
		U	2.06 mm (0.0811 in)	When worn or damaged
Reverse idler gear shaft	Diameter of needle bearing contact area		17.991 - 17.999 mm (0.70831 - 0.70862 in)	When worn or damaged
	I.D. of gear	Reverse idler gear	24.000- 24.013 mm (0.94488- 0.94539 in)	When worn or damaged
	Axial clearance		0.07- 0.27 mm (0.0028- 0.0106 in)	-
	I.D. of transmission housing at reverse idler gear shaft contact area		32.002- 32.020 mm (1.25992- 1.26063 in)	-

	Reverse idler gear shaft thrust washer thickness		1.50- 1.55 mm (0.0591- 0.0610 in)	-
ATF pump	ATF pump thrust clearance		0.04- 0.07 mm (0.002- 0.002 in)	0.07 mm (0.002 in)
	Clearance between ATF pump gear and main valve body	Drive gear	0.210- 0.265 mm (0.009- 0.010 in)	-
		Driven gear	0.070- 0.125 mm (0.003- 0.004 in)	-
	ATF pump driven gear I.D.		14.016- 14.034 mm (0.55181- 0.55252 in)	When worn or damaged
	ATF pump driven gear shaft O.D.		13.980- 13.990 mm (0.55039- 0.55079 in)	When worn or damaged
Stator shaft	I.D. at needle bearing contact area	At torque converter side	28.000- 28.021 mm (1.10236- 1.10319 in)	When worn or damaged
		At ATF pump side	40.000- 40.025 mm (1.57480- 1.57578 in)	-
	I.D. at mainshaft sealing ring contact area		41.000- 41.025 mm (1.61417- 1.61515 in)	41.05 mm (1.6161 in)
Reverse shift fork	Fork finger thickness		5.90- 6.00 mm (0.2323- 0.2362 in)	5.4 mm (0.213 in)
Park gear and pawl	-		-	When worn or damaged
Regulator valve body	I.D. of shift fork shaft contact area	At shaft part	14.000- 14.010 mm (0.55118- 0.55157 in)	-
		At valve part	37.000- 37.039 mm (1.45669- 1.45823 in)	37.045 mm (1.45846 in)
Main valve body	Third shaft sealing ring contact I.D.		35.000- 35.025 mm (1.37795- 1.37893 in)	35.05 mm (1.3799 in)
ATF guide collar	Secondary shaft sealing ring contact 1. D.		30.000- 30.021 mm (1.18110- 1.18193 in)	30.05 mm (1.1831 in)
	Driveshaft/intermediate shaft		32.025- 32.055	

A/T differential carrier	contact area I.D.		mm (1.26082- 1.26201 in)	-
	Clearance between carrier and driveshaft		0.045- 0.096 mm (0.00177- 0.00378 in)	0.13 mm (0.0051 in)
	Clearance between carrier and intermediate shaft		0.080- 0.126 mm (0.00315- 0.00496 in)	-
	Carrier bearing starting torque (preload)	For new bearing	3.9- 5.6 N.m (40- 57 kgf.cm, 35- 49 lbf.in)	Adjust
		For reused bearing	3.6- 5.3 N.m (37- 54 kgf.cm, 32- 47 lbf.in)	Adjust
A/T differential pinion gear	Backlash		0.05- 0.15 mm (0.0020- 0.0059 in)	-
	I.D.		18.042- 18.066 mm (0.71031- 0.71126 in)	-
	Clearance between pinion gear and pinion shaft		0.055- 0.095 mm (0.00217- 0.00374 in)	0.12 mm (0.0047 in)
	Diameter of bearing contact area	At transmission housing side	21.977- 21.990 mm (0.86523- 0.86575 in)	21.92 mm (0.8630 in)
		At torque converter housing side	40.002- 40.018 mm (1.57488- 1.57551 in)	39.95 mm (1.5728 in)
	Axial clearance		0- 0.44 mm (0- 0.0173 in)	-
		A	1.82 mm (0.0717 in)	When worn or damaged
		B	1.84 mm (0.0724 in)	When worn or damaged
		C	1.86 mm (0.0732 in)	When worn or damaged
		D	1.88 mm (0.0740 in)	When worn or damaged
		E	1.90 mm (0.0748 in)	When worn or damaged
		F	1.92 mm (0.0756 in)	When worn or damaged
		G	1.94 mm (0.0764 in)	When worn or damaged

Transfer output shaft	Thrust shim thickness (28.5 mm)	H	1.96 mm (0.0772 in)	When worn or damaged
		I	1.98 mm (0.0780 in)	When worn or damaged
		J	2.00 mm (0.0787 in)	When worn or damaged
		K	2.02 mm (0.0795 in)	When worn or damaged
		L	2.04 mm (0.0803 in)	When worn or damaged
		M	2.06 mm (0.0811 in)	When worn or damaged
		N	2.08 mm (0.0819 in)	When worn or damaged
		O	2.10 mm (0.0827 in)	When worn or damaged
		P	2.12 mm (0.0835 in)	When worn or damaged
		Q	2.14 mm (0.0843 in)	When worn or damaged
		R	2.16 mm (0.0850 in)	When worn or damaged
		S	2.18 mm (0.0858 in)	When worn or damaged
		T	2.20 mm (0.0866 in)	When worn or damaged
		U	2.22 mm (0.0874 in)	When worn or damaged
		V	2.24 mm (0.0882 in)	When worn or damaged
		W	2.26 mm (0.0890 in)	When worn or damaged
		X	2.28 mm (0.0898 in)	When worn or damaged
		Y	2.30 mm (0.0906 in)	When worn or damaged
		Z	2.32 mm (0.0913 in)	When worn or damaged
		AA	2.34 mm (0.0921 in)	When worn or damaged
		AB	1.78 mm (0.0701 in)	When worn or damaged
		AC	1.80 mm (0.0709 in)	When worn or damaged

Transfer assembly fluid	Capacity: Hypoid gear oil SAE 90 viscosity, API classified GL 4 or GL 5 only	Fluid change	0.43 L (0.45 US qt)	-
		Overhaul	0.45 L (0.48 US qt)	-
Transfer assembly	Diameter of transfer hypoid drive gear/shaft assembly at tapered roller bearing contact area	At transfer cover side	50.002- 50.018 mm (1.96858- 1.96921 in)	49.95 mm (1.9665 in)
		At transfer gear side	24.987- 25.000 mm (0.98374- 0.98425 in)	24.93 mm (0.9815 in)
	Diameter of transfer output shaft (hypoid gear) at tapered roller bearing contact area	At transfer gear side	40.002- 40.018 mm (1.57488- 1.57551 in)	39.95 mm (1.5728 in)
		At companion flange side	31.975- 31.988 mm (1.25886- 1.25937 in)	31.92 mm (1.2567 in)
	Transfer gear backlash		0.06- 0.16 mm (0.0024- 0.0063 in)	-
	Tapered roller bearing total starting torque (preload)		2.64- 4.23 N.m (26.9- 43.1 kgf.cm, 23.3- 37.4 lbf.in)	-

REAR DIFFERENTIAL

Item	Measurement	Qualification	Standard or New	Service Limit
Rear differential fluid	Capacity: use Acura All-Wheel Drive Fluid (DPSF)	Fluid change	2.53 L (2.67 US qt)	-
		Overhaul	2.77 L (2.93 US qt)	-

STEERING

Item	Measurement	Qualification	Standard or New	Service Limit
Steering wheel	Rotational play measured at outside edge		0- 10 mm (0- 0.39 in)	-
	Initial turning load measured at outside edge with engine running		29 N (3.0 kgf, 6.6 lbf)	-
Gearbox	Angle of rack guide screw loosened from locked position		10+5°	

SUSPENSION

Item	Measurement	Qualification	Standard or New	Service Limit
Wheel alignment	Camber	Front	- 0°30'$^{+30'}_{-45'}$ ·	
		Rear	- 1 °00'$^{+30'}_{-45'}$ ·	
	Caster	Front	3 ° 48 ' ±45 '	
	Total toe-in	Front	0±2mm (0+0.08 in)	
		Rear	2 ± 2 mm (0.08 ± 0.08 in)	
	Front wheel turning angle	Inward	38° 06' ±2°	
		Outward (reference)	30° 24' ± 1 °	
Wheel	Runout	Axial	0- 0.7 mm (0- 0.028 in)	2.0 mm (0.079 in)
		Radial	0- 0.7 mm (0- 0.028 in)	1.5 mm (0.059 in)
Wheel bearing	End play	Front	0- 0.05 mm (0- 0.0020 in)	-
		Rear	0- 0.05 mm (0- 0.0020 in)	-

BRAKES

Item	Measurement	Qualification	Standard or New	Service Limit
Parking brake	Number of clicks when lever pulled with 196 N (20.0 kgf, 44.1 lbf) of force		6 to 8 clicks	
	Drum I.D.		189.9- 190.0 mm (7.476- 7.480 in)	191.0 mm (7.520 in)
	Shoe lining thickness		3.4 mm (0.134 in)	1.0 mm (0.039 in)
Brake pedal	Height from floor	M/T	156 mm (6.14 in)	-
		A/T	155 mm (6.10 in)	-
	Free play		1 - 5 mm (0.04- 0.20 in)	-
Brake disc	Thickness	Front	27.9- 28.1 mm (1.098- 1.106 in)	26.0 mm (1.024 in)
		Rear	10.9- 11.1 mm (0.429- 0.437 in)	9.0 mm (0.354 in)
	Runout		-	0.04 mm (0.0016 in)
	Parallelism		-	0.015 mm (0.00059 in)
Brake pad	Thickness	Front	11.5- 12.2 mm (0.453- 0.480 in)	1.6 mm (0.063 in)
		Rear	9.6- 10.2 mm (0.378- 0.402 in)	1.6 mm (0.063 in)

AIR CONDITIONING

Item	Measurement	Qualification	Standard or New	Service Limit
Refrigerant	Type		HFC- 134a (R- 134a)	
	Capacity of system		505- 555 g (17.8- 19.6 oz)	-
Refrigerant oil	Type		DENSO ND- OIL 8 (P/N 38897- PR7- A01 AH)	
	Capacity of components	Condenser (including dryer desiccant)	35mL (1 1/5 fl.oz)	
		Evaporator	35mL (1 1/5 fl.oz)	
		Each line and hose	10mL (1/3 fl.oz)	
		Dryer desiccant	10mL (1/3 fl.oz)	
		Compressor	70- 82 mL (2 3/8- 2 7/9 fl.oz)	
Compressor	Field coil resistance	At 68°F (20°C)	3.9- 4.3 ohms	
	Pulley-to-pressure plate clearance		0.35- 0.60 mm (0.014- 0.023 in)	-

TORQUE SUMMARY

TORQUE SPECIFICATIONS

NOTE:

- **Refer to the appropriate Service information for the precautions and complete procedures.**
- **Refer to the appropriate Service information for the bolts/nuts not indicated here.**

Engine Electrical

Location	Item		Remark	Torque
Starting system	Starter bolts	M/T model		74 N.m (7.5 kgf.m, 54 lbf.ft)
		A/T model		44 N.m (4.5 kgf.m, 33 lbf.ft)
	Starter harness clamp nut			9 N.m (0.9 kgf.m, 7 lbf.ft)
Ignition system	Spark plugs			22 N.m (2.2 kgf.m, 16 lbf.ft)
Charging system	Alternator bolt (8 mm)			22 N.m (2.2 kgf.m, 16 lbf.ft)
	Alternator bolt (10 mm)			44 N.m (4.5 kgf.m, 33 lbf.ft)
	Alternator cable nut			12 N.m (1.2 kgf.m, 8.7 lbf.ft)
	Drive belt auto-tensioner bolt			22 N.m (2.2 kgf.m, 16 lbf.ft)
	Drive belt auto-tensioner pulley bolt			56 N.m (5.7 kgf.m, 41 lbf.ft)

NOTE:

- **Refer to the appropriate Service information for the precautions and complete procedures.**

- **Refer to the appropriate Service information for the bolts/nuts not indicated here.**

Engine Mechanical

Location	Item		Remark	Torque
Engine assembly	Power steering pump bracket bolts			22 N.m (2.2 kgf.m, 16 lbf.ft)
	Front engine mount bracket bolts		Use new bolts	54 N.m (5.5 kgf.m, 40 lbf.ft)
	Front engine mount bolts		Use new bolts	54 N.m (5.5 kgf.m, 40 lbf.ft)
	Front engine mount stop nuts		Use new nuts	64 N.m (6.5 kgf.m, 47 lbf.ft)
	Rear engine mount bracket bolts		Use new bolts	78 N.m (8.0 kgf.m, 58 lbf.ft)
	Rear engine mount bolts (10 mm) Qty 4		Use new bolts	54 N.m (5.5 kgf.m, 40 lbf.ft)
	Rear engine mount bolt (14 mm) Qty 1	M/T model	Use new bolt	88 N.m (9.0 kgf.m, 65 lbf.ft)
	Rear engine mount stop nuts	A/T model	Use new nuts	64 N.m (6.5 kgf.m, 47 lbf.ft)
	Side engine mount bracket bolts (10 mm) Qty 3		Use new bolts	44 N.m (4.5 kgf.m, 33 lbf.ft)
	Side engine mount bracket bolts (10 mm) Qty 2 (2)		Use new bolts	54 N.m (5.5 kgf.m, 40 lbf.ft)
	Side engine mount bolt (12 mm) Qty 1 (2)			64 N.m (6.5 kgf.m, 47 lbf.ft)
	Side engine mount bolts (10 mm) Qty 2		Use new bolts	64 N.m (6.5 kgf.m, 47 lbf.ft)
	Upper transmission mount bracket bolts		Use new bolts	59 N.m (6.0 kgf.m, 43 lbf.ft)
	Upper transmission mount bolts			54 N.m (5.5 kgf.m, 40 lbf.ft)
	Lower transmission mount bracket bolts	M/T model	Use new bolts	54 N.m (5.5 kgf.m, 40 lbf.ft)
		A/T model	Use new bolts	39 N.m (4.0 kgf.m, 29 lbf.ft)
	Lower transmission mount nuts			44 N.m (4.5 kgf.m, 33 lbf.ft)
	Lower transmission mount bolt		Use new bolt	54 N.m (5.5 kgf.m, 40 lbf.ft)
			• Use new O-ring	22 N.m (2.2

Engine lubrication	Oil pressure switch	• Apply liquid gasket	kgf.m, 16 lbf.ft)
	Oil pan drain bolt	Use new washer	39 N.m (4.0 kgf.m, 29 lbf.ft)
	Oil filter		12 N.m (1.2 kgf.m, 9 lbf.ft)
	Oil filter feed pipe	Use oil on threads	35 N.m (3.6 kgf.m, 26 lbf.ft)
Intake manifold and exhaust system	Intake manifold bolts (1)		22 N.m (2.2 kgf.m, 16 lbf.ft)
	Intake manifold nuts (1)		22 N.m (2.2 kgf.m, 16 lbf.ft)
	Injector base bolts (1)		22 N.m (2.2 kgf.m, 16 lbf.ft)
	Injector base nuts (1)		22 N.m (2.2 kgf.m, 16 lbf.ft)
	Exhaust pipe A self-locking nuts (10 mm) Qty 3 (warm up TWC side) (2)	Use new nuts	54 N.m (5.5 kgf.m, 40 lbf.ft)
	Exhaust pipe A self-locking nuts (10 mm) Qty 3 (under-floor TWC side) (2)	Use new nuts	33 N.m (3.4 kgf.m, 25 lbf.ft)
	Exhaust pipe B self-locking nuts (10 mm) Qty 3 (2)	Use new nuts	33 N.m (3.4 kgf.m, 25 lbf.ft)
	Exhaust pipe B self-locking nuts (10 mm) Qty 2	Use new nuts	54 N.m (5.5 kgf.m, 40 lbf.ft)
(1) Parts to be tightened in a particular order.			
(2) Follow the S/M procedures closely for torque, sequence, and special steps.			

NOTE:

- **Refer to the appropriate Service information for the precautions and complete procedures.**
- **Refer to the appropriate Service information for the bolts/nuts not indicated here.**

Engine Cooling

Location	Item	Remark	Torque
Cooling system	Water passage bolts		22 N.m (2.2 kgf.m, 16 lbf.ft)
	Water passage nuts		22 N.m (2.2 kgf.m, 16 lbf.ft)

Fuel and Emissions

Location	Item	Remark	Torque

Fuel and emissions	A/F sensor			44 N.m (4.5 kgf.m, 33 lbf.ft)
	EGR pipe bolts		Use new gasket	22 N.m (2.2 kgf.m, 16 lbf.ft)
	EGR pipe nuts		Use new gasket	22 N.m (2.2 kgf.m, 16 lbf.ft)
	EGR valve nuts		Use new gasket	22 N.m (2.2 kgf.m, 16 lbf.ft)
	Fuel joint hose mounting bolt			22 N.m (2.2 kgf.m, 16 lbf.ft)
	Fuel tank locknut (1)		Use new locknut, locknut plate, and base gasket	70 N.m (7.1 kgf.m, 51 lbf.ft)
	Fuel tank support straps bolts			38 N.m (3.9 kgf.m, 28 lbf.ft)
	Knock sensor			31 N.m (3.2 kgf.m, 23 lbf.ft)
	Rocker arm oil pressure switch		Use new O-ring	22 N.m (2.2 kgf.m, 16 lbf.ft)
	Secondary HO2S			44 N.m (4.5 kgf.m, 33 lbf.ft)
	Secondary fuel gauge sending unit locknut (1)		Use new locknut, locknut plate, and base gasket	70 N.m (7.1 kgf.m, 51 lbf.ft)
	Throttle body bolts		Use new gasket	22 N.m (2.2 kgf.m, 16 lbf.ft)
	Under floor TWC self locking nuts	Without SH-AWD	Use new gaskets and nuts	33 N.m (3.4 kgf.m, 25 lbf.ft)
	Under floor TWC self locking nuts (front side)	With SH-AWD	Use new gaskets and nuts	33 N.m (3.4 kgf.m, 25 lbf.ft)
	Under floor TWC self locking nuts (rear side)	With SH-AWD	Use new gaskets and nuts	54 N.m (5.5 kgf.m, 40 lbf.ft)
	Warm up TWC (front bank) bracket bolts			45 N.m (4.5 kgf.m, 33 lbf.ft)
	Warm up TWC (rear bank) bracket bolts			22 N.m (2.2 kgf.m, 16 lbf.ft)
	Warm up TWC (front bank) upper self locking nuts		Use new nuts	31 N.m (3.2 kgf.m, 23 lbf.ft)
	Warm up TWC (rear bank) upper self locking nuts		Use new nuts	31 N.m (3.2 kgf.m, 23 lbf.ft)
(1) Follow the S/M procedures closely for torque, sequence, and special steps.				

Clutch

Location	Item	Remark	Torque

Clutch	Clutch push rod locknut		17 N.m (1.7 kgf.m, 12 lbf.ft)
	Clutch pedal position switch A locknut		9.8 N.m (1.0 kgf.m, 7 lbf.ft)
	Clutch pedal position switch B locknut		9.8 N.m (1.0 kgf.m, 7 lbf.ft)
	Clutch pedal bolt		22 N.m (2.2 kgf.m, 16 lbf.ft)
	Master cylinder nuts		13 N.m (1.3 kgf.m, 9 lbf.ft)
	Slave cylinder bolts		22 N.m (2.2 kgf.m, 16 lbf.ft)
	Flywheel bolts		103 N.m (10.5 kgf.m, 76 lbf.ft)
	Pressure plate bolts (1)		25 N.m (2.6 kgf.m, 19 lbf.ft)
	Release fork bolt		29 N.m (3.0 kgf.m, 22 lbf.ft)
(1) Parts to be tightened in a particular order.			

Manual Transmission

Location	Item	Remark	Torque
Manual transmission	MTF drain plug	Use new sealing washer	44 N.m (4.5 kgf.m, 33 lbf.ft)
	MTF filler plug	Use new sealing washer	44 N.m (4.5 kgf.m, 33 lbf.ft)
	Back-up light switch	Use liquid gasket on threads	29 N.m (3.0 kgf.m, 22 lbf.ft)
	Upper transmission bolts		74 N.m (7.5 kgf.m, 54 lbf.ft)
	Lower transmission bolts		74 N.m (7.5 kgf.m, 54 lbf.ft)
	Shift lever housing bolts		22 N.m (2.2 kgf.m, 16 lbf.ft)
	Shift cable bracket bolts		27 N.m (2.8 kgf.m, 20 lbf.ft)

Automatic Transmission

Location	Item	Remark	Torque
Automatic transmission	ATF drain plug	Use new sealing washer	49 N.m (5.0 kgf.m, 36 lbf.ft)
	ATF filler bolt	Use new sealing washer	44 N.m (4.5 kgf.m, 33 lbf.ft)
	Clutch pressure inspection port sealing bolts (line/1st/5th/torque converter)		20 N.m (2.0 kgf.m, 14 lbf.ft)
	Clutch pressure inspection port sealing bolts (3rd/6th)		27 N.m (2.8 kgf.m, 20 lbf.ft)
	Transmission fluid pressure switches	Use new sealing washers	0 N.m (2.0 kgf.m, 14 lbf.ft)
	Line pressure switch	Use new sealing washer	20 N.m (2.0 kgf.m, 14 lbf.ft)
	Drive plate bolts (1)		74 N.m (7.5 kgf.m, 54 lbf.ft)
	Lower transmission housing mounting bolts		74 N.m (7.5 kgf.m, 54 lbf.ft)
	Upper transmission housing mounting bolts		64 N.m (6.5

			kgf.m, 47 lbf.ft)
	Transfer assembly mounting bolts		51 N.m (5.2 kgf.m, 38 lbf.ft)
	Transmission ground terminal bracket bolt		26 N.m (2.7 kgf.m, 20 lbf.ft)
	Shift lever assembly bolts		22 N.m (2.2 kgf.m, 16 lbf.ft)
	Shift cable end nut		22 N.m (2.2 kgf.m, 16 lbf.ft)
	Shift lever bracket base bolts		22 N.m (2.2 kgf.m, 16 lbf.ft)
Transfer assembly	Transfer assembly fluid drain plug	Use new sealing washer	44 N.m (4.5 kgf.m, 33 lbf.ft)
	Transfer assembly fluid filler plug	Use new sealing washer	44 N.m (4.5 kgf.m, 33 lbf.ft)
(1) Follow the S/M procedures closely for torque, sequence, and special steps.			

NOTE:

- **Refer to the appropriate Service information for the precautions and complete procedures.**
- **Refer to the appropriate Service information for the bolts/nuts not indicated here.**

Rear Differential

Location	Item	Remark	Torque
Rear differential	Rear differential fluid drain plug	Use new sealing washer	47 N.m (4.8 kgf.m, 35 lbf.ft)
	Rear differential fluid filler plug	Use new sealing washer	47 N.m (4.8 kgf.m, 35 lbf.ft)
	Rear differential front mounting bracket nuts (1)	Use new nuts	44 N.m (4.5 kgf.m, 33 lbf.ft)
	Rear differential front mounting bracket bolts (1)	Use new bolts	74 N.m (7.5 kgf.m, 54 lbf.ft)
	Rear differential rear mount bolts (1)	Use new bolts	74 N.m (7.5 kgf.m, 54 lbf.ft)
(1) Follow the S/M procedures closely for torque, sequence, and special steps.			

Driveline/Axle

Location	Item	Remark	Torque
	Driveshaft spindle nut (24	• Use oil on the seating surface	245 N.m (25.0 kgf.m, 181

	mm)	• Use new nut	lbf.ft)
	Driveshaft spindle nut (26 mm)	• Use oil on the seating surface • Use new nut	329 N.m (33.5 kgf.m, 242 lbf.ft)
	Intermediate shaft dowel bolts		39 N.m (4.0 kgf.m, 29 lbf.ft)
Driveline/axle	Intermediate shaft flange bolt		39 N.m (4.0 kgf.m, 29 lbf.ft)
	Heat shield bolts		22 N.m (2.2 kgf.m, 16 lbf.ft)
	No. 1 propeller shaft nuts	Use new nuts	72 N.m (7.3 kgf.m, 53 lbf.ft)
	No. 3 propeller shaft bolts	Use new bolts	72 N.m (7.3 kgf.m, 53 lbf.ft)
	No. 1 support bearing bolts (1)	Use new bolts	39 N.m (4.0 kgf.m, 29 lbf.ft)
	No. 2 support bearing bolts (1)	Use new bolts	39 N.m (4.0 kgf.m, 29 lbf.ft)
(1) Follow the S/M procedures closely for torque, sequence, and special steps.			

Steering

Location	Item	Remark	Torque
Steering	Steering wheel bolt		39 N.m (4.0 kgf.m, 29 lbf.ft)
	Steering joint bolts		28 N.m (2.9 kgf.m, 21 lbf.ft)
	Steering column nuts		16 N.m (1.6 kgf.m, 12 lbf.ft)
	Steering column bolts		16 N.m (1.6 kgf.m, 12 lbf.ft)
	Steering gearbox bolts	Use new bolts	74 N.m (7.5 kgf.m, 54 lbf.ft)
	Tie-rod end ball joint nuts	Use new nuts	60 N.m (6.1 kgf.m, 44 lbf.ft)
	Tie-rod end locking nuts		44 N.m (4.5 kgf.m, 33 lbf.ft)

Suspension

Location	Item	Remark	Torque
Front suspension	Wheel nuts		127 N.m (13.0 kgf.m, 94.0 lbf.ft)
	Upper arm castle nut		44- 52 N.m (4.5- 5.3 kgf.m, 33- 38 lbf.ft)
	Upper arm bolts	Use new bolts	31 N.m (3.2 kgf.m, 23 lbf.ft)
	Knuckle ball joint castle nut	Use new nut	93- 103 N.m (9.5- 10.5 kgf.m, 69- 75.9 lbf.ft)
	Lower arm bolt (12mm)	Use new bolt	74 N.m (7.5 kgf.m, 54 lbf.ft)
	Lower arm bolt (12mm)	Use new bolt	83 N.m (8.5 kgf.m, 61 lbf.ft)
	Stabilizer bar bolts		55 N.m (5.6 kgf.m, 41 lbf.ft)
	Stabilizer link nuts		78 N.m (8.0 kgf.m, 58 lbf.ft)

	Damper nuts	Use new nuts	55 N.m (5.6 kgf.m, 41 lbf.ft)
	Damper pinch bolt		49 N.m (5.0 kgf.m, 36 lbf.ft)
	Damper fork bolt/nut	Use new bolt/nut	64 N.m (6.5 kgf.m, 47 lbf.ft)
	Damper self-locking	nut Use new nut	29 N.m (3.0 kgf.m, 22 lbf.ft)
Rear suspension	Wheel nuts		127 N.m (13.0 kgf.m, 94.0 lbf.ft)
	Upper arm castle nut	Use new nut	69- 78 N.m (7.0- 8.0 kgf.m, 51 - 58 lbf.ft)
	Upper arm bolts	Use new bolts	59 N.m (6.0 kgf.m, 43 lbf.ft)
	Lower arm A bolts	Use new bolts	59 N.m (6.0 kgf.m, 43 lbf.ft)
	Control arm self-locking nut	Use new nut	59 N.m (6.0 kgf.m, 43 lbf.ft)
	Control arm self-locking nut/adjusting bolt	Use new nut	57 N.m (5.8 kgf.m, 42 lbf.ft)
	Lower arm B bolts	Use new bolts	59 N.m (6.0 kgf.m, 43 lbf.ft)
	Stabilizer bar bolts		22 N.m (2.2 kgf.m, 16 lbf.ft)
	Stabilizer link nut	Use new nut	38 N.m (3.9 kgf.m, 28 lbf.ft)
	Stabilizer link self-locking nut	Use new nut	44 N.m (4.5 kgf.m, 33 lbf.ft)
	Damper nuts	Use new nuts	55 N.m (5.6 kgf.m, 41 lbf.ft)
	Damper lower bolt	Use new bolt	64 N.m (6.5 kgf.m, 47 lbf.ft)
	Damper self-locking nut	Use new nut	29 N.m (3.0 kgf.m, 22 lbf.ft)

Brakes

Location	Item	Remark	Torque
Conventional brake	Front brake caliper bolts		72 N.m (7.3 kgf.m, 53 lbf.ft)
	Front brake caliper bracket bolts		137 N.m (14.0 kgf.m, 101 lbf.ft)
	Front brake hose bracket bolt		22 N.m (2.2 kgf.m, 16 lbf.ft)
	Front brake hose banjo bolt	Use new washers	35 N.m (3.6 kgf.m, 26 lbf.ft)
	Brake booster/brake pedal nuts		12 N.m (1.2 kgf.m, 8.7 lbf.ft)
	Master cylinder nuts		15 N.m (1.5 kgf.m, 11 lbf.ft)
	Master cylinder brake lines		22 N.m (2.2 kgf.m, 16 lbf.ft)
	Rear brake caliper bolts		22 N.m (2.2 kgf.m, 16 lbf.ft)
	Rear brake caliper bracket bolts		88 N.m (9.0 kgf.m, 65 lbf.ft)

	Rear brake hose bracket bolt		22 N.m (2.2 kgf.m, 16 lbf.ft)
	Rear brake hose banjo bolt	Use new washers	35 N.m (3.6 kgf.m, 26 lbf.ft)
	Parking brake lever bolts		32 N.m (3.3 kgf.m, 24 lbf.ft)
	Parking brake cable bolts		22 N.m (2.2 kgf.m, 16 lbf.ft)
	Equalizer cover bolts		32 N.m (3.3 kgf.m, 24 lbf.ft)
	Brake pedal bolts		22 N.m (2.2 kgf.m, 16 lbf.ft)
VSA	VSA modulator-control unit brake line (10 mm)		15 N.m (1.5 kgf.m, 11 lbf.ft)
	VSA modulator-control unit brake line (12 mm)		22 N.m (2.2 kgf.m, 16 lbf.ft)

NOTE:

- **Refer to the appropriate Service information for the precautions and complete procedures.**
- **Refer to the appropriate Service information for the bolts/nuts not indicated here.**

BODY

Location	Item	Remark	Torque
Frame	Strut brace nuts		22 N.m (2.2 kgf.m, 16 lbf.ft)
	Strut brace bolts		22 N.m (2.2 kgf.m, 16 lbf.ft)
	Front subframe front stiffener bolts (12 mm) (1)		54 N.m (5.5 kgf.m, 40 lbf.ft)
	Front subframe front stiffener bolts (14 mm) (1)	Use new bolts	103 N.m (10.5 kgf.m, 76 lbf.ft)
	Front subframe middle rubber mount bolts (10 mm) (1)	Use new bolts	49 N.m (5.0 kgf.m, 36 lbf.ft)
	Front subframe middle rubber mount bolts (12 mm) (1)	Use new bolts	44 N.m (4.5 kgf.m, 33 lbf.ft)
	Front subframe rear stiffener bolts (12 mm) (1)	Use new bolts	93 N.m (9.5 kgf.m, 69 lbf.ft)
	Front subframe rear stiffener bolts (14 mm) (1)	Use new bolts	103 N.m (10.5 kgf.m, 76 lbf.ft)
	Rear engine mounting base bracket bolts	Use new bolts	54 N.m (5.5 kgf.m, 40 lbf.ft)
	Rear subframe mounting front stay bolts (8 mm)		27 N.m (2.75 kgf.m, 20 lbf.ft)
		Use new	103 N.m (10.5 kgf.m, 76

	Rear subframe mounting front stay bolts (14 mm)	bolts	lbf.ft)
	Rear subframe mounting rear stay bolts (8 mm)		27 N.m (2.75 kgf.m, 20 lbf.ft)
	Rear subframe mounting rear stay bolts (14 mm)	Use new bolts	103 N.m (10.5 kgf.m, 76 lbf.ft)
(1) Parts to be tightened in a particular order.			

HEATING, VENTILATION, AND AIR CONDITIONING

Location	Item	Remark	Torque
A/C compressor	A/C compressor bracket bolts		45 N.m (4.5 kgf.m, 33 lbf.ft)
	A/C compressor bolts		22 N.m (2.2 kgf.m, 16 lbf.ft)
	A/C compressor center bolt		18 N.m (1.8 kgf.m, 13 lbf.ft)
	A/C compressor relief valve		13 N.m (1.35 kgf.m, 9.7 lbf.ft)
Receiver line	A/C pressure sensor		11 N.m (1.1 kgf.m, 8.0 lbf.ft)

BODY ELECTRICAL

Location	Item	Remark	Torque
Wipers/washers	Windshield wiper arm nut		30 N.m (3.0 kgf.m, 21.7 lbf.ft)
	Windshield wiper linkage nut		31.4 N.m (3.2 kgf.m, 23.2 lbf.ft)

DESIGN SPECIFICATIONS

Item	Measurement	Qualification	Specification
DIMENSIONS	Overall length		4, 966 mm (195.5 in)
	Overall width		1, 880 mm (74.0 in)
	Overall height		1, 452 mm (57.2 in)
	Wheelbase		2, 775 mm (109.3 in)
	Track	Front	1, 606 mm (63.2 in)
		Rear	1, 620 mm (63.8 in)
	Seating capacity		Five (5)
WEIGHT	Gross Vehicle Weight Rating (GVWR)	Without SH-AWD	2, 130 kg (4, 696 lbs)
		With SH-AWD	2, 235 kg (4, 927 lbs)
ENGINE (J35Z6)	Type		Water-cooled, 4-stroke SOHC VTEC gasoline engine
	Cylinder arrangement		60 ° V6-cylinder, transverse
	Bore and stroke		89.0 x 93.0 mm (3.504 x 3.661 in)
	Displacement		3, 471 cm^3 (211.8 cu in)
	Compression ratio		11.2
	Valve train		Belt drive, SOHC VTEC 4 valves

			per cylinder
	Lubrication system		Forced, wet sump, with trochoid pump
	Fuel required		Premium UNLEADED gasoline with 91 Pump Octane Number or higher
ENGINE (J37A4)	Type		Water-cooled, 4- stroke SOHC VTEC gasoline engine
	Cylinder arrangement		60 ° V6- cylinder, transverse
	Bore and stroke		90.0 x 96.0 mm (3.543 x 3.780 in)
	Displacement		3, 664 cm^3 (223.6 cu in)
	Compression ratio		11.2
	Valve train		Belt drive, SOHC VTEC 4 valves per cylinder
	Lubrication system		Forced, wet sump, with trochoid pump
	Fuel required		Premium UNLEADED gasoline with 91 Pump Octane Number or higher
STARTER	Type		Gear reduction
	Nominal output	M/T	1.6 kW
		A/T	1.8 kW
	Nominal voltage		12V
	Hour rating		30 seconds
	Direction of rotation		Counterclockwise as viewed from drive end
CLUTCH	Type		Single plate dry, diaphragm spring
MANUAL TRANSMISSION	Type		Synchronized, six-speed forward, one reverse
	Primary reduction		Direct 1:1
	Gear ratio	1st	3.625
		2nd	2.115
		3rd	1.529
		4th	1.125
		5th	0.847
		6th	0.686
		Reverse	3.656
	Final reduction	Type	Single helical gear
		Gear ratio	3.842
	Type		Electronically-controlled automatic, six-speed forward, one reverse
	Primary reduction		Direct 1:1

AUTOMATIC TRANSMISSION	Gear ratio	1st	3.359
		2nd	2.094
		3rd	1.484
		4th	1.065
		5th	0.754
		6th	0.555
		Reverse	2.269
	Final reduction	Type	Single helical gear
		Gear ratio	3.722
STEERING	Type		Electrical power-assisted rack and pinion
	Overall ratio		13.96
	Turns, lock-to-lock		2.7
	Steering wheel diameter	Without SH-AWD	370 mm (14.57 in)
		With SH-AWD	374 mm (14.72 in)
SUSPENSION	Type	Front	Independent double wishbone with stabilizer, coil spring
		Rear	Independent multilink with stabilizer, coil spring
	Shock absorber	Front and rear	Telescopic, hydraulic, nitrogen gas-filled
TIRES	Size (without SH-AWD)	Front and rear	P245/50R17 98V
			P245/45R18 96V
		Spare	T135/80D17 103M
	Size (with SH-AWD)	Front and rear	P245/45R18 96V
			245/40ZR19 94V (Optional)
		Spare	T135/80D17 103M
WHEEL ALIGNMENT	Camber	Front	- 0°30'
		Rear	- 1°00'
	Caster	Front	3° 48'
	Total toe-in	Front	0 mm (0 in)
		Rear	2 mm (0.08 in)
	Front wheel turning angle	Inward	38 ° 06'
		Outward (reference)	30 ° 24'
BRAKES	Type of service brake	Front	Power-assisted self-adjusting ventilated disc
		Rear	Power-assisted self-adjusting solid disc
	Type of parking brake		Mechanical actuating, rear wheels
	Pad friction surface area (swept area)	Front	59.2 cm^2 (9.18 sq in) x 2
		Rear	34.4 cm^2 (5.33 sq in) x 2
	Parking brake shoe		

	friction surface area		45.6 cm^2 (7.07 sq in) x 2
AIR CONDITIONING	Compressor	Type	Swash plate/DENSO
		Capacity	154.4 mL (9.42 cu in)/rev
		Maximum speed	7, 600 RPM
		Lubricant capacity	70 mL (2 3/8 fl.oz)
		Lubricant type	DENSO ND-OIL 8
	Condenser	Type	Corrugated fin
	Evaporator	Type	Corrugated fin
	Blower	Type	Radial
		Motor input	300W/12V
		Speed control	Infinitely variable
		Maximum capacity	545 m^3 (19, 246 cu ft)/h
	Temperature control		Air-mix type
	Compressor clutch	Type	Dry, single plate, poly V- belt drive
		Electrical power consumption at 68°F (20°C)	35 W maximum at 12 V
	Refrigerant	Type	HFC-134a (R-134a)
		Capacity	505- 555 g (17.8- 19.6 oz)
ELECTRICAL RATINGS	Battery		12 V- 65 Ah/20 HR (12V- 55 Ah/5 HR)
	Fuses	Under-hood fuse/relay box	120 A, 70 A, 60 A, 50 A, 40 A, 30 A, 20 A, 15 A, 10 A, 7.5 A
		Driver's under-dash fuse/relay box	20 A, 15 A, 10 A, 7.5 A
		Passenger's under-dash fuse/relay box	20 A, 15 A, 10 A, 7.5 A
		Auxiliary under-dash fuse/relay box	7.5 A
		Headlight high beam	12V- 60W (HB3)
		Headlight low beam (HID)	12V- 35W (D2S)
		Fog lights	12V- 55W (H11)
		Front turn signal/parking lights	12 V- 24/2.2CP (Amber)
		Side turn signal lights	LED
		Front side marker lights	12V- 3CP
		Rear turn signal lights	12V- 21 W (Amber)
		Brake lights/taillights	LED
		Rear side marker lights	12V- 3CP
		High mount brake light	LED

	Light bulbs	Back-up lights	12V- 16W
		License plate lights	12V- 5W
		Ambient light	LED
		Trunk light	12V- 5W
		Front individual map lights	LED
		Rear individual map lights	LED
		Door courtesy lights	12V- 3.4W
		Glove box light	12V- 1.4W
		Vanity mirror lights	12V- 2W
		Gauge lights	LED
		Indicator lights	LED
		Console box light	12V- 1.4W
		Footwell lights	LED

BODY SPECIFICATIONS

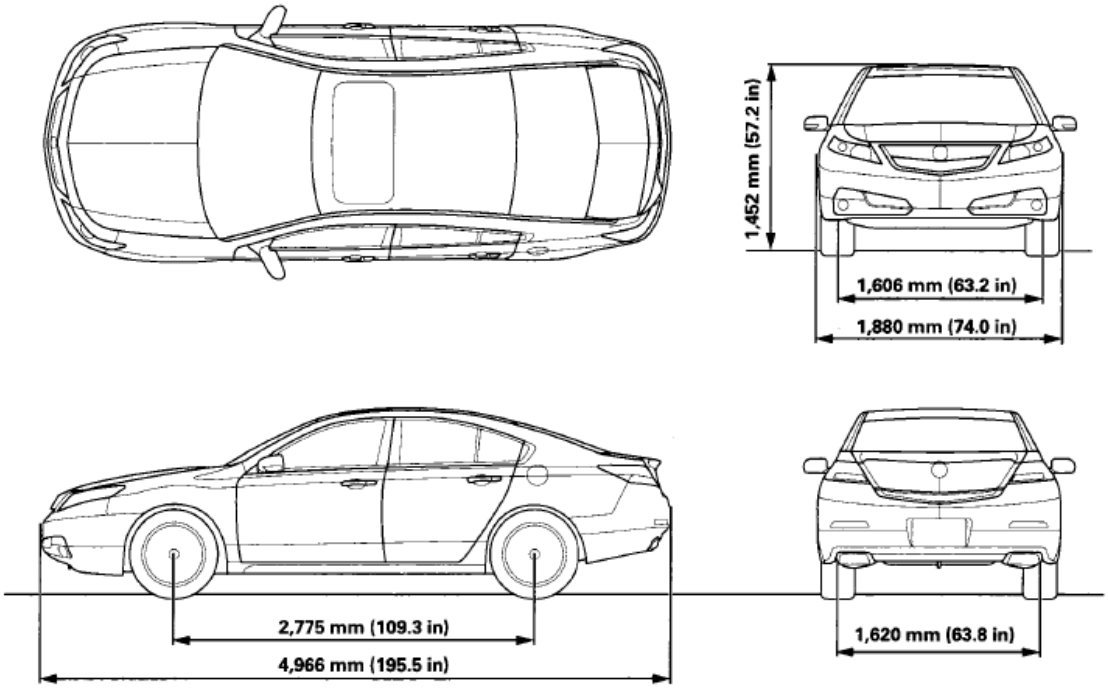


Fig. 1: Identifying Body Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2012 ENGINE

Starting System - TL

COMPONENT LOCATION INDEX

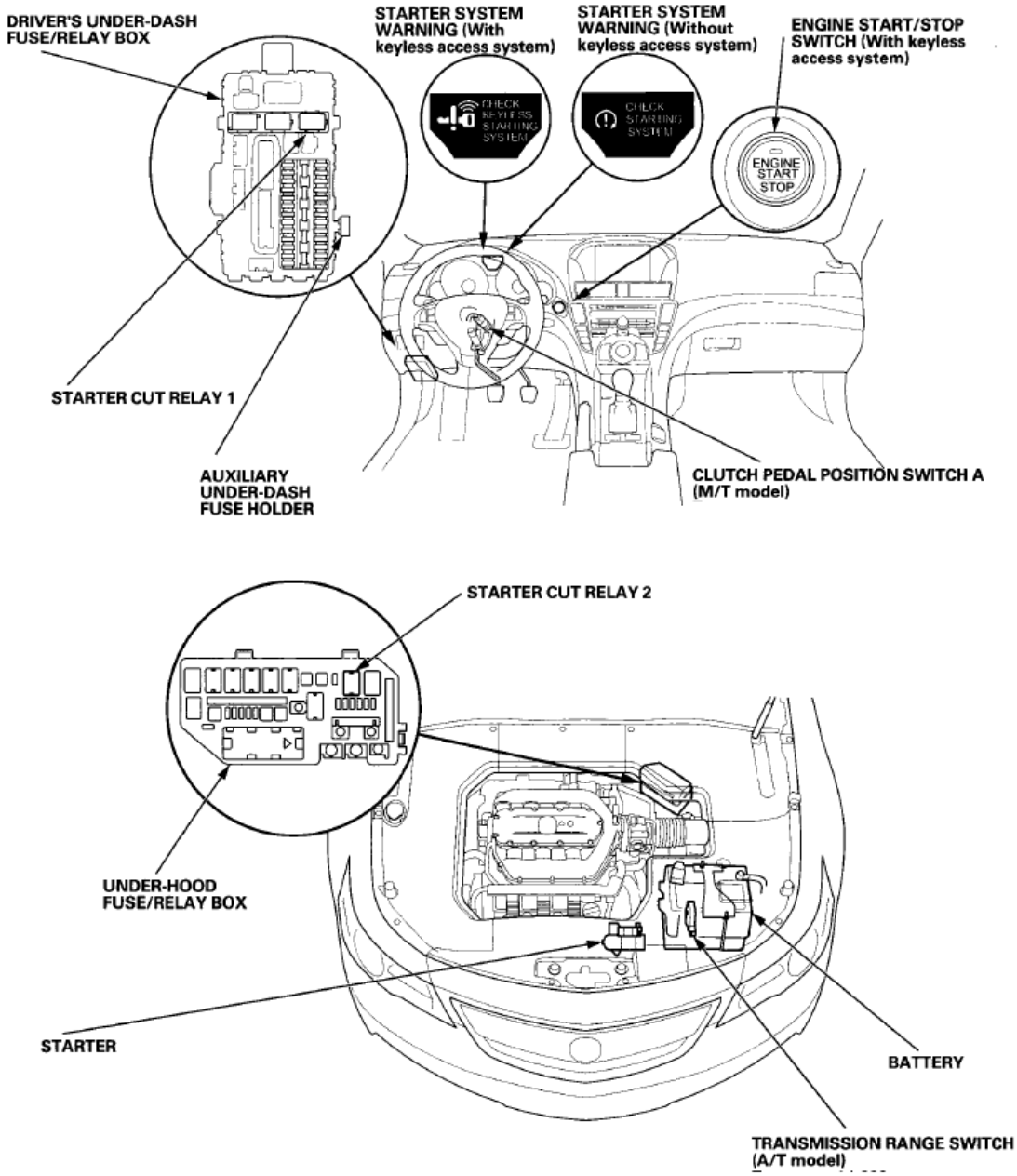


Fig. 1: Starting System Components Location
Courtesy of AMERICAN HONDA MOTOR CO., INC.

SYMPTOM TROUBLESHOOTING INDEX

WITHOUT KEYLESS ACCESS SYSTEM

Symptom	Diagnostic procedure	Also check for
Engine does not crank	1. Check for loose battery terminals or connections. 2. Test the battery for a low state of charge (see **BATTERY TEST**). 3. Check the **starter**. 4. Check starter cut relay 1 and starter cut relay 2 (see **POWER RELAY TEST**). 5. Check the transmission range switch (see **TRANSMISSION RANGE SWITCH TEST**). 6. Check the ignition switch and its related circuits (see **IGNITION SWITCH TEST**).	Poor ground at G101
Engine cranks, but does not start	1. Check for PGM-FI DTCs (see **GENERAL TROUBLESHOOTING INFORMATION**). 2. Check the PGM-FI main relays (see **POWER RELAY TEST**). 3. Check for IMMOBI status and function (see **ENGINE DOES NOT START WITH THE IMMOBILIZER KEY**). 4. Check the fuel pressure (see **FUEL PRESSURE TEST**). 5. Check for a plugged or damaged fuel line: • Without SH-AWD (see **FUEL LINE INSPECTION**) • With SH-AWD (see **WITH SH-AWD**) 6. Check for a plugged fuel filter: • Without SH-AWD (see **FUEL FILTER REPLACEMENT**) • With SH-AWD (see **FUEL FILTER REPLACEMENT**) 7. Check the throttle body (see **THROTTLE BODY TEST**). 8. Check for low engine compression: • J35Z6 engine (see **ENGINE COMPRESSION INSPECTION**) • J37A4 engine (see **ENGINE COMPRESSION INSPECTION**) 9. Check for a damaged or broken timing belt. 10. Do the PCM reset in the PGM-FI INSPECTION	• Fuel level in tank • Weak or fouled spark plugs

	menu to cancel ALL INJECTORS STOP with the HDS.	
Engine is hard to start	1. Check for PGM-FI DTCs (see **GENERAL TROUBLESHOOTING INFORMATION**). 2. Check the fuel pressure (see **FUEL PRESSURE TEST**). 3. Check for a plugged or damaged fuel line: • Without SH-AWD (see **FUEL LINE INSPECTION**) • With SH-AWD (see **WITH SH-AWD**) 4. Check for a plugged fuel filter: • Without SH-AWD (see **FUEL FILTER REPLACEMENT**) • With SH-AWD (see **FUEL FILTER REPLACEMENT**)	Weak or fouled spark plugs
Engine cranks slowly	1. Check for loose battery terminals or connections. 2. Test the battery for a low state of charge (see **BATTERY TEST**). 3. Check the starter for **binding**. 4. Check for excessive drag in the engine.	
Multi-information display warning CHECK STARTING SYSTEM	Check for PGM-FI DTCs (see **GENERAL TROUBLESHOOTING INFORMATION**).	

WITH KEYLESS ACCESS SYSTEM

Symptom	Diagnostic procedure	Also check for
Engine does not crank	1. Check for loose battery terminals or connections. 2. Test the battery for a low state of charge (see **BATTERY TEST**). 3. Check for BODY DTCs (see **GENERAL TROUBLESHOOTING INFORMATION**). 4. Check for symptom troubleshooting: • Engine does not start with the remote or with the remote in the remote slot (see **SYMPTOM TROUBLESHOOTING**) • Engine does not start with the remote (see **THE ENGINE CRANKS BUT WILL NOT START WITH KEYLESS ACCESS**) • Engine does not start with the remote in the remote slot (see **THE ENGINE CRANKS BUT WILL NOT START WITH THE REMOTE**	Poor ground at G301 (M/T model)

	IN THE REMOTE SLOT) 5. Check the starter (see). 6. Check starter cut relay 1 and starter cut relay 2 (see **POWER RELAY TEST**). 7. Check the +B cut relay (M/T model) (see **POWER RELAY TEST**). 8. Check the brake pedal position switch (see **BRAKE PEDAL POSITION SWITCH TEST**). 9. Check the **clutch pedal position switch A (M/T model)**. 10. Check the transmission range switch (A/T model) (see **TRANSMISSION RANGE SWITCH TEST**). 11. Check the engine start/stop switch and its related circuits (see **REAR BUMPER LF ANTENNA REPLACEMENT**).	or G101 (A/T model)
Engine cranks, but does not start	1. Check for PGM-FI DTCs (see **GENERAL TROUBLESHOOTING INFORMATION**). 2. Check the PGM-FI main relays (see **POWER RELAY TEST**). 3. Check for keyless access system symptom troubleshooting information (see **SYMPTOM TROUBLESHOOTING INFORMATION**). 4. Check the fuel pressure (see **FUEL PRESSURE TEST**). 5. Check for a plugged or damaged fuel line: • Without SH-AWD (see **FUEL LINE INSPECTION**) • With SH-AWD (see **WITH SH-AWD**) 6. Check for a plugged fuel filter. • Without SH-AWD (see **FUEL FILTER REPLACEMENT**) • With SH-AWD (see **FUEL FILTER REPLACEMENT**) 7. Check the throttle body (see **THROTTLE BODY TEST**). 8. Check for low engine compression: • J35Z6 engine (see **ENGINE COMPRESSION INSPECTION**) • J37A4 engine (see **ENGINE COMPRESSION INSPECTION**) 9. Check for a damaged or broken timing belt.	• Fuel level in tank • Weak or fouled spark plugs

	10. Do the ECM/PCM reset in the PGM-FI INSPECTION menu to cancel ALL INJECTORS STOP with the HDS.	
Engine is hard to start	1. Check for PGM-FI DTCs (see **GENERAL TROUBLESHOOTING INFORMATION**). 2. Check the fuel pressure (see **FUEL PRESSURE TEST**). 3. Check for a plugged or damaged fuel line: • Without SH-AWD (see **FUEL LINE INSPECTION**) • With SH-AWD (see **WITH SH-AWD**) 4. Check for a plugged fuel filter: • Without SH-AWD (see **FUEL FILTER REPLACEMENT**) • With SH-AWD (see **FUEL FILTER REPLACEMENT**)	Weak or fouled spark plugs
Engine cranks slowly	1. Check for loose battery terminals or connections. 2. Test the battery for a low state of charge (see **BATTERY TEST**). 3. Check the starter for binding (see **binding**). 4. Check for excessive drag in the engine.	
Multi-information display warning CHECK KEYLESS STARTING SYSTEM	Check for PGM-FI DTCs (see **GENERAL TROUBLESHOOTING INFORMATION**).	
Engine does not stop	1. Check for BODY DTCs (see **GENERAL TROUBLESHOOTING INFORMATION**). 2. Check the engine start/stop switch (see **REAR BUMPER LF ANTENNA REPLACEMENT**).	

CIRCUIT DIAGRAM

WITHOUT KEYLESS ACCESS SYSTEM

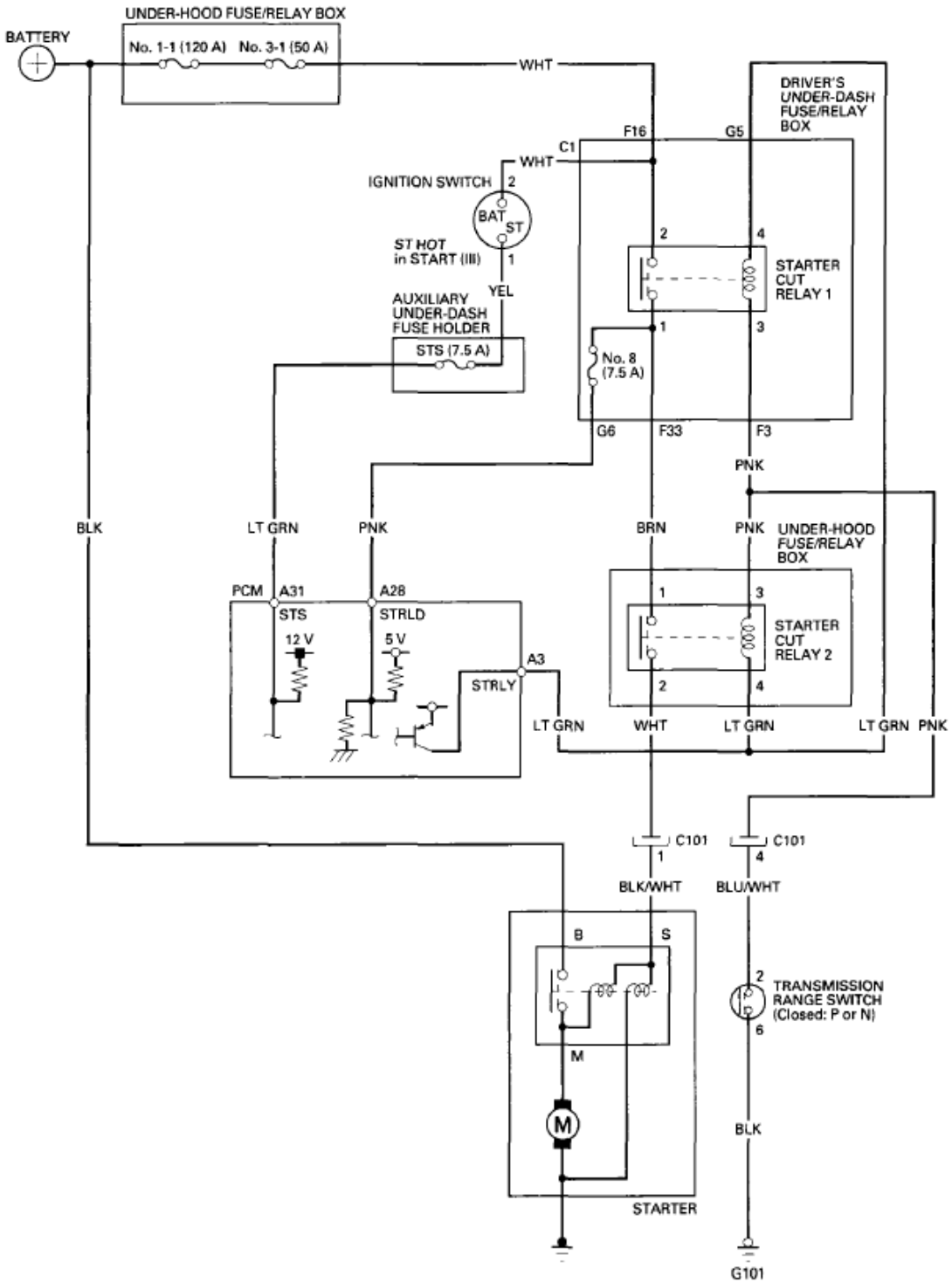


Fig. 2: Starting System - Circuit Diagram (Without Keyless Access System)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

WITH KEYLESS ACCESS SYSTEM-M/T MODEL

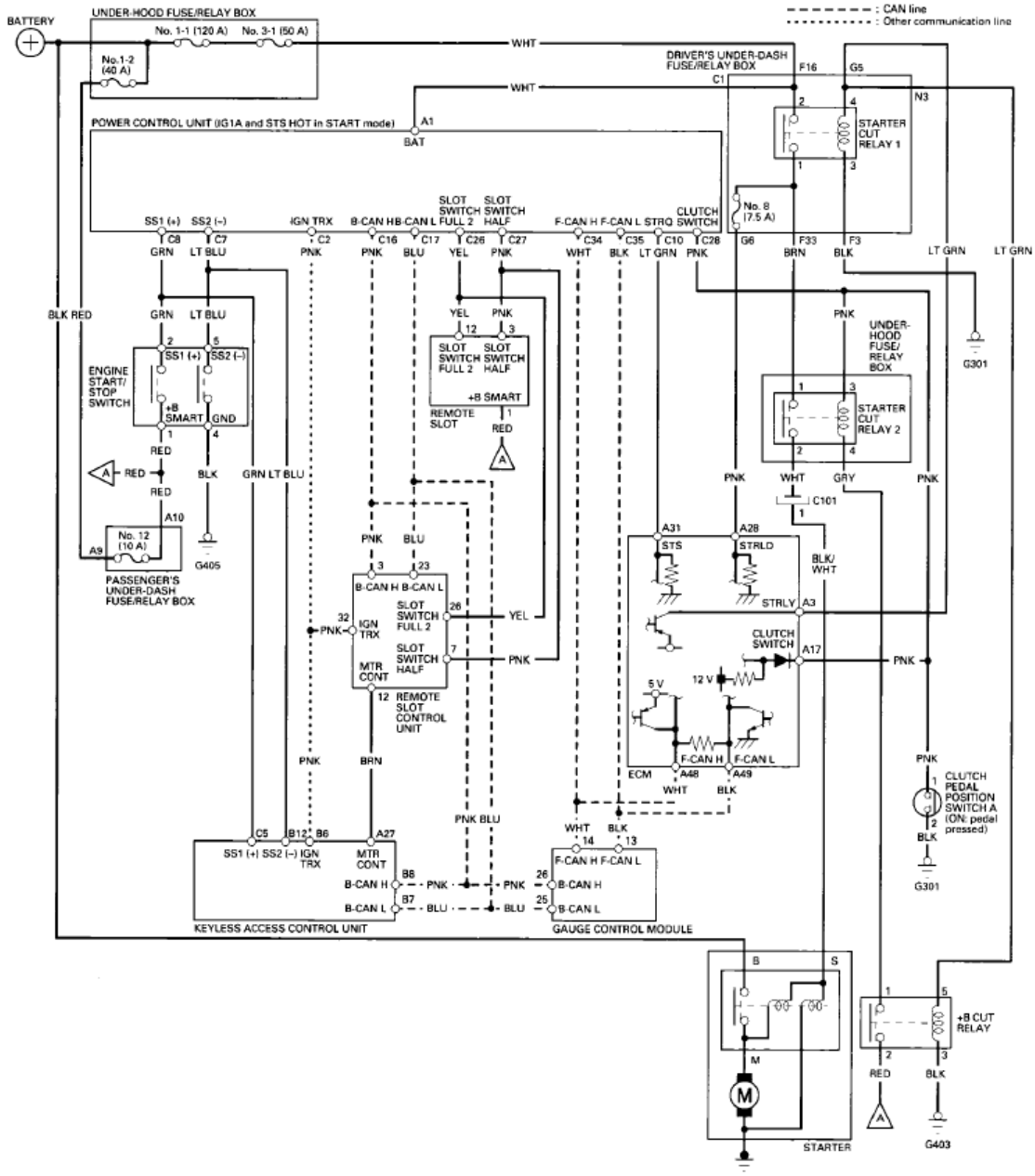


Fig. 3: Starting System - Circuit Diagram (With Keyless Access System-M/T Model)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

WITH KEYLESS ACCESS SYSTEM-A/T MODEL

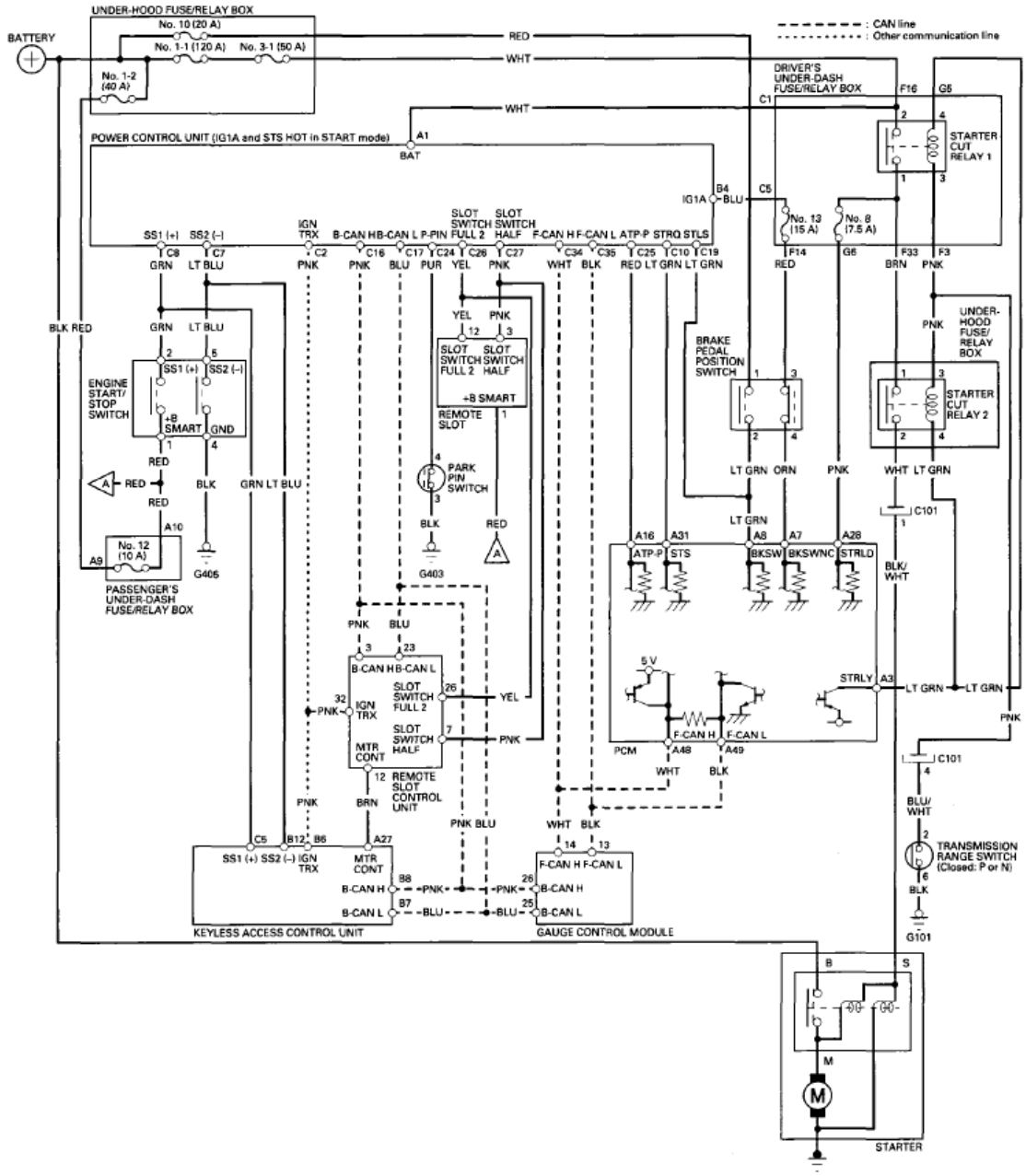


Fig. 4: Starting System - Circuit Diagram (With Keyless Access System-A/T Model)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

STARTER SYSTEM CIRCUIT TROUBLESHOOTING

Special Tools Required

Alternator, Regulator, Battery, and Starter Tester OTC3131*

*: Available through the Acura Tool and Equipment Program, 888-424-6857.

WITHOUT KEYLESS ACCESS SYSTEM

NOTE:

- **Air temperature must be within 59- 100°F (15- 38°C) during this procedure.**
- **After the inspection, you must reset the PCM. Otherwise, the PCM will continue to stop the fuel injectors from operating.**
- **The battery must be in good condition and fully charged.**

1. Remove the engine compartment covers (see **ENGINE COMPARTMENT COVER REPLACEMENT**).
2. Connect the alternator, regulator, battery, and starter tester (OTC3131) to the battery as shown.

   NOTE: The probe is not used for battery testing.

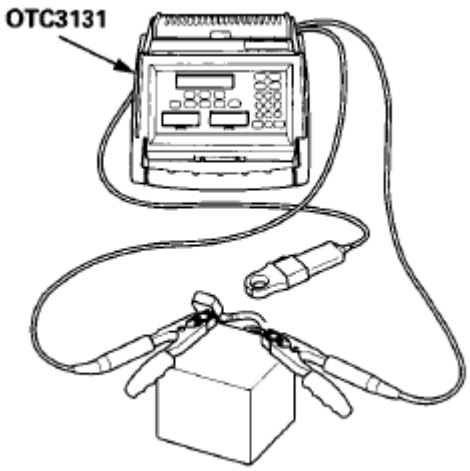


Fig. 5: Identifying Alternator, Regulator, Battery And Starter Tester
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Do the BATTERY TEST.

   Does the display indicate GOOD or GOOD, LOW CHARGE?

   YES - The battery is OK. Charge the battery if necessary, then go to step 4.

   NO - If the display indicates BAD BATTERY, replace the battery, then retest. If the display indicates CHARGE&RETEST, charge the battery, then retest.

4. Connect the HDS to the DLC (see **HOW TO USE THE HDS (HONDA DIAGNOSTIC SYSTEM)**).
5. Turn the ignition switch to ON (II).
6. Make sure the HDS communicates with the vehicle and the PCM. If it does not communicate, troubleshoot the DLC circuit (see **DLC CIRCUIT TROUBLESHOOTING**).
7. Select ALL INJECTORS STOP in the PGM-FI INSPECTION menu with the HDS.
8. Set the parking brake, then with the shift lever in P or N, turn the ignition switch to START (III) to crank

the engine.

Does the starter crank the engine normally?

YES - The starting system is OK. Go to step 16.

NO - Go to step 9.

9. Turn the ignition switch to LOCK (0).
10. Check the electrical connections at the battery, the negative battery cable to the body, the engine ground cables, and the starter for looseness and corrosion. Then try cranking the engine again.

    Does the starter crank the engine normally?

    YES - Repairing the loose connection corrected the problem. The starting system is OK. Go to step 16.

    NO - Based on the following symptoms, take the appropriate action:

    - If the starter does not crank the engine at all, go to step 11.
    - If the starter cranks the engine erratically or too slowly, go to step 13.
    - If the starter does not disengage from the torque converter ring gear when you release the key after 15 seconds, replace the **starter**, or remove and **disassemble** it, and check for the following:
        - Starter solenoid and switch malfunction.
        - Dirty drive gear or damaged overrunning clutch.
        - Damaged torque converter ring gear.
11. Make sure the shift lever is in P or N, then disconnect the connector (A) from the starter S terminal. Connect a jumper wire from the battery positive terminal to the S terminal.

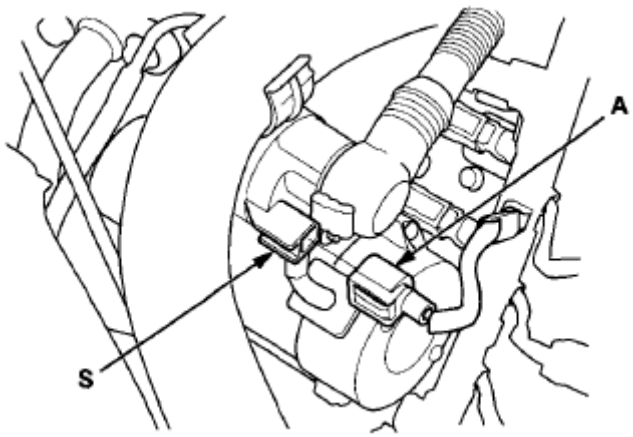


Fig. 6: Identifying Starter And Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Does the starter crank the engine?

YES - Go to step 12.

NO - Replace the **starter** or remove and **disassemble** it as necessary. •

12. Check the following items in the order listed until you find the problem in the circuit:

NOTE: After the problem in the circuit is found and repaired, go to step 16.

- A blown STS (7.5 A) fuse in the auxiliary under-dash fuse holder located below the driver's under-dash fuse/relay box.
- A blown No. 8 (7.5 A) fuse in the driver's under-dash fuse/relay box.
- Check for an open or short in the WHT wire and connectors between starter cut relay 1, the ignition switch, and the under-hood fuse/relay box.
- Check for an open or short in the PNK wire and connectors between starter cut relay 1 socket terminal No. 1 and the PCM.
- Check for an open or short in the BRN wire and connectors between starter cut relay 1 socket terminal No. 1 and starter cut relay 2 socket terminal No. 1.
- Check for an open or short in the WHT wire, BLK/WHT wire, and connectors between starter cut relay 2 socket terminal No. 2 and the starter.
- Check for an open or short in the YEL wire, LT GRN wire, and connectors between the ignition switch and the PCM.
- Check for an open or short in the LT GRN wire and connectors between the PCM, starter cut relay 1 socket terminal No. 4, and starter cut relay 2 socket terminal No. 4.
- Check for an open or short in the PNK wire, BLU/WHT wire, and connectors between starter cut relay 1 socket terminal No. 3, starter cut relay 2 socket terminal No. 3, and the transmission range switch.
- Check for poor connections or loose terminals at the transmission range switch and body ground G101.
- Check for a faulty ignition switch (see **IGNITION SWITCH TEST**).
- Check for a faulty transmission range switch (see **TRANSMISSION RANGE SWITCH TEST**).
- Check for faulty starter cut relay 1 and starter cut relay 2 (see **POWER RELAY TEST**).

13. Connect the alternator, regulator, battery, and starter tester to the battery.

NOTE: The probe is used for starter testing.

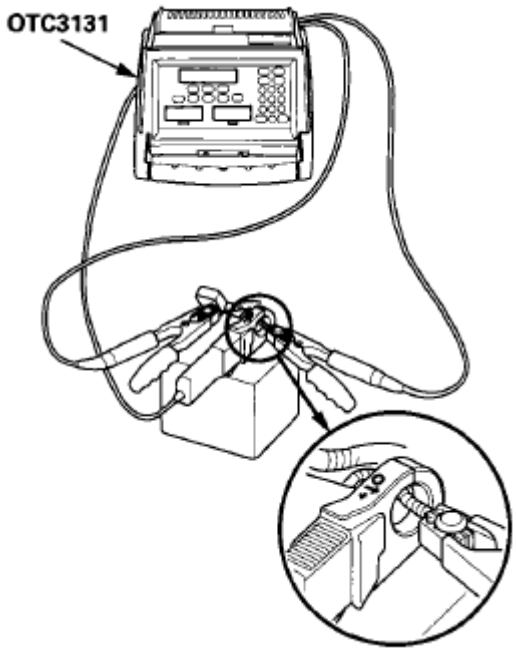


Fig. 7: Identifying Starter Tester, Battery, Regulator And Alternator
Courtesy of AMERICAN HONDA MOTOR CO., INC.

14. Do the STARTING TEST.

    Does the display indicate cranking voltage greater than or equal to 8.0 V and is the current draw less than or equal to 375 A?

    YES - Go to step 15.

    NO - Replace the **starter** or remove and **disassemble** it, and check for these problems: •

    - Drag in the starter armature
    - Short in the armature winding
    - Excessive drag in the engine
    - Open circuit in starter armature commutator segments
    - Excessively worn starter brushes
    - Open circuit in the starter brushes
    - Dirty or damaged helical splines or drive gear
    - Faulty overrunning clutch

15. Remove the **starter**, and inspect its drive gear and the torque converter ring gear for damage. Replace any damaged parts.
16. Select PCM reset (see **HDS CLEAR COMMAND**) in the PGM-FI INSPECTION menu to cancel ALL INJECTORS STOP with the HDS.
17. Install the engine compartment covers (see **ENGINE COMPARTMENT COVER REPLACEMENT**).

Special Tools Required

Alternator, Regulator, Battery, and Starter Tester OTC3131*

*: Available through the Acura Tool and Equipment Program, 888-424-6857.

WITH KEYLESS ACCESS SYSTEM

NOTE:

- **Air temperature must be within 59- 100°F (15- 38°C) during this procedure.**
- **After the inspection, you must reset the ECM/PCM. Otherwise, the ECM/PCM will continue to stop the fuel injectors from operating.**
- **The battery must be in good condition and fully charged.**

1. Remove the engine compartment covers (see **ENGINE COMPARTMENT COVER REPLACEMENT**).
2. Connect the alternator, regulator, battery, and starter tester to the battery as shown.

NOTE: The probe is not used for battery testing.

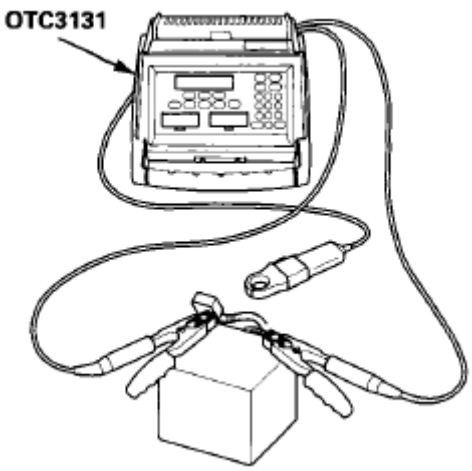


Fig. 8: Identifying Alternator, Regulator, Battery, And Starter Tester
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Do the BATTERY TEST.

   Does the display indicate GOOD or GOOD, LOW CHARGE?

   YES - The battery is OK. Charge the battery if necessary, then go to step 4.

   NO - If the display indicates BAD BATTERY, replace the battery, then retest. If the display indicates CHARGE&RETEST, charge the battery, then retest.

4. Connect the HDS to the DLC (see **HOW TO USE THE HDS (HONDA DIAGNOSTIC SYSTEM)**).

5. Press the engine start/stop button to select the ON mode.
6. Make sure the HDS communicates with the vehicle and the ECM/PCM. If it does not communicate, troubleshoot the DLC circuit (see **DLC CIRCUIT TROUBLESHOOTING**).
7. Select ALL INJECTORS STOP in the PGM-FI INSPECTION menu with the HDS.
8. Set the parking brake, then with the clutch pedal pressed (M/T model) or the shift lever in P or N (A/T model), press the brake pedal, then press the engine start/stop button to select START mode to crank the engine.

NOTE: The auto-start function cranks the engine until it starts, or for 15 seconds if the engine does not start.

Does the starter crank the engine normally?

YES - The starting system is OK. Go to step 17.

NO - Go to step 9.

9. Press the engine start/stop button to select the OFF mode.
10. Check the electrical connections at the battery, the negative battery cable to the body, the engine ground cables, and the starter for looseness and corrosion. Then try cranking the engine again.

Does the starter crank the engine normally?

YES - Repairing the loose connection corrected the problem. The starting system is OK. Go to step 17.

NO - Based on the following symptoms, take the appropriate action: •

- If the starter does not crank the engine at all, go to step 11.
- If the starter cranks the engine erratically or too slowly, go to step 14.
- If the starter does not disengage from the flywheel ring gear (M/T model) or the torque converter ring gear (A/T model) when you release the key, replace the **starter**, or remove and disassemble it; (**M/T model**), (**A/T model**), and check for the following:
  - Starter solenoid and switch malfunction.
  - Dirty drive gear or damaged overrunning clutch.
  - Damaged flywheel ring gear (M/T model), torque converter ring gear (A/T model)

11. Make sure the shift lever is in neutral (M/T model) or P or N (A/T model), then disconnect the connector (A) from the starter S terminal. Connect a jumper wire from the battery positive terminal to the S terminal.

M/T model



Fig. 9: Identifying Connector And Starter Of M/T Model
Courtesy of AMERICAN HONDA MOTOR CO., INC.

A/T model

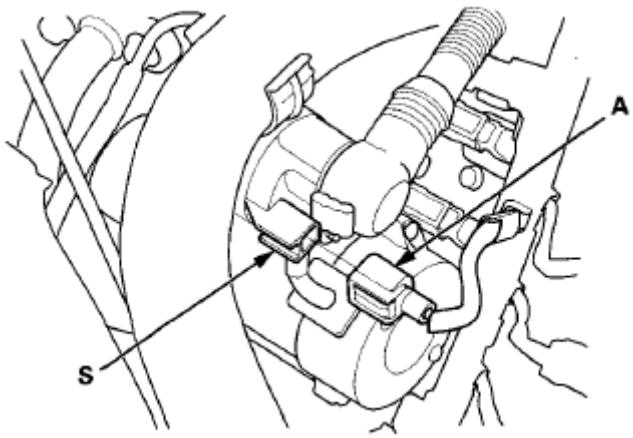


Fig. 10: Identifying Connector And Starter Of A/T Model
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Does the starter crank the engine?

YES - Go to step 12 (M/T model) / go to step 13 (A/T model).

NO - Replace the **starter**, or remove and disassemble it; (**M/T model**), (**A/T model**), as necessary. •

12. M/T model: Check the following items in the order listed until you find the problem in the circuit:

NOTE: After the problem in the circuit is found and repaired, go to step 17.

- A blown No. 8 (7.5 A) fuse in the driver's under-dash fuse/relay box.
- Check for an open or short in the WHT wire and connectors between starter cut relay 1 socket

terminal No. 2, the power control unit, and the under-hood fuse/relay box.

- Check for an open or short in the PNK wire and connectors between starter cut relay 1 socket terminal No. 1 and the ECM.
- Check for an open or short in the BRN wire and connectors between starter cut relay 1 socket terminal No. 1 and starter cut relay 2 socket terminal No. 1.
- Check for an open or short in the WHT wire, BLK/WHT wire, and connectors between starter cut relay 2 socket terminal No. 2 and the starter.
- Check for an open or short in the LT GRN wire and connectors between the ECM, starter cut relay 1 socket terminal No. 4.
- Check for an open or short in the PNK wire and connectors between the clutch pedal position switch A, starter cut relay 2 socket terminal No. 3, the power control unit, and the ECM.
- Check for poor connections or loose terminals at starter cut relay 1 socket terminal No. 3 and body ground G301.
- Check for poor connections or loose terminals at the clutch pedal position switch A and body ground G301.
- Check for an open or short in the LT GRN wire and connectors between starter cut relay 1 socket terminal No. 4 and the +B cut relay.
- Check for an open or short in the GRY wire and connectors between starter cut relay 2 socket terminal No. 4 and the + B cut relay.
- Check for faulty **clutch pedal position switch A**.
- Check for faulty starter cut relay 1 and starter cut relay 2. (see **POWER RELAY TEST**)
- Check for faulty + B cut relay (see **POWER RELAY TEST**).

13. A/T model: Check the following items in the order listed until you find the problem in the circuit:

NOTE: After the problem in the circuit is found and repaired, go to step 17.

- A blown No. 8 (7.5 A) fuse and No. 13 (15 A) fuse in the driver's under-dash fuse/relay box.
- Check for an open or short in the WHT wire and connectors between starter cut relay 1, the power control unit, and the under-hood fuse/relay box.
- Check for an open or short in the PNK wire and connectors between starter cut relay 1 socket terminal No. 1 and the PCM.
- Check for an open or short in the BRN wire and connectors between starter cut relay 1 socket terminal No. 1 and starter cut relay 2 socket terminal No. 1.
- Check for an open or short in the WHT wire, BLK/WHT wire, and connectors between starter cut relay 2 socket terminal No. 2 and the starter.
- Check for an open or short in the LT GRN wire and connectors between the PCM, starter cut relay 1 socket terminal No. 4, and starter cut relay 2 socket terminal No. 4.
- Check for an open or short in the PNK wire, BLU/WHT wire, and connectors between the transmission range switch, starter cut relay 1 socket terminal No. 3, and starter cut relay 2 socket terminal No. 3.
- Check for poor connections or loose terminals at the transmission range switch and body ground G101.

- Check for an open or short in the LT GRN wire and connectors between the power control unit, the brake pedal position switch, and the PCM.
- Check for an open or short in the RED wire and connectors between the brake pedal position switch and the under-hood fuse/relay box.
- Check for an open or short in the ORN wire and connectors between the brake pedal position switch and the PCM.
- Check for an open or short in the RED wire, BLU wire, and connectors between the brake pedal position switch and the under-hood fuse/relay box.
- Check for a faulty transmission range switch (see **TRANSMISSION RANGE SWITCH TEST**).
- Check for faulty starter cut relay 1 and starter cut relay 2. (see **POWER RELAY TEST**)
- Check for a faulty brake pedal position switch (see **BRAKE PEDAL POSITION SWITCH TEST**).

14. Connect the alternator, regulator, battery, and starter tester to the battery.

NOTE: The probe is used for starter testing.

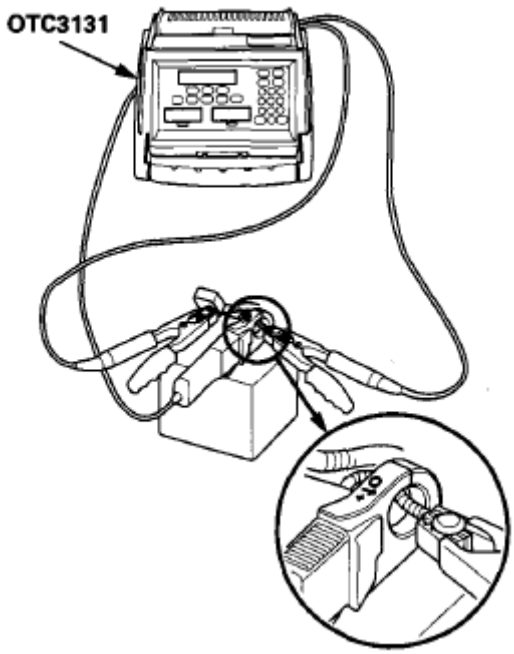


Fig. 11: Identifying Alternator, Regulator, Battery, And Starter Tester
Courtesy of AMERICAN HONDA MOTOR CO., INC.

15. Do the STARTING TEST.

Does the display indicate cranking voltage greater than or equal to 8.0 V and is the current draw less than or equal to 375 A?

YES - Go to step 16.

NO - Replace the **starter**, or remove and disassemble it; (**M/T model**), (**A/T model**), and check for these problems: •

- Drag in the starter armature
- Short in the armature winding
- Excessive drag in the engine
- Open circuit in starter armature commutator segments
- Excessively worn starter brushes
- Open circuit in the starter brushes
- Dirty or damaged helical splines or drive gear
- Faulty overrunning clutch

16. Remove the **starter**, and inspect its drive gear and the flywheel ring gear (M/T model), the torque converter ring gear (A/T model) for damage. Replace any damaged parts.
17. Select ECM/PCM reset (see **HDS CLEAR COMMAND**) in the PGM-FI INSPECTION menu to cancel ALL INJECTORS STOP with the HDS.
18. Install the engine compartment covers (see **ENGINE COMPARTMENT COVER REPLACEMENT**).

CLUTCH PEDAL POSITION SWITCH A TEST

M/T MODEL

1. Disconnect the clutch pedal position switch A connector (A).

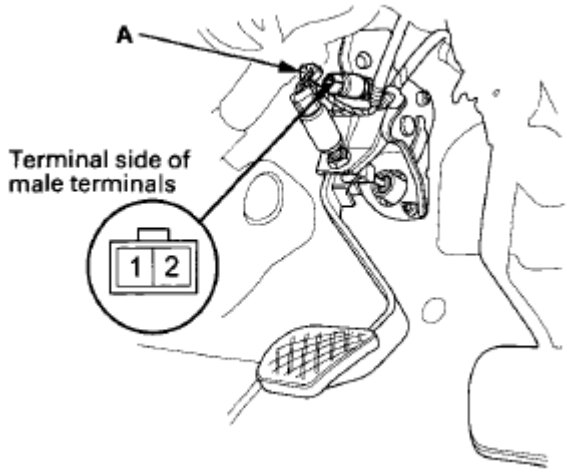


Fig. 12: Identifying Clutch Pedal Position Switch A Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Check for continuity between the terminals according to the table:
   - If the continuity is not as specified, replace **clutch pedal position switch A** and adjust the pedal height (see **CLUTCH PEDAL, CLUTCH PEDAL POSITION SWITCH A, AND CLUTCH PEDAL POSITION SWITCH B ADJUSTMENT**).

- If OK, connect the clutch pedal position switch A connector.

Terminal / Clutch Pedal	1	2
PRESSED	○——○	
RELEASED		

Fig. 13: Terminal Continuity Chart
Courtesy of AMERICAN HONDA MOTOR CO., INC.

CLUTCH PEDAL POSITION SWITCH A REPLACEMENT

M/T MODEL

1. Disconnect the clutch pedal position switch A connector (B).

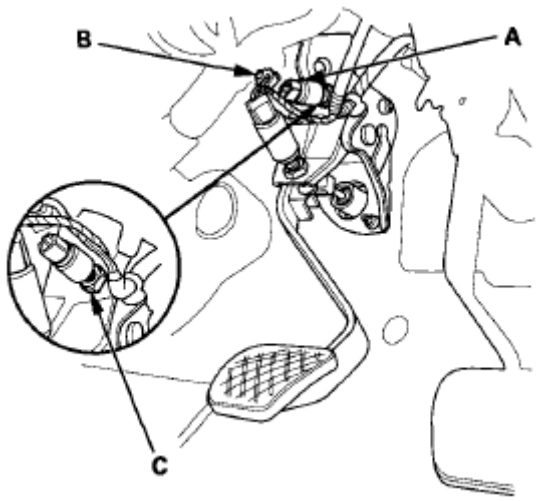


Fig. 14: Identifying Clutch Pedal Position Switch, Connector And Locknut
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Loosen the locknut (C), then remove clutch pedal position switch A.
3. Install clutch pedal position switch A and adjust the pedal height (see **CLUTCH PEDAL, CLUTCH PEDAL POSITION SWITCH A, AND CLUTCH PEDAL POSITION SWITCH B ADJUSTMENT**).

STARTER SOLENOID TEST

1. Remove the engine compartment covers (see **ENGINE COMPARTMENT COVER REPLACEMENT**).

2. Do the battery terminal disconnection procedure (see **BATTERY TERMINAL DISCONNECTION AND RECONNECTION**).
3. Remove the air intake duct splash separator (see step 4 **ENGINE REMOVAL**).
4. Remove the harness clamp (A), then disconnect the positive starter cable (B), the motor wire (C), and the S terminal connector (D).

M/T model

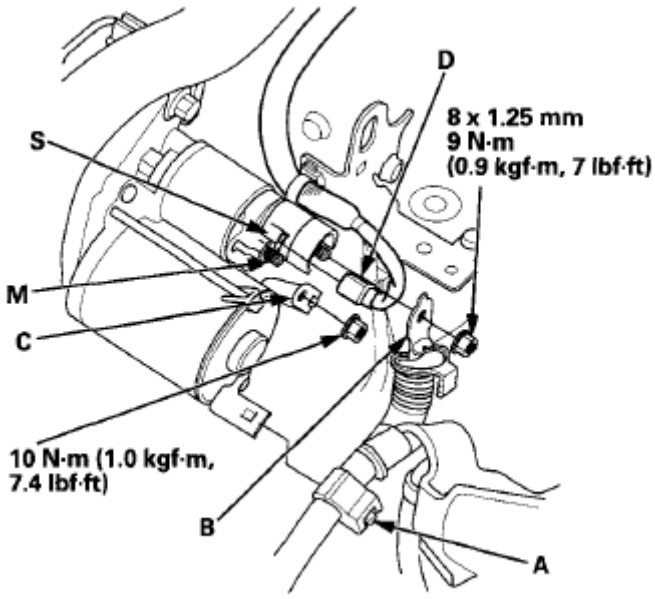


Fig. 15: Identifying Starter Solenoid And Related Components Of M/T Model With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

A/T model

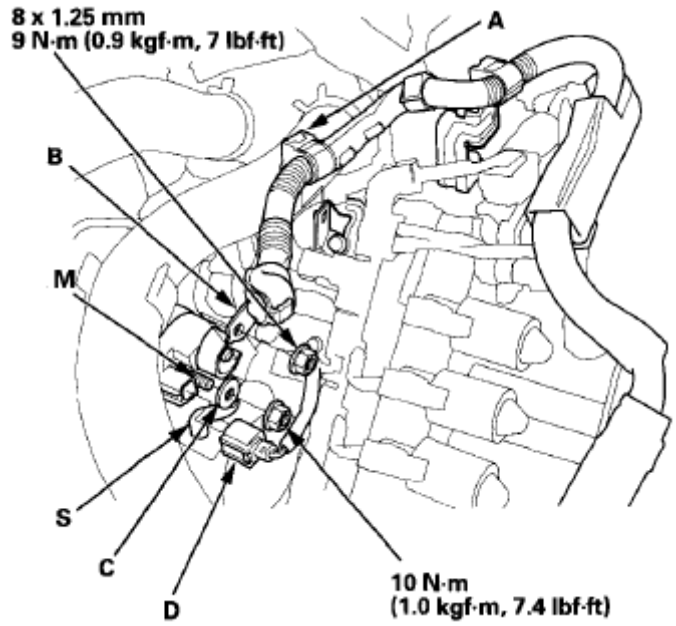


Fig. 16: Identifying Starter Solenoid And Related Components Of A/T Model With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Check the hold-in coil for continuity between the S terminal and the armature housing (ground). There should be continuity:
   - If there is continuity, go to step 6.
   - If there is no continuity, replace the solenoid.
6. Check the pull-in coil for continuity between the S terminal and the M terminal. There should be continuity:
   - If there is continuity, the solenoid is OK.
   - If there is no continuity, replace the solenoid.
7. Connect the wire and the connector in the reverse order of removal.
8. Do the battery terminal reconnection procedure (see **BATTERY TERMINAL DISCONNECTION AND RECONNECTION**).
9. Install the engine compartment covers (see **ENGINE COMPARTMENT COVER REPLACEMENT**).

STARTER PERFORMANCE TEST

1. Remove the engine compartment covers (see **ENGINE COMPARTMENT COVER REPLACEMENT**).
2. Remove the **starter**.
3. Disconnect the motor wire from the M terminal (see step 4).
4. Clamp the starter firmly in a vise.
5. Make the connections for this test using the thickest (gauge) wire possible (preferably the same gauge as used on the vehicle).

NOTE: To avoid damaging the starter, never leave the battery connected for more than 5 seconds.

6. Connect the battery as shown. Make sure you disconnect the starter motor wire from the M terminal. If the starter pinion moves out, it is working properly.

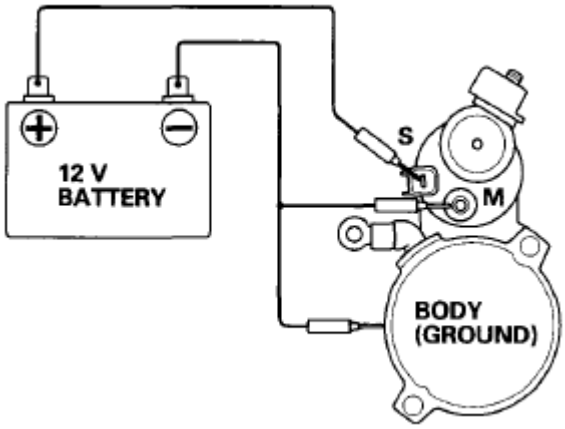


Fig. 17: Connecting Battery
Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Disconnect the battery from the M terminal. If the pinion does not retract, the hold-in coil of the solenoid is working properly.

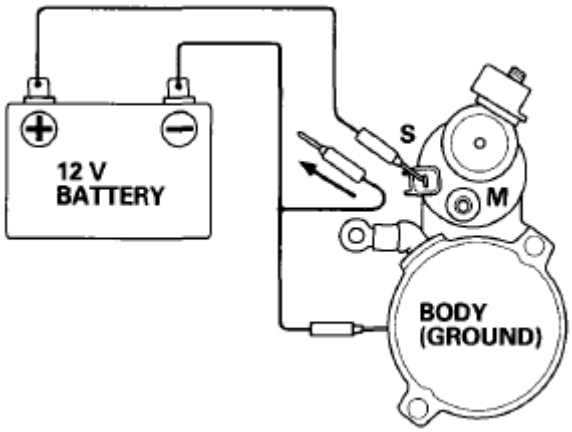


Fig. 18: Identifying Hold-In Coil Of Solenoid
Courtesy of AMERICAN HONDA MOTOR CO., INC.

8. Disconnect the battery from the starter body as shown. If the pinion retracts immediately, it is working properly.

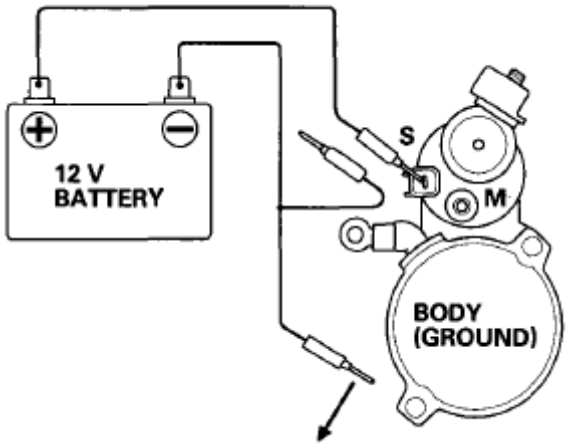


Fig. 19: Disconnecting Battery From Starter Body
Courtesy of AMERICAN HONDA MOTOR CO., INC.

9. Reconnect the motor wire to the M terminal.
10. Connect the starter to the battery as shown, and confirm that the motor runs.

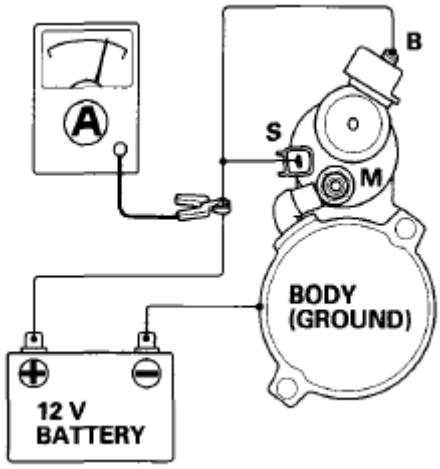


Fig. 20: Connecting Battery To Starter Body
Courtesy of AMERICAN HONDA MOTOR CO., INC.

11. If the electric current meets the specification when the battery voltage is at 11.5 V, the starter is working properly.

    Specification

    Electric Current: 80 A (M/T model)

    90 A (A/T model) or less

12. Install the **starter**.
13. Install the engine compartment covers (see **ENGINE COMPARTMENT COVER REPLACEMENT**).

STARTER REMOVAL AND INSTALLATION

REMOVAL

1. Remove the engine compartment covers (see **ENGINE COMPARTMENT COVER REPLACEMENT**).
2. Do the battery removal procedure (see **BATTERY REMOVAL AND INSTALLATION**).
3. Remove the battery base (see step 7 **ENGINE REMOVAL**).
4. Remove the air intake duct splash separator (see step 4 **ENGINE REMOVAL**).
5. Remove the harness clamp (A).

M/T model

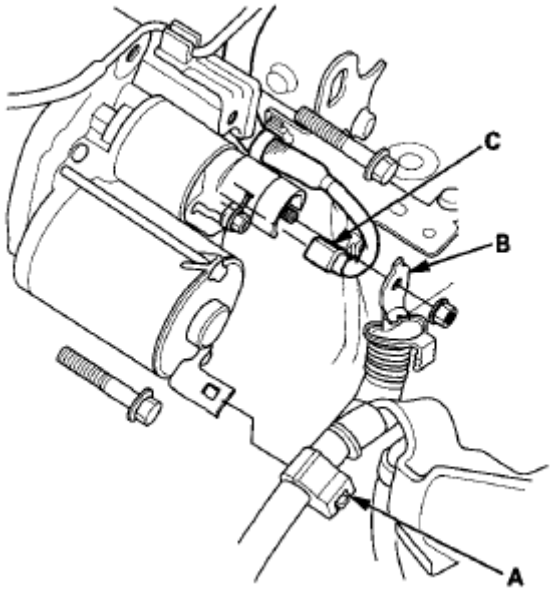


Fig. 21: Identifying Harness Clamp, Starter Cable And Connector Of M/T Model
Courtesy of AMERICAN HONDA MOTOR CO., INC.

A/T model

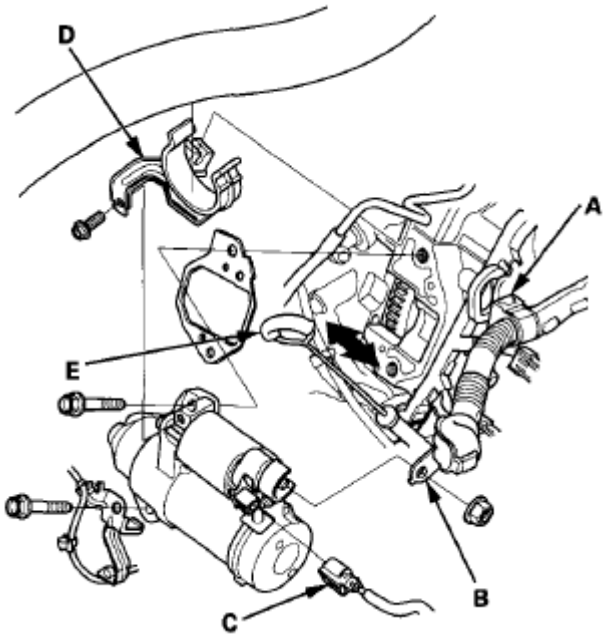


Fig. 22: Identifying Harness Clamp, Starter Cable, Hose Bracket, Dipstick And Connector Of A/T Model
Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Disconnect the positive starter cable (B) and the S terminal connector (C).
7. A/T model: Remove the lower radiator hose bracket (D) and the dipstick (E).
8. Remove the two bolts holding the starter, then remove the starter.

INSTALLATION

1. Install the starter, then tighten the bolts (A).

NOTE: Always use a new gasket (A/T model).

M/T model

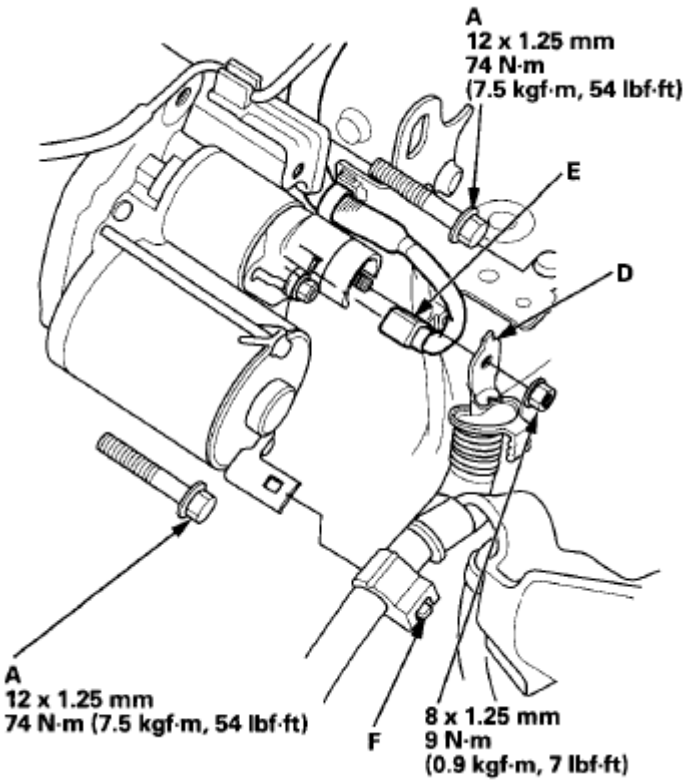


Fig. 23: Identifying Starter And Related Components With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

A/T model

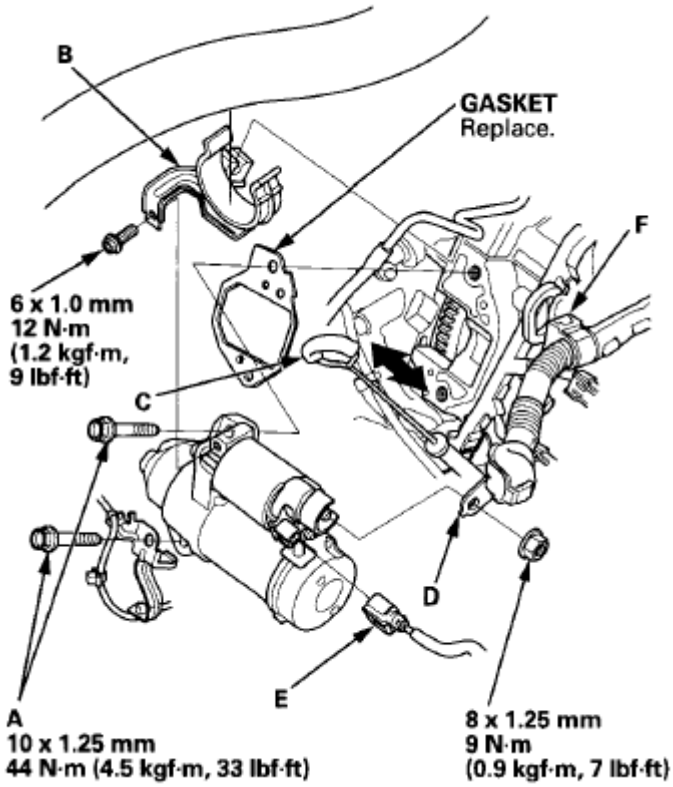


Fig. 24: Identifying Gasket Of Starter (A/T Model) With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. A/T model: Install the lower radiator hose bracket (B) and the dipstick (C).
3. Connect the positive starter cable (D) and the S terminal connector (E). Make sure the crimped side of the ring terminal faces away from the starter when you connect it.
4. Install the harness clamp (F).
5. Install the air intake duct splash separator (see step 68 **ENGINE INSTALLATION**).
6. Install the battery base (see step 64 **ENGINE INSTALLATION**).
7. Do the battery installation procedure (see **BATTERY REMOVAL AND INSTALLATION**).
8. Start the engine to make sure the starter works properly.
9. Install the engine compartment covers (see **ENGINE COMPARTMENT COVER REPLACEMENT**).

STARTER OVERHAUL

M/T MODEL

Exploded View

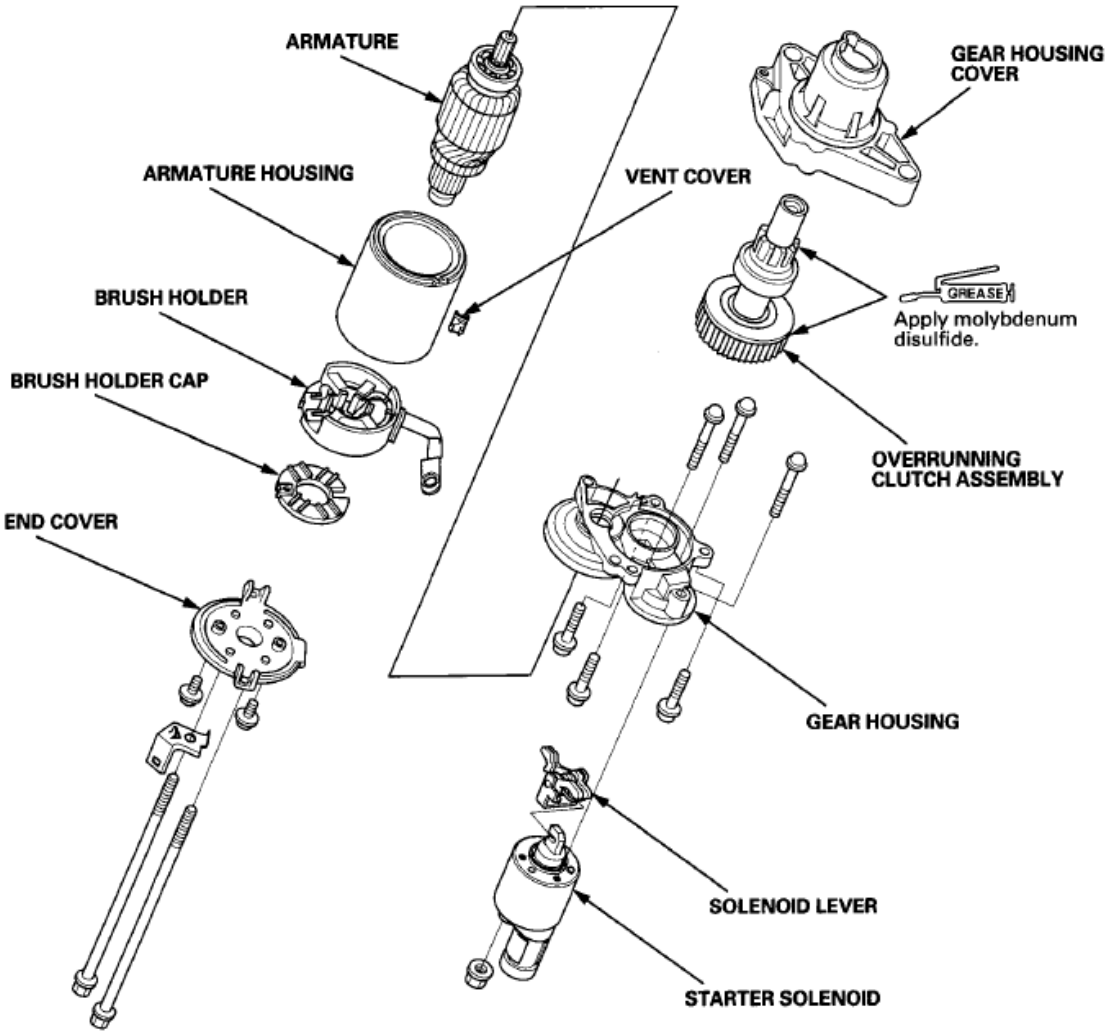


Fig. 25: Exploded View Of Starter (M/T Model)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

NOTE: Refer to the Exploded View if needed during this procedure.

Brush Holder Removal

1. Remove the **starter**.
2. Disconnect the motor wire from the **M terminal**, and remove the end cover.
3. Remove the brush holder (A).

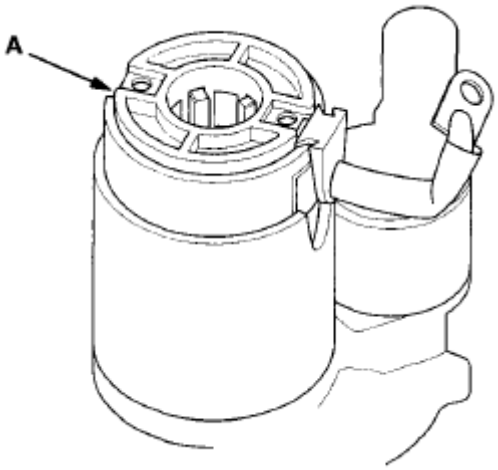


Fig. 26: Identifying Brush Holder
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Armature Inspection and Test

4. Inspect the armature for wear or damage from contact with the permanent magnet. If there is wear or damage, replace the armature.

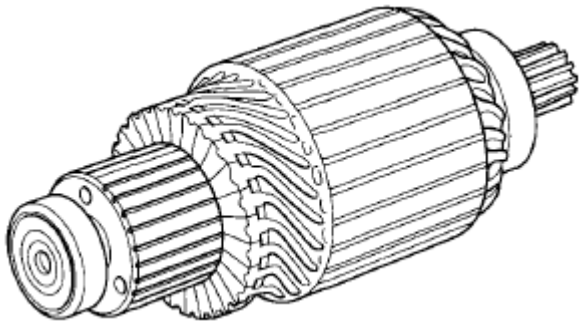


Fig. 27: Identifying Armature
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Check the commutator (A) surface. If the surface is dirty or burnt, resurface it with an emery cloth or a lathe to the specifications in step 6, or recondition with #500 or #600 sandpaper (B).

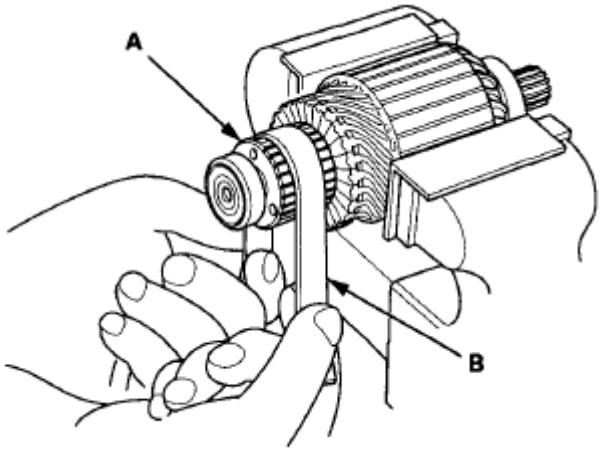


Fig. 28: Identifying Commutator And Sand Paper
Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Check the commutator diameter with a digital caliper or dial type caliper. If the diameter is below the service limit, replace the armature.

   Commutator Diameter

   Standard (New): 28.0- 28.1 mm (1.102- 1.106 in)

   Service Limit: 27.5 mm (1.083 in)

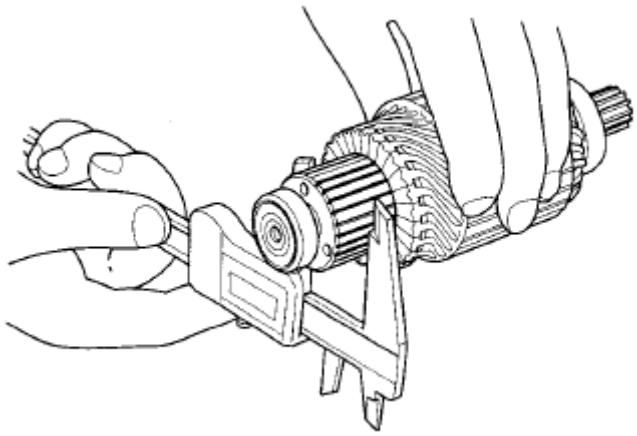


Fig. 29: Checking Commutator Diameter With Digital Caliper Or Dial Type Caliper
Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Measure the commutator (A) runout:
   - If the commutator runout is within the service limit, check the commutator for carbon dust or brass chips between the segments.
   - If the commutator runout is not within the service limit, replace the armature.

Commutator Runout

Standard (New): 0.02 mm (0.0008 in) max.

Service Limit: 0.05 mm (0.0020 in)

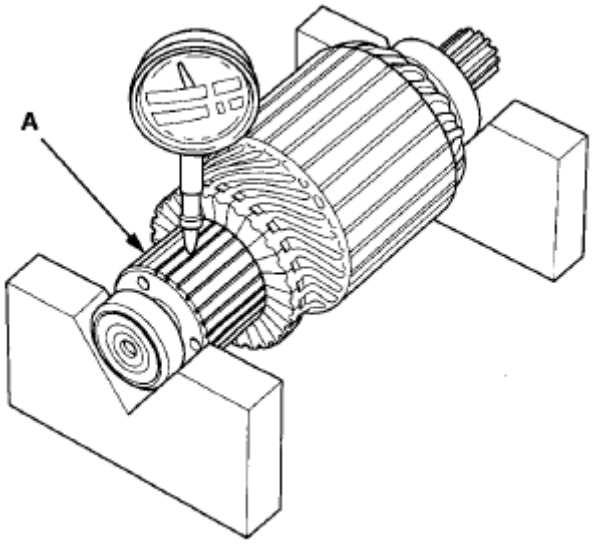


Fig. 30: Identifying Commutator
Courtesy of AMERICAN HONDA MOTOR CO., INC.

8. Use a digital caliper or dial type caliper to check the mica depth (A). If the mica depth is below the service limit, replace the armature.

Commutator Mica Depth

Standard (New): 0.4- 0.5 mm (0.016- 0.020 in)

Service Limit: 0.15 mm (0.0059 in)



Fig. 31: Checking Mica Depth Of Armature Slots
Courtesy of AMERICAN HONDA MOTOR CO., INC.

9. Use an ohmmeter to check for continuity between the segments of the commutator. If there is an open circuit between any segments, replace the armature.

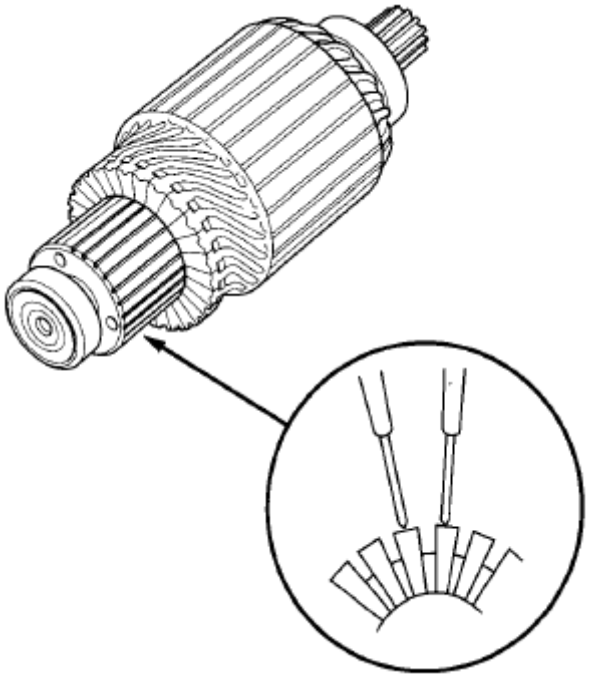


Fig. 32: Checking Continuity Between Segments Of Commutator
Courtesy of AMERICAN HONDA MOTOR CO., INC.

10. Place the armature (A) on an armature tester (B). Hold a hacksaw blade (C) on the armature core. If the blade is attracted to the core while the core is turned, the armature is shorted. Replace the armature.

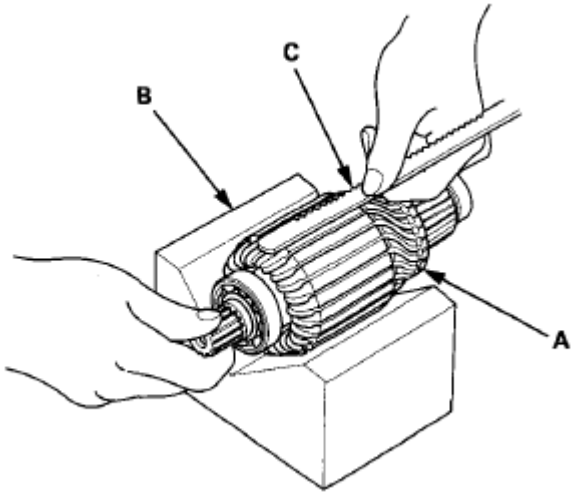


Fig. 33: Identifying Armature, Armature Tester And Hacksaw Blade
Courtesy of AMERICAN HONDA MOTOR CO., INC.

11. Use an ohmmeter to check for continuity between the commutator (A) and the armature coil core (B), and between the commutator and the armature shaft (C). If there is continuity, replace the armature.

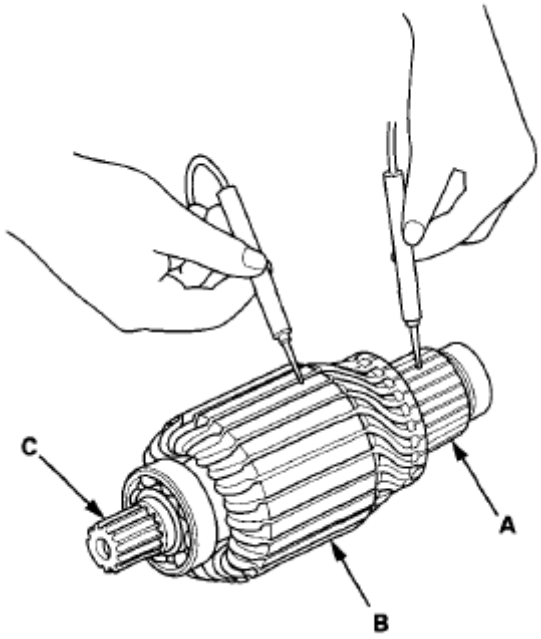


Fig. 34: Identifying Commutator, Armature Coil Core And Armature Shaft
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Starter Brush Inspection

12. Remove the brush holder cap (A), then remove the brushes (B).

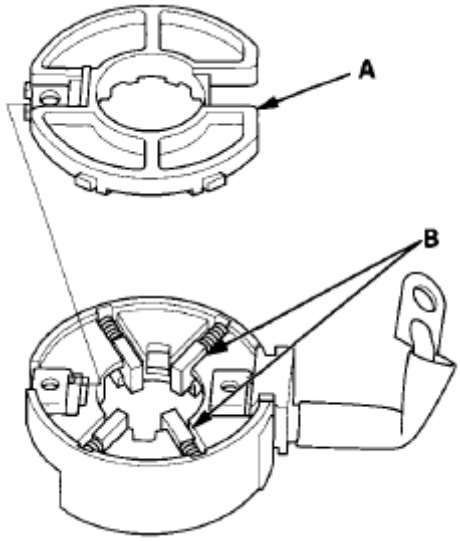


Fig. 35: Identifying Brush Holder Cap And Brushes
Courtesy of AMERICAN HONDA MOTOR CO., INC.

13. Measure the brush length. Shorter than the service limit, replace the brush holder assembly.

Brush Length

Standard (New): 15.8- 16.2 mm (0.622- 0.638 in)

Service Limit: 11.0 mm (0.433 in)

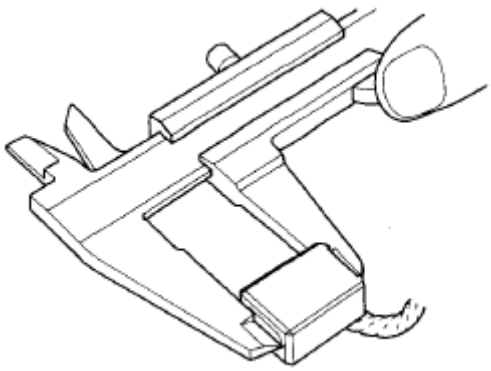


Fig. 36: Measuring Brush Length With Vernier Caliper
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Starter Brush Holder Test

14. Check for continuity between the (+) brushes (A) and the (-) brushes (B). If there is continuity, replace the brush holder assembly.

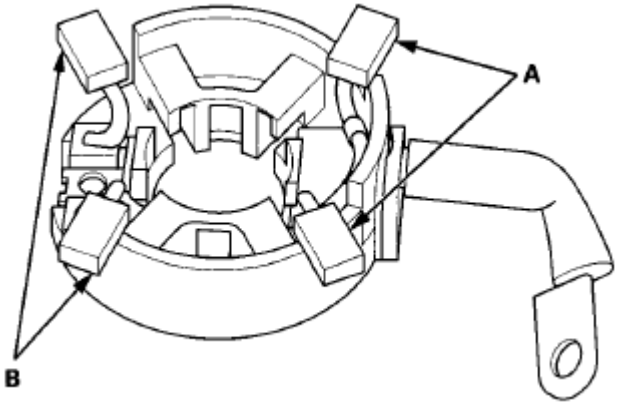


Fig. 37: Identifying (+) And (-) Brushes
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Overrunning Clutch Inspection

15. Slide the overrunning clutch along the shaft. Replace it if it does not slide smoothly.
16. Rotate the overrunning clutch (A) both ways. If it does not lock in either direction, or it locks in both directions, replace it.

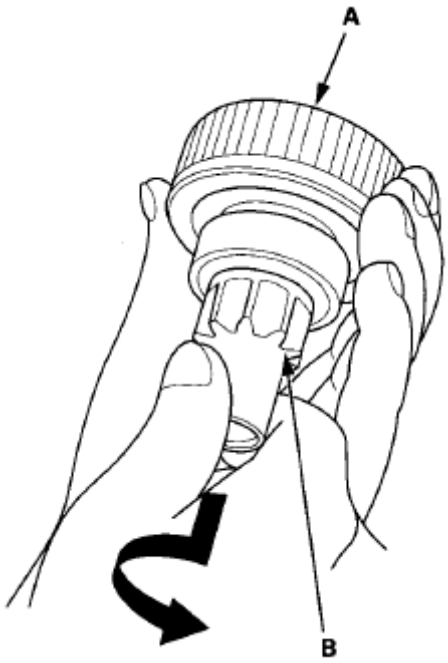


Fig. 38: Rotating Overrunning Clutch
Courtesy of AMERICAN HONDA MOTOR CO., INC.

17. If the starter drive gear (B) is worn or damaged, replace the overrunning clutch assembly; the gear is not available separately. Check the condition of the flywheel ring gear to see if the teeth are damaged.

Starter Reassembly

18. Install the armature in the housing.
19. Set the brushes with the brush spring in the brush holder (A).

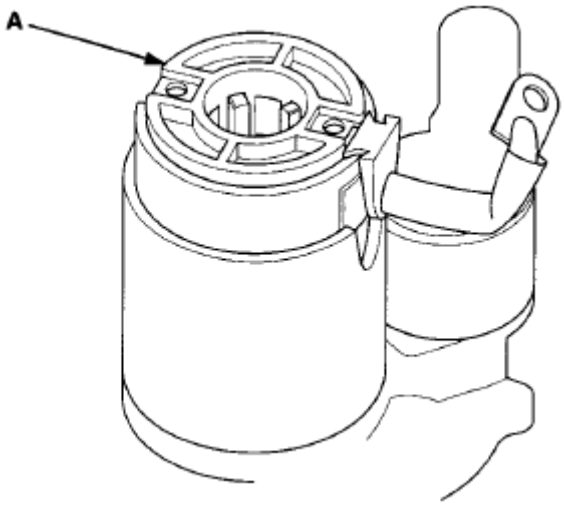


Fig. 39: Identifying Brush Holder
Courtesy of AMERICAN HONDA MOTOR CO., INC.

20. Place the brush holder assembly on the armature, then move the brush holder down to the armature.

NOTE: Keep the brush holder on the armature so the brushes do not come out of the brush holder.

21. Install the end cover (A) to retain the brush holder (B).

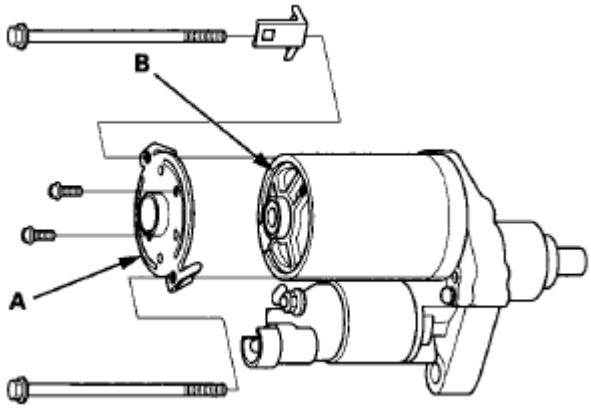


Fig. 40: Identifying End Cover And Brush Holder
Courtesy of AMERICAN HONDA MOTOR CO., INC.

22. Install the **starter**.

A/T MODEL

Exploded View

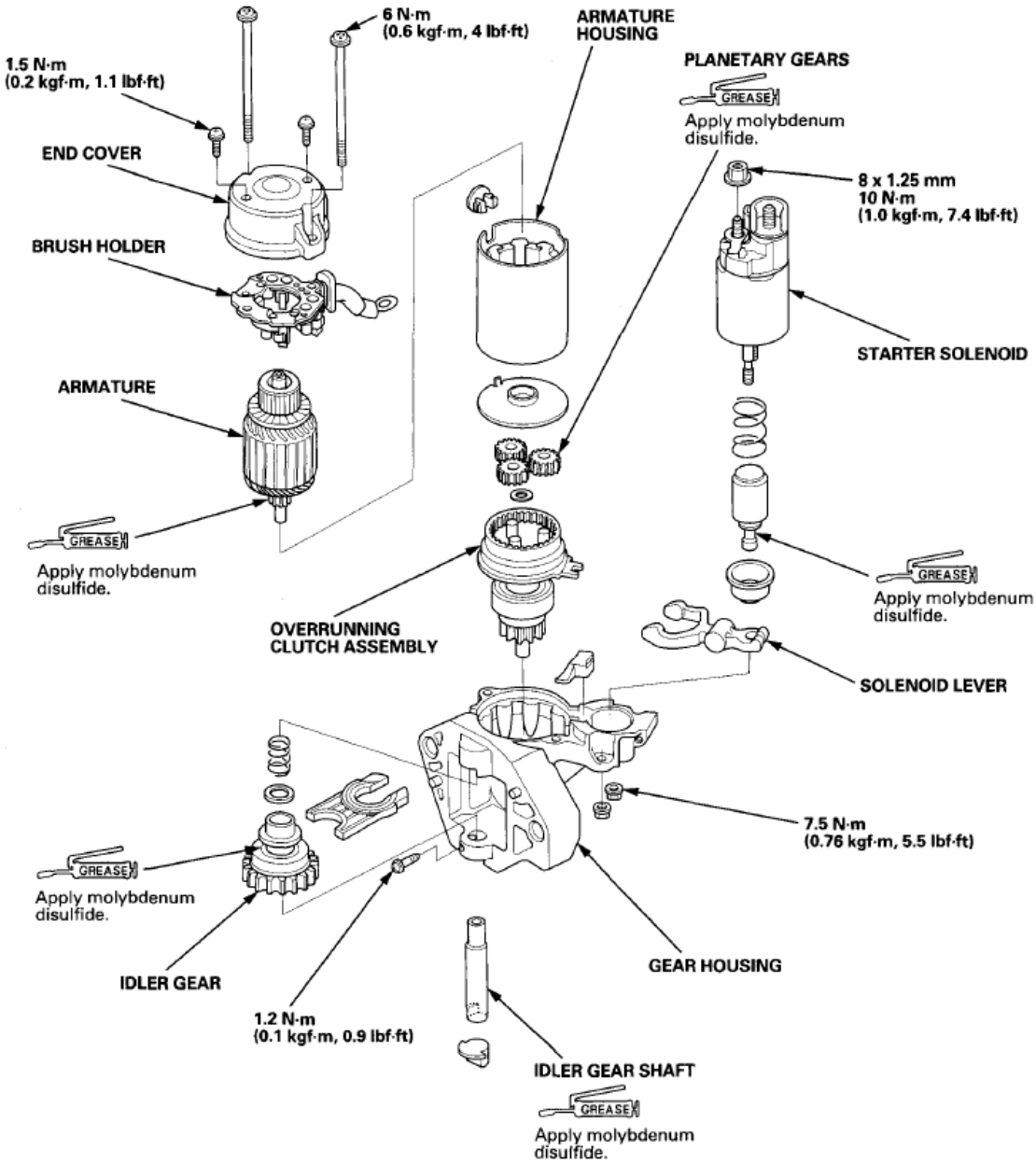


Fig. 41: Exploded View Of A/T Model With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

NOTE: Refer to the Exploded View if needed during this procedure.

Brush Holder Removal

1. Remove the **starter**.
2. Disconnect the motor wire from M terminal (see step 4), and remove the end cover.
3. Pry back each brush spring with a screwdriver, then position the brush on the brush holder (A) about halfway out of its holder. Release the spring to hold it in place.

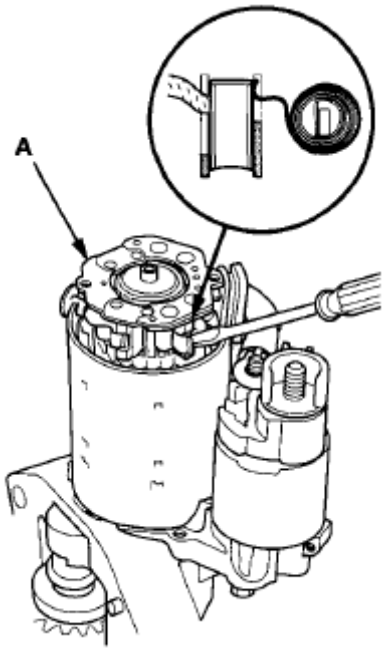


Fig. 42: Identifying Brush Holder
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Remove the brush holder assembly.

Armature Inspection and Test

5. Inspect the armature for wear or damage from contact with the permanent magnet. If there is wear or damage, replace the armature.

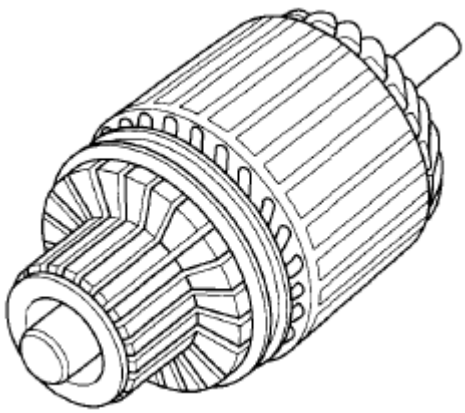


Fig. 43: Identifying Armature
Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Check the commutator (A) surface. If the surface is dirty or burnt, resurface it with an emery cloth or a lathe to the specifications in step 7, or recondition with #500 or #600 sandpaper (B).

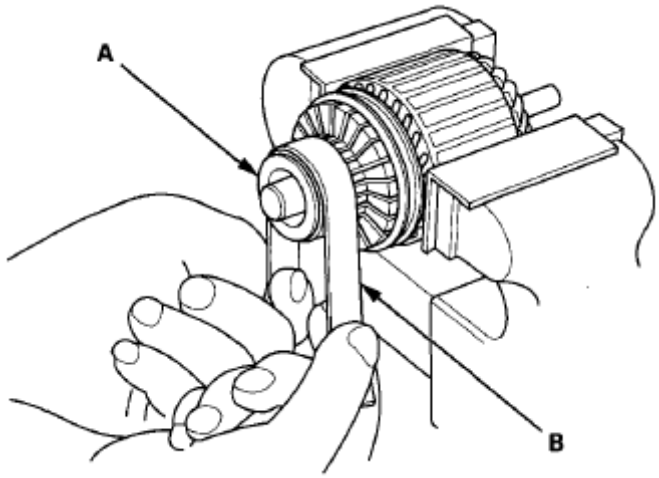


Fig. 44: Identifying Commutator And Sandpaper
Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Check the commutator diameter with a digital caliper or dial type caliper. If the diameter is below the service limit, replace the armature.

   Commutator Diameter

   Standard (New): 28.9- 29.0 mm (1.138- 1.142 in)

   Service Limit: 28.0 mm (1.102 in)

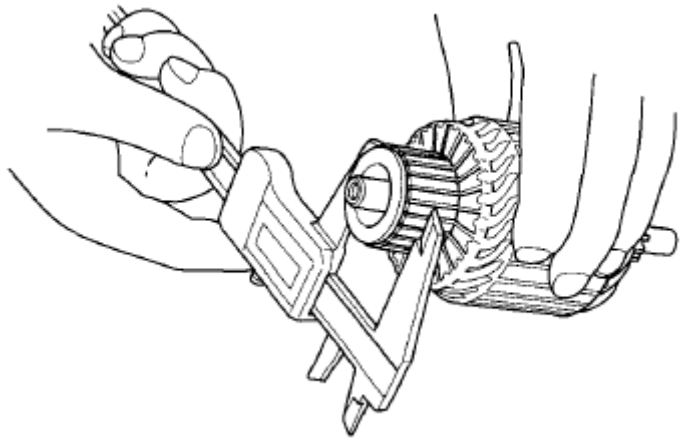


Fig. 45: Measuring Diameter Of Commutator Using Vernier Caliper
Courtesy of AMERICAN HONDA MOTOR CO., INC.

8. Measure the commutator (A) runout:
   - If the commutator runout is within the service limit, check the commutator for carbon dust or brass chips between the segments.
   - If the commutator runout is not within the service limit, replace the armature.

Commutator Runout

Standard (New): 0.02 mm (0.0008 in) max.

Service Limit: 0.05 mm (0.0020 in)

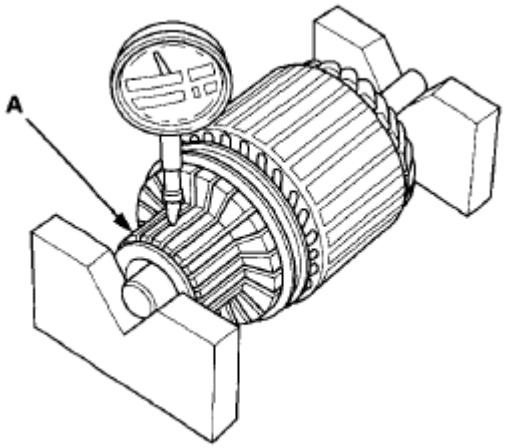


Fig. 46: Identifying Commutator
Courtesy of AMERICAN HONDA MOTOR CO., INC.

9. Use a digital caliper or dial type caliper to check the mica depth (A). If the mica depth is below the service limit, replace the armature.

Commutator Mica Depth

Standard (New): 0.50- 0.90 mm (0.0197- 0.0354 in)

Service Limit: 0.20 mm (0.0079 in)



Fig. 47: Checking Mica Depth Of Commutator Slots
Courtesy of AMERICAN HONDA MOTOR CO., INC.

10. Use an ohmmeter to check for continuity between the segments of the commutator. If there is an open circuit between any segments, replace the armature.

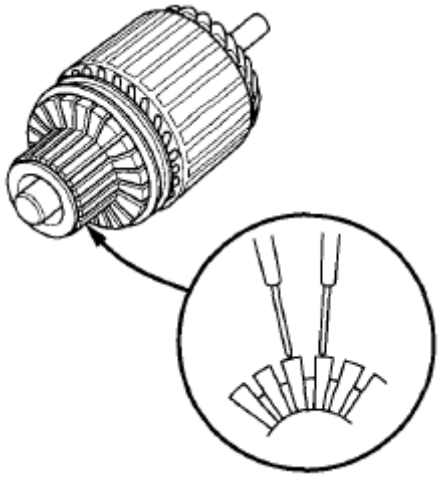


Fig. 48: Checking Continuity Between Segments Of Commutator
Courtesy of AMERICAN HONDA MOTOR CO., INC.

11. Place the armature (A) on an armature tester (B). Hold a hacksaw blade (C) on the armature core. If the blade is attracted to the core while the core is turned, the armature is shorted. Replace the armature.

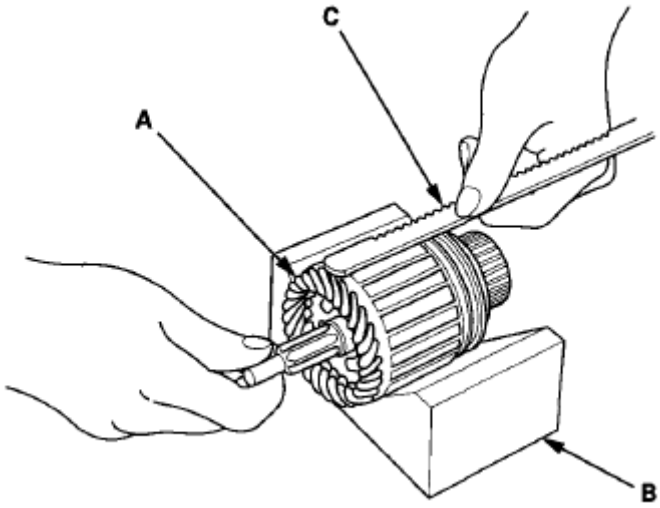


Fig. 49: Identifying Armature, Armature Tester And Hacksaw Blade
Courtesy of AMERICAN HONDA MOTOR CO., INC.

12. Use an ohmmeter to check for continuity between the commutator (A) and the armature coil core (B), and between the commutator and the armature shaft (C). If there is continuity, replace the armature.

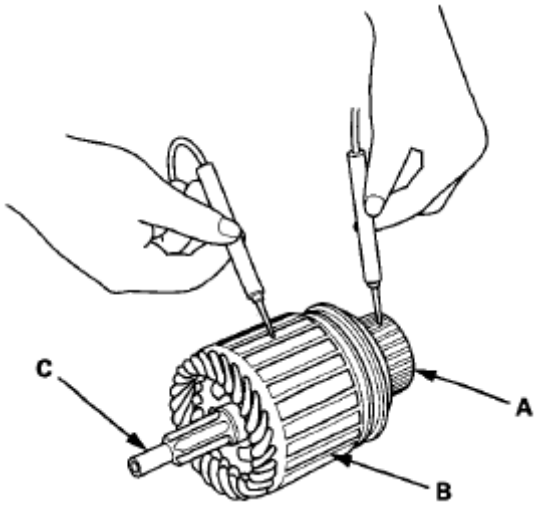


Fig. 50: Identifying Commutator, Armature Coil Core And Armature Shaft
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Overrunning Clutch Inspection

13. Slide the overrunning clutch (A) along the shaft. Replace it if it does not slide smoothly.

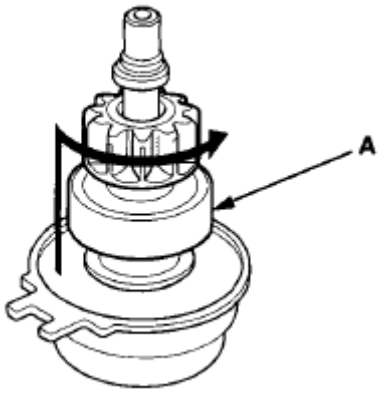


Fig. 51: Sliding Overrunning Clutch Along Shaft
Courtesy of AMERICAN HONDA MOTOR CO., INC.

14. Hold the overrunning clutch (A), and turn the drive gear (B) in the direction shown to make sure it turns freely. Also make sure the drive gear locks in the opposite direction. If it does not lock, replace the overrunning clutch assembly.

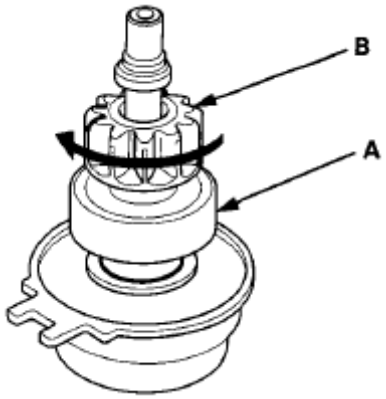


Fig. 52: Turning Drive Gear
Courtesy of AMERICAN HONDA MOTOR CO., INC.

15. If the starter drive gear is worn or damaged, replace the overrunning clutch assembly; the gear is not available separately. Check the condition of the idler gear and the torque converter ring gear. Replace it if the starter drive gear teeth are damaged.

Starter Brush Inspection

16. Measure the brush length. If it is shorter than the service limit, replace the brush holder assembly.

Brush Length

Standard (New): 15.0- 16.0 mm (0.591- 0.630 in)

Service Limit: 9.0 mm (0.354 in)

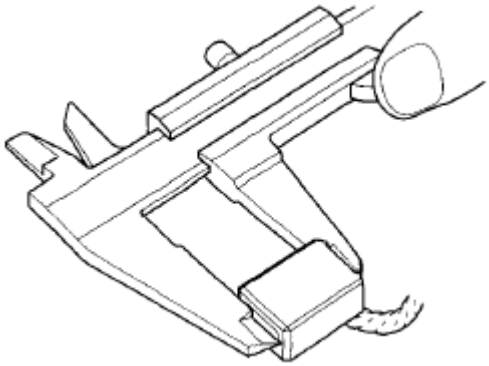


Fig. 53: Measuring Brush Length
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Starter Brush Holder Test

17. Check for continuity between the (+) brush holders (A) and the (-) brush holders (B). If there is continuity, replace the brush holder assembly.

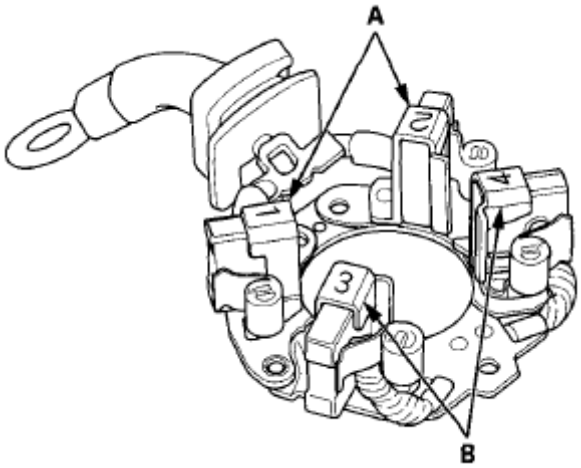


Fig. 54: Identifying (+) And (-) Brush Holders
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Brush Spring Inspection

18. Insert the brush (A) into the brush holder, and bring the brush into contact with the commutator, then attach a spring scale (B) to the spring (C). Measure the spring tension at the moment the spring lifts off the brush. If it is not within the standard, replace the brush holder assembly.

Spring Tension

Standard (New): 22.3- 27.1 N (2.27- 2.76 kgf, 5.00- 6.08 lbf)

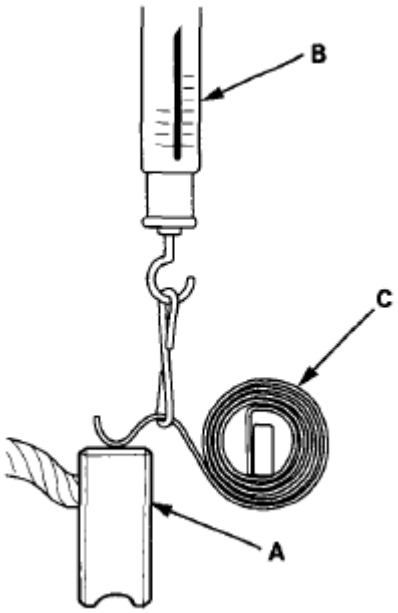


Fig. 55: Identifying Brush, Spring And Spring Scale
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Planetary Gear Inspection

19. Check the planetary gears (A), the armature shaft gear (B), and the internal ring gear (C). Replace them if they are worn or damaged.

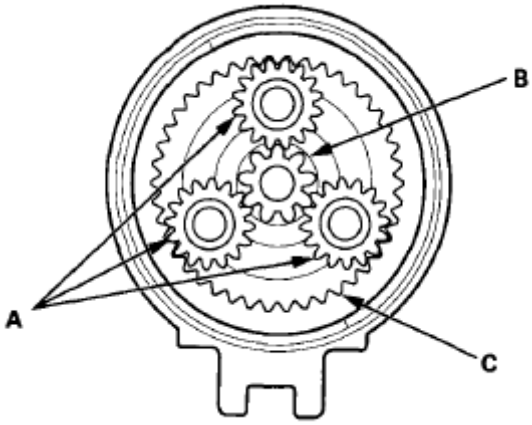


Fig. 56: Identifying Planetary Gear, Armature Shaft Gear And Internal Ring Gear
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Starter Reassembly

20. Install the armature housing (A) and the armature (B) by aligning the slotted point (C) to the projection (D).

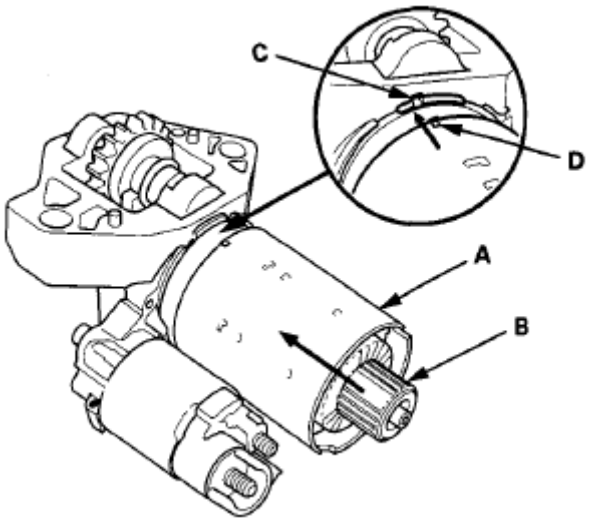


Fig. 57: Identifying Armature Housing, Armature, Slotted Point And Projection
Courtesy of AMERICAN HONDA MOTOR CO., INC.

21. Pry back each brush spring with a screwdriver, then position the brush on the brush holder about halfway out of its holder. Release the spring to hold it in place.

NOTE: To seat the new brushes, slip a strip of # 500 or #600 sandpaper, with the grit side up, between the commutator and the each brush, and smoothly turn the armature. The contact surface of the brushes will be sanded to the same contour as the commutator.

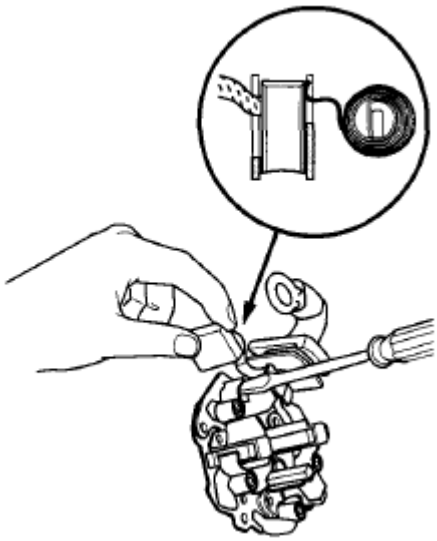


Fig. 58: Prying Back Each Brush Spring Using Screw Driver
Courtesy of AMERICAN HONDA MOTOR CO., INC.

22. Install the brush holder assembly. Next, pry back each brush spring again, and push each brush down until it seats against the commutator, then release the spring against the end of the brush.

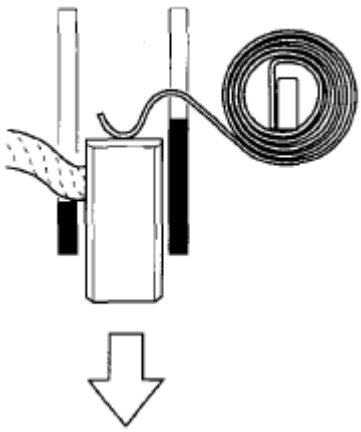


Fig. 59: Pushing Down Each Brush Till Commutator
Courtesy of AMERICAN HONDA MOTOR CO., INC.

23. Install the end cover to retain the brush holder.

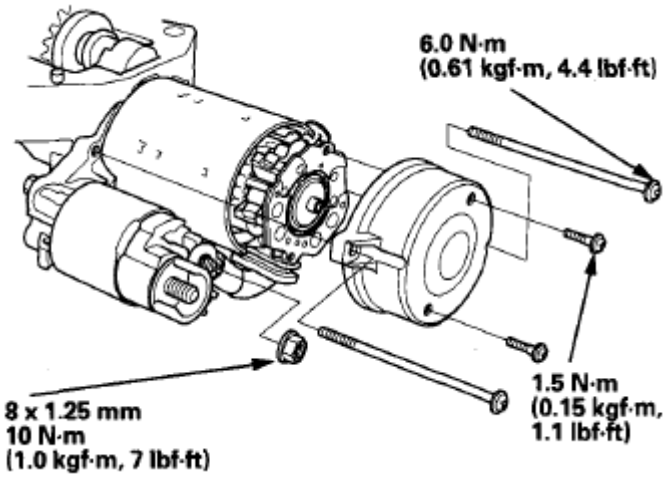


Fig. 60: Identifying Brush Holder And Related Components With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

24. Install the **starter**.

2012 ENGINE PERFORMANCE

Advanced Diagnostics - TL

DTC P0101: MASS AIRFLOW (MAF) SENSOR CIRCUIT RANGE/PERFORMANCE PROBLEM

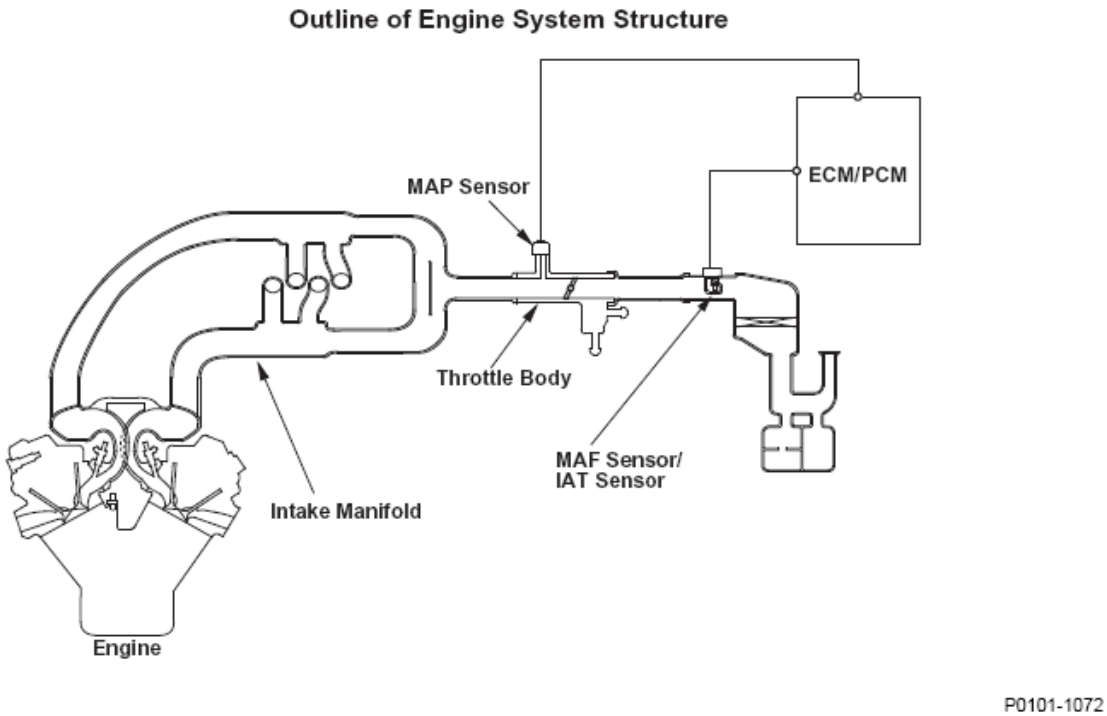


Fig. 1: Overview Of Engine System Structure

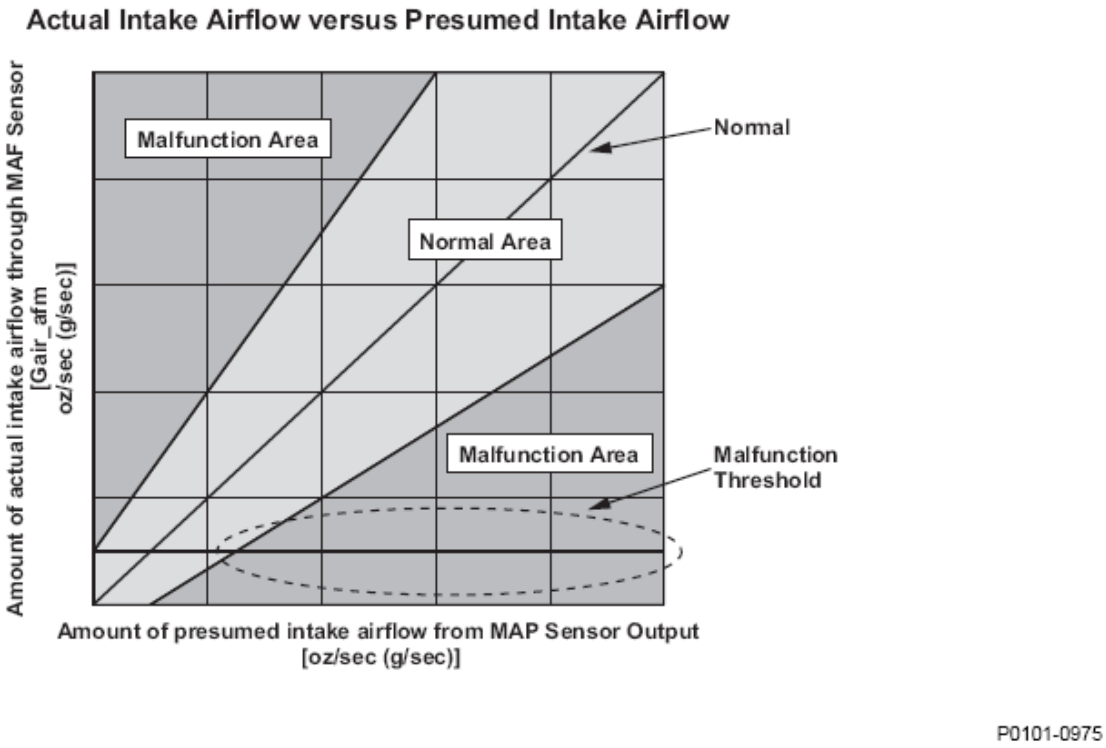


Fig. 2: Actual Intake Airflow Versus Presumed Intake Airflow Graph

GENERAL DESCRIPTION

The mass airflow (MAF) sensor directly measures the amount of intake airflow into the engine, and the engine control module (ECM)/powertrain control module (PCM) controls the fuel injection based on the measured value. The manifold absolute pressure (MAP) sensor measures the intake manifold pressure, and the ECM/PCM calculates the amount of intake airflow from the MAP sensor output and the engine revolutions. The ECM/PCM compares the MAF sensor output (amount of intake airflow) and the amount of intake airflow calculated from MAP sensor output. If their difference is too large (in the malfunction area), the ECM/PCM detects a malfunction and stores a DTC.

MONITOR EXECUTION, SEQUENCE, DURATION, DTC TYPE, OBD STATUS

Execution	Once per driving cycle
Sequence	None
Duration	5.0 seconds or more
DTC Type	Two drive cycles, MIL on
OBD Status	PASSED/FAILED/NOT COMPLETED (STILL TESTING)

ENABLE CONDITIONS

Condition	Minimum	Maximum
Elapsed time after starting the engine	3.0 seconds	-

Engine coolant temperature	156 °F (69 °C)	-
Engine speed	550 rpm	6,900 rpm(1) 6,800 rpm(2)
No active DTCs set (prevents monitor from running)	P0102, P0103, P0107, P0108, P0112, P0113, P0117, P0118, P0171, P0172, P0174, P0175, P0300, P0301, P0302, P0303, P0304, P0305, P0306, P0335, P0339, P0351, P0352, P0353, P0354, P0355, P0356, P0401, P0404, P0443, P0496, P0497, P0506, P0507, P1077, P1078, P1128, P1129, P145C, P2279, P2413, P2646, P2647, P2648, P2649	
(1) J35Z6 engine (2) J37A4 engine		

MALFUNCTION THRESHOLD

The difference between the amount of intake air measured by the MAF sensor and the amount of intake air calculated from the MAP sensor output is out of the normal area for at least 5.0 seconds.

DRIVING PATTERN

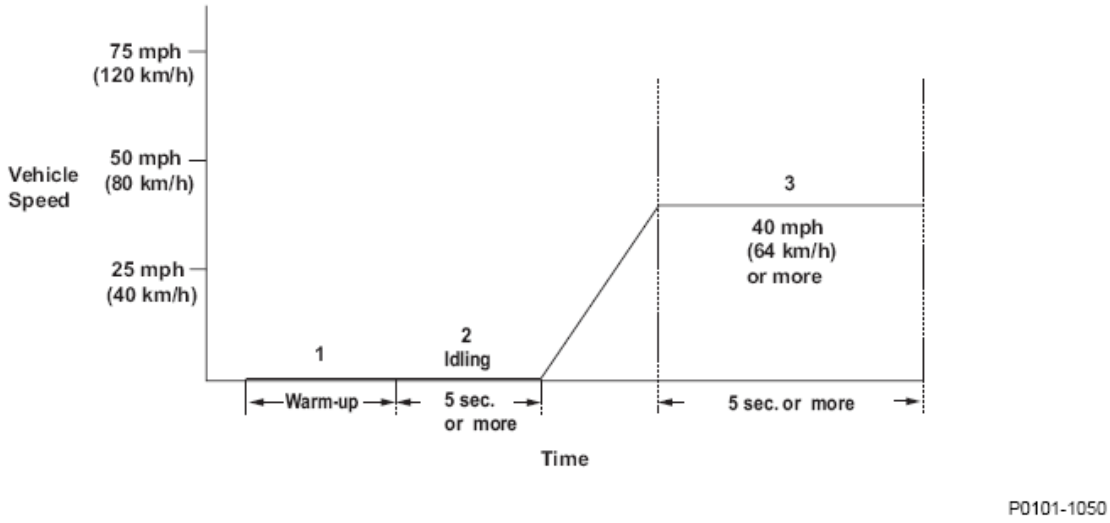


Fig. 3: Vehicle Speed Driving Pattern

1. Start the engine. Hold the engine speed at 3,000 rpm without load (A/T in P or N, M/T in neutral) until the radiator fan comes on.
2. Let the engine idle for at least 5 seconds.
3. Drive the vehicle at a steady speed of 40 mph (64 km/h) or more for at least 5 seconds.
    - When freeze data is stored, drive the vehicle under those conditions instead of Driving Pattern step 3.
    - When you have difficulty duplicating the DTC because of road conditions and traffic situations, repeat the driving pattern several times.

- Drive the vehicle in this manner only if the traffic regulations and ambient conditions allow.

DIAGNOSIS DETAILS

Conditions for setting the DTC

When a malfunction is detected during the first drive cycle, a Pending DTC is stored in the ECM/PCM memory. If the malfunction returns in the next (second) drive cycle, the MIL comes on and a Confirmed DTC and the freeze data are stored.

Conditions for clearing the DTC

The MIL is cleared if the malfunction does not return in three consecutive trips in which the diagnostic runs. The MIL, the Pending DTC, the Confirmed DTC, and the freeze data can be cleared with the scan tool Clear command or by disconnecting the battery.

DTC P0102: MASS AIRFLOW (MAF) SENSOR CIRCUIT LOW VOLTAGE

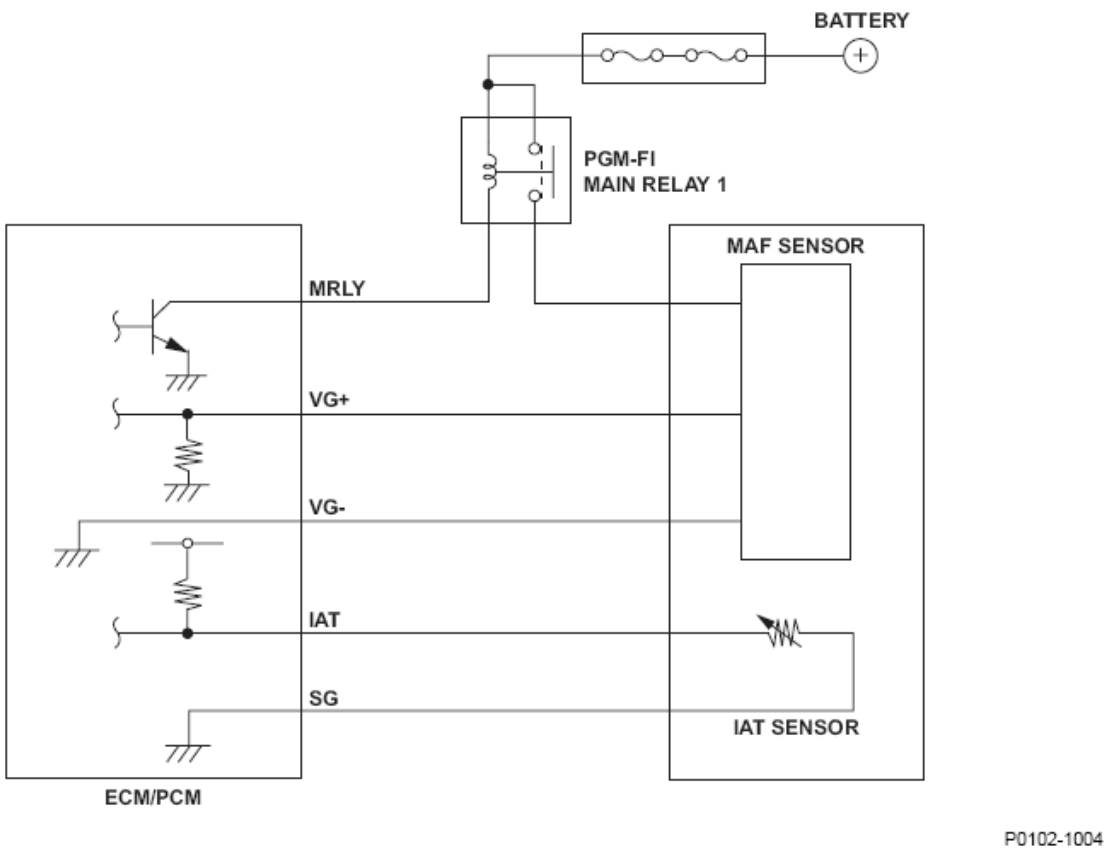


Fig. 4: Mass Airflow Sensor - Circuit Diagram

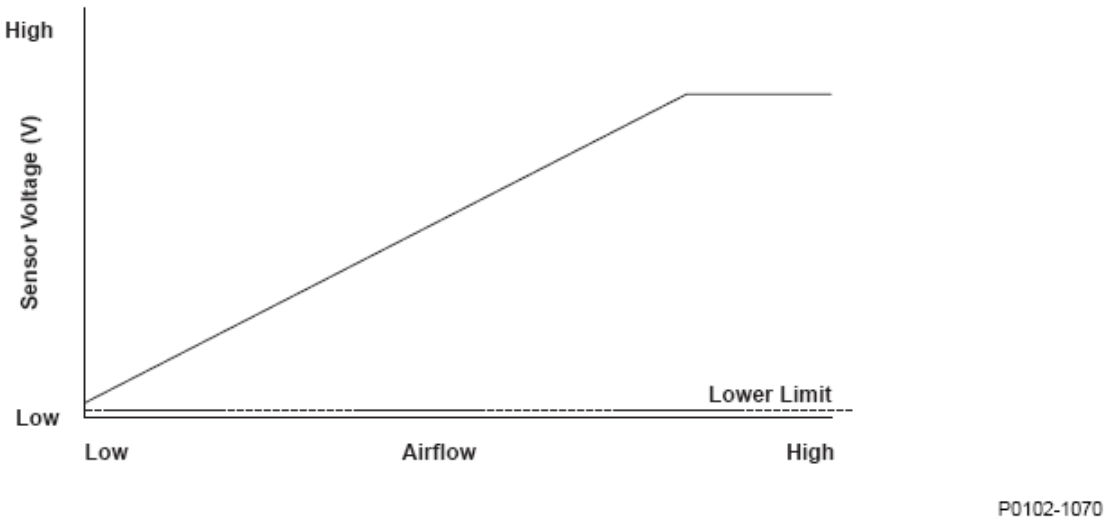


Fig. 5: Mass Airflow Sensor Voltage Versus Airflow Graph (Lower Limit)

GENERAL DESCRIPTION

The mass airflow (MAF) sensor is attached to the intake air passage, and it measures the amount of intake airflow. The MAF sensor is a hot wire airflow meter. The airflow cools the electrically heated wire that is mounted in the air passage. The engine control module (ECM)/powertrain control module (PCM) determines the amount of intake airflow by detecting the current that is required to keep the hot wire at a constant temperature. The lower limit of the MAF sensor output is specified. If the output is below that limit, the ECM/PCM detects a malfunction and stores a DTC.

MONITOR EXECUTION, SEQUENCE, DURATION, DTC TYPE, OBD STATUS

Execution	Continuous
Sequence	None
Duration	2.0 seconds or more
DTC Type	One drive cycle, MIL on
OBD Status	PASSED/FAILED/NOT COMPLETED (STILL TESTING)

ENABLE CONDITIONS

Condition	
Ignition switch(1)	ON (II)
Engine start/stop button(2)	ON mode
No active DTCs set (prevents monitor from running)	P0103
(1) Without keyless access system (2) With keyless access system	

MALFUNCTION THRESHOLD

The MAF sensor output voltage is 0.10 V or less for at least 2.0 seconds.

DIAGNOSIS DETAILS

Conditions for setting the DTC

When a malfunction is detected, the MIL comes on and a Pending DTC, a Confirmed DTC, and the freeze data are stored in the ECM/PCM memory.

Conditions for clearing the DTC

The MIL is cleared if the malfunction does not return in three consecutive trips in which the diagnostic runs. The MIL, the Pending DTC, the Confirmed DTC, and the freeze data can be cleared with the scan tool Clear command or by disconnecting the battery.

DTC P0103: MASS AIRFLOW (MAF) SENSOR CIRCUIT HIGH VOLTAGE

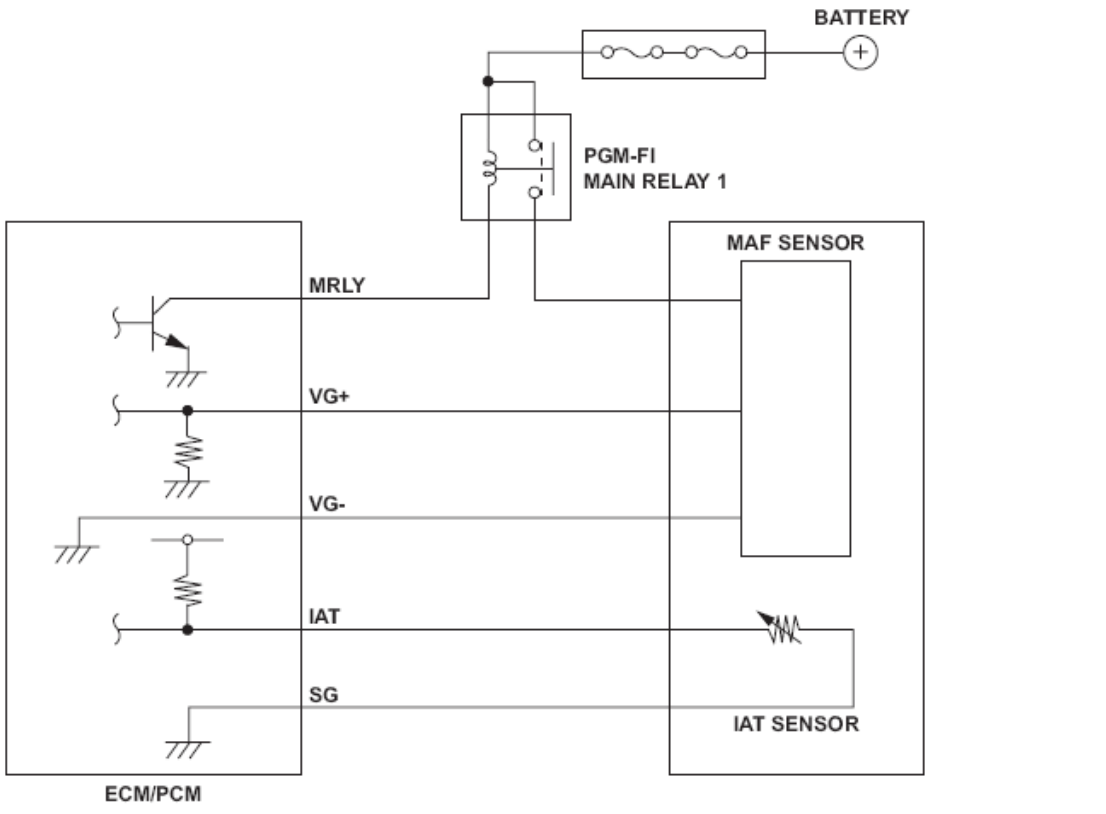


Fig. 6: Mass Airflow Sensor - Circuit Diagram

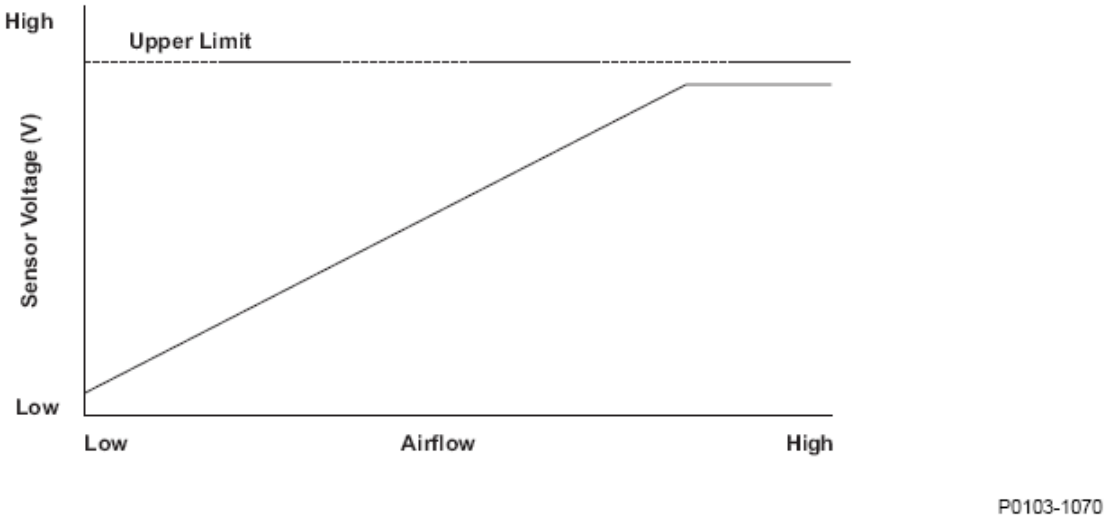


Fig. 7: Mass Airflow Sensor Voltage Versus Airflow Graph (Upper Limit)

GENERAL DESCRIPTION

The mass airflow (MAF) sensor is attached to the intake air passage, and it measures the amount of intake airflow. The MAF sensor is a hot wire airflow meter. The airflow cools the electrically heated wire that is mounted in the air passage. The engine control module (ECM)/powertrain control module (PCM) determines the amount of intake airflow by detecting the current that is required to keep the hot wire at a constant temperature. The upper limit of the MAF sensor output is specified. If the output is above that limit, the ECM/PCM detects a malfunction and stores a DTC.

MONITOR EXECUTION, SEQUENCE, DURATION, DTC TYPE, OBD STATUS

Execution	Continuous
Sequence	None
Duration	2.0 seconds or more
DTC Type	One drive cycle, MIL on
OBD Status	PASSED/FAILED/NOT COMPLETED (STILL TESTING)

ENABLE CONDITIONS

Condition	
Ignition switch(1)	ON (II)
Engine start/stop button(2)	ON mode
No active DTCs set (prevents monitor from running)	P0102
(1) Without keyless access system (2) With keyless access system	

MALFUNCTION THRESHOLD

The MAF sensor output voltage is 4.89 V or more for at least 2.0 seconds.

DIAGNOSIS DETAILS

Conditions for setting the DTC

When a malfunction is detected, the MIL comes on and a Pending DTC, a Confirmed DTC, and the freeze data are stored in the ECM/PCM memory.

Conditions for clearing the DTC

The MIL is cleared if the malfunction does not return in three consecutive trips in which the diagnostic runs. The MIL, the Pending DTC, the Confirmed DTC, and the freeze data can be cleared with the scan tool Clear command or by disconnecting the battery.

DTC P0107: MANIFOLD ABSOLUTE PRESSURE (MAP) SENSOR CIRCUIT LOW VOLTAGE

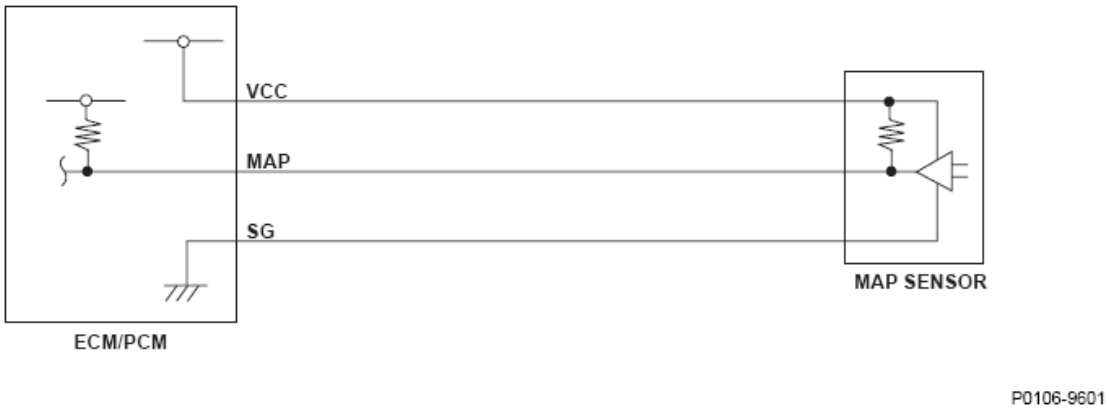


Fig. 8: Manifold Absolute Pressure Sensor - Circuit Diagram

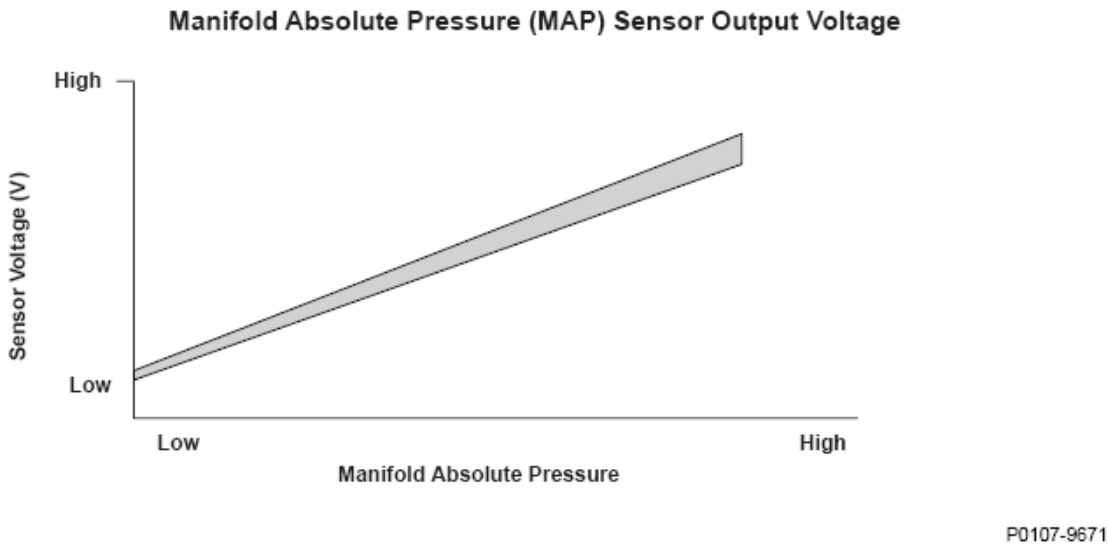


Fig. 9: Manifold Absolute Pressure Sensor Output Voltage Graph

GENERAL DESCRIPTION

The manifold absolute pressure (MAP) sensor measures the pressure or vacuum in the manifold. This measurement is converted into an electrical signal which the engine control module (ECM)/powertrain control module (PCM) uses to run the engine. The MAP sensor outputs low signal voltage at high vacuum (throttle valve closed) and high signal voltage at low vacuum (throttle valve wide open). If the signal voltage from the MAP sensor is a set value, the ECM/PCM detects a malfunction and stores a DTC.

MONITOR EXECUTION, SEQUENCE, DURATION, DTC TYPE, OBD STATUS

Execution	Continuous
Sequence	None
Duration	2 seconds or more
DTC Type	One drive cycle, MIL on
OBD Status	PASSED/FAILED/NOT COMPLETED (STILL TESTING)

ENABLE CONDITIONS

Condition	
Ignition switch(1)	ON (II)
Engine start/stop button(2)	ON mode
No active DTCs set (prevents monitor from running)	P0108
(1) Without keyless access system (2) With keyless access system	

MALFUNCTION THRESHOLD

The MAP sensor output voltage is 0.23 V or less for at least 2 seconds.

DIAGNOSIS DETAILS

Conditions for setting the DTC

When a malfunction is detected, the MIL comes on and a Pending DTC, a Confirmed DTC, and the freeze data are stored in the ECM/PCM memory.

Conditions for clearing the DTC

The MIL is cleared if the malfunction does not return in three consecutive trips in which the diagnostic runs. The MIL, the Pending DTC, the Confirmed DTC, and the freeze data can be cleared with the scan tool Clear command or by disconnecting the battery.

DTC P0108: MANIFOLD ABSOLUTE PRESSURE (MAP) SENSOR CIRCUIT HIGH VOLTAGE

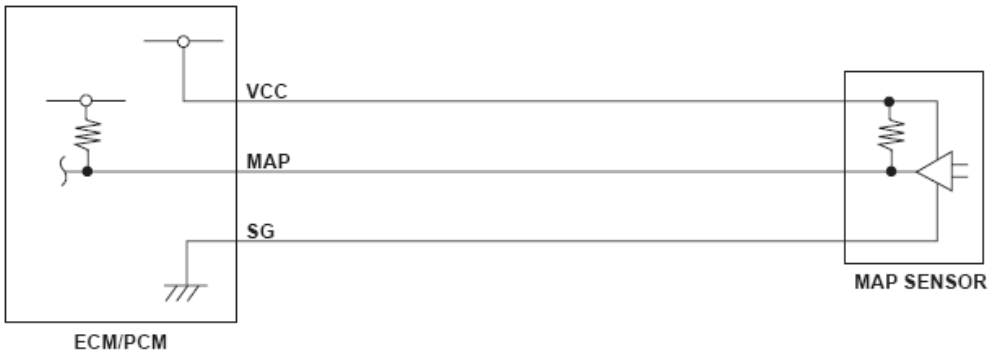


Fig. 10: Manifold Absolute Pressure Sensor - Circuit Diagram

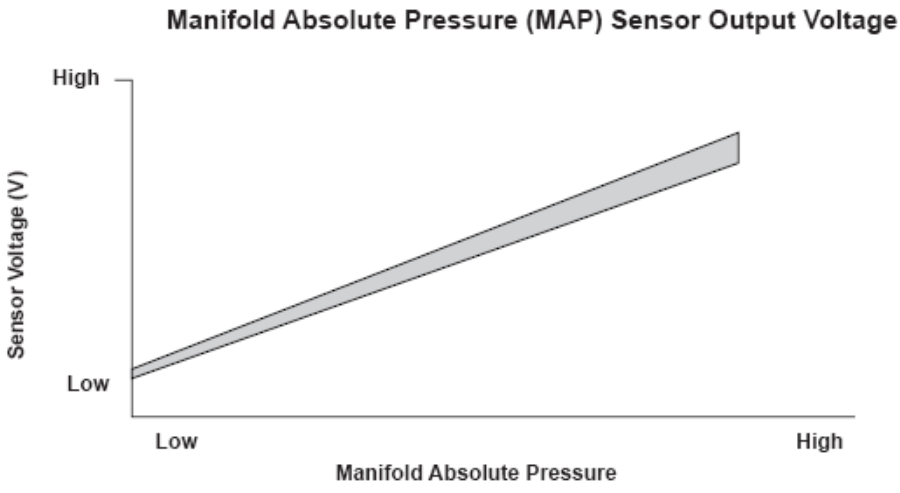


Fig. 11: Manifold Absolute Pressure Sensor Output Voltage Graph

GENERAL DESCRIPTION

The manifold absolute pressure (MAP) sensor measures the pressure or vacuum in the manifold. This measurement is converted into an electrical signal which the engine control module (ECM)/powertrain control module (PCM) uses to run the engine. The MAP sensor outputs low signal voltage at high vacuum (throttle valve closed) and high signal voltage at low vacuum (throttle valve wide open). If the signal voltage from the MAP sensor is a set value, the ECM/PCM detects a malfunction and stores a DTC.

MONITOR EXECUTION, SEQUENCE, DURATION, DTC TYPE, OBD STATUS

Execution	Continuous
Sequence	None
Duration	2 seconds or more
DTC Type	One drive cycle, MIL on
OBD Status	PASSED/FAILED/NOT COMPLETED (STILL TESTING)

ENABLE CONDITIONS

Condition	
Ignition switch(1)	ON (II)
Engine start/stop button(2)	ON mode
No active DTCs set (prevents monitor from running)	P0107
(1) Without keyless access system (2) With keyless access system	

MALFUNCTION THRESHOLD

The MAP sensor output voltage is 4.49 V or more for at least 2 seconds.

DIAGNOSIS DETAILS

Conditions for setting the DTC

When a malfunction is detected, the MIL comes on and a Pending DTC, a Confirmed DTC, and the freeze data are stored in the ECM/PCM memory.

Conditions for clearing the DTC

The MIL is cleared if the malfunction does not return in three consecutive trips in which the diagnostic runs. The MIL, the Pending DTC, the Confirmed DTC, and the freeze data can be cleared with the scan tool Clear command or by disconnecting the battery.

DTC P0111: INTAKE AIR TEMPERATURE (IAT) SENSOR CIRCUIT RANGE/PERFORMANCE PROBLEM

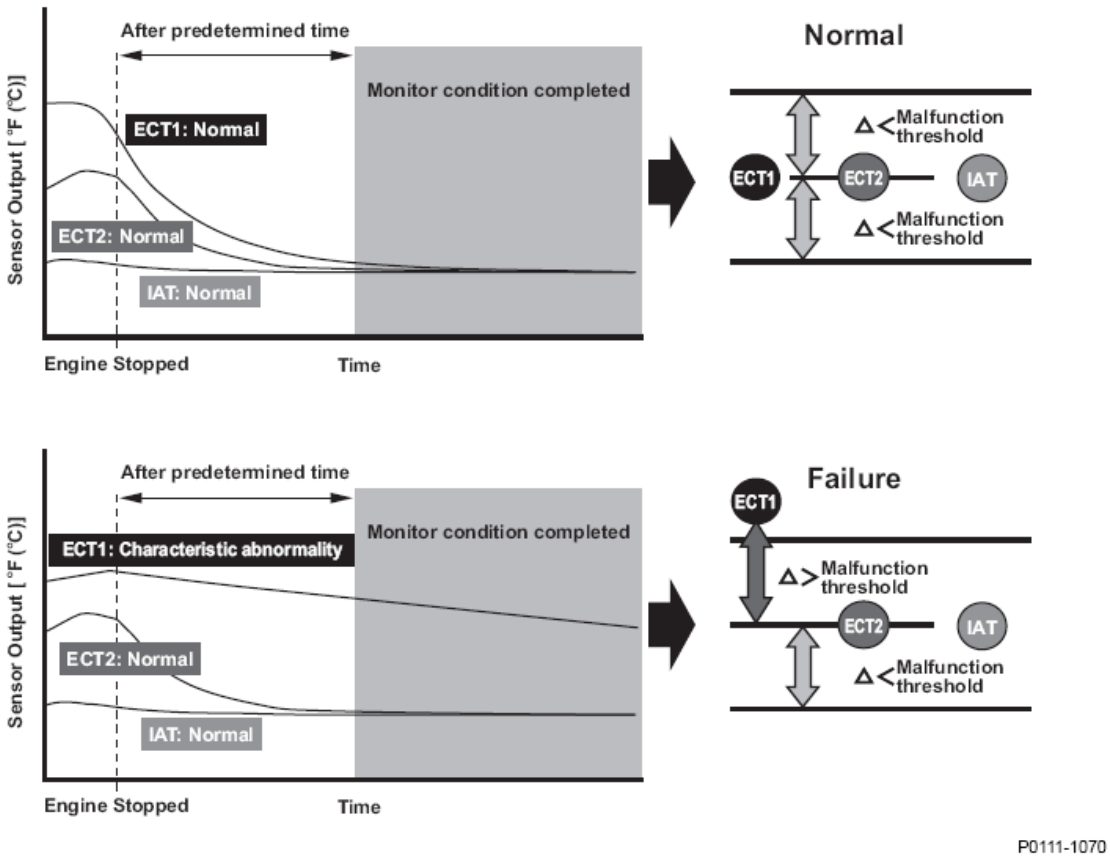


Fig. 12: Engine Coolant Temperature Sensor Characteristics Curve

GENERAL DESCRIPTION

Two engine coolant temperature (ECT) sensors and one intake air temperature (IAT) sensor are used by the engine control module (ECM)/powertrain control module (PCM). When the engine is stopped and enough time has passed, the temperature of the engine will equalize to the ambient temperature. ECT sensor 1 and IAT sensor are compared to ECT sensor 2, and if an inappropriate temperature is read, the ECM/PCM detects a malfunction in the corresponding sensor and stores a DTC.

MONITOR EXECUTION, SEQUENCE, DURATION, DTC TYPE, OBD STATUS

Execution	Once per driving cycle
Sequence	None
Duration	10 seconds or more
DTC Type	Two drive cycles, MIL on
OBD Status	PASSED/FAILED/NOT COMPLETED (STILL TESTING)

ENABLE CONDITIONS

Condition	Minimum	Maximum
Engine off time	6 hours	-
No active DTCs set (prevents monitor from running)	P0112, P0113, P0116, P0117, P0118, P0125, P2184, P2185, P2610	

MALFUNCTION THRESHOLD

A malfunction is detected if the following conditions are present after the engine has stopped and the ignition switch has been turned to LOCK (0) or engine start/stop button has been pressed to select the OFF mode, for at least 6 hours before restarting the engine:

Temperature difference between each sensor values		Malfunction judgment		
ECT1 - ECT2	IAT - ECT2	ECT sensor 1	IAT sensor	ECT sensor 2
Higher than 57 °F (32 °C)	Higher than 57 °F (32 °C)	Normal	Normal	Failure
	From -43 °F (-24 °C) to 57 °F (32 °C)	Failure	Normal	Normal
	Lower than -43 °F (-24 °C)	Failure	Failure	Normal
From -43 °F (-24 °C) to 57 °F (32 °C)	Higher than 57 °F (32 °C)	Normal	Failure	Normal
	From -43 °F (-24 °C) to 57 °F (32 °C)	Normal	Normal	Normal
	From -44 °F (-25 °C) to -108 °F (-60 °C)	Normal	Failure Suspended(1)	Normal
	Lower than -108 °F (-60 °C)	Normal	Failure	Normal
Lower than -43 °F (-24 °C)	Higher than 57 °F (32 °C)	Failure	Failure	Normal
	From -43 °F (-24 °C) to 57 °F (32 °C)	Failure	Normal	Normal
	Lower than -43 °F (-24 °C)	Normal	Normal	Failure

(1) Malfunction judgment is suspended because the cooled air introduced after engine start lowers the intake air temperature; the ambient temperature condition does not stay equal.

DRIVING PATTERN

1. Turn the ignition switch to LOCK (0) or press the engine start/stop button to select the OFF mode, and wait at least 6 hours.
2. Start the engine, and let it idle for at least 10 seconds.
   - Do not use an engine block heater because the engine coolant temperature will not stay equal during engine stop.
   - When freeze data is stored, test the vehicle under an ambient temperature close to the intake air temperature in the freeze data.
   - When an ambient temperature extremely changes, malfunction judgment may not execute. Avoid extreme temperature changing condition after or before engine start. (When the vehicle is parked in the garage, open the shutter to introduce outside air; then start the engine.)

DIAGNOSIS DETAILS

Conditions for setting the DTC

When a malfunction is detected during the first drive cycle, a Pending DTC is stored in the ECM/PCM memory. If the malfunction returns in the next (second) drive cycle, the MIL comes on and a Confirmed DTC and the freeze data are stored.

Conditions for clearing the DTC

The MIL is cleared if the malfunction does not return in three consecutive trips in which the diagnostic runs. The MIL, the Pending DTC, the Confirmed DTC, and the freeze data can be cleared with the scan tool Clear command or by disconnecting the battery.

DTC P0112: INTAKE AIR TEMPERATURE (IAT) SENSOR CIRCUIT LOW VOLTAGE

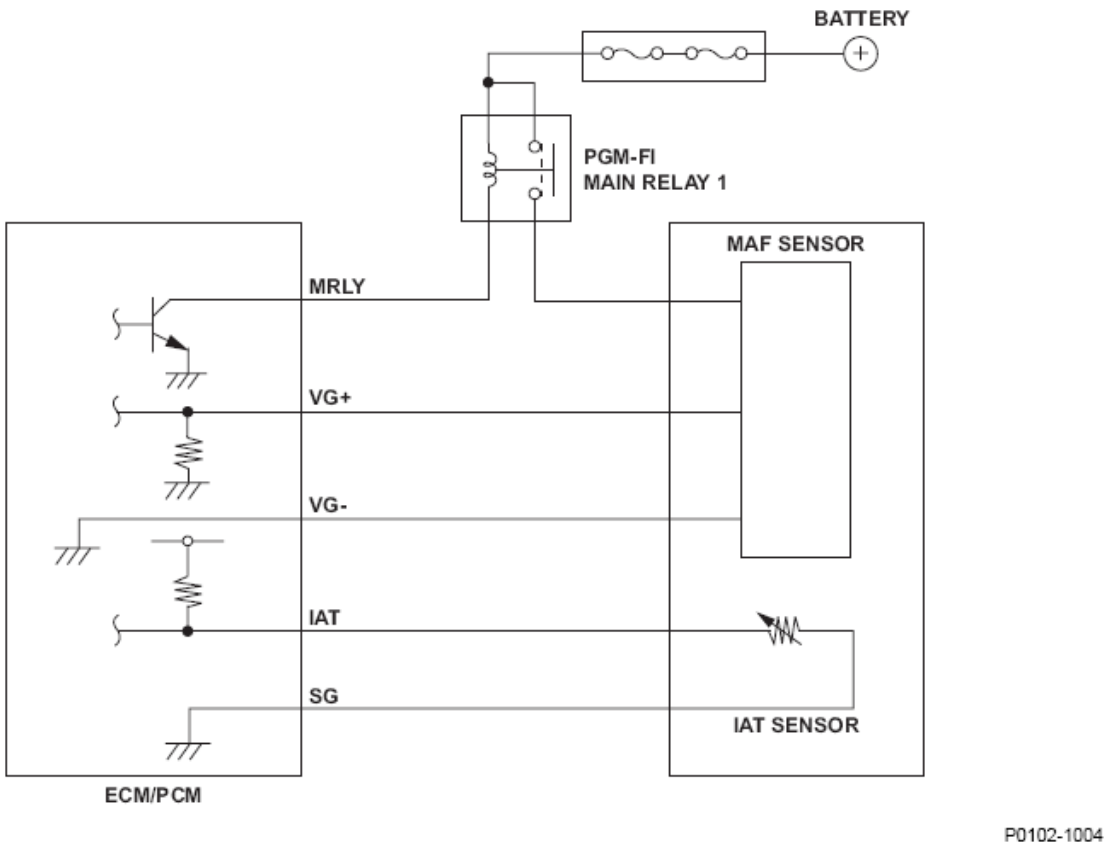


Fig. 13: Intake Air Temperature Sensor - Circuit Diagram

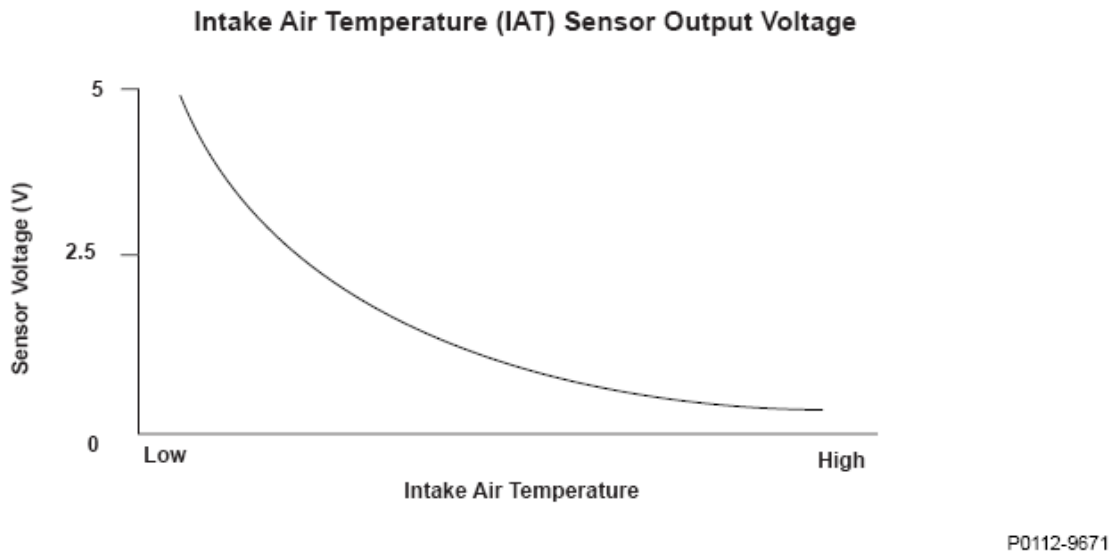


Fig. 14: Intake Air Temperature Sensor Output Voltage Graph

GENERAL DESCRIPTION

The intake air temperature (IAT) sensor is a thermistor that detects intake air temperature, and it is used for air/fuel ratio feedback control to compensate for the atmospheric density fluctuations that accompany changes in intake air temperature. The IAT sensor resistance varies depending on temperature. The output voltage and the sensor resistance increase as the intake air temperature decreases. Conversely, the output voltage and the sensor resistance decrease as the intake air temperature increases. If the IAT sensor output voltage is excessively low, the engine control module (ECM)/powertrain control module (PCM) detects a malfunction and stores a DTC.

MONITOR EXECUTION, SEQUENCE, DURATION, DTC TYPE, OBD STATUS

Execution	Continuous
Sequence	None
Duration	2.0 seconds or more
DTC Type	Two drive cycles, MIL on
OBD Status	PASSED/FAILED/NOT COMPLETED (STILL TESTING)

ENABLE CONDITIONS

Condition	
Ignition switch(1)	ON (II)
Engine start/stop button(2)	ON mode
No active DTCs set (prevents monitor from running)	P0113
(1) Without keyless access system (2) With keyless access system	

MALFUNCTION THRESHOLD

The IAT sensor output voltage is 0.08 V or less for at least 2.0 seconds.

DIAGNOSIS DETAILS

Conditions for setting the DTC

When a malfunction is detected during the first drive cycle, a Pending DTC is stored in the ECM/PCM memory. If the malfunction returns in the next (second) drive cycle, the MIL comes on and a Confirmed DTC and the freeze data are stored.

Conditions for clearing the DTC

The MIL is cleared if the malfunction does not return in three consecutive trips in which the diagnostic runs. The MIL, the Pending DTC, the Confirmed DTC, and the freeze data can be cleared with the scan tool Clear command or by disconnecting the battery.

DTC P0113: INTAKE AIR TEMPERATURE (IAT) SENSOR CIRCUIT HIGH VOLTAGE

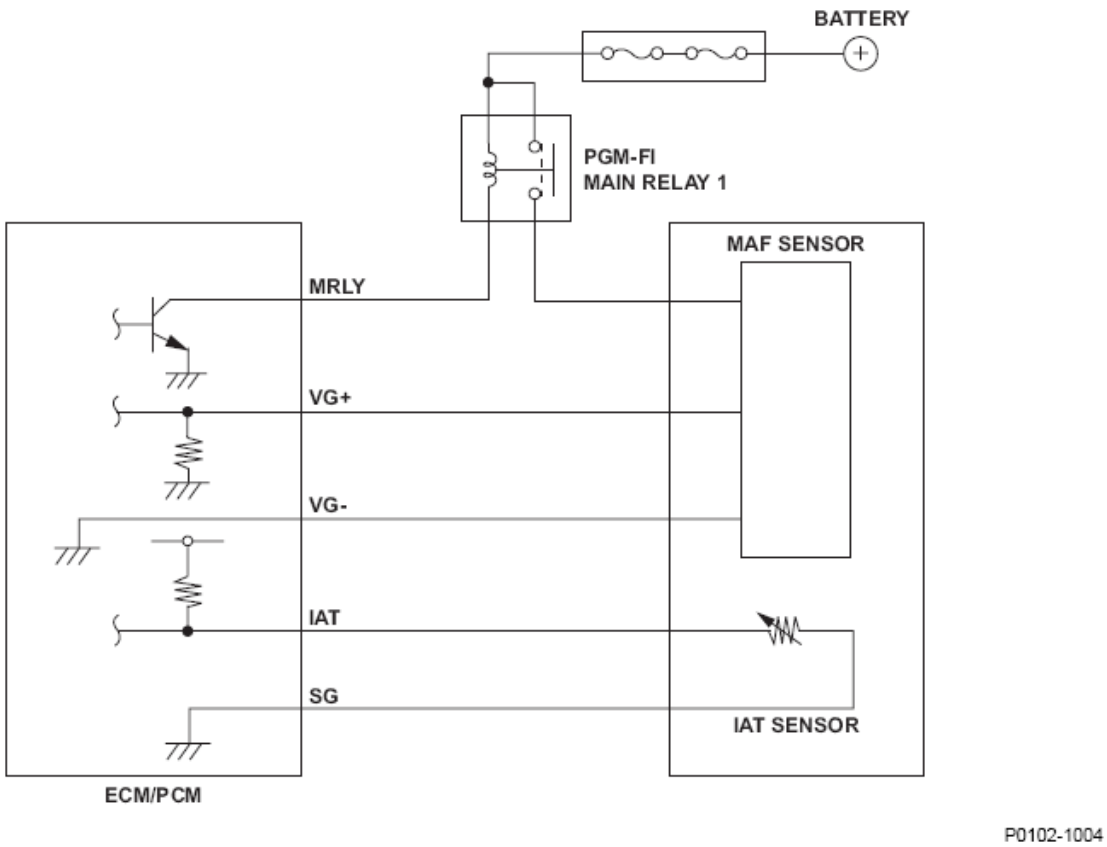


Fig. 15: Intake Air Temperature Sensor - Circuit Diagram

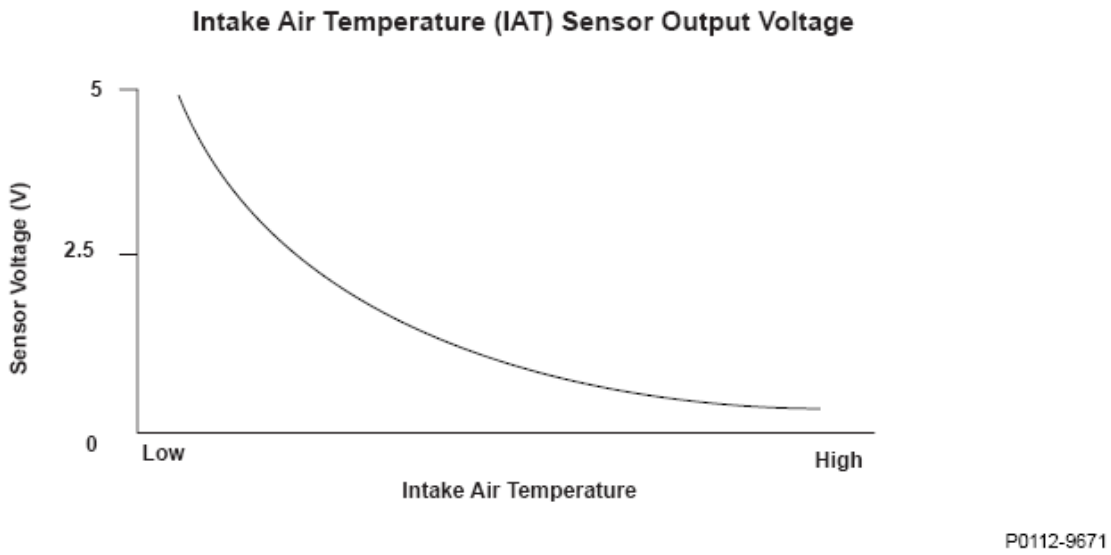


Fig. 16: Intake Air Temperature Sensor Output Voltage Graph

GENERAL DESCRIPTION

The intake air temperature (IAT) sensor is a thermistor that detects intake air temperature, and it is used for air/fuel ratio feedback control to compensate for the atmospheric density fluctuations that accompany changes in intake air temperature. The IAT sensor resistance varies depending on temperature. The output voltage and the sensor resistance increase as the intake air temperature decreases. Conversely, the output voltage and the sensor resistance decrease as the intake air temperature increases. If the IAT sensor output voltage is excessively high, the engine control module (ECM)/powertrain control module (PCM) detects a malfunction and stores a DTC.

MONITOR EXECUTION, SEQUENCE, DURATION, DTC TYPE, OBD STATUS

Execution	Continuous
Sequence	None
Duration	2.0 seconds or more
DTC Type	Two drive cycles, MIL on
OBD Status	PASSED/FAILED/NOT COMPLETED (STILL TESTING)

ENABLE CONDITIONS

Condition	
Ignition switch(1)	ON (II)
Engine start/stop button(2)	ON mode
No active DTCs set (prevents monitor from running)	P0112
(1) Without keyless access system (2) With keyless access system	

MALFUNCTION THRESHOLD

The IAT sensor output voltage is 4.92 V or more for at least 2.0 seconds.

DIAGNOSIS DETAILS

Conditions for setting the DTC

When a malfunction is detected during the first drive cycle, a Pending DTC is stored in the ECM/PCM memory. If the malfunction returns in the next (second) drive cycle, the MIL comes on and a Confirmed DTC and the freeze data are stored.

Conditions for clearing the DTC

The MIL is cleared if the malfunction does not return in three consecutive trips in which the diagnostic runs. The MIL, the Pending DTC, the Confirmed DTC, and the freeze data can be cleared with the scan tool Clear command or by disconnecting the battery.

DTC P0116: ENGINE COOLANT TEMPERATURE (ECT) SENSOR 1 CIRCUIT RANGE/PERFORMANCE PROBLEM

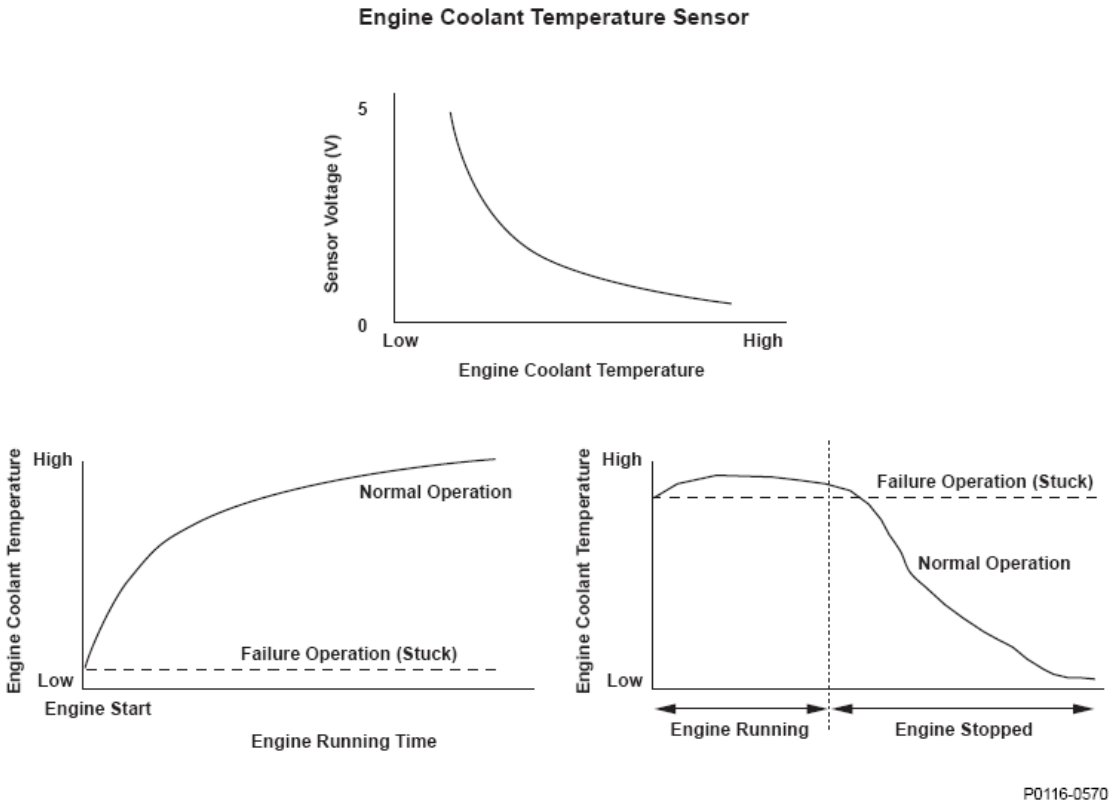


Fig. 17: Engine Coolant Temperature Sensor Characteristics Curve

GENERAL DESCRIPTION

The engine control module (ECM)/powertrain control module (PCM) supplies voltage to the engine coolant temperature signal circuit (about 5 V) through a pull-up resistor. As the engine coolant cools, the engine coolant temperature (ECT) sensor 1 resistance increases, and the ECM/PCM detects a high signal voltage. As the engine coolant warms, the ECT sensor 1 resistance decreases, and the ECM/PCM detects a low signal voltage. If the ECT sensor 1 output voltage does not reach a set temperature after starting the engine and driving a set time, or when the difference between the ECT sensor 1 output voltage while driving and the output voltage of ECT sensor 1 after the engine has been stopped a certain length of time does not change a certain amount, the ECM/PCM detects a malfunction and stores a DTC.

MONITOR EXECUTION, SEQUENCE, DURATION, DTC TYPE, OBD STATUS

Execution	Once per driving cycle
Sequence	None
Duration	30 minutes or more
DTC Type	Two drive cycles, MIL on
OBD Status	PASSED/FAILED/NOT COMPLETED (STILL TESTING)

ENABLE CONDITIONS

Condition	Minimum	Maximum
Elapsed time after starting the engine	10 seconds	-
Fuel feedback	Other than during fuel cut-off operation	
No active DTCs set (prevents monitor from running)	P0101, P0102, P0103, P0107, P0108, P0117, P0118, P0134, P0135, P0154, P0155, P0171, P0172, P0174, P0175, P0300, P0301, P0302, P0303, P0304, P0305, P0306, P0335, P0339, P0351, P0352, P0353, P0354, P0355, P0356, P0401, P0404, P0443, P0496, P0497, P0506, P0507, P1077, P1078, P1128, P1129, P1172, P1174, P145C, P2195, P2197, P2227, P2228, P2229, P2237, P2238, P2240, P2241, P2243, P2245, P2247, P2249, P2251, P2252, P2254, P2255, P2279, P2413, P2610, P2646, P2647, P2648, P2649	
Other	With a completely cooled engine (one that has been off for at least 6 hours): Judgment is made after the engine has run for at least 30 minutes or been driven at least 3 miles (5 km), turn the ignition switch to LOCK (0) or press the engine start/stop button to select the OFF mode for at least 10 seconds, then started and run again for at least 10 seconds.	
	With a partially cooled engine (one that has been off for less than 6 hours): Judgment is made after the engine has run for at least 30 minutes or been driven at least 3 miles (5 km), turn the ignition switch to LOCK (0) or press the engine start/stop button to select the OFF mode for at least 3 hours, then started and run again for at least 10 seconds.	

MALFUNCTION THRESHOLD

Malfunction determination 1:

With a completely cooled engine (one that has been off for at least 6 hours):

When the change in coolant temperature after 30 minutes or more of running time or 3 miles (5 km) or more of driving distance is 18 °F (10 °C) or less, a malfunction is detected.

Malfunction determination 2:

With a partially cooled engine (one that has been off for less than 6 hours):

When the difference between the coolant temperature after 30 minutes or more of running time or 3 miles (5 km) or more of driving distance the coolant temperature after the engine has been off for 3 hours and then ran for 10 seconds is 18 °F (10 °C) or less, a malfunction is detected.

DRIVING PATTERN

- With a completely cooled engine (one that has been off for at least 6 hours).

1. Start the engine, and let it idle for at least 30 minutes or drive for at least 3 miles (5 km).
2. Turn the ignition switch to LOCK (0) or press the engine start/stop button to select the OFF mode for 10 seconds, then restart the engine and let it idle for at least 10 seconds.

- With a partially cooled engine (one that has been off for less than 6 hours).

1. Start the engine, and let it idle for at least 30 minutes or drive for at least 3 miles (5 km).
2. Turn the ignition switch to LOCK (0) or press the engine start/stop button to select the OFF mode for 3 hours, then restart the engine and let it idle for at least 10 seconds.

- Drive the vehicle in this manner only if the traffic regulations and ambient conditions allow.

DIAGNOSIS DETAILS

Conditions for setting the DTC

When a malfunction is detected during the first drive cycle, a Pending DTC is stored in the ECM/PCM memory. If the malfunction returns in the next (second) drive cycle, the MIL comes on and a Confirmed DTC and the freeze data are stored.

Conditions for clearing the DTC

The MIL is cleared if the malfunction does not return in three consecutive trips in which the diagnostic runs. The MIL, the Pending DTC, the Confirmed DTC, and the freeze data can be cleared with the scan tool Clear command or by disconnecting the battery.

DTC P0117: ENGINE COOLANT TEMPERATURE (ECT) SENSOR 1 CIRCUIT LOW VOLTAGE



Fig. 18: Engine Coolant Temperature Sensor 1 - Circuit Diagram

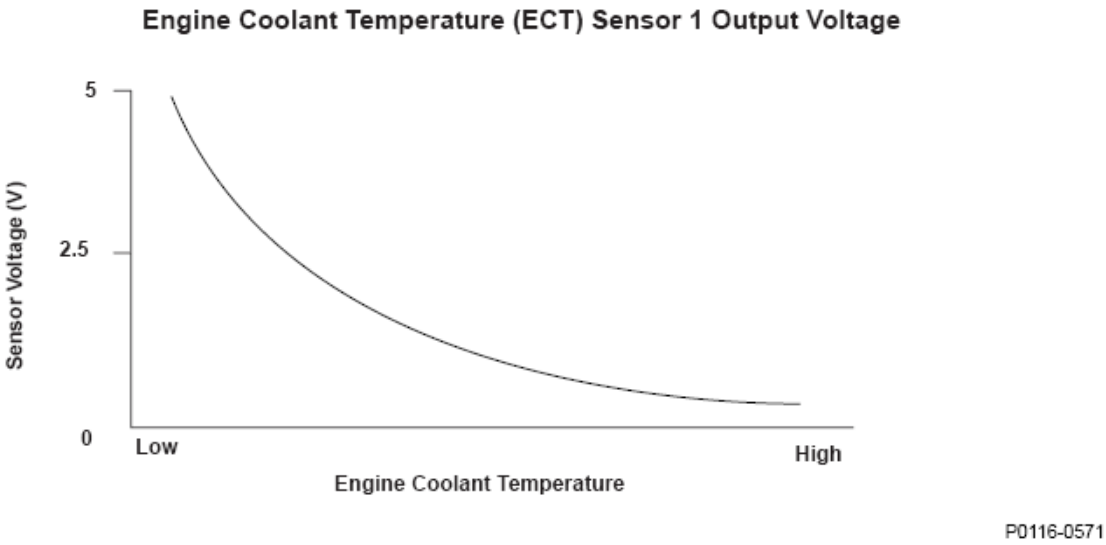


Fig. 19: Engine Coolant Temperature Sensor 1 Output Voltage Graph

GENERAL DESCRIPTION

Engine coolant temperature (ECT) sensor 1 is used for air/fuel ratio feedback control, ignition timing control, idle speed control, and other functions. The ECT sensor 1 resistance varies depending on the engine coolant temperature. As the engine coolant cools, the ECT sensor 1 resistance increases, and the engine control module (ECM)/powertrain control module (PCM) detects a high signal voltage. As the engine coolant warms, the ECT sensor 1 resistance decreases, and the ECM/PCM detects a low signal voltage. If the ECT sensor 1 output voltage is a set value when the engine coolant temperature is high, the ECM/PCM detects a malfunction and stores a DTC.

MONITOR EXECUTION, SEQUENCE, DURATION, DTC TYPE, OBD STATUS

Execution	Continuous
Sequence	None
Duration	2 seconds or more
DTC Type	One drive cycle, MIL on
OBD Status	PASSED/FAILED/NOT COMPLETED (STILL TESTING)

ENABLE CONDITIONS

Condition	
Ignition switch(1)	ON (II)
Engine start/stop button(2)	ON mode
No active DTCs set (prevents monitor from running)	P0118
(1) Without keyless access system (2) With keyless access system	

MALFUNCTION THRESHOLD

The ECT sensor 1 output voltage is 0.08 V or less for at least 2 seconds.

DIAGNOSIS DETAILS

Conditions for setting the DTC

When a malfunction is detected, the MIL comes on and a Pending DTC, a Confirmed DTC, and the freeze data are stored in the ECM/PCM memory.

Conditions for clearing the DTC

The MIL is cleared if the malfunction does not return in three consecutive trips in which the diagnostic runs. The MIL, the Pending DTC, the Confirmed DTC, and the freeze data can be cleared with the scan tool Clear command or by disconnecting the battery.

DTC P0118: ENGINE COOLANT TEMPERATURE (ECT) SENSOR 1 CIRCUIT HIGH VOLTAGE



Fig. 20: Engine Coolant Temperature Sensor 1 - Circuit Diagram

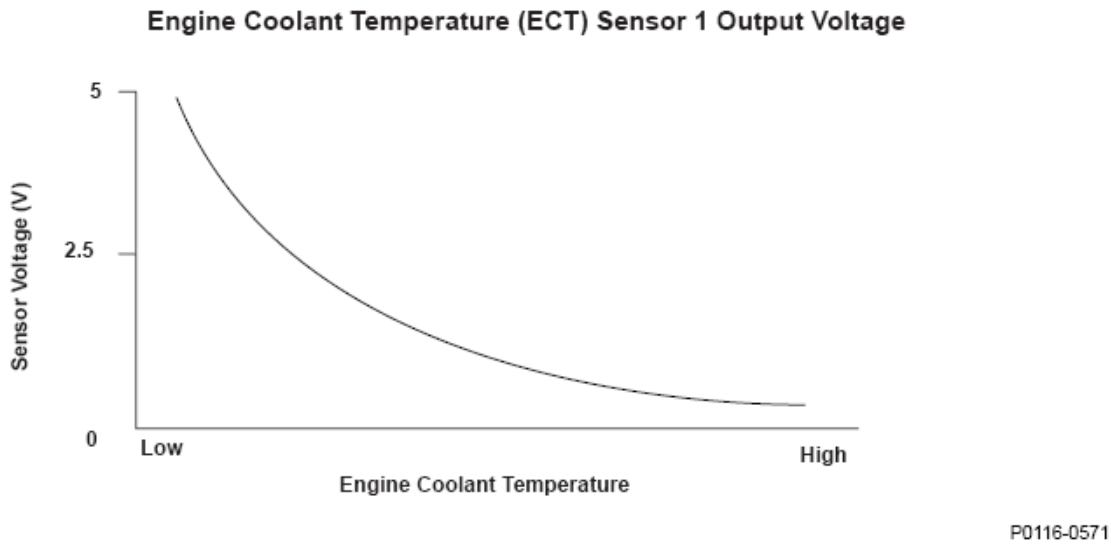


Fig. 21: Engine Coolant Temperature Sensor 1 Output Voltage Graph

GENERAL DESCRIPTION

Engine coolant temperature (ECT) sensor 1 is used for air/fuel ratio feedback control, ignition timing control, idle speed control, and other functions. The ECT sensor 1 resistance varies depending on the engine coolant temperature. As the engine coolant cools, the ECT sensor 1 resistance increases, and the engine control module (ECM)/powertrain control module (PCM) detects a high signal voltage. As the engine coolant warms, the ECT sensor 1 resistance decreases, and the ECM/PCM detects a low signal voltage. If the ECT sensor 1 output voltage is a set value when the engine coolant temperature is low, the ECM/PCM detects a malfunction and stores a DTC.

MONITOR EXECUTION, SEQUENCE, DURATION, DTC TYPE, OBD STATUS

Execution	Continuous
Sequence	None
Duration	2 seconds or more
DTC Type	One drive cycle, MIL on
OBD Status	PASSED/FAILED/NOT COMPLETED (STILL TESTING)

ENABLE CONDITIONS

Condition	
Ignition switch(1)	ON (II)
Engine start/stop button(2)	ON mode
No active DTCs set (prevents monitor from running)	P0117
(1) Without keyless access system (2) With keyless access system	

MALFUNCTION THRESHOLD

The ECT sensor 1 output voltage is 4.92 V or more for at least 2 seconds.

DIAGNOSIS DETAILS

Conditions for setting the DTC

When a malfunction is detected, the MIL comes on and a Pending DTC, a Confirmed DTC, and the freeze data are stored in the ECM/PCM memory.

Conditions for clearing the DTC

The MIL is cleared if the malfunction does not return in three consecutive trips in which the diagnostic runs. The MIL, the Pending DTC, the Confirmed DTC, and the freeze data can be cleared with the scan tool Clear command or by disconnecting the battery.

DTC P0122: THROTTLE POSITION (TP) SENSOR A CIRCUIT LOW VOLTAGE

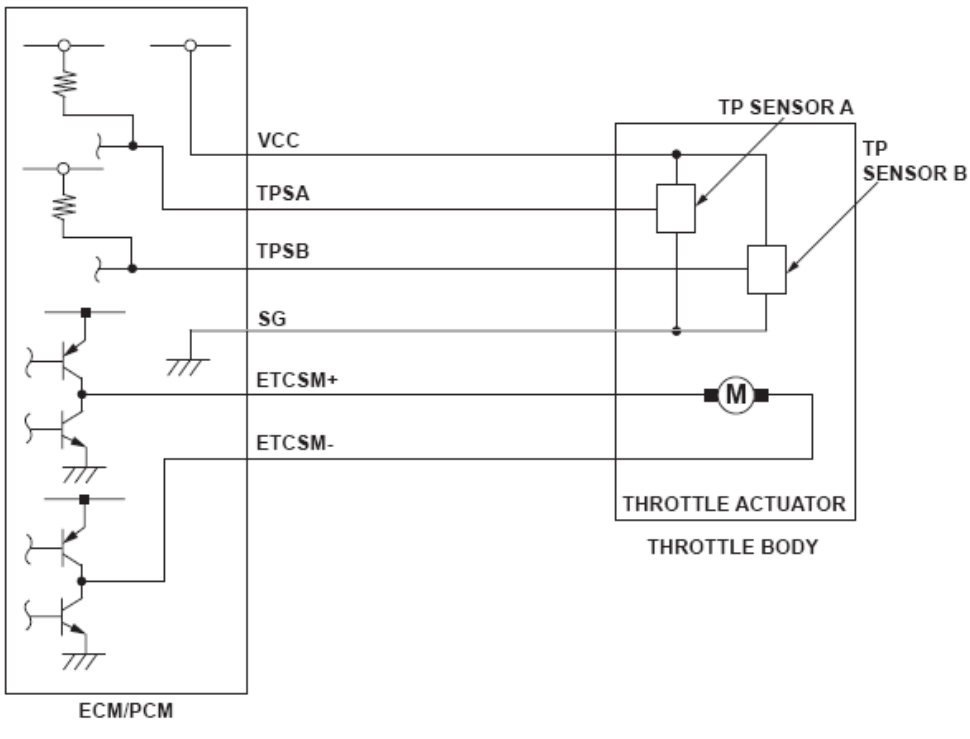


Fig. 22: Throttle Position Sensor - Circuit Diagram

GENERAL DESCRIPTION

The electronic throttle control system controls the throttle valve opening. The system includes the throttle actuator, the throttle valve, throttle position (TP) sensors A and B, the electronic throttle control system (ETCS) control relay, the accelerator pedal position (APP) sensor, and the engine control module (ECM)/powertrain

control module (PCM). TP sensor A is a semiconductor type, and it is attached to the throttle body and shaft to determine throttle valve position. The throttle valve position signal from TP sensor A is transmitted to the ECM/PCM for target position feedback control. If the signal from TP sensor A is a fixed value for a set time, the ECM/PCM detects a TP sensor A malfunction and stores a DTC.

MONITOR EXECUTION, SEQUENCE, DURATION, DTC TYPE, OBD STATUS

Execution	Continuous
Sequence	None
Duration	200 milliseconds or more
DTC Type	One drive cycle, MIL on
OBD Status	PASSED/FAILED/NOT COMPLETED (STILL TESTING)

ENABLE CONDITIONS

Condition	
Ignition switch(1)	ON (II)
Engine start/stop button(2)	ON mode
No active DTCs set (prevents monitor from running)	P0123, P0222, P0223, P2101, P2118, P2122, P2123, P2127, P2128, P2135, P2138, P2176
(1) Without keyless access system (2) With keyless access system	

MALFUNCTION THRESHOLD

The TP sensor A output voltage is 0.3 V or less for at least 200 milliseconds.

DIAGNOSIS DETAILS

Conditions for setting the DTC

When a malfunction is detected, the MIL comes on and a Pending DTC, a Confirmed DTC, and the freeze data are stored in the ECM/PCM memory.

Conditions for clearing the DTC

The MIL is cleared if the malfunction does not return in three consecutive trips in which the diagnostic runs. The MIL, the Pending DTC, the Confirmed DTC, and the freeze data can be cleared with the scan tool Clear command or by disconnecting the battery.

DTC P0123: THROTTLE POSITION (TP) SENSOR A CIRCUIT HIGH VOLTAGE

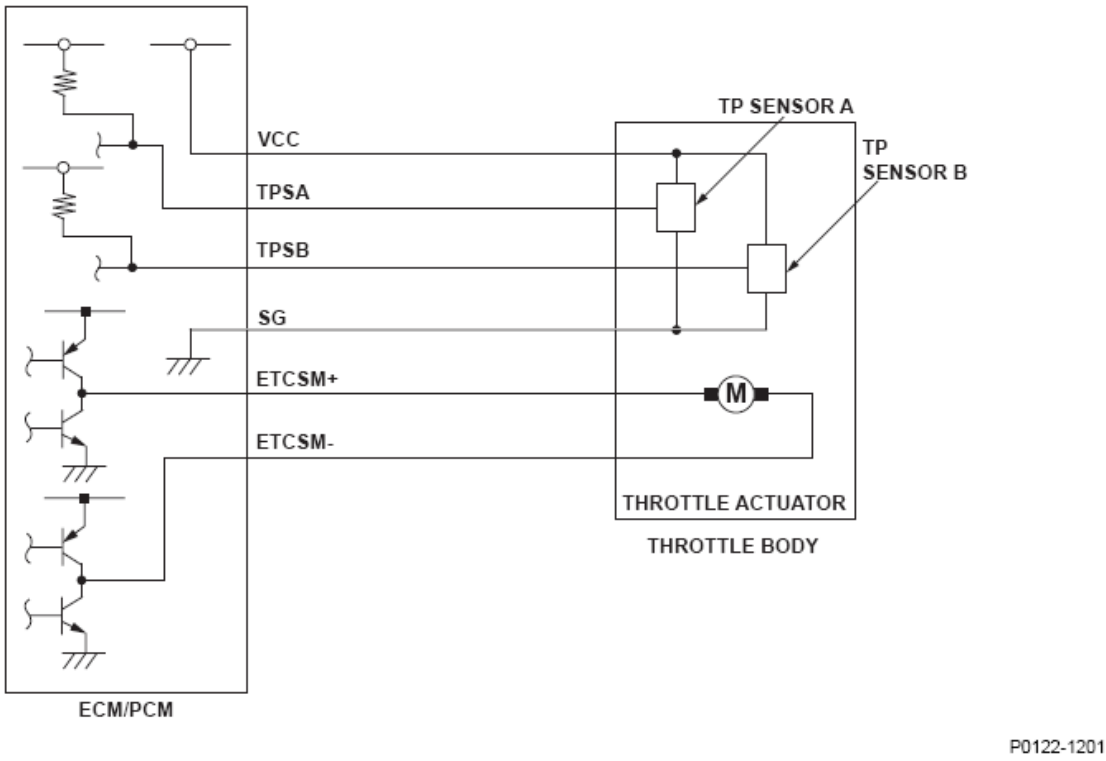


Fig. 23: Throttle Position Sensor - Circuit Diagram

GENERAL DESCRIPTION

The electronic throttle control system controls the throttle valve opening. The system includes the throttle actuator, the throttle valve, throttle position (TP) sensors A and B, the electronic throttle control system (ETCS) control relay, the accelerator pedal position (APP) sensor, and the engine control module (ECM)/powertrain control module (PCM). TP sensor A is a semiconductor type, and it is attached to the throttle body and shaft to determine throttle valve position. The throttle valve position signal from TP sensor A is transmitted to the ECM/PCM for target position feedback control. If the signal from TP sensor A is a fixed value for a set time, the ECM/PCM detects a TP sensor A malfunction and stores a DTC.

MONITOR EXECUTION, SEQUENCE, DURATION, DTC TYPE, OBD STATUS

Execution	Continuous
Sequence	None
Duration	200 milliseconds or more
DTC Type	One drive cycle, MIL on
OBD Status	PASSED/FAILED/NOT COMPLETED (STILL TESTING)

ENABLE CONDITIONS

Condition	
Ignition switch(1)	ON (II)

Engine start/stop button(2)	ON mode
No active DTCs set (prevents monitor from running)	P0122, P0222, P0223, P2101, P2118, P2122, P2123, P2127, P2128, P2135, P2138, P2176

(1) Without keyless access system

(2) With keyless access system

MALFUNCTION THRESHOLD

The TP sensor A output voltage is 4.8 V or more for at least 200 milliseconds.

DIAGNOSIS DETAILS

Conditions for setting the DTC

When a malfunction is detected, the MIL comes on and a Pending DTC, a Confirmed DTC, and the freeze data are stored in the ECM/PCM memory.

Conditions for clearing the DTC

The MIL is cleared if the malfunction does not return in three consecutive trips in which the diagnostic runs. The MIL, the Pending DTC, the Confirmed DTC, and the freeze data can be cleared with the scan tool Clear command or by disconnecting the battery.

DTC P0125: ENGINE COOLANT TEMPERATURE (ECT) SENSOR 1 MALFUNCTION/SLOW RESPONSE

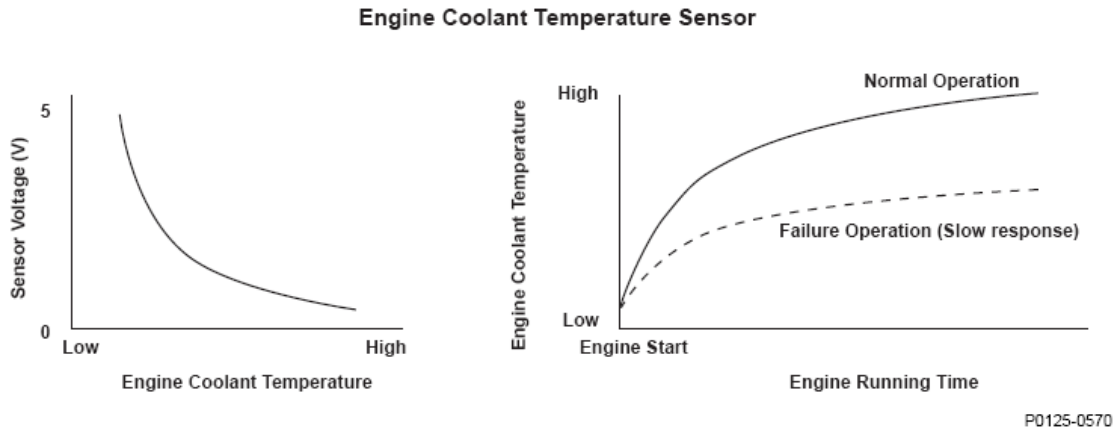


Fig. 24: Engine Coolant Temperature Sensor Characteristics Curve

GENERAL DESCRIPTION

The engine control module (ECM)/powertrain control module (PCM) supplies voltage to the engine coolant temperature signal circuit (about 5 V) through a pull-up resistor. As the engine coolant cools, the engine coolant temperature (ECT) sensor 1 resistance increases, and the ECM/PCM detects a high signal voltage. As the

engine coolant warms, the ECT sensor 1 resistance decreases, and the ECM/PCM detects a low signal voltage. If the ECT sensor 1 output voltage does not reach a specified temperature at which closed loop control for stoichiometric air/fuel ratio starts within a set time, depending on the initial engine coolant temperature after starting the engine, the ECM/PCM detects a malfunction and stores a DTC.

MONITOR EXECUTION, SEQUENCE, DURATION, DTC TYPE, OBD STATUS

Execution	Once per driving cycle
Sequence	None
Duration	20 minutes or less
DTC Type	Two drive cycles, MIL on
OBD Status	PASSED/FAILED/NOT COMPLETED (STILL TESTING)

ENABLE CONDITIONS

Condition	Minimum	Maximum
Initial engine coolant temperature	-	10 °F (-12 °C)
Fuel feedback	Other than during fuel cut-off operation	
No active DTCs set (prevents monitor from running)	P0101, P0102, P0103, P0107, P0108, P0111, P0112, P0113, P0117, P0118, P0134, P0135, P0154, P0155, P0171, P0172, P0174, P0175, P0300, P0301, P0302, P0303, P0304, P0305, P0306, P0335, P0339, P0351, P0352, P0353, P0354, P0355, P0356, P0401, P0404, P0443, P0496, P0497, P0506, P0507, P1077, P1078, P1128, P1129, P1172, P1174, P145C, P2195, P2197, P2227, P2228, P2229, P2237, P2238, P2240, P2241, P2243, P2245, P2247, P2249, P2251, P2252, P2254, P2255, P2279, P2413, P2646, P2647, P2648, P2649	

MALFUNCTION THRESHOLD

The engine running time before the engine coolant temperature reaches 10 °F (-12 °C), based on the initial engine coolant temperatures, is as follows:

Initial engine coolant temperature	Engine running time
-24 °F (-31 °C)	5 minutes or more
10 °F (-12 °C)	1 minute or more

DRIVING PATTERN

1. Start the engine under Enable Conditions (see "Initial engine coolant temperature").
2. Let the engine idle for at least 20 minutes.

DIAGNOSIS DETAILS

Conditions for setting the DTC

When a malfunction is detected during the first drive cycle with the engine coolant temperature and intake air temperature at engine start-up within the specified temperature range, a Pending DTC is stored in the ECM/PCM memory. If the malfunction returns in the next (second) drive cycle with the engine coolant temperature and intake air temperature at engine start-up within the specified temperature range, the MIL comes on and a Confirmed DTC and the freeze data are stored.

Conditions for clearing the DTC

The MIL is cleared if the malfunction does not return in three consecutive trips in which the diagnostic runs. The MIL, the Pending DTC, the Confirmed DTC, and the freeze data can be cleared with the scan tool Clear command or by disconnecting the battery.

DTC P0128: COOLING SYSTEM MALFUNCTION

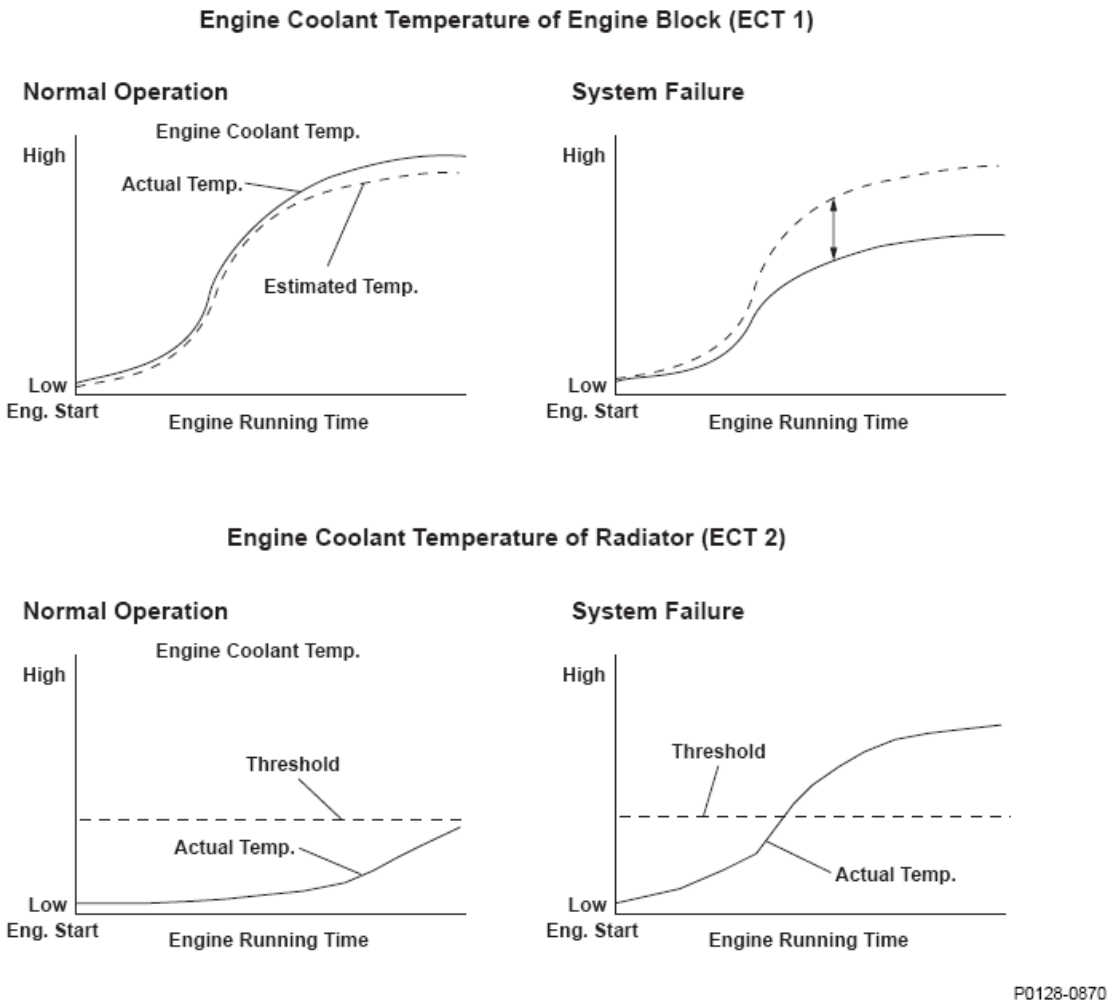


Fig. 25: Cooling System Malfunction Graph

GENERAL DESCRIPTION

The thermostat is closed when the engine coolant temperature is low, and it stops the circulation of engine

coolant to speed engine warm up. When the engine coolant temperature increases, the thermostat opens and circulates engine coolant to control its temperature. When the engine coolant temperature decreases, the opening area of the thermostat is reduced to regulate the engine coolant temperature. If the thermostat sticks open, engine warm up is delayed, and exhaust emissions are adversely affected. The engine control module (ECM)/powertrain control module (PCM) measures the rise in the coolant temperature after the engine starts at the engine block and at the radiator, and it estimates the characteristics of the engine coolant temperature by calculations based on those two temperatures and the driving conditions. When ECT 2 immediately increases from the starting value, it is defined as the thermostat stuck open. When ECT 1 does not reach a specified value at a certain condition, it is defined as a thermostat malfunction.

MONITOR EXECUTION, SEQUENCE, DURATION, DTC TYPE, OBD STATUS

Execution	Once per driving cycle
Sequence	None
Duration	Depending on the driving conditions
DTC Type	Two drive cycles, MIL on
OBD Status	PASSED/FAILED/NOT COMPLETED (STILL TESTING)

ENABLE CONDITIONS

Condition	Minimum	Maximum
Engine off time	6 hours	-
Initial intake air temperature	19 °F (-7 °C)	123 °F (50 °C)
Initial engine coolant temperature (ECT 2)	19 °F (-7 °C)	123 °F (50 °C)
The difference between initial intake air temperature and current intake air temperature	-	3 °F (2 °C)(1)
		7 °F (4 °C)(2)
No active DTCs set (prevents monitor from running)	P0101, P0102, P0103, P0107, P0108, P0111, P0112, P0113, P0116, P0117, P0118, P0122, P0123, P0125, P0134, P0135, P0154, P0155, P0171, P0172, P0174, P0175, P0222, P0223, P0300, P0301, P0302, P0303, P0304, P0305, P0306, P0335, P0339, P0351, P0352, P0353, P0354, P0355, P0356, P0400, P0401, P0404, P0443, P0496, P0497, P0506, P0507, P060A, P0720, P0722, P1077, P1078, P1116, P1128, P1129, P1172, P1174, P145C, P1659, P2101, P2118, P2122, P2123, P2127, P2128, P2135, P2138, P2176, P2183, P2184, P2185, P2195, P2197, P2227, P2228, P2229, P2237, P2238, P2240, P2241, P2243, P2245, P2247, P2249, P2251, P2252, P2254, P2255, P2279, P2413, P2610, P2646, P2647, P2648, P2649	

(1) Intake air temperature decrease judgment when there is no driving record of 25 mph (40 km/h) in this drive cycle.

(2) Intake air temperature decrease judgment when there is a driving record of 25 mph (40 km/h) in this drive cycle.

MALFUNCTION THRESHOLD

Malfunction determination 1:

The difference between the current engine coolant temperature at the radiator (ECT 2) and the initial engine coolant temperature at the radiator (ECT 2) is at least 15 °F (8 °C) when either of there condition is met.

- When the estimated engine coolant temperature reached to 160 °F (72 °C).
- When the estimated engine coolant temperature changed 36 °F (20 °C).

Malfunction determination 2:

The estimated engine coolant temperature reaches to 158 °F (70 °C) before the actual engine coolant temperature at the engine (ECT 1) reaches to 158 °F (70 °C).

DRIVING PATTERN

1. Start the engine under Enable Conditions (see "Engine off time", "Initial intake air temperature", "Initial engine coolant temperature (ECT 2)" and "The difference between initial intake air temperature and current intake air temperature").
2. Drive the vehicle at a speed between 15 - 75 mph (24 - 120 km/h) for at least 30 minutes.
    - Drive the vehicle in this manner only if the traffic regulations and ambient conditions allow.

DIAGNOSIS DETAILS

Conditions for setting the DTC

When a malfunction is detected during the first drive cycle with the engine coolant temperature and intake air temperature at engine start-up within the specified temperature range, a Pending DTC is stored in the ECM/PCM memory. If the malfunction returns in the next (second) drive cycle with the engine coolant temperature and intake air temperature at engine start-up within the specified temperature range, the MIL comes on and a Confirmed DTC and the freeze data are stored.

Conditions for clearing the DTC

The MIL is cleared if the malfunction does not return in three consecutive trips in which the diagnostic runs. The MIL, the Pending DTC, the Confirmed DTC, and the freeze data can be cleared with the scan tool Clear command or by disconnecting the battery.

DTC P0133: REAR AIR/FUEL RATIO (A/F) SENSOR (BANK 1, SENSOR 1) MALFUNCTION/SLOW RESPONSE (ENGINE TYPE: J35Z6)

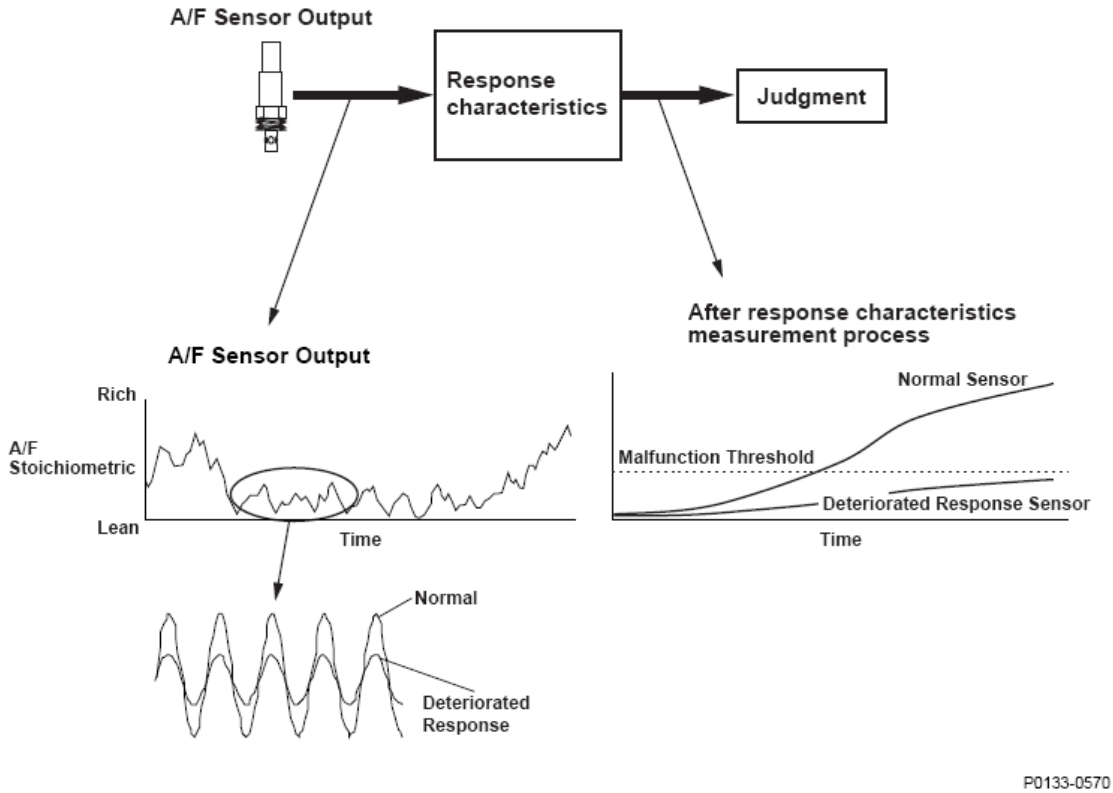


Fig. 26: Air/Fuel Ratio Sensor Characteristics Curve

GENERAL DESCRIPTION

The rear air/fuel ratio (A/F) sensor (bank 1, sensor 1) has a linear signal output in relation to the oxygen concentration. The powertrain control module (PCM) computes the air/fuel ratio from the rear A/F sensor output voltage and uses fuel feedback control to improve exhaust emissions. The PCM compares the response characteristics against the rear A/F sensor output. If the total rear A/F sensor output is a specified value for a specified time, the PCM detects a deteriorated response and stores a DTC.

MONITOR EXECUTION, SEQUENCE, DURATION, DTC TYPE, OBD STATUS

Execution	Once per driving cycle
Sequence	None
Duration	6.8 seconds or more
DTC Type	Two drive cycles, MIL on
OBD Status	PASSED/FAILED/EXECUTING/OUT OF (TEST) CONDITION

ENABLE CONDITIONS

Condition	Minimum	Maximum
Elapsed time after application of	60 seconds	-

power to A/F sensor heater starts			
Engine coolant temperature		156 °F (69 °C)	-
Intake air temperature		-13 °F (-25 °C)	-
Engine speed		1,250 rpm	2,100 rpm
MAP value	1,250 rpm	54 kPa (15.8 inHg, 400 mmHg)	75 kPa (22.4 inHg, 570 mmHg)
	2,000 rpm	34 kPa (9.9 inHg, 250 mmHg)	
Vehicle speed		36 mph (57 km/h)	-
Fuel trim		0.73	1.47
Fuel feedback		Closed loop at stoichiometric	
Monitoring priority		P0400	
No active DTCs set (prevents monitor from running)		P0101, P0102, P0103, P0107, P0108, P0112, P0113, P0117, P0118, P0134, P0135, P0171, P0172, P0300, P0301, P0302, P0303, P0304, P0305, P0306, P0335, P0339, P0351, P0352, P0353, P0354, P0355, P0356, P0400, P0401, P0404, P0443, P0496, P0497, P0722, P1077, P1078, P1128, P1129, P1172, P145C, P2195, P2227, P2228, P2229, P2237, P2238, P2243, P2245, P2251, P2252, P2279, P2413, P2646, P2647, P2648, P2649, P2A00	
Other		Without excessive load change	

MALFUNCTION THRESHOLD

The total rear A/F sensor (bank 1, sensor 1) output value is 34 or less in 6.8 seconds.

DRIVING PATTERN

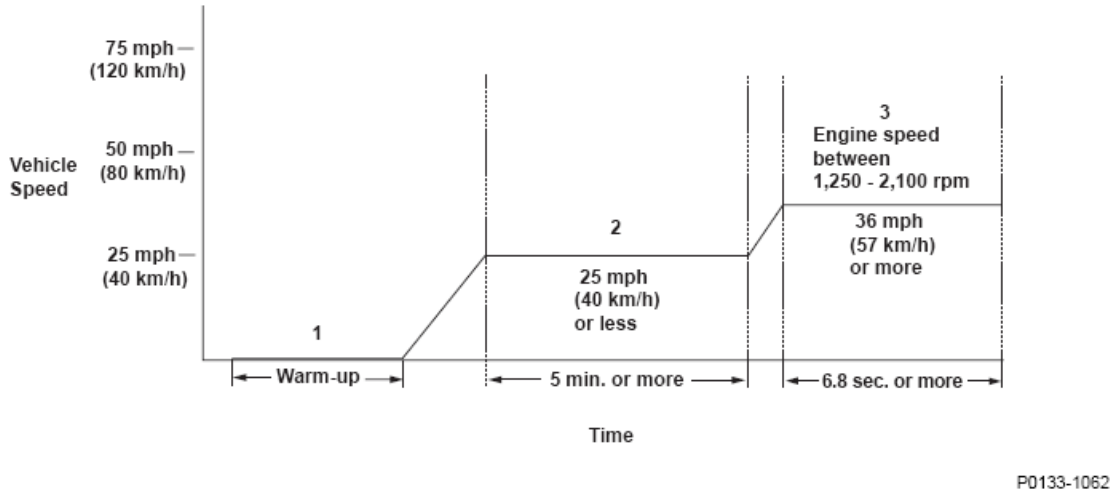


Fig. 27: Vehicle Speed Driving Pattern

1. Start the engine. Hold the engine speed at 3,000 rpm without load (in P or N) until the radiator fan comes on.
2. Drive the vehicle at a steady speed of 25 mph (40 km/h) or less, for at least 5 minutes.
3. Drive immediately at a steady speed of 36 mph (57 km/h) or more and engine speed between 1,250 - 2,100 rpm for at least 6.8 seconds.
    - Drive the vehicle in this manner only if the traffic regulations and ambient conditions allow.

DIAGNOSIS DETAILS

Conditions for setting the DTC

When a malfunction is detected during the first drive cycle, a Pending DTC is stored in the PCM memory. If the malfunction returns in the next (second) drive cycle, the MIL comes on and a Confirmed DTC and the freeze data are stored.

Conditions for clearing the DTC

The MIL is cleared if the malfunction does not return in three consecutive trips in which the diagnostic runs. The MIL, the Pending DTC, the Confirmed DTC, and the freeze data can be cleared with the scan tool Clear command or by disconnecting the battery.

DTC P0133: REAR AIR/FUEL RATIO (A/F) SENSOR (BANK 1, SENSOR 1) MALFUNCTION/SLOW RESPONSE (ENGINE TYPE: J37A4)

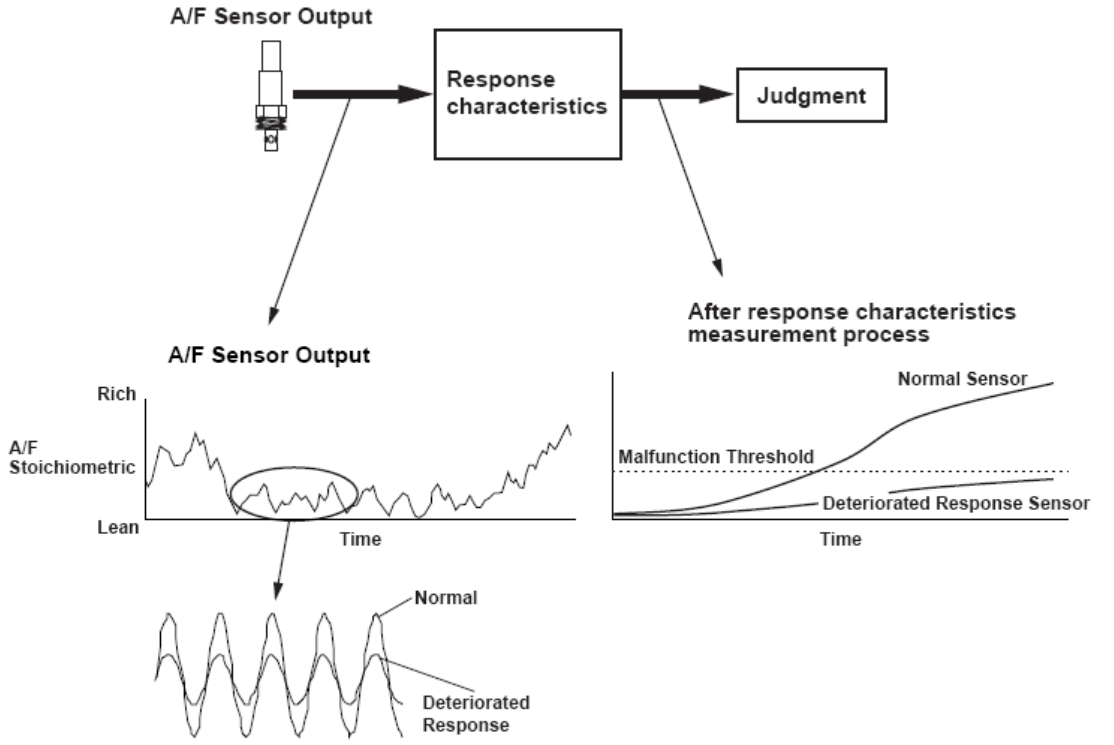


Fig. 28: Air/Fuel Ratio Sensor Characteristics Curve

GENERAL DESCRIPTION

The rear air/fuel ratio (A/F) sensor (bank 1, sensor 1) has a linear signal output in relation to the oxygen concentration. The engine control module (ECM)/powertrain control module (PCM) computes the air/fuel ratio from the rear A/F sensor output voltage and uses fuel feedback control to improve exhaust emissions. The ECM/PCM compares the response characteristics against the rear A/F sensor output. If the total rear A/F sensor output is a specified value for a specified time, the ECM/PCM detects a deteriorated response and stores a DTC.

MONITOR EXECUTION, SEQUENCE, DURATION, DTC TYPE, OBD STATUS

Execution	Once per driving cycle
Sequence	None
Duration	6.8 seconds or more
DTC Type	Two drive cycles, MIL on
OBD Status	PASSED/FAILED/EXECUTING/OUT OF (TEST) CONDITION

ENABLE CONDITIONS

Condition		Minimum	Maximum
Elapsed time after application of power to A/F sensor heater starts		60 seconds	-
Engine coolant temperature		156 °F (69 °C)	-
Intake air temperature		-13 °F (-25 °C)	-
Engine speed		1,250 rpm	2,100 rpm(1) 2,600 rpm(2)
MAP value	1,250 rpm	54 kPa (15.8 inHg, 400 mmHg)	75 kPa (22.4 inHg, 570 mmHg)
	2,000 rpm	34 kPa (9.9 inHg, 250 mmHg)	
Vehicle speed		36 mph (57 km/h)	-
Fuel trim		0.73	1.47
Fuel feedback		Closed loop at stoichiometric Monitoring priority P0400	
No active DTCs set (prevents monitor from running)		P0101, P0102, P0103, P0107, P0108, P0112, P0113, P0117, P0118, P0134, P0135, P0171, P0172, P0300, P0301, P0302, P0303, P0304, P0305, P0306, P0335, P0339, P0351, P0352, P0353, P0354, P0355, P0356, P0400, P0401, P0404, P0443, P0496, P0497, P0720, P0722, P1077, P1078, P1128, P1129, P1172, P145C, P2195, P2227, P2228, P2229, P2237, P2238, P2243, P2245, P2251, P2252, P2279, P2413, P2646, P2647, P2648, P2649, P2A00	

Other	Without excessive load change
(1) A/T model	
(2) M/T model	

MALFUNCTION THRESHOLD

The total rear A/F sensor (bank 1, sensor 1) output value is 34 or less in 6.8 seconds.

DRIVING PATTERN

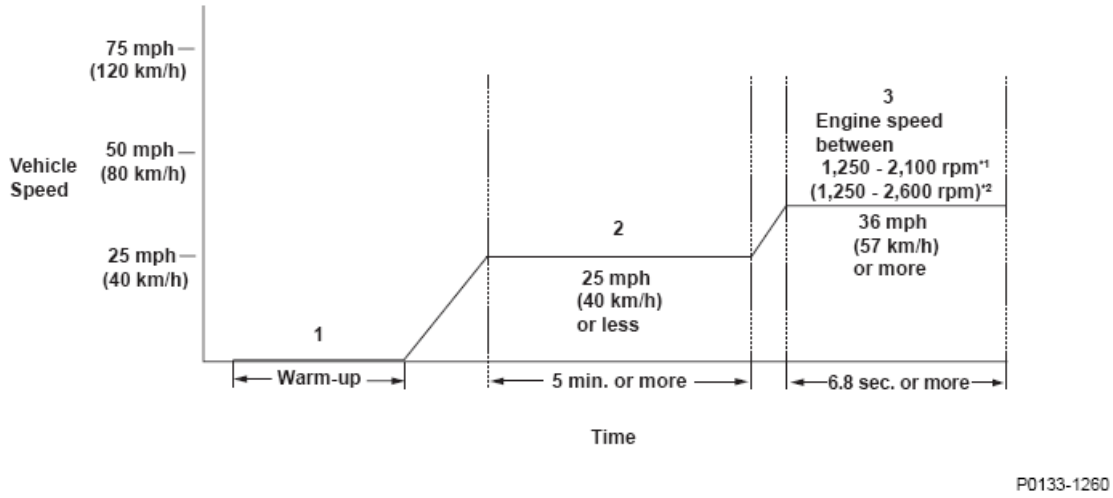


Fig. 29: Vehicle Speed Driving Pattern

1. Start the engine. Hold the engine speed at 3,000 rpm without load (A/T in P or N, M/T in neutral) until the radiator fan comes on.
2. Drive the vehicle at a steady speed of 25 mph (40 km/h) or less, for at least 5 minutes.
3. Drive immediately at a steady speed of 36 mph (57 km/h) or more and engine speed between 1,250 - 2,100 rpm*1 (1,250 - 2,600 rpm)*2 for at least 6.8 seconds.
    - Drive the vehicle in this manner only if the traffic regulations and ambient conditions allow.

DIAGNOSIS DETAILS

Conditions for setting the DTC

When a malfunction is detected during the first drive cycle, a Pending DTC is stored in the ECM/PCM memory. If the malfunction returns in the next (second) drive cycle, the MIL comes on and a Confirmed DTC and the freeze data are stored.

Conditions for clearing the DTC

The MIL is cleared if the malfunction does not return in three consecutive trips in which the diagnostic runs. The MIL, the Pending DTC, the Confirmed DTC, and the freeze data can be cleared with the scan tool Clear

command or by disconnecting the battery.

DTC P0134: REAR AIR/FUEL RATIO (A/F) SENSOR (BANK 1, SENSOR 1) HEATER SYSTEM MALFUNCTION

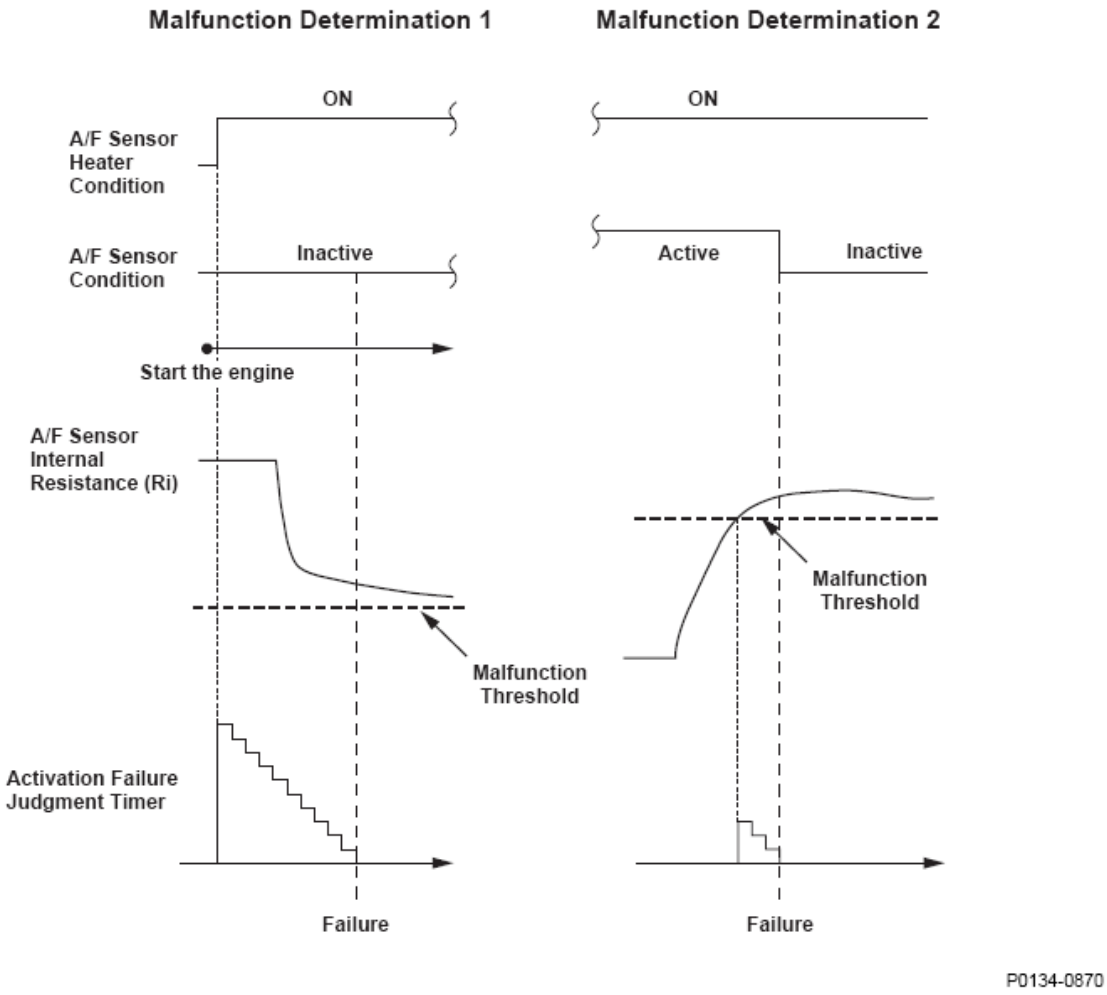


Fig. 30: Air/Fuel Ratio Sensor Heater System Characteristics Curve

GENERAL DESCRIPTION

The rear air/fuel ratio (A/F) sensor (bank 1, sensor 1) is activated by warming the element with a heater and by maintaining a steady high temperature to accurately calculate the air/fuel ratio. If the heater does not properly heat the element, the rear A/F sensor does not activate, and the exhaust emissions deteriorate. The engine control module (ECM)/powertrain control module (PCM) monitors the rear A/F sensor internal resistance.

1. When the rear A/F sensor does not activate for a set time after the rear A/F sensor heater is turned on (with high rear A/F sensor internal resistance), a malfunction of the rear A/F sensor heater is detected, and a DTC is stored.
2. When the rear A/F sensor heater cycles ON and OFF for a set time, and the resistance remains high when the heater is ON, a malfunction of the rear A/F sensor heater is detected, and a DTC is stored.

MONITOR EXECUTION, SEQUENCE, DURATION, DTC TYPE, OBD STATUS

Execution	Continuous
Sequence	None
Duration	40 seconds or more
DTC Type	Two drive cycles, MIL on
OBD Status	PASSED/FAILED/NOT COMPLETED (STILL TESTING)

ENABLE CONDITIONS

Condition	Minimum	Maximum
Battery voltage	10.5 V	-
Fuel feedback	Other than during fuel cut-off operation	
No active DTCs set (prevents monitor from running)	P0135, P0300, P0301, P0302, P0303, P0304, P0305, P0306, P0351, P0352, P0353, P0354, P0355, P0356, P1172, P2195, P2237, P2238, P2243, P2245, P2251, P2252	

MALFUNCTION THRESHOLD

Malfunction determination 1 - From start up

The rear A/F sensor (bank 1, sensor 1) internal resistance value is 200 W or more for at least 40 seconds right after the engine starts.

Malfunction determination 2 - Hot

The rear A/F sensor (bank 1, sensor 1) internal resistance value is 270 W or more for at least 1.0 second.

DRIVING PATTERN

Start the engine, and let it idle for at least 1 minute. When engine coolant temperature is 14 °F (-10 °C) or less, leave the vehicle for 4 minutes or more.

DIAGNOSIS DETAILS

Conditions for setting the DTC

When a malfunction is detected during the first drive cycle, a Pending DTC is stored in the ECM/PCM memory. If the malfunction returns in the next (second) drive cycle, the MIL comes on and a Confirmed DTC and the freeze data are stored.

Conditions for clearing the DTC

The MIL is cleared if the malfunction does not return in three consecutive trips in which the diagnostic runs. The MIL, the Pending DTC, the Confirmed DTC, and the freeze data can be cleared with the scan tool Clear command or by disconnecting the battery.

DTC P0135: REAR AIR/FUEL RATIO (A/F) SENSOR (BANK 1, SENSOR 1) HEATER CIRCUIT MALFUNCTION

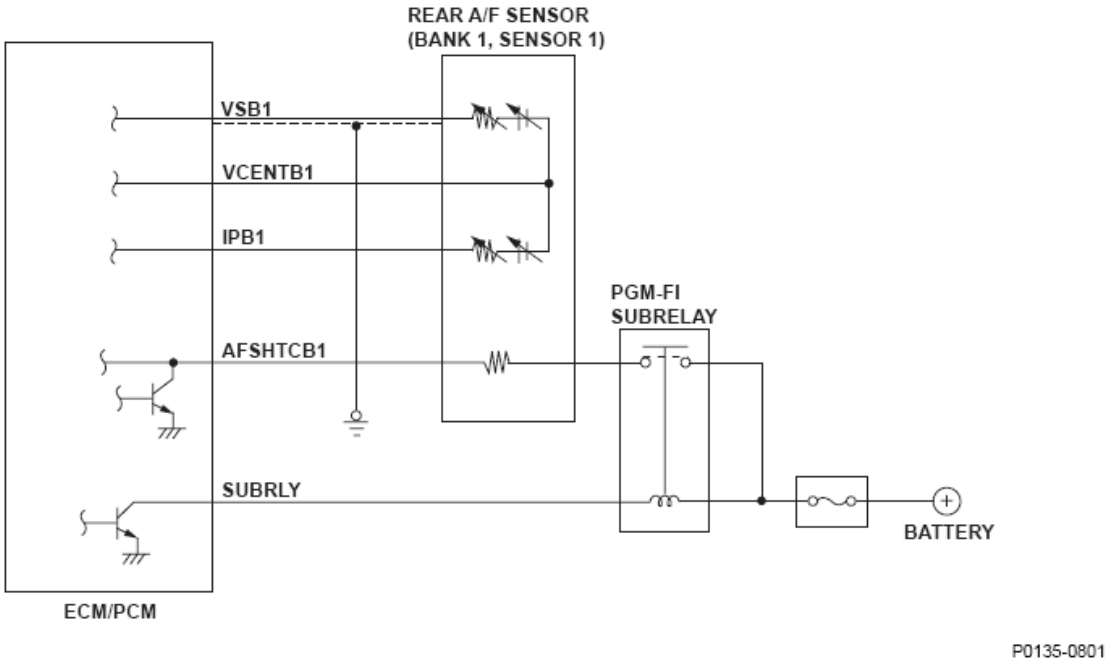


Fig. 31: Rear Air/Fuel Ratio Sensor - Circuit Diagram (Bank 1, Sensor 1)

GENERAL DESCRIPTION

A heater for the sensor element is embedded in the rear air/fuel ratio (A/F) sensor (bank 1, sensor 1), and it is controlled by the engine control module (ECM)/powertrain control module (PCM). It is activated and heats the sensor to stabilize and speed up the detection of oxygen content when the exhaust gas temperature is cold. The ECM/PCM monitors the rear A/F sensor heater output (return check). If the return signals do not meet the command value (for heater activation) for a set time, the ECM/PCM detects a malfunction and stores a DTC.

MONITOR EXECUTION, SEQUENCE, DURATION, DTC TYPE, OBD STATUS

Execution	Continuous
Sequence	None
Duration	5 seconds or more
DTC Type	Two drive cycles, MIL on
OBD Status	PASSED/FAILED/NOT COMPLETED (STILL TESTING)

ENABLE CONDITIONS

Condition	Minimum	Maximum
Battery voltage	9.0 V	-
State of the engine	Running	

Other	During rear A/F sensor heater operation

MALFUNCTION THRESHOLD

One of these conditions is met for at least 5 seconds.

- No return signal "HIGH" is detected when the ECM/PCM output duty is less than 5 %.
- Return signal does not change when the ECM/PCM output duty is more than 5 %*.

*: ECM/PCM output duty is limited to 95 % when it exceeds 95%.

DRIVING PATTERN

Start the engine. Hold the engine speed at 3,000 rpm without load (A/T in P or N, M/T in neutral) until the radiator fan comes on, then let it idle.

DIAGNOSIS DETAILS

Conditions for setting the DTC

When a malfunction is detected during the first drive cycle, a Pending DTC is stored in the ECM/PCM memory. If the malfunction returns in the next (second) drive cycle, the MIL comes on and a Confirmed DTC and the freeze data are stored.

Conditions for clearing the DTC

The MIL is cleared if the malfunction does not return in three consecutive trips in which the diagnostic runs. The MIL, the Pending DTC, the Confirmed DTC, and the freeze data can be cleared with the scan tool Clear command or by disconnecting the battery.

DTC P0137: REAR SECONDARY HEATED OXYGEN SENSOR (SECONDARY HO2S (BANK 1, SENSOR 2)) CIRCUIT LOW VOLTAGE

GENERAL DESCRIPTION

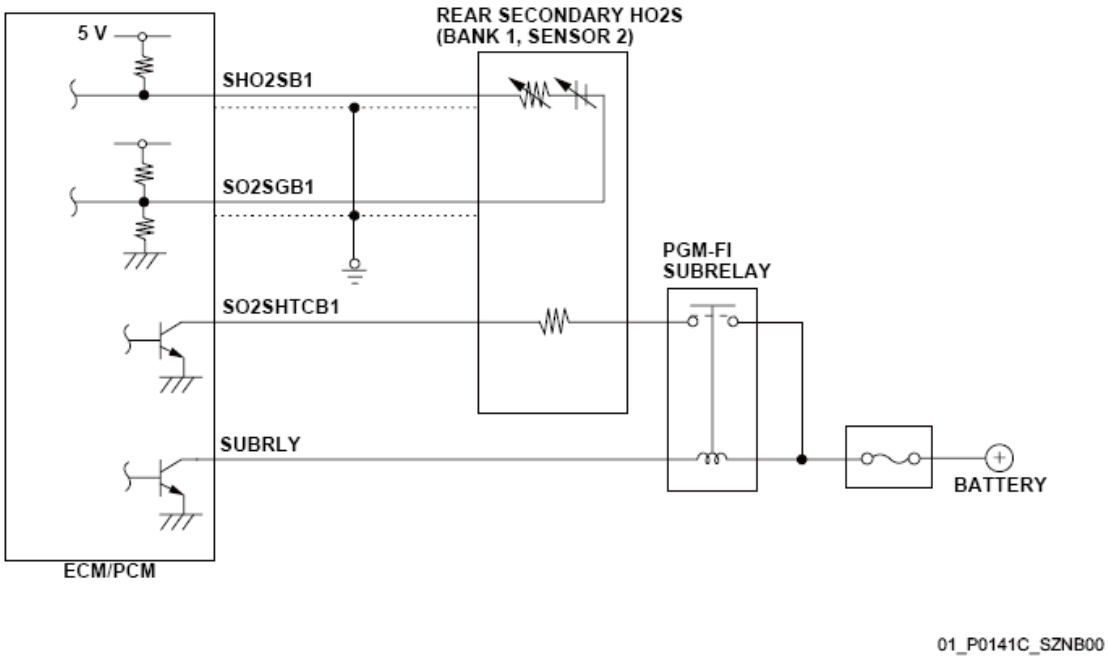


Fig. 32: Secondary Heated Oxygen Sensor - Circuit Diagram

The rear secondary heated oxygen sensor (secondary HO2S (bank 1, sensor 2)) detects the oxygen density in the exhaust gas and converts it into electrical signals. If the rear secondary HO2S output voltage is a specified value for a set time, the engine control module (ECM)/powertrain control module (PCM) detects a malfunction and stores a DTC.

MONITOR EXECUTION, SEQUENCE, DURATION, DTC TYPE, OBD STATUS

Execution	Continuous
Sequence	None
Duration	5 seconds or more
DTC Type	Two drive cycles, MIL on
OBD Status	PASSED/FAILED/EXECUTING/OUT OF (TEST) CONDITION

ENABLE CONDITIONS

Condition	
State of the engine	Running
Other	At least 55 seconds must be passed after the rear secondary HO2S (bank 1, sensor 2) output voltage reaches 1.0 V or less

MALFUNCTION THRESHOLD

The rear secondary HO2S (bank 1, sensor 2) output voltage is 0.12 V or less for at least 5 seconds.

CONFIRMATION PROCEDURE

With the Driving Pattern

Start the engine. Hold the engine speed at 3,000 rpm without load (A/T in P or N, M/T in neutral) until the radiator fan comes on, then let it idle.

DIAGNOSIS DETAILS

Conditions for setting the DTC

When a malfunction is detected during the first drive cycle, a Pending DTC is stored in the ECM/PCM memory. If the malfunction returns in the next (second) drive cycle, the MIL comes on and a Confirmed DTC and the freeze data are stored.

Conditions for clearing the DTC

The MIL is cleared if the malfunction does not return in three consecutive trips in which the diagnostic runs. The MIL, the Pending DTC, the Confirmed DTC, and the freeze data can be cleared with the scan tool Clear command or by disconnecting the battery.

DTC P0138: REAR SECONDARY HEATED OXYGEN SENSOR (SECONDARY HO2S (BANK 1, SENSOR 2)) CIRCUIT HIGH VOLTAGE

GENERAL DESCRIPTION

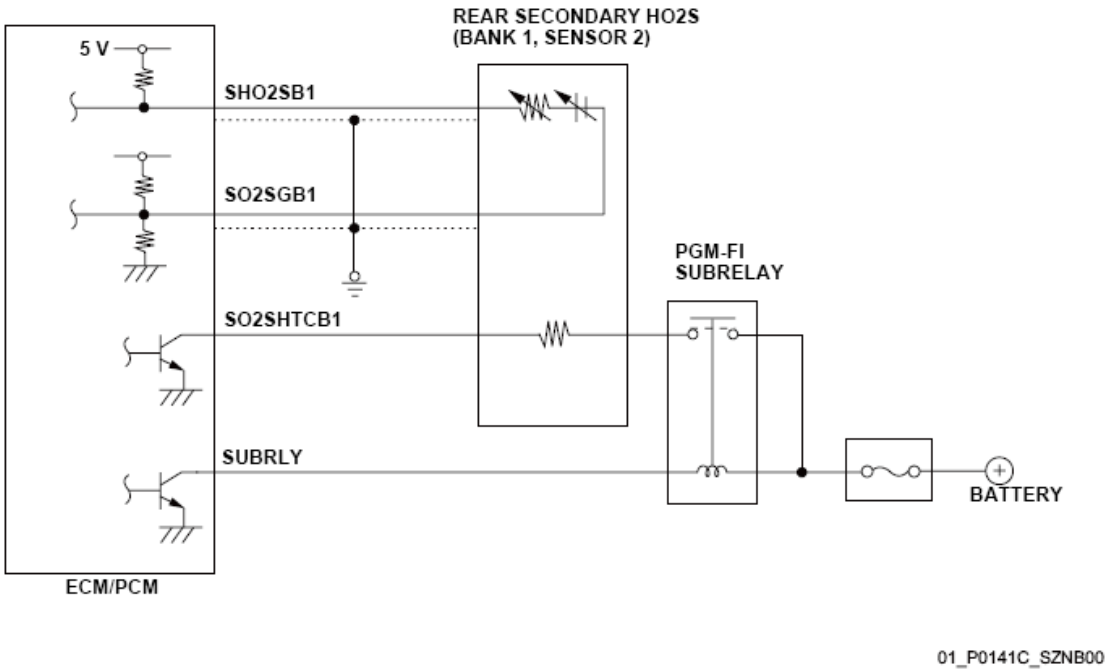


Fig. 33: Secondary Heated Oxygen Sensor - Circuit Diagram

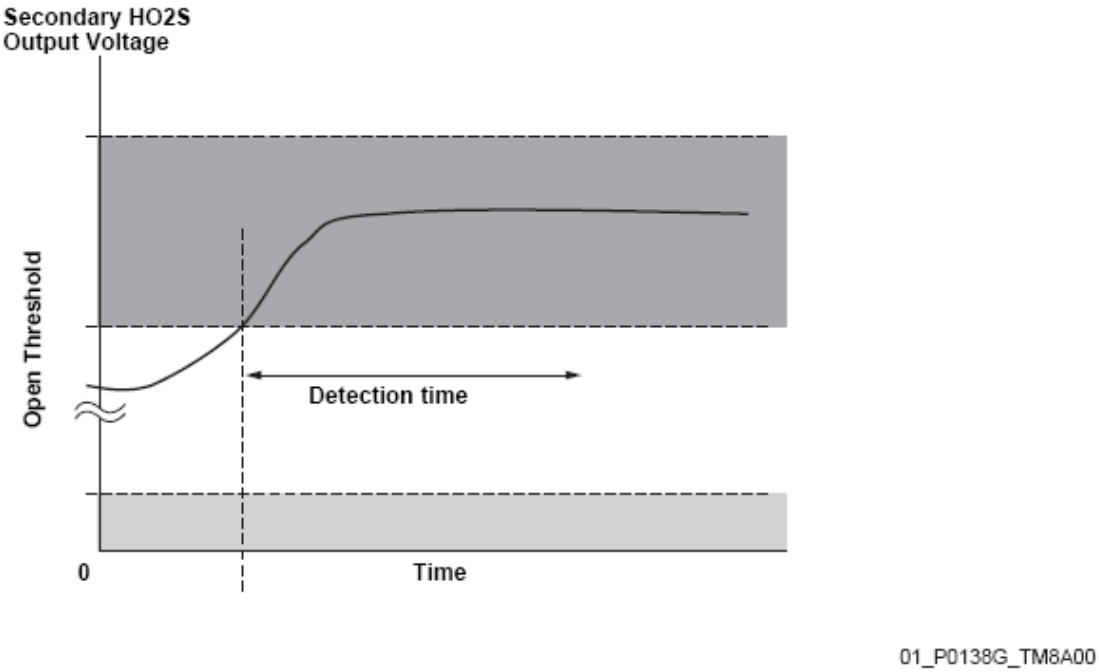


Fig. 34: Secondary Heated Oxygen Sensor Output Voltage Graph

The rear secondary heated oxygen sensor (secondary HO2S (bank 1, sensor 2)) detects the oxygen content in the exhaust gas downstream of the rear warm up three way catalytic converter (WU-TWC) (bank 1) during stoichiometric air/fuel ratio feedback control. The engine control module (ECM)/powertrain control module (PCM) controls the air/fuel ratio from the rear air/fuel ratio (A/F) sensor (bank 1, sensor 1) output voltage so that the rear WU-TWC efficiency is optimized. After current is applied to the rear secondary HO2S heater, if the rear secondary HO2S output continues to exceed the upper limit used during feedback control, the ECM/PCM detects a malfunction and stores a DTC.

MONITOR EXECUTION, SEQUENCE, DURATION, DTC TYPE, OBD STATUS

Execution	Continuous
Sequence	None
Duration	5.0 seconds or more
DTC Type	Two drive cycles, MIL on
OBD Status	PASSED/FAILED/EXECUTING/OUT OF (TEST) CONDITION

ENABLE CONDITIONS

Condition	Minimum	Maximum
Elapsed time that secondary HO2S activity is not monitored after starting the engine	20 seconds	-
Fuel feedback	Closed loop	
No active DTCs set (prevents monitor from running)	P0117, P0118, P0137, P0139, P0141, P2270	

MALFUNCTION THRESHOLD

The rear secondary HO2S output voltage is 1.27 V or more for at least 5.0 seconds.

CONFIRMATION PROCEDURE

With the Driving Pattern

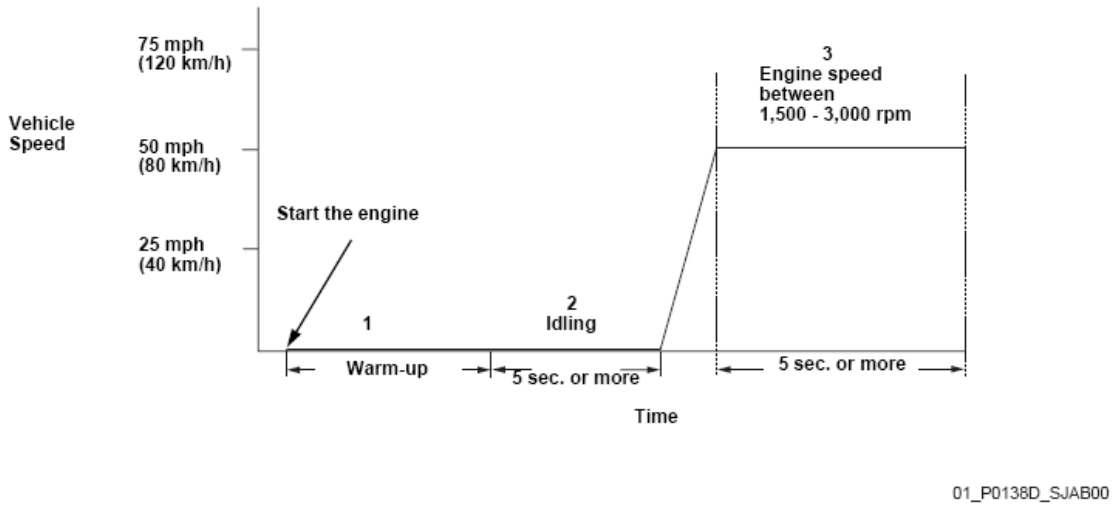


Fig. 35: Vehicle Speed Driving Pattern

1. Start the engine, and let it idle until the radiator fan comes on.
2. Let the engine idle for at least 5 seconds.
3. Drive immediately at a steady engine speed between 1,500 - 3,000 rpm for at least 5 seconds.
   - When freeze data is stored, drive the vehicle under those conditions instead of Driving Pattern step 3.
   - Drive the vehicle in this manner only if the traffic regulations and ambient conditions allow.

DIAGNOSIS DETAILS

Conditions for setting the DTC

When a malfunction is detected during the first drive cycle, a Pending DTC is stored in the ECM/PCM memory. If the malfunction returns in the next (second) drive cycle, the MIL comes on and a Confirmed DTC and the freeze data are stored.

Conditions for clearing the DTC

The MIL is cleared if the malfunction does not return in three consecutive trips in which the diagnostic runs. The MIL, the Pending DTC, the Confirmed DTC, and the freeze data can be cleared with the scan tool Clear command or by disconnecting the battery.

DTC P0139: REAR SECONDARY HEATED OXYGEN SENSOR (SECONDARY

HO2S (BANK 1, SENSOR 2)) SLOW RESPONSE

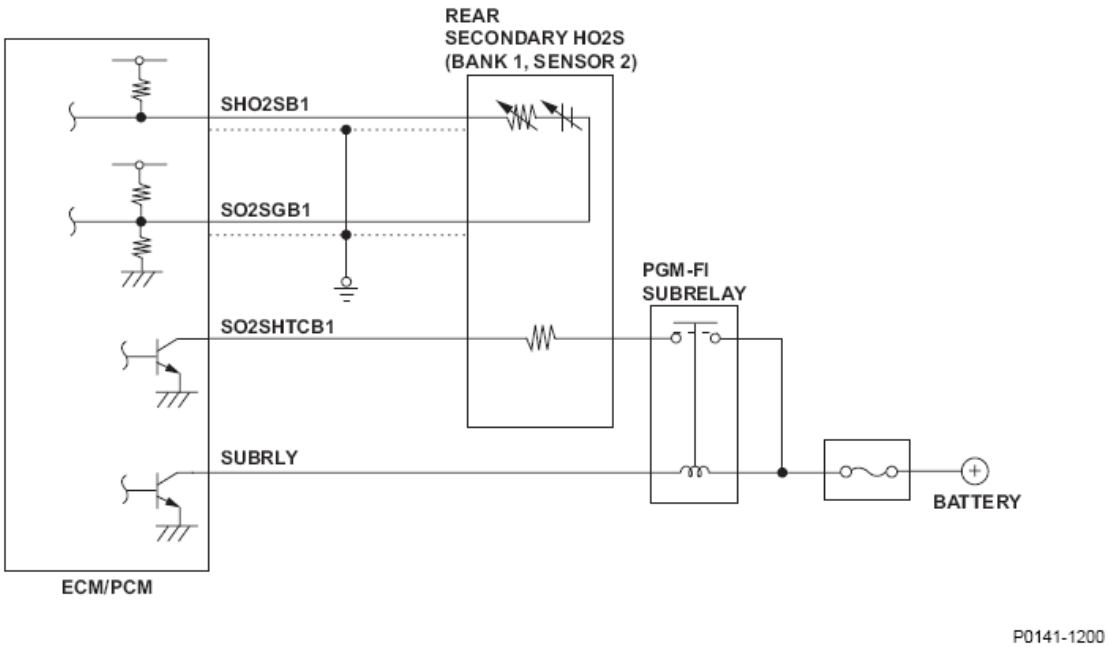


Fig. 36: Rear Secondary Heated Oxygen Sensor - Circuit Diagram (Bank 1, Sensor 2)

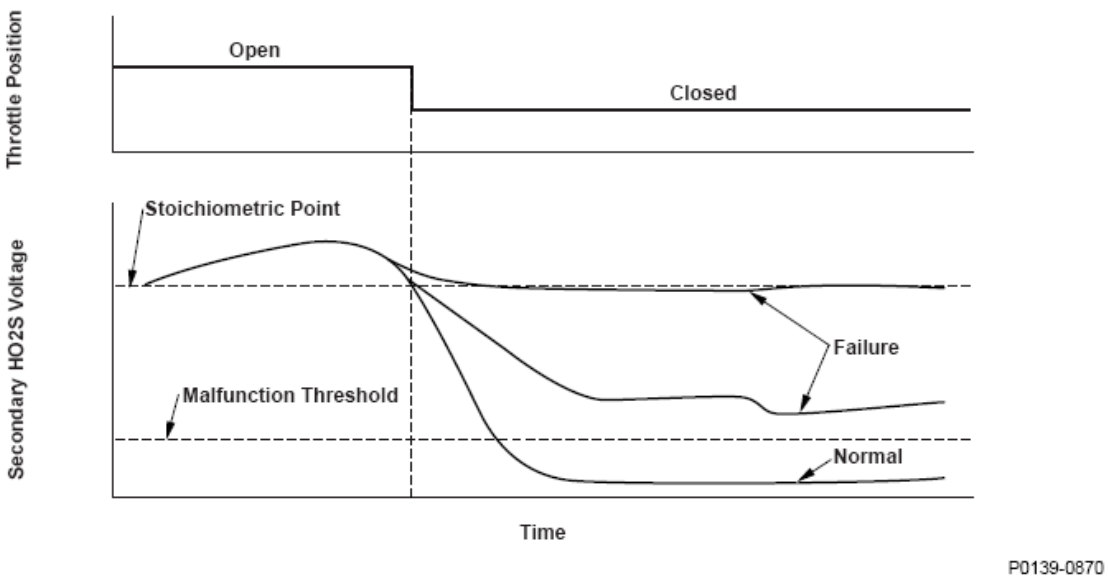


Fig. 37: Secondary HO2S Voltage And Throttle Position Characteristics Curve

GENERAL DESCRIPTION

The rear secondary heated oxygen sensor (secondary HO2S (bank 1, sensor 2)) detects the oxygen content in the exhaust gas downstream of the rear warm up three way catalytic converter (WU-TWC) (bank 1) during stoichiometric air/fuel ratio feedback control. The engine control module (ECM)/powertrain control module (PCM) controls the air/fuel ratio with the rear air/fuel ratio (A/F) sensor (bank 1, sensor 1) output voltage to

optimize the rear WU-TWC's efficiency. When the rear secondary HO2S does not change during lean air/fuel ratio when the throttle is closed, after full current is applied to the rear secondary HO2S heater, and output remains within the specified range continuously, the ECM/PCM detects a malfunction and stores a DTC.

MONITOR EXECUTION, SEQUENCE, DURATION, DTC TYPE, OBD STATUS

Execution	Once per driving cycle
Sequence	P0138 is judged as OK
Duration	10 seconds or more
DTC Type	Two drive cycles, MIL on
OBD Status	PASSED/FAILED/EXECUTING/OUT OF (TEST) CONDITION

ENABLE CONDITIONS

Condition	Minimum	Maximum
Elapsed time after starting the engine	2 minutes	-
Engine coolant temperature	156 °F (69 °C)	-
Intake air temperature	-13 °F (-25 °C)	-
Engine speed	-	4,000 rpm
Secondary HO2S output voltage	0.05 V	-
Fuel feedback	During deceleration	
No active DTCs set (prevents monitor from running)	P0101, P0102, P0103, P0107, P0108, P0111, P0112, P0113, P0116, P0117, P0118, P0122, P0123, P0125, P0135, P0137, P0138, P0141, P0171, P0172, P0222, P0223, P0300, P0301, P0302, P0303, P0304, P0305, P0306, P0335, P0339, P0351, P0352, P0353, P0354, P0355, P0356, P0443, P0496, P0497, P060A, P0720, P0722, P1116, P1128, P1129, P1172, P145C, P1659, P2101, P2118, P2122, P2123, P2127, P2128, P2135, P2138, P2176, P2195, P2237, P2238, P2243, P2245, P2251, P2252, P2270, P2279	

MALFUNCTION THRESHOLD

The rear secondary HO2S output voltage is 0.05 V or more for at least 10 seconds.

DRIVING PATTERN

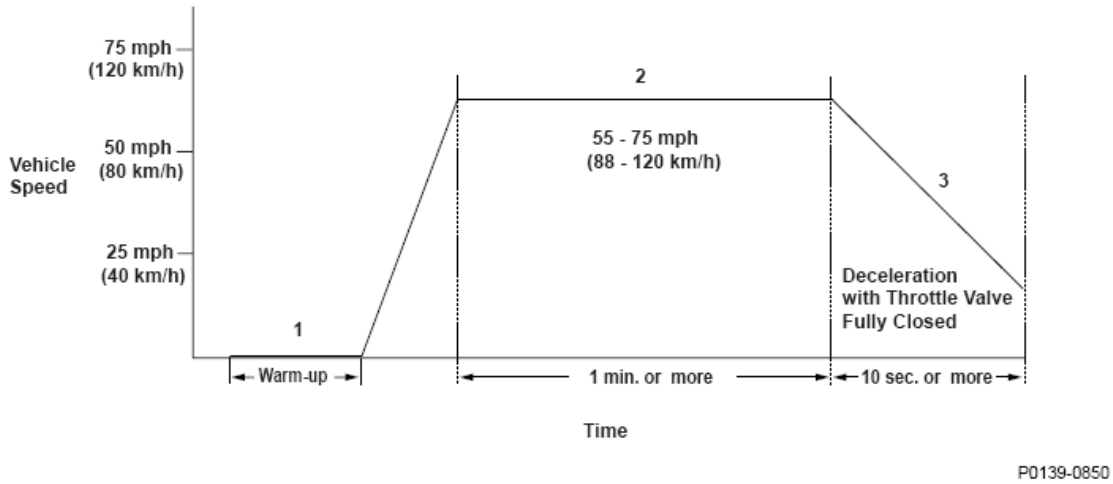


Fig. 38: Vehicle Speed Driving Pattern

1. Start the engine. Hold the engine speed at 3,000 rpm without load (A/T in P or N, M/T in neutral) until the radiator fan comes on.
2. Drive the vehicle at a steady speed between 55 - 75 mph (88 - 120 km/h) for at least 1 minute.
3. Decelerate with the throttle valve fully closed for at least 10 seconds.
    - Drive the vehicle in this manner only if the traffic regulations and ambient conditions allow.

DIAGNOSIS DETAILS

Conditions for setting the DTC

When a malfunction is detected during the first drive cycle, a Pending DTC is stored in the ECM/PCM memory. If the malfunction returns in the next (second) drive cycle, the MIL comes on and a Confirmed DTC and the freeze data are stored.

Conditions for clearing the DTC

The MIL is cleared if the malfunction does not return in three consecutive trips in which the diagnostic runs. The MIL, the Pending DTC, the Confirmed DTC, and the freeze data can be cleared with the scan tool Clear command or by disconnecting the battery.

DTC P0141: REAR SECONDARY HEATED OXYGEN SENSOR (SECONDARY HO2S (BANK 1, SENSOR 2)) HEATER CIRCUIT MALFUNCTION

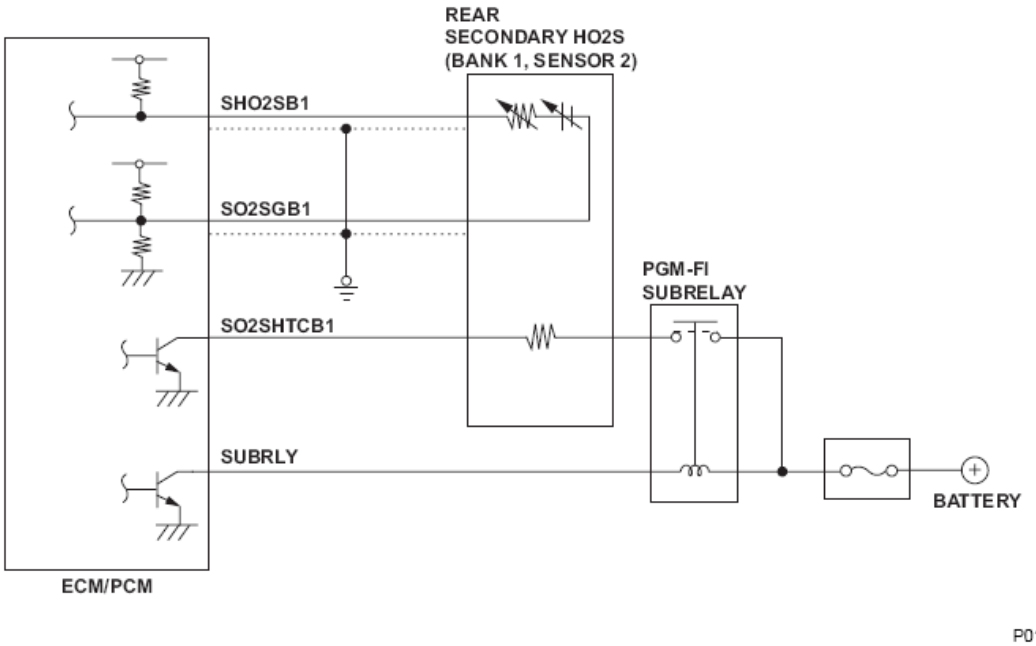


Fig. 39: Rear Secondary Heated Oxygen Sensor - Circuit Diagram (Bank 1, Sensor 2)

GENERAL DESCRIPTION

A heater for the zirconia element is embedded in the rear secondary heated oxygen sensor (secondary HO2S (bank 1, sensor 2)), and it is controlled by the engine control module (ECM)/powertrain control module (PCM). When activated, it heats the sensor to stabilize and speed up the detection of oxygen content when the exhaust gas temperature is cold. If the rear secondary HO2S heater draws other than a specified amperage, the ECM/PCM detects a malfunction and stores a DTC.

MONITOR EXECUTION, SEQUENCE, DURATION, DTC TYPE, OBD STATUS

Execution	Continuous
Sequence	None
Duration	5.0 seconds or more
DTC Type	Two drive cycles, MIL on
OBD Status	PASSED/FAILED/NOT COMPLETED (STILL TESTING)

ENABLE CONDITIONS

Condition	Minimum	Maximum
Battery voltage (IGP terminal of ECM/PCM)	10.5 V	-
State of the engine	Running	
No active DTCs set (prevents monitor from running)	P0117, P0118	

MALFUNCTION THRESHOLD

The rear secondary HO2S heater output is 0.38 A or less, or 3.33 A or more, for at least 5.0 seconds when the heater is on.

DRIVING PATTERN

Start the engine in a cold condition, and let it idle until the radiator fan comes on.

DIAGNOSIS DETAILS

Conditions for setting the DTC

When a malfunction is detected during the first drive cycle, a Pending DTC is stored in the ECM/PCM memory. If the malfunction returns in the next (second) drive cycle, the MIL comes on and a Confirmed DTC and the freeze data are stored.

Conditions for clearing the DTC

The MIL is cleared if the malfunction does not return in three consecutive trips in which the diagnostic runs. The MIL, the Pending DTC, the Confirmed DTC, and the freeze data can be cleared with the scan tool Clear command or by disconnecting the battery.

DTC P0153: FRONT AIR/FUEL RATIO (A/F) SENSOR (BANK 2, SENSOR 1) MALFUNCTION/SLOW RESPONSE (ENGINE TYPE: J35Z6)

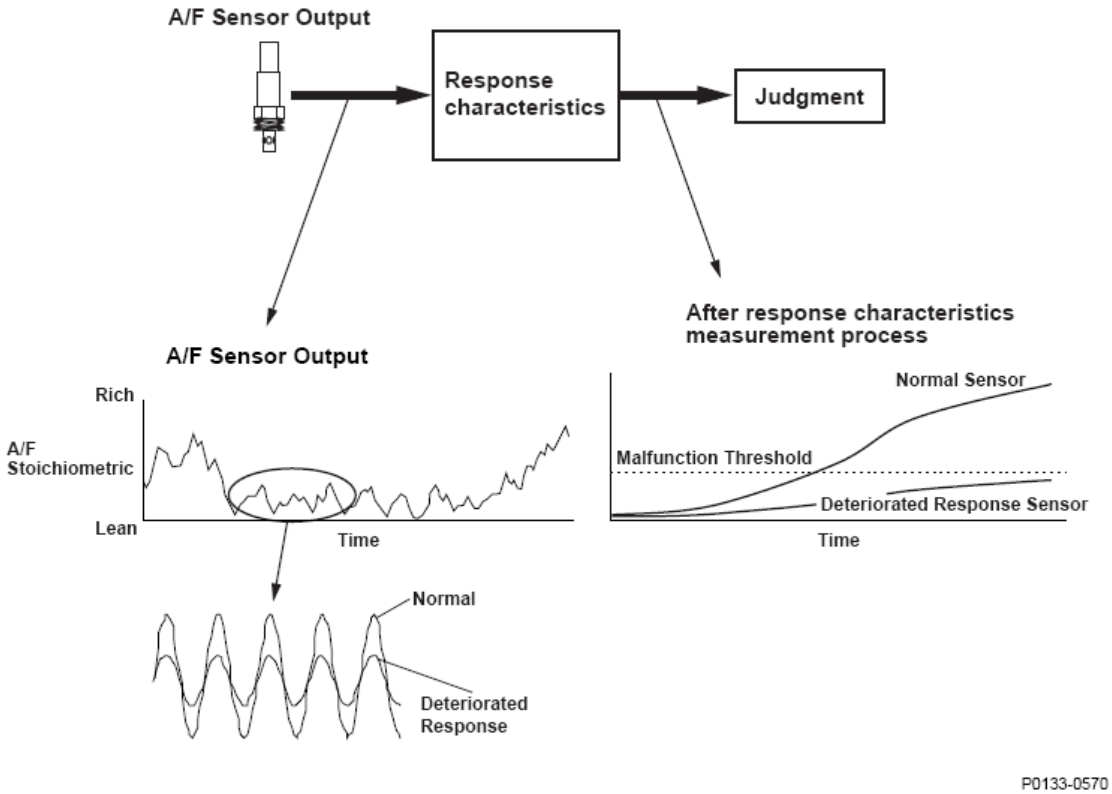


Fig. 40: Air/Fuel Ratio Sensor Characteristics Curve

GENERAL DESCRIPTION

The front air/fuel ratio (A/F) sensor (bank 2, sensor 1) has a linear signal output in relation to the oxygen concentration. The powertrain control module (PCM) computes the air/fuel ratio from the front A/F sensor output voltage and uses fuel feedback control to improve exhaust emissions. The PCM compares the response characteristics against the front A/F sensor output. If the total front A/F sensor output is a specified value for a specified time, the PCM detects a deteriorated response and stores a DTC.

MONITOR EXECUTION, SEQUENCE, DURATION, DTC TYPE, OBD STATUS

Execution	Once per driving cycle
Sequence	None
Duration	6.8 seconds or more
DTC Type	Two drive cycles, MIL on
OBD Status	PASSED/FAILED/EXECUTING/OUT OF (TEST) CONDITION

ENABLE CONDITIONS

Condition		Minimum	Maximum
Elapsed time after application of power to A/F sensor heater starts		60 seconds	-
Engine coolant temperature		156 °F (69 °C)	-
Intake air temperature		-13 °F (-25 °C)	-
Engine speed		1,250 rpm	2,100 rpm
MAP value	1,250 rpm	54 kPa (15.8 inHg, 400 mmHg)	75 kPa (22.4 inHg, 570 mmHg)
	2,000 rpm	34 kPa (9.9 inHg, 250 mmHg)	
Vehicle speed		36 mph (57 km/h)	-
Fuel trim		0.73	1.47
Fuel feedback		Closed loop at stoichiometric	
Monitoring priority		P0400	
No active DTCs set (prevents monitor from running)		P0101, P0102, P0103, P0107, P0108, P0112, P0113, P0117, P0118, P0154, P0155, P0174, P0175, P0300, P0301, P0302, P0303, P0304, P0305, P0306, P0335, P0339, P0351, P0352, P0353, P0354, P0355, P0356, P0400, P0401, P0404, P0443, P0496, P0497, P0722, P1077, P1078, P1128, P1129, P1174, P145C, P2197, P2227, P2228, P2229, P2240, P2241, P2247, P2249, P2254, P2255, P2279, P2413, P2646, P2647, P2648, P2649, P2A03	
Other		Without excessive load change	

MALFUNCTION THRESHOLD

The total front A/F sensor (bank 2, sensor 1) output value is 34 or less in 6.8 seconds.

DRIVING PATTERN

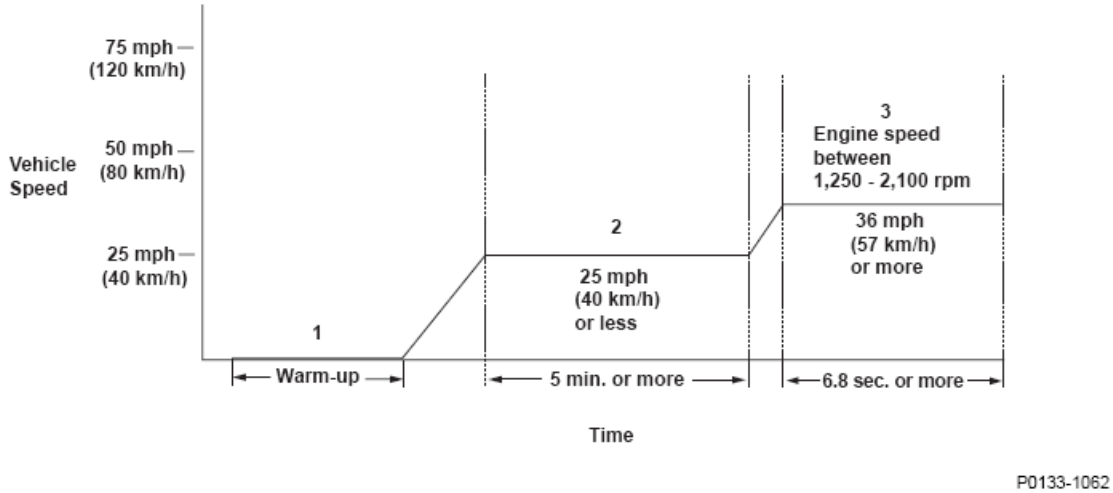


Fig. 41: Vehicle Speed Driving Pattern

1. Start the engine. Hold the engine speed at 3,000 rpm without load (in P or N) until the radiator fan comes on.
2. Drive the vehicle at a steady speed of 25 mph (40 km/h) or less, for at least 5 minutes.
3. Drive immediately at a steady speed of 36 mph (57 km/h) or more and engine speed between 1,250 - 2,100 rpm for at least 6.8 seconds.
    - Drive the vehicle in this manner only if the traffic regulations and ambient conditions allow.

DIAGNOSIS DETAILS

Conditions for setting the DTC

When a malfunction is detected during the first drive cycle, a Pending DTC is stored in the PCM memory. If the malfunction returns in the next (second) drive cycle, the MIL comes on and a Confirmed DTC and the freeze data are stored.

Conditions for clearing the DTC

The MIL is cleared if the malfunction does not return in three consecutive trips in which the diagnostic runs. The MIL, the Pending DTC, the Confirmed DTC, and the freeze data can be cleared with the scan tool Clear command or by disconnecting the battery.

DTC P0153: FRONT AIR/FUEL RATIO (A/F) SENSOR (BANK 2, SENSOR 1) MALFUNCTION/SLOW RESPONSE (ENGINE TYPE: J37A4)

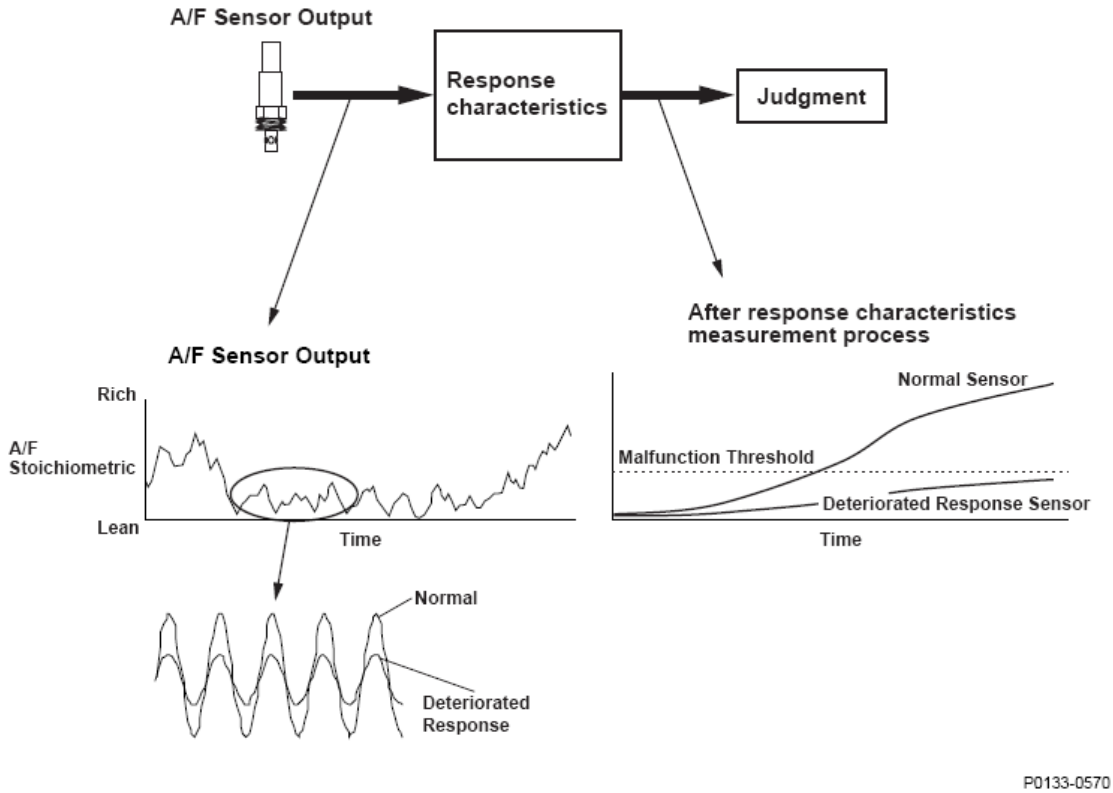


Fig. 42: Air/Fuel Ratio Sensor Characteristics Curve

GENERAL DESCRIPTION

The front air/fuel ratio (A/F) sensor (bank 2, sensor 1) has a linear signal output in relation to the oxygen concentration. The engine control module (ECM)/powertrain control module (PCM) computes the air/fuel ratio from the front A/F sensor output voltage and uses fuel feedback control to improve exhaust emissions. The ECM/PCM compares the response characteristics against the front A/F sensor output. If the total front A/F sensor output is a specified value for a specified time, the ECM/PCM detects a deteriorated response and stores a DTC.

MONITOR EXECUTION, SEQUENCE, DURATION, DTC TYPE, OBD STATUS

Execution	Once per driving cycle
Sequence	None
Duration	6.8 seconds or more
DTC Type	Two drive cycles, MIL on
OBD Status	PASSED/FAILED/EXECUTING/OUT OF (TEST) CONDITION

ENABLE CONDITIONS

Condition	Minimum	Maximum
Elapsed time after		

application of power to A/F sensor heater starts		60 seconds	-
Engine coolant temperature		156 °F (69 °C)	-
Intake air temperature		-13 °F (-25 °C)	-
Engine speed		1,250 rpm	2,100 rpm(1) 2,600 rpm(2)
MAP value	1,250 rpm	54 kPa (15.8 inHg, 400 mmHg)	75 kPa (22.4 inHg, 570 mmHg)
	2,000 rpm	34 kPa (9.9 inHg, 250 mmHg)	
Vehicle speed		36 mph (57 km/h)	-
Fuel trim		0.73	1.47
Fuel feedback		Closed loop at stoichiometric	
Monitoring priority		P0400	
No active DTCs set (prevents monitor from running)		P0101, P0102, P0103, P0107, P0108, P0112, P0113, P0117, P0118, P0154, P0155, P0174, P0175, P0300, P0301, P0302, P0303, P0304, P0305, P0306, P0335, P0339, P0351, P0352, P0353, P0354, P0355, P0356, P0400, P0401, P0404, P0443, P0496, P0497, P0720, P0722, P1077, P1078, P1128, P1129, P1174, P145C, P2197, P2227, P2228, P2229, P2240, P2241, P2247, P2249, P2254, P2255, P2279, P2413, P2646, P2647, P2648, P2649, P2A03	
Other		Without excessive load change	

(1) A/T model

(2) M/T model

MALFUNCTION THRESHOLD

The total front A/F sensor (bank 2, sensor 1) output value is 34 or less in 6.8 seconds.

DRIVING PATTERN

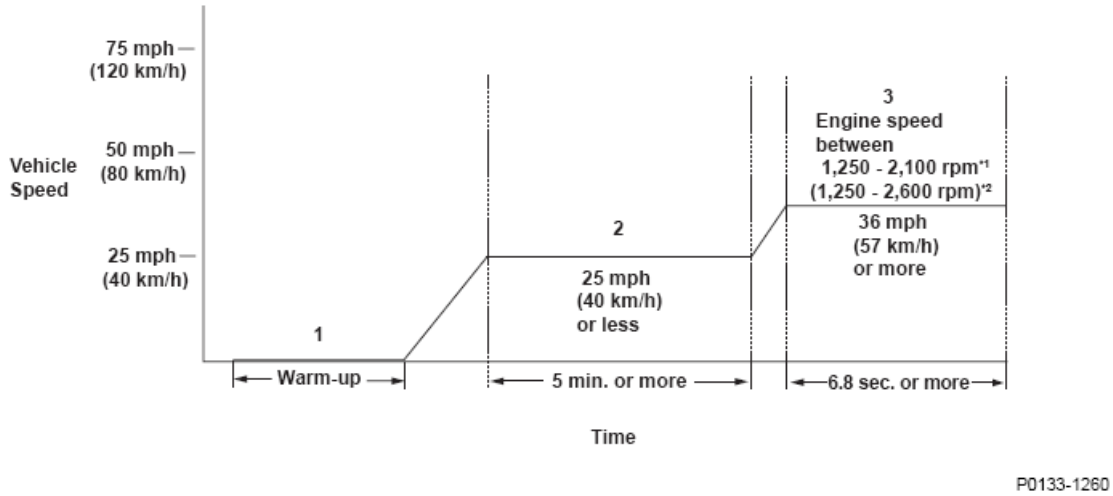


Fig. 43: Vehicle Speed Driving Pattern

1. Start the engine. Hold the engine speed at 3,000 rpm without load (A/T in P or N, M/T in neutral) until the radiator fan comes on.
2. Drive the vehicle at a steady speed of 25 mph (40 km/h) or less, for at least 5 minutes.
3. Drive immediately at a steady speed of 36 mph (57 km/h) or more and engine speed between 1,250 - 2,100 rpm*1 (1,250 - 2,600 rpm)*2 for at least 6.8 seconds.
    - Drive the vehicle in this manner only if the traffic regulations and ambient conditions allow.

DIAGNOSIS DETAILS

Conditions for setting the DTC

When a malfunction is detected during the first drive cycle, a Pending DTC is stored in the ECM/PCM memory. If the malfunction returns in the next (second) drive cycle, the MIL comes on and a Confirmed DTC and the freeze data are stored.

Conditions for clearing the DTC

The MIL is cleared if the malfunction does not return in three consecutive trips in which the diagnostic runs. The MIL, the Pending DTC, the Confirmed DTC, and the freeze data can be cleared with the scan tool Clear command or by disconnecting the battery.

DTC P0154: FRONT AIR/FUEL RATIO (A/F) SENSOR (BANK 2, SENSOR 1) HEATER SYSTEM MALFUNCTION

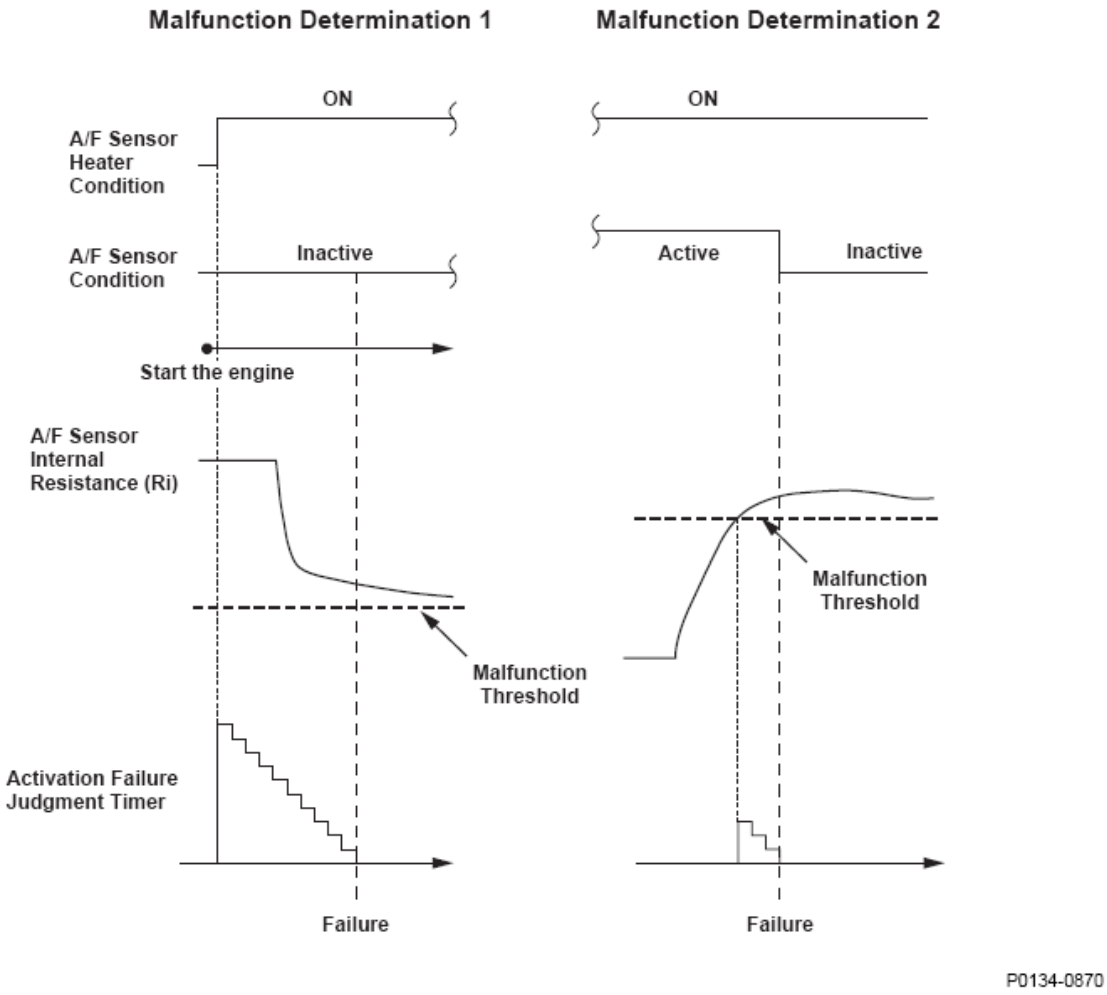


Fig. 44: Air/Fuel Ratio Sensor Heater System Characteristics Curve

GENERAL DESCRIPTION

The front air/fuel ratio (A/F) sensor (bank 2, sensor 1) is activated by warming the element with a heater and by maintaining a steady high temperature to accurately calculate the air/fuel ratio. If the heater does not properly heat the element, the front A/F sensor does not activate, and the exhaust emissions deteriorate. The engine control module (ECM)/powertrain control module (PCM) monitors the front A/F sensor internal resistance.

1. When the front A/F sensor does not activate for a set time after the front A/F sensor heater is turned on (with high front A/F sensor internal resistance), a malfunction of the front A/F sensor heater is detected, and a DTC is stored.
2. When the front A/F sensor heater cycles ON and OFF for a set time, and the resistance remains high when the heater is ON, a malfunction of the front A/F sensor heater is detected, and a DTC is stored.

MONITOR EXECUTION, SEQUENCE, DURATION, DTC TYPE, OBD STATUS

Execution	Continuous
Sequence	None

Duration	40 seconds or more
DTC Type	Two drive cycles, MIL on
OBD Status	PASSED/FAILED/NOT COMPLETED (STILL TESTING)

ENABLE CONDITIONS

Condition	Minimum	Maximum
Battery voltage	10.5 V	-
Fuel feedback	Other than during fuel cut-off operation	
No active DTCs set (prevents monitor from running)	P0155, P0300, P0301, P0302, P0303, P0304, P0305, P0306, P0351, P0352, P0353, P0354, P0355, P0356, P1174, P2197, P2240, P2241, P2247, P2249, P2254, P2255	

MALFUNCTION THRESHOLD

Malfunction determination 1 - From start up

The front A/F sensor (bank 2, sensor 1) internal resistance value is 200 W or more for at least 40 seconds right after the engine starts.

Malfunction determination 2 - Hot

The front A/F sensor (bank 2, sensor 1) internal resistance value is 270 W or more for at least 1.0 second.

DRIVING PATTERN

Start the engine, and let it idle for at least 1 minute. When engine coolant temperature is 14 °F (-10 °C) or less, leave the vehicle for 4 minutes or more.

DIAGNOSIS DETAILS

Conditions for setting the DTC

When a malfunction is detected during the first drive cycle, a Pending DTC is stored in the ECM/PCM memory. If the malfunction returns in the next (second) drive cycle, the MIL comes on and a Confirmed DTC and the freeze data are stored.

Conditions for clearing the DTC

The MIL is cleared if the malfunction does not return in three consecutive trips in which the diagnostic runs. The MIL, the Pending DTC, the Confirmed DTC, and the freeze data can be cleared with the scan tool Clear command or by disconnecting the battery.

DTC P0155: FRONT AIR/FUEL RATIO (A/F) SENSOR (BANK 2, SENSOR 1) HEATER CIRCUIT MALFUNCTION

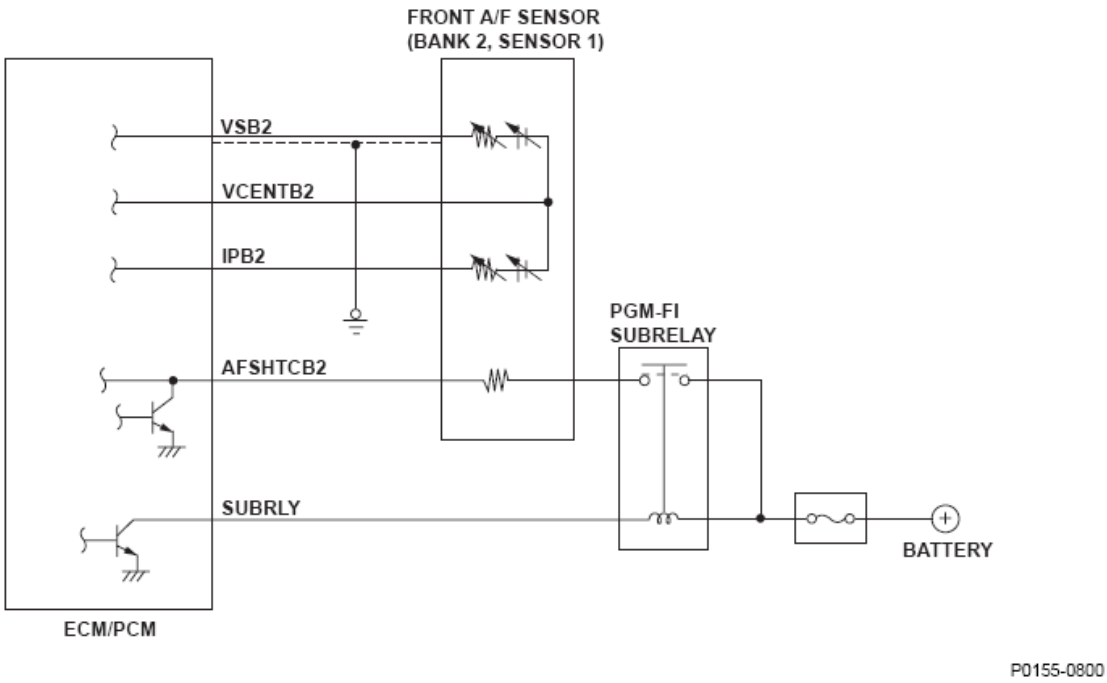


Fig. 45: Front Air/Fuel Ratio Sensor - Circuit Diagram (Bank 2, Sensor 1)

GENERAL DESCRIPTION

A heater for the sensor element is embedded in the front air/fuel ratio (A/F) sensor (bank 2, sensor 1), and it is controlled by the engine control module (ECM)/powertrain control module (PCM). It is activated and heats the sensor to stabilize and speed up the detection of oxygen content when the exhaust gas temperature is cold. The ECM/PCM monitors the front A/F sensor heater output (return check). If the return signals do not meet the command value (for heater activation) for a set time, the ECM/PCM detects a malfunction and stores a DTC.

MONITOR EXECUTION, SEQUENCE, DURATION, DTC TYPE, OBD STATUS

Execution	Continuous
Sequence	None
Duration	5 seconds or more
DTC Type	Two drive cycles, MIL on
OBD Status	PASSED/FAILED/NOT COMPLETED (STILL TESTING)

ENABLE CONDITIONS

Condition	Minimum	Maximum
Battery voltage	9.0 V	-
State of the engine	Running	
Other	During front A/F sensor heater operation	

MALFUNCTION THRESHOLD

One of these conditions is met for at least 5 seconds.

- No return signal "HIGH" is detected when the ECM/PCM output duty is less than 5 %.
- Return signal does not change when the ECM/PCM output duty is more than 5 %*.

*: ECM/PCM output duty is limited to 95 % when it exceeds 95 %.

DRIVING PATTERN

Start the engine. Hold the engine speed at 3,000 rpm without load (A/T in P or N, M/T in neutral) until the radiator fan comes on, then let it idle.

DIAGNOSIS DETAILS

Conditions for setting the DTC

When a malfunction is detected during the first drive cycle, a Pending DTC is stored in the ECM/PCM memory. If the malfunction returns in the next (second) drive cycle, the MIL comes on and a Confirmed DTC and the freeze data are stored.

Conditions for clearing the DTC

The MIL is cleared if the malfunction does not return in three consecutive trips in which the diagnostic runs. The MIL, the Pending DTC, the Confirmed DTC, and the freeze data can be cleared with the scan tool Clear command or by disconnecting the battery.

DTC P0157: FRONT SECONDARY HEATED OXYGEN SENSOR (SECONDARY HO2S (BANK 2, SENSOR 2)) CIRCUIT LOW VOLTAGE

GENERAL DESCRIPTION

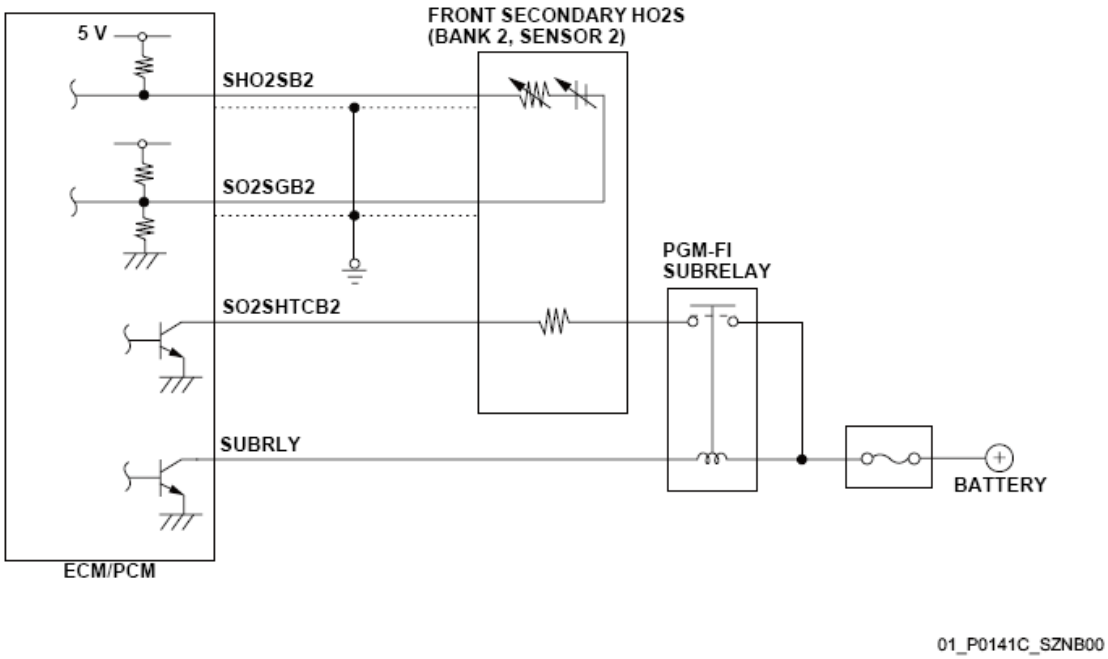


Fig. 46: Secondary Heated Oxygen Sensor - Circuit Diagram

The front secondary heated oxygen sensor (secondary HO2S (bank 2, sensor 2)) detects the oxygen density in the exhaust gas and converts it into electrical signals. If the front secondary HO2S output voltage is a specified value for a set time, the engine control module (ECM)/powertrain control module (PCM) detects a malfunction and stores a DTC.

MONITOR EXECUTION, SEQUENCE, DURATION, DTC TYPE, OBD STATUS

Execution	Continuous
Sequence	None
Duration	5 seconds or more
DTC Type	Two drive cycles, MIL on
OBD Status	PASSED/FAILED/EXECUTING/OUT OF (TEST) CONDITION

ENABLE CONDITIONS

Condition	
State of the engine	Running
Other	At least 55 seconds must be passed after the front secondary HO2S (bank 2, sensor 2) output voltage reaches 1.0 V or less

MALFUNCTION THRESHOLD

The front secondary HO2S (bank 2, sensor 2) output voltage is 0.12 V or less for at least 5 seconds.

CONFIRMATION PROCEDURE

With the Driving Pattern

Start the engine. Hold the engine speed at 3,000 rpm without load (A/T in P or N, M/T in neutral) until the radiator fan comes on, then let it idle.

DIAGNOSIS DETAILS

Conditions for setting the DTC

When a malfunction is detected during the first drive cycle, a Pending DTC is stored in the ECM/PCM memory. If the malfunction returns in the next (second) drive cycle, the MIL comes on and a Confirmed DTC and the freeze data are stored.

Conditions for clearing the DTC

The MIL is cleared if the malfunction does not return in three consecutive trips in which the diagnostic runs. The MIL, the Pending DTC, the Confirmed DTC, and the freeze data can be cleared with the scan tool Clear command or by disconnecting the battery.

DTC P0158: FRONT SECONDARY HEATED OXYGEN SENSOR (SECONDARY HO2S (BANK 2, SENSOR 2)) CIRCUIT HIGH VOLTAGE

GENERAL DESCRIPTION

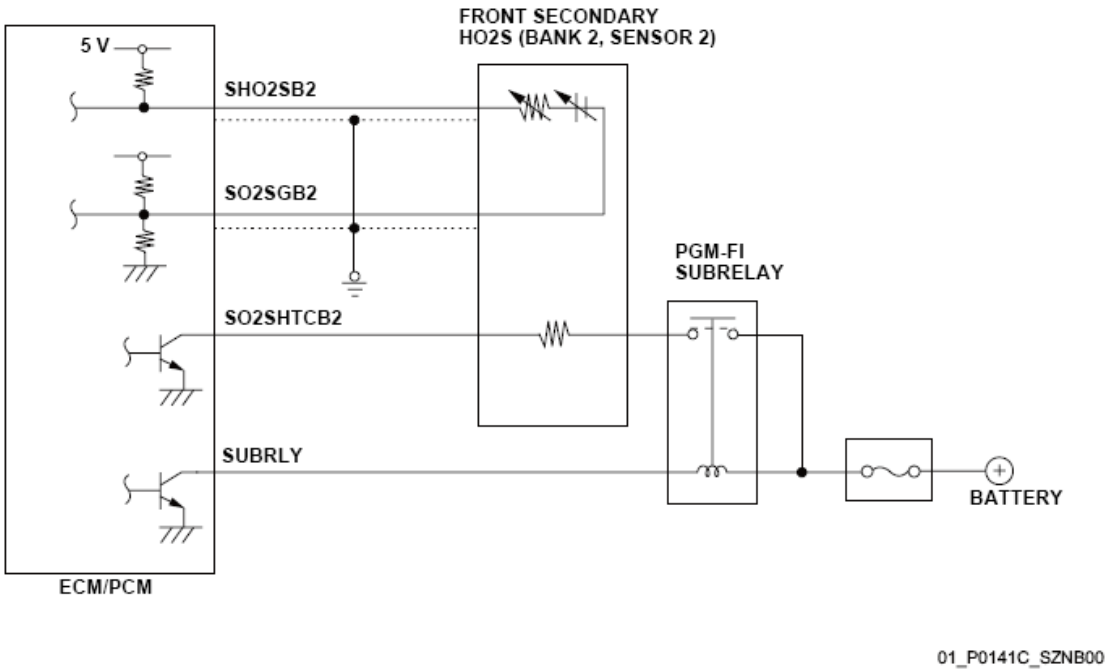


Fig. 47: Secondary Heated Oxygen Sensor - Circuit Diagram

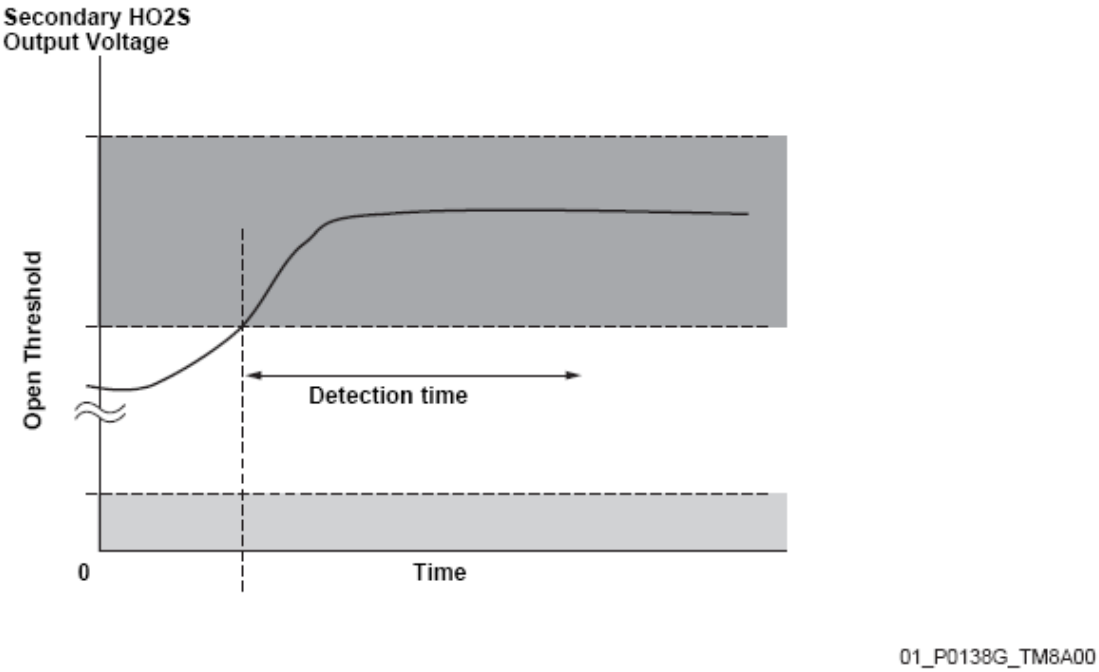


Fig. 48: Secondary Heated Oxygen Sensor Output Voltage Graph

The front secondary heated oxygen sensor (secondary HO2S (bank 2, sensor 2)) detects the oxygen content in the exhaust gas downstream of the front warm up three way catalytic converter (WU-TWC) (bank 2) during stoichiometric air/fuel ratio feedback control. The engine control module (ECM)/powertrain control module (PCM) controls the air/fuel ratio from the front air/fuel ratio (A/F) sensor (bank 2, sensor 1) output voltage so that the front WU-TWC efficiency is optimized. After current is applied to the front secondary HO2S heater, if the front secondary HO2S output continues to exceed the upper limit used during feedback control, the ECM/PCM detects a malfunction and stores a DTC.

MONITOR EXECUTION, SEQUENCE, DURATION, DTC TYPE, OBD STATUS

Execution	Continuous
Sequence	None
Duration	5.0 seconds or more
DTC Type	Two drive cycles, MIL on
OBD Status	PASSED/FAILED/EXECUTING/OUT OF (TEST) CONDITION

ENABLE CONDITIONS

Condition	Minimum	Maximum
Elapsed time that secondary HO2S activity is not monitored after starting the engine	20 seconds	-
Fuel feedback	Closed loop	
No active DTCs set (prevents monitor from running)	P0117, P0118, P0157, P0159, P0161, P2272	

MALFUNCTION THRESHOLD

The front secondary HO2S output voltage is 1.27 V or more for at least 5.0 seconds.

CONFIRMATION PROCEDURE

With the Driving Pattern

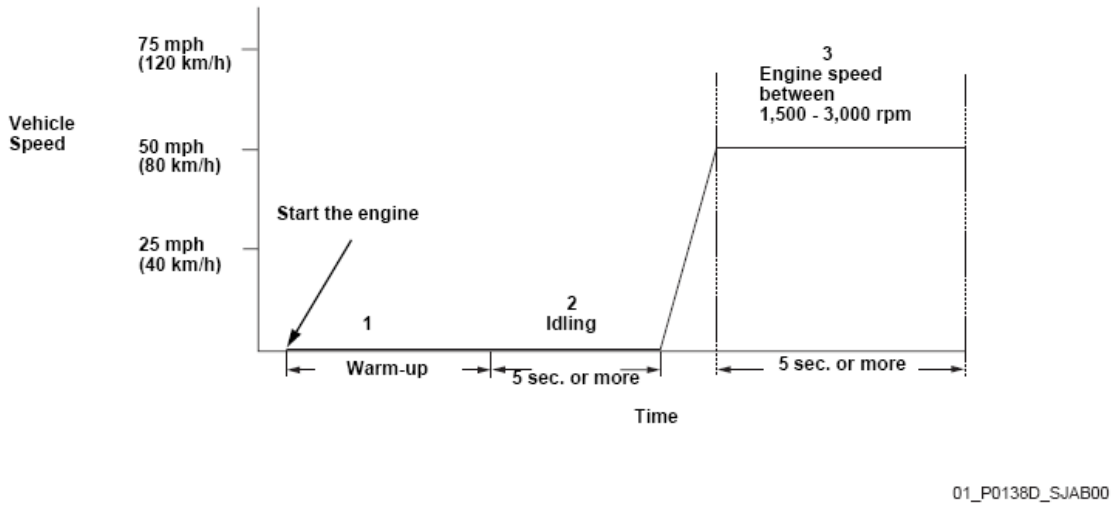


Fig. 49: Vehicle Speed Driving Pattern

1. Start the engine, and let it idle until the radiator fan comes on.
2. Let the engine idle for at least 5 seconds.
3. Drive immediately at a steady engine speed between 1,500 - 3,000 rpm for at least 5 seconds.
    - When freeze data is stored, drive the vehicle under those conditions instead of Driving Pattern step 3.
    - Drive the vehicle in this manner only if the traffic regulations and ambient conditions allow.

DIAGNOSIS DETAILS

Conditions for setting the DTC

When a malfunction is detected during the first drive cycle, a Pending DTC is stored in the ECM/PCM memory. If the malfunction returns in the next (second) drive cycle, the MIL comes on and a Confirmed DTC and the freeze data are stored.

Conditions for clearing the DTC

The MIL is cleared if the malfunction does not return in three consecutive trips in which the diagnostic runs. The MIL, the Pending DTC, the Confirmed DTC, and the freeze data can be cleared with the scan tool Clear command or by disconnecting the battery.

DTC P0159: FRONT SECONDARY HEATED OXYGEN SENSOR

(SECONDARY HO2S (BANK 2, SENSOR 2)) SLOW RESPONSE

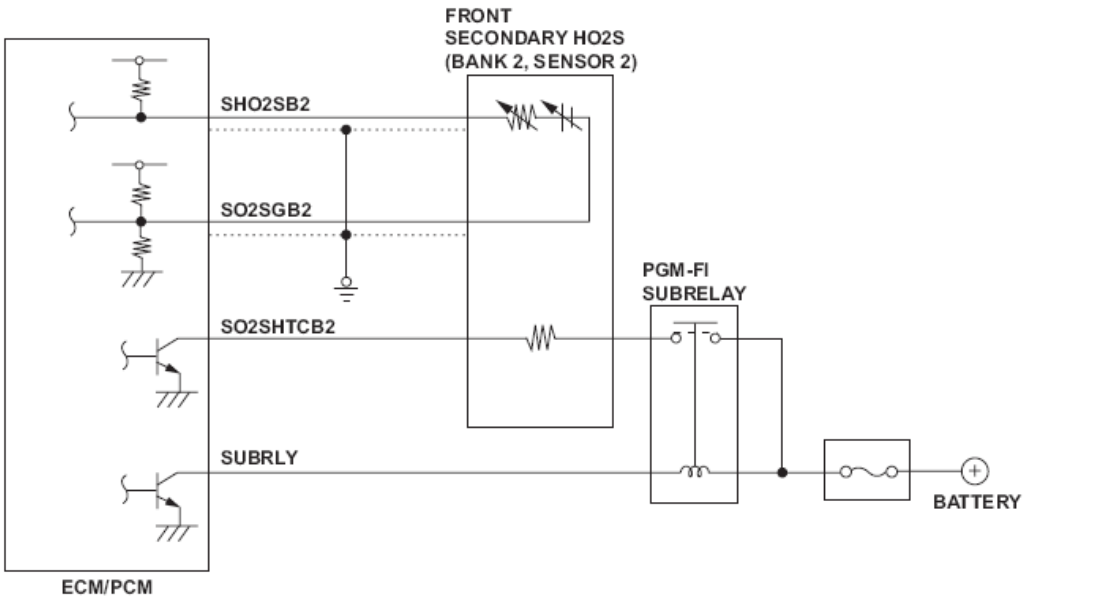


Fig. 50: Front Secondary Heated Oxygen Sensor - Circuit Diagram (Bank 2, Sensor 2)

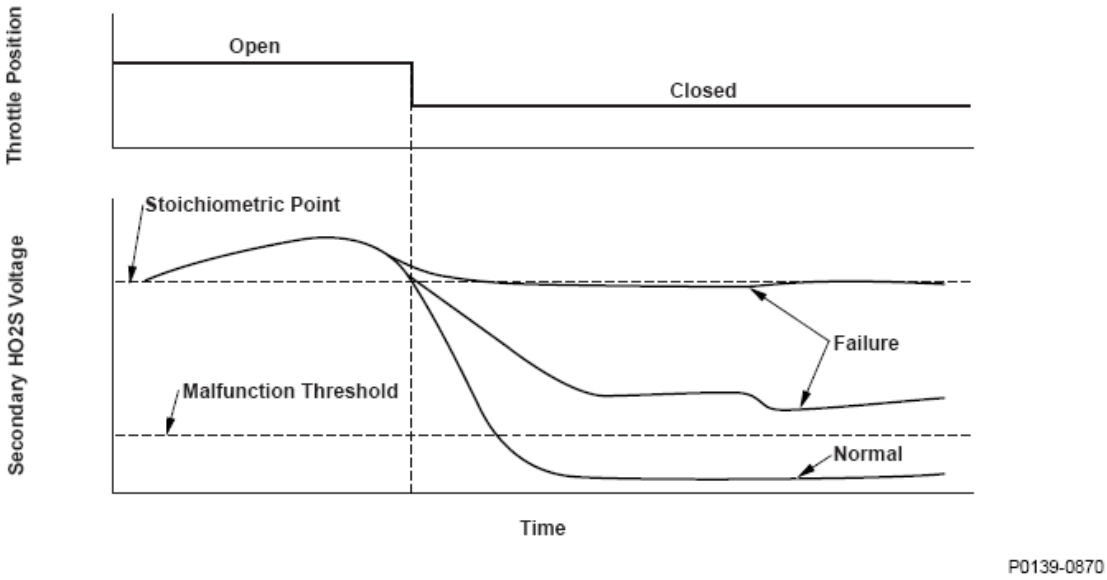


Fig. 51: Secondary HO2S Voltage And Throttle Position Characteristics Curve

GENERAL DESCRIPTION

The front secondary heated oxygen sensor (secondary HO2S (bank 2, sensor 2)) detects the oxygen content in the exhaust gas downstream of the front warm up three way catalytic converter (WU-TWC) (bank 2) during stoichiometric air/fuel ratio feedback control. The engine control module (ECM)/powertrain control module (PCM) controls the air/fuel ratio with the front air/fuel ratio (A/F) sensor (bank 2, sensor 1) output voltage to

optimize the front WU-TWC's efficiency. When the front secondary HO2S does not change during lean air/fuel ratio when the throttle is closed, after full current is applied to the front secondary HO2S heater, and output remains within the specified range continuously, the ECM/PCM detects a malfunction and stores a DTC.

MONITOR EXECUTION, SEQUENCE, DURATION, DTC TYPE, OBD STATUS

Execution	Once per driving cycle
Sequence	P0158 is judged as OK
Duration	10 seconds or more
DTC Type	Two drive cycles, MIL on
OBD Status	PASSED/FAILED/EXECUTING/OUT OF (TEST) CONDITION

ENABLE CONDITIONS

Condition	Minimum	Maximum
Elapsed time after starting the engine	2 minutes	-
Engine coolant temperature	156 °F (69 °C)	-
Intake air temperature	-13 °F (-25 °C)	-
Engine speed	-	4,000 rpm
Secondary HO2S output voltage	0.05 V	-
Fuel feedback	During deceleration	
No active DTCs set (prevents monitor from running)	P0101, P0102, P0103, P0107, P0108, P0111, P0112, P0113, P0116, P0117, P0118, P0122, P0123, P0125, P0155, P0157, P0158, P0161, P0174, P0175, P0222, P0223, P0300, P0301, P0302, P0303, P0304, P0305, P0306, P0335, P0339, P0351, P0352, P0353, P0354, P0355, P0356, P0443, P0496, P0497, P060A, P0720, P0722, P1116, P1128, P1129, P1174, P145C, P1659, P2101, P2118, P2122, P2123, P2127, P2128, P2135, P2138, P2176, P2240, P2241, P2247, P2249, P2254, P2255, P2272, P2279	

MALFUNCTION THRESHOLD

The front secondary HO2S output voltage is 0.05 V or more for at least 10 seconds.

DRIVING PATTERN

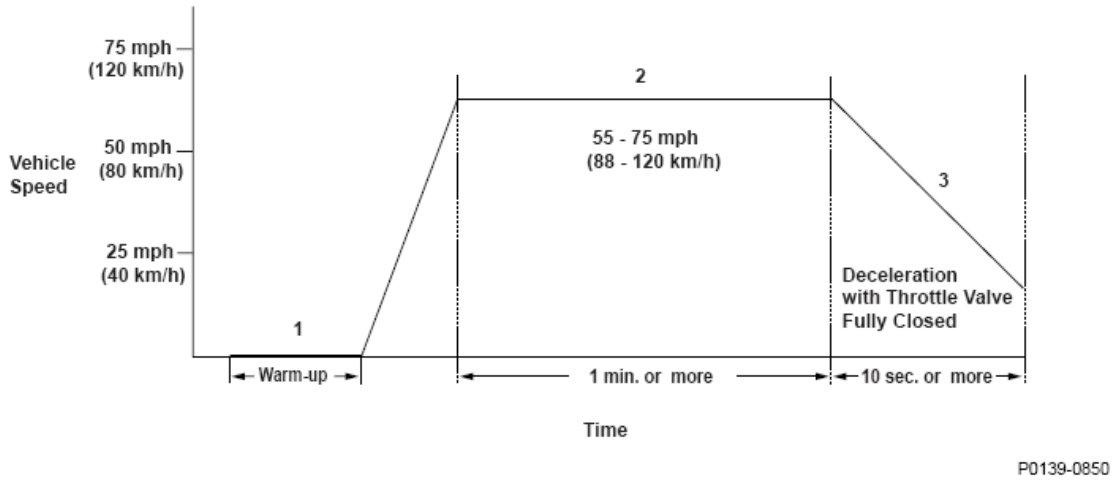


Fig. 52: Vehicle Speed Driving Pattern

1. Start the engine. Hold the engine speed at 3,000 rpm without load (A/T in P or N, M/T in neutral) until the radiator fan comes on.
2. Drive the vehicle at a steady speed between 55 - 75 mph (88 - 120 km/h) for at least 1 minute.
3. Decelerate with the throttle valve fully closed for at least 10 seconds.
    - Drive the vehicle in this manner only if the traffic regulations and ambient conditions allow.

DIAGNOSIS DETAILS

Conditions for setting the DTC

When a malfunction is detected during the first drive cycle, a Pending DTC is stored in the ECM/PCM memory. If the malfunction returns in the next (second) drive cycle, the MIL comes on and a Confirmed DTC and the freeze data are stored.

Conditions for clearing the DTC

The MIL is cleared if the malfunction does not return in three consecutive trips in which the diagnostic runs. The MIL, the Pending DTC, the Confirmed DTC, and the freeze data can be cleared with the scan tool Clear command or by disconnecting the battery.

DTC P0161: FRONT SECONDARY HEATED OXYGEN SENSOR (SECONDARY HO2S (BANK 2, SENSOR 2)) HEATER CIRCUIT MALFUNCTION

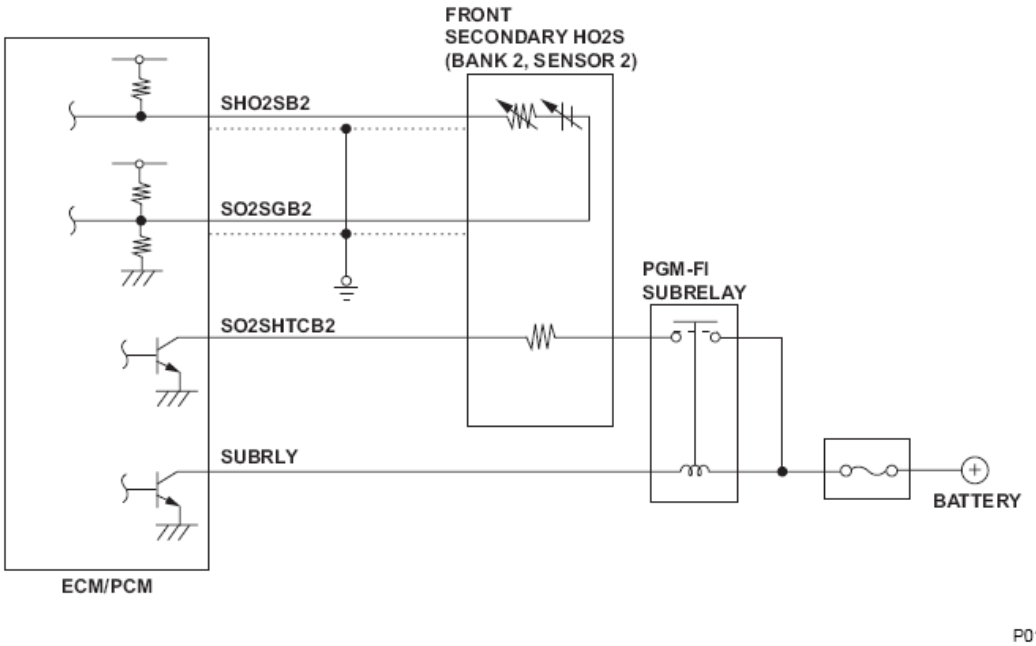


Fig. 53: Front Secondary Heated Oxygen Sensor - Circuit Diagram (Bank 2, Sensor 2)

GENERAL DESCRIPTION

A heater for the zirconia element is embedded in the front secondary heated oxygen sensor (secondary HO2S (bank 2, sensor 2)), and it is controlled by the engine control module (ECM)/powertrain control module (PCM). When activated, it heats the sensor to stabilize and speed up the detection of oxygen content when the exhaust gas temperature is cold. If the front secondary HO2S heater draws other than a specified amperage, the ECM/PCM detects a malfunction and stores a DTC.

MONITOR EXECUTION, SEQUENCE, DURATION, DTC TYPE, OBD STATUS

Execution	Continuous
Sequence	None
Duration	5.0 seconds or more
DTC Type	Two drive cycles, MIL on
OBD Status	PASSED/FAILED/NOT COMPLETED (STILL TESTING)

ENABLE CONDITIONS

Condition	Minimum	Maximum
Battery voltage (IGP terminal of ECM/PCM)	10.5 V	-
State of the engine	Running	
No active DTCs set (prevents monitor from running)	P0117, P0118	

MALFUNCTION THRESHOLD

The front secondary HO2S heater output is 0.38 A or less, or 3.33 A or more, for at least 5.0 seconds when the heater is on.

DRIVING PATTERN

Start the engine in a cold condition, and let it idle until the radiator fan comes on.

DIAGNOSIS DETAILS

Conditions for setting the DTC

When a malfunction is detected during the first drive cycle, a Pending DTC is stored in the ECM/PCM memory. If the malfunction returns in the next (second) drive cycle, the MIL comes on and a Confirmed DTC and the freeze data are stored.

Conditions for clearing the DTC

The MIL is cleared if the malfunction does not return in three consecutive trips in which the diagnostic runs. The MIL, the Pending DTC, the Confirmed DTC, and the freeze data can be cleared with the scan tool Clear command or by disconnecting the battery.

DTC P0171: REAR BANK (BANK 1) FUEL SYSTEM TOO LEAN

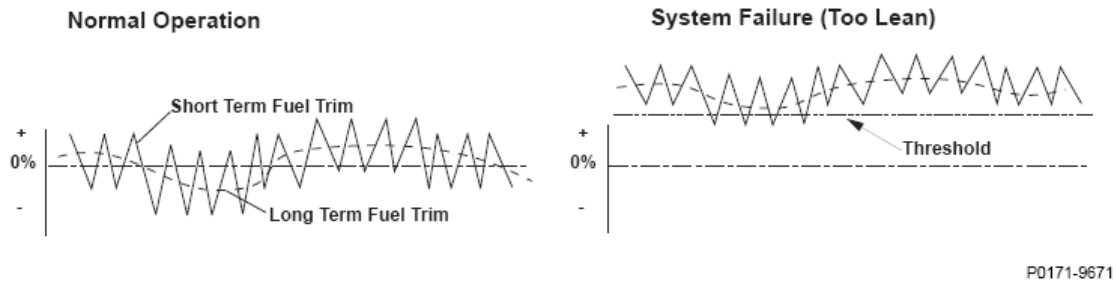


Fig. 54: Fuel System Characteristics Curve (Too Lean)

GENERAL DESCRIPTION

The engine control module (ECM)/powertrain control module (PCM) detects the oxygen content in the exhaust gas from the rear air/fuel ratio (A/F) sensor (bank 1, sensor 1) signal voltage, and it uses fuel feedback control to maintain the optimal air/fuel ratio. The air/fuel ratio coefficient for correcting the amount of injected fuel is the short term fuel trim. The ECM/PCM varies short term fuel trim continuously to keep the air/fuel ratio close to the stoichiometric ratio for all driving conditions. Long term fuel trim is computed from short term fuel trim and is used to regulate long term deviation from the stoichiometric air/fuel ratio, which occurs when fuel metering components deteriorate with age or system failures occur. In addition, long term fuel trim is stored in the ECM/PCM memory and is used to determine when fuel metering components malfunction. When long term fuel trim is higher than normal, which is about 1.0 (0 %), the amount of injected fuel must be increased, and when lower than normal, it must be decreased. If long term fuel trim is higher than normal (too lean), the ECM/PCM detects a malfunction in the fuel metering components and stores a DTC.

MONITOR EXECUTION, SEQUENCE, DURATION, DTC TYPE, OBD STATUS

Execution	Once per driving cycle(1)
Sequence	None
Duration	Every 7.0 seconds
DTC Type	Two drive cycles, MIL on
OBD Status	PASSED/FAILED/NOT COMPLETED (STILL TESTING)

(1) The malfunction parameters are cleared when it is judged as normal under the same driving conditions in which the malfunction was detected.

ENABLE CONDITIONS

Condition	Minimum	Maximum
Engine coolant temperature	156 °F (69 °C)	-
Intake air temperature	19 °F (-7 °C)	-
Engine speed	550 rpm(1) 650 rpm(2)	4,000 rpm
MAP value	20 kPa (6.0 inHg, 150 mmHg)(1) 16 kPa (4.8 inHg, 120 mmHg)(2)	-
Fuel feedback	Closed loop	
Monitoring priority	P0133, P0153, P0400, P0420, P0430	
No active DTCs set (prevents monitor from running)	P0107, P0108, P0112, P0113, P0117, P0118, P0134, P0135, P0137, P0138, P0139, P0300, P0301, P0302, P0303, P0304, P0305, P0306, P0335, P0339, P0351, P0352, P0353, P0354, P0355, P0356, P0443, P0496, P0497, P1077, P1078, P1128, P1129, P1172, P145C, P2195, P2227, P2228, P2229, P2237, P2238, P2243, P2245, P2251, P2252, P2270	

(1) A/T model

(2) M/T model

MALFUNCTION THRESHOLD

Long term fuel trim is higher than 1.25 (+25 %).

DRIVING PATTERN

1. Start the engine. Hold the engine speed at 3,000 rpm without load (A/T in P or N, M/T in neutral) until the radiator fan comes on.
2. Drive at a steady speed between 15 - 75 mph (24 - 120 km/h) for at least 15 minutes, and watch the long term fuel trim. If the long term fuel trim stays at about 1.0, the vehicle is OK or it is a very minor problem. If a significant fault is still present, the long term fuel trim will move up or down while driving.

- When freeze data is stored, drive the vehicle under those conditions instead of Driving Pattern step 2.
- If the EVAP monitor runs instead of the HO2S monitor, turn the engine off, then restart it, and the HO2S monitor will restart.
- After clearing the DTC by disconnecting the battery or using the scan tool, extend Driving Pattern step 2 to 40 minutes or longer to allow time for long term fuel trim to recover.
- Drive the vehicle in this manner only if the traffic regulations and ambient conditions allow.

DIAGNOSIS DETAILS

Conditions for setting the DTC

When a malfunction is detected during the first drive cycle, a Pending DTC is stored in the ECM/PCM memory. If the malfunction returns in the next (second) drive cycle, the MIL comes on and a Confirmed DTC and the freeze data are stored.

Conditions for clearing the DTC

The MIL is cleared if the malfunction does not return in three consecutive drive cycles in which the engine conditions are similar to the first time the malfunction was detected. The MIL, the Pending DTC, the Confirmed DTC, and the freeze data can be cleared with the scan tool Clear command or by disconnecting the battery.

DTC P0172: REAR BANK (BANK 1) FUEL SYSTEM TOO RICH

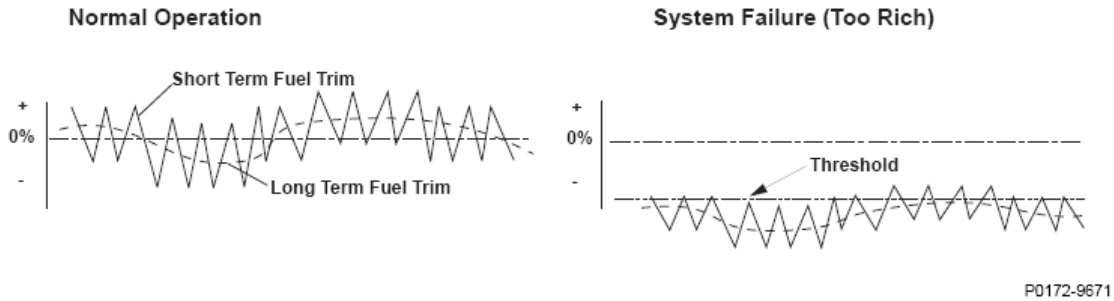


Fig. 55: Fuel System Characteristics Curve (Too Rich)

GENERAL DESCRIPTION

The engine control module (ECM)/powertrain control module (PCM) detects the oxygen content in the exhaust gas from the rear air/fuel ratio (A/F) sensor (bank 1, sensor 1) signal voltage, and it uses fuel feedback control to maintain the optimal air/fuel ratio. The air/fuel ratio coefficient for correcting the amount of injected fuel is the short term fuel trim. The ECM/PCM varies short term fuel trim continuously to keep the air/fuel ratio close to the stoichiometric ratio for all driving conditions. Long term fuel trim is computed from short term fuel trim and is used to regulate long term deviation from the stoichiometric air/fuel ratio, which occurs when fuel metering components deteriorate with age or system failures occur. In addition, long term fuel trim is stored in the ECM/PCM memory and is used to determine when fuel metering components malfunction. When long term fuel trim is higher than normal, which is about 1.0 (0 %), the amount of injected fuel must be increased, and when lower than normal, it must be decreased. If long term fuel trim is lower than normal (too rich), the

ECM/PCM detects a malfunction in the fuel metering components and stores a DTC.

MONITOR EXECUTION, SEQUENCE, DURATION, DTC TYPE, OBD STATUS

Execution	Once per driving cycle(1)
Sequence	None
Duration	12 seconds
DTC Type	Two drive cycles, MIL on
OBD Status	PASSED/FAILED/NOT COMPLETED (STILL TESTING)
(1) The malfunction parameters are cleared when it is judged as normal under the same driving conditions in which the malfunction was detected.	

ENABLE CONDITIONS

Condition	Minimum	Maximum
Engine coolant temperature	156 °F (69 °C)	-
Intake air temperature	19 °F (-7 °C)	-
Engine speed	550 rpm(1) 650 rpm(2)	4,000 rpm
MAP value	20 kPa (6.0 inHg, 150 mmHg)(1) 16 kPa (4.8 inHg, 120 mmHg)(2)	-
Fuel feedback	Closed loop	
Monitoring priority	P0133, P0153, P0400, P0420, P0430	
No active DTCs set (prevents monitor from running)	P0107, P0108, P0112, P0113, P0117, P0118, P0134, P0135, P0137, P0138, P0139, P0300, P0301, P0302, P0303, P0304, P0305, P0306, P0335, P0339, P0351, P0352, P0353, P0354, P0355, P0356, P0443, P0496, P0497, P1077, P1078, P1128, P1129, P1172, P145C, P2195, P2227, P2228, P2229, P2237, P2238, P2243, P2245, P2251, P2252, P2270	
(1) A/T model (2) M/T model		

MALFUNCTION THRESHOLD

Long term fuel trim is lower than 0.79 (-21 %).

DRIVING PATTERN

1. Start the engine. Hold the engine speed at 3,000 rpm without load (A/T in P or N, M/T in neutral) until the radiator fan comes on.
2. Drive at a steady speed between 15 - 75 mph (24 - 120 km/h) for at least 15 minutes, and watch the long

term fuel trim. If the long term fuel trim stays at about 1.0, the vehicle is OK or it is a very minor problem. If a significant fault is still present, the long term fuel trim will move up or down while driving.

- When freeze data is stored, drive the vehicle under those conditions instead of Driving Pattern step 2.
- If the EVAP monitor runs instead of the HO2S monitor, turn the engine off, then restart it, and the HO2S monitor will restart.
- After clearing the DTC by disconnecting the battery or using the scan tool, extend Driving Pattern step 2 to 40 minutes or longer to allow time for long term fuel trim to recover.
- Drive the vehicle in this manner only if the traffic regulations and ambient conditions allow.

DIAGNOSIS DETAILS

Conditions for setting the DTC

When a malfunction is detected during the first drive cycle, a Pending DTC is stored in the ECM/PCM memory. If the malfunction returns in the next (second) drive cycle, the MIL comes on and a Confirmed DTC and the freeze data are stored.

Conditions for clearing the DTC

The MIL is cleared if the malfunction does not return in three consecutive drive cycles in which the engine conditions are similar to the first time the malfunction was detected. The MIL, the Pending DTC, the Confirmed DTC, and the freeze data can be cleared with the scan tool Clear command or by disconnecting the battery.

DTC P0174: FRONT BANK (BANK 2) FUEL SYSTEM TOO LEAN

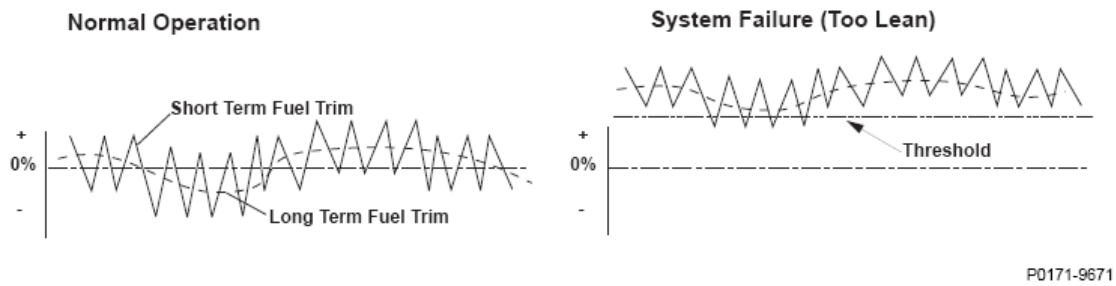


Fig. 56: Fuel System Characteristics Curve (Too Lean)

GENERAL DESCRIPTION

The engine control module (ECM)/powertrain control module (PCM) detects the oxygen content in the exhaust gas from the front air/fuel ratio (A/F) sensor (bank 2, sensor 1) signal voltage, and it uses fuel feedback control to maintain the optimal air/fuel ratio. The air/fuel ratio coefficient for correcting the amount of injected fuel is the short term fuel trim. The ECM/PCM varies short term fuel trim continuously to keep the air/fuel ratio close to the stoichiometric ratio for all driving conditions. Long term fuel trim is computed from short term fuel trim and is used to regulate long term deviation from the stoichiometric air/fuel ratio, which occurs when fuel metering components deteriorate with age or system failures occur. In addition, long term fuel trim is stored in the ECM/PCM memory and is used to determine when fuel metering components malfunction. When long term

fuel trim is higher than normal, which is about 1.0 (0 %), the amount of injected fuel must be increased, and when lower than normal, it must be decreased. If long term fuel trim is higher than normal (too lean), the ECM/PCM detects a malfunction in the fuel metering components and stores a DTC.

MONITOR EXECUTION, SEQUENCE, DURATION, DTC TYPE, OBD STATUS

Execution	Once per driving cycle(1)
Sequence	None
Duration	Every 7.0 seconds
DTC Type	Two drive cycles, MIL on
OBD Status	PASSED/FAILED/NOT COMPLETED (STILL TESTING)
(1) The malfunction parameters are cleared when it is judged as normal under the same driving conditions in which the malfunction was detected.	

ENABLE CONDITIONS

Condition	Minimum	Maximum
Engine coolant temperature	156 °F (69 °C)	-
Intake air temperature	19 °F (-7 °C)	-
Engine speed	550 rpm(1) 650 rpm(2)	4,000 rpm
MAP value	20 kPa (6.0 inHg, 150 mmHg)(1) 16 kPa (4.8 inHg, 120 mmHg)(2)	-
Fuel feedback	Closed loop	
Monitoring priority	P0133, P0153, P0400, P0420, P0430	
No active DTCs set (prevents monitor from running)	P0107, P0108, P0112, P0113, P0117, P0118, P0134, P0155, P0157, P0158, P0159, P0300, P0301, P0302, P0303, P0304, P0305, P0306, P0335, P0339, P0351, P0352, P0353, P0354, P0355, P0356, P0443, P0496, P0497, P1077, P1078, P1128, P1129, P1174, P145C, P2197, P2227, P2228, P2229, P2240, P2241, P2247, P2249, P2254, P2255, P2272	
(1) A/T model (2) M/T model		

MALFUNCTION THRESHOLD

Long term fuel trim is higher than 1.25 (+25 %).

DRIVING PATTERN

1. Start the engine. Hold the engine speed at 3,000 rpm without load (A/T in P or N, M/T in neutral) until

the radiator fan comes on.

2. Drive at a steady speed between 15 - 75 mph (24 - 120 km/h) for at least 15 minutes, and watch the long term fuel trim. If the long term fuel trim stays at about 1.0, the vehicle is OK or it is a very minor problem. If a significant fault is still present, the long term fuel trim will move up or down while driving.
    - When freeze data is stored, drive the vehicle under those conditions instead of Driving Pattern step 2.
    - If the EVAP monitor runs instead of the HO2S monitor, turn the engine off, then restart it, and the HO2S monitor will restart.
    - After clearing the DTC by disconnecting the battery or using the scan tool, extend Driving Pattern step 2 to 40 minutes or longer to allow time for long term fuel trim to recover.
    - Drive the vehicle in this manner only if the traffic regulations and ambient conditions allow.

DIAGNOSIS DETAILS

Conditions for setting the DTC

When a malfunction is detected during the first drive cycle, a Pending DTC is stored in the ECM/PCM memory. If the malfunction returns in the next (second) drive cycle, the MIL comes on and a Confirmed DTC and the freeze data are stored.

Conditions for clearing the DTC

The MIL is cleared if the malfunction does not return in three consecutive drive cycles in which the engine conditions are similar to the first time the malfunction was detected. The MIL, the Pending DTC, the Confirmed DTC, and the freeze data can be cleared with the scan tool Clear command or by disconnecting the battery.

DTC P0175: FRONT BANK (BANK 2) FUEL SYSTEM TOO RICH

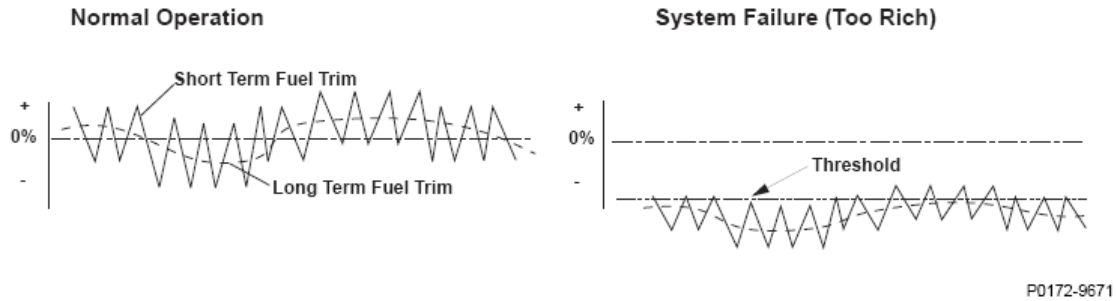


Fig. 57: Fuel System Characteristics Curve (Too Rich)

GENERAL DESCRIPTION

The engine control module (ECM)/powertrain control module (PCM) detects the oxygen content in the exhaust gas from the front air/fuel ratio (A/F) sensor (bank 2, sensor 1) signal voltage, and it uses fuel feedback control to maintain the optimal air/fuel ratio. The air/fuel ratio coefficient for correcting the amount of injected fuel is the short term fuel trim. The ECM/PCM varies short term fuel trim continuously to keep the air/fuel ratio close to the stoichiometric ratio for all driving conditions. Long term fuel trim is computed from short term fuel trim

and is used to regulate long term deviation from the stoichiometric air/fuel ratio, which occurs when fuel metering components deteriorate with age or system failures occur. In addition, long term fuel trim is stored in the ECM/PCM memory and is used to determine when fuel metering components malfunction. When long term fuel trim is higher than normal, which is about 1.0 (0 %), the amount of injected fuel must be increased, and when lower than normal, it must be decreased. If long term fuel trim is lower than normal (too rich), the ECM/PCM detects a malfunction in the fuel metering components and stores a DTC.

MONITOR EXECUTION, SEQUENCE, DURATION, DTC TYPE, OBD STATUS

Execution	Once per driving cycle(1)
Sequence	None
Duration	12 seconds
DTC Type	Two drive cycles, MIL on
OBD Status	PASSED/FAILED/NOT COMPLETED (STILL TESTING)
(1) The malfunction parameters are cleared when it is judged as normal under the same driving conditions in which the malfunction was detected.	

ENABLE CONDITIONS

Condition	Minimum	Maximum
Engine coolant temperature	156 °F (69 °C)	-
Intake air temperature	19 °F (-7 °C)	-
Engine speed	550 rpm(1) 650 rpm(2)	4,000 rpm
MAP value	20 kPa (6.0 inHg, 150 mmHg)(1) 16 kPa (4.8 inHg, 120 mmHg)(2)	-
Fuel feedback	Closed loop	
Monitoring priority	P0133, P0153, P0400, P0420, P0430	
No active DTCs set (prevents monitor from running)	P0107, P0108, P0112, P0113, P0117, P0118, P0134, P0155, P0157, P0158, P0159, P0300, P0301, P0302, P0303, P0304, P0305, P0306, P0335, P0339, P0351, P0352, P0353, P0354, P0355, P0356, P0443, P0496, P0497, P1077, P1078, P1128, P1129, P1174, P145C, P2197, P2227, P2228, P2229, P2240, P2241, P2247, P2249, P2254, P2255, P2272	
(1) A/T model (2) M/T model		

MALFUNCTION THRESHOLD

Long term fuel trim is lower than 0.79 (-21 %).

DRIVING PATTERN

1. Start the engine. Hold the engine speed at 3,000 rpm without load (A/T in P or N, M/T in neutral) until the radiator fan comes on.
2. Drive at a steady speed between 15 - 75 mph (24 - 120 km/h) for at least 15 minutes, and watch the long term fuel trim. If the long term fuel trim stays at about 1.0, the vehicle is OK or it is a very minor problem. If a significant fault is still present, the long term fuel trim will move up or down while driving.
    - When freeze data is stored, drive the vehicle under those conditions instead of Driving Pattern step 2.
    - If the EVAP monitor runs instead of the HO2S monitor, turn the engine off, then restart it, and the HO2S monitor will restart.
    - After clearing the DTC by disconnecting the battery or using the scan tool, extend Driving Pattern step 2 to 40 minutes or longer to allow time for long term fuel trim to recover.
    - Drive the vehicle in this manner only if the traffic regulations and ambient conditions allow.

DIAGNOSIS DETAILS

Conditions for setting the DTC

When a malfunction is detected during the first drive cycle, a Pending DTC is stored in the ECM/PCM memory. If the malfunction returns in the next (second) drive cycle, the MIL comes on and a Confirmed DTC and the freeze data are stored.

Conditions for clearing the DTC

The MIL is cleared if the malfunction does not return in three consecutive drive cycles in which the engine conditions are similar to the first time the malfunction was detected. The MIL, the Pending DTC, the Confirmed DTC, and the freeze data can be cleared with the scan tool Clear command or by disconnecting the battery.

DTC P0222: THROTTLE POSITION (TP) SENSOR B CIRCUIT LOW VOLTAGE

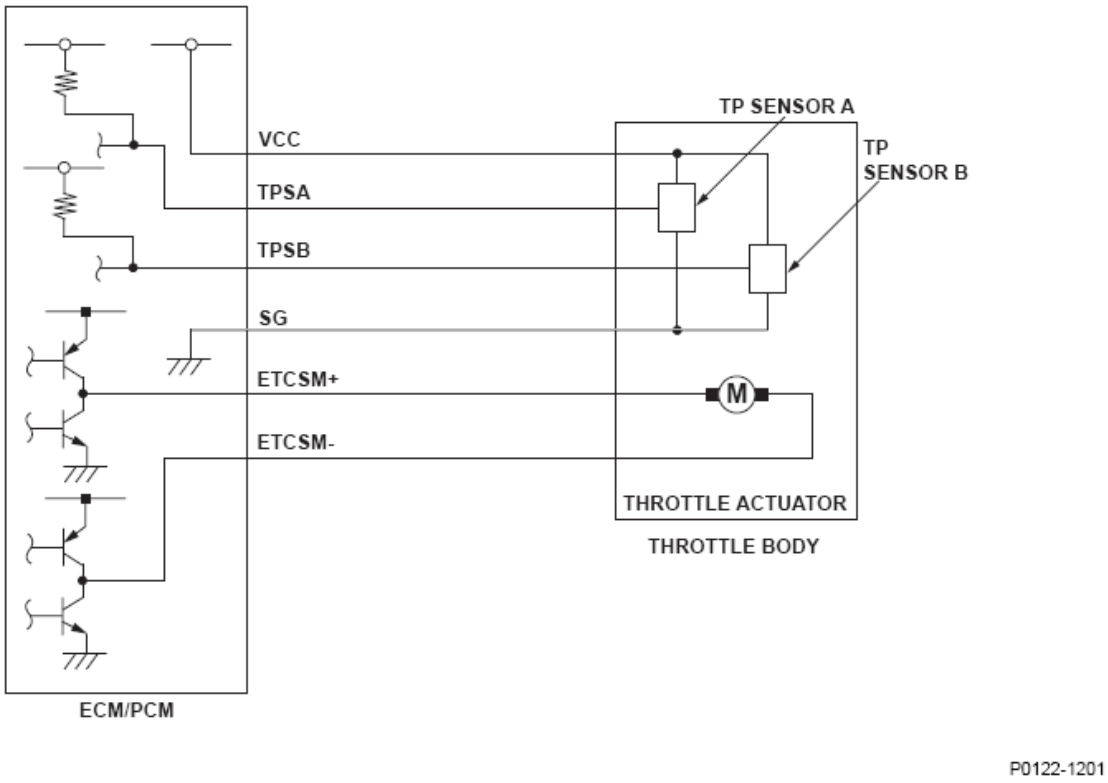


Fig. 58: Throttle Position Sensor - Circuit Diagram

GENERAL DESCRIPTION

The electronic throttle control system controls the throttle valve opening. The system includes the throttle actuator, the throttle valve, throttle position (TP) sensors A and B, the electronic throttle control system (ETCS) control relay, the accelerator pedal position (APP) sensor, and the engine control module (ECM)/powertrain control module (PCM). TP sensor B is a semiconductor type, and it is attached to the throttle body and shaft to determine throttle valve position. The throttle valve position signal from TP sensor B is transmitted to the ECM/PCM for target position feedback control. If the signal from TP sensor B is a fixed value for a set time, the ECM/PCM detects a TP sensor B malfunction and stores a DTC.

MONITOR EXECUTION, SEQUENCE, DURATION, DTC TYPE, OBD STATUS

Execution	Continuous
Sequence	None
Duration	200 milliseconds or more
DTC Type	One drive cycle, MIL on
OBD Status	PASSED/FAILED/NOT COMPLETED (STILL TESTING)

ENABLE CONDITIONS

Condition	
	ON (II)

Ignition switch(1)	
Engine start/stop button(2)	ON mode
No active DTCs set (prevents monitor from running)	P0122, P0123, P0223, P2101, P2118, P2122, P2123, P2127, P2128, P2135, P2138, P2176
(1) Without keyless access system (2) With keyless access system	

MALFUNCTION THRESHOLD

The TP sensor B output voltage is 0.3 V or less for at least 200 milliseconds.

DIAGNOSIS DETAILS

Conditions for setting the DTC

When a malfunction is detected, the MIL comes on and a Pending DTC, a Confirmed DTC, and the freeze data are stored in the ECM/PCM memory.

Conditions for clearing the DTC

The MIL is cleared if the malfunction does not return in three consecutive trips in which the diagnostic runs. The MIL, the Pending DTC, the Confirmed DTC, and the freeze data can be cleared with the scan tool Clear command or by disconnecting the battery.

DTC P0223: THROTTLE POSITION (TP) SENSOR B CIRCUIT HIGH VOLTAGE

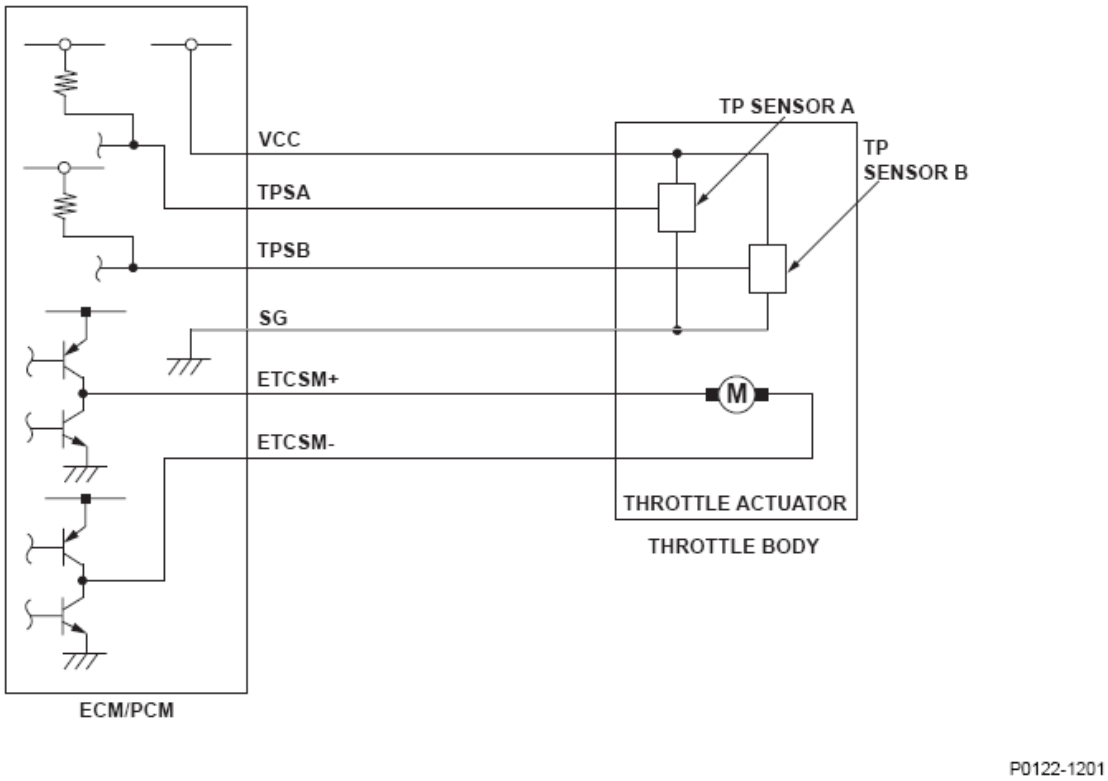


Fig. 59: Throttle Position Sensor - Circuit Diagram

GENERAL DESCRIPTION

The electronic throttle control system controls the throttle valve opening. The system includes the throttle actuator, the throttle valve, throttle position (TP) sensors A and B, the electronic throttle control system (ETCS) control relay, the accelerator pedal position (APP) sensor, and the engine control module (ECM)/powertrain control module (PCM). TP sensor B is a semiconductor type, and it is attached to the throttle body and shaft to determine throttle valve position. The throttle valve position signal from TP sensor B is transmitted to the ECM/PCM for target position feedback control. If the signal from TP sensor B is a fixed value for a set time, the ECM/PCM detects a TP sensor B malfunction and stores a DTC.

MONITOR EXECUTION, SEQUENCE, DURATION, DTC TYPE, OBD STATUS

Execution	Continuous
Sequence	None
Duration	200 milliseconds or more
DTC Type	One drive cycle, MIL on
OBD Status	PASSED/FAILED/NOT COMPLETED (STILL TESTING)

ENABLE CONDITIONS

Condition	
	ON (II)

Ignition switch(1)	
Engine start/stop button(2)	ON mode
No active DTCs set (prevents monitor from running)	P0122, P0123, P0222, P2101, P2118, P2122, P2123, P2127, P2128, P2135, P2138, P2176
(1) Without keyless access system (2) With keyless access system	

MALFUNCTION THRESHOLD

The TP sensor B output voltage is 4.8 V or more for at least 200 milliseconds.

DIAGNOSIS DETAILS

Conditions for setting the DTC

When a malfunction is detected, the MIL comes on and a Pending DTC, a Confirmed DTC, and the freeze data are stored in the ECM/PCM memory.

Conditions for clearing the DTC

The MIL is cleared if the malfunction does not return in three consecutive trips in which the diagnostic runs. The MIL, the Pending DTC, the Confirmed DTC, and the freeze data can be cleared with the scan tool Clear command or by disconnecting the battery.

DTC P0300: RANDOM MISFIRE DETECTED (ENGINE TYPE: J35Z6)

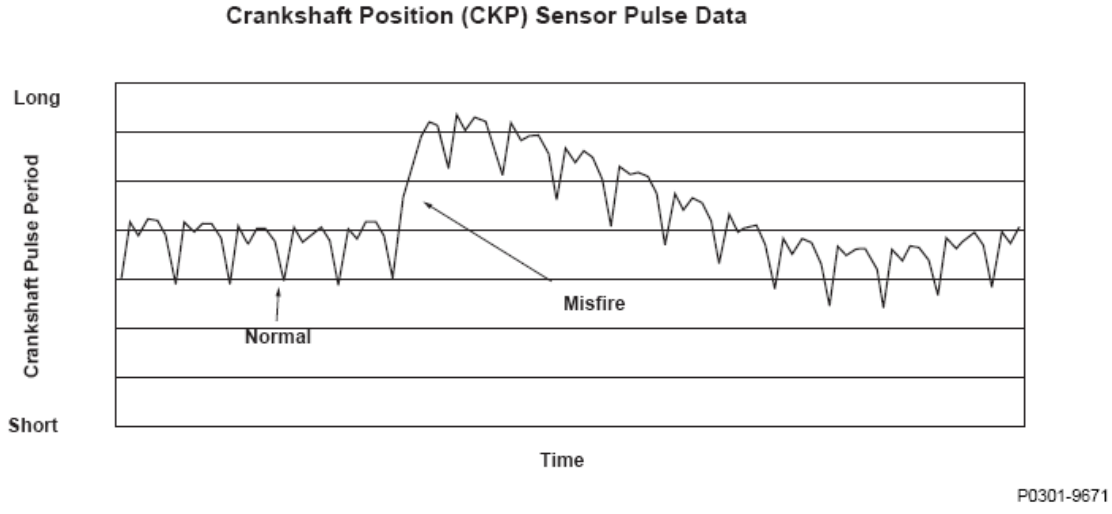


Fig. 60: Crankshaft Position Sensor Pulse Data Waveform

GENERAL DESCRIPTION

The crankshaft vibrates slightly when each cylinder fires. If a misfire occurs, the crankshaft rotation speed changes rapidly. The powertrain control module (PCM) monitors the crankshaft rotation speed based on the output pulses from the crankshaft position (CKP) sensor. By monitoring changes in the crankshaft rotation speed, the PCM counts the number of misfires and determines which cylinder is misfiring. If more than one DTC from P0301 through P0306 has been stored while misfires in multiple cylinders are detected, a malfunction is detected and a DTC is stored. There are two types of misfire detection:

Type 1: When the number of misfires per 200 engine revolutions reaches the level that can damage the warm up three way catalyst (WU-TWC), a DTC is stored and the MIL blinks. When the misfire ceases, the MIL stays on instead of blinking.

Type 2: When the number of misfires per 1,000 engine revolutions reaches the level that affects FTP mode exhaust emissions, a DTC is stored and the MIL comes on.

MONITOR EXECUTION, SEQUENCE, DURATION, DTC TYPE, OBD STATUS

Execution		Continuous
Sequence		None
Duration	Type 1	Per 200 revolutions
	Type 2	Per 1,000 revolutions
DTC Type		Two drive cycles, MIL on
OBD Status		PASSED/FAILED/EXECUTING/OUT OF (TEST) CONDITION

ENABLE CONDITIONS

Condition		Minimum	Maximum
Elapsed time after monitor finishing condition except immediate starting the engine		1.0 second	-
Engine coolant temperature		None, unless the initial engine coolant temperature is 14 °F (-10 °C) or less, in which case the monitor will not run until the engine coolant temperature reaches 68 °F (20 °C)	
Engine speed		500 rpm	6,800 rpm
MAP value(1)	750 rpm	25 kPa (7.3 inHg, 184 mmHg)	-
	2,000 rpm	20 kPa (5.9 inHg, 149 mmHg)	-
Fuel feedback		Other than during fuel cut-off operation	
No active DTCs set (prevents monitor from running)		P0107, P0108, P0117, P0118, P0122, P0123, P0222, P0223, P0335, P0339, P1128, P1129, P2227, P2228, P2229	
Other		Test-drive on a flat road to avoid misdetection	
(1) Varies with driving conditions.			

MALFUNCTION THRESHOLD

The number of misfires versus engine revolutions is equal to or greater than the values in the table.

Misfire Type	The number of engine revolutions	The number of misfires
Misfire Type 1 (Severe)	Per 200 revolutions	26 - 89 times(1)
Misfire Type 2 (Light)	Per 1,000 revolutions	40 times
(1) Depending on engine speed and load.		

DRIVING PATTERN

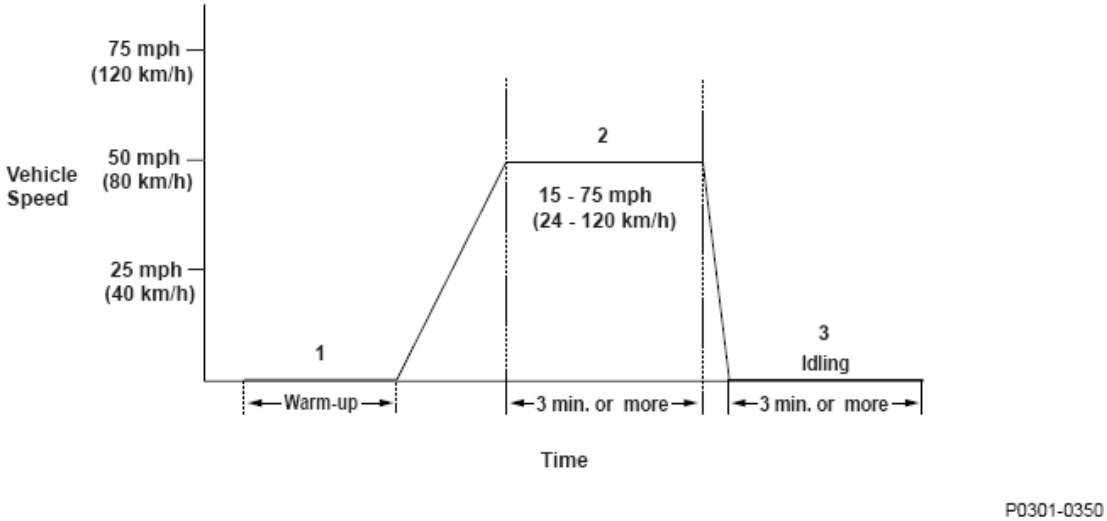


Fig. 61: Vehicle Speed Driving Pattern

1. Start the engine. Hold the engine speed at 3,000 rpm without load (in P or N) until the radiator fan comes on.
2. Drive the vehicle at a speed between 15 - 75 mph (24 - 120 km/h) for at least 3 minutes.
3. Stop the vehicle, and let the engine idle for at least 3 minutes.
   - When freeze data is stored, drive the vehicle under those conditions instead of Driving Pattern step 2 or 3.
   - When you have difficulty duplicating the DTC because of road conditions and traffic situations, repeat the driving pattern several times.
   - Drive the vehicle in this manner only if the traffic regulations and ambient conditions allow.

DIAGNOSIS DETAILS

Conditions for setting the DTC

Misfire Type 1:

- If a type 1 misfire (catalyst damaging) occurs once, the MIL blinks once per second, a Pending DTC is stored, and the high rpm fuel injection stop system activates. The fuel injection stops, at high rpm only, on the cylinder that has the highest misfire counts. The MIL then continues to blink and the fuel injection stays off at high rpm, until the drive is completed.

- If a type 1 misfire occurs during a second drive cycle, the MIL and fuel injection behave the same and a Confirmed DTC is stored.
- After a type 1 misfire has been detected during two drive cycles, the MIL comes on and stays on beginning with the third drive cycle, unless the Pending DTC has been cleared by the PCM***. Even if the MIL is on, it will start blinking if a type 1misfire occurs.
- If the malfunction returns in the next (second) drive cycle, the MIL comes on and a Confirmed DTC and the freeze data are stored.

Misfire Type 2:

If a type 2 misfire (emission-related but not severe enough to immediately damage the catalyst) occurs, a Pending DTC is stored, but the MIL does not come on or blink. If a type 2 misfire occurs during a second drive cycle, the MIL comes on and stays on unless the Pending DTC has been cleared by the PCM***.

*** The Pending DTC is erased if either of these conditions is met:

- The vehicle is operated at least once under the same driving conditions as the first misfire detection, and no misfire is detected.
- 80 drive cycles, regardless of driving conditions, are completed with no misfire detected.

Conditions for clearing the DTC

The MIL is cleared if the malfunction does not return in three consecutive drive cycles in which the engine conditions are similar to the first time the malfunction was detected. The MIL, the Pending DTC, the Confirmed DTC, and the freeze data can be cleared with the scan tool Clear command or by disconnecting the battery.

DTC P0300: RANDOM MISFIRE DETECTED (ENGINE TYPE: J37A4)

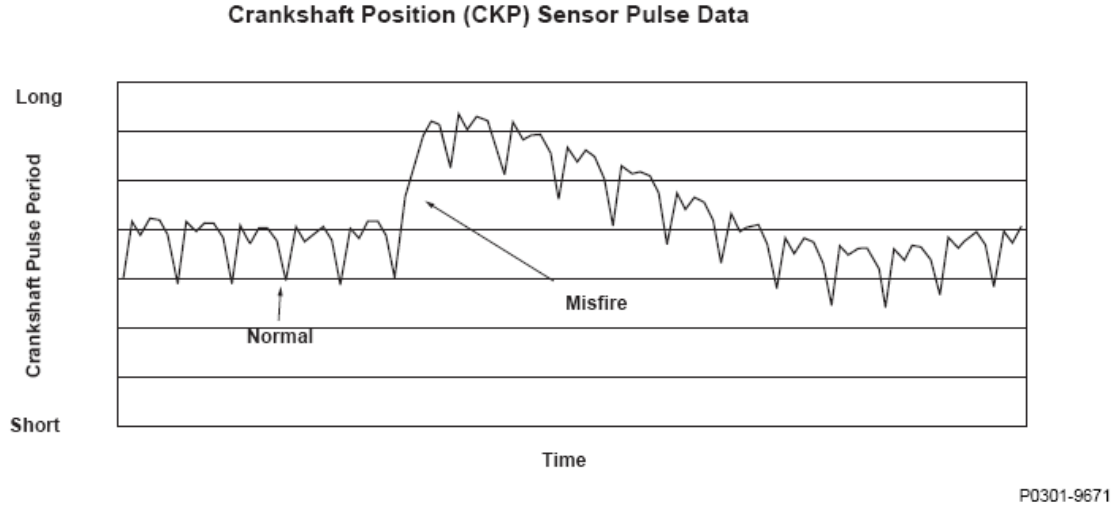


Fig. 62: Crankshaft Position Sensor Pulse Data Waveform

GENERAL DESCRIPTION

The crankshaft vibrates slightly when each cylinder fires. If a misfire occurs, the crankshaft rotation speed changes rapidly. The engine control module (ECM)/powertrain control module (PCM) monitors the crankshaft rotation speed based on the output pulses from the crankshaft position (CKP) sensor. By monitoring changes in the crankshaft rotation speed, the ECM/PCM counts the number of misfires and determines which cylinder is misfiring. If more than one DTC from P0301 through P0306 has been stored while misfires in multiple cylinders are detected, a malfunction is detected and a DTC is stored. There are two types of misfire detection:

Type 1: When the number of misfires per 200 engine revolutions reaches the level that can damage the warm up three way catalyst (WU-TWC), a DTC is stored and the MIL blinks. When the misfire ceases, the MIL stays on instead of blinking.

Type 2: When the number of misfires per 1,000 engine revolutions reaches the level that affects FTP mode exhaust emissions, a DTC is stored and the MIL comes on.

MONITOR EXECUTION, SEQUENCE, DURATION, DTC TYPE, OBD STATUS

Execution		Continuous
Sequence		None
Duration	Type 1	Per 200 revolutions
	Type 2	Per 1,000 revolutions
DTC Type		Two drive cycles, MIL on
OBD Status		PASSED/FAILED/EXECUTING/OUT OF (TEST) CONDITION

ENABLE CONDITIONS

Condition		Minimum	Maximum
Elapsed time after monitor finishing condition except immediate starting the engine		1.0 second	-
Engine coolant temperature		None, unless the initial engine coolant temperature is 14 °F (-10 °C) or less, in which case the monitor will not run until the engine coolant temperature reaches 68 °F (20 °C)	
Engine speed		500 rpm	6,700 rpm
MAP value(1)	650 rpm	25 kPa (7.3 inHg, 185 mmHg)(2) 25 kPa (7.4 inHg, 187 mmHg)(3)	-
	2,000 rpm	18 kPa (5.4 inHg, 135 mmHg)(2) 18 kPa (5.3 inHg, 134 mmHg)(3)	-
Fuel feedback		Other than during fuel cut-off operation	
No active DTCs set (prevents monitor from running)		P0107, P0108, P0117, P0118, P0122, P0123, P0222, P0223, P0335, P0339, P1128, P1129, P2227, P2228, P2229	
Other		Test-drive on a flat road to avoid misdetection	

(1) Varies with driving conditions.

(2) A/T model

(3) M/T model

MALFUNCTION THRESHOLD

The number of misfires versus engine revolutions is equal to or greater than the values in the table.

Misfire Type	The number of engine revolutions	The number of misfires
Misfire Type 1 (Severe)	Per 200 revolutions	26 - 89 times(1)
Misfire Type 2 (Light)	Per 1,000 revolutions	44*1 , 55*2 times
(1) Depending on engine speed and load.		

DRIVING PATTERN

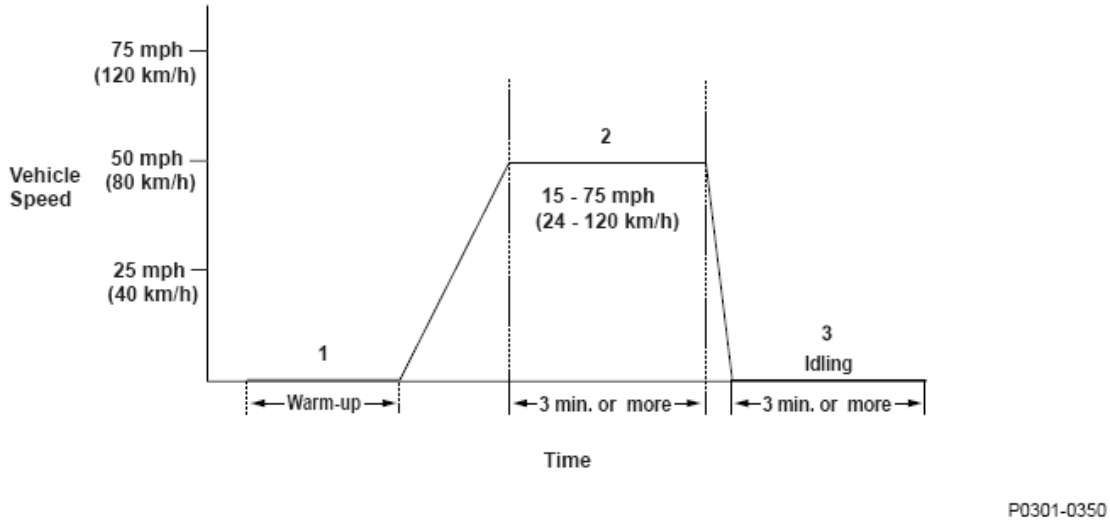


Fig. 63: Vehicle Speed Driving Pattern

1. Start the engine. Hold the engine speed at 3,000 rpm without load (A/T in P or N, M/T in neutral) until the radiator fan comes on.
2. Drive the vehicle at a speed between 15 - 75 mph (24 - 120 km/h) for at least 3 minutes.
3. Stop the vehicle, and let the engine idle for at least 3 minutes.
    - When freeze data is stored, drive the vehicle under those conditions instead of Driving Pattern step 2 or 3.
    - When you have difficulty duplicating the DTC because of road conditions and traffic situations, repeat the driving pattern several times.
    - Drive the vehicle in this manner only if the traffic regulations and ambient conditions allow.

DIAGNOSIS DETAILS

Conditions for setting the DTC

Misfire Type 1:

- If a type 1 misfire (catalyst damaging) occurs once, the MIL blinks once per second, a Pending DTC is stored, and the high rpm fuel injection stop system activates. The fuel injection stops, at high rpm only, on the cylinder that has the highest misfire counts. The MIL then continues to blink and the fuel injection stays off at high rpm, until the drive is completed.
- If a type 1 misfire occurs during a second drive cycle, the MIL and fuel injection behave the same and a Confirmed DTC is stored.
- After a type 1 misfire has been detected during two drive cycles, the MIL comes on and stays on beginning with the third drive cycle, unless the Pending DTC has been cleared by the ECM/PCM***. Even if the MIL is on, it will start blinking if a type 1 misfire occurs.
- If the malfunction returns in the next (second) drive cycle, the MIL comes on and a Confirmed DTC and the freeze data are stored.

Misfire Type 2:

If a type 2 misfire (emission-related but not severe enough to immediately damage the catalyst) occurs, a Pending DTC is stored, but the MIL does not come on or blink. If a type 2 misfire occurs during a second drive cycle, the MIL comes on and stays on unless the Pending DTC has been cleared by the ECM/PCM***.

*** The Pending DTC is erased if either of these conditions is met:

- The vehicle is operated at least once under the same driving conditions as the first misfire detection, and no misfire is detected.
- 80 drive cycles, regardless of driving conditions, are completed with no misfire detected.

Conditions for clearing the DTC

The MIL is cleared if the malfunction does not return in three consecutive drive cycles in which the engine conditions are similar to the first time the malfunction was detected. The MIL, the Pending DTC, the Confirmed DTC, and the freeze data can be cleared with the scan tool Clear command or by disconnecting the battery.

DTC P0301: NO. 1 CYLINDER MISFIRE DETECTED (ENGINE TYPE: J35Z6); DTC P0302: NO. 2 CYLINDER MISFIRE DETECTED (ENGINE TYPE: J35Z6); DTC P0303: NO. 3 CYLINDER MISFIRE DETECTED (ENGINE TYPE: J35Z6); DTC P0304: NO. 4 CYLINDER MISFIRE DETECTED (ENGINE TYPE: J35Z6); DTC P0305: NO. 5 CYLINDER MISFIRE DETECTED (ENGINE TYPE: J35Z6); DTC P0306: NO. 6 CYLINDER MISFIRE DETECTED (ENGINE TYPE: J35Z6)

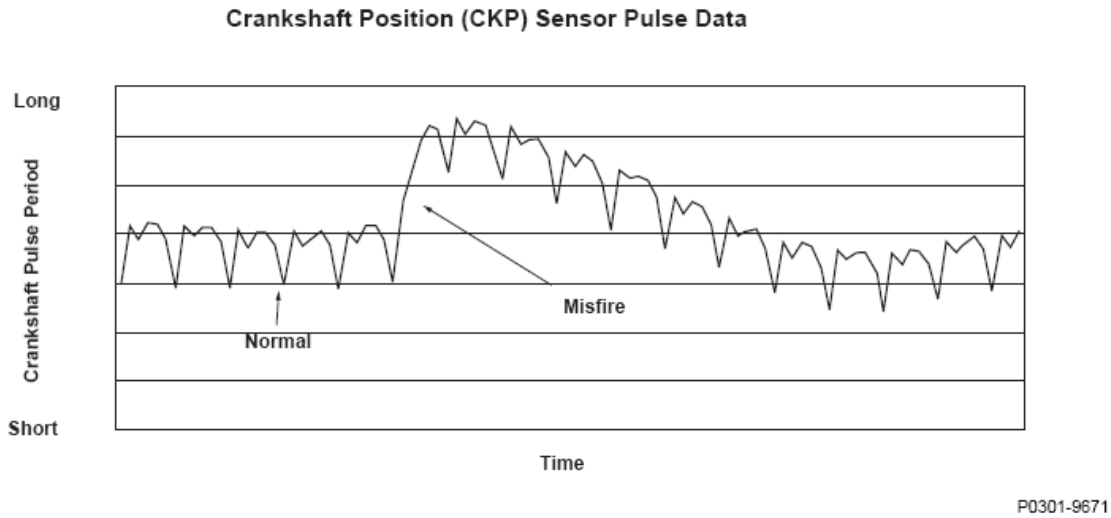


Fig. 64: Crankshaft Position Sensor Pulse Data Waveform

GENERAL DESCRIPTION

The crankshaft vibrates slightly when each cylinder fires. If a misfire occurs, the crankshaft rotation speed changes rapidly. The powertrain control module (PCM) monitors engine misfiring based on the output pulses from the crankshaft position (CKP) sensor, counts the number of misfires, and determines which cylinder is misfiring. If a misfire is detected, a DTC is stored.

There are two types of misfire detection:

Type 1: When the number of misfires per 200 engine revolutions reaches the level that can damage the warm up three way catalyst (WU-TWC), a DTC is stored and the MIL blinks. When the misfire ceases, the MIL stays on instead of blinking.

Type 2: When the number of misfires per 1,000 engine revolutions reaches the level that affects FTP mode exhaust emissions, a DTC is stored and the MIL comes on.

MONITOR EXECUTION, SEQUENCE, DURATION, DTC TYPE, OBD STATUS

Execution		Continuous
Sequence		None
Duration	Type 1	Per 200 revolutions
	Type 2	Per 1,000 revolutions
DTC Type		Two drive cycles, MIL on
OBD Status		PASSED/FAILED/EXECUTING/OUT OF (TEST) CONDITION

ENABLE CONDITIONS

Condition	Minimum	Maximum
Elapsed time after monitor		

finishing condition except immediate starting the engine		1.0 second	-
Engine coolant temperature		None, unless the initial engine coolant temperature is 14 °F (-10 °C) or less, in which case the monitor will not run until the engine coolant temperature reaches 68 °F (20 °C)	
Engine speed		500 rpm	6,800 rpm
MAP value(1)	750 rpm	25 kPa (7.3 inHg, 184 mmHg)	-
	2,000 rpm	20 kPa (5.9 inHg, 149 mmHg)	-
Fuel feedback		Other than during fuel cut-off operation	
No active DTCs set (prevents monitor from running)		P0107, P0108, P0117, P0118, P0122, P0123, P0222, P0223, P0335, P0339, P1128, P1129, P2227, P2228, P2229	
Other		Test-drive on a flat road to avoid misdetection	
(1) Varies with driving conditions.			

MALFUNCTION THRESHOLD

The number of misfires versus engine revolutions is equal to or greater than the values in the table.

Misfire Type	The number of engine revolutions	The number of misfires
Misfire Type 1 (Severe)	Per 200 revolutions	26 - 89 times(1)
Misfire Type 2 (Light)	Per 1,000 revolutions	40 times
(1) Depending on engine speed and load.		

DRIVING PATTERN

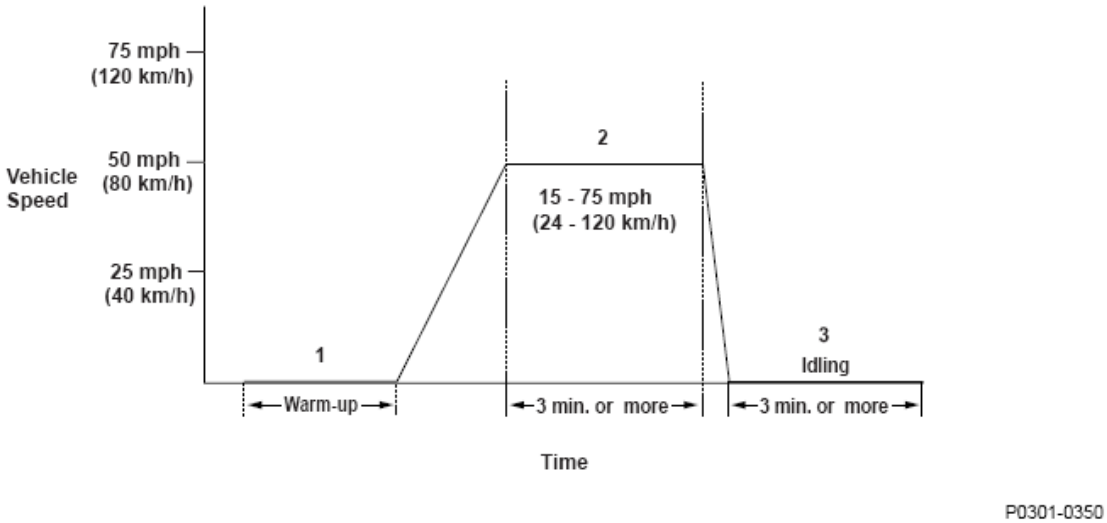


Fig. 65: Vehicle Speed Driving Pattern

1. Start the engine. Hold the engine speed at 3,000 rpm without load (in P or N) until the radiator fan comes on.

2. Drive the vehicle at a speed between 15 - 75 mph (24 - 120 km/h) for at least 3 minutes.
3. Stop the vehicle, and let the engine idle for at least 3 minutes.
    - When freeze data is stored, drive the vehicle under those conditions instead of Driving Pattern step 2 or 3.
    - When you have difficulty duplicating the DTC because of road conditions and traffic situations, repeat the driving pattern several times.
    - Drive the vehicle in this manner only if the traffic regulations and ambient conditions allow.

DIAGNOSIS DETAILS

Conditions for setting the DTC

Misfire Type 1:

- If a type 1 misfire (catalyst damaging) occurs once, the MIL blinks once per second, a Pending DTC is stored, and the high rpm fuel injection stop system activates. The fuel injection stops, at high rpm only, on the cylinder that has the highest misfire counts. The MIL then continues to blink and the fuel injection stays off at high rpm, until the drive is completed.
- If a type 1 misfire occurs during a second drive cycle, the MIL and fuel injection behave the same and a Confirmed DTC is stored.
- After a type 1 misfire has been detected during two drive cycles, the MIL comes on and stays on beginning with the third drive cycle, unless the Pending DTC has been cleared by the PCM***. Even if the MIL is on, it will start blinking if a type 1 misfire occurs.
- If the malfunction returns in the next (second) drive cycle, the MIL comes on and a Confirmed DTC and the freeze data are stored.

Misfire Type 2:

If a type 2 misfire (emission-related but not severe enough to immediately damage the catalyst) occurs, a Pending DTC is stored, but the MIL does not come on or blink. If a type 2 misfire occurs during a second drive cycle, the MIL comes on and stays on unless the Pending DTC has been cleared by the PCM***.

*** The Pending DTC is erased if either of these conditions is met:

- The vehicle is operated at least once under the same driving conditions as the first misfire detection, and no misfire is detected.
- 80 drive cycles, regardless of driving conditions, are completed with no misfire detected.

Conditions for clearing the DTC

The MIL is cleared if the malfunction does not return in three consecutive drive cycles in which the engine conditions are similar to the first time the malfunction was detected. The MIL, the Pending DTC, the Confirmed DTC, and the freeze data can be cleared with the scan tool Clear command or by disconnecting the battery.

DTC P0301: NO. 1 CYLINDER MISFIRE DETECTED (ENGINE TYPE: J37A4);

DTC P0302: NO. 2 CYLINDER MISFIRE DETECTED (ENGINE TYPE: J37A4); DTC P0303: NO. 3 CYLINDER MISFIRE DETECTED (ENGINE TYPE: J37A4); DTC P0304: NO. 4 CYLINDER MISFIRE DETECTED (ENGINE TYPE: J37A4); DTC P0305: NO. 5 CYLINDER MISFIRE DETECTED (ENGINE TYPE: J37A4); DTC P0306: NO. 6 CYLINDER MISFIRE DETECTED (ENGINE TYPE: J37A4)

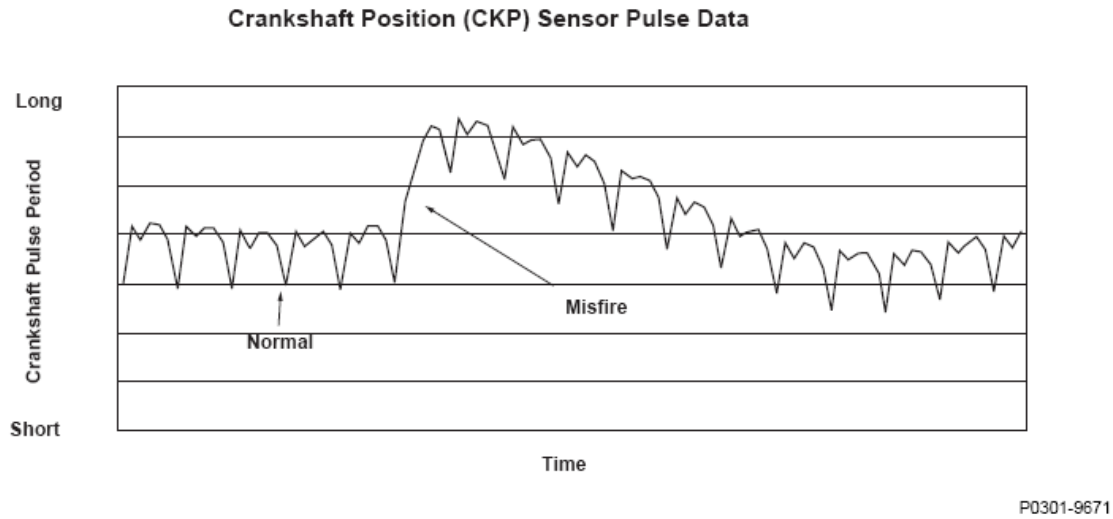


Fig. 66: Crankshaft Position Sensor Pulse Data Waveform

GENERAL DESCRIPTION

The crankshaft vibrates slightly when each cylinder fires. If a misfire occurs, the crankshaft rotation speed changes rapidly. The engine control module (ECM)/powertrain control module (PCM) monitors engine misfiring based on the output pulses from the crankshaft position (CKP) sensor, counts the number of misfires, and determines which cylinder is misfiring. If a misfire is detected, a DTC is stored.

There are two types of misfire detection:

Type 1: When the number of misfires per 200 engine revolutions reaches the level that can damage the warm up three way catalyst (WU-TWC), a DTC is stored and the MIL blinks. When the misfire ceases, the MIL stays on instead of blinking.

Type 2: When the number of misfires per 1,000 engine revolutions reaches the level that affects FTP mode exhaust emissions, a DTC is stored and the MIL comes on.

MONITOR EXECUTION, SEQUENCE, DURATION, DTC TYPE, OBD STATUS

Execution		Continuous
Sequence		None
Duration	Type 1	Per 200 revolutions
	Type 2	Per 1,000 revolutions

DTC Type	Two drive cycles, MIL on
OBD Status	PASSED/FAILED/EXECUTING/OUT OF (TEST) CONDITION

ENABLE CONDITIONS

Condition		Minimum	Maximum
Elapsed time after monitor finishing condition except immediate starting the engine		1.0 second	-
Engine coolant temperature		None, unless the initial engine coolant temperature is 14 °F (-10 °C) or less, in which case the monitor will not run until the engine coolant temperature reaches 68 °F (20 °C)	
Engine speed		500 rpm	6,700 rpm
MAP value(1)	650 rpm	25 kPa (7.3 inHg, 185 mmHg)(2) 25 kPa (7.4 inHg, 187 mmHg)(3)	-
	2,000 rpm	18 kPa (5.4 inHg, 135 mmHg)(2) 18 kPa (5.3 inHg, 134 mmHg)(3)	-
Fuel feedback		Other than during fuel cut-off operation	
No active DTCs set (prevents monitor from running)		P0107, P0108, P0117, P0118, P0122, P0123, P0222, P0223, P0335, P0339, P1128, P1129, P2227, P2228, P2229	
Other		Test-drive on a flat road to avoid misdetection	

(1) Varies with driving conditions.

(2) A/T model

(3) M/T model

MALFUNCTION THRESHOLD

The number of misfires versus engine revolutions is equal to or greater than the values in the table.

Misfire Type	The number of engine revolutions	The number of misfires
Misfire Type 1 (Severe)	Per 200 revolutions	26 - 89 times(1)
Misfire Type 2 (Light)	Per 1,000 revolutions	44*1 , 55*2 times

(1) Depending on engine speed and load.

DRIVING PATTERN

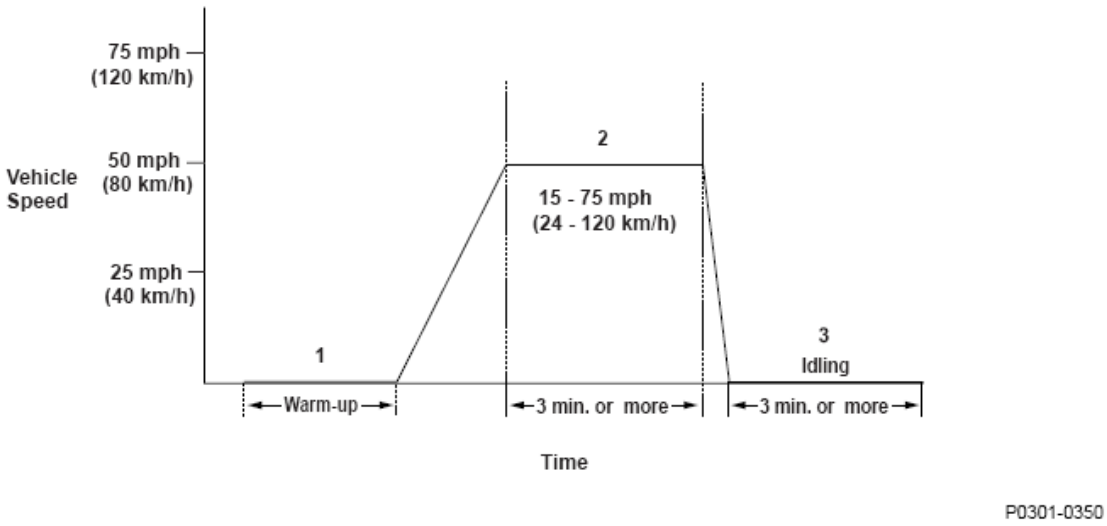


Fig. 67: Vehicle Speed Driving Pattern

1. Start the engine. Hold the engine speed at 3,000 rpm without load (A/T in P or N, M/T in neutral) until the radiator fan comes on.
2. Drive the vehicle at a speed between 15 - 75 mph (24 - 120 km/h) for at least 3 minutes.
3. Stop the vehicle, and let the engine idle for at least 3 minutes.
    - When freeze data is stored, drive the vehicle under those conditions instead of Driving Pattern step 2 or 3.
    - When you have difficulty duplicating the DTC because of road conditions and traffic situations, repeat the driving pattern several times.
    - Drive the vehicle in this manner only if the traffic regulations and ambient conditions allow.

DIAGNOSIS DETAILS

Conditions for setting the DTC

Misfire Type 1:

- If a type 1 misfire (catalyst damaging) occurs once, the MIL blinks once per second, a Pending DTC is stored, and the high rpm fuel injection stop system activates. The fuel injection stops, at high rpm only, on the cylinder that has the highest misfire counts. The MIL then continues to blink and the fuel injection stays off at high rpm, until the drive is completed.
- If a type 1 misfire occurs during a second drive cycle, the MIL and fuel injection behave the same and a Confirmed DTC is stored.
- After a type 1 misfire has been detected during two drive cycles, the MIL comes on and stays on beginning with the third drive cycle, unless the Pending DTC has been cleared by the ECM/PCM***. Even if the MIL is on, it will start blinking if a type 1 misfire occurs.
- If the malfunction returns in the next (second) drive cycle, the MIL comes on and a Confirmed DTC and the freeze data are stored.

Misfire Type 2:

If a type 2 misfire (emission-related but not severe enough to immediately damage the catalyst) occurs, a Pending DTC is stored, but the MIL does not come on or blink. If a type 2 misfire occurs during a second drive cycle, the MIL comes on and stays on unless the Pending DTC has been cleared by the ECM/PCM***.

*** The Pending DTC is erased if either of these conditions is met:

- The vehicle is operated at least once under the same driving conditions as the first misfire detection, and no misfire is detected.
- 80 drive cycles, regardless of driving conditions, are completed with no misfire detected.

Conditions for clearing the DTC

The MIL is cleared if the malfunction does not return in three consecutive drive cycles in which the engine conditions are similar to the first time the malfunction was detected. The MIL, the Pending DTC, the Confirmed DTC, and the freeze data can be cleared with the scan tool Clear command or by disconnecting the battery.

DTC P0325: KNOCK SENSOR CIRCUIT MALFUNCTION

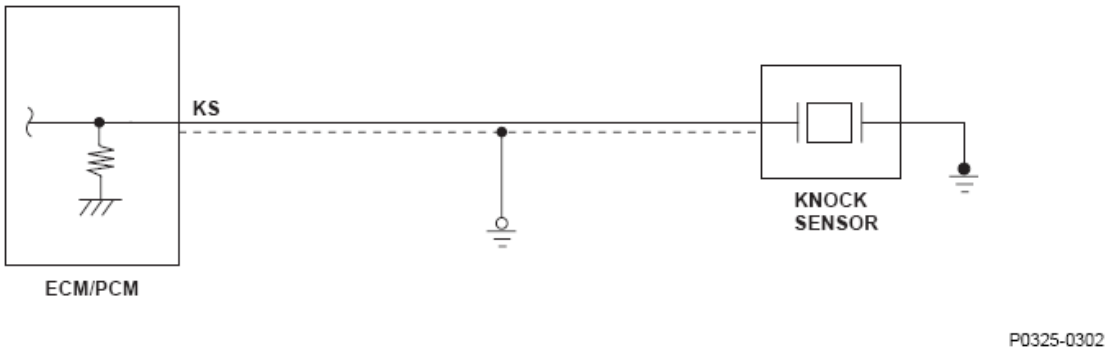


Fig. 68: Knock Sensor - Circuit Diagram

GENERAL DESCRIPTION

The knock sensor is mounted on the engine block and detects engine knocking. The vibrations caused by the knocking are converted into electrical signals through the piezo ceramic element. The engine control module (ECM)/powertrain control module (PCM) controls the ignition timing based on the electrical signal. If the signal from the knock sensor do not vary for a set time, the ECM/PCM detects a malfunction and stores a DTC.

MONITOR EXECUTION, SEQUENCE, DURATION, DTC TYPE, OBD STATUS

Execution	Continuous
Sequence	None
Duration	5 seconds or more
DTC Type	Two drive cycles, MIL on
OBD Status	PASSED/FAILED/NOT COMPLETED (STILL TESTING)

ENABLE CONDITIONS

Condition	Minimum	Maximum
Engine coolant temperature	140 °F (60 °C)	-
Engine speed	2,000 rpm	-
No active DTCs set (prevents monitor from running)	P0117, P0118	

MALFUNCTION THRESHOLD

No signals from the knock sensor are detected for at least 5 seconds.

DRIVING PATTERN

1. Start the engine. Hold the engine speed at 3,000 rpm without load (A/T in P or N, M/T in neutral) until the radiator fan comes on.
2. Hold the engine speed at 3,000 - 4,000 rpm for at least 10 seconds.

DIAGNOSIS DETAILS

Conditions for setting the DTC

When a malfunction is detected during the first drive cycle, a Pending DTC is stored in the ECM/PCM memory. If the malfunction returns in the next (second) drive cycle, the MIL comes on and a Confirmed DTC and the freeze data are stored.

Conditions for clearing the DTC

The MIL is cleared if the malfunction does not return in three consecutive trips in which the diagnostic runs. The MIL, the Pending DTC, the Confirmed DTC, and the freeze data can be cleared with the scan tool Clear command or by disconnecting the battery.

DTC P0335: CRANKSHAFT POSITION (CKP) SENSOR NO SIGNAL

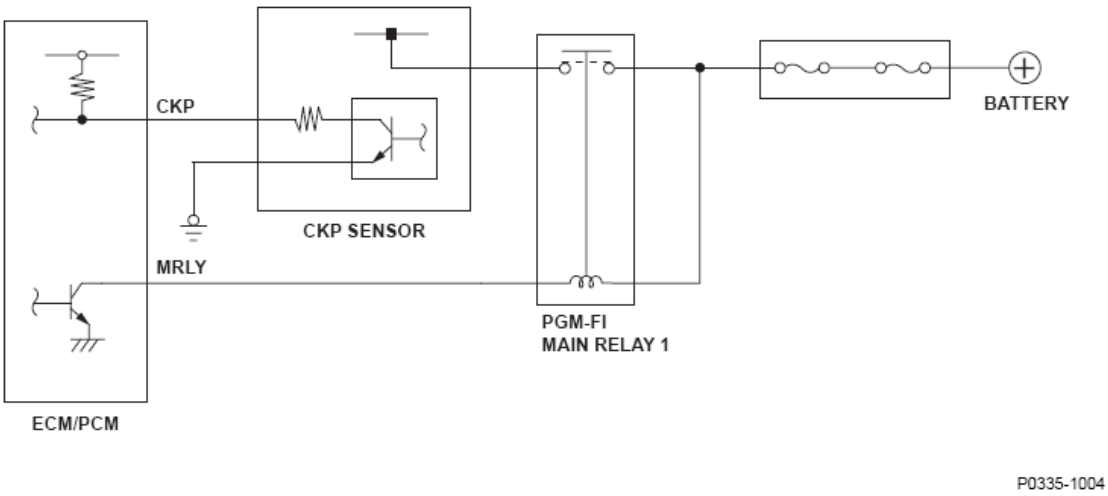


Fig. 69: Crankshaft Position Sensor - Circuit Diagram

GENERAL DESCRIPTION

The crankshaft position (CKP) sensor consists of a rotor and a semiconductor that detects rotor position. When the engine starts, the rotor turns and the magnetic flux in the semiconductor device changes. The changes of magnetic flux are converted into pulsing signals to the engine control module (ECM)/powertrain control module (PCM). The CKP sensor detects injection/ignition timing for each cylinder and engine speed. If no pulsing signals from the CKP sensor are detected, the ECM/PCM detects a malfunction and stores a DTC.

MONITOR EXECUTION, SEQUENCE, DURATION, DTC TYPE, OBD STATUS

Execution	Continuous
Sequence	None
Duration	2 seconds or more (when the engine speed is 750 rpm)
DTC Type	One drive cycle, MIL on
OBD Status	PASSED/FAILED/NOT COMPLETED (STILL TESTING)

ENABLE CONDITIONS

Condition	
State of the engine	Running
No active DTCs set (prevents monitor from running)	P0365, P0369

MALFUNCTION THRESHOLD

No input signals from the CKP sensor are detected while signals from the CMP sensor are detected at least 125 times.

DIAGNOSIS DETAILS

Conditions for setting the DTC

When a malfunction is detected, the MIL comes on and a Pending DTC, a Confirmed DTC, and the freeze data are stored in the ECM/PCM memory.

Conditions for clearing the DTC

The MIL is cleared if the malfunction does not return in three consecutive trips in which the diagnostic runs. The MIL, the Pending DTC, the Confirmed DTC, and the freeze data can be cleared with the scan tool Clear command or by disconnecting the battery.

DTC P0339: CRANKSHAFT POSITION (CKP) SENSOR CIRCUIT INTERMITTENT INTERRUPTION

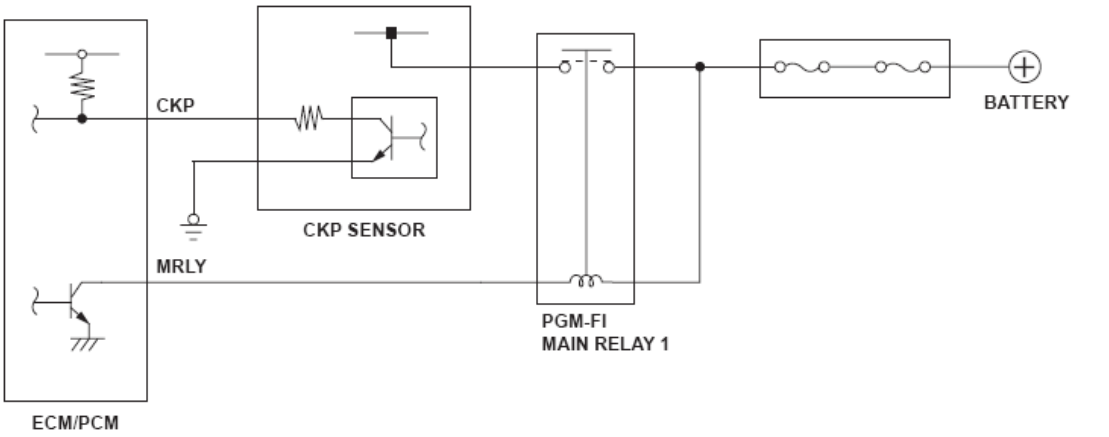


Fig. 70: Crankshaft Position Sensor - Circuit Diagram

GENERAL DESCRIPTION

The crankshaft position (CKP) sensor consists of a rotor and a semiconductor that detects rotor position. When the engine starts, the rotor turns and the magnetic flux in the semiconductor device changes. The changes of magnetic flux are converted into pulsing signals to the engine control module (ECM)/powertrain control module (PCM). The CKP sensor detects injection/ignition timing for each cylinder and engine speed. If an abnormal amount of pulsing signals from the CKP sensor are detected, the ECM/PCM detects a malfunction and stores a DTC.

MONITOR EXECUTION, SEQUENCE, DURATION, DTC TYPE, OBD STATUS

Execution	Continuous
Sequence	None
Duration	-
DTC Type	One drive cycle, MIL on
OBD Status	PASSED/FAILED/NOT COMPLETED (STILL TESTING)

ENABLE CONDITIONS

Condition	Minimum	Maximum
Engine speed	400 rpm	-
No active DTCs set (prevents monitor from running)	P0335	

MALFUNCTION THRESHOLD

Other than 58 pulses are detected during intervals between reference pulses for each crank revolution. This condition has been detected at least 30 times.

DIAGNOSIS DETAILS

Conditions for setting the DTC

When a malfunction is detected, the MIL comes on and a Pending DTC, a Confirmed DTC, and the freeze data are stored in the ECM/PCM memory.

Conditions for clearing the DTC

The MIL is cleared if the malfunction does not return in three consecutive trips in which the diagnostic runs. The MIL, the Pending DTC, the Confirmed DTC, and the freeze data can be cleared with the scan tool Clear command or by disconnecting the battery.

DTC P0351: NO. 1 CYLINDER IGNITION COIL CIRCUIT MALFUNCTION; DTC P0352: NO. 2 CYLINDER IGNITION COIL CIRCUIT MALFUNCTION; DTC P0353: NO. 3 CYLINDER IGNITION COIL CIRCUIT MALFUNCTION; DTC P0354: NO. 4 CYLINDER IGNITION COIL CIRCUIT MALFUNCTION; DTC P0355: NO. 5 CYLINDER IGNITION COIL CIRCUIT MALFUNCTION; DTC P0356: NO. 6 CYLINDER IGNITION COIL CIRCUIT MALFUNCTION

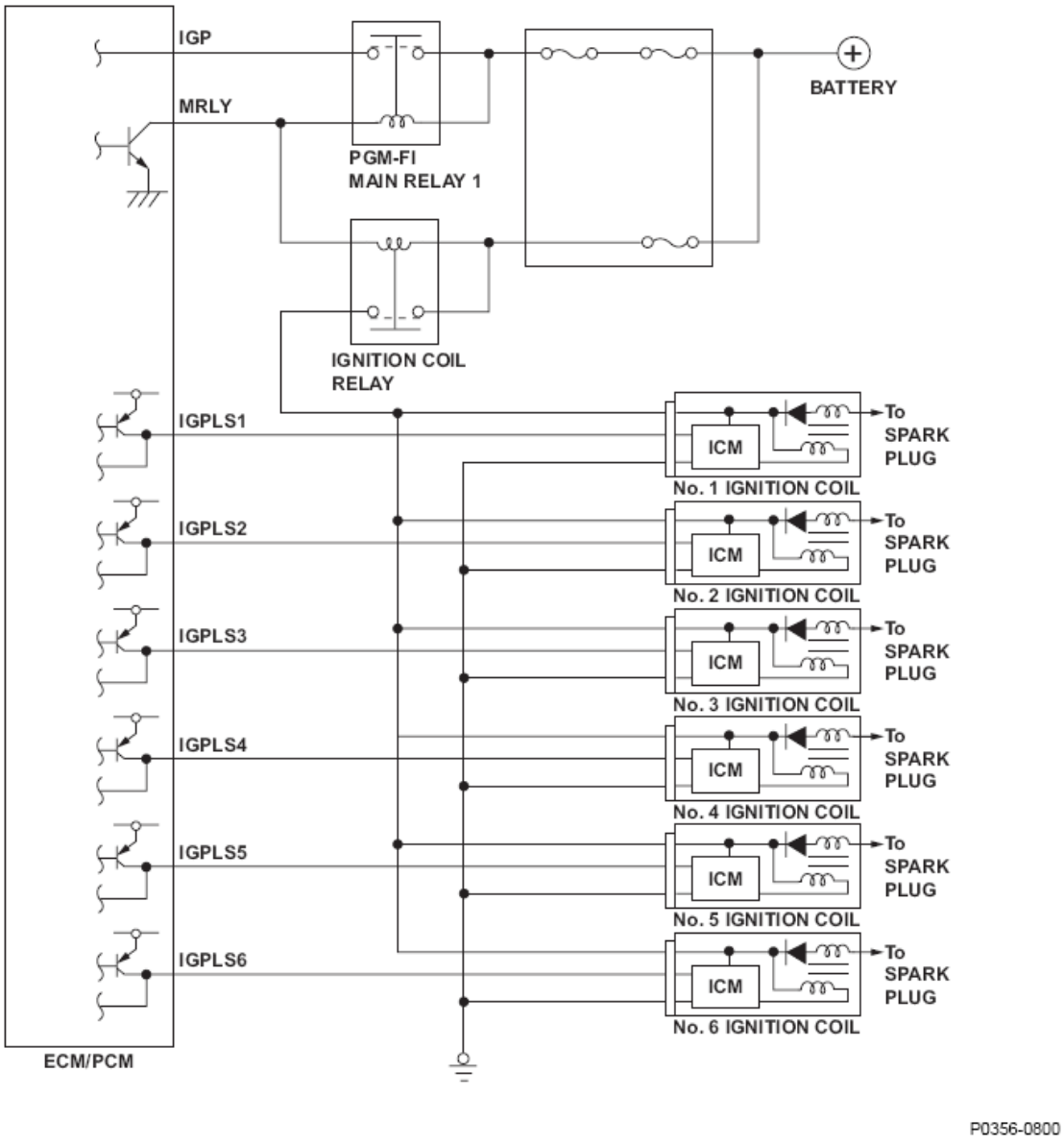


Fig. 71: Ignition Coil - Circuit Diagram

GENERAL DESCRIPTION

The ignition coil is triggered at the optimum time by the engine control module (ECM)/powertrain control module (PCM). The ECM/PCM detects a malfunction when the engine is running and the return signal does not change for a specified time, the ECM/PCM detects a malfunction and stores a DTC.

MONITOR EXECUTION, SEQUENCE, DURATION, DTC TYPE, OBD STATUS

Execution	Continuous
Sequence	None
Duration	5 seconds or more (when the engine speed is 700 rpm)

DTC Type	One drive cycle, MIL on
OBD Status	PASSED/FAILED/NOT COMPLETED (STILL TESTING)

ENABLE CONDITIONS

Condition	
State of the engine	Running
No active DTCs set (prevents monitor from running)	P0335, P0339, P0365, P0369

MALFUNCTION THRESHOLD

The return signal does not change for at least 5 seconds when the ignition coil is triggered.

DIAGNOSIS DETAILS

Conditions for setting the DTC

When a malfunction is detected, the MIL comes on and a Pending DTC, a Confirmed DTC, and the freeze data are stored in the ECM/PCM memory.

Conditions for clearing the DTC

The MIL is cleared if the malfunction does not return in three consecutive trips in which the diagnostic runs. The MIL, the Pending DTC, the Confirmed DTC, and the freeze data can be cleared with the scan tool Clear command or by disconnecting the battery.

DTC P0365: CAMSHAFT POSITION (CMP) SENSOR CIRCUIT NO SIGNAL

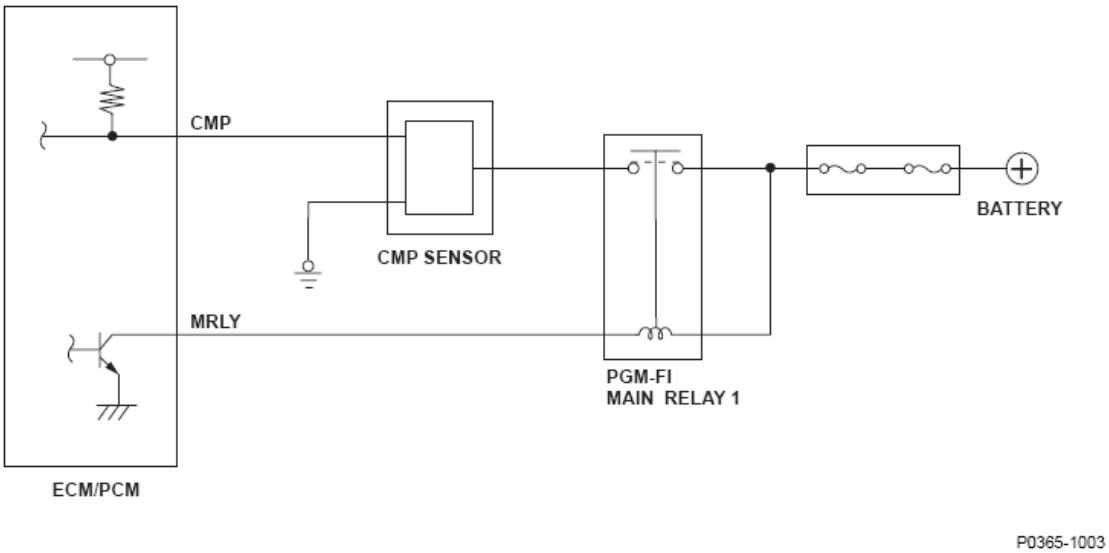


Fig. 72: Camshaft Position Sensor - Circuit Diagram

GENERAL DESCRIPTION

The camshaft position (CMP) sensor consists of a rotor and a semiconductor that detects rotor position. When the rotor turns after starting the engine, the changes of magnetic flux in the semiconductor are converted into pulsing signals to the engine control module (ECM)/powertrain control module (PCM). The CMP sensor detects the top dead center of each cylinder for fuel injection timing. If no CMP sensor pulsing signals are detected, the ECM/PCM detects a malfunction and stores a DTC.

MONITOR EXECUTION, SEQUENCE, DURATION, DTC TYPE, OBD STATUS

Execution	Continuous
Sequence	None
Duration	2 seconds or more (when the engine speed is 750 rpm)
DTC Type	One drive cycle, MIL on
OBD Status	PASSED/FAILED/NOT COMPLETED (STILL TESTING)

ENABLE CONDITIONS

Condition	
State of the engine	Running
No active DTCs set (prevents monitor from running)	P0335, P0339, P0369

MALFUNCTION THRESHOLD

No input signals from the CMP sensor are detected while signals from the CKP sensor are detected at least 300 times.

DIAGNOSIS DETAILS

Conditions for setting the DTC

When a malfunction is detected, the MIL comes on and a Pending DTC, a Confirmed DTC, and the freeze data are stored in the ECM/PCM memory.

Conditions for clearing the DTC

The MIL is cleared if the malfunction does not return in three consecutive trips in which the diagnostic runs. The MIL, the Pending DTC, the Confirmed DTC, and the freeze data can be cleared with the scan tool Clear command or by disconnecting the battery.

DTC P0369: CAMSHAFT POSITION (CMP) SENSOR CIRCUIT INTERMITTENT INTERRUPTION

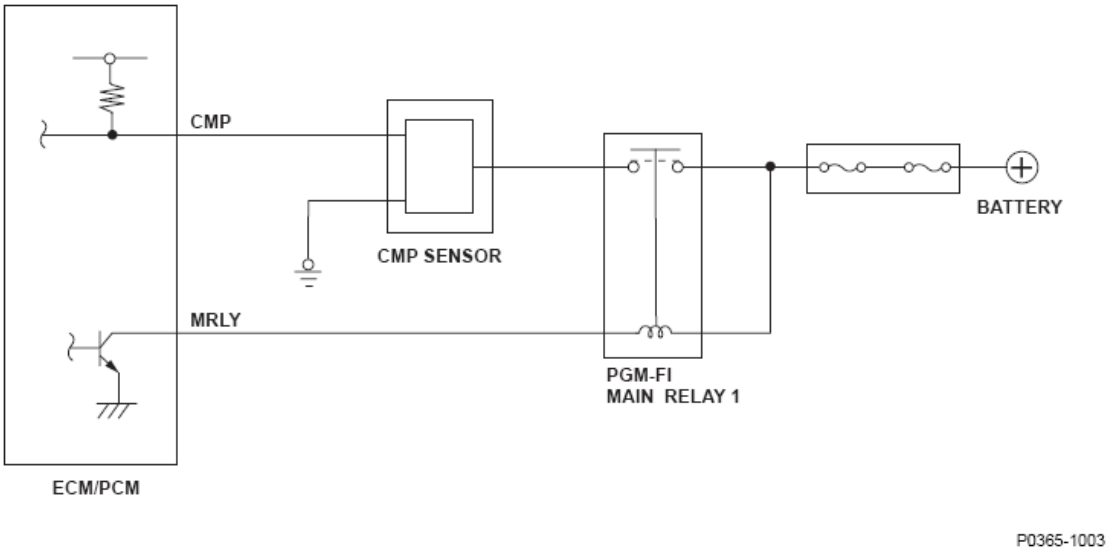


Fig. 73: Camshaft Position Sensor - Circuit Diagram

GENERAL DESCRIPTION

The camshaft position (CMP) sensor consists of a rotor and a semiconductor that detects rotor position. When the rotor turns after starting the engine, the changes of magnetic flux in the semiconductor are converted into pulsing signals to the engine control module (ECM)/powertrain control module (PCM). The CMP sensor detects the top dead center of each cylinder for fuel injection timing. If CMP sensor pulsing signals are detected an abnormal number of times due to noise, the ECM/PCM detects a malfunction and stores a DTC.

MONITOR EXECUTION, SEQUENCE, DURATION, DTC TYPE, OBD STATUS

Execution	Continuous
Sequence	None
Duration	-
DTC Type	One drive cycle, MIL on
OBD Status	PASSED/FAILED/NOT COMPLETED (STILL TESTING)

ENABLE CONDITIONS

Condition	Minimum	Maximum
Engine speed	400 rpm	-
No active DTCs set (prevents monitor from running)	P0335, P0339, P0365	

MALFUNCTION THRESHOLD

Other than 10 CMP pulses are detected during two crankshaft revolutions. This condition has been detected at least 30 times.

DIAGNOSIS DETAILS

Conditions for setting the DTC

When a malfunction is detected, the MIL comes on and a Pending DTC, a Confirmed DTC, and the freeze data are stored in the ECM/PCM memory.

Conditions for clearing the DTC

The MIL is cleared if the malfunction does not return in three consecutive trips in which the diagnostic runs. The MIL, the Pending DTC, the Confirmed DTC, and the freeze data can be cleared with the scan tool Clear command or by disconnecting the battery.

DTC P0400: EXHAUST GAS RECIRCULATION (EGR) SYSTEM LEAK DETECTED (ENGINE TYPE: J35Z6)

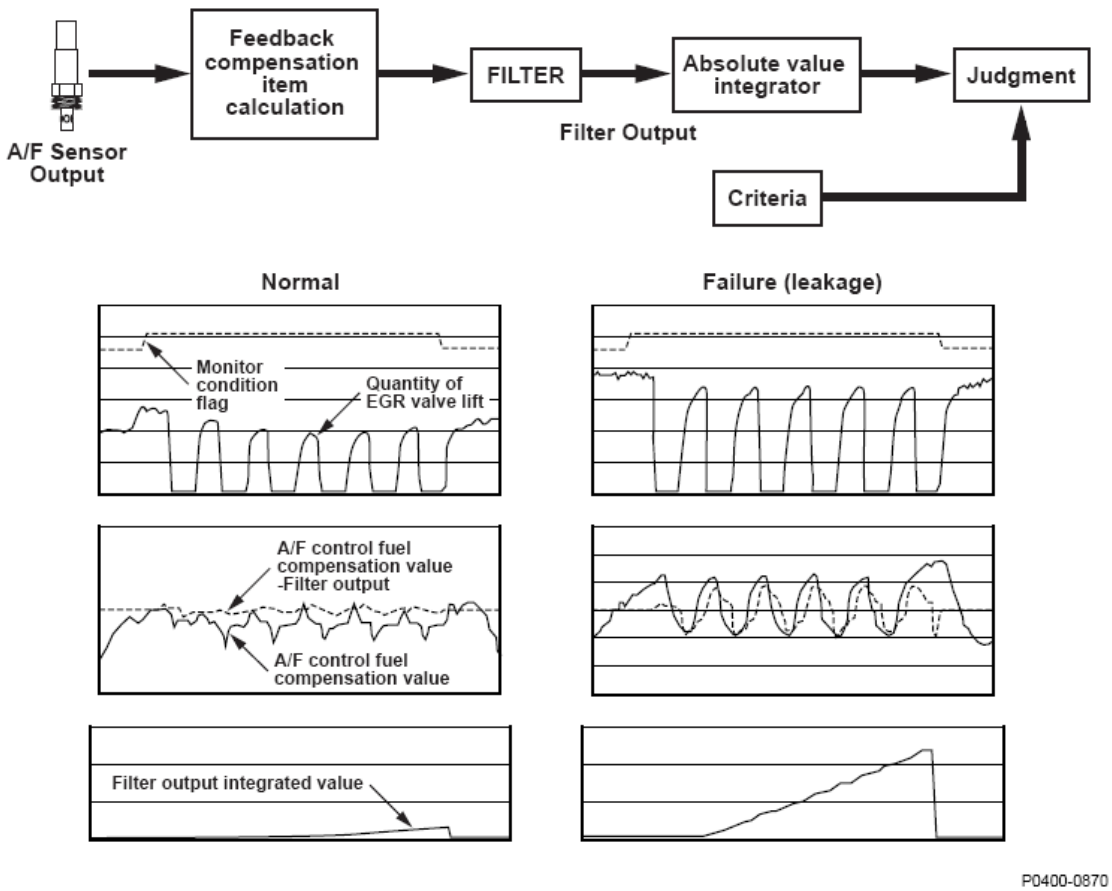


Fig. 74: Exhaust Gas Recirculation System Characteristics Curve (Normal And Failure)

GENERAL DESCRIPTION

The exhaust gas recirculation (EGR) system failure conditions include a sticking lift sensor, restricted passages, and leakage from the external piping. At any specific EGR lift value there is a corresponding air/fuel ratio compensation value. If the air/fuel ratio compensation value is greater than the corresponding EGR lift value, the powertrain control module (PCM) detects a malfunction and stores a DTC.

MONITOR EXECUTION, SEQUENCE, DURATION, DTC TYPE, OBD STATUS

Execution	Once per driving cycle
Sequence	P0404, P2413 are judged as OK
Duration	11 seconds or more
DTC Type	Two drive cycles, MIL on
OBD Status	PASSED/FAILED/NOT COMPLETED (STILL TESTING)

ENABLE CONDITIONS

Condition		Minimum	Maximum
Engine coolant temperature		156 °F (69 °C)	-
Intake air temperature		10 °F (-12 °C)	-
Engine speed		1,100 rpm	3,000 rpm
MAP value	1,600 rpm	47 kPa (13.8 inHg, 350 mmHg)	79 kPa (23.6 inHg, 600 mmHg)
	2,200 rpm	47 kPa (13.8 inHg, 350 mmHg)	73 kPa (21.6 inHg, 550 mmHg)
Vehicle speed		26 mph (41 km/h)	-
Battery voltage		10.5 V	-
Fuel trim		0.73	1.47
Fuel feedback		Closed loop at stoichiometric	
Monitoring priority		P0133, P0153, P0420, P0430	
No active DTCs set (prevents monitor from running)		P0101, P0102, P0103, P0107, P0108, P0111, P0112, P0113, P0116, P0117, P0118, P0122, P0123, P0133, P0134, P0135, P0153, P0154, P0155, P0171, P0172, P0174, P0175, P0222, P0223, P0300, P0301, P0302, P0303, P0304, P0305, P0306, P0335, P0339, P0351, P0352, P0353, P0354, P0355, P0356, P0401, P0404, P0406, P0443, P0496, P0497, P0506, P0507, P060A, P0722, P1077, P1078, P1116, P1128, P1129, P1172, P1174, P145C, P1659, P2101, P2118, P2122, P2123, P2127, P2128, P2135, P2138, P2176, P2195, P2197, P2227, P2228, P2229, P2237, P2238, P2240, P2241, P2243, P2245, P2247, P2249, P2251, P2252, P2254, P2255, P2279, P2413, P2646, P2647, P2648, P2649, P2A00, P2A03	
Other		Without excessive load change	

MALFUNCTION THRESHOLD

The air/fuel ratio (A/F) sensor response parameter according to the opening and closing of the EGR valve is 15,565 (LT80A) or less.

DRIVING PATTERN

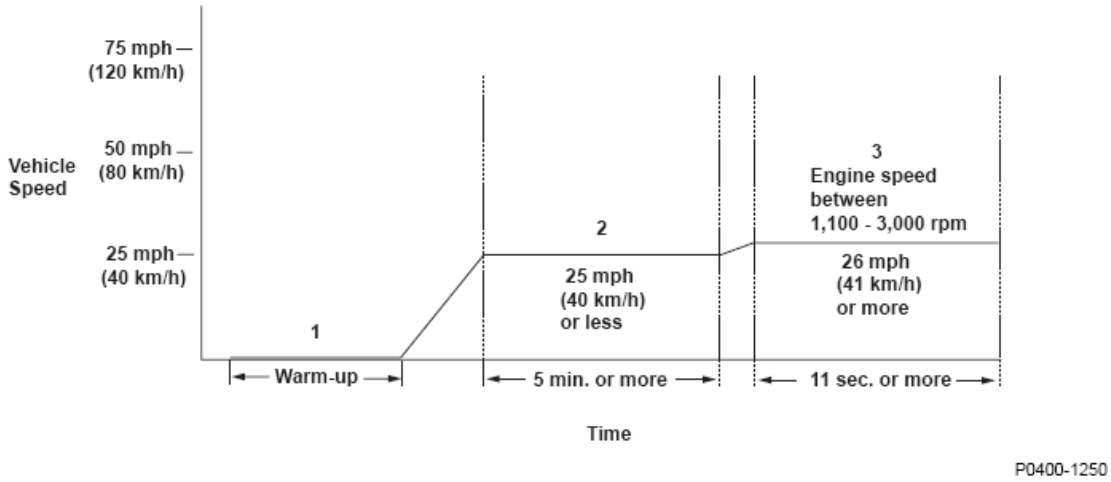


Fig. 75: Vehicle Speed Driving Pattern

1. Start the engine. Hold the engine speed at 3,000 rpm without load (in P or N) until the radiator fan comes on.
2. Drive the vehicle at a steady speed of 25 mph (40 km/h) or less, for at least 5 minutes.
3. Drive immediately at a steady speed 26 mph (41 km/h) or more and engine speed between 1,100 - 3,000 rpm for at least 11 seconds.
    - Drive the vehicle in this manner only if the traffic regulations and ambient conditions allow.

DIAGNOSIS DETAILS

Conditions for setting the DTC

When a malfunction is detected during the first drive cycle, a Pending DTC is stored in the PCM memory. If the malfunction returns in the next (second) drive cycle, the MIL comes on and a Confirmed DTC and the freeze data are stored.

Conditions for clearing the DTC

The MIL is cleared if the malfunction does not return in three consecutive trips in which the diagnostic runs. The MIL, the Pending DTC, the Confirmed DTC, and the freeze data can be cleared with the scan tool Clear command or by disconnecting the battery.

DTC P0400: EXHAUST GAS RECIRCULATION (EGR) SYSTEM LEAK DETECTED (ENGINE TYPE: J37A4)

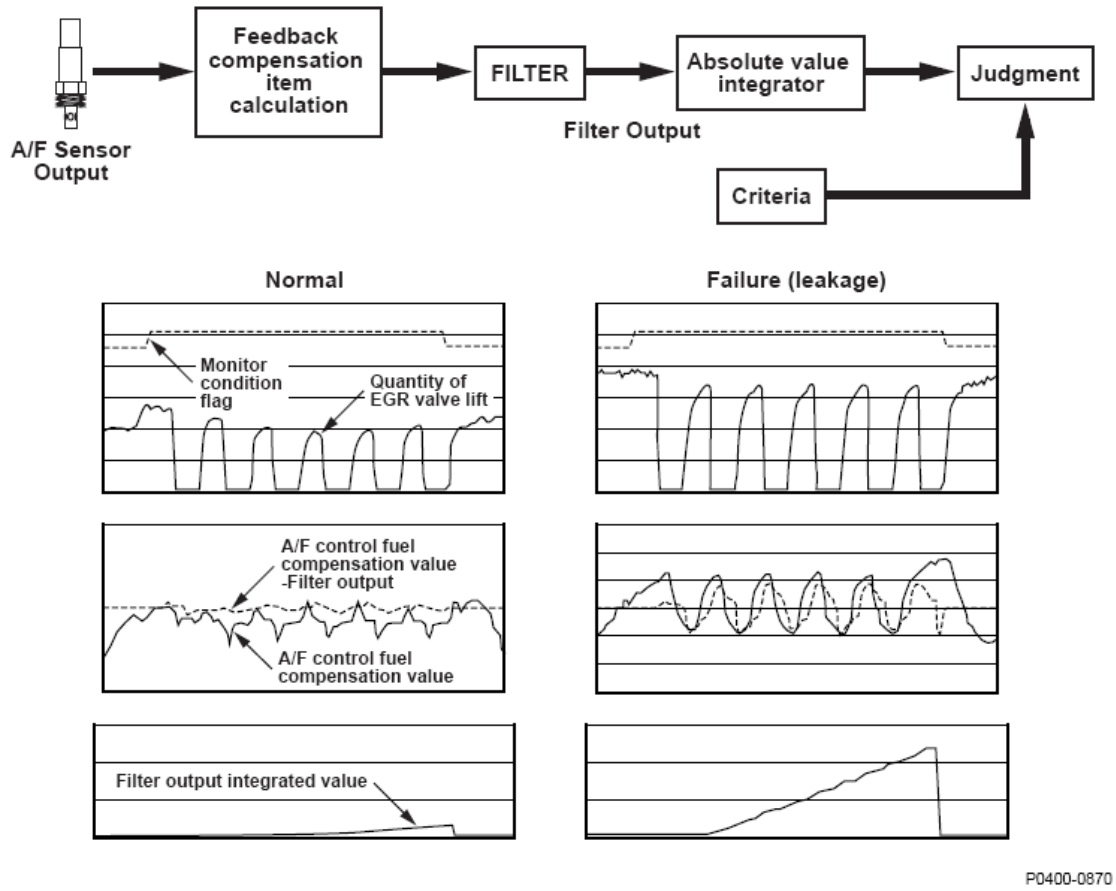


Fig. 76: Exhaust Gas Recirculation System Characteristics Curve (Normal And Failure)

GENERAL DESCRIPTION

The exhaust gas recirculation (EGR) system failure conditions include a sticking lift sensor, restricted passages, and leakage from the external piping. At any specific EGR lift value there is a corresponding air/fuel ratio compensation value. If the air/fuel ratio compensation value is greater than the corresponding EGR lift value, the engine control module (ECM)/powertrain control module (PCM) detects a malfunction and stores a DTC.

MONITOR EXECUTION, SEQUENCE, DURATION, DTC TYPE, OBD STATUS

Execution	Once per driving cycle
Sequence	P0404, P2413 are judged as OK
Duration	11 seconds or more
DTC Type	Two drive cycles, MIL on
OBD Status	PASSED/FAILED/NOT COMPLETED (STILL TESTING)

ENABLE CONDITIONS

Condition	Minimum	Maximum
Engine coolant		

temperature		156 °F (69 °C)	-
Intake air temperature		18 °F (-8 °C)	-
Engine speed		1,400 rpm(1) 1,450 rpm(2)	3,000 rpm
MAP value	1,700 rpm	46 kPa (13.4 inHg, 340 mmHg)	69 kPa (20.4 inHg, 520 mmHg)
	2,500 rpm	46 kPa (13.4 inHg, 340 mmHg)	65 kPa (19.2 inHg, 490 mmHg)
Vehicle speed		26 mph (41 km/h)	-
Battery voltage		10.5 V	-
Fuel trim		0.73	1.47
Fuel feedback		Closed loop at stoichiometric	
Monitoring priority		P0133, P0153, P0420, P0430	
No active DTCs set (prevents monitor from running)		P0101, P0102, P0103, P0107, P0108, P0111, P0112, P0113, P0116, P0117, P0118, P0122, P0123, P0133, P0134, P0135, P0153, P0154, P0155, P0171, P0172, P0174, P0175, P0222, P0223, P0300, P0301, P0302, P0303, P0304, P0305, P0306, P0335, P0339, P0351, P0352, P0353, P0354, P0355, P0356, P0401, P0404, P0406, P0443, P0496, P0497, P0506, P0507, P060A, P0720, P0722, P1077, P1078, P1116, P1128, P1129, P1172, P1174, P145C, P1659, P2101, P2118, P2122, P2123, P2127, P2128, P2135, P2138, P2176, P2195, P2197, P2227, P2228, P2229, P2237, P2238, P2240, P2241, P2243, P2245, P2247, P2249, P2251, P2252, P2254, P2255, P2279, P2413, P2646, P2647, P2648, P2649, P2A00, P2A03	
Other		Without excessive load change	

(1) A/T model

(2) M/T model

MALFUNCTION THRESHOLD

The air/fuel ratio (A/F) sensor response parameter according to the opening and closing of the EGR valve is 19,661 (LT80A) or less.

DRIVING PATTERN

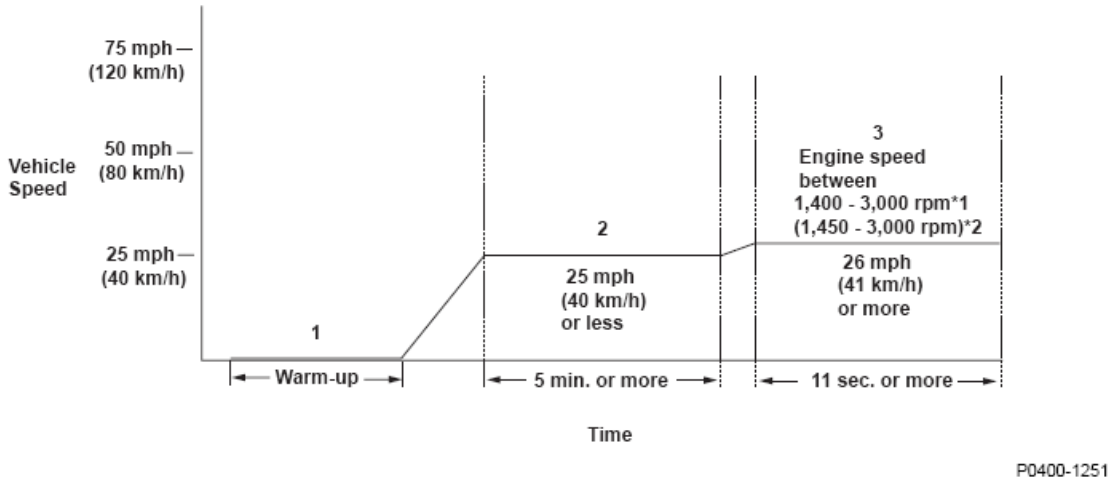


Fig. 77: Vehicle Speed Driving Pattern

1. Start the engine. Hold the engine speed at 3,000 rpm without load (A/T in P or N, M/T in neutral) until the radiator fan comes on.
2. Drive the vehicle at a steady speed of 25 mph (40 km/h) or less, for at least 5 minutes.
3. Drive immediately at a steady speed 26 mph (41 km/h) or more and engine speed between 1,400 - 3,000 rpm*1 (1,450 - 3,000 rpm)*2 for at least 11 seconds.
    - Drive the vehicle in this manner only if the traffic regulations and ambient conditions allow.

DIAGNOSIS DETAILS

Conditions for setting the DTC

When a malfunction is detected during the first drive cycle, a Pending DTC is stored in the ECM/PCM memory. If the malfunction returns in the next (second) drive cycle, the MIL comes on and a Confirmed DTC and the freeze data are stored.

Conditions for clearing the DTC

The MIL is cleared if the malfunction does not return in three consecutive trips in which the diagnostic runs. The MIL, the Pending DTC, the Confirmed DTC, and the freeze data can be cleared with the scan tool Clear command or by disconnecting the battery.

DTC P0401: EXHAUST GAS RECIRCULATION (EGR) INSUFFICIENT FLOW (ENGINE TYPE: J35Z6)

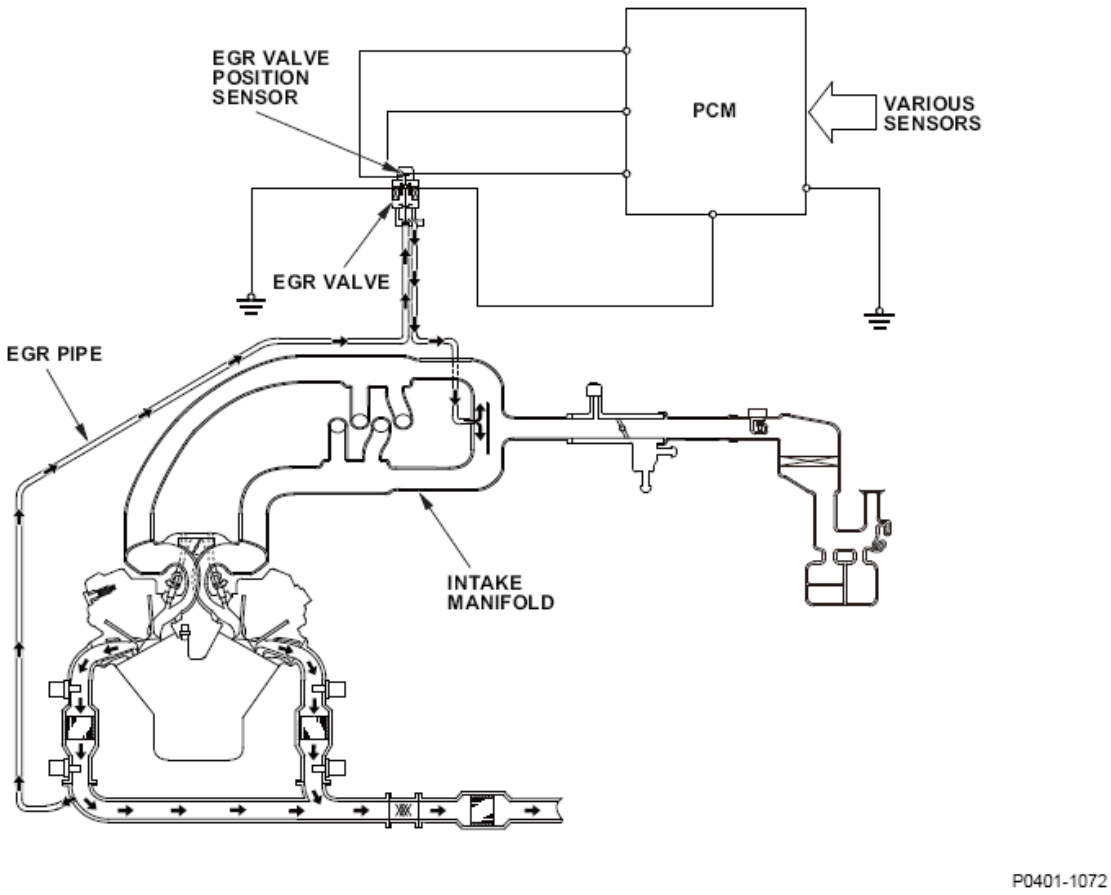


Fig. 78: Exhaust Gas Recirculation System Operation Diagram

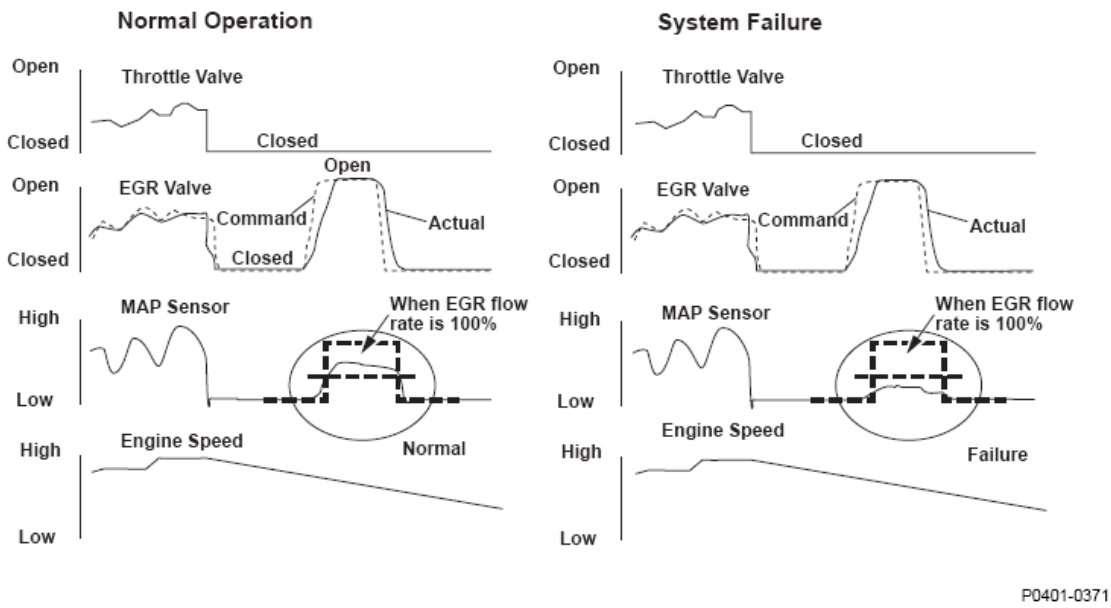


Fig. 79: Exhaust Gas Recirculation System Characteristics Curve (Normal And Failure)

GENERAL DESCRIPTION

The exhaust gas recirculation (EGR) valve, which is controlled by the powertrain control module (PCM), is opened and the exhaust gas flows through the EGR valve, the intake manifold, and the EGR passage. The exhaust gas is circulated into the air/fuel mixture to lower combustion temperatures, thus reducing oxides of nitrogen (NOx) emissions. The EGR flow is inspected as follows. The EGR valve is closed during deceleration with the throttle valve fully closed. Then the PCM fully opens the EGR valve. After a set time, the PCM computes the ratio of the present EGR flow to the normal EGR flow by monitoring the fluctuation of the intake manifold pressure between when the EGR valve is fully opened and when it is fully closed. If the EGR flow rate is lower than normal, the PCM detects a malfunction and stores a DTC.

MONITOR EXECUTION, SEQUENCE, DURATION, DTC TYPE, OBD STATUS

Execution	Once per driving cycle
Sequence	P0404, P2413 are judged as OK
Duration	3.0 seconds or more
DTC Type	Two drive cycles, MIL on
OBD Status	PASSED/FAILED/EXECUTING/OUT OF (TEST) CONDITION

ENABLE CONDITIONS

Condition	Minimum	Maximum
Engine coolant temperature	156 °F (69 °C)	-
Engine speed	1,200 rpm	2,200 rpm
MAP value	12 kPa (3.6 inHg, 90 mmHg)	-
Vehicle speed	30 mph (48 km/h)	-
Battery voltage	10.5 V	-
Throttle position	Fully closed	
Fuel feedback	During deceleration	
No active DTCs set (prevents monitor from running)	P0101, P0102, P0103, P0107, P0108, P0112, P0113, P0117, P0118, P0122, P0123, P0134, P0135, P0154, P0155, P0222, P0223, P0300, P0301, P0302, P0303, P0304, P0305, P0306, P0335, P0339, P0351, P0352, P0353, P0354, P0355, P0356, P0404, P0406, P0443, P0496, P0497, P0506, P0507, P060A, P0722, P1077, P1078, P1128, P1129, P1172, P1174, P145C, P1659, P2101, P2118, P2122, P2123, P2127, P2128, P2135, P2138, P2176, P2195, P2197, P2227, P2228, P2229, P2237, P2238, P2240, P2241, P2243, P2245, P2247, P2249, P2251, P2252, P2254, P2255, P2279, P2413, P2646, P2647, P2648, P2649	

MALFUNCTION THRESHOLD

The ratio of the current EGR flow to the normal EGR flow is 15 % or less for at least 3.0 seconds.

The ratio is derived from the actual and estimated MAP values before and after the EGR value was opened.

The estimated MAP difference value is shown in the table.

Engine speed	Barometric pressure	
	52 kPa (15.4 inHg, 390 mmHg)	102 kPa (30.0 inHg, 760 mmHg)
1,200 rpm	10 kPa (2.8 inHg, 70 mmHg)	15 kPa (4.3 inHg, 109 mmHg)
2,000 rpm	5 kPa (4 inHg, 34 mmHg)	9 kPa (2.6 inHg, 64 mmHg)

DRIVING PATTERN

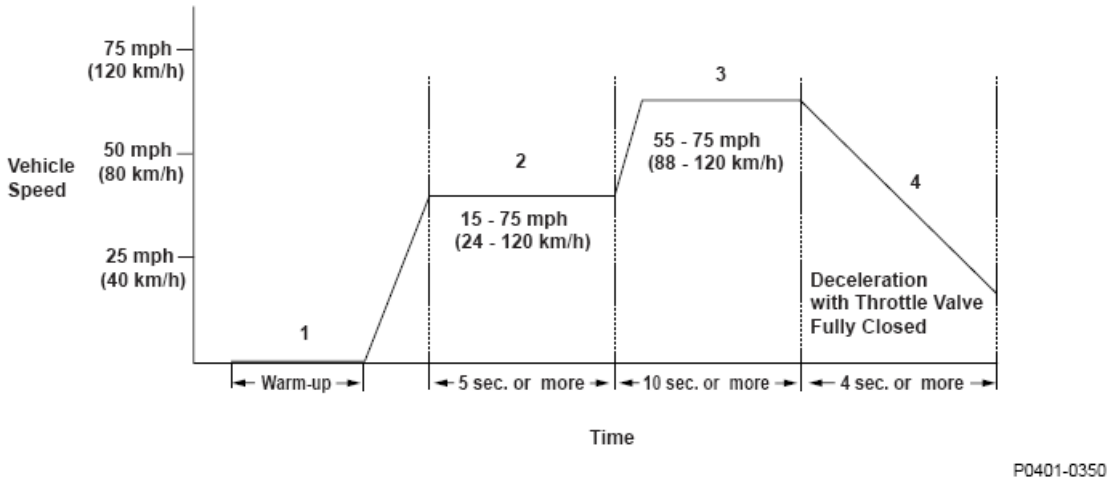


Fig. 80: Vehicle Speed Driving Pattern

1. Start the engine. Hold the engine speed at 3,000 rpm without load (in P or N) until the radiator fan comes on.
2. Drive the vehicle at a speed between 15 - 75 mph (24 - 120 km/h) for at least 5 seconds.
3. Drive at a steady speed between 55 - 75 mph (88 - 120 km/h) for at least 10 seconds.
4. Decelerate with the throttle valve fully closed for at least 4 seconds.
    - Drive the vehicle in this manner only if the traffic regulations and ambient conditions allow.

DIAGNOSIS DETAILS

Conditions for setting the DTC

When a malfunction is detected during the first drive cycle, a Pending DTC is stored in the PCM memory. If the malfunction returns in the next (second) drive cycle, the MIL comes on and a Confirmed DTC and the freeze data are stored.

Conditions for clearing the DTC

The MIL is cleared if the malfunction does not return in three consecutive trips in which the diagnostic runs. The MIL, the Pending DTC, the Confirmed DTC, and the freeze data can be cleared with the scan tool Clear command or by disconnecting the battery.

DTC P0401: EXHAUST GAS RECIRCULATION (EGR) INSUFFICIENT FLOW

(ENGINE TYPE: J37A4)

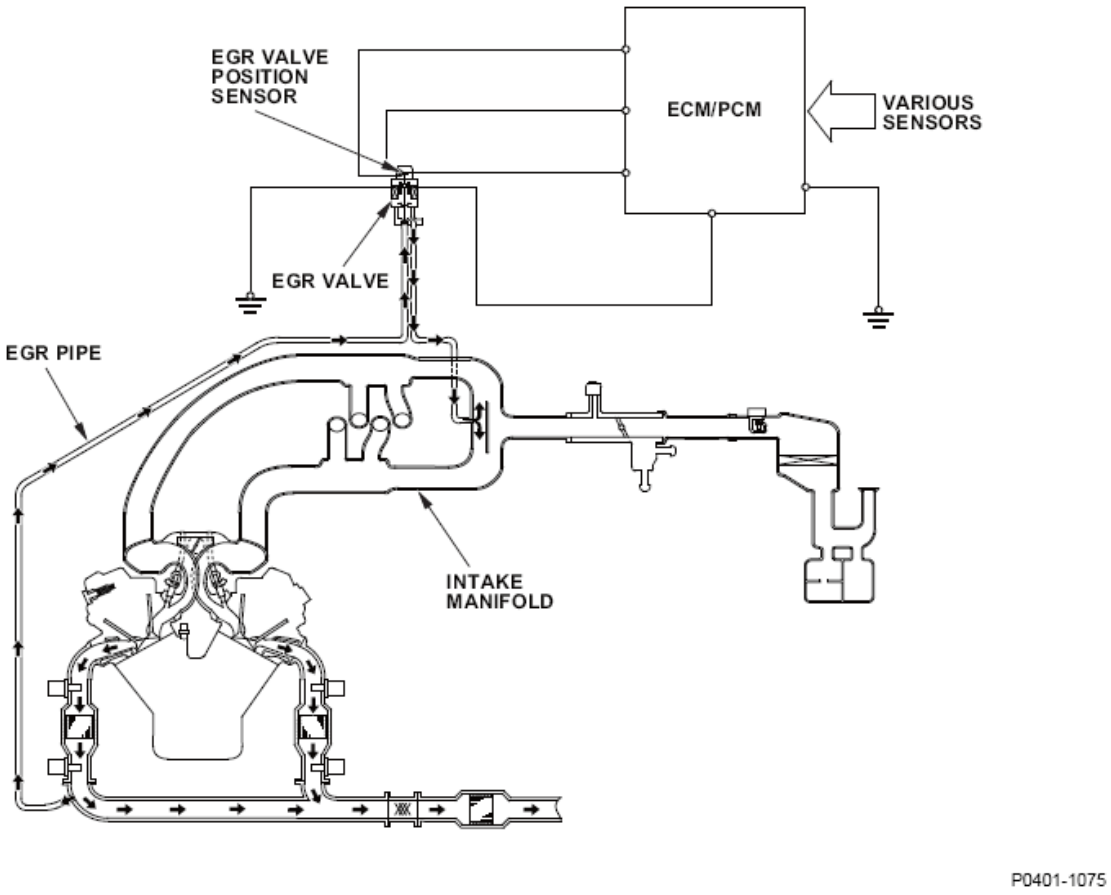


Fig. 81: Exhaust Gas Recirculation System Operation Diagram

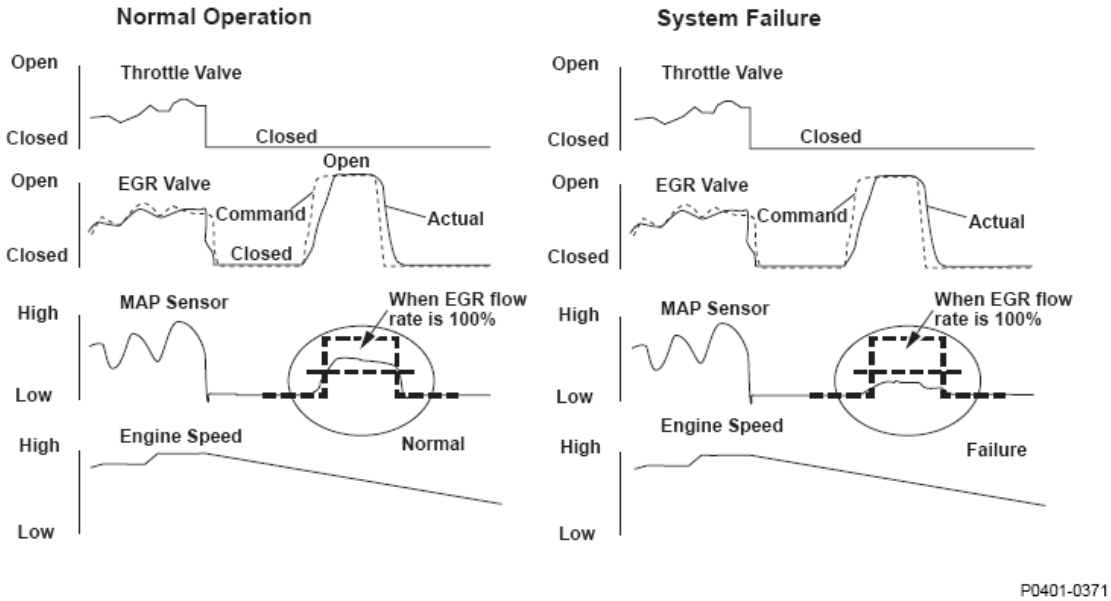


Fig. 82: Exhaust Gas Recirculation System Characteristics Curve (Normal And Failure)

GENERAL DESCRIPTION

The exhaust gas recirculation (EGR) valve, which is controlled by the engine control module (ECM)/powertrain control module (PCM), is opened and the exhaust gas flows through the EGR valve, the intake manifold, and the EGR passage. The exhaust gas is circulated into the air/fuel mixture to lower combustion temperatures, thus reducing oxides of nitrogen (NOx) emissions. The EGR flow is inspected as follows. The EGR valve is closed during deceleration with the throttle valve fully closed. Then the ECM/PCM fully opens the EGR valve. After a set time, the ECM/PCM computes the ratio of the present EGR flow to the normal EGR flow by monitoring the fluctuation of the intake manifold pressure between when the EGR valve is fully opened and when it is fully closed. If the EGR flow rate is lower than normal, the ECM/PCM detects a malfunction and stores a DTC.

MONITOR EXECUTION, SEQUENCE, DURATION, DTC TYPE, OBD STATUS

Execution	Once per driving cycle
Sequence	P0404, P2413 are judged as OK
Duration	3.0 seconds or more
DTC Type	Two drive cycles, MIL on
OBD Status	PASSED/FAILED/EXECUTING/OUT OF (TEST) CONDITION

ENABLE CONDITIONS

Condition	Minimum	Maximum
Engine coolant temperature	156 °F (69 °C)	-
Engine speed	1,200 rpm	2,200 rpm(1) 2,850 rpm(2)
MAP value	12 kPa (3.6 inHg, 90 mmHg)	-
Vehicle speed	30 mph (48 km/h)	-
Battery voltage	10.5 V	-
Throttle position	Fully closed	
Fuel feedback	During deceleration	
No active DTCs set (prevents monitor from running)	P0101, P0102, P0103, P0107, P0108, P0112, P0113, P0117, P0118, P0122, P0123, P0134, P0135, P0154, P0155, P0222, P0223, P0300, P0301, P0302, P0303, P0304, P0305, P0306, P0335, P0339, P0351, P0352, P0353, P0354, P0355, P0356, P0404, P0406, P0443, P0496, P0497, P0506, P0507, P060A, P0720, P0722, P1077, P1078, P1128, P1129, P1172, P1174, P145C, P1659, P2101, P2118, P2122, P2123, P2127, P2128, P2135, P2138, P2176, P2195, P2197, P2227, P2228, P2229, P2237, P2238, P2240, P2241, P2243, P2245, P2247, P2249, P2251, P2252, P2254, P2255, P2279, P2413, P2646, P2647, P2648, P2649	

(1) A/T model

(2) M/T model

MALFUNCTION THRESHOLD

The ratio of the current EGR flow to the normal EGR flow is 15 % or less for at least 3.0 seconds.

The ratio is derived from the actual and estimated MAP values before and after the EGR value was opened. The estimated MAP difference value is shown in the table.

Engine speed	Barometric pressure	
	52 kPa (15.4 inHg, 390 mmHg)	102 kPa (30.0 inHg, 760 mmHg)
1,200 rpm	7 kPa (1.9 inHg, 47 mmHg)*1 7 kPa (2.1 inHg, 52 mmHg)*2	12 kPa (3.5 inHg, 87 mmHg)*1 11 kPa (3.2 inHg, 81 mmHg)*2
2,100 rpm*1	4 kPa (1.1 inHg, 27 mmHg)	7 kPa (2.1 inHg, 52 mmHg)
2,300 rpm*2	5 kPa (1.3 inHg, 31 mmHg)	7 kPa (1.9 inHg, 48 mmHg)

DRIVING PATTERN

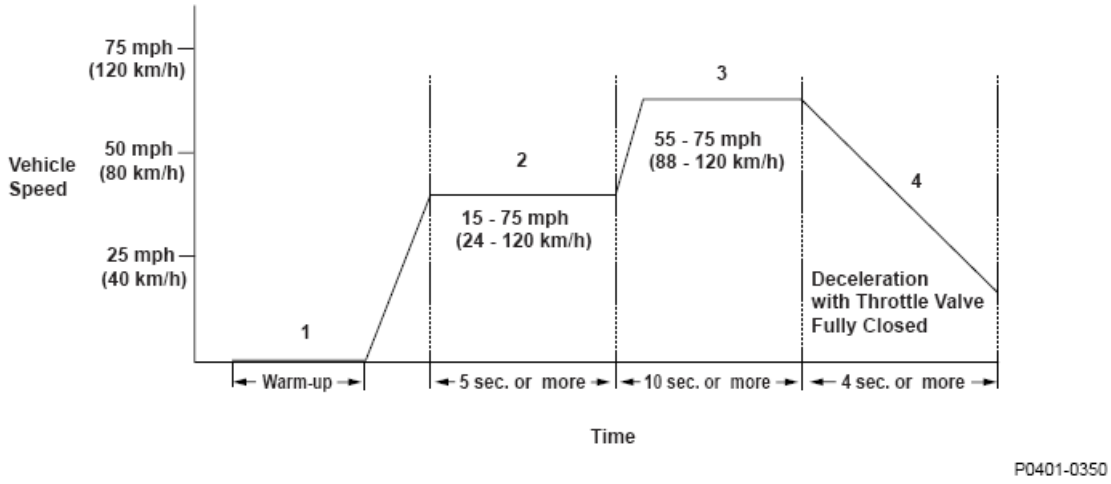


Fig. 83: Vehicle Speed Driving Pattern

1. Start the engine. Hold the engine speed at 3,000 rpm without load (A/T in P or N, M/T in neutral) until the radiator fan comes on.
2. Drive the vehicle at a speed between 15 - 75 mph (24 - 120 km/h) for at least 5 seconds.
3. Drive at a steady speed between 55 - 75 mph (88 - 120 km/h) for at least 10 seconds.
4. Decelerate with the throttle valve fully closed for at least 4 seconds.
    - Drive the vehicle in this manner only if the traffic regulations and ambient conditions allow.

DIAGNOSIS DETAILS

Conditions for setting the DTC

When a malfunction is detected during the first drive cycle, a Pending DTC is stored in the ECM/PCM memory. If the malfunction returns in the next (second) drive cycle, the MIL comes on and a Confirmed DTC and the

freeze data are stored.

Conditions for clearing the DTC

The MIL is cleared if the malfunction does not return in three consecutive trips in which the diagnostic runs. The MIL, the Pending DTC, the Confirmed DTC, and the freeze data can be cleared with the scan tool Clear command or by disconnecting the battery.

DTC P0404: EXHAUST GAS RECIRCULATION (EGR) VALVE CIRCUIT RANGE/PERFORMANCE PROBLEM

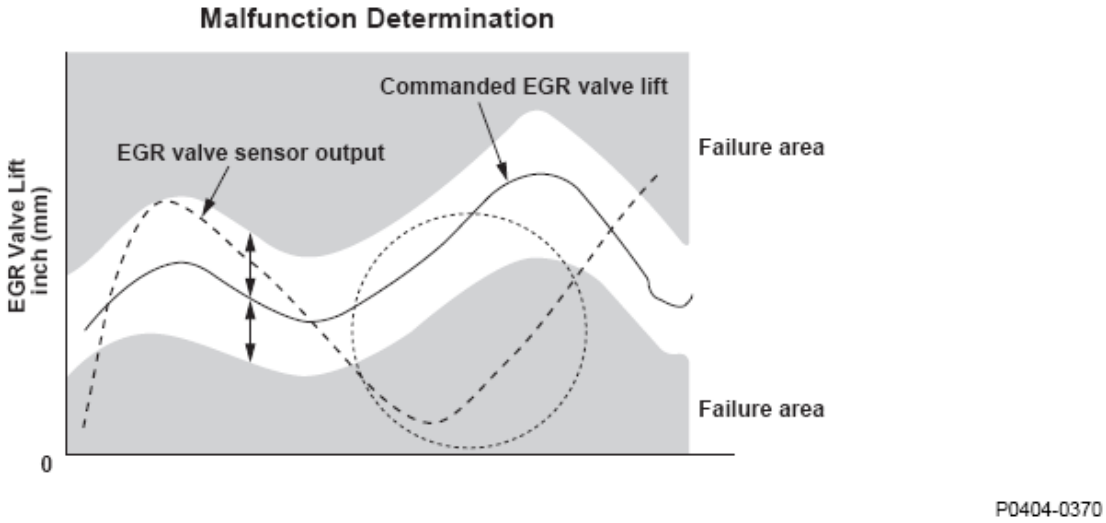


Fig. 84: Exhaust Gas Recirculation Valve Malfunction Determination Areas

GENERAL DESCRIPTION

The exhaust gas recirculation (EGR) valve, which is controlled by the engine control module (ECM)/powertrain control module (PCM), is opened and the exhaust gas flows through the EGR valve, the intake manifold, and the EGR passage. The exhaust gas is circulated into the air/fuel mixture and the mixture is drawn into the combustion chamber to lower combustion temperatures, thus reducing oxides of nitrogen (NOx) emissions. A sensor (lift sensor) is built into the EGR valve and detects the amount of valve lift. The command value for the target valve lift is stored in the ECM/PCM so that exhaust gas recirculation can be optimized according to driving conditions. Comparing this command value with the lift sensor output signal value, the ECM/PCM controls the EGR valve to make the amount of actual valve lift equal to the command value. If the difference between the value of commanded EGR valve lift and actual EGR valve lift is a specified value or more, an abnormality in the EGR valve or the lift sensor output is determined, the ECM/PCM detects a malfunction and stores a DTC.

MONITOR EXECUTION, SEQUENCE, DURATION, DTC TYPE, OBD STATUS

Execution	Once per driving cycle
Sequence	None

Duration	5.0 seconds or more
DTC Type	Two drive cycles, MIL on
OBD Status	PASSED/FAILED/EXECUTING/OUT OF (TEST) CONDITION

ENABLE CONDITIONS

Condition	Minimum	Maximum
Engine speed	-	4,600 rpm
Commanded EGR valve lift	0.012 in (0.30 mm)	-
Battery voltage	10.5 V	-
No active DTCs set (prevents monitor from running)	P0101, P0102, P0103, P0107, P0108, P0112, P0113, P0117, P0118, P0134, P0135, P0154, P0155, P0300, P0301, P0302, P0303, P0304, P0305, P0306, P0335, P0339, P0351, P0352, P0353, P0354, P0355, P0356, P0400, P0401, P0406, P1128, P1129, P1172, P1174, P2195, P2197, P2237, P2238, P2240, P2241, P2243, P2245, P2247, P2249, P2251, P2252, P2254, P2255, P2279	

MALFUNCTION THRESHOLD

The difference between the command value of the amount of EGR valve lift in the ECM/PCM and the actual amount of valve lift is 0.041 in (1.02 mm) or more for at least 5.0 seconds.

CONFIRMATION PROCEDURE WITH THE HDS

Do the EGR TEST in the INSPECTION MENU with the HDS.

DRIVING PATTERN

1. Start the engine. Hold the engine speed at 3,000 rpm without load (A/T in P or N, M/T in neutral) until the radiator fan comes on.
2. Drive the vehicle at a speed between 15 - 75 mph (24 - 120 km/h) for at least 5 seconds.
    - Drive the vehicle in this manner only if the traffic regulations and ambient conditions allow.

DIAGNOSIS DETAILS

Conditions for setting the DTC

When a malfunction is detected during the first drive cycle, a Pending DTC is stored in the ECM/PCM memory. If the malfunction returns in the next (second) drive cycle, the MIL comes on and a Confirmed DTC and the freeze data are stored.

Conditions for clearing the DTC

The MIL is cleared if the malfunction does not return in three consecutive trips in which the diagnostic runs. The MIL, the Pending DTC, the Confirmed DTC, and the freeze data can be cleared with the scan tool Clear command or by disconnecting the battery.

DTC P0406: EXHAUST GAS RECIRCULATION (EGR) VALVE POSITION SENSOR CIRCUIT HIGH VOLTAGE

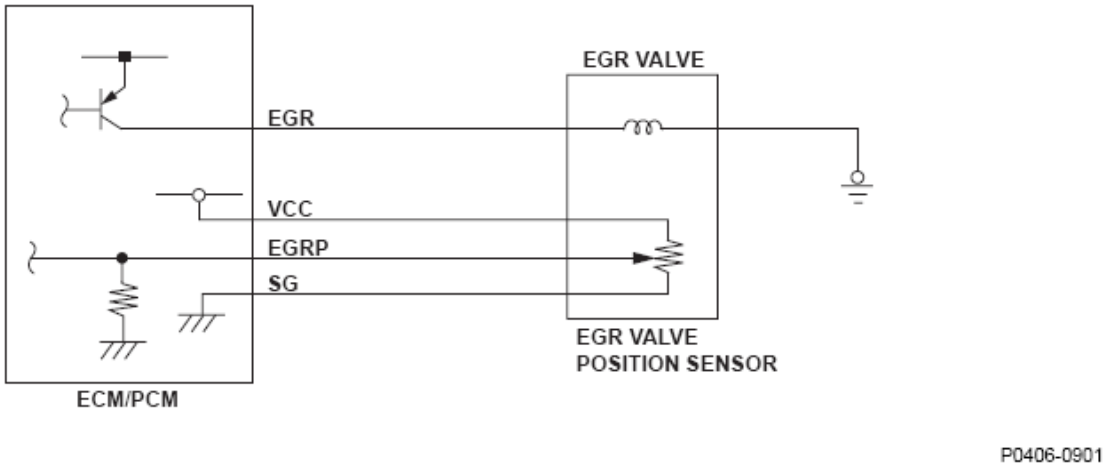


Fig. 85: Exhaust Gas Recirculation Valve Position Sensor - Circuit Diagram

GENERAL DESCRIPTION

The exhaust gas recirculation (EGR) system reduces oxides of nitrogen (NOx). NOx is generated by high combustion temperatures. The EGR system lowers peak combustion temperature by recirculating inert exhaust gas into the air/fuel mixture, thus reducing NOx emissions. To determine the optimal amount of recirculating exhaust gas, depending on driving conditions, a command value (the amount of valve lift) is stored in the engine control module (ECM)/powertrain control module (PCM). The EGR valve position sensor indicates the amount of valve lift, and the ECM/PCM controls the EGR valve so that the amount of actual valve lift equals the command value by comparing the command value and the actual amount of valve lift. If EGR valve position sensor output voltage is not within a specified value, the ECM/PCM detects a malfunction and stores a DTC.

MONITOR EXECUTION, SEQUENCE, DURATION, DTC TYPE, OBD STATUS

Execution	Continuous
Sequence	None
Duration	2 seconds or more
DTC Type	Two drive cycles, MIL on
OBD Status	PASSED/FAILED/NOT COMPLETED (STILL TESTING)

ENABLE CONDITIONS

Condition	
State of the engine	Running

MALFUNCTION THRESHOLD

The EGR valve position sensor output voltage is 4.89 V or more for at least 2 seconds.

DIAGNOSIS DETAILS

Conditions for setting the DTC

When a malfunction is detected during the first drive cycle, a Pending DTC is stored in the ECM/PCM memory. If the malfunction returns in the next (second) drive cycle, the MIL comes on and a Confirmed DTC and the freeze data are stored.

Conditions for clearing the DTC

The MIL is cleared if the malfunction does not return in three consecutive trips in which the diagnostic runs. The MIL, the Pending DTC, the Confirmed DTC, and the freeze data can be cleared with the scan tool Clear command or by disconnecting the battery.

DTC P0420: REAR BANK CATALYST SYSTEM EFFICIENCY BELOW THRESHOLD (BANK 1)

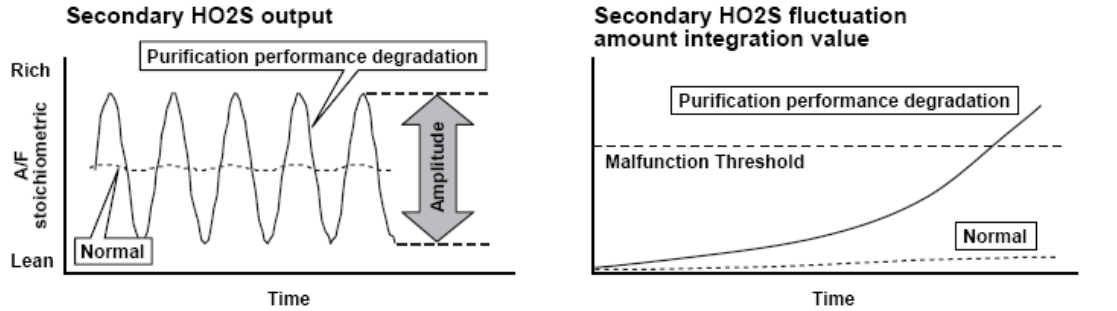


Fig. 86: Secondary HO2S Output Characteristics Curve

GENERAL DESCRIPTION

The rear warm up three way catalytic converter (WU-TWC) (bank 1) converts hydrocarbons (HC), carbon monoxide (CO), and oxides of nitrogen (NOx) in the exhaust gas to water vapor, carbon dioxide (CO_2), and dinitrogen (N_2). The engine control module (ECM)/powertrain control module (PCM) fluctuates the air/fuel ratio temporarily to detect the performance of the rear WU-TWC and measures the degree of fluctuation in the rear secondary heated oxygen sensor (secondary HO2S (bank 1, sensor 2)) output. If the accumulated value for a set time is too great, deterioration of the performance of the catalyst is detected, the ECM/PCM detects a malfunction and stores a DTC.

MONITOR EXECUTION, SEQUENCE, DURATION, DTC TYPE, OBD STATUS

Execution	Once per driving cycle
Sequence	None

Duration	7.5 seconds or more
DTC Type	Two drive cycles, MIL on
OBD Status	PASSED/FAILED/EXECUTING/OUT OF (TEST) CONDITION

ENABLE CONDITIONS

Condition	Minimum	Maximum
Elapsed time that secondary HO2S activity is not monitored after starting the engine	20 seconds	-
Engine coolant temperature	156 °F (69 °C)	-
Intake air temperature	-13 °F (-25 °C)	-
Estimated TWC temperature	1,202 °F (650 °C)	-
Vehicle speed	26 mph (41 km/h)	-
Fuel trim	0.73	1.47
Fuel feedback	Closed loop at stoichiometric	
Monitoring priority	P0133, P0153	
No active DTCs set (prevents monitor from running)	P0101, P0102, P0103, P0107, P0108, P0112, P0113, P0117, P0118, P0122, P0123, P0133, P0134, P0135, P0137, P0138, P0139, P0141, P0171, P0172, P0222, P0223, P0300, P0301, P0302, P0303, P0304, P0305, P0306, P0335, P0339, P0351, P0352, P0353, P0354, P0355, P0356, P0400, P0401, P0404, P0443, P0496, P0497, P060A, P0720, P0722, P1077, P1078, P1128, P1129, P1172, P145C, P1659, P2101, P2118, P2122, P2123, P2127, P2128, P2135, P2138, P2176, P2195, P2227, P2228, P2229, P2237, P2238, P2243, P2245, P2251, P2252, P2270, P2279, P2413, P2646, P2647, P2648, P2649, P2A00	
Other	Has record of deceleration at least once	
	Cruise load or more	

MALFUNCTION THRESHOLD

The rear secondary HO2S fluctuation integration value is 3.0 V or more for at least 7.5 seconds.

DRIVING PATTERN

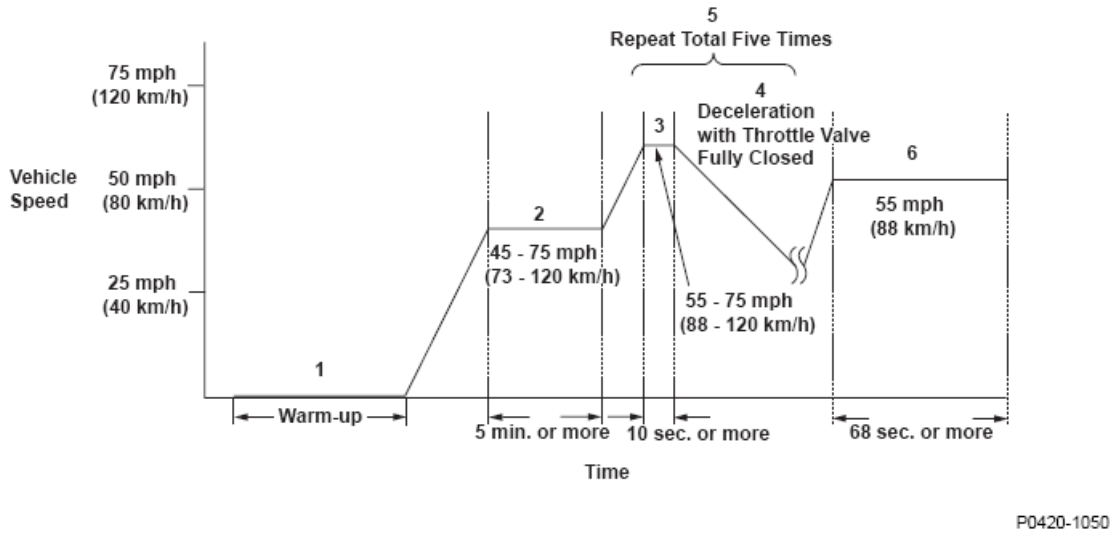


Fig. 87: Vehicle Speed Driving Pattern

1. Start the engine. Hold the engine speed at 3,000 rpm without load (A/T in P or N, M/T in neutral) until the radiator fan comes on.
2. Drive the vehicle at a speed between 45 - 75 mph (73 - 120 km/h) for at least 5 minutes, to warm up the TWC.
3. Drive at a steady speed between 55 - 75 mph (88 - 120 km/h) for at least 10 seconds.
4. Decelerate with the throttle valve fully closed.
5. Repeat Driving Pattern steps 3 through 4, four times.
6. Set a vehicle speed of 55 mph (88 km/h) on the cruise control or equivalent, and drive for at least 68 seconds.
    - After disconnecting the battery, extend Driving Pattern step 6 to 4 minutes or longer.
    - Drive the vehicle in this manner only if the traffic regulations and ambient conditions allow.

DIAGNOSIS DETAILS

Conditions for setting the DTC

When a malfunction is detected during the first drive cycle, a Pending DTC is stored in the ECM/PCM memory. If the malfunction returns in the next (second) drive cycle, the MIL comes on and a Confirmed DTC and the freeze data are stored.

Conditions for clearing the DTC

The MIL is cleared if the malfunction does not return in three consecutive trips in which the diagnostic runs. The MIL, the Pending DTC, the Confirmed DTC, and the freeze data can be cleared with the scan tool Clear command or by disconnecting the battery.

DTC P0430: FRONT BANK CATALYST SYSTEM EFFICIENCY BELOW THRESHOLD (BANK 2) (ENGINE TYPE: J35Z6)

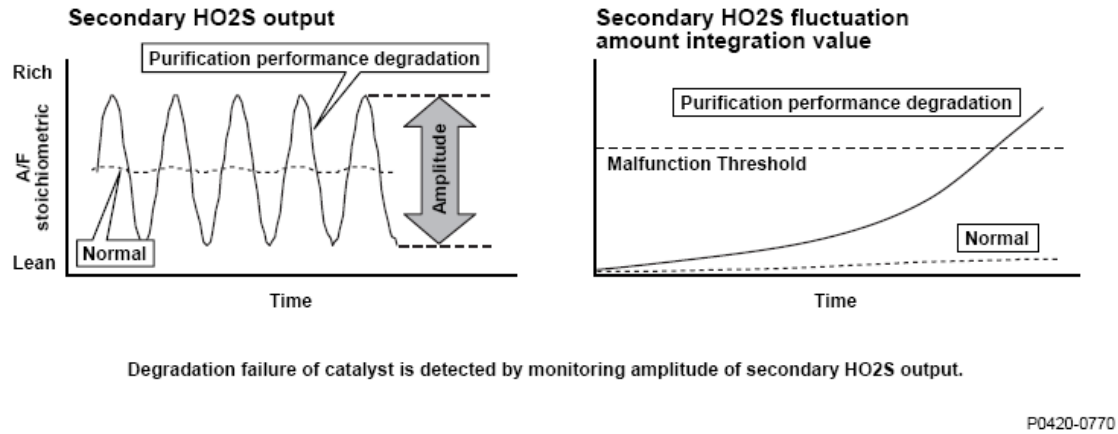


Fig. 88: Secondary HO2S Output Characteristics Curve

GENERAL DESCRIPTION

The front warm up three way catalytic converter (WU-TWC) (bank 2) converts hydrocarbons (HC), carbon monoxide (CO), and oxides of nitrogen (NOx) in the exhaust gas to water vapor, carbon dioxide (CO_2), and dinitrogen (N_2). The powertrain control module (PCM) fluctuates the air/fuel ratio temporarily to detect the performance of the front WU-TWC and measures the degree of fluctuation in the front secondary heated oxygen sensor (secondary HO2S (bank 2, sensor 2)) output. If the accumulated value for a set time is too great, deterioration of the performance of the catalyst is detected, the PCM detects a malfunction and stores a DTC.

MONITOR EXECUTION, SEQUENCE, DURATION, DTC TYPE, OBD STATUS

Execution	Once per driving cycle
Sequence	None
Duration	7.5 seconds or more
DTC Type	Two drive cycles, MIL on
OBD Status	PASSED/FAILED/EXECUTING/OUT OF (TEST) CONDITION

ENABLE CONDITIONS

Condition	Minimum	Maximum
Elapsed time that secondary HO2S activity is not monitored after starting the engine	20 seconds	-
Engine coolant temperature	156 °F (69 °C)	-
Intake air temperature	-13 °F (-25 °C)	-
Estimated TWC	1,202 °F (650 °C)	-

temperature		
Vehicle speed	26 mph (41 km/h)	-
Fuel trim	0.73	1.47
Fuel feedback	Closed loop at stoichiometric	
Monitoring priority	P0133, P0153	
No active DTCs set (prevents monitor from running)	P0101, P0102, P0103, P0107, P0108, P0112, P0113, P0117, P0118, P0122, P0123, P0133, P0134, P0135, P0141, P0157, P0158, P0159, P0171, P0172, P0222, P0223, P0300, P0301, P0302, P0303, P0304, P0305, P0306, P0335, P0339, P0351, P0352, P0353, P0354, P0355, P0356, P0400, P0401, P0404, P0443, P0496, P0497, P060A, P0722, P1077, P1078, P1128, P1129, P1172, P145C, P1659, P2101, P2118, P2122, P2123, P2127, P2128, P2135, P2138, P2176, P2195, P2227, P2228, P2229, P2237, P2238, P2243, P2245, P2251, P2252, P2272, P2279, P2413, P2646, P2647, P2648, P2649, P2A00	
Other	Has record of deceleration at least once	
	Cruise load or more	

MALFUNCTION THRESHOLD

The front secondary HO2S fluctuation integration value is 3.0 V or more for at least 7.5 seconds.

DRIVING PATTERN

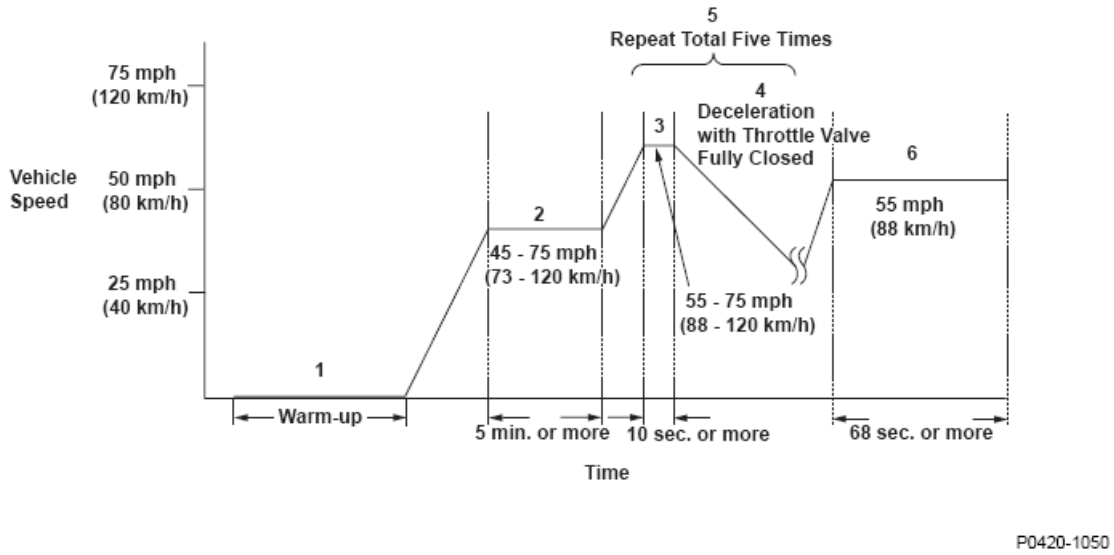


Fig. 89: Vehicle Speed Driving Pattern

1. Start the engine. Hold the engine speed at 3,000 rpm without load (in P or N) until the radiator fan comes on.
2. Drive the vehicle at a speed between 45 - 75 mph (73 - 120 km/h) for at least 5 minutes, to warm up the TWC.
3. Drive at a steady speed between 55 - 75 mph (88 - 120 km/h) for at least 10 seconds.

4. Decelerate with the throttle valve fully closed.
5. Repeat Driving Pattern steps 3 through 4, four times.
6. Set a vehicle speed of 55 mph (88 km/h) on the cruise control or equivalent, and drive for at least 68 seconds.
    - After disconnecting the battery, extend Driving Pattern step 6 to 4 minutes or longer.
    - Drive the vehicle in this manner only if the traffic regulations and ambient conditions allow.

DIAGNOSIS DETAILS

Conditions for setting the DTC

When a malfunction is detected during the first drive cycle, a Pending DTC is stored in the PCM memory. If the malfunction returns in the next (second) drive cycle, the MIL comes on and a Confirmed DTC and the freeze data are stored.

Conditions for clearing the DTC

The MIL is cleared if the malfunction does not return in three consecutive trips in which the diagnostic runs. The MIL, the Pending DTC, the Confirmed DTC, and the freeze data can be cleared with the scan tool Clear command or by disconnecting the battery.

DTC P0430: FRONT BANK CATALYST SYSTEM EFFICIENCY BELOW THRESHOLD (BANK 2) (ENGINE TYPE: J37A4)

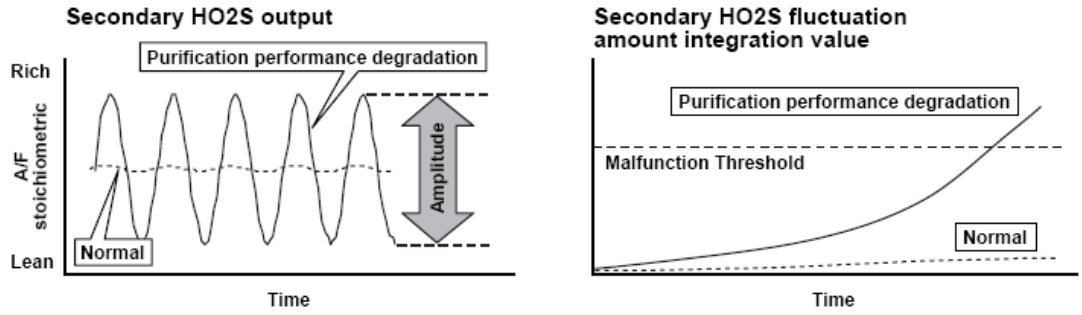


Fig. 90: Secondary HO2S Output Characteristics Curve

GENERAL DESCRIPTION

The front warm up three way catalytic converter (WU-TWC) (bank 2) converts hydrocarbons (HC), carbon monoxide (CO), and oxides of nitrogen (NOx) in the exhaust gas to water vapor, carbon dioxide (CO_2), and dinitrogen (N_2). The engine control module (ECM)/powertrain control module (PCM) fluctuates the air/fuel ratio temporarily to detect the performance of the front WU-TWC and measures the degree of fluctuation in the front secondary heated oxygen sensor (secondary HO2S (bank 2, sensor 2)) output. If the accumulated value for

a set time is too great, deterioration of the performance of the catalyst is detected, the ECM/PCM detects a malfunction and stores a DTC.

MONITOR EXECUTION, SEQUENCE, DURATION, DTC TYPE, OBD STATUS

Execution	Once per driving cycle
Sequence	None
Duration	7.5 seconds or more
DTC Type	Two drive cycles, MIL on
OBD Status	PASSED/FAILED/EXECUTING/OUT OF (TEST) CONDITION

ENABLE CONDITIONS

Condition	Minimum	Maximum
Elapsed time that secondary HO2S activity is not monitored after starting the engine	20 seconds	-
Engine coolant temperature	156 °F (69 °C)	-
Intake air temperature	-13 °F (-25 °C)	-
Estimated TWC temperature	1,202 °F (650 °C)	-
Vehicle speed	26 mph (41 km/h)	-
Fuel trim	0.73	1.47
Fuel feedback	Closed loop at stoichiometric	
Monitoring priority	P0133, P0153	
No active DTCs set (prevents monitor from running)	P0101, P0102, P0103, P0107, P0108, P0112, P0113, P0117, P0118, P0122, P0123, P0133, P0134, P0135, P0141, P0157, P0158, P0159, P0171, P0172, P0222, P0223, P0300, P0301, P0302, P0303, P0304, P0305, P0306, P0335, P0339, P0351, P0352, P0353, P0354, P0355, P0356, P0400, P0401, P0404, P0443, P0496, P0497, P060A, P0720, P0722, P1077, P1078, P1128, P1129, P1172, P145C, P1659, P2101, P2118, P2122, P2123, P2127, P2128, P2135, P2138, P2176, P2195, P2227, P2228, P2229, P2237, P2238, P2243, P2245, P2251, P2252, P2272, P2279, P2413, P2646, P2647, P2648, P2649, P2A00	
Other	Has record of deceleration at least once	
	Cruise load or more	

MALFUNCTION THRESHOLD

The front secondary HO2S fluctuation integration value is 3.0 V or more for at least 7.5 seconds.

DRIVING PATTERN

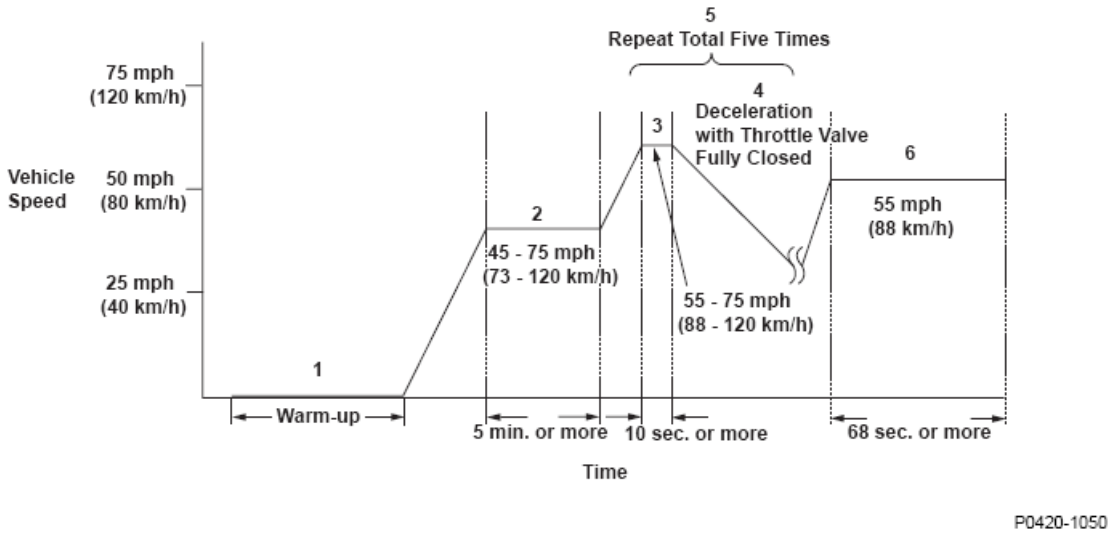


Fig. 91: Vehicle Speed Driving Pattern

1. Start the engine. Hold the engine speed at 3,000 rpm without load (A/T in P or N, M/T in neutral) until the radiator fan comes on.
2. Drive the vehicle at a speed between 45 - 75 mph (73 - 120 km/h) for at least 5 minutes, to warm up the TWC.
3. Drive at a steady speed between 55 - 75 mph (88 - 120 km/h) for at least 10 seconds.
4. Decelerate with the throttle valve fully closed.
5. Repeat Driving Pattern steps 3 through 4, four times.
6. Set a vehicle speed of 55 mph (88 km/h) on the cruise control or equivalent, and drive for at least 68 seconds.
    - After disconnecting the battery, extend Driving Pattern step 6 to 4 minutes or longer.
    - Drive the vehicle in this manner only if the traffic regulations and ambient conditions allow.

DIAGNOSIS DETAILS

Conditions for setting the DTC

When a malfunction is detected during the first drive cycle, a Pending DTC is stored in the ECM/PCM memory. If the malfunction returns in the next (second) drive cycle, the MIL comes on and a Confirmed DTC and the freeze data are stored.

Conditions for clearing the DTC

The MIL is cleared if the malfunction does not return in three consecutive trips in which the diagnostic runs. The MIL, the Pending DTC, the Confirmed DTC, and the freeze data can be cleared with the scan tool Clear command or by disconnecting the battery.

DTC P0443: EVAPORATIVE EMISSION (EVAP) CANISTER PURGE VALVE CIRCUIT MALFUNCTION

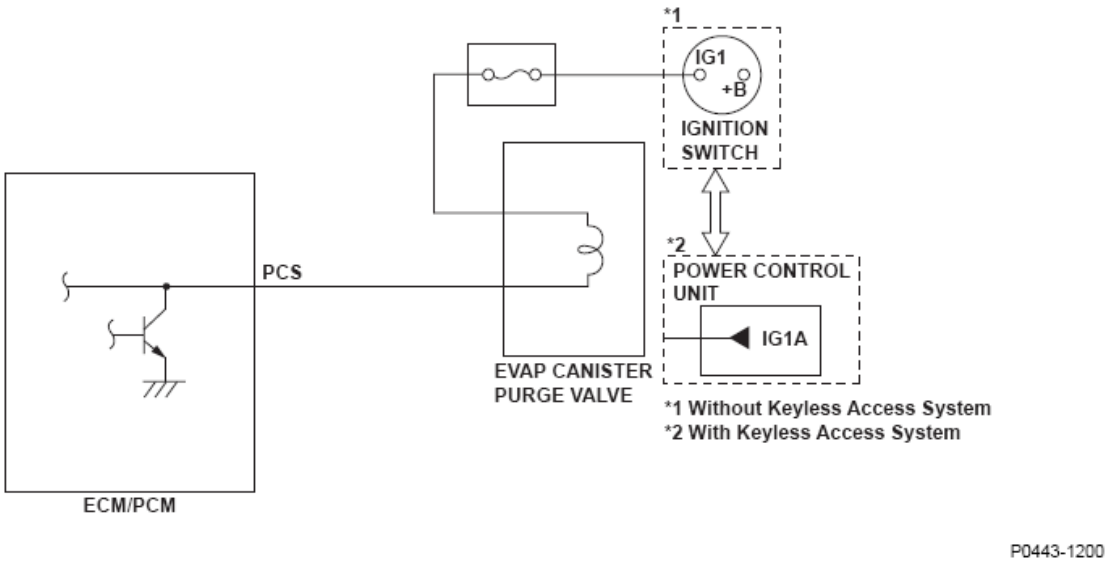


Fig. 92: Evaporative Emission Canister Purge Valve - Circuit Diagram

GENERAL DESCRIPTION

The evaporative emission (EVAP) canister purge valve is attached to the vacuum port between the intake manifold and the EVAP canister. The engine control module (ECM)/powertrain control module (PCM) does not turn on the EVAP canister purge valve when the engine coolant temperature is less than a specified value. The ECM/PCM adjusts the amount of fuel vapor sent to the engine by controlling the EVAP canister purge valve duty cycle. When the return signal does not change according to the EVAP canister purge valve output for a set time, the ECM/PCM detects a malfunction and stores a DTC.

MONITOR EXECUTION, SEQUENCE, DURATION, DTC TYPE, OBD STATUS

Execution	Continuous
Sequence	None
Duration	5 seconds or more
DTC Type	Two drive cycles, MIL on
OBD Status	PASSED/FAILED/EXECUTING/OUT OF (TEST) CONDITION

ENABLE CONDITIONS

Condition	Minimum	Maximum
Battery voltage	10.0 V	-
EVAP canister purge valve output duty	2 %	98 %
State of the engine	Running	

MALFUNCTION THRESHOLD

The return signal does not change according to the EVAP canister purge valve output for at least 5 seconds.

DIAGNOSIS DETAILS

Conditions for setting the DTC

When a malfunction is detected during the first drive cycle, a Pending DTC is stored in the ECM/PCM memory. If the malfunction returns in the next (second) drive cycle, the MIL comes on and a Confirmed DTC and the freeze data are stored.

Conditions for clearing the DTC

The MIL is cleared if the malfunction does not return in three consecutive trips in which the diagnostic runs. The MIL, the Pending DTC, the Confirmed DTC, and the freeze data can be cleared with the scan tool Clear command or by disconnecting the battery.

DTC P0451: FUEL TANK PRESSURE (FTP) SENSOR CIRCUIT RANGE/PERFORMANCE PROBLEM

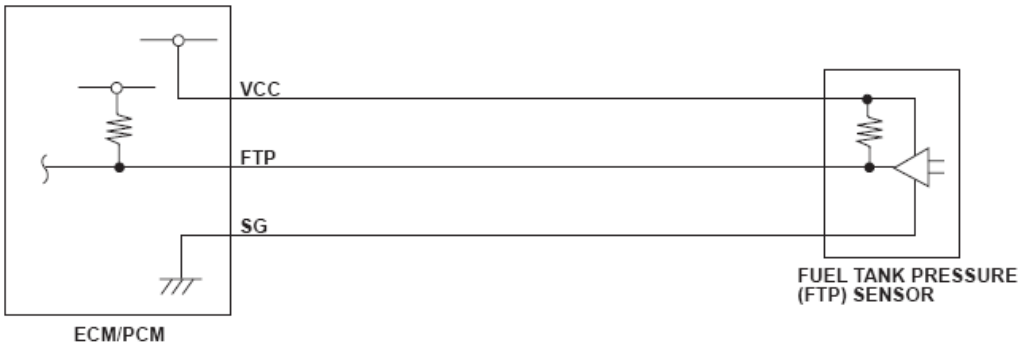


Fig. 93: Fuel Tank Pressure Sensor - Circuit Diagram

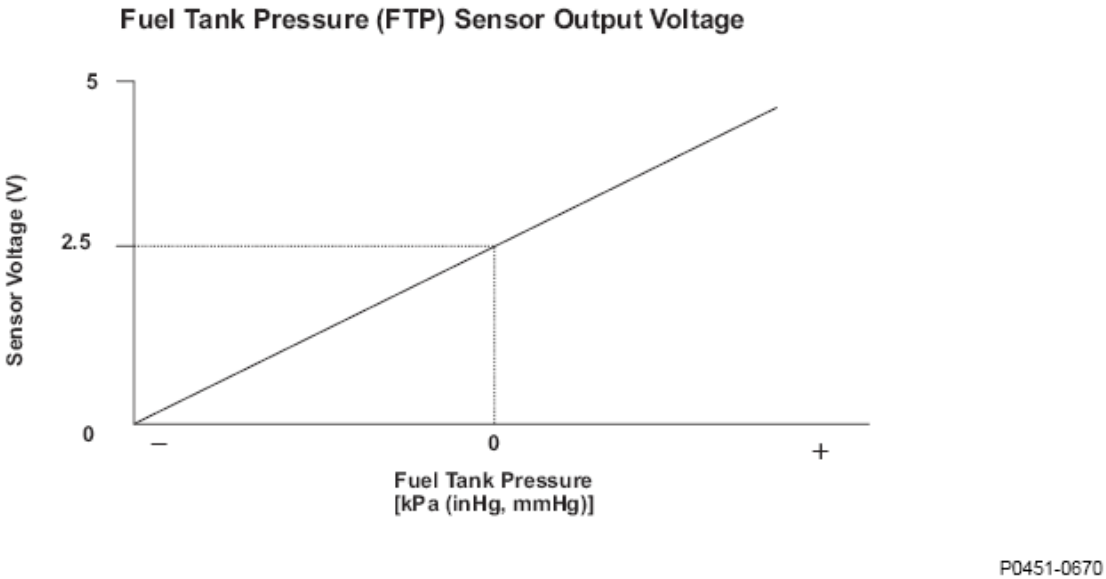


Fig. 94: Fuel Tank Pressure Sensor Output Voltage Graph

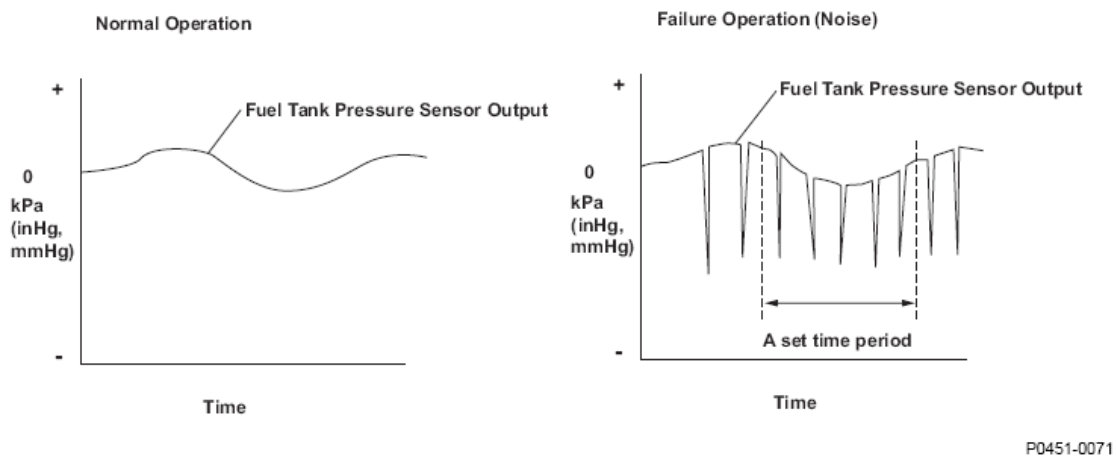


Fig. 95: Fuel Tank Pressure Sensor Output Characteristics Curve (Normal And Failure)

GENERAL DESCRIPTION

The fuel tank pressure (FTP) sensor is installed on the evaporative emission (EVAP) canister. The FTP sensor is used to detect leaks in the EVAP system. The engine control module (ECM)/powertrain control module (PCM) monitors the FTP sensor output voltage. The FTP sensor output voltage rises as the fuel tank pressure increases. Conversely, the FTP sensor output voltage drops as the fuel tank pressure decreases. Rapid changes in the FTP sensor output voltage due to electrical noise or an intermittent open during the EVAP leak detection may cause incorrect leak detection, so abnormal output is monitored. If the FTP sensor output voltage change occurs for specified ratio within a set time, the ECM/PCM detects a malfunction and stores a DTC.

MONITOR EXECUTION, SEQUENCE, DURATION, DTC TYPE, OBD STATUS

Execution	Once per driving cycle
Sequence	None
Duration	32 seconds or more
DTC Type	Two drive cycles, MIL on
OBD Status	PASSED/FAILED/NOT COMPLETED (STILL TESTING)

ENABLE CONDITIONS

Condition	Minimum	Maximum
Elapsed time after starting the engine	10 seconds	-
Engine coolant temperature	140 °F (60 °C)	-
Battery voltage	10.5 V	-
EVAP canister purge valve duty	Other than 0 %	
Fuel feedback	During deceleration	
No active DTCs set (prevents monitor from running)	P0452, P0453	
Other	Other than purge-cut operation	

MALFUNCTION THRESHOLD

The FTP sensor output voltage fluctuation occurs for more than 30 % within the set time at least 32 seconds.

DRIVING PATTERN

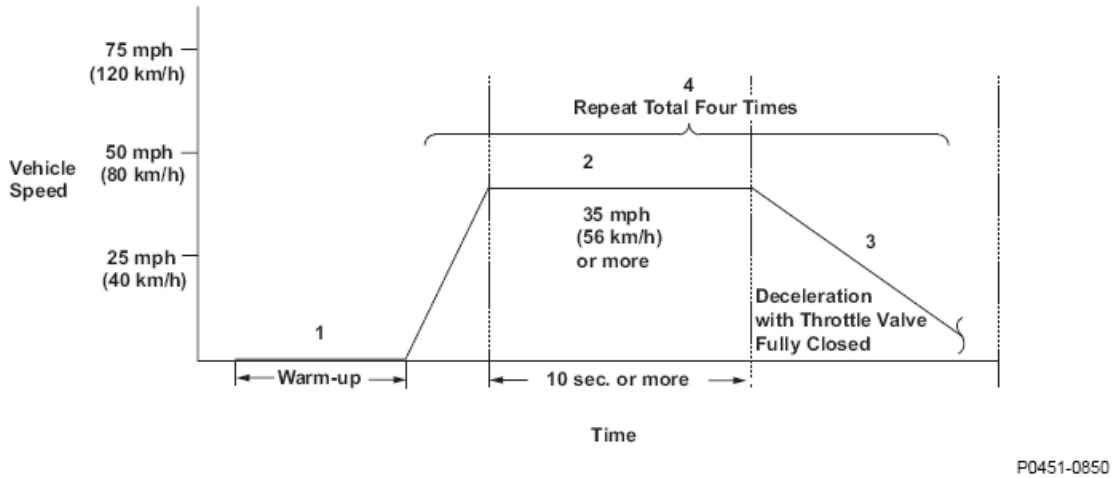


Fig. 96: Vehicle Speed Driving Pattern

1. Start the engine, and let it idle until the radiator fan comes on.
2. Drive the vehicle at a steady speed 35 mph (56 km/h) or more for at least 10 seconds.
3. Decelerate with the throttle valve fully closed.
4. Repeat Driving Pattern steps 2 through 3, three times.
    - Drive the vehicle in this manner only if the traffic regulations and ambient conditions allow.

DIAGNOSIS DETAILS

Conditions for setting the DTC

When a malfunction is detected during the first drive cycle, a Pending DTC is stored in the ECM/PCM memory. If the malfunction returns in the next (second) drive cycle, the MIL comes on and a Confirmed DTC and the freeze data are stored.

Conditions for clearing the DTC

The MIL is cleared if the malfunction does not return in three consecutive trips in which the diagnostic runs. The MIL, the Pending DTC, the Confirmed DTC, and the freeze data can be cleared with the scan tool Clear command or by disconnecting the battery.

DTC P0452: FUEL TANK PRESSURE (FTP) SENSOR CIRCUIT LOW VOLTAGE

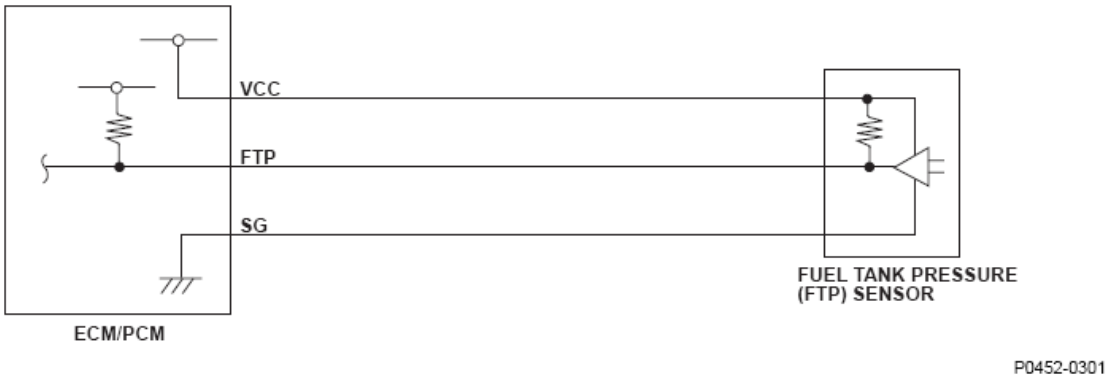


Fig. 97: Fuel Tank Pressure Sensor - Circuit Diagram

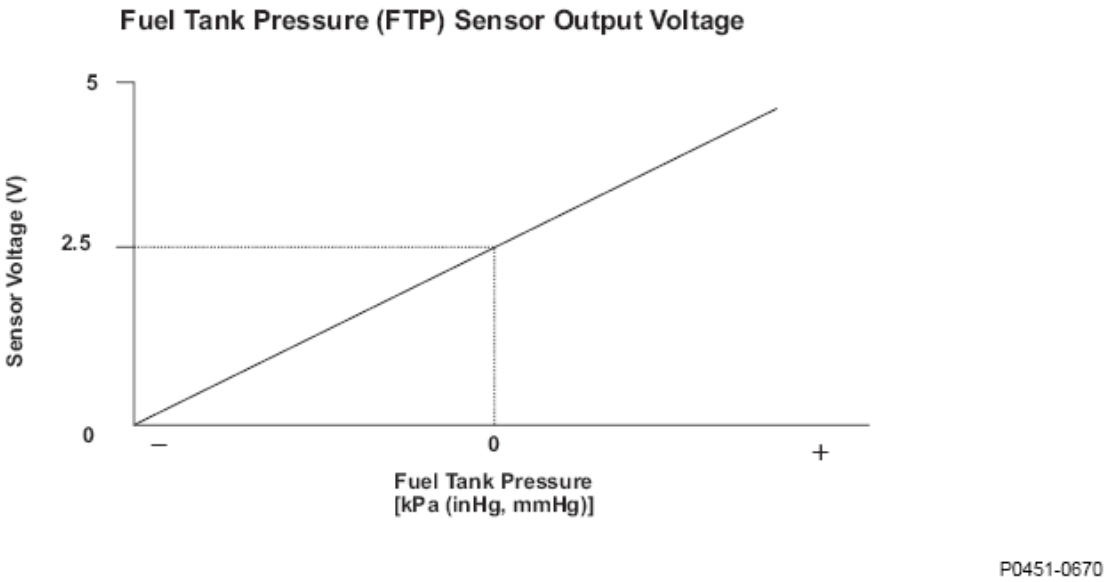


Fig. 98: Fuel Tank Pressure Sensor Output Voltage Graph

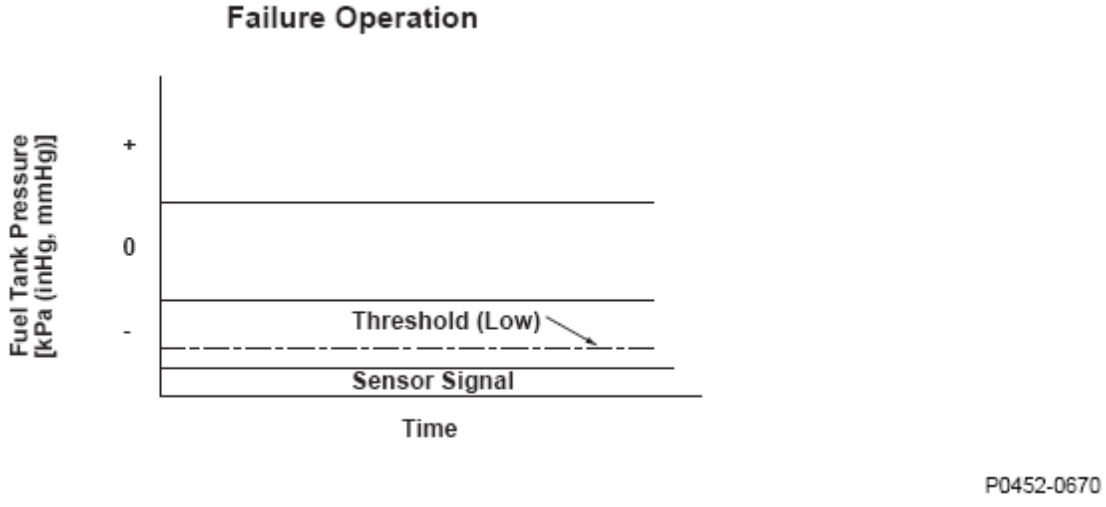


Fig. 99: Fuel Tank Pressure Versus Time Graph (Failure Operation)

GENERAL DESCRIPTION

The fuel tank pressure (FTP) sensor is installed on the evaporative emission (EVAP) canister and detects the fuel tank pressure. The FTP sensor is used to detect leaks in the EVAP system. The engine control module (ECM)/powertrain control module (PCM) monitors the FTP sensor output voltage. The FTP sensor output voltage rises as the fuel tank pressure increases. Conversely, the FTP sensor output voltage drops as the fuel tank pressure decreases. If the FTP sensor output voltage does not reach a target value for a set time after starting the engine in a cold condition, the ECM/PCM detects a malfunction and stores a DTC.

MONITOR EXECUTION, SEQUENCE, DURATION, DTC TYPE, OBD STATUS

Execution	Once per driving cycle
Sequence	None
Duration	3.0 seconds or more
DTC Type	Two drive cycles, MIL on
OBD Status	PASSED/FAILED/NOT COMPLETED (STILL TESTING)

ENABLE CONDITIONS

Condition	Minimum	Maximum
Elapsed time after engine start	2.0 seconds	-
Other	At idle	

MALFUNCTION THRESHOLD

The output from the FTP sensor is less than -7 kPa (-2.1 inHg, -55 mmHg) for at least 3.0 seconds.

DRIVING PATTERN

Start the engine in a cold condition, and let it idle until the radiator fan comes on.

DIAGNOSIS DETAILS

Conditions for setting the DTC

When a malfunction is detected during the first drive cycle, a Pending DTC is stored in the ECM/PCM memory. If the malfunction returns in the next (second) drive cycle, the MIL comes on and a Confirmed DTC and the freeze data are stored.

Conditions for clearing the DTC

The MIL is cleared if the malfunction does not return in three consecutive trips in which the diagnostic runs. The MIL, the Pending DTC, the Confirmed DTC, and the freeze data can be cleared with the scan tool Clear command or by disconnecting the battery.

DTC P0453: FUEL TANK PRESSURE (FTP) SENSOR CIRCUIT HIGH

VOLTAGE

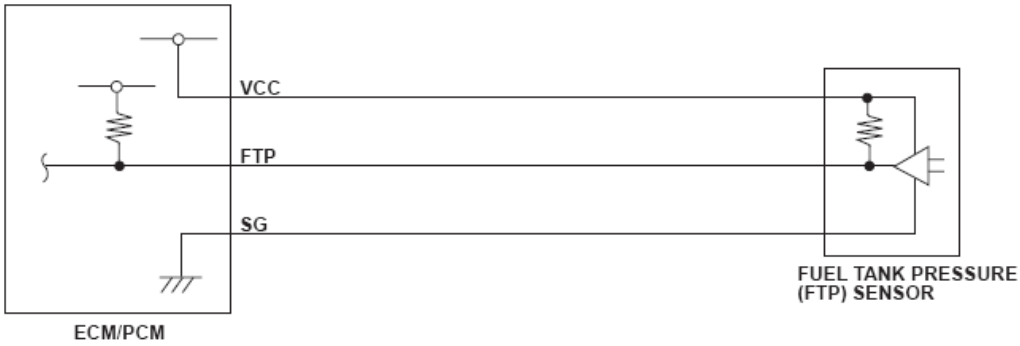


Fig. 100: Fuel Tank Pressure Sensor - Circuit Diagram

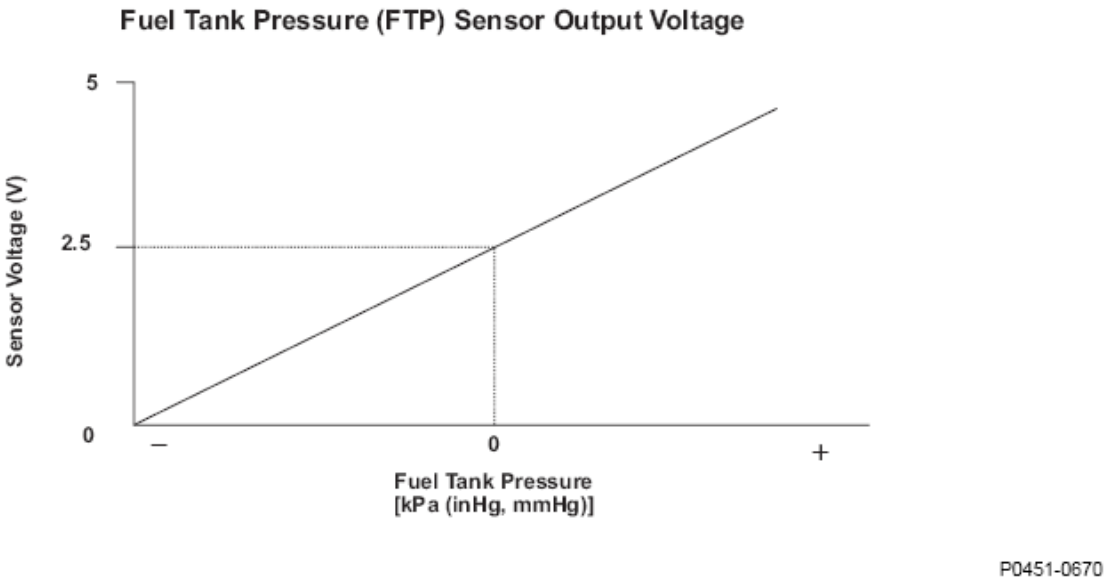


Fig. 101: Fuel Tank Pressure Sensor Output Voltage Graph

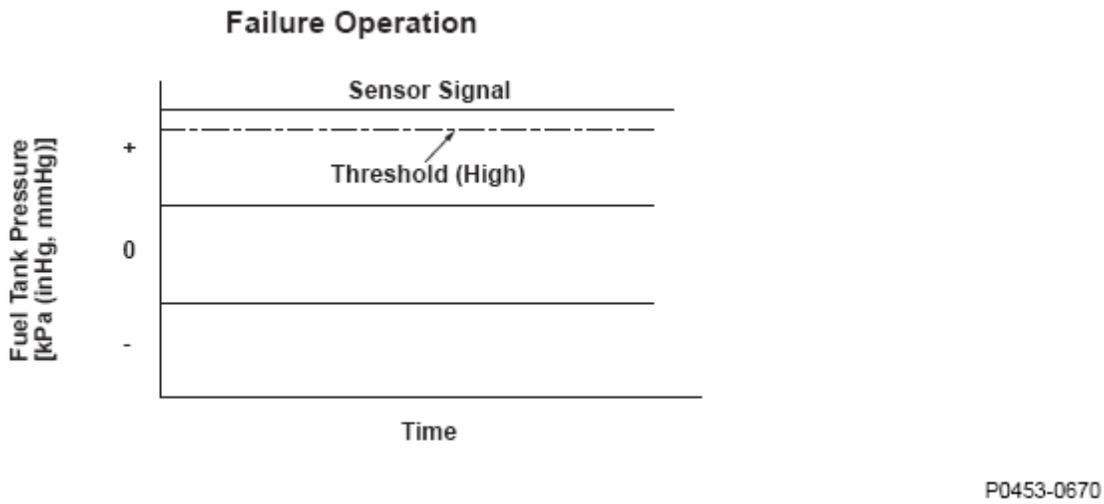


Fig. 102: Fuel Tank Pressure Versus Time Graph (Failure Operation)

GENERAL DESCRIPTION

The fuel tank pressure (FTP) sensor is installed on the evaporative emission (EVAP) canister and detects the fuel tank pressure. The FTP sensor is used to detect leaks in the EVAP system. The engine control module (ECM)/powertrain control module (PCM) monitors the FTP sensor output voltage. The FTP sensor output voltage rises as the fuel tank pressure increases. Conversely, the FTP sensor output voltage drops as the fuel tank pressure decreases. If the FTP sensor output voltage is higher than a target value for a set time after starting the engine in a cold condition, the ECM/PCM detects a malfunction and stores a DTC.

MONITOR EXECUTION, SEQUENCE, DURATION, DTC TYPE, OBD STATUS

Execution	Once per driving cycle
Sequence	None
Duration	3.0 seconds or more
DTC Type	Two drive cycles, MIL on
OBD Status	PASSED/FAILED/NOT COMPLETED (STILL TESTING)

ENABLE CONDITIONS

Condition	Minimum	Maximum
Elapsed time after engine start	2 seconds	-
Other	At idle	

MALFUNCTION THRESHOLD

The output from the FTP sensor is more than 7 kPa (2.1 inHg, 55 mmHg) for at least 3.0 seconds.

DRIVING PATTERN

Start the engine in a cold condition, and let it idle until the radiator fan comes on.

DIAGNOSIS DETAILS

Conditions for setting the DTC

When a malfunction is detected during the first drive cycle, a Pending DTC is stored in the ECM/PCM memory. If the malfunction returns in the next (second) drive cycle, the MIL comes on and a Confirmed DTC and the freeze data are stored.

Conditions for clearing the DTC

The MIL is cleared if the malfunction does not return in three consecutive trips in which the diagnostic runs. The MIL, the Pending DTC, the Confirmed DTC, and the freeze data can be cleared with the scan tool Clear command or by disconnecting the battery.

DTC P0455: EVAPORATIVE EMISSION (EVAP) SYSTEM LARGE LEAK DETECTED

GENERAL DESCRIPTION

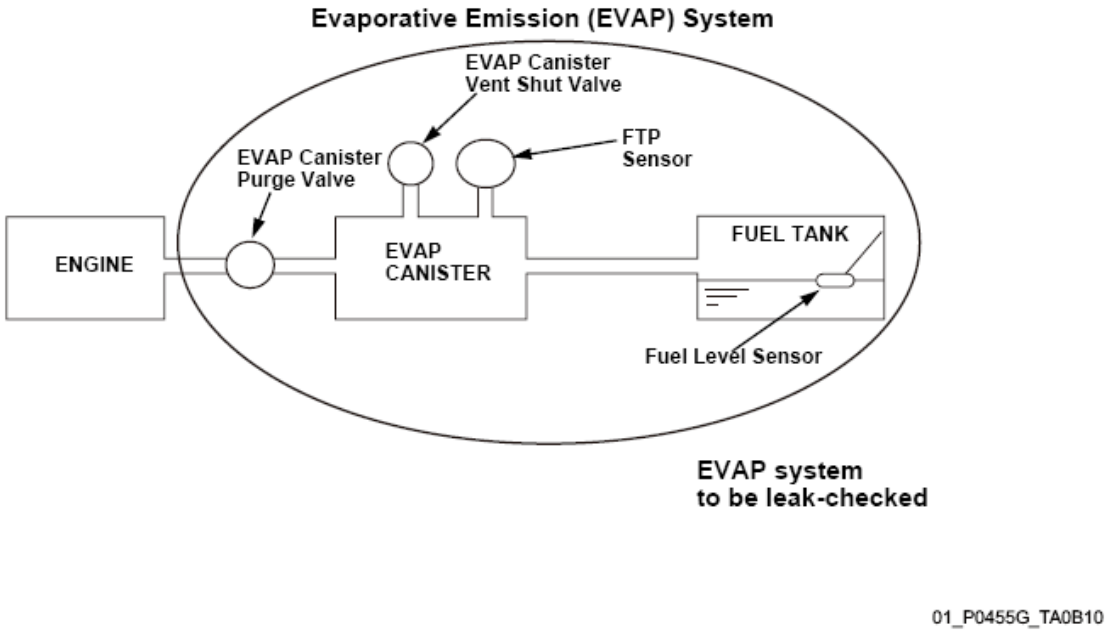


Fig. 103: Evaporative Emission - System Diagram

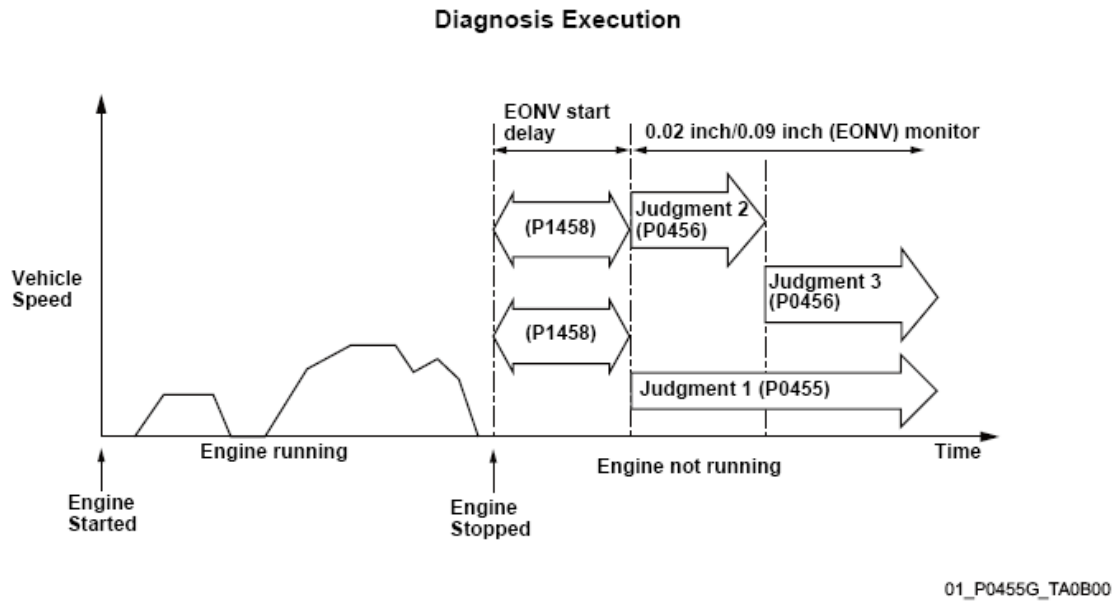


Fig. 104: Evaporative Emission System Diagnosis Execution Graph

The evaporative emission (EVAP) leak detection system uses an engine off natural vacuum (EONV) method. The EONV method detects leakage from the change in fuel tank pressure via the fuel tank pressure (FTP) sensor with the engine off.

Here is an overview of the malfunction detection for the EONV method:

Judgment 1: Judgment of detection of 0.09 inch leak as normal operation

Judgment 2: Judgment of detection of 0.02 inch leak as normal operation

Judgment 3: Detection of 0.02 inch leak

< Judgments 1, 2, and 3 happen at the same time. >

Judgment 1:

After the engine has stopped, the engine control module (ECM)/powertrain control module (PCM) monitors the variation of the FTP sensor output to detect "no 0.09 inch leak" depending on the variation of the pressure inside the fuel tank.

- If the variation of the pressure is a specified value and continues for a specified duration, it is identified as a "0.09 inch leak" and the diagnosis completes.
- If the variation of the pressure is a specified value before a specified duration has passed, it is defined as "no 0.09 inch leak", the judgment of detection of a 0.09 inch leak is completed, and it goes to 0.02 inch leak monitor.

Judgment 2:

After the engine has stopped, the ECM/PCM monitors the variation of the FTP sensor output to detect "no 0.02 inch leak" depending on the variation corresponding to the increasing pressure inside the fuel tank.

- If "no 0.02 inch leak" is detected, it is identified as normal; the diagnosis is complete.
- If the pressure inside the fuel tank does not increase a specified value within a specified duration, it goes to Judgment 3.

Judgment 3:

The ECM/PCM continues to monitor the FTP sensor output to detect "no 0.02 inch leak" depending on the variation corresponding to the decreasing pressure inside the fuel tank until the detection completes.

- If a "0.02 inch leak" is detected, it is identified as a malfunction; the diagnosis is complete.
- If "no leakage" is detected, it is identified as normal; the diagnosis is complete.
- If the pressure is not atmospheric pressure or less when the detection is completed, that data is stored and the diagnosis is complete.

MONITOR EXECUTION, SEQUENCE, DURATION, DTC TYPE, OBD STATUS

Execution	Once per driving cycle
Sequence	None
Duration	At least 11 minutes, 37 seconds but not more than 36 minutes, 37 seconds
DTC Type	Two drive cycles, MIL on
OBD Status	PASSED/FAILED/NOT COMPLETED (STILL TESTING)

ENABLE CONDITIONS

Condition	Minimum	Maximum
Elapsed time before starting the engine	6 hours	-
Initial condition A(1)	-	36 °F (20 °C)
Initial condition B(2)	-	18 °F (10 °C)
Initial engine coolant temperature	40 °F (5 °C)	95 °F (35 °C)
Initial intake air temperature	40 °F (5 °C)	95 °F (35 °C)
Barometric pressure	76 kPa (22.5 inHg, 569 mmHg)	-
Battery voltage	10.5 V	-
No active DTCs set (prevents monitor from running)	P0111, P0112, P0113, P0116, P0117, P0118, P0125, P0443, P0451, P0452, P0453, P0496, P0497, P0498, P0499, P0685, P0720, P0722, P1116, P1454, P1458, P145C, P2227, P2228, P2229, P2422, P2610	
Other	Avoid abrupt acceleration, deceleration, and turns	
	Test-drive on a flat road to avoid misdetection	

	No refueling is required
	Vehicle stopped
(1) The initial intake air temperature minus the current intake air temperature	
(2) The initial engine coolant temperature minus the initial intake air temperature	

MALFUNCTION THRESHOLD

The variation of pressure inside the fuel tank is 0.03 kPa (0.009 inHg, 0.24 mmHg) or less.

CONFIRMATION PROCEDURE

With the HDS

Do the EVAP FUNCTION TEST in the INSPECTION MENU with the HDS.

With the Driving Pattern

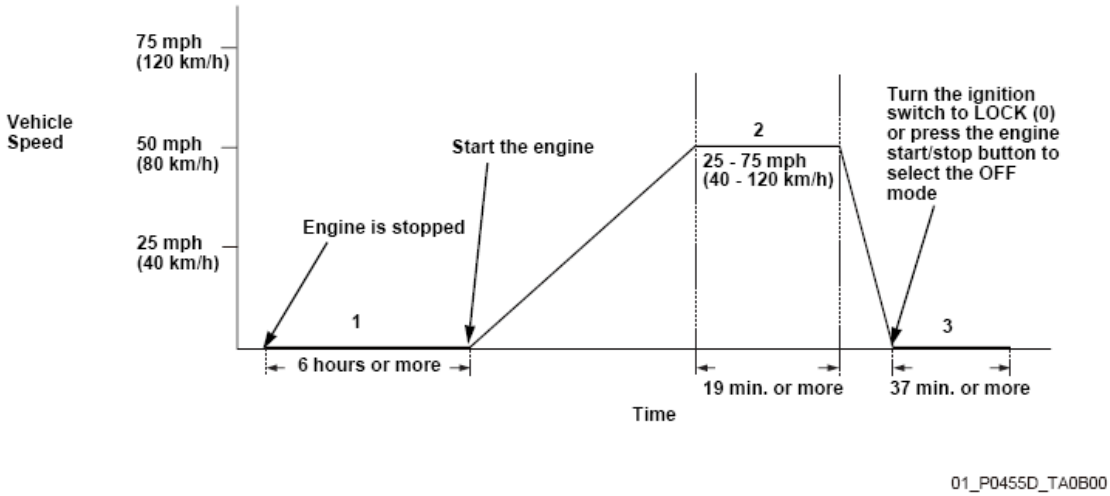


Fig. 105: Vehicle Speed Driving Pattern

1. After the vehicle has been left for an appropriate amount of time as specified, with the engine coolant temperature and intake air temperature within the specified range, start the engine.
2. Drive the vehicle immediately at a speed between 25 - 75 mph (40 - 120 km/h) for at least 19 minutes.
3. After stopping the vehicle, turn the ignition switch to LOCK (0) or press the engine start/stop button to select the OFF mode, and leave the vehicle in this condition for at least 37 minutes (EONV executes).
    - Drive the vehicle in this manner only if the traffic regulations and ambient conditions allow.

DIAGNOSIS DETAILS

Conditions for setting the DTC

When a malfunction is detected during the first drive cycle with the engine coolant temperature and intake air

temperature at engine start-up within the specified temperature range, a Pending DTC is stored in the ECM/PCM memory. If the malfunction returns in the next (second) drive cycle with the engine coolant temperature and intake air temperature at engine start-up within the specified temperature range, the MIL comes on and a Confirmed DTC and the freeze data are stored.

Conditions for clearing the DTC

The MIL is cleared if the malfunction does not return in three consecutive trips in which the diagnostic runs. The MIL, the Pending DTC, the Confirmed DTC, and the freeze data can be cleared with the scan tool Clear command or by disconnecting the battery.

DTC P0456: EVAPORATIVE EMISSION (EVAP) SYSTEM VERY SMALL LEAK DETECTED

GENERAL DESCRIPTION

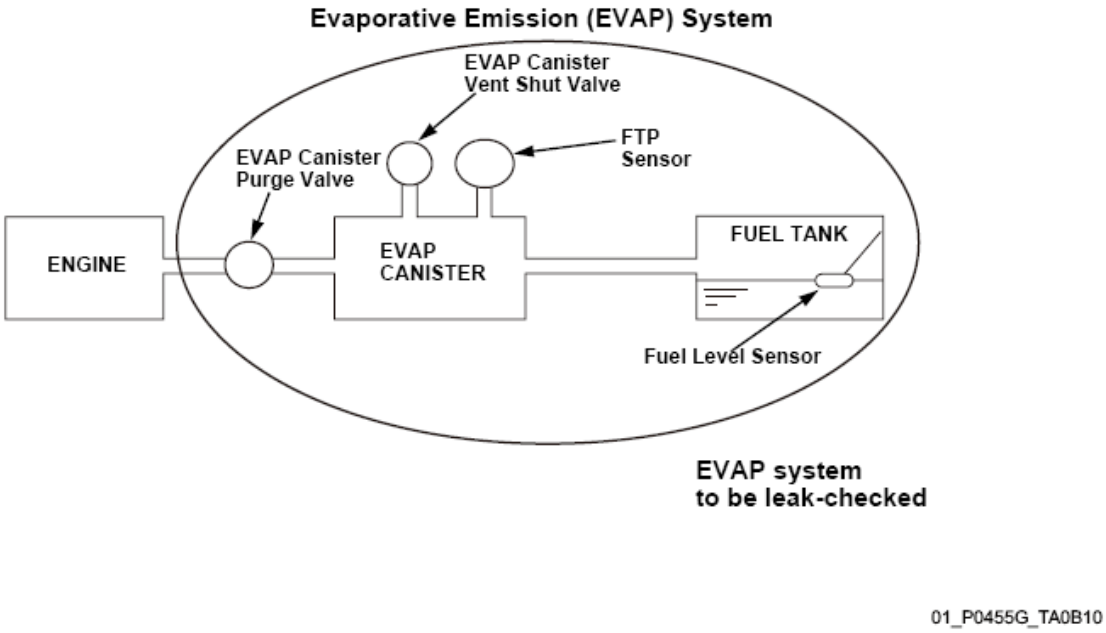


Fig. 106: Evaporative Emission - System Diagram

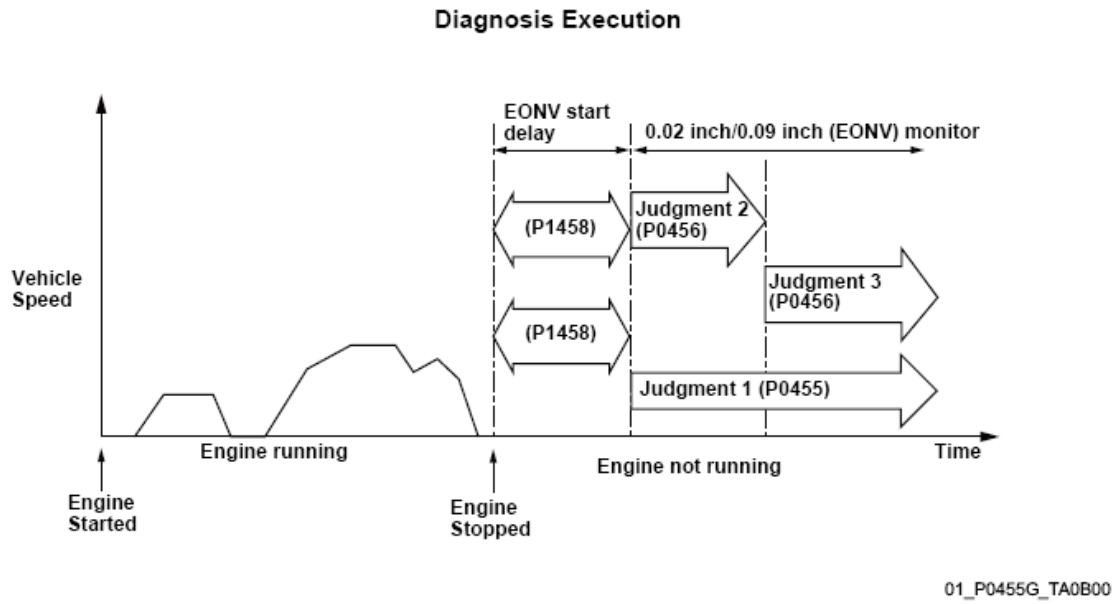


Fig. 107: Evaporative Emission System Diagnosis Execution Graph

The evaporative emission (EVAP) leak detection system uses an engine off natural vacuum (EONV) method. The EONV method detects leakage from the change in fuel tank pressure via the fuel tank pressure (FTP) sensor with the engine off.

Here is an overview of the malfunction detection for the EONV method:

Judgment 1: Judgment of detection of 0.09 inch leak as normal operation

Judgment 2: Judgment of detection of 0.02 inch leak as normal operation

Judgment 3: Detection of 0.02 inch leak

< Judgments 1, 2, and 3 happen at the same time. >

Judgment 1:

After the engine has stopped, the engine control module (ECM)/powertrain control module (PCM) monitors the variation of the FTP sensor output to detect "no 0.09 inch leak" depending on the variation of the pressure inside the fuel tank.

- If the variation of the pressure is a specified value and continues for a specified duration, it is identified as a "0.09 inch leak" and the diagnosis completes.
- If the variation of the pressure is a specified value before a specified duration has passed, it is defined as "no 0.09 inch leak", the judgment of detection of a 0.09 inch leak is completed, and it goes to 0.02 inch leak monitor.

Judgment 2:

After the engine has stopped, the ECM/PCM monitors the variation of the FTP sensor output to detect "no 0.02 inch leak" depending on the variation corresponding to the increasing pressure inside the fuel tank.

- If "no 0.02 inch leak" is detected, it is identified as normal; the diagnosis is complete.
- If the pressure inside the fuel tank does not increase a specified value within a specified duration, it goes to Judgment 3.

Judgment 3:

The ECM/PCM continues to monitor the FTP sensor output to detect "no 0.02 inch leak" depending on the variation corresponding to the decreasing pressure inside the fuel tank until the detection completes.

- If a "0.02 inch leak" is detected, it is identified as a malfunction; the diagnosis is complete.
- If "no leakage" is detected, it is identified as normal; the diagnosis is complete.
- If the pressure is not atmospheric pressure or less when the detection is completed, that data is stored and the diagnosis is complete.

MONITOR EXECUTION, SEQUENCE, DURATION, DTC TYPE, OBD STATUS

Execution	Once per driving cycle
Sequence	P0455 is judged as OK
Duration	At least 11 minutes, 37 seconds but not more than 36 minutes, 37 seconds
DTC Type	Two drive cycles, MIL on
OBD Status	PASSED/FAILED/NOT COMPLETED (STILL TESTING)

ENABLE CONDITIONS

Condition	Minimum	Maximum
Elapsed time before starting the engine	6 hours	-
Initial condition A(1)	-	36 °F (20 °C)
Initial condition B(2)	-	18 °F (10 °C)
Initial engine coolant temperature	40 °F (5 °C)	95 °F (35 °C)
Initial intake air temperature	40 °F (5 °C)	95 °F (35 °C)
Barometric pressure	76 kPa (22.5 inHg, 569 mmHg)	-
Battery voltage	10.5 V	-
No active DTCs set (prevents monitor from running)	P0111, P0112, P0113, P0116, P0117, P0118, P0125, P0443, P0451, P0452, P0453, P0496, P0497, P0498, P0499, P0685, P0720, P0722, P1116, P1454, P1458, P145C, P2227, P2228, P2229, P2422, P2610	
Other	Avoid abrupt acceleration, deceleration, and turns	
	Test-drive on a flat road to avoid misdetection	

	No refueling is required
	Vehicle stopped
(1) The initial intake air temperature minus the current intake air temperature	
(2) The initial engine coolant temperature minus the initial intake air temperature	

MALFUNCTION THRESHOLD

- The change rate of the pressure rise slope inside the fuel tank is 4.0 or more.
- The change rate of the pressure descending slope inside the fuel tank is 0.8 or more.
- The barometric pressure is stable for at least 30 minutes.

CONFIRMATION PROCEDURE

With the HDS

Do the EVAP FUNCTION TEST in the INSPECTION MENU with the HDS.

With the Driving Pattern

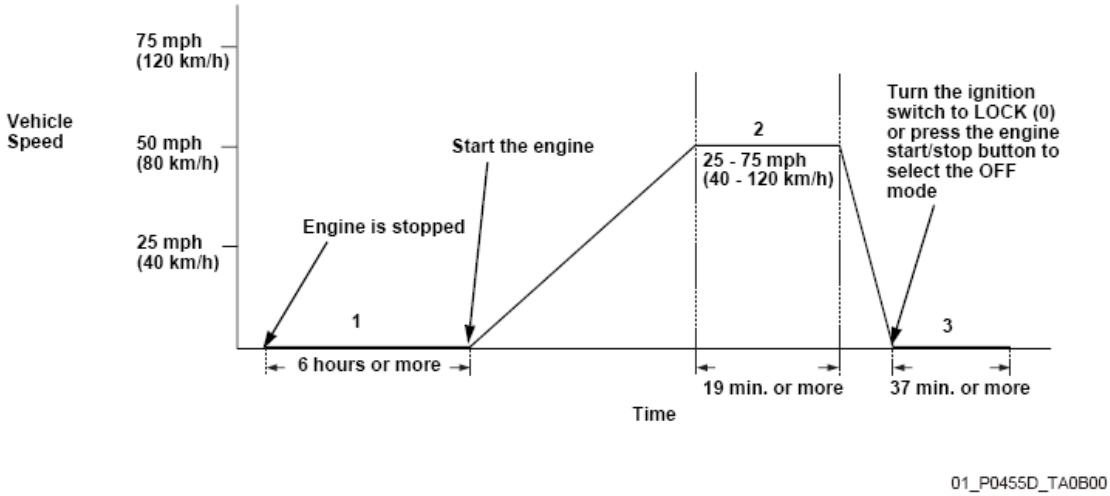


Fig. 108: Vehicle Speed Driving Pattern

1. After the vehicle has been left for an appropriate amount of time as specified, with the engine coolant temperature and intake air temperature within the specified range, start the engine.
2. Drive the vehicle immediately at a speed between 25 - 75 mph (40 - 120 km/h) for at least 19 minutes.
3. After stopping the vehicle, turn the ignition switch to LOCK (0) or press the engine start/stop button to select the OFF mode, and leave the vehicle in this condition for at least 37 minutes (EONV executes).
    - Drive the vehicle in this manner only if the traffic regulations and ambient conditions allow.

DIAGNOSIS DETAILS

Conditions for setting the DTC

When a malfunction is detected during the first drive cycle with the engine coolant temperature and intake air temperature at engine start-up within the specified temperature range, a Pending DTC is stored in the ECM/PCM memory. If the malfunction returns in the next (second) drive cycle with the engine coolant temperature and intake air temperature at engine start-up within the specified temperature range, the MIL comes on and a Confirmed DTC and the freeze data are stored.

Conditions for clearing the DTC

The MIL is cleared if the malfunction does not return in three consecutive trips in which the diagnostic runs. The MIL, the Pending DTC, the Confirmed DTC, and the freeze data can be cleared with the scan tool Clear command or by disconnecting the battery.

DTC P0457: EVAPORATIVE EMISSION (EVAP) SYSTEM LEAK DETECTED/FUEL FILL CAP LOOSE OR MISSING

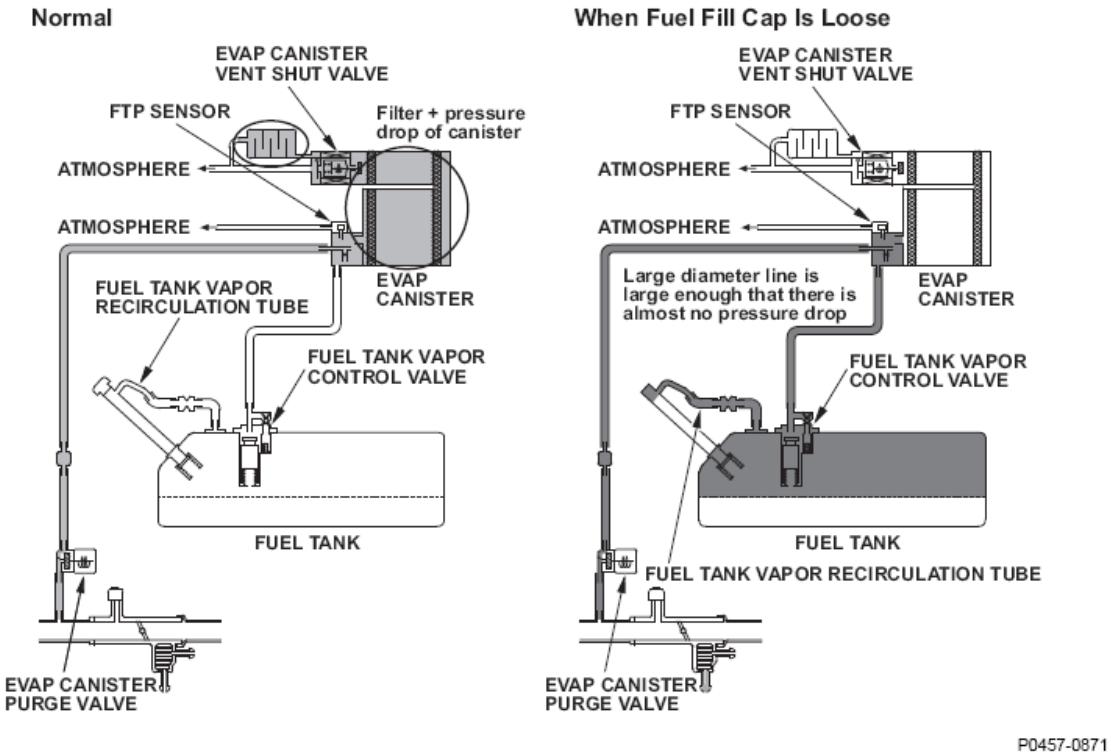


Fig. 109: Evaporative Emission - System Diagram

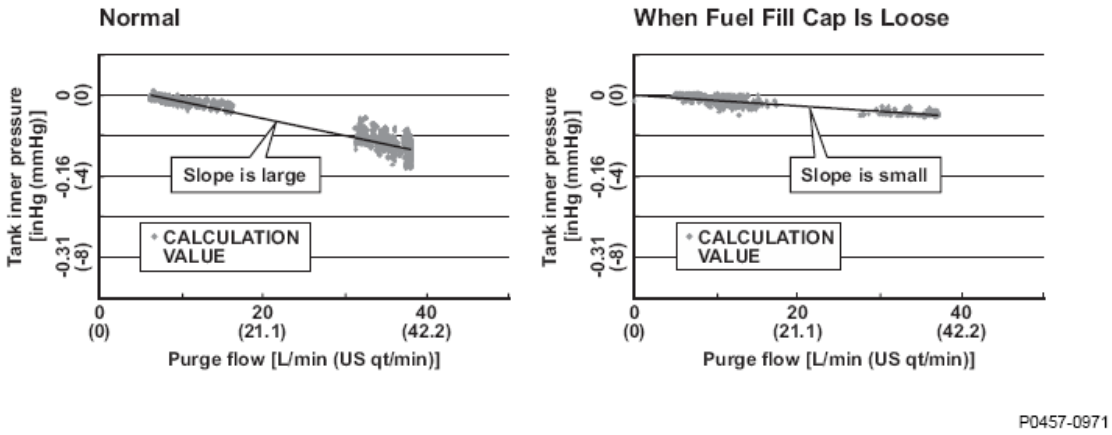


Fig. 110: Evaporative Emission System Characteristics Curve

GENERAL DESCRIPTION

When the fuel fill cap is installed properly, purge flow occurs due to the airflow resistance of the canister, and tank pressure will be reduced. When the fuel fill cap is loosened, the fuel tank pressure will not decrease even when the airflow resistance decreases and purge flow occurs, because air is being vented from the tank to the atmosphere. By checking the fuel tank pressure with various purge flows, and using the above characteristics, a loose fuel fill cap is detected. The engine control module (ECM)/powertrain control module (PCM) calculates the relationship of the purge flow and fuel tank pressure (FTP) sensor, and when the slope of the decreasing fuel tank pressure to the purge flow increase is small, the ECM/PCM detects a loose fuel fill cap and stores a DTC. The failure detection is normally done during purge.

MONITOR EXECUTION, SEQUENCE, DURATION, DTC TYPE, OBD STATUS

Execution	Continuous
Sequence	P0455 or P0456 are judged as NG
Duration	12 seconds or more
DTC Type	One drive cycle, MIL off
OBD Status	PASSED/FAILED/NOT COMPLETED (STILL TESTING)

ENABLE CONDITIONS

Condition	Minimum	Maximum
Engine coolant temperature before EVAP purge control starts	140 °F (60 °C)	-
Barometric pressure	76 kPa (22.5 inHg, 569 mmHg)	-
Vehicle speed	2 mph (2 km/h)	-
Battery voltage	10.5 V	-

Fuel trim	0.73	1.47
Low purge flow side detection	5 L/min (5.3 US qt/min, 4.4 lmp qt/min)	10 L/min (10.5 US qt/min, 8.7 lmp qt/min)
High purge flow side detection	61 L/min (64.5 US qt/min, 53.7 lmp qt/min)	-
Fuel feedback	Closed loop at stoichiometric	
No active DTCs set (prevents monitor from running)	P0101, P0102, P0103, P0107, P0108, P0117, P0118, P0134, P0135, P0154, P0155, P0300, P0301, P0302, P0303, P0304, P0305, P0306, P0335, P0339, P0351, P0352, P0353, P0354, P0355, P0356, P0443, P0451, P0452, P0453, P0496, P0497, P0498, P0499, P0720, P0722, P1128, P1129, P1172, P1174, P1454, P145C, P2195, P2197, P2227, P2228, P2229, P2237, P2238, P2240, P2241, P2243, P2245, P2247, P2249, P2251, P2252, P2254, P2255, P2279, P2422, U0029, U0155	
Other	No refueling is required	

MALFUNCTION THRESHOLD

The output from the fuel cap monitor is 0.065 or less for at least 12 seconds (when there is no NG judgment history in this drive cycle).

CONFIRMATION PROCEDURE WITH THE HDS

Do the EVAP FUNCTION TEST in the INSPECTION MENU with the HDS.

DRIVING PATTERN

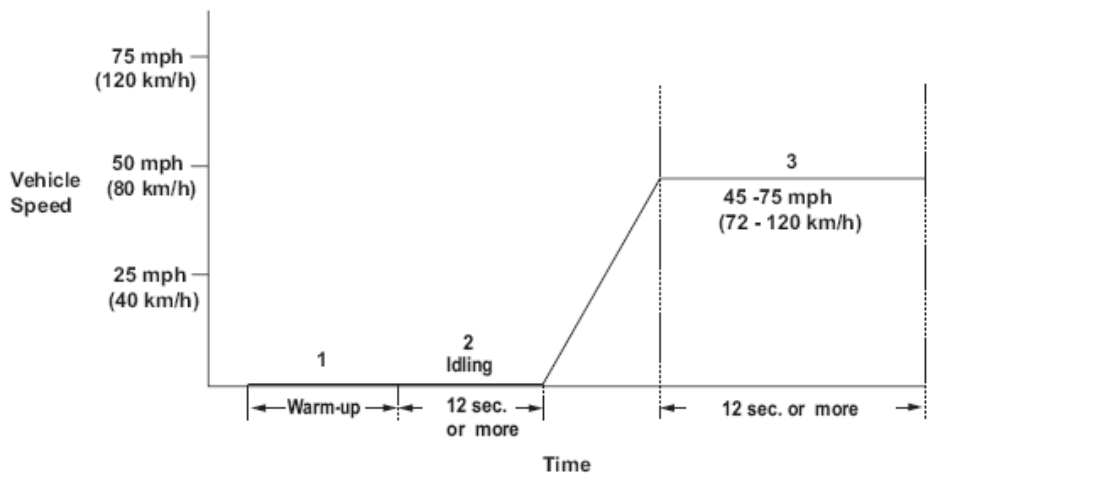


Fig. 111: Vehicle Speed Driving Pattern

1. Start the engine. Hold the engine speed at 3,000 rpm without load (A/T in P or N, M/T in neutral) until the radiator fan comes on.
2. Let the engine idle for at least 12 seconds.
3. Drive the vehicle immediately at a speed between 45 - 75 mph (72 - 120 km/h) for at least 12 seconds.

- Drive the vehicle in this manner only if the traffic regulations and ambient conditions allow.

DIAGNOSIS DETAILS

Conditions for illuminating the fuel fill cap caution

1. When a loose fuel fill cap is judged by this detection, the fuel fill cap caution is displayed. At this time, a DTC is not stored.
2. When the first drive cycle leak judgment (Pending DTC stored) is detected at a 0.02 inch leak or a 0.09 inch leak, the fuel fill cap caution is displayed the next time the ignition switch is turned to ON (II) or the engine start/stop button is pressed to select the ON mode.

Conditions for clearing the fuel fill cap caution

1. When the fuel fill cap caution is displayed by the first drive cycle leak judgment (Pending DTC stored) at a 0.02 inch leak or a 0.09 inch leak, the fuel fill cap caution goes out when the next failure occurs (second drive cycle) and P0457 is stored. (MIL illuminates)
2. When no leak is judged by a 0.02 inch leak or a 0.09 inch leak after the fuel fill cap caution is displayed, the fuel fill cap caution goes out the next time the ignition switch is turned to ON (II) or the engine start/stop button is pressed to select the ON mode. (P0457 is not stored at this time)
3. When driven three times without this failure detected and a 0.02 inch leak or a 0.09 inch leak detection is not done after the fuel fill cap caution is displayed, the fuel fill cap caution goes out. (P0457 is not stored at this time)
4. Use the Clear command of scan tool to erase the caution. The caution is erased when the MIL is illuminated.

DTC P0461: FUEL LEVEL SENSOR (FUEL GAUGE SENDING UNIT) CIRCUIT RANGE/PERFORMANCE PROBLEM

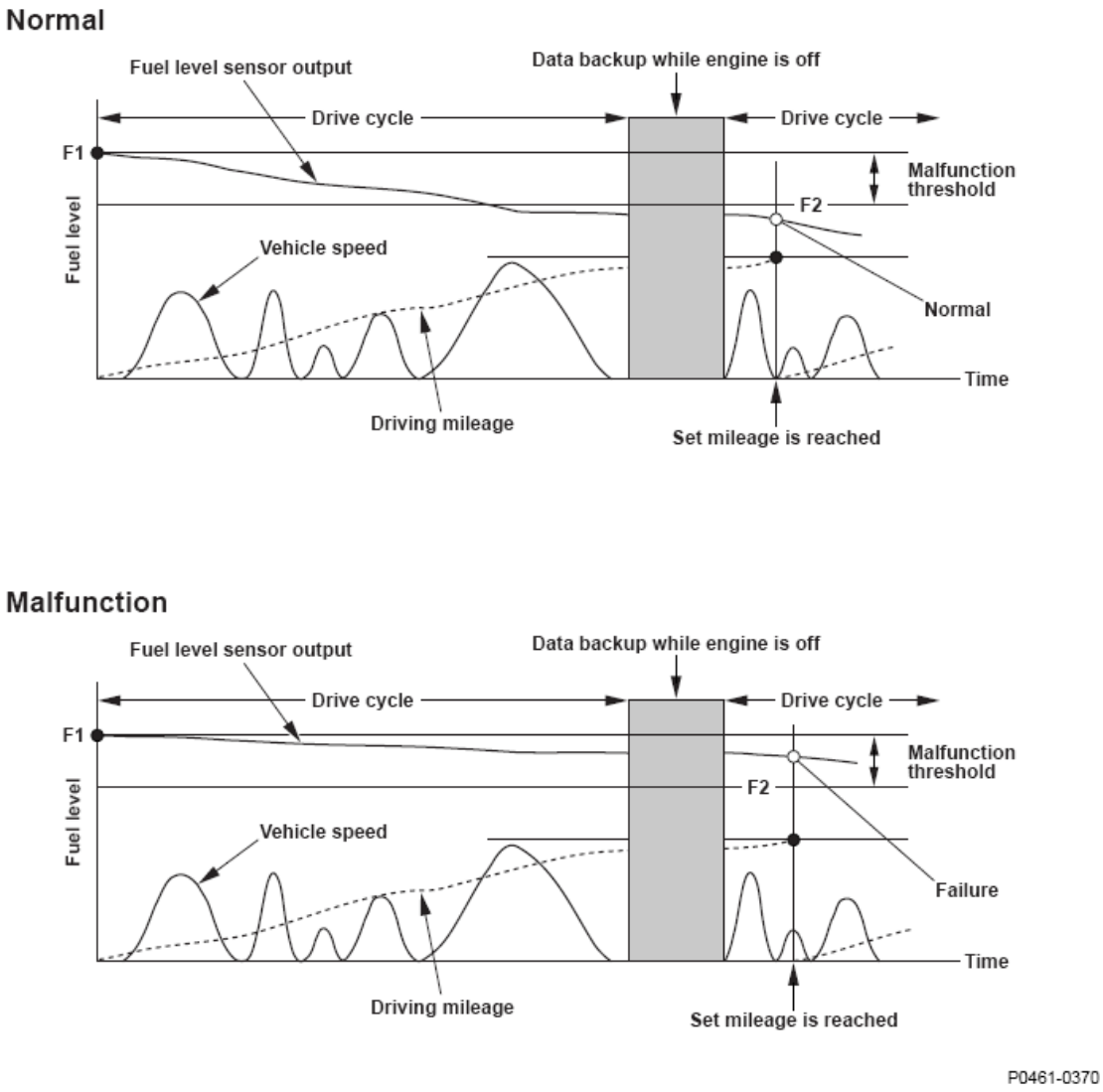


Fig. 112: Fuel Level Sensor Characteristics Curve (Normal And Malfunction)

GENERAL DESCRIPTION

The fuel level sensor is incorporated with the fuel pump and installed in the fuel tank. Using a built-in potentiometer and float, it converts the movement of the float into electrical signals that correspond to the fuel level, and it indicates the amount of fuel in the fuel tank. If the engine control module (ECM)/powertrain control module (PCM) receives no change in the fuel level sensor output after driving for a specified number of miles, it detects a malfunction and stores a DTC.

MONITOR EXECUTION, SEQUENCE, DURATION, DTC TYPE, OBD STATUS

Execution	Every 125 miles (200 km)
Sequence	P0455 or P0456 is judged as NG
Duration	-
DTC Type	One drive cycle, MIL off

OBD Status	PASSED/FAILED/NOT COMPLETED (STILL TESTING)

ENABLE CONDITIONS

Condition	Minimum	Maximum
Mileage	125 miles (200 km)	-
No active DTCs set (prevents monitor from running)	P0462, P0463, P0720, P0722, U0029, U0155	
Other	Avoid driving and stopping on a steep road	

MALFUNCTION THRESHOLD

The change in the fuel level sensor output is 3.5 % or less.

DRIVING PATTERN

Drive for 125 miles (200 km) or more under Enable Conditions (see "Other") without refueling (turning the ignition switch to LOCK (0) or pressing the engine start/stop button to select the OFF mode is acceptable).

- Drive the vehicle in this manner only if the traffic regulations and ambient conditions allow.

DIAGNOSIS DETAILS

Conditions for setting the DTC

When a malfunction is detected in a certain drive cycle and a malfunction of 0.02 inch leak is detected in the same drive cycle, and DTC P0456 is stored, a Pending DTC, a Confirmed DTC, and the freeze data are stored in the ECM/PCM memory. The MIL does not come on.

Conditions for clearing the DTC

The Pending DTC, Confirmed DTC and the freeze data can be cleared with the scan tool Clear command or by disconnecting the battery.

DTC P0462: FUEL LEVEL SENSOR (FUEL GAUGE SENDING UNIT) CIRCUIT LOW VOLTAGE

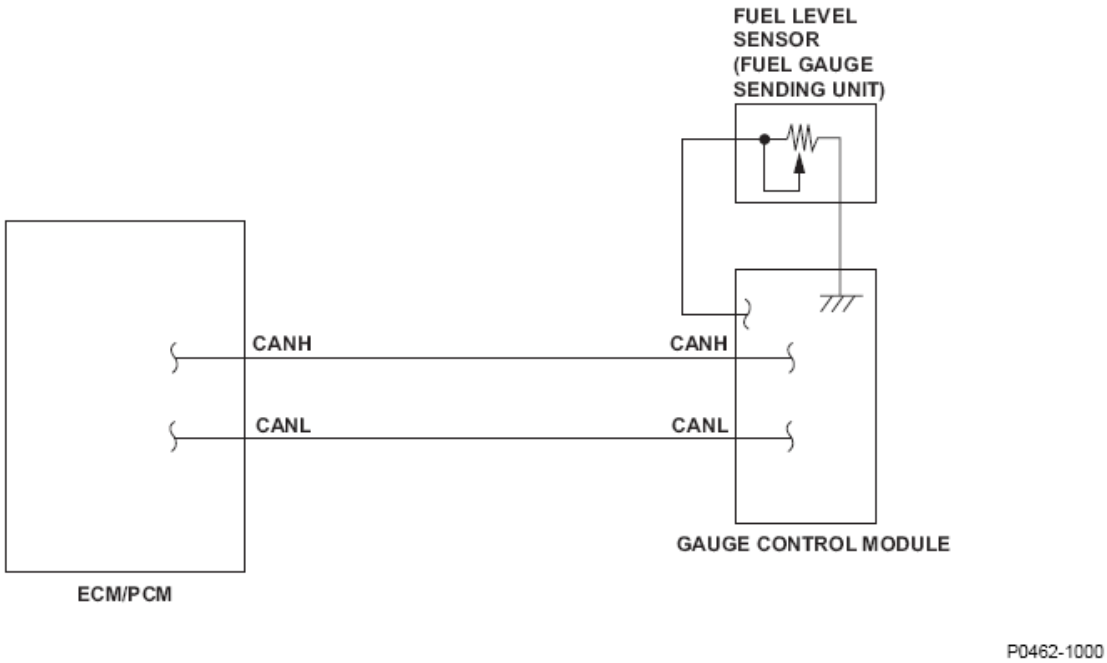


Fig. 113: Fuel Level Sensor - Circuit Diagram

GENERAL DESCRIPTION

The fuel level sensor (fuel gauge sending unit) is incorporated into the fuel pump and installed in the fuel tank. Using a built-in potentiometer and float, it converts the movement of the float to electrical signals as an output that corresponds to fuel level variations in the fuel tank. The fuel level, which is indicated by the gauge control module, is sent to the engine control module (ECM)/powertrain control module (PCM) via the controller area network (CAN). If the ECM/PCM detects a signal from the fuel level sensor (fuel gauge sending unit) below a predetermined value for a set time, it detects a malfunction and stores a DTC.

MONITOR EXECUTION, SEQUENCE, DURATION, DTC TYPE, OBD STATUS

Execution	Continuous
Sequence	None
Duration	5 seconds or more
DTC Type	Two drive cycles, MIL off
OBD Status	PASSED/FAILED/NOT COMPLETED (STILL TESTING)

ENABLE CONDITIONS

Condition	Minimum	Maximum
Battery voltage	10.0 V	-
Ignition switch(1)	ON (II)	
Engine start/stop button(2)	ON mode	
No active DTCs set (prevents monitor from running)	P0463, U0029, U0155	

(1) Without keyless access system

(2) With keyless access system

MALFUNCTION THRESHOLD

The fuel level sensor (fuel gauge sending unit) output voltage is 0.10 V or less for at least 5 seconds.

DIAGNOSIS DETAILS

Conditions for setting the DTC

When a malfunction is detected during the first drive cycle, a Pending DTC is stored in the ECM/PCM memory. If the malfunction returns in the next (second) drive cycle, a Confirmed DTC and the freeze data are stored. The MIL does not come on.

Conditions for clearing the DTC

The Pending DTC, the Confirmed DTC, and the freeze data can be cleared with the scan tool Clear command or by disconnecting the battery.

DTC P0463: FUEL LEVEL SENSOR (FUEL GAUGE SENDING UNIT) CIRCUIT HIGH VOLTAGE

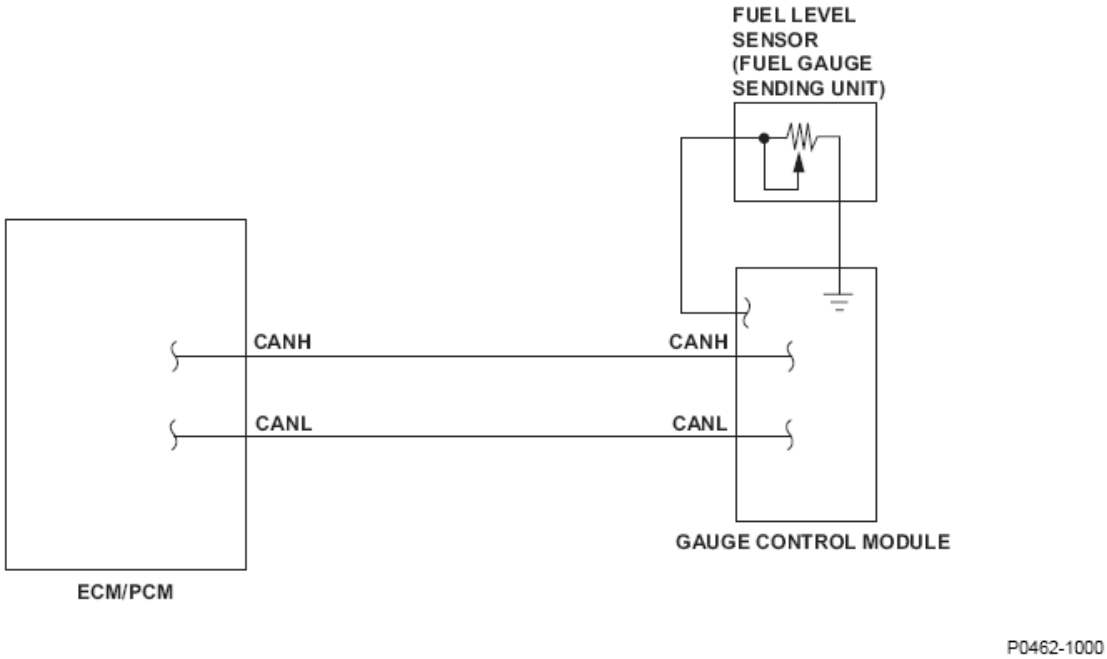


Fig. 114: Fuel Level Sensor - Circuit Diagram

GENERAL DESCRIPTION

The fuel level sensor (fuel gauge sending unit) is incorporated into the fuel pump and installed in the fuel tank. Using a built-in potentiometer and float, it converts the movement of the float to electrical signals as an output that corresponds to fuel level variations in the fuel tank. The fuel level, which is indicated by the gauge control module, is sent to the engine control module (ECM)/powertrain control module (PCM) via the controller area network (CAN). If the ECM/PCM detects a signal from the fuel level sensor (fuel gauge sending unit) above a predetermined value for a set time, it detects a malfunction and stores a DTC.

MONITOR EXECUTION, SEQUENCE, DURATION, DTC TYPE, OBD STATUS

Execution	Continuous
Sequence	None
Duration	5 seconds or more
DTC Type	Two drive cycles, MIL off
OBD Status	PASSED/FAILED/NOT COMPLETED (STILL TESTING)

ENABLE CONDITIONS

Condition	Minimum	Maximum
Battery voltage	10.0 V	-
Ignition switch(1)	ON (II)	
Engine start/stop button(2)	ON mode	
No active DTCs set (prevents monitor from running)	P0462, U0029, U0155	
(1) Without keyless access system (2) With keyless access system		

MALFUNCTION THRESHOLD

The fuel level sensor (fuel gauge sending unit) output voltage is 4.92 V or more for at least 5 seconds.

DIAGNOSIS DETAILS

Conditions for setting the DTC

When a malfunction is detected during the first drive cycle, a Pending DTC is stored in the ECM/PCM memory. If the malfunction returns in the next (second) drive cycle, a Confirmed DTC and the freeze data are stored. The MIL does not come on.

Conditions for clearing the DTC

The Pending DTC, the Confirmed DTC, and the freeze data can be cleared with the scan tool Clear command or by disconnecting the battery.

DTC P0496: EVAPORATIVE EMISSION (EVAP) SYSTEM HIGH PURGE FLOW DETECTED

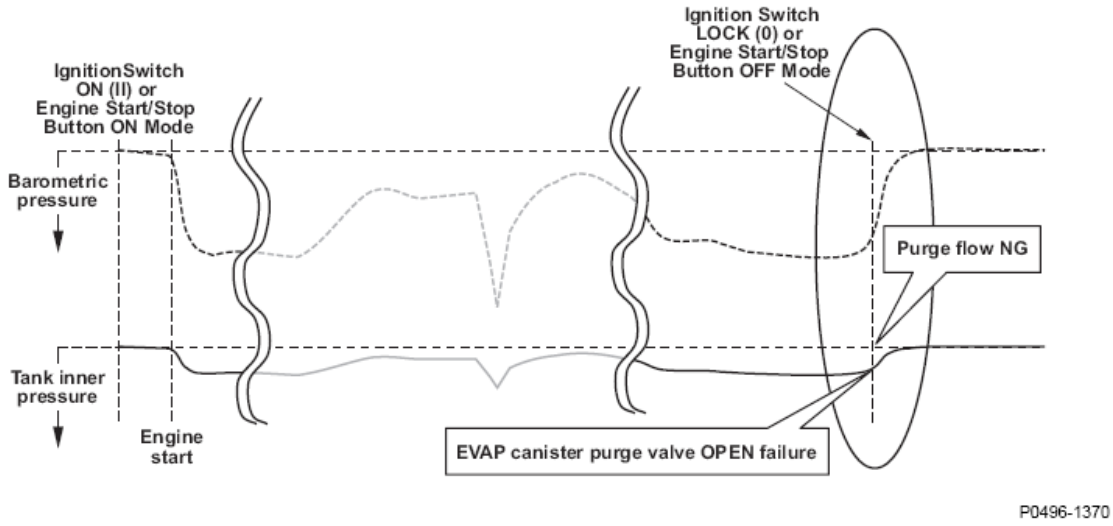


Fig. 115: Evaporative Emission System Characteristics Curve

GENERAL DESCRIPTION

The fuel vapor in the fuel tank is temporarily stored in the evaporative emission (EVAP) canister and drawn into the engine through the EVAP canister purge valve. The engine control module (ECM)/powertrain control module (PCM) controls the amount of vapor introduced into the engine by varying the duty cycle of the EVAP canister purge valve according to the condition of the engine.

< STEP 1 >

The EVAP canister purge valve opens normally (EVAP canister purge valve OPEN OK) and detects that the purge flow is normal when the pulse of the EVAP canister purge valve duty cycle is transmitted to the fuel tank pressure (FTP) sensor during purge flow (pulse method).

OK determination: Pulse exists (P145C OK)

- P0497 Purge flow OK
- P0496 EVAP canister purge valve stuck Open OK

NG determination: No pulse (P145C NG)

- Either purge flow P0497 abnormality or P0496 EVAP canister purge valve OPEN failure.
- In this case, classify the failed part according to < STEP 2 >.

< STEP 2 >

If there is no pulse, it is determined as either no purge flow or the EVAP canister purge valve is stuck OPEN: When the FTP sensor fluctuates from negative pressure to atmospheric pressure after the ignition switch is turned to LOCK (0) or the engine start/stop button is pressed to select the OFF mode: P0496 EVAP canister purge valve stuck OPEN When there is no fluctuation of the FTP sensor: P0497 purge flow NG

MONITOR EXECUTION, SEQUENCE, DURATION, DTC TYPE, OBD STATUS

Execution	Once per driving cycle
Sequence	P145C is judged as NG
Duration	-
DTC Type	Two drive cycles, MIL on
OBD Status	PASSED/FAILED/NOT COMPLETED (STILL TESTING)

ENABLE CONDITIONS

Condition	Minimum	Maximum
Low load duration time	10 seconds	-
Wait for stability after the ignition switch is turned to LOCK (0) or the engine start/stop button is pressed to select the OFF mode	10 seconds	-
Engine coolant temperature before EVAP purge control starts	140 °F (60 °C)	-
No active DTCs set (prevents monitor from running)	P0101, P0102, P0103, P0107, P0108, P0117, P0118, P0134, P0135, P0154, P0155, P0300, P0301, P0302, P0303, P0304, P0305, P0306, P0335, P0339, P0351, P0352, P0353, P0354, P0355, P0356, P0443, P0451, P0452, P0453, P0498, P0499, P0685, P1128, P1129, P1172, P1174, P1454, P2195, P2197, P2227, P2228, P2229, P2237, P2238, P2240, P2241, P2243, P2245, P2247, P2249, P2251, P2252, P2254, P2255, P2279, P2422	

MALFUNCTION THRESHOLD

The output from the FTP sensor is 0.3 kPa (0.08 inHg, 2 mmHg) or more for at least 10 seconds.

CONFIRMATION PROCEDURE WITH THE HDS

Do the EVAP FUNCTION TEST in the INSPECTION MENU with the HDS.

DRIVING PATTERN

1. Start the engine. Hold the engine speed at 3,000 rpm without load (A/T in P or N, M/T in neutral) until the radiator fan comes on.
2. Let the engine idle for at least 64 seconds.
3. Turn the ignition switch to LOCK (0) or press the engine start/stop button to select the OFF mode for at least 10 seconds.

DIAGNOSIS DETAILS

Conditions for setting the DTC

When a malfunction is detected during the first drive cycle, a Pending DTC is stored in the ECM/PCM memory. If the malfunction returns in the next (second) drive cycle, the MIL comes on and a Confirmed DTC and the freeze data are stored.

Conditions for clearing the DTC

The MIL is cleared if the malfunction does not return in three consecutive trips in which the diagnostic runs. The MIL, the Pending DTC, the Confirmed DTC, and the freeze data can be cleared with the scan tool Clear command or by disconnecting the battery.

DTC P0497: EVAPORATIVE EMISSION (EVAP) SYSTEM LOW PURGE FLOW DETECTED

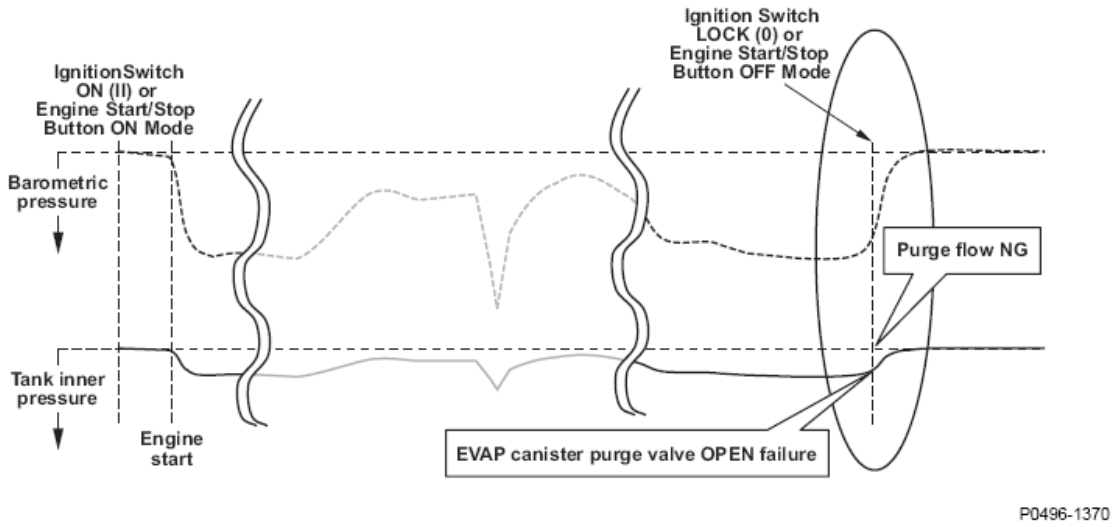


Fig. 116: Evaporative Emission System Characteristics Curve

GENERAL DESCRIPTION

The fuel vapor in the fuel tank is temporarily stored in the evaporative emission (EVAP) canister and drawn into the engine through the EVAP canister purge valve. The engine control module (ECM)/powertrain control module (PCM) controls the amount of vapor introduced into the engine by varying the duty cycle of the EVAP canister purge valve according to the condition of the engine.

< STEP 1 >

The EVAP canister purge valve opens normally (EVAP canister purge valve OPEN OK) and detects that the purge flow is normal when the pulse of the EVAP canister purge valve duty cycle is transmitted to the fuel tank pressure (FTP) sensor during purge flow (pulse method).

OK determination: Pulse exists (P145C OK)

- P0497 Purge flow OK
- P0496 EVAP canister purge valve stuck OPEN OK

NG determination: No pulse (P145C NG)

- Either purge flow P0497 abnormality or P0496 EVAP canister purge valve OPEN failure.
- In this case, classify the failed part according to < STEP 2 >.

< STEP 2 >

If there is no pulse, it is determined as either no purge flow or the EVAP canister purge valve is stuck OPEN: When the FTP sensor fluctuates from negative pressure to atmospheric pressure after the ignition switch is turned to LOCK (0) or the engine start/stop button is pressed to select the OFF mode: P0496 EVAP canister purge valve stuck OPEN When there is no fluctuation of the FTP sensor: P0497 purge flow NG

MONITOR EXECUTION, SEQUENCE, DURATION, DTC TYPE, OBD STATUS

Execution	Once per driving cycle
Sequence	P145C is judged as NG
Duration	-
DTC Type	Two drive cycles, MIL on
OBD Status	PASSED/FAILED/NOT COMPLETED (STILL TESTING)

ENABLE CONDITIONS

Condition	Minimum	Maximum
Low load duration time	10 seconds	-
Wait for stability after the ignition switch is turned to LOCK (0) or engine start/stop button is pressed to select the OFF mode	10 seconds	-
Engine coolant temperature before EVAP purge control start	140 °F (60 °C)	-
No active DTCs set (prevents monitor from running)	P0101, P0102, P0103, P0107, P0108, P0117, P0118, P0134, P0135, P0154, P0155, P0300, P0301, P0302, P0303, P0304, P0305, P0306, P0335, P0339, P0351, P0352, P0353, P0354, P0355, P0356, P0443, P0451, P0452, P0453, P0496, P0498, P0499, P0685, P1128, P1129, P1172, P1174, P1454, P2195, P2197, P2227, P2228, P2229, P2237, P2238, P2240, P2241, P2243, P2245, P2247, P2249, P2251, P2252, P2254, P2255, P2279, P2422	

MALFUNCTION THRESHOLD

The output from the FTP sensor is less than 0.2 kPa (0.07 inHg, 2 mmHg) for at least 10 seconds.

CONFIRMATION PROCEDURE WITH THE HDS

Do the EVAP FUNCTION TEST in the INSPECTION MENU with the HDS.

DRIVING PATTERN

1. Start the engine. Hold the engine speed at 3,000 rpm without load (A/T in P or N, M/T in neutral) until the radiator fan comes on.
2. Let the engine idle for at least 64 seconds.
3. Turn the ignition switch to LOCK (0) or press the engine start/stop button to select the OFF mode for at least 10 seconds.

DIAGNOSIS DETAILS

Conditions for setting the DTC

When a malfunction is detected during the first drive cycle, a Pending DTC is stored in the ECM/PCM memory. If the malfunction returns in the next (second) drive cycle, the MIL comes on and a Confirmed DTC and the freeze data are stored.

Conditions for clearing the DTC

The MIL is cleared if the malfunction does not return in three consecutive trips in which the diagnostic runs. The MIL, the Pending DTC, the Confirmed DTC, and the freeze data can be cleared with the scan tool Clear command or by disconnecting the battery.

DTC P0498: EVAPORATIVE EMISSION (EVAP) CANISTER VENT SHUT VALVE CIRCUIT LOW VOLTAGE

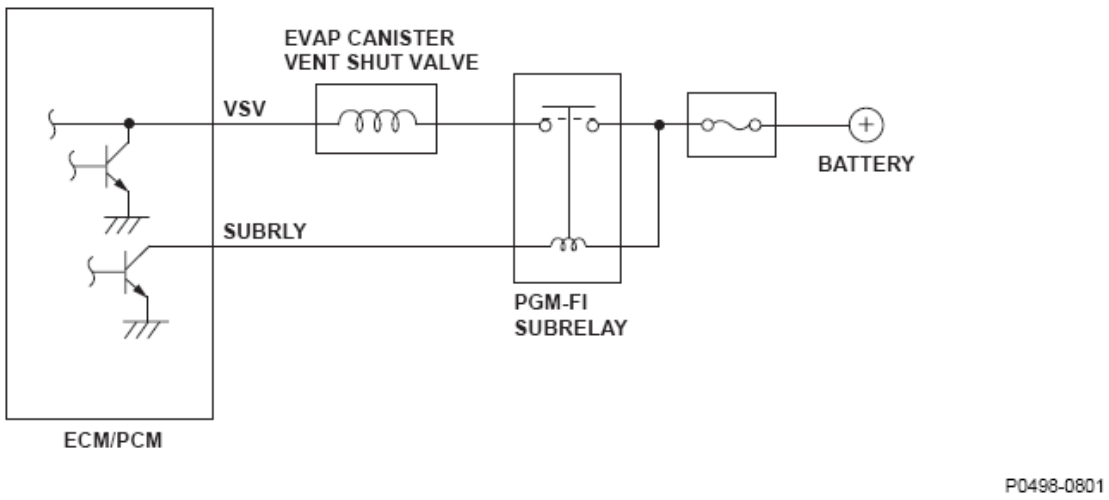


Fig. 117: Evaporative Emission Canister Vent Shut Valve - Circuit Diagram

GENERAL DESCRIPTION

The evaporative emission (EVAP) canister vent shut valve is attached to the EVAP canister to control the venting of the EVAP canister to atmosphere. The EVAP canister vent shut valve is open (open to atmosphere) when the VSV signal is OFF. If the return signal is "OFF" when the engine control module (ECM)/powertrain control module (PCM) outputs the "ON" signal to the EVAP canister vent shut valve, the ECM/PCM detects a malfunction and stores a DTC.

MONITOR EXECUTION, SEQUENCE, DURATION, DTC TYPE, OBD STATUS

Execution	Continuous
Sequence	None
Duration	5 seconds or more
DTC Type	Two drive cycles, MIL on
OBD Status	PASSED/FAILED/NOT COMPLETED (STILL TESTING)

ENABLE CONDITIONS

Condition	Minimum	Maximum
Battery voltage	10.0 V	-
State of the engine	Running	
No active DTCs set (prevents monitor from running)	P0499	

MALFUNCTION THRESHOLD

The return signal is "OFF" for at least 5 seconds when the ECM/PCM outputs the "ON" signal to the EVAP canister vent shut valve.

CONFIRMATION PROCEDURE WITH THE HDS

Do the EVAP CVS ON in the INSPECTION MENU with the HDS.

DIAGNOSIS DETAILS

Conditions for setting the DTC

When a malfunction is detected during the first drive cycle, a Pending DTC is stored in the ECM/PCM memory. If the malfunction returns in the next (second) drive cycle, the MIL comes on and a Confirmed DTC and the freeze data are stored.

Conditions for clearing the DTC

The MIL is cleared if the malfunction does not return in three consecutive trips in which the diagnostic runs. The MIL, the Pending DTC, the Confirmed DTC, and the freeze data can be cleared with the scan tool Clear command or by disconnecting the battery.

DTC P0499: EVAPORATIVE EMISSION (EVAP) CANISTER VENT SHUT

VALVE CIRCUIT HIGH VOLTAGE

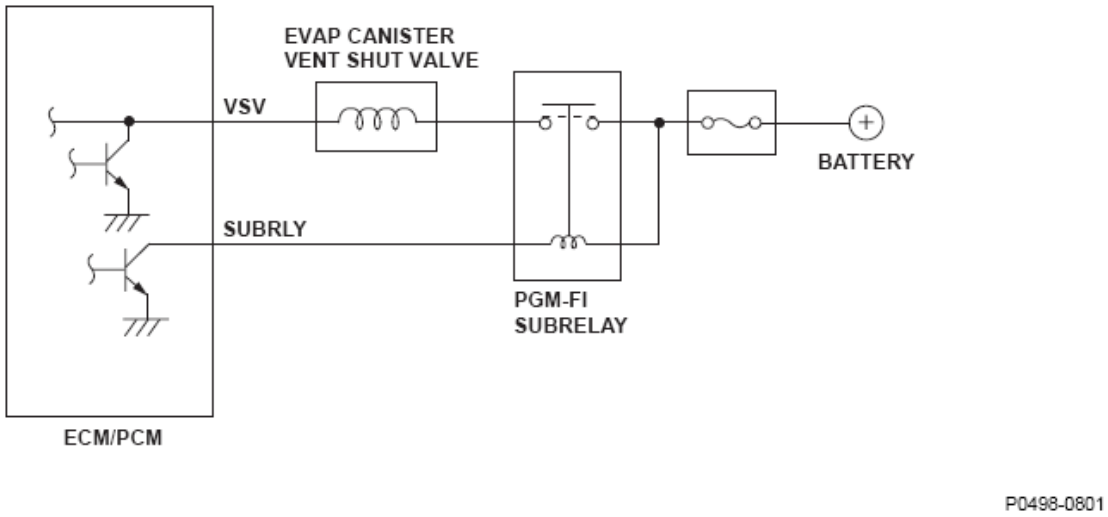


Fig. 118: Evaporative Emission Canister Vent Shut Valve - Circuit Diagram

GENERAL DESCRIPTION

The evaporative emission (EVAP) canister vent shut valve is attached to the EVAP canister to control the venting of the EVAP canister to atmosphere. The EVAP canister vent shut valve is open (open to atmosphere) when the VSV signal is OFF. If the return signal is "ON" when the engine control module (ECM)/powertrain control module (PCM) outputs the "OFF" signal to the EVAP canister vent shut valve, the ECM/PCM detects a malfunction and stores a DTC.

MONITOR EXECUTION, SEQUENCE, DURATION, DTC TYPE, OBD STATUS

Execution	Continuous
Sequence	None
Duration	5 seconds or more
DTC Type	Two drive cycles, MIL on
OBD Status	PASSED/FAILED/NOT COMPLETED (STILL TESTING)

ENABLE CONDITIONS

Condition	Minimum	Maximum
Battery voltage	10.0 V	-
State of the engine	Running	
No active DTCs set (prevents monitor from running)	P0498	

MALFUNCTION THRESHOLD

The return signal is "ON" for at least 5 seconds when the ECM/PCM outputs the "OFF" signal to the EVAP

canister vent shut valve.

CONFIRMATION PROCEDURE WITH THE HDS

Do the EVAP CVS ON in the INSPECTION MENU with the HDS.

DIAGNOSIS DETAILS

Conditions for setting the DTC

When a malfunction is detected during the first drive cycle, a Pending DTC is stored in the ECM/PCM memory. If the malfunction returns in the next (second) drive cycle, the MIL comes on and a Confirmed DTC and the freeze data are stored.

Conditions for clearing the DTC

The MIL is cleared if the malfunction does not return in three consecutive trips in which the diagnostic runs. The MIL, the Pending DTC, the Confirmed DTC, and the freeze data can be cleared with the scan tool Clear command or by disconnecting the battery.

DTC P0506: IDLE CONTROL SYSTEM RPM LOWER THAN EXPECTED

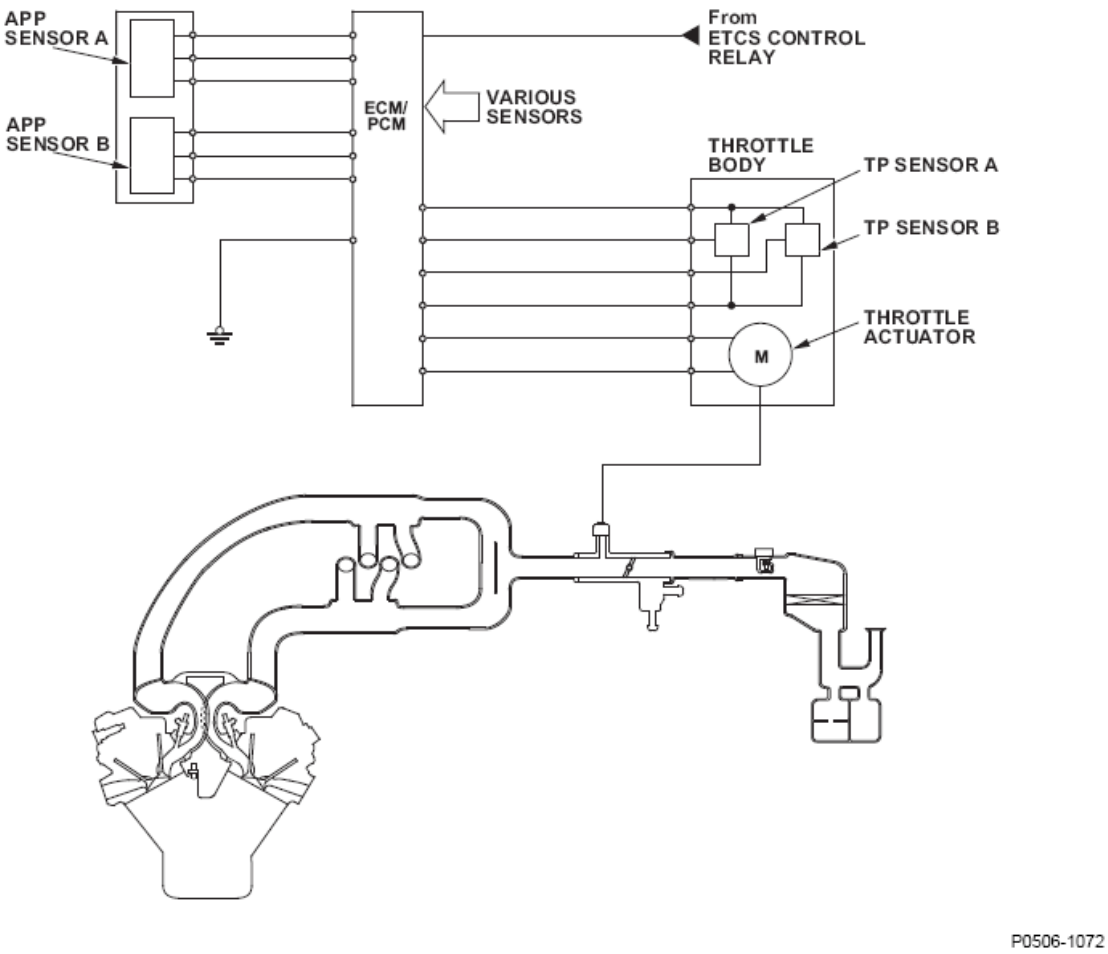


Fig. 119: Overview Of Idle Control System

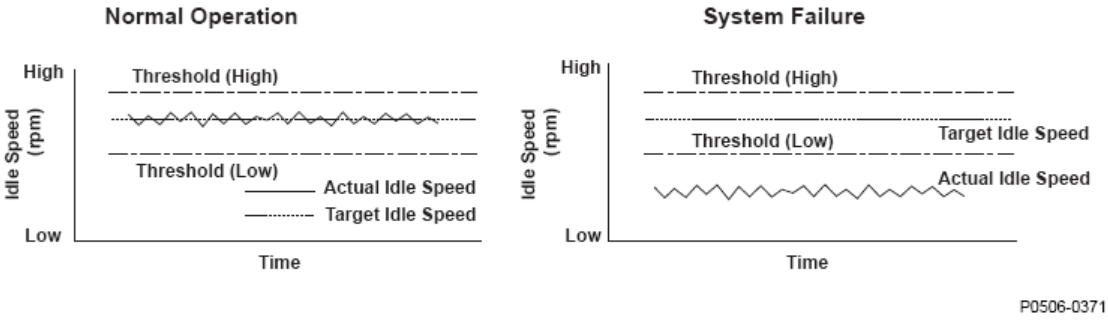


Fig. 120: Idle Control System Characteristics Curve (Normal And Failure)

GENERAL DESCRIPTION

A target idle speed that meets the engine operating conditions (coolant temperature, A/C ON or OFF, etc.) is stored in the engine control module (ECM)/powertrain control module (PCM). The ECM/PCM monitors and controls the idle speed so that the actual idle speed is equal to the target idle speed. If the actual idle speed varies beyond a specified value from the target speed over a certain period of time, the ECM/PCM detects a malfunction in the idle speed control system and stores a DTC.

MONITOR EXECUTION, SEQUENCE, DURATION, DTC TYPE, OBD STATUS

Execution	Once per driving cycle
Sequence	None
Duration	20 seconds or more
DTC Type	Two drive cycles, MIL on
OBD Status	PASSED/FAILED/EXECUTING/OUT OF (TEST) CONDITION

ENABLE CONDITIONS

Condition	Minimum	Maximum
Engine coolant temperature	156 °F (69 °C)	-
Intake air temperature	19 °F (-7 °C)	-
Battery voltage	10.5 V	-
Fuel trim	0.73	1.47
Fuel feedback	Closed loop	
Throttle position	Fully closed	
No active DTCs set (prevents monitor from running)	P0107, P0108, P0112, P0113, P0117, P0118, P0122, P0123, P0171, P0172, P0174, P0175, P0222, P0223, P0300, P0301, P0302, P0303, P0304, P0305, P0306, P0351, P0352, P0353, P0354, P0355, P0356, P0401, P0404, P0443, P0496, P0497, P0720, P0722, P1128, P1129, P145C, P2101, P2118, P2122, P2123, P2127, P2128, P2135, P2138, P2176, P2227, P2228, P2229, P2413, P2646, P2647, P2648, P2649	
Other	The engine is under no load	

MALFUNCTION THRESHOLD

The actual idle speed is 100 rpm less than the target idle speed for at least 20 seconds.

DRIVING PATTERN

1. Start the engine. Hold the engine speed at 3,000 rpm without load (A/T in P or N, M/T in neutral) until the radiator fan comes on.
2. Let the engine idle for at least 20 seconds.

DIAGNOSIS DETAILS

Conditions for setting the DTC

When a malfunction is detected during the first drive cycle, a Pending DTC is stored in the ECM/PCM memory. If the malfunction returns in the next (second) drive cycle, the MIL comes on and a Confirmed DTC and the freeze data are stored.

Conditions for clearing the DTC

The MIL is cleared if the malfunction does not return in three consecutive trips in which the diagnostic runs. The MIL, the Pending DTC, the Confirmed DTC, and the freeze data can be cleared with the scan tool Clear command or by disconnecting the battery.

DTC P0507: IDLE CONTROL SYSTEM RPM HIGHER THAN EXPECTED

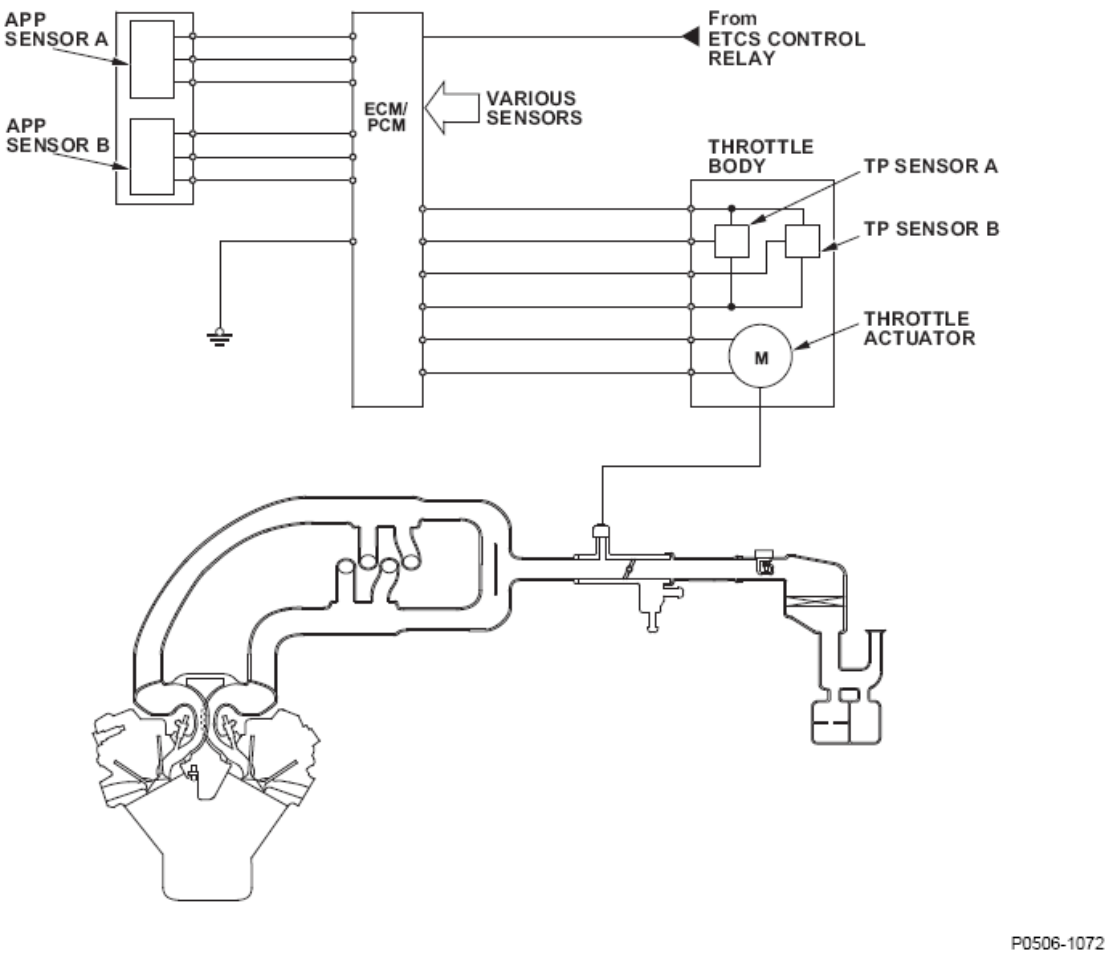


Fig. 121: Overview Of Idle Control System

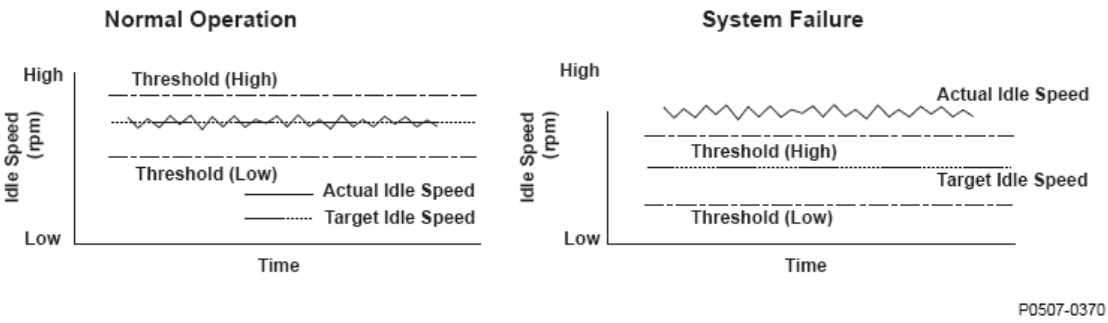


Fig. 122: Idle Control System Characteristics Curve (Normal And Failure)

GENERAL DESCRIPTION

A target idle speed that meets the engine operating conditions (coolant temperature, A/C ON or OFF, etc.) is stored in the engine control module (ECM)/powertrain control module (PCM). The ECM/PCM monitors and controls the idle speed so that the actual idle speed is equal to the target idle speed. If the actual idle speed varies beyond a specified value from the target speed over a certain period of time, the ECM/PCM detects a malfunction in the idle speed control system and stores a DTC.

MONITOR EXECUTION, SEQUENCE, DURATION, DTC TYPE, OBD STATUS

Execution	Once per driving cycle
Sequence	None
Duration	20 seconds or more
DTC Type	Two drive cycles, MIL on
OBD Status	PASSED/FAILED/EXECUTING/OUT OF (TEST) CONDITION

ENABLE CONDITIONS

Condition	Minimum	Maximum
Engine coolant temperature	156 °F (69 °C)	-
Intake air temperature	19 °F (-7 °C)	-
Battery voltage	10.5 V	-
Fuel trim	0.73	1.47
Fuel feedback	Closed loop	
Throttle position	Fully closed	
No active DTCs set (prevents monitor from running)	P0107, P0108, P0112, P0113, P0117, P0118, P0122, P0123, P0171, P0172, P0174, P0175, P0222, P0223, P0300, P0301, P0302, P0303, P0304, P0305, P0306, P0351, P0352, P0353, P0354, P0355, P0356, P0401, P0404, P0443, P0496, P0497, P0720, P0722, P1128, P1129, P145C, P2101, P2118, P2122, P2123, P2127, P2128, P2135, P2138, P2176, P2227, P2228, P2229, P2413, P2646, P2647, P2648, P2649	
Other	The engine is under no load	

MALFUNCTION THRESHOLD

The actual idle speed is 200 rpm greater than the target idle speed for at least 20 seconds.

DRIVING PATTERN

1. Start the engine. Hold the engine speed at 3,000 rpm without load (A/T in P or N, M/T in neutral) until the radiator fan comes on.
2. Let the engine idle for at least 20 seconds.

DIAGNOSIS DETAILS

Conditions for setting the DTC

When a malfunction is detected during the first drive cycle, a Pending DTC is stored in the ECM/PCM memory. If the malfunction returns in the next (second) drive cycle, the MIL comes on and a Confirmed DTC and the freeze data are stored.

Conditions for clearing the DTC

The MIL is cleared if the malfunction does not return in three consecutive trips in which the diagnostic runs. The MIL, the Pending DTC, the Confirmed DTC, and the freeze data can be cleared with the scan tool Clear command or by disconnecting the battery.

DTC P050A: COLD START IDLE AIR CONTROL SYSTEM PERFORMANCE PROBLEM

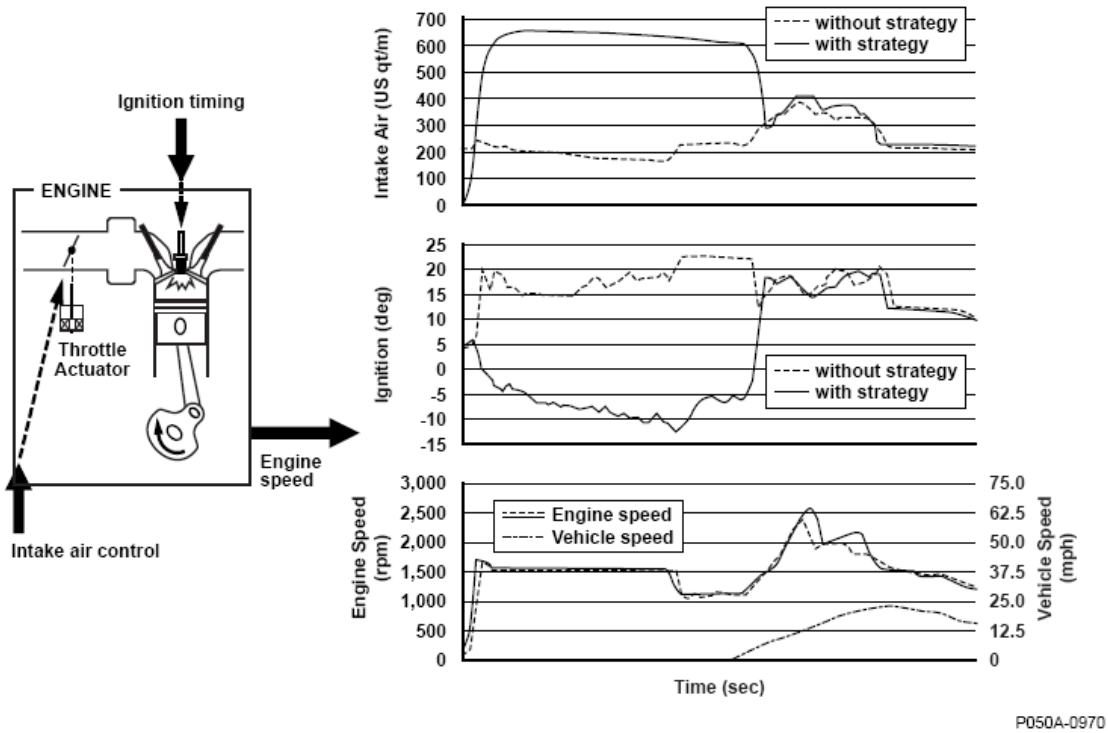


Fig. 123: Cold Start Idle Air Control System Characteristics Curve

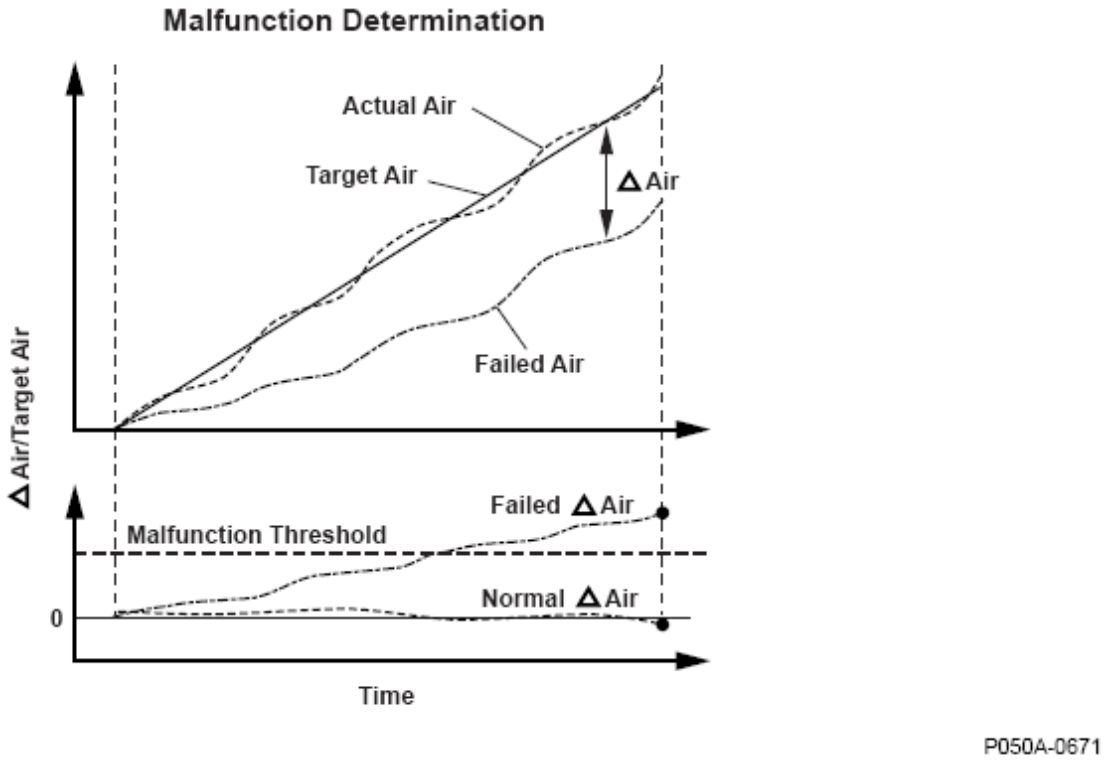


Fig. 124: Cold Start Idle Air Control System Malfunction Determination Graph

GENERAL DESCRIPTION

The quick warm-up system supplies additional air and retards the ignition timing when the engine is cold to activate the catalytic converter as quickly as possible. When the actual amount of air is less than the target amount, the engine control module (ECM)/powertrain control module (PCM) detects a malfunction and stores a DTC.

MONITOR EXECUTION, SEQUENCE, DURATION, DTC TYPE, OBD STATUS

Execution	Once per driving cycle
Sequence	None
Duration	10 seconds or more
DTC Type	Two drive cycles, MIL on
OBD Status	PASSED/FAILED/EXECUTING/OUT OF (TEST) CONDITION

ENABLE CONDITIONS

Condition	Minimum	Maximum
Duration of quick warm-up system operation after engine start-up	-	35 seconds

Engine coolant temperature	41 °F (5 °C)	131 °F (55 °C)
Throttle position Fully closed No active DTCs set (prevents monitor from running)	P0101, P0102, P0103, P0107, P0108, P0111, P0112, P0113, P0116, P0117, P0118, P0122, P0123, P0125, P0222, P0223, P0300, P0301, P0302, P0303, P0304, P0305, P0306, P0335, P0339, P0351, P0352, P0353, P0354, P0355, P0356, P0404, P0406, P0506, P0507, P060A, P0720, P0722, P1116, P1128, P1129, P1659, P2101, P2118, P2122, P2123, P2127, P2128, P2135, P2138, P2176, P2227, P2228, P2229, P2279, P2413, P2646, P2647, P2648, P2649	
Other	Vehicle stopped	

MALFUNCTION THRESHOLD

The total airflow is decreased by a factor of 0.55 for at least 10 seconds.

DRIVING PATTERN

1. Allow the engine to cool to an engine coolant temperature of 131 °F (55 °C) or less.
2. Start the engine, and let it idle for at least 10 seconds.

DIAGNOSIS DETAILS

Conditions for setting the DTC

When a malfunction is detected during the first drive cycle with the engine coolant temperature and intake air temperature at engine start-up within the specified temperature range, a Pending DTC is stored in the ECM/PCM memory. If the malfunction returns in the next (second) drive cycle with the engine coolant temperature and intake air temperature at engine start-up within the specified temperature range, the MIL comes on and a Confirmed DTC and the freeze data are stored.

Conditions for clearing the DTC

The MIL is cleared if the malfunction does not return in three consecutive trips in which the diagnostic runs. The MIL, the Pending DTC, the Confirmed DTC, and the freeze data can be cleared with the scan tool Clear command or by disconnecting the battery.

DTC P050B: COLD START IGNITION TIMING CONTROL SYSTEM PERFORMANCE PROBLEM

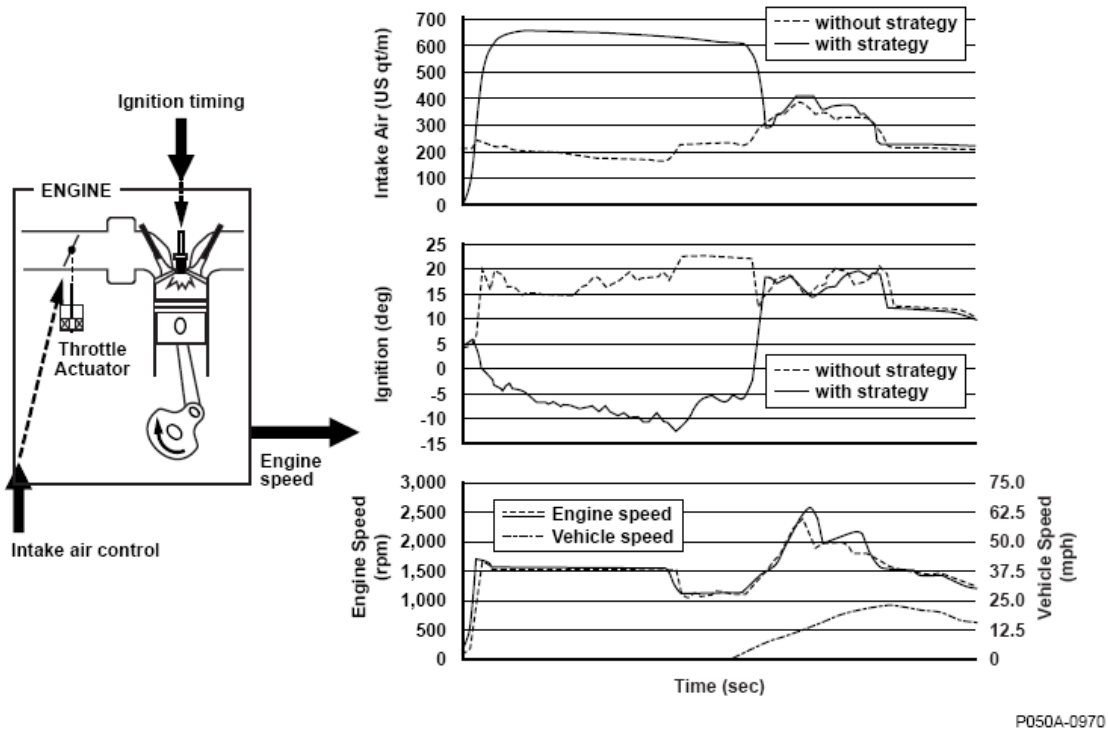


Fig. 125: Cold Start Idle Air Control System Characteristics Curve

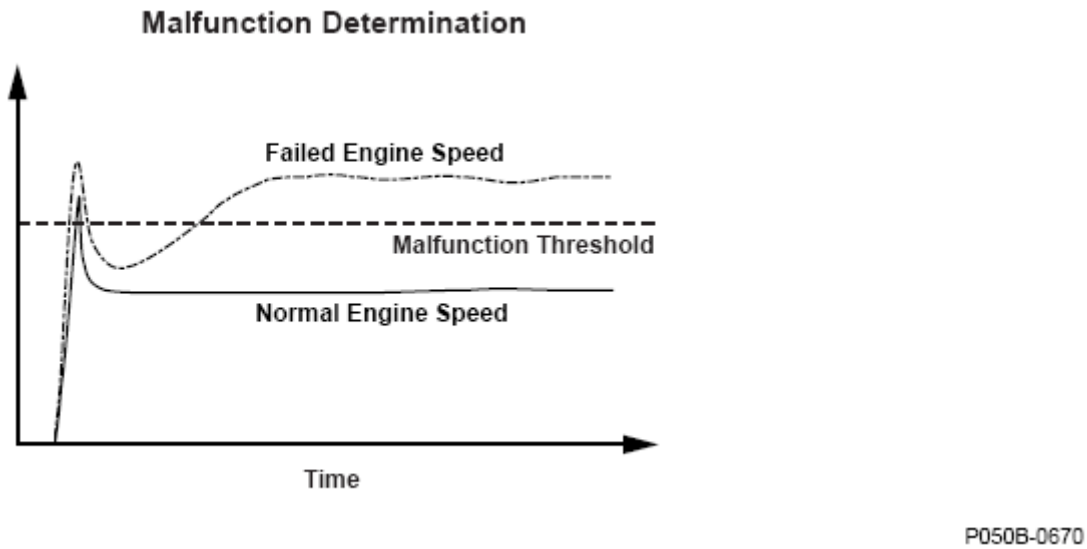


Fig. 126: Cold Start Idle Air Control System Malfunction Determination Graph

GENERAL DESCRIPTION

The quick warm-up system supplies additional air and retards the ignition timing when the engine is cold to activate the catalytic converter as quickly as possible. When the actual engine speed is a specified fast idle value, and it continues for a specified time, the engine control module (ECM)/powertrain control module (PCM) detects a malfunction and stores a DTC.

MONITOR EXECUTION, SEQUENCE, DURATION, DTC TYPE, OBD STATUS

Execution	Once per driving cycle
Sequence	None
Duration	3.5 seconds or more
DTC Type	Two drive cycles, MIL on
OBD Status	PASSED/FAILED/EXECUTING/OUT OF (TEST) CONDITION

ENABLE CONDITIONS

Condition	Minimum	Maximum
Elapsed time after starting the engine	2.5 seconds	-
Duration of quick warm-up system operation after engine start-up	-	35 seconds
Engine coolant temperature	41 °F (5 °C)	131 °F (55 °C)
Throttle position	Fully closed	
No active DTCs set (prevents monitor from running)	P0101, P0102, P0103, P0107, P0108, P0116, P0117, P0118, P0122, P0123, P0125, P0222, P0223, P0300, P0301, P0302, P0303, P0304, P0305, P0306, P0335, P0339, P0351, P0352, P0353, P0354, P0355, P0356, P0404, P0406, P0506, P0507, P060A, P0720, P0722, P1116, P1128, P1129, P1659, P2101, P2118, P2122, P2123, P2127, P2128, P2135, P2138, P2176, P2227, P2228, P2229, P2279, P2413, P2646, P2647, P2648, P2649	
Other	Vehicle stopped	

MALFUNCTION THRESHOLD

The engine speed is 2,000 rpm or more for at least 3.5 seconds.

DRIVING PATTERN

1. Allow the engine to cool to an engine coolant temperature of 131 °F (55 °C) or less.
2. Start the engine, and let it idle for at least 10 seconds.

DIAGNOSIS DETAILS

Conditions for setting the DTC

When a malfunction is detected during the first drive cycle with the engine coolant temperature and intake air temperature at engine start-up within the specified temperature range, a Pending DTC is stored in the ECM/PCM memory. If the malfunction returns in the next (second) drive cycle with the engine coolant temperature and intake air temperature at engine start-up within the specified temperature range, the MIL comes

on and a Confirmed DTC and the freeze data are stored.

Conditions for clearing the DTC

The MIL is cleared if the malfunction does not return in three consecutive trips in which the diagnostic runs. The MIL, the Pending DTC, the Confirmed DTC, and the freeze data can be cleared with the scan tool Clear command or by disconnecting the battery.

DTC P0560: ENGINE CONTROL MODULE (ECM)/POWERTRAIN CONTROL MODULE (PCM) POWER SOURCE CIRCUIT UNEXPECTED VOLTAGE

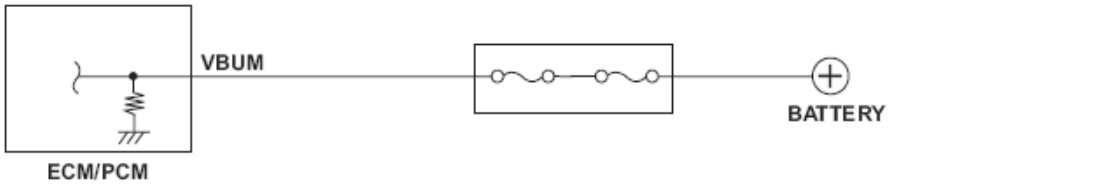


Fig. 127: Engine Control Module/Powertrain Control Module - Circuit Diagram

GENERAL DESCRIPTION

The engine control module (ECM)/powertrain control module (PCM) constantly draws power from VBUM to maintain the back-up ram. If the VBUM voltage is a set value for a specified time period, the ECM/PCM detects a malfunction and stores a DTC.

MONITOR EXECUTION, SEQUENCE, DURATION, DTC TYPE

Execution	Continuous
Sequence	None
Duration	5 seconds or more
DTC Type	One drive cycle, MIL on
OBD Status	PASSED/FAILED/NOT COMPLETED (STILL TESTING)

ENABLE CONDITIONS

Condition	
Ignition switch(1)	ON (II)
Engine start/stop button(2)	ON mode
(1) Without keyless access system (2) With keyless access system	

MALFUNCTION THRESHOLD

The back-up power supply voltage (at the VBUM terminal of the ECM/PCM) is 6.0 V or less for at least 5 seconds.

DIAGNOSIS DETAILS

Conditions for setting the DTC

When a malfunction is detected, the MIL comes on and a Pending DTC, a Confirmed DTC, and the freeze data are stored in the ECM/PCM memory.

Conditions for clearing the DTC

The MIL is cleared if the malfunction does not return in three consecutive trips in which the diagnostic runs. The MIL, the Pending DTC, the Confirmed DTC, and the freeze data can be cleared with the scan tool Clear command or by disconnecting the battery.

DTC P0562: CHARGING SYSTEM LOW VOLTAGE

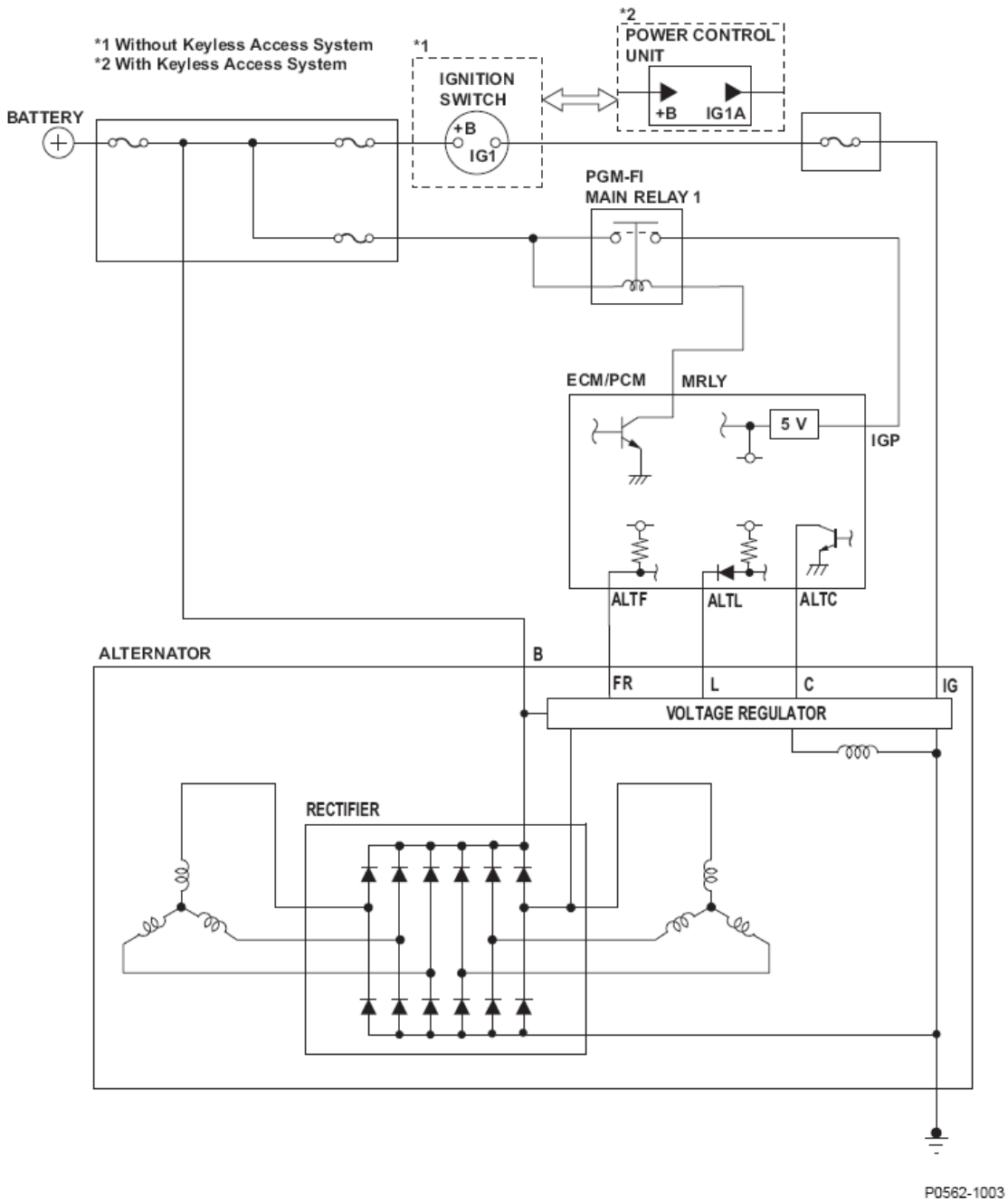


Fig. 128: Charging System - Circuit Diagram

GENERAL DESCRIPTION

The alternator is driven by the engine, and it generates electricity to supply power to the electrical system and to charge the battery. The alternator voltage target values of 14.5 V and 12.5 V are achieved by switching the alternator control mode (controlled by the engine control module (ECM)/powertrain control module (PCM)). The alternator output signal is sent to the ECM/PCM, and it varies according to the battery's state of charge, the electrical load, and the engine speed. When the IGP terminal voltage is a set value for a set time, the ECM/PCM detects a malfunction and stores a DTC.

MONITOR EXECUTION, SEQUENCE, DURATION, DTC TYPE, OBD STATUS

Execution	Continuous
Sequence	None
Duration	60 seconds or more
DTC Type	One drive cycle, MIL off
OBD Status	PASSED/FAILED/NOT COMPLETED (STILL TESTING)

ENABLE CONDITIONS

Condition	Minimum	Maximum
Engine speed	500 rpm	-

MALFUNCTION THRESHOLD

The IGP terminal voltage is 11.0 V or less for at least 60 seconds.

DIAGNOSIS DETAILS

Conditions for setting the DTC

When a malfunction is detected, a Pending DTC, a Confirmed DTC, and the freeze data are stored in the ECM/PCM memory. The MIL does not come on.

Conditions for clearing the DTC

The Pending DTC, the Confirmed DTC, and the freeze data can be cleared with the scan tool Clear command or by disconnecting the battery.

DTC P0563: ENGINE CONTROL MODULE (ECM)/POWERTRAIN CONTROL MODULE (PCM) POWER SOURCE CIRCUIT UNEXPECTED VOLTAGE

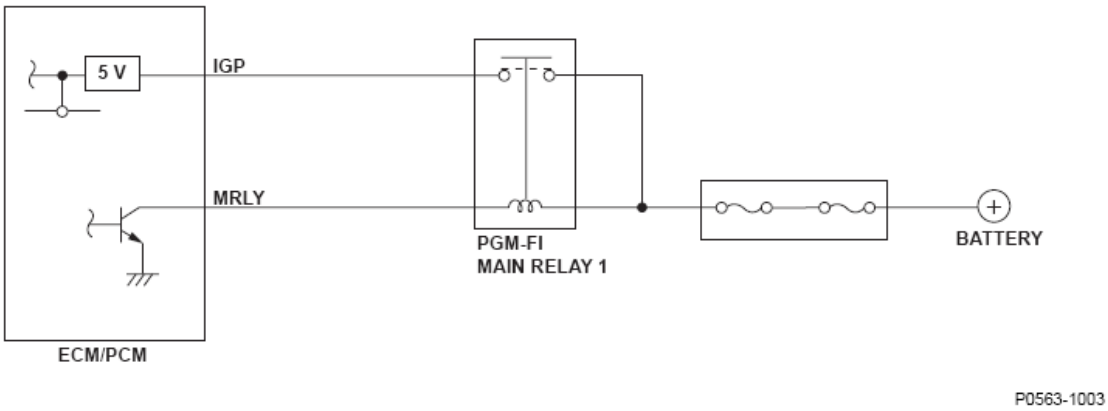


Fig. 129: Engine Control Module/Powertrain Control Module - Circuit Diagram

GENERAL DESCRIPTION

If there is a short to ground in the harness between the engine control module (ECM)/powertrain control module (PCM) and PGM-FI main relay 1, PGM-FI main relay 1 stays ON even if the ignition switch is turned to LOCK (0) or the engine start/stop button is pressed to select the OFF mode, and the ECM/PCM remains active. However, the engine is not running because power for the gauges, the ignition, and the fuel pump is turned OFF by the ignition switch. When the ECM/PCM operates for a set time after the ignition switch is turned to LOCK (0) or the engine start/stop button is pressed to select the OFF mode, it detects a malfunction and stores a DTC.

MONITOR EXECUTION, SEQUENCE, DURATION, DTC TYPE, OBD STATUS

Execution	Continuous
Sequence	None
Duration	5 seconds or more
DTC Type	Two drive cycles, MIL off
OBD Status	PASSED/FAILED/NOT COMPLETED (STILL TESTING)

ENABLE CONDITIONS

Condition	Minimum	Maximum
Battery voltage (IGP terminal of ECM/PCM)	10.0 V	-

MALFUNCTION THRESHOLD

The ECM/PCM operates for at least 5 seconds after the ignition switch is turned to LOCK (0) or the engine start/stop button is pressed to select the OFF mode.

DIAGNOSIS DETAILS

Conditions for setting the DTC

When a malfunction is detected during the first drive cycle, a Pending DTC is stored in the ECM/PCM memory. If the malfunction returns in the next (second) drive cycle, a Confirmed DTC and the freeze data are stored. The MIL does not come on.

Conditions for clearing the DTC

The Pending DTC, the Confirmed DTC, and the freeze data can be cleared with the scan tool Clear command or by disconnecting the battery.

DTC P0602: ENGINE CONTROL MODULE (ECM)/POWERTRAIN CONTROL MODULE (PCM) PROGRAMMING ERROR

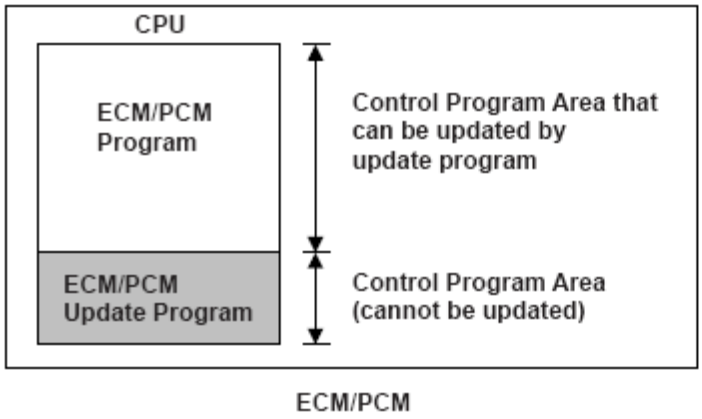


Fig. 130: Identifying ECM/PCM Control Program Area

GENERAL DESCRIPTION

The engine control module (ECM)/powertrain control module (PCM) is equipped with an update program to update its control program. The programs in the CPU of the ECM/PCM are classified as an ECM/PCM program (update-capable program) and a program for the update function (non-updatable program). The program update only updates the ECM/PCM program. When the ECM/PCM power is turned off during an update, the power for the update function is lost, and the update process stops. When the program update is stopped before it is completed, the ECM/PCM stores a DTC that indicates the update is not finished.

MONITOR EXECUTION, SEQUENCE, DURATION, DTC TYPE, OBD STATUS

Execution	Continuous
Sequence	None
Duration	1 second or less
DTC Type	One drive cycle, MIL on
OBD Status	PASSED/FAILED/NOT COMPLETED (STILL TESTING)

ENABLE CONDITIONS

Condition	
Ignition switch(1)	ON (II)
Engine start/stop button(2)	ON mode
(1) Without keyless access system (2) With keyless access system	

MALFUNCTION THRESHOLD

The ECM/PCM program update stops 1second before it is finished.

DIAGNOSIS DETAILS

Conditions for setting the DTC

When the ECM/PCM program is not written in the ECM/PCM, the MIL comes on, and a Pending DTC and a Confirmed DTC are stored in the ECM/PCM memory.

Conditions for clearing the DTC

The MIL, the Pending DTC, and the Confirmed DTC are cleared when the ECM/PCM program update is completed.

DTC P060A: ENGINE CONTROL MODULE (ECM)/POWERTRAIN CONTROL MODULE (PCM) INTERNAL CONTROL MODULE MALFUNCTION

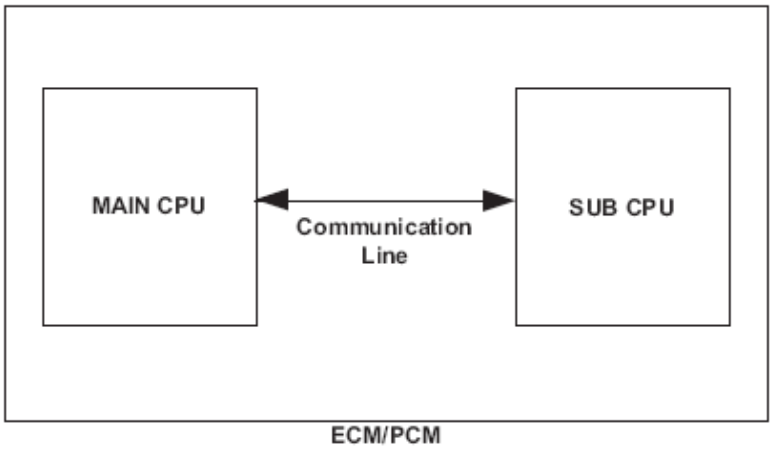


Fig. 131: ECM/PCM Communication Diagram

GENERAL DESCRIPTION

When a malfunction occurs in the communication line between the main CPU and the sub CPU in the engine control module (ECM)/powertrain control module (PCM), no monitor signals from the sub CPU are detected for a set time, or abnormal signals are detected for a set time, the ECM/PCM detects a malfunction and stores a DTC.

MONITOR EXECUTION, SEQUENCE, DURATION, DTC TYPE, OBD STATUS

Execution	Continuous
Sequence	None
Duration	0.5 second or more
DTC Type	One drive cycle, MIL on
OBD Status	PASSED/FAILED/NOT COMPLETED (STILL TESTING)

ENABLE CONDITIONS

Condition	
Ignition switch(1)	ON (II)
Engine start/stop button(2)	ON mode
(1) Without keyless access system (2) With keyless access system	

MALFUNCTION THRESHOLD

One of these conditions is met for at least 0.5 second:

- No sub CPU monitor signals are detected.
- Sub CPU monitor signals are abnormal.

DIAGNOSIS DETAILS

Conditions for setting the DTC

When a malfunction is detected, the MIL comes on and a Pending DTC, a Confirmed DTC, and the freeze data are stored in the ECM/PCM memory.

Conditions for clearing the DTC

The MIL is cleared if the malfunction does not return in three consecutive trips in which the diagnostic runs. The MIL, the Pending DTC, the Confirmed DTC, and the freeze data can be cleared with the scan tool Clear command or by disconnecting the battery.

DTC P0615: STARTER CUT RELAY STRLD CIRCUIT MALFUNCTION

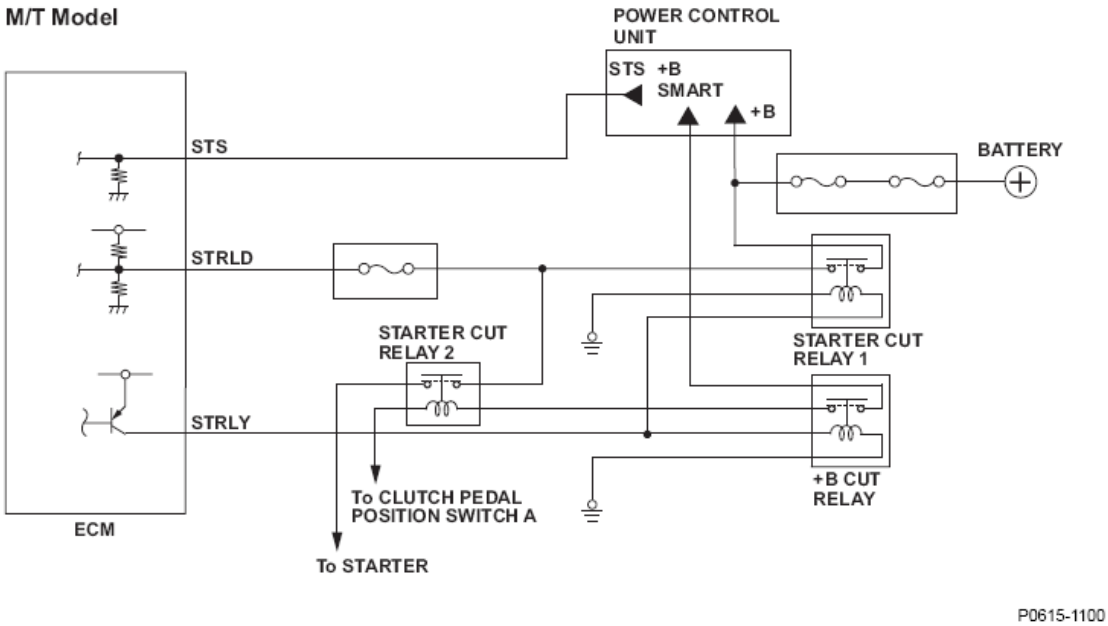


Fig. 132: Starter Cut Relay - Circuit Diagram (M/T Model)

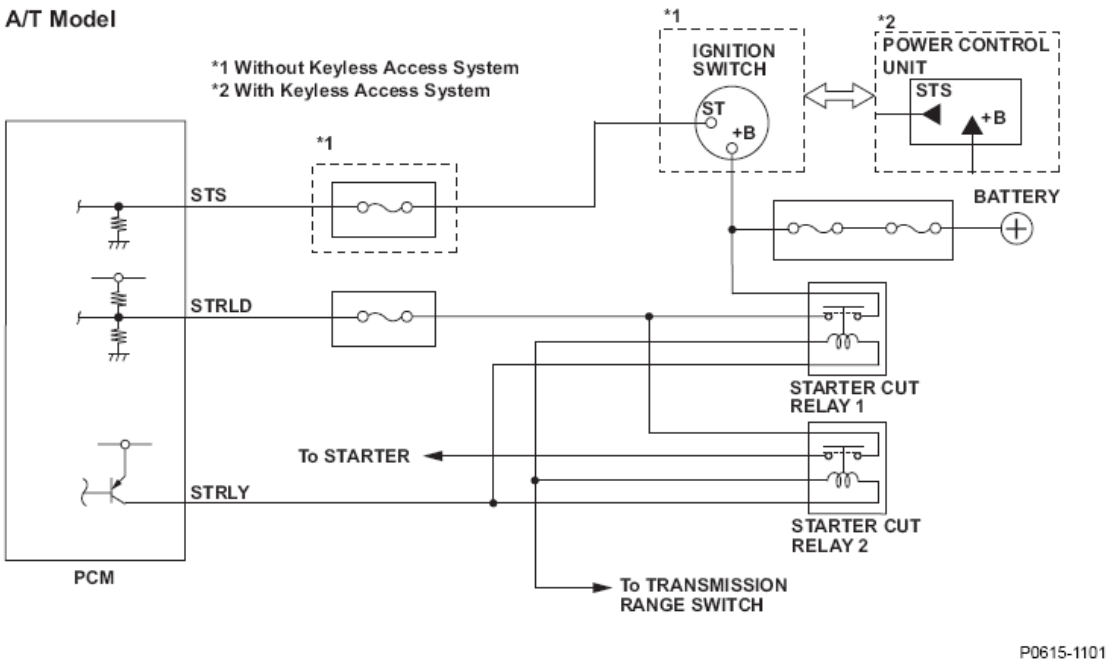


Fig. 133: Starter Cut Relay - Circuit Diagram (A/T Model)

GENERAL DESCRIPTION

A starter switch inhibit system prevents damaging the starter pinion gear by prohibiting starter activation while the engine is running. If the ignition switch is turned to START (III) or the engine start/stop button is pressed mistakenly while the engine is running, the engine control module (ECM)/powertrain control module (PCM) prevents the starter from working according to the engine speed information and the output (STRLY) signal of

the starter cut relay is switched to LOW. In this system, two starter cut relays are connected in series (starter cut relay 1, starter cut relay 2) to prevent the starter from continuing to run due to a starter cut relay malfunction. Also a diagnosis line (STRLD) is used to monitor voltage in the middle of starter cut relay 1 and starter cut relay 2. The PCM detects an OPEN malfunction of diagnosis line, an ON malfunction of starter cut relay 1, and an ON malfunction of starter cut relay 2. If the voltage on the diagnosis line (STRLD) input does not exceed upper and lower limits for a specified duration when the ignition switch is turned to START (III) or the engine start/stop button is pressed and the output of the starter cut relay (STRLY) is HIGH (starter ON), the ECM/PCM detects an OPEN malfunction of the diagnosis line and stores a DTC.

MONITOR EXECUTION, SEQUENCE, DURATION, DTC TYPE, OBD STATUS

Execution	Continuous
Sequence	None
Duration	0.8 second or more
DTC Type	One drive cycle, MIL off
OBD Status	PASSED/FAILED/NOT COMPLETED (STILL TESTING)

ENABLE CONDITIONS

Condition	
Ignition switch(1)	ON (II)
Engine start/stop button(2)	ON mode
Starter	On
No active DTCs set (prevents monitor from running)	P16BD, P16BE, P16E1(3)
(1) Without keyless access system (2) With keyless access system (3) M/T model	

MALFUNCTION THRESHOLD

The diagnosis line (STRLD) input voltage is between 2.4 V to 2.6 V for at least 0.8 second.

DRIVING PATTERN

Turn the ignition switch to START (III) or press the engine start/stop button to select the START mode for 1 second or more.

DIAGNOSIS DETAILS

Conditions for setting the DTC

When a malfunction is detected, a Pending DTC, a Confirmed DTC, and the freeze data are stored in the ECM/PCM memory. The MIL does not come on.

Conditions for clearing the DTC

The Pending DTC, the Confirmed DTC, and the freeze data can be cleared with the scan tool Clear command or by disconnecting the battery.

DTC P062F: ENGINE CONTROL MODULE (ECM)/POWERTRAIN CONTROL MODULE (PCM) INTERNAL CONTROL MODULE KEEP ALIVE MEMORY (KAM) ERROR

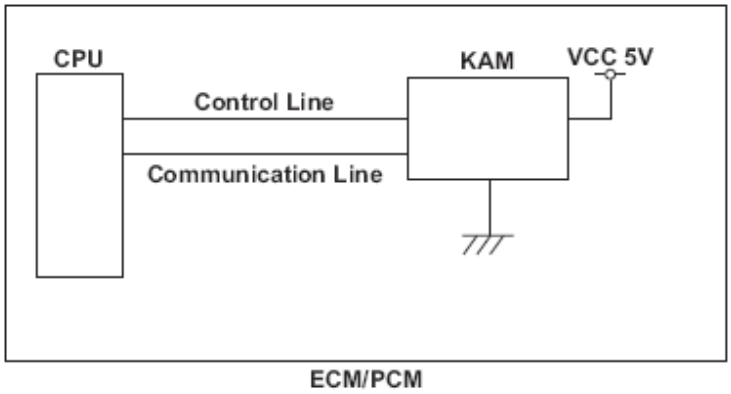


Fig. 134: ECM/PCM Communication Control Diagram

GENERAL DESCRIPTION

The engine control module (ECM)/powertrain control module (PCM) is equipped with a keep alive memory (KAM). The data (control learn data, etc.) for powertrain control and information (vehicle identification number (VIN), etc.) related to the vehicle control is stored in the KAM, so that it can be maintained even when power is not supplied to the ECM/PCM, such as when the battery is disconnected. When power is restored to the ECM/PCM, the CPU retrieves the stored information from the KAM, but when the data retrieval process is not finished normally, the ECM/PCM detects a malfunction and stores a DTC. The CPU writes data to the KAM from the CPU: Control related data is written when the ignition switch is turned to ON (II) or the engine start/stop button is pressed to select the ON mode, and vehicle information when commanded from the HDS. If the data writing process is not completed normally, the ECM/PCM detects a malfunction and stores a DTC.

MONITOR EXECUTION, SEQUENCE, DURATION, DTC TYPE, OBD STATUS

Execution	Continuous
Sequence	None
Duration	1 second or more
DTC Type	One drive cycle, MIL on
OBD Status	PASSED/FAILED/NOT COMPLETED (STILL TESTING)

ENABLE CONDITIONS

Condition	
Ignition switch(1)	ON (II)
Engine start/stop button(2)	ON mode
(1) Without keyless access system (2) With keyless access system	

MALFUNCTION THRESHOLD

A malfunction is detected whenever the keep alive data retrieval and writing process is not completed normally.

DIAGNOSIS DETAILS

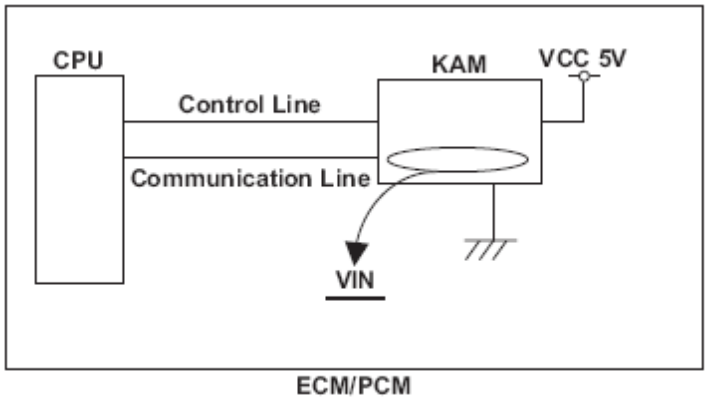
Conditions for setting the DTC

When a malfunction is detected, the MIL comes on and a Pending DTC, a Confirmed DTC, and the freeze data are stored in the ECM/PCM memory.

Conditions for clearing the DTC

The MIL is cleared if the malfunction does not return in three consecutive trips in which the diagnostic runs. The MIL, the Pending DTC, the Confirmed DTC, and the freeze data can be cleared with the scan tool Clear command or by disconnecting the battery.

DTC P0630: VIN NOT PROGRAMMED OR MISMATCH



P0630-1071

Fig. 135: ECM/PCM Communication Control Diagram (VIN Not Programmed Or Mismatch)

GENERAL DESCRIPTION

The engine control module (ECM)/powertrain control module (PCM) stores a vehicle identification number (VIN) in the keep alive memory (KAM) and outputs the VIN according to commands from the HDS. The VIN for each vehicle is registered to the ECM/PCM using the HDS. The registered VIN is read by the CPU from the

KAM after the ignition switch is turned to ON (II) or the engine start/stop button is pressed to select the ON mode, or after the Clear command is executed. If the VIN is not registered in the KAM when the ignition switch is turned to ON (II) or the engine start/stop button is pressed to select the ON mode, or when the Clear command is executed, the ECM/PCM detects a VIN unregistered condition and stores a DTC.

MONITOR EXECUTION, SEQUENCE, DURATION, DTC TYPE, OBD STATUS

Execution	Continuous
Sequence	None
Duration	1 second or less
DTC Type	One drive cycle, MIL on
OBD Status	PASSED/FAILED/NOT COMPLETED (STILL TESTING)

ENABLE CONDITIONS

Condition	
Ignition switch(1)	ON (II)
Engine start/stop button(2)	ON mode
(1) Without keyless access system (2) With keyless access system	

MALFUNCTION THRESHOLD

The VIN is not registered in the KAM in the ECM/PCM.

DIAGNOSIS DETAILS

Conditions for setting the DTC

When a malfunction is detected, the MIL comes on and a Pending DTC, a Confirmed DTC, and the freeze data are stored in the ECM/PCM memory.

Conditions for clearing the DTC

When the VIN registration is completed, the MIL is cleared.

DTC P0641: SENSOR REFERENCE VOLTAGE A MALFUNCTION

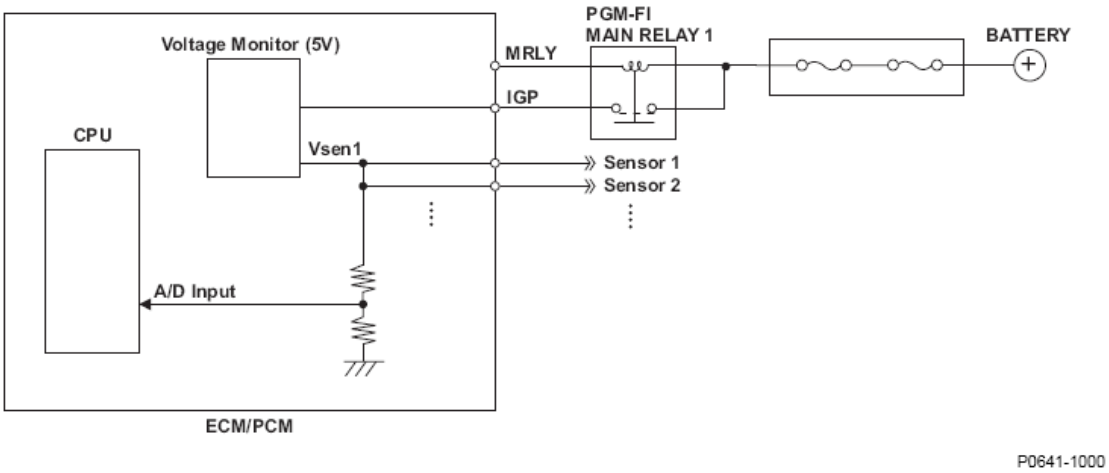


Fig. 136: ECM/PCM - Circuit Diagram (Sensor Reference Voltage A Malfunction)

GENERAL DESCRIPTION

The engine control module (ECM)/powertrain control module (PCM) is equipped with a voltage monitor (5 V power source) to supply a stable 5 V to each sensor as reference voltage. The correct voltage for the sensors are loaded in the CPU of the ECM/PCM (A/D input) and when the condition that sensor power voltage is a set value (high or low) continues for a certain time, the ECM/PCM detects a malfunction and stores a DTC.

MONITOR EXECUTION, SEQUENCE, DURATION, DTC TYPE, OBD STATUS

Execution	Continuous
Sequence	None
Duration	2.0 seconds or more
DTC Type	One drive cycle, MIL on
OBD Status	PASSED/FAILED/NOT COMPLETED (STILL TESTING)

ENABLE CONDITIONS

Condition	
Ignition switch(1)	ON (II)
Engine start/stop button(2)	ON mode
(1) Without keyless access system (2) With keyless access system	

MALFUNCTION THRESHOLD

The sensor power voltage is 5.2 V or more, or 4.5 V or less, for at least 2.0 seconds.

DIAGNOSIS DETAILS

Conditions for setting the DTC

When a malfunction is detected, the MIL comes on and a Pending DTC, a Confirmed DTC, and the freeze data are stored in the ECM/PCM memory.

Conditions for clearing the DTC

The MIL is cleared if the malfunction does not return in three consecutive trips in which the diagnostic runs. The MIL, the Pending DTC, the Confirmed DTC, and the freeze data can be cleared with the scan tool Clear command or by disconnecting the battery.

DTC P0651: SENSOR REFERENCE VOLTAGE B MALFUNCTION

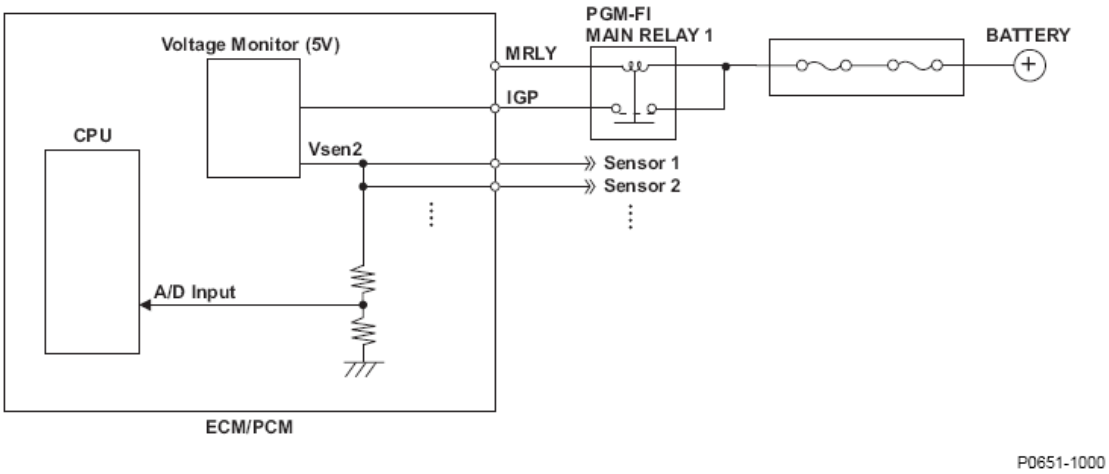


Fig. 137: ECM/PCM - Circuit Diagram (Sensor Reference Voltage B Malfunction)

GENERAL DESCRIPTION

The engine control module (ECM)/powertrain control module (PCM) is equipped with a voltage monitor (5 V power source) to supply a stable 5 V to each sensor as reference voltage. The correct voltage for the sensors are loaded in the CPU of the ECM/PCM (A/D input) and when the condition that sensor power voltage is a set value (high or low) continues for a certain time, the ECM/PCM detects a malfunction and stores a DTC.

MONITOR EXECUTION, SEQUENCE, DURATION, DTC TYPE, OBD STATUS

Execution	Continuous
Sequence	None
Duration	2.0 seconds or more
DTC Type	One drive cycle, MIL on
OBD Status	PASSED/FAILED/NOT COMPLETED (STILL TESTING)

ENABLE CONDITIONS

Condition	
Ignition switch(1)	ON (II)
Engine start/stop button(2)	ON mode
(1) Without keyless access system (2) With keyless access system	

MALFUNCTION THRESHOLD

The sensor power voltage is 5.2 V or more, or 4.5 V or less, for at least 2.0 seconds.

DIAGNOSIS DETAILS

Conditions for setting the DTC

When a malfunction is detected, the MIL comes on and a Pending DTC, a Confirmed DTC, and the freeze data are stored in the ECM/PCM memory.

Conditions for clearing the DTC

The MIL is cleared if the malfunction does not return in three consecutive trips in which the diagnostic runs. The MIL, the Pending DTC, the Confirmed DTC, and the freeze data can be cleared with the scan tool Clear command or by disconnecting the battery.

DTC P0685: ENGINE CONTROL MODULE (ECM)/POWERTRAIN CONTROL MODULE (PCM) POWER CONTROL CIRCUIT/INTERNAL CIRCUIT MALFUNCTION

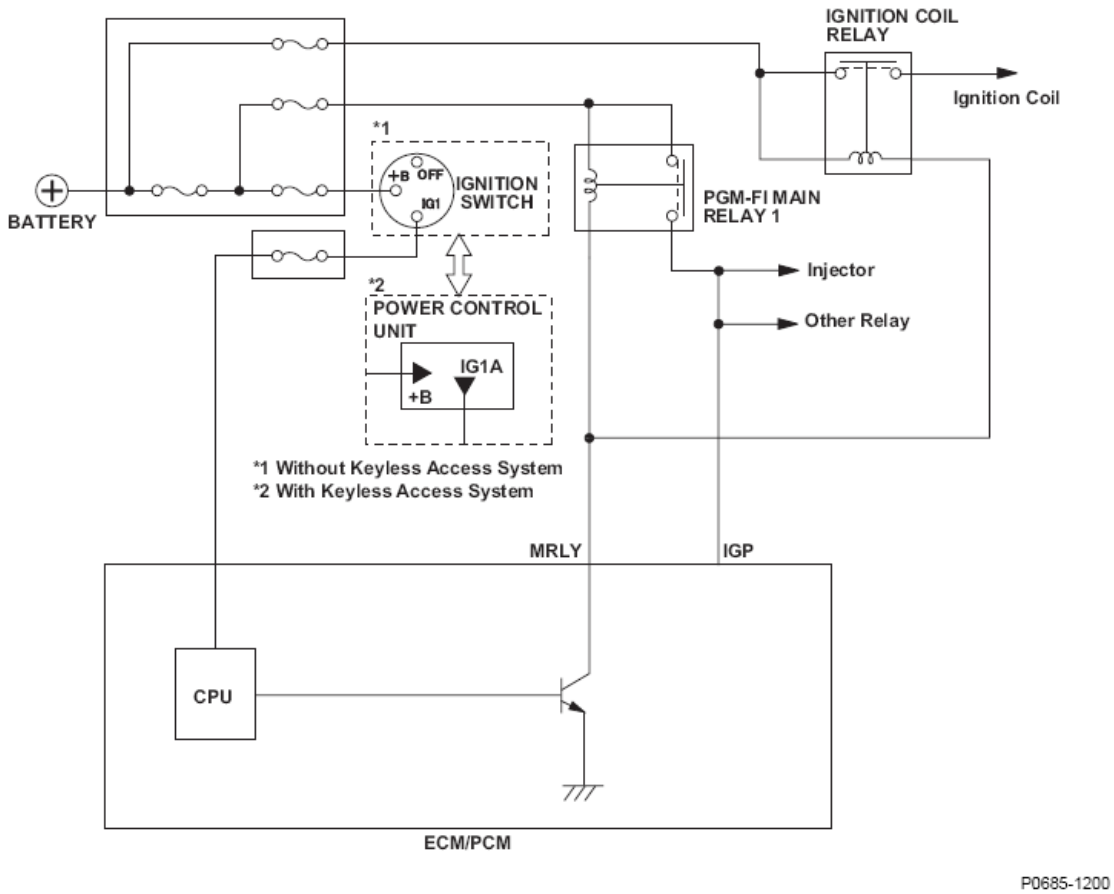


Fig. 138: ECM/PCM - Circuit Diagram (Power Control Circuit/Internal Circuit Malfunction)

GENERAL DESCRIPTION

After the ignition switch is turned to LOCK (0) or the engine start/stop button is pressed to select the OFF mode, the engine control module (ECM)/powertrain control module (PCM) does not shut down immediately. After finishing a predetermined process according to the request of each device and system, the power supply is automatically disconnected (self shut-down function). The ECM/PCM power is disconnected by controlling PGM-FI main relay 1. During a normal ECM/PCM shut down, the shut down process is executed by the CPU, PGM-FI main relay 1 is turned off, and the voltage to the ECM/PCM is turned off to shut down the ECM/PCM. When the voltage to the ECM/PCM is turned off and the ECM/PCM shuts down without the normal shut down procedure, the ECM/PCM detects a malfunction in the PGM-FI main relay 1 control circuit and stores a DTC.

MONITOR EXECUTION, SEQUENCE, DURATION, DTC TYPE, OBD STATUS

Execution	Continuous
Sequence	None
Duration	1 second or less
DTC Type	Two drive cycles, MIL on
OBD Status	PASSED/FAILED/NOT COMPLETED (STILL TESTING)

ENABLE CONDITIONS

Condition	Minimum	Maximum
Elapsed time after starting the engine	10 seconds	-
Engine speed	400 rpm	-

MALFUNCTION THRESHOLD

The ECM/PCM is shut down within 1 second without the normal shut down procedure.

DIAGNOSIS DETAILS

Conditions for setting the DTC

When a malfunction is detected during the first drive cycle, a Pending DTC is stored in the ECM/PCM memory. If the malfunction returns in the next (second) drive cycle, the MIL comes on and a Confirmed DTC and the freeze data are stored.

Conditions for clearing the DTC

The MIL is cleared if the malfunction does not return in three consecutive trips in which the diagnostic runs. The MIL, the Pending DTC, the Confirmed DTC, and the freeze data can be cleared with the scan tool Clear command or by disconnecting the battery.

DTC P0705: SHORT IN TRANSMISSION RANGE SWITCH CIRCUIT (MULTIPLE SHIFT-POSITION INPUT)

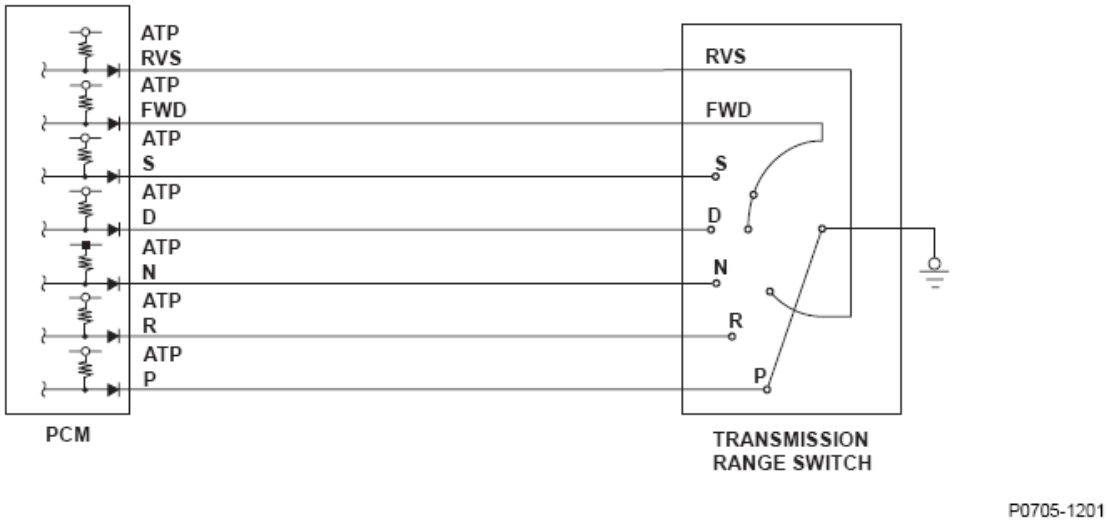


Fig. 139: Transmission Range Switch - Circuit Diagram

TRANSMISSION RANGE SWITCH CONTACT POINT INPUT MATRIX

	Input per switch						

Shift lever position	ATPP	ATPR	ATPN	ATPD	ATPS	ATP FWD	ATP RVS
P	o	X	X	X	X	X	X
R	X	o	X	X	X	X	o
N	X	X	o	X	X	X	X
D	X	X	X	o	X	o	X
S	X	X	X	X	o	o	X
o: Closed X: Open							

GENERAL DESCRIPTION

The transmission range switch is attached to a control shaft. Operating the shift lever makes the control shaft rotate via the shift cable. The A/T gear position indicator shows which position is selected according to the Low/High signal combinations, which vary based on the control shaft rotational angle. The control shaft changes the position of the transmission range switch, activates the manual valve, and switches hydraulic pressure to shift the transmission through forward/neutral/reverse. The transmission range switch signal is used to determine the shift schedule. The voltage is high (5 V or 12 V) at the powertrain control module (PCM) input terminal when each transmission range switch position is open, and it is low (0 V) when each switch is closed. If the PCM detects multiple switch inputs instead of the correct switch input for the selected range at that time, it detects a malfunction and stores a DTC.

MONITOR EXECUTION, SEQUENCE, DURATION, DTC TYPE, OBD STATUS

Execution	Continuous
Sequence	None
Duration	1 second or more
DTC Type	One drive cycle, MIL on, D indicator blinks
OBD Status	PASSED/FAILED/NOT COMPLETED (STILL TESTING)

ENABLE CONDITIONS

Condition	Minimum	Maximum
Battery voltage	11 V	-

MALFUNCTION THRESHOLD

One of these conditions occurs:

- The PCM detects the selected range switch input and another range switch input (except FWD switch input) simultaneously for at least 1 second.
- The PCM detects the P, R, or N range switch input and the FWD switch input simultaneously for at least 1 second.
- The PCM detects the D or S range switch input and the RVS switch input simultaneously for at least 1 second.

DRIVING PATTERN

1. Start the engine.
2. With the brake pedal pressed, place the shift lever in each position for at least 1 second.

DIAGNOSIS DETAILS

Conditions for setting the DTC

When a malfunction is detected, the MIL comes on and a Pending DTC, a Confirmed DTC, and the freeze data are stored in the PCM memory.

Conditions for clearing the DTC

The MIL is cleared if the malfunction does not return in three consecutive trips in which the diagnostic runs. The MIL, the Pending DTC, the Confirmed DTC, and the freeze data can be cleared with the scan tool Clear command or by disconnecting the battery.

DTC P0706: OPEN IN TRANSMISSION RANGE SWITCH CIRCUIT

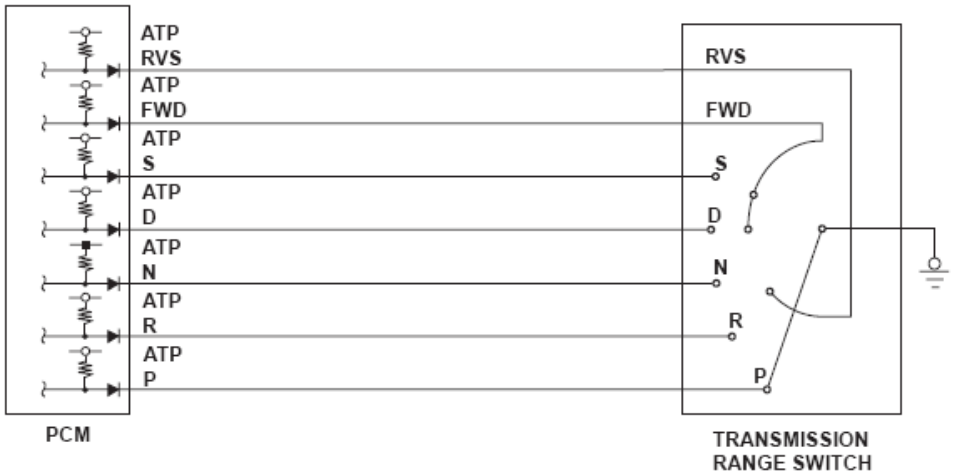


Fig. 140: Transmission Range Switch - Circuit Diagram

TRANSMISSION RANGE SWITCH CONTACT POINT INPUT MATRIX

Shift lever position	Input per switch						
	ATPP	ATPR	ATPN	ATPD	ATPS	ATP FWD	ATP RVS
P	o	X	X	X	X	X	X
R	X	o	X	X	X	X	o
N	X	X	o	X	X	X	X
D	X	X	X	o	X	o	X
S	X	X	X	X	o	o	X

o: Closed X: Open

GENERAL DESCRIPTION

The transmission range switch is attached to a control shaft. Operating the shift lever makes the control shaft rotate via the shift cable. The A/T gear position indicator shows which position is selected according to the Low/High signal combinations, which vary based on the control shaft rotational angle. The control shaft changes the position of the transmission range switch, activates the manual valve, and switches hydraulic pressure to shift the transmission through forward/neutral/reverse. The transmission range switch signal is used to determine the shift schedule. The voltage is high (5 V or 12 V) at the powertrain control module (PCM) input terminal when each transmission range switch position is open, and it is low (0 V) when each switch is closed. If the FWD switch stays open while the vehicle repeatedly accelerates to a specified vehicle speed and then stops despite being in D or S, the PCM detects a malfunction in the transmission range switch (open) and stores a DTC.

MONITOR EXECUTION, SEQUENCE, DURATION, DTC TYPE, OBD STATUS

Execution	Continuous
Sequence	None
Duration	Depending on the driving conditions
DTC Type	Two drive cycles, MIL on, D indicator off
OBD Status	PASSED/FAILED/NOT COMPLETED (STILL TESTING)

ENABLE CONDITIONS

Condition	Minimum	Maximum
Battery voltage	11 V	-
No active DTCs set (prevents monitor from running)	P0705, P0721, P0722	

MALFUNCTION THRESHOLD

No FWD position signal is detected when the vehicle speed changes from 6 mph (10 km/h) --> 25 mph (40 km/h) --> 6 mph (10 km/h) in D or S.

DRIVING PATTERN

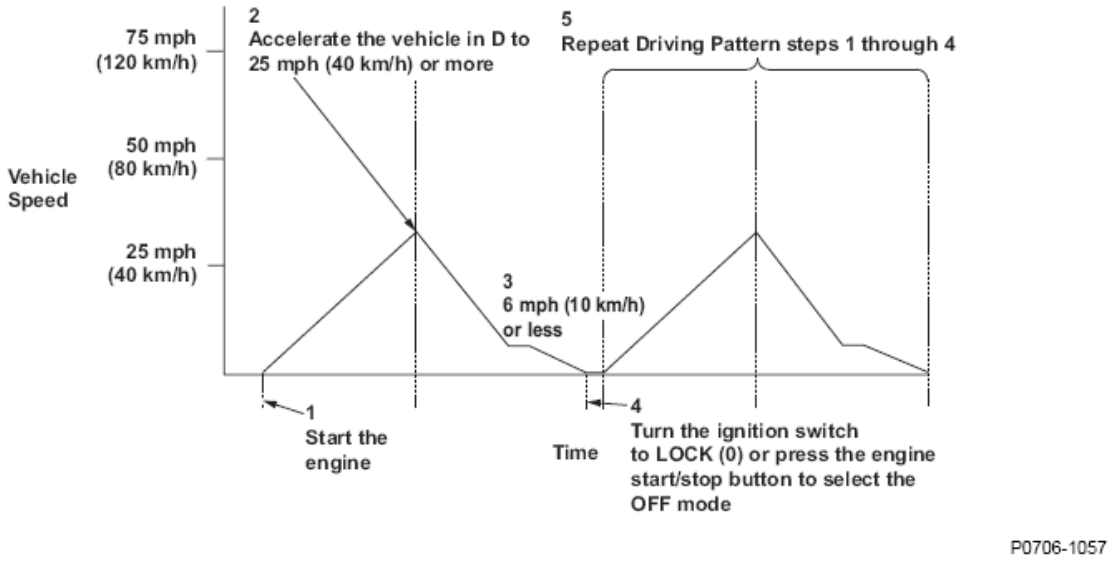


Fig. 141: Vehicle Speed Driving Pattern

1. Start the engine.
2. Accelerate the vehicle in D to 25 mph (40 km/h) or more.
3. Slow down to 6 mph (10 km/h) for several seconds.
4. Stop the vehicle, and turn the ignition switch to LOCK (0) or press the engine start/stop button to select the OFF mode.
5. Repeat Driving Pattern steps 1 through 4.
    - Drive the vehicle in this manner only if the traffic regulations and ambient conditions allow.

DIAGNOSIS DETAILS

Conditions for setting the DTC

When a malfunction is detected during the first drive cycle, a Pending DTC is stored in the PCM memory. If the malfunction returns in the next (second) drive cycle, the MIL comes on and a Confirmed DTC and the freeze data are stored.

Conditions for clearing the DTC

The MIL is cleared if the malfunction does not return in three consecutive trips in which the diagnostic runs. The MIL, the Pending DTC, the Confirmed DTC, and the freeze data can be cleared with the scan tool Clear command or by disconnecting the battery.

DTC P0711: PROBLEM IN ATF TEMPERATURE SENSOR CIRCUIT

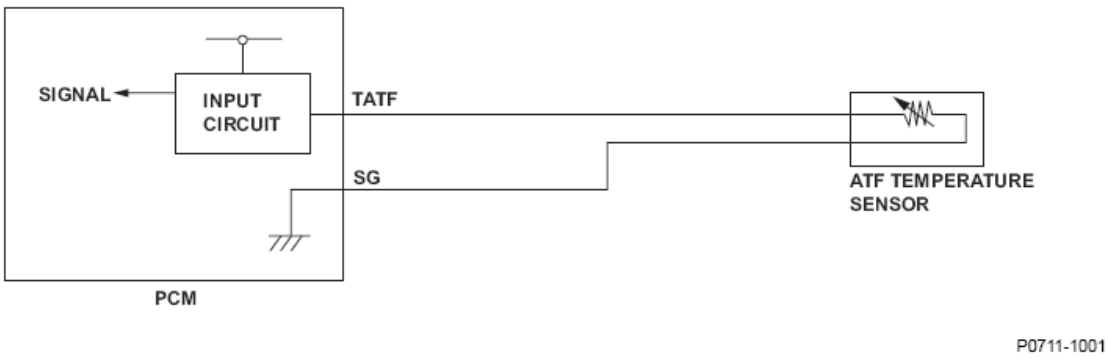


Fig. 142: ATF Temperature Sensor - Circuit Diagram

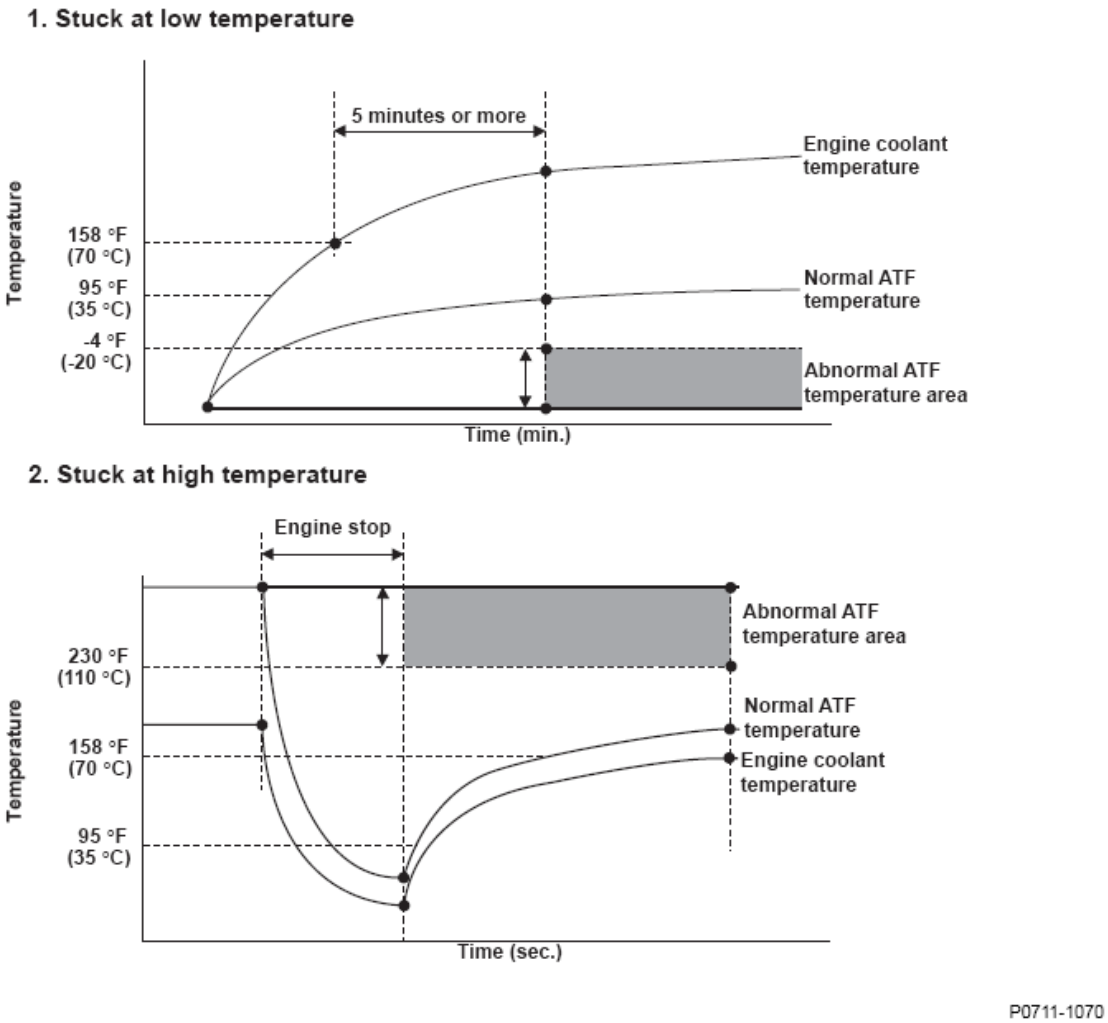


Fig. 143: ATF Temperature Sensor Characteristics Graph

GENERAL DESCRIPTION

The ATF temperature sensor is a thermistor type sensor that changes resistance according to the change in ATF temperature. The powertrain control module (PCM) sends a 5 V reference voltage to the sensor through a pull-

up resistor. When the ATF temperature is low, the sensor resistance increases and the PCM detects a high signal voltage. As the ATF temperature rises, the sensor resistance decreases and the PCM detects a low signal voltage. If the ATF temperature sensor signal does not change, the PCM detects a malfunction and stores a DTC.

MONITOR EXECUTION, SEQUENCE, DURATION, DTC TYPE, OBD STATUS

Execution	Once per driving cycle
Sequence	None
Duration	5 minutes or more(1)
	20 seconds or more(2)
DTC Type	Two drive cycles, MIL off, D indicator blinks
OBD Status	PASSED/FAILED/NOT COMPLETED (STILL TESTING)
(1) Stuck at low temperature is detected (2) Stuck at high temperature is detected	

ENABLE CONDITIONS

1. Stuck at low temperature

Condition	Minimum	Maximum
Engine coolant temperature	158 °F (70 °C)	-
Initial engine coolant temperature	-	95 °F (35 °C)
ATF temperature	-	-4 °F (-20 °C)
Initial ATF temperature		-4 °F (-20 °C)
Vehicle speed	19 mph (30 km/h)	-
Battery voltage	11 V	-
Throttle position	4 °	-
No active DTCs set (prevents monitor from running)	P0117, P0118, P0712, P0713, P0714, P0721, P0722	
Other	After the engine coolant temperature reaches the fixed value, both the vehicle speed and the throttle position meet the conditions for at least 5 minutes	

2. Stuck at high temperature

Condition	Minimum	Maximum
Engine coolant temperature	158 °F (70 °C)	-
Previous engine coolant temperature when the ignition switch was turned to LOCK (0) or the engine start/stop button was pressed to	158 °F (70 °C)	-

select the OFF mode		
Previous ATF temperature when the ignition switch was turned to LOCK (0) or the engine start/stop button was pressed to select the OFF mode	230 °F (110 °C)	-
Present engine coolant temperature when the ignition switch is turned to ON (II) or the engine start/stop button is pressed to select the ON mode	-	95 °F (35 °C)
Present ATF temperature when the ignition switch is turned to ON (II) or the engine start/stop button is pressed to select the ON mode	230 °F (110 °C)	-
Battery voltage	11 V	-
No active DTCs set (prevents monitor from running)	P0117, P0118, P0712, P0713, P0714, P0721, P0722	

MALFUNCTION THRESHOLD

1. Stuck at low temperature

   The current ATF temperature is -4 °F (-20 °C) or less after Enable Conditions.

2. Stuck at high temperature

   The current ATF temperature is 230 °F (110 °C) or more after Enable Conditions.

DRIVING PATTERN

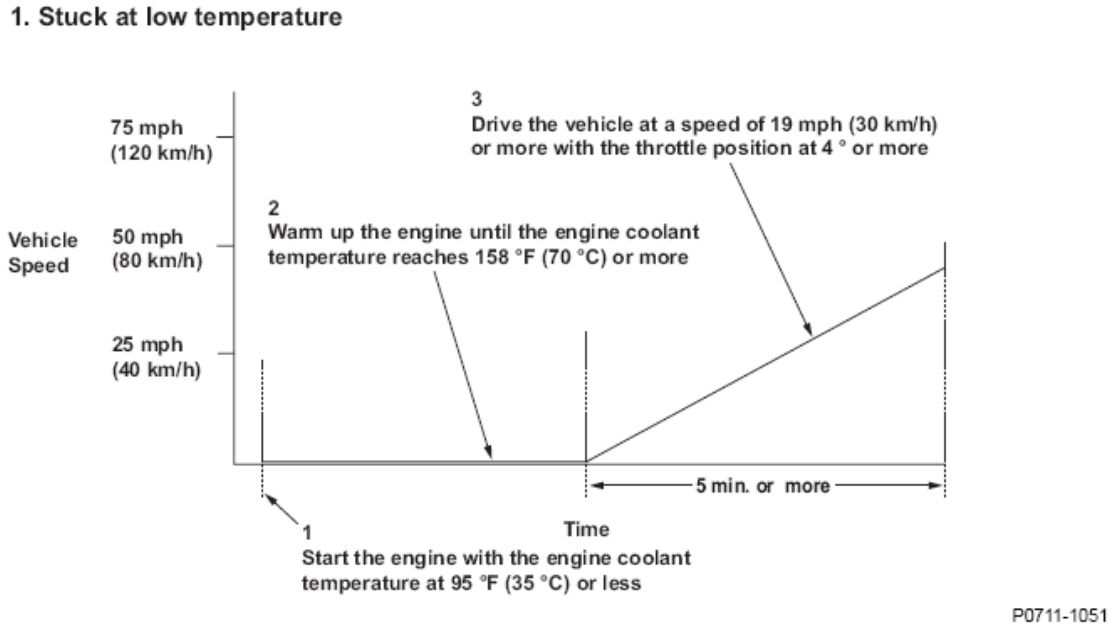


Fig. 144: Vehicle Speed Driving Pattern

1. Stuck at low temperature

1. Start the engine with the engine coolant temperature at 95 °F (35 °C) or less.
2. Warm up the engine until the engine coolant temperature reaches 158 °F (70 °C) or more.
3. Drive the vehicle at a speed of 19 mph (30 km/h) or more with the throttle position at 4 ° or more for at least 5 minutes.

2. Stuck at high temperature
   1. Turn off the engine with the engine coolant temperature at 158 °F (70 °C) or more.
   2. Restart the engine after the engine coolant temperature drops to 95 °F (35 °C) or less.
   3. Warm up the engine until the engine coolant temperature reaches 158 °F (70 °C), and wait for at least 20 seconds.
   - Drive the vehicle in this manner only if the traffic regulations and ambient conditions allow.

DIAGNOSIS DETAILS

Conditions for setting the DTC

When a malfunction is detected during the first drive cycle, a Pending DTC is stored in the PCM memory. If the malfunction returns in the next (second) drive cycle, a Confirmed DTC and the freeze data are stored. The MIL does not come on.

Conditions for clearing the DTC

The Pending DTC, the Confirmed DTC, and the freeze data can be cleared with the scan tool Clear command or by disconnecting the battery.

DTC P0712: SHORT IN ATF TEMPERATURE SENSOR CIRCUIT

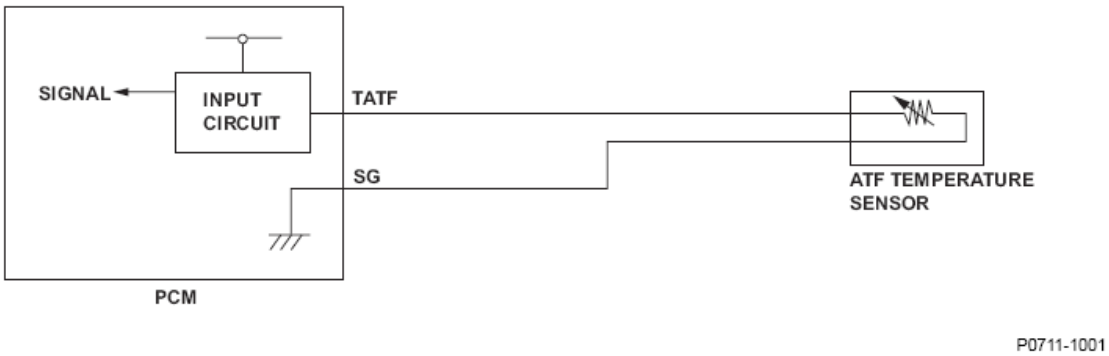


Fig. 145: ATF Temperature Sensor - Circuit Diagram

GENERAL DESCRIPTION

The ATF temperature sensor is a thermistor type sensor that changes resistance according to the change in ATF temperature. The powertrain control module (PCM) sends a 5 V reference voltage to the sensor through a pull-up resistor. When the ATF temperature is low, the sensor resistance increases and the PCM detects a high signal voltage. As the ATF temperature rises, the sensor resistance decreases and the PCM detects a low signal voltage. When the ATF temperature sensor signal voltage to the PCM is under the specification, indicating that

the temperature is above the specification (a short to ground), the PCM detects a malfunction and stores a DTC.

MONITOR EXECUTION, SEQUENCE, DURATION, DTC TYPE, OBD STATUS

Execution	Continuous
Sequence	None
Duration	10 seconds or more
DTC Type	Two drive cycles, MIL off, D indicator blinks
OBD Status	PASSED/FAILED/NOT COMPLETED (STILL TESTING)

ENABLE CONDITIONS

Condition	Minimum	Maximum
Battery voltage	11 V	-
No active DTCs set (prevents monitor from running)	P0711, P0713, P0714	

MALFUNCTION THRESHOLD

The ATF temperature sensor output voltage is less than 0.07 V for at least 10 seconds.

DRIVING PATTERN

1. Start the engine.
2. Shift to P, and wait for at least 10 seconds.

DIAGNOSIS DETAILS

Conditions for setting the DTC

When a malfunction is detected during the first drive cycle, a Pending DTC is stored in the PCM memory. If the malfunction returns in the next (second) drive cycle, a Confirmed DTC and the freeze data are stored. The MIL does not come on.

Conditions for clearing the DTC

The Pending DTC, the Confirmed DTC, and the freeze data can be cleared with the scan tool Clear command or by disconnecting the battery.

DTC P0713: OPEN IN ATF TEMPERATURE SENSOR CIRCUIT

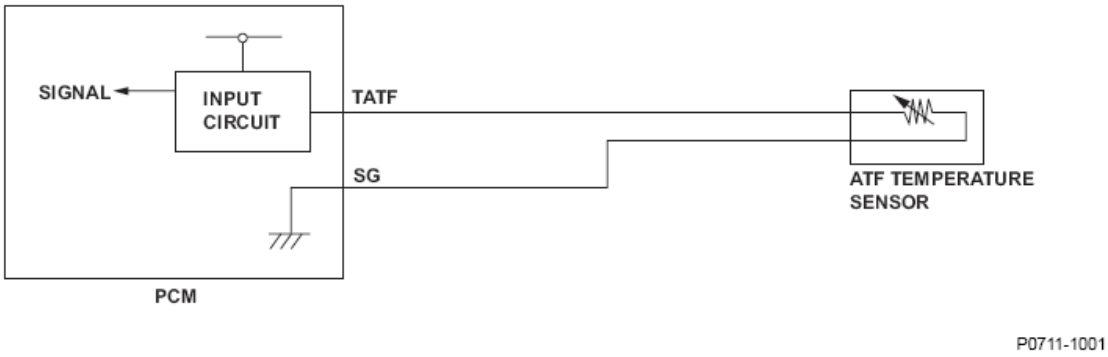


Fig. 146: ATF Temperature Sensor - Circuit Diagram

GENERAL DESCRIPTION

The ATF temperature sensor is a thermistor type sensor that changes resistance according to the change in ATF temperature. The powertrain control module (PCM) sends a 5 V reference voltage to the sensor through a pull-up resistor. When the ATF temperature is low, the sensor resistance increases and the PCM detects a high signal voltage. As the ATF temperature rises, the sensor resistance decreases and the PCM detects a low signal voltage. When the ATF temperature sensor signal voltage to the PCM is above the specification, indicating that the temperature is under the specification (open), the PCM detects a malfunction and stores a DTC.

MONITOR EXECUTION, SEQUENCE, DURATION, DTC TYPE, OBD STATUS

Execution	Continuous
Sequence	None
Duration	10 seconds or more
DTC Type	Two drive cycles, MIL off, D indicator blinks
OBD Status	PASSED/FAILED/NOT COMPLETED (STILL TESTING)

ENABLE CONDITIONS

Condition	Minimum	Maximum
Battery voltage	11 V	-
No active DTCs set (prevents monitor from running)	P0711, P0712, P0714	

MALFUNCTION THRESHOLD

The ATF temperature sensor output voltage is more than 4.93 V for at least 10 seconds.

DRIVING PATTERN

1. Start the engine.
2. Shift to P, and wait at least 10 seconds.

DIAGNOSIS DETAILS

Conditions for setting the DTC

When a malfunction is detected during the first drive cycle, a Pending DTC is stored in the PCM memory. If the malfunction returns in the next (second) drive cycle, a Confirmed DTC and the freeze data are stored. The MIL does not come on.

Conditions for clearing the DTC

The Pending DTC, the Confirmed DTC, and the freeze data can be cleared with the scan tool Clear command or by disconnecting the battery.

DTC P0714: ATF TEMPERATURE SENSOR INTERMITTENT FAILURE

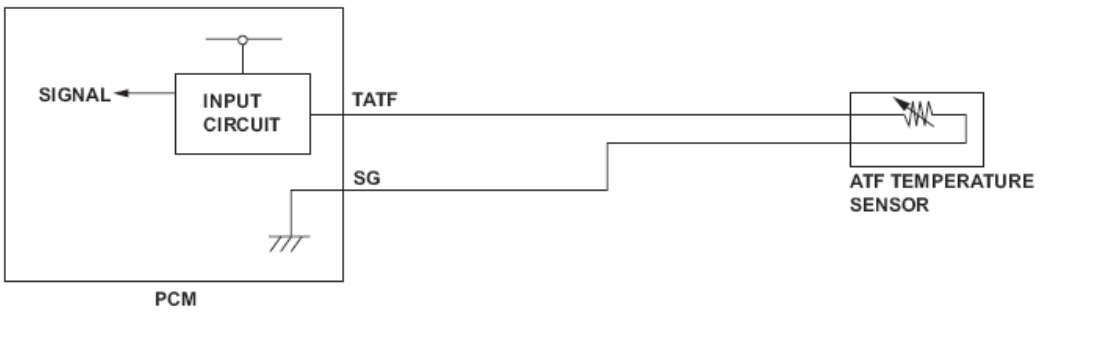


Fig. 147: ATF Temperature Sensor - Circuit Diagram

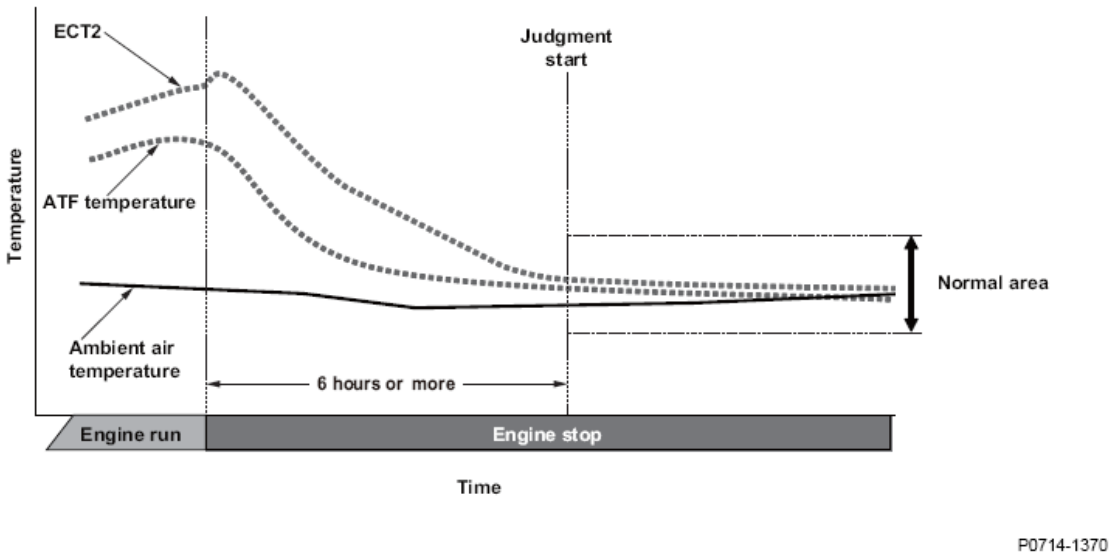


Fig. 148: ATF Temperature Versus Time Characteristics Graph

GENERAL DESCRIPTION

The ATF temperature sensor is a thermistor type sensor that changes resistance according to the change in ATF temperature. The powertrain control module (PCM) sends a 5 V reference voltage to the sensor through a pull-

up resistor. When the ATF temperature is low, the sensor resistance increases and the PCM detects a high signal voltage. As the ATF temperature rises, the sensor resistance decreases and the PCM detects a low signal voltage. When the engine is stopped and enough time has passed, the ATF temperature will equalize to the engine coolant temperature. When the temperature in the ATF temperature sensor deviates from the temperature in engine coolant temperature (ECT) sensor 2 after the engine is stopped and enough time has passed, the PCM detects a malfunction and stores a DTC.

MONITOR EXECUTION, SEQUENCE, DURATION, DTC TYPE, OBD STATUS

Execution	Once per driving cycle
Sequence	P0111, P0112, P0113, P0116, P0117, P0118, P0125, P0128, P1116, P2183, P2184, P2185 are judged as OK
Duration	10 seconds or more
DTC Type	Two drive cycles, MIL off, D indicator blinks
OBD Status	PASSED/FAILED/NOT COMPLETED (STILL TESTING)

ENABLE CONDITIONS

Condition	Minimum	Maximum
Elapsed time after the ignition switch is turned to LOCK (0) or the engine start/stop button is pressed to select the OFF mode	6 hours	-
Battery voltage	11 V	-
No active DTCs set (prevents monitor from running)	P0112, P0113, P0117, P0118, P0711, P0712, P0713, P2184, P2185, P2610	
Other	Not to be towed during engine stop	

MALFUNCTION THRESHOLD

The temperature in the ATF temperature sensor deviates from the temperature in ECT sensor 2, less than -43 °F (-24 °C) or greater than 57 °F (32 °C)*.

*: Greater than 108 °F (60 °C) if engine block heater is equipped.

DRIVING PATTERN

1. Turn the ignition switch to LOCK (0) in P or press the engine start/stop button to select the OFF mode in P, and wait for at least 6 hours.
2. Start the engine in P, and wait for at least 10 seconds.

DIAGNOSIS DETAILS

Conditions for setting the DTC

When a malfunction is detected during the first drive cycle, a Pending DTC is stored in the PCM memory. If the malfunction returns in the next (second) drive cycle, a Confirmed DTC and the freeze data are stored. The MIL does not come on.

Conditions for clearing the DTC

The Pending DTC, the Confirmed DTC, and the freeze data can be cleared with the scan tool Clear command or by disconnecting the battery.

DTC P0715: INPUT SHAFT (MAINSHAFT) SPEED SENSOR CIRCUIT MALFUNCTION

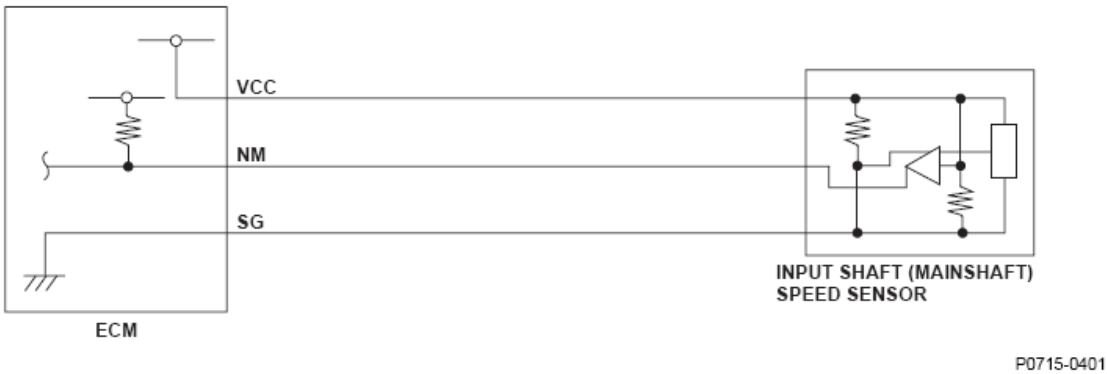


Fig. 149: Input Shaft (Mainshaft) Speed Sensor - Circuit Diagram

GENERAL DESCRIPTION

The input shaft (mainshaft) speed sensor is attached to the transmission housing to sense input shaft (mainshaft) revolutions. The engine control module (ECM) determines the vehicle speed according to the signal from the input shaft (mainshaft) speed sensor for the control units. If no signal from the input shaft (mainshaft) speed sensor is received for a set time, the ECM detects a malfunction and stores a DTC.

MONITOR EXECUTION, SEQUENCE, DURATION, DTC TYPE, OBD STATUS

Execution	Continuous
Sequence	None
Duration	20 seconds or more
DTC Type	Two drive cycles, MIL off
OBD Status	PASSED/FAILED/NOT COMPLETED (STILL TESTING)

ENABLE CONDITIONS

Condition	Minimum	Maximum
Engine coolant temperature	157 °F (69 °C)	-
Engine speed	1,000 rpm(1)	-

Battery voltage	10.0 V	-
No active DTCs set (prevents monitor from running)	P0117, P0118, P0122, P0123, P0222, P0223, P060A, P1683, P1684, P2101, P2118, P2122, P2123, P2127, P2128, P2135, P2138, P2176	
(1) Engine speed must not be 1,000 rpm or more if the throttle position is 2.0 ° or more.		

MALFUNCTION THRESHOLD

No signal from the input shaft (mainshaft) speed sensor is detected for at least 20 seconds.

DRIVING PATTERN

Start the engine speed at 3,000 rpm without load (in neutral) until the radiator fan comes on.

DIAGNOSIS DETAILS

Conditions for setting the DTC

When a malfunction is detected during the first drive cycle, a Pending DTC is stored in the ECM memory. If the malfunction returns in the next (second) drive cycle, a Confirmed DTC and the freeze data are stored. The MIL does not come on.

Conditions for clearing the DTC

The Pending DTC, the Confirmed DTC, and the freeze data can be cleared with the scan tool Clear command or by disconnecting the battery.

DTC P0716: PROBLEM IN INPUT SHAFT (MAINSHAFT) SPEED SENSOR CIRCUIT

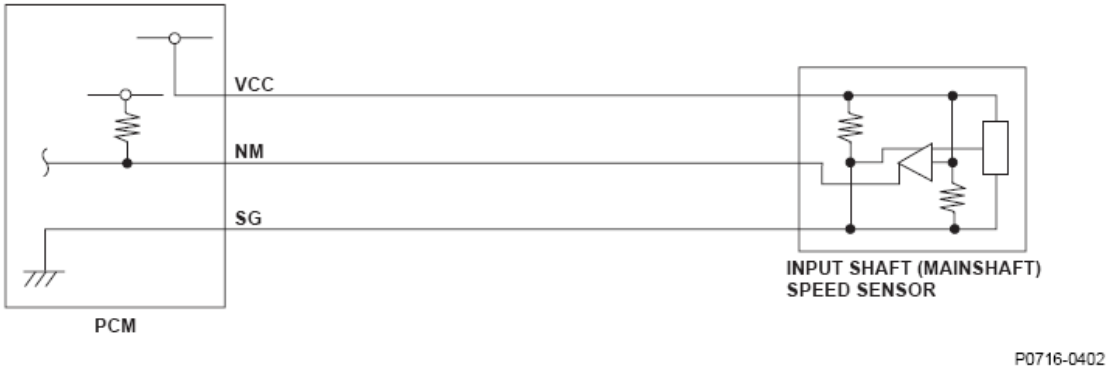


Fig. 150: Input Shaft (Mainshaft) Speed Sensor - Circuit Diagram

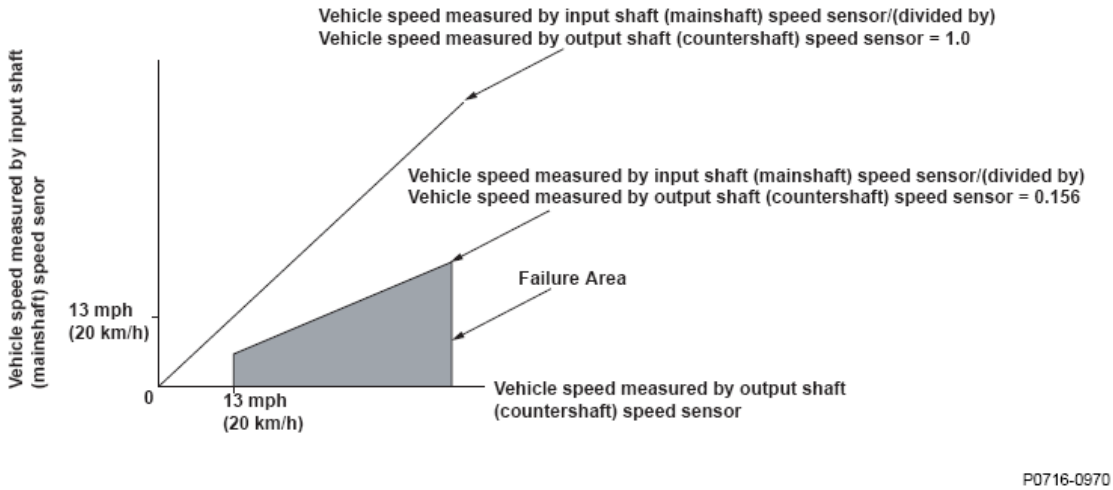


Fig. 151: Input Shaft (Mainshaft) Speed Sensor Characteristics Graph

GENERAL DESCRIPTION

The input shaft (mainshaft) speed sensor is attached to the outside of the transmission housing. The input shaft (mainshaft) speed sensor generates a pulsing signal according to the speed of the idler gear on the input shaft (mainshaft). Using that signal, the powertrain control module (PCM) determines the speed of the input shaft (mainshaft). If no pulses occur with the input shaft (mainshaft) rotating, the PCM detects a malfunction that may be caused by an open, a temporary open, or a short to ground. Based on the velocity ratio measured by the output shaft (countershaft) speed sensor and the input shaft (mainshaft) speed sensor, the PCM detects a malfunction and stores a DTC.

MONITOR EXECUTION, SEQUENCE, DURATION, DTC TYPE, OBD STATUS

Execution	Continuous
Sequence	None
Duration	10 seconds or more
DTC Type	One drive cycle, MIL on, D indicator blinks
OBD Status	PASSED/FAILED/NOT COMPLETED (STILL TESTING)

ENABLE CONDITIONS

Condition	Minimum	Maximum
Engine speed	500 rpm	-
Vehicle speed	13 mph (20 km/h)	-
Battery voltage	11 V	-
Shift lever position	D, S	
No active DTCs set (prevents monitor from running)	P0705, P0706, P0717, P0721, P0722, P0962, P0963, P0966, P0967, P0970, P0971, P0973, P0974, P0976, P0977, P0979, P0980, P2720, P2721	
	Not during shifting	

Other	Not when the shift lever is being shifted
	No electrical noise in the output shaft (countershaft) speed sensor output circuit
	Except 1st gear

MALFUNCTION THRESHOLD

The vehicle speed measured by the input shaft (mainshaft) speed sensor/(divided by) the vehicle speed measured by the output shaft (countershaft) speed sensor is less than 0.156 for at least 10 seconds.

DRIVING PATTERN

1. Start the engine.
2. Drive the vehicle at a speed of 13 mph (20 km/h) or more for at least 10 seconds.
    - Drive the vehicle in this manner only if the traffic regulations and ambient conditions allow.

DIAGNOSIS DETAILS

Conditions for setting the DTC

When a malfunction is detected, the MIL comes on and a Pending DTC, a Confirmed DTC, and the freeze data are stored in the PCM memory.

Conditions for clearing the DTC

The MIL is cleared if the malfunction does not return in three consecutive trips in which the diagnostic runs. The MIL, the Pending DTC, the Confirmed DTC, and the freeze data can be cleared with the scan tool Clear command or by disconnecting the battery.

DTC P0717: PROBLEM IN INPUT SHAFT (MAINSHAFT) SPEED SENSOR CIRCUIT (NO SIGNAL INPUT)

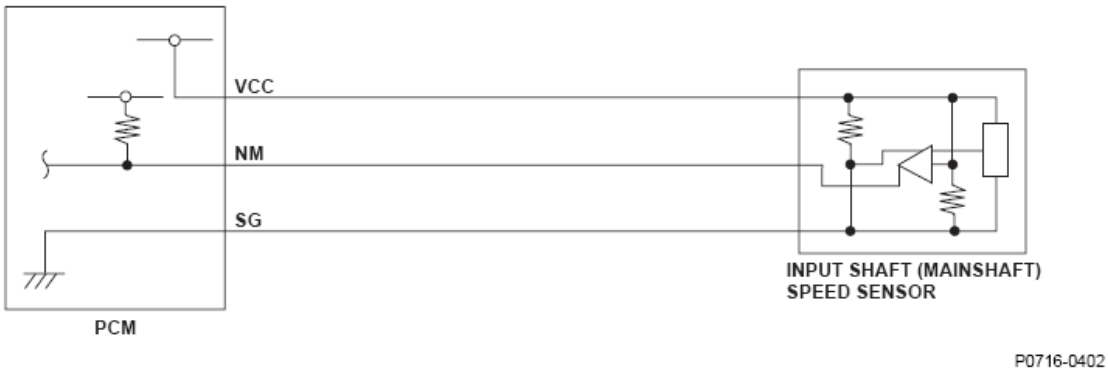


Fig. 152: Input Shaft (Mainshaft) Speed Sensor - Circuit Diagram

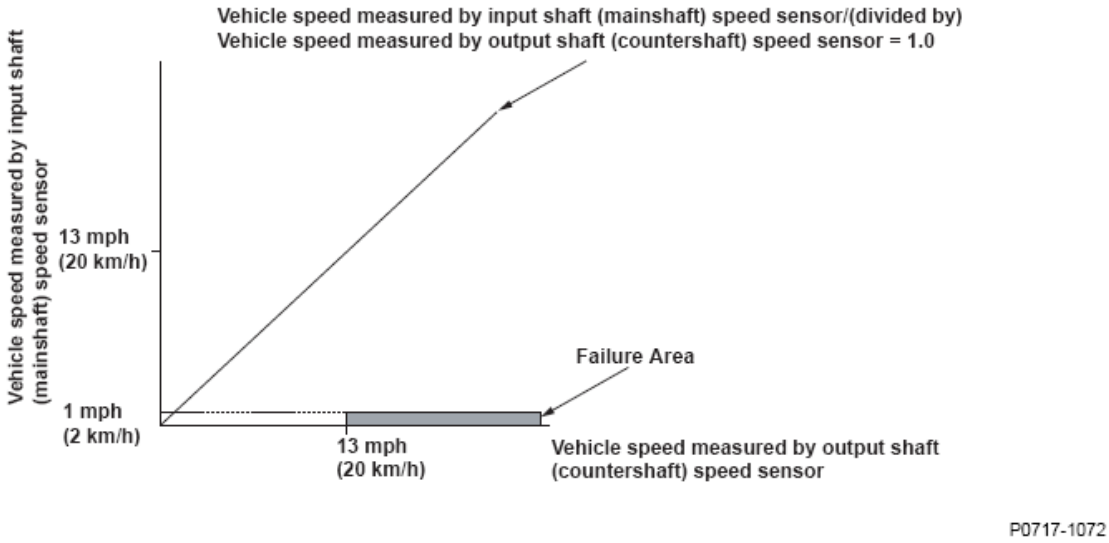


Fig. 153: Input Shaft (Mainshaft) Speed Sensor Characteristics Graph

GENERAL DESCRIPTION

The input shaft (mainshaft) speed sensor is attached to the outside of the transmission housing. The input shaft (mainshaft) speed sensor generates a pulsing signal according to the speed of the idler gear on the input shaft (mainshaft). Using that signal, the powertrain control module (PCM) determines the speed of the input shaft (mainshaft). If no pulses occur with the input shaft (mainshaft) rotating, the PCM detects a malfunction that may be caused by an open, a temporary open, or a short to ground. Based on the correlation between the vehicle speed measured by the output shaft (countershaft) speed sensor and the input shaft (mainshaft) speed sensor, the PCM detects a malfunction and stores a DTC.

MONITOR EXECUTION, SEQUENCE, DURATION, DTC TYPE, OBD STATUS

Execution	Continuous
Sequence	None
Duration	10 seconds or more
DTC Type	One drive cycle, MIL on, D indicator blinks
OBD Status	PASSED/FAILED/NOT COMPLETED (STILL TESTING)

ENABLE CONDITIONS

Condition	Minimum	Maximum
Engine speed	500 rpm	-
Vehicle speed	13 mph (20 km/h)	-
Battery voltage	11 V	-
Shift lever position	D, S	
No active DTCs set (prevents monitor from running)	P0705, P0706, P0716, P0721, P0722, P0962, P0963, P0966, P0967, P0970, P0971, P0973, P0974, P0976, P0977, P0979, P0980, P2720, P2721	

Other	Not during shifting
	Not when the shift lever is being shifted
	No electrical noise in the output shaft (countershaft) speed sensor output circuit
	Except 1st gear

MALFUNCTION THRESHOLD

When the vehicle speed measured by the output shaft (countershaft) speed sensor is 13 mph (20 km/h) or more, the vehicle speed measured by the input shaft (mainshaft) speed sensor is 1 mph (2 km/h) or less for at least 10 seconds.

DRIVING PATTERN

1. Start the engine.
2. Drive the vehicle at a speed of 13 mph (20 km/h) or more for at least 10 seconds.
    - Drive the vehicle in this manner only if the traffic regulations and ambient conditions allow.

DIAGNOSIS DETAILS

Conditions for setting the DTC

When a malfunction is detected, the MIL comes on and a Pending DTC, a Confirmed DTC, and the freeze data are stored in the PCM memory.

Conditions for clearing the DTC

The MIL is cleared if the malfunction does not return in three consecutive trips in which the diagnostic runs. The MIL, the Pending DTC, the Confirmed DTC, and the freeze data can be cleared with the scan tool Clear command or by disconnecting the battery.

DTC P0718: INPUT SHAFT (MAINSHAFT) SPEED SENSOR INTERMITTENT FAILURE

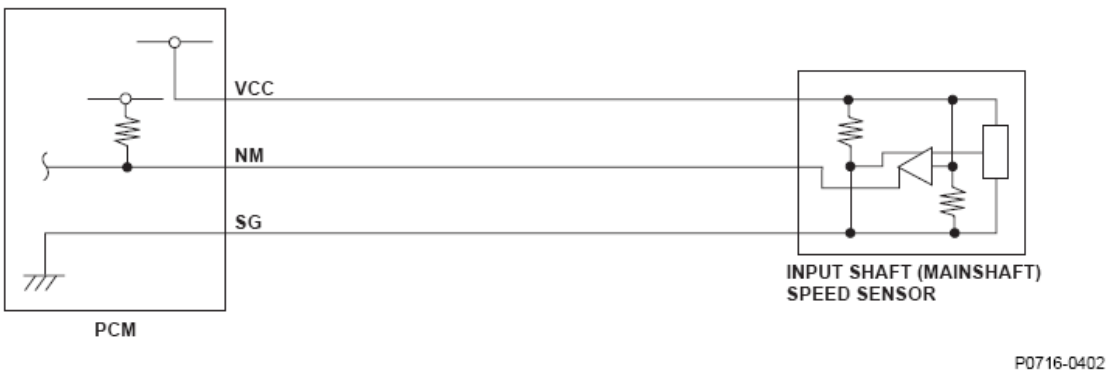


Fig. 154: Input Shaft (Mainshaft) Speed Sensor - Circuit Diagram

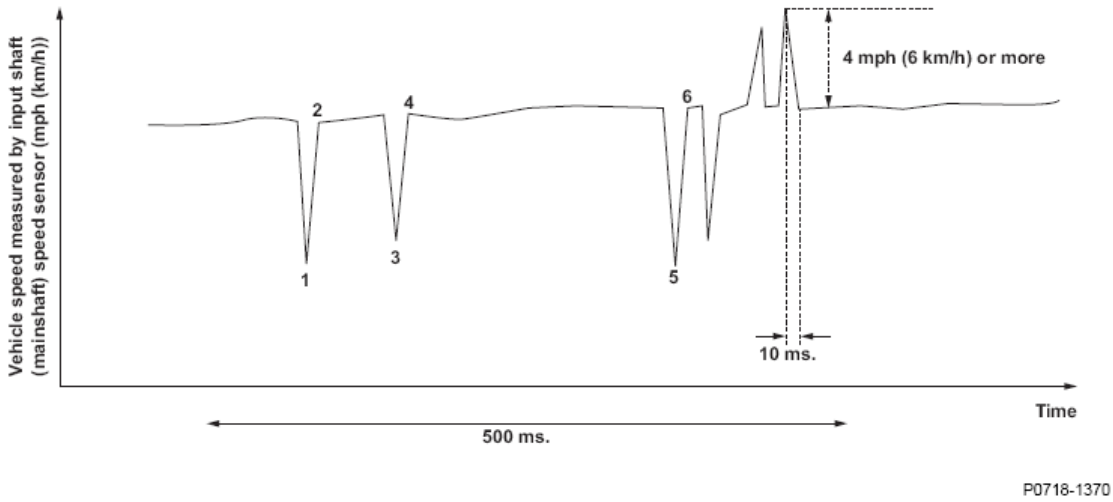


Fig. 155: Input Shaft (Mainshaft) Speed Sensor Characteristics Curve

GENERAL DESCRIPTION

The input shaft (mainshaft) speed sensor is attached to the outside of the transmission housing. The input shaft (mainshaft) speed sensor generates a pulsing signal according to the speed of the idler gear on the input shaft (mainshaft). Using that signal, the powertrain control module (PCM) determines the speed of the input shaft (mainshaft). If no pulses occur with the input shaft (mainshaft) rotating, the PCM detects a malfunction that may be caused by an open, a temporary open, or a short to ground. Based on the fluctuation of the vehicle speed measured by the input shaft (mainshaft) speed sensor, the PCM detects a malfunction and stores a DTC.

MONITOR EXECUTION, SEQUENCE, DURATION, DTC TYPE, OBD STATUS

Execution	Continuous
Sequence	None
Duration	500 milliseconds
DTC Type	Two drive cycles, MIL on, D indicator blinks
OBD Status	PASSED/FAILED/NOT COMPLETED (STILL TESTING)

ENABLE CONDITIONS

Condition	Minimum	Maximum
Vehicle speed	13 mph (20 km/h)	-
Battery voltage	11 V	-
No active DTCs set (prevents monitor from running)	P0716, P0717, P0721, P0722	
Other	Not during shifting	
	Not when an output shaft (countershaft) speed sensor intermittent failure is detected	

MALFUNCTION THRESHOLD

The fluctuation of the vehicle speed measured by the input shaft (mainshaft) speed sensor in 10 milliseconds is 4 mph (6 km/h) or more, and it fluctuates at least six times within 500 milliseconds.

DRIVING PATTERN

1. Start the engine.
2. Drive the vehicle at a speed of 13 mph (20 km/h) or more so it shifts from 1st to 6th gear.
    - Drive the vehicle in this manner only if the traffic regulations and ambient conditions allow.

DIAGNOSIS DETAILS

Conditions for setting the DTC

When a malfunction is detected during the first drive cycle, a Pending DTC is stored in the PCM memory. If the malfunction returns in the next (second) drive cycle, the MIL comes on and a Confirmed DTC and the freeze data are stored.

Conditions for clearing the DTC

The MIL is cleared if the malfunction does not return in three consecutive trips in which the diagnostic runs. The MIL, the Pending DTC, the Confirmed DTC, and the freeze data can be cleared with the scan tool Clear command or by disconnecting the battery.

DTC P0720: OUTPUT SHAFT (COUNTERSHAFT) SPEED SENSOR CIRCUIT MALFUNCTION

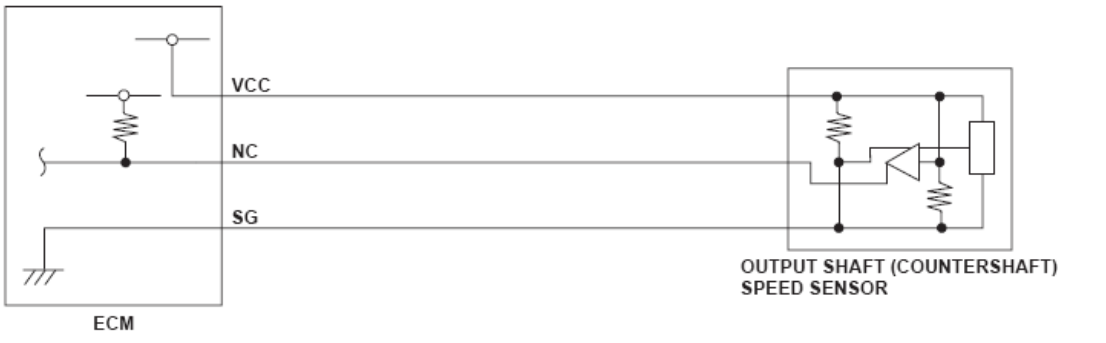


Fig. 156: Output Shaft (Countershaft) Speed Sensor - Circuit Diagram

GENERAL DESCRIPTION

The output shaft (countershaft) speed sensor is attached to the transmission housing to sense output shaft (countershaft) revolutions. The engine control module (ECM) determines the vehicle speed according to the signal from the output shaft (countershaft) speed sensor for the control units. If no signal from the output shaft (countershaft) speed sensor is received for a set time, the ECM detects a malfunction and stores a DTC.

MONITOR EXECUTION, SEQUENCE, DURATION, DTC TYPE, OBD STATUS

Execution	Continuous
Sequence	None
Duration	5 seconds or more
DTC Type	Two drive cycles, MIL on
OBD Status	PASSED/FAILED/NOT COMPLETED (STILL TESTING)

ENABLE CONDITIONS

Condition	Minimum	Maximum
Engine speed	4,000 rpm	-
Battery voltage	10.0 V	-
Other	During fuel cut-off operation for deceleration	

MALFUNCTION THRESHOLD

No signal from the output shaft (countershaft) speed sensor is detected for at least 5 seconds during deceleration with the engine speed at 4,000 rpm or less.

DIAGNOSIS DETAILS

Conditions for setting the DTC

When a malfunction is detected during the first drive cycle, a Pending DTC is stored in the ECM memory. If the malfunction returns in the next (second) drive cycle, the MIL comes on and a Confirmed DTC and the freeze data are stored.

Conditions for clearing the DTC

The MIL is cleared if the malfunction does not return in three consecutive trips in which the diagnostic runs. The MIL, the Pending DTC, the Confirmed DTC, and the freeze data can be cleared with the scan tool Clear command or by disconnecting the battery.

DTC P0721: PROBLEM IN OUTPUT SHAFT (COUNTERSHAFT) SPEED SENSOR CIRCUIT

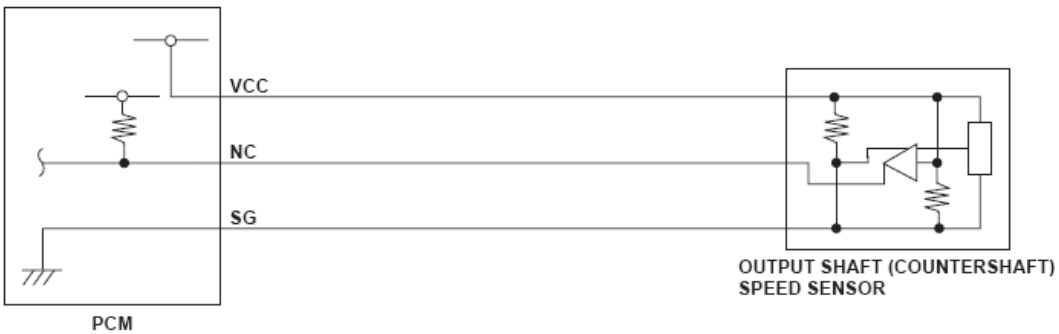


Fig. 157: Output Shaft (Countershaft) Speed Sensor - Circuit Diagram

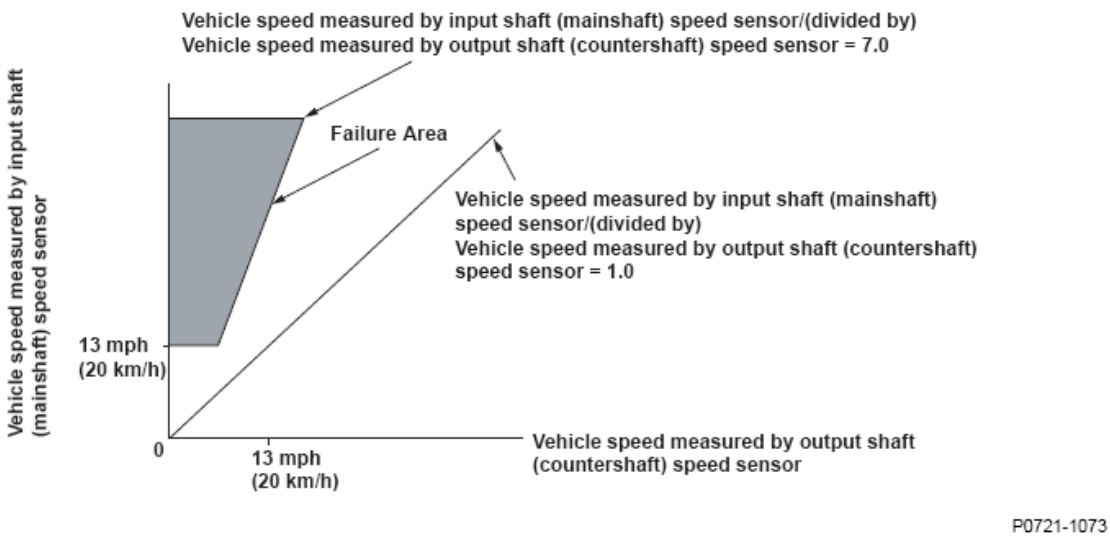


Fig. 158: Output Shaft (Countershaft) Speed Sensor Characteristics Graph

GENERAL DESCRIPTION

The output shaft (countershaft) speed sensor is attached to the outside of the transmission housing. The output shaft (countershaft) speed sensor generates a pulsing signal according to the speed of the park gear on the output shaft (countershaft). Using that signal, the powertrain control module (PCM) determines the speed of the output shaft (countershaft). If no pulses occur with the output shaft (countershaft) rotating, the PCM detects a malfunction that may be caused by an open, a temporary open, or a short to ground. Based on the velocity ratio measured by the output shaft (countershaft) speed sensor and the input shaft (mainshaft) speed sensor, the PCM detects a malfunction and stores a DTC.

MONITOR EXECUTION, SEQUENCE, DURATION, DTC TYPE, OBD STATUS

Execution	Continuous
Sequence	None
Duration	10 seconds or more
DTC Type	One drive cycle, MIL on, D indicator blinks
OBD Status	PASSED/FAILED/NOT COMPLETED (STILL TESTING)

ENABLE CONDITIONS

Condition	Minimum	Maximum
Engine speed	500 rpm	-
Vehicle speed	13 mph (20 km/h)	-
Battery voltage	11 V	-
Shift lever position	D, S	
No active DTCs set	P0705, P0706, P0716, P0717, P0722, P0962, P0963, P0966, P0967, P0970,	

(prevents monitor from running)	P0971, P0973, P0974, P0976, P0977, P0979, P0980, P2720, P2721
Other	Not during shifting
	Not when the shift lever is being shifted
	No electrical noise in the input shaft (mainshaft) speed sensor output circuit
	Except 1st gear

MALFUNCTION THRESHOLD

The vehicle speed measured by the input shaft (mainshaft) speed sensor/(divided by) the vehicle speed measured by the output shaft (countershaft) speed sensor is greater than 7.0 for at least 10 seconds.

DRIVING PATTERN

1. Start the engine.
2. Drive the vehicle at a speed of 13 mph (20 km/h) or more for at least 10 seconds.
    - Drive the vehicle in this manner only if the traffic regulations and ambient conditions allow.

DIAGNOSIS DETAILS

Conditions for setting the DTC

When a malfunction is detected, the MIL comes on and a Pending DTC, a Confirmed DTC, and the freeze data are stored in the PCM memory.

Conditions for clearing the DTC

The MIL is cleared if the malfunction does not return in three consecutive trips in which the diagnostic runs. The MIL, the Pending DTC, the Confirmed DTC, and the freeze data can be cleared with the scan tool Clear command or by disconnecting the battery.

DTC P0722: PROBLEM IN OUTPUT SHAFT (COUNTERSHAFT) SPEED SENSOR CIRCUIT (NO SIGNAL INPUT)

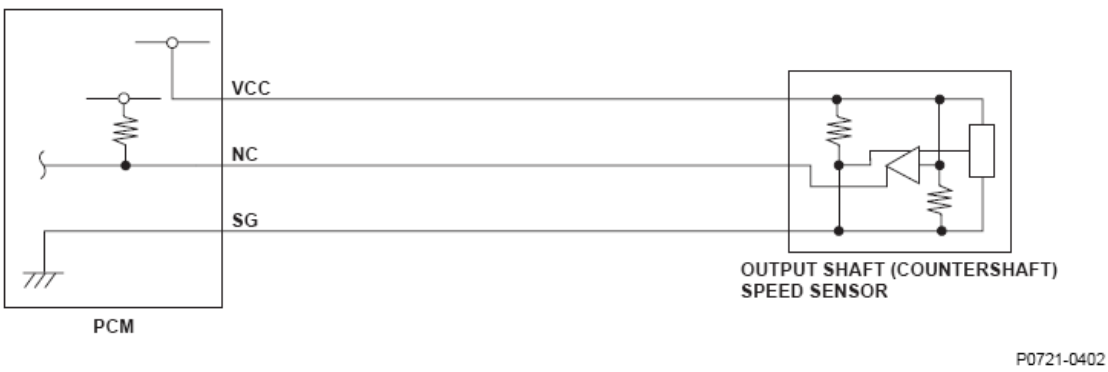


Fig. 159: Output Shaft (Countershaft) Speed Sensor - Circuit Diagram

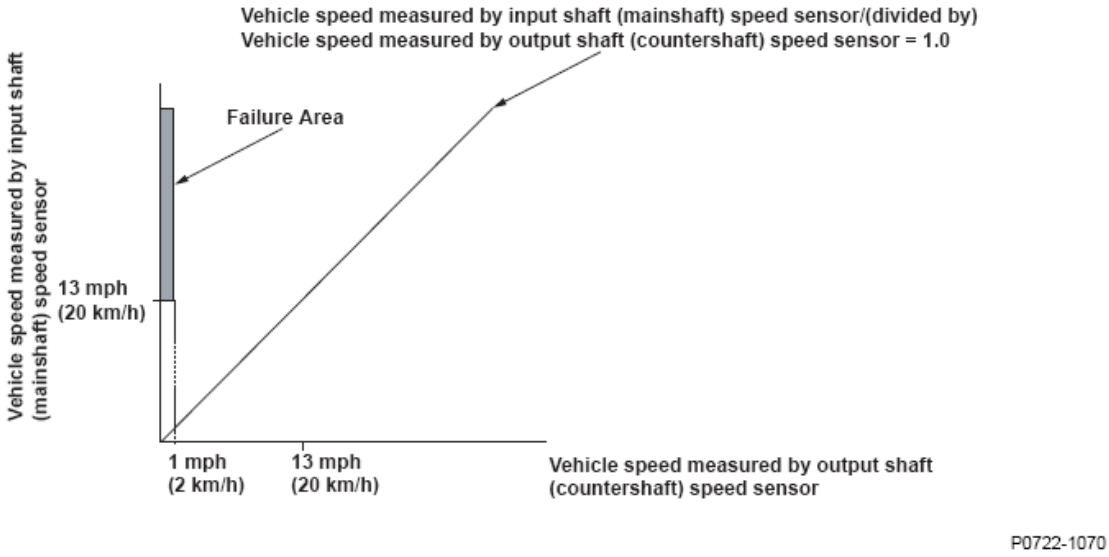


Fig. 160: Output Shaft (Countershaft) Speed Sensor Characteristics Graph

GENERAL DESCRIPTION

The output shaft (countershaft) speed sensor is attached to the outside of the transmission housing. The output shaft (countershaft) speed sensor generates a pulsing signal according to the speed of the park gear on the output shaft (countershaft). Using that signal, the powertrain control module (PCM) determines the speed of the output shaft (countershaft). If no pulses occur with the output shaft (countershaft) rotating, the PCM detects a malfunction that may be caused by an open, a temporary open, or a short to ground. Based on the correlation between the vehicle speed measured by the output shaft (countershaft) speed sensor and the input shaft (mainshaft) speed sensor, the PCM detects a malfunction and stores a DTC.

MONITOR EXECUTION, SEQUENCE, DURATION, DTC TYPE, OBD STATUS

Execution	Continuous
Sequence	None
Duration	10 seconds or more
DTC Type	One drive cycle, MIL on, D indicator blinks
OBD Status	PASSED/FAILED/NOT COMPLETED (STILL TESTING)

ENABLE CONDITIONS

Condition	Minimum	Maximum
Engine speed	500 rpm	-
Vehicle speed	13 mph (20 km/h)	-
Battery voltage	11 V	-
Shift lever position	D, S	
No active DTCs set (prevents monitor from	P0705, P0706, P0716, P0717, P0721, P0962, P0963, P0966, P0967, P0970, P0971, P0973, P0974, P0976, P0977, P0979, P0980, P2720, P2721	

running)	
Other	Not during shifting
	Not when the shift lever is being shifted
	No electrical noise in the input shaft (mainshaft) speed sensor output circuit
	Except 1st gear

MALFUNCTION THRESHOLD

When the vehicle speed measured by the input shaft (mainshaft) speed sensor is 13 mph (20 km/h) or more, the vehicle speed measured by the output shaft (countershaft) speed sensor is 1 mph (2 km/h) or less for at least 10 seconds.

DRIVING PATTERN

1. Start the engine.
2. Drive the vehicle at a speed of 13 mph (20 km/h) or more for at least 10 seconds.
    - Drive the vehicle in this manner only if the traffic regulations and ambient conditions allow.

DIAGNOSIS DETAILS

Conditions for setting the DTC

When a malfunction is detected, the MIL comes on and a Pending DTC, a Confirmed DTC, and the freeze data are stored in the PCM memory.

Conditions for clearing the DTC

The MIL is cleared if the malfunction does not return in three consecutive trips in which the diagnostic runs. The MIL, the Pending DTC, the Confirmed DTC, and the freeze data can be cleared with the scan tool Clear command or by disconnecting the battery.

DTC P0723: OUTPUT SHAFT (COUNTERSHAFT) SPEED SENSOR INTERMITTENT FAILURE

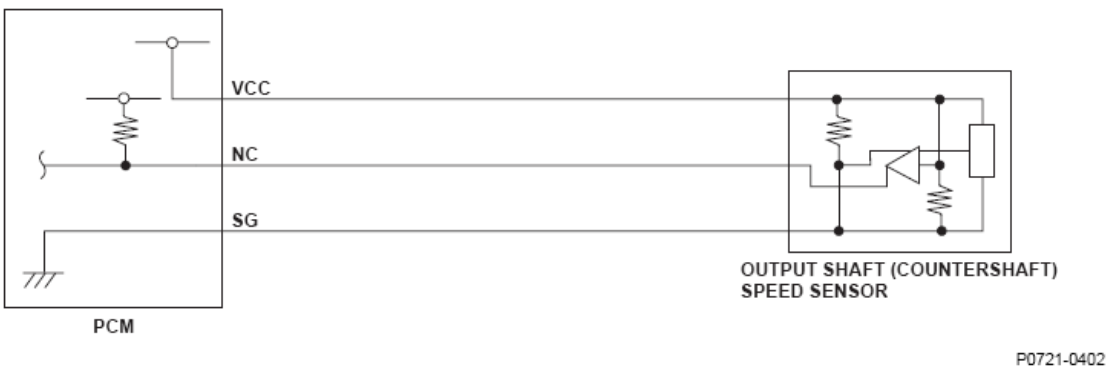


Fig. 161: Output Shaft (Countershaft) Speed Sensor - Circuit Diagram

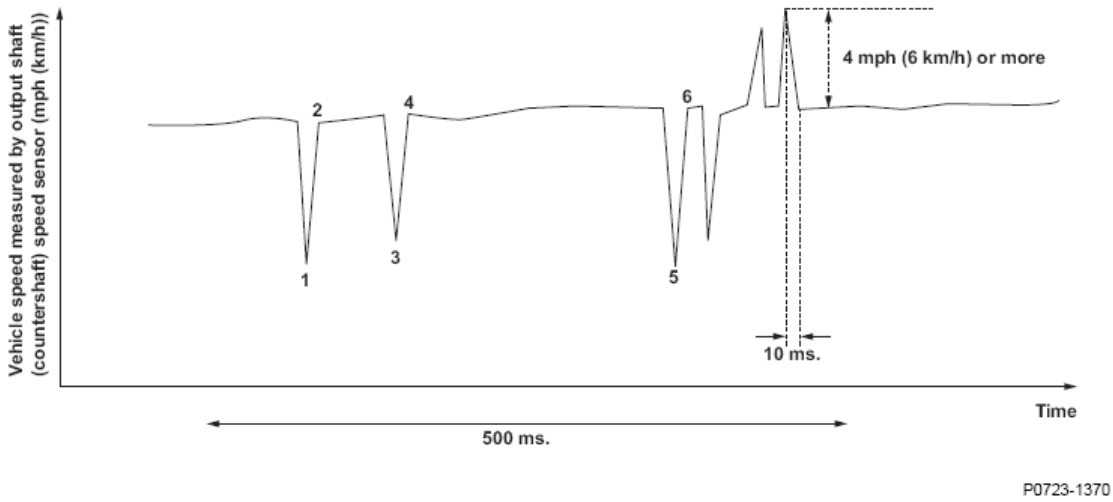


Fig. 162: Output Shaft (Countershaft) Speed Sensor Characteristics Curve

GENERAL DESCRIPTION

The output shaft (countershaft) speed sensor is attached to the outside of the transmission housing. The output shaft (countershaft) speed sensor generates a pulsing signal according to the speed of the park gear on the output shaft (countershaft). Using that signal, the powertrain control module (PCM) determines the speed of the output shaft (countershaft). If no pulses occur with the output shaft (countershaft) rotating, the PCM detects a malfunction that may be caused by an open, a temporary open, or a short to ground. Based on the fluctuation of the vehicle speed measured by the output shaft (countershaft) speed sensor, the PCM detects a malfunction and stores a DTC.

MONITOR EXECUTION, SEQUENCE, DURATION, DTC TYPE, OBD STATUS

Execution	Continuous
Sequence	None
Duration	500 milliseconds
DTC Type	Two drive cycles, MIL on, D indicator blinks
OBD Status	PASSED/FAILED/NOT COMPLETED (STILL TESTING)

ENABLE CONDITIONS

Condition	Minimum	Maximum
Vehicle speed	13 mph (20 km/h)	-
Battery voltage	11 V	-
No active DTCs set (prevents monitor from running)	P0721, P0722	
Other	Not during shifting	
	Not when an input shaft (mainshaft) speed sensor intermittent failure is detected	

MALFUNCTION THRESHOLD

The fluctuation of the vehicle speed measured by the output shaft (countershaft) speed sensor in 10 milliseconds is 4 mph (6 km/h) or more, and it fluctuates at least six times within 500 milliseconds.

DRIVING PATTERN

1. Start the engine.
2. Drive the vehicle at a speed of 13 mph (20 km/h) or more so it shifts from 1st to 6th gear.
    - Drive the vehicle in this manner only if the traffic regulations and ambient conditions allow.

DIAGNOSIS DETAILS

Conditions for setting the DTC

When a malfunction is detected during the first drive cycle, a Pending DTC is stored in the PCM memory. If the malfunction returns in the next (second) drive cycle, the MIL comes on and a Confirmed DTC and the freeze data are stored.

Conditions for clearing the DTC

The MIL is cleared if the malfunction does not return in three consecutive trips in which the diagnostic runs. The MIL, the Pending DTC, the Confirmed DTC, and the freeze data can be cleared with the scan tool Clear command or by disconnecting the battery.

DTC P0729: PROBLEM IN 6TH CLUTCH AND 6TH CLUTCH HYDRAULIC CIRCUIT

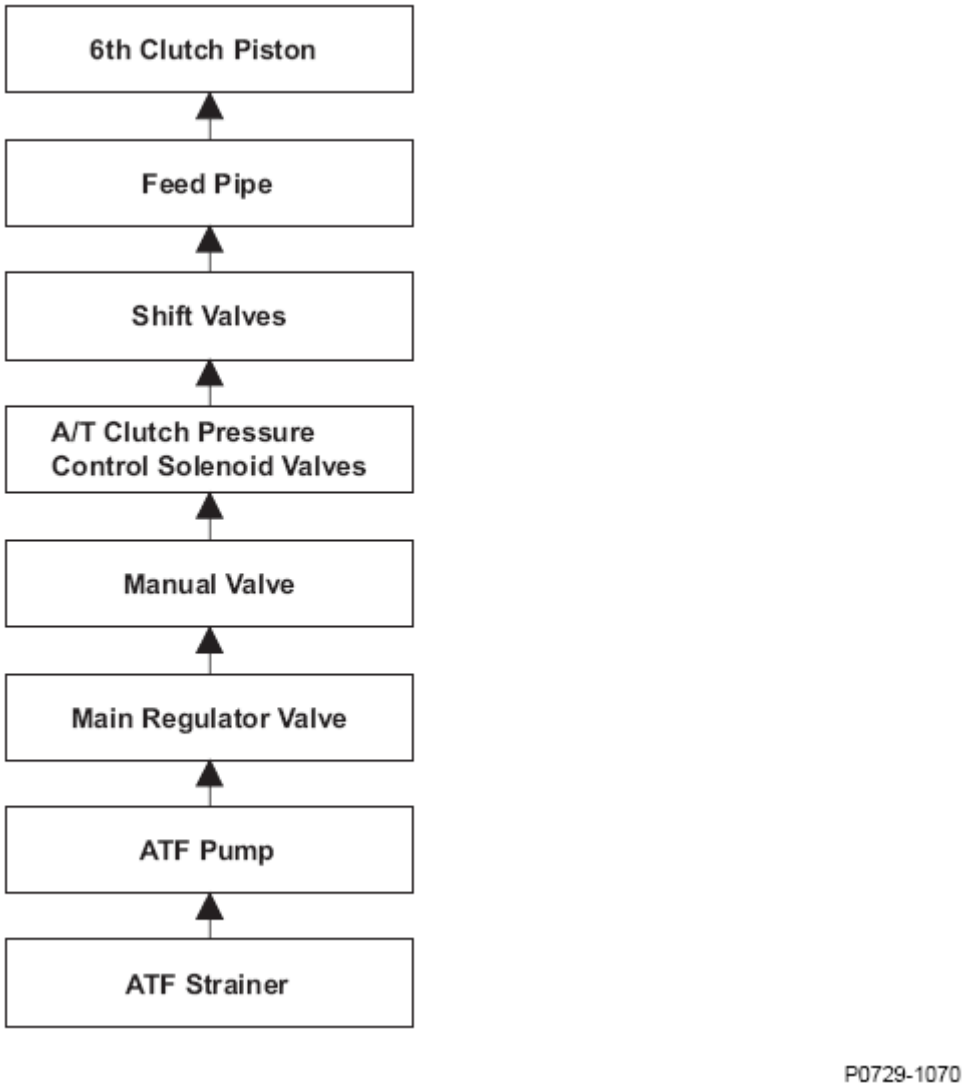


Fig. 163: 6th Clutch Hydraulic Circuit Block Diagram

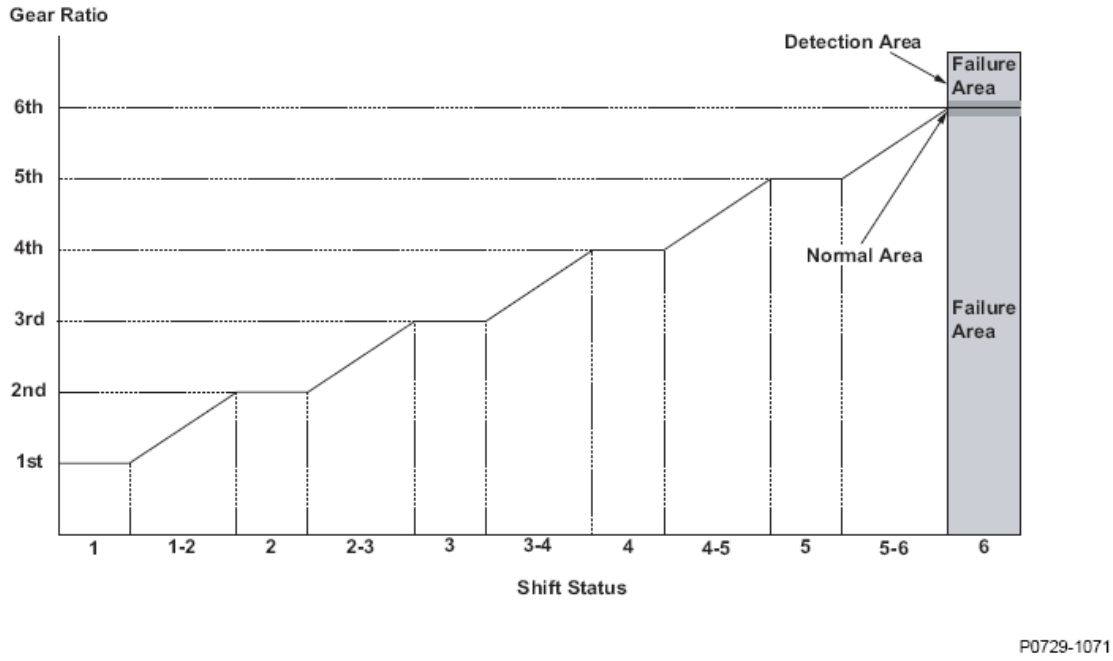


Fig. 164: 6th Clutch Gear Ratio Versus Shifting Status Graph

GENERAL DESCRIPTION

To engage 6th gear, A/T clutch pressure control solenoid valve pressure is supplied to the 6th clutch piston, engaging the 6th clutch, and the mainshaft and the mainshaft 6th gear are connected and revolve together. Hydraulic pressure is supplied to the 6th clutch through the ATF strainer --> the ATF pump --> the main regulator valve --> the manual valve --> the A/T clutch pressure control solenoid valves --> the shift valves --> the feed pipe --> the 6th clutch piston. (An A/T clutch pressure control solenoid valve failure and shift valve failure in the supply route above are detected by the malfunction detection of each solenoid valve.) The powertrain control module (PCM) computes the ratio of the input shaft (mainshaft) speed to the output shaft (countershaft) speed. When the ratio is not the 6th gear ratio, the PCM detects a malfunction of the hydraulic circuit or the 6th clutch and stores a DTC.

MONITOR EXECUTION, SEQUENCE, DURATION, DTC TYPE, OBD STATUS

Execution	Continuous
Sequence	None
Duration	12 seconds or more
DTC Type	Two drive cycles, MIL off, D indicator blinks
OBD Status	PASSED/FAILED/NOT COMPLETED (STILL TESTING)

ENABLE CONDITIONS

Condition	Minimum	Maximum
Engine speed	500 rpm	-
Vehicle speed	8 mph (12 km/h)	-

Battery voltage	11 V	-
Shift lever position	D	
No active DTCs set (prevents monitor from running)	P0117, P0118, P0122, P0123, P0222, P0223, P0705, P0706, P0716, P0717, P0718, P0721, P0722, P0723, P0731, P0732, P0733, P0734, P0735, P0746, P0747, P0751, P0752, P0756, P0757, P0761, P0762, P0776, P0777, P0796, P0797, P0962, P0963, P0966, P0967, P0970, P0971, P0973, P0974, P0976, P0977, P0979, P0980, P1658, P1659, P1683, P1684, P2101, P2118, P2122, P2123, P2127, P2128, P2135, P2138, P2176, P2714, P2720, P2721	

MALFUNCTION THRESHOLD

The actual gear ratio must match one of these conditions for at least 12 seconds with the 6th gear shift command:

- Actual gear ratio is greater than the 6th gear ratio by a factor of 1.25.
- Actual gear ratio is less than the 6th gear ratio by a factor of 0.8.

DRIVING PATTERN

1. Start the engine.
2. Drive the vehicle in D at a speed of 8 mph (12 km/h) or more for at least 12 seconds in 6th gear.
    - Drive the vehicle in this manner only if the traffic regulations and ambient conditions allow.

DIAGNOSIS DETAILS

Conditions for setting the DTC

When a malfunction is detected during the first drive cycle, a Pending DTC is stored in the PCM memory. If the malfunction returns in the next (second) drive cycle, a Confirmed DTC and the freeze data are stored. The MIL does not come on.

Conditions for clearing the DTC

The Pending DTC, the Confirmed DTC, and the freeze data can be cleared with the scan tool Clear command or by disconnecting the battery.

DTC P0731: PROBLEM IN 1ST CLUTCH AND 1ST CLUTCH HYDRAULIC CIRCUIT

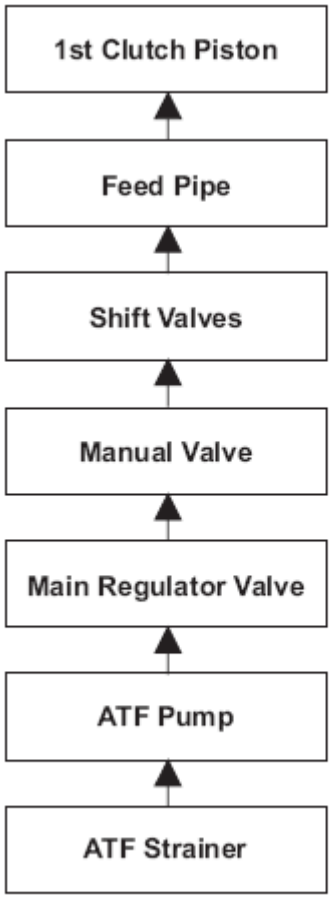


Fig. 165: 1st Clutch Hydraulic Circuit Block Diagram

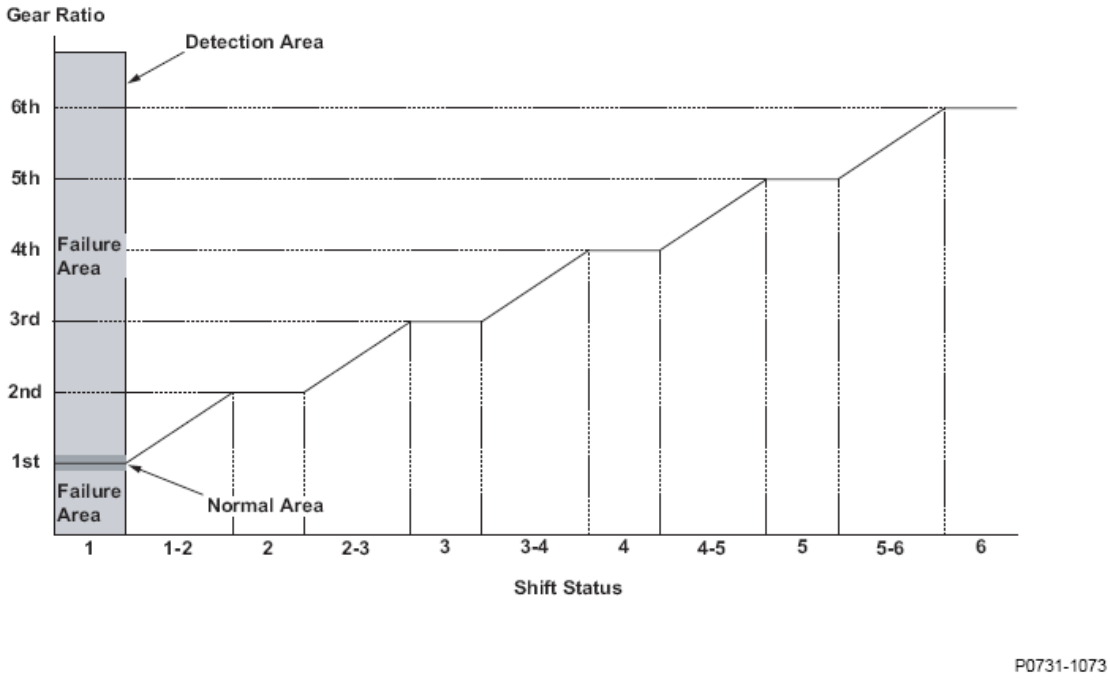


Fig. 166: 1st Clutch Gear Ratio Versus Shifting Status Graph

GENERAL DESCRIPTION

To engage 1st gear, line pressure is supplied to the 1st clutch piston, engaging the 1st clutch, and the secondary shaft and the secondary shaft 1st gear are connected and revolve together. Hydraulic pressure is supplied to the 1st clutch through the ATF strainer --> the ATF pump --> the main regulator valve --> the manual valve --> the shift valves --> the feed pipe --> the 1st clutch piston. (A shift valve failure in the supply route above is detected by the malfunction detection of each shift solenoid valve.) The powertrain control module (PCM) computes the ratio of the input shaft (mainshaft) speed to the output shaft (countershaft) speed. When the ratio is not the 1st gear ratio, the PCM detects a malfunction of the hydraulic circuit or the 1st clutch and stores a DTC.

MONITOR EXECUTION, SEQUENCE, DURATION, DTC TYPE, OBD STATUS

Execution	Continuous
Sequence	None
Duration	12 seconds or more
DTC Type	Two drive cycles, MIL off, D indicator blinks
OBD Status	PASSED/FAILED/NOT COMPLETED (STILL TESTING)

ENABLE CONDITIONS

Condition	Minimum	Maximum
Engine speed	500 rpm	-
Vehicle speed	8 mph (12 km/h)	-
Battery voltage	11 V	-

Shift lever position	D, S
No active DTCs set (prevents monitor from running)	P0117, P0118, P0122, P0123, P0222, P0223, P0705, P0706, P0716, P0717, P0718, P0721, P0722, P0723, P0729, P0732, P0733, P0734, P0735, P0746, P0747, P0751, P0752, P0756, P0757, P0761, P0762, P0776, P0777, P0796, P0797, P0962, P0963, P0966, P0967, P0970, P0971, P0973, P0974, P0976, P0977, P0979, P0980, P1658, P1659, P1683, P1684, P2101, P2118, P2122, P2123, P2127, P2128, P2135, P2138, P2176, P2714, P2720, P2721

MALFUNCTION THRESHOLD

The actual gear ratio must match one of these conditions for at least 12 seconds with the 1st gear shift command:

- Actual gear ratio is greater than the 1st gear ratio by a factor of 1.25.
- Actual gear ratio is less than the 1st gear ratio by a factor of 0.8.

DRIVING PATTERN

1. Start the engine.
2. Drive the vehicle in D at a speed of 8 mph (12 km/h) or more for at least 12 seconds in 1st gear.
    - Drive the vehicle in this manner only if the traffic regulations and ambient conditions allow.

DIAGNOSIS DETAILS

Conditions for setting the DTC

When a malfunction is detected during the first drive cycle, a Pending DTC is stored in the PCM memory. If the malfunction returns in the next (second) drive cycle, a Confirmed DTC and the freeze data are stored. The MIL does not come on.

Conditions for clearing the DTC

The Pending DTC, the Confirmed DTC, and the freeze data can be cleared with the scan tool Clear command or by disconnecting the battery.

DTC P0732: PROBLEM IN 2ND CLUTCH AND 2ND CLUTCH HYDRAULIC CIRCUIT

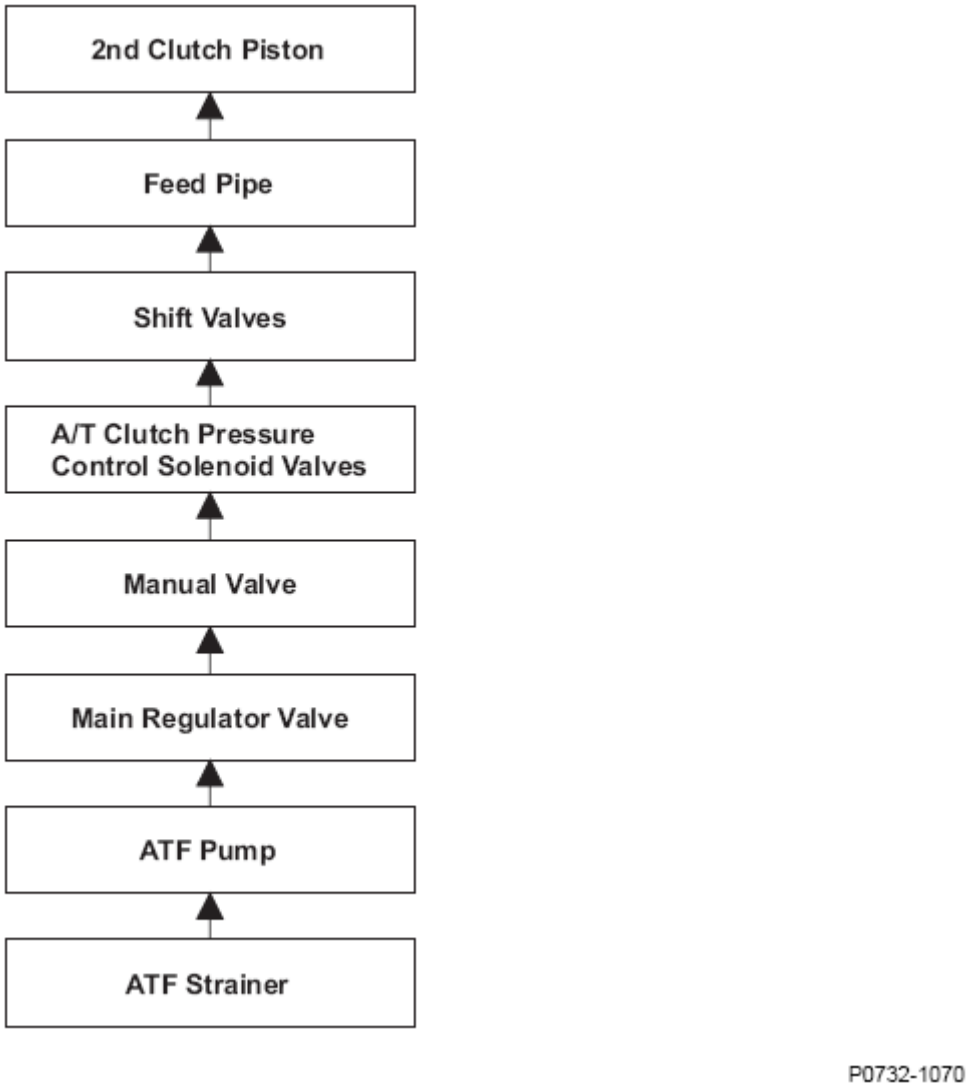


Fig. 167: 2nd Clutch Hydraulic Circuit Block Diagram

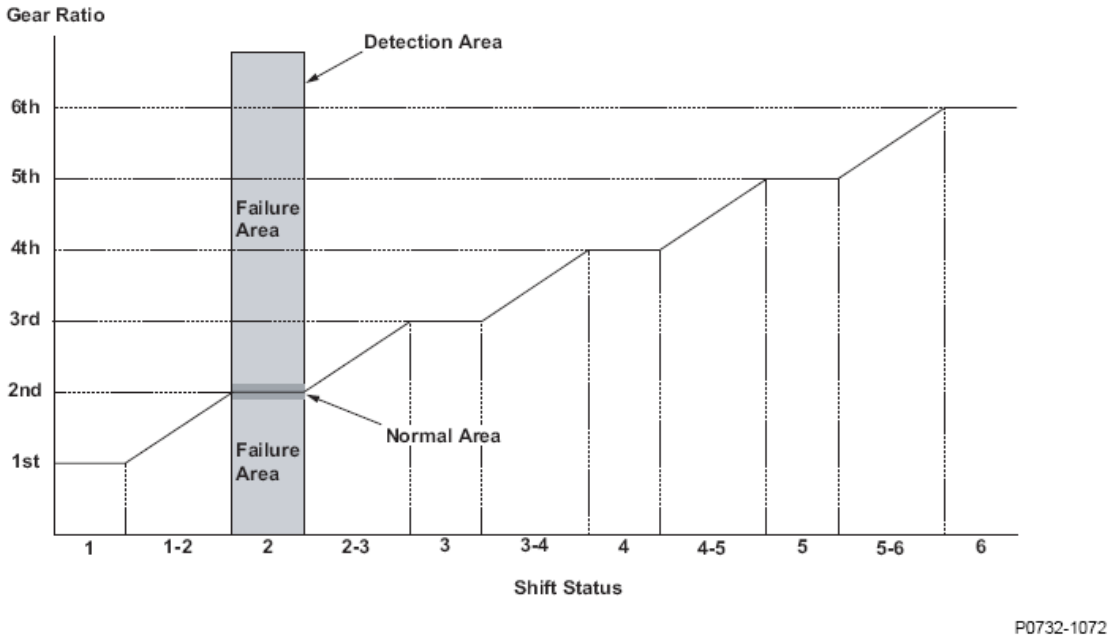


Fig. 168: 2nd Clutch Gear Ratio Versus Shifting Status Graph

GENERAL DESCRIPTION

To engage 2nd gear, A/T clutch pressure control solenoid valve pressure is supplied to the 2nd clutch piston, engaging the 2nd clutch, and the secondary shaft and the secondary shaft 2nd gear are connected and revolve together. Hydraulic pressure is supplied to the 2nd clutch through the ATF strainer --> the ATF pump --> the main regulator valve --> the manual valve --> the A/T clutch pressure control solenoid valves --> the shift valves --> the feed pipe --> the 2nd clutch piston. (An A/T clutch pressure control solenoid valve failure and shift valve failure in the supply route above are detected by the malfunction detection of each solenoid valve.) The powertrain control module (PCM) computes the ratio of the input shaft (mainshaft) speed to the output shaft (countershaft) speed. When the ratio is not the 2nd gear ratio, the PCM detects a malfunction of the hydraulic circuit or the 2nd clutch and stores a DTC.

MONITOR EXECUTION, SEQUENCE, DURATION, DTC TYPE, OBD STATUS

Execution	Continuous
Sequence	None
Duration	12 seconds or more
DTC Type	Two drive cycles, MIL off, D indicator blinks
OBD Status	PASSED/FAILED/NOT COMPLETED (STILL TESTING)

ENABLE CONDITIONS

Condition	Minimum	Maximum
Engine speed	500 rpm	-
Vehicle speed	8 mph (12 km/h)	-

Battery voltage	11 V	-
Shift lever position	D, S	
No active DTCs set (prevents monitor from running)	P0117, P0118, P0122, P0123, P0222, P0223, P0705, P0706, P0716, P0717, P0718, P0721, P0722, P0723, P0729, P0731, P0733, P0734, P0735, P0746, P0747, P0751, P0752, P0756, P0757, P0761, P0762, P0776, P0777, P0796, P0797, P0962, P0963, P0966, P0967, P0970, P0971, P0973, P0974, P0976, P0977, P0979, P0980, P1658, P1659, P1683, P1684, P2101, P2118, P2122, P2123, P2127, P2128, P2135, P2138, P2176, P2714, P2720, P2721	

MALFUNCTION THRESHOLD

The actual gear ratio must match one of these conditions for at least 12 seconds with the 2nd gear shift command:

- Actual gear ratio is greater than the 2nd gear ratio by a factor of 1.25.
- Actual gear ratio is less than the 2nd gear ratio by a factor of 0.8.

DRIVING PATTERN

1. Start the engine.
2. Drive the vehicle in D at a speed of 8 mph (12 km/h) or more for at least 12 seconds in 2nd gear.
    - Drive the vehicle in this manner only if the traffic regulations and ambient conditions allow.

DIAGNOSIS DETAILS

Conditions for setting the DTC

When a malfunction is detected during the first drive cycle, a Pending DTC is stored in the PCM memory. If the malfunction returns in the next (second) drive cycle, a Confirmed DTC and the freeze data are stored. The MIL does not come on.

Conditions for clearing the DTC

The Pending DTC, the Confirmed DTC, and the freeze data can be cleared with the scan tool Clear command or by disconnecting the battery.

DTC P0733: PROBLEM IN 3RD CLUTCH AND 3RD CLUTCH HYDRAULIC CIRCUIT

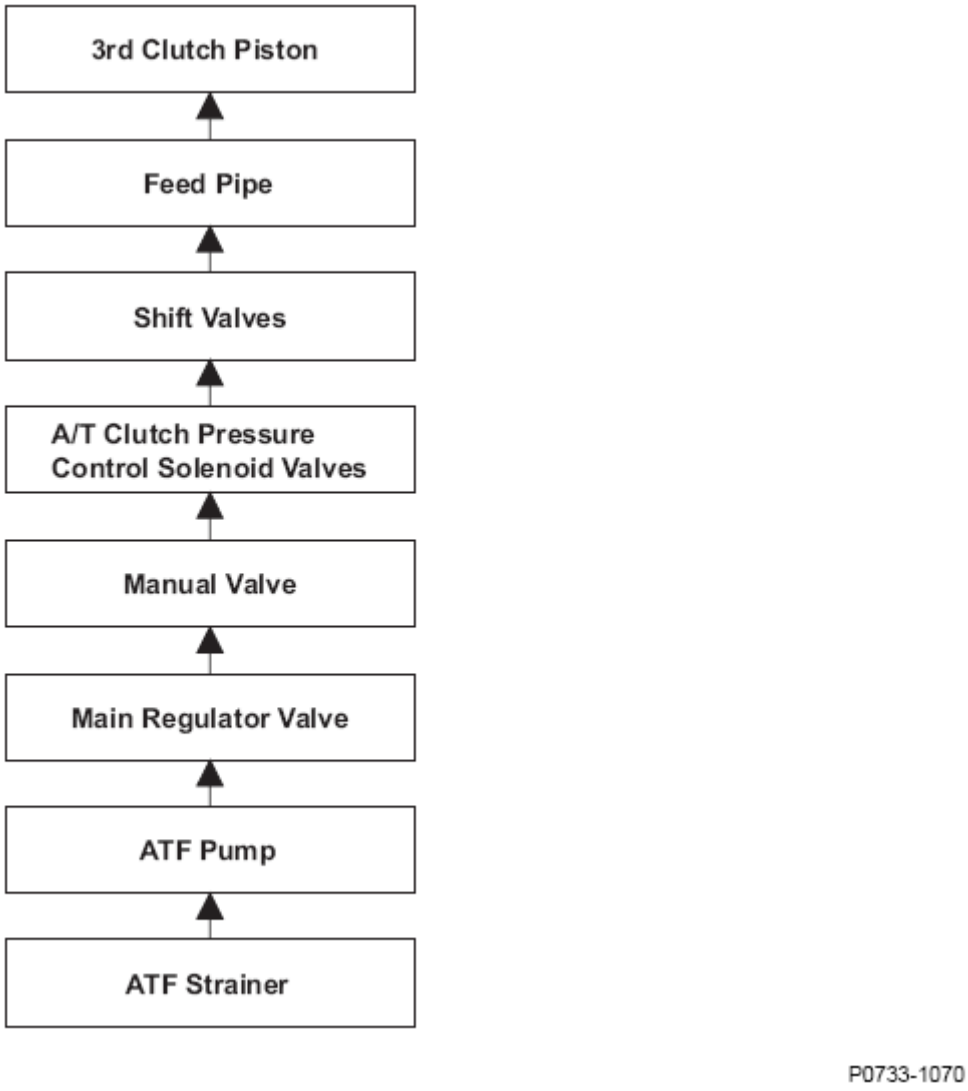


Fig. 169: 3rd Clutch Hydraulic Circuit Block Diagram

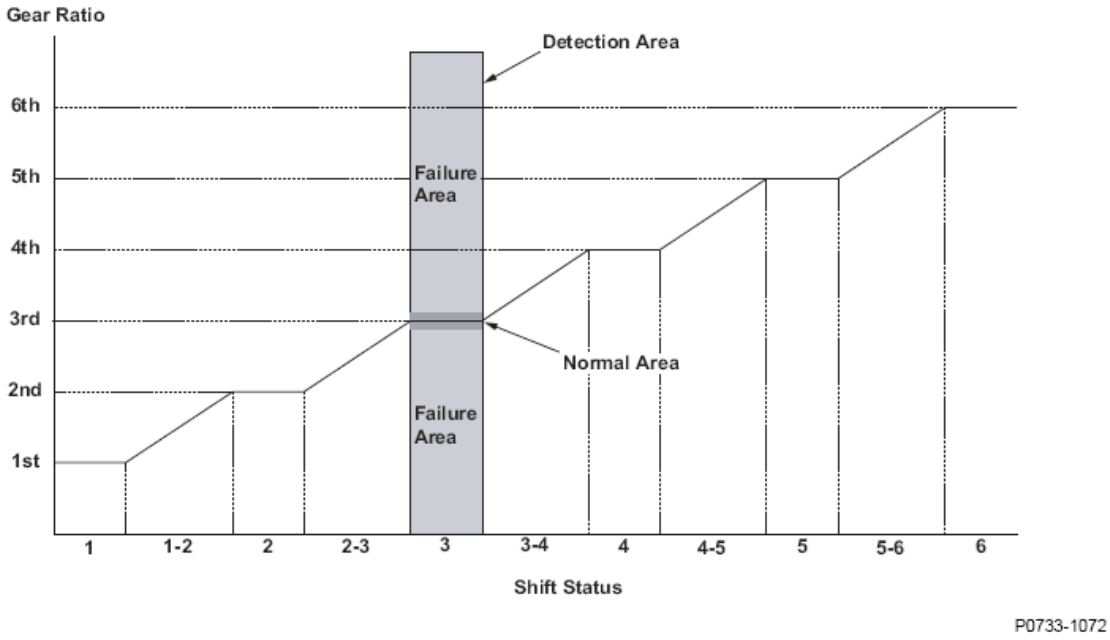


Fig. 170: 3rd Clutch Gear Ratio Versus Shifting Status Graph

GENERAL DESCRIPTION

To engage 3rd gear, A/T clutch pressure control solenoid valve pressure is supplied to the 3rd clutch piston, engaging the 3rd clutch, and the mainshaft and the mainshaft 3rd gear are connected and revolve together. Hydraulic pressure is supplied to the 3rd clutch through the ATF strainer --> the ATF pump --> the main regulator valve --> the manual valve --> the A/T clutch pressure control solenoid valves --> the shift valves --> the feed pipe --> the 3rd clutch piston. (An A/T clutch pressure control solenoid valve failure and shift valve failure in the supply route above are detected by the malfunction detection of each solenoid valve.) The powertrain control module (PCM) computes the ratio of the input shaft (mainshaft) speed to the output shaft (countershaft) speed. When the ratio is not the 3rd gear ratio, the PCM detects a malfunction of the hydraulic circuit or the 3rd clutch and stores a DTC.

MONITOR EXECUTION, SEQUENCE, DURATION, DTC TYPE, OBD STATUS

Execution	Continuous
Sequence	None
Duration	12 seconds or more
DTC Type	Two drive cycles, MIL off, D indicator blinks
OBD Status	PASSED/FAILED/NOT COMPLETED (STILL TESTING)

ENABLE CONDITIONS

Condition	Minimum	Maximum
Engine speed	500 rpm	-
Vehicle speed	8 mph (12 km/h)	-

Battery voltage	11 V	-
Shift lever position	D, S	
No active DTCs set (prevents monitor from running)	P0117, P0118, P0122, P0123, P0222, P0223, P0705, P0706, P0716, P0717, P0718, P0721, P0722, P0723, P0729, P0731, P0732, P0734, P0735, P0746, P0747, P0751, P0752, P0756, P0757, P0761, P0762, P0776, P0777, P0796, P0797, P0962, P0963, P0966, P0967, P0970, P0971, P0973, P0974, P0976, P0977, P0979, P0980, P1658, P1659, P1683, P1684, P2101, P2118, P2122, P2123, P2127, P2128, P2135, P2138, P2176, P2714, P2720, P2721	

MALFUNCTION THRESHOLD

The actual gear ratio must match one of these conditions for at least 12 seconds with the 3rd gear shift command:

- Actual gear ratio is greater than the 3rd gear ratio by a factor of 1.25.
- Actual gear ratio is less than the 3rd gear ratio by a factor of 0.8.

DRIVING PATTERN

1. Start the engine.
2. Drive the vehicle in D at a speed of 8 mph (12 km/h) or more for at least 12 seconds in 3rd gear.
    - Drive the vehicle in this manner only if the traffic regulations and ambient conditions allow.

DIAGNOSIS DETAILS

Conditions for setting the DTC

When a malfunction is detected during the first drive cycle, a Pending DTC is stored in the PCM memory. If the malfunction returns in the next (second) drive cycle, a Confirmed DTC and the freeze data are stored. The MIL does not come on.

Conditions for clearing the DTC

The Pending DTC, the Confirmed DTC, and the freeze data can be cleared with the scan tool Clear command or by disconnecting the battery.

DTC P0734: PROBLEM IN 4TH CLUTCH AND 4TH CLUTCH HYDRAULIC CIRCUIT

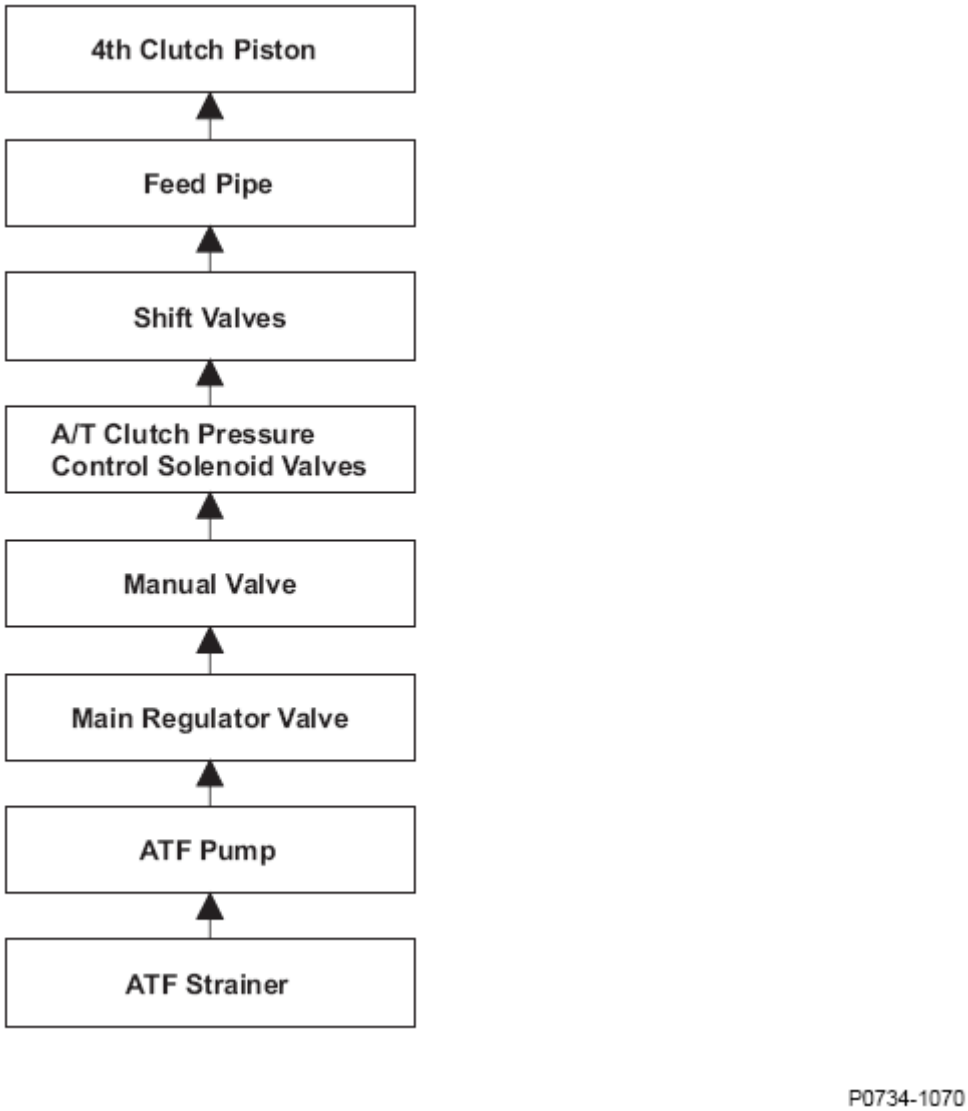


Fig. 171: 4th Clutch Hydraulic Circuit Block Diagram

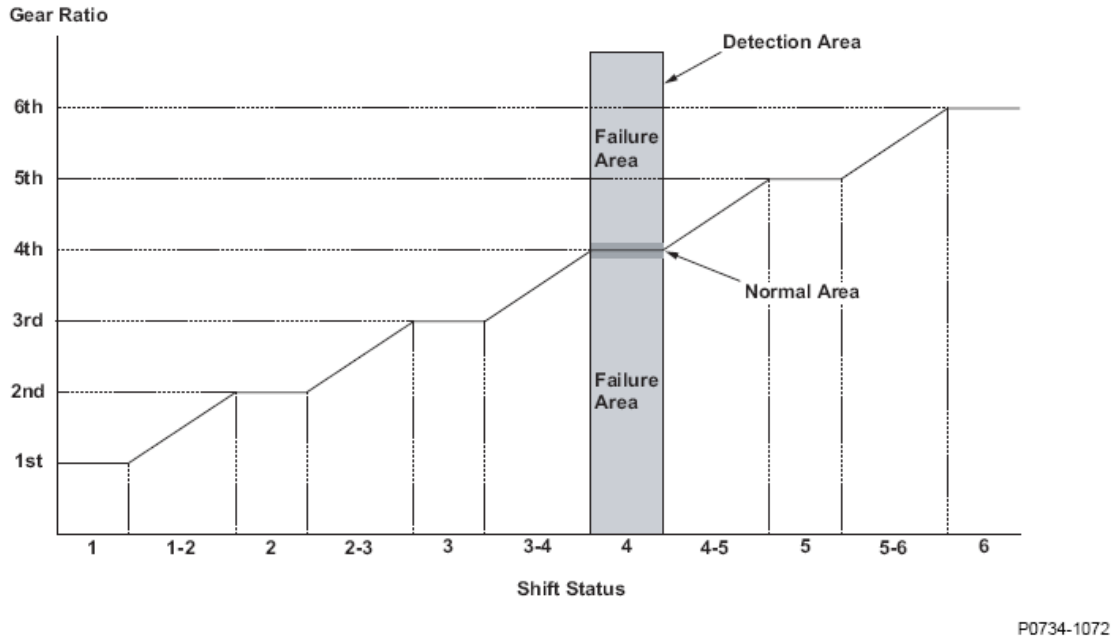


Fig. 172: 4th Clutch Gear Ratio Versus Shifting Status Graph

GENERAL DESCRIPTION

To engage 4th gear, A/T clutch pressure control solenoid valve pressure is supplied to the 4th clutch piston, engaging the 4th clutch, and the third shaft and the third shaft 4th gear are connected and revolve together. Hydraulic pressure is supplied to the 4th clutch through the ATF strainer --> the ATF pump --> the main regulator valve --> the manual valve --> the A/T clutch pressure control solenoid valves --> the shift valves --> the feed pipe --> the 4th clutch piston. (An A/T clutch pressure control solenoid valve failure and shift valve failure in the supply route above are detected by the malfunction detection of each solenoid valve.) The powertrain control module (PCM) computes the ratio of the input shaft (mainshaft) speed to the output shaft (countershaft) speed. When the ratio is not the 4th gear ratio, the PCM detects a malfunction of the hydraulic circuit or the 4th clutch and stores a DTC.

MONITOR EXECUTION, SEQUENCE, DURATION, DTC TYPE, OBD STATUS

Execution	Continuous
Sequence	None
Duration	12 seconds or more
DTC Type	Two drive cycles, MIL off, D indicator blinks
OBD Status	PASSED/FAILED/NOT COMPLETED (STILL TESTING)

ENABLE CONDITIONS

Condition	Minimum	Maximum
Engine speed	500 rpm	-
Vehicle speed	8 mph (12 km/h)	-

Battery voltage	11 V	-
Shift lever position	D	
No active DTCs set (prevents monitor from running)	P0117, P0118, P0122, P0123, P0222, P0223, P0705, P0706, P0716, P0717, P0718, P0721, P0722, P0723, P0729, P0731, P0732, P0733, P0735, P0746, P0747, P0751, P0752, P0756, P0757, P0761, P0762, P0776, P0777, P0796, P0797, P0962, P0963, P0966, P0967, P0970, P0971, P0973, P0974, P0976, P0977, P0979, P0980, P1658, P1659, P1683, P1684, P2101, P2118, P2122, P2123, P2127, P2128, P2135, P2138, P2176, P2714, P2720, P2721	

MALFUNCTION THRESHOLD

The actual gear ratio must match one of these conditions for at least 12 seconds with the 4th gear shift command:

- Actual gear ratio is greater than the 4th gear ratio by a factor of 1.25.
- Actual gear ratio is less than the 4th gear ratio by a factor of 0.8.

DRIVING PATTERN

1. Start the engine.
2. Drive the vehicle in D at a speed of 8 mph (12 km/h) or more for at least 12 seconds in 4th gear.
    - Drive the vehicle in this manner only if the traffic regulations and ambient conditions allow.

DIAGNOSIS DETAILS

Conditions for setting the DTC

When a malfunction is detected during the first drive cycle, a Pending DTC is stored in the PCM memory. If the malfunction returns in the next (second) drive cycle, a Confirmed DTC and the freeze data are stored. The MIL does not come on.

Conditions for clearing the DTC

The Pending DTC, the Confirmed DTC, and the freeze data can be cleared with the scan tool Clear command or by disconnecting the battery.

DTC P0735: PROBLEM IN 5TH CLUTCH AND 5TH CLUTCH HYDRAULIC CIRCUIT

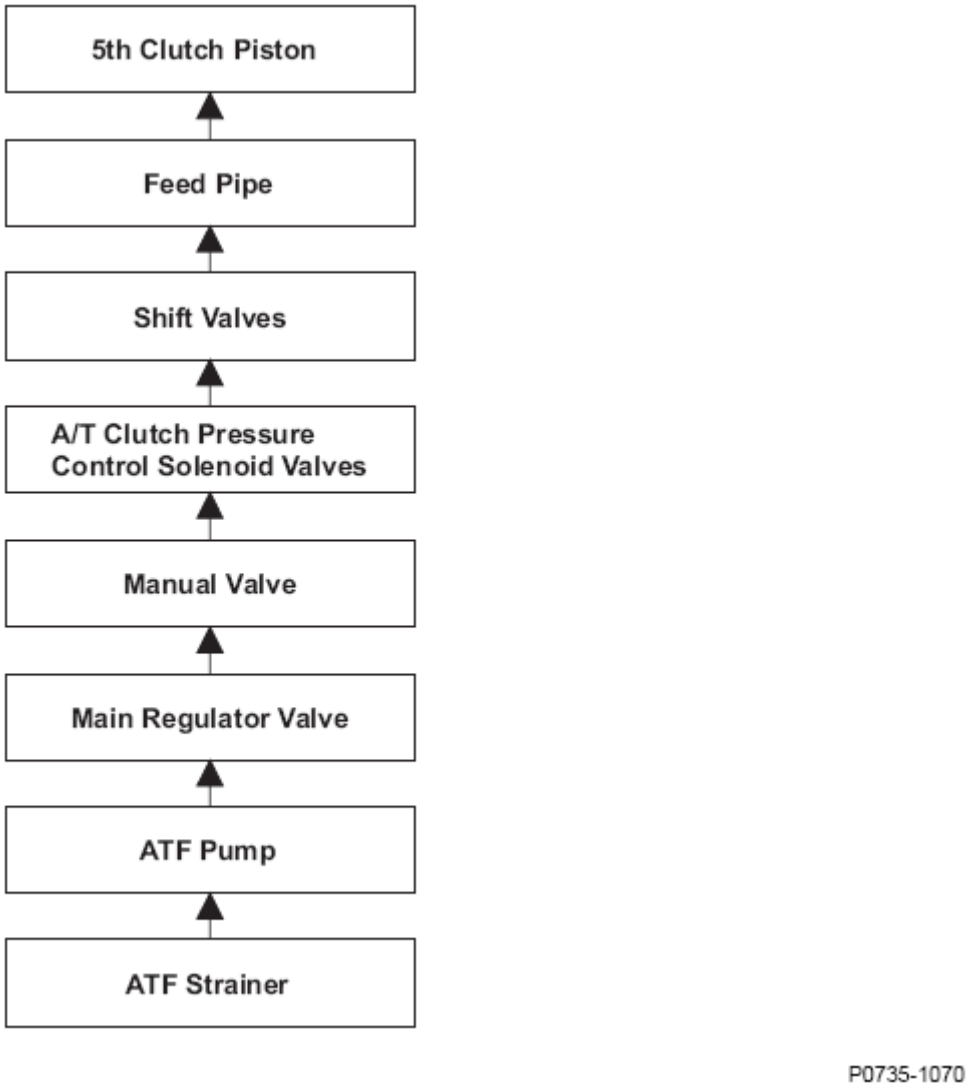


Fig. 173: 5th Clutch Hydraulic Circuit Block Diagram

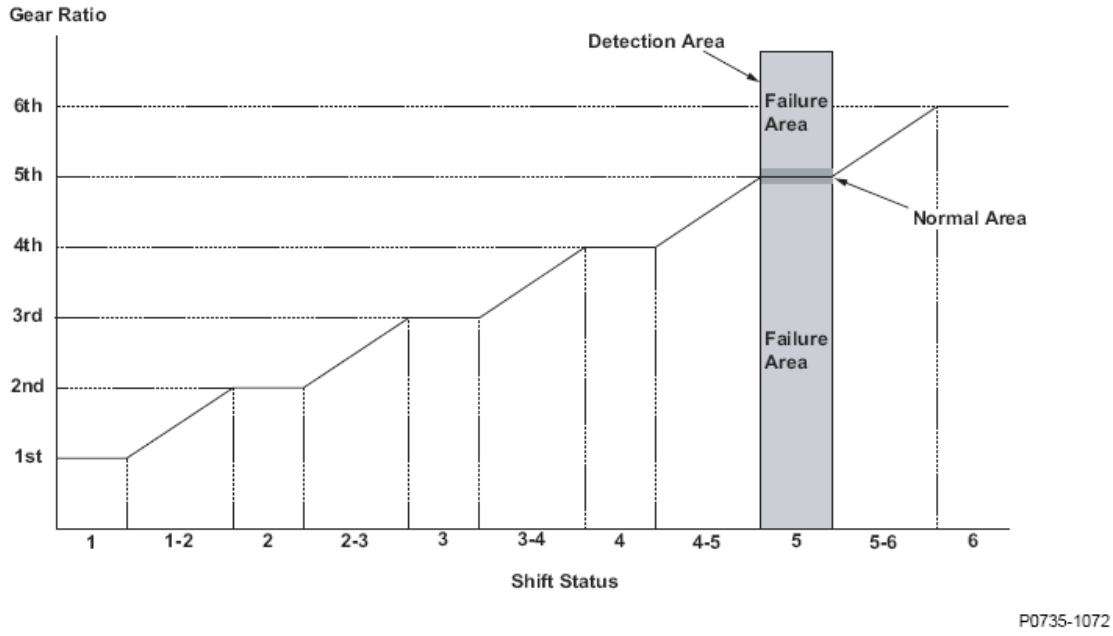


Fig. 174: 5th Clutch Gear Ratio Versus Shifting Status Graph

GENERAL DESCRIPTION

To engage 5th gear, A/T clutch pressure control solenoid valve pressure is supplied to the 5th clutch piston, engaging the 5th clutch, and the secondary shaft and the secondary shaft 5th gear are connected and revolve together. Hydraulic pressure is supplied to the 5th clutch through the ATF strainer --> the ATF pump --> the main regulator valve --> the manual valve --> the A/T clutch pressure control solenoid valves --> the shift valves --> the feed pipe --> the 5th clutch piston. (An A/T clutch pressure control solenoid valve failure and shift valve failure in the supply route above are detected by the malfunction detection of each solenoid valve.) The powertrain control module (PCM) computes the ratio of the input shaft (mainshaft) speed to the output shaft (countershaft) speed. When the ratio is not the 5th gear ratio, the PCM detects a malfunction of the hydraulic circuit or the 5th clutch and stores a DTC.

MONITOR EXECUTION, SEQUENCE, DURATION, DTC TYPE, OBD STATUS

Execution	Continuous
Sequence	None
Duration	12 seconds or more
DTC Type	Two drive cycles, MIL off, D indicator blinks
OBD Status	PASSED/FAILED/NOT COMPLETED (STILL TESTING)

ENABLE CONDITIONS

Condition	Minimum	Maximum
Engine speed	500 rpm	-
Vehicle speed	8 mph (12 km/h)	-
Battery voltage	11 V	-

Shift lever position	D
No active DTCs set (prevents monitor from running)	P0117, P0118, P0122, P0123, P0222, P0223, P0705, P0706, P0716, P0717, P0718, P0721, P0722, P0723, P0729, P0731, P0732, P0733, P0734, P0746, P0747, P0751, P0752, P0756, P0757, P0761, P0762, P0776, P0777, P0796, P0797, P0962, P0963, P0966, P0967, P0970, P0971, P0973, P0974, P0976, P0977, P0979, P0980, P1658, P1659, P1683, P1684, P2101, P2118, P2122, P2123, P2127, P2128, P2135, P2138, P2176, P2714, P2720, P2721

MALFUNCTION THRESHOLD

The actual gear ratio must match one of these conditions for at least 12 seconds with the 5th gear shift command:

- Actual gear ratio is greater than the 5th gear ratio by a factor of 1.25.
- Actual gear ratio is less than the 5th gear ratio by a factor of 0.8.

DRIVING PATTERN

1. Start the engine.
2. Drive the vehicle in D at a speed of 8 mph (12 km/h) or more for at least 12 seconds in 5th gear.
    - Drive the vehicle in this manner only if the traffic regulations and ambient conditions allow.

DIAGNOSIS DETAILS

Conditions for setting the DTC

When a malfunction is detected during the first drive cycle, a Pending DTC is stored in the PCM memory. If the malfunction returns in the next (second) drive cycle, a Confirmed DTC and the freeze data are stored. The MIL does not come on.

Conditions for clearing the DTC

The Pending DTC, the Confirmed DTC, and the freeze data can be cleared with the scan tool Clear command or by disconnecting the battery.

DTC P0741: TORQUE CONVERTER CLUTCH HYDRAULIC CIRCUIT STUCK OFF

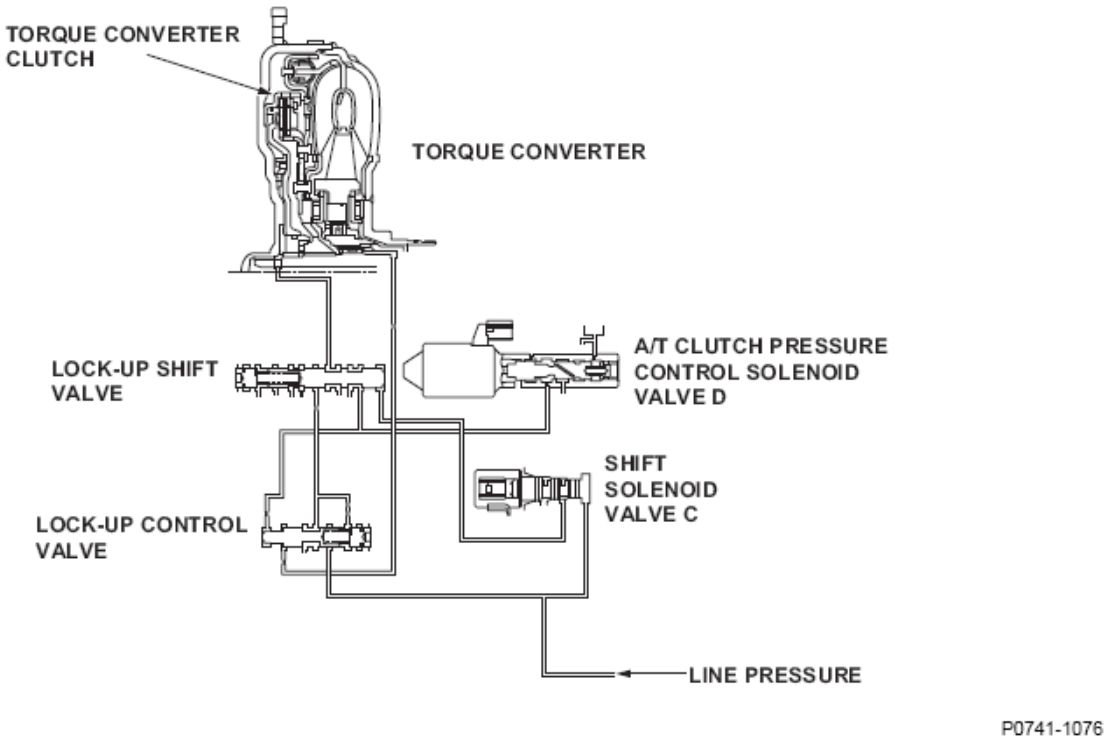


Fig. 175: Torque Converter Clutch - System Diagram

Torque converter clutch operation		A/T clutch pressure control solenoid valve D	
		ON (100 %)	OFF (0 %)
Shift solenoid valve C	ON (12 V)	Torque converter clutch: maximum duty	Torque converter clutch: minimum duty
	OFF (0 V)	Torque converter clutch OFF	Torque converter clutch OFF

GENERAL DESCRIPTION

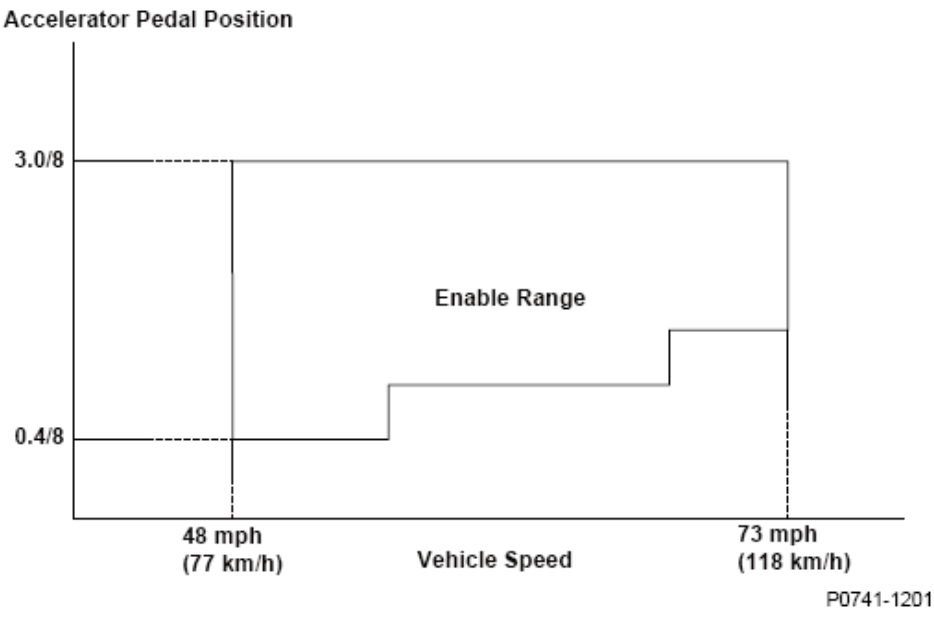
The power transfer capacity of the torque converter clutch is controlled by the balance of automatic transmission fluid (ATF) supplied to and discharged from the torque converter clutch and the torque converter. When hydraulic pressure supplied to the torque converter clutch is less than the torque converter internal pressure, lock up is off. When hydraulic pressure supplied to the torque converter clutch is greater than the torque converter internal pressure, lock up is on. As the hydraulic pressure supplied to the torque converter clutch is increased, the power transfer capacity of the torque converter clutch is increased. The supply of hydraulic pressure is switched by shift solenoid valve C and the lock-up shift valve. When the powertrain control module (PCM) turns on shift solenoid valve C, the hydraulic pressure is supplied to the torque converter clutch. When the PCM turns off shift solenoid valve C, the hydraulic pressure is not supplied to the torque converter clutch. The balance of hydraulic pressure supplied to the torque converter clutch and the torque converter is controlled by A/T clutch pressure control solenoid valve D and the lock-up control valve. When the PCM turns on A/T clutch pressure control solenoid valve D, the power transfer capacity of the torque converter clutch is at its maximum. When the PCM turns off A/T clutch pressure control solenoid valve D, the power transfer capacity of the torque converter clutch is at its minimum. If the ratio of engine speed and input shaft (mainshaft) speed is not about 1:1 while the PCM is issuing the command to turn shift solenoid valve C and A/T clutch pressure control solenoid valve D on, the PCM detects a malfunction and stores a DTC.

MONITOR EXECUTION, SEQUENCE, DURATION, DTC TYPE, OBD STATUS

Execution	Once per driving cycle
Sequence	None
Duration	22 seconds or more
DTC Type	Two drive cycles, MIL off, D indicator blinks
OBD Status	PASSED/FAILED/NOT COMPLETED (STILL TESTING)

ENABLE CONDITIONS

Condition	Minimum	Maximum
Engine coolant temperature	158 °F (70 °C)	221 °F (105 °C)
Battery voltage	11 V	-
Shift status	6th gear	
Torque converter clutch	During controlling operation	
No active DTCs set (prevents monitor from running)	P0117, P0118, P0122, P0123, P0222, P0223, P0705, P0706, P0716, P0717, P0718, P0721, P0722, P0723, P0746, P0747, P0751, P0752, P0756, P0757, P0761, P0762, P0776, P0777, P0796, P0797, P0962, P0963, P0966, P0967, P0970, P0971, P0973, P0974, P0976, P0977, P0979, P0980, P1658, P1659, P1683, P1684, P2101, P2118, P2122, P2123, P2127, P2128, P2135, P2138, P2176, P2714, P2720, P2721	
Other	When both the vehicle speed and the accelerator pedal position are in Enable Range	



MALFUNCTION THRESHOLD

The ratio of the engine revolutions to the transmission input pulses does not reach about 100 % for at least 22 seconds.

DRIVING PATTERN

1. Start the engine. Hold the engine speed at 3,000 rpm without load (in P or N) until the radiator fan comes on.
2. Drive the vehicle at a constant speed of 60 mph (96 km/h) for at least 22 seconds.
    - Drive the vehicle in this manner only if the traffic regulations and ambient conditions allow.

DIAGNOSIS DETAILS

Conditions for setting the DTC

When a malfunction is detected during the first drive cycle, a Pending DTC is stored in the PCM memory. If the malfunction returns in the next (second) drive cycle, a Confirmed DTC and the freeze data are stored. The MIL does not come on.

Conditions for clearing the DTC

The Pending DTC, the Confirmed DTC, and the freeze data can be cleared with the scan tool Clear command or by disconnecting the battery.

DTC P0746: A/T CLUTCH PRESSURE CONTROL SOLENOID VALVE A STUCK OFF

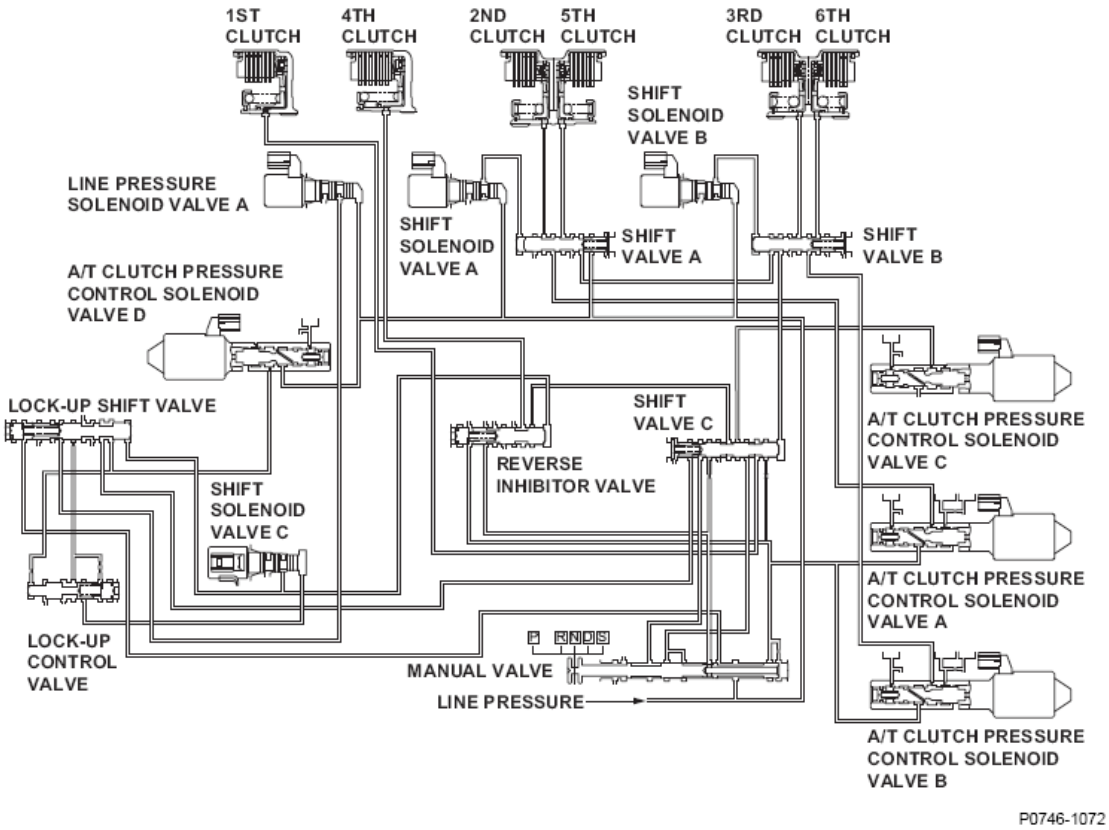


Fig. 176: A/T Clutch Pressure Control Solenoid Valve - System Diagram

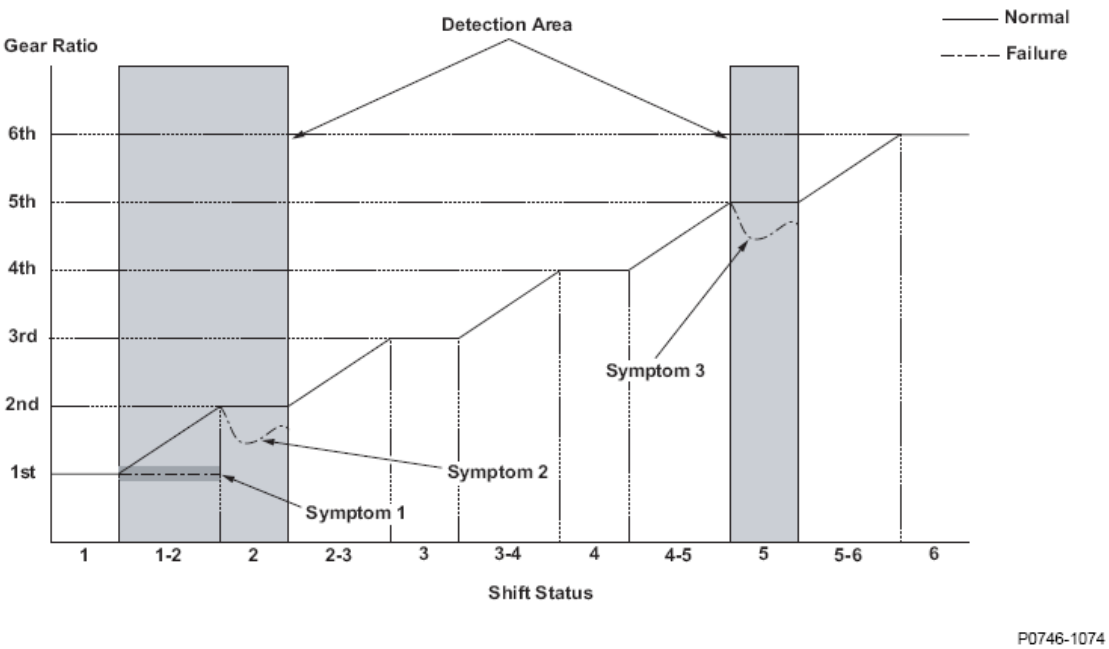


Fig. 177: Gear Ratio Versus Shifting Status Graph (Failure Detection Area)

HYDRAULIC PRESSURE SUPPLY TO CLUTCH BY SHIFT SOLENOID VALVE OUTPUT (D

POSITION)

Gear position	Shift solenoid valve		Clutch					
	A	B	1st	2nd	3rd	4th	5th	6th
Neutral-1st	ON	OFF	CPCD	-	-	-	-	-
1st	ON	ON	LINE	CPCA	CPCB	CPCC	-	-
1st-2nd	ON	ON	LINE	CPCA	CPCB	CPCC	-	-
2nd	ON	ON	LINE	CPCA	CPCB	CPCC	-	-
2nd-3rd	ON	ON	LINE	CPCA	CPCB	CPCC	-	-
3rd	OFF	ON	LINE	-	CPCB	CPCC	CPCA	-
3rd-4th	OFF	ON	LINE	-	CPCB	CPCC	CPCA	-
4th	OFF	OFF/(ON)	LINE	-	(CPCB)	CPCC	CPCA	CPCB
4th-5th	OFF	OFF	LINE	-	-	CPCC	CPCA	CPCB
5th	OFF	OFF/(ON)	LINE	-	(CPCB)	CPCC	CPCA	CPCB
5th-6th	OFF	OFF	LINE	-	-	CPCC	CPCA	CPCB
6th	OFF	OFF	LINE	-	-	CPCC	CPCA	CPCB

LINE: Line pressure
CPCA: A/T clutch pressure control solenoid valve A pressure
CPCB: A/T clutch pressure control solenoid valve B pressure
CPCC: A/T clutch pressure control solenoid valve C pressure
CPCD: A/T clutch pressure control solenoid valve D pressure

GENERAL DESCRIPTION

A/T clutch pressure control solenoid valve A is installed on the transmission housing. A/T clutch pressure control solenoid valve A is operated by the powertrain control module (PCM) and converts line pressure to A/T clutch pressure control solenoid valve A pressure. A signal from the PCM is output to A/T clutch pressure control solenoid valve A to supply proper A/T clutch pressure control solenoid valve A pressure to the correct gear clutch according to the shift schedule and the driving conditions. When the current from the PCM is high (ON), A/T clutch pressure control solenoid valve A operates and A/T clutch pressure control solenoid valve A pressure increases. When the current from the PCM is low (OFF), A/T clutch pressure control solenoid valve A turns off and A/T clutch pressure control solenoid valve A pressure decreases. The PCM monitors the input shaft (mainshaft) speed and the output shaft (countershaft) speed according to the shift status determined by the shift schedule. When an improper gear ratio is output for the shift schedule, the PCM detects an A/T clutch pressure control solenoid valve A stuck off failure and stores a DTC.

MONITOR EXECUTION, SEQUENCE, DURATION, DTC TYPE, OBD STATUS

Execution		Continuous
Sequence		None
Duration	Symptom 1	21 seconds or more
	Symptom 2	4 seconds or more
	Symptom 3	
DTC Type		Two drive cycles, MIL on, D indicator blinks
OBD Status		PASSED/FAILED/NOT COMPLETED (STILL TESTING)

ENABLE CONDITIONS

Condition	Minimum	Maximum
ATF temperature	-4 °F (-20 °C)	-
Vehicle speed(1)	5 mph (9 km/h)	-
Battery voltage	11 V	-
Shift lever position	D	
No active DTCs set (prevents monitor from running)	P0122, P0123, P0222, P0223, P0705, P0716, P0717, P0718, P0721, P0722, P0723, P0747, P0751, P0752, P0756, P0757, P0761, P0762, P0776, P0777, P0796, P0797, P0842, P0843, P0847, P0848, P0872, P0873, P0877, P0878, P0962, P0963, P0966, P0967, P0970, P0971, P0973, P0974, P0976, P0977, P0979, P0980, P0989, P0990, P1658, P1659, P1683, P1684, P2101, P2118, P2122, P2123, P2127, P2128, P2135, P2138, P2176, P2714, P2720, P2721	
(1) Symptom 1		

MALFUNCTION THRESHOLD

One of these symptoms occurs:

SYMPTOM 1

Symptom	Gear position commanded by the PCM	Actual gear position
1	1st --> 2nd gear upshift	Driving in 1st gear

SYMPTOM 2

Symptom	Gear position commanded by the PCM	Actual gear position
2	Driving in 2nd gear	Neutral

SYMPTOM 3

Symptom	Gear position commanded by the PCM	Actual gear position
3	Driving in 5th gear	Neutral

DRIVING PATTERN

1. Start the engine.
2. Drive the vehicle in D until the transmission shifts into 6th gear.
    - Drive the vehicle in this manner only if the traffic regulations and ambient conditions allow.

DIAGNOSIS DETAILS

Conditions for setting the DTC

When a malfunction is detected during the first drive cycle, a Pending DTC is stored in the PCM memory. If the malfunction returns in the next (second) drive cycle, the MIL comes on and a Confirmed DTC and the freeze

data are stored.

Conditions for clearing the DTC

The MIL is cleared if the malfunction does not return in three consecutive trips in which the diagnostic runs. The MIL, the Pending DTC, the Confirmed DTC, and the freeze data can be cleared with the scan tool Clear command or by disconnecting the battery.

DTC P0747: A/T CLUTCH PRESSURE CONTROL SOLENOID VALVE A STUCK ON

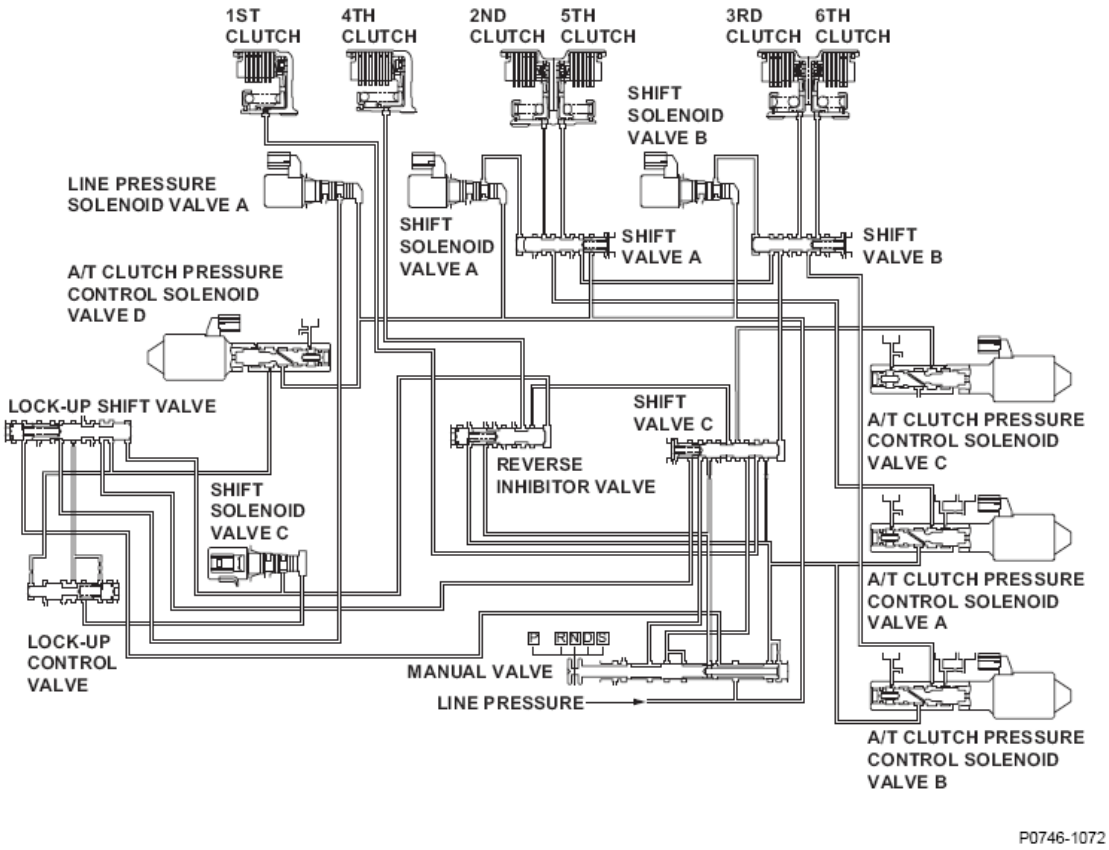


Fig. 178: A/T Clutch Pressure Control Solenoid Valve - System Diagram

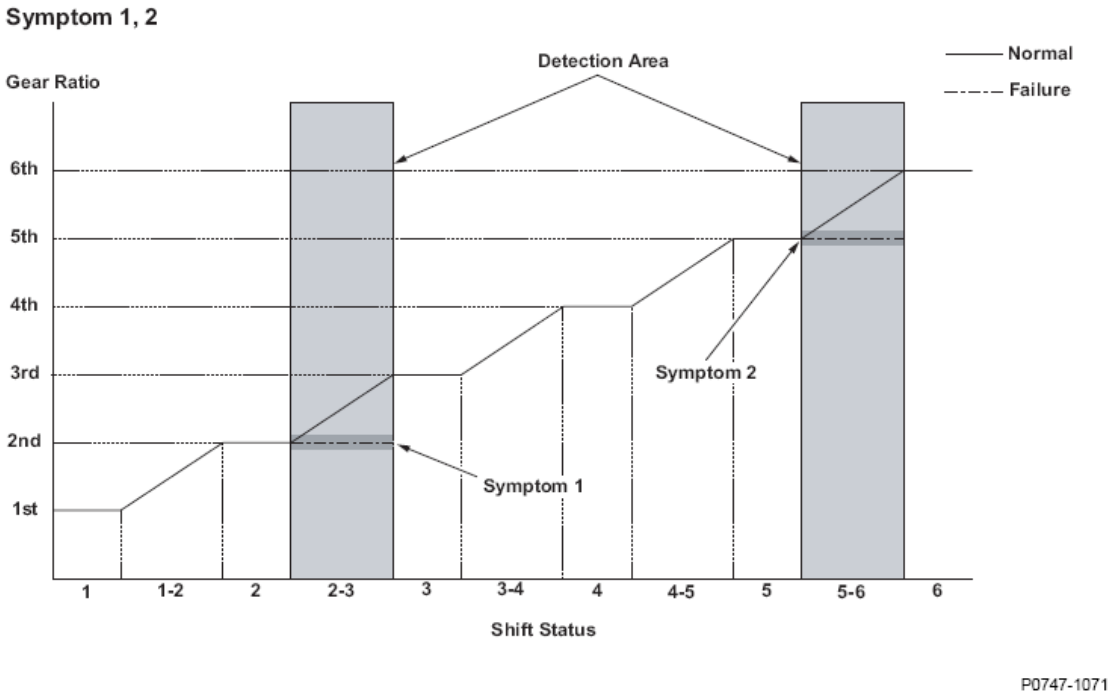


Fig. 179: Gear Ratio Versus Shifting Status Graph (Failure Detection Area, Symptom 1 And 2)

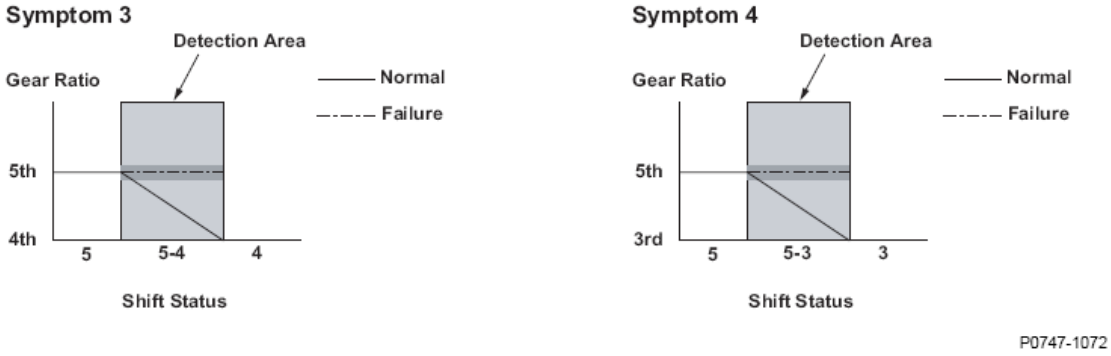


Fig. 180: Gear Ratio Versus Shifting Status Graph (Failure Detection Area, Symptom 3 And 4)

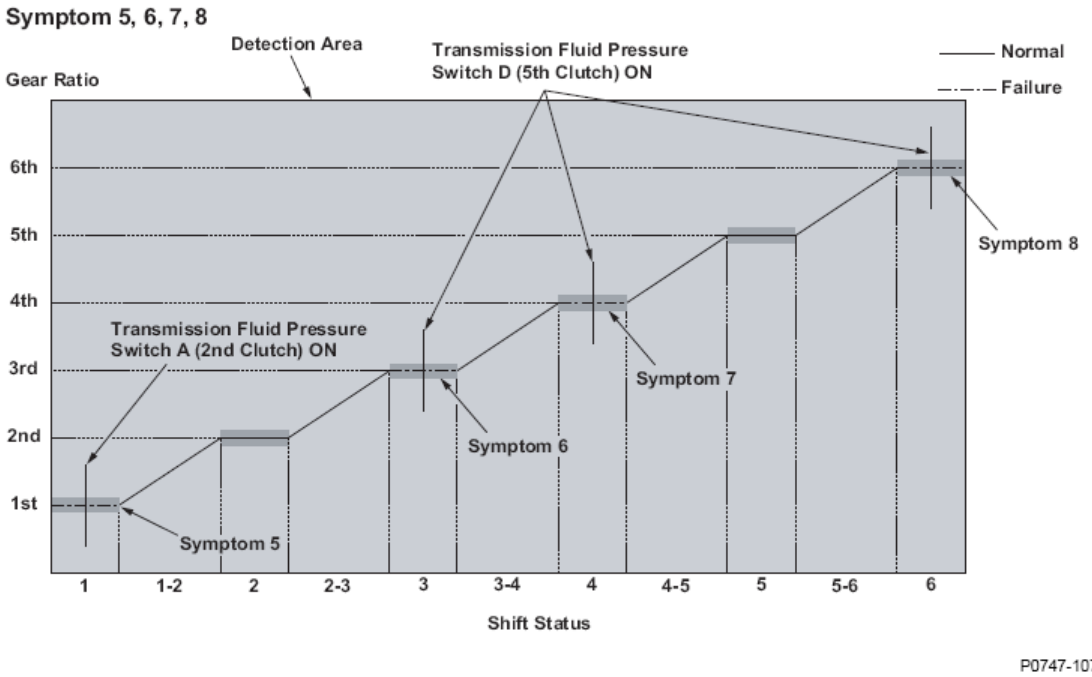


Fig. 181: Gear Ratio Versus Shifting Status Graph (Failure Detection Area, Symptom 5, 6, 7 And 8)

HYDRAULIC PRESSURE SUPPLY TO CLUTCH BY SHIFT SOLENOID VALVE OUTPUT (D POSITION)

Gear position	Shift solenoid valve		Clutch					
	A	B	1st	2nd	3rd	4th	5th	6th
Neutral-1st	ON	OFF	CPCD	-	-	-	-	-
1st	ON	ON	LINE	CPCA	CPCB	CPCC	-	-
1st-2nd	ON	ON	LINE	CPCA	CPCB	CPCC	-	-
2nd	ON	ON	LINE	CPCA	CPCB	CPCC	-	-
2nd-3rd	ON	ON	LINE	CPCA	CPCB	CPCC	-	-
3rd	OFF	ON	LINE	-	CPCB	CPCC	CPCA	-
3rd-4th	OFF	ON	LINE	-	CPCB	CPCC	CPCA	-
4th	OFF	OFF/(ON)	LINE	-	(CPCB)	CPCC	CPCA	CPCB
4th-5th	OFF	OFF	LINE	-	-	CPCC	CPCA	CPCB
5th	OFF	OFF/(ON)	LINE	-	(CPCB)	CPCC	CPCA	CPCB
5th-6th	OFF	OFF	LINE	-	-	CPCC	CPCA	CPCB
6th	OFF	OFF	LINE	-	-	CPCC	CPCA	CPCB

LINE: Line pressure
CPCA: A/T clutch pressure control solenoid valve A pressure
CPCB: A/T clutch pressure control solenoid valve B pressure
CPCC: A/T clutch pressure control solenoid valve C pressure
CPCD: A/T clutch pressure control solenoid valve D pressure

GENERAL DESCRIPTION

A/T clutch pressure control solenoid valve A is installed on the transmission housing. A/T clutch pressure control solenoid valve A is operated by the powertrain control module (PCM) and converts line pressure to A/T clutch pressure control solenoid valve A pressure. A signal from the PCM is output to A/T clutch pressure control solenoid valve A to supply proper A/T clutch pressure control solenoid valve A pressure to the correct gear clutch according to the shift schedule and the driving conditions. When the current from the PCM is high (ON), A/T clutch pressure control solenoid valve A operates and A/T clutch pressure control solenoid valve A pressure increases. When the current from the PCM is low (OFF), A/T clutch pressure control solenoid valve A turns off and A/T clutch pressure control solenoid valve A pressure decreases. The PCM monitors the input shaft (mainshaft) speed and the output shaft (countershaft) speed according to the shift status determined by the shift schedule, and monitors the transmission fluid pressure switch according to the shift status determined by the shift schedule. When an improper gear ratio is output for the shift schedule or when the wrong transmission fluid pressure switch is on for the shift schedule, the PCM detects an A/T clutch pressure control solenoid valve A stuck on failure and stores a DTC.

MONITOR EXECUTION, SEQUENCE, DURATION, DTC TYPE, OBD STATUS

Execution		Continuous
Sequence		None
Duration	Symptom 1	21 seconds or more
	Symptom 2	
	Symptom 3	6 seconds or more
	Symptom 4	
	Symptom 5	3 seconds or more
	Symptom 6	
	Symptom 7	
	Symptom 8	
DTC Type		Two drive cycles, MIL on, D indicator blinks
OBD Status		PASSED/FAILED/NOT COMPLETED (STILL TESTING)

ENABLE CONDITIONS

Condition	Minimum	Maximum
ATF temperature	-4 °F (-20 °C)	-
Vehicle speed	5 mph (9 km/h)	-
Battery voltage	11 V	-
Shift lever position	D	
No active DTCs set (prevents monitor from running)	P0122, P0123, P0222, P0223, P0705, P0716, P0717, P0718, P0721, P0722, P0723, P0746, P0751, P0752, P0756, P0757, P0761, P0762, P0776, P0777, P0796, P0797, P0842, P0843, P0847, P0848, P0872, P0873, P0877, P0878, P0962, P0963, P0966, P0967, P0970, P0971, P0973, P0974, P0976, P0977, P0979, P0980, P0989, P0990, P1658, P1659, P1683, P1684, P2101, P2118, P2122, P2123, P2127, P2128, P2135, P2138, P2176, P2714, P2720, P2721	

MALFUNCTION THRESHOLD

One of these conditions occurs:

- Either Symptom 1, Symptom 2, Symptom 3, or Symptom 4 occurs.
- The input signal from transmission fluid pressure switch A (2nd clutch) to the PCM is off for at least 4 seconds when the 5th gear shift is commanded or when the shift lever is in P, R, or N, after Symptom 5 occurred.
- The input signal from transmission fluid pressure switch D (5th clutch) to the PCM is off for at least 4 seconds when the 2nd gear shift is commanded or when the shift lever is in P, R, or N, after Symptom 6, Symptom 7, or Symptom 8 occurred.

SYMPTOM 1

Symptom	Gear position commanded by the PCM	Actual gear position
1	2nd --> 3rd gear upshift	Driving in 2nd gear

SYMPTOM 2

Symptom	Gear position commanded by the PCM	Actual gear position
2	5th --> 6th gear upshift	Driving in 5th gear

SYMPTOM 3

Symptom	Gear position commanded by the PCM	Actual gear position
3	5th --> 4th gear downshift	Driving in 5th gear

SYMPTOM 4

Symptom	Gear position commanded by the PCM	Actual gear position
4	5th --> 3rd gear downshift	Driving in 5th gear

SYMPTOM 5

Symptom	Gear position commanded by the PCM	Actual gear position
5	Driving in 1st gear	Turn on transmission fluid pressure switch A (2nd clutch) when driving in 1st gear

SYMPTOM 6

Symptom	Gear position commanded by the PCM	Actual gear position
6	Driving in 3rd gear	Turn on transmission fluid pressure switch D (5th clutch) when driving in 3rd gear

SYMPTOM 7

Symptom	Gear position commanded by the PCM	Actual gear position
7	Driving in 4th gear	Turn on transmission fluid pressure switch D (5th clutch) when driving in 4th gear

SYMPTOM 8

Symptom	Gear position commanded by the PCM	Actual gear position
8	Driving in 6th gear	Turn on transmission fluid pressure switch D (5th clutch) when driving in 6th gear

DRIVING PATTERN

1. Start the engine.
2. Drive the vehicle in D until the transmission shifts into 6th gear.
    - Drive the vehicle in this manner only if the traffic regulations and ambient conditions allow.

DIAGNOSIS DETAILS

Conditions for setting the DTC

When a malfunction is detected during the first drive cycle, a Pending DTC is stored in the PCM memory. If the malfunction returns in the next (second) drive cycle, the MIL comes on and a Confirmed DTC and the freeze data are stored.

Conditions for clearing the DTC

The MIL is cleared if the malfunction does not return in three consecutive trips in which the diagnostic runs. The MIL, the Pending DTC, the Confirmed DTC, and the freeze data can be cleared with the scan tool Clear command or by disconnecting the battery.

DTC P0751: SHIFT SOLENOID VALVE A STUCK OFF

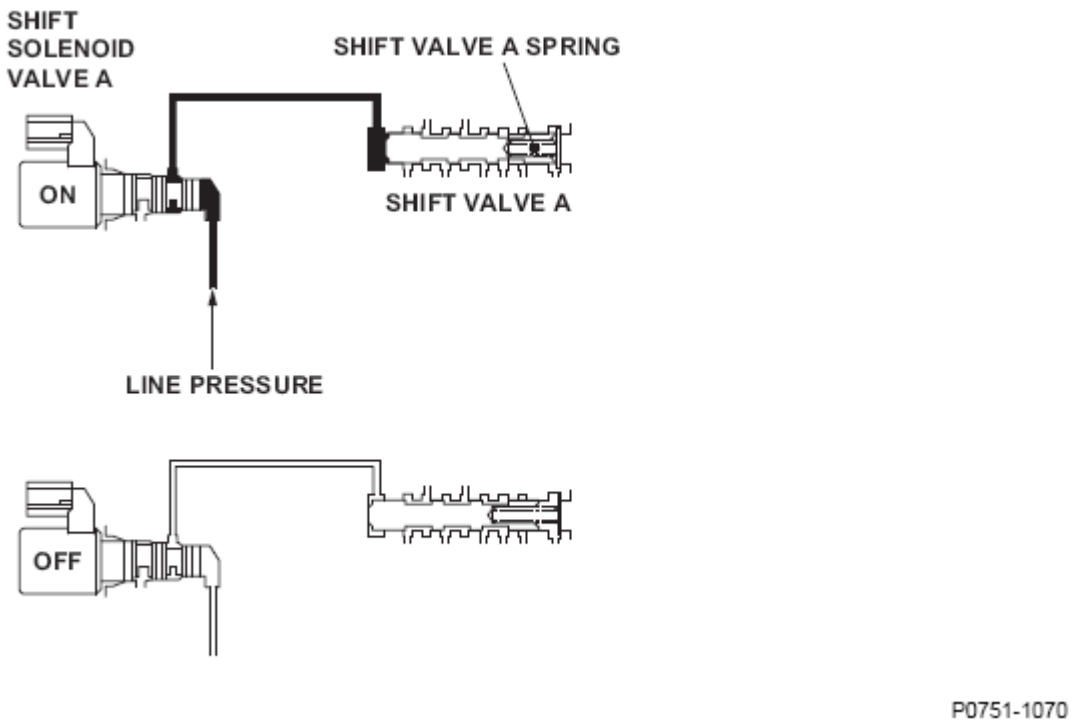


Fig. 182: Shift Solenoid Valve A - System Diagram

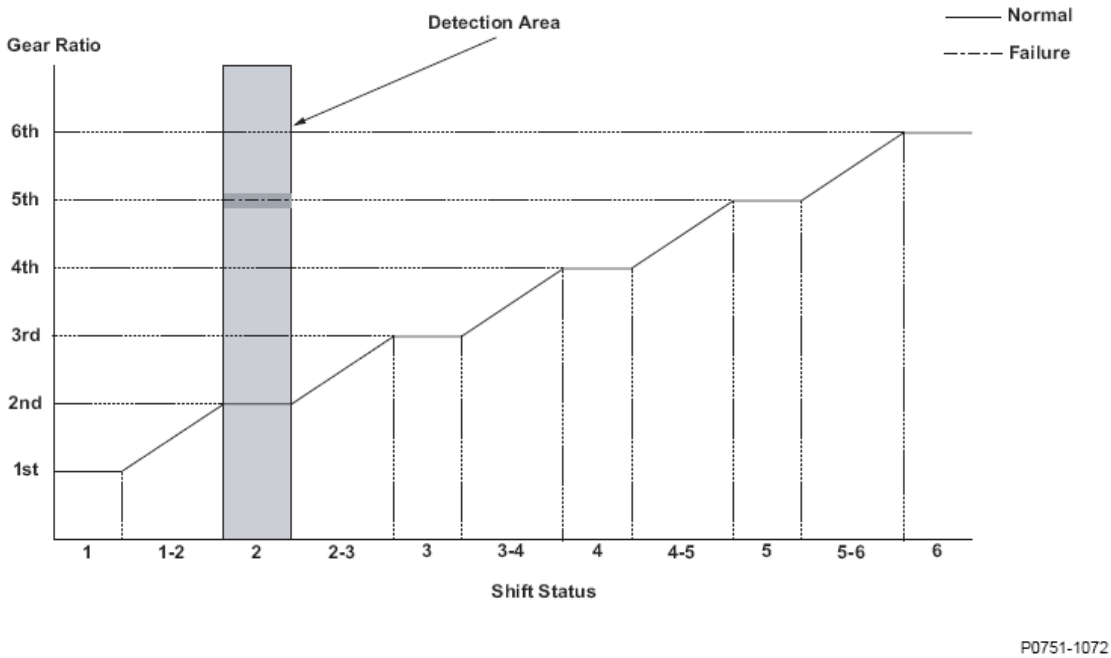


Fig. 183: 2nd Clutch Gear Ratio Versus Shifting Status Graph (Failure Detection Area)

HYDRAULIC PRESSURE SUPPLY TO CLUTCH BY SHIFT SOLENOID VALVE OUTPUT (D POSITION)

Gear position	Shift solenoid valve		Clutch					

	A	B	1st	2nd	3rd	4th	5th	6th
Neutral-1st	ON	OFF	CPCD	-	-	-	-	-
1st	ON	ON	LINE	CPCA	CPCB	CPCC	-	-
1st-2nd	ON	ON	LINE	CPCA	CPCB	CPCC	-	-
2nd	ON	ON	LINE	CPCA	CPCB	CPCC	-	-
2nd-3rd	ON	ON	LINE	CPCA	CPCB	CPCC	-	-
3rd	OFF	ON	LINE	-	CPCB	CPCC	CPCA	-
3rd-4th	OFF	ON	LINE	-	CPCB	CPCC	CPCA	-
4th	OFF	OFF/(ON)	LINE	-	(CPCB)	CPCC	CPCA	CPCB
4th-5th	OFF	OFF	LINE	-	-	CPCC	CPCA	CPCB
5th	OFF	OFF/(ON)	LINE	-	(CPCB)	CPCC	CPCA	CPCB
5th-6th	OFF	OFF	LINE	-	-	CPCC	CPCA	CPCB
6th	OFF	OFF	LINE	-	-	CPCC	CPCA	CPCB

LINE: Line pressure
CPCA: A/T clutch pressure control solenoid valve A pressure
CPCB: A/T clutch pressure control solenoid valve B pressure
CPCC: A/T clutch pressure control solenoid valve C pressure
CPCD: A/T clutch pressure control solenoid valve D pressure

GENERAL DESCRIPTION

Shift solenoid valve A is installed on the transmission housing. It is controlled by the ON/OFF signal from the powertrain control module (PCM) to apply line pressure to shift valve A. A signal from the PCM is output to apply A/T clutch pressure control solenoid valve pressure to the correct gear clutch according to the shift schedule. When the signal to shift solenoid valve A from the PCM is on, and the line pressure is applied to shift valve A, it operates against the shift valve A spring. When the signal to shift solenoid valve A from the PCM is off, and the line pressure is discharged, shift valve A is inactive. The PCM monitors the input shaft (mainshaft) speed and the output shaft (countershaft) speed according to the shift status determined by the shift schedule. When an improper gear ratio is output for the shift schedule, the PCM detects a shift solenoid valve A stuck off failure and stores a DTC.

MONITOR EXECUTION, SEQUENCE, DURATION, DTC TYPE, OBD STATUS

Execution	Continuous
Sequence	None
Duration	1.5 seconds or more
DTC Type	Two drive cycles, MIL on, D indicator blinks
OBD Status	PASSED/FAILED/NOT COMPLETED (STILL TESTING)

ENABLE CONDITIONS

Condition	Minimum	Maximum
Vehicle speed	4 mph (7 km/h)	-
Battery voltage	11 V	-

Shift lever position	D, S
No active DTCs set (prevents monitor from running)	P0122, P0123, P0222, P0223, P0705, P0716, P0717, P0718, P0721, P0722, P0723, P0746, P0747, P0752, P0756, P0757, P0761, P0762, P0776, P0777, P0796, P0797, P0842, P0843, P0847, P0848, P0872, P0873, P0877, P0878, P0962, P0963, P0966, P0967, P0970, P0971, P0973, P0974, P0976, P0977, P0979, P0980, P0989, P0990, P1658, P1659, P1683, P1684, P2101, P2118, P2122, P2123, P2127, P2128, P2135, P2138, P2176, P2714, P2720, P2721

MALFUNCTION THRESHOLD

SYMPTOM 1 OCCURS

Symptom	Gear position commanded by the PCM	Actual gear position
1	Driving in 2nd gear	Driving in 5th gear

DRIVING PATTERN

1. Start the engine.
2. Drive the vehicle in D until the transmission shifts into 6th gear.
    - Drive the vehicle in this manner only if the traffic regulations and ambient conditions allow.

DIAGNOSIS DETAILS

Conditions for setting the DTC

When a malfunction is detected during the first drive cycle, a Pending DTC is stored in the PCM memory. If the malfunction returns in the next (second) drive cycle, the MIL comes on and a Confirmed DTC and the freeze data are stored.

Conditions for clearing the DTC

The MIL is cleared if the malfunction does not return in three consecutive trips in which the diagnostic runs. The MIL, the Pending DTC, the Confirmed DTC, and the freeze data can be cleared with the scan tool Clear command or by disconnecting the battery.

DTC P0752: SHIFT SOLENOID VALVE A STUCK ON

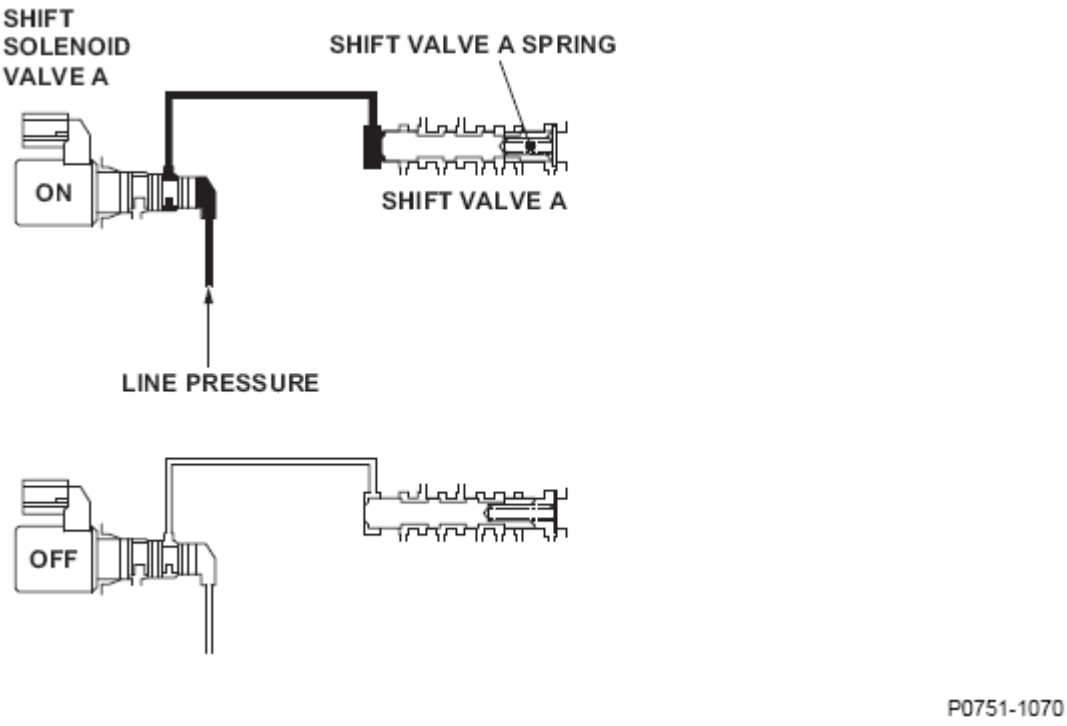


Fig. 184: Shift Solenoid Valve A - System Diagram

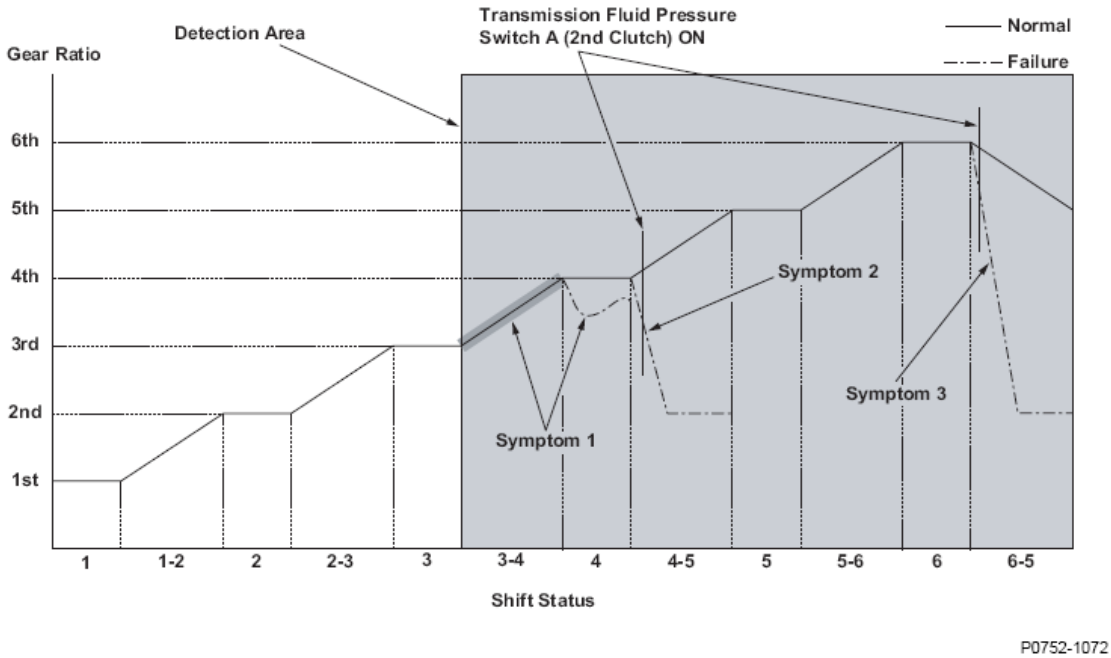


Fig. 185: Gear Ratio Versus Shifting Status Graph (Failure Detection Area)

HYDRAULIC PRESSURE SUPPLY TO CLUTCH BY SHIFT SOLENOID VALVE OUTPUT (D POSITION)

Gear position	Shift solenoid valve		Clutch					

	A	B	1st	2nd	3rd	4th	5th	6th
Neutral-1st	ON	OFF	CPCD	-	-	-	-	-
1st	ON	ON	LINE	CPCA	CPCB	CPCC	-	-
1st-2nd	ON	ON	LINE	CPCA	CPCB	CPCC	-	-
2nd	ON	ON	LINE	CPCA	CPCB	CPCC	-	-
2nd-3rd	ON	ON	LINE	CPCA	CPCB	CPCC	-	-
3rd	OFF	ON	LINE	-	CPCB	CPCC	CPCA	-
3rd-4th	OFF	ON	LINE	-	CPCB	CPCC	CPCA	-
4th	OFF	OFF/(ON)	LINE	-	(CPCB)	CPCC	CPCA	CPCB
4th-5th	OFF	OFF	LINE	-	-	CPCC	CPCA	CPCB
5th	OFF	OFF/(ON)	LINE	-	(CPCB)	CPCC	CPCA	CPCB
5th-6th	OFF	OFF	LINE	-	-	CPCC	CPCA	CPCB
6th	OFF	OFF	LINE	-	-	CPCC	CPCA	CPCB

LINE: Line pressure
CPCA: A/T clutch pressure control solenoid valve A pressure
CPCB: A/T clutch pressure control solenoid valve B pressure
CPCC: A/T clutch pressure control solenoid valve C pressure
CPCD: A/T clutch pressure control solenoid valve D pressure

GENERAL DESCRIPTION

Shift solenoid valve A is installed on the transmission housing. It is controlled by the ON/OFF signal from the powertrain control module (PCM) to apply line pressure to shift valve A. A signal from the PCM is output to apply A/T clutch pressure control solenoid valve pressure to the correct gear clutch according to the shift schedule. When the signal to shift solenoid valve A from the PCM is on, and the line pressure is applied to shift valve A, it operates against the shift valve A spring. When the signal to shift solenoid valve A from the PCM is off, and the line pressure is discharged, shift valve A is inactive. The PCM monitors the input shaft (mainshaft) speed and the output shaft (countershaft) speed according to the shift status determined by the shift schedule, and monitors the transmission fluid pressure switch according to the shift status determined by the shift schedule. When an improper gear ratio is output for the shift schedule or when the wrong transmission fluid pressure switch is on for the shift schedule, the PCM detects a shift solenoid valve A stuck on failure and stores a DTC.

MONITOR EXECUTION, SEQUENCE, DURATION, DTC TYPE, OBD STATUS

Execution		Continuous
Sequence		None
Duration	Symptom 1	4 seconds or more
	Symptom 2	12 seconds or more
	Symptom 3	6 seconds or more
DTC Type		Two drive cycles, MIL on, D indicator blinks
OBD Status		PASSED/FAILED/NOT COMPLETED (STILL TESTING)

ENABLE CONDITIONS

Condition	Minimum	Maximum
Battery voltage	11 V	-
Shift lever position	D	
No active DTCs set (prevents monitor from running)	P0122, P0123, P0222, P0223, P0705, P0716, P0717, P0718, P0721, P0722, P0723, P0746, P0747, P0751, P0756, P0757, P0761, P0762, P0776, P0777, P0796, P0797, P0842, P0843, P0847, P0848, P0872, P0873, P0877, P0878, P0962, P0963, P0966, P0967, P0970, P0971, P0973, P0974, P0976, P0977, P0979, P0980, P0989, P0990, P1658, P1659, P1683, P1684, P2101, P2118, P2122, P2123, P2127, P2128, P2135, P2138, P2176, P2714, P2720, P2721	

MALFUNCTION THRESHOLD

One of these conditions occurs:

- Symptom 1 occurs during the 1st drive cycle, and Symptom 1 occurs with record that the gear change time is normal when the 3rd --> 4th gear upshift is commanded during the 2nd drive cycle.
- Either Symptom 2 or Symptom 3 occurs.

SYMPTOM 1

Symptom	Gear position commanded by the PCM	Actual gear position
1	Driving in 4th gear	Neutral

SYMPTOM 2

Symptom	Gear position commanded by the PCM	Actual gear position
2	4th --> 5th gear upshift	Turn on transmission fluid pressure switch A (2nd clutch) when upshifting to 4th --> 5th gear

SYMPTOM 3

Symptom	Gear position commanded by the PCM	Actual gear position
3	6th --> 5th gear downshift	Turn on transmission fluid pressure switch A (2nd clutch) when downshifting to 6th --> 5th gear

DRIVING PATTERN

1. Start the engine.
2. Drive the vehicle in D until the transmission shifts into 6th gear.
    - Drive the vehicle in this manner only if the traffic regulations and ambient conditions allow.

DIAGNOSIS DETAILS

Conditions for setting the DTC

When a malfunction is detected during the first drive cycle, a Pending DTC is stored in the PCM memory. If the malfunction returns in the next (second) drive cycle, the MIL comes on and a Confirmed DTC and the freeze data are stored.

Conditions for clearing the DTC

The MIL is cleared if the malfunction does not return in three consecutive trips in which the diagnostic runs. The MIL, the Pending DTC, the Confirmed DTC, and the freeze data can be cleared with the scan tool Clear command or by disconnecting the battery.

DTC P0756: SHIFT SOLENOID VALVE B STUCK OFF

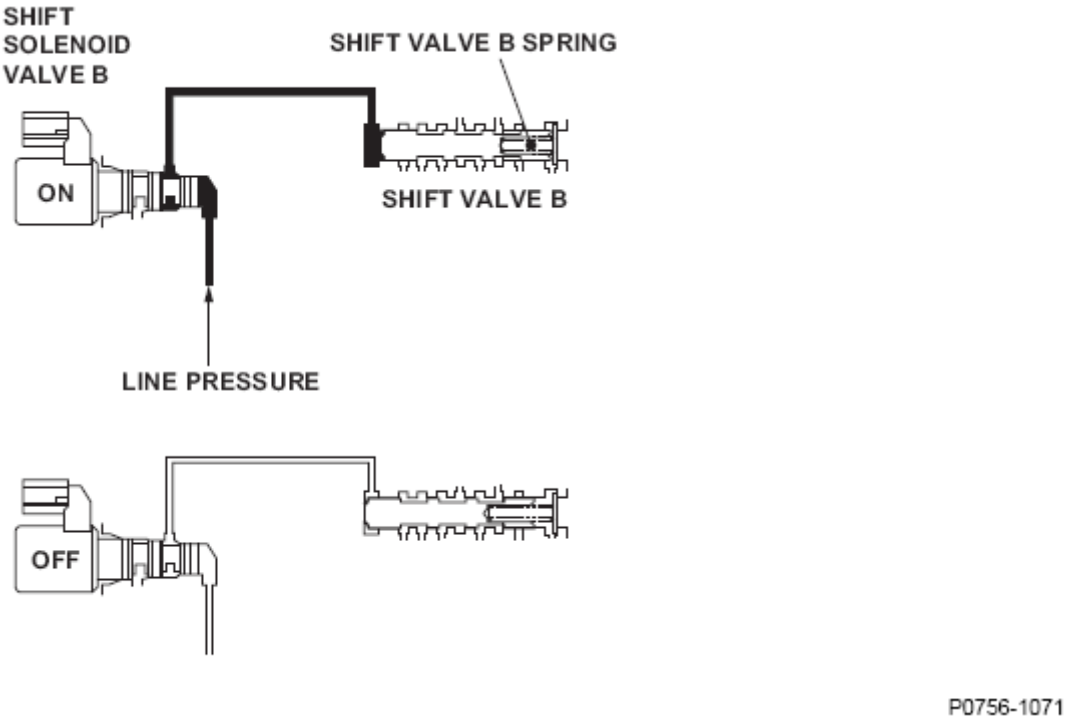


Fig. 186: Shift Solenoid Valve B - System Diagram

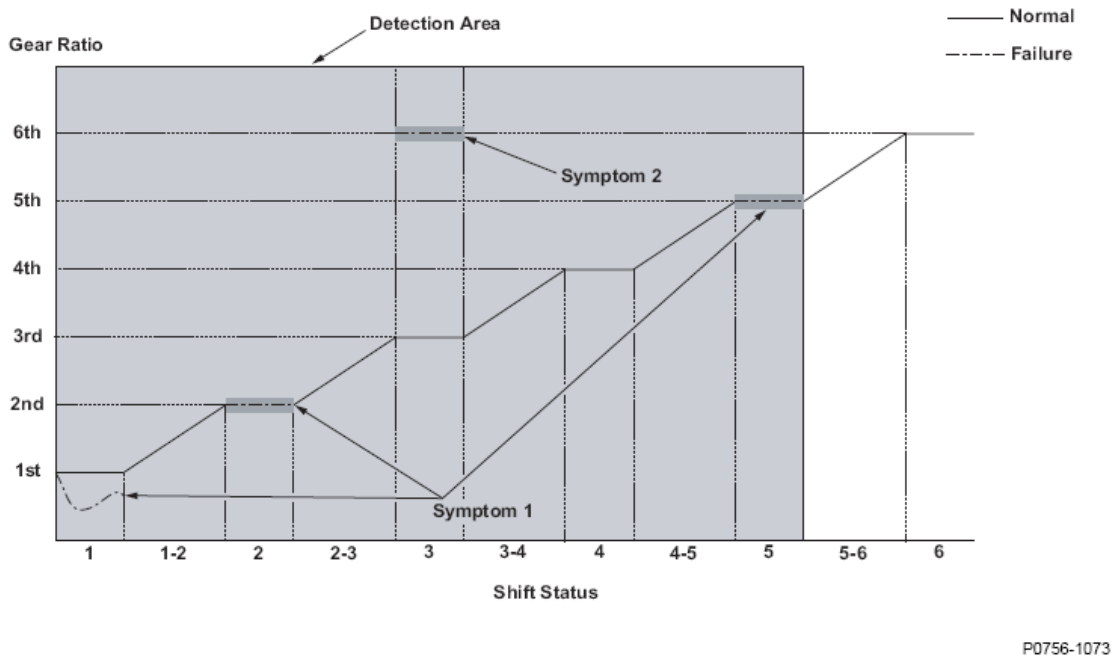


Fig. 187: Gear Ratio Versus Shifting Status Graph (Failure Detection Area)

HYDRAULIC PRESSURE SUPPLY TO CLUTCH BY SHIFT SOLENOID VALVE OUTPUT (D POSITION)

Gear position	Shift solenoid valve		Clutch					
	A	B	1st	2nd	3rd	4th	5th	6th
Neutral-1st	ON	OFF	CPCD	-	-	-	-	-
1st	ON	ON	LINE	CPCA	CPCB	CPCC	-	-
1st-2nd	ON	ON	LINE	CPCA	CPCB	CPCC	-	-
2nd	ON	ON	LINE	CPCA	CPCB	CPCC	-	-
2nd-3rd	ON	ON	LINE	CPCA	CPCB	CPCC	-	-
3rd	OFF	ON	LINE	-	CPCB	CPCC	CPCA	-
3rd-4th	OFF	ON	LINE	-	CPCB	CPCC	CPCA	-
4th	OFF	OFF/(ON)	LINE	-	(CPCB)	CPCC	CPCA	CPCB
4th-5th	OFF	OFF	LINE	-	-	CPCC	CPCA	CPCB
5th	OFF	OFF/(ON)	LINE	-	(CPCB)	CPCC	CPCA	CPCB
5th-6th	OFF	OFF	LINE	-	-	CPCC	CPCA	CPCB
6th	OFF	OFF	LINE	-	-	CPCC	CPCA	CPCB

LINE: Line pressure
CPCA: A/T clutch pressure control solenoid valve A pressure
CPCB: A/T clutch pressure control solenoid valve B pressure
CPCC: A/T clutch pressure control solenoid valve C pressure
CPCD: A/T clutch pressure control solenoid valve D pressure

GENERAL DESCRIPTION

Shift solenoid valve B is installed on the transmission housing. It is controlled by the ON/OFF signal from the powertrain control module (PCM) to apply line pressure to shift valve B. A signal from the PCM is output to apply A/T clutch pressure control solenoid valve pressure to the correct gear clutch according to the shift schedule. When the signal to shift solenoid valve B from the PCM is on, and the line pressure is applied to shift valve B, it operates against the shift valve B spring. When the signal to shift solenoid valve B from the PCM is off, and the line pressure is discharged, shift valve B is inactive. The PCM monitors the input shaft (mainshaft) speed and the output shaft (countershaft) speed according to the shift status determined by the shift schedule. When an improper gear ratio is output for the shift schedule, the PCM detects a shift solenoid valve B stuck off failure and stores a DTC.

MONITOR EXECUTION, SEQUENCE, DURATION, DTC TYPE, OBD STATUS

Execution		Continuous
Sequence		None
Duration	Symptom 1	4 seconds or more
	Symptom 2	1.5 seconds or more
DTC Type		Two drive cycles, MIL on, D indicator blinks
OBD Status		PASSED/FAILED/NOT COMPLETED (STILL TESTING)

ENABLE CONDITIONS

Condition	Minimum	Maximum
Vehicle speed(1)	4 mph (7 km/h)	-
Battery voltage	11 V	-
Shift lever position	D, S	
No active DTCs set (prevents monitor from running)	P0122, P0123, P0222, P0223, P0705, P0716, P0717, P0718, P0721, P0722, P0723, P0746, P0747, P0751, P0752, P0757, P0761, P0762, P0776, P0777, P0796, P0797, P0842, P0843, P0847, P0848, P0872, P0873, P0877, P0878, P0962, P0963, P0966, P0967, P0970, P0971, P0973, P0974, P0976, P0977, P0979, P0980, P0989, P0990, P1658, P1659, P1683, P1684, P2101, P2118, P2122, P2123, P2127, P2128, P2135, P2138, P2176, P2714, P2720, P2721	
(1) Symptom 2		

MALFUNCTION THRESHOLD

One of these conditions occurs:

- Driving in 2nd or 5th gear after Symptom 1 occurred.
- Symptom 2 occurs.

SYMPTOM 1

Symptom	Gear position commanded by the PCM	Actual gear position
1	Driving in 1st gear	Neutral

SYMPTOM 2

Symptom	Gear position commanded by the PCM	Actual gear position
2	Driving in 3rd gear	Driving in 6th gear

DRIVING PATTERN

1. Start the engine.
2. Drive the vehicle in D until the transmission shifts into 6th gear.
    - Drive the vehicle in this manner only if the traffic regulations and ambient conditions allow.

DIAGNOSIS DETAILS

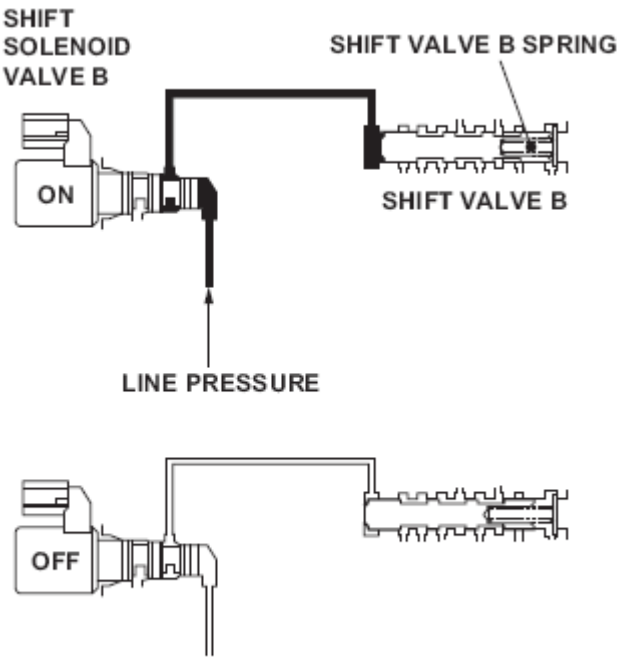
Conditions for setting the DTC

When a malfunction is detected during the first drive cycle, a Pending DTC is stored in the PCM memory. If the malfunction returns in the next (second) drive cycle, the MIL comes on and a Confirmed DTC and the freeze data are stored.

Conditions for clearing the DTC

The MIL is cleared if the malfunction does not return in three consecutive trips in which the diagnostic runs. The MIL, the Pending DTC, the Confirmed DTC, and the freeze data can be cleared with the scan tool Clear command or by disconnecting the battery.

DTC P0757: SHIFT SOLENOID VALVE B STUCK ON



P0756-1071

Fig. 188: Shift Solenoid Valve B - System Diagram

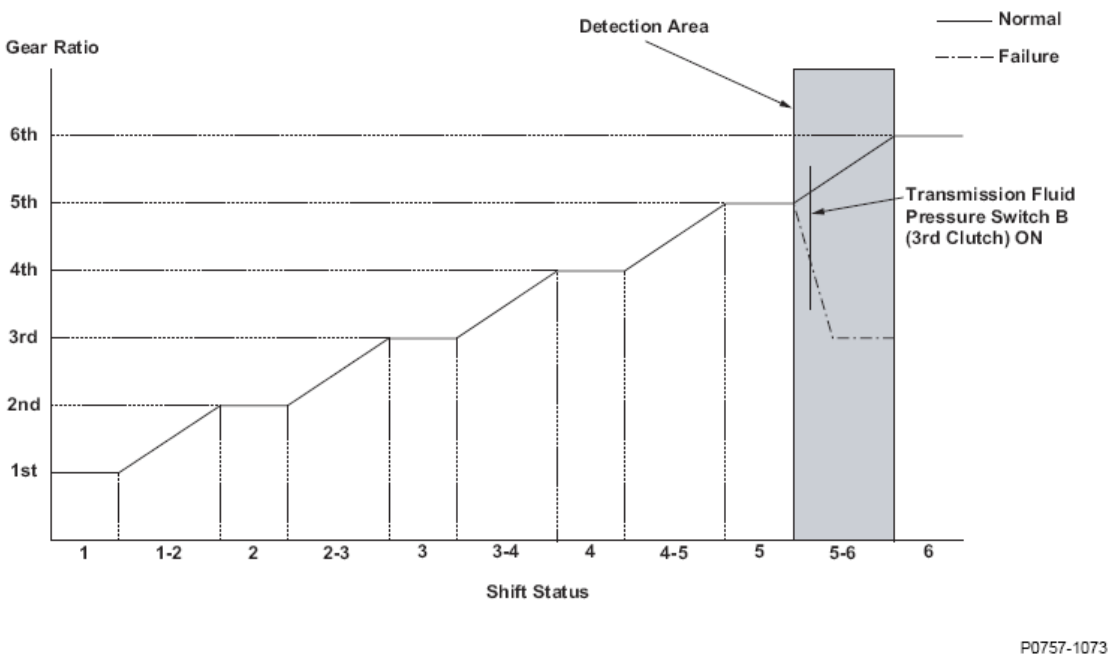


Fig. 189: Gear Ratio Versus Shifting Status Graph (Failure Detection Area)

HYDRAULIC PRESSURE SUPPLY TO CLUTCH BY SHIFT SOLENOID VALVE OUTPUT (D POSITION)

Gear position	Shift solenoid valve		Clutch					
	A	B	1st	2nd	3rd	4th	5th	6th
Neutral-1st	ON	OFF	CPCD	-	-	-	-	-
1st	ON	ON	LINE	CPCA	CPCB	CPCC	-	-
1st-2nd	ON	ON	LINE	CPCA	CPCB	CPCC	-	-
2nd	ON	ON	LINE	CPCA	CPCB	CPCC	-	-
2nd-3rd	ON	ON	LINE	CPCA	CPCB	CPCC	-	-
3rd	OFF	ON	LINE	-	CPCB	CPCC	CPCA	-
3rd-4th	OFF	ON	LINE	-	CPCB	CPCC	CPCA	-
4th	OFF	OFF/(ON)	LINE	-	(CPCB)	CPCC	CPCA	CPCB
4th-5th	OFF	OFF	LINE	-	-	CPCC	CPCA	CPCB
5th	OFF	OFF/(ON)	LINE	-	(CPCB)	CPCC	CPCA	CPCB
5th-6th	OFF	OFF	LINE	-	-	CPCC	CPCA	CPCB
6th	OFF	OFF	LINE	-	-	CPCC	CPCA	CPCB

LINE: Line pressure
CPCA: A/T clutch pressure control solenoid valve A pressure
CPCB: A/T clutch pressure control solenoid valve B pressure
CPCC: A/T clutch pressure control solenoid valve C pressure
CPCD: A/T clutch pressure control solenoid valve D pressure

GENERAL DESCRIPTION

Shift solenoid valve B is installed on the transmission housing. It is controlled by the ON/OFF signal from the powertrain control module (PCM) to apply line pressure to shift valve B. A signal from the PCM is output to apply A/T clutch pressure control solenoid valve pressure to the correct gear clutch according to the shift schedule. When the signal to shift solenoid valve B from the PCM is on, and the line pressure is applied to shift valve B, it operates against the shift valve B spring. When the signal to shift solenoid valve B from the PCM is off, and the line pressure is discharged, shift valve B is inactive. The PCM monitors the transmission fluid pressure switch according to the shift status determined by the shift schedule. When the wrong transmission fluid pressure switch is on for the shift schedule, the PCM detects a shift solenoid valve B stuck on failure and stores a DTC.

MONITOR EXECUTION, SEQUENCE, DURATION, DTC TYPE, OBD STATUS

Execution	Continuous
Sequence	None
Duration	12 seconds or less
DTC Type	Two drive cycles, MIL on, D indicator blinks
OBD Status	PASSED/FAILED/NOT COMPLETED (STILL TESTING)

ENABLE CONDITIONS

Condition	Minimum	Maximum
Battery voltage	11 V	-
Shift lever position	D	
No active DTCs set (prevents monitor from running)	P0122, P0123, P0222, P0223, P0705, P0716, P0717, P0718, P0721, P0722, P0723, P0746, P0747, P0751, P0752, P0756, P0761, P0762, P0776, P0777, P0796, P0797, P0842, P0843, P0847, P0848, P0872, P0873, P0877, P0878, P0962, P0963, P0966, P0967, P0970, P0971, P0973, P0974, P0976, P0977, P0979, P0980, P0989, P0990, P1658, P1659, P1683, P1684, P2101, P2118, P2122, P2123, P2127, P2128, P2135, P2138, P2176, P2714, P2720, P2721	

MALFUNCTION THRESHOLD

SYMPTOM 1 OCCURS

Symptom	Gear position commanded by the PCM	Actual gear position
1	5th --> 6th gear upshift	Turn on transmission fluid pressure switch B (3rd clutch) when upshifting to 5th --> 6th gear

DRIVING PATTERN

1. Start the engine.
2. Drive the vehicle in D until the transmission shifts into 6th gear.

- Drive the vehicle in this manner only if the traffic regulations and ambient conditions allow.

DIAGNOSIS DETAILS

Conditions for setting the DTC

When a malfunction is detected during the first drive cycle, a Pending DTC is stored in the PCM memory. If the malfunction returns in the next (second) drive cycle, the MIL comes on and a Confirmed DTC and the freeze data are stored.

Conditions for clearing the DTC

The MIL is cleared if the malfunction does not return in three consecutive trips in which the diagnostic runs. The MIL, the Pending DTC, the Confirmed DTC, and the freeze data can be cleared with the scan tool Clear command or by disconnecting the battery.

DTC P0761: SHIFT SOLENOID VALVE C STUCK OFF

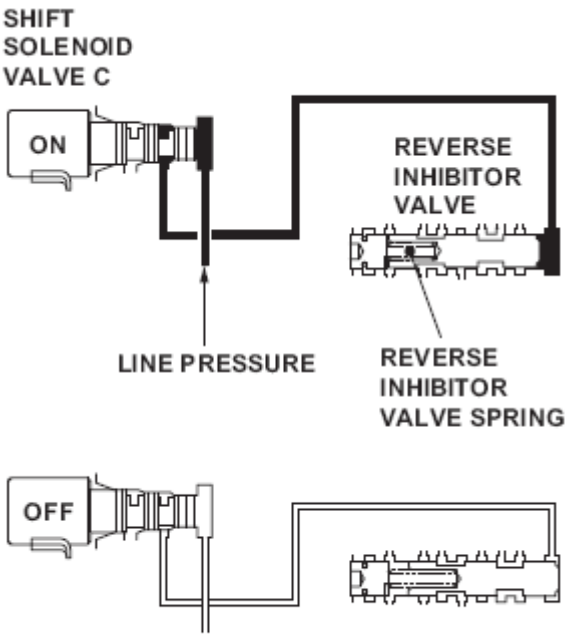


Fig. 190: Shift Solenoid Valve C - System Diagram (Stuck Off)

HYDRAULIC PRESSURE SUPPLY TO CLUTCH BY SHIFT SOLENOID VALVE OUTPUT

Gear position		Neutral-1st	1st	Neutral-Reverse	Reverse
Shift solenoid valve	A	ON	ON	ON	OFF
	B	OFF	ON	OFF	OFF
	C	OFF	OFF	ON	ON
1st clutch		CPCD	LINE	-	-

4th clutch	-	-	CPCD	LINE

LINE: Line pressure
CPCD: A/T clutch pressure control solenoid valve D pressure

GENERAL DESCRIPTION

Shift solenoid valve C is installed on the transmission housing. It is controlled by the ON/OFF signal from the powertrain control module (PCM) to apply line pressure to the reverse inhibitor valve. A signal from the PCM is output to apply A/T clutch pressure control solenoid valve pressure to the correct gear clutch according to the shift schedule. When the signal to shift solenoid valve C from the PCM is on, and the line pressure is applied to the reverse inhibitor valve, it operates against the reverse inhibitor valve spring. When the signal to shift solenoid valve C from the PCM is off, and the line pressure is discharged, the reverse inhibitor valve is inactive. The PCM monitors the input shaft (mainshaft) speed and the output shaft (countershaft) speed according to the shift status determined by the shift schedule. When an improper gear ratio is output for the shift schedule, the PCM detects a shift solenoid valve C stuck off failure and stores a DTC.

MONITOR EXECUTION, SEQUENCE, DURATION, DTC TYPE, OBD STATUS

Execution		Continuous
Sequence		None
Duration	Symptom 1-A	10 seconds or more
	Symptom 1-B	3 seconds or more
DTC Type		Two drive cycles, MIL on, D indicator blinks
OBD Status		PASSED/FAILED/NOT COMPLETED (STILL TESTING)

ENABLE CONDITIONS

Condition	Minimum	Maximum
ATF temperature	-4 °F (-20 °C)	248 °F (120 °C)
Vehicle speed	-	3 mph (4 km/h)
Battery voltage	11 V	-
Shift lever position	R	
No active DTCs set (prevents monitor from running)	P0122, P0123, P0222, P0223, P0705, P0716, P0717, P0718, P0721, P0722, P0723, P0746, P0747, P0751, P0752, P0756, P0757, P0762, P0776, P0777, P0796, P0797, P0842, P0843, P0847, P0848, P0872, P0873, P0877, P0878, P0962, P0963, P0966, P0967, P0970, P0971, P0973, P0974, P0976, P0977, P0979, P0980, P0989, P0990, P1658, P1659, P1683, P1684, P2101, P2118, P2122, P2123, P2127, P2128, P2135, P2138, P2176, P2714, P2720, P2721	

MALFUNCTION THRESHOLD

SYMPTOM 1-B OCCURS AFTER SYMPTOM 1-A OCCURRED

Symptom		Gear position commanded by the PCM	Actual gear position

1	1-A	Reverse gear in-gear	Neutral
	1-B	Driving in reverse gear	Neutral

DRIVING PATTERN

1. Start the engine.
2. With the brake pedal pressed, shift to R, and wait for at least 13 seconds.
3. Shift to P.

DIAGNOSIS DETAILS

Conditions for setting the DTC

When a malfunction is detected during the first drive cycle, a Pending DTC is stored in the PCM memory. If the malfunction returns in the next (second) drive cycle, the MIL comes on and a Confirmed DTC and the freeze data are stored.

Conditions for clearing the DTC

The MIL is cleared if the malfunction does not return in three consecutive trips in which the diagnostic runs. The MIL, the Pending DTC, the Confirmed DTC, and the freeze data can be cleared with the scan tool Clear command or by disconnecting the battery.

DTC P0762: SHIFT SOLENOID VALVE C STUCK ON

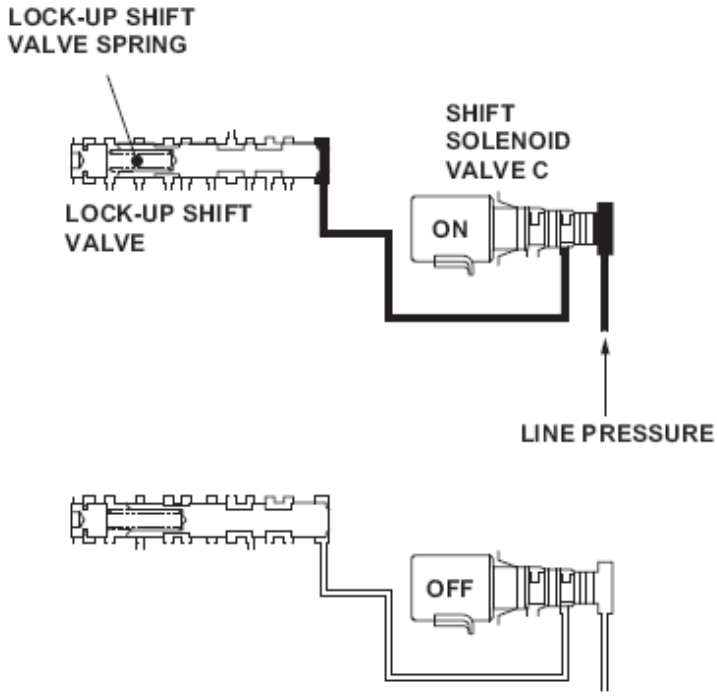


Fig. 191: Shift Solenoid Valve C - System Diagram (Stuck On)

HYDRAULIC PRESSURE SUPPLY TO CLUTCH BY SHIFT SOLENOID VALVE OUTPUT

Gear position		Neutral-1st	1st	Neutral-Reverse	Reverse
Shift solenoid valve	A	ON	ON	ON	OFF
	B	OFF	ON	OFF	OFF
	C	OFF	OFF	ON	ON
1st clutch		CPCD	LINE	-	-
4th clutch		-	-	CPCD	LINE
LINE: Line pressure CPCD: A/T clutch pressure control solenoid valve D pressure					

GENERAL DESCRIPTION

Shift solenoid valve C is installed on the transmission housing. It is controlled by the ON/OFF signal from the powertrain control module (PCM) to apply line pressure to the lock-up shift valve. A signal from the PCM is output to apply A/T clutch pressure control solenoid valve pressure to the correct gear clutch according to the shift schedule. When the signal to shift solenoid valve C from the PCM is on, and the line pressure is applied to the lock-up shift valve, it operates against the lock-up shift valve spring. When the signal to shift solenoid valve C from the PCM is off, and the line pressure is discharged, the lock-up shift valve is inactive. The PCM monitors the input shaft (mainshaft) speed and the output shaft (countershaft) speed according to the shift status determined by the shift schedule. When an improper gear ratio is output for the shift schedule, the PCM detects a shift solenoid valve C stuck on failure and stores a DTC.

MONITOR EXECUTION, SEQUENCE, DURATION, DTC TYPE, OBD STATUS

Execution		Continuous
Sequence		None
Duration	Symptom 1-A	10 seconds or more
	Symptom 1-B	3 seconds or more
DTC Type		Two drive cycles, MIL on, D indicator blinks
OBD Status		PASSED/FAILED/NOT COMPLETED (STILL TESTING)

ENABLE CONDITIONS

Condition	Minimum	Maximum
ATF temperature	-4 °F (-20 °C)	248 °F (120 °C)
Vehicle speed	-	3 mph (4 km/h)
Battery voltage	11 V	-
Shift lever position	D, S, R	
No active DTCs set (prevents	P0122, P0123, P0222, P0223, P0705, P0716, P0717, P0718, P0721, P0722, P0723, P0746, P0747, P0751, P0752, P0756, P0757, P0761, P0776, P0777, P0796, P0797, P0842, P0843, P0847, P0848, P0872, P0873, P0877, P0878, P0962, P0963, P0966,	

monitor from running)	P0967, P0970, P0971, P0973, P0974, P0976, P0977, P0979, P0980, P0989, P0990, P1658, P1659, P1683, P1684, P2101, P2118, P2122, P2123, P2127, P2128, P2135, P2138, P2176, P2714, P2720, P2721

MALFUNCTION THRESHOLD

SYMPTOM 1-B OCCURS AFTER SYMPTOM 1-A OCCURRED

Symptom		Gear position commanded by the PCM	Actual gear position
1	1-A	1st gear in-gear	Neutral
	1-B	Reverse gear in-gear	Reverse gear in-gear

DRIVING PATTERN

1. Start the engine.
2. With the brake pedal pressed, shift the transmission to 1st gear.
3. With the brake pedal pressed, shift to R.

DIAGNOSIS DETAILS

Conditions for setting the DTC

When a malfunction is detected during the first drive cycle, a Pending DTC is stored in the PCM memory. If the malfunction returns in the next (second) drive cycle, the MIL comes on and a Confirmed DTC and the freeze data are stored.

Conditions for clearing the DTC

The MIL is cleared if the malfunction does not return in three consecutive trips in which the diagnostic runs. The MIL, the Pending DTC, the Confirmed DTC, and the freeze data can be cleared with the scan tool Clear command or by disconnecting the battery.

DTC P0762: SHIFT SOLENOID VALVE C STUCK ON

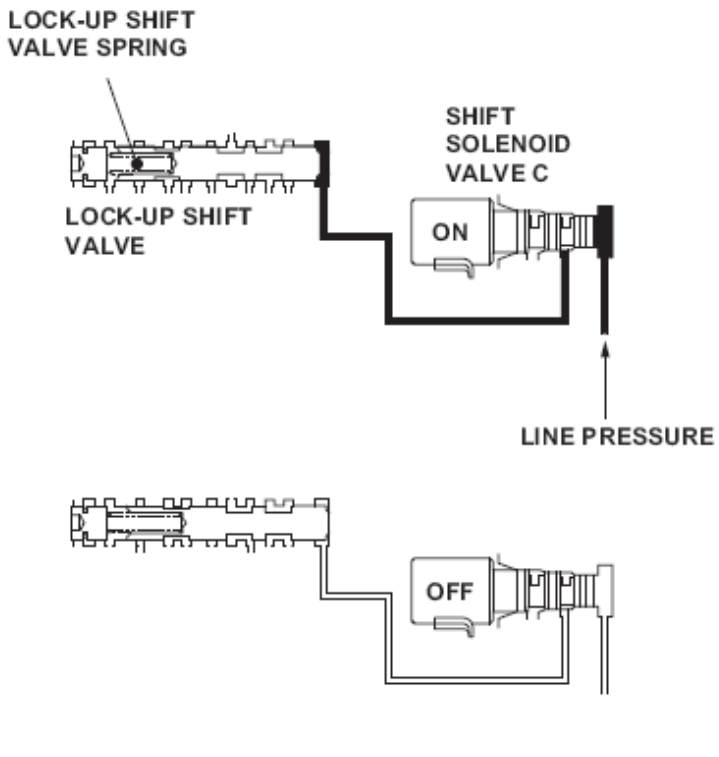


Fig. 192: Shift Solenoid Valve C - System Diagram (Stuck On)

HYDRAULIC PRESSURE SUPPLY TO CLUTCH BY SHIFT SOLENOID VALVE OUTPUT

Gear position		Neutral-1st	1st	Neutral-Reverse	Reverse
Shift solenoid valve	A	ON	ON	ON	OFF
	B	OFF	ON	OFF	OFF
	C	OFF	OFF	ON	ON
1st clutch		CPCD	LINE	-	-
4th clutch		-	-	CPCD	LINE

LINE: Line pressure
CPCD: A/T clutch pressure control solenoid valve D pressure

GENERAL DESCRIPTION

Shift solenoid valve C is installed on the transmission housing. It is controlled by the ON/OFF signal from the powertrain control module (PCM) to apply line pressure to the lock-up shift valve. A signal from the PCM is output to apply A/T clutch pressure control solenoid valve pressure to the correct gear clutch according to the shift schedule. When the signal to shift solenoid valve C from the PCM is on, and the line pressure is applied to the lock-up shift valve, it operates against the lock-up shift valve spring. When the signal to shift solenoid valve C from the PCM is off, and the line pressure is discharged, the lock-up shift valve is inactive. The PCM monitors the input shaft (mainshaft) speed and the output shaft (countershaft) speed according to the shift status determined by the shift schedule. When an improper gear ratio is output for the shift schedule, the PCM detects a shift solenoid valve C stuck on failure and stores a DTC.

MONITOR EXECUTION, SEQUENCE, DURATION, DTC TYPE, OBD STATUS

Execution		Continuous
Sequence		None
Duration	Symptom 1-A	10 seconds or more
	Symptom 1-B	3 seconds or more
DTC Type		Two drive cycles, MIL on, D indicator blinks
OBD Status		PASSED/FAILED/NOT COMPLETED (STILL TESTING)

ENABLE CONDITIONS

Condition	Minimum	Maximum
ATF temperature	-4 °F (-20 °C)	248 °F (120 °C)
Vehicle speed	-	3 mph (4 km/h)
Battery voltage	11 V	-
Shift lever position	D, S, R	
No active DTCs set (prevents monitor from running)	P0122, P0123, P0222, P0223, P0705, P0716, P0717, P0718, P0721, P0722, P0723, P0746, P0747, P0751, P0752, P0756, P0757, P0761, P0776, P0777, P0796, P0797, P0842, P0843, P0847, P0848, P0872, P0873, P0877, P0878, P0962, P0963, P0966, P0967, P0970, P0971, P0973, P0974, P0976, P0977, P0979, P0980, P0989, P0990, P1658, P1659, P1683, P1684, P2101, P2118, P2122, P2123, P2127, P2128, P2135, P2138, P2176, P2714, P2720, P2721	

MALFUNCTION THRESHOLD

SYMPTOM 1-B OCCURS AFTER SYMPTOM 1-A OCCURRED

Symptom		Gear position commanded by the PCM	Actual gear position
1	1-A	1st gear in-gear	Neutral
	1-B	Reverse gear in-gear	Reverse gear in-gear

DRIVING PATTERN

1. Start the engine.
2. With the brake pedal pressed, shift the transmission to 1st gear.
3. With the brake pedal pressed, shift to R.

DIAGNOSIS DETAILS

Conditions for setting the DTC

When a malfunction is detected during the first drive cycle, a Pending DTC is stored in the PCM memory. If the malfunction returns in the next (second) drive cycle, the MIL comes on and a Confirmed DTC and the freeze data are stored.

Conditions for clearing the DTC

The MIL is cleared if the malfunction does not return in three consecutive trips in which the diagnostic runs. The MIL, the Pending DTC, the Confirmed DTC, and the freeze data can be cleared with the scan tool Clear command or by disconnecting the battery.

DTC P0777: A/T CLUTCH PRESSURE CONTROL SOLENOID VALVE B STUCK ON

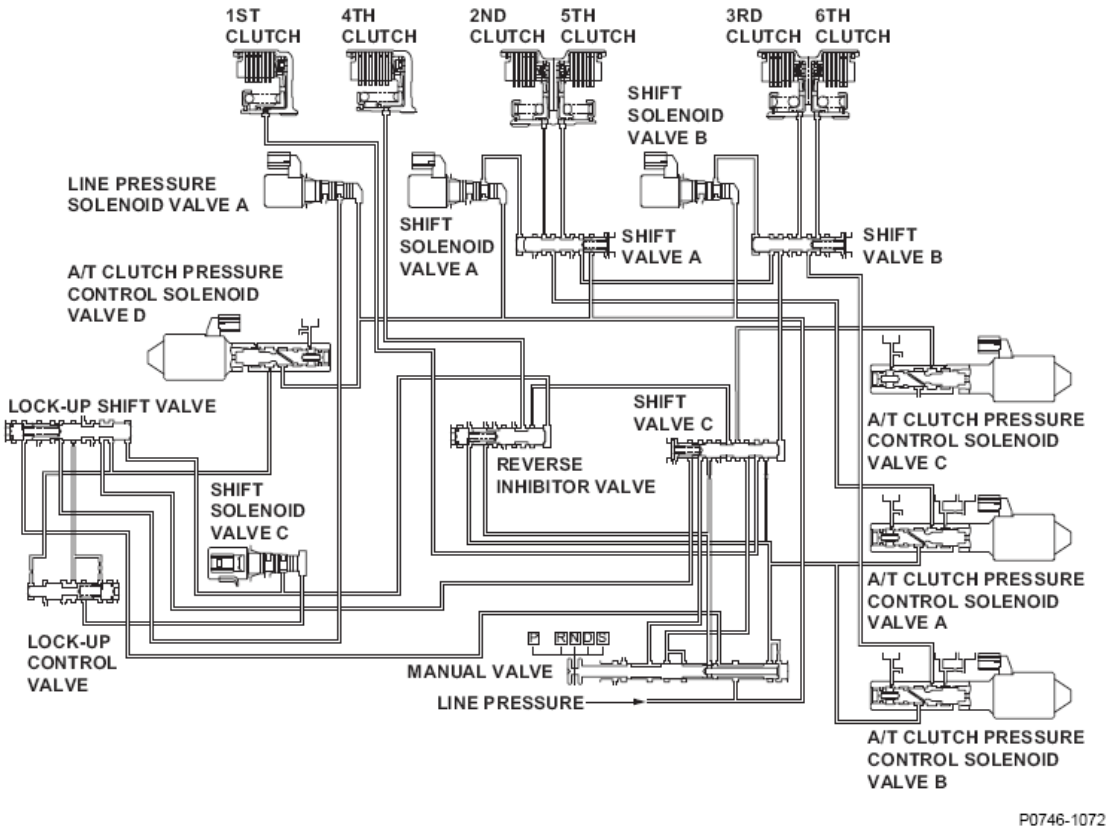


Fig. 193: A/T Clutch Pressure Control Solenoid Valve - System Diagram

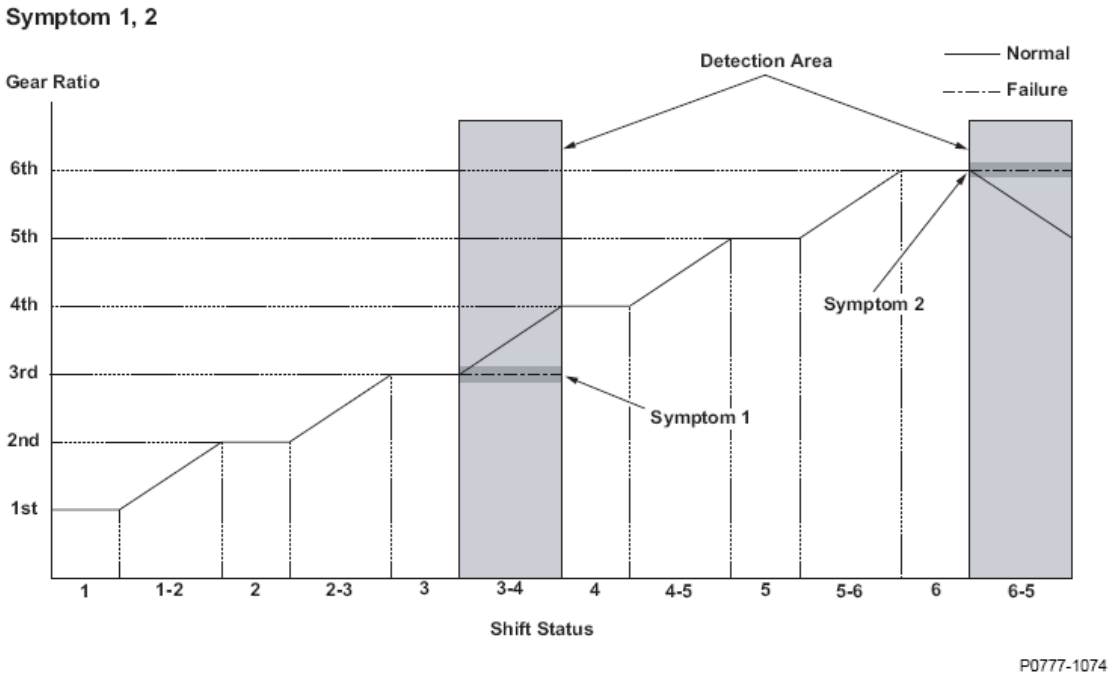


Fig. 194: Gear Ratio Versus Shifting Status Graph (Failure Detection Area, Symptom 1 And 2)

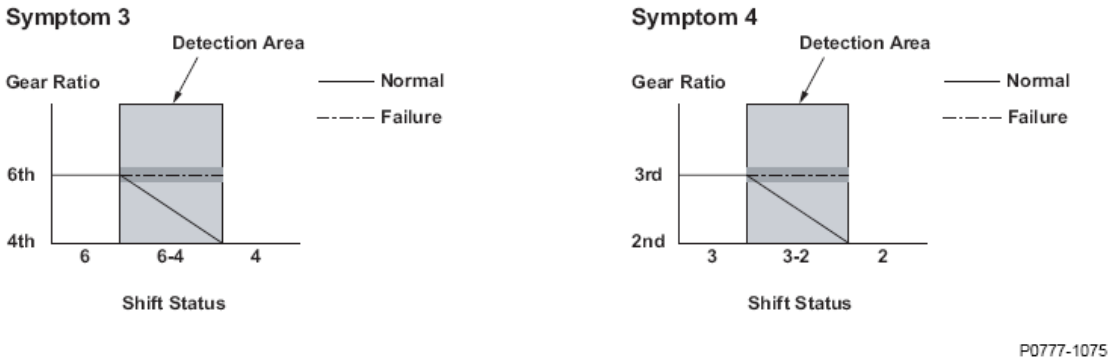


Fig. 195: Gear Ratio Versus Shifting Status Graph (Failure Detection Area, Symptom 3 And 4)

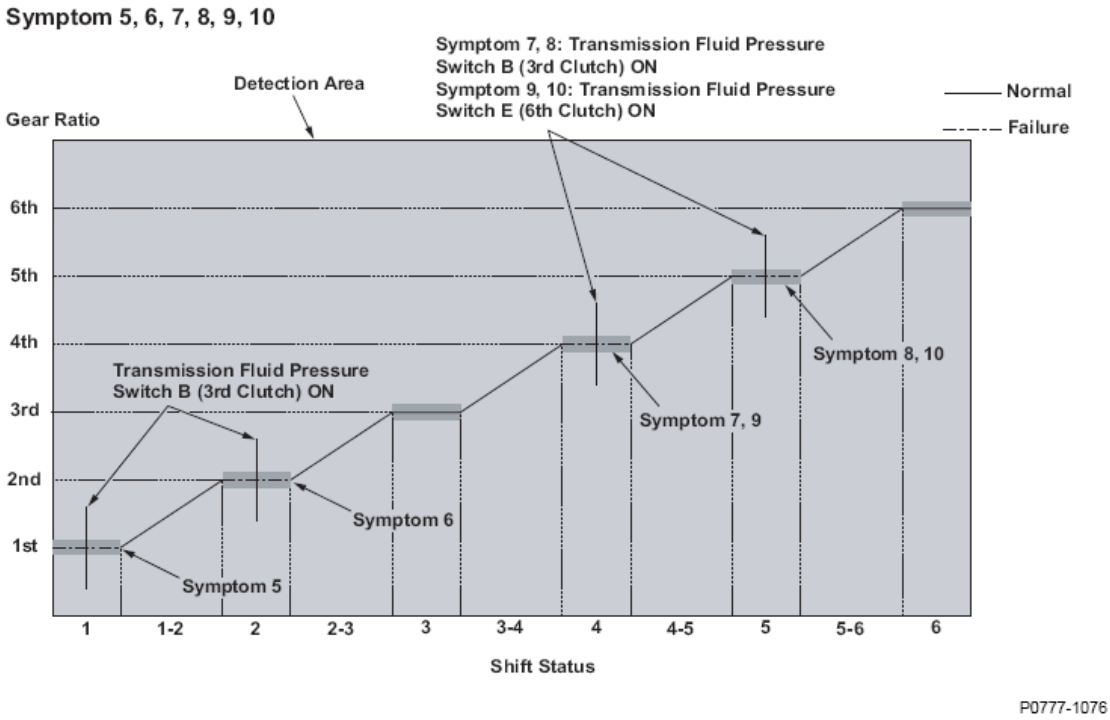


Fig. 196: Gear Ratio Versus Shifting Status Graph (Failure Detection Area, Symptom 5, 6, 7, 8, 9 And 10)

HYDRAULIC PRESSURE SUPPLY TO CLUTCH BY SHIFT SOLENOID VALVE OUTPUT (D POSITION)

Gear position	Shift solenoid valve		Clutch					
	A	B	1st	2nd	3rd	4th	5th	6th
Neutral-1st	ON	OFF	CPCD	-	-	-	-	-
1st	ON	ON	LINE	CPCA	CPCB	CPCC	-	-
1st-2nd	ON	ON	LINE	CPCA	CPCB	CPCC	-	-
2nd	ON	ON	LINE	CPCA	CPCB	CPCC	-	-
2nd-3rd	ON	ON	LINE	CPCA	CPCB	CPCC	-	-
3rd	OFF	ON	LINE	-	CPCB	CPCC	CPCA	-
3rd-4th	OFF	ON	LINE	-	CPCB	CPCC	CPCA	-
4th	OFF	OFF/(ON)	LINE	-	(CPCB)	CPCC	CPCA	CPCB
4th-5th	OFF	OFF	LINE	-	-	CPCC	CPCA	CPCB
5th	OFF	OFF/(ON)	LINE	-	(CPCB)	CPCC	CPCA	CPCB
5th-6th	OFF	OFF	LINE	-	-	CPCC	CPCA	CPCB
6th	OFF	OFF	LINE	-	-	CPCC	CPCA	CPCB

LINE: Line pressure
CPCA: A/T clutch pressure control solenoid valve A pressure
CPCB: A/T clutch pressure control solenoid valve B pressure
CPCC: A/T clutch pressure control solenoid valve C pressure
CPCD: A/T clutch pressure control solenoid valve D pressure

GENERAL DESCRIPTION

A/T clutch pressure control solenoid valve B is installed on the transmission housing. A/T clutch pressure control solenoid valve B is operated by the powertrain control module (PCM) and converts line pressure to A/T clutch pressure control solenoid valve B pressure. A signal from the PCM is output to A/T clutch pressure control solenoid valve B to supply proper A/T clutch pressure control solenoid valve B pressure to the correct gear clutch according to the shift schedule and the driving conditions. When the current from the PCM is high (ON), A/T clutch pressure control solenoid valve B operates and A/T clutch pressure control solenoid valve B pressure increases. When the current from the PCM is low (OFF), A/T clutch pressure control solenoid valve B turns off and A/T clutch pressure control solenoid valve B pressure decreases. The PCM monitors the input shaft (mainshaft) speed and the output shaft (countershaft) speed according to the shift status determined by the shift schedule, and monitors the transmission fluid pressure switch according to the shift status determined by the shift schedule. When an improper gear ratio is output for the shift schedule or when the wrong transmission fluid pressure switch is on for the shift schedule, the PCM detects an A/T clutch pressure control solenoid valve B stuck on failure and stores a DTC.

MONITOR EXECUTION, SEQUENCE, DURATION, DTC TYPE, OBD STATUS

Execution		Continuous
Sequence		None
Duration	Symptom 1	21 seconds or more
	Symptom 2	6 seconds or more
	Symptom 3	
	Symptom 4	
	Symptom 5	2 seconds or more
	Symptom 6	
	Symptom 7	
	Symptom 8	
	Symptom 9	
	Symptom 10	
DTC Type		Two drive cycles, MIL on, D indicator blinks
OBD Status		PASSED/FAILED/NOT COMPLETED (STILL TESTING)

ENABLE CONDITIONS

Condition	Minimum	Maximum
ATF temperature	-4 °F (-20 °C)	-
Vehicle speed	5 mph (9 km/h)	-
Battery voltage	11 V	-
Shift lever position	D	
No active DTCs set (prevents monitor from running)	P0122, P0123, P0222, P0223, P0705, P0716, P0717, P0718, P0721, P0722, P0723, P0746, P0747, P0751, P0752, P0756, P0757, P0761, P0762, P0776, P0796, P0797, P0842, P0843, P0847, P0848, P0872, P0873, P0877, P0878, P0962, P0963, P0966, P0967, P0970, P0971, P0973, P0974, P0976, P0977, P0979, P0980, P0989, P0990, P1658, P1659, P1683, P1684, P2101, P2118, P2122, P2123, P2127, P2128, P2135,	

	P2138, P2176, P2714, P2720, P2721

MALFUNCTION THRESHOLD

One of these conditions occurs:

- Either Symptom1, Symptom 2, Symptom 3, or Symptom 4 occurs.
- The input signal from transmission fluid pressure switch B (3rd clutch) is off for at least 4 seconds when the 6th gear shift is commanded or when the shift lever is in P, R, or N, after Symptom 5, Symptom 6, Symptom 7, or Symptom 8 occurred.
- The input signal from transmission fluid pressure switch E (6th clutch) is off for at least 4 seconds when the 3rd gear shift is commanded or when the shift lever is in P, R, or N, after Symptom 9 or Symptom 10 occurred.

SYMPTOM 1

Symptom	Gear position commanded by the PCM	Actual gear position
1	3rd --> 4th gear upshift	Driving in 3rd gear

SYMPTOM 2

Symptom	Gear position commanded by the PCM	Actual gear position
2	6th --> 5th gear downshift	Driving in 6th gear

SYMPTOM 3

Symptom	Gear position commanded by the PCM	Actual gear position
3	6th --> 4th gear downshift	Driving in 6th gear

SYMPTOM 4

Symptom	Gear position commanded by the PCM	Actual gear position
4	3rd --> 2nd gear downshift	Driving in 3rd gear

SYMPTOM 5

Symptom	Gear position commanded by the PCM	Actual gear position
5	Driving in 1st gear	Turn on transmission fluid pressure switch B (3rd clutch) when driving in 1st gear

SYMPTOM 6

Symptom	Gear position commanded by the PCM	Actual gear position
6	Driving in 2nd gear	Turn on transmission fluid pressure switch B (3rd clutch) when driving in 2nd gear

SYMPTOM 7

Symptom	Gear position commanded by the PCM	Actual gear position
7	Driving in 4th gear	Turn on transmission fluid pressure switch B (3rd clutch) when driving in 4th gear

SYMPTOM 8

Symptom	Gear position commanded by the PCM	Actual gear position
8	Driving in 5th gear	Turn on transmission fluid pressure switch B (3rd clutch) when driving in 5th gear

SYMPTOM 9

Symptom	Gear position commanded by the PCM	Actual gear position
9	Driving in 4th gear	Turn on transmission fluid pressure switch E (6th clutch) when driving in 4th gear

SYMPTOM 10

Symptom	Gear position commanded by the PCM	Actual gear position
10	Driving in 5th gear	Turn on transmission fluid pressure switch E (6th clutch) when driving in 5th gear

DRIVING PATTERN

1. Start the engine.
2. Drive the vehicle in D until the transmission shifts into 6th gear.
    - Drive the vehicle in this manner only if the traffic regulations and ambient conditions allow.

DIAGNOSIS DETAILS

Conditions for setting the DTC

When a malfunction is detected during the first drive cycle, a Pending DTC is stored in the PCM memory. If the malfunction returns in the next (second) drive cycle, the MIL comes on and a Confirmed DTC and the freeze data are stored.

Conditions for clearing the DTC

The MIL is cleared if the malfunction does not return in three consecutive trips in which the diagnostic runs. The MIL, the Pending DTC, the Confirmed DTC, and the freeze data can be cleared with the scan tool Clear command or by disconnecting the battery.

DTC P0796: A/T CLUTCH PRESSURE CONTROL SOLENOID VALVE C STUCK OFF

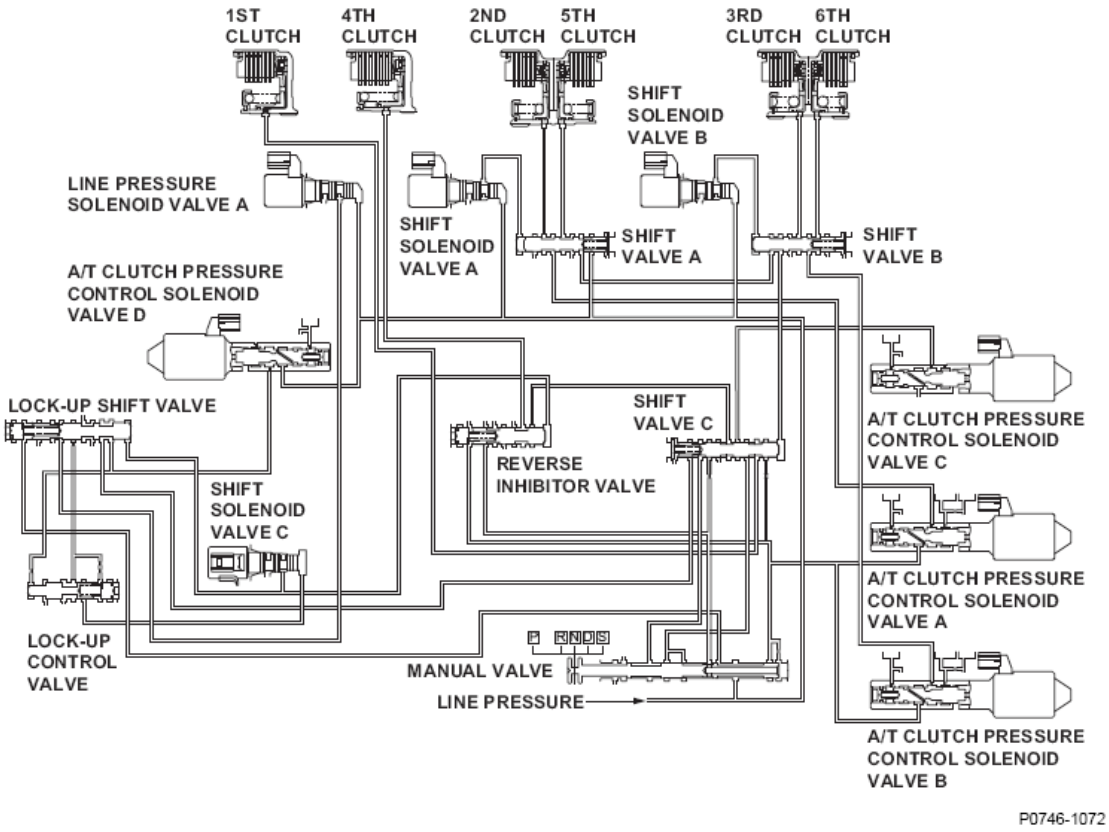


Fig. 197: A/T Clutch Pressure Control Solenoid Valve - System Diagram

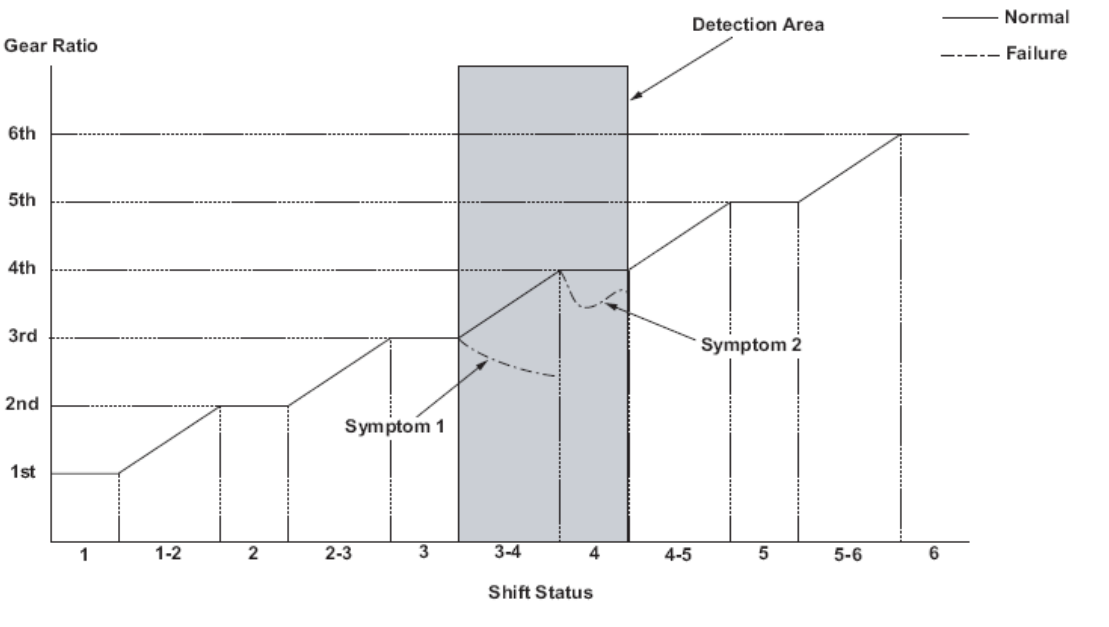


Fig. 198: Gear Ratio Versus Shifting Status Graph (Failure Detection Area)

HYDRAULIC PRESSURE SUPPLY TO CLUTCH BY SHIFT SOLENOID VALVE OUTPUT (D

POSITION)

Gear position	Shift solenoid valve		Clutch					
	A	B	1st	2nd	3rd	4th	5th	6th
Neutral-1st	ON	OFF	CPCD	-	-	-	-	-
1st	ON	ON	LINE	CPCA	CPCB	CPCC	-	-
1st-2nd	ON	ON	LINE	CPCA	CPCB	CPCC	-	-
2nd	ON	ON	LINE	CPCA	CPCB	CPCC	-	-
2nd-3rd	ON	ON	LINE	CPCA	CPCB	CPCC	-	-
3rd	OFF	ON	LINE	-	CPCB	CPCC	CPCA	-
3rd-4th	OFF	ON	LINE	-	CPCB	CPCC	CPCA	-
4th	OFF	OFF/(ON)	LINE	-	(CPCB)	CPCC	CPCA	CPCB
4th-5th	OFF	OFF	LINE	-	-	CPCC	CPCA	CPCB
5th	OFF	OFF/(ON)	LINE	-	(CPCB)	CPCC	CPCA	CPCB
5th-6th	OFF	OFF	LINE	-	-	CPCC	CPCA	CPCB
6th	OFF	OFF	LINE	-	-	CPCC	CPCA	CPCB

LINE: Line pressure
CPCA: A/T clutch pressure control solenoid valve A pressure
CPCB: A/T clutch pressure control solenoid valve B pressure
CPCC: A/T clutch pressure control solenoid valve C pressure
CPCD: A/T clutch pressure control solenoid valve D pressure

GENERAL DESCRIPTION

A/T clutch pressure control solenoid valve C is installed on the transmission housing. A/T clutch pressure control solenoid valve C is operated by the powertrain control module (PCM) and converts line pressure to A/T clutch pressure control solenoid valve C pressure. A signal from the PCM is output to A/T clutch pressure control solenoid valve C to supply proper A/T clutch pressure control solenoid valve C pressure to the correct gear clutch according to the shift schedule and the driving conditions. When the current from the PCM is high (ON), A/T clutch pressure control solenoid valve C operates and A/T clutch pressure control solenoid valve C pressure increases. When the current from the PCM is low (OFF), A/T clutch pressure control solenoid valve C turns off and A/T clutch pressure control solenoid valve C pressure decreases. The PCM monitors the input shaft (mainshaft) speed and the output shaft (countershaft) speed according to the shift status determined by the shift schedule. When an improper gear ratio is output for the shift schedule, the PCM detects an A/T clutch pressure control solenoid valve C stuck off failure and stores a DTC.

MONITOR EXECUTION, SEQUENCE, DURATION, DTC TYPE, OBD STATUS

Execution		Continuous
Sequence		None
Duration	Symptom 1	1 second or more
	Symptom 2	4 seconds or more
DTC Type		Two drive cycles, MIL on, D indicator blinks
OBD Status		PASSED/FAILED/NOT COMPLETED (STILL TESTING)

ENABLE CONDITIONS

Condition	Minimum	Maximum
Engine coolant temperature(1)	50 °F (10 °C)	-
ATF temperature (1)	-4 °F (-20 °C)	-
Vehicle speed(1)	5 mph (9 km/h)	-
Battery voltage	11 V	-
Accelerator pedal position variation (1)	-	6 %/20 milliseconds (Not fully closed)
Shift lever position	D	
No active DTCs set (prevents monitor from running)	P0122, P0123, P0222, P0223, P0705, P0716, P0717, P0718, P0721, P0722, P0723, P0746, P0747, P0751, P0752, P0756, P0757, P0761, P0762, P0776, P0777, P0797, P0842, P0843, P0847, P0848, P0872, P0873, P0877, P0878, P0962, P0963, P0966, P0967, P0970, P0971, P0973, P0974, P0976, P0977, P0979, P0980, P0989, P0990, P1658, P1659, P1683, P1684, P2101, P2118, P2122, P2123, P2127, P2128, P2135, P2138, P2176, P2714, P2720, P2721	
(1) Symptom 1		

MALFUNCTION THRESHOLD

One of these conditions occurs:

- Symptom 1 occurs.
- Symptom 2 occurs during the 1st drive cycle, and Symptom 1 occurs during the 2nd drive cycle.

SYMPTOM 1

Symptom	Gear position commanded by the PCM	Actual gear position
1	3rd --> 4th gear upshift	The engine speed flares when upshifting to 3rd --> 4th gear

SYMPTOM 2

Symptom	Gear position commanded by the PCM	Actual gear position
2	Driving in 4th gear	Neutral

DRIVING PATTERN

1. Start the engine.
2. Drive the vehicle in D until the transmission shifts into 6th gear.

- Drive the vehicle in this manner only if the traffic regulations and ambient conditions allow.

DIAGNOSIS DETAILS

Conditions for setting the DTC

When a malfunction is detected during the first drive cycle, a Pending DTC is stored in the PCM memory. If the malfunction returns in the next (second) drive cycle, the MIL comes on and a Confirmed DTC and the freeze data are stored.

Conditions for clearing the DTC

The MIL is cleared if the malfunction does not return in three consecutive trips in which the diagnostic runs. The MIL, the Pending DTC, the Confirmed DTC, and the freeze data can be cleared with the scan tool Clear command or by disconnecting the battery.

DTC P0797: A/T CLUTCH PRESSURE CONTROL SOLENOID VALVE C STUCK ON

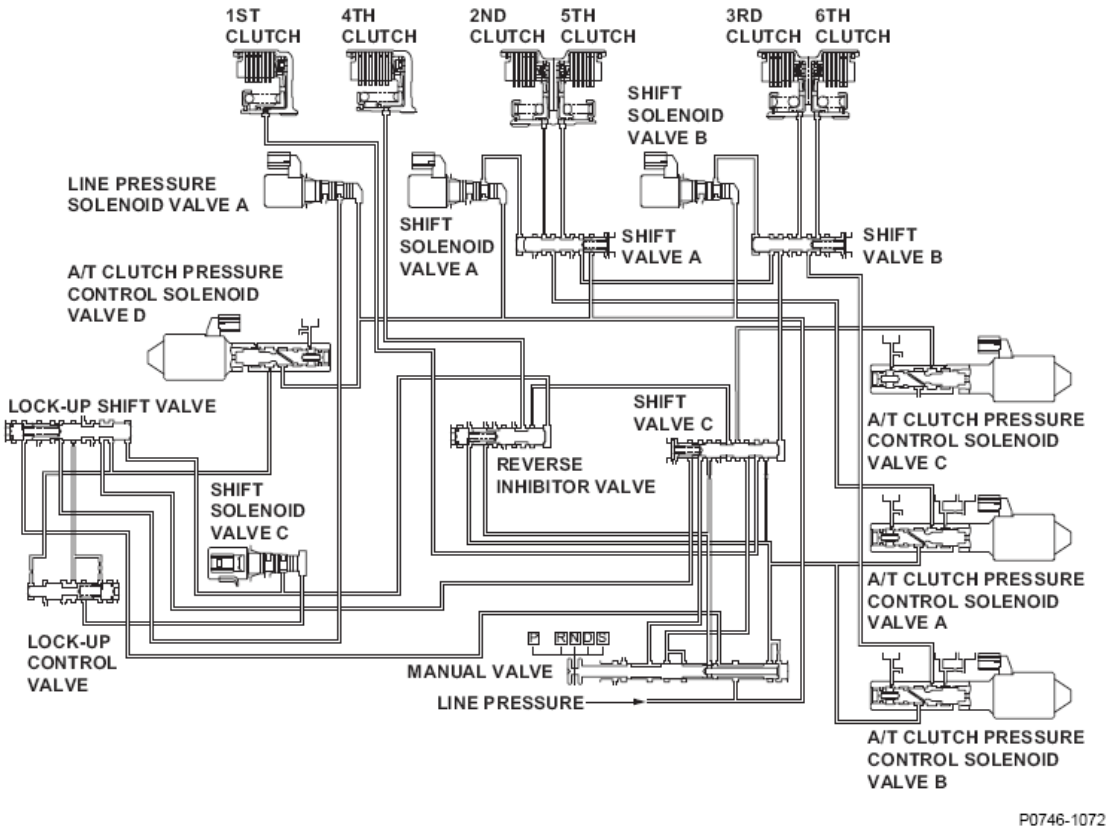


Fig. 199: A/T Clutch Pressure Control Solenoid Valve - System Diagram

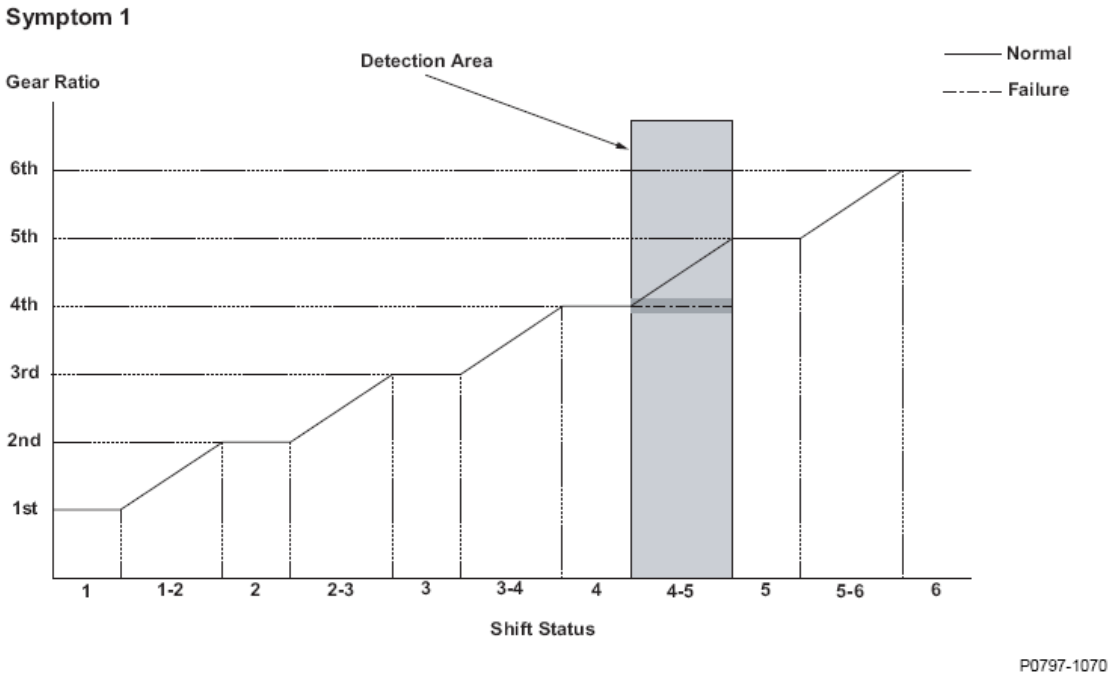


Fig. 200: Gear Ratio Versus Shifting Status Graph (Failure Detection Area, Symptom 1)

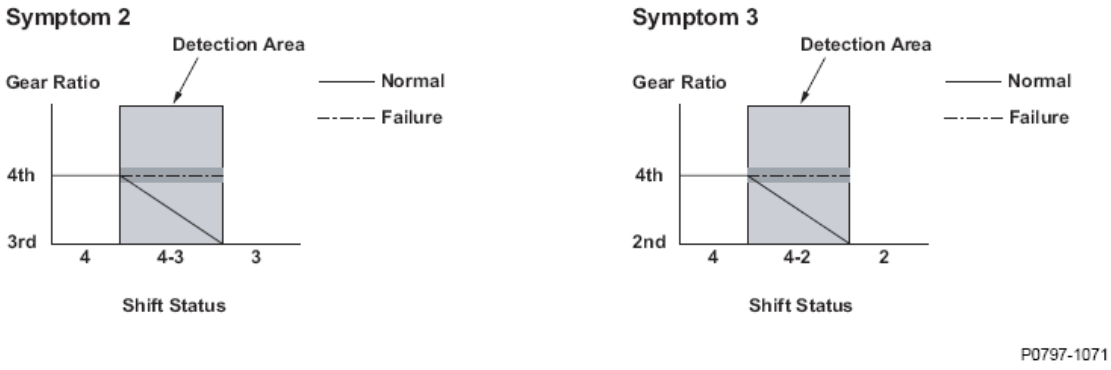


Fig. 201: Gear Ratio Versus Shifting Status Graph (Failure Detection Area, Symptom 2 And 3)

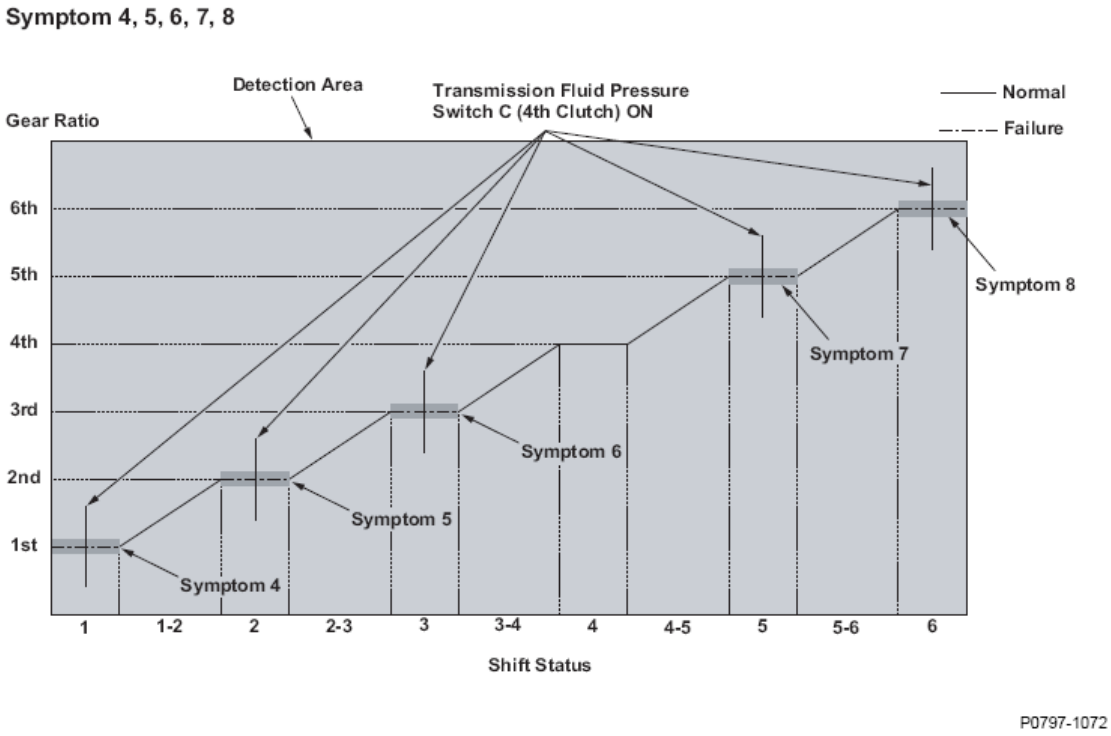


Fig. 202: Gear Ratio Versus Shifting Status Graph (Failure Detection Area, Symptom 4, 5, 6, 7 And 8)

HYDRAULIC PRESSURE SUPPLY TO CLUTCH BY SHIFT SOLENOID VALVE OUTPUT (D POSITION)

Gear position	Shift solenoid valve		Clutch					
	A	B	1st	2nd	3rd	4th	5th	6th
Neutral-1st	ON	OFF	CPCD	-	-	-	-	-
1st	ON	ON	LINE	CPCA	CPCB	CPCC	-	-
1st-2nd	ON	ON	LINE	CPCA	CPCB	CPCC	-	-
2nd	ON	ON	LINE	CPCA	CPCB	CPCC	-	-
2nd-3rd	ON	ON	LINE	CPCA	CPCB	CPCC	-	-
3rd	OFF	ON	LINE	-	CPCB	CPCC	CPCA	-
3rd-4th	OFF	ON	LINE	-	CPCB	CPCC	CPCA	-
4th	OFF	OFF/(ON)	LINE	-	(CPCB)	CPCC	CPCA	CPCB
4th-5th	OFF	OFF	LINE	-	-	CPCC	CPCA	CPCB
5th	OFF	OFF/(ON)	LINE	-	(CPCB)	CPCC	CPCA	CPCB
5th-6th	OFF	OFF	LINE	-	-	CPCC	CPCA	CPCB
6th	OFF	OFF	LINE	-	-	CPCC	CPCA	CPCB

LINE: Line pressure
CPCA: A/T clutch pressure control solenoid valve A pressure
CPCB: A/T clutch pressure control solenoid valve B pressure
CPCC: A/T clutch pressure control solenoid valve C pressure
CPCD: A/T clutch pressure control solenoid valve D pressure

GENERAL DESCRIPTION

A/T clutch pressure control solenoid valve C is installed on the transmission housing. A/T clutch pressure control solenoid valve C is operated by the powertrain control module (PCM) and converts line pressure to A/T clutch pressure control solenoid valve C pressure. A signal from the PCM is output to A/T clutch pressure control solenoid valve C to supply proper A/T clutch pressure control solenoid valve C pressure to the correct gear clutch according to the shift schedule and the driving conditions. When the current from the PCM is high (ON), A/T clutch pressure control solenoid valve C operates and A/T clutch pressure control solenoid valve C pressure increases. When the current from the PCM is low (OFF), A/T clutch pressure control solenoid valve C turns off and A/T clutch pressure control solenoid valve C pressure decreases. The PCM monitors the input shaft (mainshaft) speed and the output shaft (countershaft) speed according to the shift status determined by the shift schedule, and monitors the transmission fluid pressure switch according to the shift status determined by the shift schedule. When an improper gear ratio is output for the shift schedule or when the wrong transmission fluid pressure switch is on for the shift schedule, the PCM detects an A/T clutch pressure control solenoid valve C stuck on failure and stores a DTC.

MONITOR EXECUTION, SEQUENCE, DURATION, DTC TYPE, OBD STATUS

Execution		Continuous
Sequence		None
Duration	Symptom 1	21 seconds or more
	Symptom 2	6 seconds or more
	Symptom 3	
	Symptom 4	3 seconds or more
	Symptom 5	
	Symptom 6	
	Symptom 7	
	Symptom 8	
DTC Type		Two drive cycles, MIL on, D indicator blinks
OBD Status		PASSED/FAILED/NOT COMPLETED (STILL TESTING)

ENABLE CONDITIONS

Condition	Minimum	Maximum
ATF temperature	-4 °F (-20 °C)	-
Vehicle speed	5 mph (9 km/h)	-
Battery voltage	11 V	-
Shift lever position	D	
No active DTCs set (prevents monitor from running)	P0122, P0123, P0222, P0223, P0705, P0716, P0717, P0718, P0721, P0722, P0723, P0746, P0747, P0751, P0752, P0756, P0757, P0761, P0762, P0776, P0777, P0796, P0842, P0843, P0847, P0848, P0872, P0873, P0877, P0878, P0962, P0963, P0966, P0967, P0970, P0971, P0973, P0974, P0976, P0977, P0979, P0980, P0989, P0990, P1658, P1659, P1683, P1684, P2101, P2118, P2122, P2123, P2127, P2128, P2135, P2138, P2176, P2714, P2720, P2721	

MALFUNCTION THRESHOLD

One of these conditions occurs:

- Either Symptom 1, Symptom 2, or Symptom 3 occurs.
- The input signal from transmission fluid pressure switch C (4th clutch) is off for at least 4 seconds when the 1st gear shift is commanded or when the shift lever is in P or N, after Symptom 4, Symptom 5, Symptom 6, Symptom 7, or Symptom 8 occurred.

SYMPTOM 1

Symptom	Gear position commanded by the PCM	Actual gear position
1	4th --> 5th gear upshift	Driving in 4th gear

SYMPTOM 2

Symptom	Gear position commanded by the PCM	Actual gear position
2	4th --> 3rd gear downshift	Driving in 4th gear

SYMPTOM 3

Symptom	Gear position commanded by the PCM	Actual gear position
3	4th --> 2nd gear downshift	Driving in 4th gear

SYMPTOM 4

Symptom	Gear position commanded by the PCM	Actual gear position
4	Driving in 1st gear	Turn on transmission fluid pressure switch C (4th clutch) when driving in 1st gear

SYMPTOM 5

Symptom	Gear position commanded by the PCM	Actual gear position
5	Driving in 2nd gear	Turn on transmission fluid pressure switch C (4th clutch) when driving in 2nd gear

SYMPTOM 6

Symptom	Gear position commanded by the PCM	Actual gear position
6	Driving in 3rd gear	Turn on transmission fluid pressure switch C (4th clutch) when driving in 3rd gear

SYMPTOM 7

Symptom	Gear position commanded by the PCM	Actual gear position
7	Driving in 5th gear	Turn on transmission fluid pressure switch C (4th clutch) when driving in 5th gear

SYMPTOM 8

Symptom	Gear position commanded by the PCM	Actual gear position
8	Driving in 6th gear	Turn on transmission fluid pressure switch C (4th clutch) when driving in 6th gear

DRIVING PATTERN

1. Start the engine.
2. Drive the vehicle in D until the transmission shifts into 6th gear.
   - Drive the vehicle in this manner only if the traffic regulations and ambient conditions allow.

DIAGNOSIS DETAILS

Conditions for setting the DTC

When a malfunction is detected during the first drive cycle, a Pending DTC is stored in the PCM memory. If the malfunction returns in the next (second) drive cycle, the MIL comes on and a Confirmed DTC and the freeze data are stored.

Conditions for clearing the DTC

The MIL is cleared if the malfunction does not return in three consecutive trips in which the diagnostic runs. The MIL, the Pending DTC, the Confirmed DTC, and the freeze data can be cleared with the scan tool Clear command or by disconnecting the battery.

DTC P0812: OPEN IN TRANSMISSION RANGE SWITCH ATPR SWITCH CIRCUIT

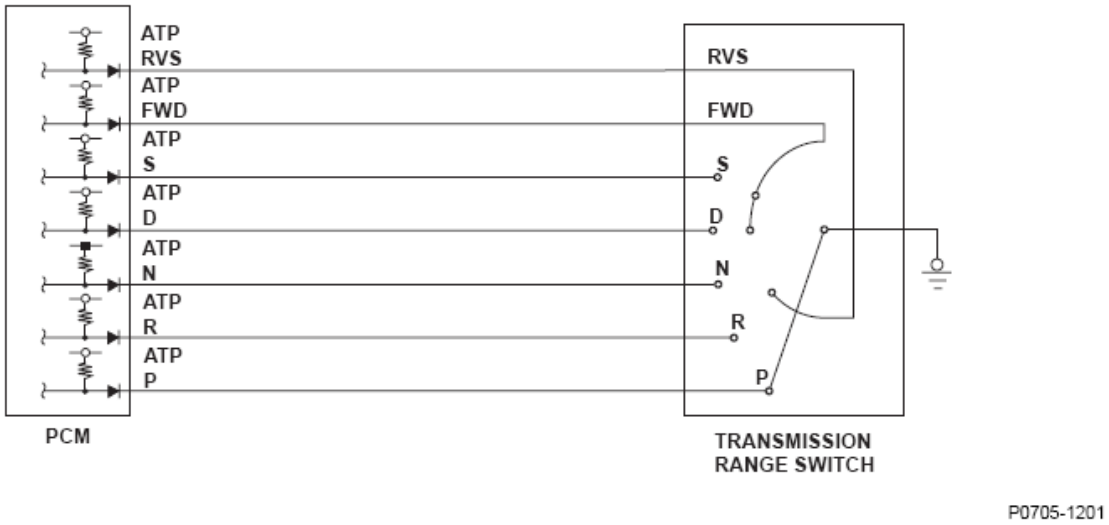


Fig. 203: Transmission Range Switch - Circuit Diagram

TRANSMISSION RANGE SWITCH CONTACT POINT INPUT MATRIX

Shift lever position	Input per switch						
	ATPP	ATPR	ATPN	ATPD	ATPS	ATP FWD	ATP RVS
P	o	X	X	X	X	X	X
R	X	o	X	X	X	X	o
N	X	X	o	X	X	X	X
D	X	X	X	o	X	o	X
S	X	X	X	X	o	o	X
o: Closed X: Open							

GENERAL DESCRIPTION

The transmission range switch is attached to a control shaft. Operating the shift lever makes the control shaft rotate via the shift cable. The A/T gear position indicator shows which position is selected according to the Low/High signal combinations, which vary based on the control shaft rotational angle. The control shaft changes the position of the transmission range switch, activates the manual valve, and switches hydraulic pressure to shift the transmission through forward/neutral/reverse. The transmission range switch signal is used to determine the shift schedule. The voltage is high (5 V or 12 V) at the powertrain control module (PCM) input terminal when each transmission range switch position is open, and it is low (0 V) when each switch is closed. If the R switch is open while driving the vehicle in R, the PCM detects an R switch open failure and stores a DTC.

MONITOR EXECUTION, SEQUENCE, DURATION, DTC TYPE, OBD STATUS

Execution	Continuous
Sequence	None
Duration	Depending on the driving conditions
DTC Type	Two drive cycles, MIL on, D indicator blinks
OBD Status	PASSED/FAILED/NOT COMPLETED (STILL TESTING)

ENABLE CONDITIONS

Condition	Minimum	Maximum
Engine speed	1,000 rpm	-
Battery voltage	11 V	-
Shift lever position	R	
No active DTCs set (prevents monitor from running)	P0705, P0716, P0717, P0721, P0722, P1717	

MALFUNCTION THRESHOLD

The RVS position signal input is detected but the R position signal input is not detected.

DRIVING PATTERN

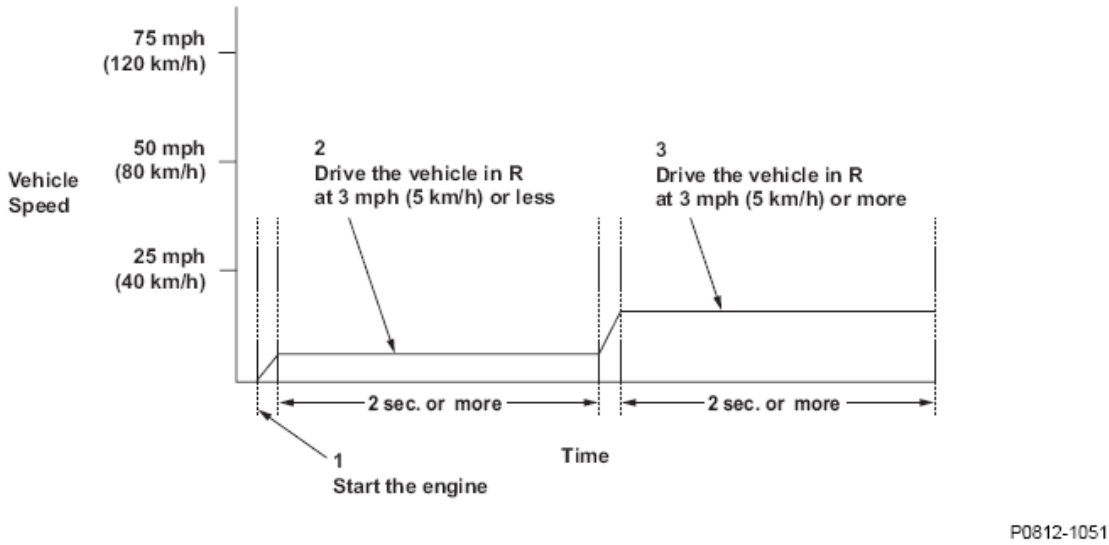


Fig. 204: Vehicle Speed Driving Pattern

1. Start the engine.
2. Drive the vehicle in R at 3 mph (5 km/h) or less for at least 2 seconds.
3. Drive the vehicle in R at 3 mph (5 km/h) or more for at least 2 seconds.
    - Drive the vehicle in this manner only if the traffic regulations and ambient conditions allow.

DIAGNOSIS DETAILS

Conditions for setting the DTC

When a malfunction is detected during the first drive cycle, a Pending DTC is stored in the PCM memory. If the malfunction returns in the next (second) drive cycle, the MIL comes on and a Confirmed DTC and the freeze data are stored.

Conditions for clearing the DTC

The MIL is cleared if the malfunction does not return in three consecutive trips in which the diagnostic runs. The MIL, the Pending DTC, the Confirmed DTC, and the freeze data can be cleared with the scan tool Clear command or by disconnecting the battery.

DTC P0831: CLUTCH PEDAL POSITION SWITCH A CIRCUIT HIGH VOLTAGE

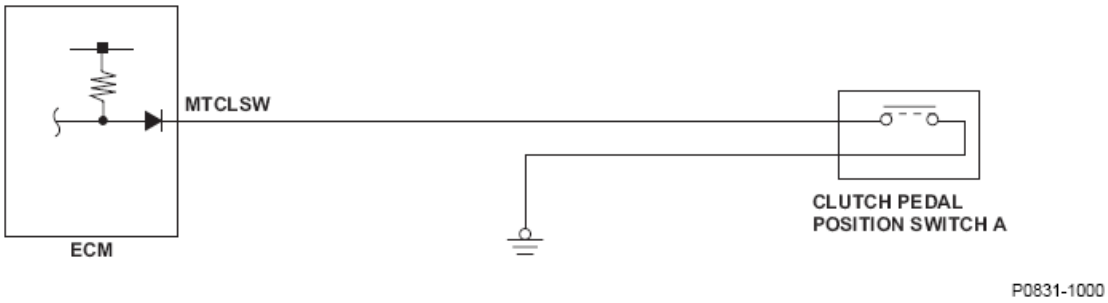


Fig. 205: Clutch Pedal Position Switch A - Circuit Diagram

GENERAL DESCRIPTION

The engine control module (ECM) monitors the clutch pedal position switch A signal to switch the starting system from auto control mode to manual mode when it malfunctions. When the ECM cannot detect an OPEN signal from clutch pedal position switch A while the clutch pedal is released, the detection continues after the engine start/stop button is pressed to select the OFF mode. If the malfunction continues for a set time after the engine start/stop button is pressed to select the OFF mode, the ECM detects a malfunction and stores a DTC.

MONITOR EXECUTION, SEQUENCE, DURATION, DTC TYPE, OBD STATUS

Execution	Once per driving cycle
Sequence	None
Duration	5 minutes or more
DTC Type	One drive cycle, MIL off
OBD Status	PASSED/FAILED/NOT COMPLETED (STILL TESTING)

ENABLE CONDITIONS

Condition	Minimum	Maximum
Engine speed	1,000 rpm	-
Vehicle speed	19 mph (30 km/h)	-
Other	Malfunction judgment executes if ECM cannot detect OPEN signal from clutch pedal position switch A while clutch pedal is released under above conditions	

MALFUNCTION THRESHOLD

The ECM cannot detect an OPEN signal from clutch pedal position switch A for at least 5 minutes after the engine start/stop button is pressed to select the OFF mode.

DRIVING PATTERN

1. Start the engine.

2. Drive the vehicle at a speed of 19 mph (30 km/h) or more.
3. Press the engine start/stop button to select the OFF mode, and wait for at least 5 minutes.
    - Drive the vehicle in this manner only if the traffic regulations and ambient conditions allow.

DIAGNOSIS DETAILS

Conditions for setting the DTC

When a malfunction is detected, a Pending DTC, a Confirmed DTC, and the freeze data are stored in the ECM memory. The MIL does not come on.

Conditions for clearing the DTC

The Pending DTC, the Confirmed DTC, and the freeze data can be cleared with the scan tool Clear command or by disconnecting the battery.

DTC P0835: CLUTCH PEDAL POSITION SWITCH B CIRCUIT LOW VOLTAGE

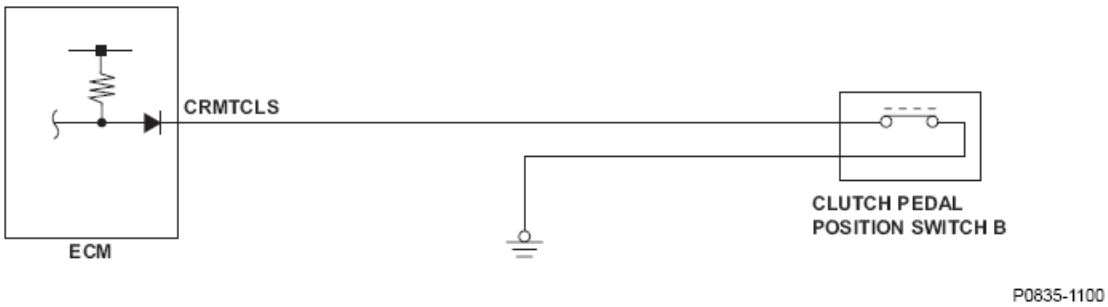


Fig. 206: Clutch Pedal Position Switch B - Circuit Diagram

GENERAL DESCRIPTION

The engine control module (ECM) monitors the clutch pedal position switch B signal to switch the starting system from auto control mode to manual mode when it malfunctions. When the ECM cannot detect a CLOSE signal from clutch pedal position switch B while the clutch pedal is released, the detection continues after the engine start/stop button is pressed to select the OFF mode. If the malfunction continues for a set time after the engine start/stop button is pressed to select the OFF mode, the ECM detects a malfunction and stores a DTC.

MONITOR EXECUTION, SEQUENCE, DURATION, DTC TYPE, OBD STATUS

Execution	Once per driving cycle
Sequence	None
Duration	30 minutes or more
DTC Type	Two drive cycles, MIL off
OBD Status	PASSED/FAILED/NOT COMPLETED (STILL TESTING)

ENABLE CONDITIONS

Condition	Minimum	Maximum
Engine speed	1,000 rpm	-
Vehicle speed	19 mph (30 km/h)	-
Other	Malfunction judgment executes if ECM cannot detect CLOSE signal from clutch pedal position switch B while clutch pedal is released under above conditions	

MALFUNCTION THRESHOLD

The ECM cannot detect a CLOSE signal from clutch pedal position switch B for at least 30 minutes after the engine start/stop button is pressed to select the OFF mode.

DRIVING PATTERN

1. Start the engine.
2. Drive the vehicle at a speed of 19 mph (30 km/h) or more.
3. Press the engine start/stop button to select the OFF mode, and wait for at least 30 minutes.
    - Drive the vehicle in this manner only if the traffic regulations and ambient conditions allow.

DIAGNOSIS DETAILS

Conditions for setting the DTC

When a malfunction is detected during the first drive cycle, a Pending DTC is stored in the ECM memory. If the malfunction returns in the next (second) drive cycle, a Confirmed DTC and the freeze data are stored. The MIL does not come on.

Conditions for clearing the DTC

The Pending DTC, the Confirmed DTC, and the freeze data can be cleared with the scan tool Clear command or by disconnecting the battery.

DTC P0842: SHORT IN TRANSMISSION FLUID PRESSURE SWITCH A (2ND CLUTCH) CIRCUIT, OR TRANSMISSION FLUID PRESSURE SWITCH A (2ND CLUTCH) STUCK ON

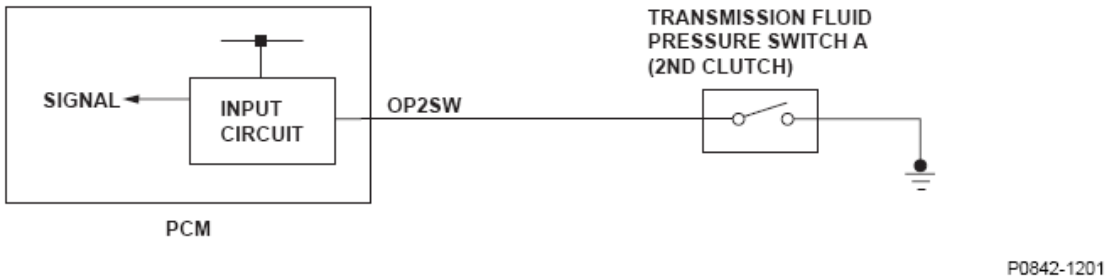


Fig. 207: Transmission Fluid Pressure Switch A - Circuit Diagram

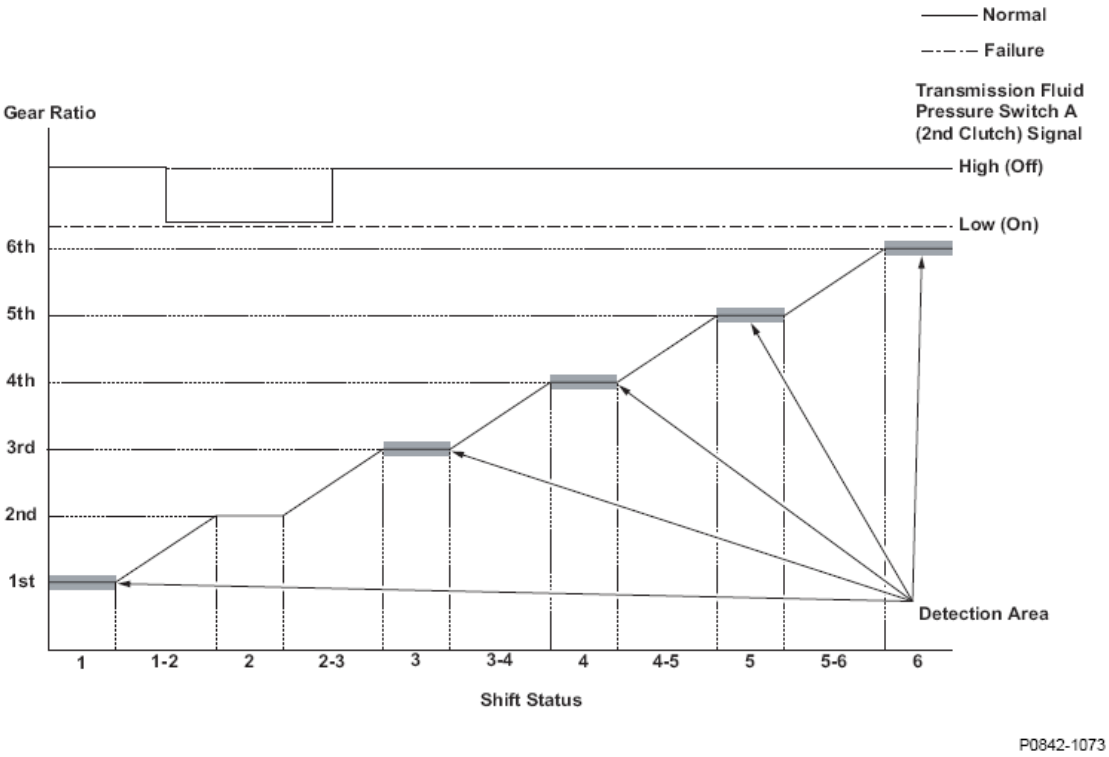


Fig. 208: Gear Ratio Versus Shifting Status Graph

GENERAL DESCRIPTION

Transmission fluid pressure switch A (2nd clutch) is installed in the hydraulic pressure circuit to the 2nd clutch. When hydraulic pressure is supplied to the 2nd clutch, the switch is turned on. When hydraulic pressure is not supplied to the 2nd clutch, the switch is turned off. The signal from transmission fluid pressure switch A (2nd clutch) is input to the powertrain control module (PCM). The PCM detects the hydraulic pressure supply conditions at the gear change to 2nd gear (1st --> 2nd) to reduce the shock that occurs at the gear change. If transmission fluid pressure switch A (2nd clutch) is on while driving the vehicle with the rotation speed ratio of the input/output pulses is other than the 2nd gear ratio (the ratio is Neutral or 4th), the PCM detects a transmission fluid pressure switch A (2nd clutch) failure and stores a DTC.

MONITOR EXECUTION, SEQUENCE, DURATION, DTC TYPE, OBD STATUS

Execution	Continuous
Sequence	None
Duration	Depending on the driving conditions
DTC Type	Two drive cycles, MIL on, D indicator blinks
OBD Status	PASSED/FAILED/NOT COMPLETED (STILL TESTING)

ENABLE CONDITIONS

Condition	Minimum	Maximum
Battery voltage	11 V	-
No active DTCs set (prevents monitor from running)	P0122, P0123, P0222, P0223, P0705, P0716, P0717, P0718, P0721, P0722, P0723, P0746, P0747, P0751, P0752, P0756, P0757, P0761, P0762, P0776, P0777, P0796, P0797, P0843, P0847, P0848, P0872, P0873, P0877, P0878, P0962, P0963, P0966, P0967, P0970, P0971, P0973, P0974, P0976, P0977, P0979, P0980, P0989, P0990, P1658, P1659, P1683, P1684, P2101, P2118, P2122, P2123, P2127, P2128, P2135, P2138, P2176, P2714, P2720, P2721	

MALFUNCTION THRESHOLD

One of these conditions occurs:

- The input signal from transmission fluid pressure switch A (2nd clutch) to the PCM is low for at least 5 seconds when the shift lever is in P, R, or N.
- The input signal from transmission fluid pressure switch A (2nd clutch) to the PCM is low for at least 5 seconds when driving in 3rd, 4th, 5th, or 6th gear.
- The input signal from transmission fluid pressure switch A (2nd clutch) to the PCM is low for at least 5 seconds when the 5th gear shift is commanded or when the shift lever is in P, R, or N, after the signal is low for at least 3 seconds when driving in 1st gear.

DRIVING PATTERN

1. Start the engine.
2. Drive the vehicle in D until the transmission shifts into 6th gear.
    - Drive the vehicle in this manner only if the traffic regulations and ambient conditions allow.

DIAGNOSIS DETAILS

Conditions for setting the DTC

When a malfunction is detected during the first drive cycle, a Pending DTC is stored in the PCM memory. If the malfunction returns in the next (second) drive cycle, the MIL comes on and a Confirmed DTC and the freeze data are stored.

Conditions for clearing the DTC

The MIL is cleared if the malfunction does not return in three consecutive trips in which the diagnostic runs. The MIL, the Pending DTC, the Confirmed DTC, and the freeze data can be cleared with the scan tool Clear command or by disconnecting the battery.

DTC P0843: OPEN IN TRANSMISSION FLUID PRESSURE SWITCH A (2ND CLUTCH) CIRCUIT, OR TRANSMISSION FLUID PRESSURE SWITCH A (2ND CLUTCH) STUCK OFF

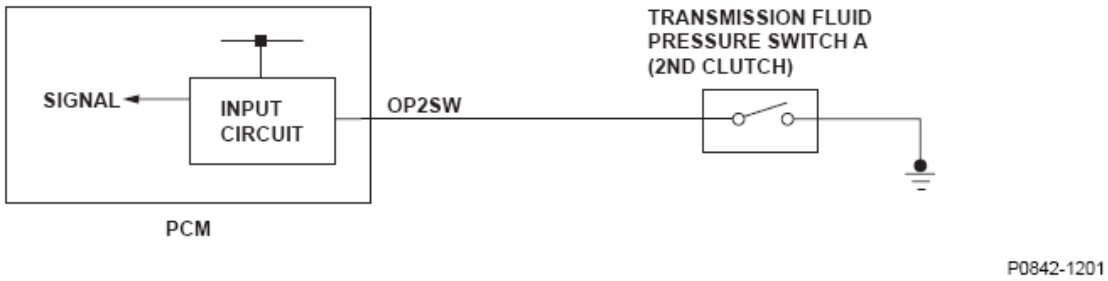


Fig. 209: Transmission Fluid Pressure Switch A - Circuit Diagram

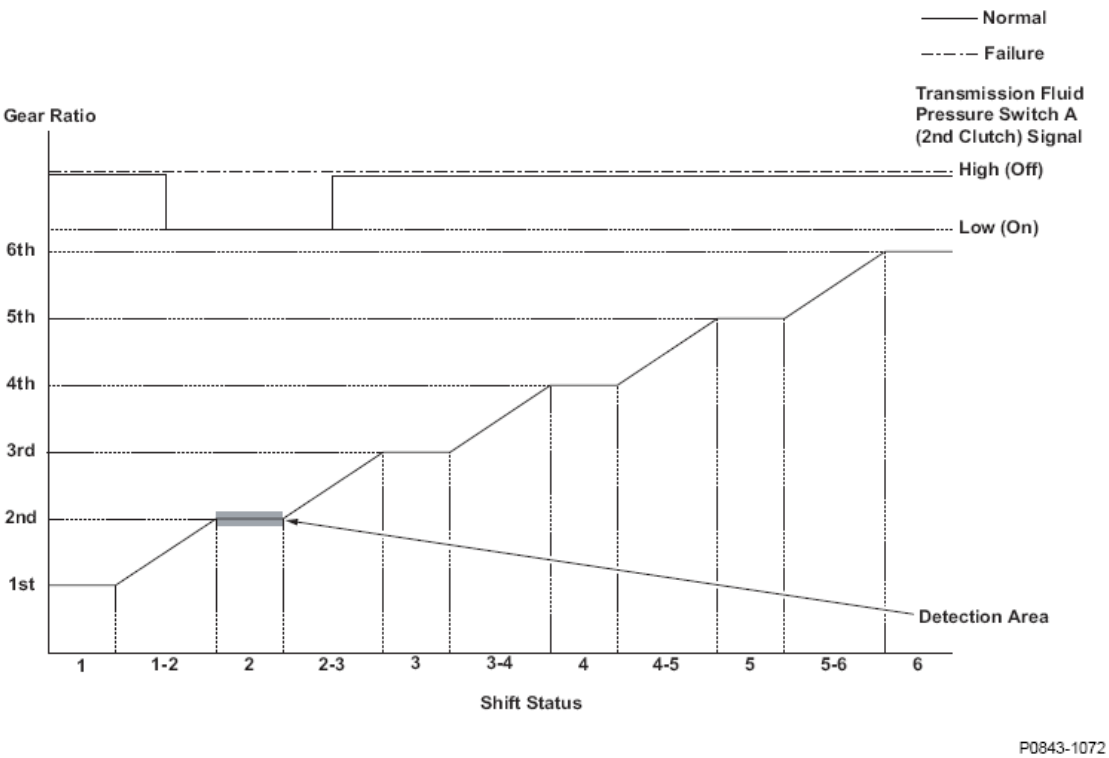


Fig. 210: Gear Ratio Versus Shifting Status Graph (2nd Clutch Detection Area)

GENERAL DESCRIPTION

Transmission fluid pressure switch A (2nd clutch) is installed in the hydraulic pressure circuit to the 2nd clutch. When hydraulic pressure is supplied to the 2nd clutch, the switch is turned on. When hydraulic pressure is not supplied to the 2nd clutch, the switch is turned off. The signal from transmission fluid pressure switch A (2nd

clutch) is input to the powertrain control module (PCM). The PCM detects the hydraulic pressure supply conditions at the gear change to 2nd gear (1st --> 2nd) to reduce the shock that occurs at the gear change. If transmission fluid pressure switch A (2nd clutch) is off while driving the vehicle with the rotation speed ratio of the input/output pulses is that of the 2nd gear ratio, the PCM detects a transmission fluid pressure switch A (2nd clutch) failure and stores a DTC.

MONITOR EXECUTION, SEQUENCE, DURATION, DTC TYPE, OBD STATUS

Execution	Continuous
Sequence	None
Duration	4 seconds or more
DTC Type	Two drive cycles, MIL on, D indicator blinks
OBD Status	PASSED/FAILED/NOT COMPLETED (STILL TESTING)

ENABLE CONDITIONS

Condition	Minimum	Maximum
Battery voltage	11 V	-
No active DTCs set (prevents monitor from running)	P0122, P0123, P0222, P0223, P0705, P0716, P0717, P0718, P0721, P0722, P0723, P0746, P0747, P0751, P0752, P0756, P0757, P0761, P0762, P0776, P0777, P0796, P0797, P0842, P0847, P0848, P0872, P0873, P0877, P0878, P0962, P0963, P0966, P0967, P0970, P0971, P0973, P0974, P0976, P0977, P0979, P0980, P0989, P0990, P1658, P1659, P1683, P1684, P2101, P2118, P2122, P2123, P2127, P2128, P2135, P2138, P2176, P2714, P2720, P2721	

MALFUNCTION THRESHOLD

The input signal from transmission fluid pressure switch A (2nd clutch) to the PCM is high when driving in 2nd gear.

DRIVING PATTERN

1. Start the engine.
2. Drive the vehicle in 2nd gear for at least 4 seconds.
    - Drive the vehicle in this manner only if the traffic regulations and ambient conditions allow.

DIAGNOSIS DETAILS

Conditions for setting the DTC

When a malfunction is detected during the first drive cycle, a Pending DTC is stored in the PCM memory. If the malfunction returns in the next (second) drive cycle, the MIL comes on and a Confirmed DTC and the freeze data are stored.

Conditions for clearing the DTC

The MIL is cleared if the malfunction does not return in three consecutive trips in which the diagnostic runs. The MIL, the Pending DTC, the Confirmed DTC, and the freeze data can be cleared with the scan tool Clear command or by disconnecting the battery.

DTC P0847: SHORT IN TRANSMISSION FLUID PRESSURE SWITCH B (3RD CLUTCH) CIRCUIT, OR TRANSMISSION FLUID PRESSURE SWITCH B (3RD CLUTCH) STUCK ON

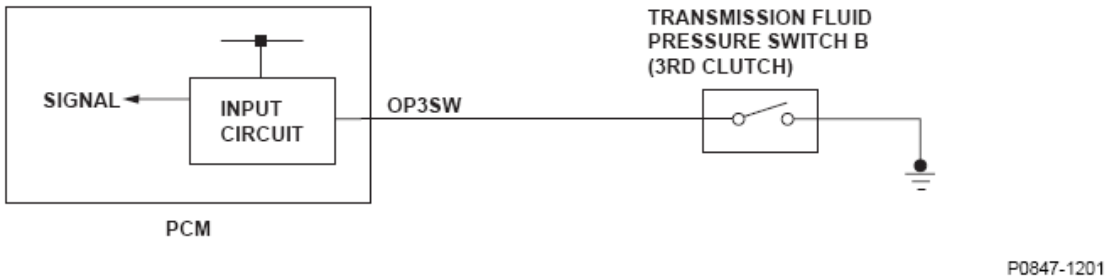


Fig. 211: Transmission Fluid Pressure Switch B - Circuit Diagram

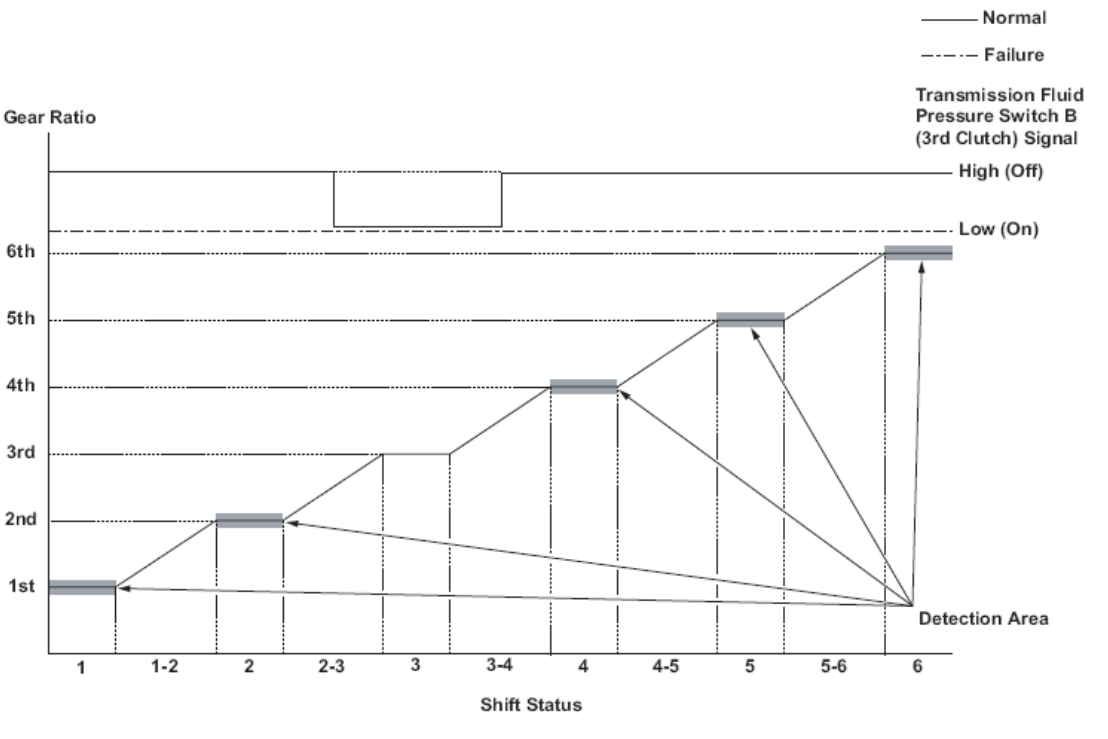


Fig. 212: Gear Ratio Versus Shifting Status Graph

GENERAL DESCRIPTION

Transmission fluid pressure switch B (3rd clutch) is installed in the hydraulic pressure circuit to the 3rd clutch. When hydraulic pressure is supplied to the 3rd clutch, the switch is turned on. When hydraulic pressure is not supplied to the 3rd clutch, the switch is turned off. The signal from transmission fluid pressure switch B (3rd

clutch) is input to the powertrain control module (PCM). The PCM detects the hydraulic pressure supply conditions at the gear change to 3rd gear (2nd --> 3rd) to reduce the shock that occurs at the gear change. If transmission fluid pressure switch B (3rd clutch) is on while driving the vehicle with the rotation speed ratio of the input/output pulses is other than the 3rd gear ratio (the ratio is Neutral or 4th), the PCM detects a transmission fluid pressure switch B (3rd clutch) failure and stores a DTC.

MONITOR EXECUTION, SEQUENCE, DURATION, DTC TYPE, OBD STATUS

Execution	Continuous
Sequence	None
Duration	Depending on the driving conditions
DTC Type	Two drive cycles, MIL on, D indicator blinks
OBD Status	PASSED/FAILED/NOT COMPLETED (STILL TESTING)

ENABLE CONDITIONS

Condition	Minimum	Maximum
Battery voltage	11 V	-
No active DTCs set (prevents monitor from running)	P0122, P0123, P0222, P0223, P0705, P0716, P0717, P0718, P0721, P0722, P0723, P0746, P0747, P0751, P0752, P0756, P0757, P0761, P0762, P0776, P0777, P0796, P0797, P0842, P0843, P0848, P0872, P0873, P0877, P0878, P0962, P0963, P0966, P0967, P0970, P0971, P0973, P0974, P0976, P0977, P0979, P0980, P0989, P0990, P1658, P1659, P1683, P1684, P2101, P2118, P2122, P2123, P2127, P2128, P2135, P2138, P2176, P2714, P2720, P2721		

MALFUNCTION THRESHOLD

One of these conditions occurs:

- The input signal from transmission fluid pressure switch B (3rd clutch) to the PCM is low for at least 4 seconds when the shift lever is in P, R, or N.
- The input signal from transmission fluid pressure switch B (3rd clutch) to the PCM is low for at least 4 seconds when driving in 6th gear.
- The input signal from transmission fluid pressure switch B (3rd clutch) to the PCM is low for at least 4 seconds when the 6th gear shift is commanded or when the shift lever is in P, R, or N, after the signal is low for at least 2 seconds when driving in 1st, 2nd, 4th, or 5th gear.

DRIVING PATTERN

1. Start the engine.
2. Drive the vehicle in D until the transmission shifts into 6th gear.
    - Drive the vehicle in this manner only if the traffic regulations and ambient conditions allow.

DIAGNOSIS DETAILS

Conditions for setting the DTC

When a malfunction is detected during the first drive cycle, a Pending DTC is stored in the PCM memory. If the malfunction returns in the next (second) drive cycle, the MIL comes on and a Confirmed DTC and the freeze data are stored.

Conditions for clearing the DTC

The MIL is cleared if the malfunction does not return in three consecutive trips in which the diagnostic runs. The MIL, the Pending DTC, the Confirmed DTC, and the freeze data can be cleared with the scan tool Clear command or by disconnecting the battery.

DTC P0848: OPEN IN TRANSMISSION FLUID PRESSURE SWITCH B (3RD CLUTCH) CIRCUIT, OR TRANSMISSION FLUID PRESSURE SWITCH B (3RD CLUTCH) STUCK OFF

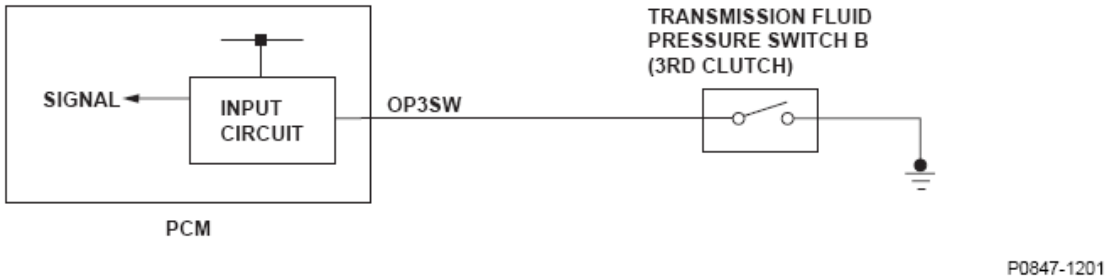


Fig. 213: Transmission Fluid Pressure Switch B - Circuit Diagram

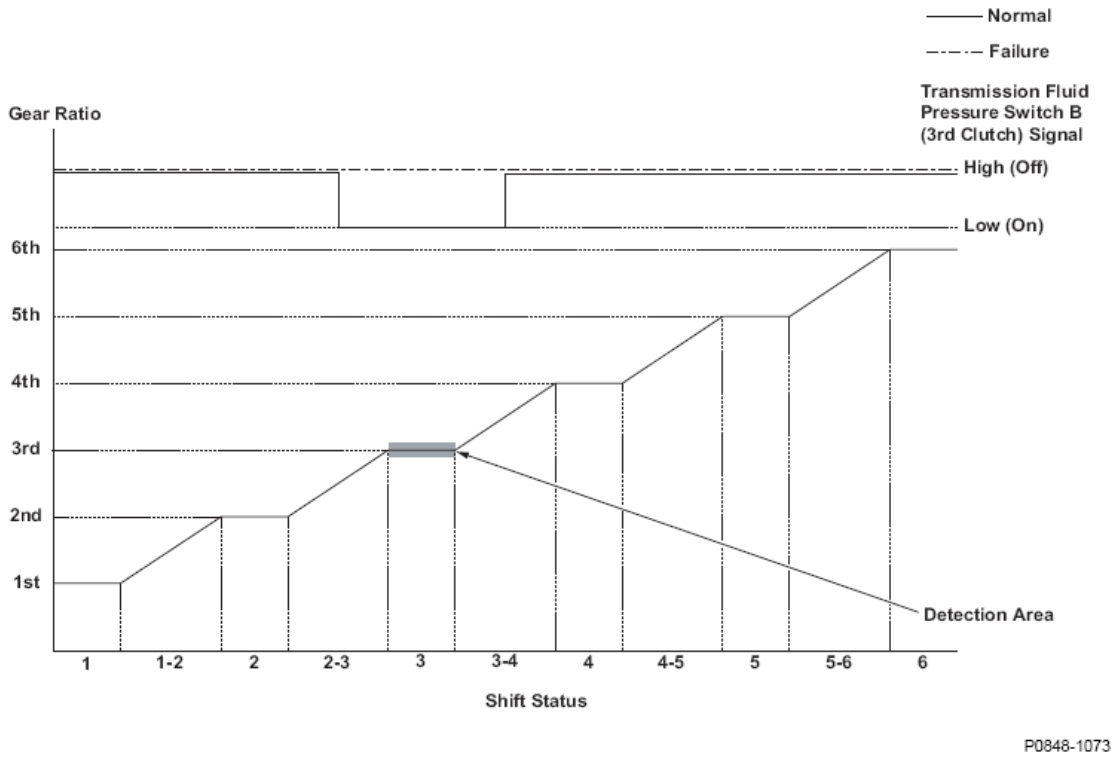


Fig. 214: Gear Ratio Versus Shifting Status Graph (3rd Clutch Detection Area)

GENERAL DESCRIPTION

Transmission fluid pressure switch B (3rd clutch) is installed in the hydraulic pressure circuit to the 3rd clutch. When hydraulic pressure is supplied to the 3rd clutch, the switch is turned on. When hydraulic pressure is not supplied to the 3rd clutch, the switch is turned off. The signal from transmission fluid pressure switch B (3rd clutch) is input to the powertrain control module (PCM). The PCM detects the hydraulic pressure supply conditions at the gear change to 3rd gear (2nd --> 3rd) to reduce the shock that occurs at the gear change. If transmission fluid pressure switch B (3rd clutch) is off while driving the vehicle with the rotation speed ratio of the input/output pulses is that of the 3rd gear ratio, the PCM detects a transmission fluid pressure switch B (3rd clutch) failure and stores a DTC.

MONITOR EXECUTION, SEQUENCE, DURATION, DTC TYPE, OBD STATUS

Execution	Continuous
Sequence	None
Duration	4 seconds or more
DTC Type	Two drive cycles, MIL on, D indicator blinks
OBD Status	PASSED/FAILED/NOT COMPLETED (STILL TESTING)

ENABLE CONDITIONS

Condition	Minimum	Maximum
Battery voltage	11 V	-

No active DTCs set (prevents monitor from running)	P0122, P0123, P0222, P0223, P0705, P0716, P0717, P0718, P0721, P0722, P0723, P0746, P0747, P0751, P0752, P0756, P0757, P0761, P0762, P0776, P0777, P0796, P0797, P0842, P0843, P0847, P0872, P0873, P0877, P0878, P0962, P0963, P0966, P0967, P0970, P0971, P0973, P0974, P0976, P0977, P0979, P0980, P0989, P0990, P1658, P1659, P1683, P1684, P2101, P2118, P2122, P2123, P2127, P2128, P2135, P2138, P2176, P2714, P2720, P2721

MALFUNCTION THRESHOLD

The input signal from transmission fluid pressure switch B (3rd clutch) to the PCM is high when driving in 3rd gear.

DRIVING PATTERN

1. Start the engine.
2. Drive the vehicle in 3rd gear for at least 4 seconds.
    - Drive the vehicle in this manner only if the traffic regulations and ambient conditions allow.

DIAGNOSIS DETAILS

Conditions for setting the DTC

When a malfunction is detected during the first drive cycle, a Pending DTC is stored in the PCM memory. If the malfunction returns in the next (second) drive cycle, the MIL comes on and a Confirmed DTC and the freeze data are stored.

Conditions for clearing the DTC

The MIL is cleared if the malfunction does not return in three consecutive trips in which the diagnostic runs. The MIL, the Pending DTC, the Confirmed DTC, and the freeze data can be cleared with the scan tool Clear command or by disconnecting the battery.

DTC P084C: SHORT IN LINE PRESSURE SWITCH CIRCUIT, OR LINE PRESSURE SWITCH STUCK ON

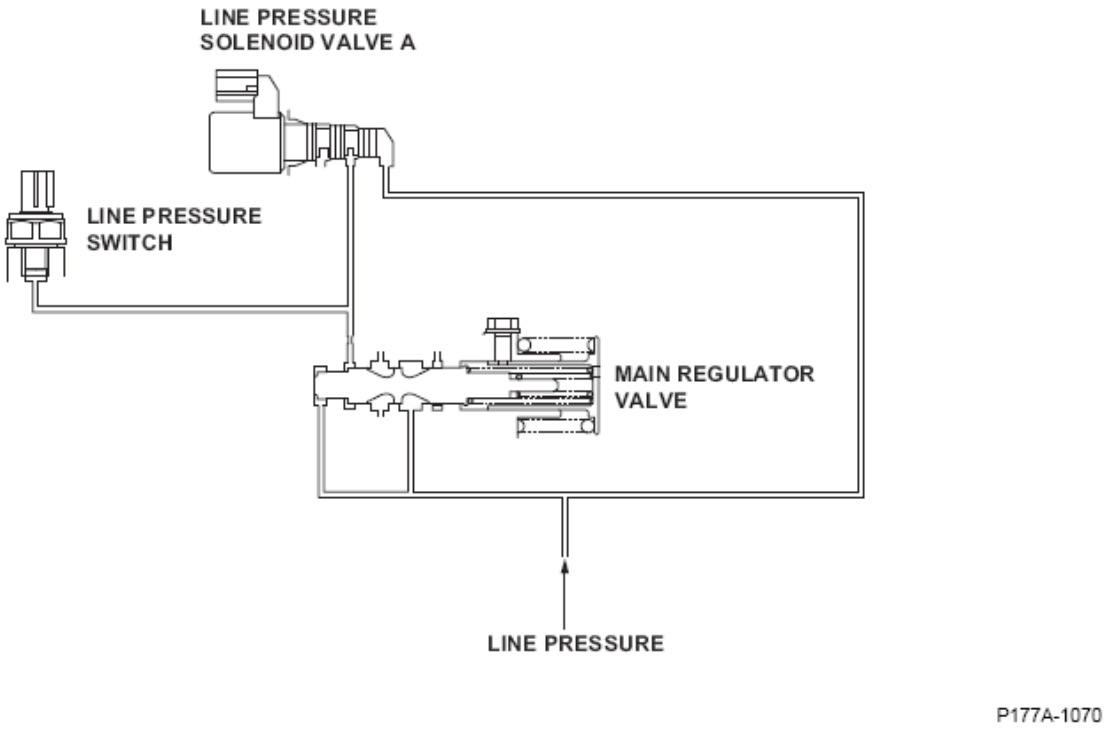


Fig. 215: Line Pressure Switch - System Diagram

LINE PRESSURE MODE COMBINATION TABLE

	Normal line pressure mode	Low line pressure mode
Line pressure solenoid valve A	OFF	ON
Line pressure switch	OFF	ON
Line pressure condition	Normal	Low

GENERAL DESCRIPTION

The line pressure switch is installed in the hydraulic pressure output circuit from line pressure solenoid valve A. When line pressure solenoid valve A outputs hydraulic pressure, the line pressure is regulated to low line pressure and the switch is turned on. When line pressure solenoid valve A does not output hydraulic pressure, the line pressure is at normal line pressure and the switch is turned off. The signal from the line pressure switch is input to the powertrain control module (PCM). The PCM detects the hydraulic pressure supply condition from line pressure solenoid valve A to detects a malfunction in line pressure solenoid valve A. If the line pressure switch is on against the command to turn off line pressure solenoid valve A, the PCM detects a line pressure switch stuck on failure and stores a DTC.

MONITOR EXECUTION, SEQUENCE, DURATION, DTC TYPE, OBD STATUS

Execution	Continuous
Sequence	None
Duration	5 seconds or more
DTC Type	Two drive cycles, MIL on, D indicator blinks

OBD Status	PASSED/FAILED/NOT COMPLETED (STILL TESTING)

ENABLE CONDITIONS

Condition	Minimum	Maximum
ATF temperature (1)	32 °F (0 °C)	-
Battery voltage	11 V	-
No active DTCs set (prevents monitor from running)	P0122, P0123, P0222, P0223, P0716, P0717, P0718, P0721, P0722, P0723, P0746, P0747, P0751, P0752, P0756, P0757, P0761, P0762, P0776, P0777, P0796, P0797, P0842, P0843, P0847, P0848, P0872, P0873, P0877, P0878, P0962, P0963, P0966, P0967, P0970, P0971, P0973, P0974, P0976, P0977, P0979, P0980, P0989, P0990, P1658, P1659, P1683, P1684, P2101, P2118, P2122, P2123, P2127, P2128, P2135, P2138, P2176, P2714, P2720, P2721	
(1) Symptom 2		

MALFUNCTION THRESHOLD

One of these symptoms occurs:

- Symptom 1

  The input signal from the line pressure switch to the PCM is low during the self shut down mode after the signal is low when the normal line pressure mode was commanded.

- Symptom 2

  The input signal from the line pressure switch to the PCM is low when the ignition switch is in ON (II) or engine start/stop button is pressed to select the ON mode, with the engine stopped.

DRIVING PATTERN

1. Start the engine.
2. Drive the vehicle in D until the transmission shifts into 6th gear.
   - Drive the vehicle in this manner only if the traffic regulations and ambient conditions allow.

DIAGNOSIS DETAILS

Conditions for setting the DTC

When a malfunction is detected during the first drive cycle, a Pending DTC is stored in the PCM memory. If the malfunction returns in the next (second) drive cycle, the MIL comes on and a Confirmed DTC and the freeze data are stored.

Conditions for clearing the DTC

The MIL is cleared if the malfunction does not return in three consecutive trips in which the diagnostic runs. The MIL, the Pending DTC, the Confirmed DTC, and the freeze data can be cleared with the scan tool Clear command or by disconnecting the battery.

DTC P0873: OPEN IN TRANSMISSION FLUID PRESSURE SWITCH C (4TH CLUTCH) CIRCUIT, OR TRANSMISSION FLUID PRESSURE SWITCH C (4TH CLUTCH) STUCK OFF

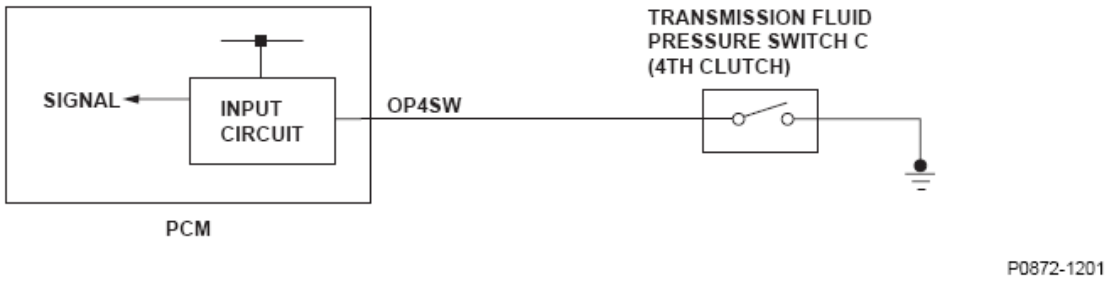


Fig. 216: Transmission Fluid Pressure Switch C - Circuit Diagram

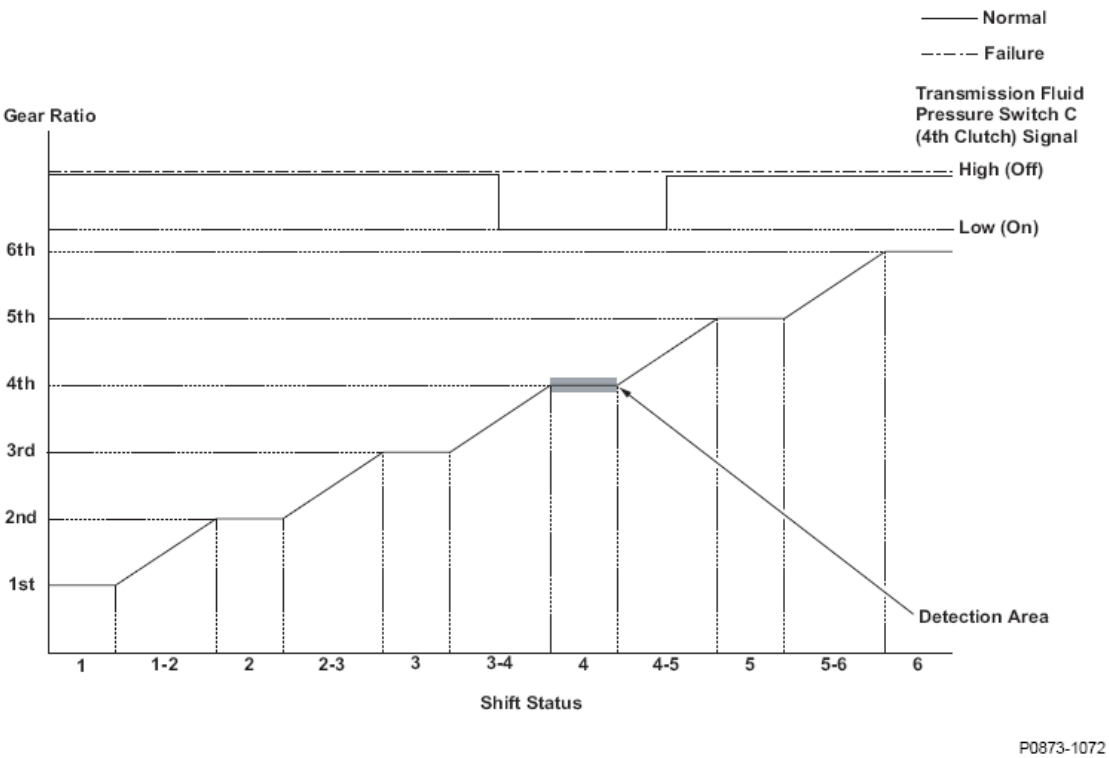


Fig. 217: Gear Ratio Versus Shifting Status Graph (4th Clutch Detection Area)

GENERAL DESCRIPTION

Transmission fluid pressure switch C (4th clutch) is installed in the hydraulic pressure circuit to the 4th clutch. When hydraulic pressure is supplied to the 4th clutch, the switch is turned on. When hydraulic pressure is not supplied to the 4th clutch, the switch is turned off. The signal from transmission fluid pressure switch C (4th

clutch) is input to the powertrain control module (PCM). The PCM detects the hydraulic pressure supply conditions at the gear change to 4th gear (3rd --> 4th) to reduce the shock that occurs at the gear change. If transmission fluid pressure switch C (4th clutch) is off while driving the vehicle with the rotation speed ratio of the input/output pulses is that of the 4th gear ratio, the PCM detects a transmission fluid pressure switch C (4th clutch) failure and stores a DTC.

MONITOR EXECUTION, SEQUENCE, DURATION, DTC TYPE, OBD STATUS

Execution	Continuous
Sequence	None
Duration	4 seconds or more
DTC Type	Two drive cycles, MIL on, D indicator blinks
OBD Status	PASSED/FAILED/NOT COMPLETED (STILL TESTING)

ENABLE CONDITIONS

Condition	Minimum	Maximum
Battery voltage	11 V	-
No active DTCs set (prevents monitor from running)	P0122, P0123, P0222, P0223, P0705, P0716, P0717, P0718, P0721, P0722, P0723, P0746, P0747, P0751, P0752, P0756, P0757, P0761, P0762, P0776, P0777, P0796, P0797, P0842, P0843, P0847, P0848, P0872, P0877, P0878, P0962, P0963, P0966, P0967, P0970, P0971, P0973, P0974, P0976, P0977, P0979, P0980, P0989, P0990, P1658, P1659, P1683, P1684, P2101, P2118, P2122, P2123, P2127, P2128, P2135, P2138, P2176, P2714, P2720, P2721	

MALFUNCTION THRESHOLD

One of these conditions occurs:

- The input signal from transmission fluid pressure switch C (4th clutch) to the PCM is high when driving in 4th gear.
- The input signal from transmission fluid pressure switch C (4th clutch) to the PCM is high when driving in R.

DRIVING PATTERN

1. Start the engine.
2. Drive the vehicle in 4th gear for at least 4 seconds.
    - Drive the vehicle in this manner only if the traffic regulations and ambient conditions allow.

DIAGNOSIS DETAILS

Conditions for setting the DTC

When a malfunction is detected during the first drive cycle, a Pending DTC is stored in the PCM memory. If the

malfunction returns in the next (second) drive cycle, the MIL comes on and a Confirmed DTC and the freeze data are stored.

Conditions for clearing the DTC

The MIL is cleared if the malfunction does not return in three consecutive trips in which the diagnostic runs. The MIL, the Pending DTC, the Confirmed DTC, and the freeze data can be cleared with the scan tool Clear command or by disconnecting the battery.

DTC P0877: SHORT IN TRANSMISSION FLUID PRESSURE SWITCH D (5TH CLUTCH) CIRCUIT, OR TRANSMISSION FLUID PRESSURE SWITCH D (5TH CLUTCH) STUCK ON

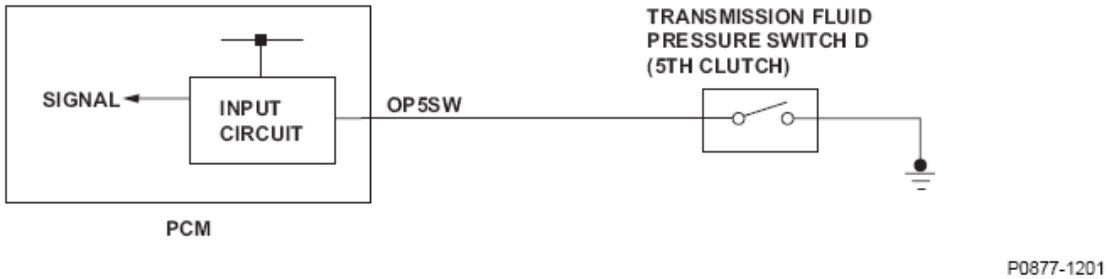


Fig. 218: Transmission Fluid Pressure Switch D - Circuit Diagram

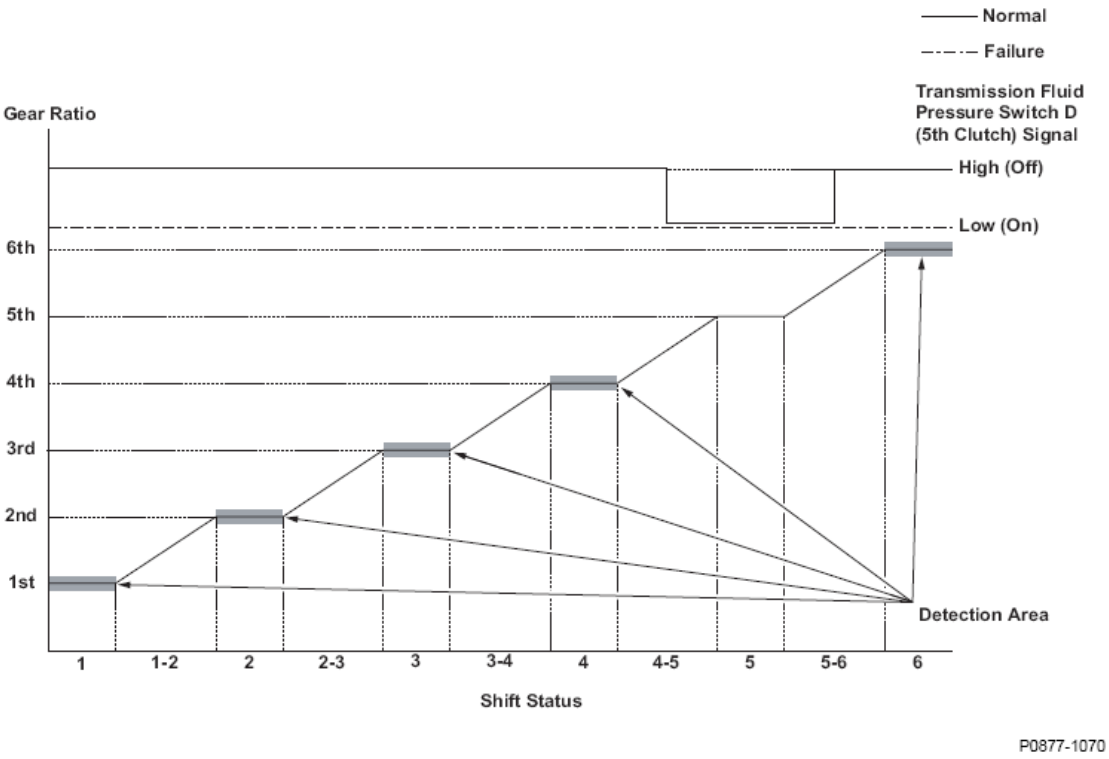


Fig. 219: Gear Ratio Versus Shifting Status Graph

GENERAL DESCRIPTION

Transmission fluid pressure switch D (5th clutch) is installed in the hydraulic pressure circuit to the 5th clutch. When hydraulic pressure is supplied to the 5th clutch, the switch is turned on. When hydraulic pressure is not supplied to the 5th clutch, the switch is turned off. The signal from transmission fluid pressure switch D (5th clutch) is input to the powertrain control module (PCM). The PCM detects the hydraulic pressure supply conditions at the gear change to 5th gear (4th --> 5th) to reduce the shock that occurs at the gear change. If transmission fluid pressure switch D (5th clutch) is on while driving the vehicle with the rotation speed ratio of the input/output pulses is other than the 5th gear ratio (the ratio is Neutral or 6th), the PCM detects a transmission fluid pressure switch D (5th clutch) failure and stores a DTC.

MONITOR EXECUTION, SEQUENCE, DURATION, DTC TYPE, OBD STATUS

Execution	Continuous
Sequence	None
Duration	Depending on the driving conditions
DTC Type	Two drive cycles, MIL on, D indicator blinks
OBD Status	PASSED/FAILED/NOT COMPLETED (STILL TESTING)

ENABLE CONDITIONS

Condition	Minimum	Maximum
Battery voltage	11 V	-
No active DTCs set (prevents monitor from running)	P0122, P0123, P0222, P0223, P0705, P0716, P0717, P0718, P0721, P0722, P0723, P0746, P0747, P0751, P0752, P0756, P0757, P0761, P0762, P0776, P0777, P0796, P0797, P0842, P0843, P0847, P0848, P0872, P0873, P0878, P0962, P0963, P0966, P0967, P0970, P0971, P0973, P0974, P0976, P0977, P0979, P0980, P0989, P0990, P1658, P1659, P1683, P1684, P2101, P2118, P2122, P2123, P2127, P2128, P2135, P2138, P2176, P2714, P2720, P2721	

MALFUNCTION THRESHOLD

One of these conditions occurs:

- The input signal from transmission fluid pressure switch D (5th clutch) to the PCM is low for at least 5 seconds when the shift lever is in P, R, or N.
- The input signal from transmission fluid pressure switch D (5th clutch) to the PCM is low for at least 5 seconds when driving in 1st or 2nd gear.
- The input signal from transmission fluid pressure switch D (5th clutch) to the PCM is low for at least 5 seconds when the 2nd gear shift is commanded or when the shift lever is in P, R, or N, after the signal is low for at least 3 seconds when driving in 3rd, 4th, or 6th gear.

DRIVING PATTERN

1. Start the engine.

2. Drive the vehicle in D until the transmission shifts into 6th gear.
    - Drive the vehicle in this manner only if the traffic regulations and ambient conditions allow.

DIAGNOSIS DETAILS

Conditions for setting the DTC

When a malfunction is detected during the first drive cycle, a Pending DTC is stored in the PCM memory. If the malfunction returns in the next (second) drive cycle, the MIL comes on and a Confirmed DTC and the freeze data are stored.

Conditions for clearing the DTC

The MIL is cleared if the malfunction does not return in three consecutive trips in which the diagnostic runs. The MIL, the Pending DTC, the Confirmed DTC, and the freeze data can be cleared with the scan tool Clear command or by disconnecting the battery.

DTC P0878: OPEN IN TRANSMISSION FLUID PRESSURE SWITCH D (5TH CLUTCH) CIRCUIT, OR TRANSMISSION FLUID PRESSURE SWITCH D (5TH CLUTCH) STUCK OFF

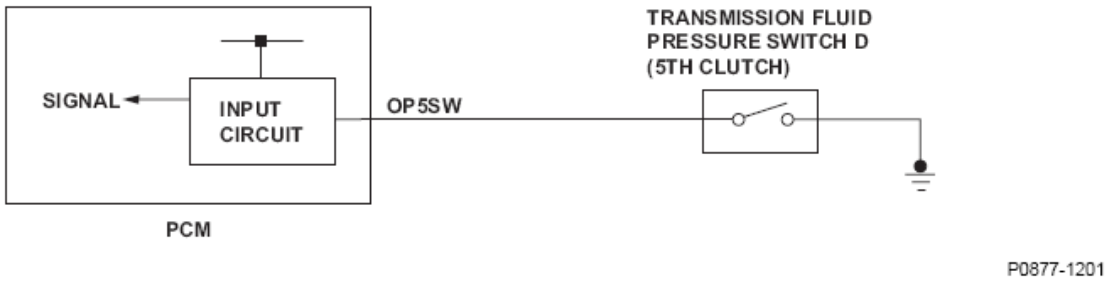


Fig. 220: Transmission Fluid Pressure Switch D - Circuit Diagram

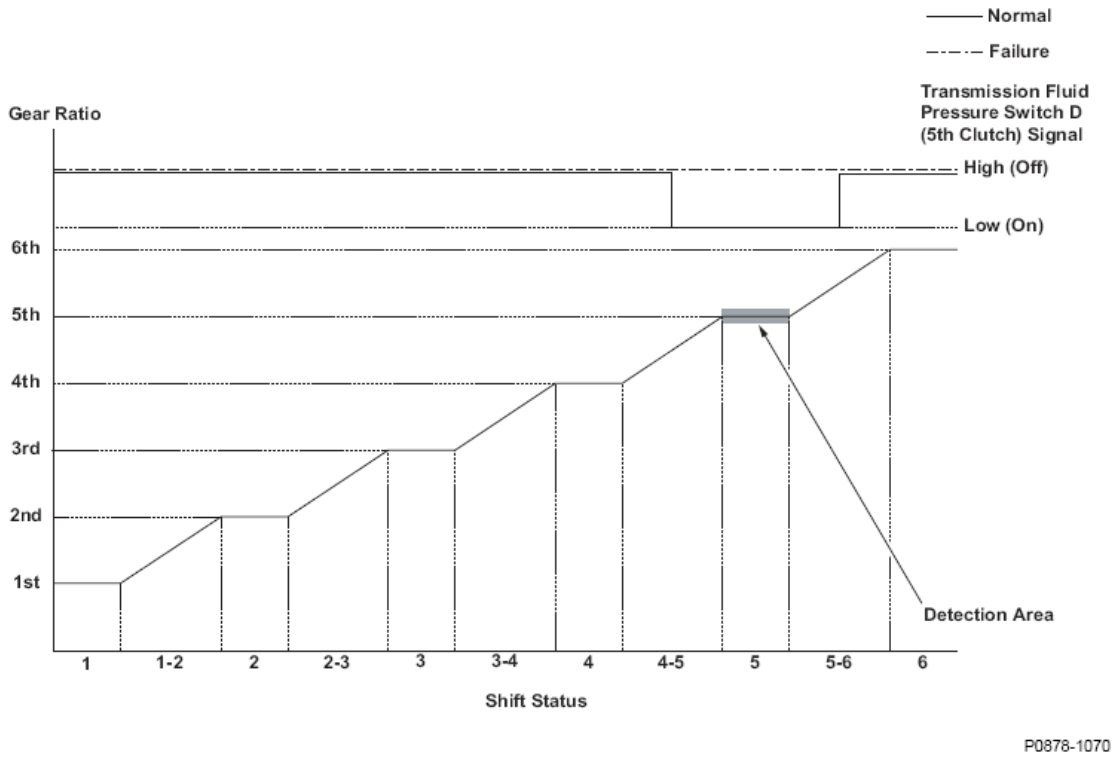


Fig. 221: Gear Ratio Versus Shifting Status Graph (5th Clutch Detection Area)

GENERAL DESCRIPTION

Transmission fluid pressure switch D (5th clutch) is installed in the hydraulic pressure circuit to the 5th clutch. When hydraulic pressure is supplied to the 5th clutch, the switch is turned on. When hydraulic pressure is not supplied to the 5th clutch, the switch is turned off. The signal from transmission fluid pressure switch D (5th clutch) is input to the powertrain control module (PCM). The PCM detects the hydraulic pressure supply conditions at the gear change to 5th gear (4th --> 5th) to reduce the shock that occurs at the gear change. If transmission fluid pressure switch D (5th clutch) is off while driving the vehicle with the rotation speed ratio of the input/output pulses is that of the 5th gear ratio, the PCM detects a transmission fluid pressure switch D (5th clutch) failure and stores a DTC.

MONITOR EXECUTION, SEQUENCE, DURATION, DTC TYPE, OBD STATUS

Execution	Continuous
Sequence	None
Duration	4 seconds or more
DTC Type	Two drive cycles, MIL on, D indicator blinks
OBD Status	PASSED/FAILED/NOT COMPLETED (STILL TESTING)

ENABLE CONDITIONS

Condition	Minimum	Maximum
Battery voltage	11 V	-

No active DTCs set (prevents monitor from running)	P0122, P0123, P0222, P0223, P0705, P0716, P0717, P0718, P0721, P0722, P0723, P0746, P0747, P0751, P0752, P0756, P0757, P0761, P0762, P0776, P0777, P0796, P0797, P0842, P0843, P0847, P0848, P0872, P0873, P0877, P0962, P0963, P0966, P0967, P0970, P0971, P0973, P0974, P0976, P0977, P0979, P0980, P0989, P0990, P1658, P1659, P1683, P1684, P2101, P2118, P2122, P2123, P2127, P2128, P2135, P2138, P2176, P2714, P2720, P2721

MALFUNCTION THRESHOLD

The input signal from transmission fluid pressure switch D (5th clutch) to the PCM is high when driving in 5th gear.

DRIVING PATTERN

1. Start the engine.
2. Drive the vehicle in 5th gear for at least 4 seconds.
    - Drive the vehicle in this manner only if the traffic regulations and ambient conditions allow.

DIAGNOSIS DETAILS

Conditions for setting the DTC

When a malfunction is detected during the first drive cycle, a Pending DTC is stored in the PCM memory. If the malfunction returns in the next (second) drive cycle, the MIL comes on and a Confirmed DTC and the freeze data are stored.

Conditions for clearing the DTC

The MIL is cleared if the malfunction does not return in three consecutive trips in which the diagnostic runs. The MIL, the Pending DTC, the Confirmed DTC, and the freeze data can be cleared with the scan tool Clear command or by disconnecting the battery.

DTC P0962: PROBLEM IN A/T CLUTCH PRESSURE CONTROL SOLENOID VALVE A CIRCUIT

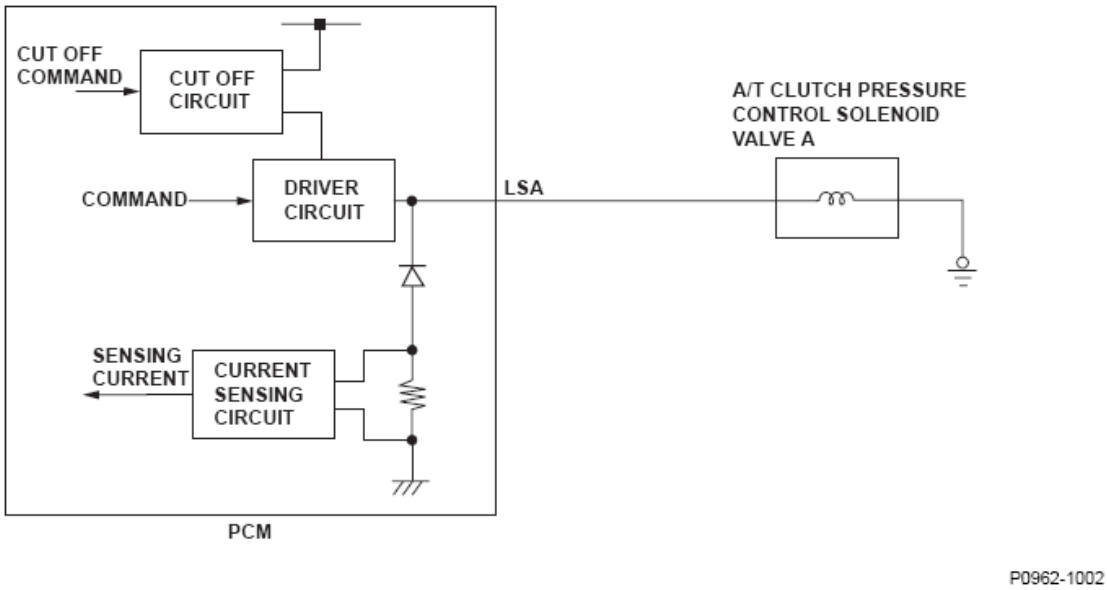


Fig. 222: A/T Clutch Pressure Control Solenoid Valve A - Circuit Diagram

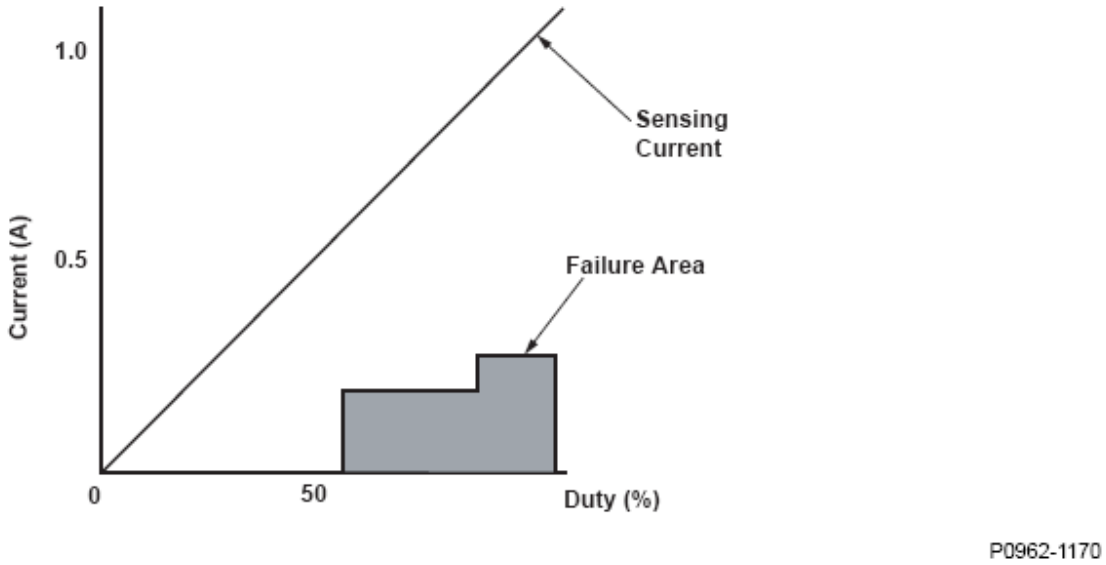


Fig. 223: Current Versus Duty Ratio Graph With Failure Area

GENERAL DESCRIPTION

A/T clutch pressure control solenoid valve A is used for clutch pressure control. A spool in A/T clutch pressure control solenoid valve A pushes the valve according to the duty cycle that is controlled by the powertrain control module (PCM) (The hydraulic pressure is proportional to the current). The PCM measures the current flowing through A/T clutch pressure control solenoid valve A, and uses feedback control to compensate for the difference between the actual current and the commanded one. If the measured current for the PCM output duty cycle is not within a specified range (circuit short or open), the PCM detects a malfunction and stores a DTC.

MONITOR EXECUTION, SEQUENCE, DURATION, DTC TYPE, OBD STATUS

Execution	Continuous
Sequence	None
Duration	1 second or more
DTC Type	One drive cycle, MIL on, D indicator blinks
OBD Status	PASSED/FAILED/NOT COMPLETED (STILL TESTING)

ENABLE CONDITIONS

Condition	Minimum	Maximum
Battery voltage	11 V	-
No active DTCs set (prevents monitor from running)	P0963, P0973, P0974, P0979, P0980, P2720, P2721	

MALFUNCTION THRESHOLD

The measured current for the PCM's command value is as specified here for at least 1 second.

Duty (%)	Current (A)	Failure mode
56.5 - 89	Less than 0.19	Low Input
More than 89	Less than 0.27	Low Input

DRIVING PATTERN

Start the engine, and wait for at least 1 second.

DIAGNOSIS DETAILS

Conditions for setting the DTC

When a malfunction is detected, the MIL comes on and a Pending DTC, a Confirmed DTC, and the freeze data are stored in the PCM memory.

Conditions for clearing the DTC

The MIL is cleared if the malfunction does not return in three consecutive trips in which the diagnostic runs. The MIL, the Pending DTC, the Confirmed DTC, and the freeze data can be cleared with the scan tool Clear command or by disconnecting the battery.

DTC P0963: PROBLEM IN A/T CLUTCH PRESSURE CONTROL SOLENOID VALVE A

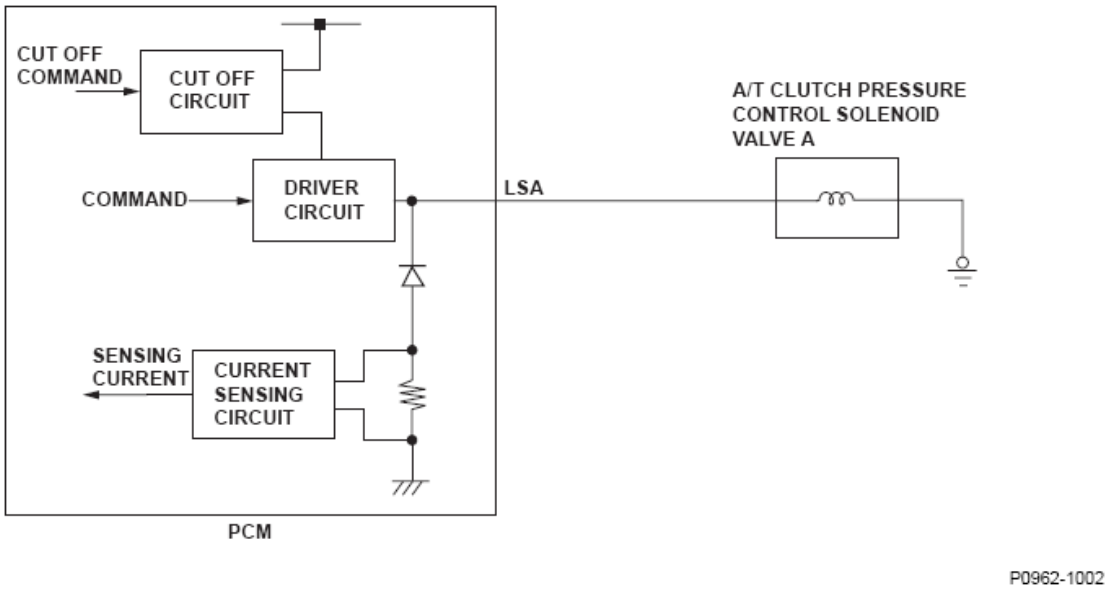


Fig. 224: A/T Clutch Pressure Control Solenoid Valve A - Circuit Diagram

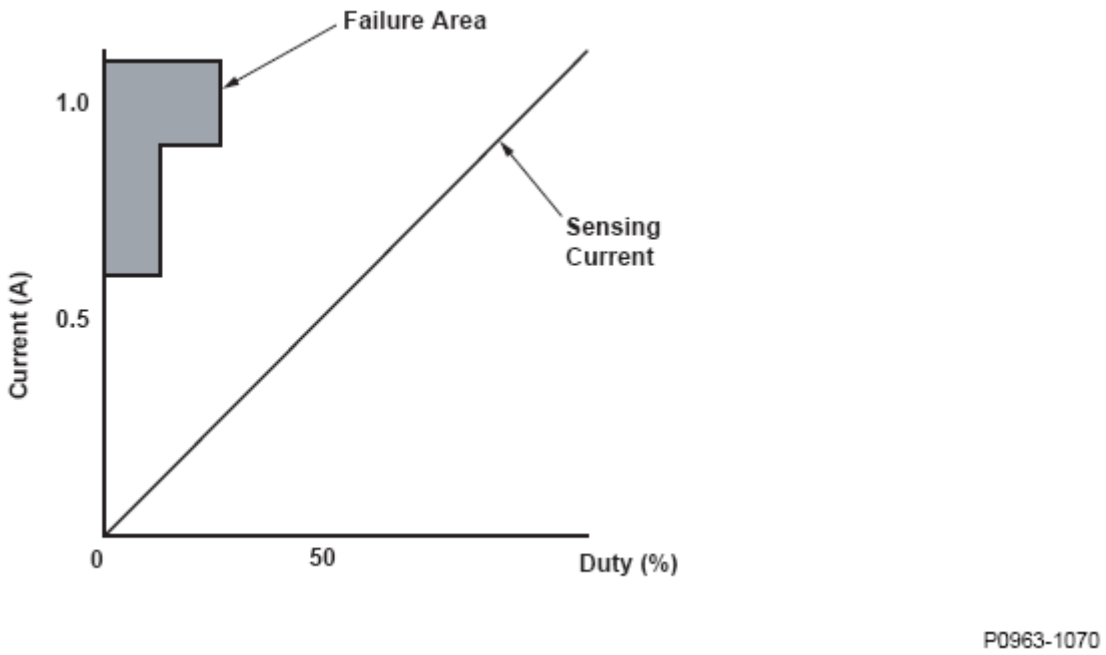


Fig. 225: Current Versus Duty Ratio Graph With Failure Area

GENERAL DESCRIPTION

A/T clutch pressure control solenoid valve A is used for clutch pressure control. A spool in A/T clutch pressure control solenoid valve A pushes the valve according to the duty cycle that is controlled by the powertrain control module (PCM) (The hydraulic pressure is proportional to the current). The PCM measures the current flowing through A/T clutch pressure control solenoid valve A, and uses feedback control to compensate for the difference between the actual current and the commanded one. If the measured current for the PCM output duty cycle is not within a specified range (circuit short or open), the PCM detects a malfunction and stores a DTC.

MONITOR EXECUTION, SEQUENCE, DURATION, DTC TYPE, OBD STATUS

Execution	Continuous
Sequence	None
Duration	1 second or more
DTC Type	One drive cycle, MIL on, D indicator blinks
OBD Status	PASSED/FAILED/NOT COMPLETED (STILL TESTING)

ENABLE CONDITIONS

Condition	Minimum	Maximum
Battery voltage	11 V	-
No active DTCs set (prevents monitor from running)	P0962, P0973, P0974, P0979, P0980, P2720, P2721	

MALFUNCTION THRESHOLD

The measured current for the PCM's command value is as specified here for at least 1 second.

Duty (%)	Current (A)	Failure mode
Less than 13.7	More than 0.6	High Input
13.7 - 27	More than 0.9	High Input

DRIVING PATTERN

Start the engine, and wait for at least 1 second.

DIAGNOSIS DETAILS

Conditions for setting the DTC

When a malfunction is detected, the MIL comes on and a Pending DTC, a Confirmed DTC, and the freeze data are stored in the PCM memory.

Conditions for clearing the DTC

The MIL is cleared if the malfunction does not return in three consecutive trips in which the diagnostic runs. The MIL, the Pending DTC, the Confirmed DTC, and the freeze data can be cleared with the scan tool Clear command or by disconnecting the battery.

DTC P0966: PROBLEM IN A/T CLUTCH PRESSURE CONTROL SOLENOID VALVE B CIRCUIT

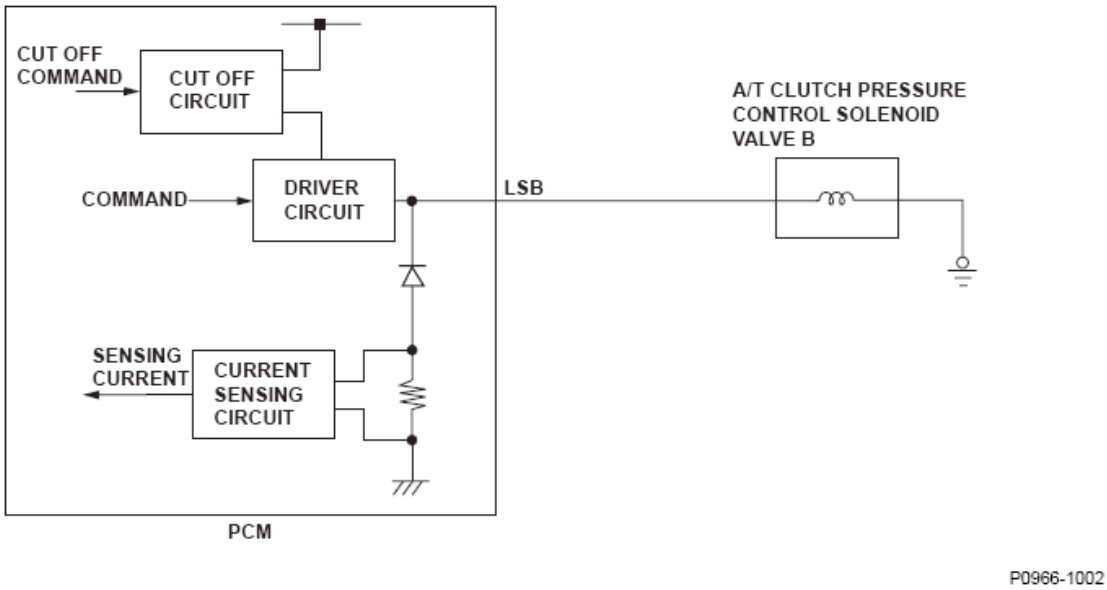


Fig. 226: A/T Clutch Pressure Control Solenoid Valve B - Circuit Diagram

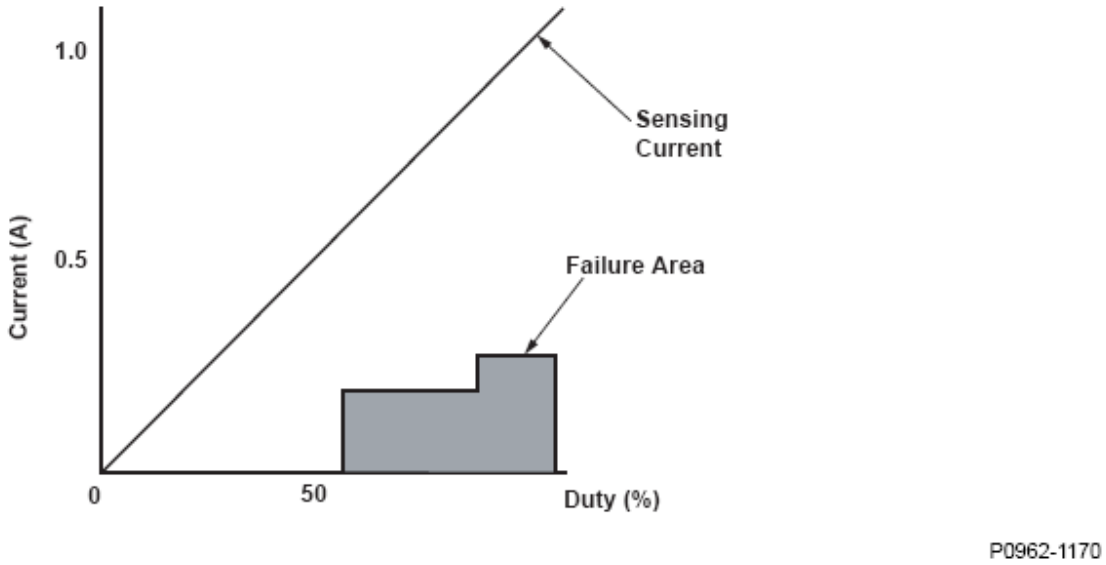


Fig. 227: Current Versus Duty Ratio Graph With Failure Area

GENERAL DESCRIPTION

A/T clutch pressure control solenoid valve B is used for clutch pressure control. A spool in A/T clutch pressure control solenoid valve B pushes the valve according to the duty cycle that is controlled by the powertrain control module (PCM) (The hydraulic pressure is proportional to the current). The PCM measures the current flowing through A/T clutch pressure control solenoid valve B, and uses feedback control to compensate for the difference between the actual current and the commanded one. If the measured current for the PCM output duty cycle is not within a specified range (circuit short or open), the PCM detects a malfunction and stores a DTC.

MONITOR EXECUTION, SEQUENCE, DURATION, DTC TYPE, OBD STATUS

Execution	Continuous
Sequence	None
Duration	1 second or more
DTC Type	One drive cycle, MIL on, D indicator blinks
OBD Status	PASSED/FAILED/NOT COMPLETED (STILL TESTING)

ENABLE CONDITIONS

Condition	Minimum	Maximum
Battery voltage	11 V	-
No active DTCs set (prevents monitor from running)	P0967, P0970, P0971, P0976, P0977	

MALFUNCTION THRESHOLD

The measured current for the PCM's command value is as specified here for at least 1 second.

Duty (%)	Current (A)	Failure mode
56.5 - 89	Less than 0.19	Low Input
More than 89	Less than 0.27	Low Input

DRIVING PATTERN

Start the engine, and wait for at least 1 second.

DIAGNOSIS DETAILS

Conditions for setting the DTC

When a malfunction is detected, the MIL comes on and a Pending DTC, a Confirmed DTC, and the freeze data are stored in the PCM memory.

Conditions for clearing the DTC

The MIL is cleared if the malfunction does not return in three consecutive trips in which the diagnostic runs. The MIL, the Pending DTC, the Confirmed DTC, and the freeze data can be cleared with the scan tool Clear command or by disconnecting the battery.

DTC P0967: PROBLEM IN A/T CLUTCH PRESSURE CONTROL SOLENOID VALVE B

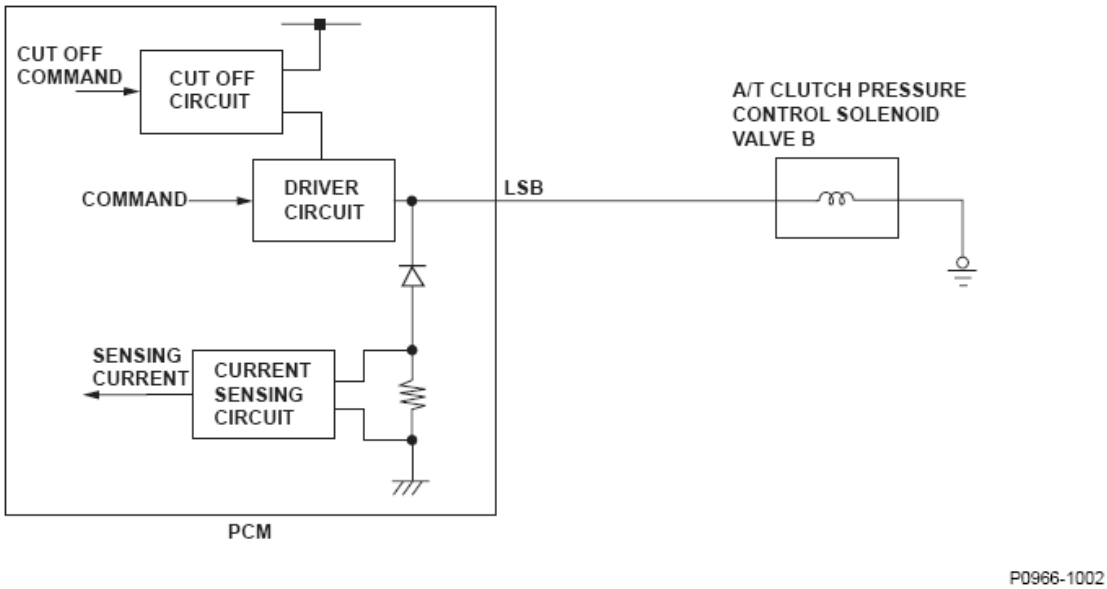


Fig. 228: A/T Clutch Pressure Control Solenoid Valve B - Circuit Diagram

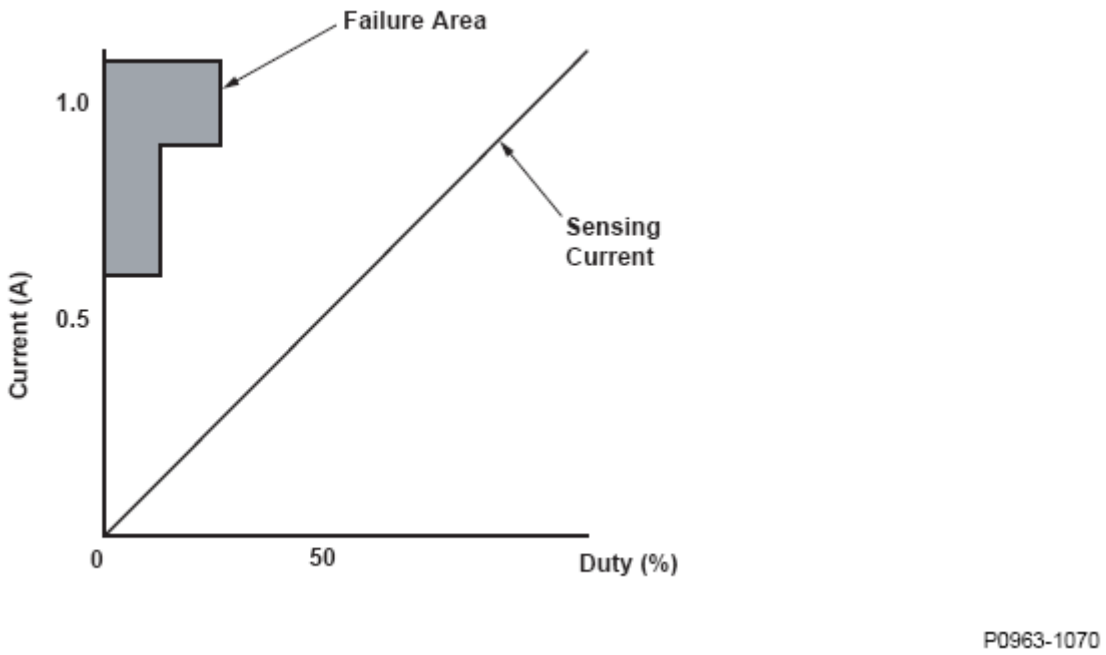


Fig. 229: Current Versus Duty Ratio Graph With Failure Area

GENERAL DESCRIPTION

A/T clutch pressure control solenoid valve B is used for clutch pressure control. A spool in A/T clutch pressure control solenoid valve B pushes the valve according to the duty cycle that is controlled by the powertrain control module (PCM) (The hydraulic pressure is proportional to the current). The PCM measures the current flowing through A/T clutch pressure control solenoid valve B, and uses feedback control to compensate for the difference between the actual current and the commanded one. If the measured current for the PCM output duty cycle is not within a specified range (circuit short or open), the PCM detects a malfunction and stores a DTC.

MONITOR EXECUTION, SEQUENCE, DURATION, DTC TYPE, OBD STATUS

Execution	Continuous
Sequence	None
Duration	1 second or more
DTC Type	One drive cycle, MIL on, D indicator blinks
OBD Status	PASSED/FAILED/NOT COMPLETED (STILL TESTING)

ENABLE CONDITIONS

Condition	Minimum	Maximum
Battery voltage	11 V	-
No active DTCs set (prevents monitor from running)	P0966, P0970, P0971, P0976, P0977	

MALFUNCTION THRESHOLD

The measured current for the PCM's command value is as specified here for at least 1 second.

Duty (%)	Current (A)	Failure mode
Less than 13.7	More than 0.6	High Input
13.7 - 27	More than 0.9	High Input

DRIVING PATTERN

Start the engine, and wait for at least 1 second.

DIAGNOSIS DETAILS

Conditions for setting the DTC

When a malfunction is detected, the MIL comes on and a Pending DTC, a Confirmed DTC, and the freeze data are stored in the PCM memory.

Conditions for clearing the DTC

The MIL is cleared if the malfunction does not return in three consecutive trips in which the diagnostic runs. The MIL, the Pending DTC, the Confirmed DTC, and the freeze data can be cleared with the scan tool Clear command or by disconnecting the battery.

DTC P0970: PROBLEM IN A/T CLUTCH PRESSURE CONTROL SOLENOID VALVE C CIRCUIT

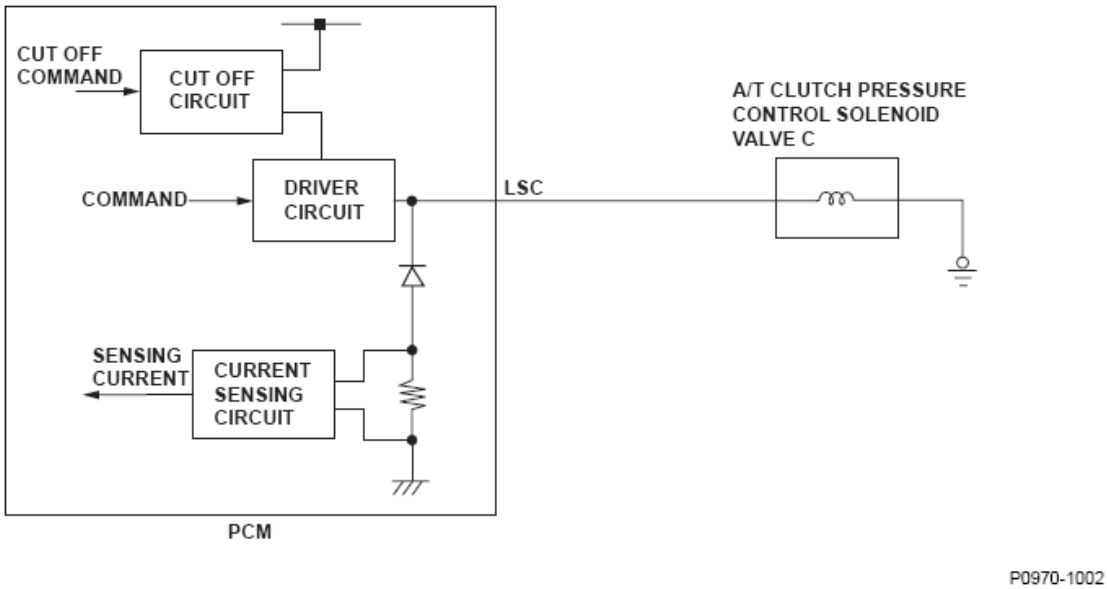


Fig. 230: A/T Clutch Pressure Control Solenoid Valve C - Circuit Diagram

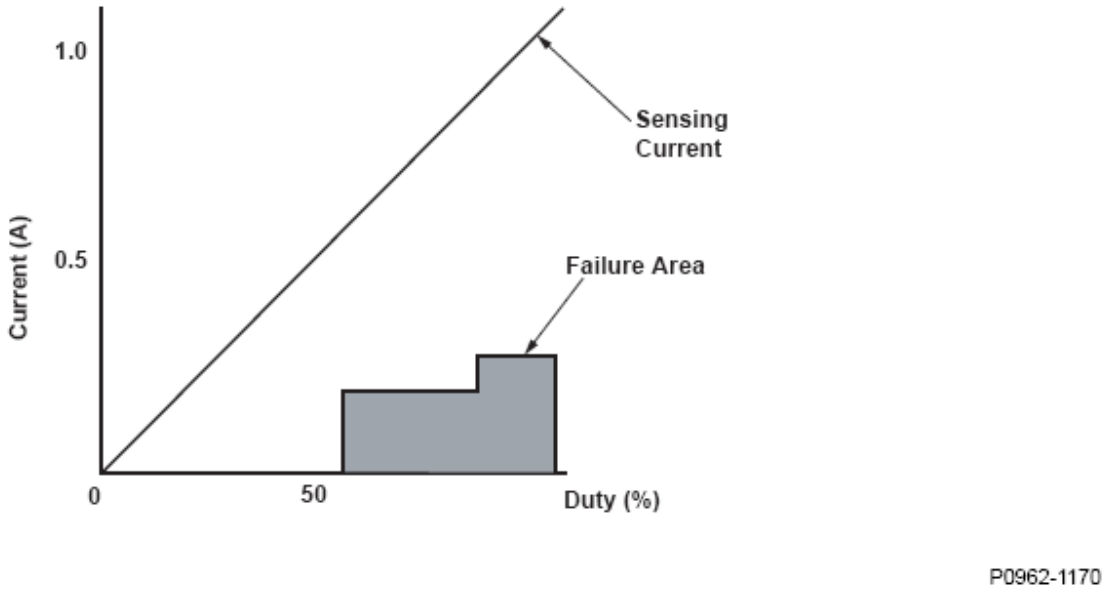


Fig. 231: Current Versus Duty Ratio Graph With Failure Area

GENERAL DESCRIPTION

A/T clutch pressure control solenoid valve C is used for clutch pressure control. A spool in A/T clutch pressure control solenoid valve C pushes the valve according to the duty cycle that is controlled by the powertrain control module (PCM) (The hydraulic pressure is proportional to the current). The PCM measures the current flowing through A/T clutch pressure control solenoid valve C, and uses feedback control to compensate for the difference between the actual current and the commanded one. If the measured current for the PCM output duty cycle is not within a specified range (circuit short or open), the PCM detects a malfunction and stores a DTC.

MONITOR EXECUTION, SEQUENCE, DURATION, DTC TYPE, OBD STATUS

Execution	Continuous
Sequence	None
Duration	1 second or more
DTC Type	One drive cycle, MIL on, D indicator blinks
OBD Status	PASSED/FAILED/NOT COMPLETED (STILL TESTING)

ENABLE CONDITIONS

Condition	Minimum	Maximum
Battery voltage	11 V	-
No active DTCs set (prevents monitor from running)	P0966, P0967, P0971, P0976, P0977	

MALFUNCTION THRESHOLD

The measured current for the PCM's command value is as specified here for at least 1 second.

Duty (%)	Current (A)	Failure mode
56.5 - 89	Less than 0.19	Low Input
More than 89	Less than 0.27	Low Input

DRIVING PATTERN

Start the engine, and wait for at least 1 second.

DIAGNOSIS DETAILS

Conditions for setting the DTC

When a malfunction is detected, the MIL comes on and a Pending DTC, a Confirmed DTC, and the freeze data are stored in the PCM memory.

Conditions for clearing the DTC

The MIL is cleared if the malfunction does not return in three consecutive trips in which the diagnostic runs. The MIL, the Pending DTC, the Confirmed DTC, and the freeze data can be cleared with the scan tool Clear command or by disconnecting the battery.

DTC P0971: PROBLEM IN A/T CLUTCH PRESSURE CONTROL SOLENOID VALVE C

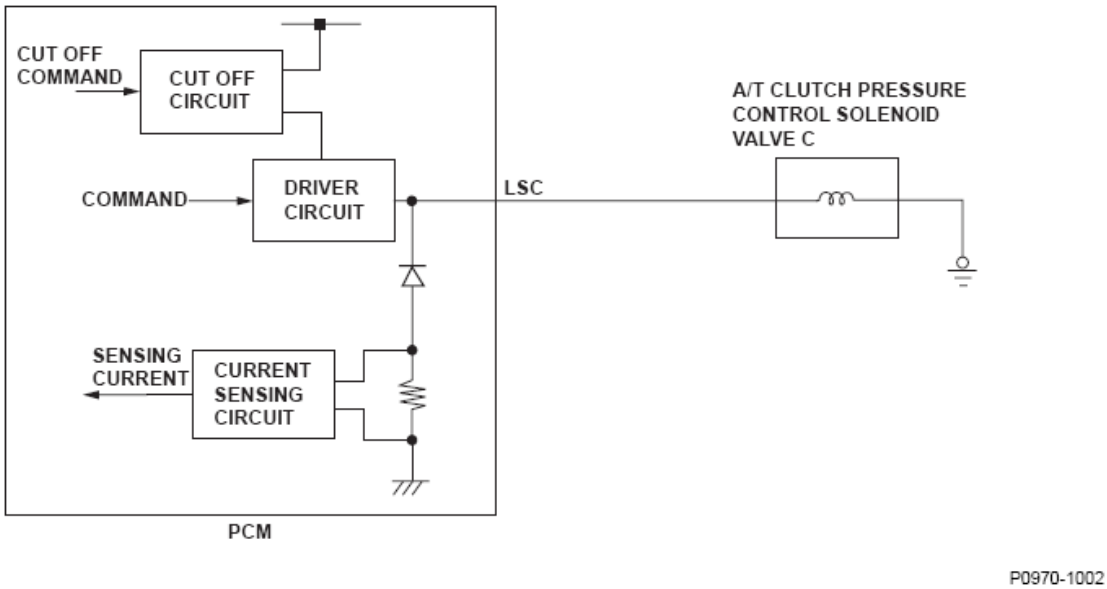


Fig. 232: A/T Clutch Pressure Control Solenoid Valve C - Circuit Diagram

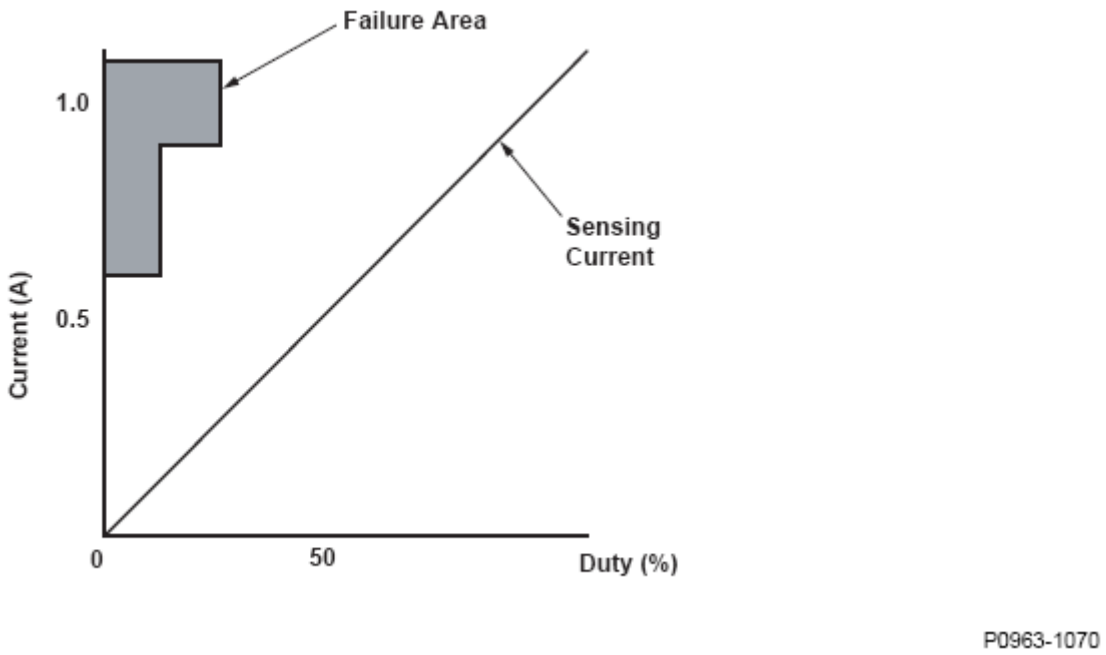


Fig. 233: Current Versus Duty Ratio Graph With Failure Area

GENERAL DESCRIPTION

A/T clutch pressure control solenoid valve C is used for clutch pressure control. A spool in A/T clutch pressure control solenoid valve C pushes the valve according to the duty cycle that is controlled by the powertrain control module (PCM) (The hydraulic pressure is proportional to the current). The PCM measures the current flowing through A/T clutch pressure control solenoid valve C, and uses feedback control to compensate for the difference between the actual current and the commanded one. If the measured current for the PCM output duty cycle is not within a specified range (circuit short or open), the PCM detects a malfunction and stores a DTC.

MONITOR EXECUTION, SEQUENCE, DURATION, DTC TYPE, OBD STATUS

Execution	Continuous
Sequence	None
Duration	1 second or more
DTC Type	One drive cycle, MIL on, D indicator blinks
OBD Status	PASSED/FAILED/NOT COMPLETED (STILL TESTING)

ENABLE CONDITIONS

Condition	Minimum	Maximum
Battery voltage	11 V	-
No active DTCs set (prevents monitor from running)	P0966, P0967, P0970, P0976, P0977	

MALFUNCTION THRESHOLD

The measured current for the PCM's command value is as specified here for at least 1 second.

Duty (%)	Current (A)	Failure mode
Less than 13.7	More than 0.6	High Input
13.7 - 27	More than 0.9	High Input

DRIVING PATTERN

Start the engine, and wait for at least 1 second.

DIAGNOSIS DETAILS

Conditions for setting the DTC

When a malfunction is detected, the MIL comes on and a Pending DTC, a Confirmed DTC, and the freeze data are stored in the PCM memory.

Conditions for clearing the DTC

The MIL is cleared if the malfunction does not return in three consecutive trips in which the diagnostic runs. The MIL, the Pending DTC, the Confirmed DTC, and the freeze data can be cleared with the scan tool Clear command or by disconnecting the battery.

DTC P0973: SHORT IN SHIFT SOLENOID VALVE A CIRCUIT



Fig. 234: Shift Solenoid Valve A - Circuit Diagram

HYDRAULIC PRESSURE SUPPLY TO CLUTCH BY SHIFT SOLENOID VALVE OUTPUT (D POSITION)

Gear position	Shift solenoid valve		Clutch					
	A	B	1st	2nd	3rd	4th	5th	6th
Neutral-1st	ON	OFF	CPCD	-	-	-	-	-
1st	ON	ON	LINE	CPCA	CPCB	CPCC	-	-
1st-2nd	ON	ON	LINE	CPCA	CPCB	CPCC	-	-
2nd	ON	ON	LINE	CPCA	CPCB	CPCC	-	-
2nd-3rd	ON	ON	LINE	CPCA	CPCB	CPCC	-	-
3rd	OFF	ON	LINE	-	CPCB	CPCC	CPCA	-
3rd-4th	OFF	ON	LINE	-	CPCB	CPCC	CPCA	-
4th	OFF	OFF/(ON)	LINE	-	(CPCB)	CPCC	CPCA	CPCB
4th-5th	OFF	OFF	LINE	-	-	CPCC	CPCA	CPCB
5th	OFF	OFF/(ON)	LINE	-	(CPCB)	CPCC	CPCA	CPCB
5th-6th	OFF	OFF	LINE	-	-	CPCC	CPCA	CPCB
6th	OFF	OFF	LINE	-	-	CPCC	CPCA	CPCB

LINE: Line pressure
CPCA: A/T clutch pressure control solenoid valve A pressure
CPCB: A/T clutch pressure control solenoid valve B pressure
CPCC: A/T clutch pressure control solenoid valve C pressure
CPCD: A/T clutch pressure control solenoid valve D pressure

GENERAL DESCRIPTION

When shift solenoid valves A, B, and C are turned on, the hydraulic pressure circuit opens. The hydraulic pressure circuit supplies/discharges hydraulic pressure to/from each clutch according to the combination of the ON/OFF status of the shift solenoid valves. The powertrain control module (PCM) commands the driver circuit to turn on the shift solenoid valve. The circuit detects malfunctions such as a circuit short or open, and sends back a return signal during the PCM's command. When the return signal does not match the PCM command to turn ON the shift solenoid valve, the PCM detects a malfunction and stores a DTC.

MONITOR EXECUTION, SEQUENCE, DURATION, DTC TYPE, OBD STATUS

Execution	Continuous

Sequence	None
Duration	1 second or more
DTC Type	One drive cycle, MIL on, D indicator blinks
OBD Status	PASSED/FAILED/NOT COMPLETED (STILL TESTING)

ENABLE CONDITIONS

Condition	Minimum	Maximum
Battery voltage	11 V	-
No active DTCs set (prevents monitor from running)	P0962, P0963, P0974, P0979, P0980, P2720, P2721	

MALFUNCTION THRESHOLD

The return signal does not match the command to turn ON shift solenoid valve A for at least 1 second.

DRIVING PATTERN

1. Start the engine.
2. Shift to P, and wait for at least 1 second.

DIAGNOSIS DETAILS

Conditions for setting the DTC

When a malfunction is detected, the MIL comes on and a Pending DTC, a Confirmed DTC, and the freeze data are stored in the PCM memory.

Conditions for clearing the DTC

The MIL is cleared if the malfunction does not return in three consecutive trips in which the diagnostic runs. The MIL, the Pending DTC, the Confirmed DTC, and the freeze data can be cleared with the scan tool Clear command or by disconnecting the battery.

DTC P0974: OPEN IN SHIFT SOLENOID VALVE A CIRCUIT



Fig. 235: Shift Solenoid Valve A - Circuit Diagram

HYDRAULIC PRESSURE SUPPLY TO CLUTCH BY SHIFT SOLENOID VALVE OUTPUT (D POSITION)

Gear position	Shift solenoid valve		Clutch					
	A	B	1st	2nd	3rd	4th	5th	6th
Neutral-1st	ON	OFF	CPCD	-	-	-	-	-
1st	ON	ON	LINE	CPCA	CPCB	CPCC	-	-
1st-2nd	ON	ON	LINE	CPCA	CPCB	CPCC	-	-
2nd	ON	ON	LINE	CPCA	CPCB	CPCC	-	-
2nd-3rd	ON	ON	LINE	CPCA	CPCB	CPCC	-	-
3rd	OFF	ON	LINE	-	CPCB	CPCC	CPCA	-
3rd-4th	OFF	ON	LINE	-	CPCB	CPCC	CPCA	-
4th	OFF	OFF/(ON)	LINE	-	(CPCB)	CPCC	CPCA	CPCB
4th-5th	OFF	OFF	LINE	-	-	CPCC	CPCA	CPCB
5th	OFF	OFF/(ON)	LINE	-	(CPCB)	CPCC	CPCA	CPCB
5th-6th	OFF	OFF	LINE	-	-	CPCC	CPCA	CPCB
6th	OFF	OFF	LINE	-	-	CPCC	CPCA	CPCB

LINE: Line pressure
CPCA: A/T clutch pressure control solenoid valve A pressure
CPCB: A/T clutch pressure control solenoid valve B pressure
CPCC: A/T clutch pressure control solenoid valve C pressure
CPCD: A/T clutch pressure control solenoid valve D pressure

GENERAL DESCRIPTION

When shift solenoid valves A, B, and C are turned on, the hydraulic pressure circuit opens. The hydraulic pressure circuit supplies/discharges hydraulic pressure to/from each clutch according to the combination of the ON/OFF status of the shift solenoid valves. The powertrain control module (PCM) commands the driver circuit to turn on the shift solenoid valve. The circuit detects malfunctions such as a circuit short or open, and sends back a return signal during the PCM's command. When the return signal does not match the PCM command to turn OFF the shift solenoid valve, the PCM detects a malfunction and stores a DTC.

MONITOR EXECUTION, SEQUENCE, DURATION, DTC TYPE, OBD STATUS

Execution	Continuous
Sequence	None
Duration	1 second or more
DTC Type	One drive cycle, MIL on, D indicator blinks
OBD Status	PASSED/FAILED/NOT COMPLETED (STILL TESTING)

ENABLE CONDITIONS

Condition	Minimum	Maximum
Battery voltage	11 V	-
No active DTCs set (prevents monitor from running)	P0962, P0963, P0973, P0979, P0980, P2720, P2721	

MALFUNCTION THRESHOLD

The return signal does not match the command to turn OFF shift solenoid valve A for at least 1 second.

DRIVING PATTERN

1. Start the engine.
2. With the brake pedal pressed, shift to R, and wait for at least 1 second.

DIAGNOSIS DETAILS

Conditions for setting the DTC

When a malfunction is detected, the MIL comes on and a Pending DTC, a Confirmed DTC, and the freeze data are stored in the PCM memory.

Conditions for clearing the DTC

The MIL is cleared if the malfunction does not return in three consecutive trips in which the diagnostic runs. The MIL, the Pending DTC, the Confirmed DTC, and the freeze data can be cleared with the scan tool Clear command or by disconnecting the battery.

DTC P0976: SHORT IN SHIFT SOLENOID VALVE B CIRCUIT



Fig. 236: Shift Solenoid Valve B - Circuit Diagram

HYDRAULIC PRESSURE SUPPLY TO CLUTCH BY SHIFT SOLENOID VALVE OUTPUT (D POSITION)

Gear position	Shift solenoid valve		Clutch					
	A	B	1st	2nd	3rd	4th	5th	6th
Neutral-1st	ON	OFF	CPCD	-	-	-	-	-
1st	ON	ON	LINE	CPCA	CPCB	CPCC	-	-
1st-2nd	ON	ON	LINE	CPCA	CPCB	CPCC	-	-
2nd	ON	ON	LINE	CPCA	CPCB	CPCC	-	-
2nd-3rd	ON	ON	LINE	CPCA	CPCB	CPCC	-	-
3rd	OFF	ON	LINE	-	CPCB	CPCC	CPCA	-
3rd-4th	OFF	ON	LINE	-	CPCB	CPCC	CPCA	-

4th	OFF	OFF/(ON)	LINE	-	(CPCB)	CPCC	CPCA	CPCB
4th-5th	OFF	OFF	LINE	-	-	CPCC	CPCA	CPCB
5th	OFF	OFF/(ON)	LINE	-	(CPCB)	CPCC	CPCA	CPCB
5th-6th	OFF	OFF	LINE	-	-	CPCC	CPCA	CPCB
6th	OFF	OFF	LINE	-	-	CPCC	CPCA	CPCB

LINE: Line pressure
CPCA: A/T clutch pressure control solenoid valve A pressure
CPCB: A/T clutch pressure control solenoid valve B pressure
CPCC: A/T clutch pressure control solenoid valve C pressure
CPCD: A/T clutch pressure control solenoid valve D pressure

GENERAL DESCRIPTION

When shift solenoid valves A, B, and C are turned on, the hydraulic pressure circuit opens. The hydraulic pressure circuit supplies/discharges hydraulic pressure to/from each clutch according to the combination of the ON/OFF status of the shift solenoid valves. The powertrain control module (PCM) commands the driver circuit to turn on the shift solenoid valve. The circuit detects malfunctions such as a circuit short or open, and sends back a return signal during the PCM's command. When the return signal does not match the PCM command to turn ON the shift solenoid valve, the PCM detects a malfunction and stores a DTC.

MONITOR EXECUTION, SEQUENCE, DURATION, DTC TYPE, OBD STATUS

Execution	Continuous
Sequence	None
Duration	1 second or more
DTC Type	One drive cycle, MIL on, D indicator blinks
OBD Status	PASSED/FAILED/NOT COMPLETED (STILL TESTING)

ENABLE CONDITIONS

Condition	Minimum	Maximum
Battery voltage	11 V	-
No active DTCs set (prevents monitor from running)	P0966, P0967, P0970, P0971, P0977	

MALFUNCTION THRESHOLD

The return signal does not match the command to turn ON shift solenoid valve B for at least 1 second.

DRIVING PATTERN

1. Start the engine.
2. With the brake pedal pressed, shift to D, and wait for at least 1 second.

DIAGNOSIS DETAILS

Conditions for setting the DTC

When a malfunction is detected, the MIL comes on and a Pending DTC, a Confirmed DTC, and the freeze data are stored in the PCM memory.

Conditions for clearing the DTC

The MIL is cleared if the malfunction does not return in three consecutive trips in which the diagnostic runs. The MIL, the Pending DTC, the Confirmed DTC, and the freeze data can be cleared with the scan tool Clear command or by disconnecting the battery.

DTC P0977: OPEN IN SHIFT SOLENOID VALVE B CIRCUIT



Fig. 237: Shift Solenoid Valve B - Circuit Diagram

HYDRAULIC PRESSURE SUPPLY TO CLUTCH BY SHIFT SOLENOID VALVE OUTPUT (D POSITION)

Gear position	Shift solenoid valve		Clutch					
	A	B	1st	2nd	3rd	4th	5th	6th
Neutral-1st	ON	OFF	CPCD	-	-	-	-	-
1st	ON	ON	LINE	CPCA	CPCB	CPCC	-	-
1st-2nd	ON	ON	LINE	CPCA	CPCB	CPCC	-	-
2nd	ON	ON	LINE	CPCA	CPCB	CPCC	-	-
2nd-3rd	ON	ON	LINE	CPCA	CPCB	CPCC	-	-
3rd	OFF	ON	LINE	-	CPCB	CPCC	CPCA	-
3rd-4th	OFF	ON	LINE	-	CPCB	CPCC	CPCA	-
4th	OFF	OFF/(ON)	LINE	-	(CPCB)	CPCC	CPCA	CPCB
4th-5th	OFF	OFF	LINE	-	-	CPCC	CPCA	CPCB
5th	OFF	OFF/(ON)	LINE	-	(CPCB)	CPCC	CPCA	CPCB
5th-6th	OFF	OFF	LINE	-	-	CPCC	CPCA	CPCB
6th	OFF	OFF	LINE	-	-	CPCC	CPCA	CPCB

LINE: Line pressure
CPCA: A/T clutch pressure control solenoid valve A pressure
CPCB: A/T clutch pressure control solenoid valve B pressure
CPCC: A/T clutch pressure control solenoid valve C pressure
CPCD: A/T clutch pressure control solenoid valve D pressure

GENERAL DESCRIPTION

When shift solenoid valves A, B, and C are turned on, the hydraulic pressure circuit opens. The hydraulic pressure circuit supplies/discharges hydraulic pressure to/from each clutch according to the combination of the ON/OFF status of the shift solenoid valves. The powertrain control module (PCM) commands the driver circuit to turn on the shift solenoid valve. The circuit detects malfunctions such as a circuit short or open, and sends back a return signal during the PCM's command. When the return signal does not match the PCM command to turn OFF the shift solenoid valve, the PCM detects a malfunction and stores a DTC.

MONITOR EXECUTION, SEQUENCE, DURATION, DTC TYPE, OBD STATUS

Execution	Continuous
Sequence	None
Duration	1 second or more
DTC Type	One drive cycle, MIL on, D indicator blinks
OBD Status	PASSED/FAILED/NOT COMPLETED (STILL TESTING)

ENABLE CONDITIONS

Condition	Minimum	Maximum
Battery voltage	11 V	-
No active DTCs set (prevents monitor from running)	P0966, P0967, P0970, P0971, P0976	

MALFUNCTION THRESHOLD

The return signal does not match the command to turn OFF shift solenoid valve B for at least 1 second.

DRIVING PATTERN

1. Start the engine.
2. Shift to P, and wait for at least 1 second.

DIAGNOSIS DETAILS

Conditions for setting the DTC

When a malfunction is detected, the MIL comes on and a Pending DTC, a Confirmed DTC, and the freeze data are stored in the PCM memory.

Conditions for clearing the DTC

The MIL is cleared if the malfunction does not return in three consecutive trips in which the diagnostic runs. The MIL, the Pending DTC, the Confirmed DTC, and the freeze data can be cleared with the scan tool Clear command or by disconnecting the battery.

DTC P0979: SHORT IN SHIFT SOLENOID VALVE C CIRCUIT

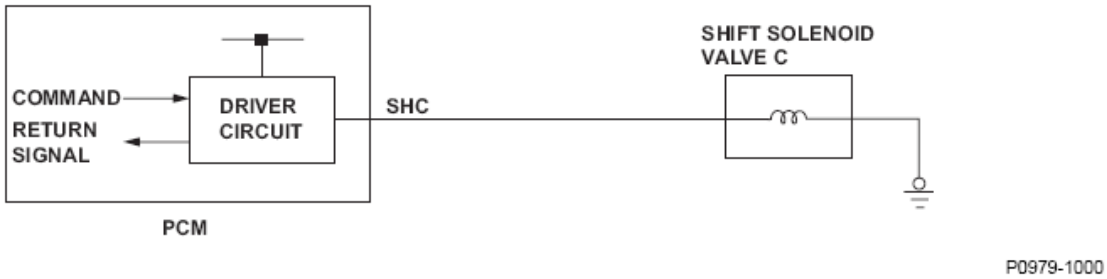


Fig. 238: Shift Solenoid Valve C - Circuit Diagram

HYDRAULIC PRESSURE SUPPLY TO CLUTCH BY SHIFT SOLENOID VALVE OUTPUT

	Neutral-1st	1st	Neutral-Reverse	Reverse
Shift solenoid valve A	ON	ON	ON	OFF
Shift solenoid valve B	OFF	ON	OFF	OFF
Shift solenoid valve C	OFF	OFF	ON	ON
1st clutch	CPCD	LINE	-	-
4th clutch	-	-	CPCD	LINE

	Lock-up ON
Shift solenoid valve A	ON/OFF
Shift solenoid valve B	ON/OFF
Shift solenoid valve C	ON
Torque converter clutch	CPCD
LINE: Line pressure CPCD: A/T clutch pressure control solenoid valve D pressure	

GENERAL DESCRIPTION

When shift solenoid valves A, B, and C are turned on, the hydraulic pressure circuit opens. The hydraulic pressure circuit supplies/discharges hydraulic pressure to/from each clutch according to the combination of the ON/OFF status of the shift solenoid valves. The powertrain control module (PCM) commands the driver circuit to turn on the shift solenoid valve. The circuit detects malfunctions such as a circuit short or open, and sends back a return signal during the PCM's command. When the return signal does not match the PCM command to turn ON the shift solenoid valve, the PCM detects a malfunction and stores a DTC.

MONITOR EXECUTION, SEQUENCE, DURATION, DTC TYPE, OBD STATUS

Execution	Continuous
Sequence	None
Duration	1 second or more
DTC Type	One drive cycle, MIL on, D indicator blinks
OBD Status	PASSED/FAILED/NOT COMPLETED (STILL TESTING)

ENABLE CONDITIONS

Condition	Minimum	Maximum
Battery voltage	11 V	-
No active DTCs set (prevents monitor from running)	P0962, P0963, P0973, P0974, P0980, P2720, P2721	

MALFUNCTION THRESHOLD

The return signal does not match the command to turn ON shift solenoid valve C for at least 1 second.

DRIVING PATTERN

1. Start the engine.
2. Shift to P, and wait for at least 1 second.

DIAGNOSIS DETAILS

Conditions for setting the DTC

When a malfunction is detected, the MIL comes on and a Pending DTC, a Confirmed DTC, and the freeze data are stored in the PCM memory.

Conditions for clearing the DTC

The MIL is cleared if the malfunction does not return in three consecutive trips in which the diagnostic runs. The MIL, the Pending DTC, the Confirmed DTC, and the freeze data can be cleared with the scan tool Clear command or by disconnecting the battery.

DTC P0980: OPEN IN SHIFT SOLENOID VALVE C CIRCUIT

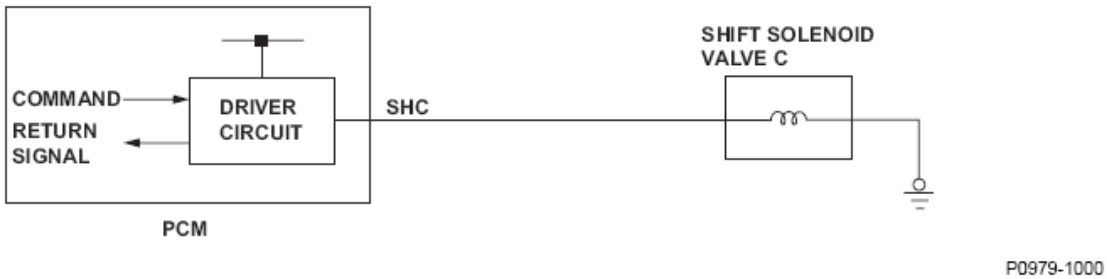


Fig. 239: Shift Solenoid Valve C - Circuit Diagram

HYDRAULIC PRESSURE SUPPLY TO CLUTCH BY SHIFT SOLENOID VALVE OUTPUT

	Neutral-1st	1st	Neutral-Reverse	Reverse
Shift solenoid valve A	ON	ON	ON	OFF
Shift solenoid valve B	OFF	ON	OFF	OFF
Shift solenoid valve C	OFF	OFF	ON	ON

1st clutch	CPCD	LINE	-	-
4th clutch	-	-	CPCD	LINE

	Lock-up ON
Shift solenoid valve A	ON/OFF
Shift solenoid valve B	ON/OFF
Shift solenoid valve C	ON
Torque converter clutch	CPCD
LINE: Line pressure CPCD: A/T clutch pressure control solenoid valve D pressure	

GENERAL DESCRIPTION

When shift solenoid valves A, B, and C are turned on, the hydraulic pressure circuit opens. The hydraulic pressure circuit supplies/discharges hydraulic pressure to/from each clutch according to the combination of the ON/OFF status of the shift solenoid valves. The powertrain control module (PCM) commands the driver circuit to turn on the shift solenoid valve. The circuit detects malfunctions such as a circuit short or open, and sends back a return signal during the PCM's command. When the return signal does not match the PCM command to turn OFF the shift solenoid valve, the PCM detects a malfunction and stores a DTC.

MONITOR EXECUTION, SEQUENCE, DURATION, DTC TYPE, OBD STATUS

Execution	Continuous
Sequence	None
Duration	1 second or more
DTC Type	One drive cycle, MIL on, D indicator blinks
OBD Status	PASSED/FAILED/NOT COMPLETED (STILL TESTING)

ENABLE CONDITIONS

Condition	Minimum	Maximum
Battery voltage	11 V	-
No active DTCs set (prevents monitor from running)	P0962, P0963, P0973, P0974, P0979, P2720, P2721	

MALFUNCTION THRESHOLD

The return signal does not match the command to turn OFF shift solenoid valve C for at least 1 second.

DRIVING PATTERN

1. Start the engine.
2. With the brake pedal pressed, shift to N or D, and wait for at least 1 second.

DIAGNOSIS DETAILS

Conditions for setting the DTC

When a malfunction is detected, the MIL comes on and a Pending DTC, a Confirmed DTC, and the freeze data are stored in the PCM memory.

Conditions for clearing the DTC

The MIL is cleared if the malfunction does not return in three consecutive trips in which the diagnostic runs. The MIL, the Pending DTC, the Confirmed DTC, and the freeze data can be cleared with the scan tool Clear command or by disconnecting the battery.

DTC P0989: SHORT IN TRANSMISSION FLUID PRESSURE SWITCH E (6TH CLUTCH) CIRCUIT, OR TRANSMISSION FLUID PRESSURE SWITCH E (6TH CLUTCH) STUCK ON

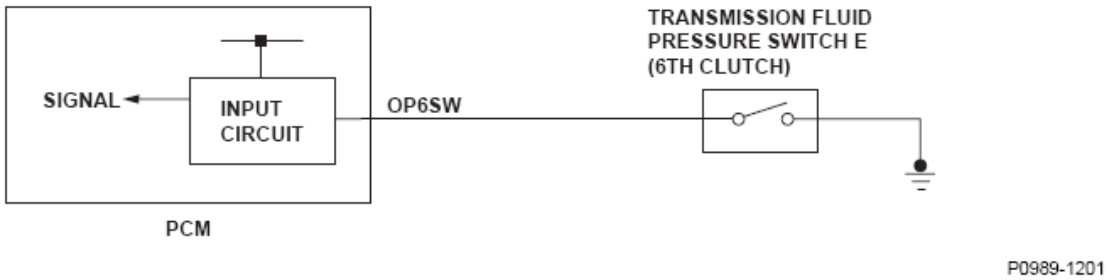


Fig. 240: Transmission Fluid Pressure Switch E - Circuit Diagram

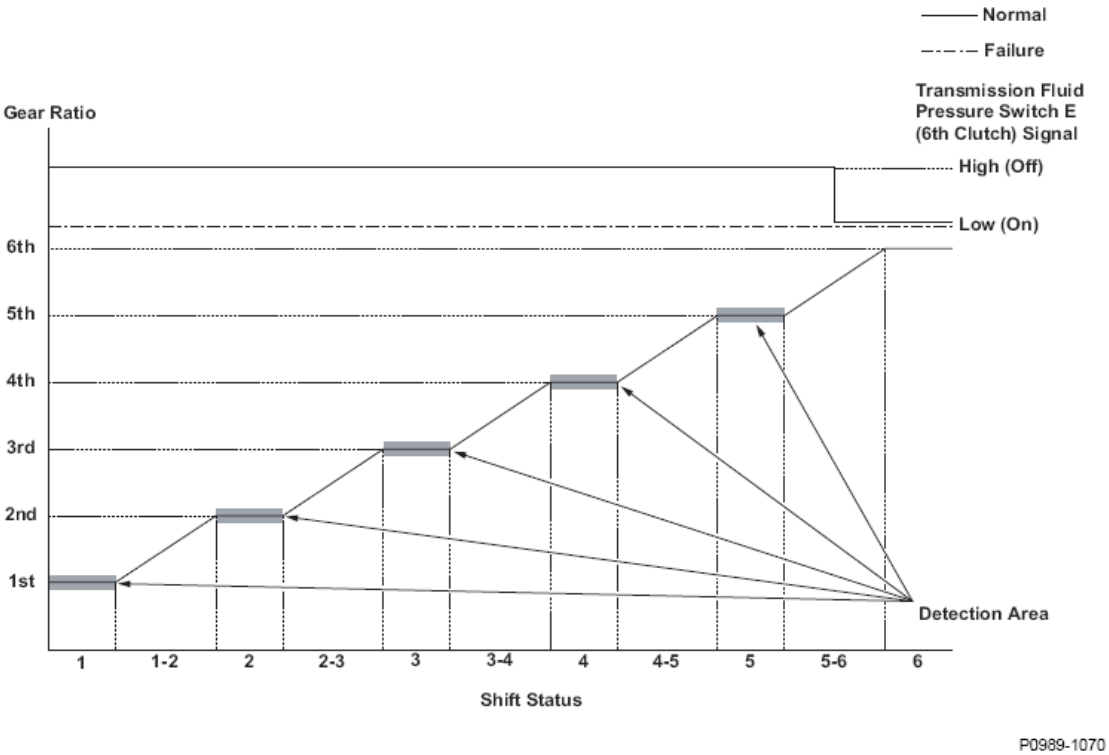


Fig. 241: Gear Ratio Versus Shifting Status Graph

GENERAL DESCRIPTION

Transmission fluid pressure switch E (6th clutch) is installed in the hydraulic pressure circuit to the 6th clutch. When hydraulic pressure is supplied to the 6th clutch, the switch is turned on. When hydraulic pressure is not supplied to the 6th clutch, the switch is turned off. The signal from transmission fluid pressure switch E (6th clutch) is input to the powertrain control module (PCM). The PCM detects the hydraulic pressure supply conditions at the gear change to 6th gear (5th --> 6th) to reduce the shock that occurs at the gear change. If transmission fluid pressure switch E (6th clutch) is on while driving the vehicle with the rotation speed ratio of the input/output pulses is other than the 6th gear ratio (the ratio is Neutral or 5th), the PCM detects a transmission fluid pressure switch E (6th clutch) failure and stores a DTC.

MONITOR EXECUTION, SEQUENCE, DURATION, DTC TYPE, OBD STATUS

Execution	Continuous
Sequence	None
Duration	Depending on the driving conditions
DTC Type	Two drive cycles, MIL on, D indicator blinks
OBD Status	PASSED/FAILED/NOT COMPLETED (STILL TESTING)

ENABLE CONDITIONS

Condition	Minimum	Maximum
Battery voltage	11 V	-
No active DTCs set (prevents monitor from running)	P0122, P0123, P0222, P0223, P0705, P0716, P0717, P0718, P0721, P0722, P0723, P0746, P0747, P0751, P0752, P0756, P0757, P0761, P0762, P0776, P0777, P0796, P0797, P0842, P0843, P0847, P0848, P0872, P0873, P0877, P0878, P0962, P0963, P0966, P0967, P0970, P0971, P0973, P0974, P0976, P0977, P0979, P0980, P0990, P1658, P1659, P1683, P1684, P2101, P2118, P2122, P2123, P2127, P2128, P2135, P2138, P2176, P2714, P2720, P2721	

MALFUNCTION THRESHOLD

One of these conditions occurs:

- The input signal from transmission fluid pressure switch E (6th clutch) to the PCM is low for at least 4 seconds when the shift lever is in P, R, or N.
- The input signal from transmission fluid pressure switch E (6th clutch) to the PCM is low for at least 4 seconds when driving in 1st, 2nd, or 3rd gear.
- The input signal from transmission fluid pressure switch E (6th clutch) to the PCM is low for at least 4 seconds when the 3rd gear shift is commanded or when the shift lever is in P, R, or N, after the signal is low for at least 2 seconds when driving in 4th or 5th gear.

DRIVING PATTERN

1. Start the engine.
2. Drive the vehicle in D until the transmission shifts into 6th gear.
    - Drive the vehicle in this manner only if the traffic regulations and ambient conditions allow.

DIAGNOSIS DETAILS

Conditions for setting the DTC

When a malfunction is detected during the first drive cycle, a Pending DTC is stored in the PCM memory. If the malfunction returns in the next (second) drive cycle, the MIL comes on and a Confirmed DTC and the freeze data are stored.

Conditions for clearing the DTC

The MIL is cleared if the malfunction does not return in three consecutive trips in which the diagnostic runs. The MIL, the Pending DTC, the Confirmed DTC, and the freeze data can be cleared with the scan tool Clear command or by disconnecting the battery.

DTC P0990: OPEN IN TRANSMISSION FLUID PRESSURE SWITCH E (6TH CLUTCH) CIRCUIT, OR TRANSMISSION FLUID PRESSURE SWITCH E (6TH CLUTCH) STUCK OFF

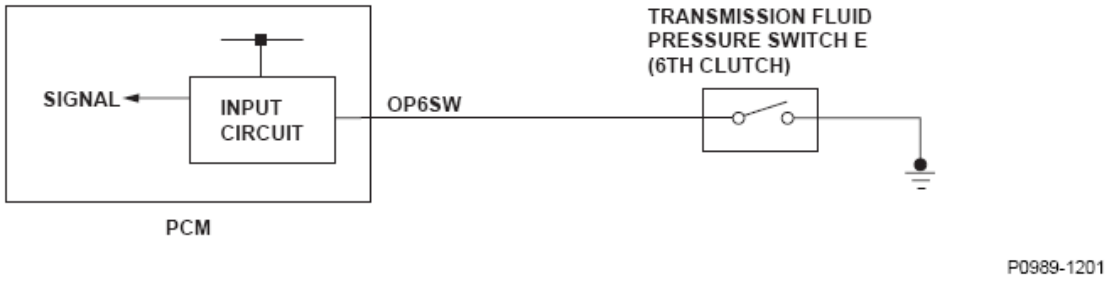


Fig. 242: Transmission Fluid Pressure Switch E - Circuit Diagram

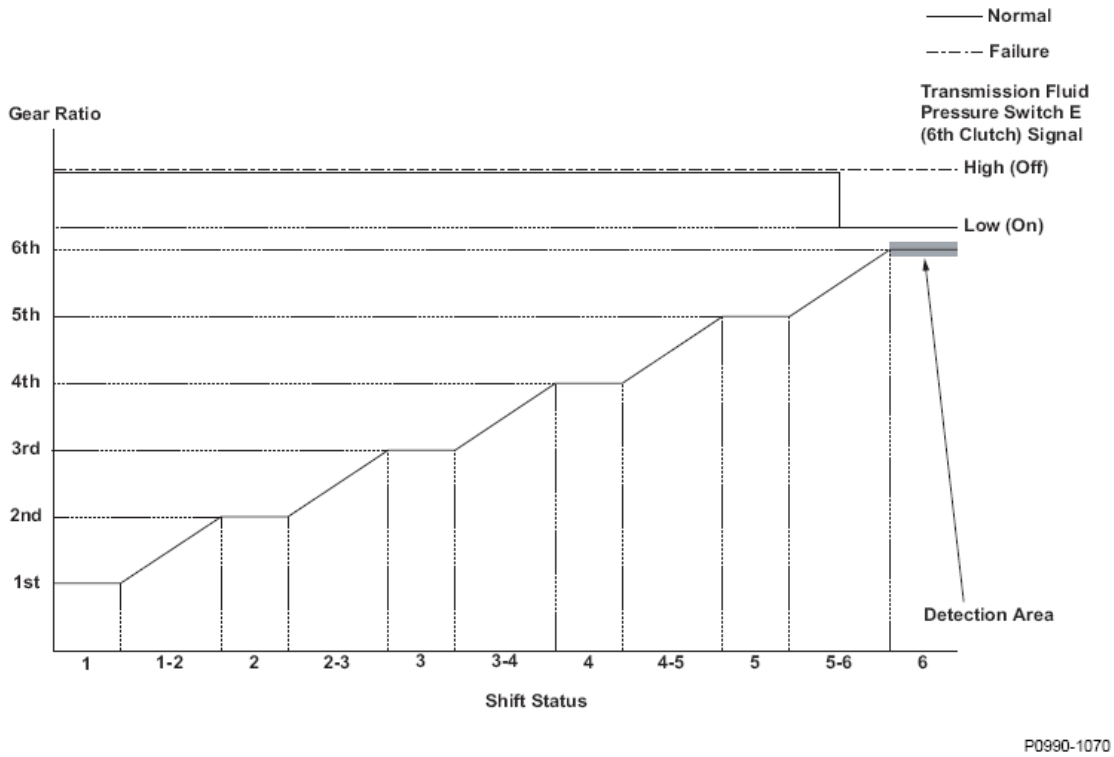


Fig. 243: Gear Ratio Versus Shifting Status Graph (6th Clutch Detection Area)

GENERAL DESCRIPTION

Transmission fluid pressure switch E (6th clutch) is installed in the hydraulic pressure circuit to the 6th clutch. When hydraulic pressure is supplied to the 6th clutch, the switch is turned on. When hydraulic pressure is not supplied to the 6th clutch, the switch is turned off. The signal from transmission fluid pressure switch E (6th clutch) is input to the powertrain control module (PCM). The PCM detects the hydraulic pressure supply conditions at the gear change to 6th gear (5th --> 6th) to reduce the shock that occurs at the gear change. If transmission fluid pressure switch E (6th clutch) is off while driving the vehicle with the rotation speed ratio of the input/output pulses is that of the 6th gear ratio, the PCM detects a transmission fluid pressure switch E (6th clutch) failure and stores a DTC.

MONITOR EXECUTION, SEQUENCE, DURATION, DTC TYPE, OBD STATUS

Execution	Continuous
Sequence	None
Duration	4 seconds or more
DTC Type	Two drive cycles, MIL on, D indicator blinks
OBD Status	PASSED/FAILED/NOT COMPLETED (STILL TESTING)

ENABLE CONDITIONS

Condition	Minimum	Maximum
Battery voltage	11 V	-

No active DTCs set (prevents monitor from running)	P0122, P0123, P0222, P0223, P0705, P0716, P0717, P0718, P0721, P0722, P0723, P0746, P0747, P0751, P0752, P0756, P0757, P0761, P0762, P0776, P0777, P0796, P0797, P0842, P0843, P0847, P0848, P0872, P0873, P0877, P0878, P0962, P0963, P0966, P0967, P0970, P0971, P0973, P0974, P0976, P0977, P0979, P0980, P0989, P1658, P1659, P1683, P1684, P2101, P2118, P2122, P2123, P2127, P2128, P2135, P2138, P2176, P2714, P2720, P2721

MALFUNCTION THRESHOLD

The input signal from transmission fluid pressure switch E (6th clutch) to the PCM is high when driving in 6th gear.

DRIVING PATTERN

1. Start the engine.
2. Drive the vehicle in 6th gear for at least 4 seconds.
    - Drive the vehicle in this manner only if the traffic regulations and ambient conditions allow.

DIAGNOSIS DETAILS

Conditions for setting the DTC

When a malfunction is detected during the first drive cycle, a Pending DTC is stored in the PCM memory. If the malfunction returns in the next (second) drive cycle, the MIL comes on and a Confirmed DTC and the freeze data are stored.

Conditions for clearing the DTC

The MIL is cleared if the malfunction does not return in three consecutive trips in which the diagnostic runs. The MIL, the Pending DTC, the Confirmed DTC, and the freeze data can be cleared with the scan tool Clear command or by disconnecting the battery.

DTC P1077: INTAKE MANIFOLD TUNING (IMT) VALVE STUCK IN HIGH RPM POSITION

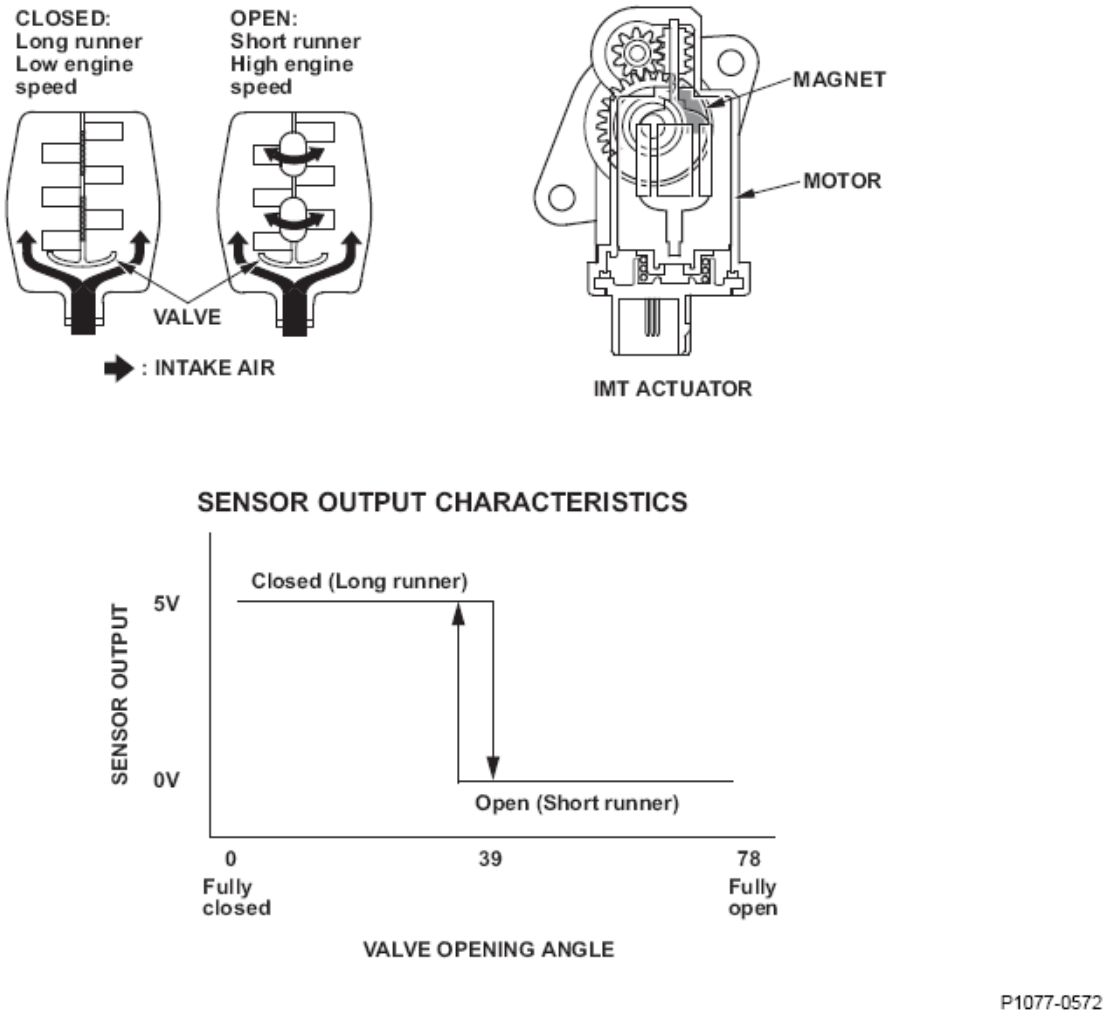


Fig. 244: Intake Manifold Tuning Sensor Output Characteristics Graph

GENERAL DESCRIPTION

The intake manifold tuning (IMT) system aids engine output by selecting either long or short intake runner lengths. The system consists of the IMT valve, the IMT actuator, and the engine control module (ECM)/powertrain control module (PCM). The IMT actuator is attached to the intake manifold and it includes the motor and the Hall-effect-IC position sensing unit. The ECM/PCM actuates the motor, which operates the IMT valve. When the IMT valve is closed, the long runner is selected, increasing torque at low engine speed. When the IMT valve is open, the short runner is selected, increasing torque at high engine speed. A Hall-effect-IC position sensing unit is integrated with the motor to provide precise open/close feedback to the ECM/PCM. The IMT actuator sends a long runner return signal to the ECM/PCM when the IMT valve is closed, and it sends a short runner return signal to the ECM/PCM when the IMT valve is open. If the ECM/PCM receives no closed return signal when it sends a close command, or if it receives no open return signal when sending an open command to the IMT actuator, for a specified time, it detects a malfunction and stores a DTC.

MONITOR EXECUTION, SEQUENCE, DURATION, DTC TYPE, OBD STATUS

Execution	Once per driving cycle
Sequence	None
Duration	7.0 seconds or more
DTC Type	Two drive cycles, MIL on
OBD Status	PASSED/FAILED/NOT COMPLETED (STILL TESTING)

ENABLE CONDITIONS

Condition	Minimum	Maximum
Intake air temperature	32 °F (0 °C)	-
Engine speed	-	3,750 rpm(1) 3,800 rpm(2)
Battery voltage	10.5 V	-
No active DTCs set (prevents monitor from running)	P0112, P0113	
(1) J35Z6 engine (2) J37A4 engine		

MALFUNCTION THRESHOLD

When the ECM/PCM sends a close (long runner) command, no long runner return signal is received for at least 7.0 seconds.

DRIVING PATTERN

1. Start the engine, and let it idle until the radiator fan comes on.
2. Let the engine idle for at least 7 seconds.

DIAGNOSIS DETAILS

Conditions for setting the DTC

When a malfunction is detected during the first drive cycle, a Pending DTC is stored in the ECM/PCM memory. If the malfunction returns in the next (second) drive cycle, the MIL comes on and a Confirmed DTC and the freeze data are stored.

Conditions for clearing the DTC

The MIL is cleared if the malfunction does not return in three consecutive trips in which the diagnostic runs. The MIL, the Pending DTC, the Confirmed DTC, and the freeze data can be cleared with the scan tool Clear command or by disconnecting the battery.

DTC P1078: INTAKE MANIFOLD TUNING (IMT) VALVE STUCK IN LOW RPM POSITION

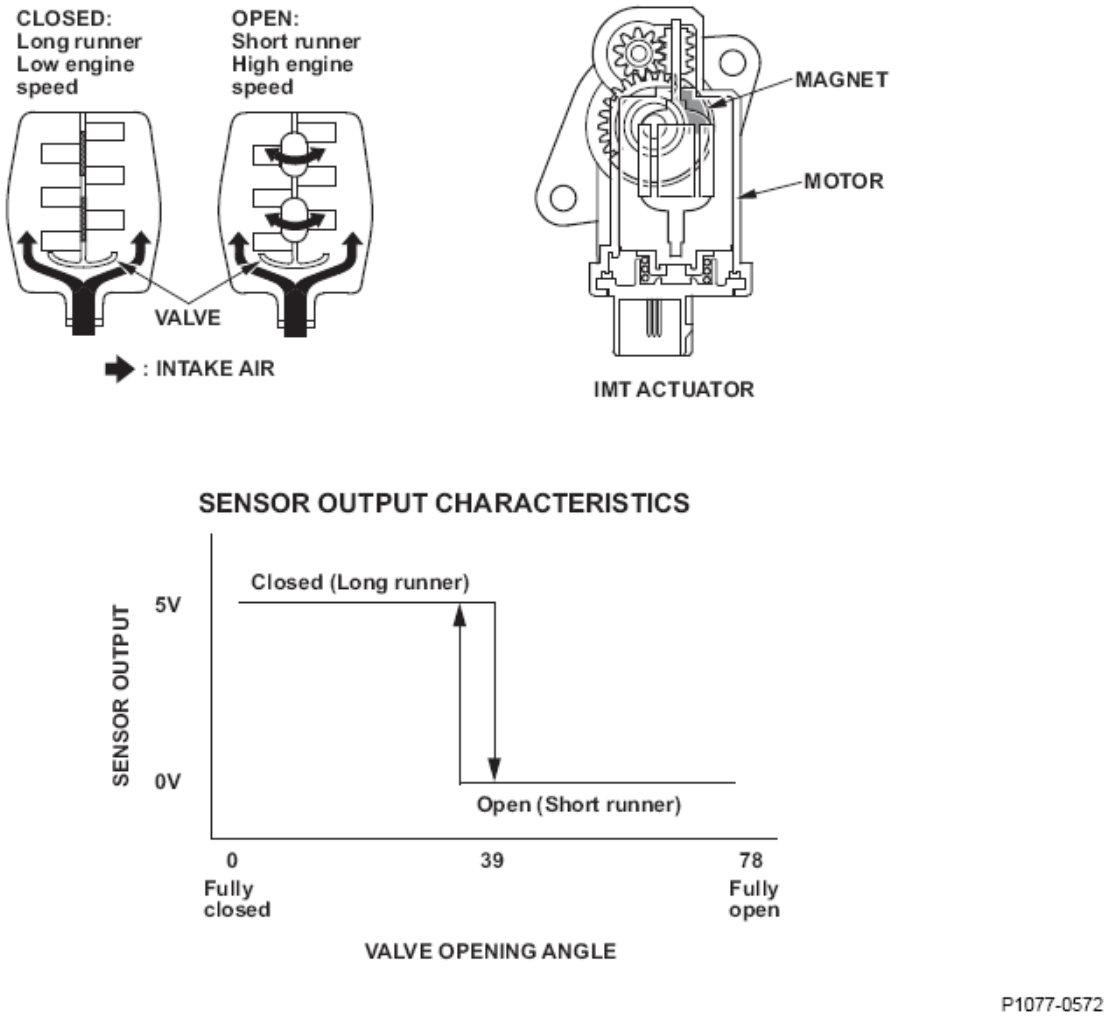


Fig. 245: Intake Manifold Tuning Sensor Output Characteristics Graph

GENERAL DESCRIPTION

The intake manifold tuning (IMT) system aids engine output by selecting either long or short intake runner lengths. The system consists of the IMT valve, the IMT actuator, and the engine control module (ECM)/powertrain control module (PCM). The IMT actuator is attached to the intake manifold and it includes the motor and the Hall-effect-IC position sensing unit. The ECM/PCM actuates the motor, which operates the IMT valve. When the IMT valve is closed, the long runner is selected, increasing torque at low engine speed. When the IMT valve is open, the short runner is selected, increasing torque at high engine speed. A Hall-effect-IC position sensing unit is integrated with the motor to provide precise open/close feedback to the ECM/PCM. The IMT actuator sends a long runner return signal to the ECM/PCM when the IMT valve is closed, and it sends a short runner return signal to the ECM/PCM when the IMT valve is open. If the ECM/PCM receives no closed return signal when it sends a close command, or if it receives no open return signal when sending an open command to the IMT actuator, for a specified time, it detects a malfunction and stores a DTC.

MONITOR EXECUTION, SEQUENCE, DURATION, DTC TYPE, OBD STATUS

Execution	Once per driving cycle
Sequence	None
Duration	3.0 seconds or more
DTC Type	Two drive cycles, MIL on
OBD Status	PASSED/FAILED/NOT COMPLETED (STILL TESTING)

ENABLE CONDITIONS

Condition	Minimum	Maximum
Intake air temperature	32 °F (0 °C)	-
Engine speed	3,950 rpm(1) 4,000 rpm(2)	-
Battery voltage	10.5 V	-
No active DTCs set (prevents monitor from running)	P0112, P0113	
(1) J35Z6 engine (2) J37A4 engine		

MALFUNCTION THRESHOLD

When the ECM/PCM sends an open (short runner) command, no short runner return signal is received for at least 3.0 seconds.

DRIVING PATTERN

1. Start the engine, and let it idle until the radiator fan comes on.
2. Hold the engine speed to 3,950 rpm*1 (4,000 rpm)*2 or more for at least 3 seconds.

DIAGNOSIS DETAILS

Conditions for setting the DTC

When a malfunction is detected during the first drive cycle, a Pending DTC is stored in the ECM/PCM memory. If the malfunction returns in the next (second) drive cycle, the MIL comes on and a Confirmed DTC and the freeze data are stored.

Conditions for clearing the DTC

The MIL is cleared if the malfunction does not return in three consecutive trips in which the diagnostic runs. The MIL, the Pending DTC, the Confirmed DTC, and the freeze data can be cleared with the scan tool Clear command or by disconnecting the battery.

DTC P1116: ENGINE COOLANT TEMPERATURE (ECT) SENSOR 1 CIRCUIT RANGE/PERFORMANCE PROBLEM

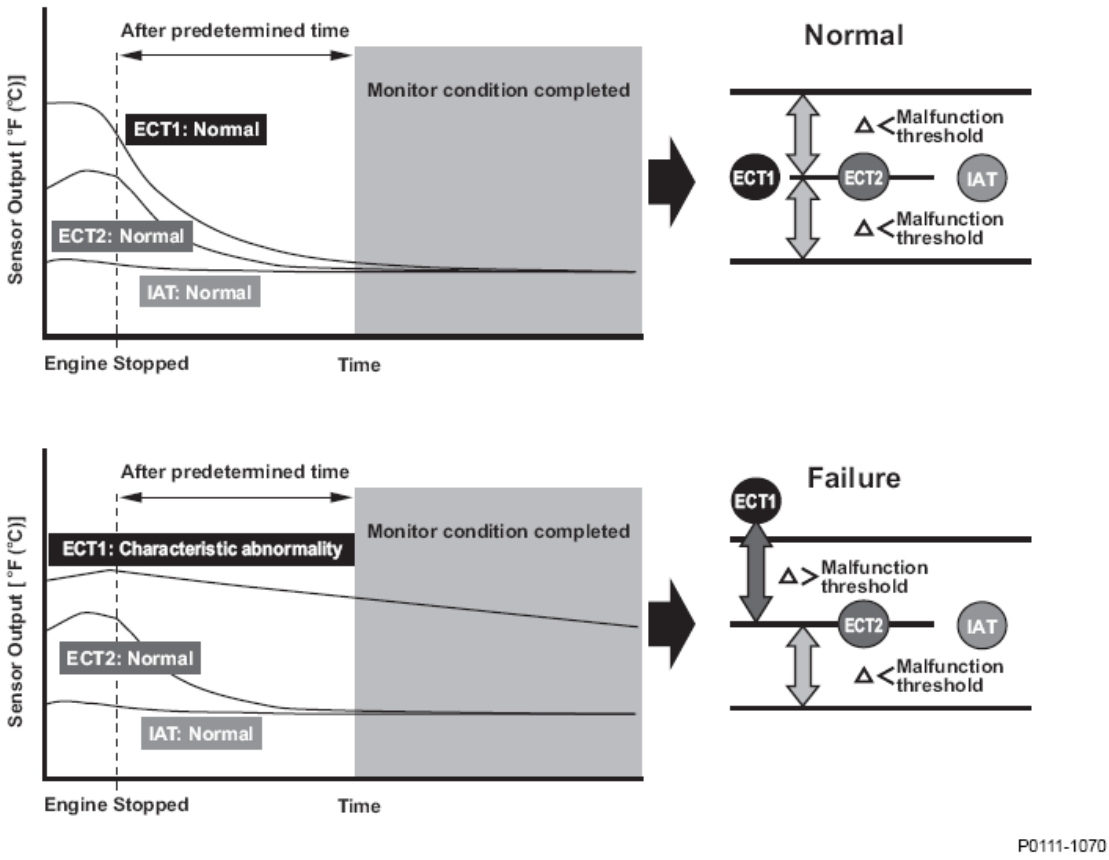


Fig. 246: Engine Coolant Temperature Sensor Characteristics Curve

GENERAL DESCRIPTION

Two engine coolant temperature (ECT) sensors and one intake air temperature (IAT) sensor are used by the engine control module (ECM)/powertrain control module (PCM). When the engine is stopped and enough time has passed, the temperature of the engine will equalize to the ambient temperature. ECT sensor 1 and IAT sensor are compared to ECT sensor 2, and if an inappropriate temperature is read, the ECM/PCM detects a malfunction in the corresponding sensor and stores a DTC.

MONITOR EXECUTION, SEQUENCE, DURATION, DTC TYPE, OBD STATUS

Execution	Once per driving cycle
Sequence	None
Duration	10 seconds or more
DTC Type	Two drive cycles, MIL on
OBD Status	PASSED/FAILED/NOT COMPLETED (STILL TESTING)

ENABLE CONDITIONS

Condition	Minimum	Maximum
Engine off time	6 hours	-

No active DTCs set (prevents monitor from running)	P0112, P0113, P0116, P0117, P0118, P0125, P2184, P2185, P2610

MALFUNCTION THRESHOLD

A malfunction is detected if the following conditions are present after the engine has stopped and the ignition switch has been turned to LOCK (0) or engine start/stop button has been pressed to select the OFF mode, for at least 6 hours before restarting the engine:

Temperature difference between each sensor values		Malfunction judgment		
ECT1 - ECT2	**IAT - ECT2**	**ECT sensor 1**	**IAT sensor**	**ECT sensor 2**
Higher than 57 °F (32 °C)	Higher than 57 °F (32 °C)	Normal	Normal	Failure
	From -43 °F (-24 °C) to 57 °F (32 °C)	Failure	Normal	Normal
	Lower than -43 °F (-24 °C)	Failure	Failure	Normal
From -43 °F (-24 °C) to 57 °F (32 °C)	Higher than 57 °F (32 °C)	Normal	Failure	Normal
	From -43 °F (-24 °C) to 57 °F (32 °C)	Normal	Normal	Normal
	From -44 °F (-25 °C) to -108 °F (-60 °C)	Normal	Failure Suspended(1)	Normal
	Lower than -108 °F (-60 °C)	Normal	Failure	Normal
Lower than -43 °F (-24 °C)	Higher than 57 °F (32 °C)	Failure	Failure	Normal
	From -43 °F (-24 °C) to 57 °F (32 °C)	Failure	Normal	Normal
	Lower than -43 °F (-24 °C)	Normal	Normal	Failure
(1) Malfunction judgment is suspended because the cooled air introduced after engine start lowers the intake air temperature; the ambient temperature condition does not stay equal.				

DRIVING PATTERN

1. Turn the ignition switch to LOCK (0) or press the engine start/stop button to select the OFF mode, and wait at least 6 hours.
2. Start the engine, and let it idle for at least 10 seconds.
   - Do not use an engine block heater because the engine coolant temperature will not stay equal during engine stop.
   - When freeze data is stored, test the vehicle under an ambient temperature close to the intake air temperature in the freeze data.
   - When an ambient temperature extremely changes, malfunction judgment may not execute. Avoid extreme temperature changing condition after or before engine start. (When the vehicle is parked in the garage, open the shutter to introduce outside air; then start the engine.)

DIAGNOSIS DETAILS

Conditions for setting the DTC

When a malfunction is detected during the first drive cycle, a Pending DTC is stored in the ECM/PCM memory. If the malfunction returns in the next (second) drive cycle, the MIL comes on and a Confirmed DTC and the freeze data are stored.

Conditions for clearing the DTC

The MIL is cleared if the malfunction does not return in three consecutive trips in which the diagnostic runs. The MIL, the Pending DTC, the Confirmed DTC, and the freeze data can be cleared with the scan tool Clear command or by disconnecting the battery.

DTC P1128: MANIFOLD ABSOLUTE PRESSURE (MAP) SENSOR SIGNAL LOWER THAN EXPECTED

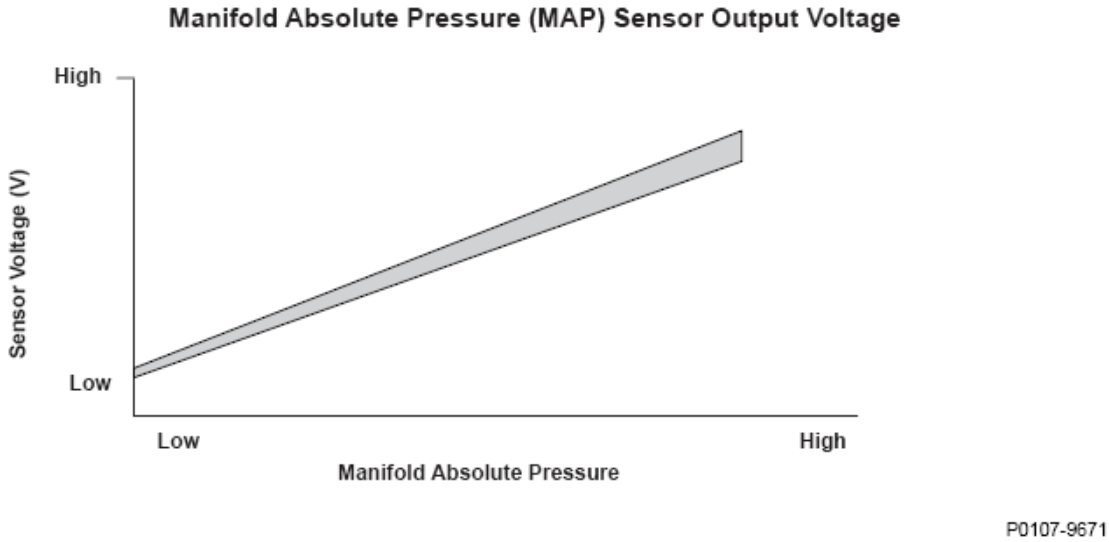


Fig. 247: Manifold Absolute Pressure Sensor Output Voltage Graph

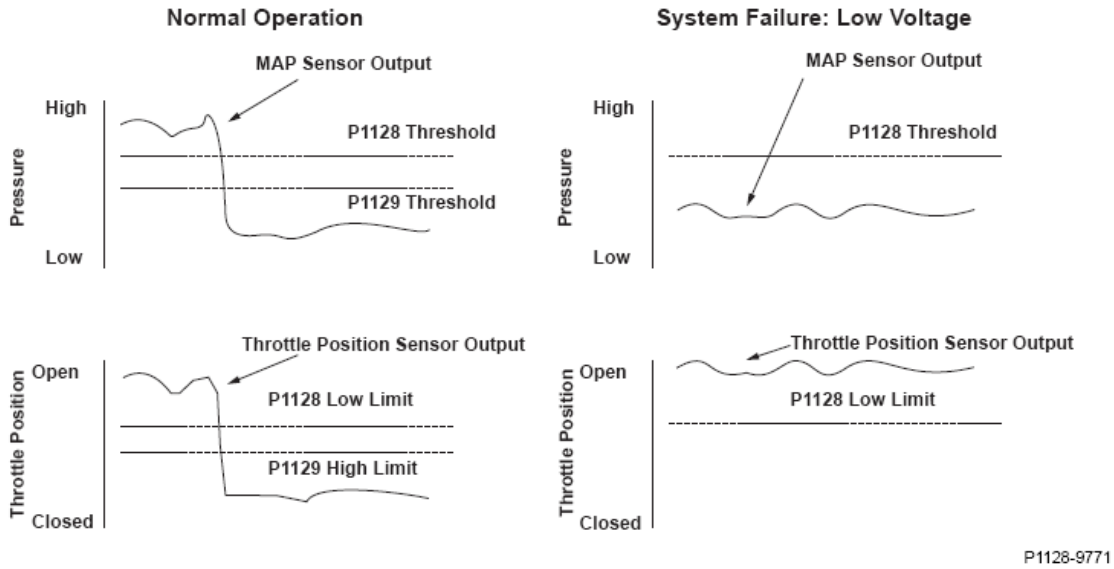


Fig. 248: Manifold Absolute Pressure Sensor Output Voltage Characteristics Curve

GENERAL DESCRIPTION

The manifold absolute pressure (MAP) sensor senses manifold absolute pressure (vacuum) and converts it into electrical signals. The MAP sensor outputs low signal voltage at high vacuum (throttle valve closed) and high signal voltage at low vacuum (throttle valve wide open). The engine control module (ECM)/powertrain control module (PCM) compares a predetermined MAP value at a given throttle position and manifold absolute pressure to the output voltage value of the MAP sensor. If the MAP sensor outputs lower voltage than expected, the ECM/PCM detects a malfunction and stores a DTC.

MONITOR EXECUTION, SEQUENCE, DURATION, DTC TYPE, OBD STATUS

Execution	Once per driving cycle
Sequence	None
Duration	2.0 seconds or more
DTC Type	Two drive cycles, MIL on
OBD Status	PASSED/FAILED/NOT COMPLETED (STILL TESTING)

ENABLE CONDITIONS

Condition		Minimum	Maximum
Engine coolant temperature		156 °F (69 °C)	-
Engine speed		1,200 rpm	-
Vehicle speed		15 mph (24 km/h)	-
Throttle	1,000 rpm	12.7 °(1) 12.0 °(2)	
	3,000		

position	rpm(1)	27.1 °	-
	4,500 rpm(2)	33.2 °	
No active DTCs set (prevents monitor from running)		P0107, P0108, P0117, P0118, P0122, P0123, P0171, P0172, P0174, P0175, P0222, P0223, P0300, P0301, P0302, P0303, P0304, P0305, P0306, P0351, P0352, P0353, P0354, P0355, P0356, P0401, P0404, P0506, P0507, P060A, P0720, P0722, P1077, P1078, P1129, P1659, P2101, P2118, P2122, P2123, P2127, P2128, P2135, P2138, P2176, P2227, P2228, P2229, P2279, P2413, P2646, P2647, P2648, P2649	
Other		Other than during fuel cut-off operation	
(1) J35Z6 engine (2) J37A4 engine			

MALFUNCTION THRESHOLD

The MAP sensor output is 53 kPa (15.9 inHg, 405 mmHg) or less for at least 2.0 seconds when atmospheric pressure is 104 kPa (30.6 inHg, 776 mmHg).

DRIVING PATTERN

1. Start the engine. Hold the engine speed at 3,000 rpm without load (A/T in P or N, M/T in neutral) until the radiator fan comes on.
2. Drive the vehicle at a speed of 15 mph (24 km/h) or more under Enable Conditions (see "Throttle position") for at least 2 seconds.
    - Drive the vehicle in this manner only if the traffic regulations and ambient conditions allow.

DIAGNOSIS DETAILS

Conditions for setting the DTC

When a malfunction is detected during the first drive cycle, a Pending DTC is stored in the ECM/PCM memory. If the malfunction returns in the next (second) drive cycle, the MIL comes on and a Confirmed DTC and the freeze data are stored.

Conditions for clearing the DTC

The MIL is cleared if the malfunction does not return in three consecutive trips in which the diagnostic runs. The MIL, the Pending DTC, the Confirmed DTC, and the freeze data can be cleared with the scan tool Clear command or by disconnecting the battery.

DTC P1129: MANIFOLD ABSOLUTE PRESSURE (MAP) SENSOR SIGNAL HIGHER THAN EXPECTED

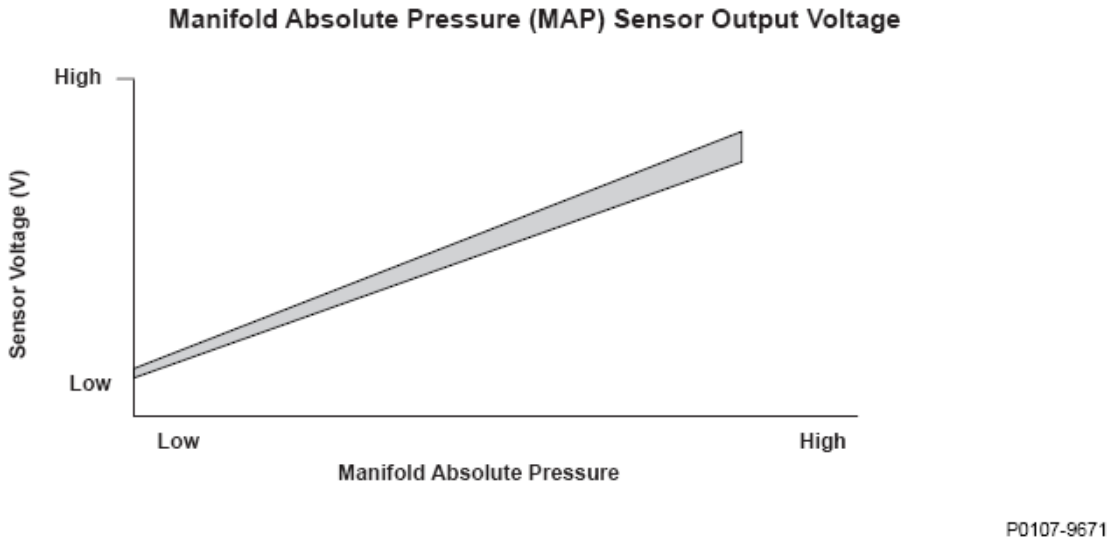


Fig. 249: Manifold Absolute Pressure Sensor Output Voltage Graph

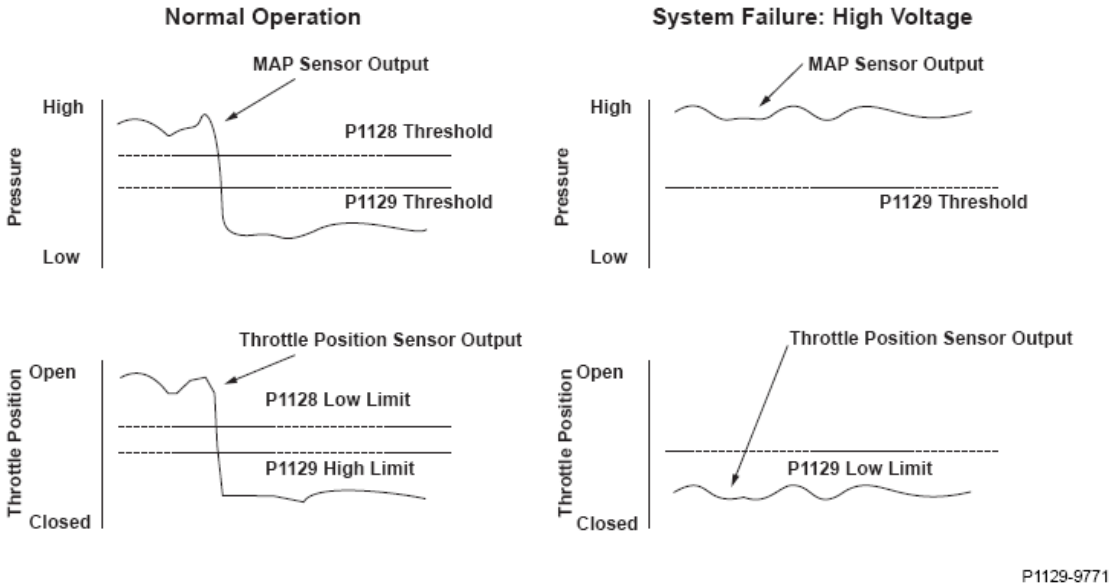


Fig. 250: Manifold Absolute Pressure Sensor Output Voltage Characteristics Curve

GENERAL DESCRIPTION

The manifold absolute pressure (MAP) sensor senses manifold absolute pressure (vacuum) and converts it into electrical signals. The MAP sensor outputs low signal voltage at high vacuum (throttle valve closed) and high signal voltage at low vacuum (throttle valve wide open). The engine control module (ECM)/powertrain control module (PCM) compares a predetermined MAP value at a given throttle position and manifold absolute pressure to the output voltage value of the MAP sensor. If the MAP sensor outputs high voltage during fuel cut-off operation for deceleration with the throttle valve fully closed, which should make the manifold absolute pressure lower, the ECM/PCM detects a malfunction and stores a DTC.

MONITOR EXECUTION, SEQUENCE, DURATION, DTC TYPE, OBD STATUS

Execution	Once per driving cycle
Sequence	None
Duration	2.0 seconds or more
DTC Type	Two drive cycles, MIL on
OBD Status	PASSED/FAILED/NOT COMPLETED (STILL TESTING)

ENABLE CONDITIONS

Condition	Minimum	Maximum
Engine coolant temperature	156 °F (69 °C)	-
Engine speed	1,200 rpm	5,900 rpm
Vehicle speed	15 mph (24 km/h)	-
Fuel feedback	During deceleration	
Throttle position	Fully closed	
No active DTCs set (prevents monitor from running)	P0107, P0108, P0117, P0118, P0122, P0123, P0171, P0172, P0174, P0175, P0222, P0223, P0300, P0301, P0302, P0303, P0304, P0305, P0306, P0351, P0352, P0353, P0354, P0355, P0356, P0401, P0404, P0443, P0496, P0497, P0506, P0507, P060A, P0720, P0722, P1077, P1078, P1128, P145C, P1659, P2101, P2118, P2122, P2123, P2127, P2128, P2135, P2138, P2176, P2279, P2413, P2646, P2647, P2648, P2649	

MALFUNCTION THRESHOLD

The MAP sensor output is 37 kPa (11.0 inHg, 277 mmHg) or more for at least 2.0 seconds.

DRIVING PATTERN

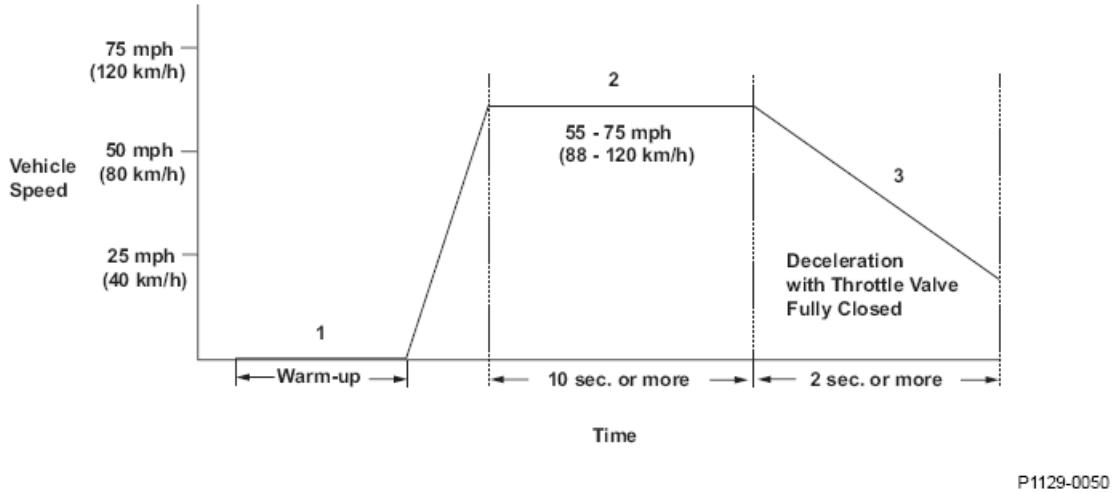


Fig. 251: Vehicle Speed Driving Pattern

1. Start the engine. Hold the engine speed at 3,000 rpm without load (A/T in P or N, M/T in neutral) until the radiator fan comes on.

2. Drive the vehicle at a steady speed between 55 - 75 mph (88 - 120 km/h) for at least 10 seconds.
3. Decelerate with the throttle valve fully closed for at least 2 seconds.
    - Drive the vehicle in this manner only if the traffic regulations and ambient conditions allow.

DIAGNOSIS DETAILS

Conditions for setting the DTC

When a malfunction is detected during the first drive cycle, a Pending DTC is stored in the ECM/PCM memory. If the malfunction returns in the next (second) drive cycle, the MIL comes on and a Confirmed DTC and the freeze data are stored.

Conditions for clearing the DTC

The MIL is cleared if the malfunction does not return in three consecutive trips in which the diagnostic runs. The MIL, the Pending DTC, the Confirmed DTC, and the freeze data can be cleared with the scan tool Clear command or by disconnecting the battery.

DTC P1172: REAR AIR/FUEL RATIO (A/F) SENSOR (BANK 1, SENSOR 1) CIRCUIT OUT OF RANGE HIGH

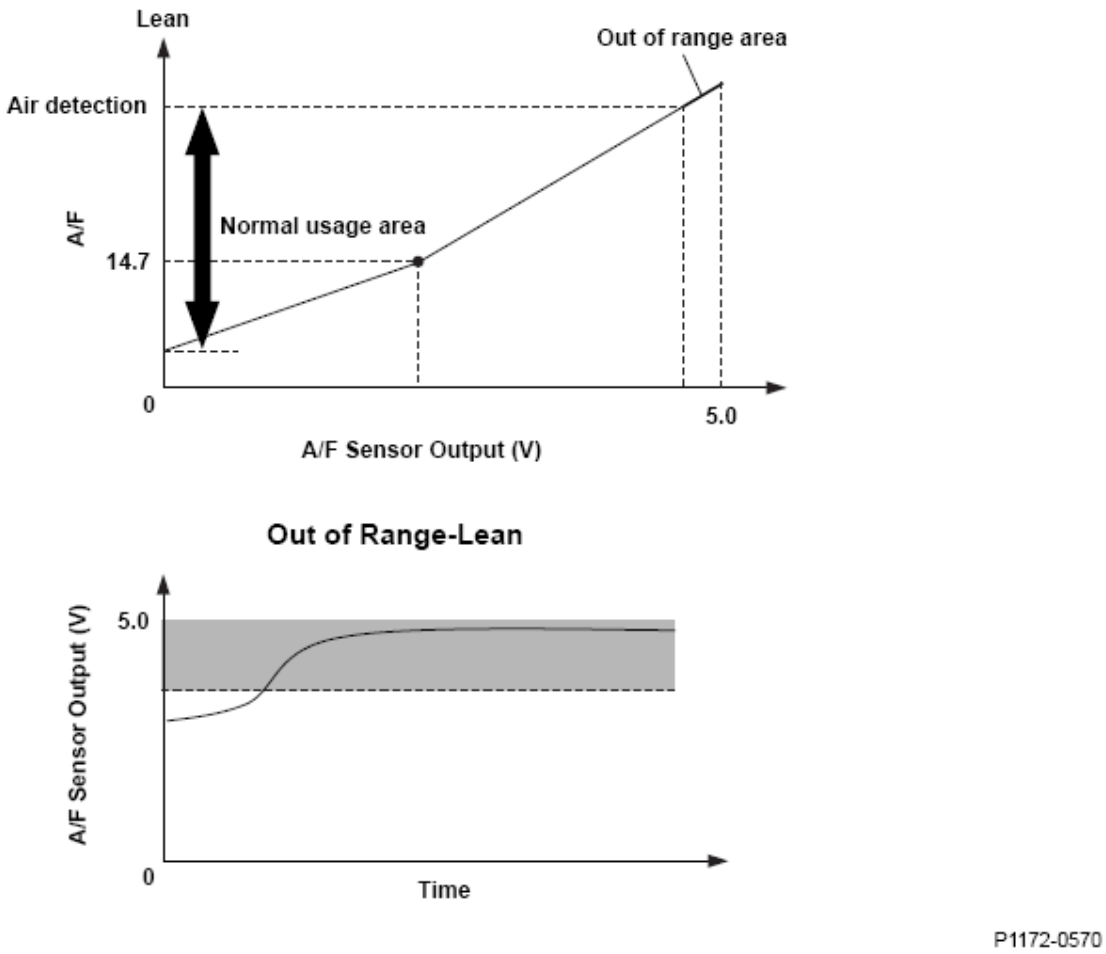


Fig. 252: Air/Fuel Ratio Sensor Characteristics Graph

GENERAL DESCRIPTION

If a malfunction causes the rear air/fuel ratio (A/F) sensor (bank 1, sensor 1) signal to the engine control module (ECM)/powertrain control module (PCM) to deviate from the normal control area, the rear A/F sensor may still become active after the engine starts, but the air/fuel feedback does not start normally and the emissions deteriorate. When the rear A/F sensor output is out of the normal area, and this condition continues after the rear A/F sensor is active, the ECM/PCM detects a malfunction and stores a DTC.

MONITOR EXECUTION, SEQUENCE, DURATION, DTC TYPE, OBD STATUS

Execution	Continuous
Sequence	None
Duration	7.0 seconds or more
DTC Type	Two drive cycles, MIL on
OBD Status	PASSED/FAILED/EXECUTING/OUT OF (TEST) CONDITION

ENABLE CONDITIONS

Condition	
No active DTCs set (prevents monitor from running)	P0101, P0102, P0103, P0107, P0108, P0117, P0118, P0134, P0135, P0171, P0172, P0174, P0175, P0300, P0301, P0302, P0303, P0304, P0305, P0306, P0335, P0339, P0351, P0352, P0353, P0443, P0496, P0497, P1128, P1129, P145C, P2195, P2237, P2238, P2243, P2245, P2251, P2252

MALFUNCTION THRESHOLD

A malfunction is detected when the rear A/F sensor (bank 1, sensor 1) output voltage is 4.70 V or more.

DRIVING PATTERN

1. Start the engine. Hold the engine speed at 3,000 rpm without load (A/T in P or N, M/T in neutral) until the radiator fan comes on, then let it idle.
2. Air/fuel ratio feedback is started while idling, hold for at least 7 seconds.

DIAGNOSIS DETAILS

Conditions for setting the DTC

When a malfunction is detected during the first drive cycle, a Pending DTC is stored in the ECM/PCM memory. If the malfunction returns in the next (second) drive cycle, the MIL comes on and a Confirmed DTC and the freeze data are stored.

Conditions for clearing the DTC

The MIL is cleared if the malfunction does not return in three consecutive trips in which the diagnostic runs. The MIL, the Pending DTC, the Confirmed DTC, and the freeze data can be cleared with the scan tool Clear command or by disconnecting the battery.

DTC P1174: FRONT AIR/FUEL RATIO (A/F) SENSOR (BANK 2, SENSOR 1) CIRCUIT OUT OF RANGE HIGH

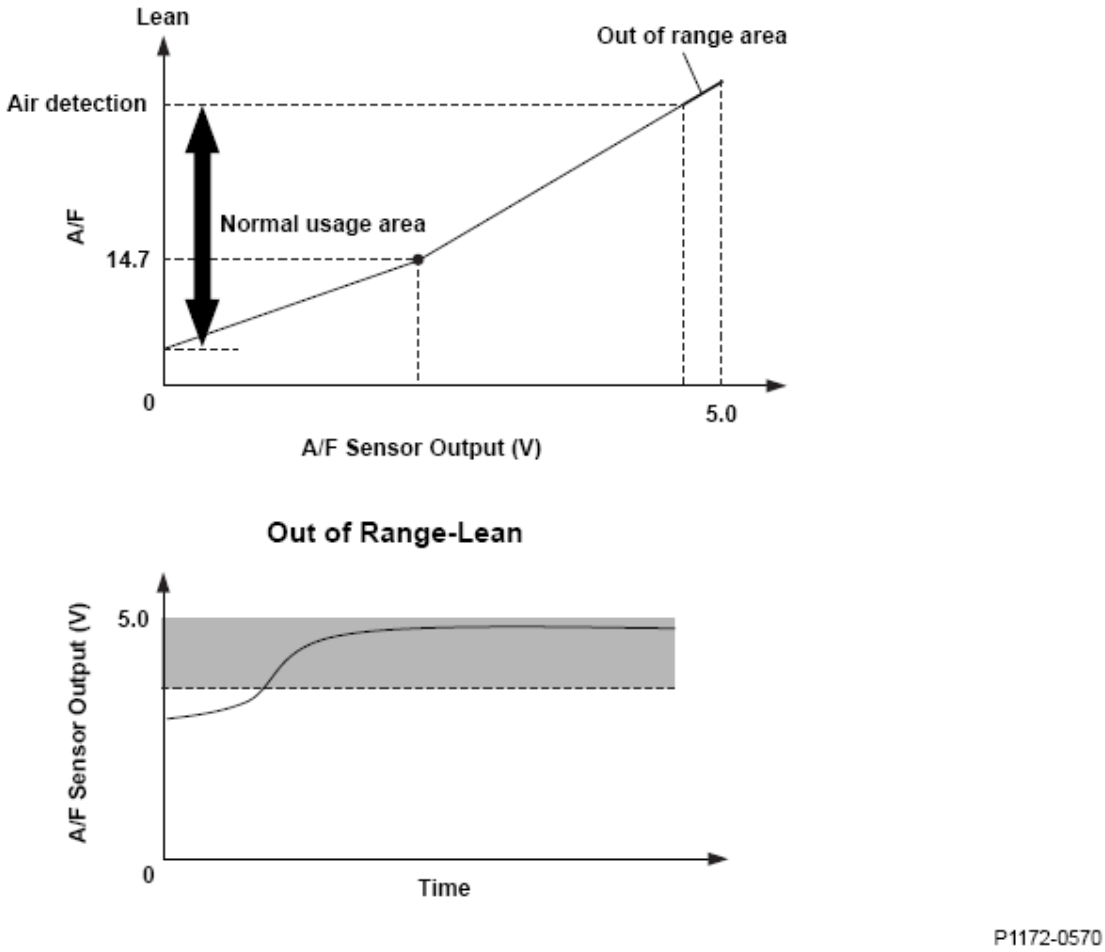


Fig. 253: Air/Fuel Ratio Sensor Characteristics Graph

GENERAL DESCRIPTION

If a malfunction causes the front air/fuel ratio (A/F) sensor (bank 2, sensor 1) signal to the engine control module (ECM)/powertrain control module (PCM) to deviate from the normal control area, the front A/F sensor may still become active after the engine starts, but the air/fuel feedback does not start normally and the emissions deteriorate. When the front A/F sensor output is out of the normal area, and this condition continues after the front A/F sensor is active, the ECM/PCM detects a malfunction and stores a DTC.

MONITOR EXECUTION, SEQUENCE, DURATION, DTC TYPE, OBD STATUS

Execution	Continuous
Sequence	None
Duration	7.0 seconds or more
DTC Type	Two drive cycles, MIL on
OBD Status	PASSED/FAILED/EXECUTING/OUT OF (TEST) CONDITION

ENABLE CONDITIONS

Condition	
No active DTCs set (prevents monitor from running)	P0101, P0102, P0103, P0107, P0108, P0117, P0118, P0154, P0155, P0174, P0175, P0300, P0301, P0302, P0303, P0304, P0305, P0306, P0335, P0339, P0354, P0355, P0356, P0443, P0496, P0497, P1128, P1129, P145C, P2197, P2240, P2241, P2247, P2249, P2254, P2255

MALFUNCTION THRESHOLD

A malfunction is detected when the front A/F sensor (bank 2, sensor 1) output voltage is 4.70 V or more.

DRIVING PATTERN

1. Start the engine. Hold the engine speed at 3,000 rpm without load (A/T in P or N, M/T in neutral) until the radiator fan comes on, then let it idle.
2. Air/fuel ratio feedback is started while idling, hold for at least 7 seconds.

DIAGNOSIS DETAILS

Conditions for setting the DTC

When a malfunction is detected during the first drive cycle, a Pending DTC is stored in the ECM/PCM memory. If the malfunction returns in the next (second) drive cycle, the MIL comes on and a Confirmed DTC and the freeze data are stored.

Conditions for clearing the DTC

The MIL is cleared if the malfunction does not return in three consecutive trips in which the diagnostic runs. The MIL, the Pending DTC, the Confirmed DTC, and the freeze data can be cleared with the scan tool Clear command or by disconnecting the battery.

DTC P1297: ELECTRICAL LOAD DETECTOR (ELD) CIRCUIT LOW VOLTAGE

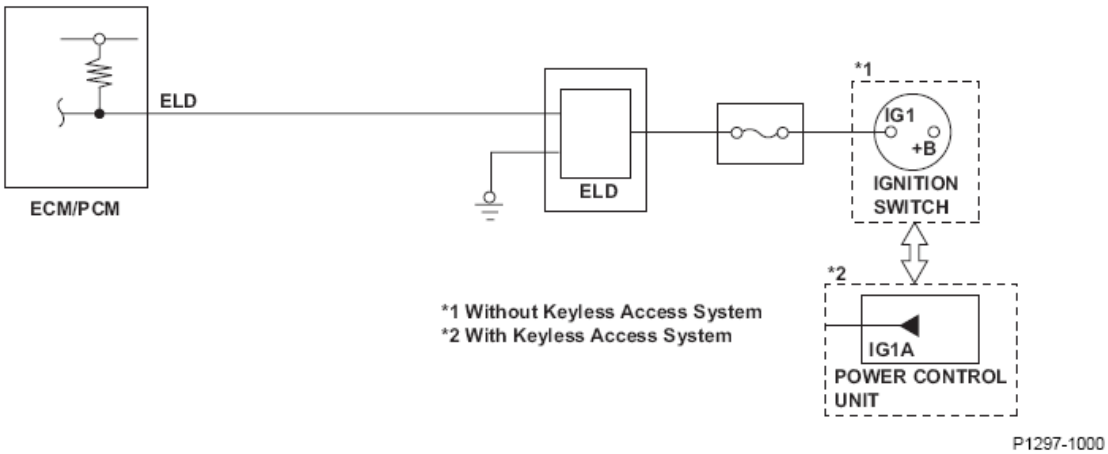


Fig. 254: Electrical Load Detector - Circuit Diagram

GENERAL DESCRIPTION

The electrical load detector (ELD) is built into the under-hood fuse/relay box. It monitors the current fed to the ignition switch and sends a signal to the engine control module (ECM)/powertrain control module (PCM). If the ELD output voltage is extremely low, the ECM/PCM detects a malfunction and stores a DTC.

MONITOR EXECUTION, SEQUENCE, DURATION, DTC TYPE, OBD STATUS

Execution	Continuous
Sequence	None
Duration	5.0 seconds or more
DTC Type	Two drive cycles, MIL off
OBD Status	PASSED/FAILED/NOT COMPLETED (STILL TESTING)

ENABLE CONDITIONS

Condition	Minimum	Maximum
Battery voltage	10.0 V	-
Ignition switch(1)	ON (II)	
Engine start/stop button(2)	ON mode	
No active DTCs set (prevents monitor from running)	P1298	
(1) Without keyless access system (2) With keyless access system		

MALFUNCTION THRESHOLD

The ELD output voltage is 0.27 V or less for at least 5.0 seconds.

DIAGNOSIS DETAILS

Conditions for setting the DTC

When a malfunction is detected during the first drive cycle, a Pending DTC is stored in the ECM/PCM memory. If the malfunction returns in the next (second) drive cycle, a Confirmed DTC and the freeze data are stored. The MIL does not come on.

Conditions for clearing the DTC

The Pending DTC, the Confirmed DTC, and the freeze data can be cleared with the scan tool Clear command or by disconnecting the battery.

DTC P1298: ELECTRICAL LOAD DETECTOR (ELD) CIRCUIT HIGH

VOLTAGE

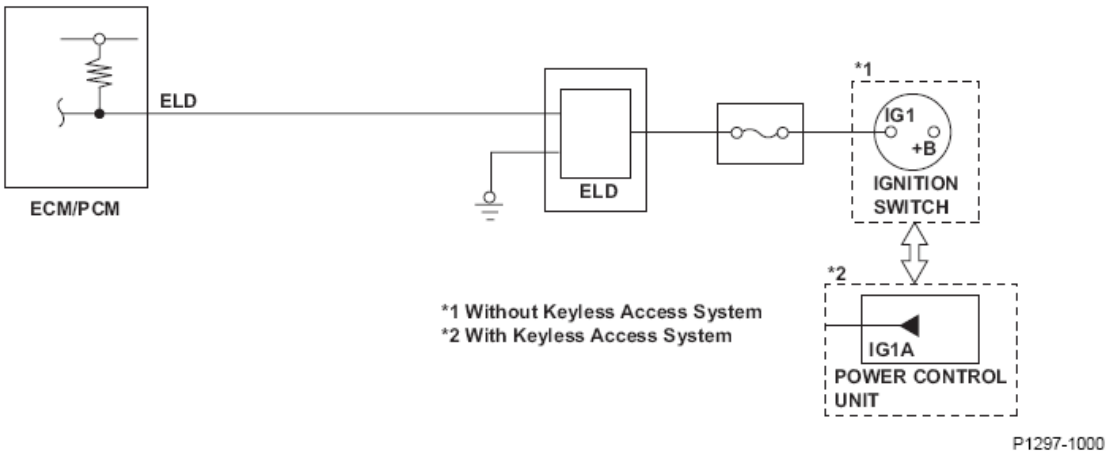


Fig. 255: Electrical Load Detector - Circuit Diagram

GENERAL DESCRIPTION

The electrical load detector (ELD) is built into the under-hood fuse/relay box. It monitors the current fed to the ignition switch and sends a signal to the engine control module (ECM)/powertrain control module (PCM). If the ELD output voltage is extremely high, the ECM/PCM detects a malfunction and stores a DTC.

MONITOR EXECUTION, SEQUENCE, DURATION, DTC TYPE, OBD STATUS

Execution	Continuous
Sequence	None
Duration	5.0 seconds or more
DTC Type	Two drive cycles, MIL off
OBD Status	PASSED/FAILED/NOT COMPLETED (STILL TESTING)

ENABLE CONDITIONS

Condition	Minimum	Maximum
Battery voltage	10.0 V	-
Ignition switch(1)	ON (II)	
Engine start/stop button(2)	ON mode	
No active DTCs set (prevents monitor from running)	P1297	
(1) Without keyless access system (2) With keyless access system		

MALFUNCTION THRESHOLD

The ELD output voltage is 4.57 V or more for at least 5.0 seconds.

DIAGNOSIS DETAILS

Conditions for setting the DTC

When a malfunction is detected during the first drive cycle, a Pending DTC is stored in the ECM/PCM memory. If the malfunction returns in the next (second) drive cycle, a Confirmed DTC and the freeze data are stored. The MIL does not come on.

Conditions for clearing the DTC

The Pending DTC, the Confirmed DTC, and the freeze data can be cleared with the scan tool Clear command or by disconnecting the battery.

DTC P1454: FUEL TANK PRESSURE (FTP) SENSOR CIRCUIT RANGE/PERFORMANCE PROBLEM

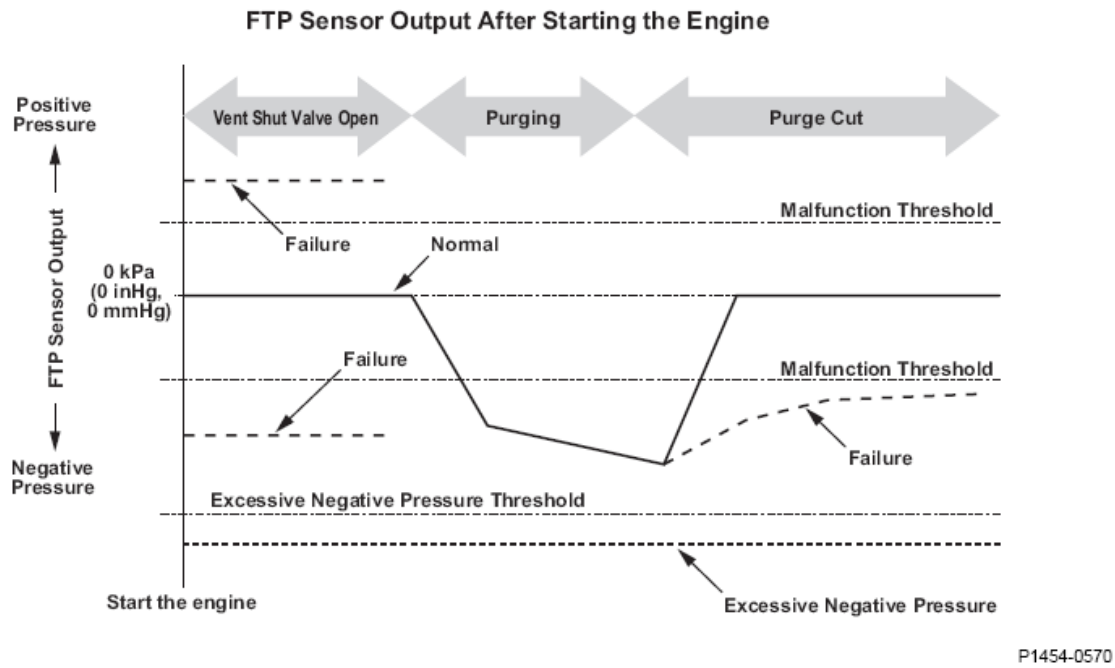


Fig. 256: FTP Sensor Output Characteristics Curve

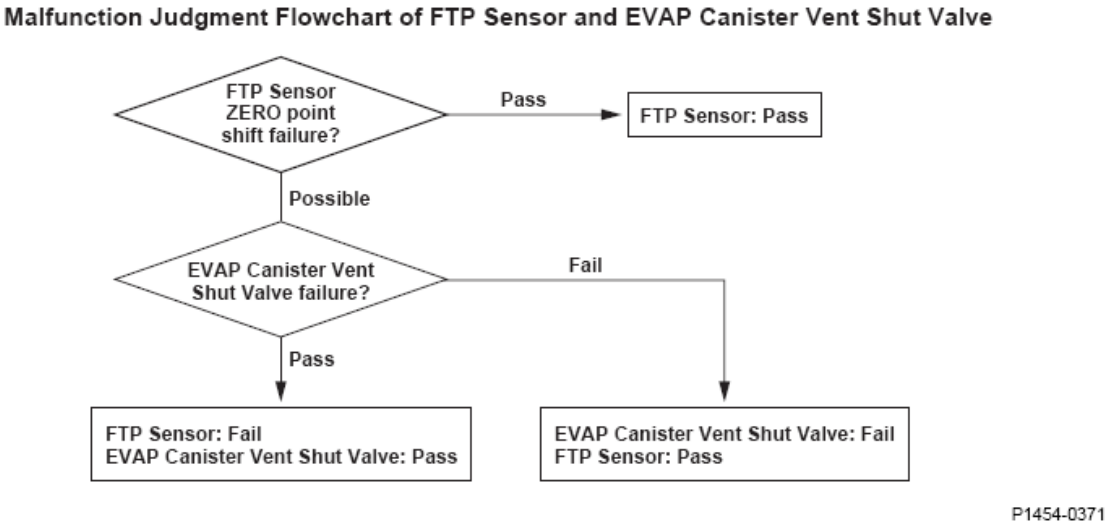


Fig. 257: FTP Sensor And EVAP Canister Vent Shut Valve Malfunction Judgment Flowchart

GENERAL DESCRIPTION

The fuel tank pressure is about 0 kPa (0 inHg, 0 mmHg) when starting a cold engine. When the fuel tank pressure (FTP) sensor output value is out of a specified range and the engine control module (ECM)/powertrain control module (PCM) judges that there's no other cause [no evaporative emission (EVAP) canister vent shut valve failure, etc.] for the FTP sensor zero point shift, the ECM/PCM detects an FTP sensor malfunction. However, if the FTP sensor output when starting the engine, is a prescribed negative value or less (excessive negative pressure is detected), the malfunction judgment should be done as follows because it is difficult to distinguish the FTP sensor zero point shift (P1454) from the EVAP canister vent shut valve failure (P2422).

1. If neither Pending DTCs (P1454 nor P2422) are stored, both Pending DTCs are stored when excessive vacuum is detected at engine start.
2. If both Pending DTCs (P1454 and P2422) are stored and excessive vacuum is detected, both Confirmed DTCs are stored.
3. If either Pending DTC (P1454 or P2422) is stored and excessive vacuum is detected, the ECM/PCM stores the Confirmed DTC which the Pending DTC is stored.

MONITOR EXECUTION, SEQUENCE, DURATION, DTC TYPE, OBD STATUS

Execution	Once per driving cycle
Sequence	P0452, P0453 are judged as OK
Duration	10 seconds or more
DTC Type	Two drive cycles, MIL on
OBD Status	PASSED/FAILED/NOT COMPLETED (STILL TESTING)

ENABLE CONDITIONS

Condition	Minimum	Maximum

Elapsed time after starting the engine	10 seconds	-
No active DTCs set (prevents monitor from running)	P0101, P0102, P0103, P0107, P0108, P0117, P0118, P0134, P0135, P0154, P0155, P0300, P0301, P0302, P0303, P0304, P0305, P0306, P0335, P0339, P0351, P0352, P0353, P0354, P0355, P0356, P0443, P0451, P0452, P0453, P0496, P0497, P0498, P0499, P1128, P1129, P1172, P1174, P145C, P2195, P2197, P2227, P2228, P2229, P2237, P2238, P2240, P2241, P2243, P2245, P2247, P2249, P2251, P2252, P2254, P2255, P2279, P2422	
Other	The EVAP canister vent shut valve is open	
	The EVAP canister purge valve is closed (the system is not purging)	

MALFUNCTION THRESHOLD

- The FTP sensor output fluctuates by 1.4 kPa (0.4 inHg, 10 mmHg) or more, or -0.7 kPa (-0.2 inHg, -5 mmHg) or less, for at least 10 seconds.
- The FTP sensor output value is -1.4 kPa (-0.4 inHg, -10 mmHg) or less for at least 10 seconds.

DRIVING PATTERN

1. Start the engine, and let it idle until the radiator fan comes on.
2. When the diagnosis does not finish at idle, drive at 30 - 75 mph (48 - 120 km/h) at EVAP canister purge valve duty 20 % or more.
    - Drive the vehicle in the manner only if the traffic regulations and ambient conditions allow.

DIAGNOSIS DETAILS

Conditions for setting the DTC

When a malfunction is detected during the first drive cycle, a Pending DTC is stored in the ECM/PCM memory. If the malfunction returns in the next (second) drive cycle, the MIL comes on and a Confirmed DTC and the freeze data are stored.

Conditions for clearing the DTC

The MIL is cleared if the malfunction does not return in three consecutive trips in which the diagnostic runs. The MIL, the Pending DTC, the Confirmed DTC, and the freeze data can be cleared with the scan tool Clear command or by disconnecting the battery.

DTC P1458: FUEL TANK PRESSURE (FTP) SENSOR CIRCUIT RANGE/PERFORMANCE PROBLEM

GENERAL DESCRIPTION

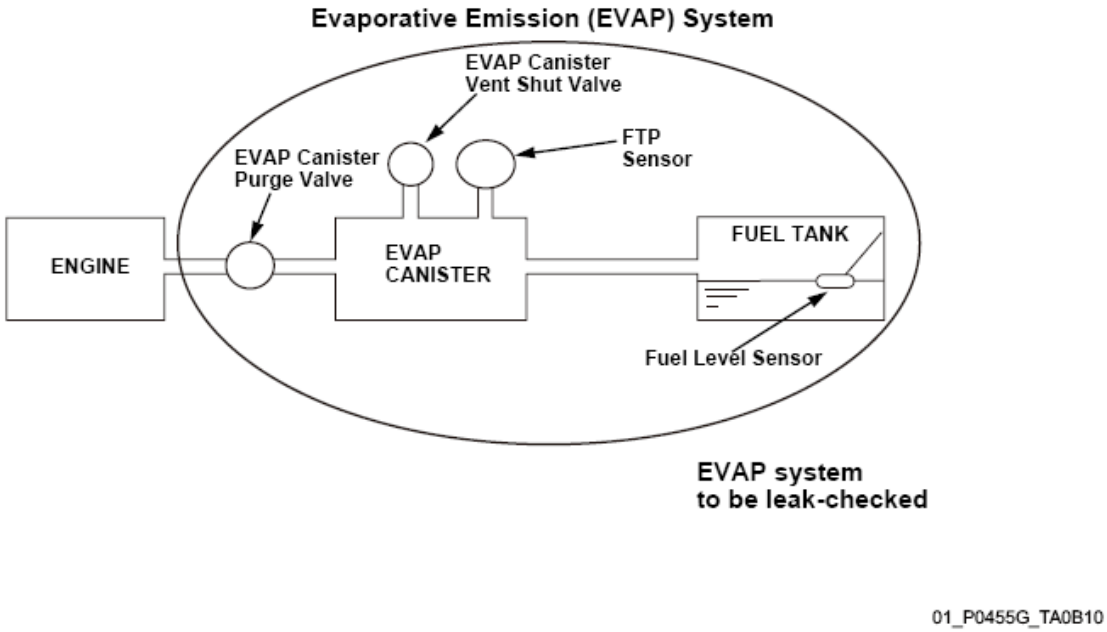


Fig. 258: Evaporative Emission - System Diagram

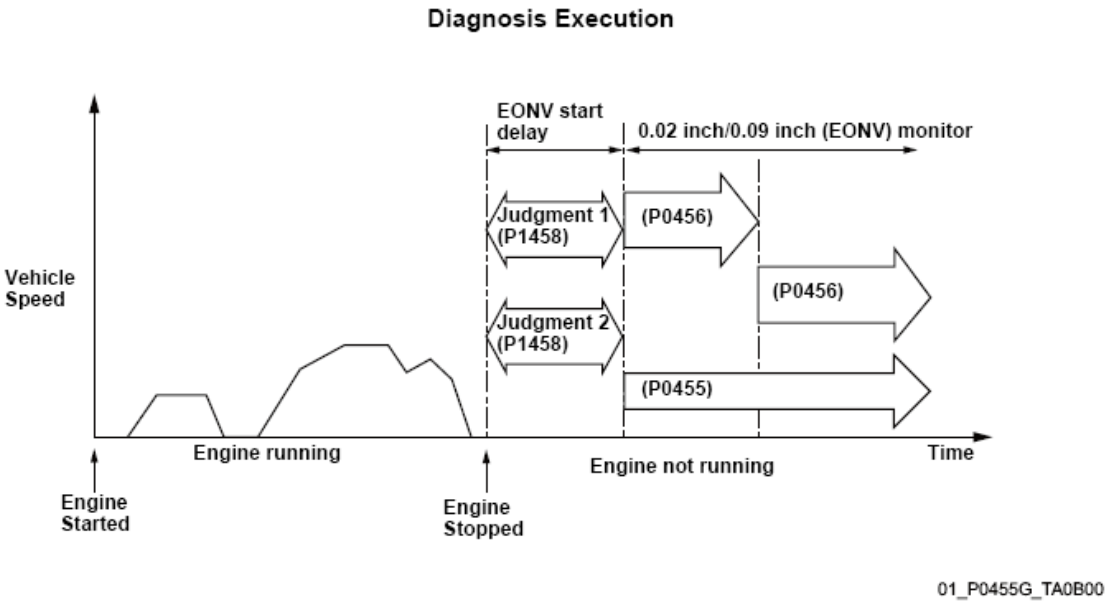


Fig. 259: Evaporative Emission System Diagnosis Execution Graph

The evaporative emission (EVAP) leak detection system uses an engine off natural vacuum (EONV) method. The EONV method detects leakage from the change in fuel tank pressure via the fuel tank pressure (FTP) sensor with the engine off.

Here is an overview of the malfunction detection for the EONV method:

Judgment 1: Detection of atmospheric pressure failure

Judgment 2: Flickering of the FTP sensor

< Judgments 1 and 2 happen at the same time. >

Judgment 1:

After the engine has stopped, the engine control module (ECM)/powertrain control module (PCM) monitors the variation of the FTP sensor output to detect atmospheric pressure, after keeping the canister vent opened for a specified duration to stabilize the pressure inside the fuel tank.

- If the pressure inside the fuel tank after a specified duration has not reached a specified value from the sensor zero point, a canister vent blockage is detected.

Judgment 2:

After the engine has stopped, the ECM/PCM monitors the variation of the FTP sensor output to detect FTP sensor electrical noise failure, after keeping the canister vent opened for a specified time to stabilize the pressure inside the fuel tank.

- If the difference of pressure inside the fuel tank and an average value after a specified duration has exceeded a specified value for a specified duration, an FTP sensor electrical noise failure is detected.

MONITOR EXECUTION, SEQUENCE, DURATION, DTC TYPE, OBD STATUS

Execution	Once per driving cycle
Sequence	None
Duration	7 minutes or more
DTC Type	Two drive cycles, MIL on
OBD Status	PASSED/FAILED/NOT COMPLETED (STILL TESTING)

ENABLE CONDITIONS

Condition	Minimum	Maximum
Elapsed time before starting the engine	6 hours	-
Initial condition A(1)	-	36 °F (20 °C)
Initial condition B(2)	-	18 °F (10 °C)
Initial engine coolant temperature	40 °F (5 °C)	95 °F (35 °C)
Initial intake air temperature	40 °F (5 °C)	95 °F (35 °C)
Barometric pressure	76 kPa (22.5 inHg, 569 mmHg)	-
Battery voltage	10.5 V	-
No active DTCs set (prevents monitor from	P0111, P0112, P0113, P0116, P0117, P0118, P0125, P0443, P0451, P0452, P0453, P0496, P0497, P0498, P0499, P0685, P0720, P0722, P1116, P1454,	

running)	P145C, P2227, P2228, P2229, P2422, P2610
Other	Avoid abrupt acceleration, deceleration, and turns
	Test-drive on a flat road to avoid misdetection
	No refueling is required
	Vehicle stopped
(1) The initial intake air temperature minus the current intake air temperature (2) The initial engine coolant temperature minus the initial intake air temperature	

MALFUNCTION THRESHOLD

- The misalignment of zero point pressure inside the fuel tank is 0.7 kPa (0.2 inHg, 5 mmHg) or more.
- The output from the FTP sensor is flickering 3.1 seconds or more.

CONFIRMATION PROCEDURE

With the Driving Pattern

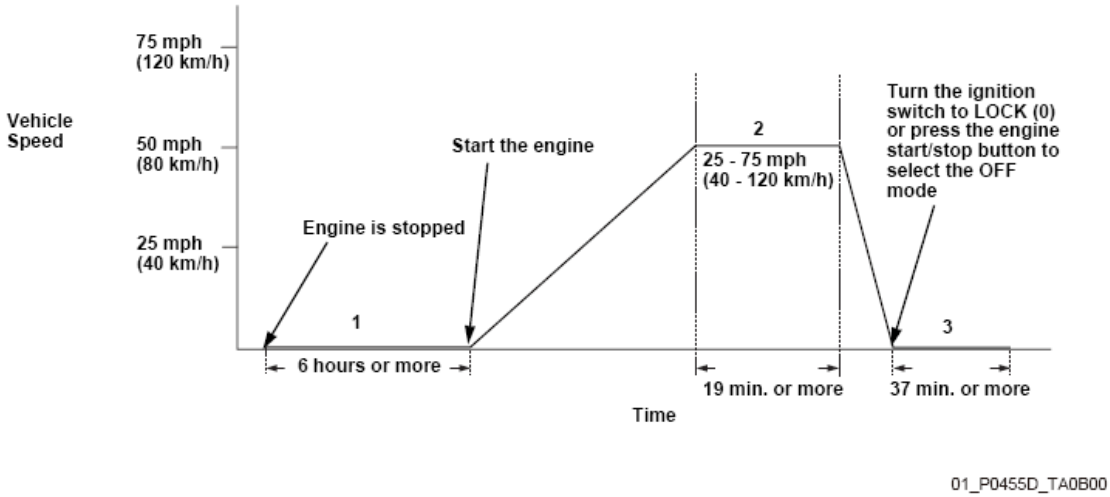


Fig. 260: Vehicle Speed Driving Pattern

1. After the vehicle has been left for an appropriate amount of time as specified, with the engine coolant temperature and intake air temperature within the specified range, start the engine.
2. Drive the vehicle immediately at a speed between 25 - 75 mph (40 - 120 km/h) for at least 19 minutes.
3. After stopping the vehicle, turn the ignition switch to LOCK (0) or press the engine start/stop button to select the OFF mode, and leave the vehicle in this condition for at least 37 minutes (EONV executes).
    - Drive the vehicle in this manner only if the traffic regulations and ambient conditions allow.

DIAGNOSIS DETAILS

Conditions for setting the DTC

When a malfunction is detected during the first drive cycle with the engine coolant temperature and intake air temperature at engine start-up within the specified temperature range, a Pending DTC is stored in the ECM/PCM memory. If the malfunction returns in the next (second) drive cycle with the engine coolant temperature and intake air temperature at engine start-up within the specified temperature range, the MIL comes on and a Confirmed DTC and the freeze data are stored.

Conditions for clearing the DTC

The MIL is cleared if the malfunction does not return in three consecutive trips in which the diagnostic runs. The MIL, the Pending DTC, the Confirmed DTC, and the freeze data can be cleared with the scan tool Clear command or by disconnecting the battery.

DTC P145C: EVAPORATIVE EMISSION (EVAP) SYSTEM PURGE FLOW MALFUNCTION

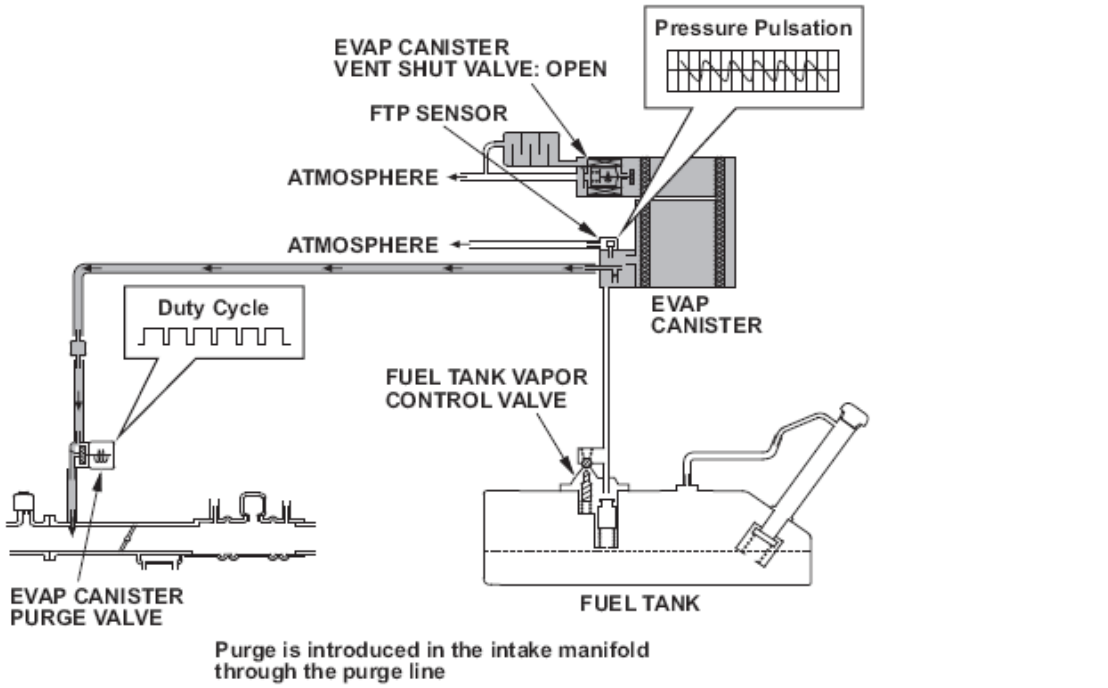


Fig. 261: Evaporative Emission - System Diagram

GENERAL DESCRIPTION

The fuel vapor in the fuel tank is temporarily stored in the evaporative emission (EVAP) canister and drawn into the engine through the EVAP canister purge valve. The engine control module (ECM)/powertrain control module (PCM) controls the amount of vapor introduced into the engine by varying the duty cycle of the EVAP canister purge valve according to the condition of the engine.

< STEP 1 >

The EVAP canister purge valve opens normally (EVAP canister purge valve OPEN OK) and detects that the purge flow is normal when the pulse of the EVAP canister purge valve duty cycle is transmitted to the fuel tank pressure (FTP) sensor during purge flow (pulse method).

OK determination: Pulse exists (P145C OK)

- P0497 Purge flow OK
- P0496 EVAP canister purge valve stuck Open OK

NG determination: No pulse (P145C NG)

- Either purge flow P0497 abnormality or P0496 EVAP canister purge valve OPEN failure.
- In this case, classify the failed part according to < STEP 2 >.

< STEP 2 >

If there is no pulse, it is determined as either no purge flow or the EVAP canister purge valve is stuck OPEN:

When the FTP sensor fluctuates from negative pressure to atmospheric pressure after the ignition switch is turned to LOCK (0) or the engine start/stop button is pressed to select the OFF mode: P0496 EVAP canister purge valve stuck OPEN When there is no fluctuation of the FTP sensor: P0497 purge flow NG

MONITOR EXECUTION, SEQUENCE, DURATION, DTC TYPE, OBD STATUS

Execution	Once per driving cycle
Sequence	None
Duration	19 seconds or more
DTC Type	Two drive cycles, MIL on
OBD Status	PASSED/FAILED/NOT COMPLETED (STILL TESTING)

ENABLE CONDITIONS

Condition	Minimum	Maximum
Engine coolant temperature before EVAP purge control starts	140 °F (60 °C)	-
MAP value	-	54 kPa (16.1 inHg, 410 mmHg)
Battery voltage	10.5 V	-
EVAP canister purge valve duty	30 %	80 %
Fuel trim	0.73	1.47
Fuel feedback	Closed loop at stoichiometric	
No active DTCs	P0101, P0102, P0103, P0107, P0108, P0117, P0118, P0134, P0135, P0154, P0155, P0300, P0301, P0302, P0303, P0304, P0305, P0306, P0335, P0339, P0351, P0352,	

set (prevents monitor from running)	P0353, P0354, P0355, P0356, P0443, P0451, P0452, P0453, P0496, P0498, P0499, P1128, P1129, P1172, P1174, P1454, P2195, P2197, P2227, P2228, P2229, P2237, P2238, P2240, P2241, P2243, P2245, P2247, P2249, P2251, P2252, P2254, P2255, P2279, P2422

MALFUNCTION THRESHOLD

The pulses detected by the FTP sensor are 30 % or less for at least 19 seconds.

DRIVING PATTERN

1. Start the engine. Hold the engine speed at 3,000 rpm without load (A/T in P or N, M/T in neutral) until the radiator fan comes on.
2. Let the engine idle for at least 64 seconds.
3. Turn the ignition switch to LOCK (0) or press the engine start/stop button to select the OFF mode for at least 10 seconds.

DIAGNOSIS DETAILS

Conditions for setting the DTC

When a malfunction is detected during the first drive cycle, a Pending DTC is stored in the ECM/PCM memory. If the malfunction returns in the next (second) drive cycle, the MIL comes on and a Confirmed DTC and the freeze data are stored.

Conditions for clearing the DTC

The MIL is cleared if the malfunction does not return in three consecutive trips in which the diagnostic runs. The MIL, the Pending DTC, the Confirmed DTC, and the freeze data can be cleared with the scan tool Clear command or by disconnecting the battery.

DTC P1549: CHARGING SYSTEM HIGH VOLTAGE

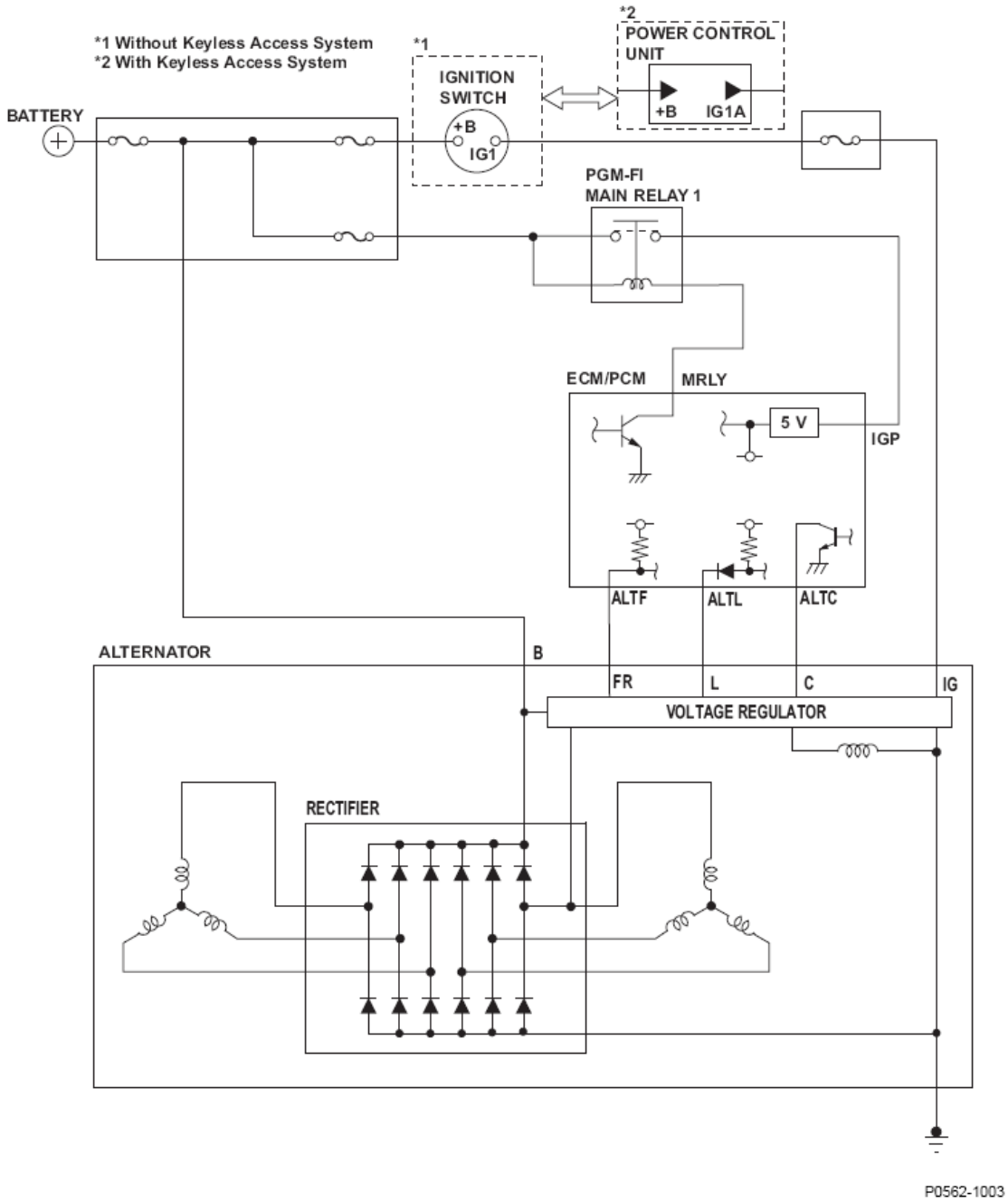


Fig. 262: Charging System - Circuit Diagram

GENERAL DESCRIPTION

The alternator is driven by the engine, and it generates electricity to supply power to the electrical system and to charge the battery. The alternator voltage target values of 14.5 V and 12.5 V are achieved by switching the alternator control mode (controlled by the engine control module (ECM)/powertrain control module (PCM)). The alternator output signal is sent to the ECM/PCM, and it varies according to the battery's state of charge, the electrical load, and the engine speed. When the IGP terminal voltage is a set value for a set time, the ECM/PCM detects a malfunction and stores a DTC.

MONITOR EXECUTION, SEQUENCE, DURATION, DTC TYPE, OBD STATUS

Execution	Continuous
Sequence	None
Duration	60 seconds or more
DTC Type	One drive cycle, MIL off
OBD Status	PASSED/FAILED/NOT COMPLETED (STILL TESTING)

ENABLE CONDITIONS

Condition	Minimum	Maximum
Engine speed	500 rpm	-

MALFUNCTION THRESHOLD

The IGP terminal voltage is 16.0 V or more for at least 60 seconds.

DIAGNOSIS DETAILS

Conditions for setting the DTC

When a malfunction is detected, a Pending DTC, a Confirmed DTC, and the freeze data are stored in the ECM/PCM memory. The MIL does not come on.

Conditions for clearing the DTC

The Pending DTC, the Confirmed DTC, and the freeze data can be cleared with the scan tool Clear command or by disconnecting the battery.

DTC P1658: ELECTRONIC THROTTLE CONTROL SYSTEM (ETCS) CONTROL RELAY ON MALFUNCTION

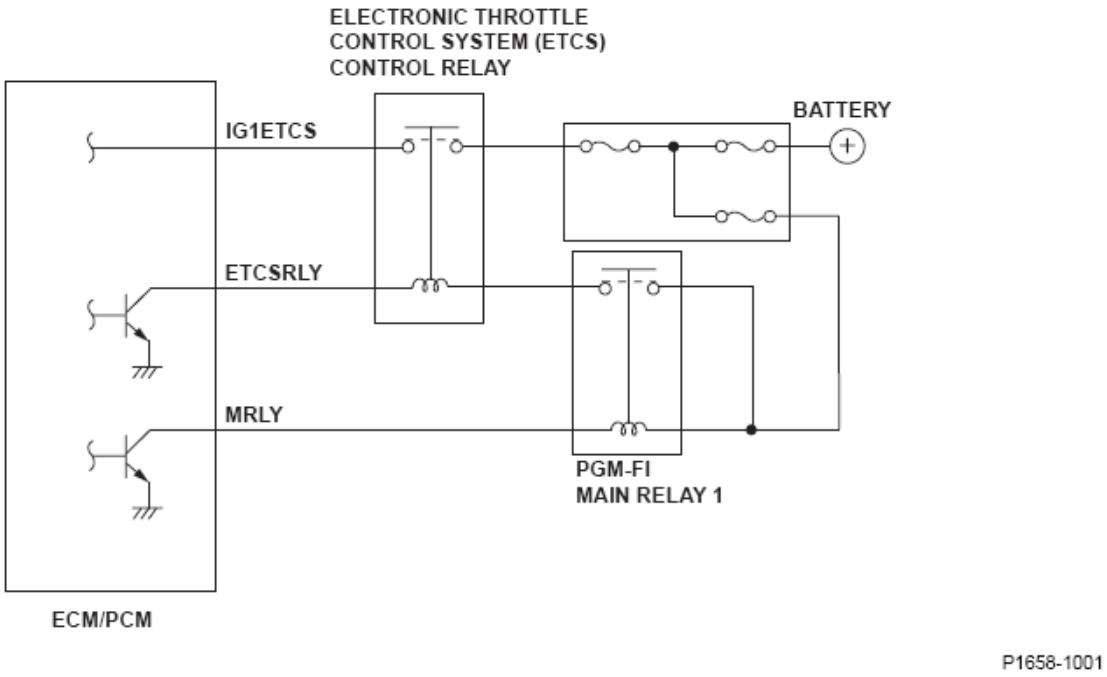


Fig. 263: Electronic Throttle Control System Control Relay - Circuit Diagram

GENERAL DESCRIPTION

The electronic throttle control system controls the throttle valve opening. The system includes the throttle actuator, the throttle valve, throttle position (TP) sensors A and B, the electronic throttle control system (ETCS) control relay, the accelerator pedal position (APP) sensor, and the engine control module (ECM)/powertrain control module (PCM). When the accelerator pedal is pressed, the APP sensor detects the accelerator pedal opening value. The accelerator pedal opening value is converted to a signal in the APP sensor and transmitted to the ECM/PCM to compute the target position. The ECM/PCM determines the throttle valve target position according to the signal received and operates the throttle actuator to move the throttle valve to the target position. The actual throttle valve position is determined by TP sensors A and B (installed in the throttle body). When the voltage is applied from the ETCS control relay to the IG1ETCS terminal for a set time after the ETCS control relay is turned off, the ECM/PCM detects a malfunction in the ETCS control relay power switch and stores a DTC.

MONITOR EXECUTION, SEQUENCE, DURATION, DTC TYPE, OBD STATUS

Execution	Once per driving cycle
Sequence	None
Duration	2.0 seconds or more
DTC Type	One drive cycle, MIL on
OBD Status	PASSED/FAILED/NOT COMPLETED (STILL TESTING)

ENABLE CONDITIONS

Condition	

Ignition switch(1)	LOCK (0)
Engine start/stop button(2)	OFF mode
No active DTCs set (prevents monitor from running)	P0122, P0123, P0222, P0223, P1659, P2101, P2118, P2122, P2123, P2127, P2128, P2135, P2138, P2176
(1) Without keyless access system (2) With keyless access system	

MALFUNCTION THRESHOLD

The communication signal is input from the ECM/PCM for at least 2.0 seconds after the ETCS control relay is turned off.

DIAGNOSIS DETAILS

Conditions for setting the DTC

When a malfunction is detected, the MIL comes on and a Pending DTC, a Confirmed DTC, and the freeze data are stored in the ECM/PCM memory.

Conditions for clearing the DTC

The MIL is cleared if the malfunction does not return in three consecutive trips in which the diagnostic runs. The MIL, the Pending DTC, the Confirmed DTC, and the freeze data can be cleared with the scan tool Clear command or by disconnecting the battery.

DTC P1659: ELECTRONIC THROTTLE CONTROL SYSTEM (ETCS) CONTROL RELAY OFF MALFUNCTION

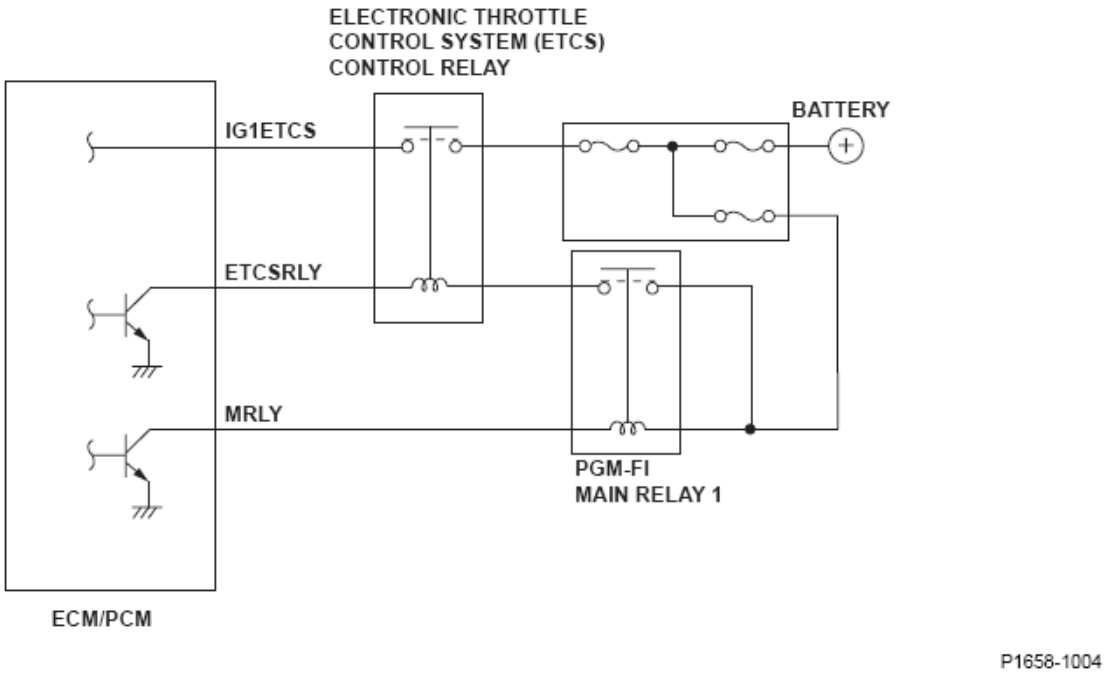


Fig. 264: Electronic Throttle Control System Control Relay - Circuit Diagram

GENERAL DESCRIPTION

The electronic throttle control system controls the throttle valve opening. The system includes the throttle actuator, the throttle valve, throttle position (TP) sensors A and B, the electronic throttle control system (ETCS) control relay, the accelerator pedal position (APP) sensor, and the engine control module (ECM)/powertrain control module (PCM). When the accelerator pedal is pressed, the APP sensor detects the accelerator pedal opening value. The accelerator pedal opening value is converted to a signal in the APP sensor and transmitted to the ECM/PCM to compute the target position. The ECM/PCM determines the throttle valve target position according to the signal received and operates the throttle actuator to move the throttle valve to the target position. The actual throttle valve position is determined by TP sensors A and B (installed in the throttle body). When the voltage from the ETCS control relay is not input for a set time after the ETCS control relay is turned on when the ignition switch is turned to ON (II), or when voltage is not applied for a set time when the throttle actuator is operating, the ECM/PCM detects a malfunction in the ETCS control relay power switch and stores a DTC.

MONITOR EXECUTION, SEQUENCE, DURATION, DTC TYPE, OBD STATUS

Execution	Continuous
Sequence	None
Duration	200 milliseconds or more
DTC Type	One drive cycle, MIL on
OBD Status	PASSED/FAILED/NOT COMPLETED (STILL TESTING)

ENABLE CONDITIONS

Condition	Minimum	Maximum
Battery voltage	10 V	-
Ignition switch(1)	ON (II)	
Engine start/stop button(2)	ON mode	
No active DTCs set (prevents monitor from running)	P0122, P0123, P0222, P0223, P2101, P2118, P2122, P2123, P2127, P2128, P2135, P2138, P2176	
(1) Without keyless access system (2) With keyless access system		

MALFUNCTION THRESHOLD

The voltage is not applied from the ETCS control relay for at least 200 milliseconds.

DIAGNOSIS DETAILS

Conditions for setting the DTC

When a malfunction is detected, the MIL comes on and a Pending DTC, a Confirmed DTC, and the freeze data are stored in the ECM/PCM memory.

Conditions for clearing the DTC

The MIL is cleared if the malfunction does not return in three consecutive trips in which the diagnostic runs. The MIL, the Pending DTC, the Confirmed DTC, and the freeze data can be cleared with the scan tool Clear command or by disconnecting the battery.

DTC P1683: THROTTLE VALVE DEFAULT POSITION SPRING PERFORMANCE PROBLEM

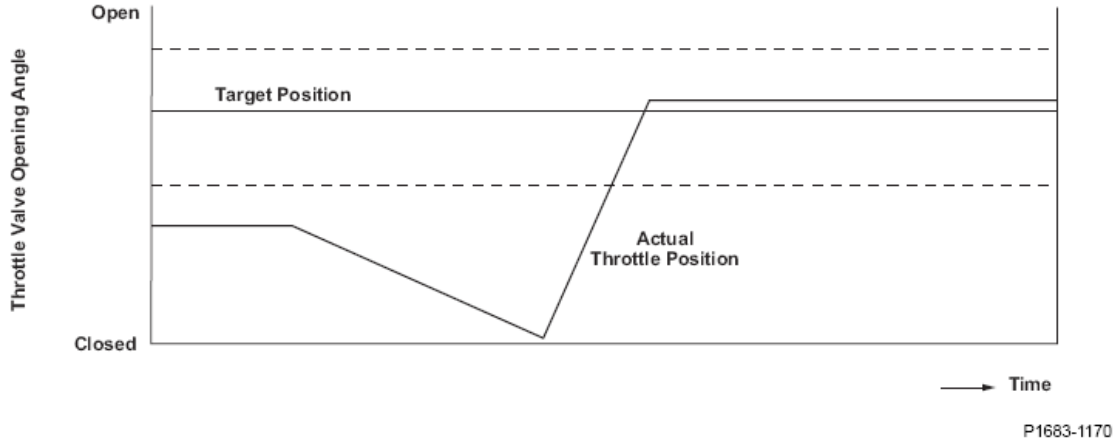


Fig. 265: Throttle Valve Default Position Spring Characteristics Curve

GENERAL DESCRIPTION

The electronic throttle control system controls the throttle valve opening. The system includes the throttle actuator, the throttle valve, throttle position (TP) sensors A and B, the electronic throttle control system (ETCS) control relay, the accelerator pedal position (APP) sensor, and the engine control module (ECM)/powertrain control module (PCM). The throttle valve default position spring is attached to the throttle valve gear. It opens the throttle valve to improve starting performance in cold conditions, or to retain minimum running performance in case of an electronic throttle control system failure. To confirm that the throttle valve is operating normally, and if the detecting condition meets, the throttle valve moves to a fully closed position and opens to the target position by the throttle valve default position spring. If the throttle valve does not move to the target position range, the ECM/PCM detects a throttle valve default position spring malfunction and stores a DTC.

MONITOR EXECUTION, SEQUENCE, DURATION, DTC TYPE, OBD STATUS

Execution	Once per driving cycle
Sequence	None
Duration	2.5 seconds or more
DTC Type	One drive cycle, MIL on
OBD Status	PASSED/FAILED/NOT COMPLETED (STILL TESTING)

ENABLE CONDITIONS

Condition	Minimum	Maximum
Engine coolant temperature	158 °F (70 °C)	-
Battery voltage	6.0 V	-
Ignition switch(1)	LOCK (0)	
Engine start/stop button(2)	OFF mode	
No active DTCs set (prevents monitor from running)	P0117, P0118, P0122, P0123, P0222, P0223, P2101, P2118, P2122, P2123, P2127, P2128, P2135, P2138, P2176	

(1) Without keyless access system

(2) With keyless access system

MALFUNCTION THRESHOLD

The throttle valve position is more than +5 ° from the fully closed position, or less than +3 ° from the fully closed position, for at least 2.5 seconds.

DRIVING PATTERN

1. Start the engine. Hold the engine speed at 3,000 rpm without load (A/T in P or N, M/T in neutral) until the radiator fan comes on.
2. Turn the ignition switch to LOCK (0) or press the engine start/stop button to select the OFF mode, and wait 10 seconds.
3. Turn the ignition switch to ON (II) or press the engine start/stop button to select the ON mode.

DIAGNOSIS DETAILS

Conditions for setting the DTC

When a malfunction is detected, the MIL comes on and a Pending DTC, a Confirmed DTC, and the freeze data are stored in the ECM/PCM memory.

Conditions for clearing the DTC

The MIL is cleared if the malfunction does not return in three consecutive trips in which the diagnostic runs. The MIL, the Pending DTC, the Confirmed DTC, and the freeze data can be cleared with the scan tool Clear command or by disconnecting the battery.

DTC P1684: THROTTLE VALVE RETURN SPRING PERFORMANCE PROBLEM

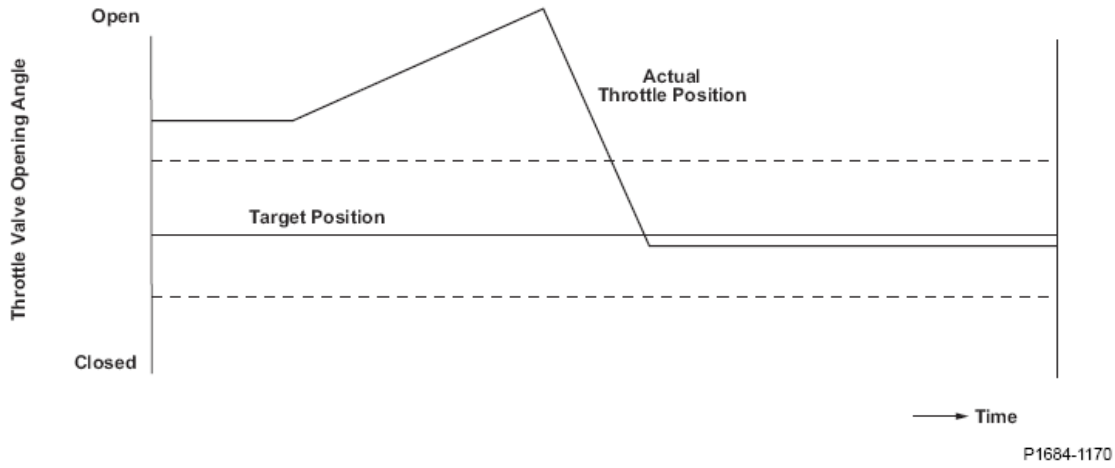


Fig. 266: Throttle Valve Return Spring Characteristics Curve

GENERAL DESCRIPTION

The electronic throttle control system controls the throttle valve opening. The system includes the throttle actuator, the throttle valve, throttle position (TP) sensors A and B, the electronic throttle control system (ETCS) control relay, the accelerator pedal position (APP) sensor, and the engine control module (ECM)/powertrain control module (PCM). The throttle valve return spring is attached to the throttle valve gear to return the throttle valve to the default position. To confirm that the throttle valve is operating normally, and if the detecting condition meets, the throttle valve moves to a specified position and closes to the target position by the throttle valve return spring. If the throttle valve does not move to the target position range, the ECM/PCM detects a throttle valve return spring and stores a DTC.

MONITOR EXECUTION, SEQUENCE, DURATION, DTC TYPE, OBD STATUS

Execution	Once per driving cycle
Sequence	None

Duration	2.5 seconds or more
DTC Type	One drive cycle, MIL on
OBD Status	PASSED/FAILED/NOT COMPLETED (STILL TESTING)

ENABLE CONDITIONS

Condition	Minimum	Maximum
Engine coolant temperature	158 °F (70 °C)	-
Battery voltage	6.0 V	-
Ignition switch(1)	LOCK (0)	
Engine start/stop button(2)	OFF mode	
No active DTCs set (prevents monitor from running)	P0117, P0118, P0122, P0123, P0222, P0223, P2101, P2118, P2122, P2123, P2127, P2128, P2135, P2138, P2176	
(1) Without keyless access system (2) With keyless access system		

MALFUNCTION THRESHOLD

The throttle valve opening angle is 17 ° or more, or 11 ° or less, for at least 2.5 seconds.

DRIVING PATTERN

1. Start the engine. Hold the engine speed at 3,000 rpm without load (A/T in P or N, M/T in neutral) until the radiator fan comes on.
2. Turn the ignition switch to LOCK (0) or press the engine start/stop button to select the OFF mode, and wait 10 seconds.
3. Turn the ignition switch to ON (II) or press the engine start/stop button to select the ON mode.

DIAGNOSIS DETAILS

Conditions for setting the DTC

When a malfunction is detected, the MIL comes on and a Pending DTC, a Confirmed DTC, and the freeze data are stored in the ECM/PCM memory.

Conditions for clearing the DTC

The MIL is cleared if the malfunction does not return in three consecutive trips in which the diagnostic runs. The MIL, the Pending DTC, the Confirmed DTC, and the freeze data can be cleared with the scan tool Clear command or by disconnecting the battery.

DTC P16BB: ALTERNATOR B TERMINAL CIRCUIT LOW VOLTAGE

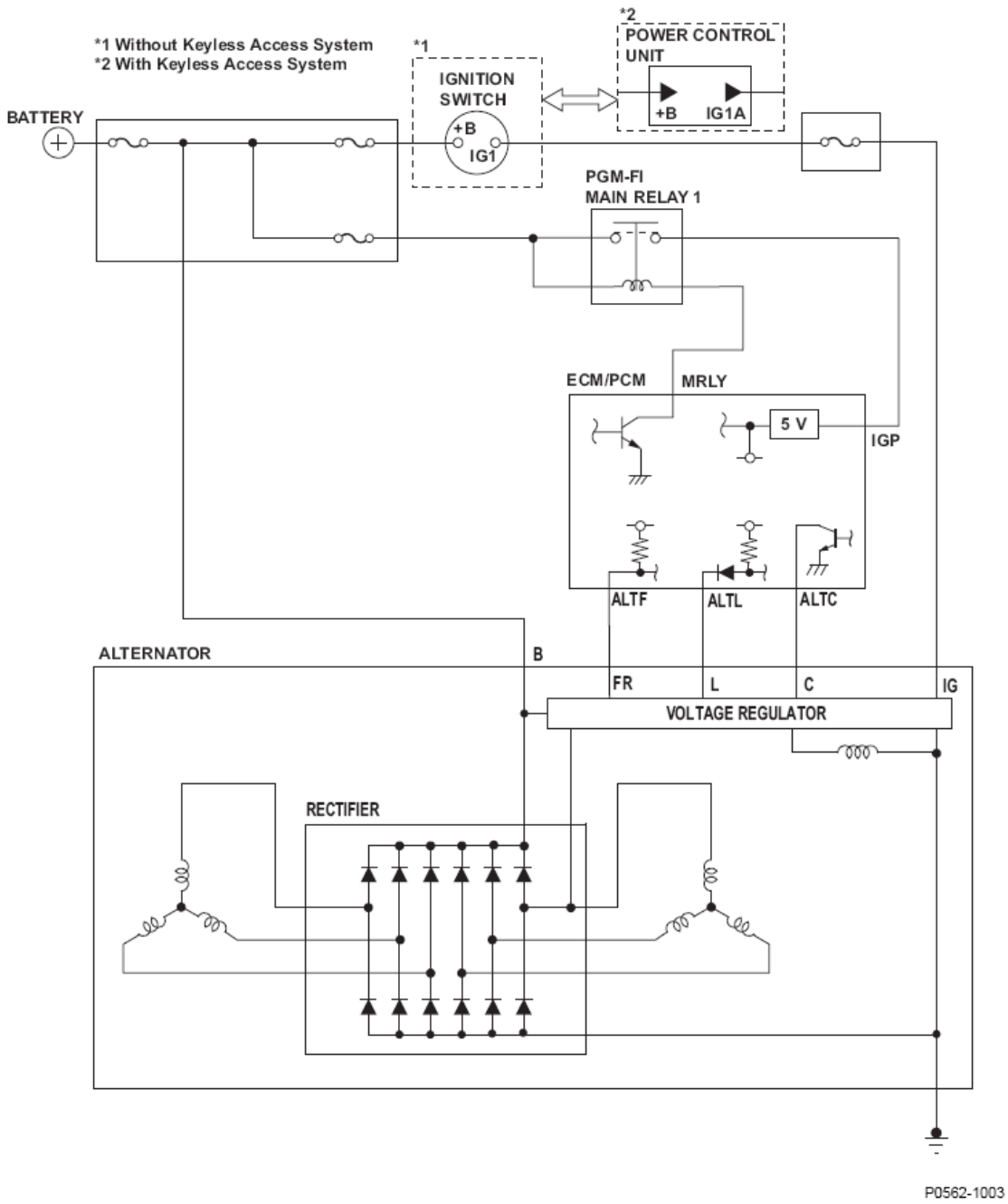


Fig. 267: Charging System - Circuit Diagram

GENERAL DESCRIPTION

The alternator is driven by the engine, and it generates electricity to supply power to the electrical system and to charge the battery. The alternator voltage target values of 14.5 V and 12.5 V are achieved by switching the alternator control mode (controlled by the engine control module (ECM)/powertrain control module (PCM)). The alternator output signal is sent to the ECM/PCM, and it varies according to the battery's state of charge, the electrical load, and the engine speed. When the engine speed is a specified value, the IGP terminal voltage is below a set value when the alternator is in the 14.5 V mode, and the alternator power generation amount is a set

range for a set time, the ECM/PCM detects a malfunction and stores a DTC.

MONITOR EXECUTION, SEQUENCE, DURATION, DTC TYPE, OBD STATUS

Execution	Continuous
Sequence	None
Duration	60 seconds or more
DTC Type	One drive cycle, MIL off
OBD Status	PASSED/FAILED/NOT COMPLETED (STILL TESTING)

ENABLE CONDITIONS

Condition	Minimum	Maximum
Engine speed	500 rpm	3,000 rpm
Alternator control mode	14.5 V mode	

MALFUNCTION THRESHOLD

The IGP terminal voltage is 12.0 V or less, and the alternator power generation amount is within 1.0 % to 50.0 %, for at least 60 seconds.

DRIVING PATTERN

1. Start the engine.
2. Maintain an engine speed of 500 rpm to 3,000 rpm.
3. Turn on the headlights (high beam) and rear window defogger.

DIAGNOSIS DETAILS

Conditions for setting the DTC

When a malfunction is detected, a Pending DTC, a Confirmed DTC, and the freeze data are stored in the ECM/PCM memory. The MIL does not come on.

Conditions for clearing the DTC

The Pending DTC, the Confirmed DTC, and the freeze data can be cleared with the scan tool Clear command or by disconnecting the battery.

DTC P16BC: ALTERNATOR FR TERMINAL CIRCUIT/IGP CIRCUIT LOW VOLTAGE

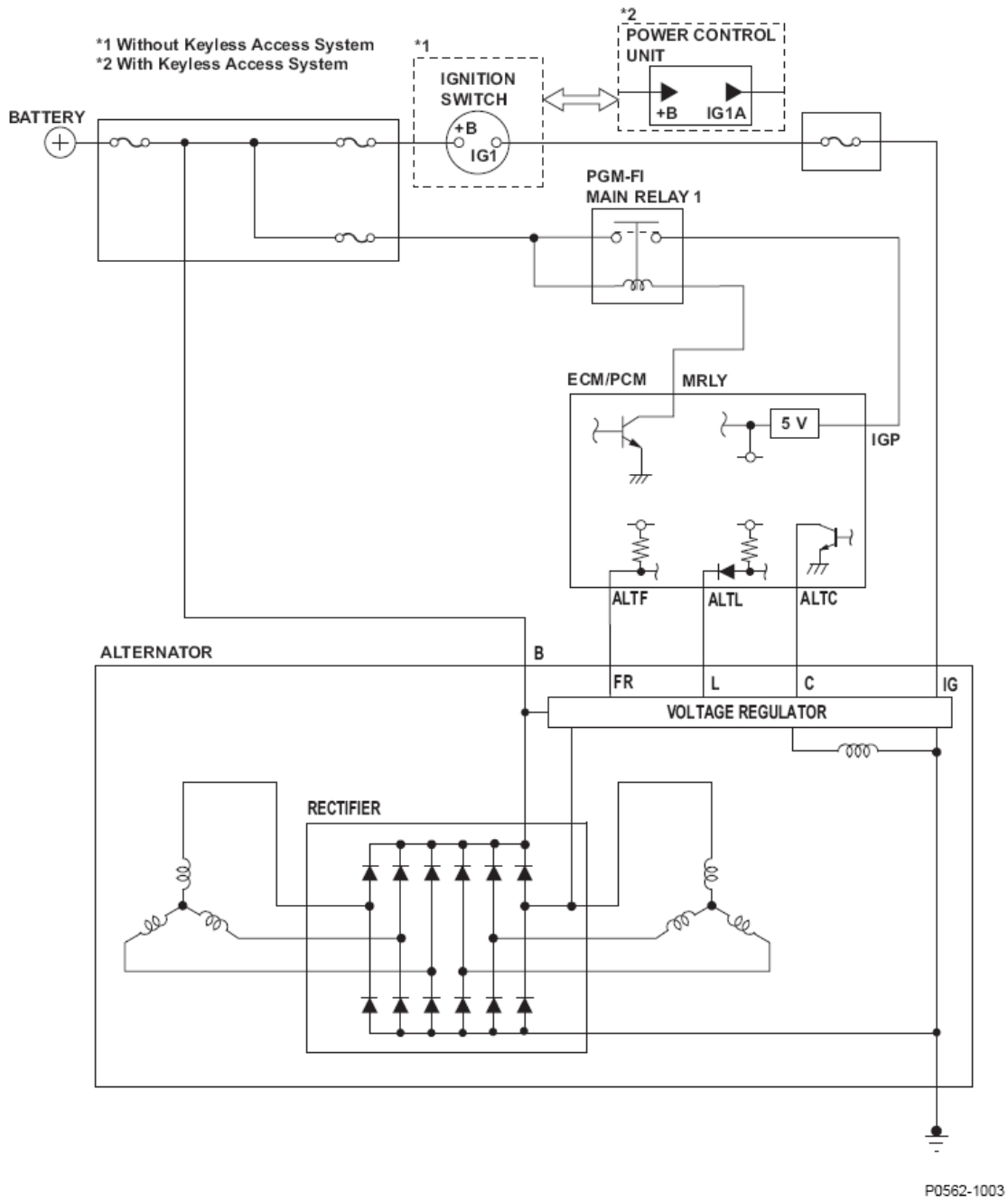


Fig. 268: Charging System - Circuit Diagram

GENERAL DESCRIPTION

The alternator is driven by the engine, and it generates electricity to supply power to the electrical system and to charge the battery. The alternator voltage target values of 14.5 V and 12.5 V are achieved by switching the alternator control mode (controlled by the engine control module (ECM)/powertrain control module (PCM)). The alternator output signal is sent to the ECM/PCM, and it varies according to the battery's state of charge, the electrical load, and the engine speed. When the engine speed is a specified value, the IGP terminal voltage is below a set value when the alternator is in the 14.5 V mode, and the alternator power generation amount is a set

range for a set time, the ECM/PCM detects a malfunction and stores a DTC.

MONITOR EXECUTION, SEQUENCE, DURATION, DTC TYPE, OBD STATUS

Execution	Continuous
Sequence	None
Duration	60 seconds or more
DTC Type	One drive cycle, MIL off
OBD Status	PASSED/FAILED/NOT COMPLETED (STILL TESTING)

ENABLE CONDITIONS

Condition	Minimum	Maximum
Engine speed	500 rpm	3,000 rpm
Alternator control mode	14.5 V mode	

MALFUNCTION THRESHOLD

The IGP terminal voltage is 12.0 V or less, and the alternator power generation amount is 0.5 % or less, for at least 60 seconds.

DRIVING PATTERN

1. Start the engine.
2. Maintain an engine speed of 500 rpm to 3,000 rpm.
3. Turn on the headlights (high beam) and rear window defogger.

DIAGNOSIS DETAILS

Conditions for setting the DTC

When a malfunction is detected, a Pending DTC, a Confirmed DTC, and the freeze data are stored in the ECM/PCM memory. The MIL does not come on.

Conditions for clearing the DTC

The Pending DTC, the Confirmed DTC, and the freeze data can be cleared with the scan tool Clear command or by disconnecting the battery.

DTC P16BD: STARTER CUT RELAY 2 MALFUNCTION

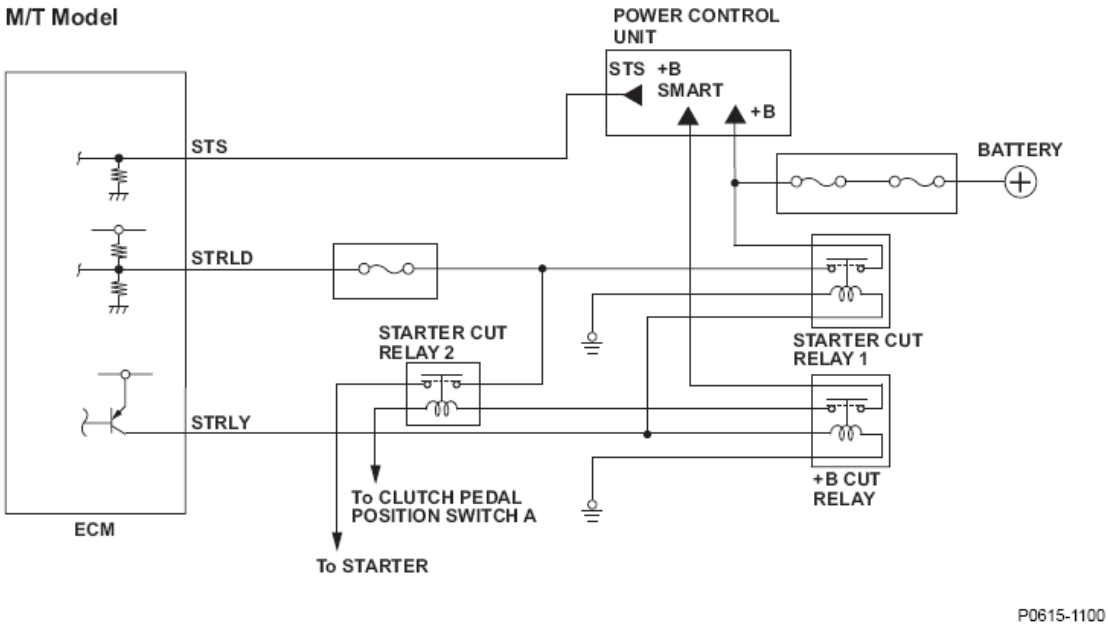


Fig. 269: Starter Cut Relay - Circuit Diagram (M/T Model)

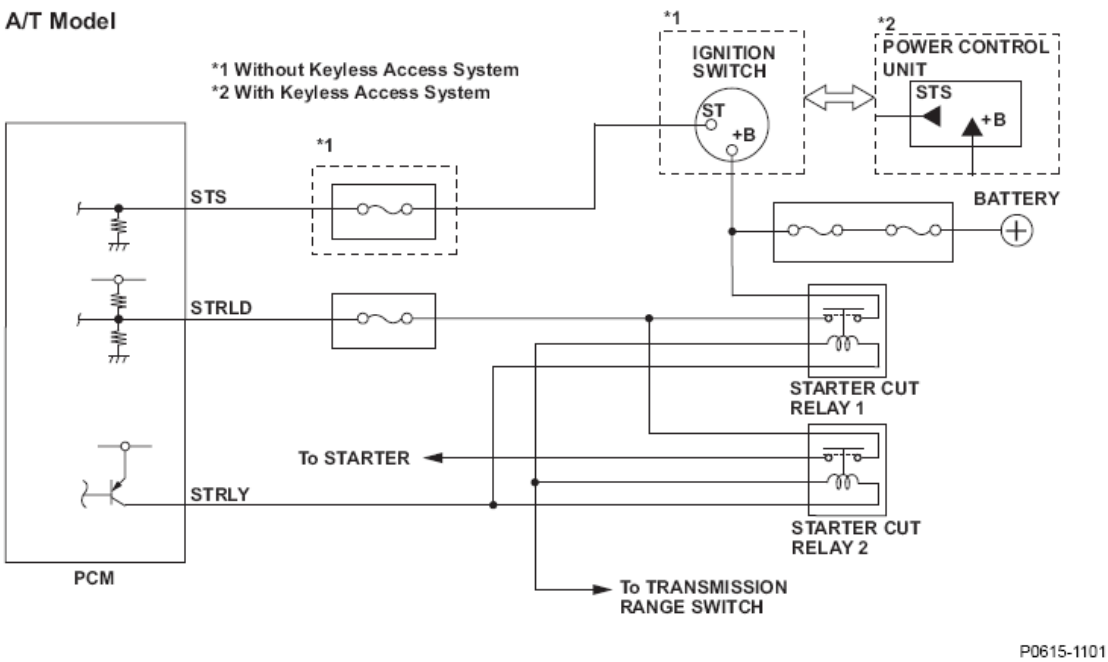


Fig. 270: Starter Cut Relay - Circuit Diagram (A/T Model)

GENERAL DESCRIPTION

To prevent the starter from continuing to run due to a switching failure of the starter cut relay, two starter cut relays are connected in series. When the input voltage of the STRLD terminal drops to a set voltage even when the starter cut relay output (STRLY) is turned off, the engine control module (ECM)/powertrain control module (PCM) detects a malfunction of starter cut relay 2 and stores a DTC.

MONITOR EXECUTION, SEQUENCE, DURATION, DTC TYPE, OBD STATUS

Execution	Continuous
Sequence	None
Duration	5 seconds or more
DTC Type	One drive cycle, MIL off
OBD Status	PASSED/FAILED/NOT COMPLETED (STILL TESTING)

ENABLE CONDITIONS

Condition	
State of the engine	Running
Starter	Off
No active DTCs set (prevents monitor from running)	P0615, P16BE, P16E1(1)
(1) M/T model	

MALFUNCTION THRESHOLD

The STRLD terminal voltage is 2.2 V or less for at least 5 seconds when the starter cut relay output is turned off.

DIAGNOSIS DETAILS

Conditions for setting the DTC

When a malfunction is detected, a Pending DTC, a Confirmed DTC, and the freeze data are stored in the ECM/PCM memory. The MIL does not come on.

Conditions for clearing the DTC

The Pending DTC, the Confirmed DTC, and the freeze data can be cleared with the scan tool Clear command or by disconnecting the battery.

DTC P16BE: STARTER CUT RELAY 1 MALFUNCTION

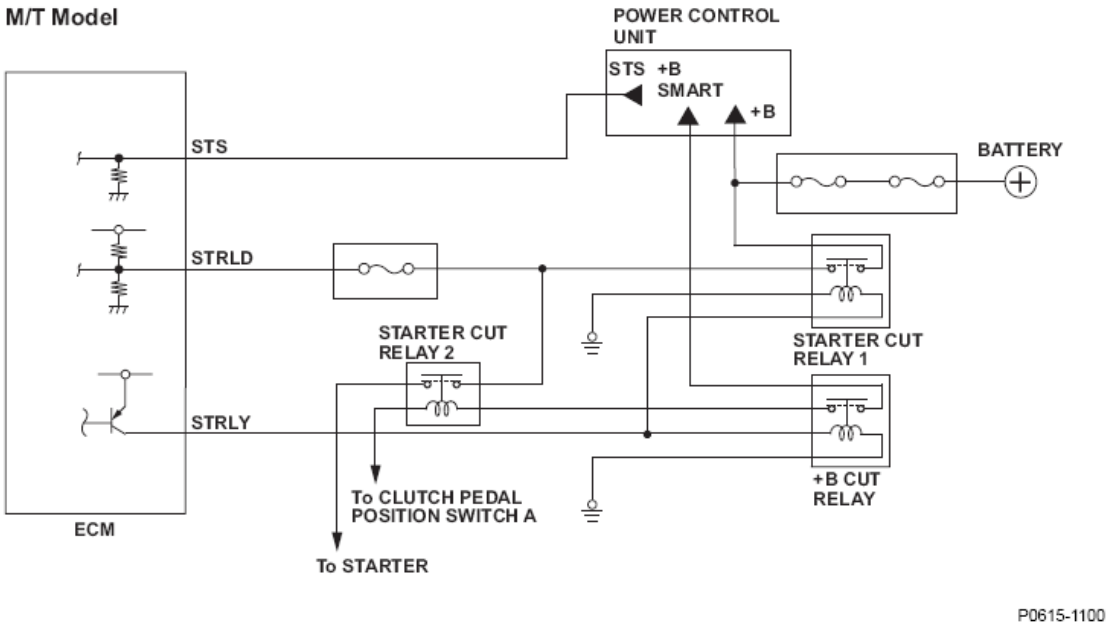


Fig. 271: Starter Cut Relay - Circuit Diagram (M/T Model)

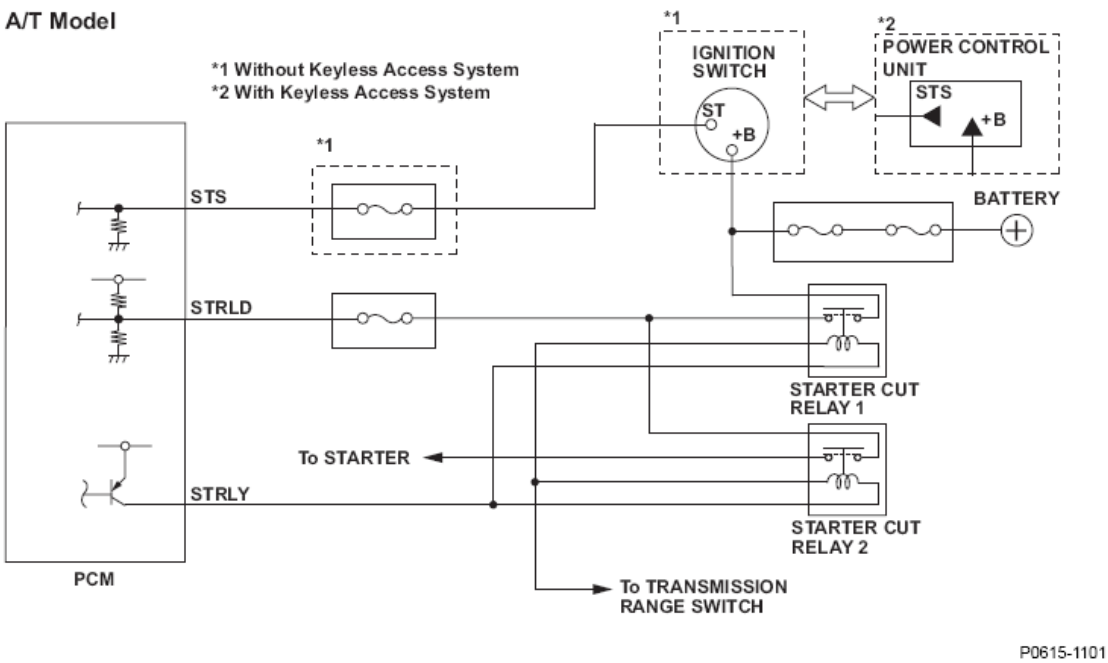


Fig. 272: Starter Cut Relay - Circuit Diagram (A/T Model)

GENERAL DESCRIPTION

To prevent the starter from continuing to run due to a switching failure of the starter cut relay, two starter cut relays are connected in series. When the input voltage of the STRLD terminal exceeds a set voltage even when the starter cut relay output (STRLY) is turned off, the engine control module (ECM)/powertrain control module (PCM) detects a starter cut relay 1 turn on switching failure and stores a DTC. When the starter is turned on, but the STRLD terminal input voltage does not exceed the upper or lower limits, a simultaneous failure of both

starter cut relays or the STRLD open circuit is detected.

MONITOR EXECUTION, SEQUENCE, DURATION, DTC TYPE, OBD STATUS

Execution	Continuous
Sequence	None
Duration	5 seconds or more(1), 0.8 second or more(2)
DTC Type	One drive cycle, MIL off
OBD Status	PASSED/FAILED/NOT COMPLETED (STILL TESTING)
(1) Starter cut relay turn on switching failure (2) STRLD open circuit failure	

ENABLE CONDITIONS

Condition	
State of the engine	Running
Starter	Off*, on**
No active DTCs set (prevents monitor from running)	P0615, P16BD, P16E1(1)
(1) M/T model	

MALFUNCTION THRESHOLD

One of these conditions occurs:

- The terminal voltage of the STRLD exceeds 3.0 V for at least 5 seconds when the starter cut relay output is turned off.
- The terminal voltage of the STRLD is between 2.4 V to 2.6 V for at least 0.8 second when the starter cut relay output is turned on.

DIAGNOSIS DETAILS

Conditions for setting the DTC

When a malfunction is detected, a Pending DTC, a Confirmed DTC, and the freeze data are stored in the ECM/PCM memory. The MIL does not come on.

Conditions for clearing the DTC

The Pending DTC, the Confirmed DTC, and the freeze data can be cleared with the scan tool Clear command or by disconnecting the battery.

DTC P16BF: STARTER CUT RELAY STRLY CIRCUIT MALFUNCTION

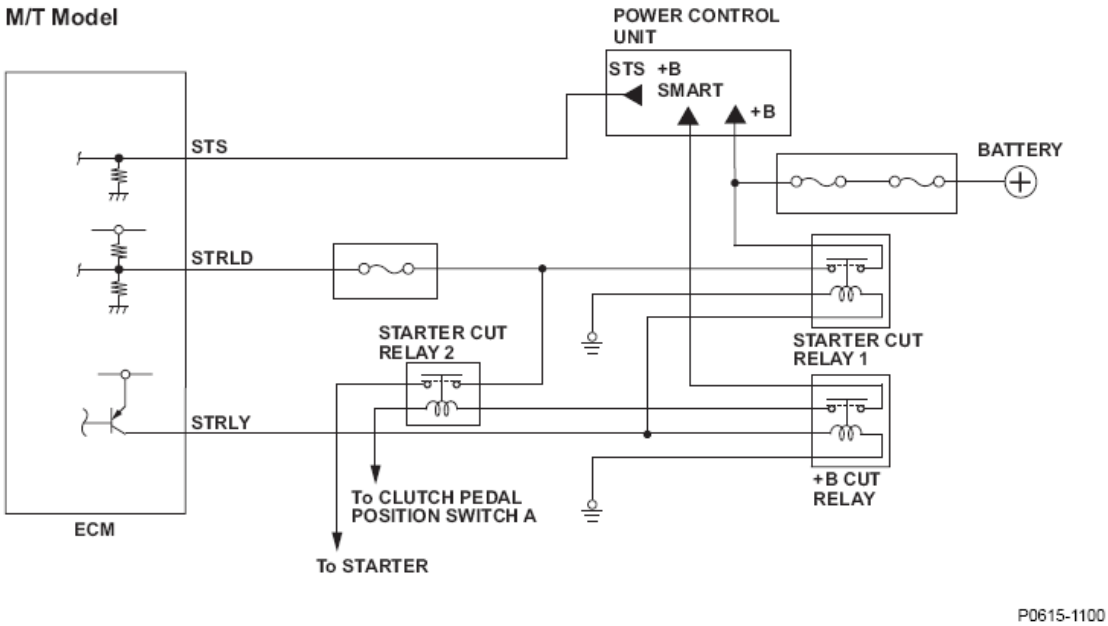


Fig. 273: Starter Cut Relay - Circuit Diagram (M/T Model)

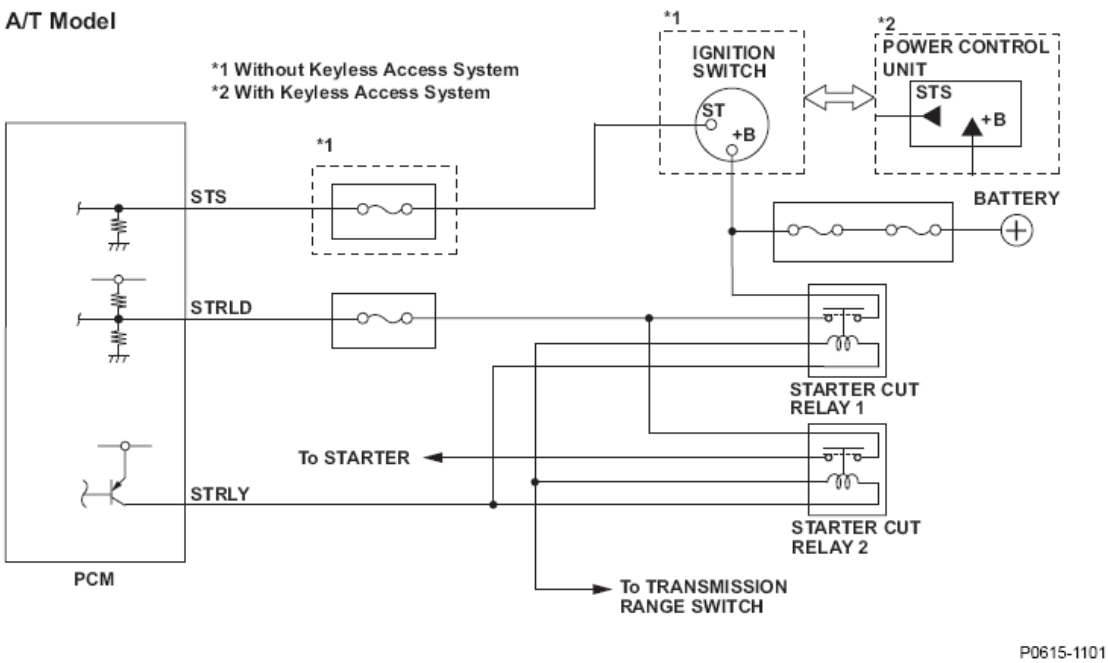


Fig. 274: Starter Cut Relay - Circuit Diagram (A/T Model)

GENERAL DESCRIPTION

The engine control module (ECM)/powertrain control module (PCM) compares the ON command signal to the starter with the return signal from the starter cut relay. When the signals do not coincide for a set time, the ECM/PCM detects a malfunction and stores a DTC.

MONITOR EXECUTION, SEQUENCE, DURATION, DTC TYPE, OBD STATUS

Execution	Continuous
Sequence	None
Duration	5 seconds or more
DTC Type	One drive cycle, MIL off
OBD Status	PASSED/FAILED/NOT COMPLETED (STILL TESTING)

ENABLE CONDITIONS

Condition	
Ignition switch(1)	ON (II)
Engine start/stop button(2)	ON mode
(1) Without keyless access system (2) With keyless access system	

MALFUNCTION THRESHOLD

The ON command signal from the ECM/PCM to the starter and the return signal from the starter cut relay do not coincide for at least 5 seconds.

DIAGNOSIS DETAILS

Conditions for setting the DTC

When a malfunction is detected, a Pending DTC, a Confirmed DTC, and the freeze data are stored in the ECM/PCM memory. The MIL does not come on.

Conditions for clearing the DTC

The Pending DTC, the Confirmed DTC, and the freeze data can be cleared with the scan tool Clear command or by disconnecting the battery.

DTC P16E1: +B CUT RELAY CIRCUIT MALFUNCTION

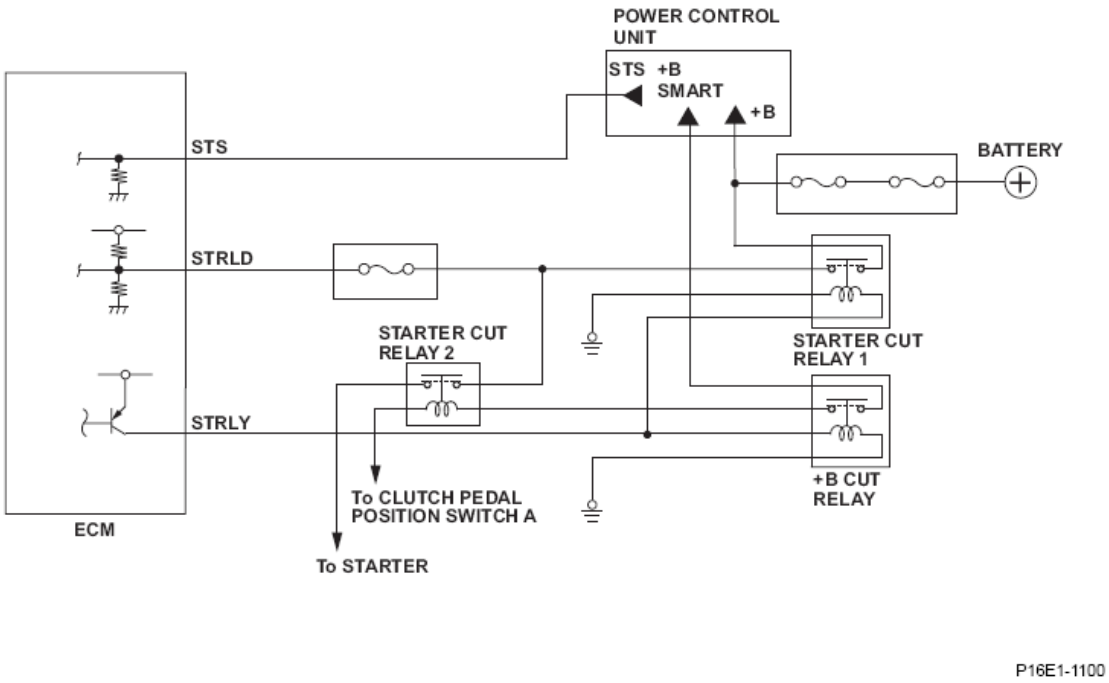


Fig. 275: +B Cut Relay - Circuit Diagram

GENERAL DESCRIPTION

To prevent the starter from continuing to run due to a clutch pedal position switch failure, two starter cut relays are connected in series with an additional cut relay connected to the STRLY terminal. When the STRLD input voltage is a specified value for a set time, the engine control module (ECM) detects a +B cut relay circuit malfunction and stores a DTC.

MONITOR EXECUTION, SEQUENCE, DURATION, DTC TYPE, OBD STATUS

Execution	Continuous
Sequence	None
Duration	2.0 seconds or more
DTC Type	One drive cycle, MIL off
OBD Status	PASSED/FAILED/NOT COMPLETED (STILL TESTING)

ENABLE CONDITIONS

Condition	
State of the engine	Running
Starter	Off
Clutch pedal	Pressed
No active DTCs set (prevents monitor from running)	P0615, P16BD

MALFUNCTION THRESHOLD

The STRLY terminal voltage is 1.74 V or less for at least 2.0 seconds.

DIAGNOSIS DETAILS

Conditions for setting the DTC

When a malfunction is detected, a Pending DTC, a Confirmed DTC, and the freeze data are stored in the ECM memory. The MIL does not come on.

Conditions for clearing the DTC

The Pending DTC, the Confirmed DTC, and the freeze data can be cleared with the scan tool Clear command or by disconnecting the battery.

DTC P1717: OPEN IN TRANSMISSION RANGE SWITCH ATPRVS SWITCH CIRCUIT

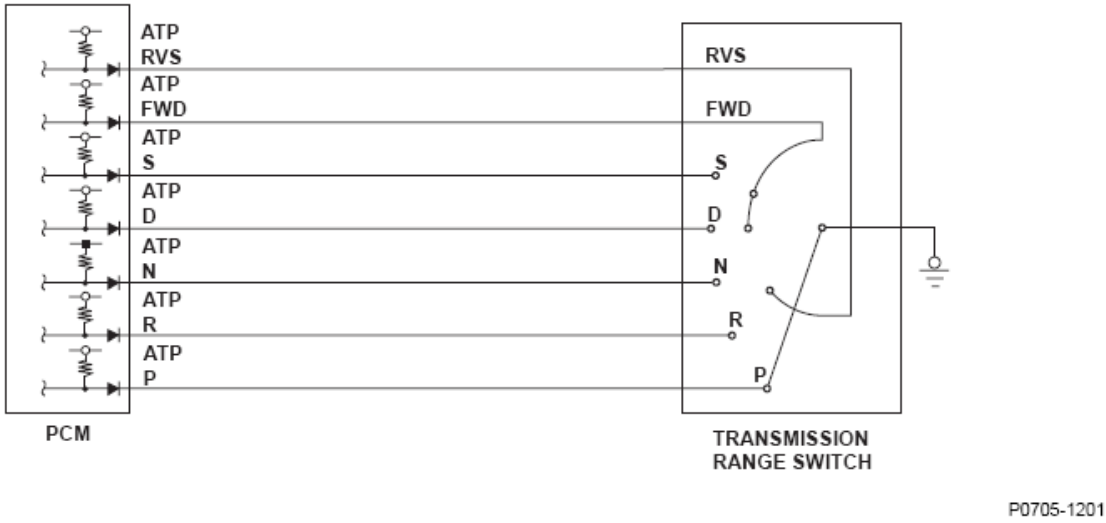


Fig. 276: Transmission Range Switch - Circuit Diagram

TRANSMISSION RANGE SWITCH CONTACT POINT INPUT MATRIX

Shift lever position	Input per switch						
	ATPP	ATPR	ATPN	ATPD	ATPS	ATP FWD	ATP RVS
P	o	X	X	X	X	X	X
R	X	o	X	X	X	X	o
N	X	X	o	X	X	X	X
D	X	X	X	o	X	o	X
S	X	X	X	X	o	o	X
o: Closed X: Open							

GENERAL DESCRIPTION

The transmission range switch is attached to a control shaft. Operating the shift lever makes the control shaft rotate via the shift cable. The A/T gear position indicator shows which position is selected according to the Low/High signal combinations, which vary based on the control shaft rotational angle. The control shaft changes the position of the transmission range switch, activates the manual valve, and switches hydraulic pressure to shift the transmission through forward/neutral/reverse. The transmission range switch signal is used to determine the shift schedule. The voltage is high (5 V or 12 V) at the powertrain control module (PCM) input terminal when each transmission range switch position is open, and it is low (0 V) when each switch is closed. If the RVS switch is open while driving the vehicle in R, the PCM detects an RVS switch open failure and stores a DTC.

MONITOR EXECUTION, SEQUENCE, DURATION, DTC TYPE, OBD STATUS

Execution	Continuous
Sequence	None
Duration	Depending on the driving conditions
DTC Type	Two drive cycles, MIL on, D indicator blinks
OBD Status	PASSED/FAILED/NOT COMPLETED (STILL TESTING)

ENABLE CONDITIONS

Condition	Minimum	Maximum
Engine speed	500 rpm	-
Battery voltage	11 V	-
Shift lever position	R	
No active DTCs set (prevents monitor from running)	P0705, P0716, P0717, P0721, P0722, P0812	

MALFUNCTION THRESHOLD

The R position signal input is detected but the RVS position signal input is not detected.

DRIVING PATTERN

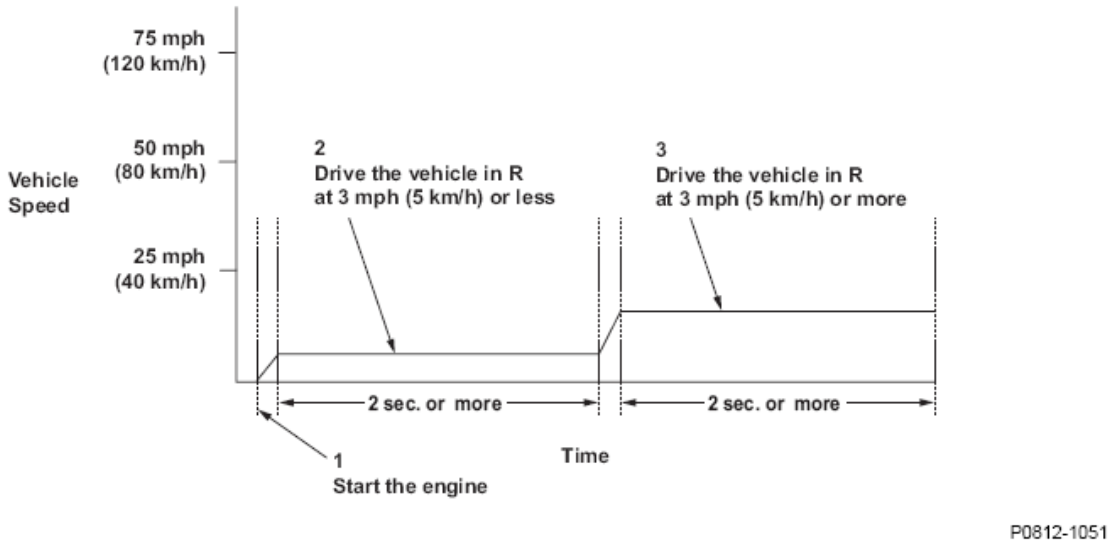


Fig. 277: Vehicle Speed Driving Pattern

1. Start the engine.
2. Drive the vehicle in R at 3 mph (5 km/h) or less for at least 2 seconds.
3. Drive the vehicle in R at 3 mph (5 km/h) or more for at least 2 seconds.
    - Drive the vehicle in this manner only if the traffic regulations and ambient conditions allow.

DIAGNOSIS DETAILS

Conditions for setting the DTC

When a malfunction is detected during the first drive cycle, a Pending DTC is stored in the PCM memory. If the malfunction returns in the next (second) drive cycle, the MIL comes on and a Confirmed DTC and the freeze data are stored.

Conditions for clearing the DTC

The MIL is cleared if the malfunction does not return in three consecutive trips in which the diagnostic runs. The MIL, the Pending DTC, the Confirmed DTC, and the freeze data can be cleared with the scan tool Clear command or by disconnecting the battery.

DTC P177A: LINE PRESSURE SOLENOID VALVE A STUCK OFF, OR LINE PRESSURE SWITCH STUCK OFF

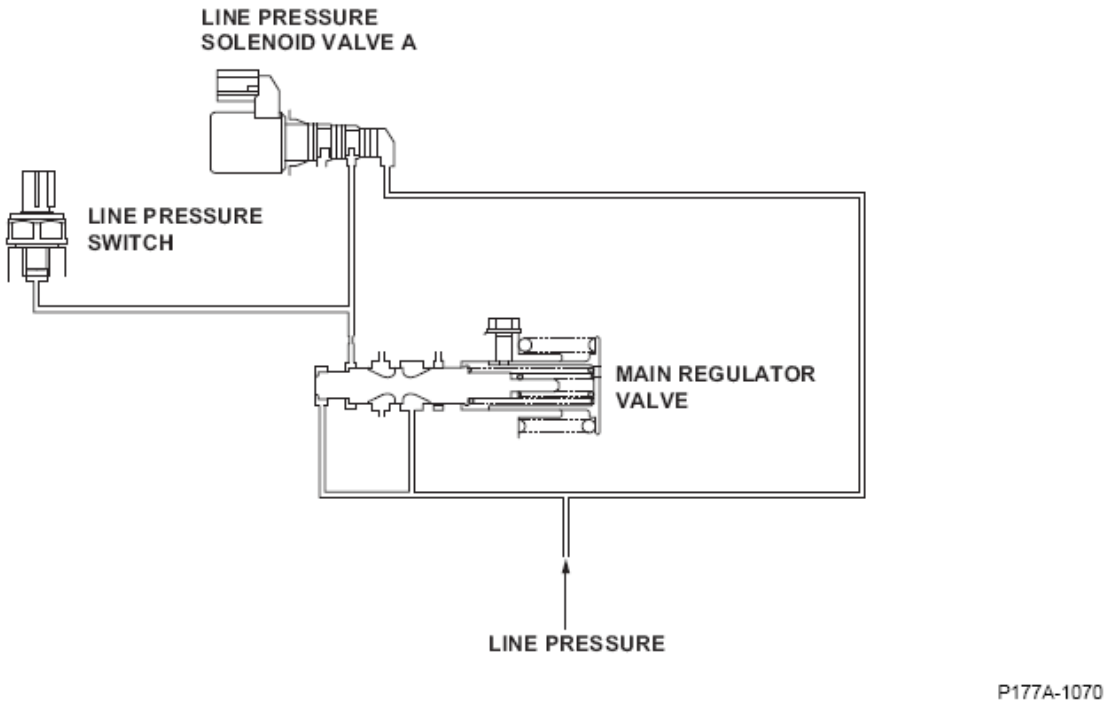


Fig. 278: Line Pressure Solenoid Valve A - System Diagram

LINE PRESSURE MODE COMBINATION TABLE

	Normal line pressure mode	Low line pressure mode
Line pressure solenoid valve A	OFF	ON
Line pressure switch	OFF	ON
Line pressure condition	Normal	Low

GENERAL DESCRIPTION

Line pressure solenoid valve A is installed on the transmission housing. It is controlled by the ON/OFF signal from the powertrain control module (PCM) to regulate line pressure to low line pressure or normal line pressure. The line pressure switch is installed in the hydraulic pressure output circuit from line pressure solenoid valve A. When line pressure solenoid valve A outputs hydraulic pressure, the line pressure is regulated to low line pressure and the switch is turned on. When line pressure solenoid valve A does not output hydraulic pressure, the line pressure is at normal line pressure and the switch is turned off. The signal from the line pressure switch is input to the PCM. The PCM detects the hydraulic pressure supply condition from line pressure solenoid valve A to detects a malfunction in line pressure solenoid valve A. If the line pressure switch is off against the command to turn on line pressure solenoid valve A, the PCM detects a line pressure solenoid valve A stuck off or line pressure switch stuck off failure and stores a DTC.

MONITOR EXECUTION, SEQUENCE, DURATION, DTC TYPE, OBD STATUS

Execution	Continuous
Sequence	None
Duration	4 seconds or more

DTC Type	Two drive cycles, MIL off, D indicator blinks
OBD Status	PASSED/FAILED/NOT COMPLETED (STILL TESTING)

ENABLE CONDITIONS

Condition	Minimum	Maximum
Battery voltage	11 V	-
No active DTCs set (prevents monitor from running)	P0122, P0123, P0222, P0223, P0716, P0717, P0718, P0721, P0722, P0723, P0746, P0747, P0751, P0752, P0756, P0757, P0761, P0762, P0776, P0777, P0796, P0797, P0842, P0843, P0847, P0848, P0872, P0873, P0877, P0878, P0962, P0963, P0966, P0967, P0970, P0971, P0973, P0974, P0976, P0977, P0979, P0980, P0989, P0990, P1658, P1659, P1683, P1684, P2101, P2118, P2122, P2123, P2127, P2128, P2135, P2138, P2176, P2714, P2720, P2721	

MALFUNCTION THRESHOLD

The input signal from the line pressure switch to the PCM is high when the low line pressure mode is commanded.

DRIVING PATTERN

1. Start the engine.
2. Drive the vehicle in D until the transmission shifts into 6th gear.
    - Drive the vehicle in this manner only if the traffic regulations and ambient conditions allow.

DIAGNOSIS DETAILS

Conditions for setting the DTC

When a malfunction is detected during the first drive cycle, a Pending DTC is stored in the PCM memory. If the malfunction returns in the next (second) drive cycle, a Confirmed DTC and the freeze data are stored. The MIL does not come on.

Conditions for clearing the DTC

The Pending DTC, the Confirmed DTC, and the freeze data can be cleared with the scan tool Clear command or by disconnecting the battery.

DTC P2101: ELECTRONIC THROTTLE CONTROL SYSTEM (ETCS) MALFUNCTION

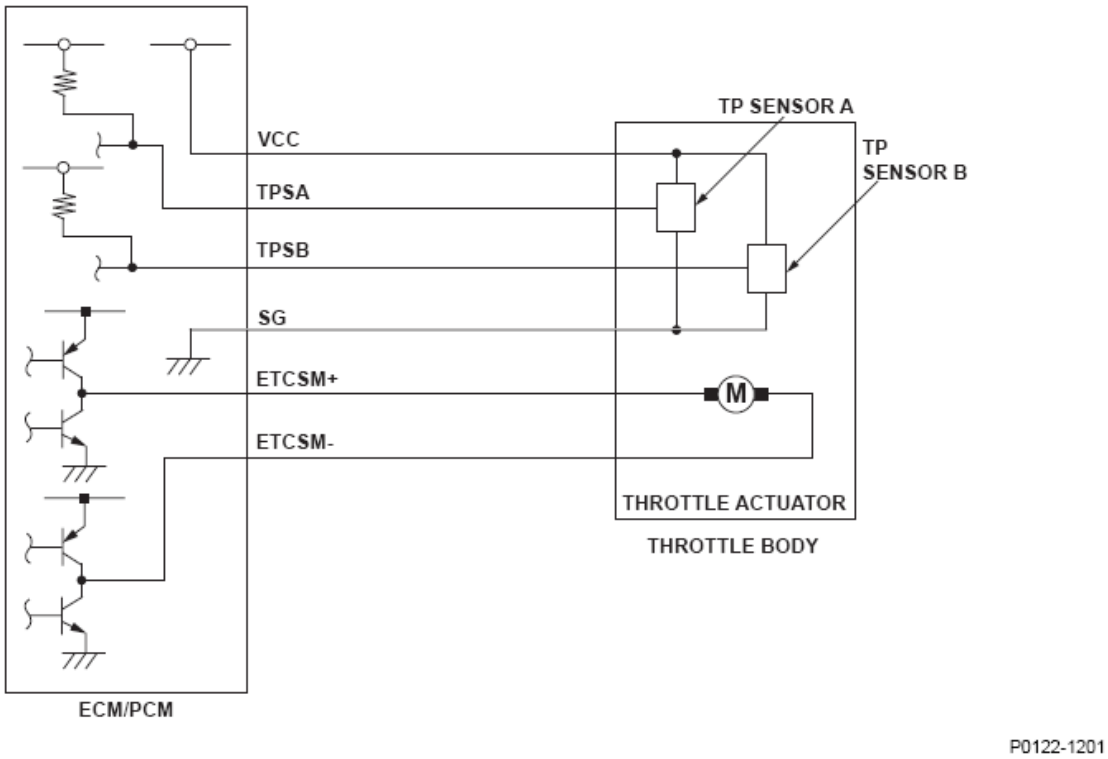


Fig. 279: Throttle Position Sensor - Circuit Diagram

GENERAL DESCRIPTION

The electronic throttle control system controls the throttle valve opening. The system includes the throttle actuator, the throttle valve, throttle position (TP) sensors A and B, the electronic throttle control system (ETCS) control relay, the accelerator pedal position (APP) sensor, and the engine control module (ECM)/powertrain control module (PCM). When the accelerator pedal is pressed, the APP sensor detects the accelerator pedal opening value. The accelerator pedal opening value is converted to a signal in the APP sensor and transmitted to the ECM/PCM to compute the target position. The ECM/PCM determines the throttle valve target position according to the signal received and operates the throttle actuator to move the throttle valve to the target position. The actual throttle valve position is determined by TP sensor A (installed in the throttle body). The ECM/PCM compares the throttle valve target opening angle and the actual throttle valve opening angle from TP sensor A, and when the difference exceeds the specification, the ECM/PCM detects the malfunction of the electronic throttle control system and stores a DTC.

MONITOR EXECUTION, SEQUENCE, DURATION, DTC TYPE, OBD STATUS

Execution	Continuous
Sequence	None
Duration	250 milliseconds or more(1), 500 milliseconds or more(2)
DTC Type	One drive cycle, MIL on
OBD Status	PASSED/FAILED/NOT COMPLETED (STILL TESTING)
(1) Throttle valve closed direction	

(2) Throttle valve open direction

ENABLE CONDITIONS

Condition	Minimum	Maximum
Battery voltage	6.0 V	-
Ignition switch(1)	ON (II)	
Engine start/stop button(2)	ON mode	
No active DTCs set (prevents monitor from running)	P0122, P0123, P0222, P0223, P2118, P2122, P2123, P2127, P2128, P2135, P2138, P2176	
(1) Without keyless access system (2) With keyless access system		

MALFUNCTION THRESHOLD

One of the conditions in this table is met for at least 250 milliseconds* (500 milliseconds**).

Throttle valve target position	Difference between throttle valve target position and actual throttle valve position
2 °	4 ° or more
6 °	5.4 ° or more
10 °	5.7 ° or more
15 °	6 ° or more
90 °	6 ° or more

DIAGNOSIS DETAILS

Conditions for setting the DTC

When a malfunction is detected, the MIL comes on and a Pending DTC, a Confirmed DTC, and the freeze data are stored in the ECM/PCM memory.

Conditions for clearing the DTC

The MIL is cleared if the malfunction does not return in three consecutive trips in which the diagnostic runs. The MIL, the Pending DTC, the Confirmed DTC, and the freeze data can be cleared with the scan tool Clear command or by disconnecting the battery.

DTC P2118: THROTTLE ACTUATOR CURRENT RANGE/PERFORMANCE PROBLEM

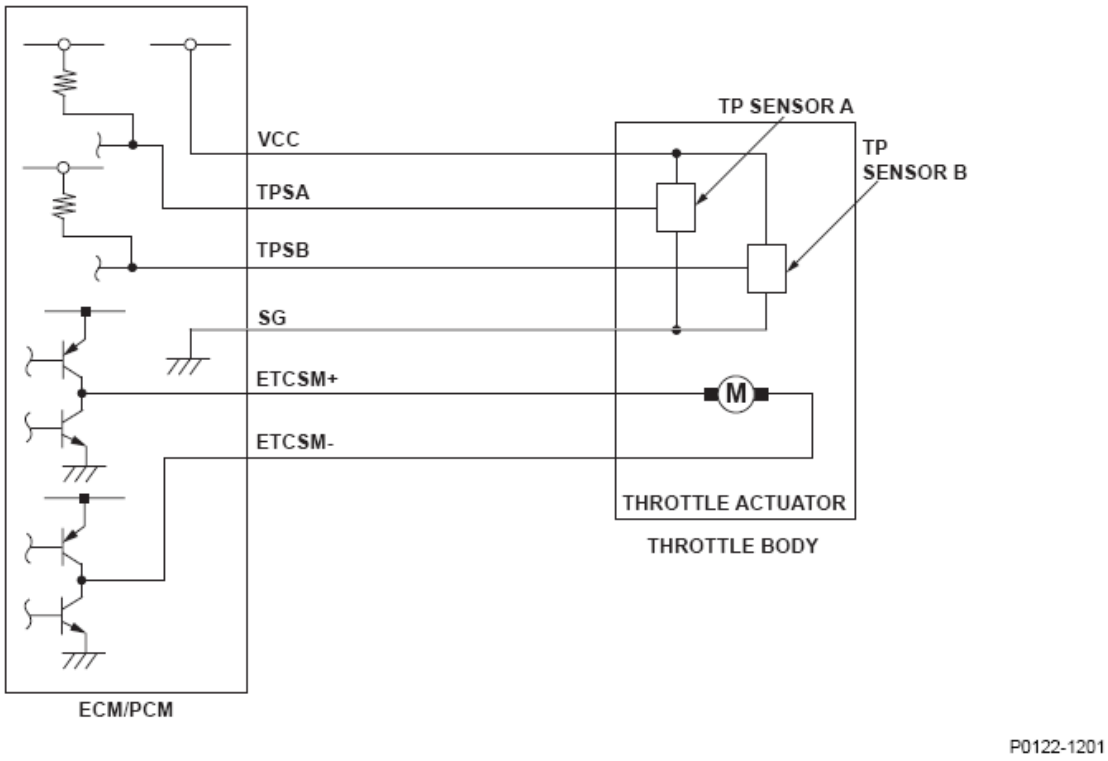


Fig. 280: Throttle Position Sensor - Circuit Diagram

GENERAL DESCRIPTION

The electronic throttle control system controls the throttle valve opening. The system includes the throttle actuator, the throttle valve, throttle position (TP) sensors A and B, the electronic throttle control system (ETCS) control relay, the accelerator pedal position (APP) sensor, and the engine control module (ECM)/powertrain control module (PCM). When the accelerator pedal is pressed, the APP sensor detects the accelerator pedal opening value. The accelerator pedal opening value is converted to a signal in the APP sensor and transmitted to the ECM/PCM to compute the target position. The ECM/PCM determines the throttle valve target position according to the signal received and operates the throttle actuator to move the throttle valve to the target position. The actual throttle valve position is determined by TP sensor A (installed in the throttle body). When the output current to the throttle valve actuator exceeds the specification for a set time, the ECM/PCM detects a malfunction of the throttle actuator system and stores a DTC.

MONITOR EXECUTION, SEQUENCE, DURATION, DTC TYPE, OBD STATUS

Execution	Continuous
Sequence	None
Duration	200 milliseconds or more
DTC Type	One drive cycle, MIL on
OBD Status	PASSED/FAILED/NOT COMPLETED (STILL TESTING)

ENABLE CONDITIONS

Condition	Minimum	Maximum
Battery voltage	6.0 V	-
Ignition switch(1)	ON (II)	
Engine start/stop button(2)	ON mode	
No active DTCs set (prevents monitor from running)	P0122, P0123, P0222, P0223, P2101, P2122, P2123, P2127, P2128, P2135, P2138, P2176	
(1) Without keyless access system (2) With keyless access system		

MALFUNCTION THRESHOLD

The current flow to the throttle actuator is 9.4 A or more for at least 200 milliseconds.

DIAGNOSIS DETAILS

Conditions for setting the DTC

When a malfunction is detected, the MIL comes on and a Pending DTC, a Confirmed DTC, and the freeze data are stored in the ECM/PCM memory.

Conditions for clearing the DTC

The MIL is cleared if the malfunction does not return in three consecutive trips in which the diagnostic runs. The MIL, the Pending DTC, the Confirmed DTC, and the freeze data can be cleared with the scan tool Clear command or by disconnecting the battery.

DTC P2122: ACCELERATOR PEDAL POSITION (APP) SENSOR A (THROTTLE POSITION (TP) SENSOR D) CIRCUIT LOW VOLTAGE

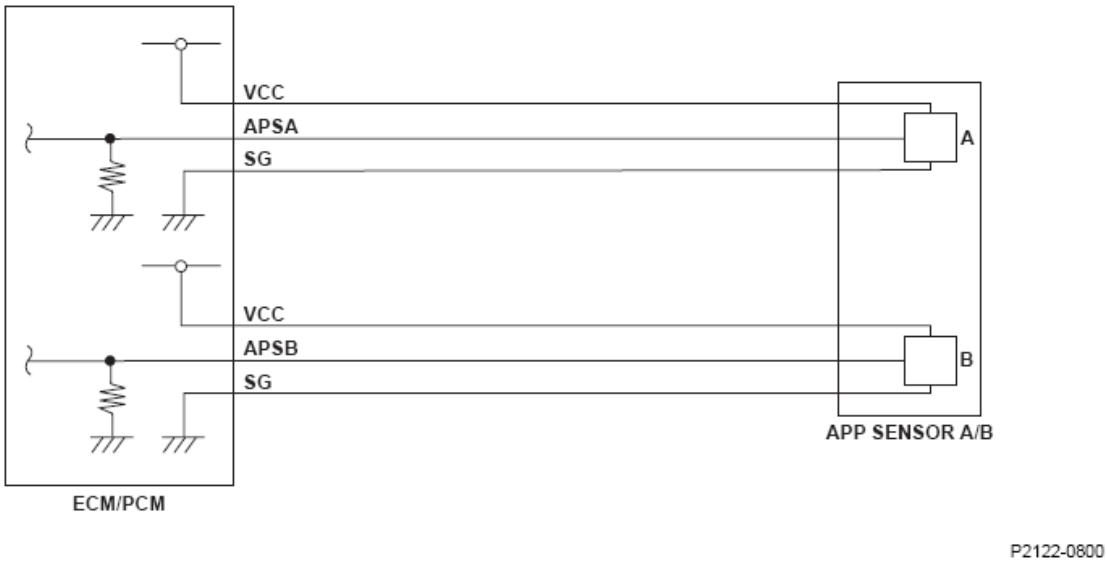


Fig. 281: Accelerator Pedal Position Sensor - Circuit Diagram

GENERAL DESCRIPTION

Accelerator pedal position (APP) sensor A is a part of the electronic throttle control system. It is used to convert the position of the accelerator pedal into electrical signals. Based on these signals, the engine control module (ECM)/powertrain control module (PCM) controls the throttle actuator so that the throttle position agrees with the accelerator pedal position. If the signal voltage from APP sensor A is a set value, the ECM/PCM detects a malfunction and stores a DTC.

MONITOR EXECUTION, SEQUENCE, DURATION, DTC TYPE, OBD STATUS

Execution	Continuous
Sequence	None
Duration	200 milliseconds or more
DTC Type	One drive cycle, MIL on
OBD Status	PASSED/FAILED/NOT COMPLETED (STILL TESTING)

ENABLE CONDITIONS

Condition	
Ignition switch(1)	ON (II)
Engine start/stop button(2)	ON mode
No active DTCs set (prevents monitor from running)	P2123
(1) Without keyless access system (2) With keyless access system	

MALFUNCTION THRESHOLD

The APP sensor A output voltage is 0.2 V or less for at least 200 milliseconds.

DIAGNOSIS DETAILS

Conditions for setting the DTC

When a malfunction is detected, the MIL comes on and a Pending DTC, a Confirmed DTC, and the freeze data are stored in the ECM/PCM memory.

Conditions for clearing the DTC

The MIL is cleared if the malfunction does not return in three consecutive trips in which the diagnostic runs. The MIL, the Pending DTC, the Confirmed DTC, and the freeze data can be cleared with the scan tool Clear command or by disconnecting the battery.

DTC P2123: ACCELERATOR PEDAL POSITION (APP) SENSOR A (THROTTLE POSITION (TP) SENSOR D) CIRCUIT HIGH VOLTAGE

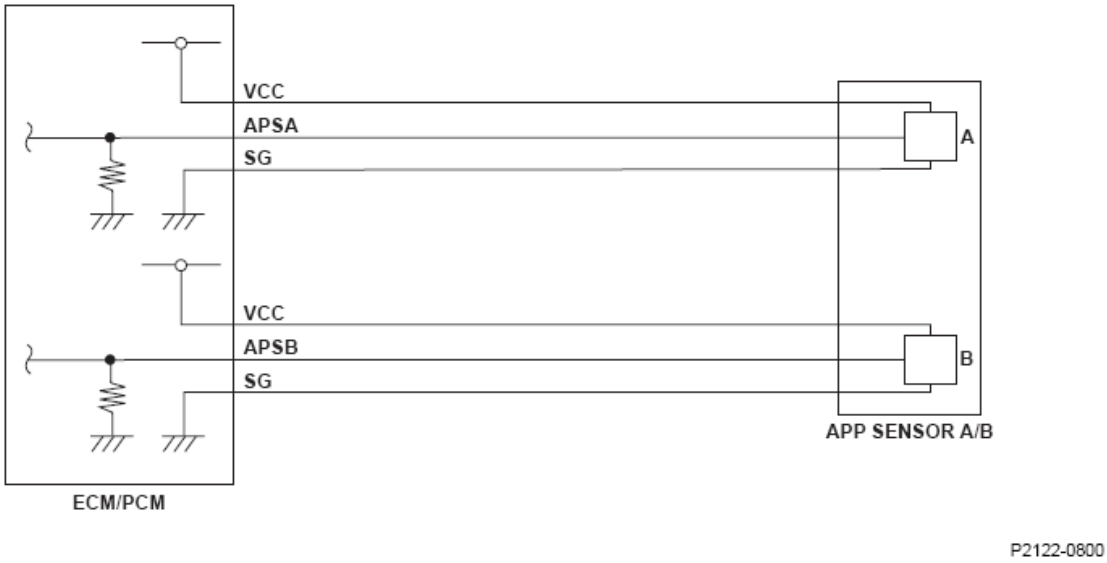


Fig. 282: Accelerator Pedal Position Sensor - Circuit Diagram

GENERAL DESCRIPTION

Accelerator pedal position (APP) sensor A is a part of the electronic throttle control system. It is used to convert the position of the accelerator pedal into electrical signals. Based on these signals, the engine control module (ECM)/powertrain control module (PCM) controls the throttle actuator so that the throttle position agrees with the accelerator pedal position. If the signal voltage from APP sensor A is a set value, the ECM/PCM detects a malfunction and stores a DTC.

MONITOR EXECUTION, SEQUENCE, DURATION, DTC TYPE, OBD STATUS

Execution	Continuous
Sequence	None
Duration	200 milliseconds or more
DTC Type	One drive cycle, MIL on
OBD Status	PASSED/FAILED/NOT COMPLETED (STILL TESTING)

ENABLE CONDITIONS

Condition	
State of the engine	Running
No active DTCs set (prevents monitor from running)	P2122

MALFUNCTION THRESHOLD

The APP sensor A output voltage is 4.9 V or more for at least 200 milliseconds.

DIAGNOSIS DETAILS

Conditions for setting the DTC

When a malfunction is detected, the MIL comes on and a Pending DTC, a Confirmed DTC, and the freeze data are stored in the ECM/PCM memory.

Conditions for clearing the DTC

The MIL is cleared if the malfunction does not return in three consecutive trips in which the diagnostic runs. The MIL, the Pending DTC, the Confirmed DTC, and the freeze data can be cleared with the scan tool Clear command or by disconnecting the battery.

DTC P2127: ACCELERATOR PEDAL POSITION (APP) SENSOR B (THROTTLE POSITION (TP) SENSOR E) CIRCUIT LOW VOLTAGE

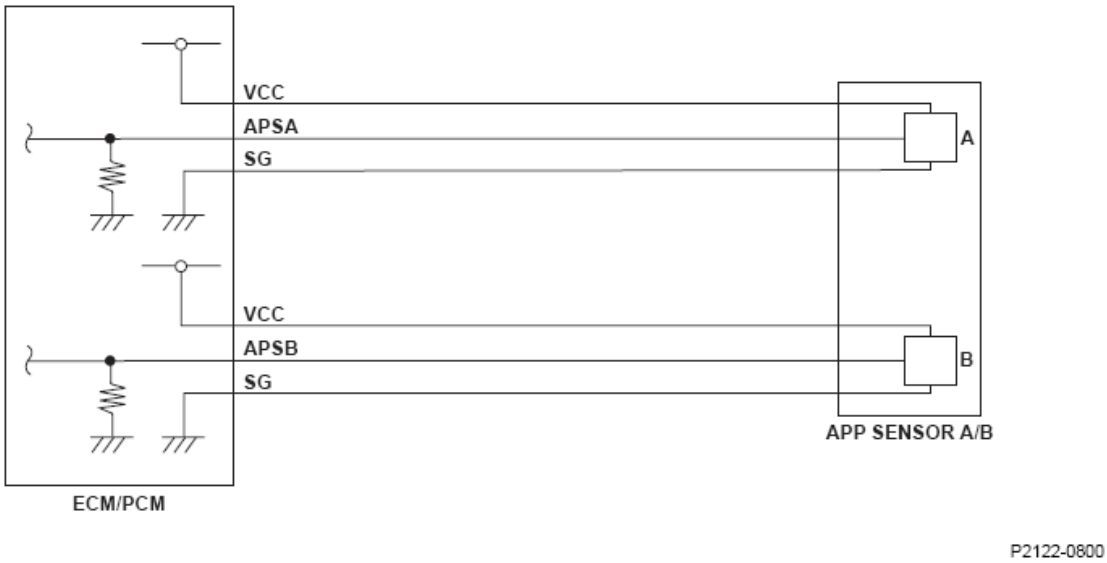


Fig. 283: Accelerator Pedal Position Sensor - Circuit Diagram

GENERAL DESCRIPTION

Accelerator pedal position (APP) sensor B is a part of the electronic throttle control system. It is used to convert the position of the accelerator pedal into electrical signals. Based on these signals, the engine control module (ECM)/powertrain control module (PCM) controls the throttle actuator so that the throttle position agrees with the accelerator pedal position. If the signal voltage from APP sensor B is a set value, the ECM/PCM detects a malfunction and stores a DTC.

MONITOR EXECUTION, SEQUENCE, DURATION, DTC TYPE, OBD STATUS

Execution	Continuous
Sequence	None
Duration	200 milliseconds or more
DTC Type	One drive cycle, MIL on
OBD Status	PASSED/FAILED/NOT COMPLETED (STILL TESTING)

ENABLE CONDITIONS

Condition	
Ignition switch(1)	ON (II)
Engine start/stop button(2)	ON mode
No active DTCs set (prevents monitor from running)	P2128
(1) Without keyless access system (2) With keyless access system	

MALFUNCTION THRESHOLD

The APP sensor B output voltage is 0.2 V or less for at least 200 milliseconds.

DIAGNOSIS DETAILS

Conditions for setting the DTC

When a malfunction is detected, the MIL comes on and a Pending DTC, a Confirmed DTC, and the freeze data are stored in the ECM/PCM memory.

Conditions for clearing the DTC

The MIL is cleared if the malfunction does not return in three consecutive trips in which the diagnostic runs. The MIL, the Pending DTC, the Confirmed DTC, and the freeze data can be cleared with the scan tool Clear command or by disconnecting the battery.

DTC P2128: ACCELERATOR PEDAL POSITION (APP) SENSOR B (THROTTLE POSITION (TP) SENSOR E) CIRCUIT HIGH VOLTAGE

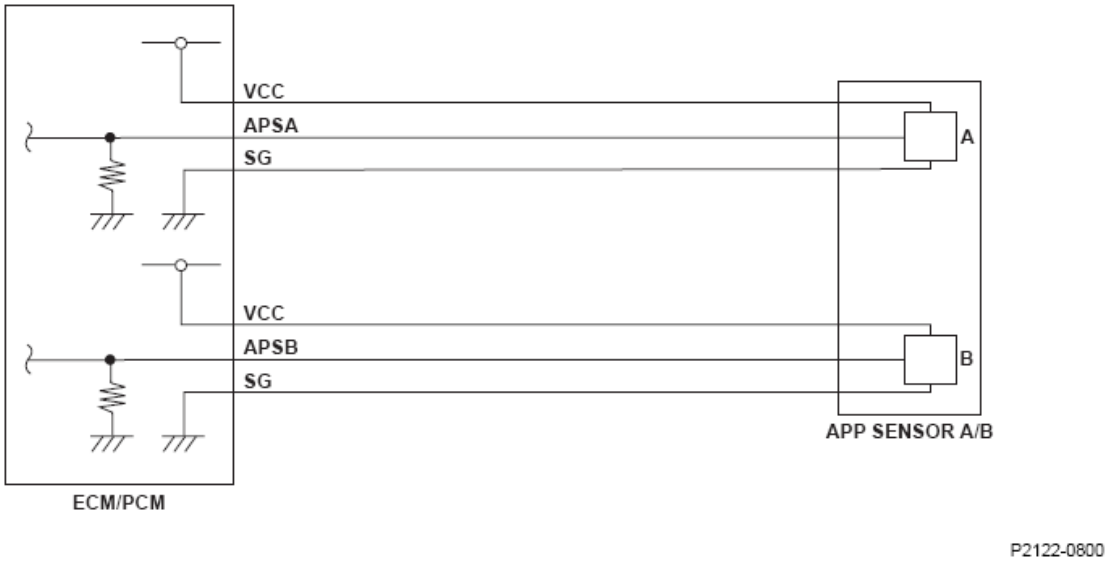


Fig. 284: Accelerator Pedal Position Sensor - Circuit Diagram

GENERAL DESCRIPTION

Accelerator pedal position (APP) sensor B is a part of the electronic throttle control system. It is used to convert the position of the accelerator pedal into electrical signals. Based on these signals, the engine control module (ECM)/powertrain control module (PCM) controls the throttle actuator so that the throttle position agrees with the accelerator pedal position. If the signal voltage from APP sensor B is a set value, the ECM/PCM detects a malfunction and stores a DTC.

MONITOR EXECUTION, SEQUENCE, DURATION, DTC TYPE, OBD STATUS

Execution	Continuous
Sequence	None
Duration	200 milliseconds or more
DTC Type	One drive cycle, MIL on
OBD Status	PASSED/FAILED/NOT COMPLETED (STILL TESTING)

ENABLE CONDITIONS

Condition	
State of the engine	Running
No active DTCs set (prevents monitor from running)	P2127

MALFUNCTION THRESHOLD

The APP sensor B output voltage is 4.0 V or more for at least 200 milliseconds.

DIAGNOSIS DETAILS

Conditions for setting the DTC

When a malfunction is detected, the MIL comes on and a Pending DTC, a Confirmed DTC, and the freeze data are stored in the ECM/PCM memory.

Conditions for clearing the DTC

The MIL is cleared if the malfunction does not return in three consecutive trips in which the diagnostic runs. The MIL, the Pending DTC, the Confirmed DTC, and the freeze data can be cleared with the scan tool Clear command or by disconnecting the battery.

DTC P2128: ACCELERATOR PEDAL POSITION (APP) SENSOR B (THROTTLE POSITION (TP) SENSOR E) CIRCUIT HIGH VOLTAGE

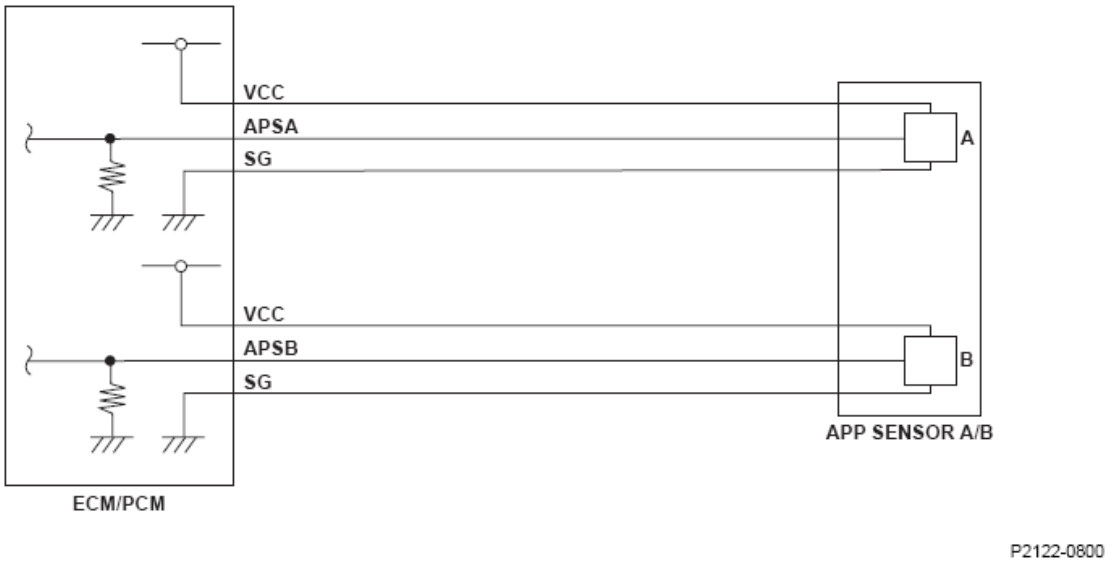


Fig. 285: Accelerator Pedal Position Sensor - Circuit Diagram

GENERAL DESCRIPTION

Accelerator pedal position (APP) sensor B is a part of the electronic throttle control system. It is used to convert the position of the accelerator pedal into electrical signals. Based on these signals, the engine control module (ECM)/powertrain control module (PCM) controls the throttle actuator so that the throttle position agrees with the accelerator pedal position. If the signal voltage from APP sensor B is a set value, the ECM/PCM detects a malfunction and stores a DTC.

MONITOR EXECUTION, SEQUENCE, DURATION, DTC TYPE, OBD STATUS

Execution	Continuous
Sequence	None
Duration	200 milliseconds or more
DTC Type	One drive cycle, MIL on
OBD Status	PASSED/FAILED/NOT COMPLETED (STILL TESTING)

ENABLE CONDITIONS

Condition	
State of the engine	Running
No active DTCs set (prevents monitor from running)	P2127

MALFUNCTION THRESHOLD

The APP sensor B output voltage is 4.0 V or more for at least 200 milliseconds.

DIAGNOSIS DETAILS

Conditions for setting the DTC

When a malfunction is detected, the MIL comes on and a Pending DTC, a Confirmed DTC, and the freeze data are stored in the ECM/PCM memory.

Conditions for clearing the DTC

The MIL is cleared if the malfunction does not return in three consecutive trips in which the diagnostic runs. The MIL, the Pending DTC, the Confirmed DTC, and the freeze data can be cleared with the scan tool Clear command or by disconnecting the battery.

DTC P2135: THROTTLE POSITION (TP) SENSOR A/B INCORRECT VOLTAGE CORRELATION

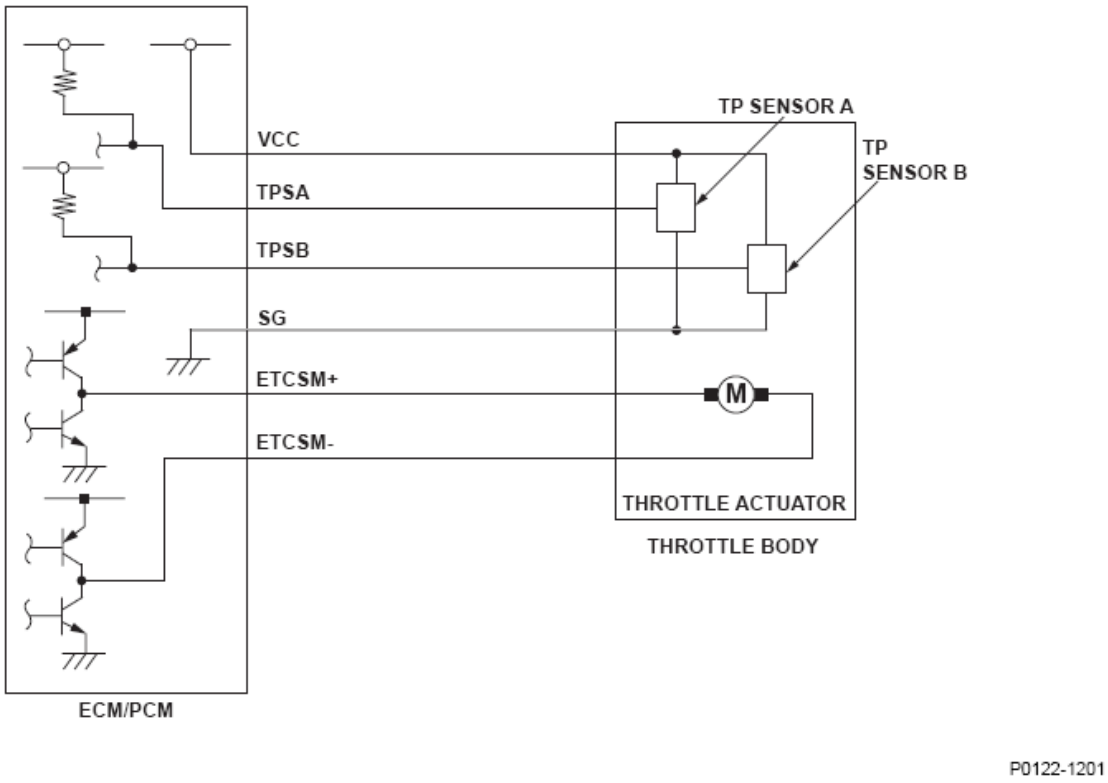


Fig. 286: Throttle Position Sensor - Circuit Diagram

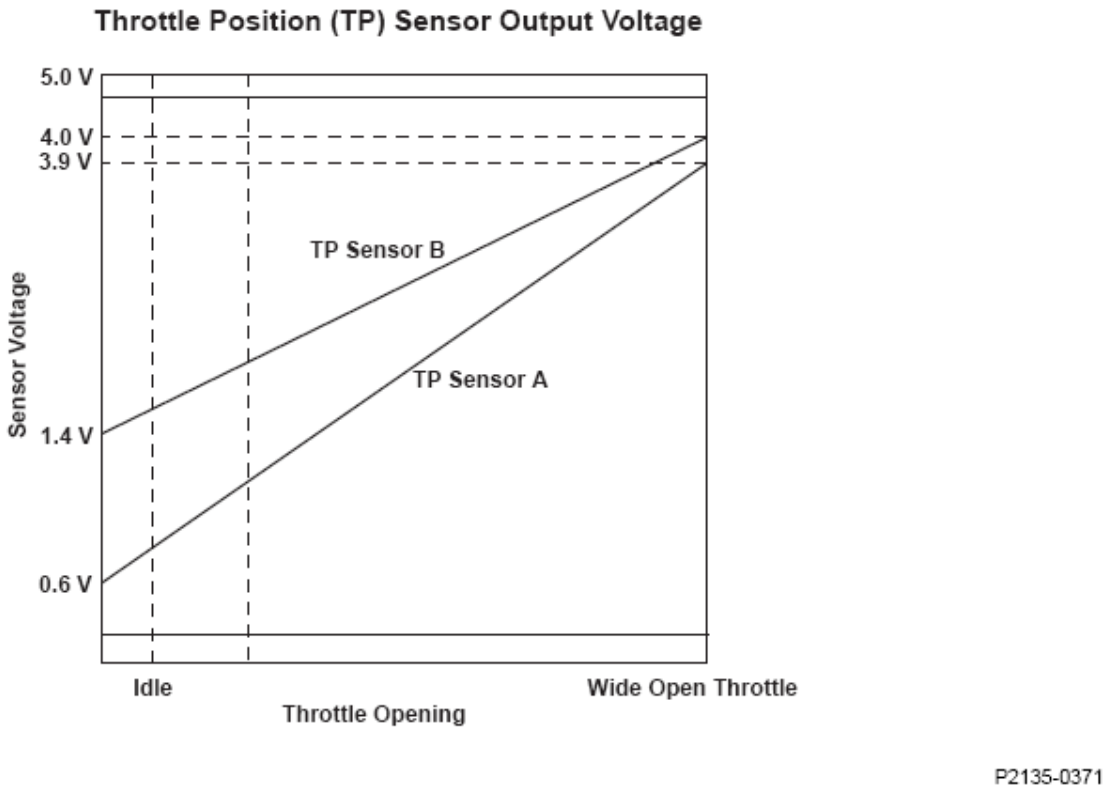


Fig. 287: Throttle Position Sensor Output Voltage Graph

GENERAL DESCRIPTION

The electronic throttle control system controls the throttle valve opening. The system includes the throttle actuator, the throttle valve, throttle position (TP) sensors A and B, the electronic throttle control system (ETCS) control relay, the accelerator pedal position (APP) sensor, and the engine control module (ECM)/powertrain control module (PCM). When the accelerator pedal is pressed, the APP sensor detects the accelerator pedal opening value. The accelerator pedal opening value is converted to a signal in the APP sensor and transmitted to the ECM/PCM to compute the target position. The ECM/PCM then operates the throttle actuator to move the throttle valve to the target position. The actual throttle valve position is determined by TP sensor A (installed in the throttle body). The ECM/PCM compares the voltages and the throttle valve positions of TP sensor A and TP sensor B. If the difference of the voltages or the throttle valve positions is a certain value for a set time, the ECM/PCM detects a malfunction in the relationship between TP sensor A and TP sensor B, and stores a DTC.

MONITOR EXECUTION, SEQUENCE, DURATION, DTC TYPE, OBD STATUS

Execution	Continuous
Sequence	None
Duration	200 milliseconds or more
DTC Type	One drive cycle, MIL on
OBD Status	PASSED/FAILED/NOT COMPLETED (STILL TESTING)

ENABLE CONDITIONS

Condition	Minimum	Maximum
TP sensor B voltage	-	2.3 V
Ignition switch(1)	ON (II)	
Engine start/stop button(2)	ON mode	
No active DTCs set (prevents monitor from running)	P0122, P0123, P0222, P0223, P2101, P2118, P2122, P2123, P2127, P2128, P2138, P2176	
Other	After the throttle valve fully closed position registration is completed	
(1) Without keyless access system (2) With keyless access system		

MALFUNCTION THRESHOLD

The difference between the throttle valve positions that TP sensor A and TP sensor B determined exceeds the value shown in this table for at least 200 milliseconds.

Throttle valve position determined by TP sensor A	Difference between TP sensor A and TP sensor B
0 °	1.8 ° or more
83.3 °	14.7 ° or more

DIAGNOSIS DETAILS

Conditions for setting the DTC

When a malfunction is detected, the MIL comes on and a Pending DTC, a Confirmed DTC, and the freeze data are stored in the ECM/PCM memory.

Conditions for clearing the DTC

The MIL is cleared if the malfunction does not return in three consecutive trips in which the diagnostic runs. The MIL, the Pending DTC, the Confirmed DTC, and the freeze data can be cleared with the scan tool Clear command or by disconnecting the battery.

DTC P2138: ACCELERATOR PEDAL POSITION (APP) SENSOR A/B (THROTTLE POSITION (TP) SENSOR D/E) INCORRECT VOLTAGE CORRELATION

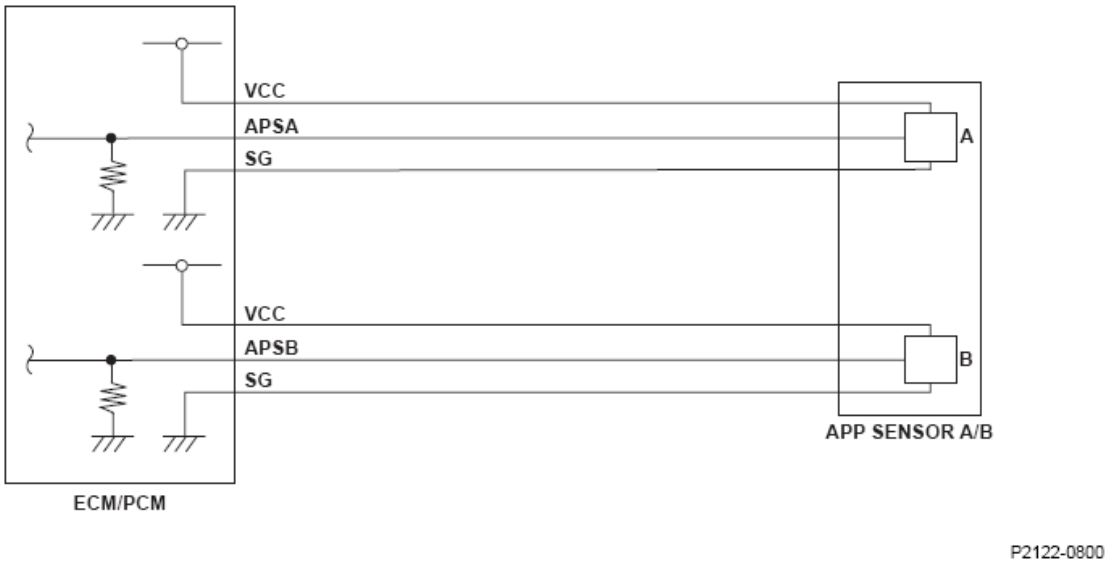


Fig. 288: Accelerator Pedal Position Sensor - Circuit Diagram

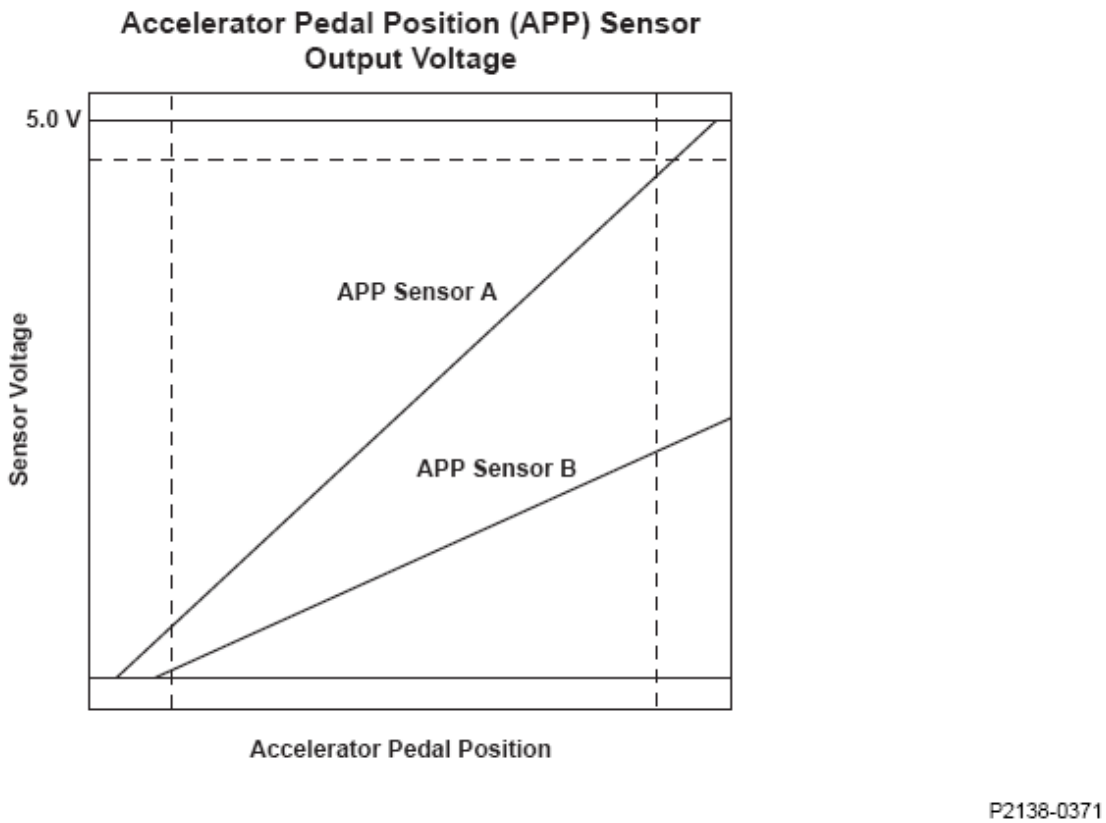


Fig. 289: Accelerator Pedal Position Sensor Output Voltage Graph

GENERAL DESCRIPTION

Accelerator pedal position (APP) sensor A and accelerator pedal position (APP) sensor B are potentiometers. They are installed on the accelerator pedal. When the accelerator pedal is pressed, APP sensors A and B detect

the accelerator pedal opening value. The accelerator pedal opening value is converted to a signal in APP sensors A and B and transmitted to the engine control module (ECM)/powertrain control module (PCM) to compute the target position. APP sensor A is the primary control, and APP sensor B is a back-up of APP sensor A in case it malfunctions. Both sensors compare their output voltage to each other for malfunction detection. When the voltage difference of APP sensor B is out of a fixed range for a set time, the ECM/PCM detects a malfunction and stores a DTC.

MONITOR EXECUTION, SEQUENCE, DURATION, DTC TYPE, OBD STATUS

Execution	Continuous
Sequence	None
Duration	300 milliseconds or more
DTC Type	One drive cycle, MIL on
OBD Status	PASSED/FAILED/NOT COMPLETED (STILL TESTING)

ENABLE CONDITIONS

Condition	
Ignition switch(1)	ON (II)
Engine start/stop button(2)	ON mode
No active DTCs set (prevents monitor from running)	P2122, P2123, P2127, P2128
(1) Without keyless access system (2) With keyless access system	

MALFUNCTION THRESHOLD

One of these conditions is met for at least 300 milliseconds:

- The APP sensor B voltage exceeds the range from 0 V or less to 0.37 V or more when the APP sensor A voltage is 0.37 V.
- The APP sensor B voltage exceeds the range from 2.31 V or less to 2.69 V or more when the APP sensor A voltage is 5.0 V.

DIAGNOSIS DETAILS

Conditions for setting the DTC

When a malfunction is detected, the MIL comes on and a Pending DTC, a Confirmed DTC, and the freeze data are stored in the ECM/PCM memory.

Conditions for clearing the DTC

The MIL is cleared if the malfunction does not return in three consecutive trips in which the diagnostic runs. The MIL, the Pending DTC, the Confirmed DTC, and the freeze data can be cleared with the scan tool Clear

command or by disconnecting the battery.

DTC P2176: THROTTLE ACTUATOR CONTROL SYSTEM IDLE POSITION NOT LEARNED

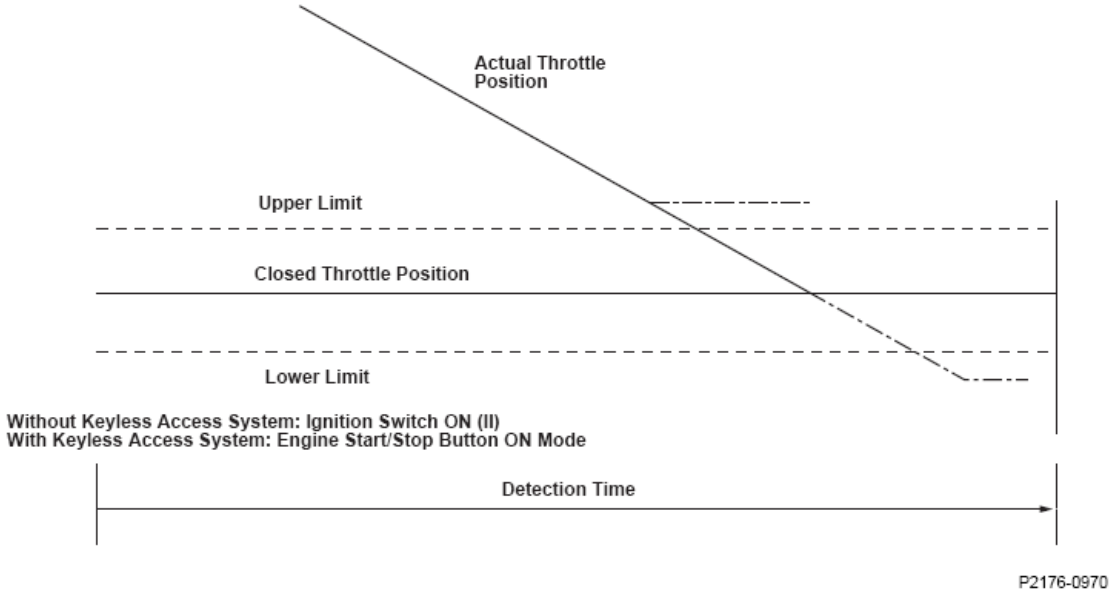


Fig. 290: Throttle Actuator Control System Characteristics Curve

GENERAL DESCRIPTION

The electronic throttle control system controls the throttle valve opening. The system includes the throttle actuator, the throttle valve, throttle position (TP) sensors A and B, the electronic throttle control system (ETCS) control relay, the accelerator pedal position (APP) sensor, and the engine control module (ECM)/powertrain control module (PCM). When the accelerator pedal is pressed, the APP sensor detects the accelerator pedal opening value. The accelerator pedal opening value is converted to a signal in the APP sensor and transmitted to the ECM/PCM to compute the target position. The ECM/PCM determines the throttle valve target position according to the signal received and operates the throttle actuator to move the throttle valve to the target position. The actual throttle valve position is determined by TP sensor A (installed in the throttle body). The ECM/PCM transmits a signal to the throttle actuator and moves the throttle valve to the fully closed position to register the throttle valve fully closed position after the ignition switch is turned to ON (II) or the engine start/stop button is pressed to select the ON mode. When the registration of the throttle valve fully closed position is not completed within a predetermined time or the registered value is out of predetermined range after the ignition switch is turned to ON (II) or the engine start/stop button is pressed to select the ON mode, the ECM/PCM detects a malfunction in the throttle actuator control system and stores a DTC.

MONITOR EXECUTION, SEQUENCE, DURATION, DTC TYPE, OBD STATUS

Execution	Once per driving cycle
Sequence	None
Duration	700 milliseconds or more

DTC Type	One drive cycle, MIL on
OBD Status	PASSED/FAILED/NOT COMPLETED (STILL TESTING)

ENABLE CONDITIONS

Condition	Minimum	Maximum
Battery voltage	6.0 V	-
Ignition switch(1)	ON (II)	
Engine start/stop button(2)	ON mode	
No active DTCs set (prevents monitor from running)	P0122, P0123, P0222, P0223, P2101, P2118, P2122, P2123, P2127, P2128, P2135, P2138	
Other	Engine is stopped	
(1) Without keyless access system (2) With keyless access system		

MALFUNCTION THRESHOLD

One of these conditions is met for at least 700 milliseconds:

- The registration of the throttle valve fully closed position is not completed within a predetermined time after the ignition switch is turned to ON (II) or the engine start/stop button is pressed to select the ON mode.
- The registered value of the throttle valve fully closed position is 0.74 V*, 1.61 V**, or more, or 0.49 V*, 1.37 V**, or less.

*: TP sensor A

**: TP sensor B

DIAGNOSIS DETAILS

Conditions for setting the DTC

When a malfunction is detected, the MIL comes on and a Pending DTC, a Confirmed DTC, and the freeze data are stored in the ECM/PCM memory.

Conditions for clearing the DTC

The MIL is cleared if the malfunction does not return in three consecutive trips in which the diagnostic runs. The MIL, the Pending DTC, the Confirmed DTC, and the freeze data can be cleared with the scan tool Clear command or by disconnecting the battery.

DTC P2183: ENGINE COOLANT TEMPERATURE (ECT) SENSOR 2 CIRCUIT RANGE/PERFORMANCE PROBLEM

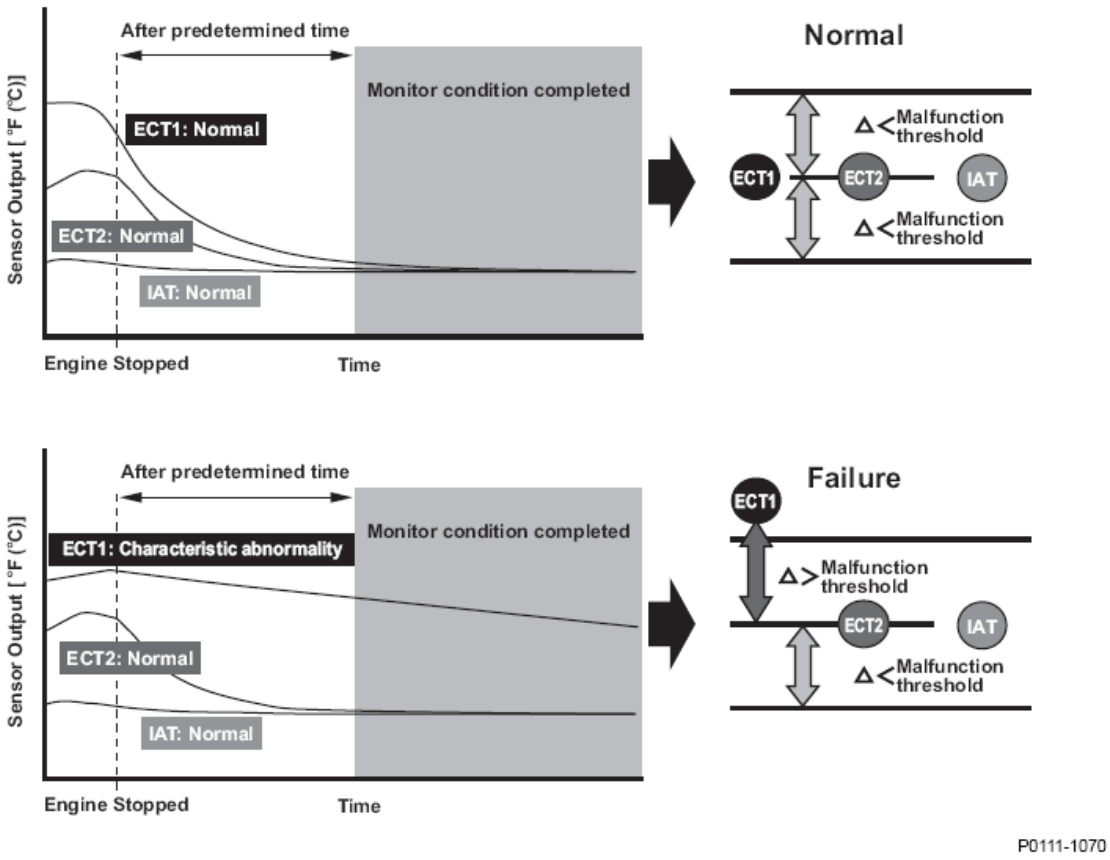


Fig. 291: Engine Coolant Temperature Sensor Characteristics Curve

GENERAL DESCRIPTION

Two engine coolant temperature (ECT) sensors and one intake air temperature (IAT) sensor are used by the engine control module (ECM)/powertrain control module (PCM). When the engine is stopped and enough time has passed, the temperature of the engine will equalize to the ambient temperature. ECT sensor 1 and IAT sensor are compared to ECT sensor 2, and if an inappropriate temperature is read, the ECM/PCM detects a malfunction in the corresponding sensor and stores a DTC.

MONITOR EXECUTION, SEQUENCE, DURATION, DTC TYPE, OBD STATUS

Execution	Once per driving cycle
Sequence	None
Duration	10 seconds or more
DTC Type	Two drive cycles, MIL on
OBD Status	PASSED/FAILED/NOT COMPLETED (STILL TESTING)

ENABLE CONDITIONS

Condition	Minimum	Maximum
Engine off time	6 hours	-

No active DTCs set (prevents monitor from running)	P0112, P0113, P0116, P0117, P0118, P0125, P2184, P2185, P2610

MALFUNCTION THRESHOLD

A malfunction is detected if the following conditions are present after the engine has stopped and the ignition switch has been turned to LOCK (0) or engine start/stop button has been pressed to select OFF mode, for at least 6 hours before restarting the engine:

Temperature difference between each sensor values		Malfunction judgment		
ECT1 - ECT2	**IAT - ECT2**	**ECT sensor 1**	**IAT sensor**	**ECT sensor 2**
Higher than 57 °F (32 °C)	Higher than 57 °F (32 °C)	Normal	Normal	Failure
	From -43 °F (-24 °C) to 57 °F (32 °C)	Failure	Normal	Normal
	Lower than -43 °F (-24 °C)	Failure	Failure	Normal
From -43 °F (-24 °C) to 57 °F (32 °C)	Higher than 57 °F (32 °C)	Normal	Failure	Normal
	From -43 °F (-24 °C) to 57 °F (32 °C)	Normal	Normal	Normal
	From -44 °F (-25 °C) to -108 °F (-60 °C)	Normal	Failure Suspended(1)	Normal
	Lower than -108 °F (-60 °C)	Normal	Failure	Normal
Lower than -43 °F (-24 °C)	Higher than 57 °F (32 °C)	Failure	Failure	Normal
	From -43 °F (-24 °C) to 57 °F (32 °C)	Failure	Normal	Normal
	Lower than -43 °F (-24 °C)	Normal	Normal	Failure
(1) Malfunction judgment is suspended because the cooled air introduced after engine start lowers the intake air temperature; the ambient temperature condition does not stay equal.				

DRIVING PATTERN

1. Turn the ignition switch to LOCK (0) or press the engine start/stop button to select the OFF mode, and wait at least 6 hours.
2. Start the engine, and let it idle for at least 10 seconds.
   - Do not use an engine block heater because the engine coolant temperature will not stay equal during engine stop.
   - When freeze data is stored, test the vehicle under an ambient temperature close to the intake air temperature in the freeze data.
   - When an ambient temperature extremely changes, malfunction judgment may not execute. Avoid extreme temperature changing condition after or before engine start. (When the vehicle is parked in the garage, open the shutter to introduce outside air; then start the engine.)

DIAGNOSIS DETAILS

Conditions for setting the DTC

When a malfunction is detected during the first drive cycle, a Pending DTC is stored in the ECM/PCM memory. If the malfunction returns in the next (second) drive cycle, the MIL comes on and a Confirmed DTC and the freeze data are stored.

Conditions for clearing the DTC

The MIL is cleared if the malfunction does not return in three consecutive trips in which the diagnostic runs. The MIL, the Pending DTC, the Confirmed DTC, and the freeze data can be cleared with the scan tool Clear command or by disconnecting the battery.

DTC P2184: ENGINE COOLANT TEMPERATURE (ECT) SENSOR 2 CIRCUIT LOW VOLTAGE



Fig. 292: Engine Coolant Temperature Sensor 2 - Circuit Diagram

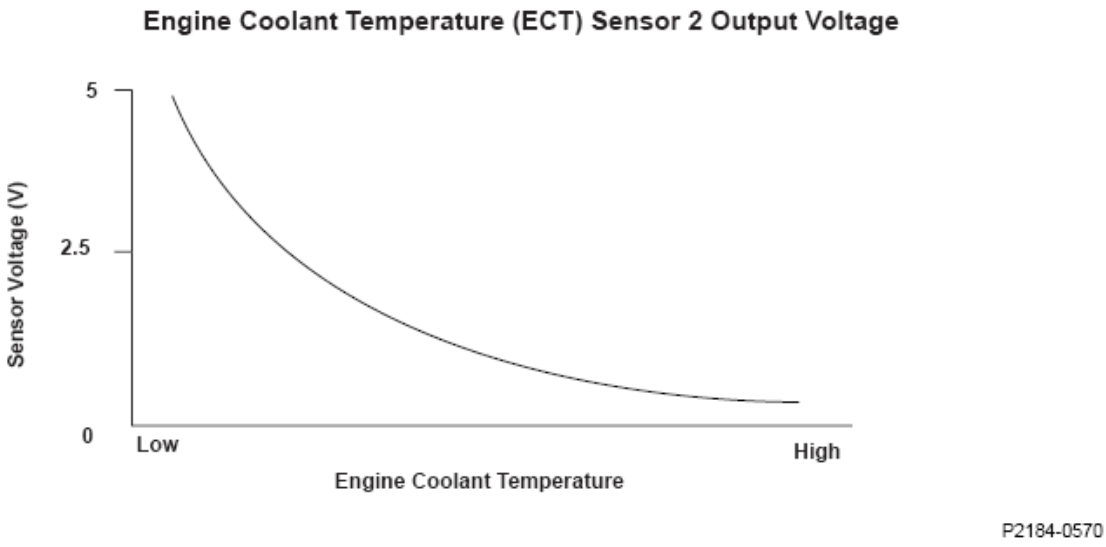


Fig. 293: Engine Coolant Temperature Sensor 2 Output Voltage Graph

GENERAL DESCRIPTION

Engine coolant temperature (ECT) sensor 2 is a thermistor attached to the radiator. The engine control module

(ECM)/powertrain control module (PCM) applies voltage (about 5 V) to the ECT2 signal circuit through a pull-up resistor. As the engine coolant temperature cools, ECT sensor 2 resistance increases, and the ECM/PCM detects a high signal voltage. As the engine coolant warms, the sensor resistance decreases, and the ECM/PCM detects a low signal voltage. If the ECT sensor 2 output voltage is a set value when the engine coolant temperature is high, the ECM/PCM detects a malfunction and stores a DTC.

MONITOR EXECUTION, SEQUENCE, DURATION, DTC TYPE, OBD STATUS

Execution	Continuous
Sequence	None
Duration	2 seconds or more
DTC Type	Two drive cycles, MIL on
OBD Status	PASSED/FAILED/NOT COMPLETED (STILL TESTING)

ENABLE CONDITIONS

Condition	
Ignition switch(1)	ON (II)
Engine start/stop button(2)	ON mode
No active DTCs set (prevents monitor from running)	P2185
(1) Without keyless access system (2) With keyless access system	

MALFUNCTION THRESHOLD

The ECT sensor 2 output voltage is 0.08 V or less for at least 2 seconds.

DIAGNOSIS DETAILS

Conditions for setting the DTC

When a malfunction is detected during the first drive cycle, a Pending DTC is stored in the ECM/PCM memory. If the malfunction returns in the next (second) drive cycle, the MIL comes on and a Confirmed DTC and the freeze data are stored.

Conditions for clearing the DTC

The MIL is cleared if the malfunction does not return in three consecutive trips in which the diagnostic runs. The MIL, the Pending DTC, the Confirmed DTC, and the freeze data can be cleared with the scan tool Clear command or by disconnecting the battery.

DTC P2185: ENGINE COOLANT TEMPERATURE (ECT) SENSOR 2 CIRCUIT HIGH VOLTAGE



Fig. 294: Engine Coolant Temperature Sensor 2 - Circuit Diagram

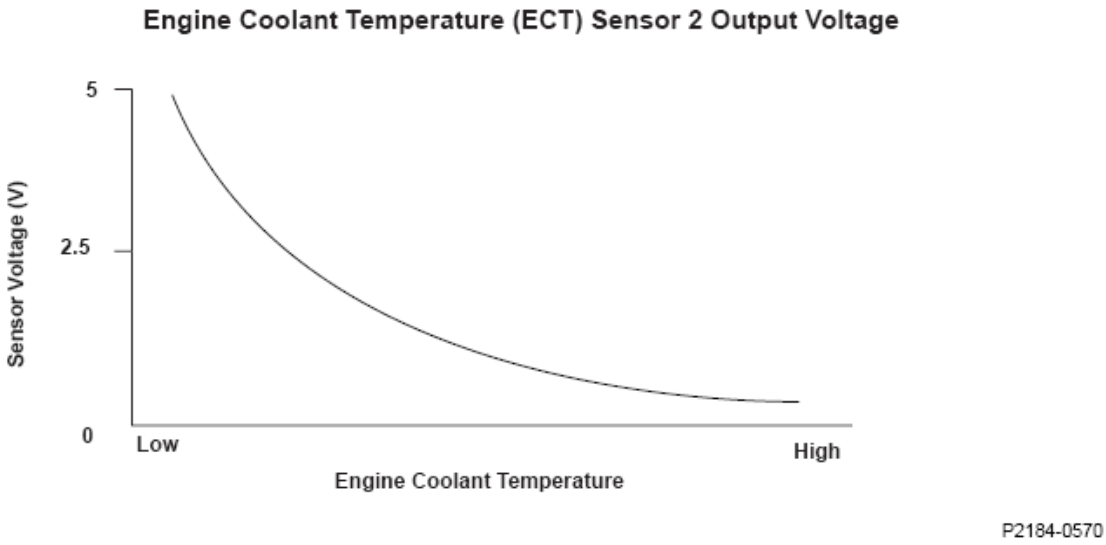


Fig. 295: Engine Coolant Temperature Sensor 2 Output Voltage Graph

GENERAL DESCRIPTION

Engine coolant temperature (ECT) sensor 2 is a thermistor attached to the radiator. The engine control module (ECM)/powertrain control module (PCM) applies voltage (about 5 V) to the ECT2 signal circuit through a pull-up resistor. As the engine coolant temperature cools, ECT sensor 2 resistance increases, and the ECM/PCM detects a high signal voltage. As the engine coolant warms, the sensor resistance decreases, and the ECM/PCM detects a low signal voltage. If the ECT sensor 2 output voltage is a set value when the engine coolant temperature is low, the ECM/PCM detects a malfunction and stores a DTC.

MONITOR EXECUTION, SEQUENCE, DURATION, DTC TYPE, OBD STATUS

Execution	Continuous
Sequence	None
Duration	2 seconds or more
DTC Type	Two drive cycles, MIL on
OBD Status	PASSED/FAILED/NOT COMPLETED (STILL TESTING)

ENABLE CONDITIONS

Condition	
Ignition switch(1)	ON (II)
Engine start/stop button(2)	ON mode
No active DTCs set (prevents monitor from running)	P2184
(1) Without keyless access system (2) With keyless access system	

MALFUNCTION THRESHOLD

The ECT sensor 2 output voltage is 4.92 V or more for at least 2 seconds.

DIAGNOSIS DETAILS

Conditions for setting the DTC

When a malfunction is detected during the first drive cycle, a Pending DTC is stored in the ECM/PCM memory. If the malfunction returns in the next (second) drive cycle, the MIL comes on and a Confirmed DTC and the freeze data are stored.

Conditions for clearing the DTC

The MIL is cleared if the malfunction does not return in three consecutive trips in which the diagnostic runs. The MIL, the Pending DTC, the Confirmed DTC, and the freeze data can be cleared with the scan tool Clear command or by disconnecting the battery.

DTC P2195: REAR AIR/FUEL RATIO (A/F) SENSOR (BANK 1, SENSOR 1) SIGNAL STUCK LEAN

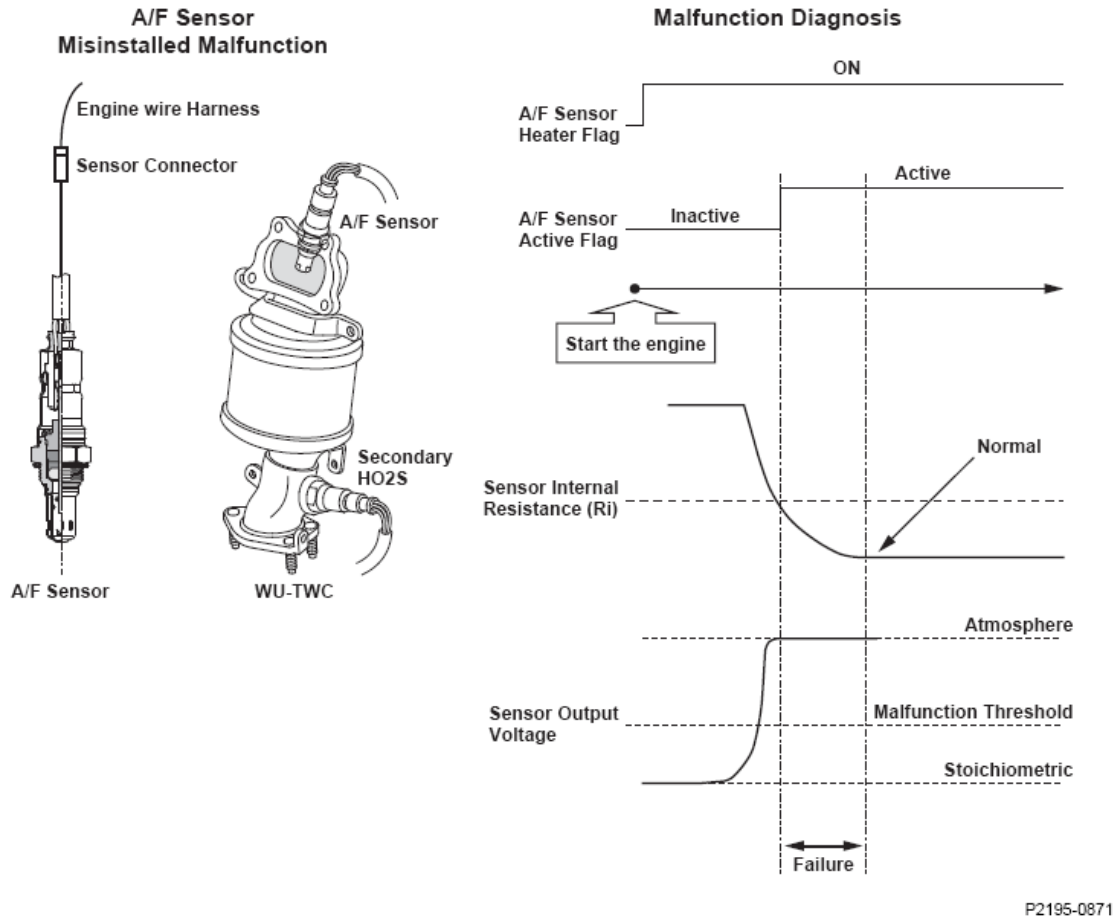


Fig. 296: Rear Air/Fuel Ratio Sensor Characteristics Curve (Bank 1, Sensor 1)

GENERAL DESCRIPTION

When the rear air/fuel ratio (A/F) sensor (bank 1, sensor 1) is properly connected to the engine wire harness, but it is not installed in the exhaust pipe, the feedback is not done properly even if the rear A/F sensor is active after starting the engine. Thus, the exhaust emissions increase. When the rear A/F sensor output stays out of the normal range after the rear A/F sensor becomes active, the engine control module (ECM)/powertrain control module (PCM) detects that the rear A/F sensor is not properly installed and stores a DTC.

MONITOR EXECUTION, SEQUENCE, DURATION, DTC TYPE, OBD STATUS

Execution	Once per driving cycle
Sequence	None
Duration	7.0 seconds or more
DTC Type	Two drive cycles, MIL on
OBD Status	PASSED/FAILED/NOT COMPLETED (STILL TESTING)

ENABLE CONDITIONS

Condition	
Fuel feedback	Other than during fuel cut-off operation
No active DTCs set (prevents monitor from running)	P0134, P0135, P0171, P0172, P0300, P0301, P0302, P0303, P0304, P0305, P0306, P0351, P0352, P0353, P1172, P2195, P2237, P2238, P2243, P2245, P2251, P2252

MALFUNCTION THRESHOLD

The rear A/F sensor (bank 1, sensor 1) output voltage is 3.37 V or more for at least 7.0 seconds.

DRIVING PATTERN

Start the engine, and let it idle for at least 2 minutes.

DIAGNOSIS DETAILS

Conditions for setting the DTC

When a malfunction is detected during the first drive cycle, a Pending DTC is stored in the ECM/PCM memory. If the malfunction returns in the next (second) drive cycle, the MIL comes on and a Confirmed DTC and the freeze data are stored.

Conditions for clearing the DTC

The MIL is cleared if the malfunction does not return in three consecutive trips in which the diagnostic runs. The MIL, the Pending DTC, the Confirmed DTC, and the freeze data can be cleared with the scan tool Clear command or by disconnecting the battery.

DTC P2197: FRONT AIR/FUEL RATIO (A/F) SENSOR (BANK 2, SENSOR 1) SIGNAL STUCK LEAN

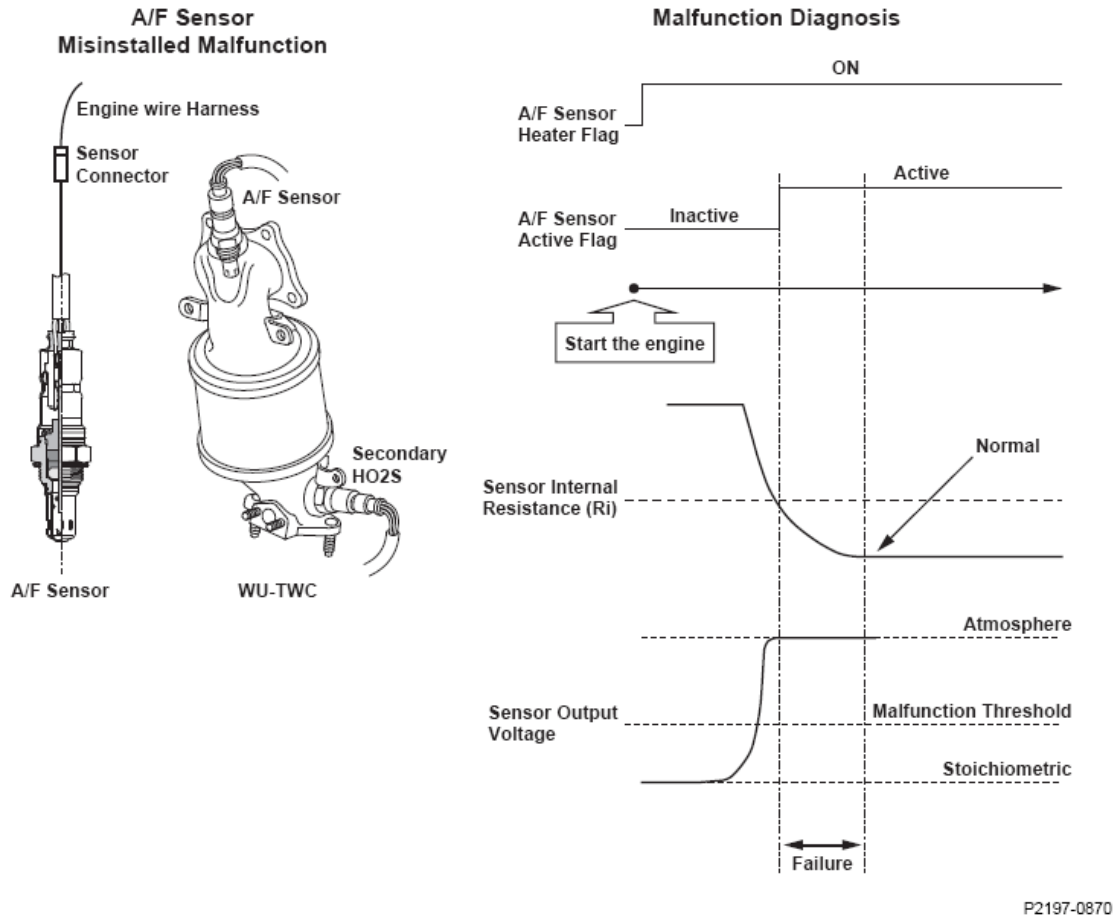


Fig. 297: Front Air/Fuel Ratio Sensor Characteristics Curve (Bank 2, Sensor 1)

GENERAL DESCRIPTION

When the front air/fuel ratio (A/F) sensor (bank 2, sensor 1) is properly connected to the engine wire harness, but it is not installed in the exhaust pipe, the feedback is not done properly even if the front A/F sensor is active after starting the engine. Thus, the exhaust emissions increase. When the front A/F sensor output stays out of the normal range after the front A/F sensor becomes active, the engine control module (ECM)/powertrain control module (PCM) detects that the front A/F sensor is not properly installed and stores a DTC.

MONITOR EXECUTION, SEQUENCE, DURATION, DTC TYPE, OBD STATUS

Execution	Once per driving cycle
Sequence	None
Duration	7.0 seconds or more
DTC Type	Two drive cycles, MIL on
OBD Status	PASSED/FAILED/NOT COMPLETED (STILL TESTING)

ENABLE CONDITIONS

Condition	
Fuel feedback	Other than during fuel cut-off operation
No active DTCs set (prevents monitor from running)	P0154, P0155, P0174, P0175, P0300, P0301, P0302, P0303, P0304, P0305, P0306, P0354, P0355, P0356, P1174, P2197, P2240, P2241, P2247, P2249, P2254, P2255

MALFUNCTION THRESHOLD

The front A/F sensor (bank 2, sensor 1) output voltage is 3.37 V or more for at least 7.0 seconds.

DRIVING PATTERN

Start the engine, and let it idle for at least 2 minutes.

DIAGNOSIS DETAILS

Conditions for setting the DTC

When a malfunction is detected during the first drive cycle, a Pending DTC is stored in the ECM/PCM memory. If the malfunction returns in the next (second) drive cycle, the MIL comes on and a Confirmed DTC and the freeze data are stored.

Conditions for clearing the DTC

The MIL is cleared if the malfunction does not return in three consecutive trips in which the diagnostic runs. The MIL, the Pending DTC, the Confirmed DTC, and the freeze data can be cleared with the scan tool Clear command or by disconnecting the battery.

DTC P2227: BAROMETRIC PRESSURE (BARO) SENSOR CIRCUIT RANGE/PERFORMANCE PROBLEM

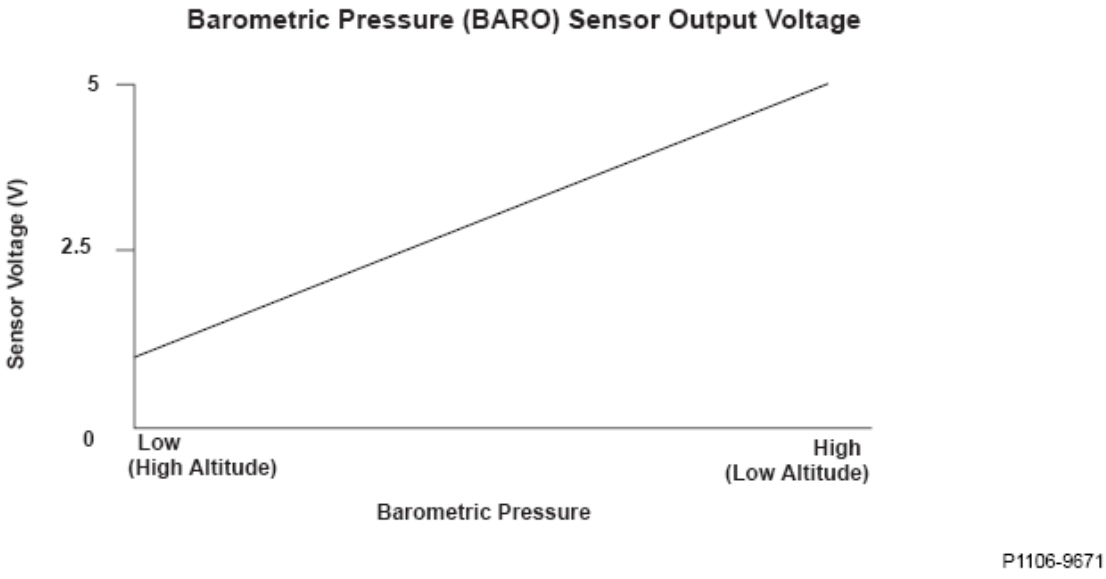


Fig. 298: Barometric Pressure Sensor Output Voltage Graph

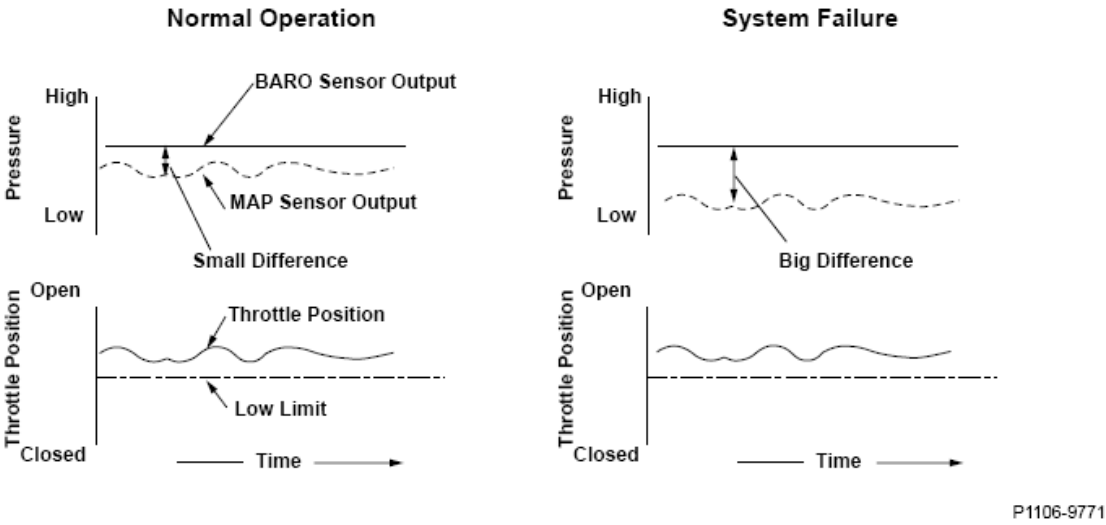


Fig. 299: Barometric Pressure Sensor Output Voltage Characteristics Curve

GENERAL DESCRIPTION

The barometric pressure (BARO) sensor is built into the engine control module (ECM)/powertrain control module (PCM) and monitors atmospheric pressure. When the throttle valve is wide open, the manifold absolute pressure (MAP) sensor output is nearly equal to the BARO sensor output. If the throttle position is beyond a value stored in the ECM/PCM that is used to detect "wide-open throttle," and if the difference between the MAP sensor output and the BARO sensor output is equal to or greater than a set value, the ECM/PCM detects a malfunction in the BARO sensor output and stores a DTC.

MONITOR EXECUTION, SEQUENCE, DURATION, DTC TYPE, OBD STATUS

Execution	Once per driving cycle
Sequence	None
Duration	2.5 seconds or more
DTC Type	Two drive cycles, MIL on
OBD Status	PASSED/FAILED/NOT COMPLETED (STILL TESTING)

ENABLE CONDITIONS

Condition		Minimum	Maximum
Throttle position	1,000 rpm	15.3 °(1) 12.9 °(2)	-
	3,000 rpm(1)	30.6 °	
	4,500 rpm(2)	35.1 °	
No active DTCs set (prevents monitor from running)		P0102, P0103, P0107, P0108, P0117, P0118, P0122, P0123, P0171, P0172, P0174, P0175, P0222, P0223, P0300, P0301, P0302, P0303, P0304, P0305, P0306, P0351, P0352, P0353, P0354, P0355, P0356, P0401, P0404, P0506, P0507, P060A, P0720, P0722, P1077, P1078, P1128, P1129, P1659, P2101, P2118, P2122, P2123, P2127, P2128, P2135, P2138, P2176, P2228, P2229, P2279, P2413, P2646, P2647, P2648, P2649	

(1) J35Z6 engine

(2) J37A4 engine

MALFUNCTION THRESHOLD

The difference between the BARO sensor output and the MAP sensor output is 26 kPa (7.5 inHg, 190 mmHg) or more for at least 2.5 seconds.

DRIVING PATTERN

1. Start the engine. Hold the engine speed at 3,000 rpm without load (A/T in P or N, M/T in neutral) until the radiator fan comes on.
2. Drive the vehicle under Enable Conditions (see "Throttle position") for at least 2.5 seconds.
    - Drive the vehicle in this manner only if the traffic regulations and ambient conditions allow.

DIAGNOSIS DETAILS

Conditions for setting the DTC

When a malfunction is detected during the first drive cycle, a Pending DTC is stored in the ECM/PCM memory. If the malfunction returns in the next (second) drive cycle, the MIL comes on and a Confirmed DTC and the freeze data are stored.

Conditions for clearing the DTC

The MIL is cleared if the malfunction does not return in three consecutive trips in which the diagnostic runs. The MIL, the Pending DTC, the Confirmed DTC, and the freeze data can be cleared with the scan tool Clear command or by disconnecting the battery.

DTC P2228: BAROMETRIC PRESSURE (BARO) SENSOR CIRCUIT LOW VOLTAGE

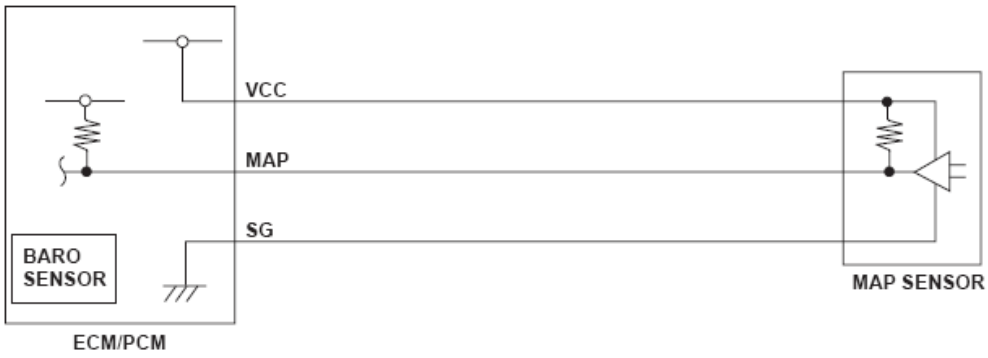


Fig. 300: Barometric Pressure Sensor - Circuit Diagram

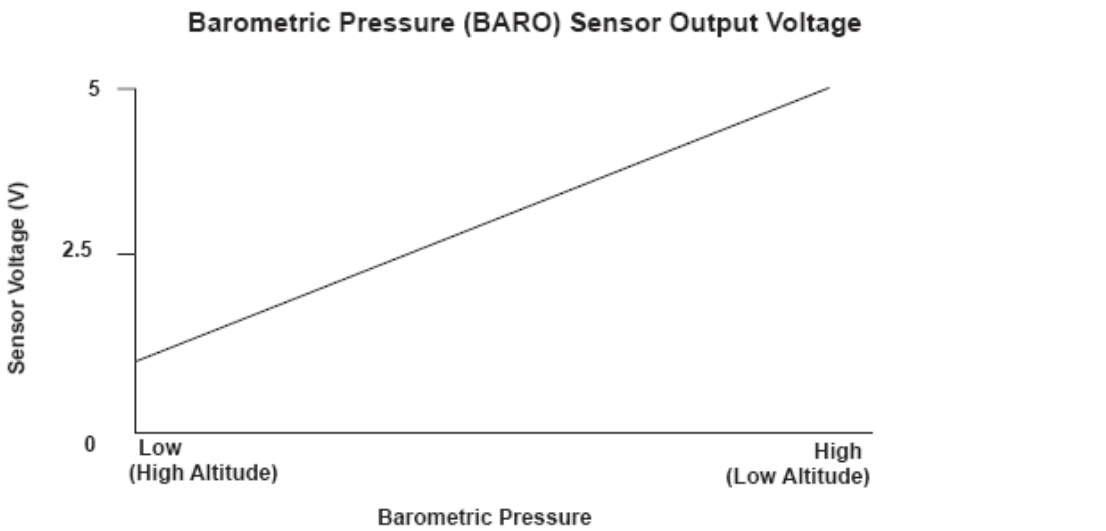


Fig. 301: Barometric Pressure Sensor Output Voltage Graph

GENERAL DESCRIPTION

The barometric pressure (BARO) sensor is built into the engine control module (ECM)/powertrain control module (PCM), and it monitors atmospheric pressure. The ECM/PCM estimates appropriate intake airflow from the manifold absolute pressure (MAP) sensor output voltage and the BARO sensor output voltage. If the BARO

sensor output voltage is a specified value, the ECM/PCM detects a malfunction and stores a DTC.

MONITOR EXECUTION, SEQUENCE, DURATION, DTC TYPE, OBD STATUS

Execution	Continuous
Sequence	None
Duration	2.0 seconds or more
DTC Type	Two drive cycles, MIL on
OBD Status	PASSED/FAILED/NOT COMPLETED (STILL TESTING)

ENABLE CONDITIONS

Condition	
Ignition switch(1)	ON (II)
Engine start/stop button(2)	ON mode
No active DTCs set (prevents monitor from running)	P2229
(1) Without keyless access system (2) With keyless access system	

MALFUNCTION THRESHOLD

The BARO sensor output voltage is 1.08 V or less for at least 2.0 seconds.

DIAGNOSIS DETAILS

Conditions for setting the DTC

When a malfunction is detected during the first drive cycle, a Pending DTC is stored in the ECM/PCM memory. If the malfunction returns in the next (second) drive cycle, the MIL comes on and a Confirmed DTC and the freeze data are stored.

Conditions for clearing the DTC

The MIL is cleared if the malfunction does not return in three consecutive trips in which the diagnostic runs. The MIL, the Pending DTC, the Confirmed DTC, and the freeze data can be cleared with the scan tool Clear command or by disconnecting the battery.

DTC P2229: BAROMETRIC PRESSURE (BARO) SENSOR CIRCUIT HIGH VOLTAGE

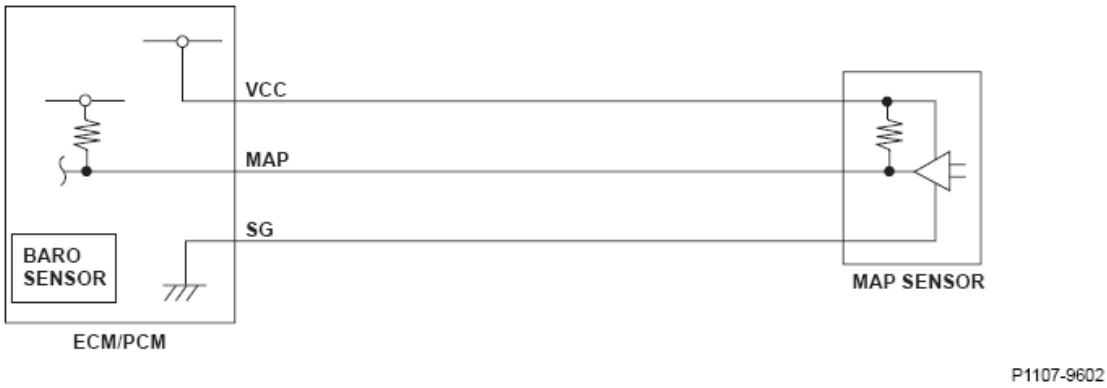


Fig. 302: Barometric Pressure Sensor - Circuit Diagram

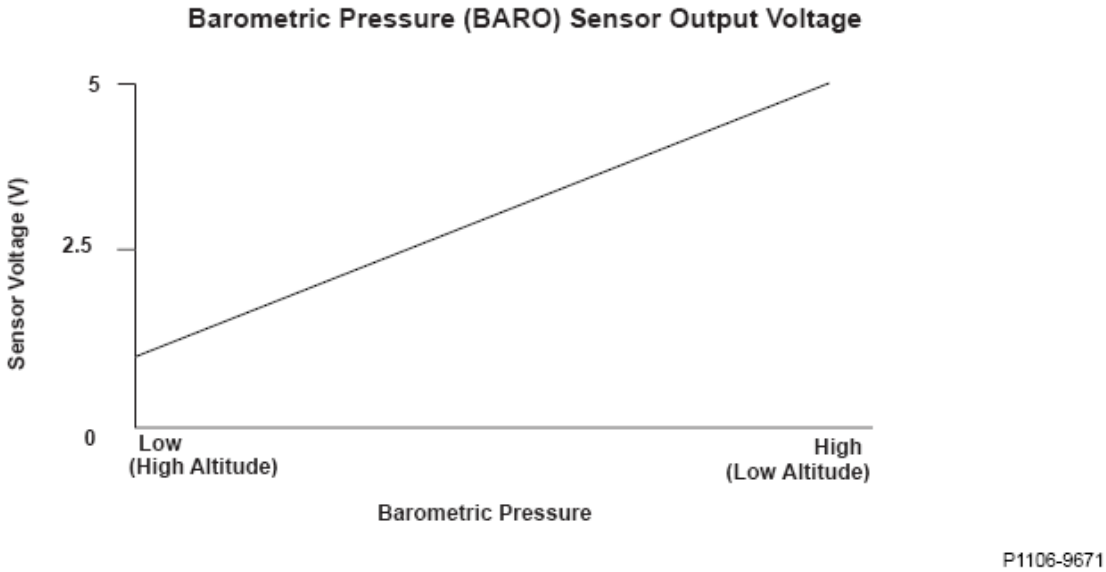


Fig. 303: Barometric Pressure Sensor Output Voltage Graph

GENERAL DESCRIPTION

The barometric pressure (BARO) sensor is built into the engine control module (ECM)/powertrain control module (PCM), and it monitors atmospheric pressure. The ECM/PCM estimates appropriate intake airflow from the manifold absolute pressure (MAP) sensor output voltage and the BARO sensor output voltage. If the BARO sensor output voltage is a specified value, the ECM/PCM detects a malfunction and stores a DTC.

MONITOR EXECUTION, SEQUENCE, DURATION, DTC TYPE, OBD STATUS

Execution	Continuous
Sequence	None
Duration	2.0 seconds or more
DTC Type	Two drive cycles, MIL on
OBD Status	PASSED/FAILED/NOT COMPLETED (STILL TESTING)

ENABLE CONDITIONS

Condition	
Ignition switch(1)	ON (II)
Engine start/stop button(2)	ON mode
No active DTCs set (prevents monitor from running)	P2228
(1) Without keyless access system (2) With keyless access system	

MALFUNCTION THRESHOLD

The BARO sensor output voltage is 4.95 V or more for at least 2.0 seconds.

DIAGNOSIS DETAILS

Conditions for setting the DTC

When a malfunction is detected during the first drive cycle, a Pending DTC is stored in the ECM/PCM memory. If the malfunction returns in the next (second) drive cycle, the MIL comes on and a Confirmed DTC and the freeze data are stored.

Conditions for clearing the DTC

The MIL is cleared if the malfunction does not return in three consecutive trips in which the diagnostic runs. The MIL, the Pending DTC, the Confirmed DTC, and the freeze data can be cleared with the scan tool Clear command or by disconnecting the battery.

DTC P2237: REAR AIR/FUEL RATIO (A/F) SENSOR (BANK 1, SENSOR 1) IP CIRCUIT HIGH VOLTAGE

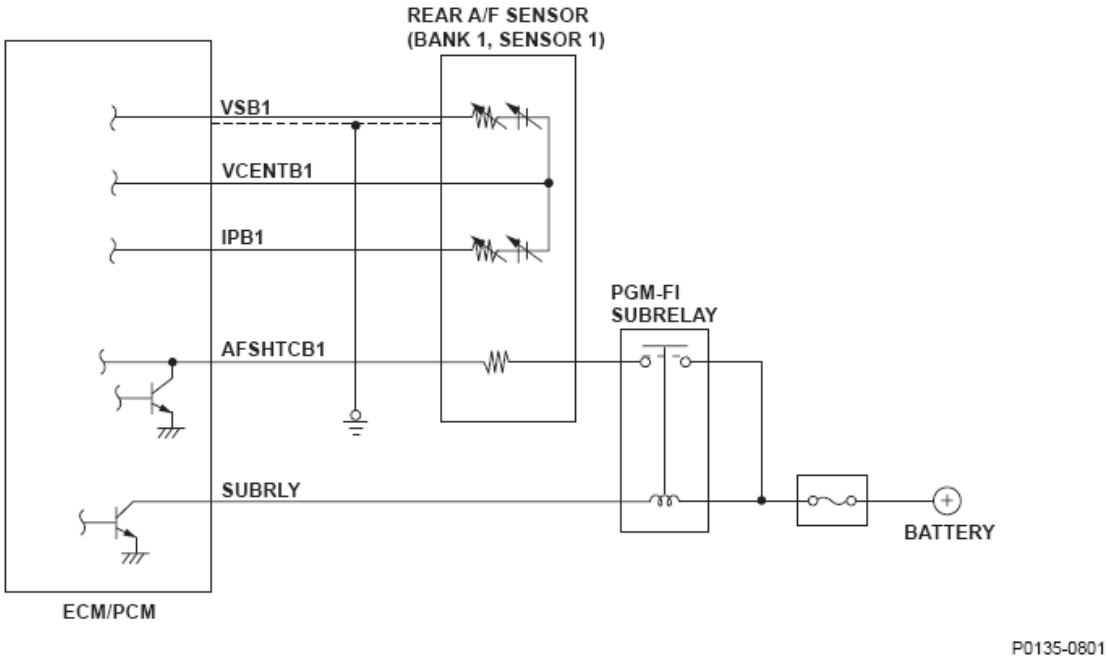


Fig. 304: Rear Air/Fuel Ratio Sensor - Circuit Diagram (Bank 1, Sensor 1)

GENERAL DESCRIPTION

The rear air/fuel ratio (A/F) sensor (bank 1, sensor 1) is installed in the exhaust manifold and detects oxygen content in the exhaust gas. The rear A/F sensor transmits a signal to the engine control module (ECM)/powertrain control module (PCM), and it enables overall feedback control. The ECM/PCM controls fuel injection duration by comparing the target air/fuel ratio with the rear A/F sensor signal. If the IPB1 terminal voltage is out of a specified range, the ECM/PCM detects a malfunction and stores a DTC.

MONITOR EXECUTION, SEQUENCE, DURATION, DTC TYPE, OBD STATUS

Execution	Continuous
Sequence	None
Duration	15 seconds or more
DTC Type	Two drive cycles, MIL on
OBD Status	PASSED/FAILED/NOT COMPLETED (STILL TESTING)

ENABLE CONDITIONS

Condition	Minimum	Maximum
VSB1 terminal voltage	3.4 V	4.8 V
Battery voltage	9.0 V	-
State of the engine	Running	
No active DTCs set (prevents monitor from running)	P0135, P2238, P2243, P2245, P2251, P2252	

MALFUNCTION THRESHOLD

The IPB1 terminal voltage is 2.0 V or less, or 5.6 V or more, for at least 15 seconds.

DRIVING PATTERN

Start the engine. Hold the engine speed at 3,000 rpm without load (A/T in P or N, M/T in neutral) until the radiator fan comes on, then let it idle for 2 minutes.

DIAGNOSIS DETAILS

Conditions for setting the DTC

When a malfunction is detected during the first drive cycle, a Pending DTC is stored in the ECM/PCM memory. If the malfunction returns in the next (second) drive cycle, the MIL comes on and a Confirmed DTC and the freeze data are stored.

Conditions for clearing the DTC

The MIL is cleared if the malfunction does not return in three consecutive trips in which the diagnostic runs. The MIL, the Pending DTC, the Confirmed DTC, and the freeze data can be cleared with the scan tool Clear command or by disconnecting the battery.

DTC P2238: REAR AIR/FUEL RATIO (A/F) SENSOR (BANK 1, SENSOR 1) IP CIRCUIT LOW VOLTAGE

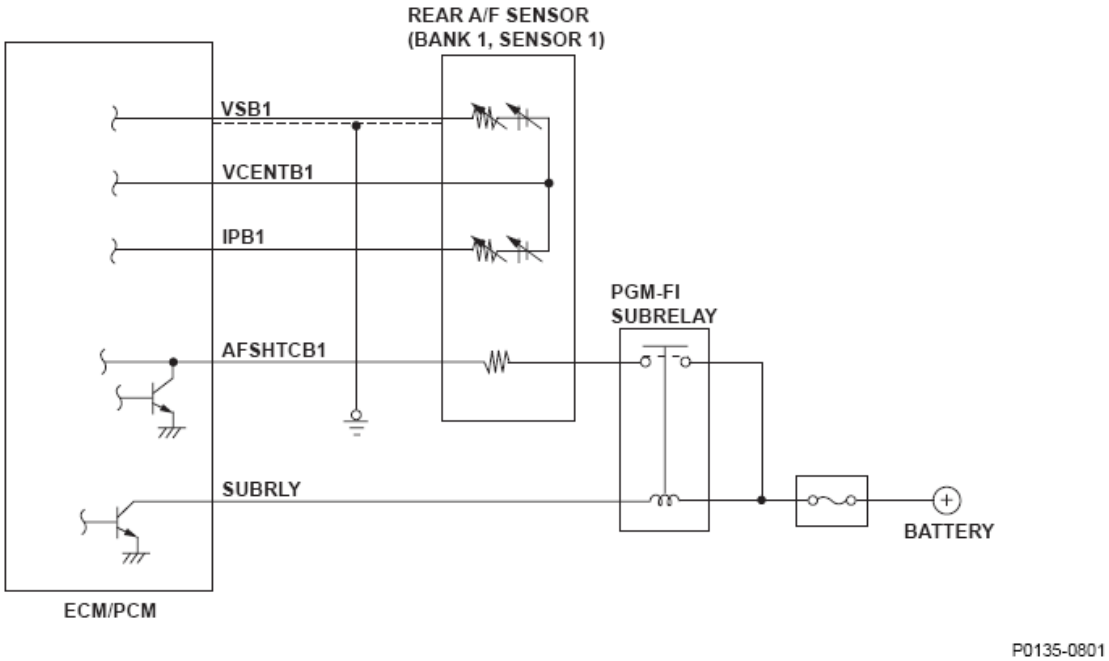


Fig. 305: Rear Air/Fuel Ratio Sensor - Circuit Diagram (Bank 1, Sensor 1)

GENERAL DESCRIPTION

The rear air/fuel ratio (A/F) sensor (bank 1, sensor 1) is installed in the exhaust manifold and detects oxygen content in the exhaust gas. The rear A/F sensor transmits a signal to the engine control module (ECM)/powertrain control module (PCM), and it enables overall feedback control. The ECM/PCM controls fuel injection duration by comparing the target air/fuel ratio with the rear A/F sensor signal. When the self diagnosis function in the ECM/PCM detects a short circuit failure, it measures the ECM/PCM input voltage of VSB1/VCENTB1/IPB1. If the IPB1 terminal voltage is less than VSB1/VCENTB1 terminal voltage, the ECM/PCM detects a malfunction and stores a DTC.

MONITOR EXECUTION, SEQUENCE, DURATION, DTC TYPE, OBD STATUS

Execution	Continuous
Sequence	None
Duration	0.5 second or more
DTC Type	Two drive cycles, MIL on
OBD Status	PASSED/FAILED/NOT COMPLETED (STILL TESTING)

ENABLE CONDITIONS

Condition	Minimum	Maximum
Battery voltage	9.0 V	-
State of the engine	Running	
No active DTCs set (prevents monitor from running)	P0135, P2237, P2243, P2245, P2251, P2252	

MALFUNCTION THRESHOLD

The IPB1 terminal voltage is less than VSB1/VCENTB1 terminal voltage after the self diagnosis function in the ECM/PCM detects a short circuit failure for at least 0.5 second.

DRIVING PATTERN

Start the engine. Hold the engine speed at 3,000 rpm without load (A/T in P or N, M/T in neutral) until the radiator fan comes on, then let it idle for 2 minutes.

DIAGNOSIS DETAILS

Conditions for setting the DTC

When a malfunction is detected during the first drive cycle, a Pending DTC is stored in the ECM/PCM memory. If the malfunction returns in the next (second) drive cycle, the MIL comes on and a Confirmed DTC and the freeze data are stored.

Conditions for clearing the DTC

The MIL is cleared if the malfunction does not return in three consecutive trips in which the diagnostic runs. The MIL, the Pending DTC, the Confirmed DTC, and the freeze data can be cleared with the scan tool Clear command or by disconnecting the battery.

DTC P2240: FRONT AIR/FUEL RATIO (A/F) SENSOR (BANK 2, SENSOR 1) IP CIRCUIT HIGH VOLTAGE

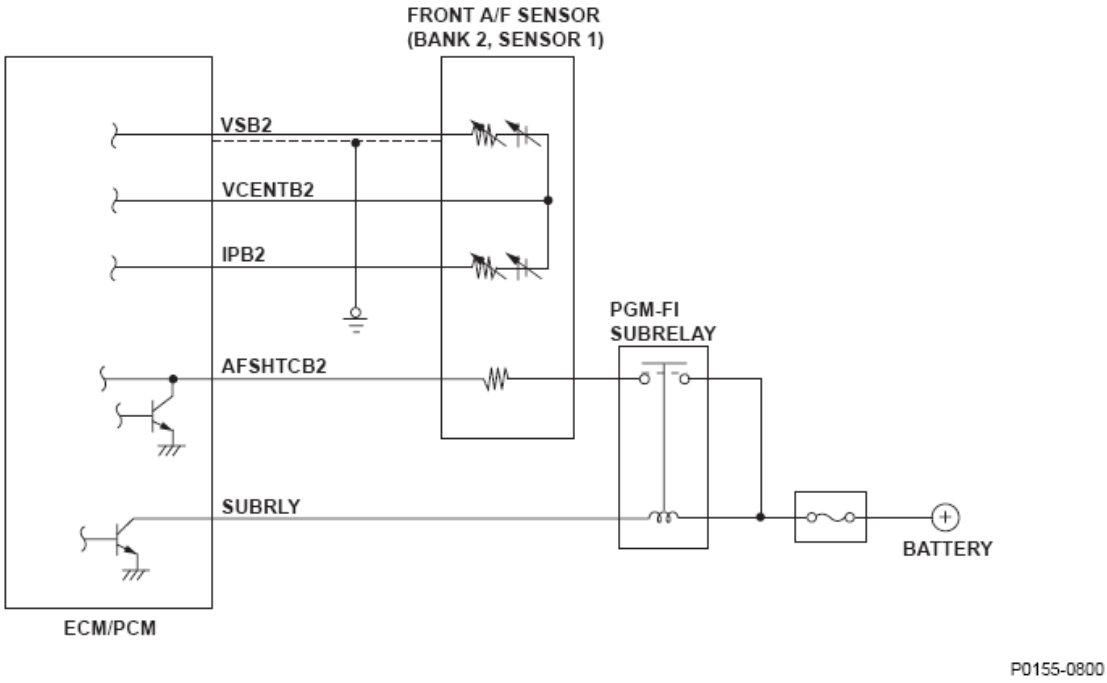


Fig. 306: Front Air/Fuel Ratio Sensor - Circuit Diagram (Bank 2, Sensor 1)

GENERAL DESCRIPTION

The front air/fuel ratio (A/F) sensor (bank 2, sensor 1) is installed in the exhaust manifold and detects oxygen content in the exhaust gas. The front A/F sensor transmits a signal to the engine control module (ECM)/powertrain control module (PCM), and it enables overall feedback control. The ECM/PCM controls fuel injection duration by comparing the target air/fuel ratio with the front A/F sensor signal. If the IPB2 terminal voltage is out of a specified range, the ECM/PCM detects a malfunction and stores a DTC.

MONITOR EXECUTION, SEQUENCE, DURATION, DTC TYPE, OBD STATUS

Execution	Continuous
Sequence	None
Duration	15 seconds or more
DTC Type	Two drive cycles, MIL on
OBD Status	PASSED/FAILED/NOT COMPLETED (STILL TESTING)

ENABLE CONDITIONS

Condition	Minimum	Maximum
VSB2 terminal voltage	3.4 V	4.8 V
State of the engine	Running	

No active DTCs set (prevents monitor from running)	P0155, P2241, P2247, P2249, P2254, P2255

MALFUNCTION THRESHOLD

The IPB2 terminal voltage is 2.0 V or less, or 5.6 V or more, for at least 15 seconds.

DRIVING PATTERN

Start the engine. Hold the engine speed at 3,000 rpm without load (A/T in P or N, M/T in neutral) until the radiator fan comes on, then let it idle for 2 minutes.

DIAGNOSIS DETAILS

Conditions for setting the DTC

When a malfunction is detected during the first drive cycle, a Pending DTC is stored in the ECM/PCM memory. If the malfunction returns in the next (second) drive cycle, the MIL comes on and a Confirmed DTC and the freeze data are stored.

Conditions for clearing the DTC

The MIL is cleared if the malfunction does not return in three consecutive trips in which the diagnostic runs. The MIL, the Pending DTC, the Confirmed DTC, and the freeze data can be cleared with the scan tool Clear command or by disconnecting the battery.

DTC P2241: FRONT AIR/FUEL RATIO (A/F) SENSOR (BANK 2, SENSOR 1) IP CIRCUIT LOW VOLTAGE

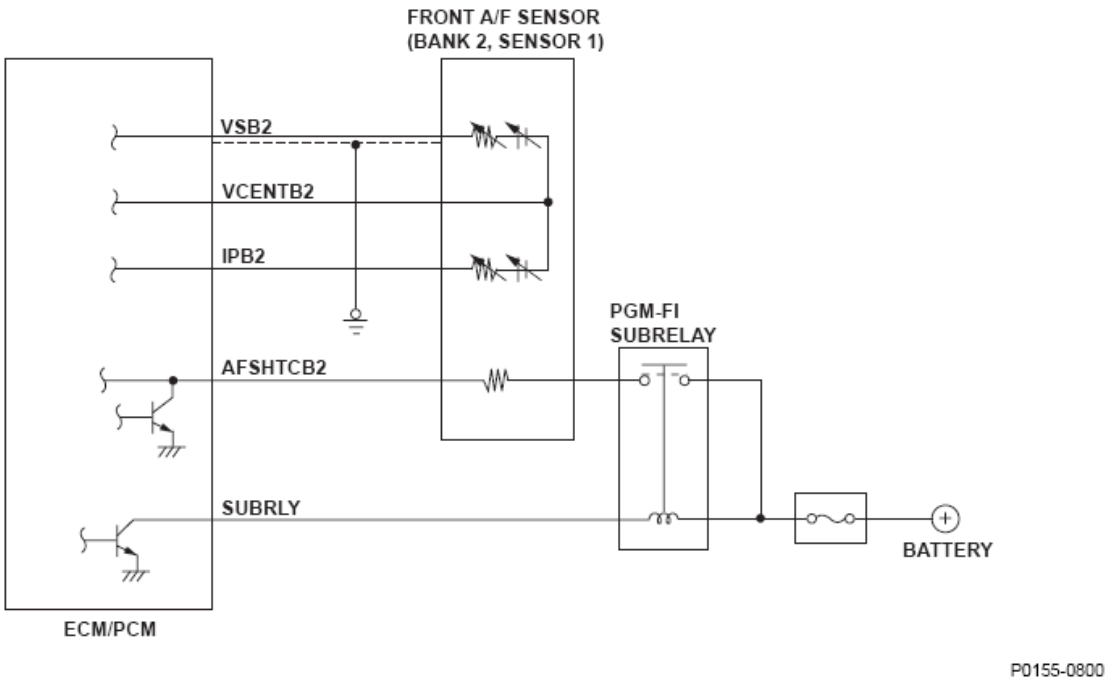


Fig. 307: Front Air/Fuel Ratio Sensor - Circuit Diagram (Bank 2, Sensor 1)

GENERAL DESCRIPTION

The front air/fuel ratio (A/F) sensor (bank 2, sensor 1) is installed in the exhaust manifold and detects oxygen content in the exhaust gas. The front A/F sensor transmits a signal to the engine control module (ECM)/powertrain control module (PCM), and it enables overall feedback control. The ECM/PCM controls fuel injection duration by comparing the target air/fuel ratio with the front A/F sensor signal. When the self diagnosis function in the ECM/PCM detects a short circuit failure, it measures the ECM/PCM input voltage of VSB2/VCENTB2/IPB2. If the IPB2 terminal voltage is less than VSB2/VCENTB2 terminal voltage, the ECM/PCM detects a malfunction and stores a DTC.

MONITOR EXECUTION, SEQUENCE, DURATION, DTC TYPE, OBD STATUS

Execution	Continuous
Sequence	None
Duration	0.5 second or more
DTC Type	Two drive cycles, MIL on
OBD Status	PASSED/FAILED/NOT COMPLETED (STILL TESTING)

ENABLE CONDITIONS

Condition	Minimum	Maximum
Battery voltage	9.0 V	-
State of the engine	Running	
No active DTCs set (prevents monitor from running)	P0155, P2240, P2247, P2249, P2254, P2255	

MALFUNCTION THRESHOLD

The IPB2 terminal voltage is less than VSB2/VCENTB2 terminal voltage after the self diagnosis function in the ECM/PCM detects a short circuit failure for at least 0.5 second.

DRIVING PATTERN

Start the engine. Hold the engine speed at 3,000 rpm without load (A/T in P or N, M/T in neutral) until the radiator fan comes on, then let it idle for 2 minutes.

DIAGNOSIS DETAILS

Conditions for setting the DTC

When a malfunction is detected during the first drive cycle, a Pending DTC is stored in the ECM/PCM memory. If the malfunction returns in the next (second) drive cycle, the MIL comes on and a Confirmed DTC and the freeze data are stored.

Conditions for clearing the DTC

The MIL is cleared if the malfunction does not return in three consecutive trips in which the diagnostic runs. The MIL, the Pending DTC, the Confirmed DTC, and the freeze data can be cleared with the scan tool Clear command or by disconnecting the battery.

DTC P2243: REAR AIR/FUEL RATIO (A/F) SENSOR (BANK 1, SENSOR 1) VCENT CIRCUIT HIGH VOLTAGE

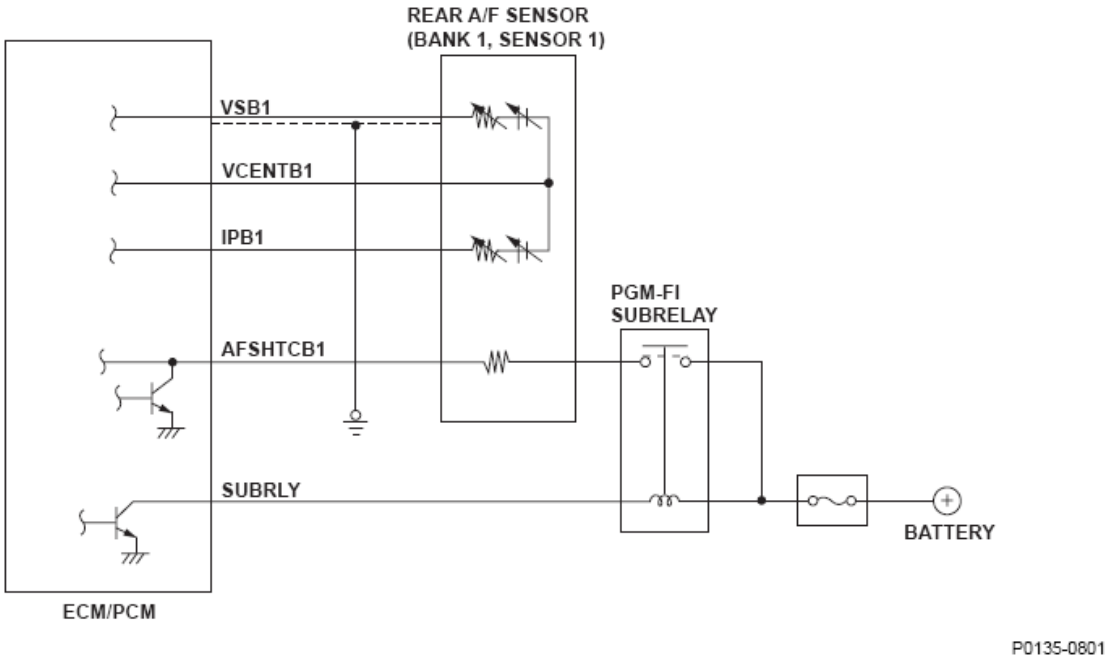


Fig. 308: Rear Air/Fuel Ratio Sensor - Circuit Diagram (Bank 1, Sensor 1)

GENERAL DESCRIPTION

The rear air/fuel ratio (A/F) sensor (bank 1, sensor 1) is installed in the exhaust manifold and detects oxygen content in the exhaust gas. The rear A/F sensor transmits a signal to the engine control module (ECM)/powertrain control module (PCM), and it enables overall feedback control. The ECM/PCM controls fuel injection duration by comparing the target air/fuel ratio with the rear A/F sensor signal. If the VSB1 terminal voltage is a specified value for a set time, the ECM/PCM detects a malfunction and stores a DTC.

MONITOR EXECUTION, SEQUENCE, DURATION, DTC TYPE, OBD STATUS

Execution	Continuous
Sequence	None
Duration	5 seconds or more(1), 38 seconds or more(2)
DTC Type	Two drive cycles, MIL on
OBD Status	PASSED/FAILED/NOT COMPLETED (STILL TESTING)
(1) After the sensor becomes active (2) Before the sensor becomes active	

ENABLE CONDITIONS

Condition	Minimum	Maximum
Battery voltage	9.0 V	-
State of the engine	Running	
No active DTCs set (prevents monitor from running)	P0135, P2237, P2238, P2245, P2251, P2252	

MALFUNCTION THRESHOLD

The VSB1 terminal voltage is 5.3 V or less for at least 5 seconds*, 38 seconds**.

DRIVING PATTERN

Start the engine. Hold the engine speed at 3,000 rpm without load (A/T in P or N, M/T in neutral) until the radiator fan comes on, then let it idle for 2 minutes.

DIAGNOSIS DETAILS

Conditions for setting the DTC

When a malfunction is detected during the first drive cycle, a Pending DTC is stored in the ECM/PCM memory. If the malfunction returns in the next (second) drive cycle, the MIL comes on and a Confirmed DTC and the freeze data are stored.

Conditions for clearing the DTC

The MIL is cleared if the malfunction does not return in three consecutive trips in which the diagnostic runs. The MIL, the Pending DTC, the Confirmed DTC, and the freeze data can be cleared with the scan tool Clear command or by disconnecting the battery.

DTC P2245: REAR AIR/FUEL RATIO (A/F) SENSOR (BANK 1, SENSOR 1) VCENT CIRCUIT LOW VOLTAGE

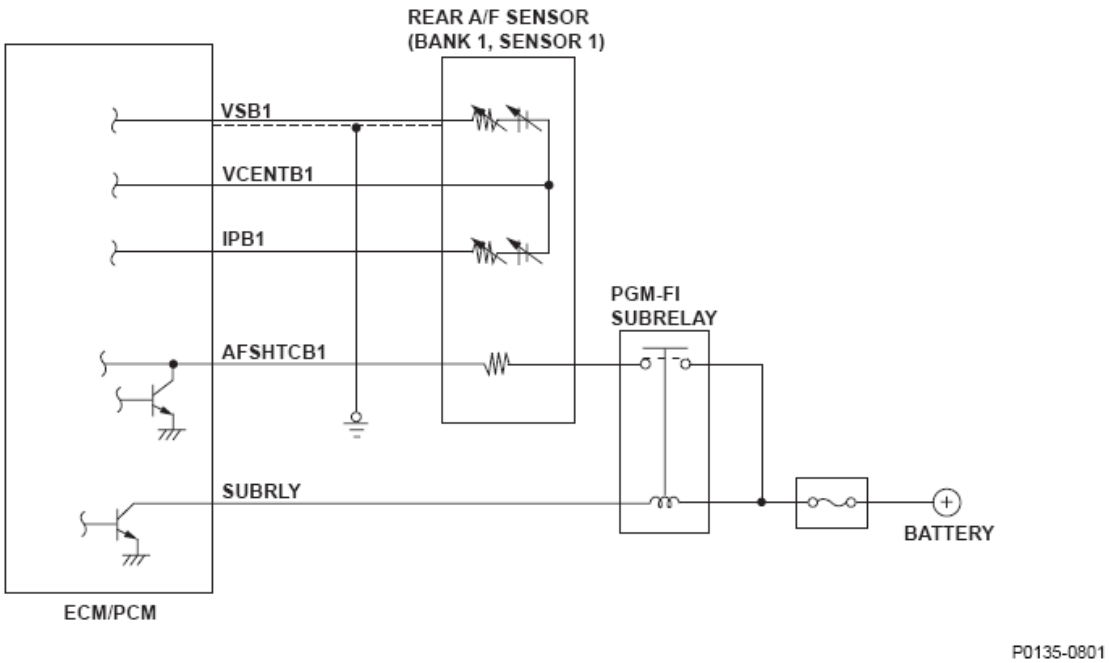


Fig. 309: Rear Air/Fuel Ratio Sensor - Circuit Diagram (Bank 1, Sensor 1)

GENERAL DESCRIPTION

The rear air/fuel ratio (A/F) sensor (bank 1, sensor 1) is installed in the exhaust manifold and detects oxygen content in the exhaust gas. The rear A/F sensor transmits a signal to the engine control module (ECM)/powertrain control module (PCM), and it enables overall feedback control. The ECM/PCM controls fuel injection duration by comparing the target air/fuel ratio with the rear A/F sensor signal. When the self diagnosis function in the ECM/PCM detects a short circuit failure, it measures the ECM/PCM input voltage of VSB1/VCENTB1/IPB1. If the VCENTB1 terminal voltage is less than VSB1/IPB1 terminal voltage, the ECM/PCM detects a malfunction and stores a DTC.

MONITOR EXECUTION, SEQUENCE, DURATION, DTC TYPE, OBD STATUS

Execution	Continuous
Sequence	None
Duration	0.5 second or more
DTC Type	Two drive cycles, MIL on
OBD Status	PASSED/FAILED/NOT COMPLETED (STILL TESTING)

ENABLE CONDITIONS

Condition	Minimum	Maximum
Battery voltage	9.0 V	-
State of the engine	Running	
No active DTCs set (prevents monitor from running)	P0135, P2237, P2238, P2243, P2251, P2252	

MALFUNCTION THRESHOLD

The VCENTB1 terminal voltage is less than VSB1/IPB1 terminal voltage after the self diagnosis function in the ECM/PCM detects a short circuit failure for at least 0.5 second.

DRIVING PATTERN

Start the engine. Hold the engine speed at 3,000 rpm without load (A/T in P or N, M/T in neutral) until the radiator fan comes on, then let it idle for 2 minutes.

DIAGNOSIS DETAILS

Conditions for setting the DTC

When a malfunction is detected during the first drive cycle, a Pending DTC is stored in the ECM/PCM memory. If the malfunction returns in the next (second) drive cycle, the MIL comes on and a Confirmed DTC and the freeze data are stored.

Conditions for clearing the DTC

The MIL is cleared if the malfunction does not return in three consecutive trips in which the diagnostic runs. The MIL, the Pending DTC, the Confirmed DTC, and the freeze data can be cleared with the scan tool Clear command or by disconnecting the battery.

DTC P2247: FRONT AIR/FUEL RATIO (A/F) SENSOR (BANK 2, SENSOR 1) VCENT CIRCUIT HIGH VOLTAGE

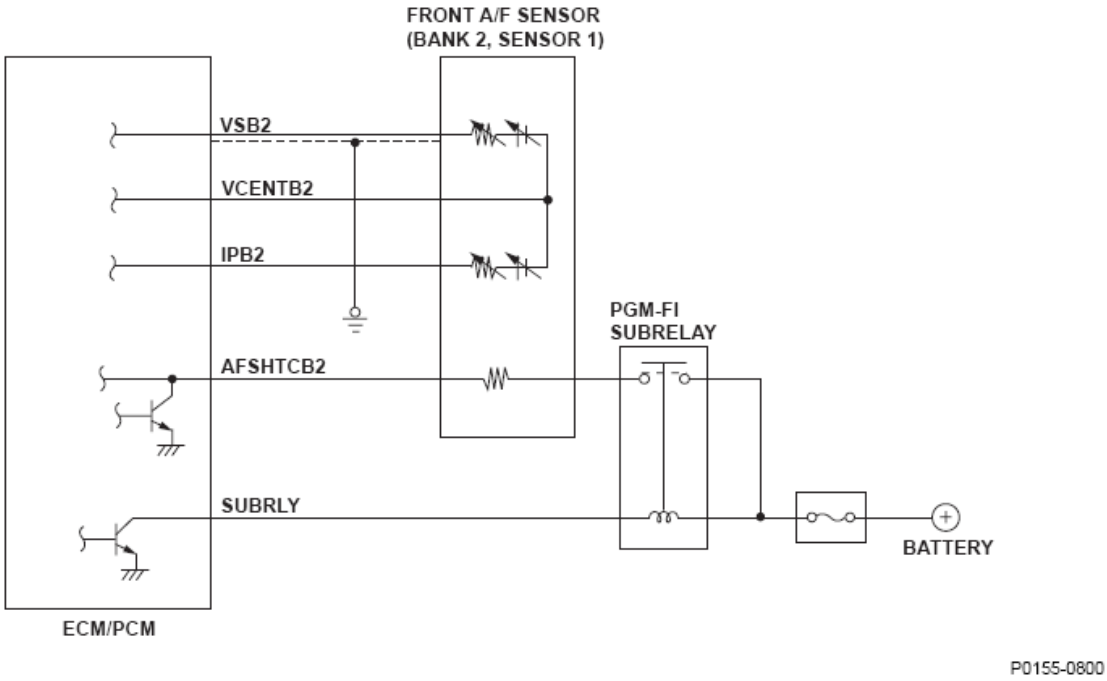


Fig. 310: Front Air/Fuel Ratio Sensor - Circuit Diagram (Bank 2, Sensor 1)

GENERAL DESCRIPTION

The front air/fuel ratio (A/F) sensor (bank 2, sensor 1) is installed in the exhaust manifold and detects oxygen content in the exhaust gas. The front A/F sensor transmits a signal to the engine control module (ECM)/powertrain control module (PCM), and it enables overall feedback control. The ECM/PCM controls fuel injection duration by comparing the target air/fuel ratio with the front A/F sensor signal. If the VSB2 terminal voltage is a specified value for a set time, the ECM/PCM detects a malfunction and stores a DTC.

MONITOR EXECUTION, SEQUENCE, DURATION, DTC TYPE, OBD STATUS

Execution	Continuous
Sequence	None
Duration	5 seconds or more(1), 38 seconds or more(2)
DTC Type	Two drive cycles, MIL on
OBD Status	PASSED/FAILED/NOT COMPLETED (STILL TESTING)
(1) After the sensor becomes active (2) Before the sensor becomes active	

ENABLE CONDITIONS

Condition	Minimum	Maximum
Battery voltage	9.0 V	-
State of the engine	Running	

No active DTCs set (prevents monitor from running)	P0155, P2240, P2241, P2249, P2254, P2255

MALFUNCTION THRESHOLD

The VSB2 terminal voltage is 5.3 V or less for at least 5 seconds*, 38 seconds**.

DRIVING PATTERN

Start the engine. Hold the engine speed at 3,000 rpm without load (A/T in P or N, M/T in neutral) until the radiator fan comes on, then let it idle for 2 minutes.

DIAGNOSIS DETAILS

Conditions for setting the DTC

When a malfunction is detected during the first drive cycle, a Pending DTC is stored in the ECM/PCM memory. If the malfunction returns in the next (second) drive cycle, the MIL comes on and a Confirmed DTC and the freeze data are stored.

Conditions for clearing the DTC

The MIL is cleared if the malfunction does not return in three consecutive trips in which the diagnostic runs. The MIL, the Pending DTC, the Confirmed DTC, and the freeze data can be cleared with the scan tool Clear command or by disconnecting the battery.

DTC P2249: FRONT AIR/FUEL RATIO (A/F) SENSOR (BANK 2, SENSOR 1) VCENT CIRCUIT LOW VOLTAGE

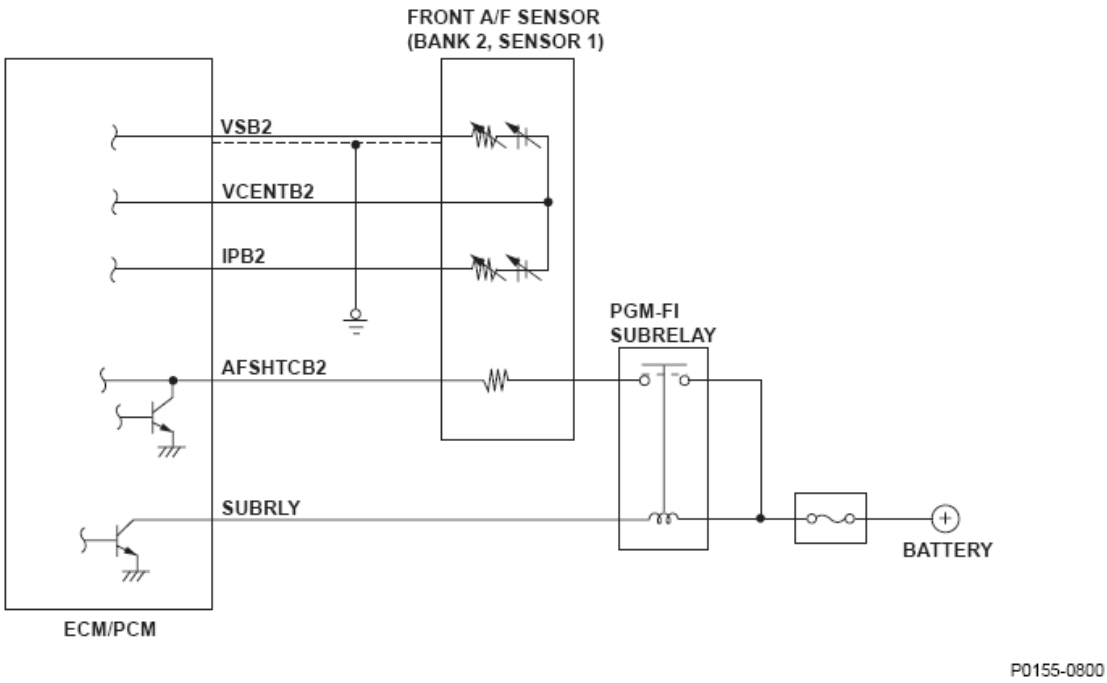


Fig. 311: Front Air/Fuel Ratio Sensor - Circuit Diagram (Bank 2, Sensor 1)

GENERAL DESCRIPTION

The front air/fuel ratio (A/F) sensor (bank 2, sensor 1) is installed in the exhaust manifold and detects oxygen content in the exhaust gas. The front A/F sensor transmits a signal to the engine control module (ECM)/powertrain control module (PCM), and it enables overall feedback control. The ECM/PCM controls fuel injection duration by comparing the target air/fuel ratio with the front A/F sensor signal. When the self diagnosis function in the ECM/PCM detects a short circuit failure, it measures the ECM/PCM input voltage of VSB2/VCENTB2/IPB2. If the VCENTB2 terminal voltage is less than VSB2/IPB2 terminal voltage, the ECM/PCM detects a malfunction and stores a DTC.

MONITOR EXECUTION, SEQUENCE, DURATION, DTC TYPE, OBD STATUS

Execution	Continuous
Sequence	None
Duration	0.5 second or more
DTC Type	Two drive cycles, MIL on
OBD Status	PASSED/FAILED/NOT COMPLETED (STILL TESTING)

ENABLE CONDITIONS

Condition	Minimum	Maximum
Battery voltage	9.0 V	-
State of the engine	Running	
No active DTCs set (prevents monitor from running)	P0155, P2240, P2241, P2247, P2254, P2255	

MALFUNCTION THRESHOLD

The VCENTB2 input terminal voltage is less than VSB2/IPB2 terminal voltage after the self diagnosis function in the ECM/PCM detects a short circuit failure for at least 0.5 second.

DRIVING PATTERN

Start the engine. Hold the engine speed at 3,000 rpm without load (A/T in P or N, M/T in neutral) until the radiator fan comes on, then let it idle for 2 minutes.

DIAGNOSIS DETAILS

Conditions for setting the DTC

When a malfunction is detected during the first drive cycle, a Pending DTC is stored in the ECM/PCM memory. If the malfunction returns in the next (second) drive cycle, the MIL comes on and a Confirmed DTC and the freeze data are stored.

Conditions for clearing the DTC

The MIL is cleared if the malfunction does not return in three consecutive trips in which the diagnostic runs. The MIL, the Pending DTC, the Confirmed DTC, and the freeze data can be cleared with the scan tool Clear command or by disconnecting the battery.

DTC P2251: REAR AIR/FUEL RATIO (A/F) SENSOR (BANK 1, SENSOR 1) VS CIRCUIT HIGH VOLTAGE

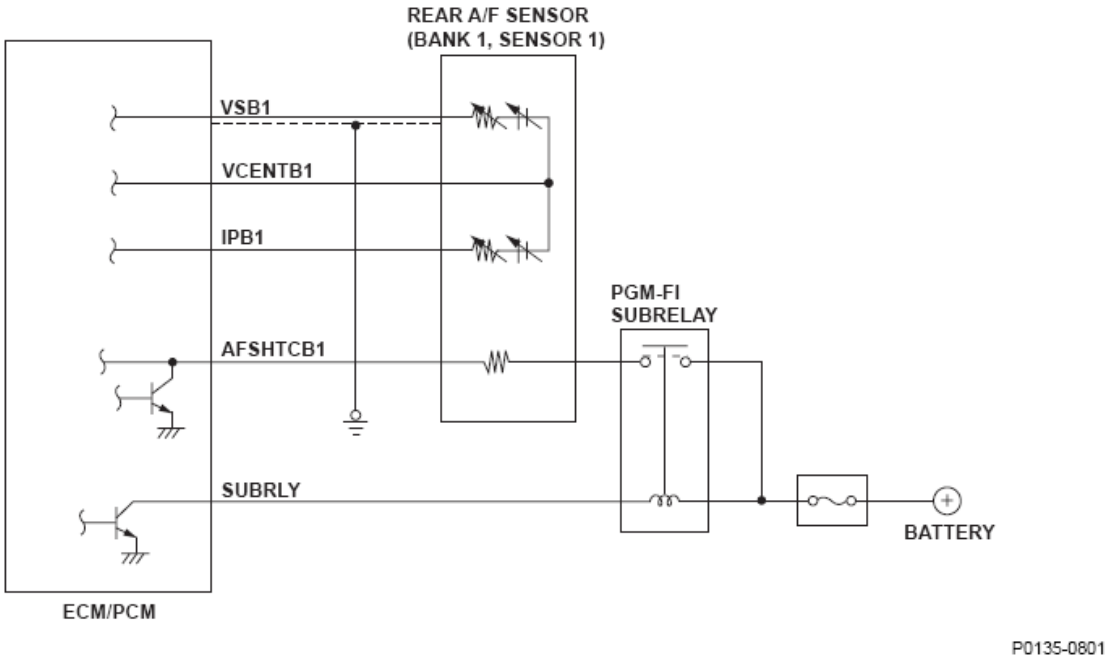


Fig. 312: Rear Air/Fuel Ratio Sensor - Circuit Diagram (Bank 1, Sensor 1)

GENERAL DESCRIPTION

The rear air/fuel ratio (A/F) sensor (bank 1, sensor 1) is installed in the exhaust manifold and detects oxygen content in the exhaust gas. The rear A/F sensor transmits a signal to the engine control module (ECM)/powertrain control module (PCM), and it enables overall feedback control. The ECM/PCM controls fuel injection duration by comparing the target air/fuel ratio with the rear A/F sensor signal. When the VSB1 terminal voltage is a specified value for a predetermined time, the ECM/PCM detects a malfunction and stores a DTC.

MONITOR EXECUTION, SEQUENCE, DURATION, DTC TYPE, OBD STATUS

Execution	Continuous
Sequence	None
Duration	5 seconds or more(1), 38 seconds or more(2)
DTC Type	Two drive cycles, MIL on
OBD Status	PASSED/FAILED/NOT COMPLETED (STILL TESTING)
(1) After the sensor becomes active (2) Before the sensor becomes active	

ENABLE CONDITIONS

Condition	Minimum	Maximum
Battery voltage	9.0 V	-
State of the engine	Running	
No active DTCs set (prevents monitor from running)	P0135, P2237, P2238, P2243, P2245, P2252	

MALFUNCTION THRESHOLD

After the sensor becomes active, the VSB1 terminal voltage is 6.0 V or more for at least 5 seconds.

Before the sensor becomes active, the VSB1 terminal voltage is 5.3 V or more for at least 38 seconds.

DRIVING PATTERN

Start the engine. Hold the engine speed at 3,000 rpm without load (A/T in P or N, M/T in neutral) until the radiator fan comes on, then let it idle for 2 minutes.

DIAGNOSIS DETAILS

Conditions for setting the DTC

When a malfunction is detected during the first drive cycle, a Pending DTC is stored in the ECM/PCM memory. If the malfunction returns in the next (second) drive cycle, the MIL comes on and a Confirmed DTC and the freeze data are stored.

Conditions for clearing the DTC

The MIL is cleared if the malfunction does not return in three consecutive trips in which the diagnostic runs. The MIL, the Pending DTC, the Confirmed DTC, and the freeze data can be cleared with the scan tool Clear command or by disconnecting the battery.

DTC P2252: REAR AIR/FUEL RATIO (A/F) SENSOR (BANK 1, SENSOR 1) VS CIRCUIT LOW VOLTAGE

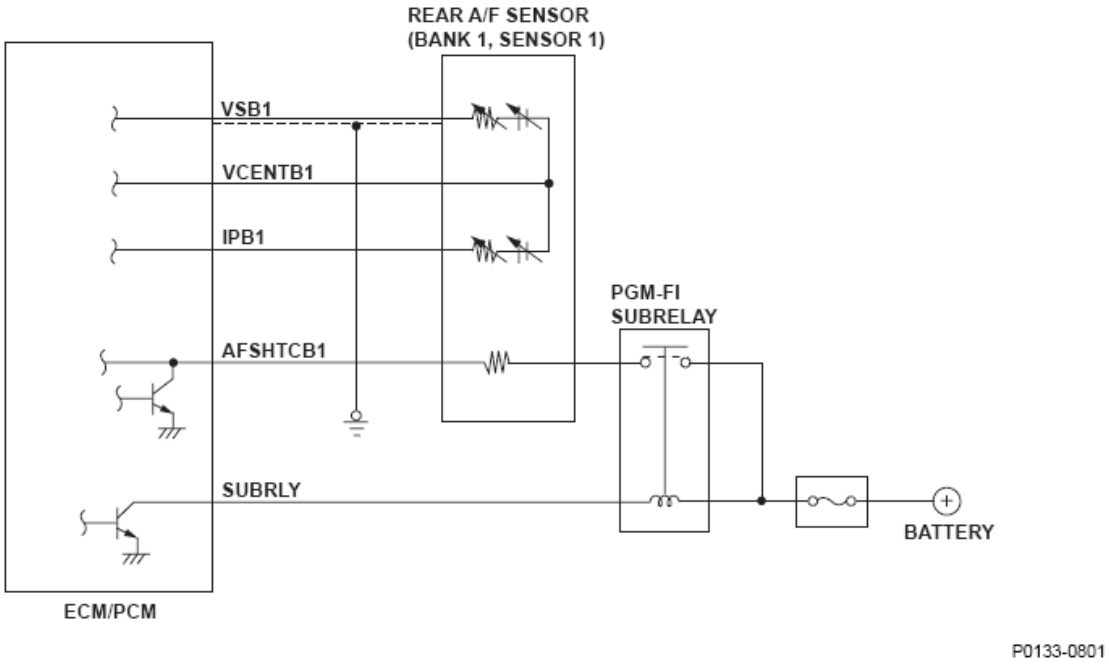


Fig. 313: Rear Air/Fuel Ratio Sensor - Circuit Diagram (Bank 1, Sensor 1)

GENERAL DESCRIPTION

The rear air/fuel ratio (A/F) sensor (bank 1, sensor 1) is installed in the exhaust manifold and detects oxygen content in the exhaust gas. The rear A/F sensor transmits a signal to the engine control module (ECM)/powertrain control module (PCM), and it enables overall feedback control. The ECM/PCM controls fuel injection duration by comparing the target air/fuel ratio with the rear A/F sensor signal. When the self diagnosis function in the ECM/PCM detects a short circuit failure, it measures the ECM/PCM input voltage of VSB1/VCENTB1/IPB1. If the VSB1 terminal voltage is less than VCENTB1/IPB1 terminal voltage, the ECM/PCM detects a malfunction and stores a DTC.

MONITOR EXECUTION, SEQUENCE, DURATION, DTC TYPE, OBD STATUS

Execution	Continuous
Sequence	None
Duration	0.5 second or more
DTC Type	Two drive cycles, MIL on

OBD Status	PASSED/FAILED/NOT COMPLETED (STILL TESTING)

ENABLE CONDITIONS

Condition	Minimum	Maximum
Battery voltage	9.0 V	-
State of the engine	Running	
No active DTCs set (prevents monitor from running)	P0135, P2237, P2238, P2243, P2245, P2251	

MALFUNCTION THRESHOLD

The VSB1 input terminal voltage is less than the VCENTB1/IPB1 terminal voltage after the self diagnosis function in the ECM/PCM detects a short circuit failure for at least 0.5 second.

DRIVING PATTERN

Start the engine. Hold the engine speed at 3,000 rpm without load (A/T in P or N, M/T in neutral) until the radiator fan comes on, then let it idle for 2 minutes.

DIAGNOSIS DETAILS

Conditions for setting the DTC

When a malfunction is detected during the first drive cycle, a Pending DTC is stored in the ECM/PCM memory. If the malfunction returns in the next (second) drive cycle, the MIL comes on and a Confirmed DTC and the freeze data are stored.

Conditions for clearing the DTC

The MIL is cleared if the malfunction does not return in three consecutive trips in which the diagnostic runs. The MIL, the Pending DTC, the Confirmed DTC, and the freeze data can be cleared with the scan tool Clear command or by disconnecting the battery.

DTC P2254: FRONT AIR/FUEL RATIO (A/F) SENSOR (BANK 2, SENSOR 1) VS CIRCUIT HIGH VOLTAGE

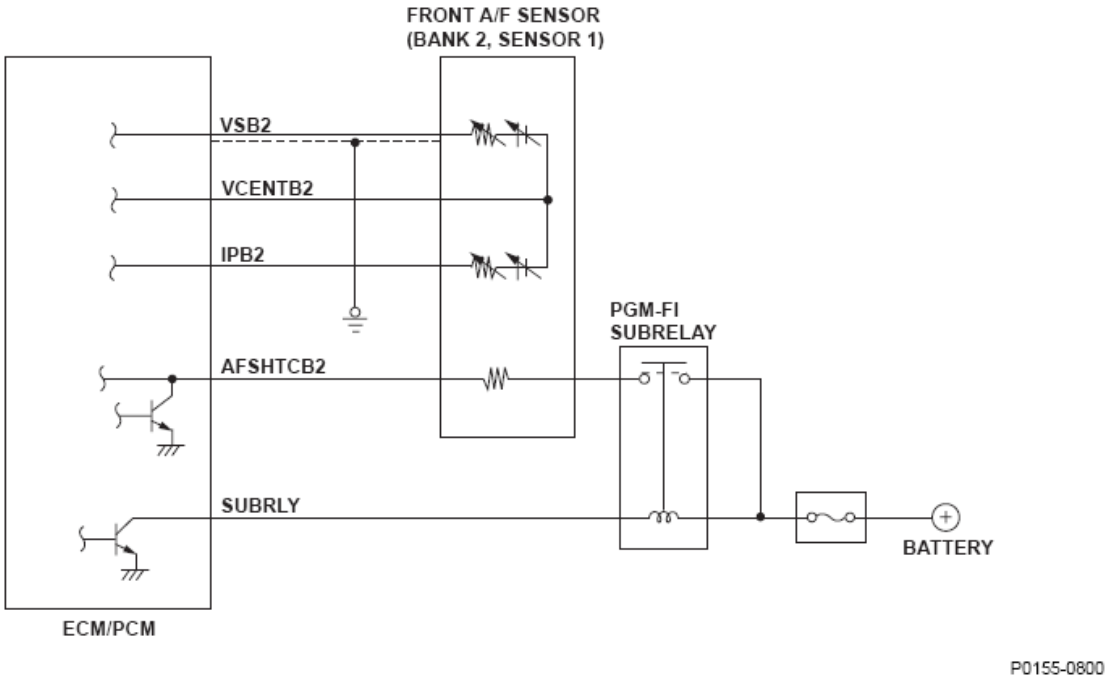


Fig. 314: Front Air/Fuel Ratio Sensor - Circuit Diagram (Bank 2, Sensor 1)

GENERAL DESCRIPTION

The front air/fuel ratio (A/F) sensor (bank 2, sensor 1) is installed in the exhaust manifold and detects oxygen content in the exhaust gas. The front A/F sensor transmits a signal to the engine control module (ECM)/powertrain control module (PCM), and it enables overall feedback control. The ECM/PCM controls fuel injection duration by comparing the target air/fuel ratio with the front A/F sensor signal. When the VSB2 terminal voltage is a specified value for a predetermined time, the ECM/PCM detects a malfunction and stores a DTC.

MONITOR EXECUTION, SEQUENCE, DURATION, DTC TYPE, OBD STATUS

Execution	Continuous
Sequence	None
Duration	5 seconds or more(1), 38 seconds or more(2)
DTC Type	Two drive cycles, MIL on
OBD Status	PASSED/FAILED/NOT COMPLETED (STILL TESTING)
(1) After the sensor becomes active (2) Before the sensor becomes active	

ENABLE CONDITIONS

Condition	Minimum	Maximum
Battery voltage	9.0 V	-

State of the engine	Running
No active DTCs set (prevents monitor from running)	P0155, P2240, P2241, P2247, P2249, P2255

MALFUNCTION THRESHOLD

After the sensor becomes active, the VSB2 terminal voltage is 6.0 V or more for at least 5 seconds.

Before the sensor becomes active, the VSB2 terminal voltage is 5.3 V or more for at least 38 seconds.

DRIVING PATTERN

Start the engine. Hold the engine speed at 3,000 rpm without load (A/T in P or N, M/T in neutral) until the radiator fan comes on, then let it idle for 2 minutes.

DIAGNOSIS DETAILS

Conditions for setting the DTC

When a malfunction is detected during the first drive cycle, a Pending DTC is stored in the ECM/PCM memory. If the malfunction returns in the next (second) drive cycle, the MIL comes on and a Confirmed DTC and the freeze data are stored.

Conditions for clearing the DTC

The MIL is cleared if the malfunction does not return in three consecutive trips in which the diagnostic runs. The MIL, the Pending DTC, the Confirmed DTC, and the freeze data can be cleared with the scan tool Clear command or by disconnecting the battery.

DTC P2255: FRONT AIR/FUEL RATIO (A/F) SENSOR (BANK 2, SENSOR 1) VS CIRCUIT LOW VOLTAGE

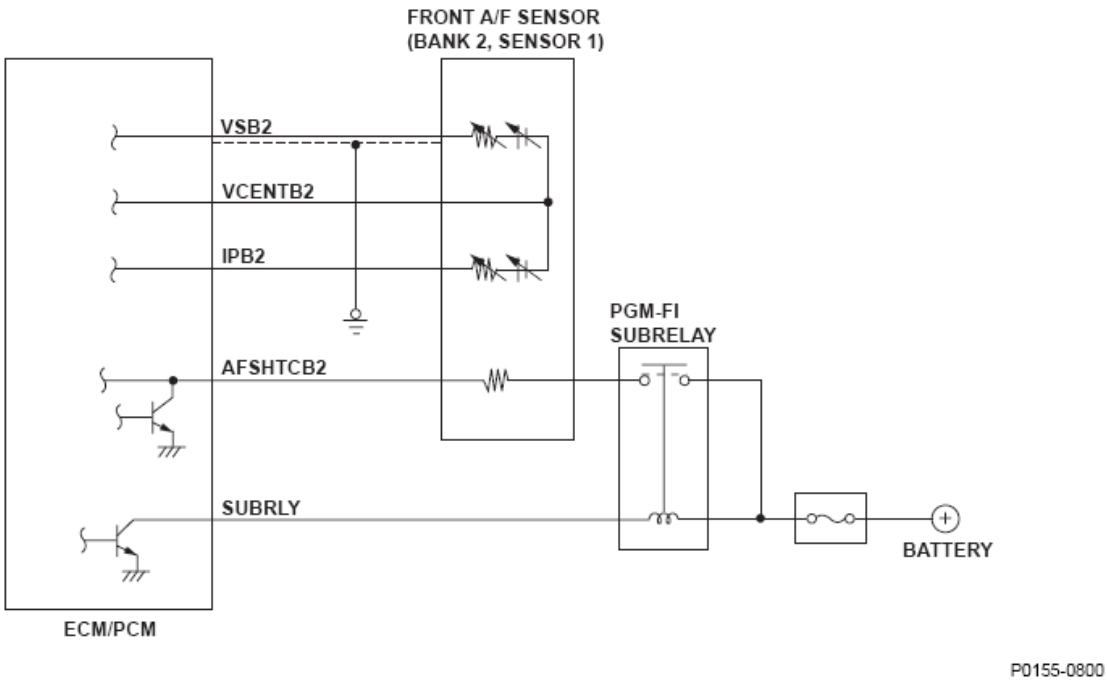


Fig. 315: Front Air/Fuel Ratio Sensor - Circuit Diagram (Bank 2, Sensor 1)

GENERAL DESCRIPTION

The front air/fuel ratio (A/F) sensor (bank 2, sensor 1) is installed in the exhaust manifold and detects oxygen content in the exhaust gas. The front A/F sensor transmits a signal to the engine control module (ECM)/powertrain control module (PCM), and it enables overall feedback control. The ECM/PCM controls fuel injection duration by comparing the target air/fuel ratio with the front A/F sensor signal. When the self diagnosis function in the ECM/PCM detects a short circuit failure, it measures the ECM/PCM input voltage of VSB2/VCENTB2/IPB2. If the VSB2 terminal voltage is less than VCENTB2/IPB2 terminal voltage, the ECM/PCM detects a malfunction and stores a DTC.

MONITOR EXECUTION, SEQUENCE, DURATION, DTC TYPE, OBD STATUS

Execution	Continuous
Sequence	None
Duration	0.5 second or more
DTC Type	Two drive cycles, MIL on
OBD Status	PASSED/FAILED/NOT COMPLETED (STILL TESTING)

ENABLE CONDITIONS

Condition	Minimum	Maximum
Battery voltage	9.0 V	-
State of the engine	Running	
No active DTCs set (prevents monitor from running)	P0155, P2240, P2241, P2247, P2249, P2254	

MALFUNCTION THRESHOLD

The VSB2 terminal voltage is less than VCENTB2/IPB2 terminal voltage after the self diagnosis function in the ECM/PCM detects a short circuit failure for at least 0.5 second.

DRIVING PATTERN

Start the engine. Hold the engine speed at 3,000 rpm without load (A/T in P or N, M/T in neutral) until the radiator fan comes on, then let it idle for 2 minutes.

DIAGNOSIS DETAILS

Conditions for setting the DTC

When a malfunction is detected during the first drive cycle, a Pending DTC is stored in the ECM/PCM memory. If the malfunction returns in the next (second) drive cycle, the MIL comes on and a Confirmed DTC and the freeze data are stored.

Conditions for clearing the DTC

The MIL is cleared if the malfunction does not return in three consecutive trips in which the diagnostic runs. The MIL, the Pending DTC, the Confirmed DTC, and the freeze data can be cleared with the scan tool Clear command or by disconnecting the battery.

DTC P2270: REAR SECONDARY HEATED OXYGEN SENSOR (SECONDARY HO2S (BANK 1, SENSOR 2)) CIRCUIT SIGNAL STUCK LEAN

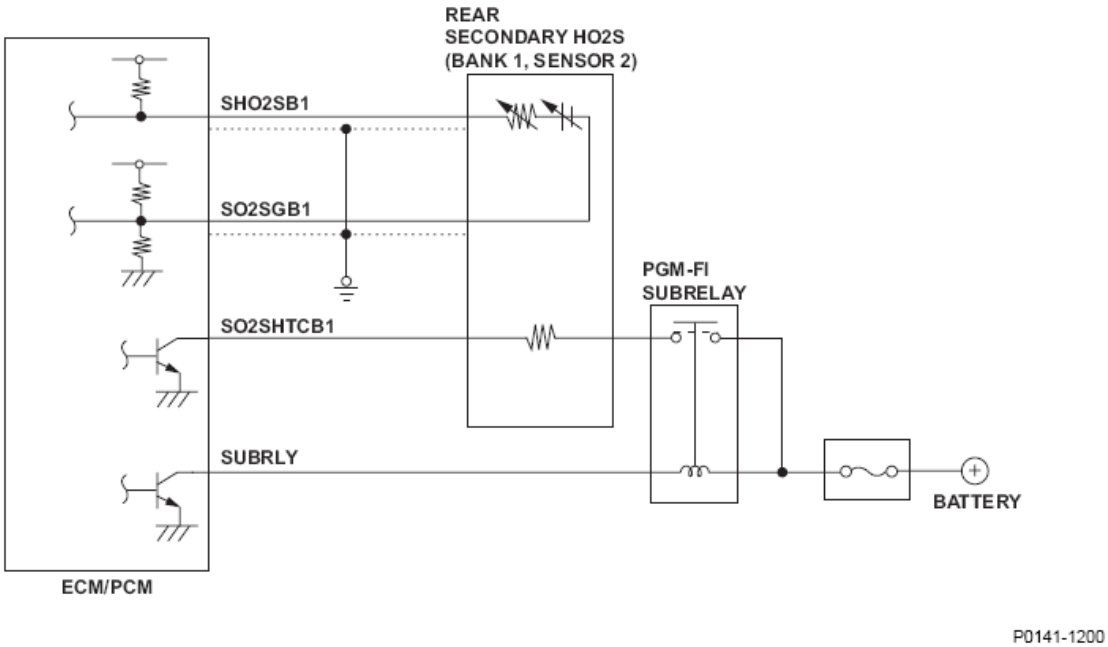


Fig. 316: Rear Secondary Heated Oxygen Sensor - Circuit Diagram (Bank 1, Sensor 2)

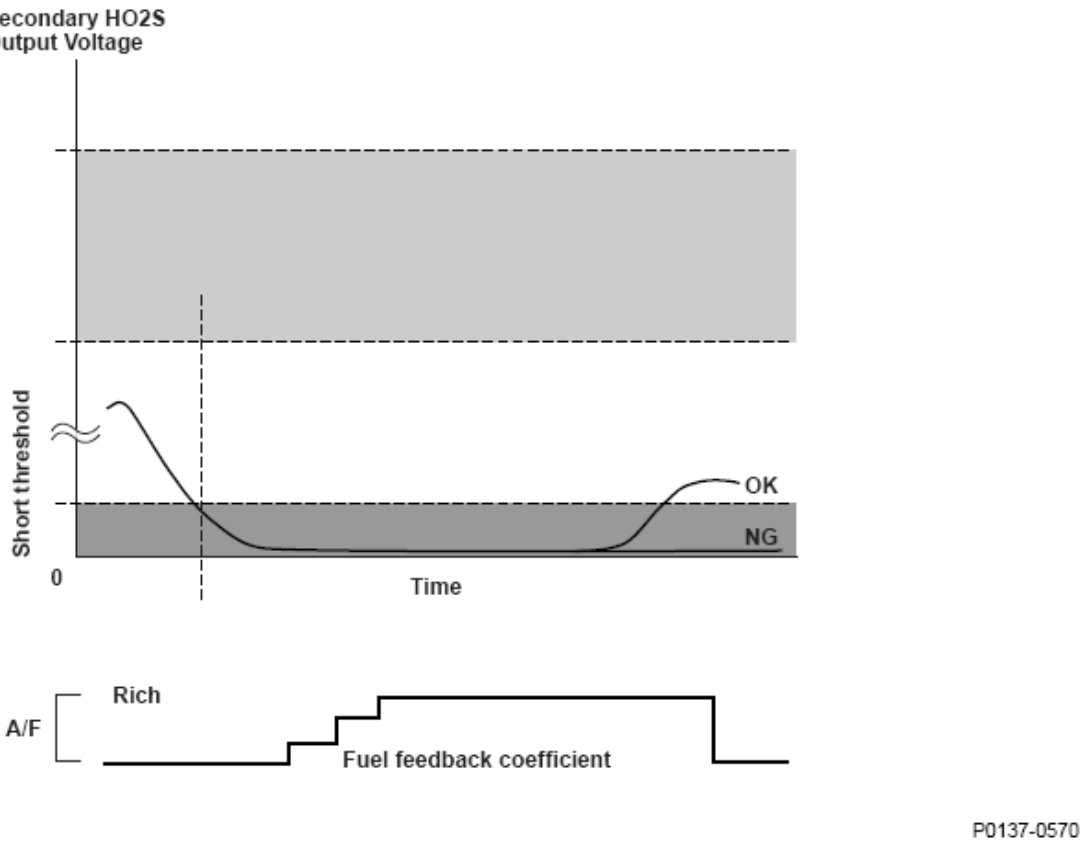


Fig. 317: Secondary HO2S Output Voltage Characteristics Curve

GENERAL DESCRIPTION

The rear secondary heated oxygen sensor (secondary HO2S (bank 1, sensor 2)) detects the oxygen content in the exhaust gas downstream of the warm up three way catalytic converter (WU-TWC) (bank 1) during stoichiometric air/fuel ratio feedback control. The engine control module (ECM)/powertrain control module (PCM) controls the air/fuel ratio from the rear air/fuel ratio (A/F) sensor (bank 1, sensor 1) output voltage so that the WU-TWC efficiency is optimized. After current is applied to the rear secondary HO2S heater, if the rear secondary HO2S output continues to be low (lean) during feedback control, the ECM/PCM detects a malfunction and stores a DTC.

MONITOR EXECUTION, SEQUENCE, DURATION, DTC TYPE, OBD STATUS

Execution	Continuous
Sequence	None
Duration	35 seconds or more
DTC Type	Two drive cycles, MIL on
OBD Status	PASSED/FAILED/NOT COMPLETED (STILL TESTING)

ENABLE CONDITIONS

Condition	Minimum	Maximum
Elapsed time that secondary HO2S activity is not monitored after starting the engine	20 seconds	-
Engine coolant temperature	156 °F (69 °C)	-
Intake air temperature	-13 °F (-25 °C)	-
Fuel trim	0.73	1.47
Fuel feedback	Closed loop	
No active DTCs set (prevents monitor from running)	P0101, P0102, P0103, P0107, P0108, P0112, P0113, P0117, P0118, P0133, P0134, P0135, P0137, P0138, P0139, P0141, P0171, P0172, P0300, P0301, P0302, P0303, P0304, P0305, P0306, P0351, P0352, P0353, P0354, P0355, P0356, P0400, P0401, P0404, P0443, P0496, P0497, P1077, P1078, P1128, P1129, P1172, P145C, P2195, P2237, P2238, P2243, P2245, P2251, P2252, P2279, P2413, P2646, P2647, P2648, P2649, P2A00	
Other	Cruise load or more	

MALFUNCTION THRESHOLD

The rear secondary HO2S output voltage is 0.05 V or less for at least 35 seconds.

DRIVING PATTERN

1. Start the engine, and let it idle until the radiator fan comes on.
2. Drive immediately at a steady engine speed between 1,500 - 3,000 rpm for at least 35 seconds.
    - When freeze data is stored, drive the vehicle under those conditions instead of Driving Pattern step 2.
    - Drive the vehicle in this manner only if the traffic regulations and ambient conditions allow.

DIAGNOSIS DETAILS

Conditions for setting the DTC

When a malfunction is detected during the first drive cycle, a Pending DTC is stored in the ECM/PCM memory. If the malfunction returns in the next (second) drive cycle, the MIL comes on and a Confirmed DTC and the freeze data are stored.

Conditions for clearing the DTC

The MIL is cleared if the malfunction does not return in three consecutive trips in which the diagnostic runs. The MIL, the Pending DTC, the Confirmed DTC, and the freeze data can be cleared with the scan tool Clear command or by disconnecting the battery.

DTC P2272: FRONT SECONDARY HEATED OXYGEN SENSOR (SECONDARY HO2S (BANK 2, SENSOR 2)) CIRCUIT SIGNAL STUCK LEAN

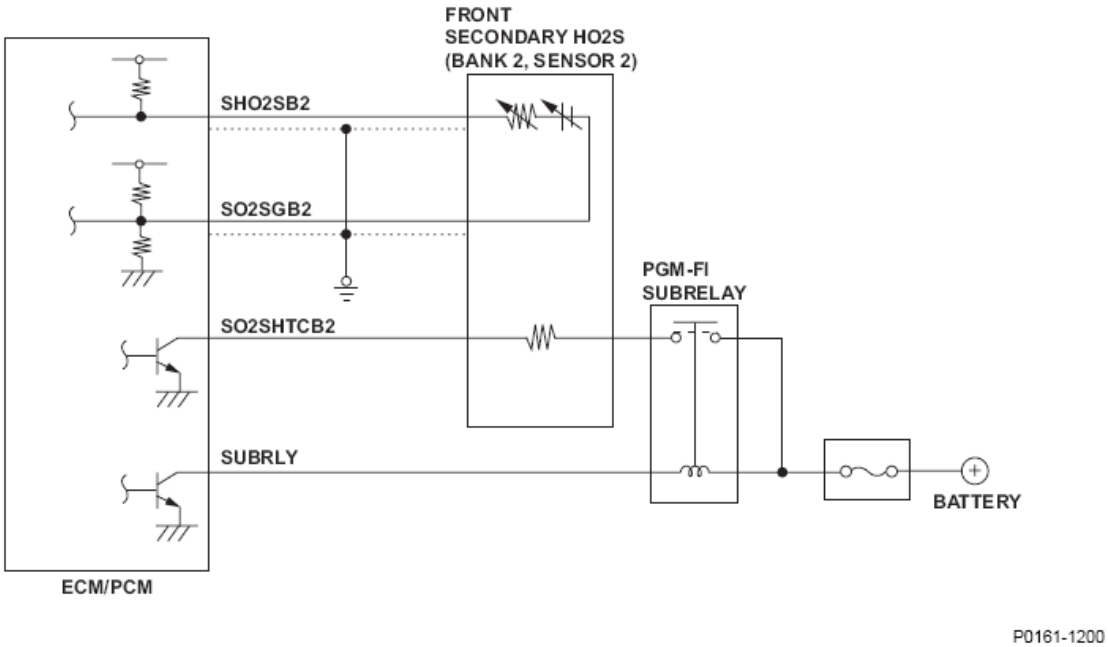


Fig. 318: Front Secondary Heated Oxygen Sensor - Circuit Diagram (Bank 2, Sensor 2)

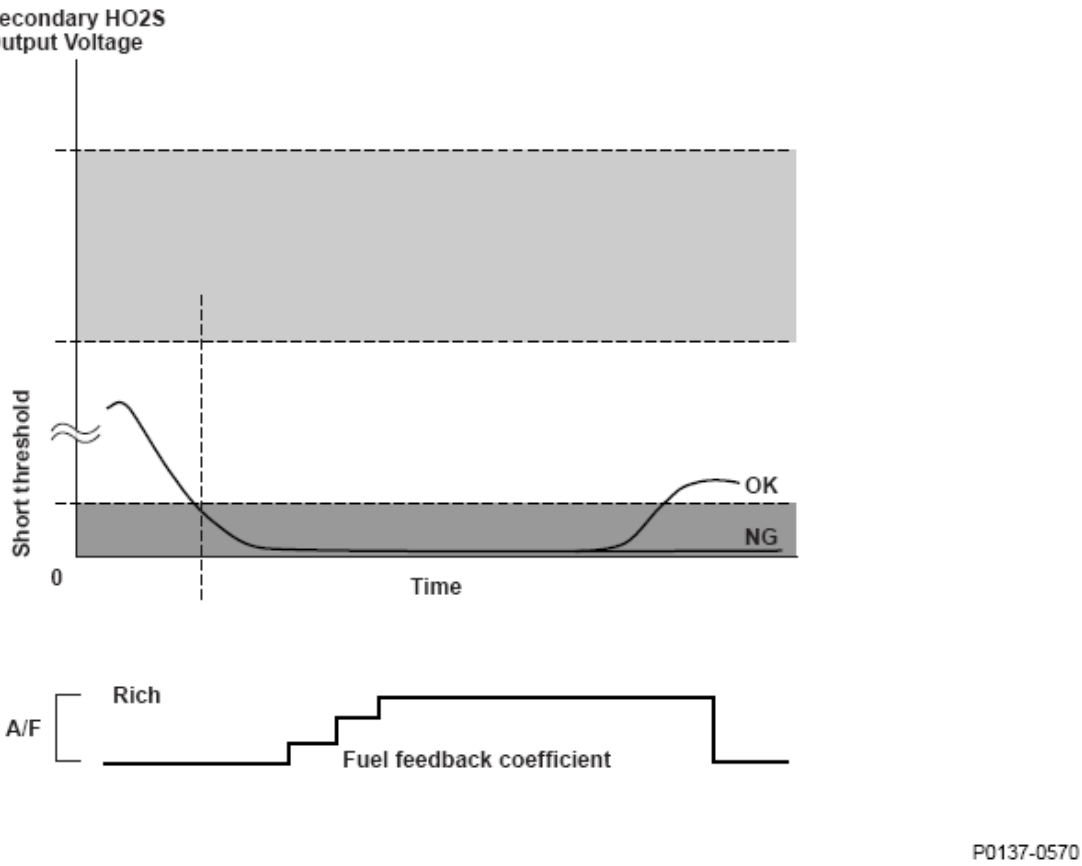


Fig. 319: Secondary HO2S Output Voltage Characteristics Curve

GENERAL DESCRIPTION

The front secondary heated oxygen sensor (secondary HO2S (bank 2, sensor 2)) detects the oxygen content in the exhaust gas downstream of the front warm up three way catalytic converter (WU-TWC) (bank 2) during stoichiometric air/fuel ratio feedback control. The engine control module (ECM)/powertrain control module (PCM) controls the air/fuel ratio from the front air/fuel ratio (A/F) sensor (bank 2, sensor 1) output voltage so that the front WU-TWC efficiency is optimized. After current is applied to the front secondary HO2S heater, if the front secondary HO2S output continues to be low (lean) during feedback control, the ECM/PCM detects a malfunction and stores a DTC.

MONITOR EXECUTION, SEQUENCE, DURATION, DTC TYPE, OBD STATUS

Execution	Continuous
Sequence	None
Duration	35 seconds or more
DTC Type	Two drive cycles, MIL on
OBD Status	PASSED/FAILED/NOT COMPLETED (STILL TESTING)

ENABLE CONDITIONS

Condition	Minimum	Maximum
Elapsed time that secondary HO2S activity is not monitored after starting the engine	20 seconds	-
Engine coolant temperature	156 °F (69 °C)	-
Intake air temperature	-13 °F (-25 °C)	-
Fuel trim	0.73	1.47
Fuel feedback	Closed loop	
No active DTCs set (prevents monitor from running)	P0101, P0102, P0103, P0107, P0108, P0112, P0113, P0117, P0118, P0153, P0154, P0155, P0157, P0158, P0159, P0161, P0174, P0175, P0300, P0301, P0302, P0303, P0304, P0305, P0306, P0351, P0352, P0353, P0354, P0355, P0356, P0400, P0401, P0404, P0443, P0496, P0497, P1077, P1078, P1128, P1129, P1174, P145C, P2197, P2240, P2241, P2247, P2249, P2254, P2255, P2279, P2413, P2646, P2647, P2648, P2649, P2A03	
Other	Cruise load or more	

MALFUNCTION THRESHOLD

The front secondary HO2S output voltage is 0.05 V or less for at least 35 seconds.

DRIVING PATTERN

1. Start the engine, and let it idle until the radiator fan comes on.
2. Drive immediately at a steady engine speed between 1,500 - 3,000 rpm for at least 35 seconds.
    - When freeze data is stored, drive the vehicle under those conditions instead of Driving Pattern step 2.
    - Drive the vehicle in this manner only if the traffic regulations and ambient conditions allow.

DIAGNOSIS DETAILS

Conditions for setting the DTC

When a malfunction is detected during the first drive cycle, a Pending DTC is stored in the ECM/PCM memory. If the malfunction returns in the next (second) drive cycle, the MIL comes on and a Confirmed DTC and the freeze data are stored.

Conditions for clearing the DTC

The MIL is cleared if the malfunction does not return in three consecutive trips in which the diagnostic runs. The MIL, the Pending DTC, the Confirmed DTC, and the freeze data can be cleared with the scan tool Clear command or by disconnecting the battery.

DTC P2279: INTAKE AIR SYSTEM LEAK (ENGINE TYPE: J35Z6)

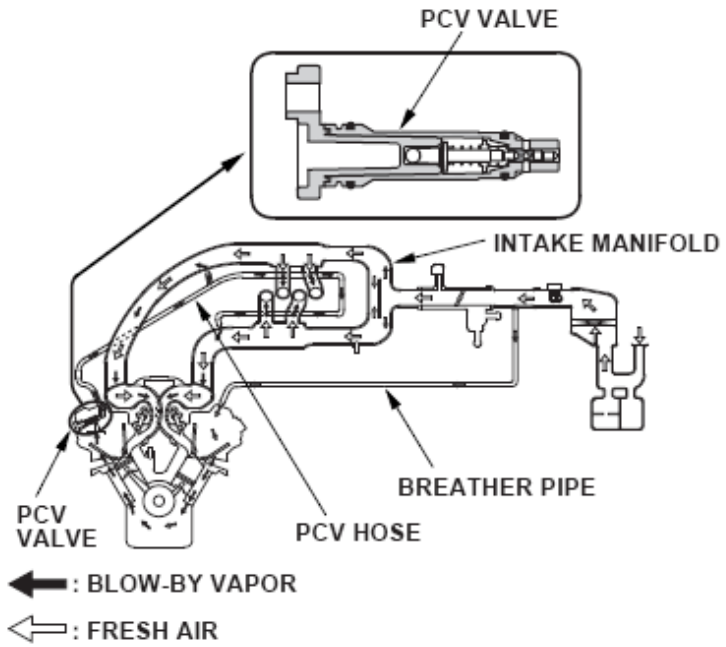


Fig. 320: Intake Air System - Circuit Diagram

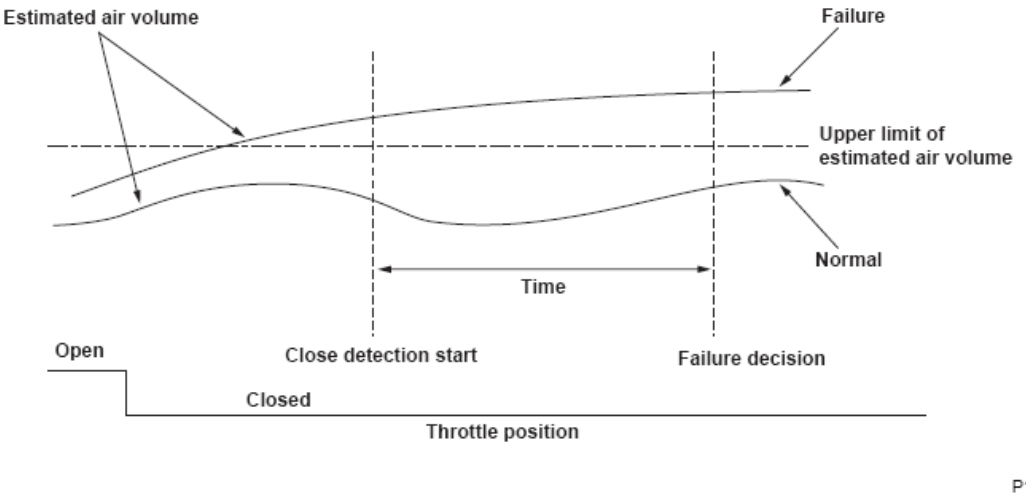


Fig. 321: Intake Air System Characteristics Curve

GENERAL DESCRIPTION

The positive crankcase ventilation (PCV) system reduces hydrocarbon (HC) emissions. The PCV system recirculates unburned air/fuel mixture (blow-by vapor) into the intake manifold so that it is drawn into the engine and burned, thus reducing HC. If the PCV hose comes off at idle with the throttle closed, the amount of air supplied to the engine is considerably more than the amount of air the idle control system supplies. The

powertrain control module (PCM) estimates the amount of air supplied to the engine while the throttle valve is fully closed, and if the estimated amount is more than the upper limit, it detects a malfunction and stores a DTC.

MONITOR EXECUTION, SEQUENCE, DURATION, DTC TYPE, OBD STATUS

Execution	Once per driving cycle
Sequence	None
Duration	22 seconds or more
DTC Type	Two drive cycles, MIL on
OBD Status	PASSED/FAILED/EXECUTING/OUT OF (TEST) CONDITION

ENABLE CONDITIONS

Condition	Minimum	Maximum
Elapsed time after starting the engine	15 seconds	-
Engine coolant temperature	156 °F (69 °C)	-
Intake air temperature	19 °F (-7 °C)	-
MAP value	-	67 kPa (19.8 inHg, 503 mmHg)
Battery voltage	10.5 V	-
Fuel trim	0.73	1.47
Fuel feedback	Closed loop	
No active DTCs set (prevents monitor from running)	P0101, P0102, P0103, P0107, P0108, P0112, P0113, P0117, P0118, P0122, P0123, P0171, P0172, P0174, P0175, P0222, P0223, P0300, P0301, P0302, P0303, P0304, P0305, P0306, P0335, P0339, P0351, P0352, P0353, P0354, P0355, P0356, P0401, P0404, P0443, P0496, P0497, P060A, P1077, P1078, P1128, P1129, P145C, P1659, P2101, P2118, P2122, P2123, P2127, P2128, P2135, P2138, P2176, P2227, P2228, P2229, P2413, P2646, P2647, P2648, P2649	
Other	At idle	

MALFUNCTION THRESHOLD

Either of these conditions is met:

- The estimated volume of intake air is 185 L/min (196 US qt/min, 163 lmp qt/min) or more when the MAP value is 35 kPa (10.2 inHg, 260 mmHg).
- The estimated volume of intake air is 185 L/min (196 US qt/min, 163 lmp qt/min) or more when the MAP value is 48 kPa (14.2 inHg, 360 mmHg).

DRIVING PATTERN

1. Start the engine. Hold the engine speed at 3,000 rpm without load (in P or N) until the radiator fan comes

on.

2. Let the engine idle for at least 22 seconds.

DIAGNOSIS DETAILS

Conditions for setting the DTC

When a malfunction is detected during the first drive cycle, a Pending DTC is stored in the PCM memory. If the malfunction returns in the next (second) drive cycle, the MIL comes on and a Confirmed DTC and the freeze data are stored.

Conditions for clearing the DTC

The MIL is cleared if the malfunction does not return in three consecutive trips in which the diagnostic runs. The MIL, the Pending DTC, the Confirmed DTC, and the freeze data can be cleared with the scan tool Clear command or by disconnecting the battery.

DTC P2279: INTAKE AIR SYSTEM LEAK (ENGINE TYPE: J37A4)

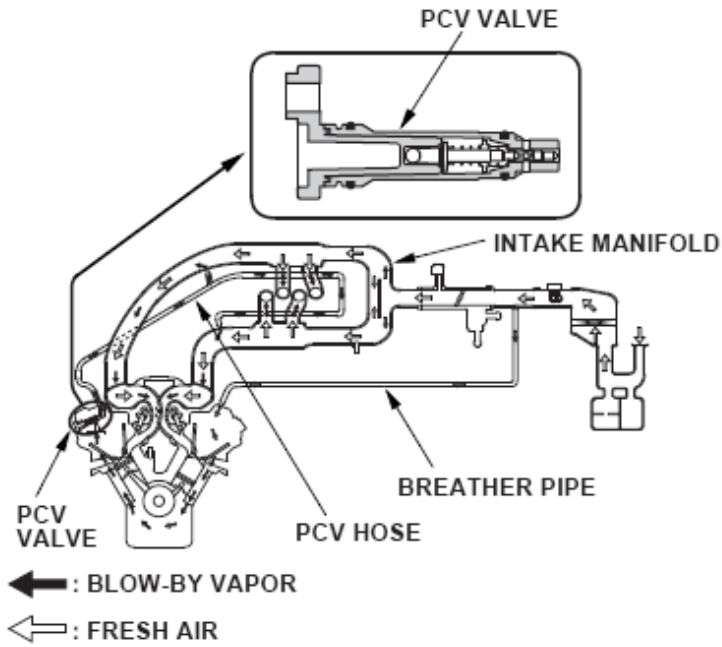


Fig. 322: Intake Air System - Circuit Diagram

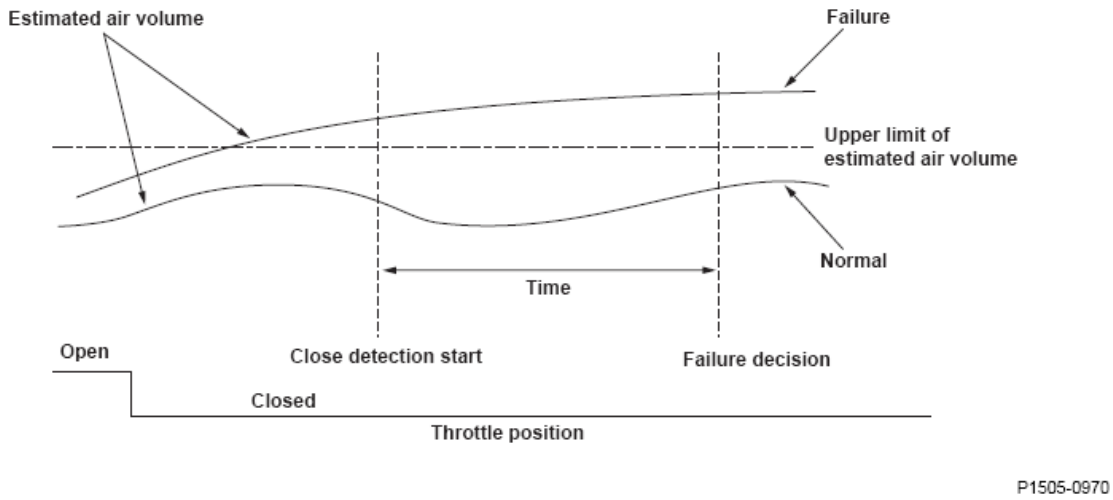


Fig. 323: Intake Air System Characteristics Curve

GENERAL DESCRIPTION

The positive crankcase ventilation (PCV) system reduces hydrocarbon (HC) emissions. The PCV system recirculates unburned air/fuel mixture (blow-by vapor) into the intake manifold so that it is drawn into the engine and burned, thus reducing HC. If the PCV hose comes off at idle with the throttle closed, the amount of air supplied to the engine is considerably more than the amount of air the idle control system supplies. The engine control module (ECM)/powertrain control module (PCM) estimates the amount of air supplied to the engine while the throttle valve is fully closed, and if the estimated amount is more than the upper limit, it detects a malfunction and stores a DTC.

MONITOR EXECUTION, SEQUENCE, DURATION, DTC TYPE, OBD STATUS

Execution	Once per driving cycle
Sequence	None
Duration	22 seconds or more
DTC Type	Two drive cycles, MIL on
OBD Status	PASSED/FAILED/EXECUTING/OUT OF (TEST) CONDITION

ENABLE CONDITIONS

Condition	Minimum	Maximum
Elapsed time after starting the engine	15 seconds	-
Engine coolant temperature	156 °F (69 °C)	-
Intake air temperature	19 °F (-7 °C)	-
MAP value	-	69 kPa (20.4 inHg, 520 mmHg)

Battery voltage	10.5 V	-
Fuel trim	0.73	1.47
Fuel feedback	Closed loop	
No active DTCs set (prevents monitor from running)	P0101, P0102, P0103, P0107, P0108, P0112, P0113, P0117, P0118, P0122, P0123, P0171, P0172, P0174, P0175, P0222, P0223, P0300, P0301, P0302, P0303, P0304, P0305, P0306, P0335, P0339, P0351, P0352, P0353, P0354, P0355, P0356, P0401, P0404, P0443, P0496, P0497, P060A, P1077, P1078, P1128, P1129, P145C, P1659, P2101, P2118, P2122, P2123, P2127, P2128, P2135, P2138, P2176, P2227, P2228, P2229, P2413, P2646, P2647, P2648, P2649	
Other	At idle	

MALFUNCTION THRESHOLD

Either of these conditions is met:

- The estimated volume of intake air is 209 L/min (221 US qt/min, 184 lmp qt/min)*1 , 253 L/min (268 US qt/min, 223 lmp qt/min)*2 or more when the MAP value is 35 kPa (10.2 inHg, 260 mmHg).
- The estimated volume of intake air is 209 L/min (221 US qt/min, 184 lmp qt/min)*1 , 253 L/min (268 US qt/min, 223 lmp qt/min)*2 or more when the MAP value is 48 kPa (14.2 inHg, 360 mmHg).

*1 : A/T model

*2 : M/T model

DRIVING PATTERN

1. Start the engine. Hold the engine speed at 3,000 rpm without load (A/T in P or N, M/T in neutral) until the radiator fan comes on.
2. Let the engine idle for at least 22 seconds.

DIAGNOSIS DETAILS

Conditions for setting the DTC

When a malfunction is detected during the first drive cycle, a Pending DTC is stored in the ECM/PCM memory. If the malfunction returns in the next (second) drive cycle, the MIL comes on and a Confirmed DTC and the freeze data are stored.

Conditions for clearing the DTC

The MIL is cleared if the malfunction does not return in three consecutive trips in which the diagnostic runs. The MIL, the Pending DTC, the Confirmed DTC, and the freeze data can be cleared with the scan tool Clear command or by disconnecting the battery.

DTC P2413: EXHAUST GAS RECIRCULATION (EGR) SYSTEM

MALFUNCTION

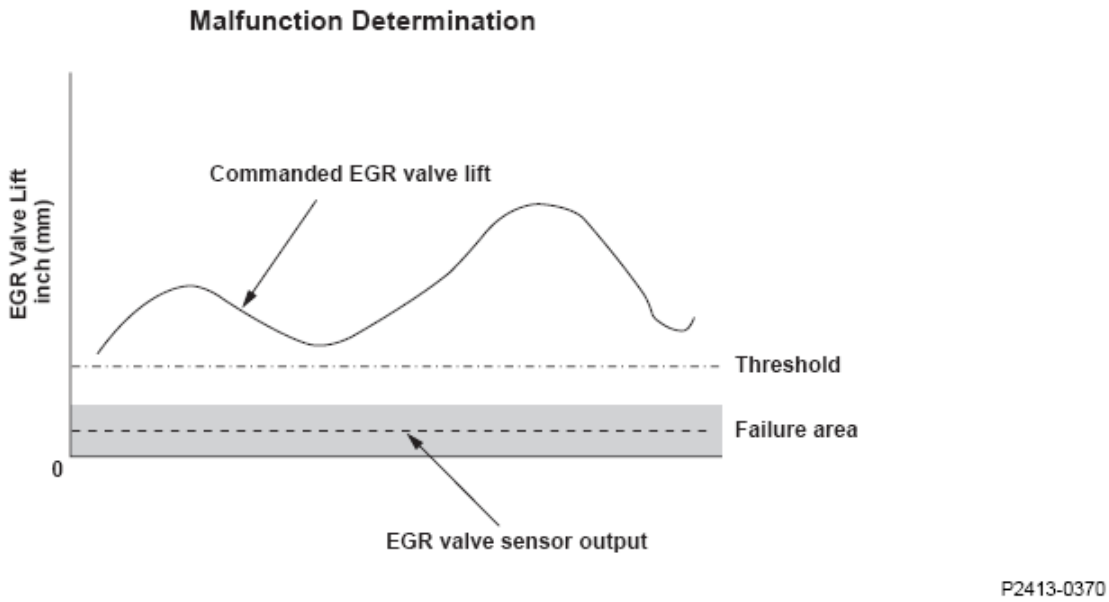


Fig. 324: Exhaust Gas Recirculation System Malfunction Determination Graph

GENERAL DESCRIPTION

The exhaust gas recirculation (EGR) valve, which is controlled by the engine control module (ECM)/powertrain control module (PCM), is opened and the exhaust gas flows through the EGR valve, the intake manifold, and the EGR passage. The exhaust gas is circulated into the air/fuel mixture and the mixture is drawn into the combustion chamber to lower combustion temperatures, thus reducing oxides of nitrogen (NOx) emissions. A sensor (lift sensor) is built into the EGR valve and detects the amount of valve lift. The command value for the target valve lift is stored in the ECM/PCM so that exhaust gas recirculation can be optimized according to driving conditions. Comparing this command value with the lift sensor output signal value, the ECM/PCM controls the EGR valve to make the amount of actual valve lift equal to the command value. If the valve sensor output is insufficient for the commanded valve lift, the ECM/PCM detects a malfunction and stores a DTC.

MONITOR EXECUTION, SEQUENCE, DURATION, DTC TYPE, OBD STATUS

Execution	Once per driving cycle
Sequence	None
Duration	5.0 seconds or more
DTC Type	Two drive cycles, MIL on
OBD Status	PASSED/FAILED/EXECUTING/OUT OF (TEST) CONDITION

ENABLE CONDITIONS

Condition	Minimum	Maximum
Engine speed	-	4,600 rpm

Commanded EGR valve lift	0.040 in (1.00 mm)	-
Battery voltage	10.5 V	-
No active DTCs set (prevents monitor from running)	P0101, P0102, P0103, P0107, P0108, P0112, P0113, P0117, P0118, P0134, P0135, P0154, P0155, P0300, P0301, P0302, P0303, P0304, P0305, P0306, P0335, P0339, P0351, P0352, P0353, P0354, P0355, P0356, P0400, P0401, P0406, P1128, P1129, P1172, P1174, P2195, P2197, P2237, P2238, P2240, P2241, P2243, P2245, P2247, P2249, P2251, P2252, P2254, P2255, P2279	

MALFUNCTION THRESHOLD

If the actual valve lift is 0.005 in (0.15 mm) or less for at least 5.0 seconds, the valve is considered stuck closed.

CONFIRMATION PROCEDURE WITH THE HDS

Do the EGR TEST in the INSPECTION MENU with the HDS.

DRIVING PATTERN

1. Start the engine. Hold the engine speed at 3,000 rpm without load (A/T in P or N, M/T in neutral) until the radiator fan comes on.
2. Drive the vehicle at a speed between 15 - 75 mph (24 - 120 km/h) for at least 5 seconds.
    - Drive the vehicle in this manner only if the traffic regulations and ambient conditions allow.

DIAGNOSIS DETAILS

Conditions for setting the DTC

When a malfunction is detected during the first drive cycle, a Pending DTC is stored in the ECM/PCM memory. If the malfunction returns in the next (second) drive cycle, the MIL comes on and a Confirmed DTC and the freeze data are stored.

Conditions for clearing the DTC

The MIL is cleared if the malfunction does not return in three consecutive trips in which the diagnostic runs. The MIL, the Pending DTC, the Confirmed DTC, and the freeze data can be cleared with the scan tool Clear command or by disconnecting the battery.

DTC P2422: EVAPORATIVE EMISSION (EVAP) CANISTER VENT SHUT VALVE STUCK CLOSED MALFUNCTION

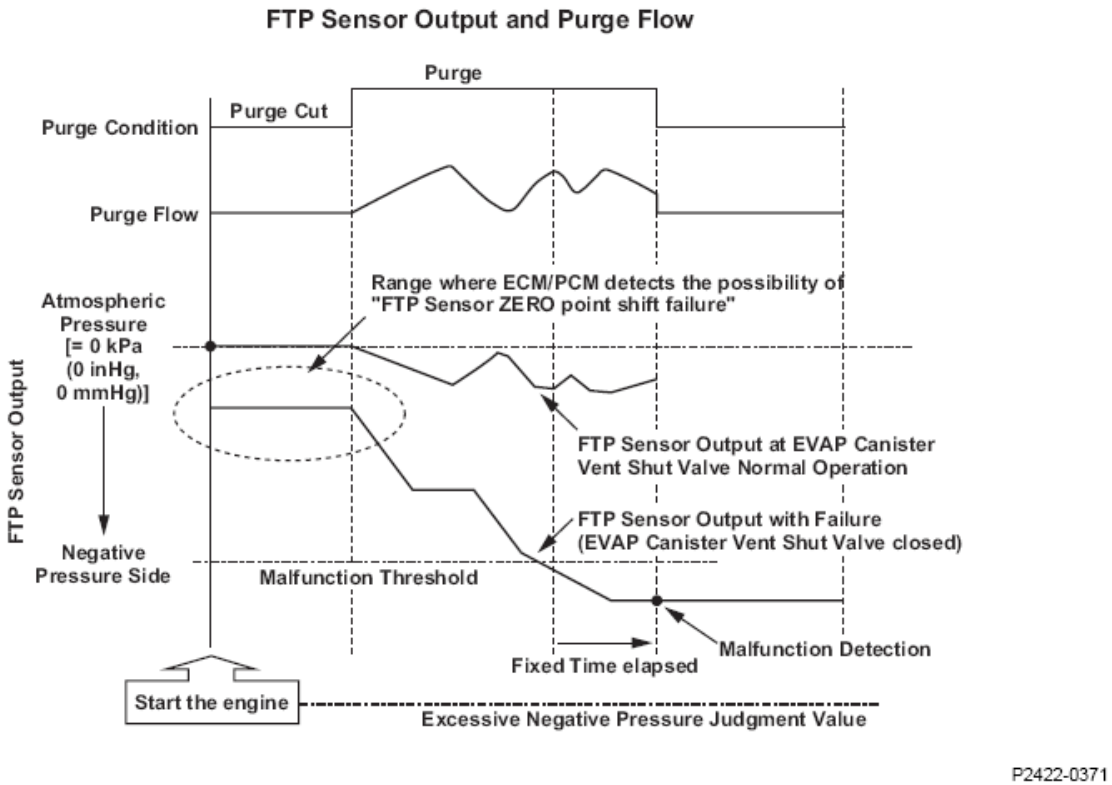


Fig. 325: FTP Sensor Output And Purge Flow Characteristics Curve

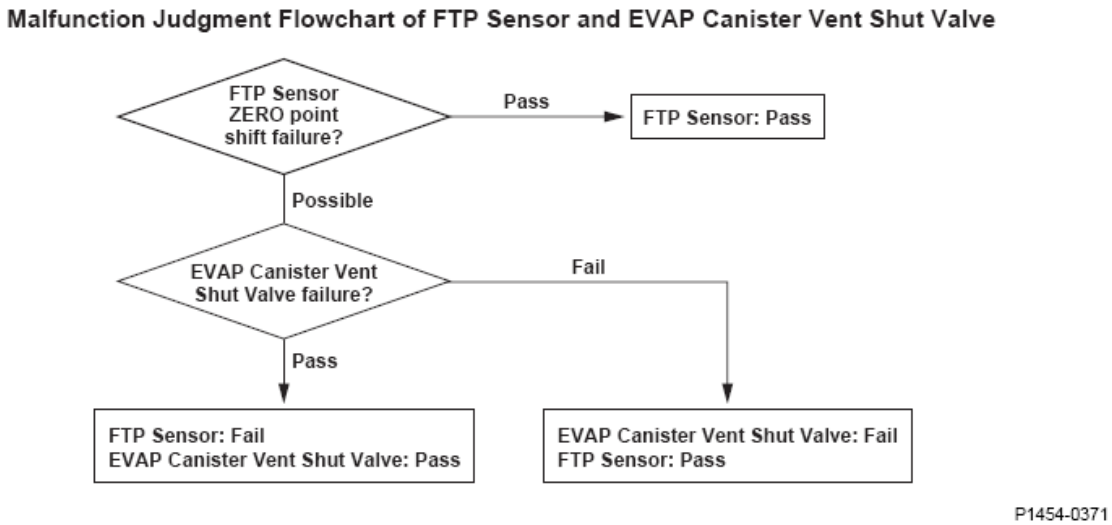


Fig. 326: FTP Sensor And EVAP Canister Vent Shut Valve Malfunction Judgment Flowchart

GENERAL DESCRIPTION

The fuel tank pressure (FTP) sensor output is near atmospheric pressure (0 kPa (0 inHg, 0 mmHg)) before purge starts since the evaporative emission (EVAP) canister vent shut valve is normally open (to the atmosphere). The sensor indicates a negative pressure value (vacuum) while purging. When the FTP sensor indicates vacuum after the engine starts, an FTP sensor zero point shift failure or an EVAP canister vent shut valve stuck closed

can occur. To prevent these failures, the engine control module (ECM)/powertrain control module (PCM) monitors the FTP sensor output after purge starts. The ECM/PCM detects a malfunction of the EVAP canister vent shut valve if the output indicates excessive vacuum. However, if the fuel tank internal pressure is below the specified value (excessive vacuum is detected) when starting the engine, the malfunction detection should be done as follows because it is difficult to distinguish between FTP sensor range problem (P1454) and an EVAP canister vent shut valve stuck closed problem (P2422).

1. If neither Pending DTCs (P1454 nor P2422) are stored, both Pending DTCs are stored when excessive vacuum is detected at engine start.
2. If both Pending DTCs (P1454 and P2422) are stored and excessive vacuum is detected, both Confirmed DTC are stored.
3. If either Pending DTC (p1454 or P2422) is stored and excessive vacuum is detected, the ECM/PCM stores the Confirmed DTC which the Pending DTC is stored.

MONITOR EXECUTION, SEQUENCE, DURATION, DTC TYPE, OBD STATUS

Execution	Once per driving cycle
Sequence(2)	P0452, P0453 are judged as OK
Duration	1.1(1), 10(2) seconds or more
DTC Type	Two drive cycles, MIL on
OBD Status	PASSED/FAILED/NOT COMPLETED (STILL TESTING)
(1) Elapsed time after the FTP sensor output exceeds the malfunction threshold. (2) Excessive negative pressure is detected.	

ENABLE CONDITIONS

Condition	Minimum	Maximum
Elapsed time after starting the engine**	10 seconds	-
Engine coolant temperature(1)	140 °F (60 °C)	-
Battery voltage**	10.5 V	-
Fuel feedback	Closed loop	
No active DTCs set (prevents monitor from running)	P0101, P0102, P0103, P0107, P0108, P0117, P0118, P0134, P0135, P0154, P0155, P0300, P0301, P0302, P0303, P0304, P0305, P0306, P0335, P0339, P0351, P0352, P0353, P0354, P0355, P0356, P0443, P0451, P0452, P0453, P0496, P0497, P0498, P0499, P1128, P1129, P1172, P1174, P145C, P2195, P2197, P2227, P2228, P2229, P2237, P2238, P2240, P2241, P2243, P2245, P2247, P2249, P2251, P2252, P2254, P2255, P2279	
Other**	The EVAP canister vent shut valve is open	
	The EVAP canister purge valve is closed (the system is not purging)	

(1) Condition to start the purge control.

MALFUNCTION THRESHOLD

The output from the FTP sensor is -4 kPa (-1.0 inHg, -25 mmHg)*, -2 kPa (-0.4 inHg, -10 mmHg)** or less for at least 1.1*, 10** seconds.

DRIVING PATTERN

1. Start the engine, and let it idle until the radiator fan comes on.
2. When the diagnosis does not finish at idle, drive at 30 - 75 mph (48 - 120 km/h) at EVAP canister purge valve duty 20 % or more.

DIAGNOSIS DETAILS

Conditions for setting the DTC

When a malfunction is detected during the first drive cycle, a Pending DTC is stored in the ECM/PCM memory. If the malfunction returns in the next (second) drive cycle, the MIL comes on and a Confirmed DTC and the freeze data are stored.

Conditions for clearing the DTC

The MIL is cleared if the malfunction does not return in three consecutive trips in which the diagnostic runs. The MIL, the Pending DTC, the Confirmed DTC, and the freeze data can be cleared with the scan tool Clear command or by disconnecting the battery.

DTC P2610: ENGINE CONTROL MODULE (ECM)/POWERTRAIN CONTROL MODULE (PCM) IGNITION OFF INTERNAL TIMER MALFUNCTION

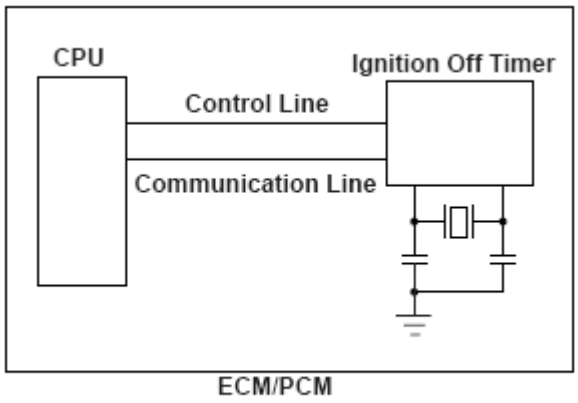


Fig. 327: Engine Control Module/Powertrain Control Module Communication And Control Line

GENERAL DESCRIPTION

The engine control module (ECM)/powertrain control module (PCM) has a built-in ignition off timer that measures the duration of time from ignition off to the next ignition on. The measured duration is used for evaporative emission (EVAP) leak detection and temperature assumption of the catalytic converter. The CPU in the ECM/PCM accesses the ignition off timer when reading the measured duration. If the access process fails, a malfunction is detected and a DTC is stored. When an abnormality is found in the read data, the ECM/PCM detects a malfunction and stores a DTC.

MONITOR EXECUTION, SEQUENCE, DURATION, DTC TYPE, OBD STATUS

Execution	Continuous
Sequence	None
Duration	10 seconds or more
DTC Type	One drive cycle, MIL on
OBD Status	PASSED/FAILED/NOT COMPLETED (STILL TESTING)

ENABLE CONDITIONS

Condition	
Ignition switch(1)	ON (II) (excludes after battery reconnection)
Engine start/stop button(2)	ON mode (excludes after battery reconnection)
(1) Without keyless access system (2) With keyless access system	

MALFUNCTION THRESHOLD

The access process to the ignition off timer fails, or a malfunction is found in the read data for at least 10 seconds.

DIAGNOSIS DETAILS

Conditions for setting the DTC

When a malfunction is detected, the MIL comes on and a Pending DTC, a Confirmed DTC, and the freeze data are stored in the ECM/PCM memory.

Conditions for clearing the DTC

The MIL is cleared if the malfunction does not return in three consecutive trips in which the diagnostic runs. The MIL, the Pending DTC, the Confirmed DTC, and the freeze data can be cleared with the scan tool Clear command or by disconnecting the battery.

DTC P2646: ROCKER ARM OIL PRESSURE SWITCH CIRCUIT LOW VOLTAGE

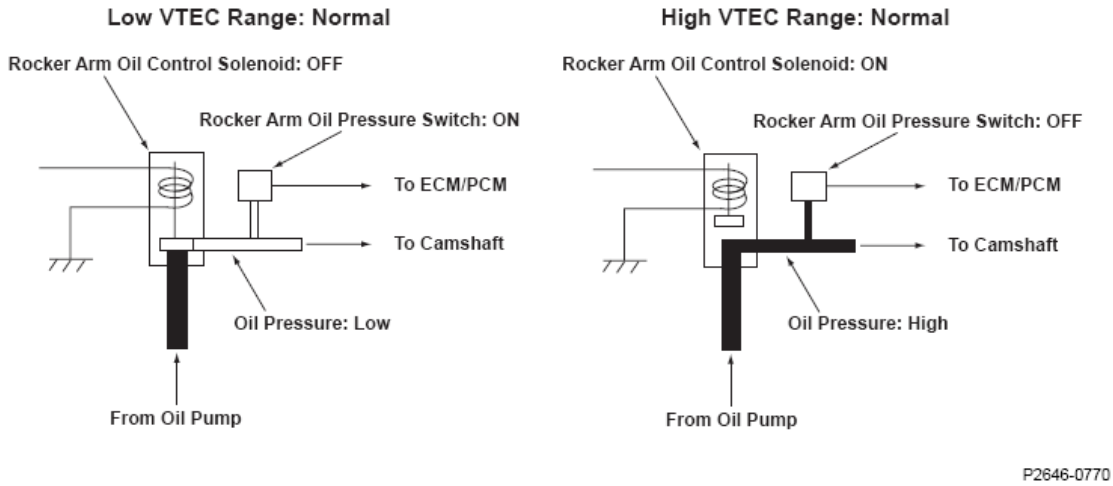


Fig. 328: Rocker Arm Oil Pressure Switch - Circuit Diagram (Low And VTEC Range)

Logic Decision	Rocker Arm Oil Pressure Switch	
	'ON'	'OFF'
Rocker Arm Oil Control Solenoid Command 'ON'	Failure	Normal
Rocker Arm Oil Control Solenoid Command 'OFF'	Normal	Failure

GENERAL DESCRIPTION

The VTEC system activates the rocker arm oil control solenoid with a command from the engine control module (ECM)/powertrain control module (PCM), and it charges/discharges the hydraulic circuit of the VTEC mechanism that switches valve timing between Low and High. The ECM/PCM monitors oil pressure in the hydraulic circuit of the VTEC mechanism using the rocker arm oil pressure switch downstream of the rocker arm oil control solenoid. If there is a difference between the oil pressure condition in the hydraulic circuit determined by the ECM/PCM command and the oil pressure condition determined by the status of the rocker arm oil pressure switch, the system is considered faulty, and a DTC is stored.

MONITOR EXECUTION, SEQUENCE, DURATION, DTC TYPE, OBD STATUS

Execution	Once per driving cycle
Sequence	None
Duration	3.0 seconds or more
DTC Type	One drive cycle, MIL on
OBD Status	PASSED/FAILED/NOT COMPLETED (STILL TESTING)

ENABLE CONDITIONS

Condition		Minimum	Maximum
Engine coolant temperature		50 °F (10 °C)	-
Engine speed (High lift cam operation)	J35Z6 engine	4,750 rpm(1)	-
	J37A4 engine		-

		4,700 rpm(1)	
Vehicle speed		7 mph (10 km/h)	-
Battery voltage		10.5 V	-
Shift lever position(2)		Other than P or N	
No active DTCs set (prevents monitor from running)		P2648, P2649	
(1) Variable that is depending on the engine load. (2) A/T model			

MALFUNCTION THRESHOLD

When the rocker arm oil control solenoid is ON, the rocker arm oil pressure switch remains ON.

CONFIRMATION PROCEDURE WITH THE HDS

Do the VTEC TEST in the INSPECTION MENU with the HDS.

DRIVING PATTERN

1. Start the engine. Hold the engine speed at 3,000 rpm without load (A/T in P or N, M/T in neutral) until the radiator fan comes on.
2. Drive the vehicle in a lower gear at 4,750 rpm*2 , 4,700 rpm*3 or more for at least 3 seconds.
    - Drive the vehicle in this manner only if the traffic regulations and ambient conditions allow.

*2 : J35Z6 engine

*3 : J37A4 engine

DIAGNOSIS DETAILS

Conditions for setting the DTC

When a malfunction is detected, the MIL comes on and a Pending DTC, a Confirmed DTC, and the freeze data are stored in the ECM/PCM memory.

Conditions for clearing the DTC

The MIL is cleared if the malfunction does not return in three consecutive trips in which the diagnostic runs. The MIL, the Pending DTC, the Confirmed DTC, and the freeze data can be cleared with the scan tool Clear command or by disconnecting the battery.

DTC P2647: ROCKER ARM OIL PRESSURE SWITCH CIRCUIT HIGH VOLTAGE

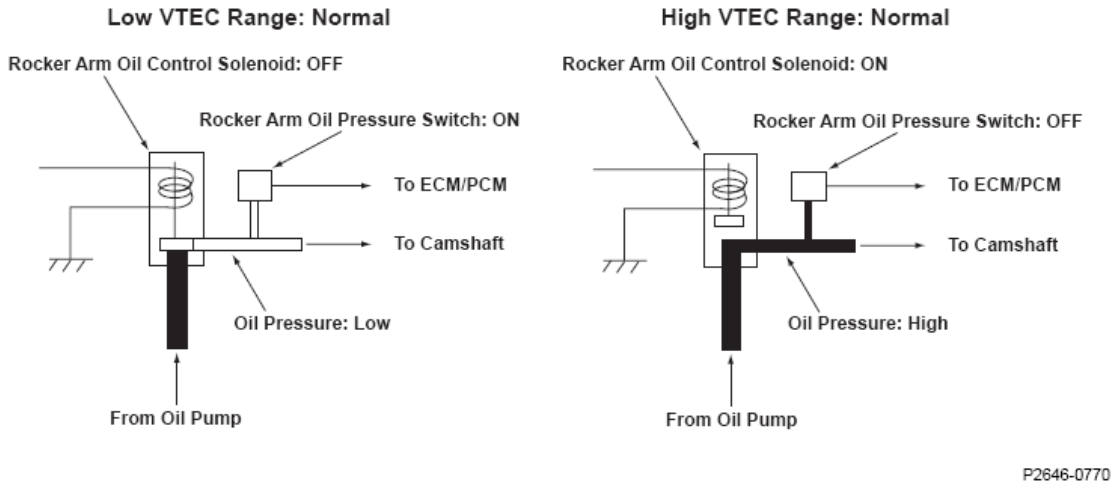


Fig. 329: Rocker Arm Oil Pressure Switch - Circuit Diagram (Low And VTEC Range)

Logic Decision	Rocker Arm Oil Pressure Switch	
	'ON'	'OFF'
Rocker Arm Oil Control Solenoid Command 'ON'	Failure	Normal
Rocker Arm Oil Control Solenoid Command 'OFF'	Normal	Failure

GENERAL DESCRIPTION

The VTEC system activates the rocker arm oil control solenoid with a command from the engine control module (ECM)/powertrain control module (PCM), and it charges/discharges the hydraulic circuit of the VTEC mechanism that switches valve timing between Low and High. The ECM/PCM monitors oil pressure in the hydraulic circuit of the VTEC mechanism using the rocker arm oil pressure switch downstream of the rocker arm oil control solenoid. If there is a difference between the oil pressure condition in the hydraulic circuit determined by the ECM/PCM command and the oil pressure condition determined by the status of the rocker arm oil pressure switch, the system is considered faulty, and a DTC is stored.

MONITOR EXECUTION, SEQUENCE, DURATION, DTC TYPE, OBD STATUS

Execution	Once per driving cycle
Sequence	None
Duration	7.0 seconds or more
DTC Type	One drive cycle, MIL on
OBD Status	PASSED/FAILED/NOT COMPLETED (STILL TESTING)

ENABLE CONDITIONS

Condition	Minimum	Maximum
Battery voltage	10.5 V	-
No active DTCs set (prevents monitor from running)	P2648, P2649	
Other	At idle	

MALFUNCTION THRESHOLD

When the rocker arm oil control solenoid is OFF, the rocker arm oil pressure switch remains OFF.

DRIVING PATTERN

Start the engine, and let it idle for at least 7 seconds.

DIAGNOSIS DETAILS

Conditions for setting the DTC

When a malfunction is detected, the MIL comes on and a Pending DTC, a Confirmed DTC, and the freeze data are stored in the ECM/PCM memory.

Conditions for clearing the DTC

The MIL is cleared if the malfunction does not return in three consecutive trips in which the diagnostic runs. The MIL, the Pending DTC, the Confirmed DTC, and the freeze data can be cleared with the scan tool Clear command or by disconnecting the battery.

DTC P2648: ROCKER ARM OIL CONTROL SOLENOID CIRCUIT LOW VOLTAGE

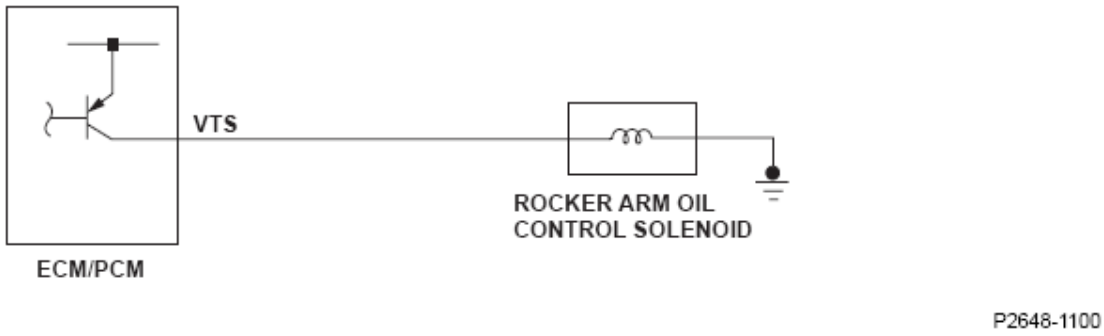


Fig. 330: Rocker Arm Oil Control Solenoid - Circuit Diagram

GENERAL DESCRIPTION

The VTEC system activates the rocker arm oil control solenoid by a command from the engine control module (ECM)/powertrain control module (PCM), and it charges/discharges the hydraulic circuit of the VTEC mechanism that switches valve timing between low and high. If the return signal is OFF (low) when the ECM/PCM outputs the ON (high) signal to the rocker arm oil control solenoid, the ECM/PCM detects a malfunction and stores a DTC.

MONITOR EXECUTION, SEQUENCE, DURATION, DTC TYPE, OBD STATUS

Execution	Continuous

Sequence	None
Duration	2.0 seconds or more
DTC Type	One drive cycle, MIL on
OBD Status	PASSED/FAILED/NOT COMPLETED (STILL TESTING)

ENABLE CONDITIONS

Condition	Minimum	Maximum
Battery voltage	10.0 V	-
No active DTCs set (prevents monitor from running)	P2649	

MALFUNCTION THRESHOLD

The return signal is OFF (low) for at least 2.0 seconds when the ECM/PCM outputs the ON (high) signal to the rocker arm oil control solenoid.

CONFIRMATION PROCEDURE WITH THE HDS

Do the VTEC TEST in the INSPECTION MENU with the HDS.

DRIVING PATTERN

1. Start the engine. Hold the engine speed at 3,000 rpm without load (A/T in P or N, M/T in neutral) until the radiator fan comes on.
2. Drive the vehicle in a lower gear at 4,800 rpm or more for at least 10 seconds.
    - Drive the vehicle in this manner only if the traffic regulations and ambient conditions allow.

DIAGNOSIS DETAILS

Conditions for setting the DTC

When a malfunction is detected, the MIL comes on and a Pending DTC, a Confirmed DTC, and the freeze data are stored in the ECM/PCM memory.

Conditions for clearing the DTC

The MIL is cleared if the malfunction does not return in three consecutive trips in which the diagnostic runs. The MIL, the Pending DTC, the Confirmed DTC, and the freeze data can be cleared with the scan tool Clear command or by disconnecting the battery.

DTC P2649: ROCKER ARM OIL CONTROL SOLENOID CIRCUIT HIGH VOLTAGE

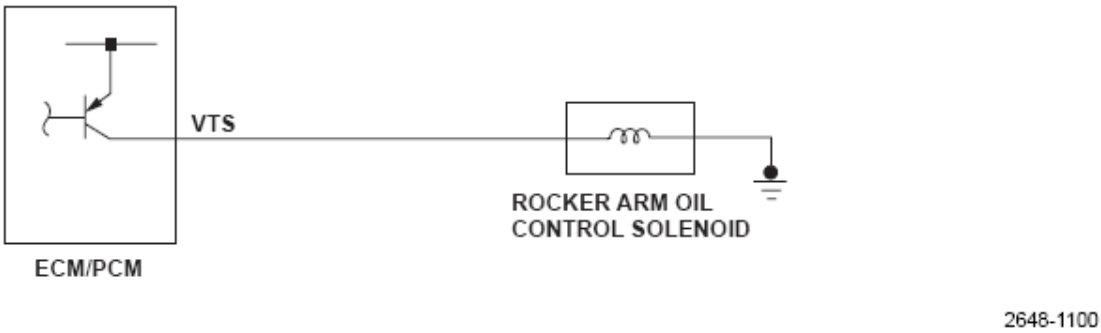


Fig. 331: Rocker Arm Oil Control Solenoid - Circuit Diagram

GENERAL DESCRIPTION

The VTEC system activates the rocker arm oil control solenoid by a command from the engine control module (ECM)/powertrain control module (PCM), and it charges/discharges the hydraulic circuit of the VTEC mechanism that switches valve timing between low and high. If the return signal is ON (high) when the ECM/PCM outputs the OFF (low) signal to the rocker arm oil control solenoid, the ECM/PCM detects a malfunction and stores a DTC.

MONITOR EXECUTION, SEQUENCE, DURATION, DTC TYPE, OBD STATUS

Execution	Continuous
Sequence	None
Duration	2.0 seconds or more
DTC Type	One drive cycle, MIL on
OBD Status	PASSED/FAILED/NOT COMPLETED (STILL TESTING)

ENABLE CONDITIONS

Condition	Minimum	Maximum
Battery voltage	10.0 V	-
State of the engine	Running	
No active DTCs set (prevents monitor from running)	P2648	

MALFUNCTION THRESHOLD

The return signal is ON (high) for at least 2.0 seconds when the ECM/PCM outputs the OFF (low) signal to the rocker arm oil control solenoid.

DRIVING PATTERN

Start the engine, and let it idle for at least 10 seconds.

DIAGNOSIS DETAILS

Conditions for setting the DTC

When a malfunction is detected, the MIL comes on and a Pending DTC, a Confirmed DTC, and the freeze data are stored in the ECM/PCM memory.

Conditions for clearing the DTC

The MIL is cleared if the malfunction does not return in three consecutive trips in which the diagnostic runs. The MIL, the Pending DTC, the Confirmed DTC, and the freeze data can be cleared with the scan tool Clear command or by disconnecting the battery.

DTC P2714: A/T CLUTCH PRESSURE CONTROL SOLENOID VALVE D STUCK OFF

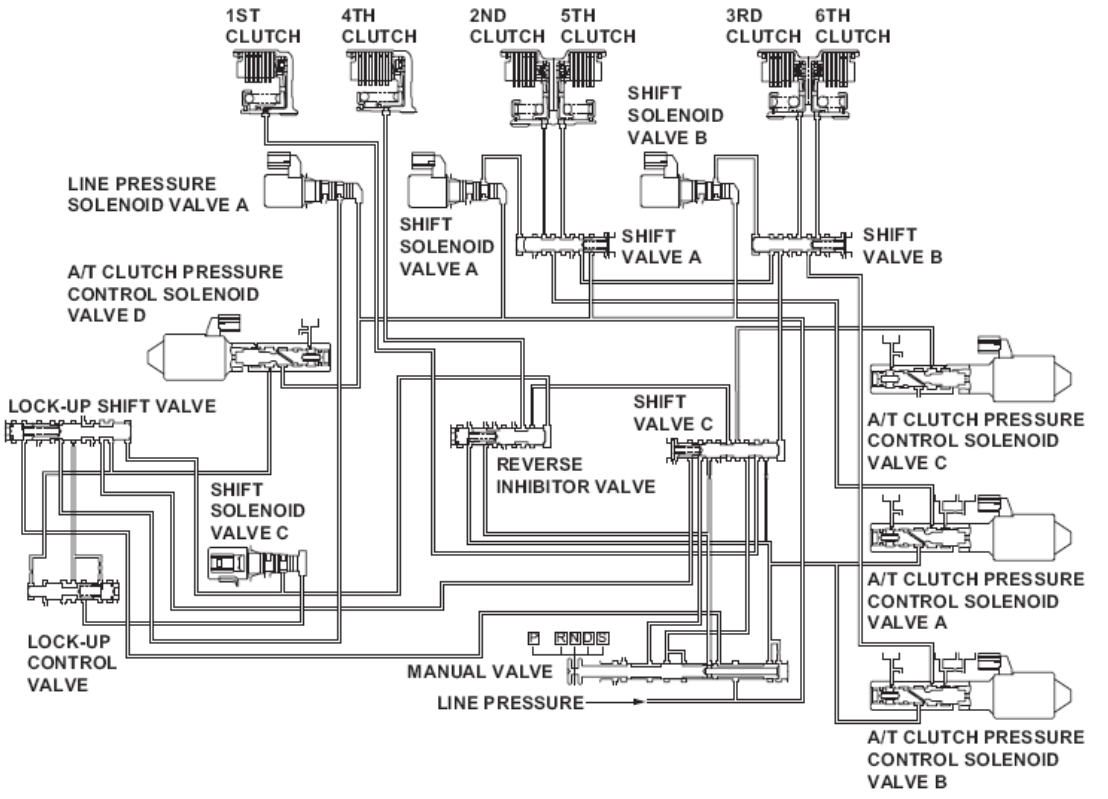


Fig. 332: A/T Clutch Pressure Control Solenoid Valve - System Diagram

HYDRAULIC PRESSURE SUPPLY TO CLUTCH BY SHIFT SOLENOID VALVE OUTPUT

Gear position		Neutral-1st	1st	Neutral-Reverse	Reverse
Shift solenoid valve	A	ON	ON	ON	OFF
	B	OFF	ON	OFF	OFF
	C	OFF	OFF	ON	ON
1st clutch		CPCD	LINE	-	-

4th clutch	-	-	CPCD	LINE

LINE: Line pressure
CPCD: A/T clutch pressure control solenoid valve D pressure

GENERAL DESCRIPTION

A/T clutch pressure control solenoid valve D is installed on the transmission housing. A/T clutch pressure control solenoid valve D is operated by the powertrain control module (PCM) and converts line pressure to A/T clutch pressure control solenoid valve D pressure. A signal from the PCM is output to A/T clutch pressure control solenoid valve D to supply proper A/T clutch pressure control solenoid valve D pressure to the correct gear clutch according to the shift schedule and the driving conditions. When the current from the PCM is high (ON), A/T clutch pressure control solenoid valve D operates and A/T clutch pressure control solenoid valve D pressure increases. When the current from the PCM is low (OFF), A/T clutch pressure control solenoid valve D turns off and A/T clutch pressure control solenoid valve D pressure decreases. The PCM monitors the input shaft (mainshaft) speed and the output shaft (countershaft) speed according to the shift status determined by the shift schedule. When an improper gear ratio is output for the shift schedule, the PCM detects an A/T clutch pressure control solenoid valve D stuck off failure and stores a DTC.

MONITOR EXECUTION, SEQUENCE, DURATION, DTC TYPE, OBD STATUS

Execution		Continuous
Sequence		None
Duration	Symptom 1-A	10 seconds or more
	Symptom 1-B	3 seconds or more
	Symptom 2-A	10 seconds or more
	Symptom 2-B	
DTC Type		Two drive cycles, MIL on, D indicator blinks
OBD Status		PASSED/FAILED/NOT COMPLETED (STILL TESTING)

ENABLE CONDITIONS

Condition	Minimum	Maximum
ATF temperature	-4 °F (-20 °C)	248 °F (120 °C)
Vehicle speed	-	3 mph (4 km/h)
Battery voltage	11 V	-
Shift lever position	D, S, R	
No active DTCs set (prevents monitor from running)	P0122, P0123, P0222, P0223, P0705, P0716, P0717, P0718, P0721, P0722, P0723, P0746, P0747, P0751, P0752, P0756, P0757, P0761, P0762, P0776, P0777, P0796, P0797, P0842, P0843, P0847, P0848, P0872, P0873, P0877, P0878, P0962, P0963, P0966, P0967, P0970, P0971, P0973, P0974, P0976, P0977, P0979, P0980, P0989, P0990, P1658, P1659, P1683, P1684, P2101, P2118, P2122, P2123, P2127, P2128, P2135, P2138, P2176, P2720, P2721	

MALFUNCTION THRESHOLD

One of these symptoms occurs:

SYMPTOM 1 (SYMPTOM 1-B OCCURS AFTER SYMPTOM 1-A OCCURRED)

Symptom		Gear position commanded by the PCM	Actual gear position
1	1-A	Reverse gear in-gear	Neutral
	1-B	Reverse gear in-gear	Reverse gear in-gear

SYMPTOM 2 (SYMPTOM 2-B OCCURS AFTER SYMPTOM 2-A OCCURRED)

Symptom		Gear position commanded by the PCM	Actual gear position
2	2-A	1st gear in-gear	Neutral
	2-B	Reverse gear in-gear	Neutral

DRIVING PATTERN

1. Start the engine.
2. With the brake pedal pressed, shift the transmission to 1st gear.
3. With the brake pedal pressed, shift to R.

DIAGNOSIS DETAILS

Conditions for setting the DTC

When a malfunction is detected during the first drive cycle, a Pending DTC is stored in the PCM memory. If the malfunction returns in the next (second) drive cycle, the MIL comes on and a Confirmed DTC and the freeze data are stored.

Conditions for clearing the DTC

The MIL is cleared if the malfunction does not return in three consecutive trips in which the diagnostic runs. The MIL, the Pending DTC, the Confirmed DTC, and the freeze data can be cleared with the scan tool Clear command or by disconnecting the battery.

DTC P2720: PROBLEM IN A/T CLUTCH PRESSURE CONTROL SOLENOID VALVE D CIRCUIT

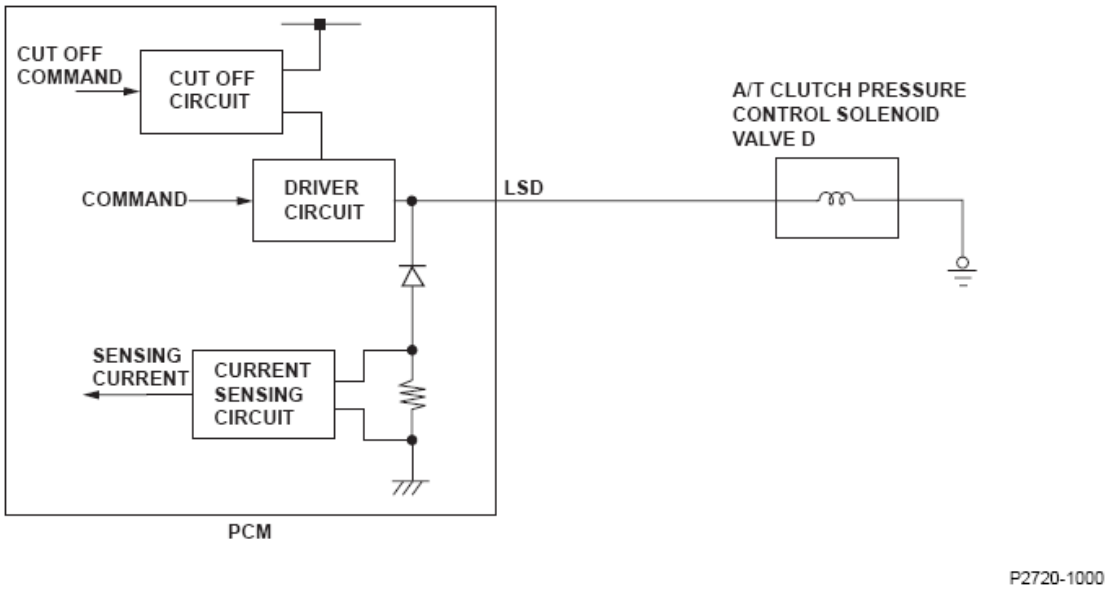


Fig. 333: A/T Clutch Pressure Control Solenoid Valve D - Circuit Diagram

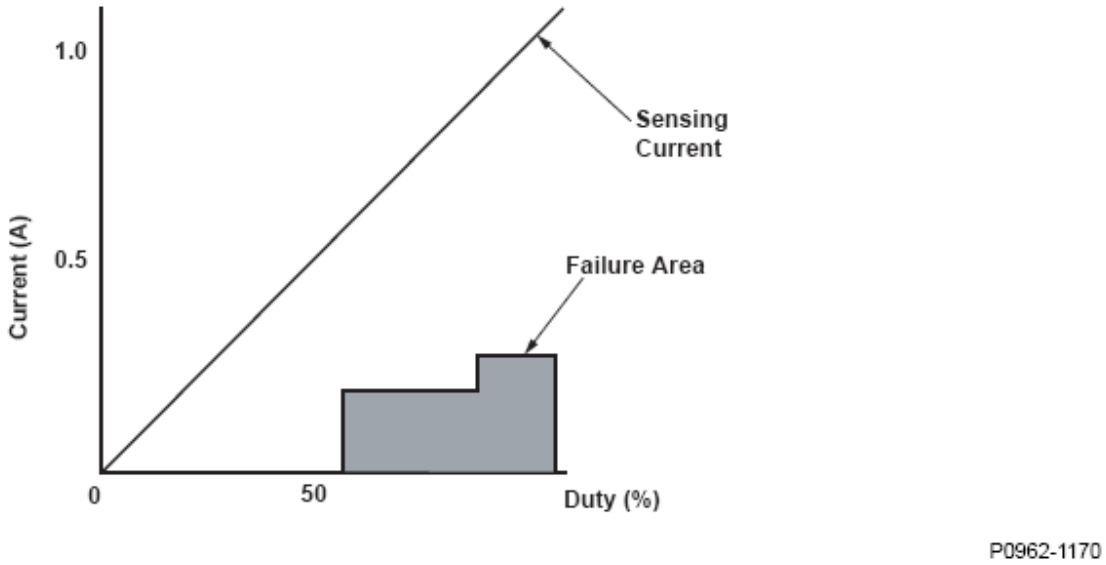


Fig. 334: Current Versus Duty Ratio Graph With Failure Area

GENERAL DESCRIPTION

A/T clutch pressure control solenoid valve D is used for clutch pressure control. A spool in A/T clutch pressure control solenoid valve D pushes the valve according to the duty cycle that is controlled by the powertrain control module (PCM) (The hydraulic pressure is proportional to the current). The PCM measures the current flowing through A/T clutch pressure control solenoid valve D, and uses feedback control to compensate for the difference between the actual current and the commanded one. If the measured current for the PCM output duty cycle is not within a specified range (circuit short or open), the PCM detects a malfunction and stores a DTC.

MONITOR EXECUTION, SEQUENCE, DURATION, DTC TYPE, OBD STATUS

Execution	Continuous
Sequence	None
Duration	1 second or more
DTC Type	One drive cycle, MIL on, D indicator blinks
OBD Status	PASSED/FAILED/NOT COMPLETED (STILL TESTING)

ENABLE CONDITIONS

Condition	Minimum	Maximum
Battery voltage	11 V	-
No active DTCs set (prevents monitor from running)	P0962, P0963, P0973, P0974, P0979, P0980, P2721	

MALFUNCTION THRESHOLD

The measured current for the PCM's command value is as specified here for at least 1 second.

Duty (%)	Current (A)	Failure mode
56.5 - 89	Less than 0.19	Low Input
More than 89	Less than 0.27	Low Input

DRIVING PATTERN

Start the engine, and wait for at least 1 second.

DIAGNOSIS DETAILS

Conditions for setting the DTC

When a malfunction is detected, the MIL comes on and a Pending DTC, a Confirmed DTC, and the freeze data are stored in the PCM memory.

Conditions for clearing the DTC

The MIL is cleared if the malfunction does not return in three consecutive trips in which the diagnostic runs. The MIL, the Pending DTC, the Confirmed DTC, and the freeze data can be cleared with the scan tool Clear command or by disconnecting the battery.

DTC P2721: PROBLEM IN A/T CLUTCH PRESSURE CONTROL SOLENOID VALVE D

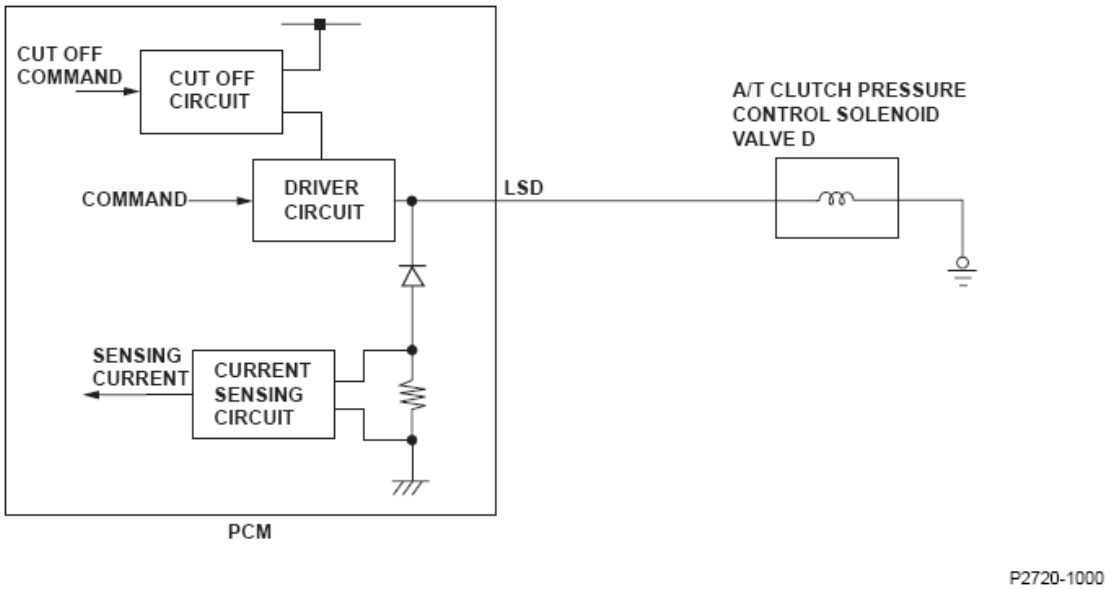


Fig. 335: A/T Clutch Pressure Control Solenoid Valve D - Circuit Diagram

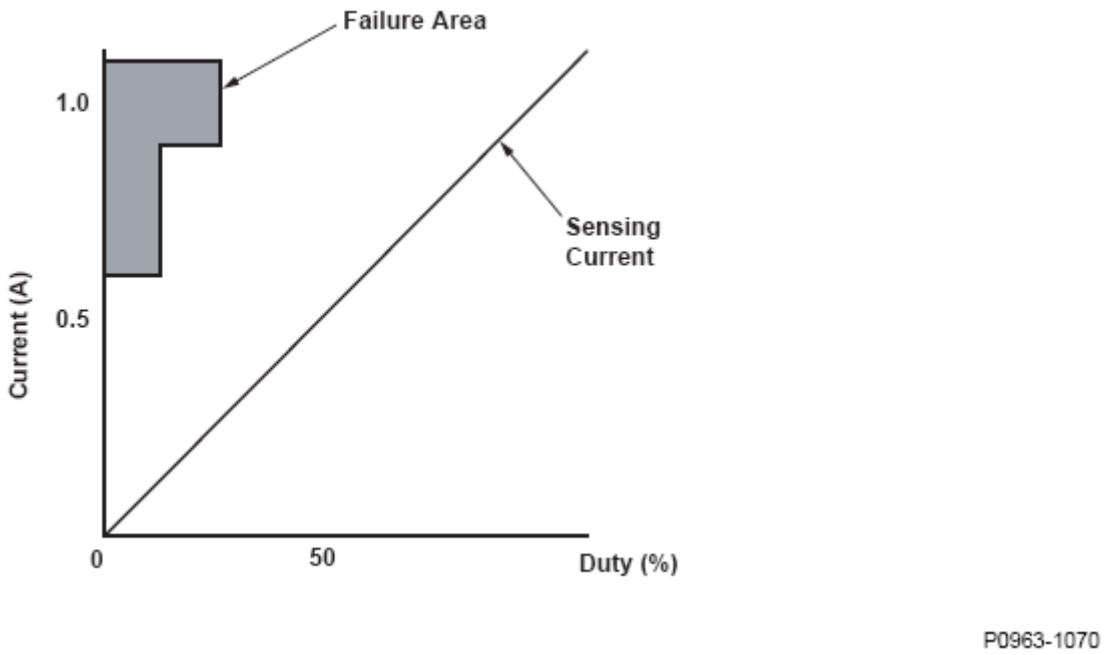


Fig. 336: Current Versus Duty Ratio Graph With Failure Area

GENERAL DESCRIPTION

A/T clutch pressure control solenoid valve D is used for clutch pressure control. A spool in A/T clutch pressure control solenoid valve D pushes the valve according to the duty cycle that is controlled by the powertrain control module (PCM) (The hydraulic pressure is proportional to the current). The PCM measures the current flowing through A/T clutch pressure control solenoid valve D, and uses feedback control to compensate for the difference between the actual current and the commanded one. If the measured current for the PCM output duty cycle is not within a specified range (circuit short or open), the PCM detects a malfunction and stores a DTC.

MONITOR EXECUTION, SEQUENCE, DURATION, DTC TYPE, OBD STATUS

Execution	Continuous
Sequence	None
Duration	1 second or more
DTC Type	One drive cycle, MIL on, D indicator blinks
OBD Status	PASSED/FAILED/NOT COMPLETED (STILL TESTING)

ENABLE CONDITIONS

Condition	Minimum	Maximum
Battery voltage	11 V	-
No active DTCs set (prevents monitor from running)	P0962, P0963, P0973, P0974, P0979, P0980, P2720	

MALFUNCTION THRESHOLD

The measured current for the PCM's command value is as specified here for at least 1 second.

Duty (%)	Current (A)	Failure mode
Less than 13.7	More than 0.6	High Input
13.7 - 27	More than 0.9	High Input

DRIVING PATTERN

Start the engine, and wait for at least 1 second.

DIAGNOSIS DETAILS

Conditions for setting the DTC

When a malfunction is detected, the MIL comes on and a Pending DTC, a Confirmed DTC, and the freeze data are stored in the PCM memory.

Conditions for clearing the DTC

The MIL is cleared if the malfunction does not return in three consecutive trips in which the diagnostic runs. The MIL, the Pending DTC, the Confirmed DTC, and the freeze data can be cleared with the scan tool Clear command or by disconnecting the battery.

DTC P2821: LINE PRESSURE SOLENOID VALVE A STUCK ON

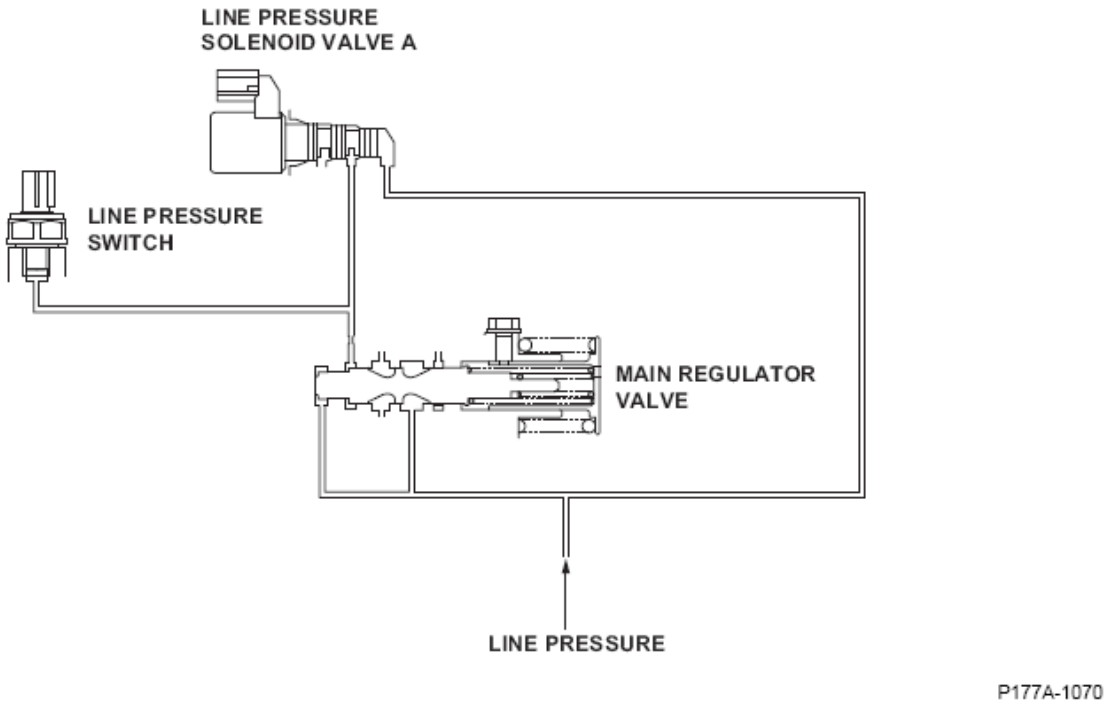


Fig. 337: Line Pressure Solenoid Valve A - System Diagram

LINE PRESSURE MODE COMBINATION TABLE

	Normal line pressure mode	Low line pressure mode
Line pressure solenoid valve A	OFF	ON
Line pressure switch	OFF	ON
Line pressure condition	Normal	Low

GENERAL DESCRIPTION

Line pressure solenoid valve A is installed on the transmission housing. It is controlled by the ON/OFF signal from the powertrain control module (PCM) to regulate line pressure to low line pressure or normal line pressure. The line pressure switch is installed in the hydraulic pressure output circuit from line pressure solenoid valve A. The signal to line pressure solenoid valve A from the PCM is output to regulate line pressure to proper pressure according to the driving conditions. When line pressure solenoid valve A outputs hydraulic pressure, the line pressure is regulated to low line pressure and the switch is turned on. When line pressure solenoid valve A does not output hydraulic pressure, the line pressure is at normal line pressure and the switch is turned off. If the line pressure switch is on against the command to turn off line pressure solenoid valve A, the PCM detects a line pressure solenoid valve A stuck on failure and stores a DTC.

MONITOR EXECUTION, SEQUENCE, DURATION, DTC TYPE, OBD STATUS

Execution	Continuous
Sequence	None
Duration	5 seconds or more
DTC Type	Two drive cycles, MIL on, D indicator blinks

OBD Status	PASSED/FAILED/NOT COMPLETED (STILL TESTING)

ENABLE CONDITIONS

Condition	Minimum	Maximum
Battery voltage	11 V	-
No active DTCs set (prevents monitor from running)	P0122, P0123, P0222, P0223, P0716, P0717, P0718, P0721, P0722, P0723, P0746, P0747, P0751, P0752, P0756, P0757, P0761, P0762, P0776, P0777, P0796, P0797, P0842, P0843, P0847, P0848, P0872, P0873, P0877, P0878, P0962, P0963, P0966, P0967, P0970, P0971, P0973, P0974, P0976, P0977, P0979, P0980, P0989, P0990, P1658, P1659, P1683, P1684, P2101, P2118, P2122, P2123, P2127, P2128, P2135, P2138, P2176, P2714, P2720, P2721	

MALFUNCTION THRESHOLD

The input signal from the line pressure switch to the PCM is high during the self shut down mode after the signal is low when the normal line pressure mode was commanded.

DRIVING PATTERN

1. Start the engine.
2. Drive the vehicle in D until the transmission shifts into 6th gear.
    - Drive the vehicle in this manner only if the traffic regulations and ambient conditions allow.

DIAGNOSIS DETAILS

Conditions for setting the DTC

When a malfunction is detected during the first drive cycle, a Pending DTC is stored in the PCM memory. If the malfunction returns in the next (second) drive cycle, the MIL comes on and a Confirmed DTC and the freeze data are stored.

Conditions for clearing the DTC

The MIL is cleared if the malfunction does not return in three consecutive trips in which the diagnostic runs. The MIL, the Pending DTC, the Confirmed DTC, and the freeze data can be cleared with the scan tool Clear command or by disconnecting the battery.

DTC P2826: SHORT IN LINE PRESSURE SOLENOID VALVE A CIRCUIT

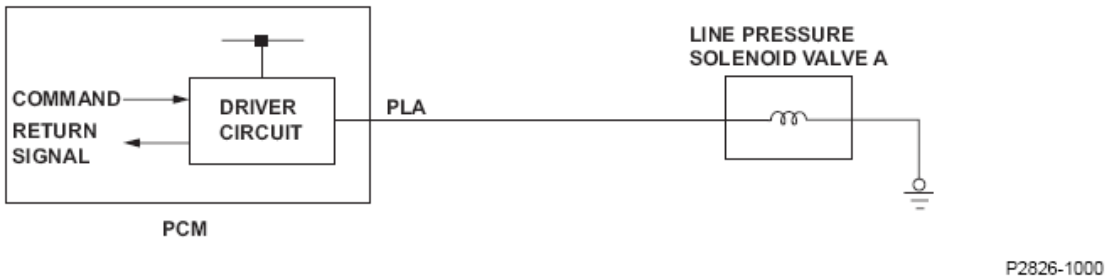


Fig. 338: Line Pressure Solenoid Valve A - Circuit Diagram

LINE PRESSURE MODE COMBINATION TABLE

	Normal line pressure mode	Low line pressure mode
Line pressure solenoid valve A	OFF	ON
Line pressure switch	OFF	ON
Line pressure condition	Normal	Low

GENERAL DESCRIPTION

Line pressure solenoid valve A is installed on the transmission housing. It is controlled by the ON/OFF signal from the powertrain control module (PCM) to regulate line pressure to low line pressure or to normal line pressure. The PCM commands the driver circuit to turn on line pressure solenoid valve A. The circuit detects malfunctions such as a circuit short or open, and sends back a return signal during the PCM's command. When the return signal does not match the PCM command to turn on line pressure solenoid valve A, the PCM detects a malfunction and stores a DTC.

MONITOR EXECUTION, SEQUENCE, DURATION, DTC TYPE, OBD STATUS

Execution	Continuous
Sequence	None
Duration	1 second or more
DTC Type	Two drive cycles, MIL off, D indicator blinks
OBD Status	PASSED/FAILED/NOT COMPLETED (STILL TESTING)

ENABLE CONDITIONS

Condition	Minimum	Maximum
Battery voltage	11 V	-
No active DTCs set (prevents monitor from running)	P2827	

MALFUNCTION THRESHOLD

The return signal does not match the command to turn on line pressure solenoid valve A for at least 1 second.

DRIVING PATTERN

1. Start the engine.
2. Drive the vehicle in D until the transmission shifts into 6th gear.
    - Drive the vehicle in this manner only if the traffic regulations and ambient conditions allow.

DIAGNOSIS DETAILS

Conditions for setting the DTC

When a malfunction is detected during the first drive cycle, a Pending DTC is stored in the PCM memory. If the malfunction returns in the next (second) drive cycle, a Confirmed DTC and the freeze data are stored. The MIL does not come on.

Conditions for clearing the DTC

The Pending DTC, the Confirmed DTC, and the freeze data can be cleared with the scan tool Clear command or by disconnecting the battery.

DTC P2827: OPEN IN LINE PRESSURE SOLENOID VALVE A CIRCUIT

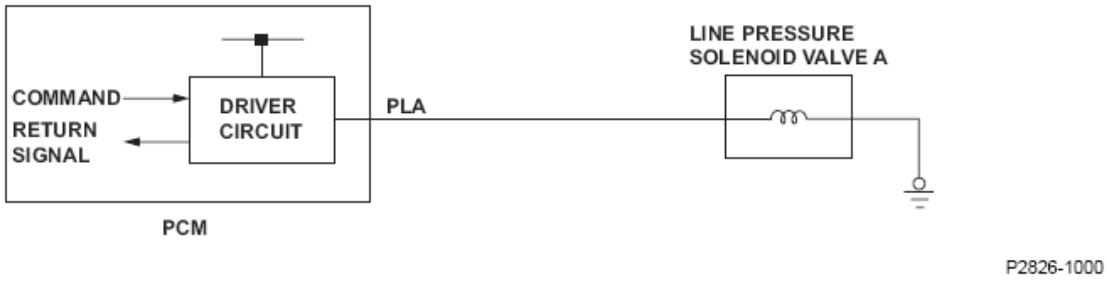


Fig. 339: Line Pressure Solenoid Valve A - Circuit Diagram

LINE PRESSURE MODE COMBINATION TABLE

	Normal line pressure mode	Low line pressure mode
Line pressure solenoid valve A	OFF	ON
Line pressure switch	OFF	ON
Line pressure condition	Normal	Low

GENERAL DESCRIPTION

Line pressure solenoid valve A is installed on the transmission housing. It is controlled by the ON/OFF signal from the powertrain control module (PCM) to regulate line pressure to low line pressure or to normal line pressure. The PCM commands the driver circuit to turn on line pressure solenoid valve A. The circuit detects malfunctions such as a circuit short or open, and sends back a return signal during the PCM's command. When the return signal does not match the PCM command to turn off line pressure solenoid valve A, the PCM detects a malfunction and stores a DTC.

MONITOR EXECUTION, SEQUENCE, DURATION, DTC TYPE, OBD STATUS

Execution	Continuous
Sequence	None
Duration	1 second or more
DTC Type	Two drive cycles, MIL off, D indicator blinks
OBD Status	PASSED/FAILED/NOT COMPLETED (STILL TESTING)

ENABLE CONDITIONS

Condition	Minimum	Maximum
Battery voltage	11 V	-
No active DTCs set (prevents monitor from running)	P2826	

MALFUNCTION THRESHOLD

The return signal does not match the command to turn off line pressure solenoid valve A for at least 1 second.

DRIVING PATTERN

1. Start the engine.
2. Drive the vehicle in D until the transmission shifts into 6th gear.
    - Drive the vehicle in this manner only if the traffic regulations and ambient conditions allow.

DIAGNOSIS DETAILS

Conditions for setting the DTC

When a malfunction is detected during the first drive cycle, a Pending DTC is stored in the PCM memory. If the malfunction returns in the next (second) drive cycle, a Confirmed DTC and the freeze data are stored. The MIL does not come on.

Conditions for clearing the DTC

The Pending DTC, the Confirmed DTC, and the freeze data can be cleared with the scan tool Clear command or by disconnecting the battery.

DTC P2A00: REAR AIR/FUEL RATIO (A/F) SENSOR (BANK 1, SENSOR 1) CIRCUIT RANGE/PERFORMANCE PROBLEM (ENGINE TYPE: J35Z6)

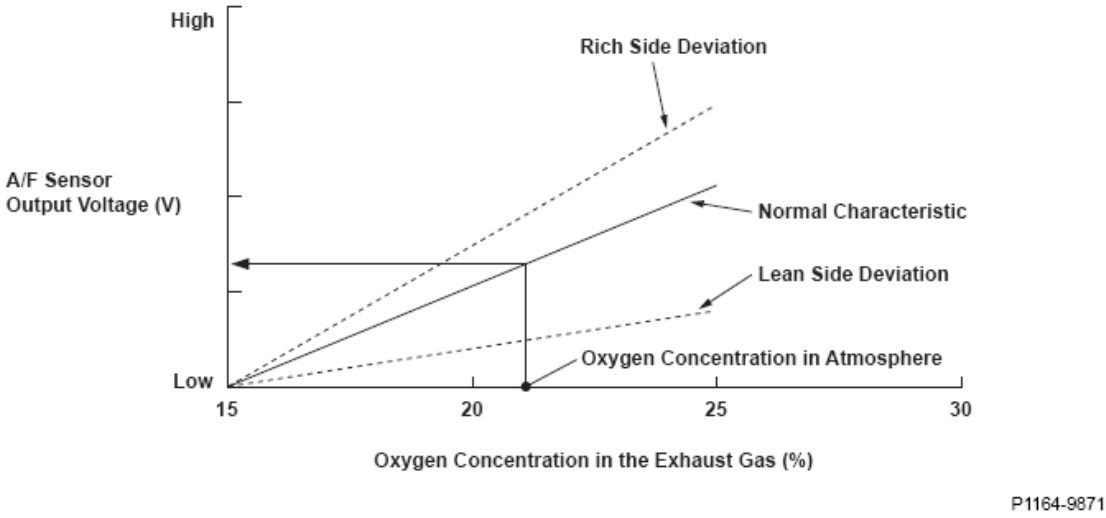


Fig. 340: A/F Sensor Output Voltage Versus Exhaust Gas Oxygen Concentration Ratio Graph

GENERAL DESCRIPTION

The rear air/fuel ratio (A/F) sensor (bank 1, sensor 1) has a linear signal output in relation to the oxygen concentration. The powertrain control module (PCM) computes the air/fuel ratio from the rear A/F sensor output voltage and uses fuel feedback control to improve exhaust emissions. The PCM monitors the rear A/F sensor output voltage during deceleration with the throttle fully closed, and if the output voltage deviates greatly from normal oxygen concentration levels, it detects a malfunction and stores a DTC.

NOTE: Output to the scan tool exhibits a relationship between the rear A/F sensor output and oxygen concentration, which is opposite to the characteristic shown in the graph. That is, a deviation toward the rich side increases the output voltage and one toward the lean side decreases the output voltage, as the stoichiometric ratio is 0.

MONITOR EXECUTION, SEQUENCE, DURATION, DTC TYPE, OBD STATUS

Execution	Once per driving cycle
Sequence	None
Duration	5.3 seconds or more
DTC Type	Two drive cycles, MIL on
OBD Status	PASSED/FAILED/EXECUTING/OUT OF (TEST) CONDITION

ENABLE CONDITIONS

Condition	Minimum	Maximum
Elapsed time after starting the engine	60 seconds	-
Engine coolant temperature	156 °F (69 °C)	-

Intake air temperature	-13 °F (-25 °C)	-
Engine speed	-	2,100 rpm
Vehicle speed	30 mph (48 km/h)	-
Fuel feedback	During deceleration	
No active DTCs set (prevents monitor from running)	P0112, P0113, P0117, P0118, P0122, P0123, P0133, P0134, P0135, P0171, P0172, P0222, P0223, P0300, P0301, P0302, P0303, P0304, P0305, P0306, P0351, P0352, P0353, P0443, P0496, P0497, P060A, P0722, P1172, P145C, P1659, P2101, P2118, P2122, P2123, P2127, P2128, P2135, P2138, P2176, P2195, P2227, P2228, P2229, P2237, P2238, P2243, P2245, P2251, P2252, P2279	

MALFUNCTION THRESHOLD

The rear A/F sensor (bank 1, sensor 1) output voltage is 2.55 V or less, or 4.50 V or more.

DRIVING PATTERN

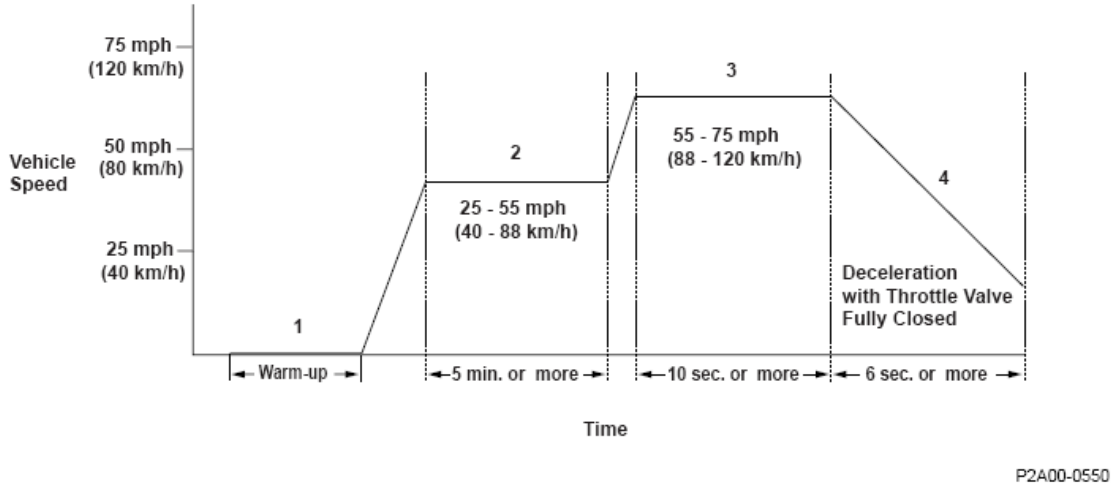


Fig. 341: Vehicle Speed Driving Pattern

1. Start the engine. Hold the engine speed at 3,000 rpm without load (in P or N) until the radiator fan comes on.
2. Drive the vehicle at a speed between 25 - 55 mph (40 - 88 km/h) for at least 5 minutes.
3. Drive immediately at a steady speed between 55 - 75 mph (88 - 120 km/h) for at least 10 seconds.
4. Decelerate with the throttle valve fully closed for at least 6 seconds.
    - If the EVAP monitor runs instead of the HO2S monitor, turn the engine off, then restart it, and the HO2S monitor will restart.
    - Drive the vehicle in this manner only if the traffic regulations and ambient conditions allow.

DIAGNOSIS DETAILS

Conditions for setting the DTC

When a malfunction is detected during the first drive cycle, a Pending DTC is stored in the PCM memory. If the malfunction returns in the next (second) drive cycle, the MIL comes on and a Confirmed DTC and the freeze data are stored.

Conditions for clearing the DTC

The MIL is cleared if the malfunction does not return in three consecutive trips in which the diagnostic runs. The MIL, the Pending DTC, the Confirmed DTC, and the freeze data can be cleared with the scan tool Clear command or by disconnecting the battery.

DTC P2A00: REAR AIR/FUEL RATIO (A/F) SENSOR (BANK 1, SENSOR 1) CIRCUIT RANGE/PERFORMANCE PROBLEM (ENGINE TYPE: J37A4)

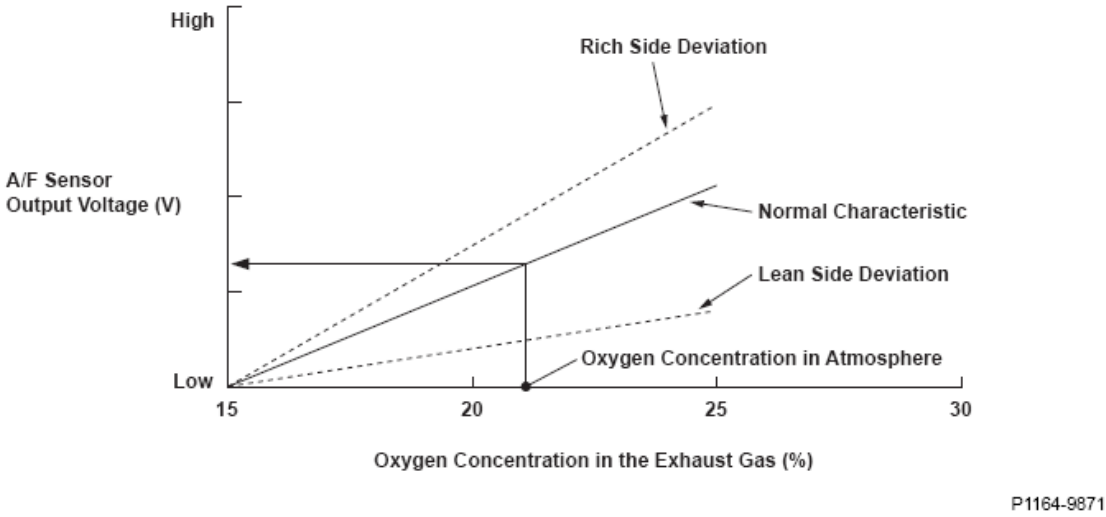


Fig. 342: A/F Sensor Output Voltage Versus Exhaust Gas Oxygen Concentration Ratio Graph

GENERAL DESCRIPTION

The rear air/fuel ratio (A/F) sensor (bank 1, sensor 1) has a linear signal output in relation to the oxygen concentration. The engine control module (ECM)/powertrain control module (PCM) computes the air/fuel ratio from the rear A/F sensor output voltage and uses fuel feedback control to improve exhaust emissions. The ECM/PCM monitors the rear A/F sensor output voltage during deceleration with the throttle fully closed, and if the output voltage deviates greatly from normal oxygen concentration levels, it detects a malfunction and stores a DTC.

NOTE: Output to the scan tool exhibits a relationship between the rear A/F sensor output and oxygen concentration, which is opposite to the characteristic shown in the graph. That is, a deviation toward the rich side increases the output voltage and one toward the lean side decreases the output voltage, as the stoichiometric ratio is 0.

MONITOR EXECUTION, SEQUENCE, DURATION, DTC TYPE, OBD STATUS

Execution	Once per driving cycle
Sequence	None
Duration	5.3 seconds or more
DTC Type	Two drive cycles, MIL on
OBD Status	PASSED/FAILED/EXECUTING/OUT OF (TEST) CONDITION

ENABLE CONDITIONS

Condition	Minimum	Maximum
Elapsed time after starting the engine	60 seconds	-
Engine coolant temperature	156 °F (69 °C)	-
Intake air temperature	-13 °F (-25 °C)	-
Engine speed	-	2,100 rpm(1) 2,600 rpm(2)
Vehicle speed	30 mph (48 km/h)	-
Fuel feedback	During deceleration	
No active DTCs set (prevents monitor from running)	P0112, P0113, P0117, P0118, P0122, P0123, P0133, P0134, P0135, P0171, P0172, P0222, P0223, P0300, P0301, P0302, P0303, P0304, P0305, P0306, P0351, P0352, P0353, P0443, P0496, P0497, P060A, P0720, P0722, P1172, P145C, P1659, P2101, P2118, P2122, P2123, P2127, P2128, P2135, P2138, P2176, P2195, P2227, P2228, P2229, P2237, P2238, P2243, P2245, P2251, P2252, P2279	

(1) A/T model

(2) M/T model

MALFUNCTION THRESHOLD

The rear A/F sensor (bank 1, sensor 1) output voltage is 2.55 V or less, or 4.50 V or more.

DRIVING PATTERN

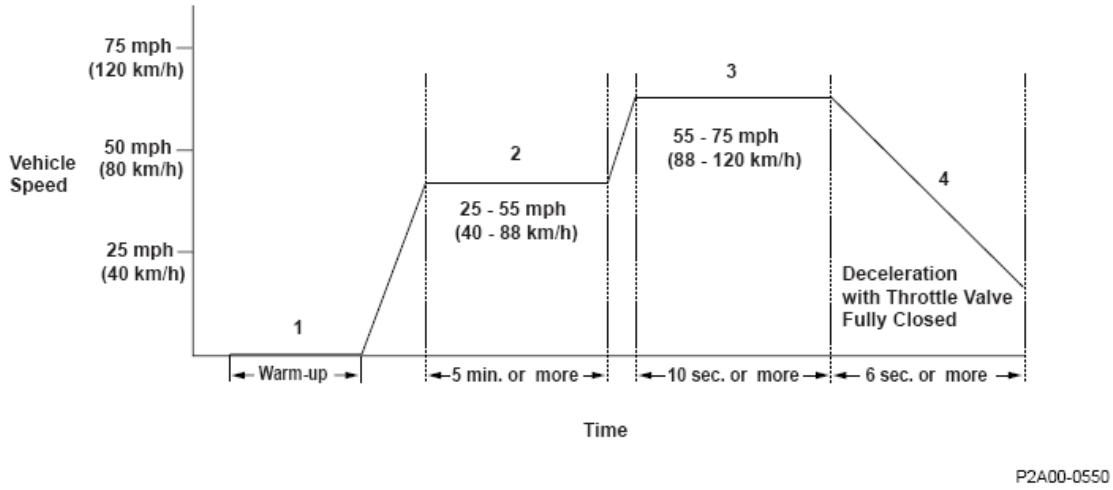


Fig. 343: Vehicle Speed Driving Pattern

1. Start the engine. Hold the engine speed at 3,000 rpm without load (A/T in P or N, M/T in neutral) until the radiator fan comes on.
2. Drive the vehicle at a speed between 25 - 55 mph (40 - 88 km/h) for at least 5 minutes.
3. Drive immediately at a steady speed between 55 - 75 mph (88 - 120 km/h) for at least 10 seconds.
4. Decelerate with the throttle valve fully closed for at least 6 seconds.
    - If the EVAP monitor runs instead of the HO2S monitor, turn the engine off, then restart it, and the HO2S monitor will restart.
    - Drive the vehicle in this manner only if the traffic regulations and ambient conditions allow.

DIAGNOSIS DETAILS

Conditions for setting the DTC

When a malfunction is detected during the first drive cycle, a Pending DTC is stored in the ECM/PCM memory. If the malfunction returns in the next (second) drive cycle, the MIL comes on and a Confirmed DTC and the freeze data are stored.

Conditions for clearing the DTC

The MIL is cleared if the malfunction does not return in three consecutive trips in which the diagnostic runs. The MIL, the Pending DTC, the Confirmed DTC, and the freeze data can be cleared with the scan tool Clear command or by disconnecting the battery.

DTC P2A03: FRONT AIR/FUEL RATIO (A/F) SENSOR (BANK 2, SENSOR 1) CIRCUIT RANGE/PERFORMANCE PROBLEM (ENGINE TYPE: J35Z6)

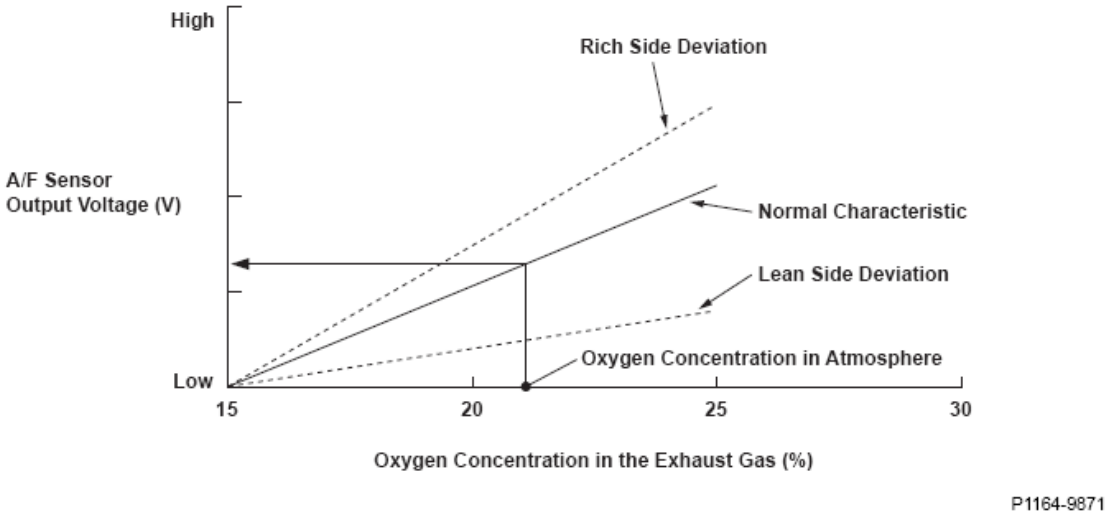


Fig. 344: A/F Sensor Output Voltage Versus Exhaust Gas Oxygen Concentration Ratio Graph

GENERAL DESCRIPTION

The front air/fuel ratio (A/F) sensor (bank 2, sensor 1) has a linear signal output in relation to the oxygen concentration. The powertrain control module (PCM) computes the air/fuel ratio from the front A/F sensor output voltage and uses fuel feedback control to improve exhaust emissions. The PCM monitors the front A/F sensor output voltage during deceleration with the throttle fully closed, and if the output voltage deviates greatly from normal oxygen concentration levels, it detects a malfunction and stores a DTC.

NOTE: Output to the scan tool exhibits a relationship between the front A/F sensor output and oxygen concentration, which is opposite to the characteristic shown in the graph. That is, a deviation toward the rich side increases the output voltage and one toward the lean side decreases the output voltage, as the stoichiometric ratio is 0.

MONITOR EXECUTION, SEQUENCE, DURATION, DTC TYPE, OBD STATUS

Execution	Once per driving cycle
Sequence	None
Duration	5.3 seconds or more
DTC Type	Two drive cycles, MIL on
OBD Status	PASSED/FAILED/EXECUTING/OUT OF (TEST) CONDITION

ENABLE CONDITIONS

Condition	Minimum	Maximum
Elapsed time after starting the engine	60 seconds	-
Engine coolant temperature	156 °F (69 °C)	-

Intake air temperature	-13 °F (-25 °C)	-
Engine speed	-	2,100 rpm
Vehicle speed	30 mph (48 km/h)	-
Fuel feedback	During deceleration	
No active DTCs set (prevents monitor from running)	P0112, P0113, P0117, P0118, P0122, P0123, P0153, P0154, P0155, P0174, P0175, P0222, P0223, P0300, P0301, P0302, P0303, P0304, P0305, P0306, P0354, P0355, P0356, P0443, P0496, P0497, P060A, P0722, P1174, P145C, P1659, P2101, P2118, P2122, P2123, P2127, P2128, P2135, P2138, P2176, P2197, P2227, P2228, P2229, P2240, P2241, P2247, P2249, P2254, P2255, P2279	

MALFUNCTION THRESHOLD

The front A/F sensor (bank 2, sensor 1) output voltage is 2.55 V or less, or 4.50 V or more.

DRIVING PATTERN

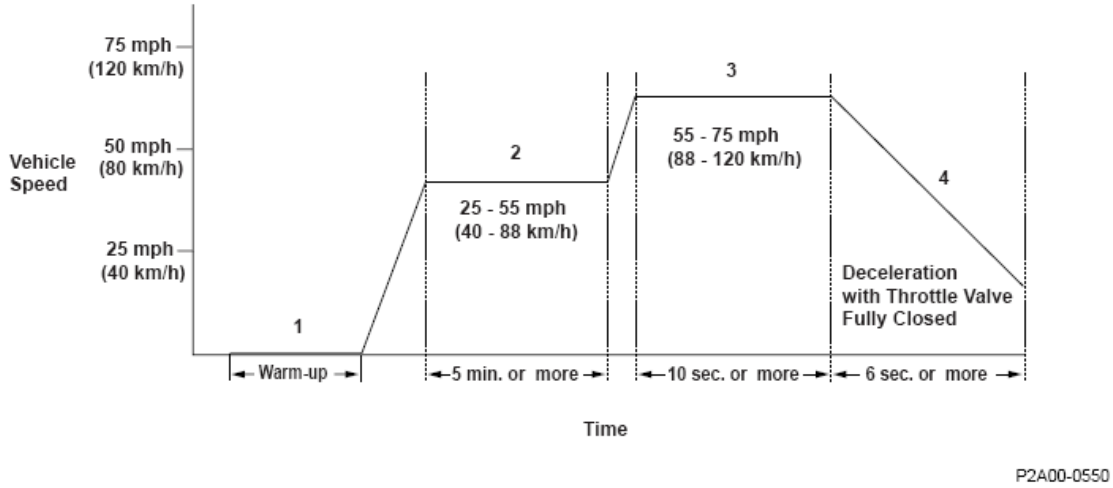


Fig. 345: Vehicle Speed Driving Pattern

1. Start the engine. Hold the engine speed at 3,000 rpm without load (in P or N) until the radiator fan comes on.
2. Drive the vehicle at a speed between 25 - 55 mph (40 - 88 km/h) for at least 5 minutes.
3. Drive immediately at a steady speed between 55 - 75 mph (88 - 120 km/h) for at least 10 seconds.
4. Decelerate with the throttle valve fully closed for at least 6 seconds.
    - If the EVAP monitor runs instead of the HO2S monitor, turn the engine off, then restart it, and the HO2S monitor will restart.
    - Drive the vehicle in this manner only if the traffic regulations and ambient conditions allow.

DIAGNOSIS DETAILS

Conditions for setting the DTC

When a malfunction is detected during the first drive cycle, a Pending DTC is stored in the PCM memory. If the malfunction returns in the next (second) drive cycle, the MIL comes on and a Confirmed DTC and the freeze data are stored.

Conditions for clearing the DTC

The MIL is cleared if the malfunction does not return in three consecutive trips in which the diagnostic runs. The MIL, the Pending DTC, the Confirmed DTC, and the freeze data can be cleared with the scan tool Clear command or by disconnecting the battery.

DTC P2A03: FRONT AIR/FUEL RATIO (A/F) SENSOR (BANK 2, SENSOR 1) CIRCUIT RANGE/PERFORMANCE PROBLEM (ENGINE TYPE: J37A4)

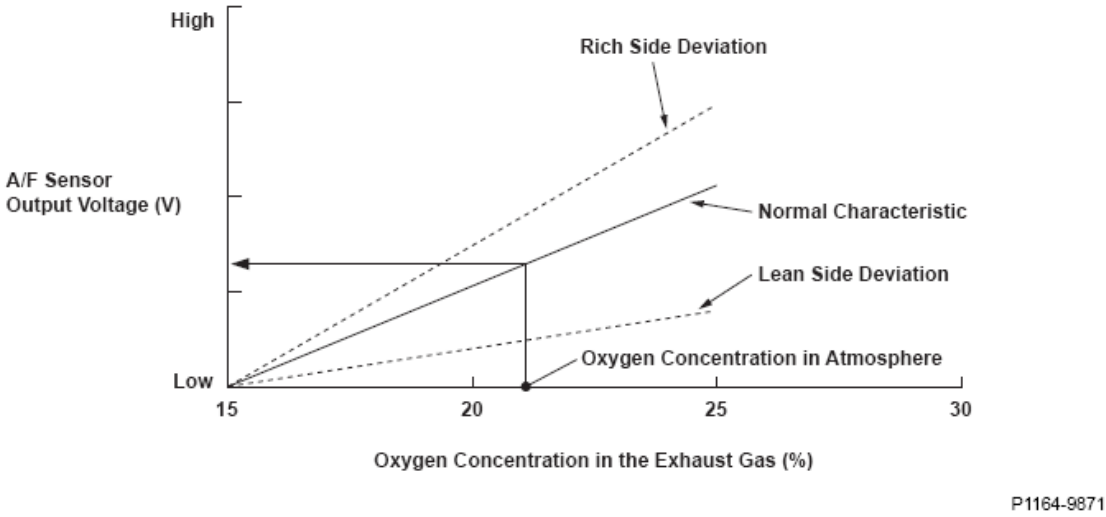


Fig. 346: A/F Sensor Output Voltage Versus Exhaust Gas Oxygen Concentration Ratio Graph

GENERAL DESCRIPTION

The front air/fuel ratio (A/F) sensor (bank 2, sensor 1) has a linear signal output in relation to the oxygen concentration. The engine control module (ECM)/powertrain control module (PCM) computes the air/fuel ratio from the front A/F sensor output voltage and uses fuel feedback control to improve exhaust emissions. The ECM/PCM monitors the front A/F sensor output voltage during deceleration with the throttle fully closed, and if the output voltage deviates greatly from normal oxygen concentration levels, it detects a malfunction and stores a DTC.

NOTE: Output to the scan tool exhibits a relationship between the front A/F sensor output and oxygen concentration, which is opposite to the characteristic shown in the graph. That is, a deviation toward the rich side increases the output voltage and one toward the lean side decreases the output voltage, as the stoichiometric ratio is 0.

MONITOR EXECUTION, SEQUENCE, DURATION, DTC TYPE, OBD STATUS

Execution	Once per driving cycle
Sequence	None
Duration	5.3 seconds or more
DTC Type	Two drive cycles, MIL on
OBD Status	PASSED/FAILED/EXECUTING/OUT OF (TEST) CONDITION

ENABLE CONDITIONS

Condition	Minimum	Maximum
Elapsed time after starting the engine	60 seconds	-
Engine coolant temperature	156 °F (69 °C)	-
Intake air temperature	-13 °F (-25 °C)	-
Engine speed	-	2,100 rpm(1) 2,600 rpm(2)
Vehicle speed	30 mph (48 km/h)	-
Fuel feedback	During deceleration	
No active DTCs set (prevents monitor from running)	P0112, P0113, P0117, P0118, P0122, P0123, P0153, P0154, P0155, P0174, P0175, P0222, P0223, P0300, P0301, P0302, P0303, P0304, P0305, P0306, P0354, P0355, P0356, P0443, P0496, P0497, P060A, P0720, P0722, P1174, P145C, P1659, P2101, P2118, P2122, P2123, P2127, P2128, P2135, P2138, P2176, P2197, P2227, P2228, P2229, P2240, P2241, P2247, P2249, P2254, P2255, P2279	

(1) A/T model

(2) M/T model

MALFUNCTION THRESHOLD

The front A/F sensor (bank 2, sensor 1) output voltage is 2.55 V or less, or 4.50 V or more.

DRIVING PATTERN

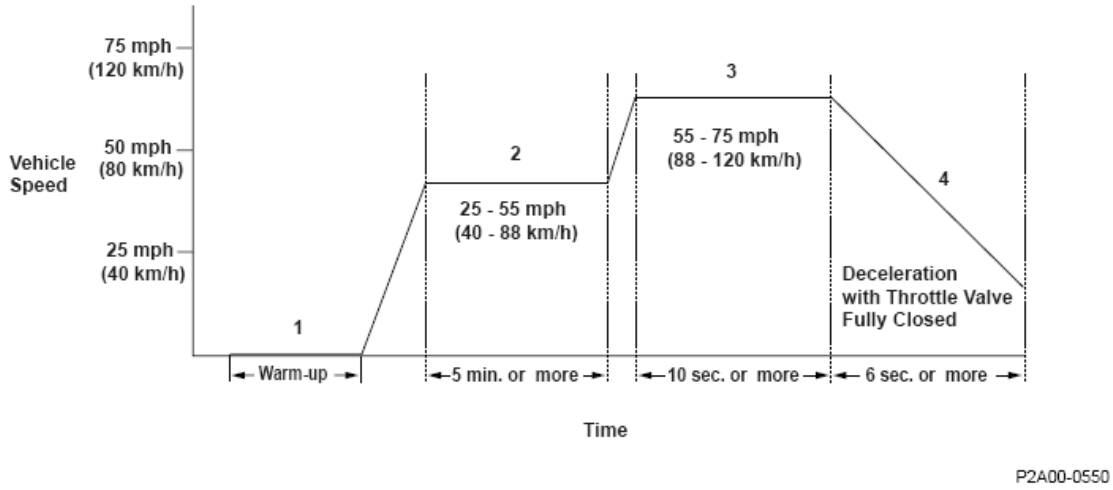


Fig. 347: Vehicle Speed Driving Pattern

1. Start the engine. Hold the engine speed at 3,000 rpm without load (A/T in P or N, M/T in neutral) until the radiator fan comes on.
2. Drive the vehicle at a speed between 25 - 55 mph (40 - 88 km/h) for at least 5 minutes.
3. Drive immediately at a steady speed between 55 - 75 mph (88 - 120 km/h) for at least 10 seconds.
4. Decelerate with the throttle valve fully closed for at least 6 seconds.
    - If the EVAP monitor runs instead of the HO2S monitor, turn the engine off, then restart it, and the HO2S monitor will restart.
    - Drive the vehicle in this manner only if the traffic regulations and ambient conditions allow.

DIAGNOSIS DETAILS

Conditions for setting the DTC

When a malfunction is detected during the first drive cycle, a Pending DTC is stored in the ECM/PCM memory. If the malfunction returns in the next (second) drive cycle, the MIL comes on and a Confirmed DTC and the freeze data are stored.

Conditions for clearing the DTC

The MIL is cleared if the malfunction does not return in three consecutive trips in which the diagnostic runs. The MIL, the Pending DTC, the Confirmed DTC, and the freeze data can be cleared with the scan tool Clear command or by disconnecting the battery.

DTC U0029: F-CAN MALFUNCTION (BUS-OFF (ENGINE CONTROL MODULE (ECM)/POWERTRAIN CONTROL MODULE (PCM)))

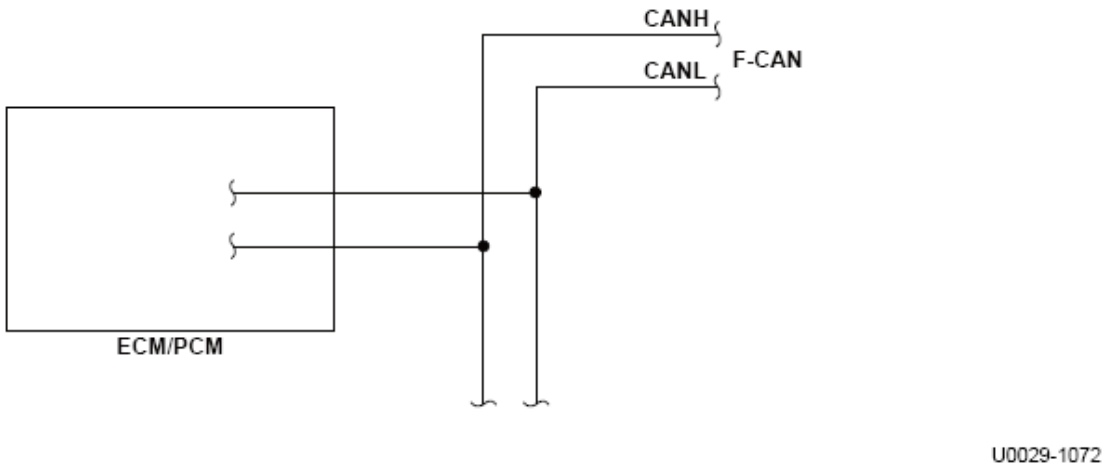


Fig. 348: Engine Control Module/Powertrain Control Module And F-CAN - Circuit Diagram (Bus-Off)

GENERAL DESCRIPTION

The controller area network (CAN) transmits/receives pulsing signals to/from the control modules simultaneously by using two signal lines (CANH and CANL). When the engine control module (ECM)/powertrain control module (PCM) does not receive the signals via the F-CAN lines for a set time, the ECM/PCM detects a malfunction and stores a DTC.

MONITOR EXECUTION, SEQUENCE, DURATION, DTC TYPE, OBD STATUS

Execution	Continuous
Sequence	None
Duration	1 second or more
DTC Type	One drive cycle, MIL on
OBD Status	PASSED/FAILED/NOT COMPLETED (STILL TESTING)

ENABLE CONDITIONS

Condition	Minimum	Maximum
Elapsed time after the ignition switch is turned to ON (II)(1) or the engine start/stop button is pressed to select the ON mode(2)	3 seconds	-
Battery voltage	10.0 V	-
(1) Without keyless access system (2) With keyless access system		

MALFUNCTION THRESHOLD

The ECM/PCM does not receive any signals via the F-CAN lines for at least 1 second.

DIAGNOSIS DETAILS

Conditions for setting the DTC

When a malfunction is detected, the MIL comes on and a Pending DTC, a Confirmed DTC, and the freeze data are stored in the ECM/PCM memory.

Conditions for clearing the DTC

The MIL is cleared if the malfunction does not return in three consecutive trips in which the diagnostic runs. The MIL, the Pending DTC, the Confirmed DTC, and the freeze data can be cleared with the scan tool Clear command or by disconnecting the battery.

DTC U0114: F-CAN MALFUNCTION (ENGINE CONTROL MODULE (ECM)/POWERTRAIN CONTROL MODULE (PCM)-SH-AWD CONTROL UNIT)

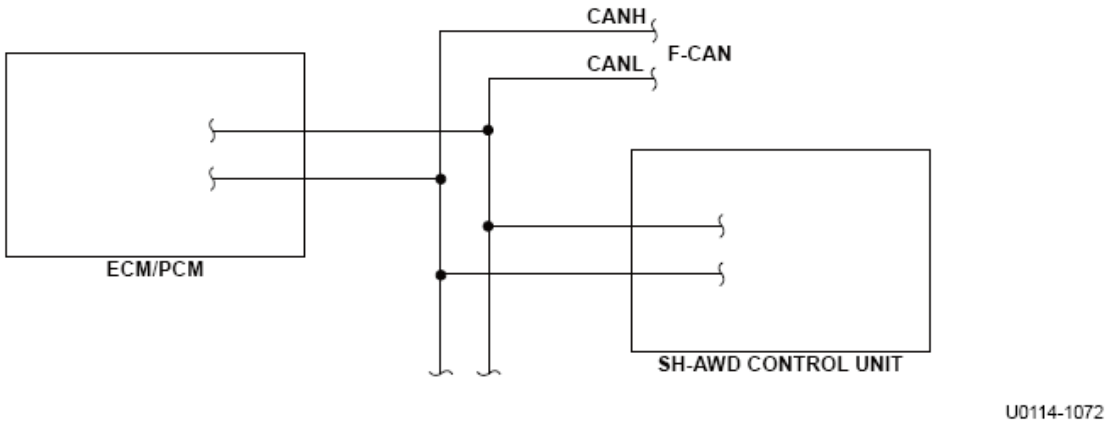


Fig. 349: Engine Control Module/Powertrain Control Module And F-CAN - Circuit Diagram (SH-AWD Control Unit)

GENERAL DESCRIPTION

The controller area network (CAN) transmits/receives pulsing signals to/from the control modules simultaneously by using two signal lines (CANH and CANL). When the engine control module (ECM)/powertrain control module (PCM) does not receive the signals from the SH-AWD control unit via the F-CAN lines for a set time, the ECM/PCM detects a malfunction and stores a DTC.

MONITOR EXECUTION, SEQUENCE, DURATION, DTC TYPE, OBD STATUS

Execution	Continuous
Sequence	None
Duration	1 second or more
DTC Type	One drive cycle, MIL off
OBD Status	PASSED/FAILED/NOT COMPLETED (STILL TESTING)

ENABLE CONDITIONS

Condition	Minimum	Maximum
Battery voltage	10.0 V	-

MALFUNCTION THRESHOLD

The ECM/PCM does not receive any signals via the F-CAN lines for at least 1 second.

DIAGNOSIS DETAILS

Conditions for setting the DTC

When a malfunction is detected, a Pending DTC, a Confirmed DTC, and the freeze data are stored in the ECM/PCM memory. The MIL does not come on.

Conditions for clearing the DTC

The Pending DTC, the Confirmed DTC, and the freeze data can be cleared with the scan tool Clear command or by disconnecting the battery.

DTC U0122: F-CAN MALFUNCTION (ENGINE CONTROL MODULE (ECM)/POWERTRAIN CONTROL MODULE (PCM)-VSA MODULATOR-CONTROL UNIT)

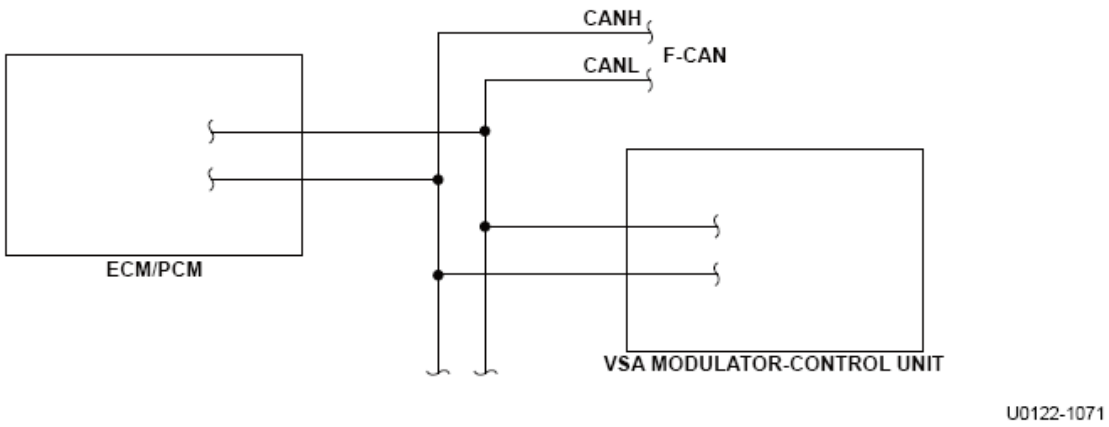


Fig. 350: Engine Control Module/Powertrain Control Module And F-CAN - Circuit Diagram (VSA Modulator-Control Unit)

GENERAL DESCRIPTION

The controller area network (CAN) transmits/receives pulsing signals to/from the control modules simultaneously by using two signal lines (CANH and CANL). When the information is not sent from the VSA modulator-control unit via the F-CAN lines and this condition continues for a specified time or when the information sent from the VSA modulator-control unit is abnormal and this condition continues for a specified

cycle, the engine control module (ECM)/powertrain control module (PCM) detects a malfunction and stores a DTC.

MONITOR EXECUTION, SEQUENCE, DURATION, DTC TYPE, OBD STATUS

Execution	Continuous
Sequence	None
Duration	1 second or more
DTC Type	One drive cycle, MIL off
OBD Status	PASSED/FAILED/NOT COMPLETED (STILL TESTING)

ENABLE CONDITIONS

Condition	Minimum	Maximum
Elapsed time after the ignition switch is turned to ON (II)(1) or the engine start/stop button is pressed to select the ON mode(2)	3 seconds	-
Battery voltage	10.0 V	-
No active DTCs set (prevents monitor from running)	U0029	
(1) Without keyless access system (2) With keyless access system		

MALFUNCTION THRESHOLD

One of these conditions is met:

- The ECM/PCM does not receive any signals via the F-CAN lines for at least 1 second.
- The information sent from the VSA modulator-control unit is abnormal at least 20 times.

DIAGNOSIS DETAILS

Conditions for setting the DTC

When a malfunction is detected, a Pending DTC, a Confirmed DTC, and the freeze data are stored in the ECM/PCM memory. The MIL does not come on.

Conditions for clearing the DTC

The Pending DTC, the Confirmed DTC, and the freeze data can be cleared with the scan tool Clear command or by disconnecting the battery.

DTC U0131: F-CAN MALFUNCTION (ENGINE CONTROL MODULE (ECM)/POWERTRAIN CONTROL MODULE (PCM)-EPS CONTROL UNIT)

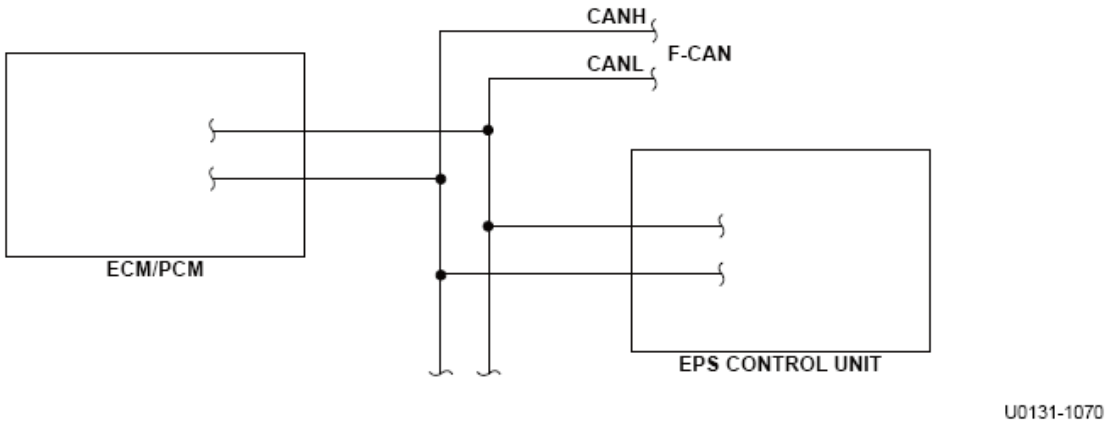


Fig. 351: Engine Control Module/Powertrain Control Module And F-CAN - Circuit Diagram (EPS Control Unit)

GENERAL DESCRIPTION

The controller area network (CAN) transmits/receives pulsing signals to/from the control modules simultaneously by using two signal lines (CANH and CANL). When the engine control module (ECM)/powertrain control module (PCM) does not receive the signals from the EPS control unit via the F-CAN lines for a set time, the ECM/PCM detects a malfunction and stores a DTC.

MONITOR EXECUTION, SEQUENCE, DURATION, DTC TYPE, OBD STATUS

Execution	Continuous
Sequence	None
Duration	1 second or more
DTC Type	One drive cycle, MIL off
OBD Status	PASSED/FAILED/NOT COMPLETED (STILL TESTING)

ENABLE CONDITIONS

Condition	Minimum	Maximum
Battery voltage	10.0 V	-
No active DTCs set (prevents monitor from running)	U0029	

MALFUNCTION THRESHOLD

The ECM/PCM does not receive any signals via the F-CAN lines for at least 1 second.

DIAGNOSIS DETAILS

Conditions for setting the DTC

When a malfunction is detected, a Pending DTC, a Confirmed DTC, and the freeze data are stored in the

ECM/PCM memory. The MIL does not come on.

Conditions for clearing the DTC

The Pending DTC, the Confirmed DTC, and the freeze data can be cleared with the scan tool Clear command or by disconnecting the battery.

DTC U0155: F-CAN MALFUNCTION (ENGINE CONTROL MODULE (ECM)/POWERTRAIN CONTROL MODULE (PCM)-GAUGE CONTROL MODULE)

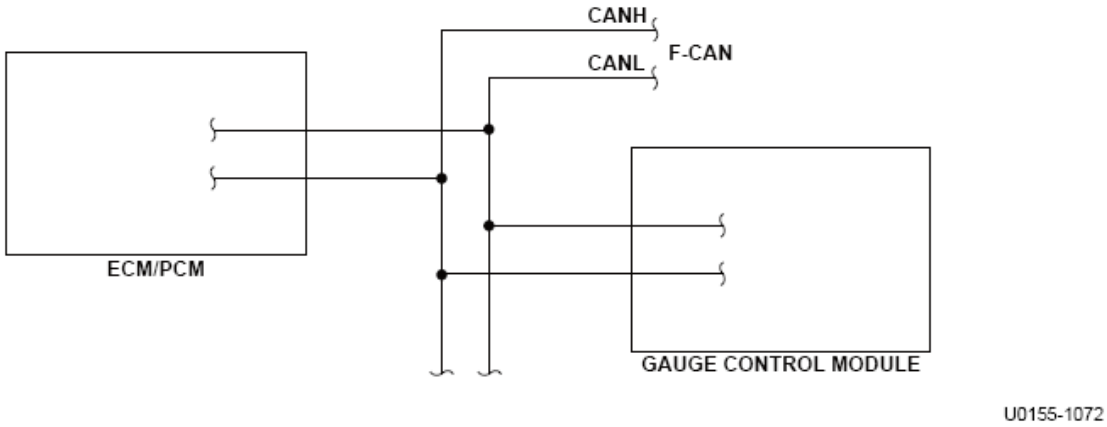


Fig. 352: Engine Control Module/Powertrain Control Module And F-CAN - Circuit Diagram (Gauge Control Module))

GENERAL DESCRIPTION

The controller area network (CAN) transmits/receives pulsing signals to/from the control modules simultaneously by using two signal lines (CANH and CANL). When the information is not sent from the gauge control module via the F-CAN lines and this condition continues for a specified time or when the information sent from the gauge control module is abnormal and this condition continues for a specified cycle, the engine control module (ECM)/powertrain control module (PCM) detects a malfunction and stores a DTC.

MONITOR EXECUTION, SEQUENCE, DURATION, DTC TYPE, OBD STATUS

Execution	Continuous
Sequence	None
Duration	1 second or more
DTC Type	One drive cycle, MIL on
OBD Status	PASSED/FAILED/NOT COMPLETED (STILL TESTING)

ENABLE CONDITIONS

Condition	Minimum	Maximum

Elapsed time after the ignition switch is turned to ON (II)(1) or the engine start/stop button is pressed to select the ON mode(2)	3 seconds	-
Battery voltage	10.0 V	-
No active DTCs set (prevents monitor from running)	U0029	
(1) Without keyless access system (2) With keyless access system		

MALFUNCTION THRESHOLD

One of these conditions is met:

- The ECM/PCM does not receive any signals via the F-CAN lines for at least 1 second.
- The information sent from the gauge control module is abnormal at least 20 times.

DIAGNOSIS DETAILS

Conditions for setting the DTC

When a malfunction is detected, the MIL comes on and a Pending DTC, a Confirmed DTC, and the freeze data are stored in the ECM/PCM memory.

Conditions for clearing the DTC

The MIL is cleared if the malfunction does not return in three consecutive trips in which the diagnostic runs. The MIL, the Pending DTC, the Confirmed DTC, and the freeze data can be cleared with the scan tool Clear command or by disconnecting the battery.

2012 ENGINE PERFORMANCE

Catalytic Converter System - TL

COMPONENT LOCATION INDEX

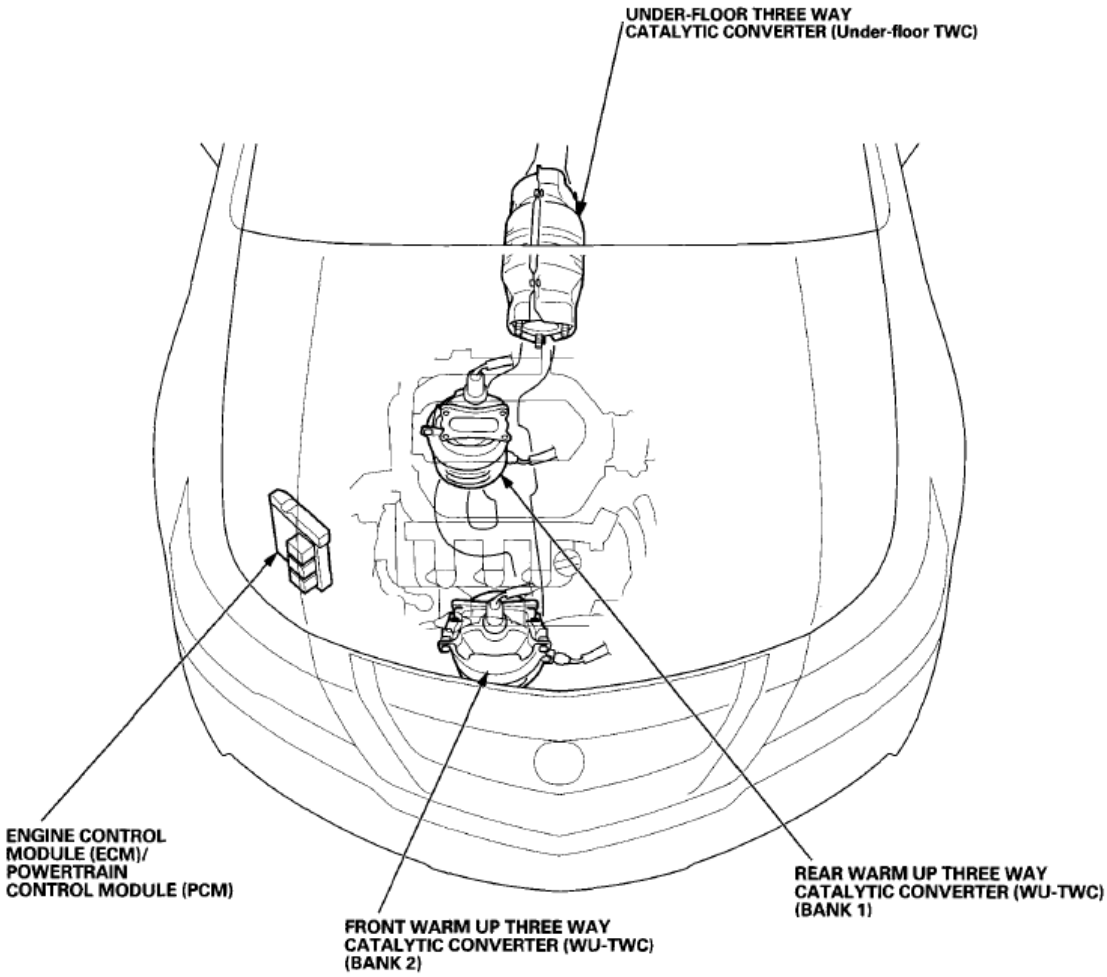


Fig. 1: Catalytic Converter System Components Location
Courtesy of AMERICAN HONDA MOTOR CO., INC.

DTC TROUBLESHOOTING

DTC P0420: REAR BANK CATALYST SYSTEM EFFICIENCY BELOW THRESHOLD (BANK 1);
DTC P0430: FRONT BANK CATALYST SYSTEM EFFICIENCY BELOW THRESHOLD (BANK 2)

NOTE:

- **Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see GENERAL TROUBLESHOOTING INFORMATION).**
- **If some of the DTCs listed below are stored at the same time as DTC P0420**

and/or P0430*, troubleshoot those DTCs first, then recheck for DTC P0420 and/or P0430*.

P0137, P0138, P0157*, P0158*: Secondary HO2S (Sensor 2)

P0141, P0161*: Secondary HO2S (Sensor 2) heater

- **Poor quality fuel can cause these DTCs.**
- **Information marked with an asterisk (*) applies to the front bank (Bank 2).**

1. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
2. Clear the DTC with the HDS.
3. Start the engine. Hold the engine speed at 3, 000 RPM without load (A/T in P or N, M/T in neutral) until the radiator fan comes on, then let it idle.
4. Test-drive under these conditions:
   - Engine coolant temperature (ECT SENSOR 1) above 158°F(70°C)
   - A/Tin D, or M/T in 4th
   - Vehicle speed between 45- 75 mph (72- 120 km/h) for 5 minutes or more with cruise control set
   - Vehicle speed between 55- 75 mph (88- 120 km/h) for 10 seconds, then decelerate (with the throttle fully closed). Repeat this 3 times or more
   - Maintain the vehicle speed at 55 mph (88 km/h) for 5 minutes or more with cruise control set
5. Monitor the OBD STATUS for DTC P0420 and/or P0430* in the DTCs MENU with the HDS.

   Does the screen indicate EXECUTING?

   YES - Go to step 6.

   NO - If the screen indicates OUT OF CONDITION, go to step 4 and recheck. If the screen indicates PASSED, intermittent failure, the system is OK at this time. If the screen indicates FAILED, go to step 8 and recheck.

6. Continue test driving until a result comes on.
7. Monitor the OBD STATUS for DTC P0420 and/or P0430* in the DTCs MENU with the HDS.

   Does the screen indicate FAILED?

   YES - Go to step 8.

   NO - If the screen indicates PASSED, intermittent failure, the system is OK at this time. If the screen indicates EXECUTING, keep driving until a result comes on. If the screen indicates OUT OF CONDITION, go to step 4 and recheck.

8. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the ON mode.
9. Replace the WU-TWC:

- For DTC P0420, replace the rear WU-TWC (Bank 1) (see **REAR (Bank 1)**).
- For DTC P0430, replace the front WU-TWC (Bank 2) (see **FRONT (Bank 2)**).

10. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
11. Reset the ECM/PCM with the HDS.
12. Do the ECM/PCM idle learn procedure (see **ECM/PCM IDLE LEARN PROCEDURE**).
13. Test-drive for about 10 minutes, continually changing the vehicle speed.
14. Check the CATA MONITOR CONDITION B1 (B2)* in the DATA LIST with the HDS.

    Is the condition OK?

    YES - Go to step 15.

    NO - Go to step 13 and recheck.

15. Test-drive under these conditions:
    - Engine coolant temperature (ECT SENSOR 1) above 158°F(70°C)
    - A/Tin D, or M/T in 4th
    - Vehicle speed between 55- 75 mph (88 - 120 km/h) for 10 seconds, then decelerate (with the throttle fully closed). Repeat this 3 times or more
    - Maintain the vehicle speed at 55 mph (88 km/h) for 5 minutes or more with cruise control set
16. Continue test driving until a result comes on.
17. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P0420 and/or P0430 indicated?*

    YES - Check the fuel quality, then go to step 1.

    NO - Go to step 18.

18. Monitor the OBD STATUS for DTC P0420 and/or P0430* in the DTCs MENU with the HDS.

    Does the screen indicate PASSED?

    YES - Troubleshooting is complete. If any other Pending or Confirmed DTCs were indicated in step 17, go to the indicated **DTC'S TROUBLESHOOTING**.

    NO - If the screen indicates FAILED, check the fuel quality, then go to step 1. If the screen indicates EXECUTING, keep driving until a result comes on. If the screen indicates OUT OF CONDITION, go to step 15.

WARM UP TWC REMOVAL/INSTALLATION

FRONT (BANK 2)

1. Remove the No. 2 the ignition coil and the ignition coil heat insulator.
2. Remove the front A/F sensor (Sensor 1) (see **A/F SENSOR REPLACEMENT**) and front secondary HO2S (Sensor 2) (see **SECONDARY HO2S REPLACEMENT**).
3. Remove the exhaust pipe A mounting nuts (front WU-TWC side); J35Z6 engine (see **EXHAUST PIPE AND MUFFLER REPLACEMENT**), J37A4 engine (see **J37A4 ENGINE (WITH SH-AWD)**).
4. Remove the EGR pipe (see **EGR VALVE REPLACEMENT**).
5. Remove the A/C condenser fan assembly (see **FAN, FAN MOTOR, AND SHROUD REMOVAL AND INSTALLATION**) and the radiator upper bracket/cushion (see **FAN, FAN MOTOR, AND SHROUD REMOVAL AND INSTALLATION**).
6. Remove the front WU-TWC bracket, then carefully remove the front WU-TWC.

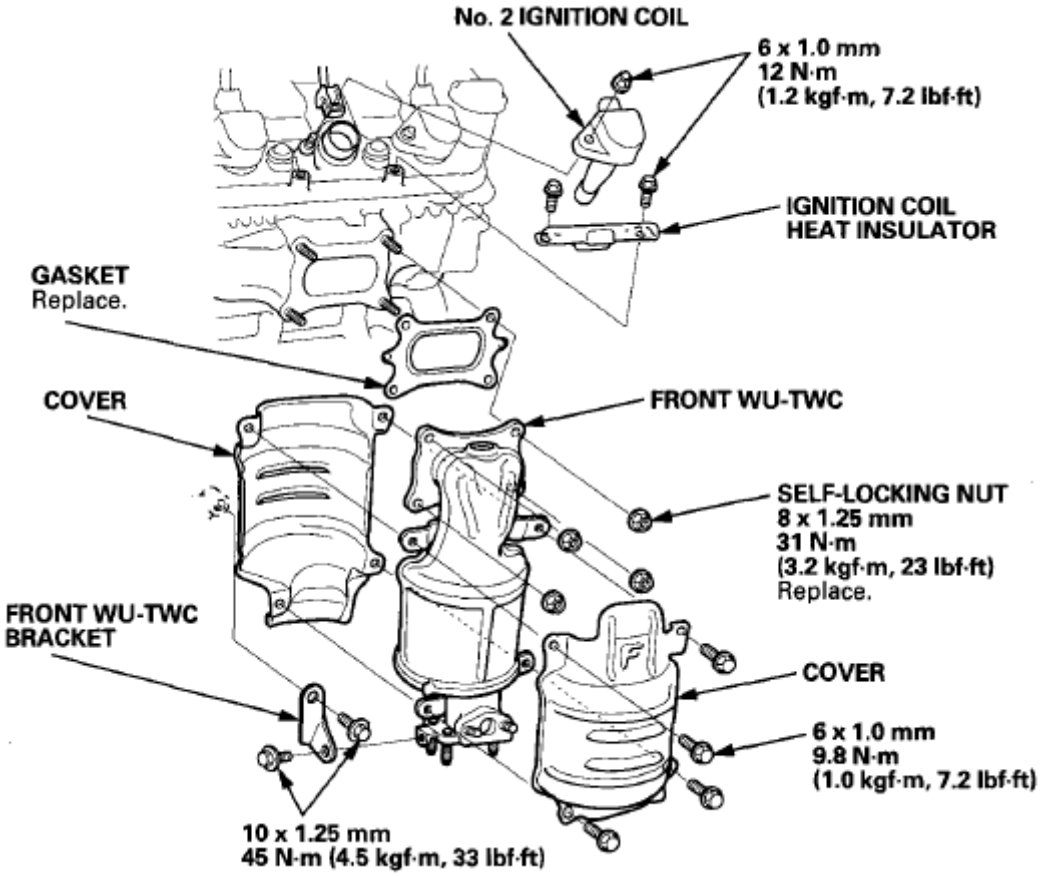


Fig. 2: Identifying Warm Up TWC And Related Components With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Carefully install the front WU-TWC with a new gasket and new self-locking nuts. Tighten the nuts in a crisscross pattern in two or three steps.
8. Install the parts in the reverse order of removal.

REAR (BANK 1)

1. Remove the strut brace (see **FRAME BRACE REPLACEMENT**).
2. Remove the rear A/F sensor (Sensor 1) (see **A/F SENSOR REPLACEMENT**) and rear secondary HO2S (Sensor 2) (see **SECONDARY HO2S REPLACEMENT**).
3. Remove the P/S heat shield (see step 15 **STEERING GEARBOX REMOVAL AND INSTALLATION**).
4. Remove exhaust pipe A; J35Z6 engine (see **EXHAUST PIPE AND MUFFLER REPLACEMENT**), J37A4 engine (see **J37A4 ENGINE (WITH SH-AWD)**).
5. Remove the intermediate shaft (see **INTERMEDIATE SHAFT REMOVAL**).
6. Remove the rear WU-TWC bracket, then carefully remove the rear WU-TWC.

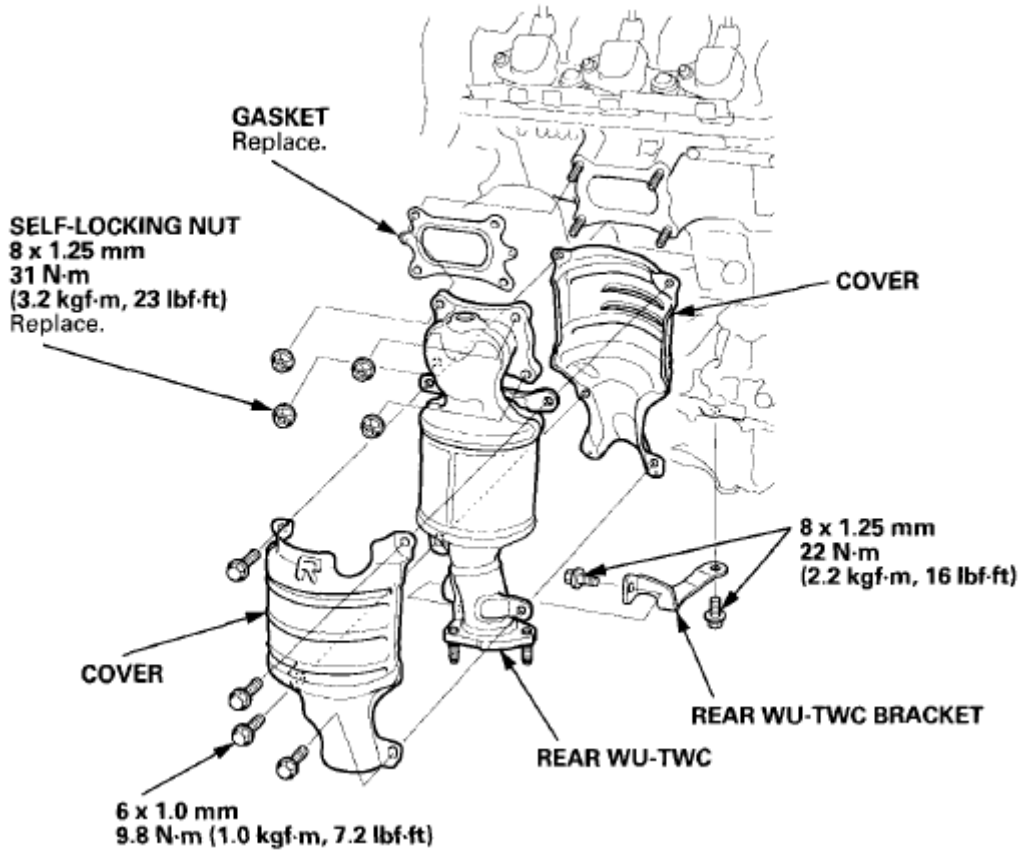


Fig. 3: Identifying Warm Up TWC And Related Components With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Carefully install the rear WU-TWC with a new gasket and new self-locking nuts. Tighten the nuts in a crisscross pattern in two or three steps.
8. Install the parts in the reverse order of removal.

UNDER-FLOOR TWC REMOVAL/INSTALLATION

WITHOUT SH-AWD

1. Raise the vehicle on a lift
2. Remove the exhaust pipe hangers (A).

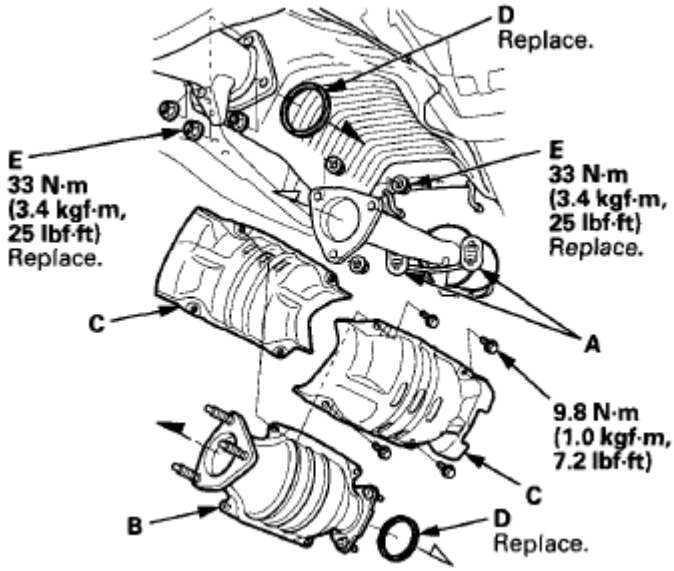


Fig. 4: Identifying Exhaust Pipe Hangers, Under-Floor TWC, Converter Cover, Gasket And Self-Locking Nuts With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Remove the under-floor TWC (B).
4. Remove the converter cover (C).
5. Install the parts in the reverse order of removal with new gaskets (D) and new self-locking nuts (E).

WITH SH-AWD

1. Raise the vehicle on a lift.
2. Remove the exhaust pipe hangers (A).

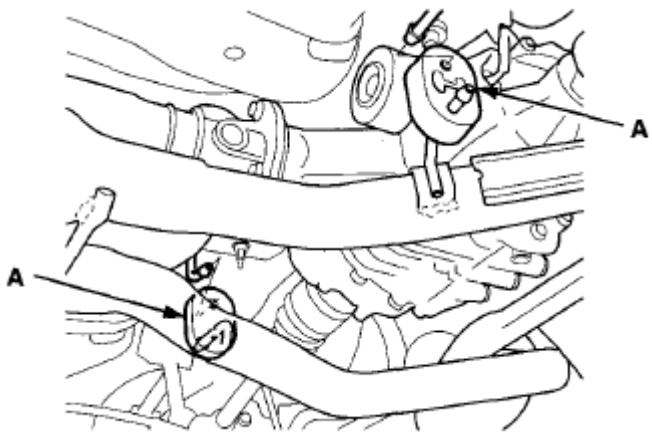


Fig. 5: Identifying Exhaust Pipe
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Remove the under-floor TWC (A).

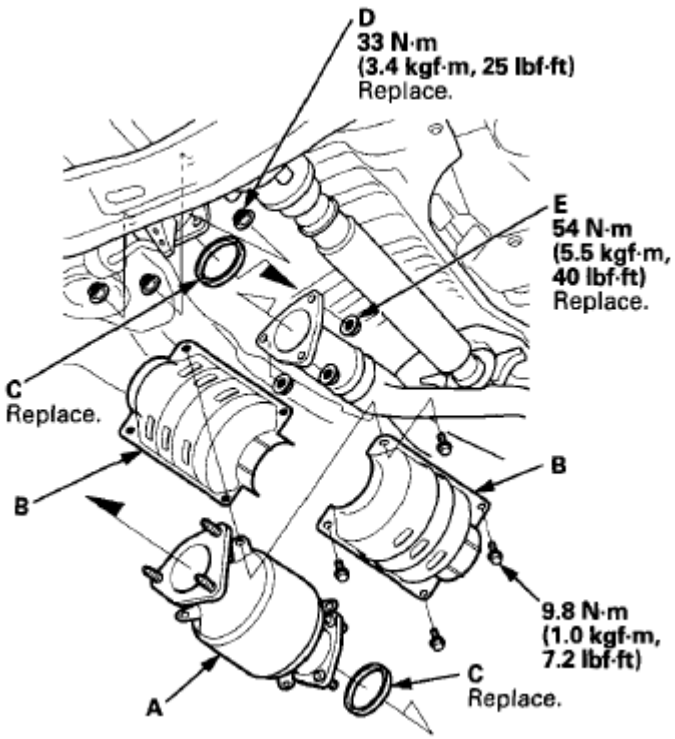


Fig. 6: Identifying Under-Floor TWC, Converter Cover, Gasket And Self Locking Nuts With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Remove the converter cover (B).
5. Install the parts in the reverse order of removal with new gaskets (C) and new self-locking nuts (D and E).

2012 ENGINE PERFORMANCE

EGR System - TL

COMPONENT LOCATION INDEX

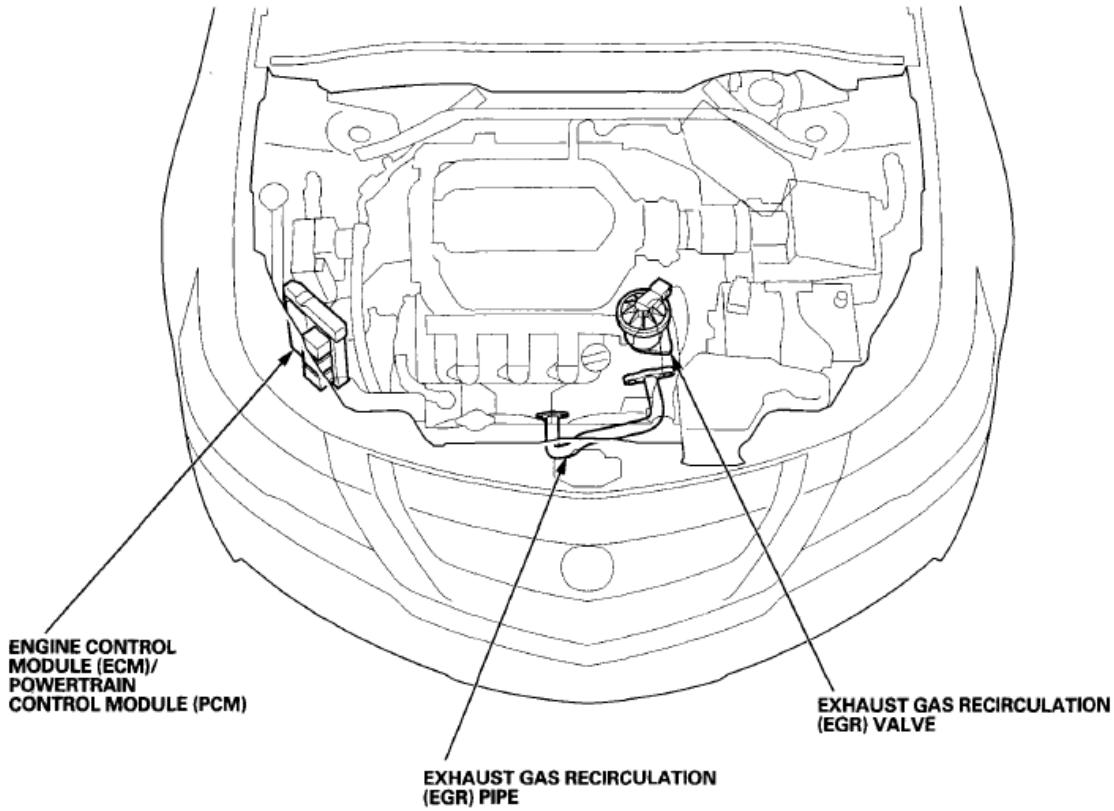


Fig. 1: EGR System Components Location
Courtesy of AMERICAN HONDA MOTOR CO., INC.

DTC TROUBLESHOOTING

DTC P0400: EGR SYSTEM LEAK DETECTED

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see GENERAL TROUBLESHOOTING INFORMATION).

1. Check for a loose or damaged EGR pipe.

   Is the EGR pipe OK?

   YES - Go to step 2.

NO - Reconnect or replace the EGR pipe, then go to step 7.

2. Start the engine. Hold the engine speed at 3, 000 RPM without load (A/T in P or N, M/T in neutral) until the radiator fan comes on, then let it idle.
3. Test-drive under these conditions:
   - Engine coolant temperature (ECT SENSOR 1) above 158°F(70°C)
   - A/T in D, or M/T in 4th
   - Vehicle speed at 25 mph (40 km/h) for 5 minutes or more
   - Maintain the vehicle speed at 32 mph (50 km/h) and engine speed between 1, 450- 3, 000 RPM for 1 minute or more with cruise control set
4. Monitor the OBD STATUS for DTC P0400 in the DTCs MENU with the HDS.

   Does the screen indicate FAILED?

   YES - Go to step 5.

   NO - If the screen indicates PASSED, intermittent failure, the system is OK at this time. Check for exhaust gas leakage between the EGR pipe and the EGR valve. If the screen indicates NOT COMPLETED, go to step 3 and recheck.

5. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
6. Replace the EGR valve (see **EGR VALVE REPLACEMENT**).
7. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
8. Reset the ECM/PCM with the HDS.
9. Do the ECM/PCM idle learn procedure (see **ECM/PCM IDLE LEARN PROCEDURE**).
10. Test-drive under these conditions:
    - Engine coolant temperature (ECT SENSOR 1) above 158°F(70°C)
    - A/T in D, or M/T in 4th
    - Vehicle speed at 25 mph (40 km/h) for 5 minutes or more
    - Maintain the vehicle speed at 32 mph (50 km/h) and engine speed between 1, 450- 3, 000 RPM for 1 minute or more with cruise control set
11. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P0400 indicated?

    YES - Check for leakage between the EGR pipe and the EGR valve, then go to step 1.

    NO - Go to step 12.

12. Monitor the OBD STATUS for DTC P0400 in the DTCs MENU with the HDS.

    Does the screen indicate PASSED?

YES - Troubleshooting is complete. If any other Pending or Confirmed DTCs were indicated in step 11, go to the indicated **DTC'S TROUBLESHOOTING**.

NO - If the screen indicates FAILED, check for leakage between the EGR pipe and the EGR valve, then go to step 1. If the screen indicates NOT COMPLETED, go to step 10.

DTC P0401: EGR INSUFFICIENT FLOW

NOTE: Before you troubleshoot, record ail freeze data and any on-board snapshot, and review the general troubleshooting information (see GENERAL TROUBLESHOOTING INFORMATION).

1. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
2. Clear the DTC with the HDS.
3. Start the engine. Hold the engine speed at 3, 000 RPM without load (A/T in P or N, M/T in neutral) until the radiator fan comes on, then let it idle.
4. Do the EGR TEST in the INSPECTION MENU with the HDS.

   Is the result OK?

   YES - Go to step 5.

   NO - Go to step 7.

5. Test-drive under these conditions:
   - Engine coolant temperature (ECT SENSOR 1) above 158°F(70°C)
   - A/T in D, or M/T in 4th
   - Drive at a steady speed between 55- 75 mph (88- 120 km/h) for at least 10 seconds
   - During the drive, decelerate (with the throttle fully closed) for 5 seconds
6. Monitor the OBD STATUS for DTC P0401 in the DTCs MENU with the HDS.

   Does the screen indicate FAILED?

   YES - Clean the intake manifold EGR port and EGR pipe (see **EGR PIPE REPLACEMENT**) with throttle plate cleaner. Also, clean the passage inside the EGR valve with throttle plate cleaner, then go to step 9.

   NO - If the screen indicates PASSED, intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at the EGR valve and the ECM/PCM. If the screen indicates EXECUTING, keep driving until a result comes on. If the screen indicates OUT OF CONDITION, go to step 5 and recheck.

7. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
8. Replace the EGR valve (see **EGR VALVE REPLACEMENT**).

9. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
10. Reset the ECM/PCM with the HDS.
11. Do the ECM/PCM idle learn procedure (see **ECM/PCM IDLE LEARN PROCEDURE**).
12. Test-drive under these conditions:
    - Engine coolant temperature (ECT SENSOR 1) above 158°F(70°C)
    - A/T in D, or M/T in 4th
    - Drive at a steady speed between 55- 75 mph (88- 120 km/h) for at least 10 seconds
    - During the drive, decelerate (with the throttle fully closed) for 5 seconds
13. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P0401 indicated?

    YES - Check for poor connections or loose terminals at the EGR valve and the ECM/PCM. If the connections are OK, go to step 15.

    NO - Go to step 14.

14. Monitor the OBD STATUS for DTC P0401 in the DTCs MENU with the HDS.

    Does the screen indicate PASSED?

    YES - Troubleshooting is complete. If any other Pending or Confirmed DTCs were indicated in step 13, go to the indicated **DTC'S TROUBLESHOOTING**.

    NO - If the screen indicates FAILED, check for poor connections or loose terminals at the EGR valve and the ECM/PCM, then go to step 1. If the screen indicates EXECUTING, keep driving until a result comes on. If the screen indicates OUT OF CONDITION, go to step 12.

15. Update the ECM/PCM if it does not have the latest software (see **ECM/PCM UPDATE**), or substitute a known-good ECM/PCM (see **SUBSTITUTING THE ECM/PCM**).
16. Test-drive under these conditions:
    - Engine coolant temperature (ECT SENSOR 1) above 158°F(70°C)
    - A/T in D, or M/T in 4th
    - Drive at a steady speed between 55- 75 mph (88- 120 km/h) for at least 10 seconds
    - During the drive, decelerate (with the throttle fully closed) for 5 seconds
17. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P0401 indicated?

    YES - Check for poor connections or loose terminals at the EGR valve and the ECM/PCM. If the ECM/PCM was updated, substitute a known-good ECM/PCM (see **SUBSTITUTING THE ECM/PCM**), then go to step 16. If the ECM/PCM was substituted, go to step 1.

NO - Go to step 18.

18. Monitor the OBD STATUS for DTC P0401 in the DTCs MENU with the HDS.

    Does the screen indicate PASSED?

    YES - If the ECM/PCM was updated, troubleshooting is complete. If the ECM/PCM was substituted, replace the original ECM/PCM (see **ECM/PCM REPLACEMENT**). If any other Pending or Confirmed DTCs were indicated in step 17, go to the indicated **DTC'S TROUBLESHOOTING**.

    NO - If the screen indicates FAILED, check for poor connections or loose terminals at the EGR valve and the ECM/PCM. If the ECM/PCM was updated, substitute a known-good ECM/PCM (see **SUBSTITUTING THE ECM/PCM**), then go to step 16. If the ECM/PCM was substituted, go to step 1. If the screen indicates EXECUTING, keep driving until a result comes on. If the screen indicates OUT OF CONDITION, go to step 16.

DTC P0404: EGR CIRCUIT RANGE/PERFORMANCE PROBLEM

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see GENERAL TROUBLESHOOTING INFORMATION).

1. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
2. Clear the DTC with the HDS.
3. Start the engine. Hold the engine speed at 3, 000 RPM without load (A/T in P or N, M/T in neutral) until the radiator fan comes on, then let it idle.
4. Do the EGR TEST in the INSPECTION MENU with the HDS.

   Is the result OK?

   YES - Intermittent failure, the system is OK at this time. Clean any carbon build-up on the EGR valve with throttle plate cleaner.

   NO - Go to step 5.

5. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
6. Disconnect the EGR valve 5P connector.
7. At the EGR valve side, measure the resistance between EGR valve 5P connector terminals No. 2 and No. 3.

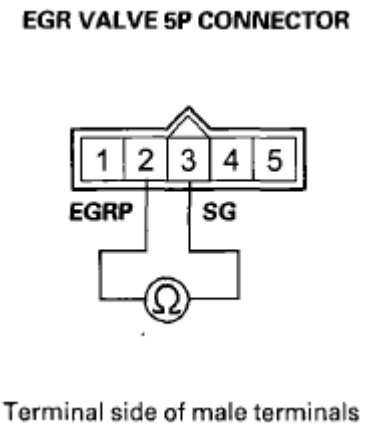


Fig. 2: Measuring Resistance Between EGR Valve 5P Connector Terminals No. 2 And No. 3
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there 100 kohms or more?

YES - Go to step 25.

NO - Go to step 8.

8. At the EGR valve side, measure the resistance between EGR valve 5P connector terminals No. 2 and No. 4.

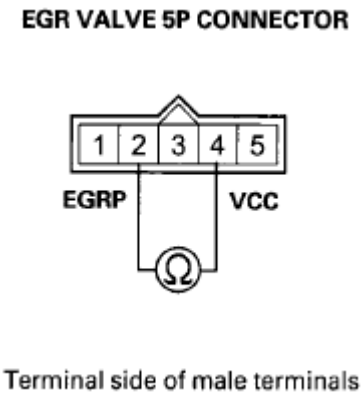


Fig. 3: Measuring Resistance Between EGR Valve 5P Connector Terminals No. 2 And No. 4
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there 100 kohms or more?

YES - Go to step 25.

NO - Go to step 9.

9. Check for continuity between EGR valve 5P connector terminal No. 5 and body ground.

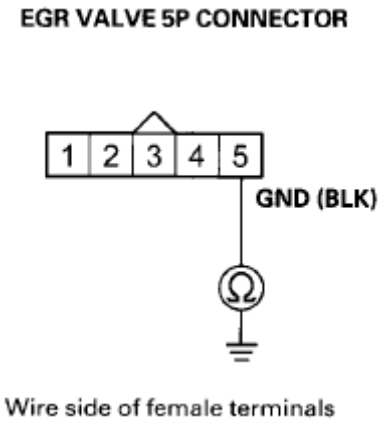


Fig. 4: Checking Continuity Between EGR Valve 5P Connector Terminal No. 5 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 10.

NO - Repair open in the wire between the EGR valve and G101; M/T (see **CONNECTOR TO FUSE/RELAY BOX INDEX**), A/T (see **CONNECTOR TO FUSE/RELAY BOX INDEX**), then go to step 26.

10. Jump the SCS line with the HDS.
11. Disconnect ECM/PCM connector C (49P).
12. Check for continuity between ECM/PCM connector terminal C10 and body ground.

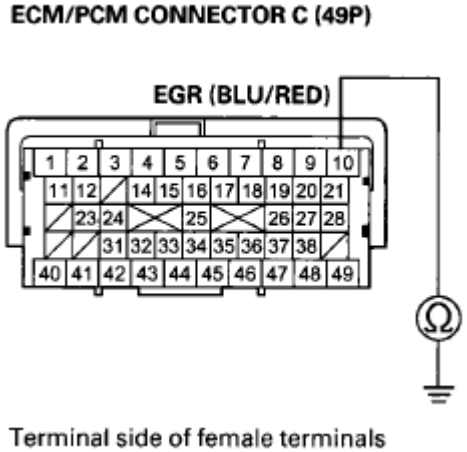


Fig. 5: Checking Continuity Between ECM/PCM Connector Terminal C10 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair short in the wire between the ECM/PCM (C10) and the EGR valve, then go to step 26.

NO - Go to step 13.

13. Check for continuity between ECM/PCM connector terminal C10 and EGR valve 5P connector terminal No. 1.

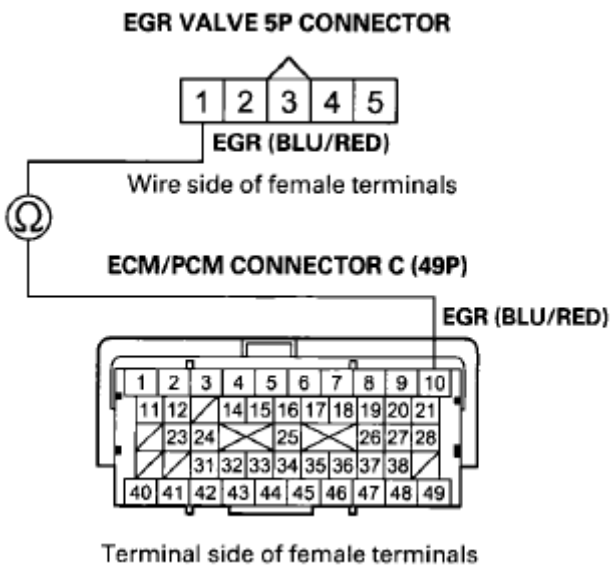


Fig. 6: Checking Continuity Between ECM/PCM Connector Terminal C10 And EGR Valve 5P Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 14.

NO - Repair open in the wire between the ECM/PCM (C10) and the EGR valve, then go to step 26.

14. Remove the EGR valve (see **EGR VALVE REPLACEMENT**).
15. Clean any carbon build-up on the EGR valve with throttle plate cleaner.
16. Install the EGR valve (see **EGR VALVE REPLACEMENT**).
17. Reconnect the EGR valve 5P connector.
18. Reconnect ECM/PCM connector C (49P).
19. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
20. Reset the ECM/PCM with the HDS.
21. Do the ECM/PCM idle learn procedure (see **ECM/PCM IDLE LEARN PROCEDURE**).
22. Start the engine. Hold the engine speed at 3, 000 RPM without load (A/T in P or N, M/T in neutral) until the radiator fan comes on, then let it idle.
23. Do the EGR TEST in the INSPECTION MENU with the HDS.

Is the result OK?

YES - Go to step 32.

NO - Go to step 24.

24. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
25. Replace the EGR valve (see **EGR VALVE REPLACEMENT**).
26. Reconnect all connectors.
27. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
28. Reset the ECM/PCM with the HDS.
29. Do the ECM/PCM idle learn procedure (see **ECM/PCM IDLE LEARN PROCEDURE**).
30. Start the engine. Hold the engine speed at 3, 000 RPM without load (A/T in P or N, M/T in neutral) until the radiator fan comes on, then let it idle.
31. Do the EGR TEST in the INSPECTION MENU with the HDS.
32. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P0404 indicated?

    YES - Check for poor connections or loose terminals at the EGR valve and the ECM/PCM, then go to step 1. If the connections and terminals are OK, go to step 33.

    NO - Troubleshooting is complete. If any other Pending or Confirmed DTCs are indicated, go to the indicated **DTC'S TROUBLESHOOTING**.

33. Update the ECM/PCM if it does not have the latest software (see **ECM/PCM UPDATE**), or substitute a known-good ECM/PCM (see **SUBSTITUTING THE ECM/PCM**).
34. Start the engine. Hold the engine speed at 3, 000 RPM without load (A/T in P or N, M/T in neutral) until the radiator fan comes on, then let it idle.
35. Do the EGR TEST in the INSPECTION MENU with the HDS.
36. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P0404 indicated?

    YES - Check for poor connections or loose terminals at the EGR valve and the ECM/PCM. If the ECM/PCM was updated, substitute a known-good ECM/PCM (see **SUBSTITUTING THE ECM/PCM**), then go to step 34. If the ECM/PCM was substituted, go to step 1.

    NO - If the ECM/PCM was updated, troubleshooting is complete. If the ECM/PCM was substituted, replace the original ECM/PCM (see **ECM/PCM REPLACEMENT**). If any other Pending or Confirmed DTCs are indicated, go to the indicated **DTC'S TROUBLESHOOTING**.

DTC P0406: EGR VALVE POSITION SENSOR CIRCUIT HIGH VOLTAGE

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see GENERAL

TROUBLESHOOTING INFORMATION).

1. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
2. Check the EGR VLS in the DATA LIST with the HDS.

   Is 4.88 V or more indicated?

   YES - Go to step 3.

   NO - Intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at the EGR valve and the ECM/PCM.

3. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
4. Disconnect the EGR valve 5P connector.
5. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
6. Measure the voltage between EGR valve 5P connector terminals No. 3 and No. 4.

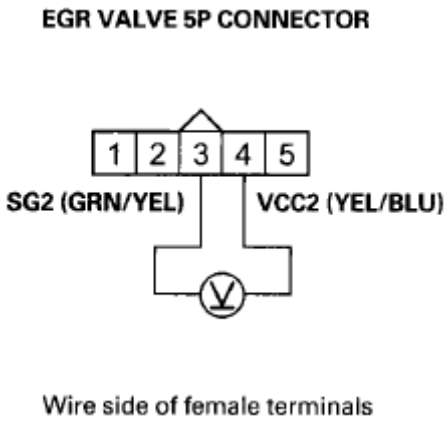


Fig. 7: Measuring Voltage Between EGR Valve 5P Connector Terminals No. 3 And No. 4
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there about 5 V?

YES - Go to step 11.

NO - Go to step 7.

7. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
8. Jump the SCS line with the HDS.
9. Disconnect ECM/PCM connector C (49P).
10. Check for continuity between ECM/PCM connector terminal C16 and EGR valve 5P connector terminal No. 3.

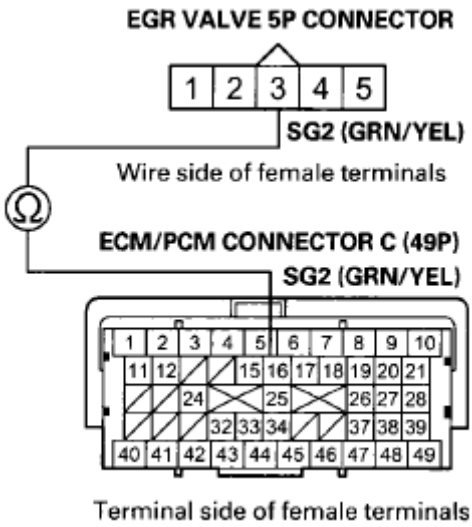


Fig. 8: Checking Continuity Between ECM/PCM Connector Terminal C16 And EGR Valve 5P Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 18.

NO - Repair open in the wire between the EGR valve and the ECM/PCM (C16), then go to step 13.

11. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
12. Replace the EGR valve (see **EGR VALVE REPLACEMENT**).
13. Reconnect all connectors.
14. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
15. Reset the ECM/PCM with the HDS.
16. Do the ECM/PCM idle learn procedure (see **ECM/PCM IDLE LEARN PROCEDURE**).
17. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P0406 indicated?

    YES - Check for poor connections or loose terminals at the EGR valve and the ECM/PCM, then go to step 1.

    NO - Troubleshooting is complete. If any other Pending or Confirmed DTCs are indicated, go to the indicated **DTC'S TROUBLESHOOTING**.

18. Reconnect all connectors.
19. Update the ECM/PCM if it does not have the latest software (see **ECM/PCM UPDATE**), or substitute a known-good ECM/PCM (see **SUBSTITUTING THE ECM/PCM**).
20. Check for Pending or Confirmed DTCs with the HDS.

Is DTC P0406 indicated?

YES - Check for poor connections or loose terminals at the EGR valve and the ECM/PCM. If the ECM/PCM was updated, substitute a known-good ECM/PCM (see **SUBSTITUTING THE ECM/PCM**), then recheck. If the ECM/PCM was substituted, go to step 1.

NO - If the ECM/PCM was updated, troubleshooting is complete. If the ECM/PCM was substituted, replace the original ECM/PCM (see **ECM/PCM REPLACEMENT**). If any other Pending or Confirmed DTCs are indicated, go to the indicated **DTC'S TROUBLESHOOTING**.

DTC P2413: EGR SYSTEM MALFUNCTION

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see GENERAL TROUBLESHOOTING INFORMATION).

1. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
2. Clear the DTC with the HDS.
3. Start the engine. Hold the engine speed at 3, 000 RPM without load (A/T in P or N, M/T in neutral) until the radiator fan comes on, then let it idle.
4. Do the EGR TEST in the INSPECTION MENU with the HDS.

   Is the result OK?

   YES - Intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at the EGR valve and the ECM/PCM.

   NO - Go to step 5.

5. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
6. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
7. Check the EGR VLS in the DATA LIST with the HDS.

   Is about 0 Vindicated?

   YES - Go to step 8.

   NO - Go to step 21.

8. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
9. Disconnect the EGR valve 5P connector.
10. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
11. Measure the voltage between EGR valve 5P connector terminal No. 4 and body ground.

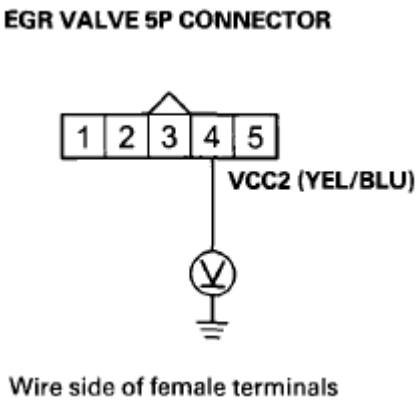


Fig. 9: Measuring Voltage Between EGR Valve 5P Connector Terminal No. 4 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there about 5 V?

YES - Go to step 16.

NO - Go to step 12.

12. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
13. Jump the SCS line with the HDS.
14. Disconnect ECM/PCM connector C (49P).
15. Check for continuity between ECM/PCM connector terminal C12 and EGR valve 5P connector terminal No. 4.

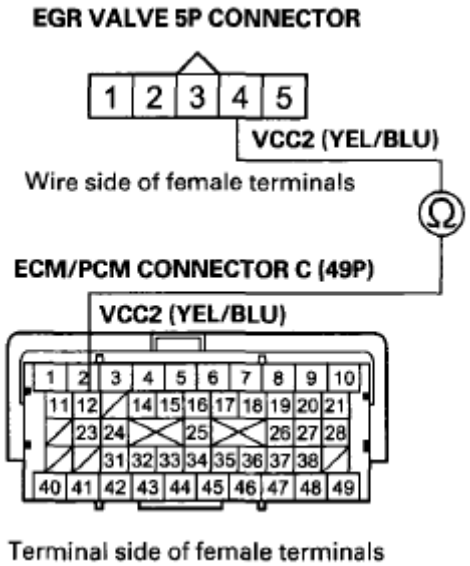


Fig. 10: Checking Continuity Between ECM/PCM Connector Terminal C12 And EGR Valve 5P Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 50.

NO - Repair open in the wire between the EGR valve and the ECM/PCM (C12), then go to step 42.

16. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
17. Jump the SCS line with the HDS.
18. Disconnect ECM/PCM connector C (49P).
19. Check for continuity between ECM/PCM connector terminal C34 and body ground.

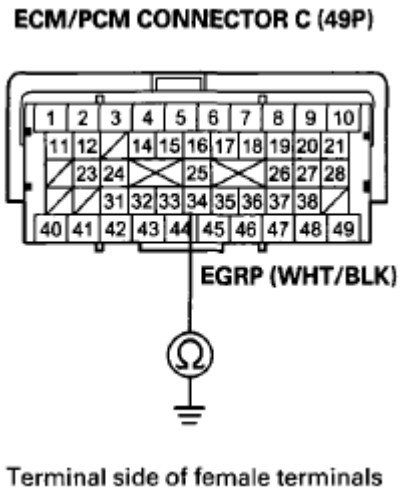


Fig. 11: Checking Continuity Between ECM/PCM Connector Terminal C34 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair short in the wire between the ECM/PCM (C34) and the EGR valve, then go to step 42.

NO - Go to step 20.

20. Check for continuity between ECM/PCM connector terminal C34 and EGR valve 5P connector terminal No. 2.

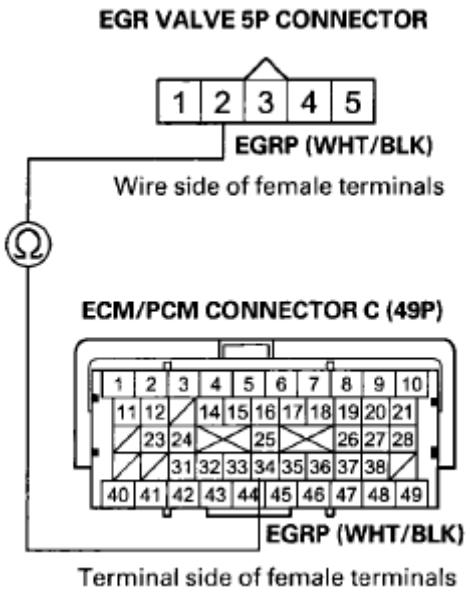


Fig. 12: Checking Continuity Between ECM/PCM Connector Terminal C34 And EGR Valve 5P Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 21.

NO - Repair open in the wire between the ECM/PCM (C34) and the EGR valve, then go to step 42.

21. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
22. Disconnect the EGR valve 5P connector.
23. At the EGR valve side, measure the resistance between EGR valve 5P connector terminals No. 2 and No. 3.

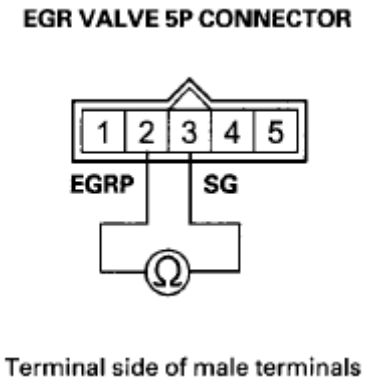


Fig. 13: Measuring Resistance Between EGR Valve 5P Connector Terminals No. 2 And No. 3
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there 100 kohms or more?

YES - Go to step 41.

NO - Go to step 24.

24. At the EGR valve side, measure the resistance between EGR valve 5P connector terminals No. 2 and No. 4.

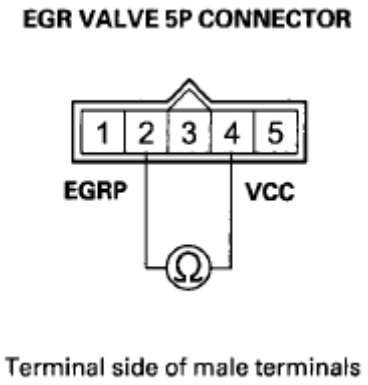


Fig. 14: Measuring Resistance Between EGR Valve 5P Connector Terminals No. 2 And No. 4
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there 100 kohms or more?

YES - Go to step 41.

NO - Go to step 25.

25. Check for continuity between ECM/PCM connector terminal C10 and body ground.

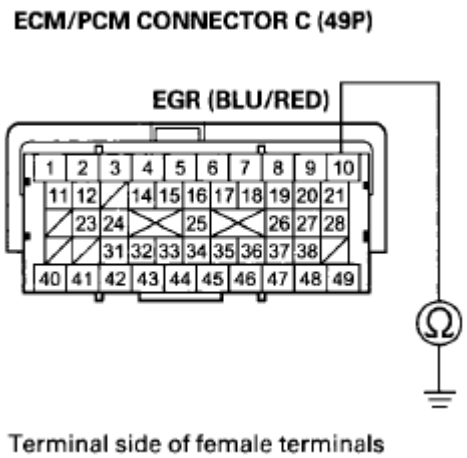


Fig. 15: Checking Continuity Between ECM/PCM Connector Terminal C10 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair short in the wire between the ECM/PCM (C10) and the EGR valve, then go to step 42.

NO - Go to step 26.

26. Check for continuity between ECM/PCM connector terminal C10 and EGR valve 5P connector terminal No. 1.

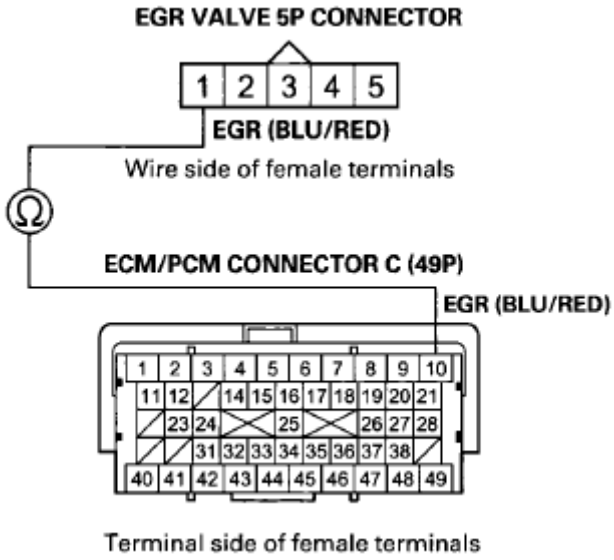


Fig. 16: Checking Continuity Between ECM/PCM Connector And EGR Valve 5P Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 27.

NO - Repair open in the wire between the ECM/PCM (C10) and the EGR valve, then go to step 42.

27. Check for continuity between EGR valve 5P connector terminal No. 5 and body ground.

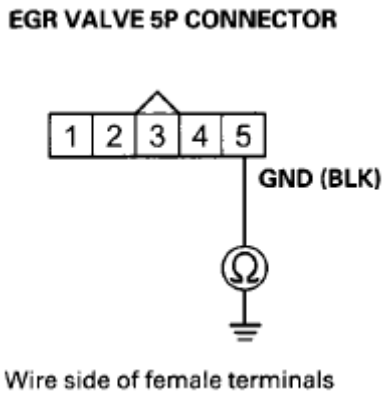


Fig. 17: Checking Continuity Between EGR Valve 5P Connector Terminal No. 5 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 28.

NO - Repair open in the wire between the EGR valve and G101; M/T(see **CONNECTOR TO FUSE/RELAY BOX INDEX**), A/T (see **CONNECTOR TO FUSE/RELAY BOX INDEX**), then go to step 42.

28. Reconnect ECM/PCM connector C (49P).
29. At the EGR valve side, connect the battery positive terminal to EGR valve 5P connector terminal No. 1 with a jumper wire.

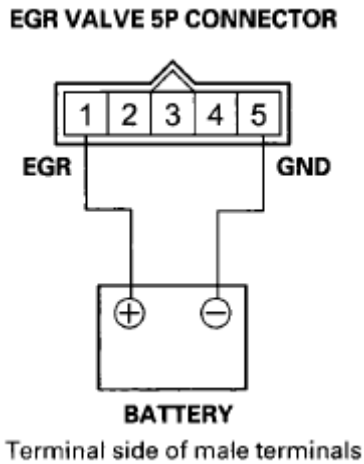


Fig. 18: Connecting Battery Positive Terminal To EGR Valve 5P Connector With Jumper Wire
Courtesy of AMERICAN HONDA MOTOR CO., INC.

30. Start the engine, and let it idle, then connect the battery negative terminal to EGR valve 5P connector terminal No. 5 with a jumper wire.

Does the engine stall?

YES - Go to step 48.

NO - Go to step 31.

31. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
32. Remove the EGR valve (see **EGR VALVE REPLACEMENT**).
33. Clean any carbon build-up inside the EGR valve with throttle plate cleaner.
34. Install the EGR valve (see **EGR VALVE REPLACEMENT**).
35. Reconnect all connectors.
36. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
37. Reset the ECM/PCM with the HDS.
38. Do the ECM/PCM idle learn procedure (see **ECM/PCM IDLE LEARN PROCEDURE**).
39. Do the EGR TEST in the INSPECTION MENU with the HDS.

Is the result OK?

YES - Go to step 47.

NO - Go to step 40.

40. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
41. Replace the EGR valve (see **EGR VALVE REPLACEMENT**).
42. Reconnect all connectors.
43. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
44. Reset the ECM/PCM with the HDS.
45. Do the ECM/PCM idle learn procedure (see **ECM/PCM IDLE LEARN PROCEDURE**).
46. Do the EGR TEST in the INSPECTION MENU with the HDS.
47. Check for Pending or Confirmed DTCs with the HDS.

Is DTC P2413 indicated?

YES - Check for poor connections or loose terminals at the EGR valve and the ECM/PCM, then go to step 1.

NO - Troubleshooting is complete. If any other Pending or Confirmed DTCs are indicated, go to the indicated **DTC'S TROUBLESHOOTING**.

48. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
49. Reconnect all connectors.
50. Update the ECM/PCM if it does not have the latest software (see **ECM/PCM UPDATE**), or substitute a known-good ECM/PCM (see **SUBSTITUTING THE ECM/PCM**).
51. Do the EGR TEST in the INSPECTION MENU with the HDS.

52. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P2413 indicated?

    YES - Check for poor connections or loose terminals at the EGR valve and the ECM/PCM. If the ECM/PCM was updated, substitute a known-good ECM/PCM (see **SUBSTITUTING THE ECM/PCM**), then go to step 51. If the ECM/PCM was substituted, go to step 1.

    NO - If the ECM/PCM was updated, troubleshooting is complete. If the ECM/PCM was substituted, replace the original ECM/PCM (see **ECM/PCM REPLACEMENT**). If any other Pending or Confirmed DTCs are indicated, go to the indicated **DTC'S TROUBLESHOOTING**.

EGR VALVE REPLACEMENT

1. Disconnect the EGR valve 5P connector (A).

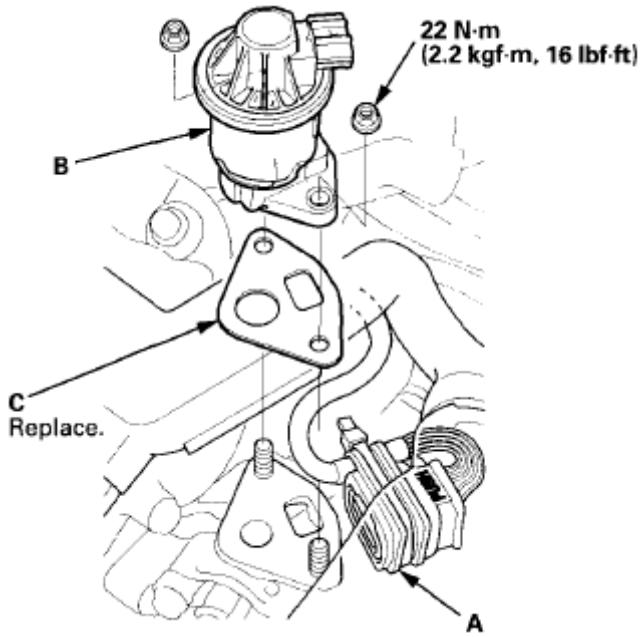


Fig. 19: Identifying EGR Valve 5P Connector, Gasket And EGR Valve With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Remove the EGR valve (B).
3. Install the parts in the reverse order of removal with a new gasket (C).

EGR PIPE REPLACEMENT

1. Raise the vehicle on a lift.
2. Remove the splash shield (see **FRONT SPLASH SHIELD REPLACEMENT**).
3. Remove the mounting nuts (A).

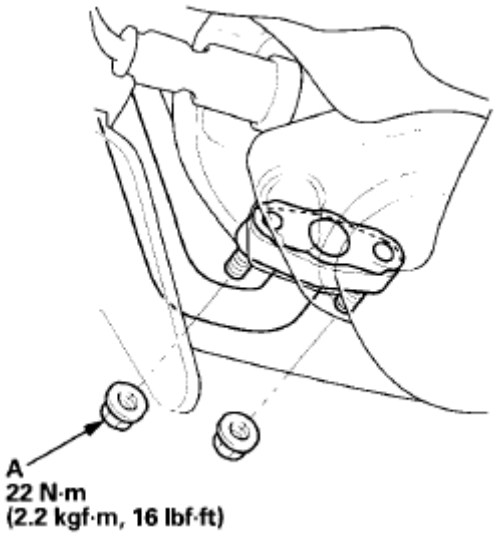


Fig. 20: Identifying Mounting Nuts With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Lower the vehicle.
5. Remove the mounting bolts (A).

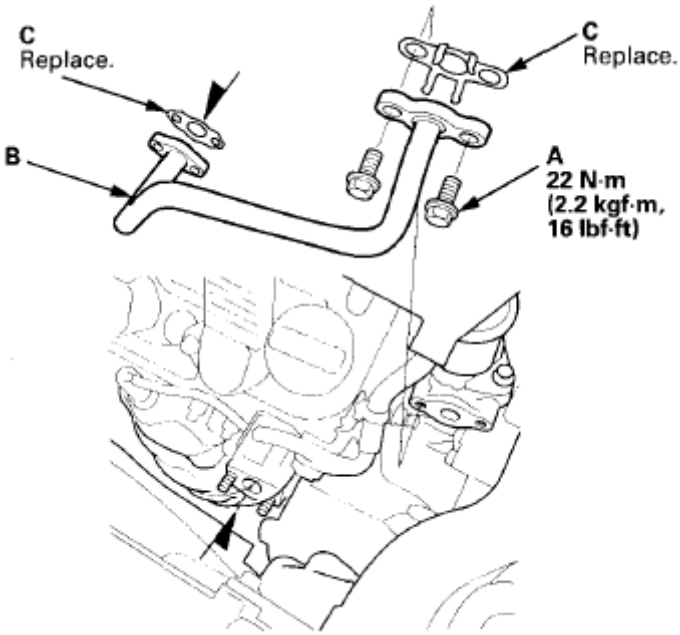


Fig. 21: Identifying EGR Pipe, Gasket And Mounting Nuts With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Remove the EGR pipe (B).
7. Install the parts in the reverse order of removal with new gaskets (C).

2012 ENGINE PERFORMANCE

Electronic Throttle Control System - TL

COMPONENT LOCATION INDEX

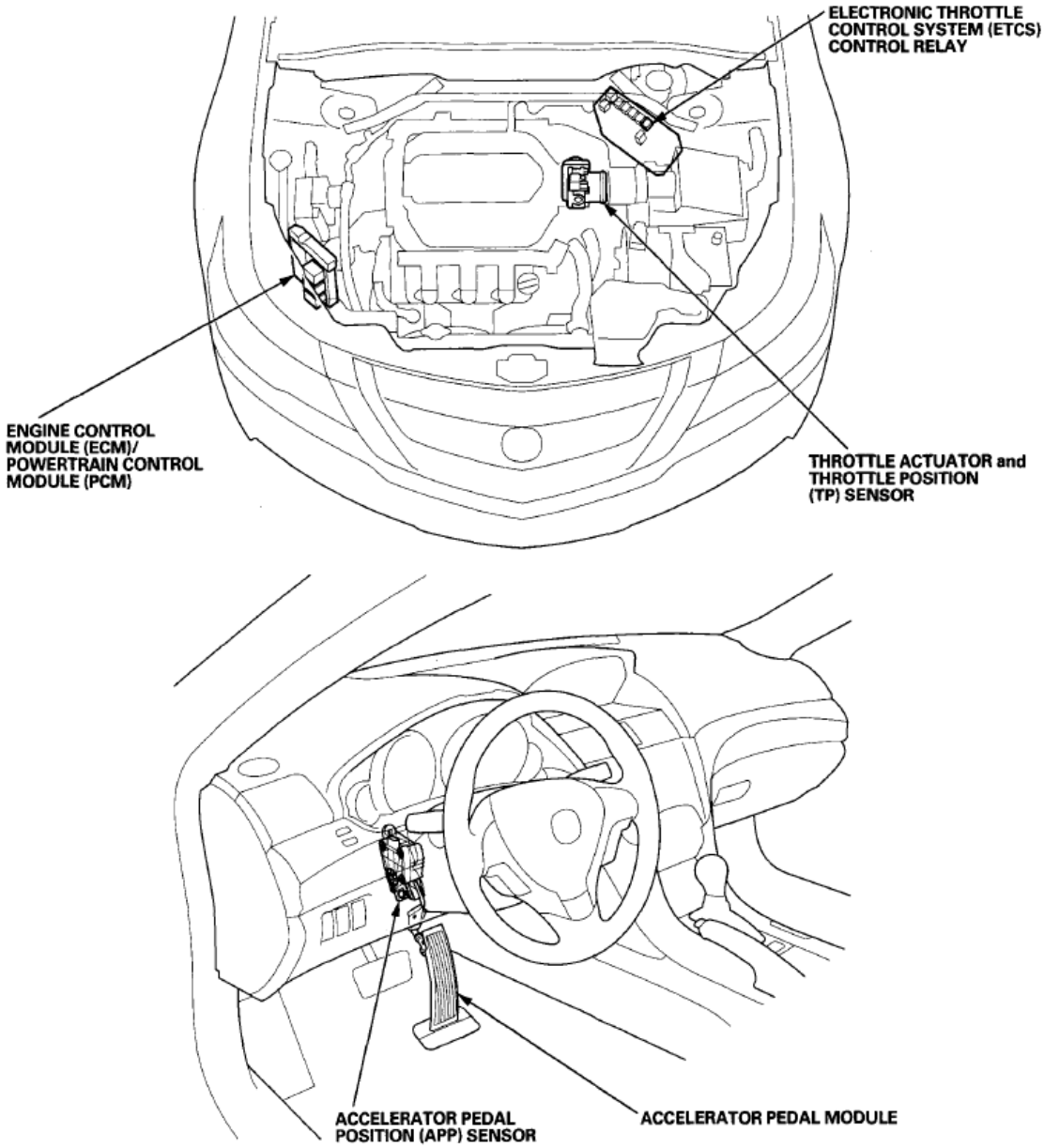


Fig. 1: Electronic Throttle Control System Components Location
Courtesy of AMERICAN HONDA MOTOR CO., INC.

DTC TROUBLESHOOTING

DTC P0122: TP SENSOR A CIRCUIT LOW VOLTAGE

NOTE: **Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see GENERAL TROUBLESHOOTING INFORMATION).**

1. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
2. Clear the DTC with the HDS.
3. Check TP SENSOR A in the DATA LIST with the HDS.

   Is there about 0.3 V or less?

   YES - Go to step 4.

   NO - Intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at the throttle body and the ECM/PCM. •

4. Check for Pending or Confirmed DTCs with the HDS.

   Are DTC P0122 and P0222 indicated at the same time?

   YES - Go to step 10.

   NO - Go to step 5.

5. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
6. Disconnect the throttle body 6P connector.
7. Jump the SCS line with the HDS.
8. Disconnect ECM/PCM connector B (49P).
9. Check for continuity between throttle body 6P connector terminal No. 1 and body ground.

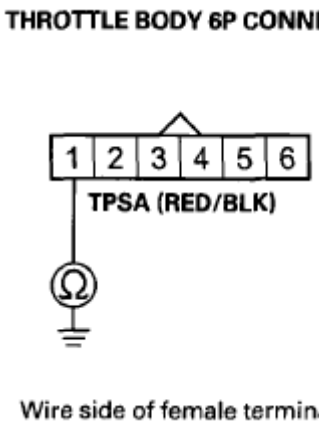


Fig. 2: Checking Continuity Between Throttle Body 6P Connector Terminal No. 1 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair short in the wire between the throttle body and the ECM/PCM (B17), then go to step 18.

NO - Go to step 23.

10. Measure the voltage between throttle body 6P connector terminal No. 2 and body ground.

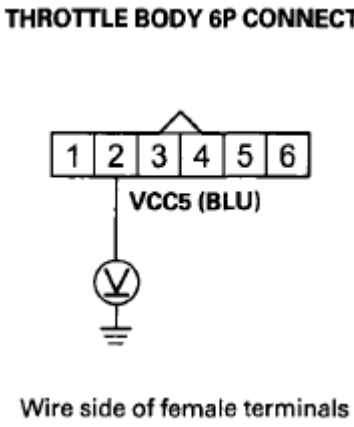


Fig. 3: Measuring Voltage Between Throttle Body 6P Connector Terminal No. 2 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there about 5 V?

YES - Go to step 16.

NO - Go to step 11.

11. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
12. Jump the SCS line with the HDS.
13. Disconnect ECM/PCM connector B (49P).
14. Disconnect the throttle body 6P connector.
15. Check for continuity between ECM/PCM connector terminal B18 and throttle body 6P connector terminal No. 2.

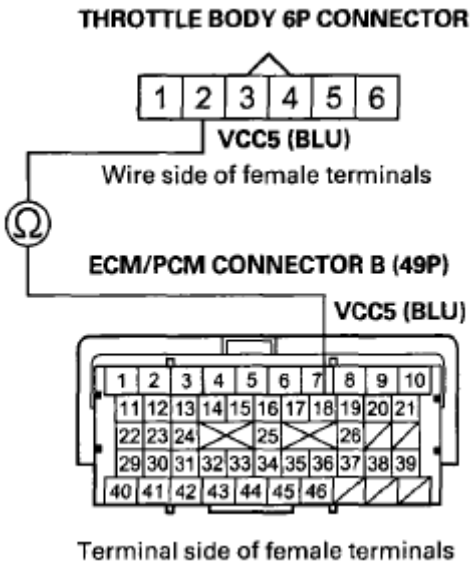


Fig. 4: Checking Continuity Between ECM/PCM Connector Terminal B18 And Throttle Body 6P Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 23.

NO - Repair open in the wire between the throttle body and the ECM/PCM (B18), then go to step 18.

16. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
17. Replace the throttle body (see **THROTTLE BODY REMOVAL/INSTALLATION**).
18. Reconnect all connectors.
19. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
20. Reset the ECM/PCM with the HDS.
21. Do the ECM/PCM idle learn procedure (see **ECM/PCM IDLE LEARN PROCEDURE**).
22. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P0122 indicated?

    YES - Check for poor connections or loose terminals at the throttle body and the ECM/PCM, then go to step 1.

    NO - Troubleshooting is complete. If any other Pending or Confirmed DTCs are indicated, go to the indicated DTC's troubleshooting. •

23. Reconnect all connectors.
24. Update the ECM/PCM if it does not have the latest software (see **ECM/PCM UPDATE**), or substitute a known-good ECM/PCM (see **SUBSTITUTING THE ECM/PCM**).

25. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P0122 indicated?

    YES - Check for poor connections or loose terminals at the throttle body and the ECM/PCM. If the ECM/PCM was updated, substitute a known-good ECM/PCM (see **SUBSTITUTING THE ECM/PCM**), then recheck. If the ECM/PCM was substituted, go to step 1.

    NO - If the ECM/PCM was updated, troubleshooting is complete. If the ECM/PCM was substituted, replace the original ECM/PCM (see **ECM/PCM REPLACEMENT**). If any other Pending or Confirmed DTCs are indicated, go to the indicated DTC's troubleshooting. •

DTC P0123: TP SENSOR A CIRCUIT HIGH VOLTAGE

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see GENERAL TROUBLESHOOTING INFORMATION).

1. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
2. Clear the DTC with the HDS.
3. Check TP SENSOR A in the DATA LIST with the HDS.

    Is there about 4.8 V or more?

    YES - Go to step 4.

    NO - Intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at the throttle body and the ECM/PCM. •

4. Check for Pending or Confirmed DTCs with the HDS.

    Are DTC P0123 and P0223 indicated at the same time?

    YES - Go to step 13.

    NO - Go to step 5.

5. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
6. Disconnect the throttle body 6P connector.
7. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
8. Measure the voltage between throttle body 6P connector terminal No. 1 and body ground.

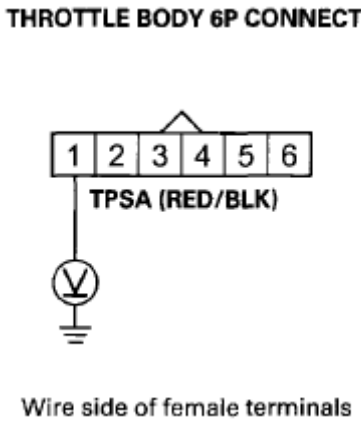


Fig. 5: Measuring Voltage Between Throttle Body 6P Connector Terminal No. 1 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there about 5 V?

YES - Go to step 18.

NO - Go to step 9.

9. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
10. Jump the SCS line with the HDS.
11. Disconnect ECM/PCM connector B (49P).
12. Check for continuity between ECM/PCM connector terminal B17 and throttle body 6P connector terminal No. 1.

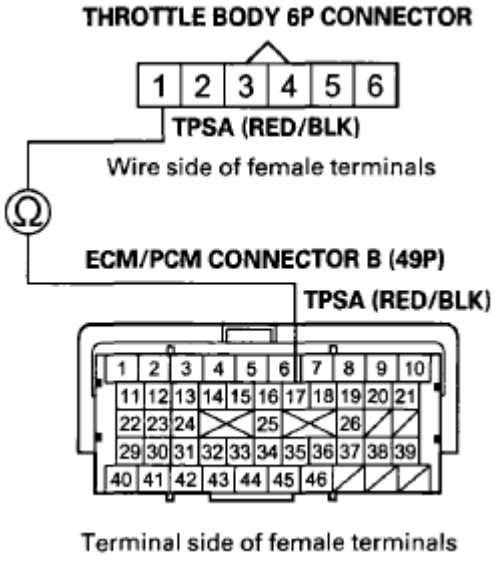


Fig. 6: Checking Continuity Between ECM/PCM Connector Terminal B17 And Throttle Body 6P Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 25.

NO - Repair open in the wire between the throttle body and the ECM/PCM (B17), then go to step 20.

13. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
14. Disconnect the throttle body 6P connector.
15. Jump the SCS line with the HDS.
16. Disconnect ECM/PCM connector B (49P).
17. Check for continuity between ECM/PCM connector terminal B33 and throttle body 6P connector terminal No. 4.

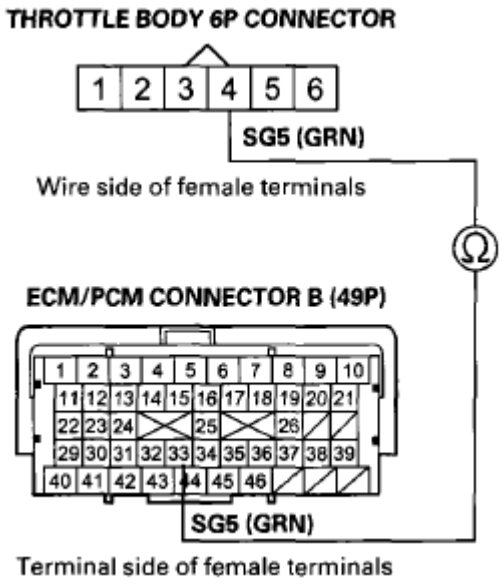


Fig. 7: Checking Continuity Between ECM/PCM Connector Terminal B33 And Throttle Body 6P Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 25.

NO - Repair open in the wire between the throttle body and the ECM/PCM (B33), then go to step 20.

18. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
19. Replace the throttle body (see **THROTTLE BODY REMOVAL/INSTALLATION**).
20. Reconnect all connectors.
21. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
22. Reset the ECM/PCM with the HDS.

23. Do the ECM/PCM idle learn procedure (see **ECM/PCM IDLE LEARN PROCEDURE**).
24. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P0123 indicated?

    YES - Check for poor connections or loose terminals at the throttle body and the ECM/PCM, then go to step 1.

    NO - Troubleshooting is complete. If any other Pending or Confirmed DTCs are indicated, go to the indicated DTC's troubleshooting. •

25. Reconnect all connectors.
26. Update the ECM/PCM if it does not have the latest software (see **ECM/PCM UPDATE**), or substitute a known-good ECM/PCM (see **SUBSTITUTING THE ECM/PCM**).
27. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P0123 indicated?

    YES - Check for poor connections or loose terminals at the throttle body and the ECM/PCM. If the ECM/PCM was updated, substitute a known-good ECM/PCM (see **SUBSTITUTING THE ECM/PCM**), then recheck. If the ECM/PCM was substituted, go to step 1.

    NO - If the ECM/PCM was updated, troubleshooting is complete. If the ECM/PCM was substituted, replace the original ECM/PCM (see **ECM/PCM REPLACEMENT**). If any other Pending or Confirmed DTCs are indicated, go to the indicated DTC's troubleshooting. •

DTC P0222: TP SENSOR B CIRCUIT LOW VOLTAGE

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see GENERAL TROUBLESHOOTING INFORMATION).

1. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
2. Clear the DTC with the HDS.
3. Check TP SENSOR B in the DATA LIST with the HDS.

    Is there about 0.3 V or less?

    YES - Go to step 4.

    NO - Intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at the throttle body and the ECM/PCM. •

4. Check for Pending or Confirmed DTCs with the HDS.

Are DTC P0122 and P0222 indicated at the same time?

YES - Go to step 10.

NO - Go to step 5.

5. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
6. Disconnect the throttle body 6P connector.
7. Jump the SCS line with the HDS.
8. Disconnect ECM/PCM connector B (49P).
9. Check for continuity between throttle body 6P connector terminal No. 3 and body ground.

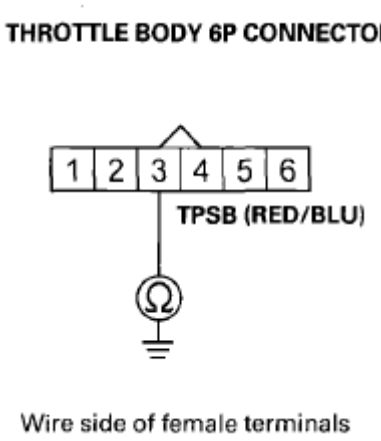


Fig. 8: Checking Continuity Between Throttle Body 6P Connector Terminal No. 3 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair short in the wire between the throttle body and the ECM/PCM (B26), then go to step 18.

NO - Go to step 23.

10. Measure the voltage between throttle body 6P connector terminal No. 2 and body ground.

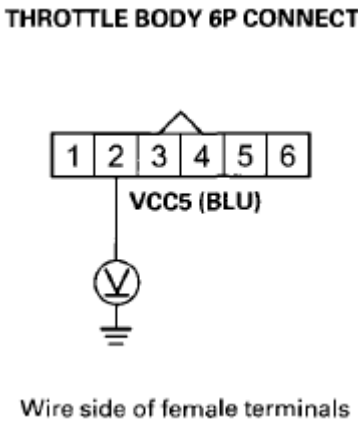


Fig. 9: Measuring Voltage Between Throttle Body 6P Connector Terminal No. 2 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there about 5 V?

YES - Go to step 16.

NO - Go to step 11.

11. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
12. Jump the SCS line with the HDS.
13. Disconnect ECM/PCM connector B (49P).
14. Disconnect the throttle body 6P connector.
15. Check for continuity between ECM/PCM connector terminal B18 and throttle body 6P connector terminal No. 2.

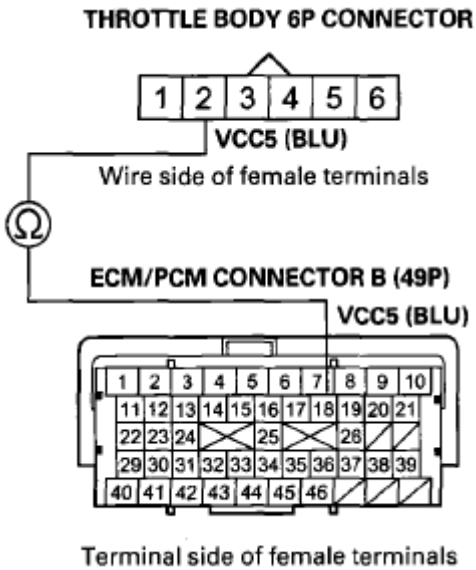


Fig. 10: Checking Continuity Between ECM/PCM Connector Terminal B18 And Throttle Body 6P

Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 23.

NO - Repair open in the wire between the throttle body and the ECM/PCM (B18), then go to step 18.

16. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
17. Replace the throttle body (see **THROTTLE BODY REMOVAL/INSTALLATION**).
18. Reconnect all connectors.
19. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
20. Reset the ECM/PCM with the HDS.
21. Do the ECM/PCM idle learn procedure (see **ECM/PCM IDLE LEARN PROCEDURE**).
22. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P0222 indicated?

    YES - Check for poor connections or loose terminals at the throttle body and the ECM/PCM, then go to step 1.

    NO - Troubleshooting is complete. If any other Pending or Confirmed DTCs are indicated, go to the indicated DTC's troubleshooting. •

23. Reconnect all connectors.
24. Update the ECM/PCM if it does not have the latest software (see **ECM/PCM UPDATE**), or substitute a known-good ECM/PCM (see **SUBSTITUTING THE ECM/PCM**).
25. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P0222 indicated?

    YES - Check for poor connections or loose terminals at the throttle body and the ECM/PCM, then go to step 1. If the ECM/PCM was updated, substitute a known-good ECM/PCM (see **SUBSTITUTING THE ECM/PCM**), then recheck. If the ECM/PCM was substituted, go to step 1.

    NO - If the ECM/PCM was updated, troubleshooting is complete. If the ECM/PCM was substituted, replace the original ECM/PCM (see **ECM/PCM REPLACEMENT**). If any other Pending or Confirmed DTCs are indicated, go to the indicated DTC's troubleshooting. •

DTC P0223: TP SENSOR B CIRCUIT HIGH VOLTAGE

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see GENERAL TROUBLESHOOTING INFORMATION).

1. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
2. Clear the DTC with the HDS.
3. Check TP SENSOR B in the DATA LIST with the HDS.

   Is there about 4.8 V or more?

   YES - Go to step 4.

   NO - Intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at the throttle body and the ECM/PCM. •

4. Check for Pending or Confirmed DTCs with the HDS.

   Are DTC P0123 and P0223 indicated at the same time?

   YES - Go to step 13.

   NO - Go to step 5.

5. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
6. Disconnect the throttle body 6P connector.
7. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
8. Measure the voltage between throttle body 6P connector terminal No. 3 and body ground.

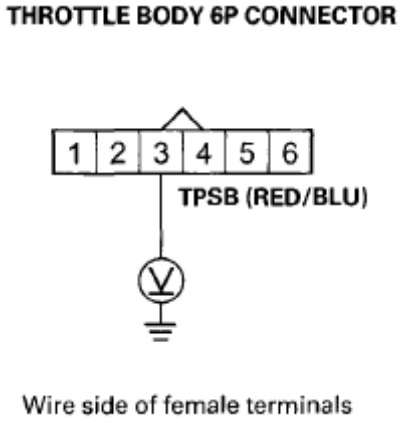


Fig. 11: Measuring Voltage Between Throttle Body 6P Connector Terminal No. 3 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there about 5 V?

YES - Go to step 18.

NO - Go to step 9.

9. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
10. Jump the SCS line with the HDS.
11. Disconnect ECM/PCM connector B (49P).
12. Check for continuity between ECM/PCM connector terminal B26 and throttle body 6P connector terminal No. 3.

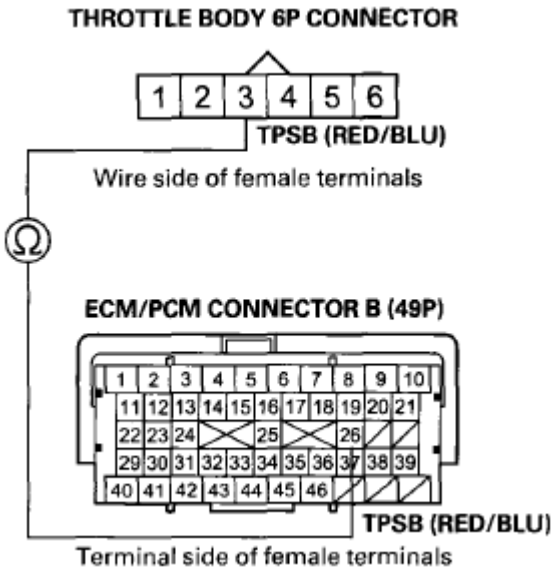


Fig. 12: Checking Continuity Between ECM/PCM Connector Terminal B26 And Throttle Body 6P Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 25.

NO - Repair open in the wire between the throttle body and the ECM/PCM (B26), then go to step 20.

13. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
14. Disconnect the throttle body 6P connector.
15. Jump the SCS line with the HDS.
16. Disconnect ECM/PCM connector B (49P).
17. Check for continuity between ECM/PCM connector terminal B33 and throttle body 6P connector terminal No. 4.

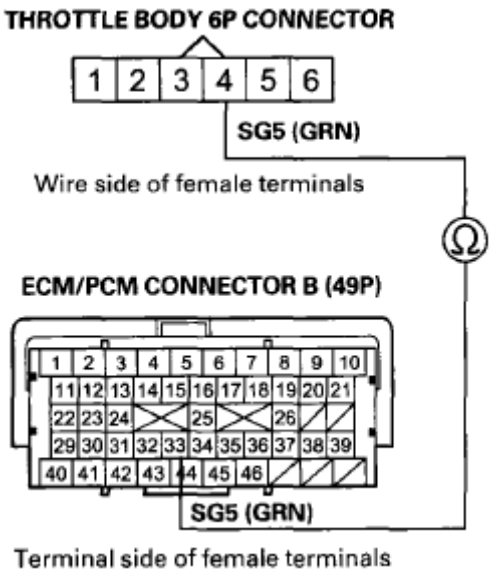


Fig. 13: Checking Continuity Between ECM/PCM Connector Terminal B33 And Throttle Body 6P Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 25.

NO - Repair open in the wire between the throttle body and the ECM/PCM (B33), then go to step 20.

18. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
19. Replace the throttle body (see **THROTTLE BODY REMOVAL/INSTALLATION**).
20. Reconnect all connectors.
21. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
22. Reset the ECM/PCM with the HDS.
23. Do the ECM/PCM idle learn procedure (see **ECM/PCM IDLE LEARN PROCEDURE**).
24. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P0223 indicated?

    YES - Check for poor connections or loose terminals at the throttle body and the ECM/PCM, then go to step 1.

    NO - Troubleshooting is complete. If any other Pending or Confirmed DTCs are indicated, go to the indicated DTC's troubleshooting. •

25. Reconnect all connectors.
26. Update the ECM/PCM if it does not have the latest software (see **ECM/PCM UPDATE**), or substitute a known-good ECM/PCM (see **SUBSTITUTING THE ECM/PCM**).

27. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P0223 indicated?

    YES - Check for poor connections or loose terminals at the throttle body and the ECM/PCM. If the ECM/PCM was updated, substitute a known-good ECM/PCM (see **SUBSTITUTING THE ECM/PCM**), then recheck. If the ECM/PCM was substituted, go to step 1.

    NO - If the ECM/PCM was updated, troubleshooting is complete. If the ECM/PCM was substituted, replace the original ECM/PCM (see **ECM/PCM REPLACEMENT**). If any other Pending or Confirmed DTCs are indicated, go to the indicated DTC's troubleshooting. •

DTC P1658: ETCS CONTROL RELAY ON MALFUNCTION

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see GENERAL TROUBLESHOOTING INFORMATION).

1. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
2. Do the ETCS TEST in the INSPECTION MENU with the HDS.

    Is the RELAY circuit OK?

    YES - Intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at the ETCS control relay and the ECM/PCM. •

    NO - Go to step 3.

3. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
4. Remove the ETCS control relay (A) from the under-hood fuse/relay box.

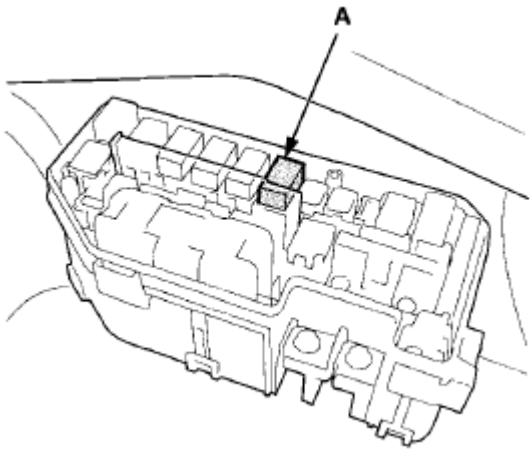


Fig. 14: Identifying ETCS Control Relay
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Test the ETCS control relay (see **POWER RELAY TEST**).

   Is the ETCS control relay OK?

   YES - Go to step 6.

   NO - Replace the ETCS control relay, then go to step 13.

6. Jump the SCS line with the HDS.
7. Disconnect ECM/PCM connector A (49P).
8. Check for continuity between ECM/PCM connector terminal A29 and body ground.

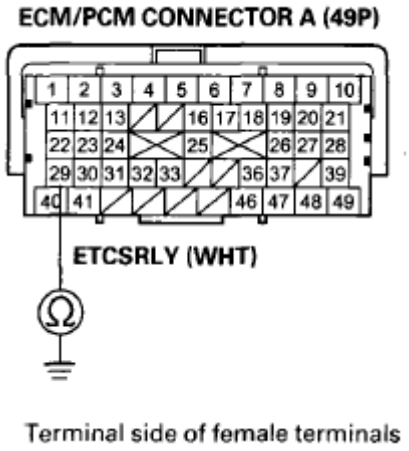


Fig. 15: Checking Continuity Between ECM/PCM Connector Terminal A29 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair short in the wire between the ECM/PCM (A29) and the ETCS control relay, then go to step 13.

NO - Go to step 9.

9. Disconnect ECM/PCM connector C (49P).
10. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
11. Measure the voltage between ECM/PCM connector terminal C4 and body ground.

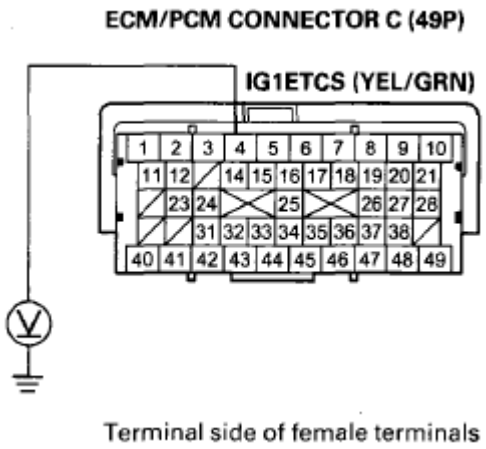


Fig. 16: Measuring Voltage Between ECM/PCM Connector Terminal C4 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there battery voltage?

YES - Repair short to power in the wire between the ECM/PCM (C4) and the ETCS control relay, then go to step 12.

NO - Go to step 18.

12. Turn the ignition switch to LOCK(0), or press the engine start/stop button to select the OFF mode.
13. Reconnect ail connectors.
14. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
15. Reset the ECM/PCM with the HDS.
16. Do the ECM/PCM idle learn procedure (see **ECM/PCM IDLE LEARN PROCEDURE**).
17. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P1658 indicated?

    YES - Check for poor connections or loose terminals at the ETCS control relay and the ECM/PCM, then go to step 1.

    NO - Troubleshooting is complete. If any other Pending or Confirmed DTCs are indicated, go to the indicated DTC's troubleshooting. •

18. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
19. Reconnect all connectors.
20. Update the ECM/PCM if it does not have the latest software (see **ECM/PCM UPDATE**), or substitute a known-good ECM/PCM (see **SUBSTITUTING THE ECM/PCM**).
21. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P1658 indicated?

YES - Check for poor connections or loose terminals at the ETCS control relay and the ECM/PCM. If the ECM/PCM was updated, substitute a known-good ECM/PCM (see **SUBSTITUTING THE ECM/PCM**), then recheck. If the ECM/PCM was substituted, go to step 1.

NO - If the ECM/PCM was updated, troubleshooting is complete. If the ECM/PCM was substituted, replace the original ECM/PCM (see **ECM/PCM REPLACEMENT**). If any other Pending or Confirmed DTCs are indicated, go to the indicated DTC's troubleshooting. •

DTC P1659: ETCS CONTROL RELAY OFF MALFUNCTION

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see GENERAL TROUBLESHOOTING INFORMATION).

1. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
2. Clear the DTC with the HDS.
3. Check for Pending or Confirmed DTCs with the HDS.

   Is DTC P1659 indicated?

   YES - Go to step 4.

   NO - Intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at the ETCS control relay and the ECM/PCM. •

4. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
5. Check the No. 18 DBW (ETCS) (15 A) fuse in the under-hood fuse/relay box.

   Is the fuse OK?

   YES - Go to step 6.

   NO - Go to step 17.

6. Remove the ETCS control relay (A) from the under-hood fuse/relay box.

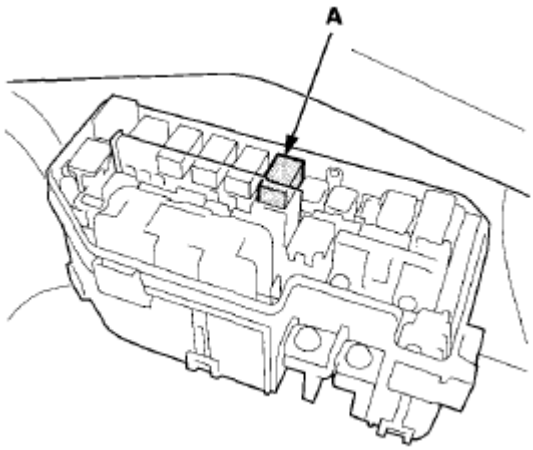


Fig. 17: Identifying ETCS Control Relay On Under-Hood Fuse/Relay Box
Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Test the ETCS control relay (see **POWER RELAY TEST**).

   Is the ETCS control relay OK?

   YES - Go to step 8.

   NO - Replace the ETCS control relay, then go to step 23.

8. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
9. Measure the voltage between ETCS control relay 4P connector terminal No. 4 and body ground.

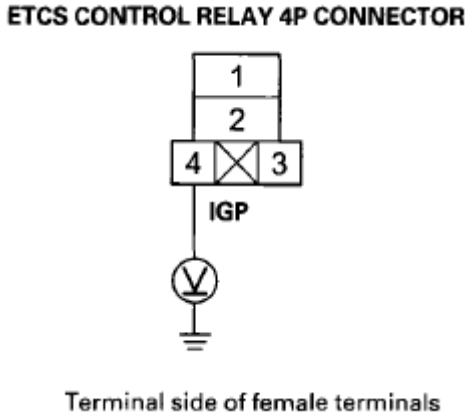


Fig. 18: Measuring Voltage Between ETCS Control Relay 4P Connector Terminal No. 4 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there battery voltage?

YES - Go to step 10.

NO - Replace the under-hood fuse/relay box (see **REMOVAL AND INSTALLATION**), then go to step 22.

10. Measure the voltage between ETCS control relay 4P connector terminal No. 1 and body ground.

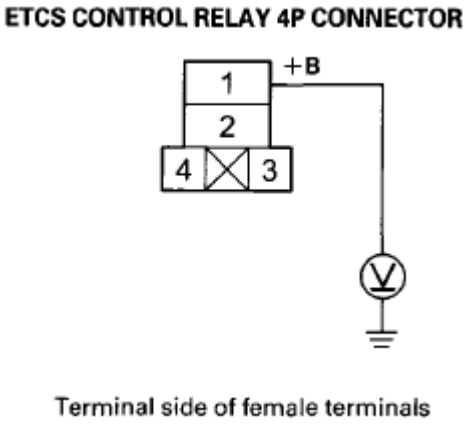


Fig. 19: Measuring Voltage Between ETCS Control Relay 4P Connector Terminal No. 1 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there battery voltage?

YES - Go to step 11.

NO - Replace the under-hood fuse/relay box (see **REMOVAL AND INSTALLATION**), then go to step 22.

11. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
12. Jump the SCS line with the HDS.
13. Disconnect ECM/PCM connector C (49P).
14. Check for continuity between ETCS control relay 4P connector terminal No. 2 and ECM/PCM connector terminal C4.

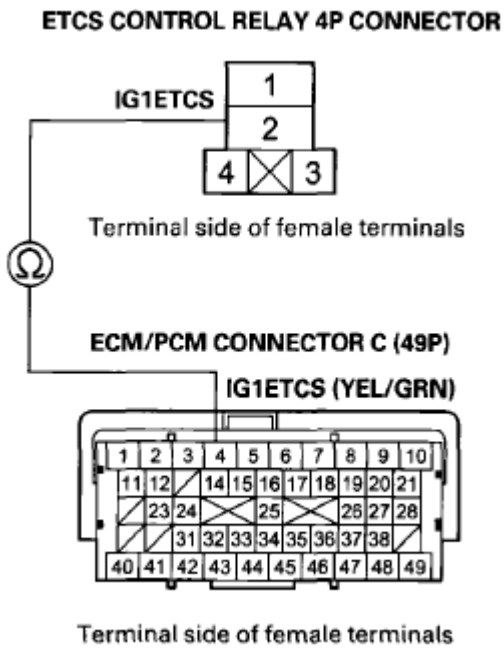


Fig. 20: Checking Continuity Between ETCS Control Relay 4P Connector And ECM/PCM Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 15.

NO - Repair open in the wire between the ECM/PCM (C4) and the ETCS control relay, then go to step 23.

15. Disconnect ECM/PCM connector A (49P).
16. Check for continuity between ETCS control relay 4P connector terminal No. 3 and ECM/PCM connector terminal A29.

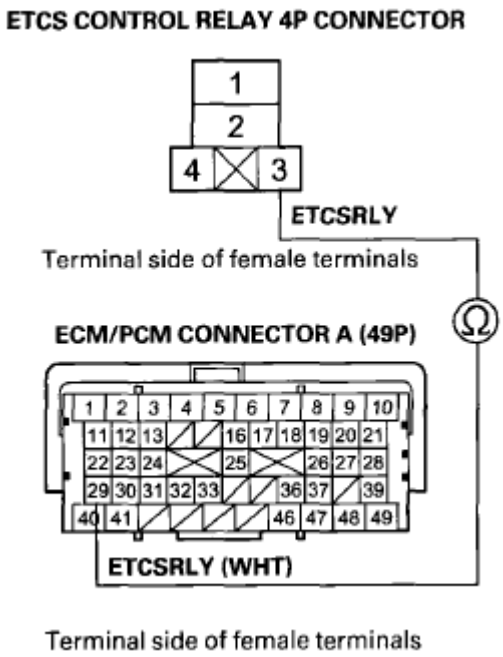


Fig. 21: Checking Continuity Between ETCS Control Relay 4P Connector Terminal No. 3 And ECM/PCM Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 28.

NO - Repair open in the wire between the ECM/PCM (A29) and the ETCS control relay, then go to step 23.

17. Remove the ETCS control relay (A) from the under-hood fuse/relay box.

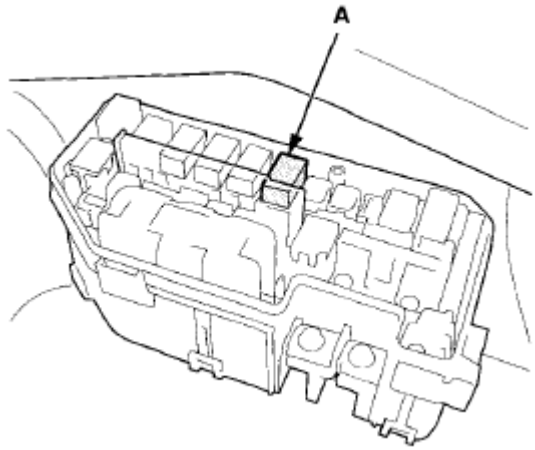


Fig. 22: Identifying ETCS Control Relay On Under-Hood Fuse/Relay Box
Courtesy of AMERICAN HONDA MOTOR CO., INC.

18. Jump the SCS line with the HDS.
19. Disconnect ECM/PCM connector C (49P).
20. Check for continuity between ECM/PCM connector terminal C4 and body ground.

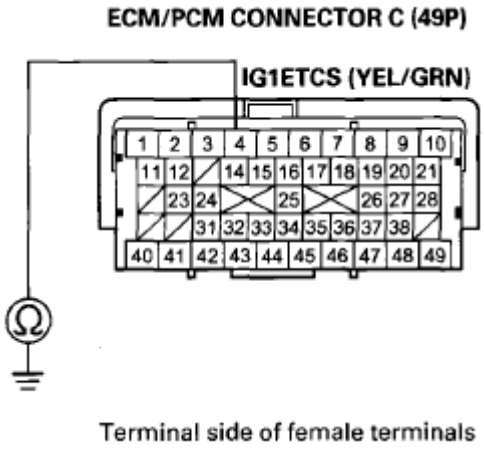


Fig. 23: Checking Continuity Between ECM/PCM Connector Terminal C4 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair short in the wire between the ECM/PCM (C4) and the ETCS control relay, then go to step 23.

NO - Go to step 21.

21. Check for continuity between ETCS control relay 4P connector terminal No. 1 and body ground.

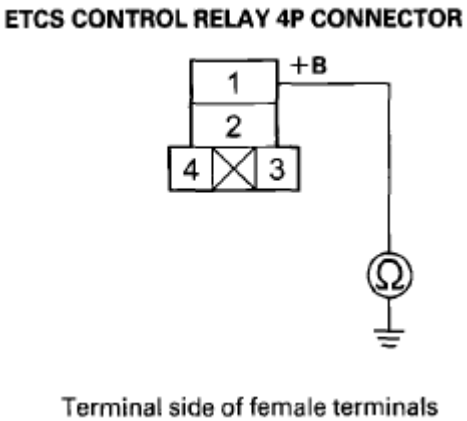


Fig. 24: Checking Continuity Between ETCS Control Relay 4P Connector And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Replace the under-hood fuse/relay box (see **REMOVAL AND INSTALLATION**), then go to step 23.

NO - Go to step 28.

22. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
23. Reconnect all connectors.
24. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
25. Reset the ECM/PCM with the HDS.
26. Do the ECM/PCM idle learn procedure (see **ECM/PCM IDLE LEARN PROCEDURE**).
27. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P1659 indicated?

    YES - Check for poor connections or loose terminals at the ETCS control relay and the ECM/PCM, then go to step 1.

    NO - Troubleshooting is complete. If any other Pending or Confirmed DTCs are indicated, go to the indicated DTC's troubleshooting. •

28. Reconnect all connectors.
29. Update the ECM/PCM if it does not have the latest software (see **ECM/PCM UPDATE**), or substitute a known-good ECM/PCM (see **SUBSTITUTING THE ECM/PCM**).
30. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P1659 indicated?

    YES - Check for poor connections or loose terminals at the ETCS control relay and the ECM/PCM. If the ECM/PCM was updated, substitute a known-good ECM/PCM (see **SUBSTITUTING THE ECM/PCM**), then recheck. If the ECM/PCM was substituted, go to step 1.

    NO - If the ECM/PCM was updated, troubleshooting is complete. If the ECM/PCM was substituted, replace the original ECM/PCM (see **ECM/PCM REPLACEMENT**). If any other Pending or Confirmed DTCs are indicated, go to the indicated DTC's troubleshooting. •

DTC P1683: THROTTLE VALVE DEFAULT POSITION SPRING PERFORMANCE PROBLEM

CAUTION: Do not insert your fingers into the installed throttle body when you turn the ignition switch to ON (II)/press the engine start/stop button, or while the ignition switch is in ON (II)/vehicle in ON mode. If you do, you will seriously injure your fingers if the throttle valve is activated.

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see GENERAL TROUBLESHOOTING INFORMATION).

1. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
2. Clear the DTC with the HDS.
3. Start the engine. Hold the engine speed at 3, 000 RPM without load (A/T in P or N, M/T in neutral) until the radiator fan comes on, then let it idle.
4. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode, and wait 10 seconds.
5. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
6. Check for Pending or Confirmed DTCs with the HDS.

   Is DTC P1683 indicated?

   YES - Go to step 7.

   NO - Intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at the throttle body and the ECM/PCM. •

7. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
8. Disconnect the intake air duct from the throttle body.
9. Push the throttle valve closed as shown in illustration below.

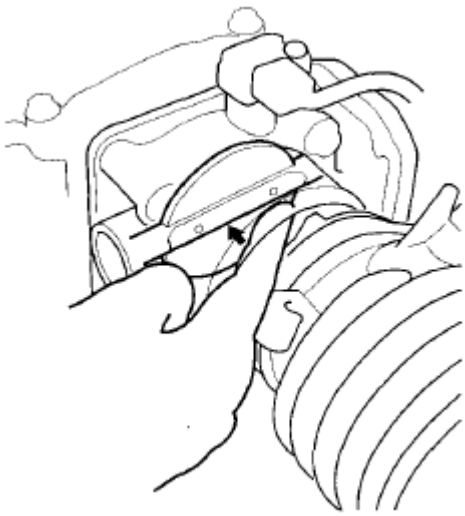


Fig. 25: Pushing Throttle Valve Closed
Courtesy of AMERICAN HONDA MOTOR CO., INC.

10. Release the throttle valve.

    Does the throttle valve return?

    YES - Clean the throttle body (see **THROTTLE BODY CLEANING**), then go to step 12 and recheck. If DTC P1683 is indicated, go to step 11.

NO - Go to step 11.

11. Replace the throttle body (see **THROTTLE BODY REMOVAL/INSTALLATION**).
12. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
13. Reset the ECM/PCM with the HDS.
14. Do the ECM/PCM idle learn procedure (see **ECM/PCM IDLE LEARN PROCEDURE**).
15. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode, and wait 10 seconds.
16. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
17. Check for Pending or Confirmed DTCs with the HDS.

Is DTC P1683 indicated?

YES - Check for poor connections or loose terminals at the throttle body and the ECM/PCM, then go to step 1.

NO - Troubleshooting is complete. If any other Pending or Confirmed DTCs are indicated, go to the indicated DTC's troubleshooting. •

DTC P1684: THROTTLE VALVE RETURN SPRING PERFORMANCE PROBLEM

CAUTION: Do not insert your fingers into the installed throttle body when you turn the ignition switch to ON (II)/press the engine start/stop button, or while the ignition switch is in ON (II)/vehicle in ON mode. If you do, you will seriously injure your fingers if the throttle valve is activated.

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see GENERAL TROUBLESHOOTING INFORMATION).

1. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
2. Clear the DTC with the HDS.
3. Start the engine. Hold the engine speed at 3, 000 RPM without load (A/T in P or N, M/T in neutral) until the radiator fan comes on, then let it idle.
4. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode, and wait 10 seconds.
5. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
6. Check for Pending or Confirmed DTCs with the HDS.

Is DTC P1684 indicated?

YES - Go to step 7.

NO - Intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at

the throttle body and the ECM/PCM. •

7. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
8. Disconnect the intake air duct from the throttle body.
9. Push the throttle valve open as shown in illustration below.

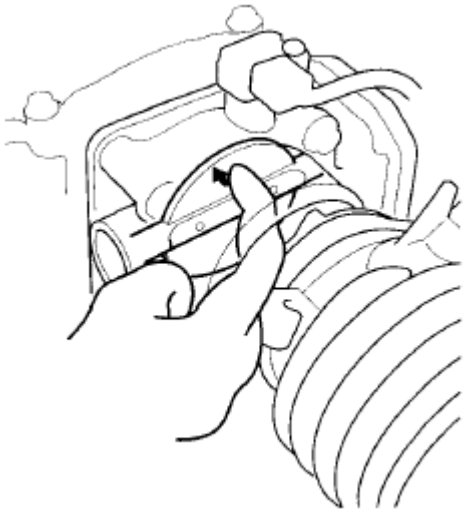


Fig. 26: Pushing Throttle Valve Open
Courtesy of AMERICAN HONDA MOTOR CO., INC.

10. Release the throttle valve.

    Does the throttle valve return?

    YES - Clean the throttle body (see **THROTTLE BODY CLEANING**), then go to step 12 and recheck. If DTC P1684 is indicated, go to step 11.

    NO - Go to step 11.

11. Replace the throttle body (see **THROTTLE BODY REMOVAL/INSTALLATION**).
12. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
13. Reset the ECM/PCM with the HDS.
14. Do the ECM/PCM idle learn procedure (see **ECM/PCM IDLE LEARN PROCEDURE**).
15. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode, and wait 10 seconds.
16. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
17. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P1684 indicated?

    YES - Check for poor connections or loose terminals at the throttle body and the ECM/PCM, then go to

step 1.

NO - Troubleshooting is complete. If any other Pending or Confirmed DTCs are indicated, go to the indicated DTC's troubleshooting. •

DTC P2101: ETCS MALFUNCTION

CAUTION: Do not insert your fingers into the installed throttle body when you turn the ignition switch to ON (II)/press the engine start/stop button, or while the ignition switch is in ON (II)/vehicle in ON mode. If you do, you will seriously injure your fingers if the throttle valve is activated.

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see GENERAL TROUBLESHOOTING INFORMATION).

1. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
2. Clear the DTC with the HDS.
3. Do the ETCS TEST in the INSPECTION MENU with the HDS.
4. Check for Pending or Confirmed DTCs with the HDS.

   Is DTC P2101 indicated?

   YES - Go to step 7.

   NO - Go to step 5.

5. Test-drive the vehicle for several minutes in the range of these recorded freeze data parameters:
   - ENGINE SPEED
   - VEHICLE SPEED
   - APP SENSOR
6. Check for Pending or Confirmed DTCs with the HDS.

   Is DTC P2101 indicated?

   YES - Go to step 7.

   NO - Intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at the throttle body and at the ECM/PCM, then clean the throttle body (see **THROTTLE BODY CLEANING**). •

7. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
8. Disconnect the intake air duct from the throttle body.
9. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.

10. Clear the DTC with the HDS.
11. Do the ETCS TEST in the INSPECTION MENU with the HDS.
12. Visually check the throttle valve operation.

    Does the throttle valve operate smoothly?

    YES - Clean the throttle body (see **THROTTLE BODY CLEANING**), then go to step 24 and recheck. If DTC P2101 is indicated, go to step 22.

    NO - Go to step 13.

13. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
14. Disconnect the throttle body 6P connector.
15. Jump the SCS line with the HDS.
16. Disconnect ECM/PCM connector B (49P).
17. Check for continuity between ECM/PCM connector terminal B33 and throttle body 6P connector terminal No. 4.

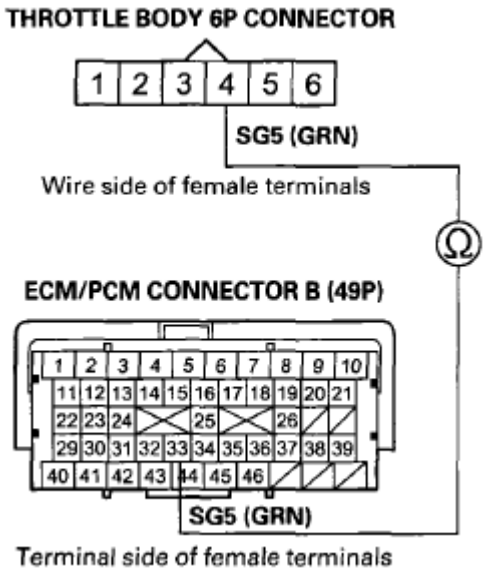


Fig. 27: Checking Continuity Between ECM/PCM Connector Terminal B33 And Throttle Body 6P Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 18.

NO - Repair open in the wire between the throttle body and the ECM/PCM (B33), then go to step 24.

18. Disconnect ECM/PCM connector C (49P).

19. Connect throttle body 6P connector terminals No. 5 and No. 6 with a jumper wire.

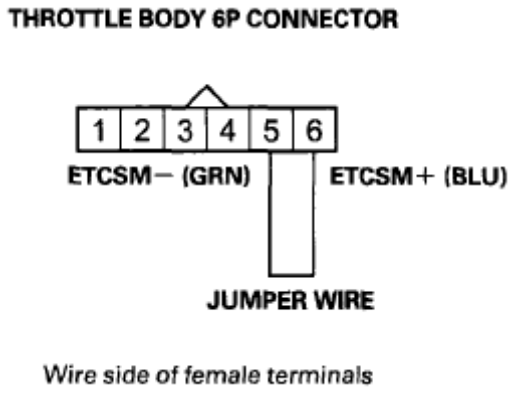


Fig. 28: Connecting Throttle Body 6P Connector Terminals No. 5 And No. 6 With Jumper Wire
Courtesy of AMERICAN HONDA MOTOR CO., INC.

20. Check for continuity between ECM/PCM connector terminals C2 and C3.

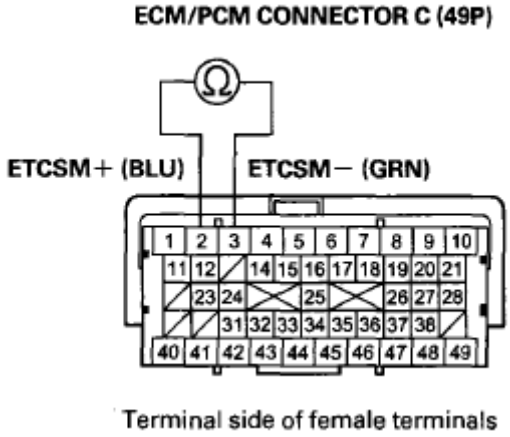


Fig. 29: Checking Continuity Between ECM/PCM Connector Terminals C2 And C3
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 21.

NO - Repair open in the wires between the throttle body and the ECM/PCM (C2, C3), then go to step 24.

21. At the throttle body side, measure the resistance between throttle body 6P connector terminals No. 5 and No. 6 with the throttle fully closed.

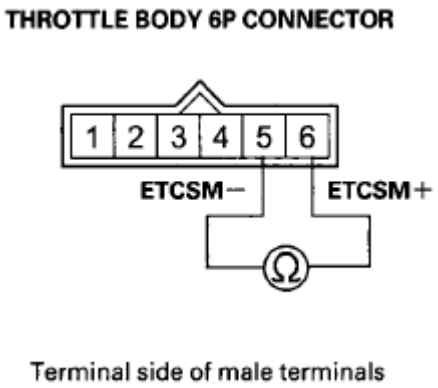


Fig. 30: Measuring Resistance Between Throttle Body 6P Connector Terminals No. 5 And No. 6
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there about 1.0 kohms or more?

YES - Go to step 23.

NO - Go to step 30.

22. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
23. Replace the throttle body (see **THROTTLE BODY REMOVAL/INSTALLATION**).
24. Reconnect all connectors.
25. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
26. Reset the ECM/PCM with the HDS.
27. Do the ECM/PCM idle learn procedure (see **ECM/PCM IDLE LEARN PROCEDURE**).
28. Test-drive the vehicle for several minutes in the range of these recorded freeze data parameters:
    - ENGINE SPEED
    - VEHICLE SPEED
    - APP SENSOR
29. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P2101 indicated?

    YES - Check for poor connections or loose terminals at the throttle body and the ECM/PCM, then clean the throttle body (see **THROTTLE BODY CLEANING**), and go to step 1.

    NO - Troubleshooting is complete. If any other Pending or Confirmed DTCs are indicated, go to the indicated DTC's troubleshooting. •

30. Reconnect all connectors.
31. Update the ECM/PCM if it does not have the latest software (see **ECM/PCM UPDATE**), or substitute a known-good ECM/PCM (see **SUBSTITUTING THE ECM/PCM**).
32. Test-drive the vehicle for several minutes in the range of these recorded freeze data parameters:

- ENGINE SPEED
- VEHICLE SPEED
- APP SENSOR

33. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P2101 indicated?

    YES - Check for poor connections or loose terminals at the throttle body and the ECM/PCM, then clean the throttle body (see **THROTTLE BODY CLEANING**). If the ECM/PCM was updated, substitute a known-good ECM/PCM (see **SUBSTITUTING THE ECM/PCM**), then go to step 32. If the ECM/PCM was substituted, go to step 1.

    NO - If the ECM/PCM was updated, troubleshooting is complete. If the ECM/PCM was substituted, replace the original ECM/PCM (see **ECM/PCM REPLACEMENT**). If any other Pending or Confirmed DTCs are indicated, go to the indicated DTC's troubleshooting. •

DTC P2118: THROTTLE ACTUATOR CURRENT RANGE/PERFORMANCE PROBLEM

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see GENERAL TROUBLESHOOTING INFORMATION).

1. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
2. Clear the DTC with the HDS.
3. Slowly press the accelerator pedal to the floor.
4. Check for Pending or Confirmed DTCs with the HDS.

   Is DTC P2118 indicated?

   YES - Go to step 5.

   NO - Intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at the throttle body and the ECM/PCM. •

5. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
6. Jump the SCS line with the HDS.
7. Disconnect the throttle body 6P connector.
8. Disconnect ECM/PCM connector B (49P).
9. Check for continuity between ECM/PCM connector terminal B33 and throttle body 6P connector terminal No. 4.

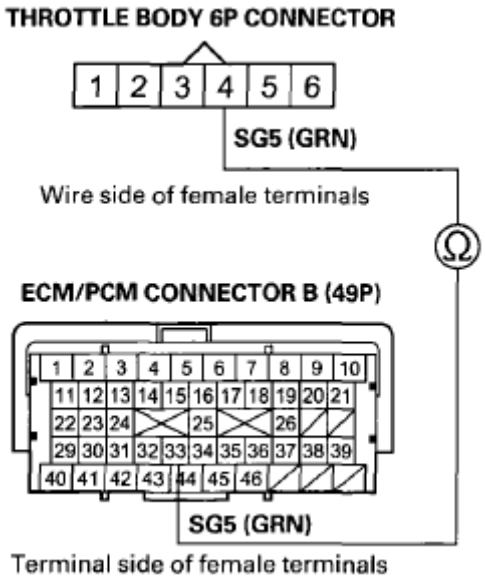


Fig. 31: Checking Continuity Between ECM/PCM Connector And Throttle Body 6P Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 10.

NO - Repair open in the wire between the throttle body and the ECM/PCM (B33), then go to step 18.

10. Disconnect ECM/PCM connector C (49P).
11. Check for continuity between throttle body 6P connector terminals No. 5 and No. 6.

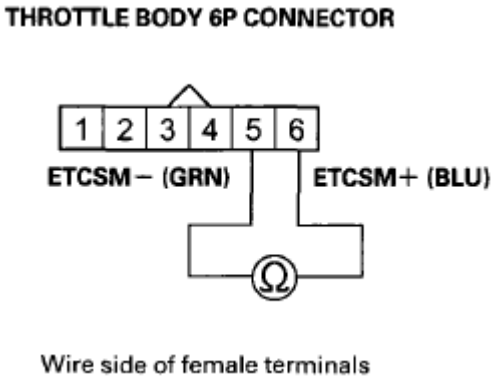


Fig. 32: Checking Continuity Between Throttle Body 6P Connector Terminals No. 5 And No. 6
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair short in the wires between throttle body 6P connector terminal No. 5 (ETCS- line) and No. 6 (ETCS+ line), then go to step 18.

NO - Go to step 12.

12. Check for continuity between body ground and throttle body 6P connector terminals No. 5 and No. 6 individually.

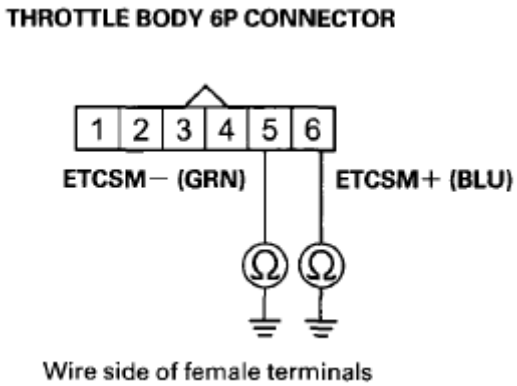


Fig. 33: Checking Continuity Between Body Ground And Throttle Body 6P Connector Terminals No. 5 And No. 6
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair short in the wire between the throttle body 6P connector and body ground, then go to step 18.

NO - Go to step 13.

13. At the throttle body side, measure the resistance between throttle body 6P connector terminals No. 5 and No. 6 with the throttle fully closed.

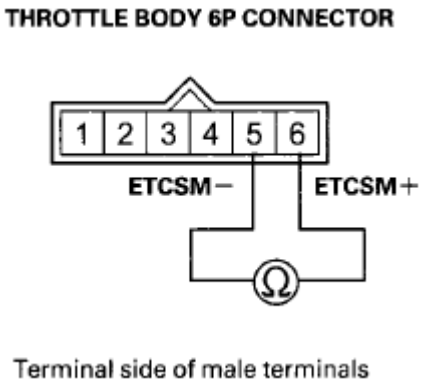


Fig. 34: Measuring Resistance Between Throttle Body 6P Connector Terminals No. 5 And No. 6
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there about 1.0 ohms or less?

YES - Go to step 14.

NO - Go to step 17.

14. Connect throttle body 6P connector terminals No. 5 and No. 6 with a jumper wire.

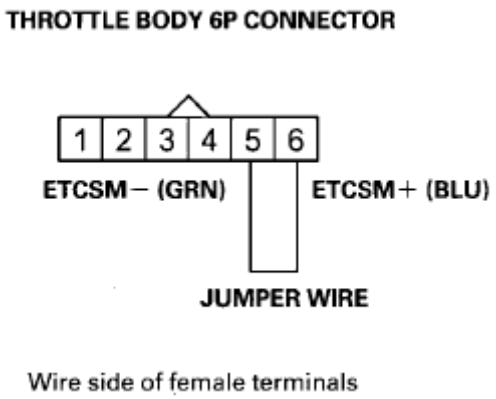


Fig. 35: Connecting Throttle Body 6P Connector Terminals No. 5 And No. 6 With Jumper Wire
Courtesy of AMERICAN HONDA MOTOR CO., INC.

15. Check for continuity between ECM/PCM connector terminals C2 and C3.

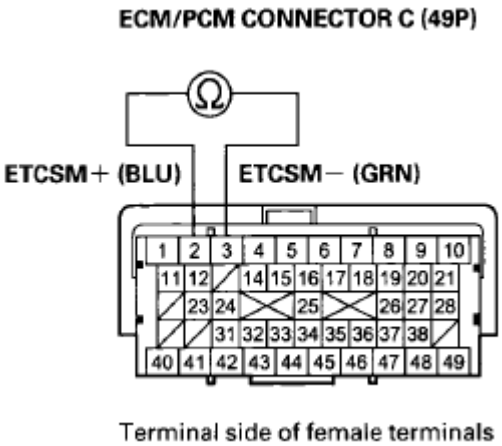


Fig. 36: Checking Continuity Between ECM/PCM Connector Terminals C2 And C3
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 16.

NO - Repair open in the wire between the throttle body and the ECM/PCM (C2, C3), then go to step 18.

16. At the throttle body side, check for continuity between body ground and throttle body 6P connector terminals No. 5 and No. 6 individually.

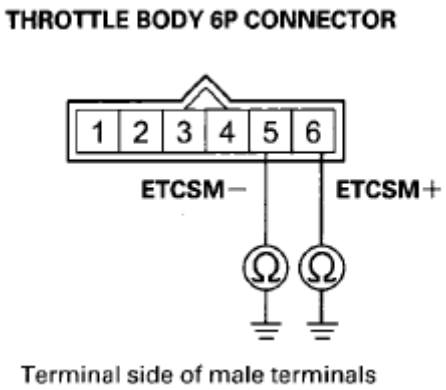


Fig. 37: Checking Continuity Between Body Ground And Throttle Body 6P Connector Terminals No. 5 And No. 6
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 17.

NO - Go to step 26.

17. Replace the throttle body (see **THROTTLE BODY REMOVAL/INSTALLATION**).
18. Reconnect all connectors.
19. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
20. Reset the ECM/PCM with the HDS.
21. Do the ECM/PCM idle learn procedure (see **ECM/PCM IDLE LEARN PROCEDURE**).
22. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
23. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
24. Slowly press the accelerator pedal to the floor.
25. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P2118 indicated?

    YES - Check for poor connections or loose terminals at the throttle body and the ECM/PCM, then go to step 1.

    NO - Troubleshooting is complete. If any other Pending or Confirmed DTCs are indicated, go to the indicated DTC's troubleshooting. •

26. Reconnect all connectors.
27. Update the ECM/PCM if it does not have the latest software (see **ECM/PCM UPDATE**), or substitute a known-good ECM/PCM (see **SUBSTITUTING THE ECM/PCM**).
28. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
29. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.

30. Slowly press the accelerator pedal to the floor.
31. Check for Pending or Confirmed DTCs with the HDS.

Is DTC P2118 indicated?

YES - Check for poor connections or loose terminals at the throttle body and the ECM/PCM. If the ECM/PCM was updated, substitute a known-good ECM/PCM (see **SUBSTITUTING THE ECM/PCM**), then go to step 27. If the ECM/PCM was substituted, go to step 1.

NO - If the ECM/PCM was updated, troubleshooting is complete. If the ECM/PCM was substituted, replace the original ECM/PCM (see **ECM/PCM REPLACEMENT**). If any other Pending or Confirmed DTCs are indicated, go to the indicated DTC's troubleshooting. •

DTC P2122: APP SENSOR A (TP SENSOR D) CIRCUIT LOW VOLTAGE

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see GENERAL TROUBLESHOOTING INFORMATION).

1. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
2. Check APP SENSOR A in the DATA LIST with the HDS.

Is there about 0.2 V or less?

YES - Go to step 3.

NO - Intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at the APP sensor and the ECM/PCM. •

3. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
4. Disconnect the APP sensor 6P connector.
5. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
6. Measure the voltage between APP sensor 6P connector terminals No. 2 and No. 3.

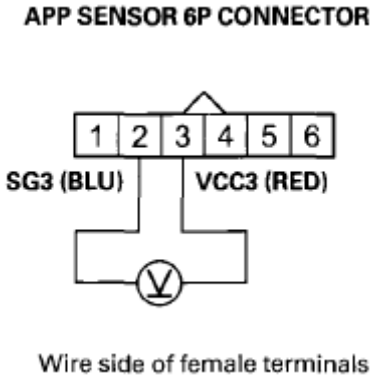


Fig. 38: Measuring Voltage Between APP Sensor 6P Connector Terminals No. 2 And No. 3
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there about 5 V?

YES - Go to step 7.

NO - Go to step 17.

7. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
8. Jump the SCS line with the HDS.
9. Disconnect ECM/PCM connector A (49P).
10. Check for continuity between APP sensor 6P connector terminal No. 1 and body ground.

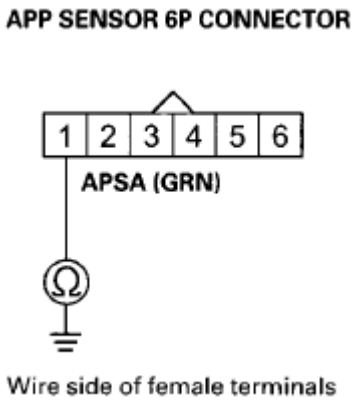


Fig. 39: Checking Continuity Between APP Sensor 6P Connector Terminal No. 1 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair short in the wire between the APP sensor and the ECM/PCM (A18), then go to step 24.

NO - Go to step 11.

11. Connect APP sensor 6P connector terminal No. 1 to body ground with a jumper wire.

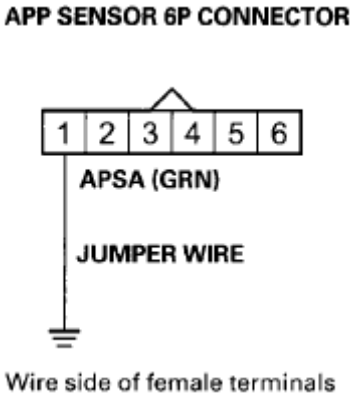


Fig. 40: Connecting APP Sensor 6P Connector Terminal No. 1 To Body Ground With Jumper Wire
Courtesy of AMERICAN HONDA MOTOR CO., INC.

12. Check for continuity between ECM/PCM connector terminal A18 and body ground.

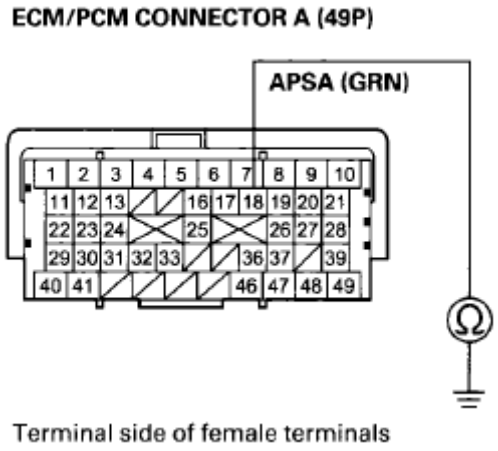


Fig. 41: Checking Continuity Between ECM/PCM Connector Terminal A18 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 13.

NO - Repair open in the wire between the APP sensor and the ECM/PCM (A18), then go to step 24.

13. Reconnect ECM/PCM connector A (49P).
14. Connect APP sensor 6P connector terminals No. 1 and No. 3 with a jumper wire.

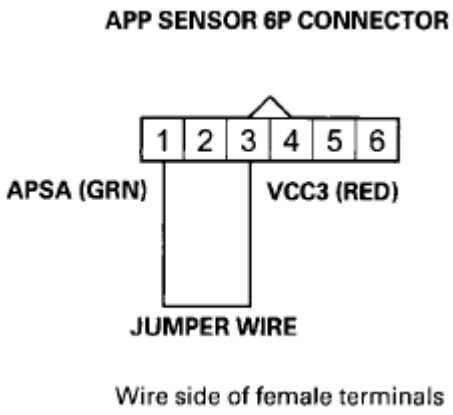


Fig. 42: Connecting APP Sensor 6P Connector Terminals No. 1 And No. 3 With Jumper Wire
Courtesy of AMERICAN HONDA MOTOR CO., INC.

15. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
16. Check APP SENSOR A in the DATA LIST with the HDS.

    Is there 0.2 V or less?

    YES - Go to step 29.

    NO - Go to step 22.

17. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
18. Jump the SCS line with the HDS.
19. Disconnect ECM/PCM connector A (49P).
20. Connect APP sensor 6P connector terminal No. 3 to body ground with a jumper wire.

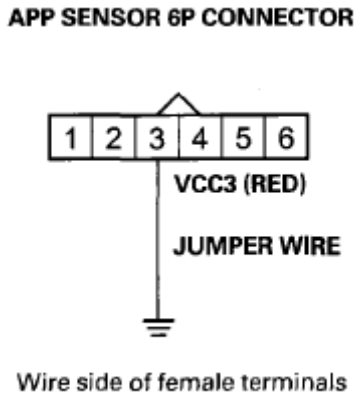


Fig. 43: Connecting APP Sensor 6P Connector Terminal No. 3 To Body Ground With Jumper Wire
Courtesy of AMERICAN HONDA MOTOR CO., INC.

21. Check for continuity between ECM/PCM connector terminal A24 and body ground.

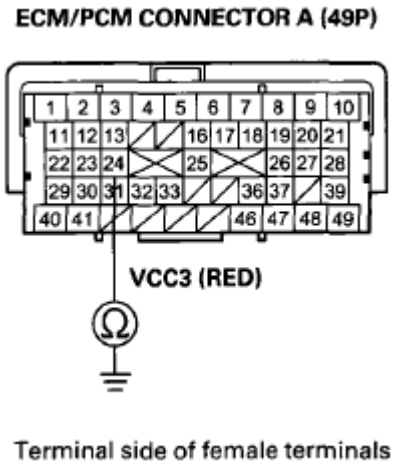


Fig. 44: Checking Continuity Between ECM/PCM Connector Terminal A24 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 29.

NO - Repair open in the wire between the APP sensor and the ECM/PCM (A24), then go to step 24.

22. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
23. Replace the accelerator pedal module (see **Accelerator Pedal Module Removal and Installation**).
24. Reconnect all connectors.
25. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
26. Reset the ECM/PCM with the HDS.
27. Do the ECM/PCM idle learn procedure (see **ECM/PCM IDLE LEARN PROCEDURE**).
28. Check for Pending or Confirmed DTCs with the HDS.

Is DTC P2122 indicated?

YES - Check for poor connections or loose terminals at the APP sensor and the ECM/PCM, then go to step 1.

NO - Troubleshooting is complete. If any other Pending or Confirmed DTCs are indicated, go to the indicated DTC's troubleshooting. •

29. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
30. Reconnect all connectors.
31. Update the ECM/PCM if it does not have the latest software (see **ECM/PCM UPDATE**), or substitute a known-good ECM/PCM (see **SUBSTITUTING THE ECM/PCM**).
32. Check for Pending or Confirmed DTCs with the HDS.

Is DTC P2122 indicated?

YES - Check for poor connections or loose terminals at the APP sensor and the ECM/PCM. If the ECM/PCM was updated, substitute a known-good ECM/PCM (see **SUBSTITUTING THE ECM/PCM**), then recheck. If the ECM/PCM was substituted, go to step 1.

NO - If the ECM/PCM was updated, troubleshooting is complete. If the ECM/PCM was substituted, replace the original ECM/PCM (see **ECM/PCM REPLACEMENT**). If any other Pending or Confirmed DTCs are indicated, go to the indicated DTC's troubleshooting. •

DTC P2123: APP SENSOR A (TP SENSOR D) CIRCUIT HIGH VOLTAGE

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see GENERAL TROUBLESHOOTING INFORMATION).

1. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
2. Check APP SENSOR A in the DATA LIST with the HDS.

Is there about 4.9 V or more?

YES - Go to step 3.

NO - Intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at the APP sensor and the ECM/PCM. •

3. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
4. Disconnect the APP sensor 6P connector.
5. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
6. Measure the voltage between APP sensor 6P connector terminals No. 2 and No. 3.

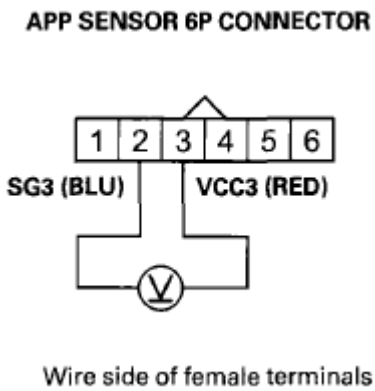


Fig. 45: Measuring Voltage Between APP Sensor 6P Connector Terminals No. 2 And No. 3
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there about 5 V?

YES - Go to step 12.

NO - Go to step 7.

7. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
8. Jump the SCS line with the HDS.
9. Disconnect ECM/PCM connector A (49P).
10. Connect APP sensor 6P connector terminal No. 2 to body ground with a jumper wire.

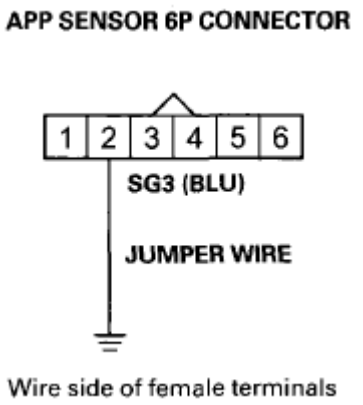


Fig. 46: Connecting APP Sensor 6P Connector Terminal No. 2 To Body Ground With Jumper Wire
Courtesy of AMERICAN HONDA MOTOR CO., INC.

11. Check for continuity between ECM/PCM connector terminal A26 and body ground.

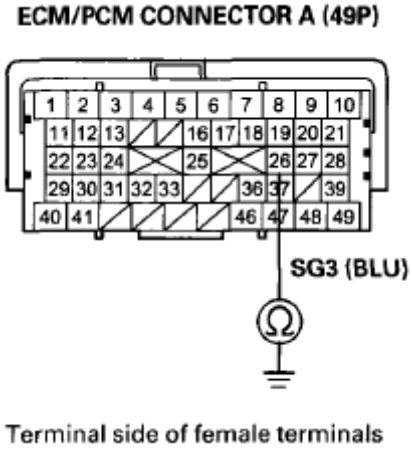


Fig. 47: Checking Continuity Between ECM/PCM Connector Terminal A26 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 19.

NO - Repair open in the wire between the APP sensor and the ECM/PCM (A26), then go to step 14.

12. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
13. Replace the accelerator pedal module (see **Accelerator Pedal Module Removal and Installation**).
14. Reconnect all connectors.
15. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
16. Reset the ECM/PCM with the HDS.
17. Do the ECM/PCM idle learn procedure (see **ECM/PCM IDLE LEARN PROCEDURE**).
18. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P2123 indicated?

    YES - Check for poor connections or loose terminals at the APP sensor and the ECM/PCM, then go to step 1.

    NO - Troubleshooting is complete. If any other Pending or Confirmed DTCs are indicated, go to the indicated DTC's troubleshooting. •

19. Reconnect all connectors.
20. Update the ECM/PCM if it does not have the latest software (see **ECM/PCM UPDATE**), or substitute a known-good ECM/PCM (see **SUBSTITUTING THE ECM/PCM**).
21. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P2123 indicated?

    YES - Check for poor connections or loose terminals at the APP sensor and the ECM/PCM, then go to step 1. If the ECM/PCM was updated, substitute a known-good ECM/PCM (see **SUBSTITUTING THE ECM/PCM**), then recheck. If the ECM/PCM was substituted, go to step 1.

    NO - If the ECM/PCM was updated, troubleshooting is complete. If the ECM/PCM was substituted, replace the original ECM/PCM (see **ECM/PCM REPLACEMENT**). If any other Pending or Confirmed DTCs are indicated, go to the indicated DTC's troubleshooting. •

DTC P2127: APP SENSOR B (TP SENSOR E) CIRCUIT LOW VOLTAGE

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see GENERAL TROUBLESHOOTING INFORMATION).

1. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
2. Check APP SENSOR B in the DATA LIST with the HDS.

   Is there about 0.2 V or less?

YES - Go to step 3.

NO - Intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at the APP sensor and the ECM/PCM. •

3. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
4. Disconnect the APP sensor 6P connector.
5. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
6. Measure the voltage between APP sensor 6P connector terminals No. 5 and No. 6.

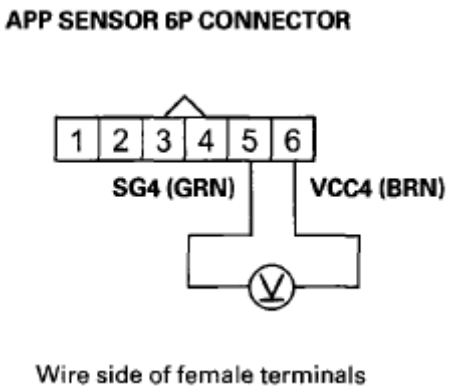


Fig. 48: Measuring Voltage Between APP Sensor 6P Connector Terminals No. 5 And No. 6
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there about 5 V?

YES - Go to step 7.

NO - Go to step 17.

7. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
8. Jump the SCS line with the HDS.
9. Disconnect ECM/PCM connector A (49P).
10. Check for continuity between APP sensor 6P connector terminal No. 4 and body ground.

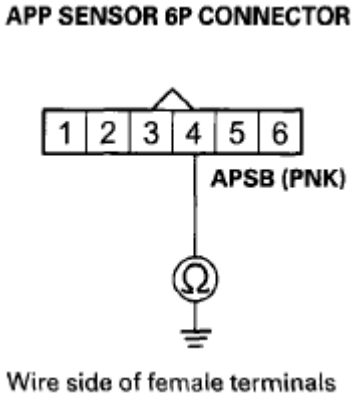


Fig. 49: Checking Continuity Between APP Sensor 6P Connector Terminal No. 4 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair short in the wire between the APP sensor and the ECM/PCM (A19), then go to step 24.

NO - Go to step 11.

11. Connect APP sensor 6P connector terminal No. 4 to body ground with a jumper wire.

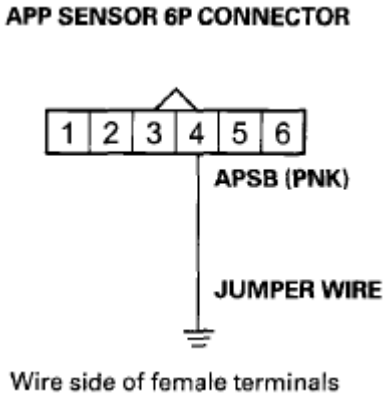


Fig. 50: Connecting APP Sensor 6P Connector Terminal No. 4 To Body Ground With Jumper Wire
Courtesy of AMERICAN HONDA MOTOR CO., INC.

12. Check for continuity between ECM/PCM connector terminal A19 and body ground.

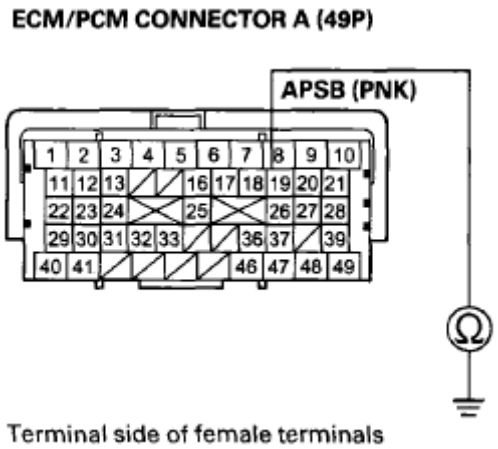


Fig. 51: Checking Continuity Between ECM/PCM Connector Terminal A19 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 13.

NO - Repair open in the wire between the APP sensor and the ECM/PCM (A19), then go to step 24.

13. Reconnect ECM/PCM connector A (49P).
14. Connect APP sensor 6P connector terminals No. 4 and No. 6 with a jumper wire.

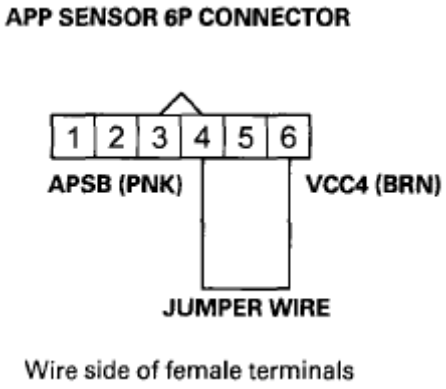


Fig. 52: Connecting APP Sensor 6P Connector Terminals No. 4 And No. 6 With Jumper Wire
Courtesy of AMERICAN HONDA MOTOR CO., INC.

15. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
16. Check APP SENSOR B in the DATA LIST with the HDS.

Is there about 0.2 V or less?

YES - Go to step 29.

NO - Go to step 22.

17. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
18. Jump the SCS line with the HDS.
19. Disconnect ECM/PCM connector A (49P).
20. Connect APP sensor 6P connector terminal No. 6 to body ground with a jumper wire.

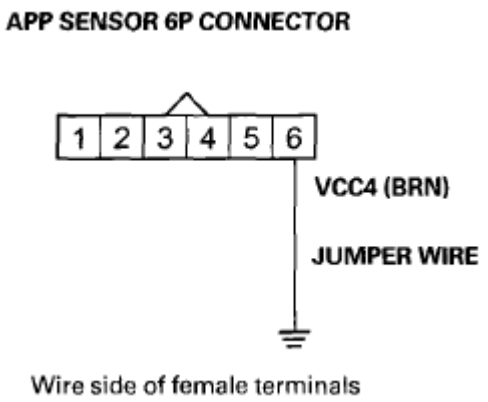


Fig. 53: Connecting APP Sensor 6P Connector Terminal No. 6 To Body Ground With Jumper Wire
Courtesy of AMERICAN HONDA MOTOR CO., INC.

21. Check for continuity between ECM/PCM connector terminal A25 and body ground.

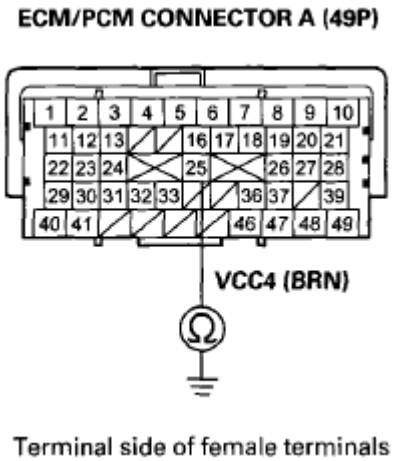


Fig. 54: Checking Continuity Between ECM/PCM Connector Terminal A25 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 30.

NO - Repair open in the wire between the APP sensor and the ECM/PCM (A25), then go to step 24.

22. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
23. Replace the accelerator pedal module (see **Accelerator Pedal Module Removal and Installation**).
24. Reconnect all connectors.
25. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
26. Reset the ECM/PCM with the HDS.
27. Do the ECM/PCM idle learn procedure (see **ECM/PCM IDLE LEARN PROCEDURE**).
28. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P2127 indicated?

    YES - Check for poor connections or loose terminals at the APP sensor and the ECM/PCM, then go to step 1.

    NO - Troubleshooting is complete. If any other Pending or Confirmed DTCs are indicated, go to the indicated DTC's troubleshooting. •

29. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
30. Reconnect all connectors.
31. Update the ECM/PCM if it does not have the latest software (see **ECM/PCM UPDATE**), or substitute a known-good ECM/PCM (see **SUBSTITUTING THE ECM/PCM**).
32. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P2127 indicated?

    YES - Check for poor connections or loose terminals at the APP sensor and the ECM/PCM, then go to step 1. If the ECM/PCM was updated, substitute a known-good ECM/PCM (see **SUBSTITUTING THE ECM/PCM**), then recheck. If the ECM/PCM was substituted, go to step 1.

    NO - If the ECM/PCM was updated, troubleshooting is complete. If the ECM/PCM was substituted, replace the original ECM/PCM (see **ECM/PCM REPLACEMENT**). If any other Pending or Confirmed DTCs are indicated, go to the indicated DTC's troubleshooting. •

DTC P2128: APP SENSOR B (TP SENSOR E) CIRCUIT HIGH VOLTAGE

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see GENERAL TROUBLESHOOTING INFORMATION).

1. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
2. Check APP SENSOR B in the DATA LIST with the HDS.

   Is there about 4.0 V or more?

   YES - Go to step 3.

NO - Intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at the APP sensor and the ECM/PCM. •

3. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
4. Disconnect the APP sensor 6P connector.
5. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
6. Measure the voltage between APP sensor 6P connector terminals No. 5 and No. 6.

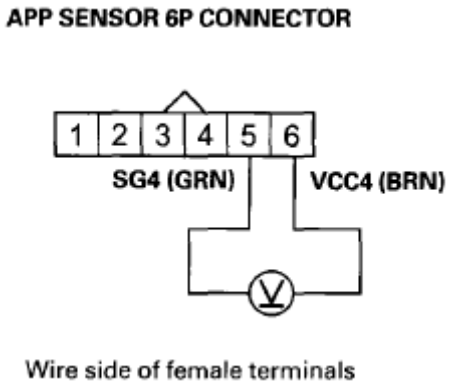


Fig. 55: Measuring Voltage Between APP Sensor 6P Connector Terminals No. 5 And No. 6
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there about 5 V?

YES - Go to step 12.

NO - Go to step 7.

7. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
8. Jump the SCS line with the HDS.
9. Disconnect ECM/PCM connector A (49P).
10. Connect APP sensor 6P connector terminal No. 5 to body ground with a jumper wire.

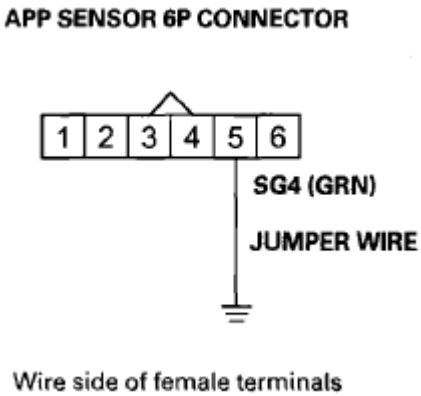


Fig. 56: Connecting APP Sensor 6P Connector Terminal No. 5 To Body Ground With Jumper Wire
Courtesy of AMERICAN HONDA MOTOR CO., INC.

11. Check for continuity between ECM/PCM connector terminal A27 and body ground.

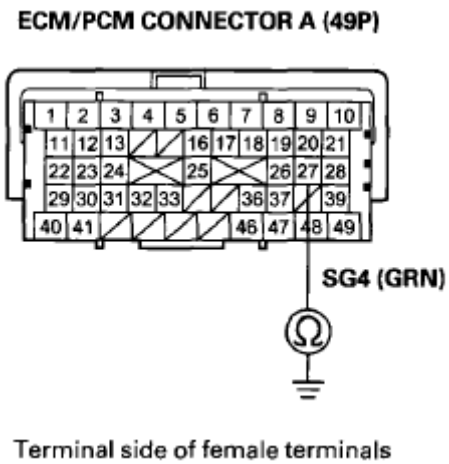


Fig. 57: Checking Continuity Between ECM/PCM Connector Terminal A27 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 19.

NO - Repair open in the wire between the APP sensor and the ECM/PCM (A27), then go to step 14.

12. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
13. Replace the accelerator pedal module (see **Accelerator Pedal Module Removal and Installation**).
14. Reconnect all connectors.
15. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
16. Reset the ECM/PCM with the HDS.
17. Do the ECM/PCM idle learn procedure (see **ECM/PCM IDLE LEARN PROCEDURE**).
18. Check for Pending or Confirmed DTCs with the HDS.

Is DTC P2128 indicated?

YES - Check for poor connections or loose terminals at the APP sensor and the ECM/PCM, then go to step 1.

NO - Troubleshooting is complete. If any other Pending or Confirmed DTCs are indicated, go to the indicated DTC's troubleshooting. •

19. Reconnect all connectors.
20. Update the ECM/PCM if it does not have the latest software (see **ECM/PCM UPDATE**), or substitute a

known-good ECM/PCM (see **SUBSTITUTING THE ECM/PCM**).

21. Check for Pending or Confirmed DTCs with the HDS.

Is DTC P2128 indicated?

YES - Check for poor connections or loose terminals at the APP sensor and the ECM/PCM. If the ECM/PCM was updated, substitute a known-good ECM/PCM (see **SUBSTITUTING THE ECM/PCM**), then recheck. If the ECM/PCM was substituted, go to step 1.

NO - If the ECM/PCM was updated, troubleshooting is complete. If the ECM/PCM was substituted, replace the original ECM/PCM (see **ECM/PCM REPLACEMENT**). If any other Pending or Confirmed DTCs are indicated, go to the indicated DTC's troubleshooting. •

DTC P2135: TP SENSOR A/B INCORRECT VOLTAGE CORRELATION

CAUTION: Do not insert your fingers into the installed throttle body when you turn the ignition switch to ON (II)/press the engine start/stop button, or while the ignition switch is in ON (II)/vehicle in ON mode. If you do, you will seriously injure your fingers if the throttle valve is activated.

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see GENERAL TROUBLESHOOTING INFORMATION).

1. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
2. Clear the DTC with the HDS.
3. Do the ETCS TEST in the INSPECTION MENU with the HDS.
4. Check for Pending or Confirmed DTCs with the HDS.

Is DTC P2135 indicated?

YES - Go to step 5.

NO - Intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at the throttle body and the ECM/PCM. •

5. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
6. Disconnect the intake air duct from the throttle body.
7. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
8. Visually check the throttle valve operation while you clear the DTC with the HDS.

Does the valve temporarily move to its fully closed position?

YES - Go to step 15.

NO - Go to step 9.

9. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
10. Jump the SCS line with the HDS.
11. Disconnect ECM/PCM connector B (49P).
12. Check for continuity between ECM/PCM connector terminals B17 and B26.

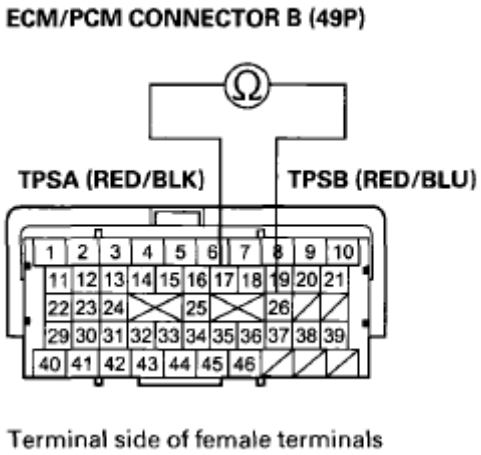


Fig. 58: Checking Continuity Between ECM/PCM Connector Terminals B17 And B26
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 13.

NO - Go to step 22.

13. Disconnect the throttle body 6P connector.
14. Check for continuity between ECM/PCM connector terminals B17 and B26.

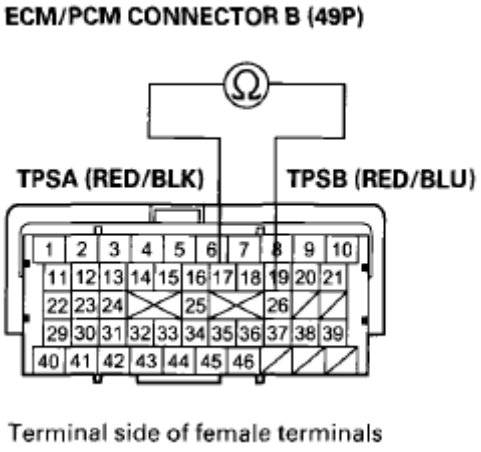


Fig. 59: Checking Continuity Between ECM/PCM Connector Terminals B17 And B26

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair short in the wires between the ECM/PCM connector terminals B17 (TPSA line) and B26 (TPSB line), then go to step 17.

NO - Go to step 15.

15. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
16. Replace the throttle body (see **THROTTLE BODY REMOVAL/INSTALLATION**).
17. Reconnect all connectors.
18. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
19. Reset the ECM/PCM with the HDS.
20. Do the ECM/PCM idle learn procedure (see **ECM/PCM IDLE LEARN PROCEDURE**).
21. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P2135 indicated?

    YES - Check for poor connections or loose terminals at the throttle body and the ECM/PCM, then go to step 1.

    NO - Troubleshooting is complete. If any other Pending or Confirmed DTCs are indicated, go to the indicated DTC's troubleshooting. •

22. Reconnect all connectors.
23. Update the ECM/PCM if it does not have the latest software (see **ECM/PCM UPDATE**), or substitute a known-good ECM/PCM (see **SUBSTITUTING THE ECM/PCM**).
24. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P2135 indicated?

    YES - Check for poor connections or loose terminals at the throttle body and the ECM/PCM. If the ECM/PCM was updated, substitute a known-good ECM/PCM (see **SUBSTITUTING THE ECM/PCM**), then recheck. If the ECM/PCM was substituted, go to step 1.

    NO - If the ECM/PCM was updated, troubleshooting is complete. If the ECM/PCM was substituted, replace the original ECM/PCM (see **ECM/PCM REPLACEMENT**). If any other Pending or Confirmed DTCs are indicated, go to the indicated DTC's troubleshooting. •

DTC P2138: APP SENSOR A/B (TP SENSOR D/E) INCORRECT VOLTAGE CORRELATION

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see GENERAL TROUBLESHOOTING INFORMATION).

1. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
2. Clear the DTC with HDS.
3. Press the accelerator pedal to the floor.
4. Check for Pending or Confirmed DTCs with the HDS.

   Is DTC P2138 indicated?

   YES - Go to step 5.

   NO - Intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at the APP sensor and the ECM/PCM. •

5. Check APP SENSOR A and APP SENSOR B in the DATA LIST with the HDS.

   Are they the same voltage?

   YES - Go to step 6.

   NO - Go to step 12.

6. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
7. Jump the SCS line with the HDS.
8. Disconnect ECM/PCM connector A (49P).
9. Check for continuity between ECM/PCM connector terminals A18 and A19.

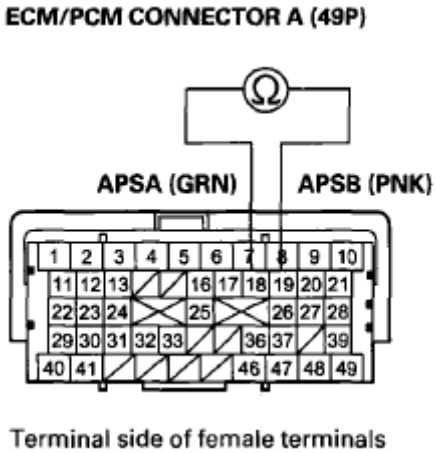


Fig. 60: Checking Continuity Between ECM/PCM Connector Terminals A18 And A19
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 10.

NO - Go to step 22.

10. Disconnect the APP sensor 6P connector.
11. Check for continuity between ECM/PCM connector terminals A18 and A19.

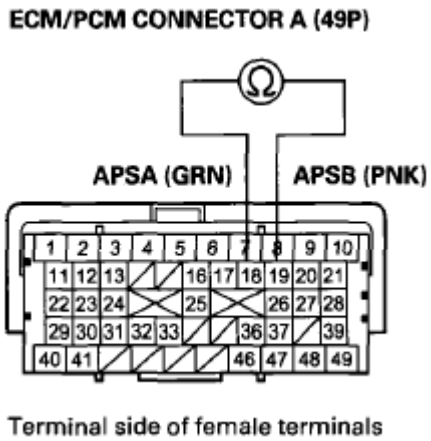


Fig. 61: Checking Continuity Between ECM/PCM Connector Terminals A18 And A19
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair short in the wires between ECM/PCM connector terminals A18 (APSA line) and A19 (APSB line), then go to step 14.

NO - Go to step 13.

12. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
13. Replace the accelerator pedal module (see **Accelerator Pedal Module Removal and Installation**).
14. Reconnect all connectors.
15. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
16. Reset the ECM/PCM with the HDS.
17. Do the ECM/PCM idle learn procedure (see **ECM/PCM IDLE LEARN PROCEDURE**).
18. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
19. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
20. Press the accelerator pedal to the floor.
21. Check for Pending or Confirmed DTCs with the HDS.

Is DTC P2138 indicated?

YES - Check for poor connections or loose terminals at the APP sensor and the ECM/PCM, then go to step 1.

NO - Troubleshooting is complete. If any other Pending or Confirmed DTCs are indicated, go to the

indicated DTC's troubleshooting. •

22. Reconnect all connectors.
23. Update the ECM/PCM if it does not have the latest software (see **ECM/PCM UPDATE**), or substitute a known-good ECM/PCM (see **SUBSTITUTING THE ECM/PCM**).
24. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
25. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
26. Press the accelerator pedal to the floor.
27. Check for Pending or Confirmed DTCs with the HDS.

Is DTC P2138 indicated?

YES - Check for poor connections or loose terminals at the APP sensor and the ECM/PCM. If the ECM/PCM was updated, substitute a known-good ECM/PCM (see **SUBSTITUTING THE ECM/PCM**), then go to step 24. If the ECM/PCM was substituted, go to step 1.

NO - If the ECM/PCM was updated, troubleshooting is complete. If the ECM/PCM was substituted, replace the original ECM/PCM (see **ECM/PCM REPLACEMENT**). If any other Pending or Confirmed DTCs are indicated, go to the indicated DTC's troubleshooting. •

DTC P2176: THROTTLE ACTUATOR CONTROL SYSTEM IDLE POSITION NOT LEARNED

CAUTION: Do not insert your fingers into the installed throttle body when you turn the ignition switch to ON (II)/press the engine start/stop button, or while the ignition switch is in ON (II)/vehicle in ON mode. If you do, you will seriously injure your fingers if the throttle valve is activated.

NOTE:

- **Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see GENERAL TROUBLESHOOTING INFORMATION).**
- **If DTC P2135 is stored at the same time as DTC P2176, troubleshoot DTC P2135 first, then recheck for DTC P2176.**

1. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
2. Clear the DTC with the HDS.
3. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
4. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode, and wait 10 seconds.
5. Check for Pending or Confirmed DTCs with the HDS.

Is DTC P2176 indicated?

YES - Go to step 6.

NO - Intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at the throttle body and the ECM/PCM, then clean the throttle body (see **THROTTLE BODY CLEANING**). •

6. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
7. Disconnect the intake air duct from the throttle body.
8. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
9. Clear the DTC with the HDS.
10. Visually check the throttle valve operation while doing the ETCS TEST in the INSPECTION MENU with the HDS.

    Does the throttle valve move to its fully closed position?

    YES - Go to step 11.

    NO - Go to step 12.

11. Check for sludge or carbon on the throttle valve.

    Is there sludge or carbon on the throttle valve?

    YES - Clean the throttle body (see **THROTTLE BODY CLEANING**), then go to step 21.

    NO - Go to step 18.

12. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
13. Disconnect the throttle body 6P connector.
14. Jump the SCS line with the HDS.
15. Disconnect ECM/PCM connector C (49P).
16. Connect throttle body 6P connector terminals No. 5 and No. 6 with a jumper wire.

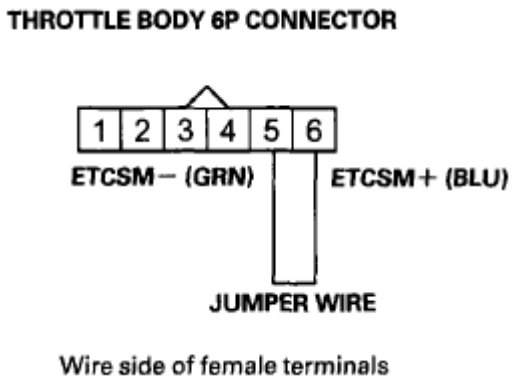


Fig. 62: Connecting Throttle Body 6P Connector Terminals No. 5 And No. 6 With Jumper Wire
Courtesy of AMERICAN HONDA MOTOR CO., INC.

17. Check for continuity between ECM/PCM connector terminals C2 and C3.

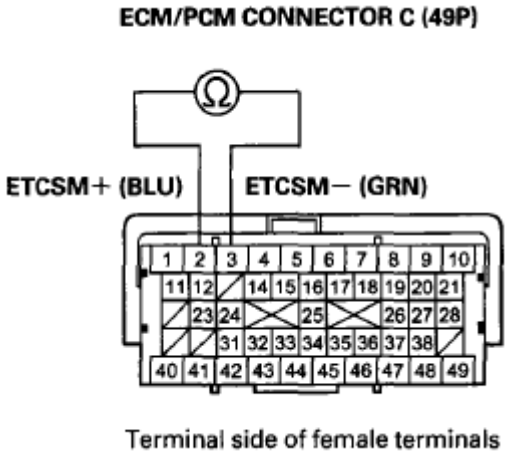


Fig. 63: Checking Continuity Between ECM/PCM Connector Terminals C2 And C3
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 28.

NO - Repair open in the wires between the throttle body and the ECM/PCM (C2, C3), then go to step 21.

18. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
19. Replace the throttle body (see **THROTTLE BODY REMOVAL/INSTALLATION**).
20. Reconnect all connectors.
21. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
22. Reset the ECM/PCM with the HDS.
23. Do the ECM/PCM idle learn procedure (see **ECM/PCM IDLE LEARN PROCEDURE**).
24. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
25. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode, and wait 10 seconds.
26. Check for Pending or Confirmed DTCs with the HDS.

Is DTC P2176 indicated?

YES - Check for poor connections or loose terminals at the throttle body and the ECM/PCM, then clean the throttle body (see **THROTTLE BODY CLEANING**), and go to step 1.

NO - Troubleshooting is complete. If any other Pending or Confirmed DTCs are indicated, go to the indicated DTC's troubleshooting. •

27. Reconnect all connectors.

28. Update the ECM/PCM if it does not have the latest software (see **ECM/PCM UPDATE**), or substitute a known-good ECM/PCM (see **SUBSTITUTING THE ECM/PCM**).
29. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
30. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode, and wait 10 seconds.
31. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P2176 indicated?

    YES - Check for poor connections or loose terminals at throttle body and the ECM/PCM. If the ECM/PCM was updated, substitute a known-good ECM/PCM (see **SUBSTITUTING THE ECM/PCM**), then go to step 29. If the ECM/PCM was substituted, go to step 1.

    NO - If the ECM/PCM was updated, troubleshooting is complete. If the ECM/PCM was substituted, replace the original ECM/PCM (see **ECM/PCM REPLACEMENT**). If any other Pending or Confirmed DTCs are indicated, go to the indicated DTC's troubleshooting. •

APP SENSOR SIGNAL INSPECTION

NOTE:

- **This procedure checks the APP sensor in its fully closed position. In any other position, the APP sensor stores DTCs which are covered in other troubleshooting procedures.**
- **Check for Pending or Confirmed DTCs with the HDS before doing this procedure. If any DTCs are indicated, troubleshoot them first, then do this procedure.**
- **Press the accelerator pedal several times, to check its operation. If it does not operate smoothly, check the pedal. If you find a problem, replace the accelerator pedal module (see Accelerator Pedal Module Removal and Installation).**

1. Connect the HDS to the data link connector (DLC) (A) located under the driver's side of the dashboard.

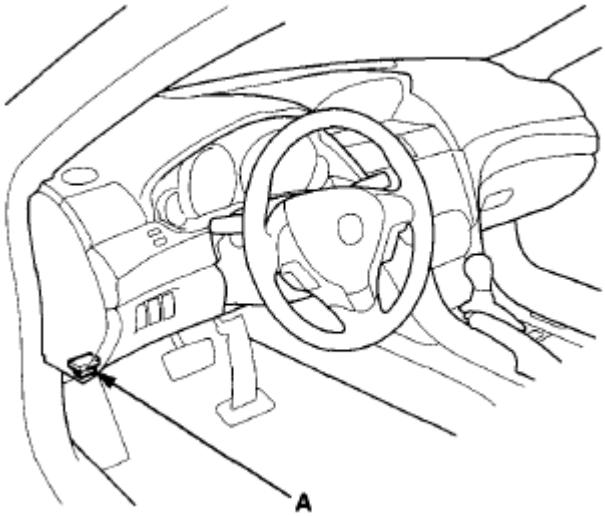


Fig. 64: Identifying Data Link Connector (DLC)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
3. Make sure the HDS communicates with the ECM/PCM. If it doesn't, go to the DLC circuit troubleshooting (see **DLC CIRCUIT TROUBLESHOOTING**).
4. Make sure the accelerator pedal is not pressed, then check the APP SENSOR in the DATA LIST with the HDS.
   - If it is 0 %, the APP sensor is OK.
   - If it is not 0 %, update the ECM/PCM if it does not have the latest software (see **ECM/PCM UPDATE**), or substitute a known-good ECM/PCM (see **SUBSTITUTING THE ECM/PCM**), then go to step 5.
5. Make sure the accelerator pedal is not pressed, then check the APP SENSOR in the DATA LIST with the HDS.
   - If it is 0 %, the APP sensor is OK.
   - If it is not 0 %, replace the accelerator pedal module (see **Accelerator Pedal Module Removal and Installation**), then go to step 1.

ACCELERATOR PEDAL MODULE REMOVAL AND INSTALLATION

REMOVAL

1. Remove the driver's dashboard undercover (see **DRIVER'S DASHBOARD UNDERCOVER REMOVAL/INSTALLATION**).
2. Disconnect the APP sensor 6P connector (A).

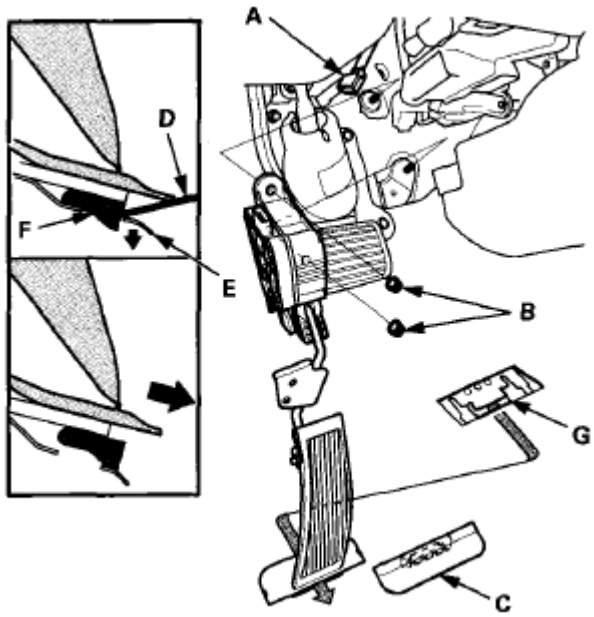


Fig. 65: Identifying APP Sensor 6P Connector, Clip, Screwdriver, Lock, Accelerator Pedal Pad, Mounting Nuts
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Remove the two mounting nuts (B), then remove the clip (C). Using a flat-tip screwdriver (D), push the lock (E), then remove the accelerator pedal pad (F) from the pedal stop (G).
4. Remove the accelerator pedal module.

NOTE:

- **The APP sensor is not available separately. Do not disassemble the accelerator pedal module.**
- **If the pedal stop is damaged, replace it by pulling back the carpet (A), and removing the nuts (B), the bolt (C), and the pedal stop (D).**

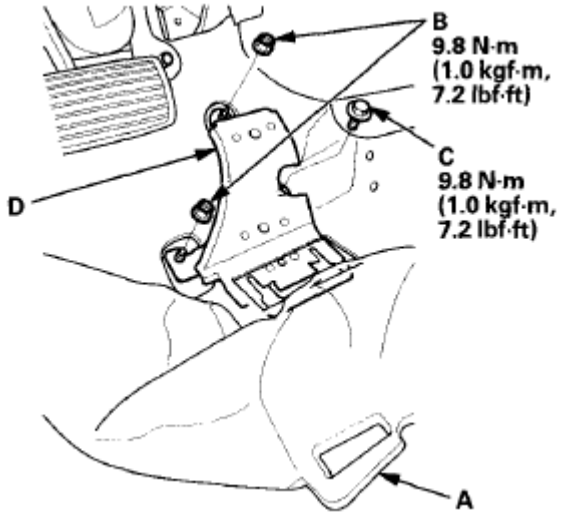


Fig. 66: Identifying Carpet, Nuts, Bolt And Pedal Stop With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

INSTALLATION

1. Install the accelerator pedal pad (A) to the pedal stop (B). Slide the pad until it locks with a clicking sound.

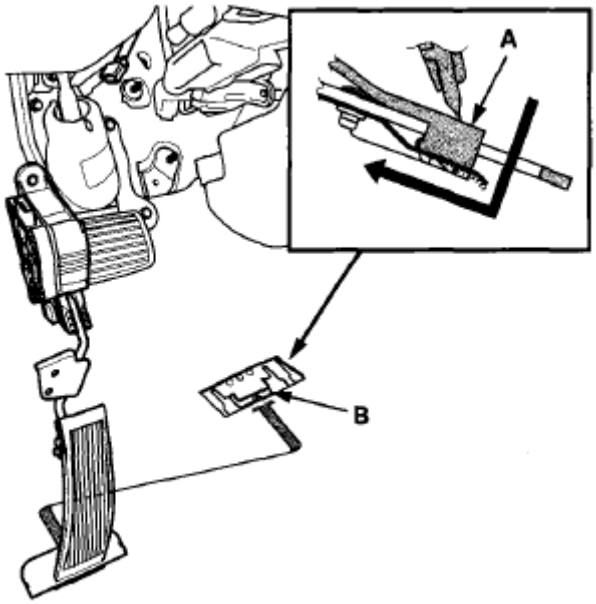


Fig. 67: Identifying Pedal Pad And Stop
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Install a new clip (A).

NOTE:

- **The clip must be replaced whenever the accelerator pedal module is installed.**
- **Make sure that the accelerator pedal module and the clip are secure.**

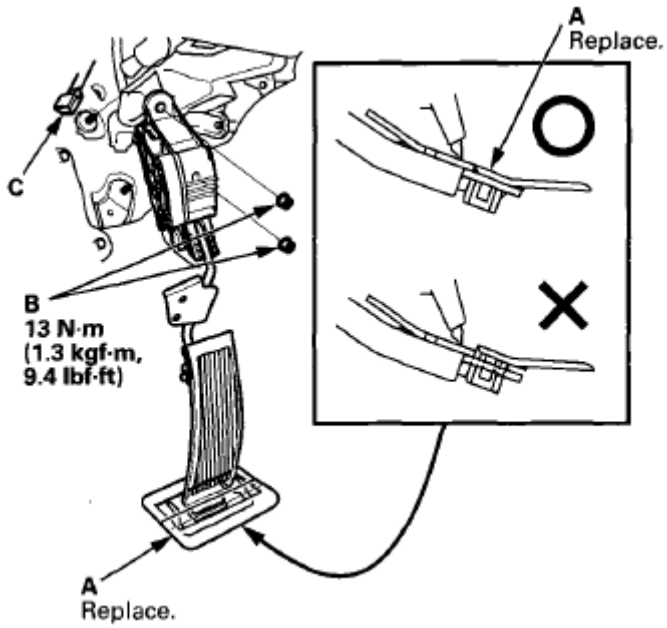


Fig. 68: Identifying Clip, Nuts And APP Sensor 6P Connector With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Install the nuts (B), and connect the APP sensor 6P connector (C).

EMISSION APPLICATIONS

2012 Acura - TL

EMISSION APPLICATIONS

2012 TL

Engine & Fuel System	(1) Emission Control Systems & Devices	(2) EGR Test No.
3.5L (211") V6 SFI	**PCV, EVAP, TWC, FR, EGR, SPK, (3) HO2S, CEC, (4) MIL,** EVAP-CVSV, EVAP-CPV, EVAP-VC, EGR-PS, FTPS, FT-VCV	3
3.7L (224") V6 SFI	**PCV, EVAP, TWC, FR, EGR, SPK, (3) HO2S, CEC, (4) MIL,** EVAP-CVSV, EVAP-CPV, EVAP-VC, EGR-PS, FTPS, FT-VCV	3

(1) For quick reference, major emission control systems and devices are listed in bold type; components and other related devices are listed in light type.

(2) See ACURA under IMPORTED CARS & TRUCKS in EGR FUNCTION TESTING section. Use EGR test number specified in table.

(3) Equipped with 2 AFS & 2 HO2S.

(4) PCM controlled.

2012 ENGINE PERFORMANCE

EVAP System - TL

COMPONENT LOCATION INDEX

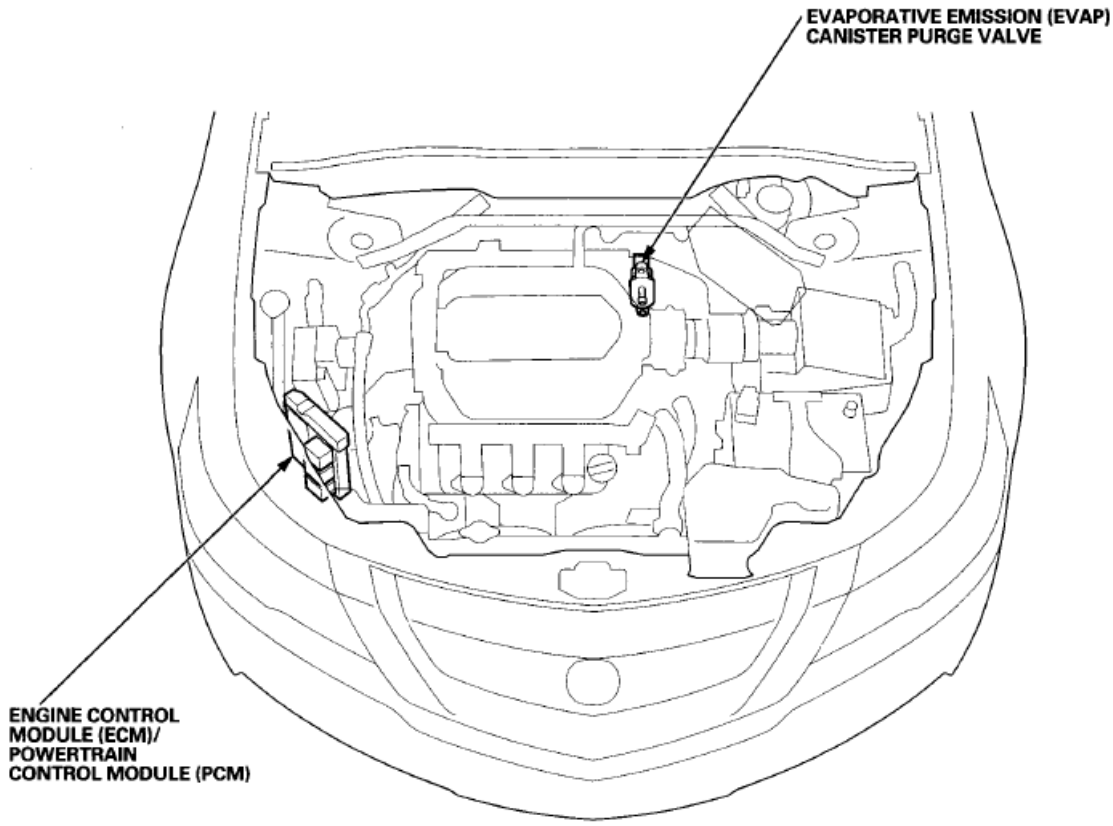


Fig. 1: EVAP System Components Location
Courtesy of AMERICAN HONDA MOTOR CO., INC.

WITHOUT SH-AWD

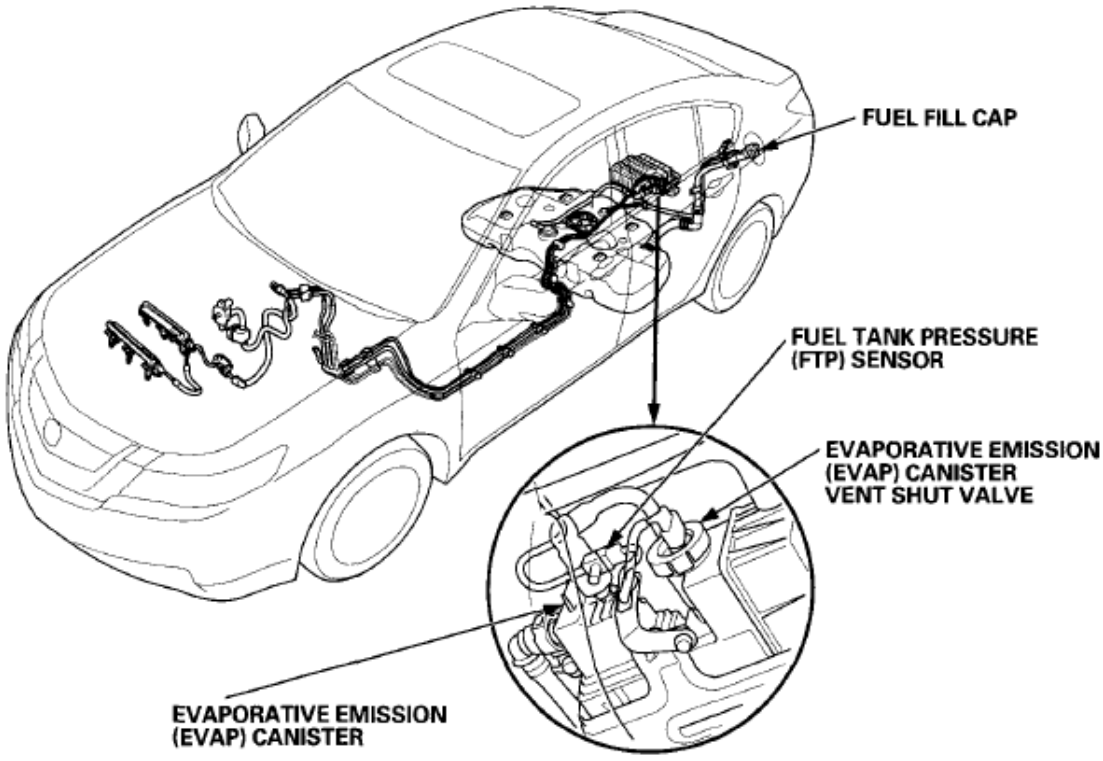


Fig. 2: Identifying EVAP System Components Location (Without SH-AWD)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

WITH SH-AWD

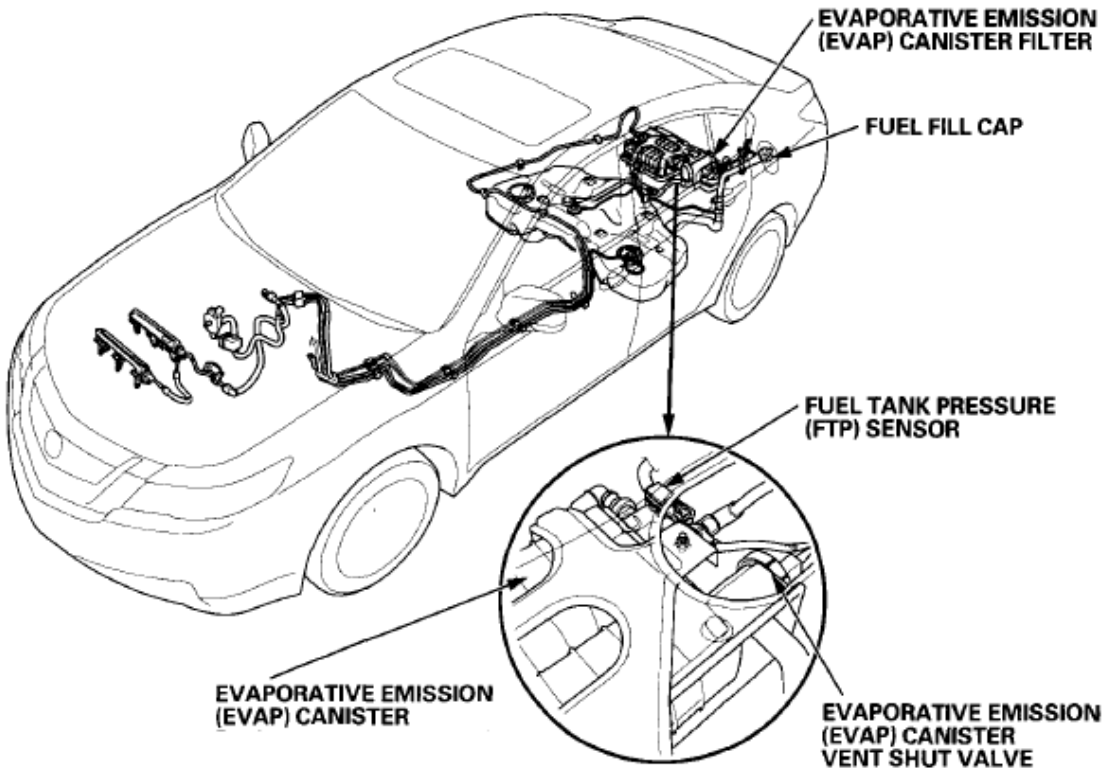


Fig. 3: Identifying EVAP System Components Location (With SH-AWD)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

DTC TROUBLESHOOTING

DTC P0443: EVAP CANISTER PURGE VALVE CIRCUIT MALFUNCTION

Special Tools Required

Vacuum Pump/Gauge, 0- 30 inHg Snap-on YA4000A or equivalent, commercially available

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see GENERAL TROUBLESHOOTING INFORMATION).

1. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
2. Clear the DTC with the HDS.
3. Start the engine. Hold the engine speed at 3, 000 RPM without load (A/T in P or N, M/T in neutral) until the radiator fan comes on, then let it idle.
4. Check for Pending or Confirmed DTCs with the HDS.

Is DTC P0443 indicated?

YES - Go to step 5.

NO - Intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at the EVAP canister purge valve and the ECM/PCM.

5. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode and allow the engine to cool to below 140 °F (60 °C).
6. Disconnect the vacuum hose (A) from the purge joint (B) in the engine compartment, and connect a vacuum pump/gauge, 0- 30 inHg, to the hose.

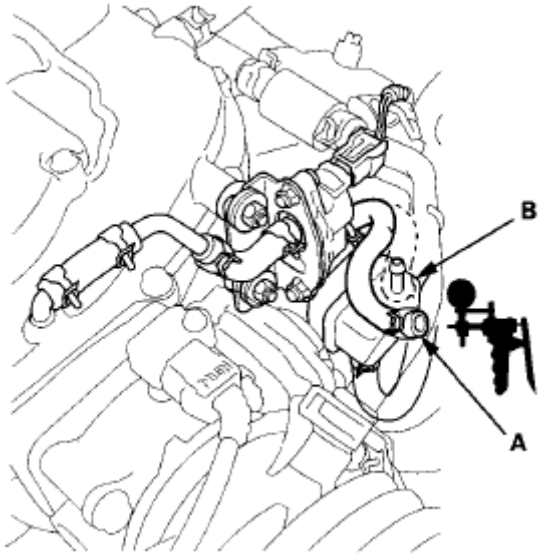


Fig. 4: Identifying Vacuum Hose And Purge Joint
Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Start the engine, and let it idle.

   Is there vacuum?

   YES - Go to step 8.

   NO - Go to step 14.

8. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
9. Disconnect the EVAP canister purge valve 2P connector.
10. Check for continuity between EVAP canister purge valve 2P connector terminal No. 1 and body ground.

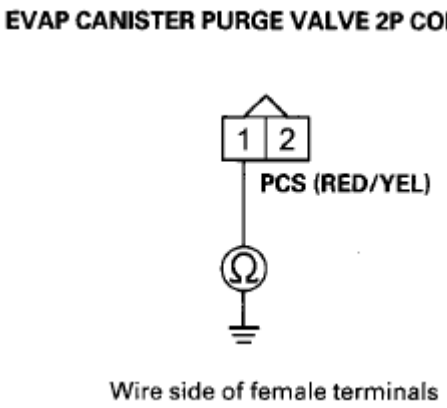


Fig. 5: Checking Continuity Between EVAP Canister Purge Valve 2P Connector Terminal No. 1 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 11.

NO - Go to step 23.

11. Jump the SCS line with the HDS.
12. Disconnect ECM/PCM connector C (49P).
13. Check for continuity between EVAP canister purge valve 2P connector terminal No. 1 and body ground.

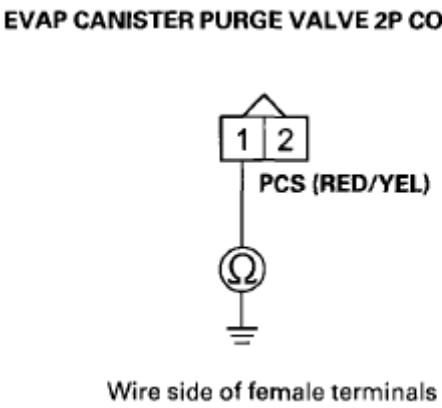


Fig. 6: Checking Continuity Between EVAP Canister Purge Valve 2P Connector Terminal No. 1 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair short in the wire between the EVAP canister purge valve and the ECM/PCM (C40), then go to step 24.

NO - Go to step 30.

14. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
15. Disconnect the EVAP canister purge valve 2P connector.
16. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
17. Measure the voltage between EVAP canister purge valve 2P connector terminal No. 2 and body ground.

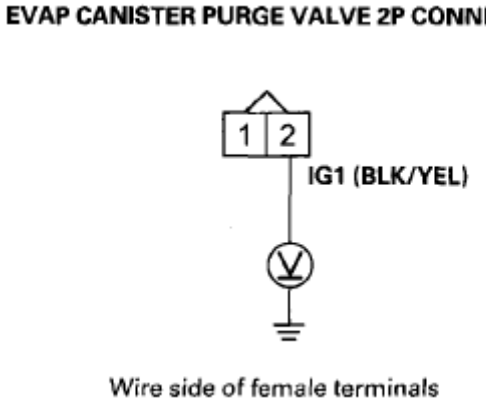


Fig. 7: Measuring Voltage Between EVAP Canister Purge Valve 2P Connector Terminal No. 2 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there battery voltage?

YES - Go to step 18.

NO - Repair open in the wire between the EVAP canister purge valve and the No. 13 ACG (15 A) fuse in the driver's under-dash fuse/relay box, then go to step 24.

18. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
19. Jump the SCS line with the HDS.
20. Disconnect ECM/PCM connector C (49P).
21. Check for continuity between ECM/PCM connector terminal C40 and EVAP canister purge valve 2P connector terminal No. 1.

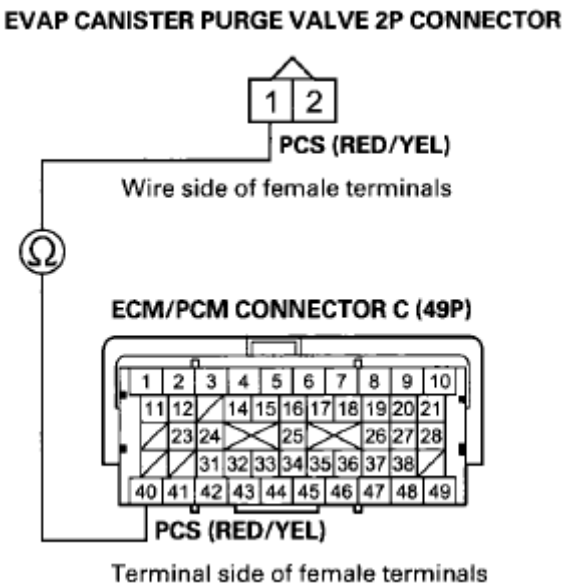


Fig. 8: Checking Continuity Between ECM/PCM Connector Terminal C40 And EVAP Canister Purge Valve 2P Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 22.

NO - Repair open in the wire between the EVAP canister purge valve and the ECM/PCM (C40), then go to step 24.

22. At the valve side, measure the resistance between EVAP canister purge valve 2P connector terminals No. 1 and No. 2.

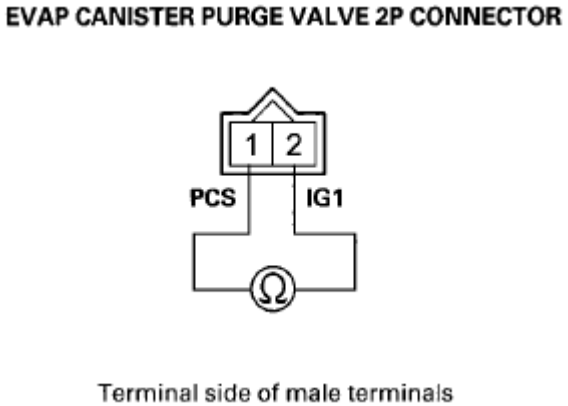


Fig. 9: Measuring Resistance Between EVAP Canister Purge Valve 2P Connector Terminals No. 1 And No. 2
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there about 23- 26 ohms at room temperature?

YES - Go to step 30.

NO - Go to step 23.

23. Replace the EVAP canister purge valve (see **EVAP CANISTER PURGE VALVE REPLACEMENT**).
24. Reconnect all connectors.
25. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
26. Reset the ECM/PCM with the HDS.
27. Do the ECM/PCM idle learn procedure (see **ECM/PCM IDLE LEARN PROCEDURE**).
28. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P0443 indicated?

    YES - Check for poor connections or loose terminals at the EVAP canister purge valve and the ECM/PCM, then go to step 1.

    NO - Go to step 29.

29. Monitor the OBD STATUS for DTC P0443 in the DTCs MENU with the HDS.

    Does the screen indicate PASSED?

    YES - Troubleshooting is complete. If any other Pending or Confirmed DTCs were indicated in step 28, go to the indicated **DTC'S TROUBLESHOOTING**.

    NO - If the screen indicates FAILED, check for poor connections or loose terminals at the EVAP canister purge valve and the ECM/PCM, then go to step 1. If the screen indicates EXECUTING or OUT OF CONDITION, keep idling until a result comes on.

30. Reconnect all connectors.
31. Update the ECM/PCM if it does not have the latest software (see **ECM/PCM UPDATE**), or substitute a known-good ECM/PCM (see **SUBSTITUTING THE ECM/PCM**).
32. Start the engine, and let it idle.
33. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P0443 indicated?

    YES - Check for poor connections or loose terminals at the EVAP canister purge valve and the ECM/PCM. If the ECM/PCM was updated, substitute a known-good ECM/PCM (see **SUBSTITUTING THE ECM/PCM**), then go to step 32. If the ECM/PCM was substituted, go to step 1.

    NO - Go to step 34.

34. Monitor the OBD STATUS for DTC P0443 in the DTCs MENU with the HDS.

    Does the screen indicate PASSED?

    YES - If the ECM/PCM was updated, troubleshooting is complete. If the ECM/PCM was substituted, replace the original ECM/PCM (see **ECM/PCM REPLACEMENT**). If any other Pending or Confirmed DTCs were indicated in step 33, go to the indicated **DTC'S TROUBLESHOOTING**.

    NO - If the screen indicates FAILED, check for poor connections or loose terminals at the EVAP canister purge valve and the ECM/PCM. If the ECM/PCM was updated, substitute a known-good ECM/PCM (see **SUBSTITUTING THE ECM/PCM**), then go to step 32. If the ECM/PCM was substituted, go to step 1. If the screen indicates EXECUTING or OUT OF CONDITION, keep idling until a result comes on.

DTC P0451: FTP SENSOR CIRCUIT RANGE/PERFORMANCE PROBLEM

NOTE:

- **Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see GENERAL TROUBLESHOOTING INFORMATION).**
- **If DTC P2422 is stored at the same time as DTC P0451, troubleshoot DTC P2422 first, then recheck for DTC P0451.**

1. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
2. Clear the DTC with the HDS.
3. Start the engine, and let it idle for 1 minute.
4. Monitor the OBD STATUS for DTC P0451 in the DTCs MENU with the HDS.

   Does the screen indicate FAILED?

   YES - Go to step 5.

   NO - If the screen indicates PASSED, intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at the FTP sensor and the ECM/PCM. If the screen indicates NOT COMPLETED, keep idling until a result comes on.

5. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
6. Replace the FTP sensor; without SH-AWD (see **FTP SENSOR REPLACEMENT**), with SH-AWD (see **WITH SH-AWD**).
7. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
8. Reset the ECM/PCM with the HDS.
9. Do the ECM/PCM idle learn procedure (see **ECM/PCM IDLE LEARN PROCEDURE**).
10. Start the engine, and let it idle for 1 minute.
11. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P0451 indicated?

YES - Check for poor connections or loose terminals at the FTP sensor and the ECM/PCM, then go to step 1.

NO - Go to step 12.

12. Monitor the OBD STATUS for DTC P0451 in the DTCs MENU with the HDS.

    Does the screen indicate PASSED?

    YES - Troubleshooting is complete. If any other Pending or Confirmed DTCs were indicated in step 11, go to the indicated **DTC'S TROUBLESHOOTING**.

    NO - If the screen indicates FAILED, check for poor connections or loose terminals at the FTP sensor and the ECM/PCM, then go to step 1. If the screen indicates NOT COMPLETED, keep idling until a result comes on.

DTC P0452: FTP SENSOR CIRCUIT LOW VOLTAGE

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see GENERAL TROUBLESHOOTING INFORMATION).

1. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
2. Clear the DTC with the HDS.
3. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
4. Remove the fuel fill cap.
5. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
6. Check the FTP SENSOR in the DATA LIST with the HDS.

   Is about - 7.3 kPa (- 2.16 inHg, - 55 mmHg), or 0.3 V or less indicated?

   YES - Go to step 10.

   NO - Go to step 7.

7. Install the fuel fill cap.
8. Start the engine.
9. Monitor the OBD STATUS for DTC P0452 in the DTCs MENU with the HDS.

   Does the screen indicate FAILED?

   YES - Go to step 10.

   NO - If the screen indicates PASSED, intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at the FTP sensor and the ECM/PCM. If the screen indicates NOT

COMPLETED, keep idling until a result comes on.

10. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
11. Disconnect the FTP sensor 3P connector.
12. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
13. Check the FTP SENSOR in the DATA LIST with the HDS.

    Is about - 7.3 kPa (- 2.16 inHg, - 55 mmHg), or 0.3 V or less indicated?

    YES - Go to step 20.

    NO - Go to step 14.

14. Measure the voltage between FTP sensor 3P connector terminal No. 1 and body ground.

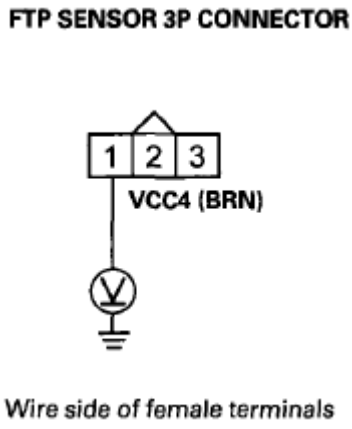


Fig. 10: Measuring Voltage Between FTP Sensor 3P Connector Terminal No. 1 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there about 5 V?

YES - Go to step 24.

NO - Go to step 15.

15. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
16. Jump the SCS line with the HDS.
17. Disconnect ECM/PCM connector A (49P).
18. Connect FTP sensor 3P connector terminal No. 1 to body ground with a jumper wire.

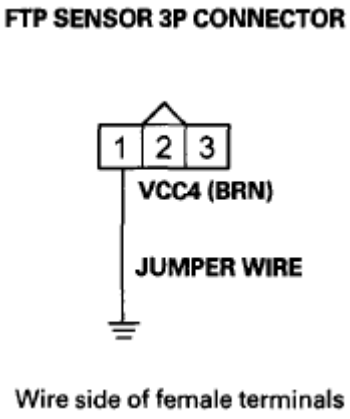


Fig. 11: Connecting FTP Sensor 3P Connector Terminal No. 1 To Body Ground With Jumper Wire
Courtesy of AMERICAN HONDA MOTOR CO., INC.

19. Check for continuity between ECM/PCM connector terminal A25 and body ground.

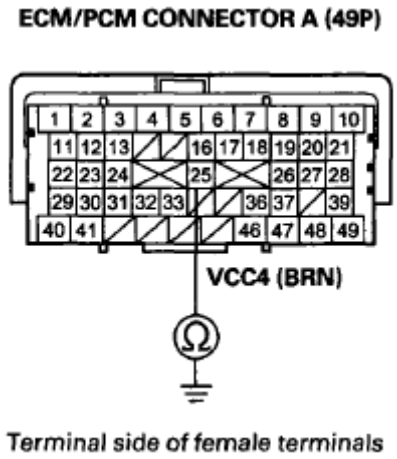


Fig. 12: Checking Continuity Between ECM/PCM Connector Terminal A25 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 32.

NO - Repair open in the wire between the ECM/PCM (A25) and the FTP sensor, then go to step 26.

20. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
21. Jump the SCS line with the HDS.
22. Disconnect ECM/PCM connector A (49P).
23. Check for continuity between FTP sensor 3P connector terminal No. 2 and body ground.

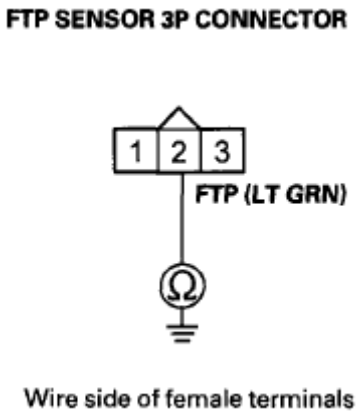


Fig. 13: Checking Continuity Between FTP Sensor 3P Connector Terminal No. 2 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair short in the wire between the ECM/PCM (A39) and the FTP sensor, then go to step 26.

NO - Go to step 32.

24. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
25. Replace the FTP sensor; without SH-AWD (see **FTP SENSOR REPLACEMENT**), with SH-AWD (see **WITH SH-AWD**).
26. Reconnect all connectors.
27. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
28. Reset the ECM/PCM with the HDS.
29. Do the ECM/PCM idle learn procedure (see **ECM/PCM IDLE LEARN PROCEDURE**).
30. Check for Pending or Confirmed DTCs with the HDS.

Is DTC P0452 indicated?

YES - Check for poor connections or loose terminals at the FTP sensor and the ECM/PCM, then go to step 1.

NO - Go to step 31.

31. Monitor the OBD STATUS for DTC P0452 in the DTCs MENU with the HDS.

Does the screen indicate PASSED?

YES - Troubleshooting is complete. If any other Pending or Confirmed DTCs were indicated in step 30, go to the indicated **DTC'S TROUBLESHOOTING**.

NO - If the screen indicates FAILED, check for poor connections or loose terminals at the FTP sensor and the ECM/PCM, then go to step 1. If the screen indicates NOT COMPLETED, keep idling until a result comes on.

32. Reconnect all connectors.
33. Update the ECM/PCM if it does not have the latest software (see **ECM/PCM UPDATE**), or substitute a known-good ECM/PCM (see **SUBSTITUTING THE ECM/PCM**).
34. Start the engine, and let it idle.
35. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P0452 indicated?

    YES - Check for poor connections or loose terminals at the FTP sensor and the ECM/PCM. If the ECM/PCM was updated, substitute a known-good ECM/PCM (see **SUBSTITUTING THE ECM/PCM**), then go to step 34. If the ECM/PCM was substituted, go to step 1.

    NO - Go to step 36.

36. Monitor the OBD STATUS for DTC P0452 in the DTCs MENU with the HDS.

    Does the screen indicate PASSED?

    YES - If the ECM/PCM was updated, troubleshooting is complete. If the ECM/PCM was substituted, replace the original ECM/PCM (see **ECM/PCM REPLACEMENT**). If any other Pending or Confirmed DTCs were indicated in step 35, go to the indicated **DTC'S TROUBLESHOOTING**.

    NO - If the screen indicates FAILED, check for poor connections or loose terminals at the FTP sensor and the ECM/PCM. If the ECM/PCM was updated, substitute a known-good ECM/PCM (see **SUBSTITUTING THE ECM/PCM**), then go to step 34. If the ECM/PCM was substituted, go to step 1. If the screen indicates NOT COMPLETED, keep idling until a result comes on.

DTC P0453: FTP SENSOR CIRCUIT HIGH VOLTAGE

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see GENERAL TROUBLESHOOTING INFORMATION).

1. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
2. Clear the DTC with the HDS.
3. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
4. Remove the fuel fill cap.
5. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
6. Check the FTP SENSOR in the DATA LIST with the HDS.

   Is about 7.3 kPa (2.16 inHg, 55 mmHg), or 4.7 V or more indicated?

YES - Go to step 10.

NO - Go to step 7.

7. Install the fuel fill cap.
8. Start the engine.
9. Monitor the OBD STATUS for DTC P0453 in the DTCs MENU with the HDS.

   Does the screen indicate FAILED?

   YES - Go to step 10.

   NO - If the screen indicates PASSED, intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at the FTP sensor and the ECM/PCM. If the screen indicates NOT COMPLETED, keep idling until a result comes on.

10. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
11. Disconnect the FTP sensor 3P connector.
12. Connect FTP sensor 3P connector terminals No. 2 and No. 3 with a jumper wire.

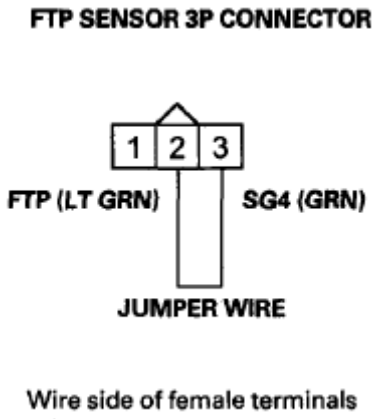


Fig. 14: Connecting FTP Sensor 3P Connector Terminals No. 2 And No. 3 With Jumper Wire
Courtesy of AMERICAN HONDA MOTOR CO., INC.

13. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
14. Check the FTP SENSOR in the DATA LIST with the HDS.

    Is about 7.3 kPa (2.16 inHg, 55 mmHg), or 4.7 V or more indicated?

    YES - Go to step 15.

    NO - Go to step 26.

15. Measure the voltage between FTP sensor 3P connector terminals No. 1 and No. 3.

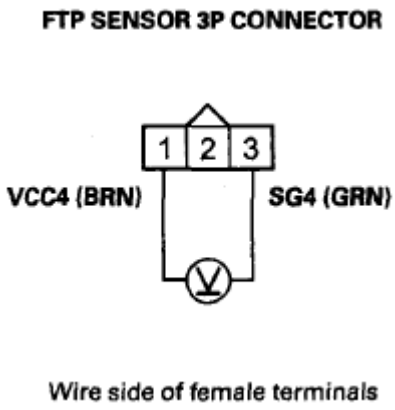


Fig. 15: Measuring Voltage Between FTP Sensor 3P Connector Terminals No. 1 And No. 3
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there about 5 V?

YES - Go to step 21.

NO - Go to step 16.

16. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
17. Jump the SCS line with the HDS.
18. Disconnect ECM/PCM connector A (49P).
19. Connect FTP sensor 3P connector terminal No. 3 to body ground with a jumper wire.

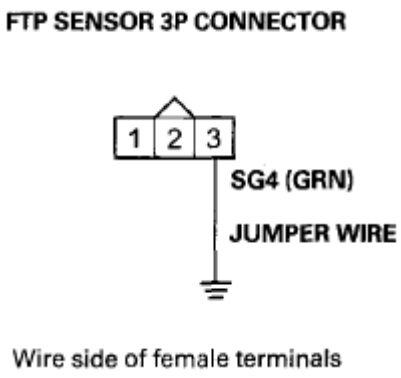


Fig. 16: Connecting FTP Sensor 3P Connector Terminal No. 3 To Body Ground With Jumper Wire
Courtesy of AMERICAN HONDA MOTOR CO., INC.

20. Check for continuity between ECM/PCM connector terminal A27 and body ground.

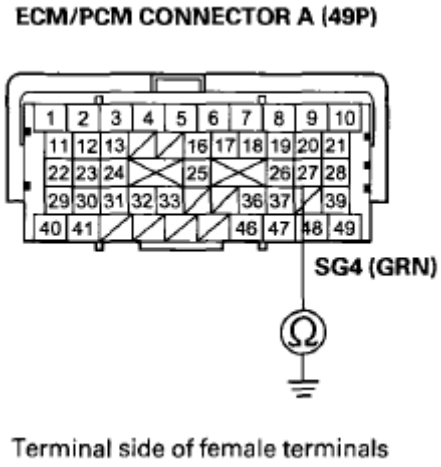


Fig. 17: Checking Continuity Between ECM/PCM Connector Terminal A27 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 34.

NO - Repair open in the wire between the ECM/PCM (A27) and the FTP sensor, then go to step 28.

21. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
22. Jump the SCS line with the HDS.
23. Disconnect ECM/PCM connector A (49P).
24. Connect FTP sensor 3P connector terminal No. 2 to body ground with a jumper wire.

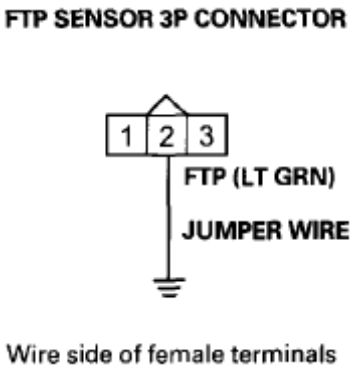


Fig. 18: Connecting FTP Sensor 3P Connector Terminal No. 2 To Body Ground With Jumper Wire
Courtesy of AMERICAN HONDA MOTOR CO., INC.

25. Check for continuity between ECM/PCM connector terminal A39 and body ground.

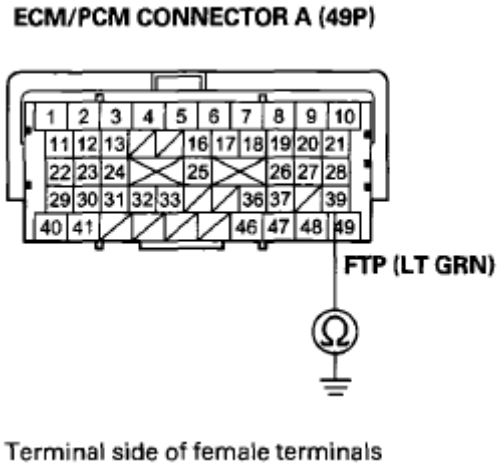


Fig. 19: Checking Continuity Between ECM/PCM Connector Terminal A39 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 34.

NO - Repair open in the wire between the ECM/PCM (A39) and the FTP sensor, then go to step 28.

26. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
27. Replace the FTP sensor; without SH-AWD (see **FTP SENSOR REPLACEMENT**), with SH-AWD (see **WITH SH-AWD**).
28. Reconnect all connectors.
29. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
30. Reset the ECM/PCM with the HDS.
31. Do the ECM/PCM idle learn procedure (see **ECM/PCM IDLE LEARN PROCEDURE**).
32. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P0453 indicated?

    YES - Check for poor connections or loose terminals at the FTP sensor and the ECM/PCM, then go to step 1.

    NO - Go to step 33.

33. Monitor the OBD STATUS for DTC P0453 in the DTCs MENU with the HDS.

    Does the screen indicate PASSED?

    YES - Troubleshooting is complete. If any other Pending or Confirmed DTCs were indicated in step 32, go to the indicated **DTC'S TROUBLESHOOTING**.

NO - If the screen indicates FAILED, check for poor connections or loose terminals at the FTP sensor and the ECM/PCM, then go to step 1. If the screen indicates NOT COMPLETED, keep idling until a result comes on.

34. Reconnect all connectors.
35. Update the ECM/PCM if it does not have the latest software (see **ECM/PCM UPDATE**), or substitute a known-good ECM/PCM (see **SUBSTITUTING THE ECM/PCM**).
36. Start the engine, and let it idle.
37. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P0453 indicated?

    YES - Check for poor connections or loose terminals at the FTP sensor and the ECM/PCM. If the ECM/PCM was updated, substitute a known-good ECM/PCM (see **SUBSTITUTING THE ECM/PCM**), then go to step 36. If the ECM/PCM was substituted, go to step 1.

    NO - Go to step 38.

38. Monitor the OBD STATUS for DTC P0453 in the DTCs MENU with the HDS.

    Does the screen indicate PASSED?

    YES - If the ECM/PCM was updated, troubleshooting is complete. If the ECM/PCM was substituted, replace the original ECM/PCM (see **ECM/PCM REPLACEMENT**). If any other Pending or Confirmed DTCs were indicated in step 37, go to the indicated **DTC'S TROUBLESHOOTING**.

    NO - If the screen indicates FAILED, check for poor connections or loose terminals at the FTP sensor and the ECM/PCM. If the ECM/PCM was updated, substitute a known-good ECM/PCM (see **SUBSTITUTING THE ECM/PCM**), then go to step 36. If the ECM/PCM was substituted, go to step 1. If the screen indicates NOT COMPLETED, keep idling until a result comes on.

DTC P0455: EVAP SYSTEM LARGE LEAK DETECTED; DTC P0456: EVAP SYSTEM VERY SMALL LEAK DETECTED

NOTE: **The fuel system is designed to allow specified maximum vacuum and pressure conditions. Do not deviate from the vacuum and pressure tests as indicated in these procedures. Excessive pressure/vacuum would damage the EVAP components or cause eventual fuel tank failure.**

Special Tools Required

Vacuum Pump/Gauge, 0- 30 inHg Snap-on YA4000A or equivalent, commercially available

NOTE:

- **Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see GENERAL TROUBLESHOOTING INFORMATION).**

- **Fresh fuel has a higher volatility that will create greater pressure/vacuum. The best condition for testing is less than a full tank of fresh fuel. If possible, to assist in leak detection, add 1 gallon of fresh fuel to the tank (as long as it will not fill the tank), just before starting these procedures.**

1. Check the fuel fill cap (the cap must say TIGHTEN TO CLICK). It should turn 1/4 turn after it's tight, then it clicks.

   Is the correct fuel fill cap installed and properly tightened?

   YES - Go to step 2.

   NO - Replace or tighten the cap, then go to step 30.

2. Check the fuel fill cap seal (A) and the fuel fill pipe mating surface (B). Verify that the fuel fill cap tether cord (C) is not caught under the cap.

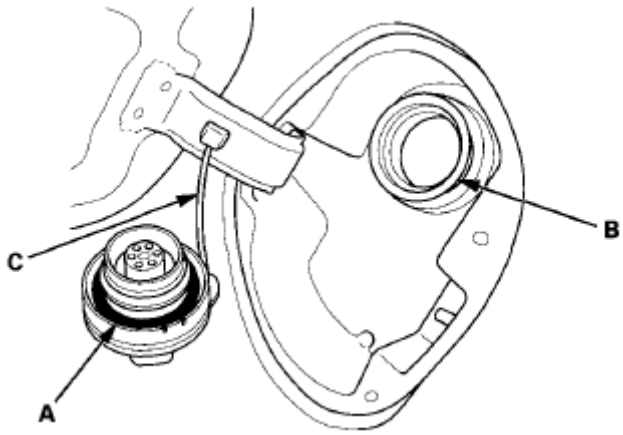


Fig. 20: Checking Fuel Fill Cap Seal And Fuel Fill Pipe Mating Surface
Courtesy of AMERICAN HONDA MOTOR CO., INC.

   Is the fuel fill cap seal missing or damaged, is the fuel fill pipe damaged, or is the tether cord caught under the cap?

   YES - Replace the fuel fill cap or the fuel fill pipe, then go to step 30.

   NO - Go to step 3.

3. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
4. Clear the DTC with the HDS.
5. Do the EVAP FUNCTION TEST in the INSPECTION MENU with the HDS.

   Is the result OK?

YES - Intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at the FTP sensor, the EVAP canister purge valve, or the EVAP canister vent shut valve, and the ECM/PCM.

NO - Go to step 6.

6. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
7. Check for a poor connection or damage at the fuel tank vapor recirculation tube.

   Is the tube OK

   YES -

   - With SH-AWD: Go to step 8.
   - Without SH-AWD: Go to step 9.

   NO -

   - Replace the fuel tank vapor recirculation tube, then go to step 29.
   - If necessary, replace the fuel tank; with SH-AWD (see **WITH SH-AWD**), without SH-AWD (see **FUEL TANK REPLACEMENT**), then go to step 29.
8. Remove the fuel tank (see **REMOVAL (WITH SH-AWD)**).
9. Disconnect the fuel tank vapor recirculation tube (A) and fresh air hose (B) from the EVAP canister (C), and plug the EVAP canister ports (D).

   With SH-AWD

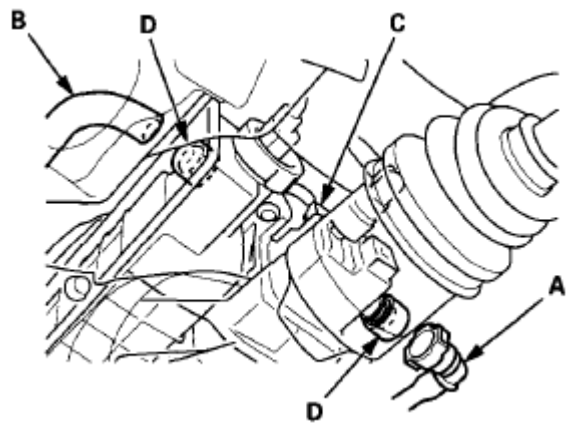


Fig. 21: Identifying Fuel Tank Vapor Recirculation Tube, EVAP Canister, EVAP Canister Ports (With SH-AWD)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Without SH-AWD B

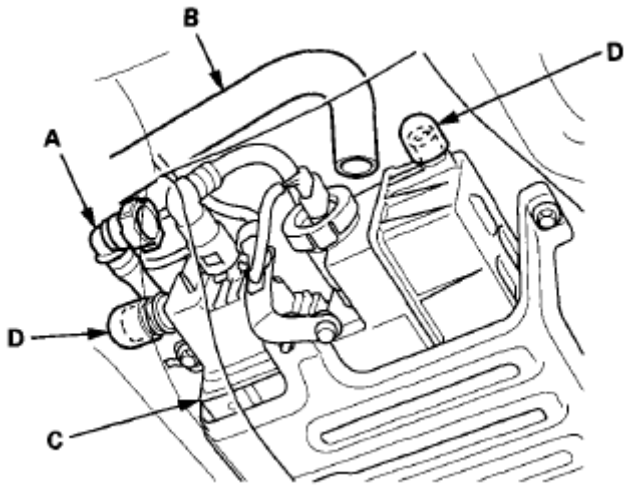


Fig. 22: Identifying Fuel Tank Vapor Recirculation Tube, EVAP Canister, EVAP Canister Ports (Without SH-AWD)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

10. Disconnect the vacuum hose (engine side) (A) from the EVAP canister purge valve (B) in the engine compartment, and connect a vacuum pump/gauge, 0- 30 inHg, to the purge valve as shown.

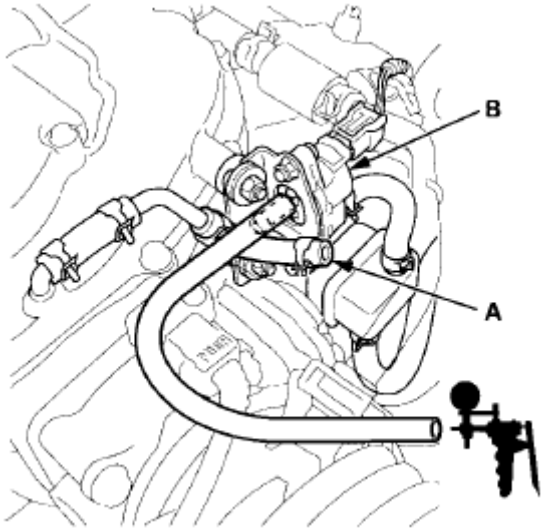


Fig. 23: Identifying Vacuum Hose And Valve
Courtesy of AMERICAN HONDA MOTOR CO., INC.

11. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
12. Select EVAP PCS ON in the INSPECTION MENU with the HDS.
13. Apply vacuum to the hose until the FTP reads 1.90 V (- 0.59 inHg, - 15.1 mmHg).

NOTE: Be careful not to exceed the specified vacuum. If you do, the FTP sensor can be damaged.

14. Select EVAP PCS OFF in the INSPECTION MENU with the HDS, then remove the vacuum pump from the purge valve.
15. Monitor the FTP SENSOR in the DATA LIST for 1 minute with the HDS, and remove the vacuum pump from the purge valve.

    Does the voltage increase more than 0.2 V (0.1 inHg, 2.5 mmHg)?

    YES - Go to step 16.

    NO - Go to step 21.

16. Reconnect the vacuum hose (engine side) to the EVAP canister purge valve.
17. Disconnect the vacuum hose (EVAP canister side) (A) from the EVAP canister purge valve (B) in the engine compartment, and connect the vacuum pump/gauge to the vacuum hose as shown.

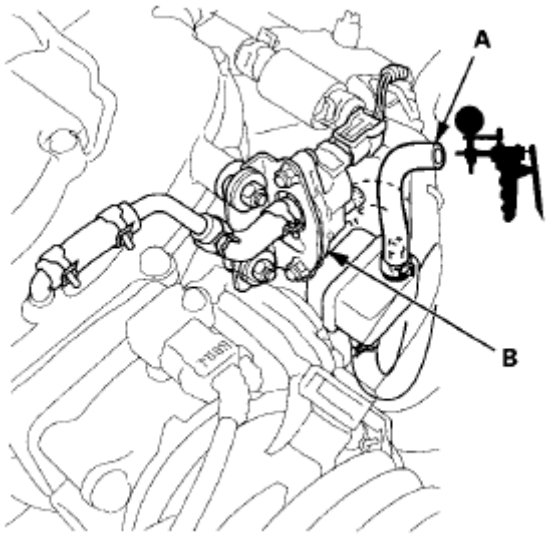


Fig. 24: Identifying Vacuum Hose And EVAP Canister Purge Valve
Courtesy of AMERICAN HONDA MOTOR CO., INC.

18. Apply vacuum to the hose until the FTP reads 1.90 V (- 0.59 inHg, - 15.1 mmHg).

    NOTE: Be careful not to exceed the specified vacuum. If you do, the FTP sensor can be damaged.

19. Monitor the FTP SENSOR in the DATA LIST for 1 minute with the HDS.

    Does the voltage increase more than 0.2 V (0.1 inHg, 2.5 mmHg)?

    YES - Go to step 20.

    NO - Replace the EVAP canister purge valve (see **EVAP CANISTER PURGE VALVE**

REPLACEMENT), then go to step 29.

20. Check for a loose or damaged EVAP canister purge line between the EVAP canister and the EVAP canister purge valve.

    Is the line OK

    YES - Replace these parts, then go to step 29:

    - FTP sensor O-ring
    - EVAP canister vent shut valve case and O-ring
    - EVAP canister

    NO - Reconnect or repair the EVAP canister purge line, then go to step 29.

21. Reconnect the fresh air hose (A) to the EVAP canister (B).

    With SH-AWD

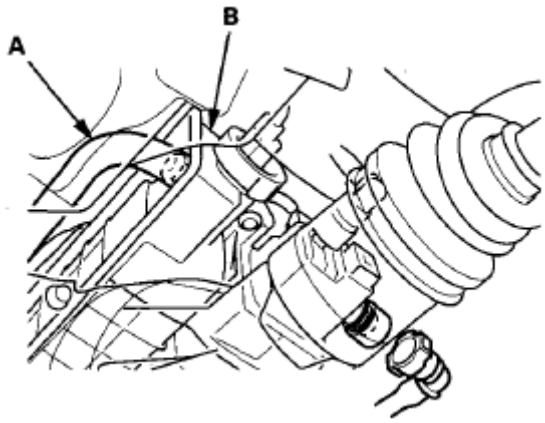


Fig. 25: Identifying Fresh Air Hose And EVAP Canister (With SH-AWD)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Without SH-AWD

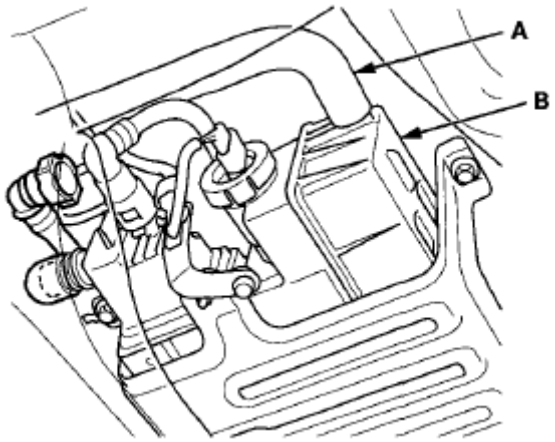


Fig. 26: Identifying Fresh Air Hose And EVAP Canister (Without SH-AWD)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

22. Reconnect the vacuum hose (engine side) to the EVAP canister purge valve.
23. Disconnect the vacuum hose (EVAP canister side) (A) from the EVAP canister purge valve (B) in the engine compartment, and connect the vacuum pump/gauge to the purge valve as shown.

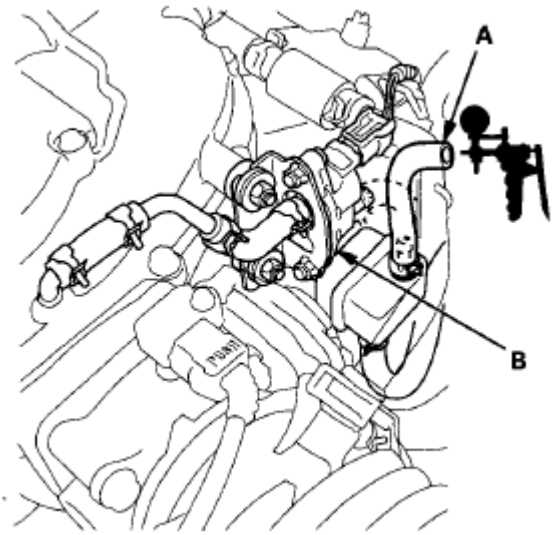


Fig. 27: Identifying Vacuum Hose And EVAP Canister Purge Valve
Courtesy of AMERICAN HONDA MOTOR CO., INC.

24. Select EVAP CVS ON in the INSPECTION MENU with the HDS.
25. Apply vacuum to the EVAP system until the FTP reads 1.90 V (- 0.59 inHg,- 15.1 mmHg).

NOTE: Be careful not to exceed the specified vacuum. If you do, the FTP sensor can be damaged.

26. Monitor the FTP SENSOR in the DATA LIST for 1 minute with the HDS.

Does the voltage increase more than 0.2 V (0.1 inHg, 2.5 mmHg)?

YES - Replace the EVAP canister vent shut valve; with SH-AWD (see **WITH SH-AWD**), without SH-AWD (see **WITH SH-AWD**), then go to step 29.

NO - Go to step 27.

27. Select EVAP CVS OFF in the INSPECTION MENU with the HDS.
28. Check these parts for looseness or damage:
    - Fuel fill pipe
    - Fuel vapor return pipe

    Are the parts OK

    YES -

    - With SH-AWD: Check the fuel tank unit base gasket (see **REMOVAL (WITH SH-AWD)**), the secondary fuel gauge sending unit base gasket (see **SECONDARY FUEL GAUGE SENDING UNIT REMOVAL/INSTALLATION**), and check the fuel tank, then go to step 31.
    - Without SH-AWD: Check the fuel tank unit base gasket (see **FUEL TANK UNIT REMOVAL AND INSTALLATION**), and check the fuel tank, then go to step 31.

    NO - Repair or replace the damaged parts, then go to step 29.

29. Reconnect all hoses and connectors.
30. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
31. Reset the ECM/PCM with the HDS.
32. Do the ECM/PCM idle learn procedure (see **ECM/PCM IDLE LEARN PROCEDURE**).
33. Do the EVAP FUNCTION TEST in the INSPECTION MENU with the HDS.

    Is the result OK?

    YES - Troubleshooting is complete.

    NO - Check for poor connections or loose terminals at the FTP sensor, the EVAP canister purge valve, the EVAP canister vent shut valve, and the ECM/PCM, then go to step 1.

DTC P0457: EVAP SYSTEM LEAK DETECTED/FUEL FILL CAP LOOSE OR MISSING

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see GENERAL TROUBLESHOOTING INFORMATION).

1. Check the fuel fill cap (the cap must say TIGHTEN TO CLICK). It should turn 1/4 turn after it's tight, then it clicks.

Is the correct fuel fill cap installed and properly tightened?

YES - Go to step 2.

NO - Replace or tighten the cap, then go to step 20.

2. Check the fuel fill cap seal (A) and the fuel fill pipe mating surface (B). Verify that the fuel fill cap tether cord (C) is not caught under the cap.

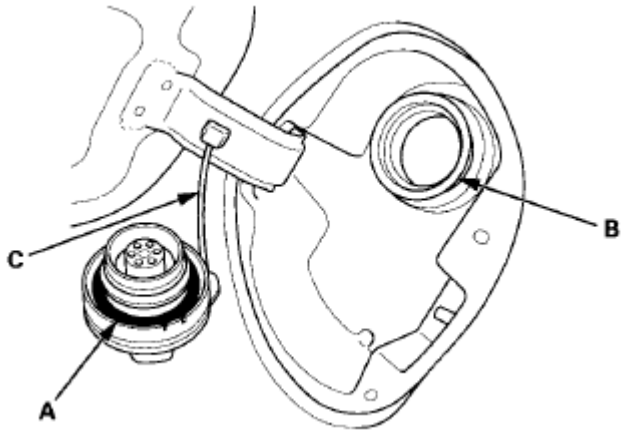


Fig. 28: Identifying Fuel Fill Cap Seal, Mating Surface And Tether Cord
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is the fuel fill cap seal missing or damaged, is the fuel fill pipe damaged, or is the tether cord caught under the cap?

YES - Replace the fuel fill cap or the fuel fill pipe, then go to step 20.

NO - Go to step 3.

3. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
4. Clear the DTC with the HDS.
5. Do the EVAP FUNCTION TEST in the INSPECTION MENU with the HDS.

Is the result OK?

YES - Intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at the FTP sensor, the EVAP canister vent shut valve, and the ECM/PCM.

NO - Go to step 6.

6. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
7. Remove the EVAP canister vent shut valve from the EVAP canister; without SH-AWD (see **WITH SH-AWD**), with SH-AWD (see **WITH SH-AWD**).

8. Connect the 2P connector to the EVAP canister vent shut valve.
9. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
10. Select EVAP CVS ON in the INSPECTION MENU with the HDS.
11. Check the EVAP canister vent shut valve (A) operation.

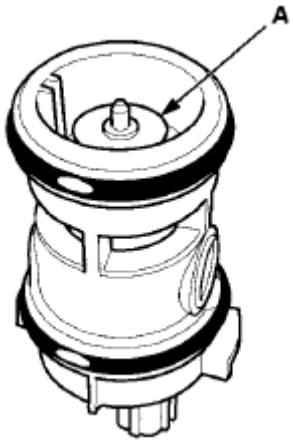


Fig. 29: Identifying EVAP Canister Vent Shut Valve
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Does the valve operate?

YES - Go to step 18.

NO - Go to step 12.

12. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
13. Replace the EVAP canister vent shut valve; without SH-AWD system (see **WITH SH-AWD**), with SH-AWD system (see **WITH SH-AWD**).
14. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
15. Reset the ECM/PCM with the HDS.
16. Do the ECM/PCM idle learn procedure (see **ECM/PCM IDLE LEARN PROCEDURE**).
17. Do the EVAP FUNCTION TEST in the INSPECTION MENU with the HDS.

Is the result OK?

YES - Troubleshooting is complete.

NO - Check for poor connections or loose terminals at the FTP sensor, the EVAP canister vent shut valve, and the ECM/PCM, then go to step 1.

18. Check the EVAP canister vent tube.

Is there any damage or blockage?

YES - YES-Remove the blockage, and replace the EVAP canister vent tube if needed, then go to step 19.

NO - Do the DTC P0455 troubleshooting (see **DTC P0455: EVAP SYSTEM LARGE LEAK DETECTED; DTC P0456: EVAP SYSTEM VERY SMALL LEAK DETECTED**).

19. Reinstall the EVAP canister vent shut valve.
20. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
21. Reset the ECM/PCM with the HDS.
22. Do the ECM/PCM idle learn procedure (see **ECM/PCM IDLE LEARN PROCEDURE**).
23. Do the EVAP FUNCTION TEST in the INSPECTION MENU with the HDS.

Is the result OK?

YES - Troubleshooting is complete.

NO - Check for poor connections or loose terminals at the FTP sensor, the EVAP canister vent shut valve, and the ECM/PCM, then go to step 1.

DTC P0496: EVAP SYSTEM HIGH PURGE FLOW DETECTED

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see GENERAL TROUBLESHOOTING INFORMATION).

1. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
2. Clear the DTC with the HDS.
3. Do the EVAP FUNCTION TEST in the INSPECTION MENU with the HDS.

Is the result OK?

YES - Intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at the FTP sensor, the EVAP canister purge valve, the EVAP canister vent shut valve, and the ECM/PCM.

NO - Go to step 4.

NOTE: If the test could not be completed because of another DTC, do the troubleshooting for that DTC, then go to step 4.

4. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
5. Replace the EVAP canister purge valve (see **EVAP CANISTER PURGE VALVE REPLACEMENT**).
6. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
7. Reset the ECM/PCM with the HDS.
8. Do the ECM/PCM idle learn procedure (see **ECM/PCM IDLE LEARN PROCEDURE**).
9. Do the EVAP FUNCTION TEST in the INSPECTION MENU with the HDS.

Is the result OK?

YES - Troubleshooting is complete.

NO - Check for poor connections or loose terminals at the FTP sensor, the EVAP canister purge valve, the EVAP canister vent shut valve, and the ECM/PCM, then go to step 1.

DTC P0497: EVAP SYSTEM LOW PURGE FLOW DETECTED (WITHOUT SH-AWD)

Special Tools Required

- Vacuum Pump/Gauge, 0- 30 inHg Snap-on YA4000A or equivalent, commercially available
- Vacuum/Pressure Gauge, 0- 4 inHg 07JAZ-001000B

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see GENERAL TROUBLESHOOTING INFORMATION).

1. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
2. Clear the DTC with the HDS.
3. Do the EVAP FUNCTION TEST in the INSPECTION MENU with the HDS.

   Is the result OK?

   YES - Intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at the EVAP canister purge valve, the FTP sensor, and the PCM.

   NO - Go to step 4.

4. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
5. Check for a poor connection, a blockage, or damage at the EVAP canister purge line between the throttle body and the EVAP canister.

   Is the line OK?

   YES - Go to step 6.

   NO - Reconnect or repair the EVAP canister purge line, then go to step 24.

6. Disconnect the vacuum hose (A) from the EVAP canister purge valve (B).

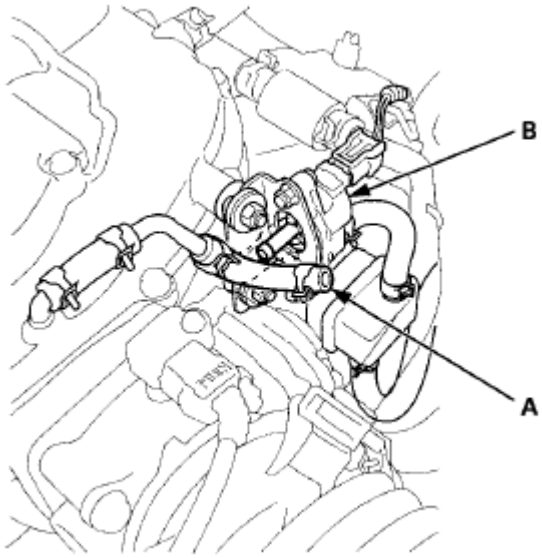


Fig. 30: Identifying Vacuum Hose And EVAP Canister Purge Valve
Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Disconnect the vacuum hose (A) from the purge line (at the EVAP canister side), then connect a T-fitting (B), a vacuum gauge, and a vacuum pump/gauge, 0- 30 inHg, to the hose as shown.

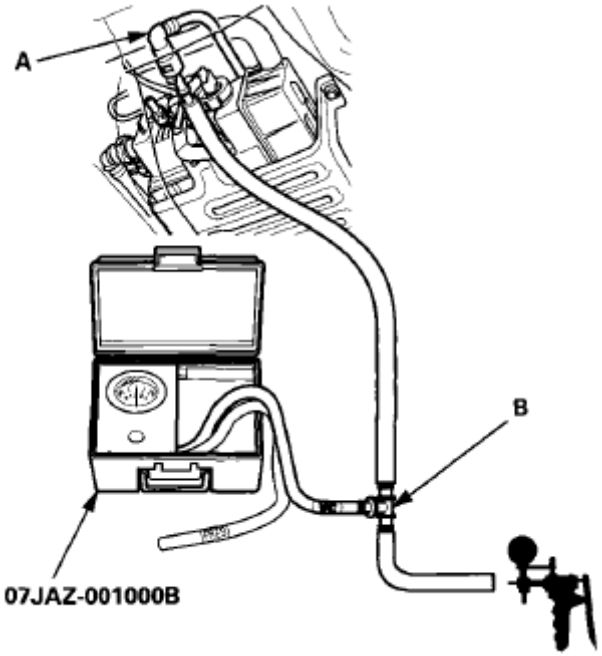


Fig. 31: Identifying Vacuum Hose And T-Fitting
Courtesy of AMERICAN HONDA MOTOR CO., INC.

8. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
9. Apply about 2 kPa (0.6 inHg, 15 mmHg) of vacuum to the hose.

10. Select EVAP PCS ON in the INSPECTION MENU with the HDS.

    Does the vacuum release immediately?

    YES - Go to step 15.

    NO - Go to step 11.

11. Select EVAP PCS OFF in the INSPECTION MENU with the HDS.
12. Disconnect the vacuum hose (A) from the EVAP canister purge valve (B). Connect the T-fitting (C), the vacuum gauge, and the vacuum pump/gauge to the EVAP canister purge valve as shown.

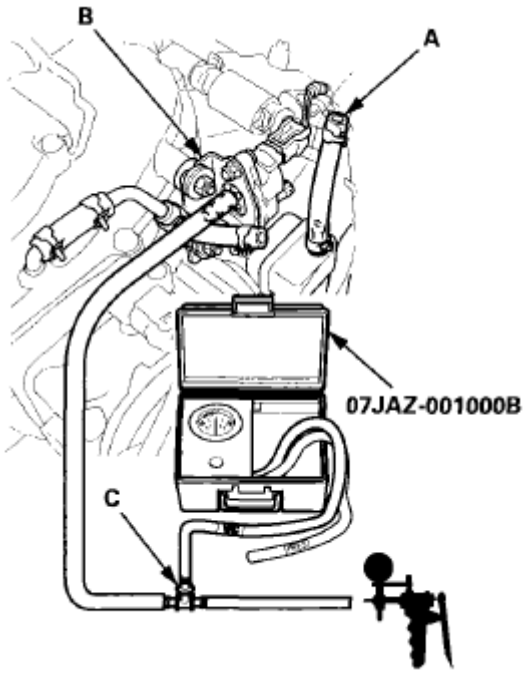


Fig. 32: Identifying Vacuum Hose, EVAP Canister Purge Valve And T-Fitting
Courtesy of AMERICAN HONDA MOTOR CO., INC.

13. Apply about 2 kPa (0.6 inHg, 15 mmHg) of vacuum to the purge valve.
14. Select EVAP PCS ON in the INSPECTION MENU with the HDS.

    Does the vacuum release immediately?

    YES - Check for a blockage in the vacuum hose between the EVAP canister purge valve and the EVAP canister, then go to step 24.

    NO - Replace the EVAP canister purge valve (see **EVAP CANISTER PURGE VALVE REPLACEMENT**), then go to step 24.

15. Connect the vacuum pump/gauge to the vacuum hose (A) as shown.

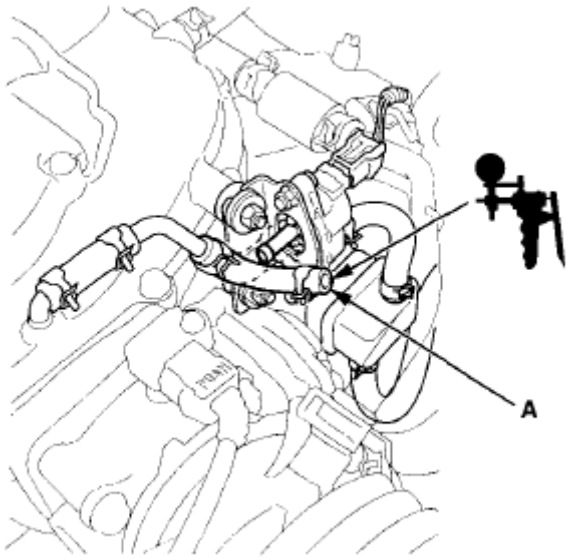


Fig. 33: Identifying Vacuum Hose
Courtesy of AMERICAN HONDA MOTOR CO., INC.

16. Start the engine, and let it idle.

    Is there vacuum?

    YES - Go to step 17.

    NO - Check for a blockage in the vacuum hose between the EVAP canister purge valve and the intake manifold, then go to step 24.

17. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
18. Remove the FTP sensor with its connector connected (see **FTP SENSOR REPLACEMENT**).
19. Connect the T-fitting (A), the vacuum gauge, and the vacuum pump/gauge to the FTP sensor (B) as shown.

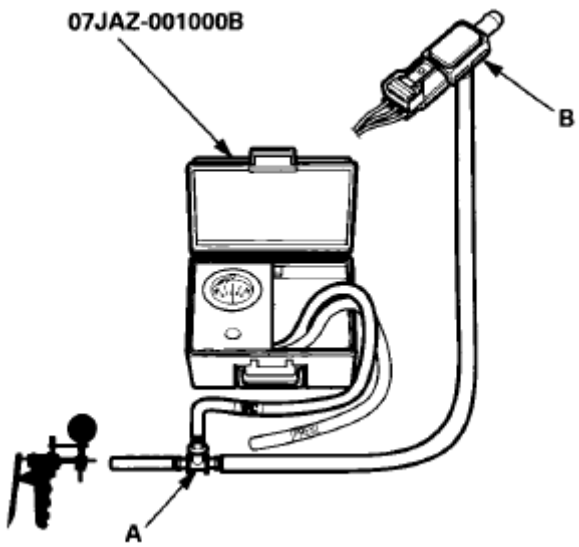


Fig. 34: Identifying T-Fitting, Vacuum Gauge And FTP Sensor
Courtesy of AMERICAN HONDA MOTOR CO., INC.

20. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
21. Check and record the FTP SENSOR reading in the DATA LIST with the HDS.
22. Slowly apply about 1.3 kPa (0.4 inHg, 10 mmHg) of vacuum to the hose.
23. Check the FTP SENSOR in the DATA LIST with the HDS.

    Does the value change?

    YES - Check for debris or a blockage at the EVAP canister port, then go to step 24.

    NO - Replace the FTP sensor (see **FTP SENSOR REPLACEMENT**), then go to step 24.

24. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
25. Reset the PCM with the HDS.
26. Do the PCM idle learn procedure (see **ECM/PCM IDLE LEARN PROCEDURE**).
27. Do the EVAP FUNCTION TEST in the INSPECTION MENU with the HDS.

    Is the result OK?

    YES - Troubleshooting is complete.

    NO - Check for poor connections or loose terminals at the EVAP canister purge valve, the FTP sensor, and the PCM, then go to step 1.

DTC P0497: EVAP SYSTEM LOW PURGE FLOW DETECTED (WITH SH-AWD)

Special Tools Required

- Vacuum Pump/Gauge, 0- 30 inHg Snap-on YA4000A or equivalent, commercially available
- Vacuum/Pressure Gauge, 0- 4 inHg 07JAZ-001000B

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see GENERAL TROUBLESHOOTING INFORMATION).

1. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
2. Clear the DTC with the HDS.
3. Select EVAP FUNCTION TEST in the INSPECTION MENU with the HDS.

   Is the result OK?

   YES - Intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at the EVAP canister purge valve, the FTP sensor, and the ECM/PCM.

   NO - Go to step 4.

4. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
5. Check for a poor connection, a blockage, or damage at the EVAP canister purge line between the throttle body and the EVAP canister.

   Is the line OK?

   YES - Go to step 6.

   NO - Reconnect or repair the EVAP canister purge line, then go to step 25.

6. Disconnect the vacuum hose (A) from the EVAP canister purge valve (B).

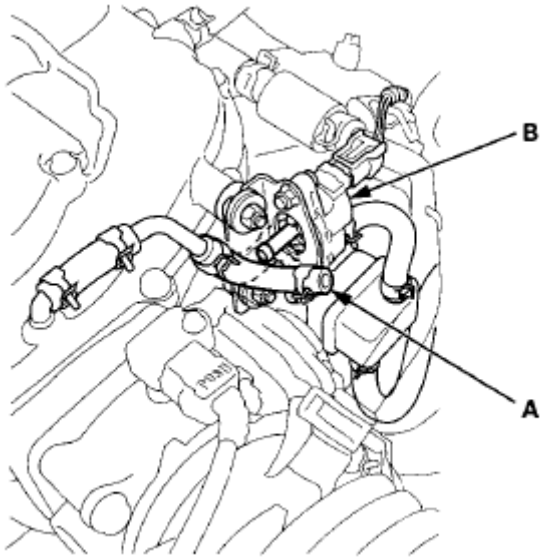


Fig. 35: Identifying Vacuum Hose And EVAP Canister Purge Valve
Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Remove the trunk front trim panel (see **TRIM REMOVAL/INSTALLATION - TRUNK AREA**), then remove the access panel from the floor (see step 2).
8. Disconnect the vacuum hose (A) from the purge line (at the EVAP canister side), then connect a T-fitting (B), a vacuum gauge, and a vacuum pump/gauge to the hose as shown.

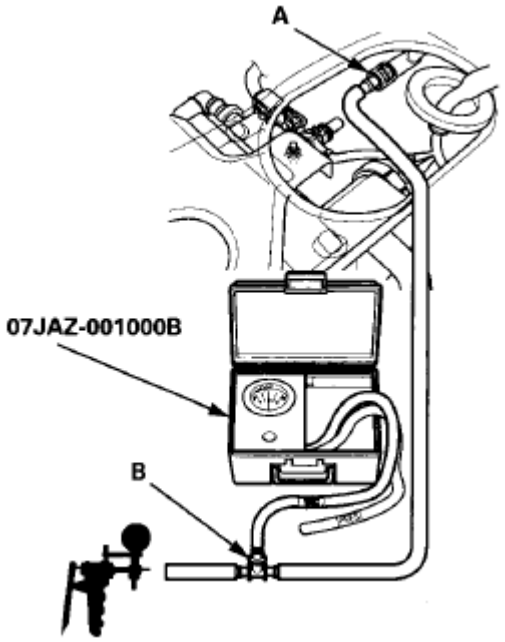


Fig. 36: Identifying Vacuum Hose And T-Fitting
Courtesy of AMERICAN HONDA MOTOR CO., INC.

9. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.

10. Apply about 2 kPa (0.6 inHg, 15 mmHg) of vacuum to the hose.
11. Select EVAP PCS ON in the INSPECTION MENU with the HDS.

    Does the vacuum release immediately?

    YES - Go to step 16.

    NO - Go to step 12.

12. Select EVAP PCS OFF in the INSPECTION MENU with the HDS.
13. Disconnect the vacuum hose (A) from the EVAP canister purge valve (B). Connect the T-fitting (C), the vacuum gauge, and the vacuum pump/gauge to the EVAP canister purge valve as shown.

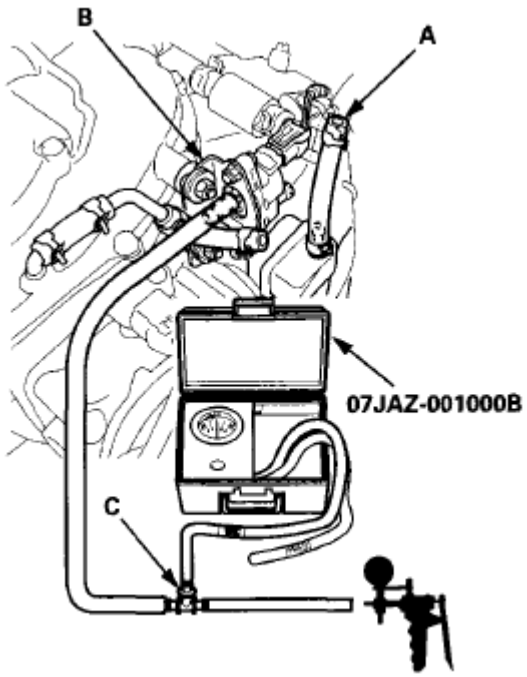


Fig. 37: Identifying Vacuum Hose, EVAP Canister Purge Valve And Vacuum Gauge
Courtesy of AMERICAN HONDA MOTOR CO., INC.

14. Apply about 2 kPa (0.6 inHg, 15 mmHg) of vacuum to the purge valve.
15. Select EVAP PCS ON in the INSPECTION MENU with the HDS.

    Does the vacuum release immediately?

    YES - Check for a blockage in the vacuum hose between the EVAP canister purge valve and the EVAP canister, then go to step 25.

    NO - Replace the EVAP canister purge valve (see **EVAP CANISTER PURGE VALVE REPLACEMENT**), then go to step 25.

16. Connect the vacuum pump/gauge to the vacuum hose (A) as shown.

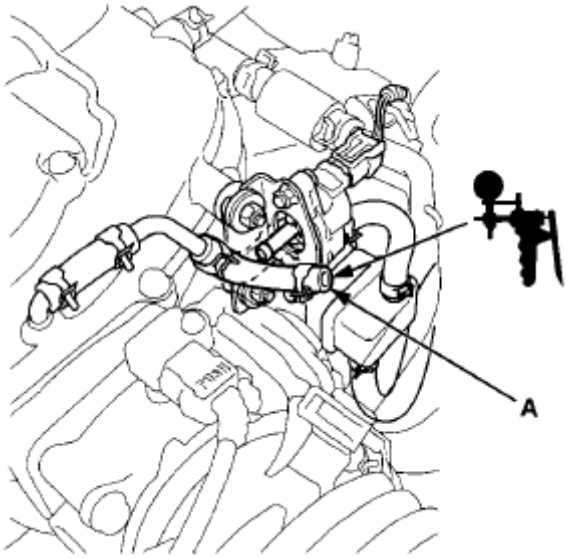


Fig. 38: Connecting Vacuum Pump/Gauge To Vacuum Hose
Courtesy of AMERICAN HONDA MOTOR CO., INC.

17. Start the engine, and let it idle.

    Is there vacuum?

    YES - Go to step 18.

    NO - Check for a blockage in the vacuum hose between the EVAP canister purge valve and the intake manifold, then go to step 25.

18. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
19. Remove the FTP sensor with its connector connected (see **WITH SH-AWD**).
20. Connect the T-fitting (A), the vacuum gauge, and the vacuum pump/gauge to the FTP sensor (B) as shown.

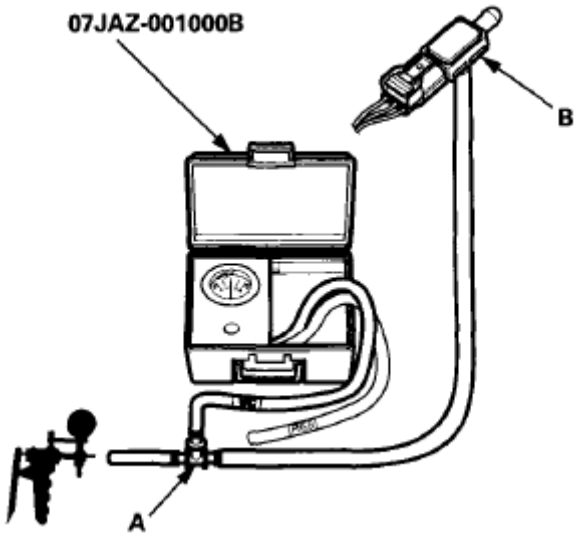


Fig. 39: Identifying FTP Sensor
Courtesy of AMERICAN HONDA MOTOR CO., INC.

21. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
22. Check and record the FTP SENSOR reading in the DATA LIST with the HDS.
23. Slowly apply about 1.3 kPa (0.4 inHg, 10 mmHg) of vacuum to the hose.
24. Check the FTP SENSOR in the DATA LIST with the HDS.

    Does the value change?

    YES - Check for debris or a blockage at the EVAP canister port, then go to step 25.

    NO - Replace the FTP sensor (see **WITH SH-AWD**), then go to step 25.

25. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
26. Reset the ECM/PCM with the HDS.
27. Do the ECM/PCM idle learn procedure (see **ECM/PCM IDLE LEARN PROCEDURE**).
28. Do the EVAP FUNCTION TEST in the INSPECTION MENU with the HDS.

    Is the result OK?

    YES - Troubleshooting is complete.

    NO - Check for poor connections or loose terminals at the EVAP canister purge valve, the FTP sensor, and the ECM/PCM, then go to step 1.

DTC P0498: EVAP CANISTER VENT SHUT VALVE CIRCUIT LOW VOLTAGE

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see GENERAL

TROUBLESHOOTING INFORMATION).

1. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
2. Clear the DTC with the HDS.
3. Check for Pending or Confirmed DTCs with the HDS.

   Is DTC P0498 indicated?

   YES - Go to step 6.

   NO - Go to step 4.

4. Select EVAP CVS ON in the INSPECTION MENU with the HDS.
5. Check for Pending or Confirmed DTCs with the HDS.

   Is DTC P0498 indicated?

   YES - Go to step 6.

   NO - Intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at the EVAP canister vent shut valve and the ECM/PCM.

6. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
7. Disconnect the EVAP canister vent shut valve 2P connector.
8. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
9. Measure the voltage between EVAP canister vent shut valve 2P connector terminal No. 2 and body ground.

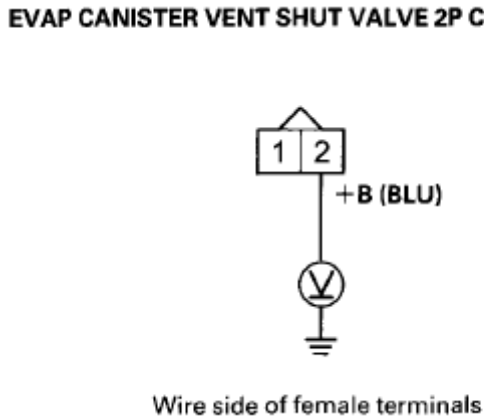


Fig. 40: Measuring Voltage Between EVAP Canister Vent Shut Valve 2P Connector And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there battery voltage?

YES - Go to step 10.

NO - Repair open in the wire between the EVAP canister vent shut valve and the PGM-FI subrelay, then go to step 18.

10. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
11. At the valve side, measure the resistance between EVAP canister vent shut valve 2P connector terminals No. 1 and No. 2.

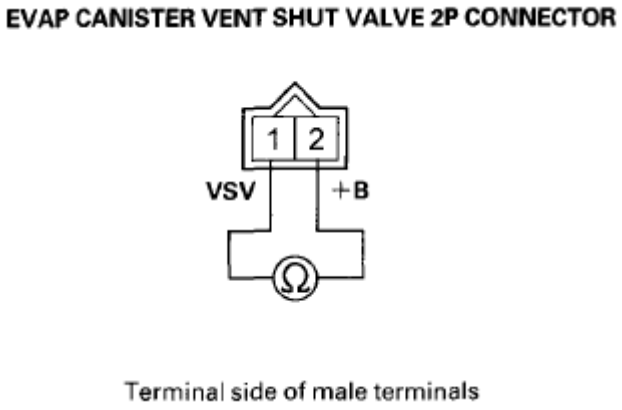


Fig. 41: Measuring Resistance Between EVAP Canister Vent Shut Valve 2P Connector Terminals No. 1 And No. 2
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there about 25- 30 ohms at room temperature?

YES - Go to step 12.

NO - Go to step 17.

12. Jump the SCS line with the HDS.
13. Disconnect ECM/PCM connector A (49P).
14. Check for continuity between ECM/PCM connector terminal A22 and body ground.

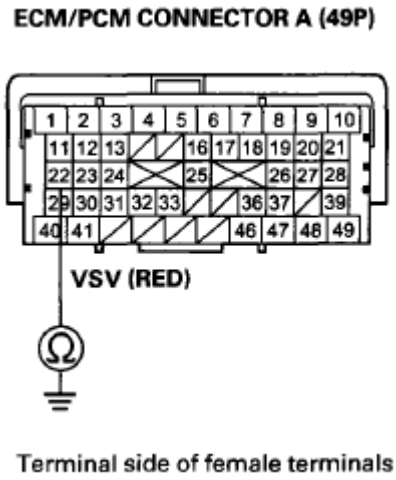


Fig. 42: Checking Continuity Between ECM/PCM Connector Terminal A22 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair short in the wire between the EVAP canister vent shut valve and the ECM/PCM (A22), then go to step 18.

NO - Go to step 15.

15. Connect EVAP canister vent shut valve 2P connector terminal No. 1 to body ground with a jumper wire.

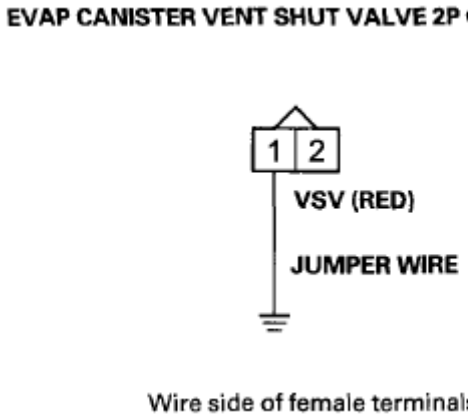


Fig. 43: Connecting EVAP Canister Vent Shut Valve 2P Connector Terminal No. 1 To Body Ground With Jumper Wire
Courtesy of AMERICAN HONDA MOTOR CO., INC.

16. Check for continuity between ECM/PCM connector terminal A22 and body ground.

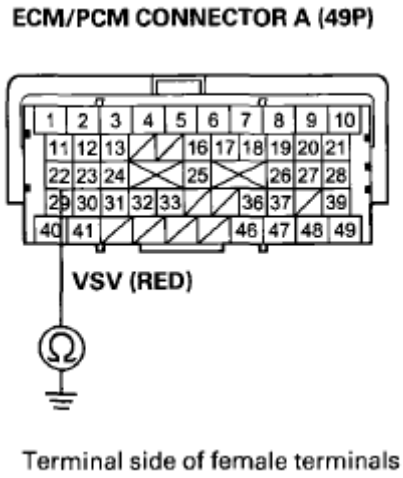


Fig. 44: Checking Continuity Between ECM/PCM Connector Terminal A22 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 25.

NO - Repair open in the wire between the EVAP canister vent shut valve and the ECM/PCM (A22), then go to step 18.

17. Replace the EVAP canister vent shut valve; without SH-AWD (see **WITH SH-AWD**), with SH-AWD (see **WITH SH-AWD**).
18. Reconnect all connectors.
19. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
20. Reset the ECM/PCM with the HDS.
21. Do the ECM/PCM idle learn procedure (see **ECM/PCM IDLE LEARN PROCEDURE**).
22. Select EVAP CVS ON in the INSPECTION MENU with the HDS.
23. Check for Pending or Confirmed DTCs with the HDS.

Is DTC P0498 indicated?

YES - Check for poor connections or loose terminals at the EVAP canister vent shut valve and the ECM/PCM, then go to step 1.

NO - Go to step 24.

24. Monitor the OBD STATUS for DTC P0498 in the DTCs MENU with the HDS.

Does the screen indicate PASSED?

YES - Troubleshooting is complete. If any other Pending or Confirmed DTCs were indicated in step 23, go to the indicated **DTC'S TROUBLESHOOTING**.

NO - If the screen indicates FAILED, check for poor connections or loose terminals at the EVAP canister vent shut valve and the ECM/PCM, then go to step 1. If the screen indicates NOT COMPLETED, go to step 22.

25. Reconnect all connectors.
26. Update the ECM/PCM if it does not have the latest software (see **ECM/PCM UPDATE**), or substitute a known-good ECM/PCM (see **SUBSTITUTING THE ECM/PCM**).
27. Select EVAP CVS ON in the INSPECTION MENU with the HDS.
28. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P0498 indicated?

    YES - Check for poor connections or loose terminals at the EVAP canister vent shut valve and the ECM/PCM. If the ECM/PCM was updated, substitute a known-good ECM/PCM (see **SUBSTITUTING THE ECM/PCM**), then go to step 27. If the ECM/PCM was substituted, go to step 1.

    NO - Go to step 29.

29. Monitor the OBD STATUS for DTC P0498 in the DTCs MENU with the HDS.

    Does the screen indicate PASSED?

    YES - If the ECM/PCM was updated, troubleshooting is complete. If the ECM/PCM was substituted, replace the original ECM/PCM (see **ECM/PCM REPLACEMENT**). If any other Pending or Confirmed DTCs were indicated in step 28, go to the indicated **DTC'S TROUBLESHOOTING**.

    NO - If the screen indicates FAILED, check for poor connections or loose terminals at the EVAP canister vent shut valve and the ECM/PCM. If the ECM/PCM was updated, substitute a known-good ECM/PCM (see **SUBSTITUTING THE ECM/PCM**), then go to step 27. If the ECM/PCM was substituted, go to step 1. If the screen indicates NOT COMPLETED, go to step 27.

DTC P0499: EVAP CANISTER VENT SHUT VALVE CIRCUIT HIGH VOLTAGE

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see GENERAL TROUBLESHOOTING INFORMATION).

1. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
2. Clear the DTC with the HDS.
3. Select EVAP CVS ON in the INSPECTION MENU with the HDS.
4. Check for Pending or Confirmed DTCs with the HDS.

   Is DTC P0499 indicated?

   YES - Go to step 5.

NO - Intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at the EVAP canister vent shut valve and the ECM/PCM.

5. Update the ECM/PCM if it does not have the latest software (see **ECM/PCM UPDATE**), or substitute a known-good ECM/PCM (see **SUBSTITUTING THE ECM/PCM**).
6. Select EVAP CVS ON in the INSPECTION MENU with the HDS.
7. Check for Pending or Confirmed DTCs with the HDS.

   Is DTC P0499 indicated?

   YES - Check for poor connections or loose terminals at the EVAP canister vent shut valve and the ECM/PCM. If the ECM/PCM was updated, substitute a known-good ECM/PCM (see **SUBSTITUTING THE ECM/PCM**), then go to step 6. If the ECM/PCM was substituted, go to step 1.

   NO - Go to step 8.

8. Monitor the OBD STATUS for DTC P0499 in the DTCs MENU with the HDS.

   Does the screen indicate PASSED?

   YES - If the ECM/PCM was updated, troubleshooting is complete. If the ECM/PCM was substituted, replace the original ECM/PCM (see **ECM/PCM REPLACEMENT**). If any other Pending or Confirmed DTCs were indicated in step 7, go to the indicated **DTC'S TROUBLESHOOTING**.

   NO - If the screen indicates FAILED, check for poor connections or loose terminals at the EVAP canister vent shut valve and the ECM/PCM. If the ECM/PCM was updated, substitute a known-good ECM/PCM (see **SUBSTITUTING THE ECM/PCM**), then go to step 6. If the ECM/PCM was substituted, go to step 1. If the screen indicates NOT COMPLETED, go to step 6.

DTC P1454: FTP SENSOR CIRCUIT RANGE/PERFORMANCE PROBLEM; DTC P2422: EVAP CANISTER VENT SHUT VALVE STUCK CLOSED MALFUNCTION

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see GENERAL TROUBLESHOOTING INFORMATION).

1. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
2. Clear the DTC with the HDS.
3. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
4. Remove the fuel fill cap, and wait 1 minute.
5. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
6. Check the FTP SENSOR in the DATA LIST with the HDS.

   Is it between - 0.67 and 0.67 kPa (- 0.2 and 0.2 inHg, - 5 and 5 mmHg), or 2.4 and 2.6 V?

YES - Go to step 7.

NO - Go to step 18.

7. Install the fuel fill cap.
8. Clear the DTC with the HDS.
9. Start the engine. Hold the engine speed at 3, 000 RPM without load (A/T in P or N, M/T in neutral) until the radiator fan comes on, then let it idle.
10. Monitor the OBD STATUS for DTC P1454 and/or P2422 in the DTCs MENU with the HDS.

    Does the screen indicate FAILED?

    YES - Go to step 11.

    NO - If the screen indicates PASSED, intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at the FTP sensor, the EVAP canister vent shut valve, and the ECM/PCM. Also check for a blockage in the vent hoses and the drain joint. If the screen indicates NOT COMPLETED, keep idling until a result comes on.

11. Clear the DTC with the HDS.
12. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
13. Remove the EVAP canister vent shut valve from the EVAP canister; without SH-AWD (see **WITH SH-AWD**), with SH-AWD (see **WITH SH-AWD**).
14. Connect the 2P connector to the EVAP canister vent shut valve.
15. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
16. Select EVAP CVS ON in the INSPECTION MENU with the HDS.
17. Check the EVAP canister vent shut valve (A) operation.

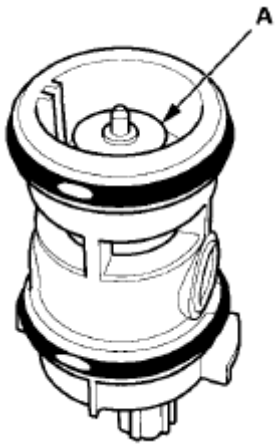


Fig. 45: Checking EVAP Canister Vent Shut Valve
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Does the valve operate?

YES - Check for a blockage in the EVAP canister, vent hoses, and the drain joint, then install the EVAP canister vent shut valve, and go to step 25.

NO - Replace the EVAP canister vent shut valve; without SH-AWD (see **WITH SH-AWD**), with SH-AWD (see **WITH SH-AWD**), then go to step 25.

18. With SH-AWD: Remove the trunk front trim panel (see **TRIM REMOVAL/INSTALLATION - TRUNK AREA**), then remove the access panel from the floor (see step 2).
19. Disconnect the air tube (A) from the FTP sensor (B).

Without SH-AWD B

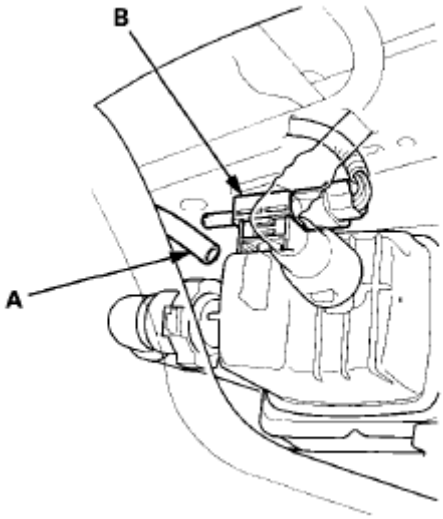


Fig. 46: Identifying Air Tube And FTP Sensor (Without SH-AWD)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

With SH-AWD

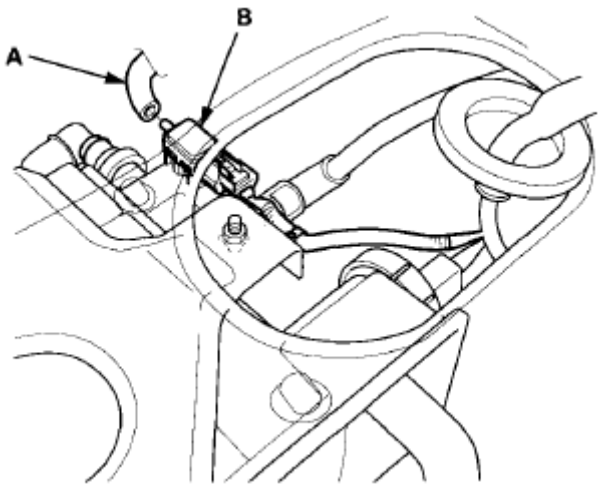


Fig. 47: Identifying Air Tube And FTP Sensor (With SH-AWD)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

20. Check the FTP SENSOR in the DATA LIST with the HDS.

    Is it between - 0.67 and 0.67 kPa (- 0.2 and 0.2 inHg, - 5 and 5 mmHg), or 2.4 and 2.6 V?

    YES - Check for a blockage in the FTP sensor air tube or vent, clear the blockage and reattach the air tube or vent, then go to step 25.

    NO - Go to step 21.

21. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
22. Remove the FTP sensor (A) from the EVAP canister with its connector connected; without SH-AWD (see **FTP SENSOR REPLACEMENT**), with SH-AWD (see **WITH SH-AWD**).

    Without SH-AWD A

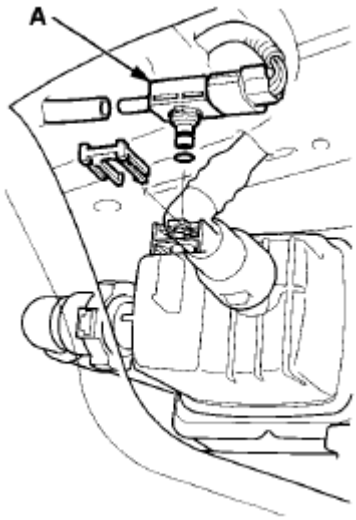


Fig. 48: Identifying FTP Sensor (Without SH-AWD)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

With SH-AWD

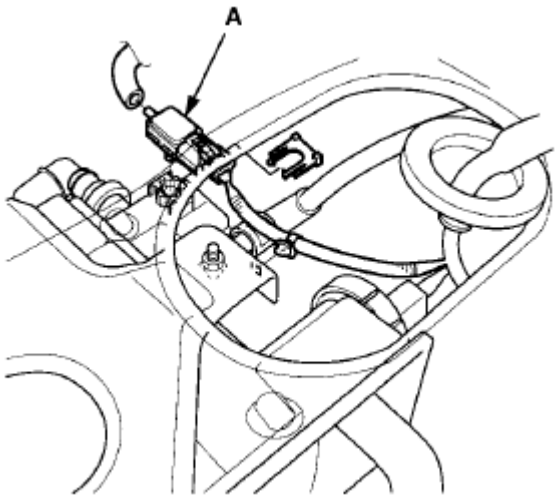


Fig. 49: Identifying FTP Sensor (With SH-AWD)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

23. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
24. Check the FTP SENSOR in the DATA LIST with the HDS.

    Is it between - 0.67 and 0.67 kPa (- 0.2 and 0.2 inHg, -5 and 5 mmHg), or 2.4 and 2.6 V?

    YES - Check for debris or clogging at the EVAP canister and the FTP sensor port, then go to step 25.

    NO - Replace the FTP sensor; without SH-AWD (see **FTP SENSOR REPLACEMENT**), with SH-AWD (see **WITH SH-AWD**), then go to step 25.

25. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
26. Reset the ECM/PCM with the HDS.
27. Do the ECM/PCM idle learn procedure (see **ECM/PCM IDLE LEARN PROCEDURE**).
28. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P1454 and/or P2422 indicated?

    YES - Check for poor connections or loose terminals at the FTP sensor, the EVAP canister vent shut valve, and the ECM/PCM, then go to step 1.

    NO - Go to step 29.

29. Monitor the OBD STATUS for DTC P1454 and/or P2422 in the DTCs MENU with the HDS.

    Does the screen indicate PASSED?

    YES - Troubleshooting is complete. If any other Pending or Confirmed DTCs were indicated in step 28, go to the indicated **DTC'S TROUBLESHOOTING**.

NO - If the screen indicates FAILED, check for poor connections or loose terminals at the FTP sensor, the EVAP canister vent shut valve, and the ECM/PCM, then go to step 1. If the screen indicates NOT COMPLETED, keep idling until a result comes on.

DTC P1458: FTP SENSOR CIRCUIT RANGE/PERFORMANCE PROBLEM

Special Tools Required

Vacuum Pump/Gauge, 0-30 inHg Snap-on YA4000A or equivalent, commercially available

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see GENERAL TROUBLESHOOTING INFORMATION).

1. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
2. Note these recorded on-board snapshot parameters with the HDS:
   - Max Value of FTP SENSOR
   - Min Value of FTP SENSOR
   - FUEL LEVEL

   HDS on-board snapshot screen

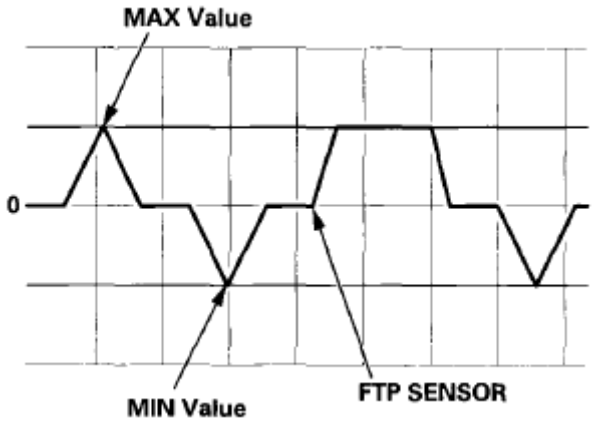


Fig. 50: Showing HDS On-Board Snapshot Screen
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Check the FUEL LEVEL in the DATA LIST with the HDS.

   Is the FUEL LEVEL less than it is in the on- board snapshot?

   YES - Go to step 4.

   NO - Drain the fuel until the FUEL LEVEL is less than it is in the on-board snapshot, then go to step 4.

4. Take a snapshot with the HDS for 3 minutes without starting the engine.
5. Check these recorded snapshot parameters with the HDS:
   - Max Value of FTP SENSOR (FINE)
   - Min Value of FTP SENSOR (FINE)

   HDS snapshot screen

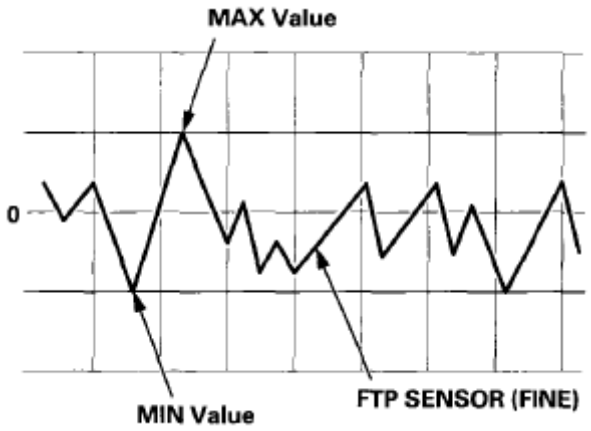


Fig. 51: Showing HDS Snapshot Screen
Courtesy of AMERICAN HONDA MOTOR CO., INC.

   Is the difference between the MAX and MIN values of the FTP SENSOR (FINE) about 0.67 kPa (0.2 inHg, 5 mmHg) or less?

   YES - Go to step 6.

   NO - Go to step 12.

6. Check the FTP SENSOR (FINE) in the recorded snapshot with the HDS.

   Does it vary 0.067 kPa (0.02 inHg, 0.5 mmHg) or more for 3 seconds?

   YES - Go to step 7.

   NO - Intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at the FTP sensor, the EVAP canister vent shut valve, and the ECM/PCM. Also check for a blockage in the EVAP vent hose.

7. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the ON mode.
8. Remove the FTP sensor.
9. Reconnect the FTP sensor 3P connector.
10. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
11. Check the FTP SENSOR (FINE) in the DATA LIST with the HDS.

Does it vary 0.067 kPa (0.02 inHg, 0.5 mmHg) or more for 3 seconds?

YES - Replace the FTP sensor; with SH-AWD (see **WITH SH-AWD**), without SH-AWD (see **FTP SENSOR REPLACEMENT**), then go to step 28.

NO - Intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at the FTP sensor, the EVAP canister vent shut valve, and the ECM/PCM. Also check for a blockage in the EVAP vent hose.

12. Remove the fuel fill cap.
13. Check the FTP SENSOR (FINE) in the DATA LIST with the HDS.

    Is the value about 0.67 kPa (0.2 inHg, 5 mmHg) or more, or about - 0.67 kPa (- 0.2 inHg, - 5 mmHg) or less?

    YES - Reinstall the fuel fill cap, then go to step 22.

    NO - Go to step 14.

14. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the ON mode.
15. Remove the FTP sensor.
16. Reconnect the FTP sensor 3P connector.
17. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
18. Check the FTP SENSOR (FINE) in the DATA LIST with the HDS.

    Is the value about 0.67 kPa (0.2 inHg, 5 mmHg) or more, or about - 0.67 kPa (- 0.2 inHg, - 5 mmHg) or less?

    YES - Remove the blockage in the EVAP vent hose, and replace it if needed, then go to step 26.

    NO - Go to step 19.

19. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the ON mode.
20. Disconnect the FTP sensor 3P connector.
21. Check for a blockage or damage at the FTP sensor ports (EVAP canister side and vent side).

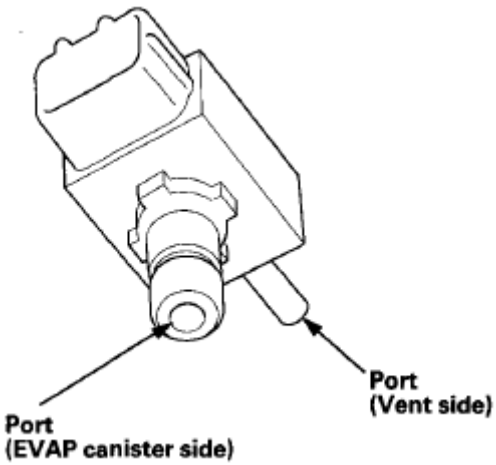


Fig. 52: Checking Blockage Or Damage At FTP Sensor Ports
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there any blockage or damage?

YES - Remove the blockage, and replace the FTP sensor if needed; with SH-AWD (see **WITH SH-AWD**), without SH-AWD (see **FTP SENSOR REPLACEMENT**), then go to step 28.

NO - Replace the FTP sensor; with SH-AWD (see **WITH SH-AWD**), without SH-AWD (see **FTP SENSOR REPLACEMENT**), then go to step 28.

22. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the ON mode.
23. Disconnect the fresh air hose (A) from the EVAP canister (B), then connect a vacuum pump/gauge, 0- 30 inHg, to the EVAP vent shut valve as shown.

With SH-AWD

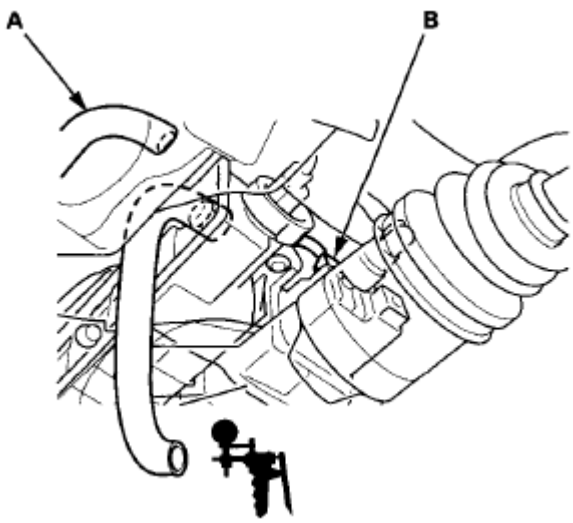


Fig. 53: Identifying Fresh Air Hose And EVAP Canister (With SH-AWD)

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Without SH-AWD

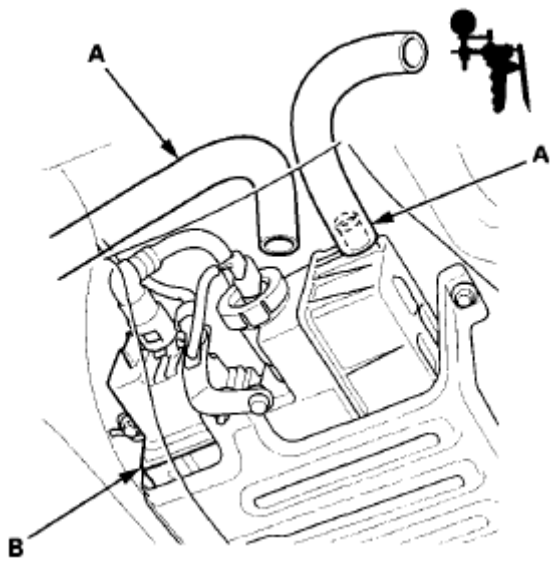


Fig. 54: Identifying Fresh Air Hose And EVAP Canister (Without SH-AWD)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

24. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
25. Try to apply vacuum to the valve (not more than 5.3 kPa (1.6 inHg, 40 mmHg)) while checking the FTP SENSOR (FINE) in the DATA LIST with the HDS.

NOTE: To avoid damaging the FTP sensor, do not apply more than 5.3 kPa (1.6 inHg, 40 mmHg) of vacuum.

Does the valve hold more than 1.3 kPa (0.4 inHg, 10 mmHg) of vacuum?

YES - Replace the EVAP canister vent shut valve; with SH-AWD (see **WITH SH-AWD**), without SH-AWD (see **WITH SH-AWD**), then go to step 26.

NO - Remove the blockage in the fresh air hose, and replace it if needed, then go to step 26.

26. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the ON mode.
27. Reconnect all connectors and the fresh air hose.
28. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
29. Reset the ECM/PCM with the HDS.
30. Do the ECM/PCM idle learn procedure (see **ECM/PCM IDLE LEARN PROCEDURE**).
31. Take a snapshot with the HDS for 3 minutes without starting the engine.
32. Check these recorded snapshot parameters with the HDS:
    - Max Value of FTP SENSOR (FINE)

- Min Value of FTP SENSOR (FINE)

HDS snapshot screen

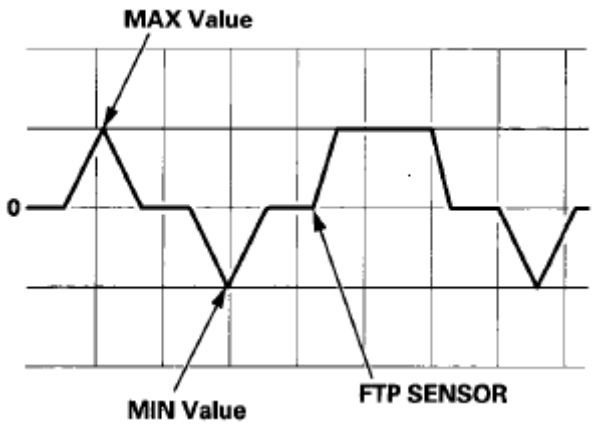


Fig. 55: Showing HDS Snapshot Screen
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is the difference between the MAX and MIN values of the FTP SENSOR (FINE) about 0.67 kPa (0.2 inHg, 5 mmHg) or less?

YES - Troubleshooting is complete.

NO - Check for poor connections or loose terminals at the FTP sensor, the EVAP canister vent shut valve, and the ECM/PCM, then go to step 1.

DTC P145C: EVAP SYSTEM PURGE FLOW MALFUNCTION

NOTE:

- **Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see GENERAL TROUBLESHOOTING INFORMATION).**
- **If DTC P145C is indicated alone, do the troubleshooting for DTC P0496 and P0497 using freeze data for P145C.**
- **If DTC P0497 and P145C stored at the same time, check for a poor connection, a blockage, or damage at the EVAP canister purge line between the EVAP canister purge valve and the EVAP canister. Also check for a stuck closed EVAP canister purge valve.**
- **If any of DTCs listed below are indicated at the same time as DTC P145C, troubleshoot those DTCs first, then recheck for P145C.**

P0496, P0497: EVAP system purge flow

FUEL CAP WARNING MESSAGE SYSTEM TROUBLESHOOTING

Special Tools Required

- Vacuum Pump/Gauge, 0- 30 inHg Snap-on YA4000A or equivalent, commercially available
- Vacuum/Pressure Gauge, 0- 4 inHg 07JAZ-001000B

Do this procedure if the fuel cap warning message comes on frequently, or if the message does not go off after the fuel fill cap is tightened and the vehicle is driven several days.

1. Check the fuel fill cap (the cap must say TIGHTEN TO CLICK). It should turn 1/4 after it's tight, then it clicks.

   Is the correct fuel fill cap installed and properly tightened?

   YES - Go to step 2.

   NO - Replace or tighten the cap, then go to step 13.

2. Check the fuel fill cap seal (A) and the fuel fill pipe mating surface (B). Verify that the fuel fill cap tether cord (C) is not caught under the cap.

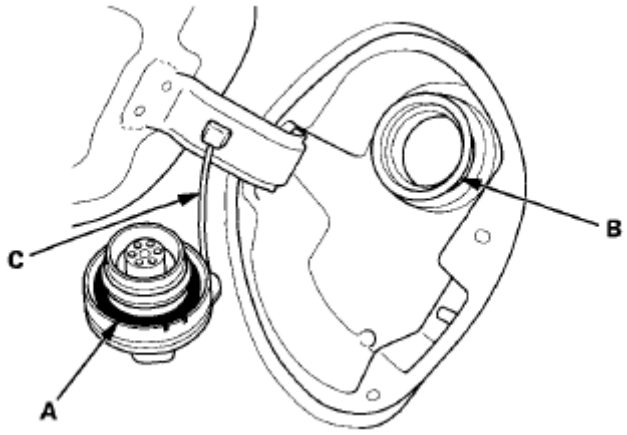


Fig. 56: Identifying Fuel Fill Cap Seal, Pipe Mating Surface And Tether Cord
Courtesy of AMERICAN HONDA MOTOR CO., INC.

   Is the fuel fill cap seal missing or damaged, is the fuel fill pipe damaged, or is the tether cord caught under the cap?

   YES - Replace the fuel fill cap or the fuel fill pipe, then go to step 13.

   NO - Go to step 3.

3. Reinstall and tighten the fuel fill cap.
4. Clear the DTC with the HDS.
5. Start the engine. Hold the engine speed at 3, 000 RPM without load (A/T in P or N, M/T in neutral) until the radiator fan comes on, then let it idle for 1 minute.

6. Test drive at 45 mph (72 km/h) for 1 minute or more.

   Does the fuel fill cap warning message come on?

   YES - Go to step 7.

   NO - Intermittent failure, the system is OK at this time.

7. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
8. Disconnect the vacuum hose (A) from the EVAP canister purge valve (B) in the engine compartment, then connect a T-fitting (C), a vacuum gauge, and a vacuum pump/gauge, 0- 30 inHg, to the EVAP canister purge valve as shown.

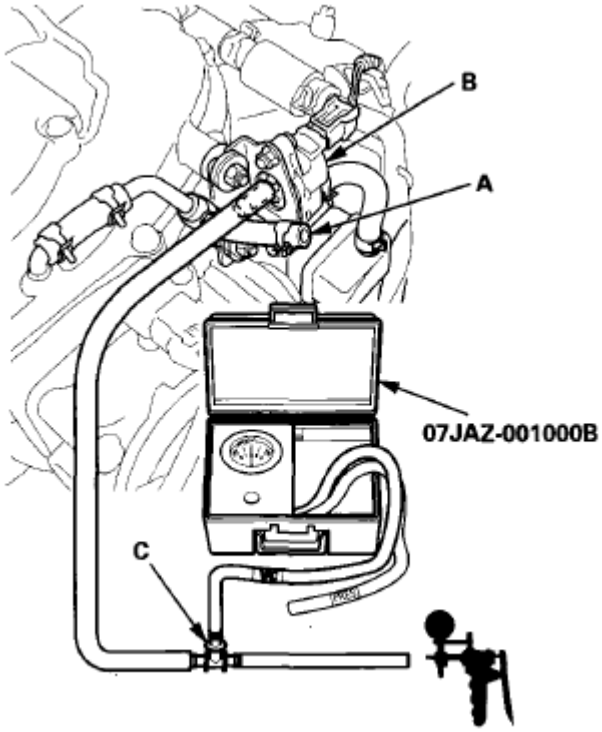


Fig. 57: Identifying Vacuum Hose, EVAP Canister Purge Valve And T-Fitting
Courtesy of AMERICAN HONDA MOTOR CO., INC.

9. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
10. Apply about 2 kPa (0.6 inHg, 15 mmHg) of vacuum to the hose.
11. Select the EVAP PCS ON in the INSPECTION MENU with the HDS.

    Does the vacuum release immediately?

    YES - Check for a blockage in the vacuum hose/line between the EVAP canister purge valve and the EVAP canister, then go to step 12.

NO - Replace the EVAP canister purge valve (see **EVAP CANISTER PURGE VALVE REPLACEMENT**), then go to step 12.

12. Install the parts in the reverse order of removal.
13. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
14. Reset the ECM/PCM with the HDS.
15. Do the ECM/PCM idle learn procedure (see **ECM/PCM IDLE LEARN PROCEDURE**).
16. Test-drive at 45 mph (72 km/h) for 1 minute or more.

Does the fuel cap warning message come on?

YES - Go to step 1 and recheck.

NO - Troubleshooting is complete.

EVAP CANISTER REPLACEMENT

WITHOUT SH-AWD

1. Raise the vehicle on a lift.
2. Remove the wheel sensor harness clamps (A)

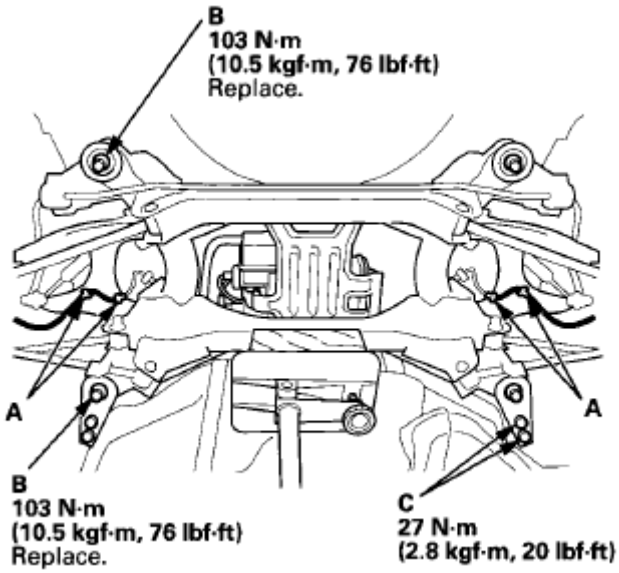


Fig. 58: Identifying Wheel Sensor Harness Clamps With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Support the rear subframe with a transmission jack and a wooden block as shown.
4. Remove the rear subframe mounting bolts (B and C).
5. Lower the transmission jack and the rear subframe about 50 mm.

NOTE: Be careful not to damage the connecting parts.

6. Remove the bolt (A), and disconnect the hoses (B), the EVAP canister vent shut valve 2P connector (C), and the FTP sensor 3P connector (D).

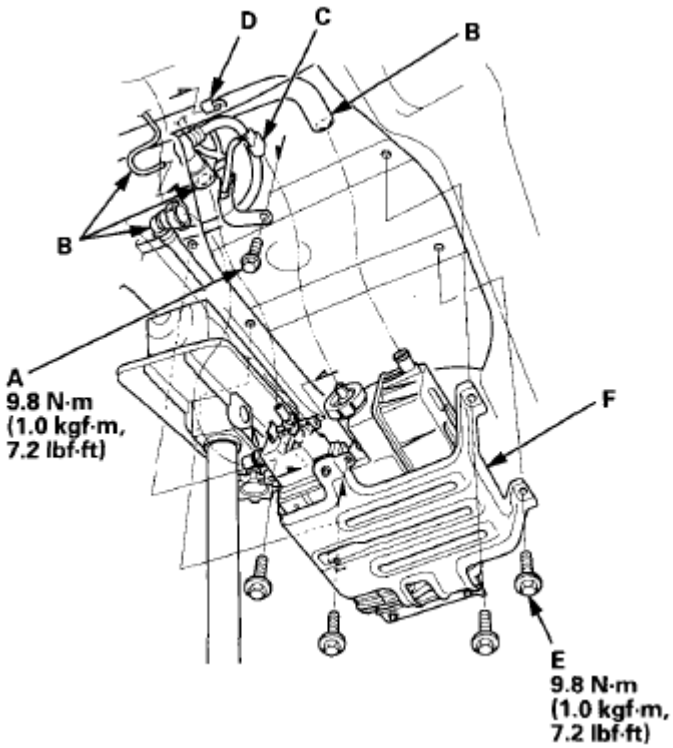


Fig. 59: Identifying Hoses, Bolt, EVAP Canister Vent Shut Valve 2P Connector And FTP Sensor 3P Connector And Bracket With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Remove the bolts (E), then remove the EVAP canister assembly (F).
8. Remove the EVAP canister (A) from the EVAP canister bracket (B).

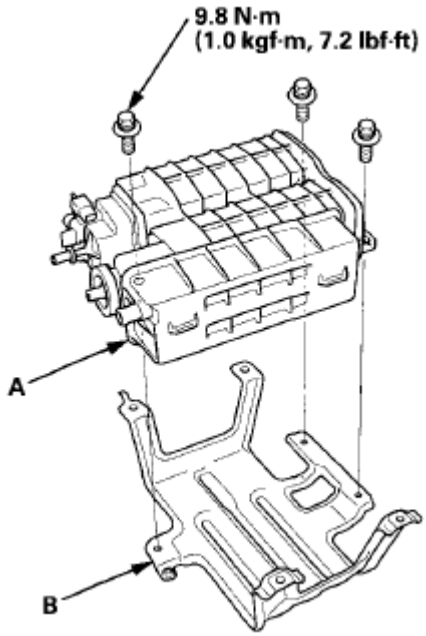


Fig. 60: Identifying EVAP Canister And Bracket With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

9. Remove the EVAP canister vent shut valve (A) and the FTP sensor (B) from the canister (C).

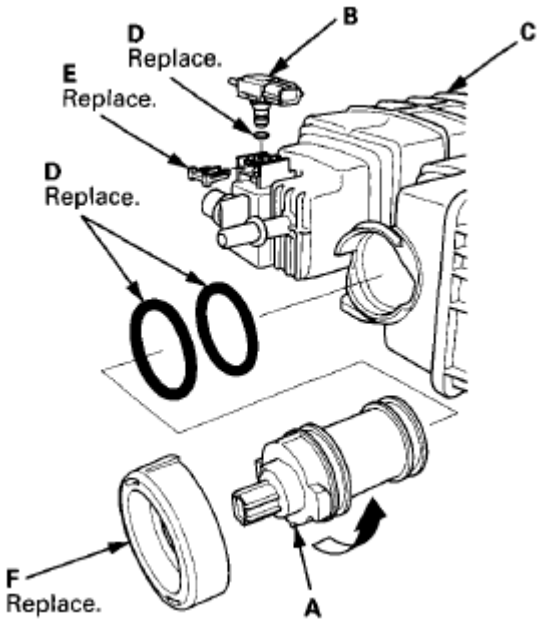


Fig. 61: Identifying EVAP Canister Vent Shut Valve, FTP Sensor And Canister
Courtesy of AMERICAN HONDA MOTOR CO., INC.

10. Reassemble the EVAP canister with new O-rings (D), a new retainer (E), and a new cap (F), then install the EVAP canister bracket.

NOTE: Do not coat the O-rings with oil.

11. Install the EVAP canister assembly to the body.

NOTE: Attach the bracket arm (A) to the body as shown.

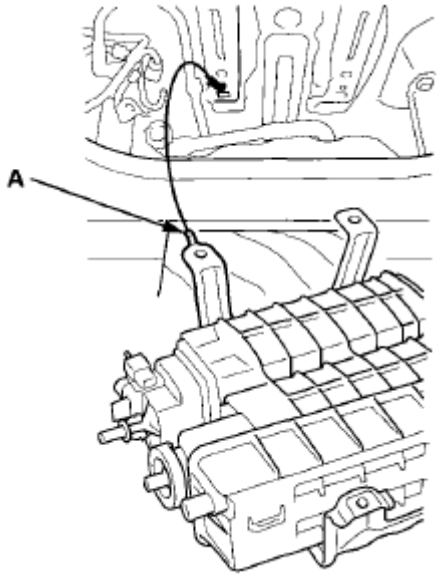


Fig. 62: Identifying Bracket Arm
Courtesy of AMERICAN HONDA MOTOR CO., INC.

12. Install the parts in the reverse order of removal. Use new bolts when you install the rear subframe.
13. Check the wheel alignment (see **WHEEL ALIGNMENT**).

WITH SH-AWD

1. Remove the rear differential (see **REAR DIFFERENTIAL REMOVAL**).
2. Remove the fuel tank (see **WITH SH-AWD**).
3. Remove the EVAP canister filter (see **EVAP CANISTER FILTER REPLACEMENT**).
4. Disconnect the quick-connect fitting (A), the hose (B), the FTP sensor 3P connector (C), and the EVAP canister vent shut valve 2P connector (D).

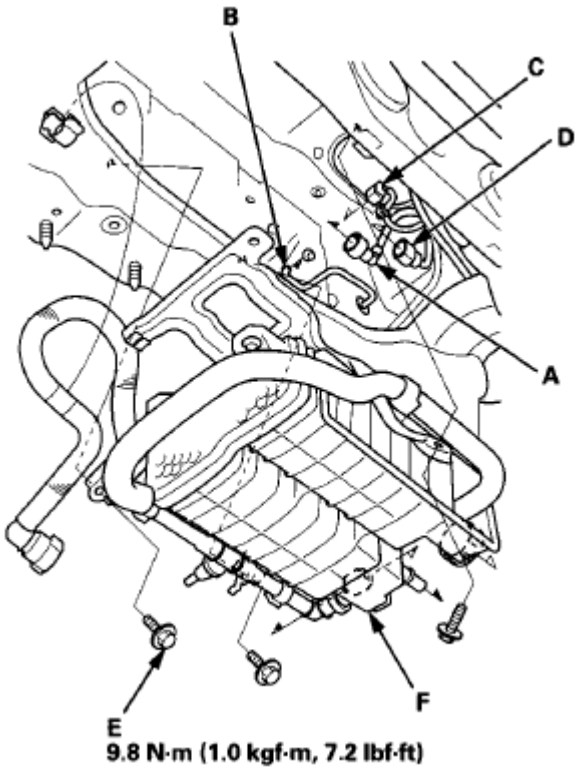


Fig. 63: Identifying Fitting, Hose, FTP Sensor 3P Connector And EVAP Canister Vent Shut Valve 2P Connector With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Remove the bolts (E) and the EVAP canister assembly (F).
6. Remove the EVAP canister (A) from the bracket (B).

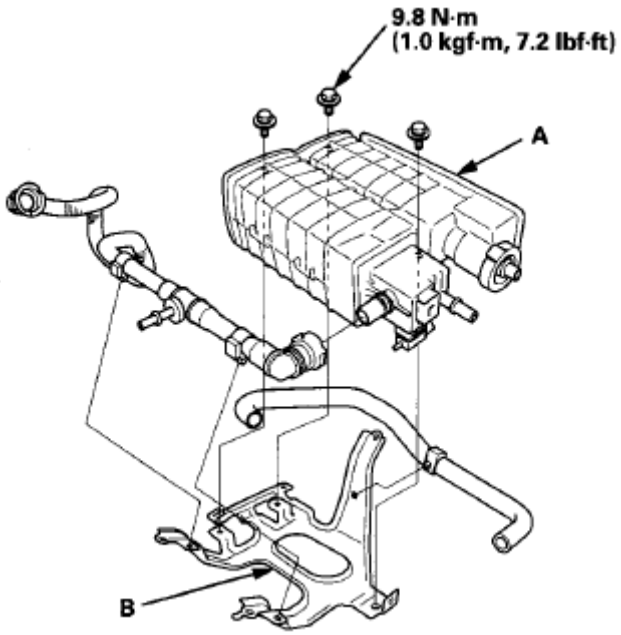


Fig. 64: Identifying EVAP Canister And Bracket With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Remove the EVAP canister vent shut valve (A) and the FTP sensor (B) from the EVAP canister (C).

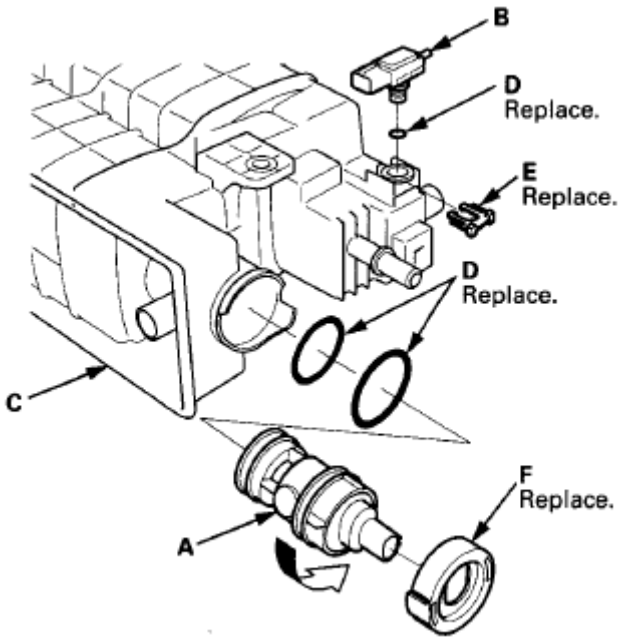


Fig. 65: Identifying EVAP Canister Vent Shut Valve And FTP Sensor
Courtesy of AMERICAN HONDA MOTOR CO., INC.

8. Reassemble the EVAP canister with new O-rings (D), a new retainer (E), and a new cap (F), then install the EVAP canister bracket.

NOTE: Do not coat the O-rings with oil.

9. Install the parts in the reverse order of removal.

NOTE: The new fuel vapor hose has a ring pull (A) at the connector (B). When you connect the connector and confirm that the connection is secure, remove the ring pull by pulling it down.

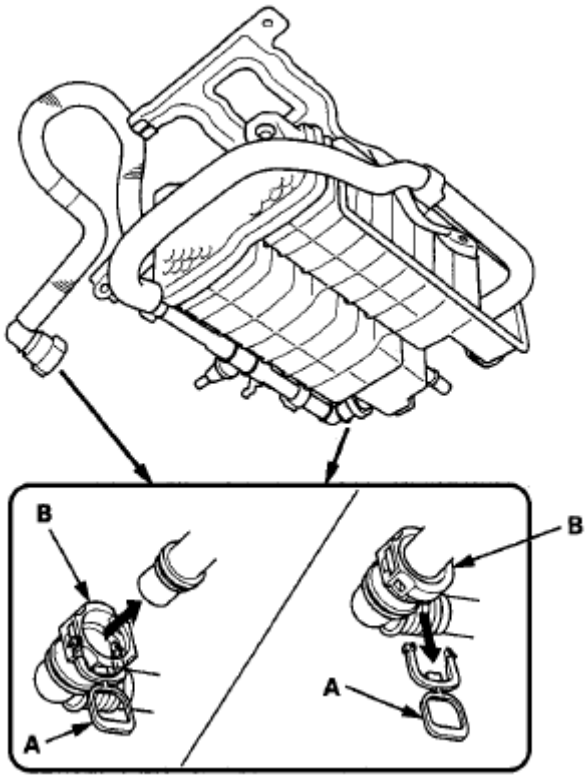


Fig. 66: Identifying Fuel Vapor Hose And Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

FTP SENSOR REPLACEMENT

WITHOUT SH-AWD

1. Remove the bolt (A), and disconnect the EVAP canister vent shut valve 2P connector (B), the FTP sensor 3P connector (C), and the hoses (D).

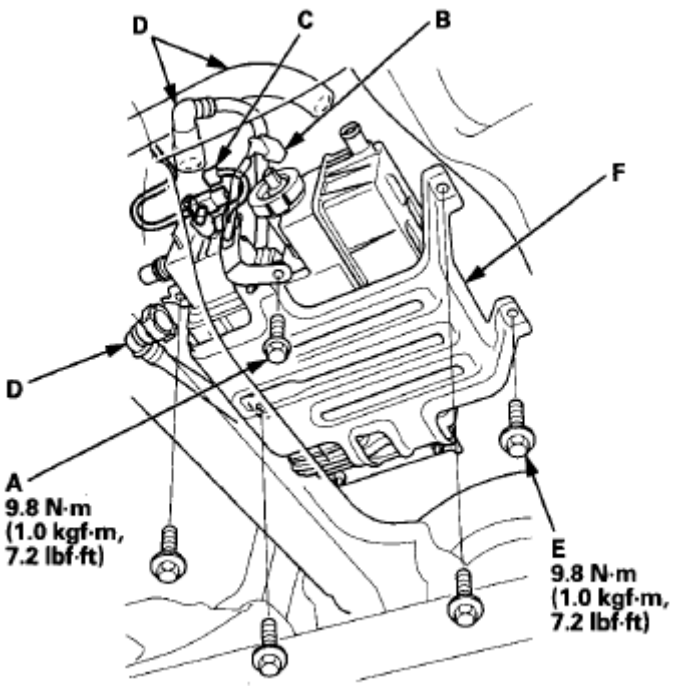


Fig. 67: Identifying Bolt, 2P Connector, FTP Sensor 3P Connector And Hoses With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Remove the bolts (E), and move the EVAP canister assembly (F) to the rear.
3. Remove the FTP sensor (A).

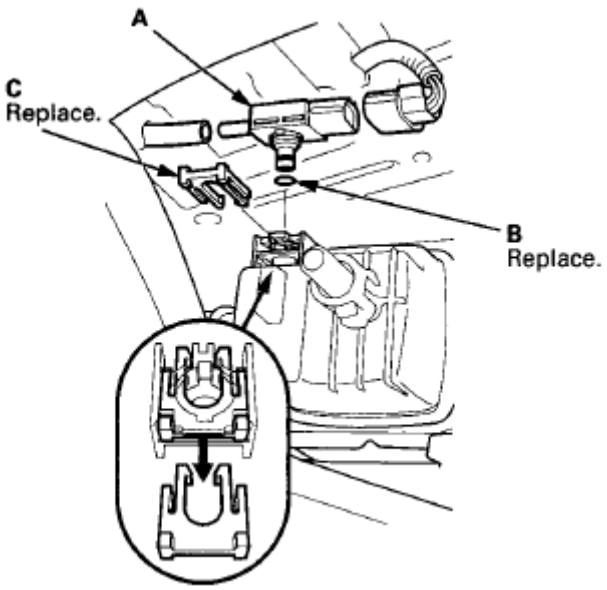


Fig. 68: Identifying FTP Sensor, O-Ring And Retainer
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Install the parts in the reverse order of removal with a new O-ring (B) and a new retainer (C).

WITH SH-AWD

1. Remove the trunk front trim panel (see **TRIM REMOVAL/INSTALLATION - TRUNK AREA**).
2. Remove the access panel (A) from the floor.

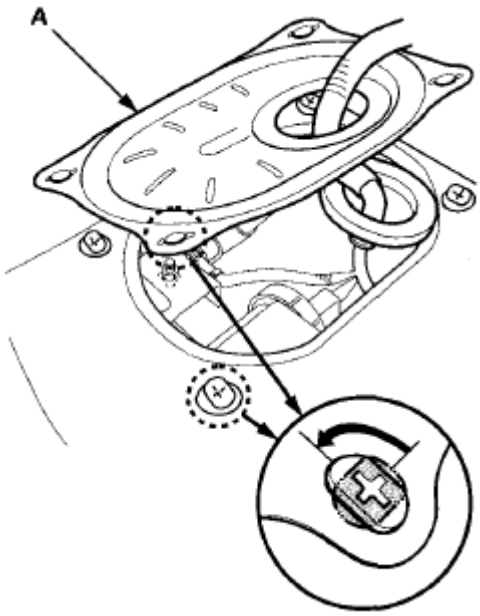


Fig. 69: Identifying Access Panel
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Disconnect the hose (A) and the FTP sensor 3P connector (B).

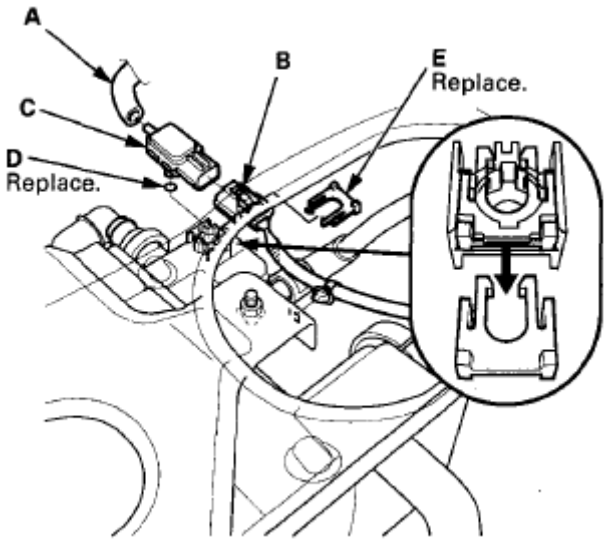


Fig. 70: Identifying Hose, 3P Connector And FTP Sensor

Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Remove the FTP sensor (C).
5. Install the parts in the reverse order of removal with a new O-ring (D) and a new retainer (E).

EVAP CANISTER VENT SHUT VALVE REPLACEMENT

WITHOUT SH-AWD

1. Disconnect the EVAP canister vent shut valve 2P connector (A).

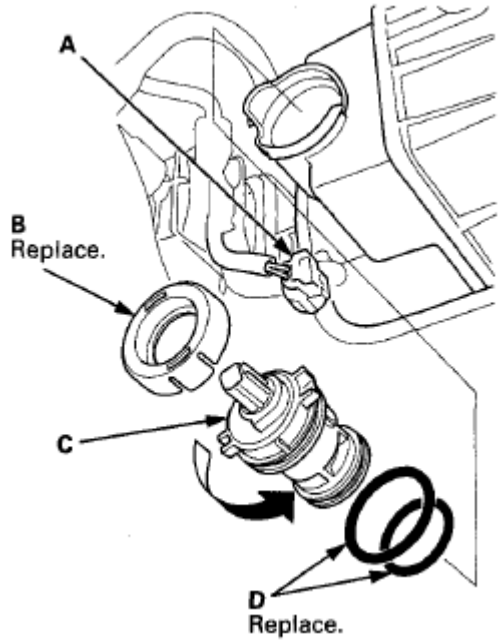


Fig. 71: Identifying EVAP Canister Vent Shut Valve 2P Connector, Shut Valve And Cap
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Remove the cap (B).
3. Remove the EVAP canister vent shut valve (C).
4. Install the parts in the reverse order of removal with new O-rings (D) and a new cap.

NOTE: Do not coat the O-rings with oil.

WITH SH-AWD

1. Remove the trunk front trim panel (see **TRIM REMOVAL/INSTALLATION - TRUNK AREA**).
2. Remove the access panel (A) from the floor.

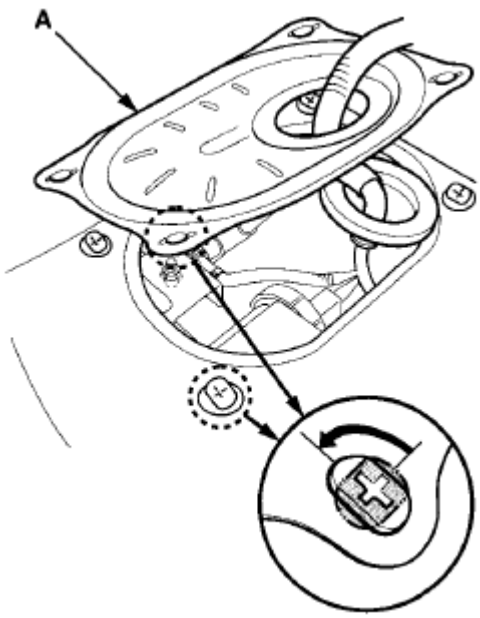


Fig. 72: Identifying Access Panel
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Disconnect the EVAP canister vent shut valve 2P connector (A).

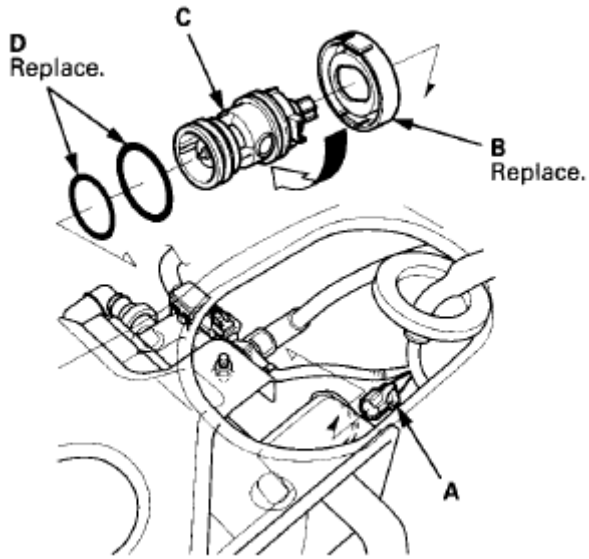


Fig. 73: Identifying 2P Connector, Cap, Shut Valve And O-Rings
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Remove the cap (B).
5. Remove the EVAP canister vent shut valve (C).
6. Install the parts in the reverse order of removal with new O-rings (D) and a new cap.

EVAP CANISTER FILTER REPLACEMENT

WITH SH-AWD

1. Remove the rear differential (see **REAR DIFFERENTIAL REMOVAL**).
2. Disconnect the hoses (A).

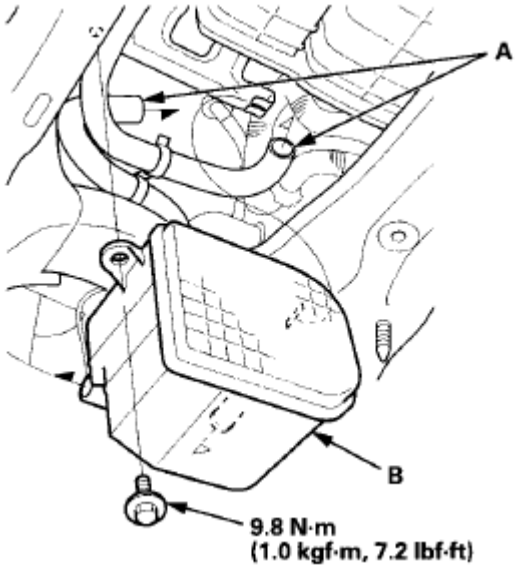


Fig. 74: Identifying Hoses And EVAP Canister Filter With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Remove the EVAP canister filter (B).
4. Install the parts in the reverse order of removal.

EVAP CANISTER PURGE VALVE REPLACEMENT

1. Disconnect the hoses (A) and the EVAP canister purge valve 2P connector (B).

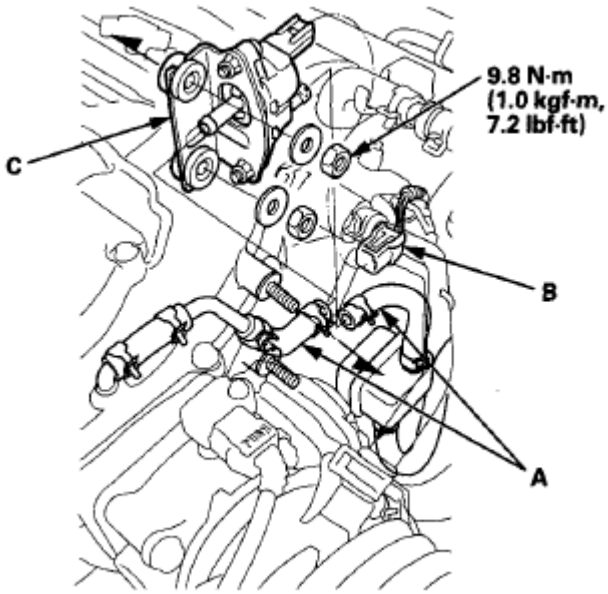


Fig. 75: Identifying Hoses And EVAP Canister Purge Valve 2P Connector And Valve Assembly With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Remove the EVAP canister purge valve assembly (C).
3. Remove the EVAP canister purge valve (A) from the bracket (B).

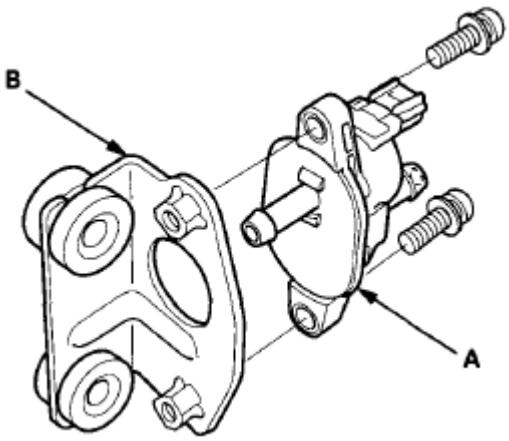


Fig. 76: Identifying EVAP Canister Purge Valve And Bracket
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Install the parts in the reverse order of removal.

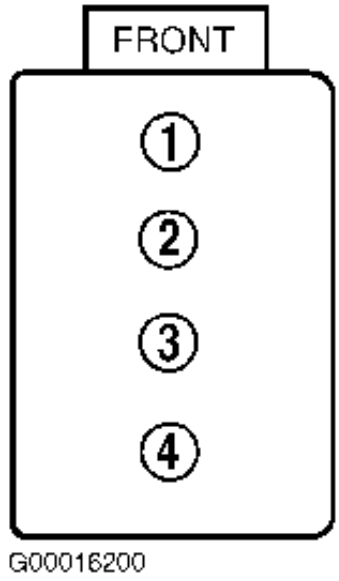
FIRING ORDER & CYLINDER IDENTIFICATION

Firing Order & Cylinder Identification - Acura

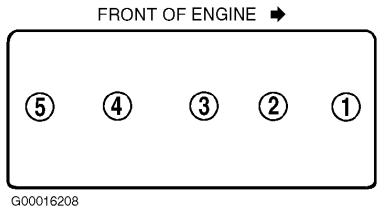
FIRING ORDER & CYLINDER IDENTIFICATION

NOTE: **This information is intended as a quick reference for firing order and cylinder identification only. The information provided covers many vehicles and may include some information that does not apply to the vehicle you have currently selected.**

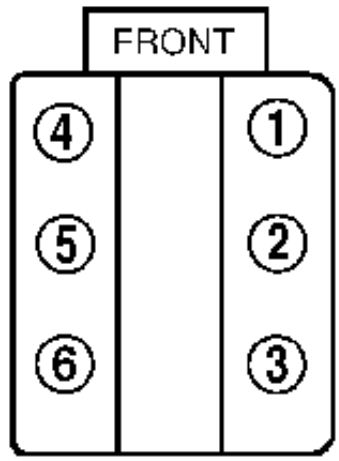
4 CYLINDER ENGINE

Block Configuration	Firing Order	Cylinder Identification
In-Line4	1-3-4-2	 G00016200

5 CYLINDER ENGINE

Block Configuration	Firing Order	Cylinder Identification
In-Line5	1-2-4-5-3	 G00016208

V6 ENGINE

Block Configuration	Firing Order	Cylinder Identification
V6	1-4-2-5-3-6	 G00016204

2012 ENGINE PERFORMANCE

Fuel And Emissions Systems - TL

SPECIAL TOOLS

Ref.No.	Tool Number	Description	Qty
①	07406-004000B	Fuel Pressure Gauge	1
②	07406-0070301	A/T Low Pressure Gauge w/Panel	1
③	07AAA-S0XA100	Fuel Sender Wrench	1
④	07AAJ-PY4A100	AT Pressure Test Hose	1
⑤	07AAJ-S6MA150	Fuel Pressure Gauge Attachment Set	1
⑥	07JAZ-001000B	Vacuum/Pressure Gauge, 0—4 inHg	1
⑦	07MAJ-PY40120	A/T Pressure Adapter	1
⑧	07NAJ-P07010A	Pressure Gauge Adapter	1
⑨	07ZAJ-S5AA200	Oil Pressure Hose	1

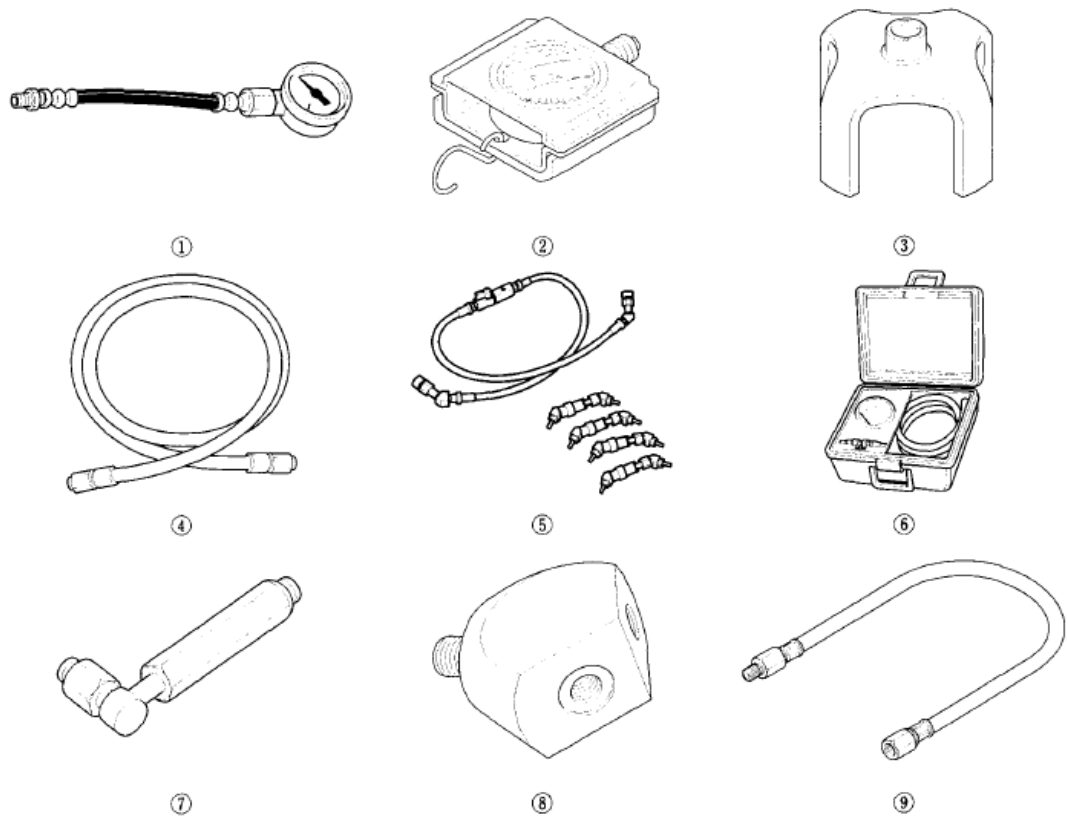


Fig. 1: Identifying Fuel And Emission Systems Special Tools
Courtesy of AMERICAN HONDA MOTOR CO., INC.

GENERAL TROUBLESHOOTING INFORMATION

INTERMITTENT FAILURES

The term intermittent failure means a system may have had a failure, but it checks OK now. If the malfunction

indicator lamp (MIL) on the dash does not come on, check for poor connections or loose terminals at all connectors related to the circuit that you are troubleshooting. If the MIL was on but then went out, the original problem may have been intermittent.

SERVICE INFORMATION

Periodically, new ECM/PCM software or new service procedures may become available. Always check online for the latest software or service information related to the DTCs or symptoms you are troubleshooting.

OPENS AND SHORTS

Open and short are common electrical terms. An open is a break in a wire or at a connection. A short is an accidental connection of a wire to ground or to another wire. In simple electronics, this usually means something won't work at all. With complex electronics (such as ECMs or PCMs) this can sometimes mean something works, but not the way it's supposed to.

HOW TO USE THE HDS (HONDA DIAGNOSTIC SYSTEM)

If the MIL (malfunction indicator lamp) has come on

1. Start the engine, and check the MIL (A).

NOTE: If the ignition switch is turned to ON (II), or press the engine start/stop button to select the ON mode, and the engine is not started, the MIL stays on for 15- 20 seconds.

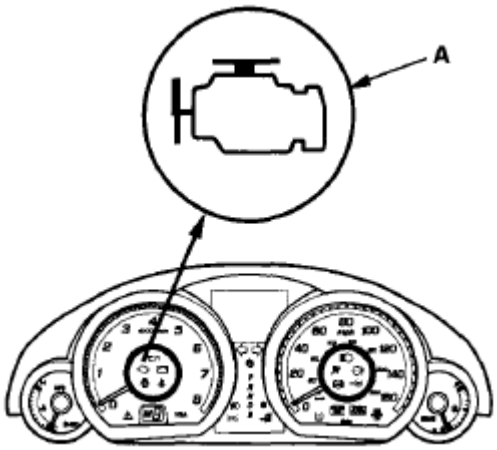


Fig. 2: Identifying Malfunction Indicator Lamp
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. If the MIL stays on, connect the HDS to the data link connector (DLC) (A) located under the driver's side of the dashboard.

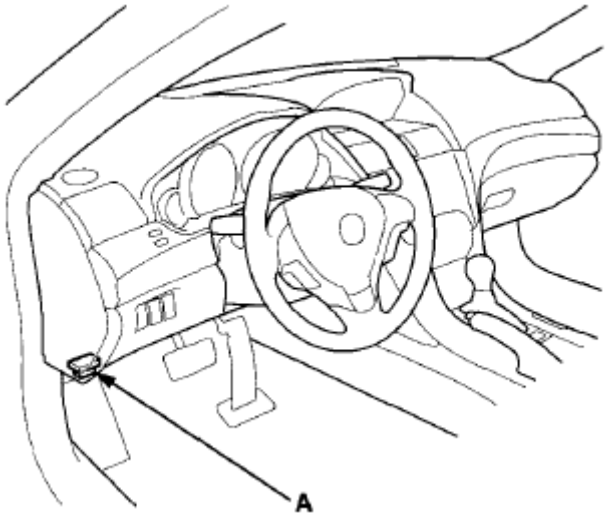


Fig. 3: Identifying Data Link Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
4. Make sure the HDS communicates with the ECM/PCM and other vehicle systems. If it doesn't, go to the DLC circuit troubleshooting (see **DLC CIRCUIT TROUBLESHOOTING**).
5. Check the diagnostic trouble code (DTC) and note it. Also check the freeze data and/or on-board snapshot data, and download any data found. Then refer to the indicated DTC's troubleshooting, and begin the appropriate troubleshooting procedure.

NOTE:

- **Freeze data indicates the engine conditions when the first system malfunction, misfire, or fuel trim malfunction that activated the MIL was detected.**
- **The HDS can read the DTC, the freeze data, the on-board snapshot, the current data, and other engine control module (ECM) or powertrain control module (PCM) data.**
- **For specific operations, refer to the user's manual that came with the HDS.**

6. If no DTCs are found, go to the MIL circuit troubleshooting (see **MIL CIRCUIT TROUBLESHOOTING**).

If the MIL did not stay on

If the MIL did not stay on but there is a driveability problem, do the symptom troubleshooting.

If you can't duplicate the DTC

Some of the troubleshooting requires you to reset the ECM/PCM and try to duplicate the DTC. If the problem is intermittent and you can't duplicate the DTC, do not continue through the procedure. To do so will only result in confusion and possibly, a needlessly replaced ECM/PCM.

HDS CLEAR COMMAND

The ECM/PCM stores various specific data to backup the system even if there is no electrical power such as when the battery negative terminal or the No. 19 BACK UP Fl ECU (7.5 A) fuse are disconnected. Stored data based on failed parts should be cleared by using the CLEAR COMMAND of the HDS, if parts are replaced.

The HDS has three kinds of clear commands to meet this purpose. They are DTC clear, ECM/PCM reset, and CKP pattern clear. The DTC clear command erases all stored DTC codes, freeze data, on-board snapshot, and readiness codes. This must be done with the HDS after reproducing the DTC during troubleshooting.

The ECM/PCM reset command erases all stored DTCs, freeze data, on-board snapshot, readiness codes, and all specific data to correct the system except CKP pattern. If the CKP pattern data in the ECM/PCM was cleared, you must do the CKP pattern learn procedure. The CKP pattern clear command erases only CKP pattern data. This command is for repair of a misfire or the CKP sensor.

SCAN TOOL CLEAR COMMAND

If you are using a generic scan tool to clear commands, be aware that there is only one setting for clearing the ECM/PCM, and it clears all commands at the same time (CKP pattern learn, idle learn, readiness codes, freeze data, on-board snapshot, and DTCs). After you clear all commands, you then need to do these procedures, in this order: ECM/PCM idle learn procedure (see **ECM/PCM IDLE LEARN PROCEDURE**); CKP pattern learn procedure; test-drive to set **readiness codes** to complete.

DTC CLEAR

1. Clear the DTC with the HDS while the engine is stopped.
2. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
3. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode, and wait 30 seconds.
4. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode, and disconnect the HDS from the DLC.

ECM/PCM RESET

1. Reset the ECM/PCM with the HDS while the engine is stopped.
2. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
3. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode, and wait 30 seconds.
4. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode, and disconnect the HDS from the DLC.
5. Do the ECM/PCM idle learn procedure (see **ECM/PCM IDLE LEARN PROCEDURE**).

CKP PATTERN CLEAR/CKP PATTERN LEARN

Clear/Learn Procedure (with the HDS)

1. Connect the HDS to the data link connector (DLC) (A) located under the driver's side of the dashboard.

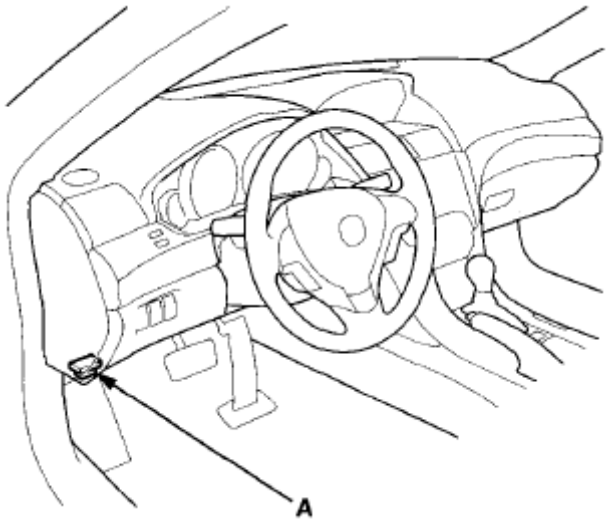


Fig. 4: Identifying Data Link Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
3. Make sure the HDS communicates with the ECM/PCM and other vehicle systems. If it doesn't, go to the DLC circuit troubleshooting (see **DLC CIRCUIT TROUBLESHOOTING**).
4. Select CRANK PATTERN in the ADJUSTMENT MENU with the HDS.
5. Select CRANK PATTERN CLEAR, and clear the CKP pattern.
6. Select CRANK PATTERN LEARNING with the HDS, and follow the screen prompts.

Learn Procedure (without the HDS)

1. Start the engine. Hold the engine speed at 3, 000 RPM without load (A/T in P or N, M/T in neutral) until the radiator fan comes on.
2. Test-drive the vehicle on a level road: Decelerate (with the throttle fully closed) from an engine speed of 2, 500 RPM down to 1, 000 RPM with the Transmission in 2nd.
3. Repeat step 2 several times.
4. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
5. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode, and wait 30 seconds.

How to End a Troubleshooting Session (required after any troubleshooting)

1. Reset the ECM/PCM with the HDS.
2. Do the ECM/PCM idle learn procedure (see **ECM/PCM IDLE LEARN PROCEDURE**).
3. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
4. Disconnect the HDS from the DLC.

NOTE: The ECM/PCM is part of the immobilizer system. If you replace the ECM/PCM, for the engine to start, you must use the HDS to instruct the new ECM/PCM and the immobilizer-keyless control unit (without keyless access) or the keyless access system (with keyless access) to recognize each other's unique serial code.

How to Troubleshoot Circuits at the ECM/PCM Connectors

NOTE: The ECM/PCM overwrites data and monitors the EVAP system for about 40 minutes after the ignition switch is turned to LOCK (0), or the engine start/stop button is pressed to select the OFF mode. Jumping the SCS line after turning the ignition switch to LOCK (0), or pressing the engine start/stop button to select OFF mode cancels this function. Disconnecting the ECM/PCM during this function, without jumping the SCS line first, can damage the ECM/PCM.

1. Jump the SCS line with the HDS.
2. Disconnect ECM/PCM connectors A, B, and C.

NOTE: ECM/PCM connectors A, B, and C have symbols (A=[], B=delta, C=o) embossed on them for identification.

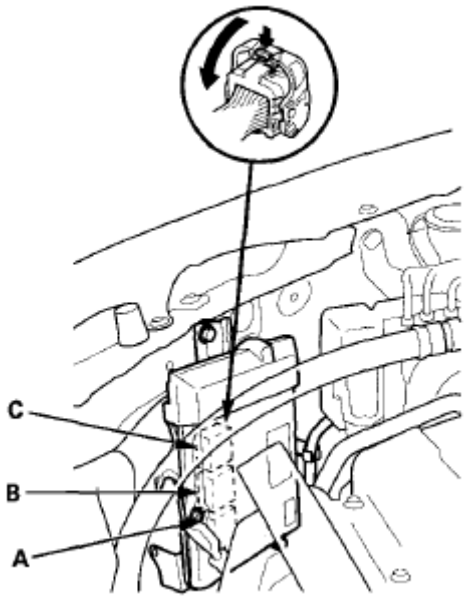


Fig. 5: Identifying ECM/PCM Connectors A, B And C
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. When diagnosis/troubleshooting is done at the ECM/PCM connector, use the terminal test port (A) above the terminal you need to check.

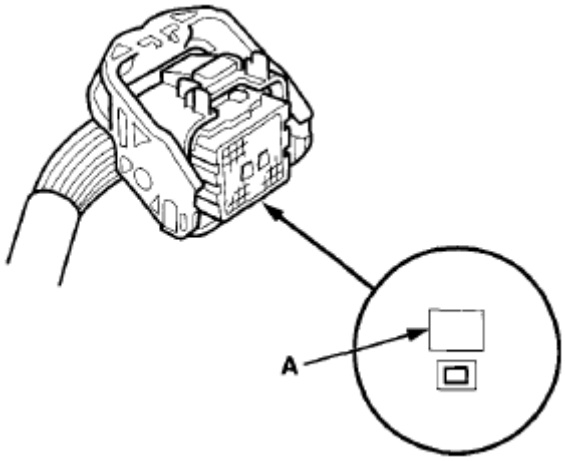


Fig. 6: Identifying Terminal Test Port Of ECM/PCM Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Connect one side of the patch cord's terminals (A) to a commercially available digital multimeter (B), and connect the other side of the terminals (C) to a commercially available banana jack (Pomona Electronics Tool No. 3563 or equivalent) (D).

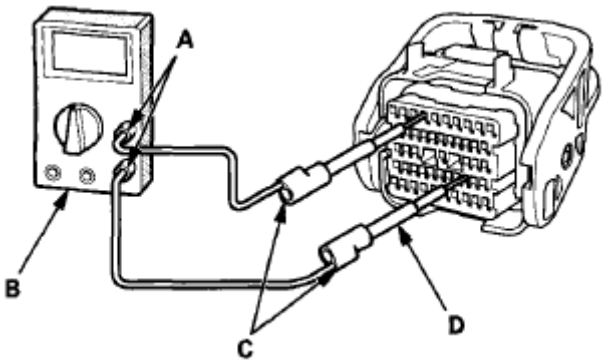


Fig. 7: Identifying Patch Chord's Terminals, Multimeter, Banana Jack And Terminals
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Gently contact the pin probe (male) at the terminal test port from the terminal side. Do not force the tips into the terminals.

NOTE:

- **For accurate results, always use the pin probe (male).**
- **To prevent damage to the connector terminals, do not insert test equipment probes, paper clips, or other substitutes. Damaged terminals cause a poor connection and an incorrect measurement.**
- **Do not puncture the insulation on a wire. Punctures can cause poor or intermittent electrical connections.**

Substituting the ECM/PCM

Special Tools Required

- Honda Diagnostic System (HDS) tablet tester
- Honda Interface Module (HIM) and an iN workstation with the latest HDS software version
- HDS pocket tester
- GNA600 and an iN workstation with the latest HDS software version
- MVCI unit with the latest control module (CM) update software installed

Any one of the above updating tools can be used.

NOTE:

- **Use this procedure when you have to substitute a known-good ECM/PCM during the troubleshooting procedure.**
- **Make sure the HDS/iN workstation or the MVCI unit has the latest HDS software version.**

1. Connect the HDS to the data link connector (DLC) (A) located under the driver's side of the dashboard.

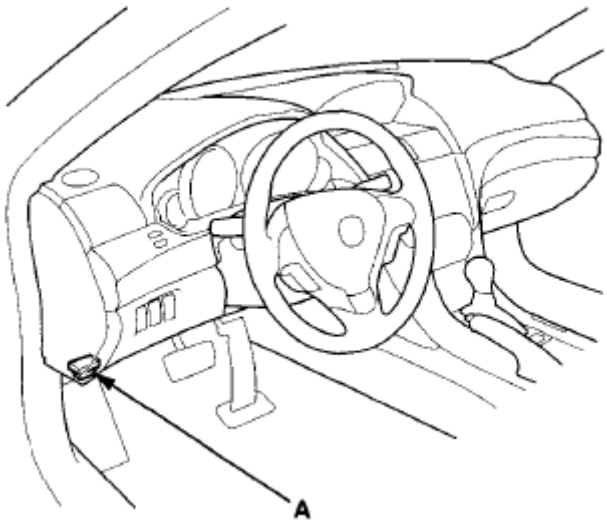


Fig. 8: Identifying Data Link Connector Location
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
3. Make sure the HDS communicates with the ECM/PCM and other vehicle systems. If it doesn't, go to the DLC circuit troubleshooting (see **DLC CIRCUIT TROUBLESHOOTING**). If you are returning from DLC circuit troubleshooting, skip steps 4 and 5, then clean the throttle body after substituting the ECM/PCM (see **THROTTLE BODY CLEANING**).
4. Select the INSPECTION MENU with the HDS.
5. Select the ETCS TEST, then select the TP POSITION CHECK, and follow the screen prompts.

NOTE: If the TP POSITION CHECK indicates FAILED, continue this procedure.

6. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
7. Jump the SCS line with the HDS.
8. Disconnect ECM/PCM connectors A, B, and C, then remove the ECM/PCM assembly (D).

NOTE: ECM/PCM connectors A, B, and C have symbols (A=[], B=delta, C=o) embossed on them for identification.

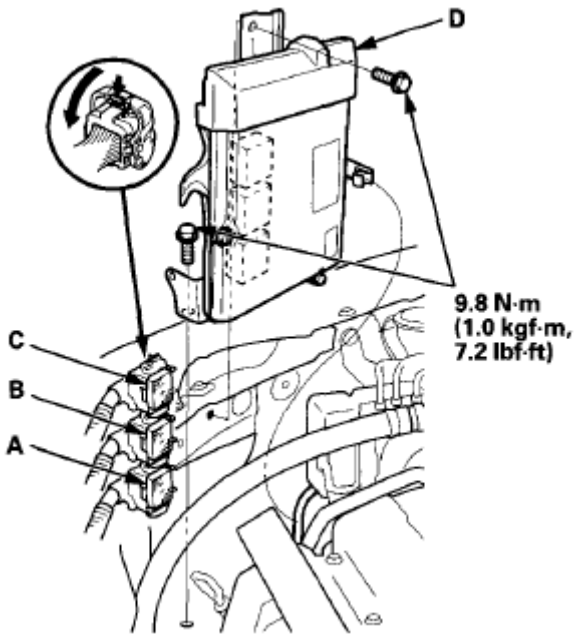


Fig. 9: Identifying ECM/PCM Connectors A, B And C And ECM/PCM Assembly With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

9. Remove the cover (A) and the bracket (B) from the ECM/PCM (C).

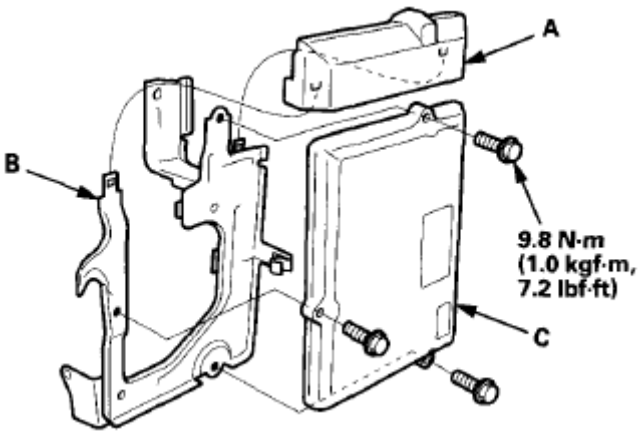


Fig. 10: Identifying Cover, Bracket And ECM/PCM With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

10. Install a known-good ECM/PCM in the reverse order of removal.
11. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.

NOTE: DTC P0630 (VIN Not Programmed or Mismatch) may be stored because the VIN has not been programmed into the ECM/PCM; ignore it, and continue this procedure.

12. Manually input the VIN to the ECM/PCM with the HDS.
13. Select the IMMOBI system (without keyless access) or ONE PUSH START system (with keyless access) with the HDS.
14. Enter the immobilizer ECM/PCM code that you got from the iN, and use the ECM/PCM replacement procedure in the IMMOBI Menu (without keyless access) or ONE PUSH START Menu (with keyless access) of the HDS; it allows you to start the engine.
15. Reset the ECM/PCM with the HDS.
16. If the TP POSITION CHECK failed in step 5, clean the throttle body (see **THROTTLE BODY CLEANING**).
17. Update the ECM/PCM if it does not have the latest software (see **ECM/PCM UPDATE**).
18. Do the ECM/PCM idle learn procedure (see **ECM/PCM IDLE LEARN PROCEDURE**).
19. Do the CKP pattern clear/CKP pattern learn procedure.

OBD Status

The OBD status shows the current system status of each DTC and all of the parameters. This function is used to see if the repair was successfully completed. The results of diagnostic tests for the DTC are displayed as:

- PASSED: The on board diagnosis is successfully finished.
- FAILED: The on board diagnosis has finished but failed.
- EXECUTING: The vehicle is in enable criteria conditions of the DTC, and the on board diagnosis is running.
- NOT COMPLETED: The on board diagnosis was running but is out of the enable conditions of the DTC.
- OUT OF CONDITION: The vehicle has stayed out of the enable conditions of at the DTC.

DTC TROUBLESHOOTING INDEX

DTC (MIL indication(1))	Two Drive Cycle Detection	Detection Item	MIL	Note
P0101 (50)	o	Mass Air Flow (MAF) Sensor Circuit Range/Performance Problem	ON	DTC Troubleshooting (see **DTC TROUBLESHOOTING**)
		Mass Air Flow (MAF)		DTC Troubleshooting (see **DTC P0102: MAF**

P0102 (50)	- -	Sensor Circuit Low Voltage	ON	**SENSOR CIRCUIT LOW VOLTAGE**)
P0103 (50)	- -	Mass Air Flow (MAF) Sensor Circuit High Voltage	ON	DTC Troubleshooting (see **DTC P0103: MAF SENSOR CIRCUIT HIGH VOLTAGE**)
P0107 (3)	- -	Manifold Absolute Pressure (MAP) Sensor Circuit Low Voltage	ON	DTC Troubleshooting (see **DTC P0107: MAP SENSOR CIRCUIT LOW VOLTAGE**)
P0108 (3)	- -	Manifold Absolute Pressure (MAP) Sensor Circuit High Voltage	ON	DTC Troubleshooting (see **DTC P0108: MAP SENSOR CIRCUIT HIGH VOLTAGE**)
P0111 (10)	o	Intake Air Temperature (IAT) Sensor Circuit Range/Performance Problem	ON	DTC Troubleshooting (see **DTC P0111: IAT SENSOR CIRCUIT RANGE/PERFORMANCE PROBLEM**)
P0112 (10)	o	Intake Air Temperature (IAT) Sensor Circuit Low Voltage	ON	DTC Troubleshooting (see **DTC P0112: IAT SENSOR CIRCUIT LOW VOLTAGE**)
P0113 (10)	o	Intake Air Temperature (IAT) Sensor Circuit High Voltage	ON	DTC Troubleshooting (see **DTC P0113: IAT SENSOR CIRCUIT HIGH VOLTAGE**)
P0116 (86)	o	Engine Coolant Temperature (ECT) Sensor 1 Circuit Range/Performance Problem	ON	DTC Troubleshooting (see **DTC P0116: ECT SENSOR 1 CIRCUIT RANGE/PERFORMANCE PROBLEM**)
P0117 (6)	- -	Engine Coolant Temperature (ECT) Sensor 1 Circuit Low Voltage	ON	DTC Troubleshooting (see **DTC P0117: ECT SENSOR 1 CIRCUIT LOW VOLTAGE**)
P0118 (6)	- -	Engine Coolant Temperature (ECT) Sensor 1 Circuit High Voltage	ON	DTC Troubleshooting (see **DTC P0118: ECT SENSOR 1 CIRCUIT HIGH VOLTAGE**)
P0122 (7)	- -	Throttle Position (TP) Sensor A Circuit Low Voltage	ON	DTC Troubleshooting (see **DTC TROUBLESHOOTING**)
P0123 (7)	- -	Throttle Position (TP) Sensor A Circuit High Voltage	ON	DTC Troubleshooting (see **DTC P0123: TP SENSOR A CIRCUIT HIGH VOLTAGE**)
P0125 (86)	o	Engine Coolant Temperature (ECT) Sensor 1 Malfunction/Slow Response	ON	DTC Troubleshooting (see **DTC P0125: ECT SENSOR 1 MALFUNCTION/SLOW RESPONSE**)
		Cooling System		DTC Troubleshooting (see **DTC P0128:**

P0128 (87)	o	Malfunction	ON	**COOLING SYSTEM MALFUNCTION**)
P0133 (157)	o	Rear Air Fuel Ratio (A/F) Sensor (Bank 1, Sensor 1) Malfunction/Slow Response	ON	DTC Troubleshooting (see **DTC P0133: REAR A/F SENSOR (BANK 1, SENSOR 1) MALFUNCTION/SLOW RESPONSE; DTC P0153: FRONT A/F SENSOR (BANK 2, SENSOR 1) MALFUNCTION/SLOW RESPONSE**)
P0134 (151)	o	Rear Air Fuel Ratio (A/F) Sensor (Bank 1, Sensor 1) Heater System Malfunction	ON	DTC Troubleshooting (see **DTC P0134: REAR A/F SENSOR (BANK 1, SENSOR 1) HEATER SYSTEM MALFUNCTION; DTC P0154: FRONT A/F SENSOR (BANK 2, SENSOR 1) HEATER SYSTEM MALFUNCTION**)
P0135 (151)	o	Rear Air Fuel Ratio (A/F) Sensor (Bank 1, Sensor 1) Heater Circuit Malfunction	ON	DTC Troubleshooting (see **DTC P0135: REAR A/F SENSOR (BANK 1, SENSOR 1) HEATER CIRCUIT MALFUNCTION; DTC P0155: FRONT A/F SENSOR (BANK 2, SENSOR 1) HEATER CIRCUIT MALFUNCTION**)
P0137 (161)	o	Rear Secondary Heated Oxygen Sensor (Secondary HO2S (Bank 1, Sensor 2)) Circuit Low Voltage	ON	DTC Troubleshooting (see **DTC P0137: REAR SECONDARY HO2S (BANK 1, SENSOR 2) CIRCUIT LOW VOLTAGE; DTC P0157: FRONT SECONDARY HO2S (BANK 2, SENSOR 2) CIRCUIT LOW VOLTAGE**)
P0138 (161)	o	Rear Secondary Heated Oxygen Sensor (Secondary HO2S (Bank 1, Sensor 2)) Circuit High Voltage	ON	DTC Troubleshooting (see **DTC P0138: REAR SECONDARY HO2S (BANK 1, SENSOR 2) CIRCUIT HIGH VOLTAGE; DTC P0158: FRONT SECONDARY HO2S (BANK 2, SENSOR 2) CIRCUIT HIGH VOLTAGE**)
P0139 (161)	o	Rear Secondary Heated Oxygen Sensor (Secondary HO2S (Bank 1, Sensor 2)) Slow Response	ON	DTC Troubleshooting (see **DTC P0139: REAR SECONDARY HO2S (BANK 1, SENSOR 2) SLOW RESPONSE; DTC P0159: FRONT SECONDARY HO2S (BANK 2, SENSOR 2) SLOW RESPONSE**)
P0141 (163)	o	Rear Secondary Heated Oxygen Sensor (Secondary HO2S (Bank 1, Sensor 2)) Heater Circuit Malfunction	ON	DTC Troubleshooting (see **DTC P0141: REAR SECONDARY HO2S (BANK 1, SENSOR 2) HEATER CIRCUIT MALFUNCTION; DTC P0161: FRONT SECONDARY HO2S (BANK 2, SENSOR 2) HEATER CIRCUIT MALFUNCTION**)
P0153 (158)	o	Front Air Fuel Ratio (A/F) Sensor (Bank 2, Sensor 1) Malfunction/Slow	ON	DTC Troubleshooting (see **DTC P0133: REAR A/F SENSOR (BANK 1, SENSOR 1) MALFUNCTION/SLOW RESPONSE; DTC P0153: FRONT A/F SENSOR (BANK 2, SENSOR 1) MALFUNCTION/SLOW**

		Response		**RESPONSE**)
P0154 (152)	o	Front Air Fuel Ratio (A/F) Sensor (Bank 2, Sensor 1) Heater System Malfunction	ON	DTC Troubleshooting (see **DTC P0134: REAR A/F SENSOR (BANK 1, SENSOR 1) HEATER SYSTEM MALFUNCTION; DTC P0154: FRONT A/F SENSOR (BANK 2, SENSOR 1) HEATER SYSTEM MALFUNCTION**)
P0155 (152)	o	Front Air Fuel Ratio (A/F) Sensor (Bank 2, Sensor 1) Heater Circuit Malfunction	ON	DTC Troubleshooting (see **DTC P0135: REAR A/F SENSOR (BANK 1, SENSOR 1) HEATER CIRCUIT MALFUNCTION; DTC P0155: FRONT A/F SENSOR (BANK 2, SENSOR 1) HEATER CIRCUIT MALFUNCTION**)
P0157 (162)	o	Front Secondary Heated Oxygen Sensor (Secondary HO2S (Bank 2, Sensor 2)) Circuit Low Voltage	ON	DTC Troubleshooting (see **DTC P0137: REAR SECONDARY HO2S (BANK 1, SENSOR 2) CIRCUIT LOW VOLTAGE; DTC P0157: FRONT SECONDARY HO2S (BANK 2, SENSOR 2) CIRCUIT LOW VOLTAGE**)
P0158 (162)	o	Front Secondary Heated Oxygen Sensor (Secondary HO2S (Bank 2, Sensor 2)) Circuit High Voltage	ON	DTC Troubleshooting (see **DTC P0138: REAR SECONDARY HO2S (BANK 1, SENSOR 2) CIRCUIT HIGH VOLTAGE; DTC P0158: FRONT SECONDARY HO2S (BANK 2, SENSOR 2) CIRCUIT HIGH VOLTAGE**)
P0159 (162)	o	Front Secondary Heated Oxygen Sensor (Secondary HO2S (Bank 2, Sensor 2)) Slow Response	ON	DTC Troubleshooting (see **DTC P0139: REAR SECONDARY HO2S (BANK 1, SENSOR 2) SLOW RESPONSE; DTC P0159: FRONT SECONDARY HO2S (BANK 2, SENSOR 2) SLOW RESPONSE**)
P0161 (164)	o	Front Secondary Heated Oxygen Sensor (Secondary HO2S (Bank 2, Sensor 2)) Heater Circuit Malfunction	ON	DTC Troubleshooting (see **DTC P0141: REAR SECONDARY HO2S (BANK 1, SENSOR 2) HEATER CIRCUIT MALFUNCTION; DTC P0161: FRONT SECONDARY HO2S (BANK 2, SENSOR 2) HEATER CIRCUIT MALFUNCTION**)
P0171 (153)	o	Rear Bank (Bank 1) Fuel System Too Lean	ON	DTC Troubleshooting (see **DTC P0171: REAR BANK (BANK 1) FUEL SYSTEM TOO LEAN; DTC P0172: REAR BANK (BANK 1) FUEL SYSTEM TOO RICH; DTC P0174: FRONT BANK (BANK 2) FUEL SYSTEM TOO LEAN; DTC P0175: FRONT BANK (BANK 2) FUEL SYSTEM TOO RICH**)
				DTC Troubleshooting (see **DTC P0171: REAR BANK (BANK 1) FUEL SYSTEM TOO LEAN; DTC P0172: REAR BANK**

P0172 (153)	o	Rear Bank (Bank 1) Fuel System Too Rich	ON	**(BANK 1) FUEL SYSTEM TOO RICH; DTC P0174: FRONT BANK (BANK 2) FUEL SYSTEM TOO LEAN; DTC P0175: FRONT BANK (BANK 2) FUEL SYSTEM TOO RICH**)
P0174 (154)	o	Front Bank (Bank 2) Fuel System Too Lean	ON	DTC Troubleshooting (see **DTC P0171: REAR BANK (BANK 1) FUEL SYSTEM TOO LEAN; DTC P0172: REAR BANK (BANK 1) FUEL SYSTEM TOO RICH; DTC P0174: FRONT BANK (BANK 2) FUEL SYSTEM TOO LEAN; DTC P0175: FRONT BANK (BANK 2) FUEL SYSTEM TOO RICH**)
P0175 (154)	o	Front Bank (Bank 2) Fuel System Too Rich	ON	DTC Troubleshooting (see **DTC P0171: REAR BANK (BANK 1) FUEL SYSTEM TOO LEAN; DTC P0172: REAR BANK (BANK 1) FUEL SYSTEM TOO RICH; DTC P0174: FRONT BANK (BANK 2) FUEL SYSTEM TOO LEAN; DTC P0175: FRONT BANK (BANK 2) FUEL SYSTEM TOO RICH**)
P0222 (7)	- -	Throttle Position (TP) Sensor B Circuit Low Voltage	ON	DTC Troubleshooting (see **DTC P0222: TP SENSOR B CIRCUIT LOW VOLTAGE**)
P0223 (7)	- -	Throttle Position (TP) Sensor B Circuit High Voltage	ON	DTC Troubleshooting (see **DTC P0223: TP SENSOR B CIRCUIT HIGH VOLTAGE**)
P0300 (77) and any combination of the following: P0301 (71) P0302 (72) P0303 (73) P0304 (74) P0305 (75) P0306 (76)	o	Random Misfire Detected	ON	DTC Troubleshooting (see **DTC P0300: RANDOM MISFIRE AND ANY COMBINATION OF THE FOLLOWING:; DTC P0301: NO. 1 CYLINDER MISFIRE DETECTED; DTC P0302: NO. 2 CYLINDER MISFIRE DETECTED; DTC P0303: NO. 3 CYLINDER MISFIRE DETECTED; DTC P0304: NO. 4 CYLINDER MISFIRE DETECTED DTC P0305: NO. 5 CYLINDER MISFIRE DETECTED; DTC P0306: NO. 6 CYLINDER MISFIRE DETECTED**)
P0301 (71)	o	No. 1 Cylinder Misfire Detected	ON	DTC Troubleshooting (see **DTC P0301: NO. 1 CYLINDER MISFIRE DETECTED; DTC P0302: NO. 2 CYLINDER MISFIRE DETECTED; DTC P0303: NO. 3 CYLINDER MISFIRE DETECTED; DTC P0304: NO. 4 CYLINDER MISFIRE DETECTED; DTC P0305: NO. 5 CYLINDER MISFIRE DETECTED; DTC**

				P0306: NO. 6 CYLINDER MISFIRE DETECTED)
P0302 (72)	o	No. 2 Cylinder Misfire Detected	ON	DTC Troubleshooting (see **DTC P0301: NO. 1 CYLINDER MISFIRE DETECTED; DTC P0302: NO. 2 CYLINDER MISFIRE DETECTED; DTC P0303: NO. 3 CYLINDER MISFIRE DETECTED; DTC P0304: NO. 4 CYLINDER MISFIRE DETECTED; DTC P0305: NO. 5 CYLINDER MISFIRE DETECTED; DTC P0306: NO. 6 CYLINDER MISFIRE DETECTED**)
P0303 (73)	o	No. 3 Cylinder Misfire Detected	ON	DTC Troubleshooting (see **DTC P0301: NO. 1 CYLINDER MISFIRE DETECTED; DTC P0302: NO. 2 CYLINDER MISFIRE DETECTED; DTC P0303: NO. 3 CYLINDER MISFIRE DETECTED; DTC P0304: NO. 4 CYLINDER MISFIRE DETECTED; DTC P0305: NO. 5 CYLINDER MISFIRE DETECTED; DTC P0306: NO. 6 CYLINDER MISFIRE DETECTED**)
P0304 (74)	o	No. 4 Cylinder Misfire Detected	ON	DTC Troubleshooting (see **DTC P0301: NO. 1 CYLINDER MISFIRE DETECTED; DTC P0302: NO. 2 CYLINDER MISFIRE DETECTED; DTC P0303: NO. 3 CYLINDER MISFIRE DETECTED; DTC P0304: NO. 4 CYLINDER MISFIRE DETECTED; DTC P0305: NO. 5 CYLINDER MISFIRE DETECTED; DTC P0306: NO. 6 CYLINDER MISFIRE DETECTED**)
P0305 (75)	o	No. 5 Cylinder Misfire Detected	ON	DTC Troubleshooting (see **DTC P0301: NO. 1 CYLINDER MISFIRE DETECTED; DTC P0302: NO. 2 CYLINDER MISFIRE DETECTED; DTC P0303: NO. 3 CYLINDER MISFIRE DETECTED; DTC P0304: NO. 4 CYLINDER MISFIRE DETECTED; DTC P0305: NO. 5 CYLINDER MISFIRE DETECTED; DTC P0306: NO. 6 CYLINDER MISFIRE DETECTED**)
P0306 (76)	o	No. 6 Cylinder Misfire	ON	DTC Troubleshooting (see **DTC P0301: NO. 1 CYLINDER MISFIRE DETECTED; DTC P0302: NO. 2 CYLINDER MISFIRE DETECTED; DTC P0303: NO. 3 CYLINDER MISFIRE DETECTED; DTC**

		Detected		**P0304: NO. 4 CYLINDER MISFIRE DETECTED; DTC P0305: NO. 5 CYLINDER MISFIRE DETECTED; DTC P0306: NO. 6 CYLINDER MISFIRE DETECTED**)
P0325 (23)	- -	Knock Sensor Circuit Malfunction	ON	DTC Troubleshooting (see **DTC P0325: KNOCK SENSOR CIRCUIT MALFUNCTION**)
P0335 (4)	- -	Crankshaft Position (CKP) Sensor No Signal	ON	DTC Troubleshooting (see **DTC P0335: CKP SENSOR NO SIGNAL**)
P0339 (4)	- -	Crankshaft Position (CKP) Sensor Circuit Intermittent Interruption	ON	DTC Troubleshooting (see **DTC P0339: CKP SENSOR CIRCUIT INTERMITTENT INTERRUPTION**)
P0351 (71)	- -	No. 1 Cylinder Ignition Coil Circuit Malfunction	ON	DTC Troubleshooting (see **DTC P0351: NO. 1 CYLINDER IGNITION COIL CIRCUIT MALFUNCTION; DTC P0352: NO. 2 CYLINDER IGNITION COIL CIRCUIT MALFUNCTION; DTC P0353: NO. 3 CYLINDER IGNITION COIL CIRCUIT MALFUNCTION; DTC P0354: NO. 4 CYLINDER IGNITION COIL CIRCUIT MALFUNCTION; DTC P0355: NO. 5 CYLINDER IGNITION COIL CIRCUIT MALFUNCTION; DTC P0356: NO. 6 CYLINDER IGNITION COIL CIRCUIT MALFUNCTION**)
P0352 (72)	- -	No. 2 Cylinder Ignition Coil Circuit Malfunction	ON	DTC Troubleshooting (see **DTC P0351: NO. 1 CYLINDER IGNITION COIL CIRCUIT MALFUNCTION; DTC P0352: NO. 2 CYLINDER IGNITION COIL CIRCUIT MALFUNCTION; DTC P0353: NO. 3 CYLINDER IGNITION COIL CIRCUIT MALFUNCTION; DTC P0354: NO. 4 CYLINDER IGNITION COIL CIRCUIT MALFUNCTION; DTC P0355: NO. 5 CYLINDER IGNITION COIL CIRCUIT MALFUNCTION; DTC P0356: NO. 6 CYLINDER IGNITION COIL CIRCUIT MALFUNCTION**)
		No. 3 Cylinder Ignition		DTC Troubleshooting (see **DTC P0351: NO. 1 CYLINDER IGNITION COIL CIRCUIT MALFUNCTION; DTC P0352: NO. 2 CYLINDER IGNITION COIL CIRCUIT MALFUNCTION; DTC P0353: NO. 3 CYLINDER IGNITION COIL CIRCUIT**

P0353 (73)	- -	Coil Circuit Malfunction	ON	**MALFUNCTION; DTC P0354: NO. 4 CYLINDER IGNITION COIL CIRCUIT MALFUNCTION; DTC P0355: NO. 5 CYLINDER IGNITION COIL CIRCUIT MALFUNCTION; DTC P0356: NO. 6 CYLINDER IGNITION COIL CIRCUIT MALFUNCTION**)
P0354 (74)	- -	No. 4 Cylinder Ignition Coil Circuit Malfunction	ON	DTC Troubleshooting (see **DTC P0351: NO. 1 CYLINDER IGNITION COIL CIRCUIT MALFUNCTION; DTC P0352: NO. 2 CYLINDER IGNITION COIL CIRCUIT MALFUNCTION; DTC P0353: NO. 3 CYLINDER IGNITION COIL CIRCUIT MALFUNCTION; DTC P0354: NO. 4 CYLINDER IGNITION COIL CIRCUIT MALFUNCTION; DTC P0355: NO. 5 CYLINDER IGNITION COIL CIRCUIT MALFUNCTION; DTC P0356: NO. 6 CYLINDER IGNITION COIL CIRCUIT MALFUNCTION**)
P0355 (75)	- -	No. 5 Cylinder Ignition Coil Circuit Malfunction	ON	DTC Troubleshooting (see **DTC P0351: NO. 1 CYLINDER IGNITION COIL CIRCUIT MALFUNCTION; DTC P0352: NO. 2 CYLINDER IGNITION COIL CIRCUIT MALFUNCTION; DTC P0353: NO. 3 CYLINDER IGNITION COIL CIRCUIT MALFUNCTION; DTC P0354: NO. 4 CYLINDER IGNITION COIL CIRCUIT MALFUNCTION; DTC P0355: NO. 5 CYLINDER IGNITION COIL CIRCUIT MALFUNCTION; DTC P0356: NO. 6 CYLINDER IGNITION COIL CIRCUIT MALFUNCTION**)
P0356 (76)	- -	No. 6 Cylinder Ignition Coil Circuit Malfunction	ON	DTC Troubleshooting (see **DTC P0351: NO. 1 CYLINDER IGNITION COIL CIRCUIT MALFUNCTION; DTC P0352: NO. 2 CYLINDER IGNITION COIL CIRCUIT MALFUNCTION; DTC P0353: NO. 3 CYLINDER IGNITION COIL CIRCUIT MALFUNCTION; DTC P0354: NO. 4 CYLINDER IGNITION COIL CIRCUIT MALFUNCTION; DTC P0355: NO. 5 CYLINDER IGNITION COIL CIRCUIT MALFUNCTION; DTC P0356: NO. 6 CYLINDER IGNITION COIL CIRCUIT MALFUNCTION**)
		Camshaft Position		DTC Troubleshooting (see **DTC P0365: CMP**

P0365 (8)	- -	(CMP) Sensor Circuit No Signal	ON	**SENSOR CIRCUIT NO SIGNAL**)
P0369 (8)	- -	Camshaft Position (CMP) Sensor Circuit Intermittent Interruption	ON	DTC Troubleshooting (see **DTC P0369: CMP SENSOR CIRCUIT INTERMITTENT INTERRUPTION**)
P0400 (80)	o	Exhaust Gas Recirculation (EGR) System Leak Detected	ON	DTC Troubleshooting (see **DTC TROUBLESHOOTING**)
P0401 (80)	o	Exhaust Gas Recirculation (EGR) Insufficient Flow	ON	DTC Troubleshooting (see **DTC P0401: EGR INSUFFICIENT FLOW**)
P0404 (12)	o	Exhaust Gas Recirculation (EGR) Valve Circuit Range/Performance Problem	ON	DTC Troubleshooting (see **DTC P0404: EGR CIRCUIT RANGE/PERFORMANCE PROBLEM**)
P0406 (12)	o	Exhaust Gas Recirculation (EGR) Valve Position Sensor Circuit High Voltage	ON	DTC Troubleshooting (see **DTC P0406: EGR VALVE POSITION SENSOR CIRCUIT HIGH VOLTAGE**)
P0420 (165)	o	Rear Bank Catalyst System Efficiency Below Threshold (Bank 1)	ON	DTC Troubleshooting (see **DTC TROUBLESHOOTING**)
P0430 (166)	o	Front Bank Catalyst System Efficiency Below Threshold (Bank 2)	ON	DTC Troubleshooting (see **DTC TROUBLESHOOTING**)
P0443 (92)	o	Evaporative Emission (EVAP) Canister Purge Valve Circuit Malfunction	ON	DTC Troubleshooting (see **DTC TROUBLESHOOTING**)
P0451 (91)	o	Fuel Tank Pressure (FTP) Sensor Circuit Range/Performance Problem	ON	DTC Troubleshooting (see **DTC P0451: FTP SENSOR CIRCUIT RANGE/PERFORMANCE PROBLEM**)
P0452 (91)	o	Fuel Tank Pressure (FTP) Sensor Circuit Low Voltage	ON	DTC Troubleshooting (see **DTC P0452: FTP SENSOR CIRCUIT LOW VOLTAGE**)
P0453 (91)	o	Fuel Tank Pressure (FTP) Sensor Circuit High Voltage	ON	DTC Troubleshooting (see **DTC P0453: FTP SENSOR CIRCUIT HIGH VOLTAGE**)
P0455 (90)	o	Evaporative Emission (EVAP) System Large	ON	DTC Troubleshooting (see **DTC P0455: EVAP SYSTEM LARGE LEAK DETECTED; DTC P0456: EVAP SYSTEM VERY**

		Leak Detected		**SMALL LEAK DETECTED**)
P0456 (90)	o	Evaporative Emission (EVAP) System Very Small Leak Detected	ON	DTC Troubleshooting (see **DTC P0455: EVAP SYSTEM LARGE LEAK DETECTED; DTC P0456: EVAP SYSTEM VERY SMALL LEAK DETECTED**)
P0457	- -	Evaporative Emission (EVAP) System Leak Detected/Fuel Fill Cap Loose or Missing	OFF	DTC Troubleshooting (see **DTC P0457: EVAP SYSTEM LEAK DETECTED/FUEL FILL CAP LOOSE OR MISSING**)
P0461	- -	Fuel Level Sensor (Fuel Gauge Sending Unit) Circuit Range/Performance Problem	OFF	DTC Troubleshooting (see **DTC TROUBLESHOOTING**)
P0462(2)	o	Fuel Level Sensor (Fuel Gauge Sending Unit) Circuit Low Voltage	OFF	DTC Troubleshooting (see **DTC TROUBLESHOOTING**)
P0462(3)	o	Fuel Level Sensor (Fuel Gauge Sending Unit) Circuit Low Voltage	OFF	DTC Troubleshooting (see **DTC P0462: FUEL LEVEL SENSOR (FUEL GAUGE SENDING UNIT) CIRCUIT LOW VOLTAGE (WITH SH-AWD)**)
P0463(2)	o	Fuel Level Sensor (Fuel Gauge Sending Unit) Circuit High Voltage	OFF	DTC Troubleshooting (see **DTC P0463: FUEL LEVEL SENSOR (FUEL GAUGE SENDING UNIT) CIRCUIT HIGH VOLTAGE (WITHOUT SH-AWD)**)
P0463(3)	o	Fuel Level Sensor (Fuel Gauge Sending Unit) Circuit High Voltage	OFF	DTC Troubleshooting (see **DTC P0463: FUEL LEVEL SENSOR (FUEL GAUGE SENDING UNIT) CIRCUIT HIGH VOLTAGE (WITH SH-AWD)**)
P0496 (92)	o	Evaporative Emission (EVAP) System High Purge Flow Detected	ON	DTC Troubleshooting (see **DTC P0496: EVAP SYSTEM HIGH PURGE FLOW DETECTED**)
P0497 (90)	o	Evaporative Emission (EVAP) System Low Purge Flow Detected	ON	DTC Troubleshooting (see **DTC P0496: EVAP SYSTEM HIGH PURGE FLOW DETECTED**)
P0497 (90)-2	o	Evaporative Emission (EVAP) System Low Purge Flow Detected	ON	DTC Troubleshooting (see **DTC P0497: EVAP SYSTEM LOW PURGE FLOW DETECTED (WITH SH-AWD)**)
P0498 (117)	o	Evaporative Emission (EVAP) Canister Vent Shut Valve Circuit Low Voltage	ON	DTC Troubleshooting (see **DTC P0498: EVAP CANISTER VENT SHUT VALVE CIRCUIT LOW VOLTAGE**)
P0499 (117)	o	Evaporative Emission (EVAP) Canister Vent Shut Valve Circuit	ON	DTC Troubleshooting (see **DTC P0499: EVAP CANISTER VENT SHUT VALVE**

		High Voltage		**CIRCUIT HIGH VOLTAGE**)
P0506 (14)	o	Idle Control System RPM Lower than Expected	ON	DTC Troubleshooting (see **DTC TROUBLESHOOTING**)
P0507 (14)	o	Idle Control System RPM Higher than Expected	ON	DTC Troubleshooting (see **DTC P0507: IDLE CONTROL SYSTEM RPM HIGHER THAN EXPECTED**)
P050A (167)	o	Cold Start Idle Air Control System Performance Problem	ON	DTC Troubleshooting (see **DTC P050A: COLD START IDLE AIR CONTROL SYSTEM PERFORMANCE PROBLEM**)
P050B (167)	o	Cold Start Ignition Timing Control System Performance Problem	ON	DTC Troubleshooting (see **DTC P050B: COLD START IGNITION TIMING CONTROL SYSTEM PERFORMANCE PROBLEM**)
P0560 (34)	- -	Engine Control Module (ECM)/Powertrain Control Module (PCM) Power Source Circuit Unexpected Voltage	ON	DTC Troubleshooting (see **DTC P0560: PCM POWER SOURCE CIRCUIT UNEXPECTED VOLTAGE**)
P0562	- -	Charging System Low Voltage	OFF	DTC Troubleshooting (see **DTC P0562: CHARGING SYSTEM LOW VOLTAGE**)
P0563	o	Engine Control Module (ECM)/Powertrain Control Module (PCM) Power Source Circuit Unexpected Voltage	OFF	DTC Troubleshooting (see **DTC P0563: ECM/PCM POWER SOURCE CIRCUIT UNEXPECTED VOLTAGE**)
P0602 (196)	- -	Engine Control Module (ECM)/Powertrain Control Module (PCM) Programming Error	ON	DTC Troubleshooting (see **DTC P0602: ECM/PCM PROGRAMMING ERROR**)
P060A (131)	- -	Engine Control Module (ECM)/Powertrain Control Module (PCM) Internal Control Module Malfunction	ON	DTC Troubleshooting (see **DTC P0602: ECM/PCM PROGRAMMING ERROR**)
P0615(4)	- -	Starter Cut Relay STRLD Circuit Malfunction	OFF	DTC Troubleshooting (see **DTC P0615: STARTER CUT RELAY STRLD CIRCUIT MALFUNCTION (M/T)**)
P0615(5)	- -	Starter Cut Relay STRLD Circuit Malfunction	OFF	DTC Troubleshooting (see **DTC P0615: STARTER CUT RELAY STRLD CIRCUIT MALFUNCTION (A/T)**)
P062F (131)	- -	Engine Control Module (ECM)/Powertrain Control Module (PCM) Internal Control Module Keep Alive	ON	DTC Troubleshooting (see **DTC P062F: ECM/PCM INTERNAL CONTROL MODULE KEEP ALIVE MEMORY (KAM) ERROR**)

		Memory (KAM) Error		
P0630 (139)	- -	VIN Not Programmed or Mismatch	ON	DTC Troubleshooting (see **DTC P062F: ECM/PCM INTERNAL CONTROL MODULE KEEP ALIVE MEMORY (KAM) ERROR**)
P0641 (133)	- -	Sensor Reference Voltage A Malfunction	ON	DTC Troubleshooting (see **DTC P0641: SENSOR REFERENCE VOLTAGE A MALFUNCTION**)
P0651 (134)	- -	Sensor Reference Voltage B Malfunction	ON	DTC Troubleshooting (see **DTC P0651: SENSOR REFERENCE VOLTAGE B MALFUNCTION**)
P0685 (135)	o	Engine Control Module (ECM)/Powertrain Control Module (PCM) Power Control Circuit/Internal Circuit Malfunction	ON	DTC Troubleshooting (see **DTC P0685: ECM/PCM POWER CONTROL CIRCUIT/INTERNAL CIRCUIT MALFUNCTION**)
P0715(4)	o	Input Shaft (Mainshaft) Speed Sensor Circuit Malfunction	OFF	DTC Troubleshooting (see **DTC P0715: INPUT SHAFT (MAINSHAFT) SPEED SENSOR CIRCUIT MALFUNCTION**)
P0720 (122)(4)	o	Output Shaft (Countershaft) Speed Sensor Circuit Malfunction	ON	DTC Troubleshooting (see **DTC P0720: OUTPUT SHAFT (COUNTERSHAFT) SPEED SENSOR CIRCUIT MALFUNCTION**)
P0831(4)	- -	Clutch Pedal Position Switch A Circuit High Voltage	OFF	DTC Troubleshooting (see **DTC P0831: CLUTCH PEDAL POSITION SWITCH A CIRCUIT HIGH VOLTAGE**)
P0835(4)	o	Clutch Pedal Position Switch B Circuit Low Voltage	OFF	DTC Troubleshooting (see **DTC P0835: CLUTCH PEDAL POSITION SWITCH B CIRCUIT LOW VOLTAGE**)
P1077 (106)	o	Intake Manifold Tuning (IMT) Valve Stuck in High RPM Position	ON	DTC Troubleshooting (see **DTC TROUBLESHOOTING**)
P1078 (106)	o	Intake Manifold Tuning (IMT) Valve Stuck in Low RPM Position	ON	DTC Troubleshooting (see **DTC P1078: IMT VALVE STUCK IN LOW RPM POSITION**)
P1116 (86)	o	Engine Coolant Temperature (ECT) Sensor 1 Circuit Range/Performance Problem	ON	DTC Troubleshooting (see **DTC P1116: ECT SENSOR 1 CIRCUIT RANGE/PERFORMANCE PROBLEM**)
P1128 (5)	o	Manifold Absolute Pressure (MAP) Sensor Signal Lower Than	ON	DTC Troubleshooting (see **DTC P1128: MAP SENSOR SIGNAL LOWER THAN**

		Expected		**EXPECTED**)
P1129 (5)	o	Manifold Absolute Pressure (MAP) Sensor Signal Higher Than Expected	ON	DTC Troubleshooting (see **DTC P1129: MAP SENSOR SIGNAL HIGHER THAN EXPECTED**)
P1172 (157)	o	Rear Air Fuel Ratio (A/F) Sensor (Bank 1, Sensor 1) Circuit Out of Range High	ON	DTC Troubleshooting (see **DTC P1172: REAR A/F SENSOR (BANK 1, SENSOR 1) CIRCUIT OUT OF RANGE HIGH; DTC P1174: FRONT A/F SENSOR (BANK 2, SENSOR 1) CIRCUIT OUT OF RANGE HIGH**)
P1174 (158)	o	Front Air Fuel Ratio (A/F) Sensor (Bank 2, Sensor 1) Circuit Out of Range High	ON	DTC Troubleshooting (see **DTC P1172: REAR A/F SENSOR (BANK 1, SENSOR 1) CIRCUIT OUT OF RANGE HIGH; DTC P1174: FRONT A/F SENSOR (BANK 2, SENSOR 1) CIRCUIT OUT OF RANGE HIGH**)
P1297	o	Electrical Load Detector (ELD) Circuit Low Voltage	OFF	DTC Troubleshooting (see **DTC P1297: ELD CIRCUIT LOW VOLTAGE**)
P1298	o	Electrical Load Detector (ELD) Circuit High Voltage	OFF	DTC Troubleshooting (see **DTC P1298: ELD CIRCUIT HIGH VOLTAGE**)
P1454 (91)	o	Fuel Tank Pressure (FTP) Sensor Circuit Range/Performance Problem	ON	DTC Troubleshooting (see **DTC P0499: EVAP CANISTER VENT SHUT VALVE CIRCUIT HIGH VOLTAGE**)
P1458 (91)	o	Fuel Tank Pressure (FTP) Sensor Circuit Range/Performance Problem	ON	DTC Troubleshooting (see **DTC P1458: FTP SENSOR CIRCUIT RANGE/PERFORMANCE PROBLEM**)
P145C (90)	o	Evaporative Emission (EVAP) System Purge Flow Malfunction	ON	DTC Troubleshooting (see **DTC P145C: EVAP SYSTEM PURGE FLOW MALFUNCTION**)
P1549	- -	Charging System High Voltage	OFF	DTC Troubleshooting (see **DTC P1549: CHARGING SYSTEM HIGH VOLTAGE**)
P1658 (40)	- -	Electronic Throttle Control System (ETCS) Control Relay ON Malfunction	ON	DTC Troubleshooting (see **DTC P1658: ETCS CONTROL RELAY ON MALFUNCTION**)
P1659 (40)	- -	Electronic Throttle Control System (ETCS) Control Relay OFF Malfunction	ON	DTC Troubleshooting (see **DTC P1659: ETCS CONTROL RELAY OFF MALFUNCTION**)
		Throttle Valve Default		DTC Troubleshooting (see **DTC P1683: THROTTLE VALVE DEFAULT**

P1683 (40)	- -	Position Spring Performance Problem	ON	**POSITION SPRING PERFORMANCE PROBLEM**)
P1684 (40)	- -	Throttle Valve Return Spring Performance Problem	ON	DTC Troubleshooting (see **DTC P1684: THROTTLE VALVE RETURN SPRING PERFORMANCE PROBLEM**)
P16BB	- -	Alternator B Terminal Circuit Low Voltage	OFF	DTC Troubleshooting (see **DTC P16BB: ALTERNATOR B TERMINAL CIRCUIT LOW VOLTAGE**)
P16BC	- -	Alternator FR Terminal Circuit/IGP Circuit Low Voltage	OFF	DTC Troubleshooting (see **DTC P16BC: ALTERNATOR FR TERMINAL CIRCUIT/IGP CIRCUIT LOW VOLTAGE**)
P16BD(4)	- -	Starter Cut Relay 2 Malfunction	OFF	DTC Troubleshooting (see **DTC P16BD: STARTER CUT RELAY 2 MALFUNCTION (M/T)**)
P16BD(5)	- -	Starter Cut Relay 2 Malfunction	OFF	DTC Troubleshooting (see **DTC P16BD: STARTER CUT RELAY 2 MALFUNCTION (A/T)**)
P16BE(4)	- -	Starter Cut Relay 1 Malfunction	OFF	DTC Troubleshooting (see **DTC P16BE: STARTER CUT RELAY 1 MALFUNCTION (M/T)**)
P16BE(5)	- -	Starter Cut Relay 1 Malfunction	OFF	DTC Troubleshooting (see **DTC P16BE: STARTER CUT RELAY 1 MALFUNCTION (A/T)**)
P16BF(4)	- -	Starter Cut Relay STRLY Circuit Malfunction	OFF	DTC Troubleshooting (see **DTC P16BF: STARTER CUT RELAY STRLY CIRCUIT MALFUNCTION (M/T)**)
P16BF(5)	- -	Starter Cut Relay STRLY Circuit Malfunction	OFF	DTC Troubleshooting (see **DTC P16BF: STARTER CUT RELAY STRLY CIRCUIT MALFUNCTION (A/T)**)
P16E1(4)	- -	+ B Cut Relay Circuit Malfunction	OFF	DTC Troubleshooting (see **DTC P16E1: +B CUT RELAY CIRCUIT MALFUNCTION**)
P2101 (40)	- -	Electronic Throttle Control System (ETCS) Malfunction	ON	DTC Troubleshooting (see **DTC P2101: ETCS MALFUNCTION**)
P2118 (40)	- -	Throttle Actuator Current Range/Performance Problem	ON	DTC Troubleshooting (see **DTC P2118: THROTTLE ACTUATOR CURRENT RANGE/PERFORMANCE PROBLEM**)
P2122 (37)	- -	Accelerator Pedal Position (APP) Sensor A (Throttle Position (TP) Sensor D) Circuit Low Voltage	ON	DTC Troubleshooting (see **DTC P2122: APP SENSOR A (TP SENSOR D) CIRCUIT LOW VOLTAGE**)
		Accelerator Pedal Position (APP) Sensor		DTC Troubleshooting (see **DTC P2123: APP**

P2123 (37)	- -	A (Throttle Position (TP) Sensor D) Circuit High Voltage	ON	**SENSOR A (TP SENSOR D) CIRCUIT HIGH VOLTAGE**)
P2127 (37)	- -	Accelerator Pedal Position (APP) Sensor B (Throttle Position (TP) Sensor E) Circuit Low Voltage	ON	DTC Troubleshooting (see **DTC P2127: APP SENSOR B (TP SENSOR E) CIRCUIT LOW VOLTAGE**)
P2128 (37)	- -	Accelerator Pedal Position (APP) Sensor B (Throttle Position (TP) Sensor E) Circuit High Voltage	ON	DTC Troubleshooting (see **DTC P2128: APP SENSOR B (TP SENSOR E) CIRCUIT HIGH VOLTAGE**)
P2135 (7)	- -	Throttle Position (TP) Sensor A/B Incorrect Voltage Correlation	ON	DTC Troubleshooting (see **DTC P2135: TP SENSOR A/B INCORRECT VOLTAGE CORRELATION**)
P2138 (37)	- -	Accelerator Pedal Position (APP) Sensor A/B (Throttle Position (TP) Sensor D/E) Incorrect Voltage Correlation	ON	DTC Troubleshooting (see **DTC P2138: APP SENSOR A/B (TP SENSOR D/E) INCORRECT VOLTAGE CORRELATION**)
P2176 (40)	- -	Throttle Actuator Control System Idle Position Not Learned	ON	DTC Troubleshooting (see **DTC P2176: THROTTLE ACTUATOR CONTROL SYSTEM IDLE POSITION NOT LEARNED**)
P2183 (192)	o	Engine Coolant Temperature (ECT) Sensor 2 Circuit Range/Performance Problem	ON	DTC Troubleshooting (see **DTC P2183: ECT SENSOR 2 CIRCUIT RANGE/PERFORMANCE PROBLEM**)
P2184 (192)	o	Engine Coolant Temperature (ECT) Sensor 2 Circuit Low Voltage	ON	DTC Troubleshooting (see **DTC P2184: ECT SENSOR 2 CIRCUIT LOW VOLTAGE**)
P2185 (192)	o	Engine Coolant Temperature (ECT) Sensor 2 Circuit High Voltage	ON	DTC Troubleshooting (see **DTC P2185: ECT SENSOR 2 CIRCUIT HIGH VOLTAGE**)
P2195 (155)	o	Rear Air Fuel Ratio (A/F) Sensor (Bank 1, Sensor 1) Signal Stuck Lean	ON	DTC Troubleshooting (see **DTC P2195: REAR A/F SENSOR (BANK 1, SENSOR 1) SIGNAL STUCK LEAN; DTC P2197: FRONT A/F SENSOR (BANK 2, SENSOR 1) SIGNAL STUCK LEAN**)
		Front Air Fuel Ratio (A/F) Sensor (Bank 2,		DTC Troubleshooting (see **DTC P2195: REAR A/F SENSOR (BANK 1, SENSOR 1)**

P2197 (156)	o	Sensor 1) Signal Stuck Lean	ON	**SIGNAL STUCK LEAN; DTC P2197: FRONT A/F SENSOR (BANK 2, SENSOR 1) SIGNAL STUCK LEAN**)
P2227 (13)	o	Barometric Pressure (BARO) Sensor Circuit Range/Performance Problem	ON	DTC Troubleshooting (see **DTC P2227: BARO SENSOR CIRCUIT RANGE/PERFORMANCE PROBLEM**)
P2228 (13)	o	Barometric Pressure (BARO) Sensor Circuit Low Voltage	ON	DTC Troubleshooting (see **DTC P2228: BARO SENSOR CIRCUIT LOW VOLTAGE**)
P2229 (13)	o	Barometric Pressure (BARO) Sensor Circuit High Voltage	ON	DTC Troubleshooting (see **DTC P2228: BARO SENSOR CIRCUIT LOW VOLTAGE**)
P2237 (155)	o	Rear Air Fuel Ratio (A/F) Sensor (Bank 1, Sensor 1) IP Circuit High Voltage	ON	DTC Troubleshooting (see **DTC P2237: REAR A/F SENSOR (BANK 1, SENSOR 1) IP CIRCUIT HIGH VOLTAGE; DTC P2240: FRONT A/F SENSOR (BANK 2, SENSOR 1) IP CIRCUIT HIGH VOLTAGE**)
P2238 (155)	o	Rear Air Fuel Ratio (A/F) Sensor (Bank 1, Sensor 1) IP Circuit Low Voltage	ON	DTC Troubleshooting (see **DTC P2238: REAR A/F SENSOR (BANK 1, SENSOR 1) IP CIRCUIT LOW VOLTAGE; DTC P2241: FRONT A/F SENSOR (BANK 2, SENSOR 1) IP CIRCUIT LOW VOLTAGE**)
P2240 (156)	o	Front Air Fuel Ratio (A/F) Sensor (Bank 2, Sensor 1) IP Circuit High Voltage	ON	DTC Troubleshooting (see **DTC P2237: REAR A/F SENSOR (BANK 1, SENSOR 1) IP CIRCUIT HIGH VOLTAGE; DTC P2240: FRONT A/F SENSOR (BANK 2, SENSOR 1) IP CIRCUIT HIGH VOLTAGE**)
P2241 (156)	o	Front Air Fuel Ratio (A/F) Sensor (Bank 2, Sensor 1) IP Circuit Low Voltage	ON	DTC Troubleshooting (see **DTC P2238: REAR A/F SENSOR (BANK 1, SENSOR 1) IP CIRCUIT LOW VOLTAGE; DTC P2241: FRONT A/F SENSOR (BANK 2, SENSOR 1) IP CIRCUIT LOW VOLTAGE**)
P2243 (155)	o	Rear Air Fuel Ratio (A/F) Sensor (Bank 1, Sensor 1) VCENT Circuit High Voltage	ON	DTC Troubleshooting (see **DTC P2243: REAR A/F SENSOR (BANK 1, SENSOR 1) VCENT CIRCUIT HIGH VOLTAGE; DTC P2247: FRONT A/F SENSOR (BANK 2, SENSOR 1) VCENT CIRCUIT HIGH VOLTAGE**)
P2245 (155)	o	Rear Air Fuel Ratio (A/F) Sensor (Bank 1,	ON	DTC Troubleshooting (see **DTC P2245: REAR A/F SENSOR (BANK 1, SENSOR 1) VCENT CIRCUIT LOW VOLTAGE; DTC**

		Sensor 1) VCENT Circuit Low Voltage		**P2249: FRONT A/F SENSOR (BANK 2, SENSOR 1) VCENT CIRCUIT LOW VOLTAGE**)
P2247 (156)	o	Front Air Fuel Ratio (A/F) Sensor (Bank 2, Sensor 1) VCENT Circuit High Voltage	ON	DTC Troubleshooting (see **DTC P2243: REAR A/F SENSOR (BANK 1, SENSOR 1) VCENT CIRCUIT HIGH VOLTAGE; DTC P2247: FRONT A/F SENSOR (BANK 2, SENSOR 1) VCENT CIRCUIT HIGH VOLTAGE**)
P2249 (156)	o	Front Air Fuel Ratio (A/F) Sensor (Bank 2, Sensor 1) VCENT Circuit Low Voltage	ON	DTC Troubleshooting (see **DTC P2245: REAR A/F SENSOR (BANK 1, SENSOR 1) VCENT CIRCUIT LOW VOLTAGE; DTC P2249: FRONT A/F SENSOR (BANK 2, SENSOR 1) VCENT CIRCUIT LOW VOLTAGE**)
P2251 (155)	o	Rear Air Fuel Ratio (A/F) Sensor (Bank 1, Sensor 1) VS Circuit High Voltage	ON	DTC Troubleshooting (see **DTC P2251: REAR A/F SENSOR (BANK 1, SENSOR 1) VS CIRCUIT HIGH VOLTAGE; DTC P2254: FRONT A/F SENSOR (BANK 2, SENSOR 1) VS CIRCUIT HIGH VOLTAGE**)
P2252 (155)	o	Rear Air Fuel Ratio (A/F) Sensor (Bank 1, Sensor 1) VS Circuit Low Voltage	ON	DTC Troubleshooting (see **DTC P2252: REAR A/F SENSOR (BANK 1, SENSOR 1) VS CIRCUIT LOW VOLTAGE; DTC P2255: FRONT A/F SENSOR (BANK 2, SENSOR 1) VS CIRCUIT LOW VOLTAGE**)
P2254 (156)	o	Front Air Fuel Ratio (A/F) Sensor (Bank 2, Sensor 1) VS Circuit High Voltage	ON	DTC Troubleshooting (see **DTC P2251: REAR A/F SENSOR (BANK 1, SENSOR 1) VS CIRCUIT HIGH VOLTAGE; DTC P2254: FRONT A/F SENSOR (BANK 2, SENSOR 1) VS CIRCUIT HIGH VOLTAGE**)
P2255 (156)	o	Front Air Fuel Ratio (A/F) Sensor (Bank 2, Sensor 1) VS Circuit Low Voltage	ON	DTC Troubleshooting (see **DTC P2252: REAR A/F SENSOR (BANK 1, SENSOR 1) VS CIRCUIT LOW VOLTAGE; DTC P2255: FRONT A/F SENSOR (BANK 2, SENSOR 1) VS CIRCUIT LOW VOLTAGE**)
P2270 (161)	o	Rear Secondary Heated Oxygen Sensor (Secondary HO2S (Bank 2, Sensor 2) Circuit Signal Stuck Lean)	ON	DTC Troubleshooting (see **DTC P2270: REAR SECONDARY HO2S (BANK 1, SENSOR 2) CIRCUIT SIGNAL STUCK LEAN; DTC P2272: FRONT SECONDARY HO2S (BANK 2, SENSOR 2) CIRCUIT SIGNAL STUCK LEAN**)
		Front Secondary Heated Oxygen Sensor		DTC Troubleshooting (see **DTC P2270: REAR SECONDARY HO2S (BANK 1,**

P2272 (162)	o	(Secondary HO2S (Bank 2, Sensor 2) Circuit Signal Stuck Lean)	ON	**SENSOR 2) CIRCUIT SIGNAL STUCK LEAN; DTC P2272: FRONT SECONDARY HO2S (BANK 2, SENSOR 2) CIRCUIT SIGNAL STUCK LEAN**)
P2279 (109)	o	Intake Air System Leak	ON	DTC Troubleshooting (see **DTC TROUBLESHOOTING**)
P2413 (12)	o	Exhaust Gas Recirculation (EGR) System Malfunction	ON	DTC Troubleshooting (see **DTC P2413: EGR SYSTEM MALFUNCTION**)
P2422 (117)	o	Evaporative Emission (EVAP) Canister Vent Shut Valve Stuck Closed Malfunction	ON	DTC Troubleshooting (see **DTC P0499: EVAP CANISTER VENT SHUT VALVE CIRCUIT HIGH VOLTAGE**)
P2610 (132)	- -	Engine Control Module (ECM)/Powertrain Control Module (PCM) Ignition Off Internal Timer Malfunction	ON	DTC Troubleshooting (see **DTC P2610: ECM/PCM IGNITION OFF INTERNAL TIMER MALFUNCTION**)
P2646 (22)	- -	Rocker Arm Oil Pressure Switch Circuit Low Voltage	ON	DTC Troubleshooting (see **DTC TROUBLESHOOTING**)
P2647 (22)	- -	Rocker Arm Oil Pressure Switch Circuit High Voltage	ON	DTC Troubleshooting (see **DTC P2647: ROCKER ARM OIL PRESSURE SWITCH CIRCUIT HIGH VOLTAGE**)
P2648 (21)	- -	Rocker Arm Oil Control Solenoid Circuit Low Voltage	ON	DTC Troubleshooting (see **DTC P2648: ROCKER ARM OIL CONTROL SOLENOID CIRCUIT LOW VOLTAGE**)
P2649 (21)	- -	Rocker Arm Oil Control Solenoid Circuit High Voltage	ON	DTC Troubleshooting (see **DTC P2649: ROCKER ARM OIL CONTROL SOLENOID CIRCUIT HIGH VOLTAGE**)
P2A00 (157)	o	Rear Air Fuel Ratio (A/F) Sensor (Bank 1, Sensor 1) Circuit Range/Performance Problem	ON	DTC Troubleshooting (see **DTC P2610: ECM/PCM IGNITION OFF INTERNAL TIMER MALFUNCTION**)
P2A03 (158)	o	Front Air Fuel Ratio (A/F) Sensor (Bank 2, Sensor 1) Circuit Range/Performance Problem	ON	DTC Troubleshooting (see **DTC P2610: ECM/PCM IGNITION OFF INTERNAL TIMER MALFUNCTION**)
U0029 (126)	- -	F-CAN Malfunction (BUS-OFF (Engine Control Module (ECM)/Powertrain Control Module (PCM)))	ON	DTC Troubleshooting (see **DTC U0029: F-CAN MALFUNCTION (BUS-OFF (ECM/PCM))**)

U0114(3)	- -	F-CAN Malfunction (Engine Control Module (ECM)/Powertrain Control Module (PCM)-SH-AWD Control Unit)	OFF	DTC Troubleshooting (see **DTC U0114: F-CAN MALFUNCTION (ECM/PCM-SH-AWD CONTROL UNIT)**)
U0122	- -	F-CAN Malfunction (Engine Control Module (ECM)/Powertrain Control Module (PCM)-VSA Modulator-Control Unit)	OFF	DTC Troubleshooting (see **DTC U0122: F-CAN MALFUNCTION (ECM/PCM-VSA MODULATOR-CONTROL UNIT)**)
U0131	- -	F-CAN Malfunction (Engine Control Module (ECM)/Powertrain Control Module (PCM)-EPS Control Unit)	OFF	DTC Troubleshooting (see **DTC U0131: F-CAN MALFUNCTION (ECM/PCM-EPS CONTROL UNIT)**)
U0155 (126)	- -	F-CAN Malfunction (Engine Control Module (ECM)/Powertrain Control Module (PCM)-Gauge Control Module)	ON	DTC Troubleshooting (see **DTC U0155: F-CAN MALFUNCTION (ECM/PCM-GAUGE CONTROL MODULE)**)

NOTE:

The above DTCs are indicated when the PGM-FI system is selected with the HDS. Some automatic transmission DTCs cause the MIL to come on. If the MIL is on and no DTCs are indicated in the PGM-FI system, select the A/T system, and check for automatic transmission DTCs.

(1) These DTCs are indicated by a blinking MIL when the SCS line is jumped with the HDS. Some DTCs do not cause the MIL to blink when the SCS line is jumped; these DTCs are shown in the gauge display.

(2) Without SH-AWD

(3) With SH-AWD

(4) M/T

(5) A/T

SYMPTOM TROUBLESHOOTING INDEX

When the vehicle has one of these symptoms, check for a diagnostic trouble code (DTC) with the HDS. If there is no DTC, do the diagnostic procedure for the symptom, in the sequence listed, until you find the cause.

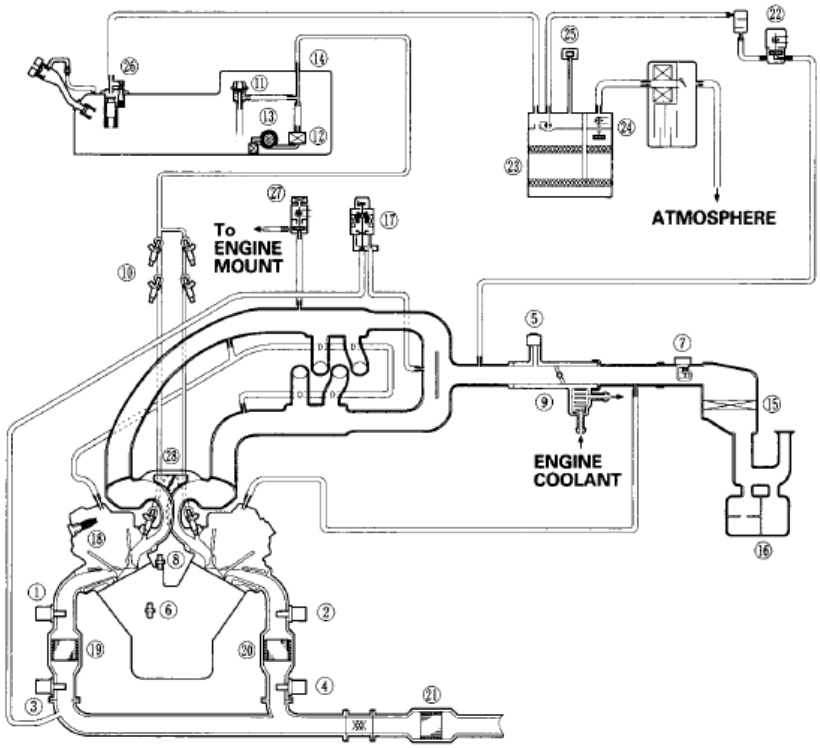
Symptom	Diagnostic procedure	Also check for
Engine will not start (MIL works OK, no DTCs set)	1. Test the battery (see **BATTERY TEST**). 2. Test the starter (see **STARTER PERFORMANCE TEST**). 3. Check the fuel pressure (see **FUEL PRESSURE TEST**). 4. Troubleshoot the fuel pump circuit (see **FUEL PUMP CIRCUIT TROUBLESHOOTING**).	• Low compression • No ignition spark • Restricted exhaust system • Intake air leaks • Locked up engine • Broken timing belt • Fuel contamination
Engine will not start (MIL comes on and stays on, no DTCs set)	Troubleshoot the DLC circuit (see **DLC CIRCUIT TROUBLESHOOTING**).	• No power to ECM/PCM • No ground to ECM/PCM
MIL comes on and stays on, or never comes on at all, no DTCs set	Troubleshoot the MIL circuit (see **MIL CIRCUIT TROUBLESHOOTING**).	
Engine will not start (MIL works OK, no DTCs set, immobilizer indicator stays on or flashes)	Check the immobilizer system: • Without keyless access system (see **SYMPTOM TROUBLESHOOTING INFORMATION**). • With keyless access system (see **SYMPTOM TROUBLESHOOTING INFORMATION**).	
Engine starts but stalls immediately (MIL works OK, no DTCs set, immobilizer indicator stays on or flashes)	Check the immobilizer system: • Without keyless access system (see **SYMPTOM TROUBLESHOOTING INFORMATION**). • With keyless access system (see **SYMPTOM TROUBLESHOOTING INFORMATION**).	
Engine is hard to start (MIL works OK, no DTCs set)	1. Test the battery (see **BATTERY TEST**). 2. Check the fuel pressure (see **FUEL PRESSURE TEST**). 3. Clean the throttle body (see **THROTTLE BODY CLEANING**).	• Low compression • Intake air leaks • Fuel contamination • Weak spark • Low fuel pressure

Cold fast idle too low (MIL works OK, no DTCs set)	1. Do the ECM/PCM idle learn procedure (see **ECM/PCM IDLE LEARN PROCEDURE**). 2. Check the idle speed (see **IDLE SPEED INSPECTION**). 3. Clean the throttle body (see **THROTTLE BODY CLEANING**).	
Cold fast idle too high (MIL works OK, no DTCs set)	1. Do the ECM/PCM idle learn procedure (see **ECM/PCM IDLE LEARN PROCEDURE**). 2. Check the idle speed (see **IDLE SPEED INSPECTION**). 3. Do the throttle position learning check (see **THROTTLE BODY TEST**).	Intake air leaks
Idle speed fluctuates (MIL works OK, no DTCs set)	1. Do the ECM/PCM idle learn procedure (see **ECM/PCM IDLE LEARN PROCEDURE**). 2. Check the idle speed (see **IDLE SPEED INSPECTION**). 3. Do the carbon accumulation check (see **THROTTLE BODY TEST**). 4. Troubleshoot the A/C signal circuit (see **A/C SIGNAL CIRCUIT TROUBLESHOOTING**).	• Incorrect valve timing or clearance adjustment • Intake air leaks
After warming up, idle speed is below specification without load (MIL works OK, no DTCs set)	1. Troubleshoot the alternator FR signal circuit (see **ALTERNATOR FR SIGNAL CIRCUIT TROUBLESHOOTING**). 2. Do the carbon accumulation check (see **THROTTLE BODY TEST**).	Incorrect valve adjustment
After warming up, idle speed is above specification without load (MIL works OK, no DTCs set)	1. Troubleshoot the alternator FR signal circuit (see **ALTERNATOR FR SIGNAL CIRCUIT TROUBLESHOOTING**). 2. Inspect the APP sensor (see **APP SENSOR SIGNAL INSPECTION**).	Intake air leaks
Low power (MIL works OK, no DTCs set)	Check the fuel pressure (see **FUEL PRESSURE TEST**).	• Low compression • Incorrect camshaft timing • Incorrect engine oil level • Exhaust restriction
	1. Do the ECM/PCM idle learn procedure (see **ECM/PCM IDLE LEARN**	

Engine stalls (MIL works OK, no DTCs set)	**PROCEDURE**). 2. Check the fuel pressure (see **FUEL PRESSURE TEST**). 3. Check the idle speed (see **IDLE SPEED INSPECTION**). 4. Troubleshoot the brake pedal position switch signal circuit (see **BRAKE PEDAL POSITION SWITCH SIGNAL CIRCUIT TROUBLESHOOTING**).	• Intake air leaks • Faulty harness and sensor connections
Difficult to refuel (MIL works OK, no DTCs set)	1. Check the fuel vent tube between the EVAP canister and the fuel tank. 2. Check the fuel tank vapor recirculation tube between the fuel pipe and the fuel tank. 3. Replace the fuel tank: • Without SH-AWD (see **FUEL TANK REPLACEMENT**). • With SH-AWD (see **WITH SH-AWD**).	Malfunctioning gas station filling nozzle
Fuel overflows during refueling (No DTCs set)	Replace the fuel tank. • Without SH-AWD (see **FUEL TANK REPLACEMENT**). • With SH-AWD (see **WITH SH-AWD**).	Malfunctioning gas station filling nozzle
Fuel cap warning message stays on (MIL works OK, no DTCs set)	Troubleshoot the fuel cap warning message system (see **FUEL CAP WARNING MESSAGE SYSTEM TROUBLESHOOTING**).	
HDS does not communicate with the ECM/PCM or the vehicle	Troubleshoot the DLC circuit (see **DLC CIRCUIT TROUBLESHOOTING**).	Correct HDS software

SYSTEM DESCRIPTION

FUEL AND EMISSIONS SYSTEMS DIAGRAM



① FRONT AIR FUEL RATIO (A/F) SENSOR (BANK 2, SENSOR 1)
② REAR AIR FUEL RATIO (A/F) SENSOR (BANK 1, SENSOR 1)
③ FRONT SECONDARY HEATED OXYGEN SENSOR (SECONDARY HO2S) (BANK 2, SENSOR 2)
④ REAR SECONDARY HEATED OXYGEN SENSOR (SECONDARY HO2S) (BANK 1, SENSOR 2)
⑤ MANIFOLD ABSOLUTE PRESSURE (MAP) SENSOR
⑥ ENGINE COOLANT TEMPERATURE (ECT) SENSOR 1
⑦ MASS AIR FLOW (MAF) SENSOR/ INTAKE AIR TEMPERATURE (IAT) SENSOR
⑧ KNOCK SENSOR
⑨ THROTTLE BODY
⑩ INJECTOR
⑪ FUEL PRESSURE REGULATOR
⑫ FUEL FILTER
⑬ FUEL PUMP
⑭ FUEL TANK
⑮ AIR CLEANER
⑯ INTAKE AIR RESONATOR
⑰ EXHAUST GAS RECIRCULATION (EGR) VALVE and POSITION SENSOR
⑱ POSITIVE CRANKCASE VENTILATION (PCV) VALVE
⑲ FRONT WARM UP THREE WAY CATALYTIC CONVERTER (WU-TWC) (BANK 2)
⑳ REAR WARM UP THREE WAY CATALYTIC CONVERTER (WU-TWC) (BANK 1)
㉑ UNDER-FLOOR THREE WAY CATALYTIC CONVERTER (TWC)
㉒ EVAPORATIVE EMISSION (EVAP) CANISTER PURGE VALVE
㉓ EVAPORATIVE EMISSION (EVAP) CANISTER
㉔ EVAPORATIVE EMISSION (EVAP) CANISTER VENT SHUT VALVE
㉕ FUEL TANK PRESSURE (FTP) SENSOR
㉖ FUEL TANK VAPOR CONTROL VALVE
㉗ ENGINE MOUNT CONTROL SOLENOID VALVE
㉘ INTAKE MANIFOLD TUNING (IMT) VALVE

Fig. 11: Fuel And Emissions Systems - Diagram
Courtesy of AMERICAN HONDA MOTOR CO., INC.

VACUUM HOSE ROUTING

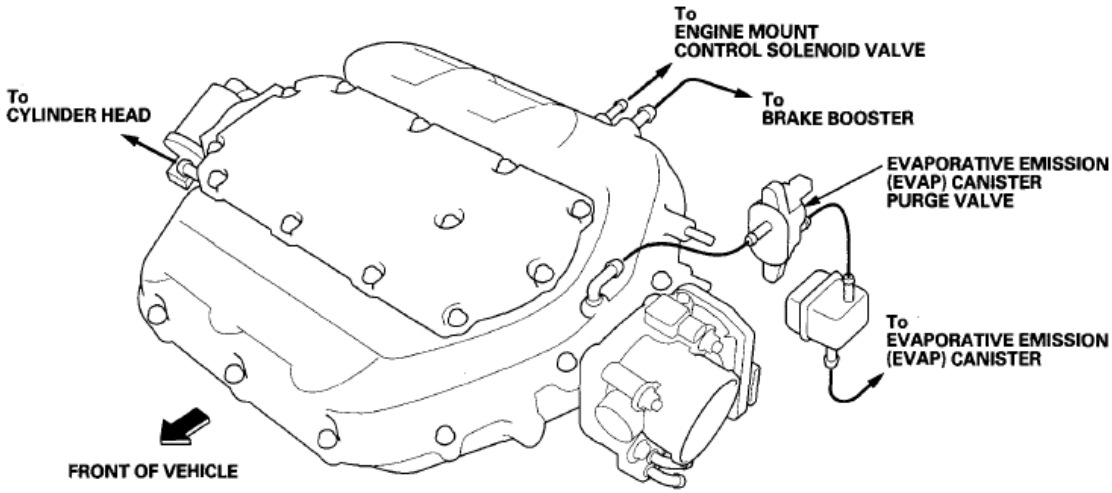


Fig. 12: Identifying Vacuum Hose Routing And Related Components
Courtesy of AMERICAN HONDA MOTOR CO., INC.

ELECTRONIC CONTROL SYSTEMS

The functions of the fuel and emission control systems are managed by the engine control module (ECM) on vehicle with manual transmissions or the powertrain control module (PCM) on vehicle with automatic transmissions.

Self-Diagnosis

The ECM/PCM detects the failure of a signal from a sensor or from another control unit and stores a Pending DTC or a Confirmed DTC. Depending on the failure, a Confirmed DTC is stored in either the first or the second drive cycle. When a Confirmed DTC is stored, the ECM/PCM turns on the malfunction indicator lamp (MIL) by a signal sent to the gauge via F-CAN.

- **One Drive Cycle Detection Method**

  When an abnormality occurs in the signal from a sensor or from another control unit, the ECM/PCM stores a Confirmed DTC and turns on the MIL immediately.

- **Two Drive Cycle Detection Method**

When an abnormality occurs in the signal from a sensor or from another control unit in the first drive cycle, the ECM/PCM stores a Pending DTC. The MIL does not come on at this time. If the failure continues in the second drive cycle, the ECM/PCM stores a Confirmed DTC and turns on the MIL.

Fail-Safe Function

When an abnormality occurs in the signal from a sensor or from another control unit, the ECM/PCM ignores that signal and substitutes a pre-programmed value for them that allows the engine to continue running. This causes a Confirmed DTC to be stored and the MIL to come on.

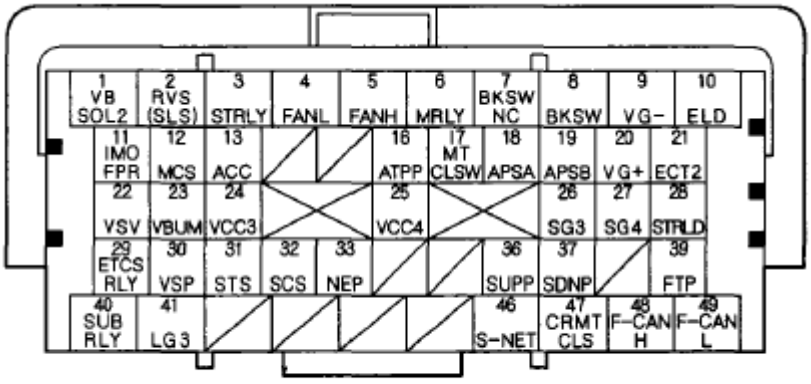
MIL Bulb Check and Readiness Code Condition

When the ignition switch is turned to ON (II), or press the engine start/stop button to select the ON mode, the ECM/PCM turns on the MIL via the F-CAN circuit for about 15 to 20 seconds to check the bulb condition. If any readiness codes are not set to complete, the MIL flashes five times. If all readiness codes are set to complete, the MIL goes off.

Self Shut Down (SSD) Mode

After the ignition switch is turned to LOCK (0), or the engine start/stop button is pressed to select the OFF mode, the ECM/PCM stays on (about 40 minutes). If the ECM/PCM connector is disconnected during this time, the ECM/PCM may be damaged. To cancel this mode, disconnect the negative cable from the battery or jump the SCS line with the HDS after the ignition switch is turned to LOCK (0), or the engine start/stop button is pressed to select the OFF mode.

ECM/PCM Inputs and Outputs at ECM/PCM Connector A ([]) (49P)



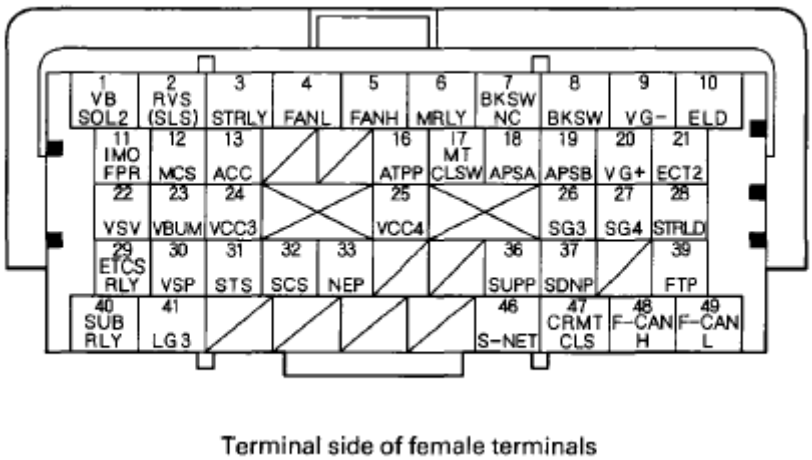
Terminal side of female terminals

Fig. 13: Identifying ECM/PCM Inputs And Outputs At ECM/PCM Connector A ([]) (49P) Terminals
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Terminal number	Wire color	Terminal name	Description	Signal
1(2)	PUR	VBSOL2 (POWER SOURCE FOR SOLENOID VALVES)	Power source for solenoid valves	With ignition switch ON (II)/vehicle in ON mode: battery voltage
2(1)	WHT	RVS (REVERSE LOCKOUT SOLENOID)	Drives reverse lockout solenoid	With vehicle speed below 9 mph (15 km/h): battery voltage With vehicle speed above 12 mph (20 km/h): about 0 V
2(2)	PNK	SLS (SHIFT LOCK SOLENOID)	Drives shift lock solenoid	With ignition switch ON (II)/vehicle in ON mode, in P, brake pedal pressed, and accelerator pedal released: about 0 V

3	LT GRN	STRLY (STARTER RELAY)	Drives starter cut relay	With ignition switch ON (II)/vehicle in ON mode: about 0 V
4	GRN	FANL (RADIATOR FAN CONTROL)	Drives A/C condenser fan relay	With condenser fan running: about 0 V With condenser fan stopped: battery voltage
5	BRN	FANH (RADIATOR FAN CONTROL)	Drives radiator fan relay	With radiator fan running at high speed: about 0 V With radiator fan stopped or running at low speed: battery voltage
6	RED	MRLY (PGM-FI MAIN RELAY 1)	Drives PGM-FI main relay 1	With ignition switch ON (II)/vehicle in ON mode: about 0 V With ignition switch in LOCK (0)/vehicle in OFF mode: battery voltage
7	ORN	BKSWNC (BRAKE PEDAL POSITION SWITCH)	Detects brake pedal position switch signal	With ignition switch ON (II)/vehicle in ON mode and brake pedal released: battery voltage With ignition switch ON (II)/vehicle in ON mode and brake pedal pressed: about 0 V
8	LT GRN	BKSW (BRAKE PEDAL POSITION SWITCH)	Detects brake pedal position switch signal	With brake pedal released: about 0 V With brake pedal pressed: battery voltage
9	LT BLU	VG-(MASS AIR FLOW (MAF) SENSOR -SIDE)	Ground for MAF sensor signal	
(1) M/T (2) A/T				

ECM/PCM Inputs and Outputs at ECM/PCM Connector A ([]) (49P)



Terminal side of female terminals

Fig. 14: Identifying ECM/PCM Inputs And Outputs At ECM/PCM Connector A ([]) (49P)

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Terminal number	Wire color	Terminal name	Description	Signal
10	BLU	ELD (ELECTRICAL LOAD DETECTOR (ELD))	Detects ELD signal	With ignition switch ON (II)/vehicle in ON mode: about 0.1- 4.8 V (depending on electrical load)
11	GRY	IMOFPR (IMMOBILIZER FUEL PUMP RELAY)	Drives PGM-FI main relay 2	0 V for 2 seconds after turning ignition switch ON (II)/vehicle in ON mode, then battery voltage
12	LT BLU	MCS (ENGINE MOUNT CONTROL SOLENOID VALVE)	Drives engine mount control solenoid valve	At idle: about 0 V Above idle: battery voltage
13	GRY	ACC (A/C CLUTCH RELAY)	Drives A/C clutch relay	With compressor ON: about 0 V With compressor OFF: battery voltage
16(2)	RED	ATPP (TRANSMISSION RANGE SWITCH P)	Detects transmission range switch P position signal	In P: about 0 V In any position other than P: more than 5.0 V
17(1)	PNK	MTCLSW (CLUTCH PEDAL POSITION SWITCH A)	Detects clutch pedal position switch A signal	With vehicle in ON mode and clutch pedal pressed: about 0 V With vehicle in ON mode and clutch pedal released: battery voltage
18	GRN	APSA (ACCELERATOR PEDAL POSITION (APP) SENSOR A)	Detects APP sensor A signal	With ignition switch ON (II)/vehicle in ON mode and accelerator pedal pressed: about 4.7 V With ignition switch ON (II)/vehicle in ON mode and accelerator pedal released: about 1.0 V
19	PNK	APSB (ACCELERATOR PEDAL POSITION (APP) SENSOR B)	Detects APP sensor B signal	With ignition switch ON (II)/vehicle in ON mode and accelerator pedal pressed: about 2.3 V With ignition switch ON (II)/vehicle in ON mode and accelerator pedal released: about 0.5 V

(1) M/T

(2) A/T

ECM/PCM Inputs and Outputs at ECM/PCM Connector A ([]) (49P)

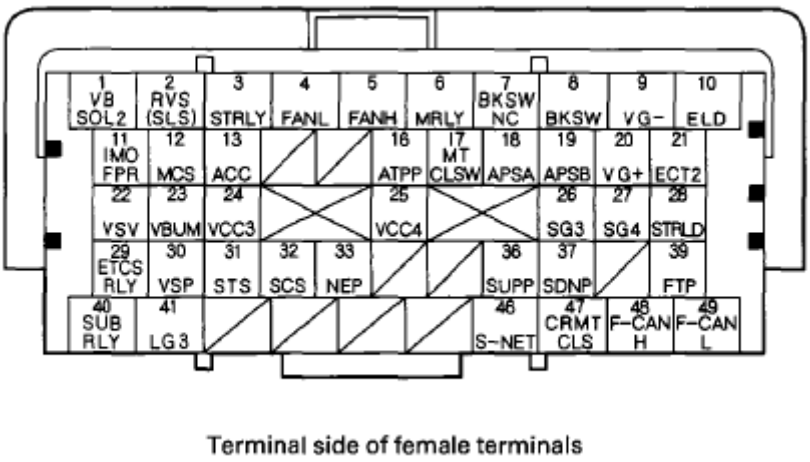
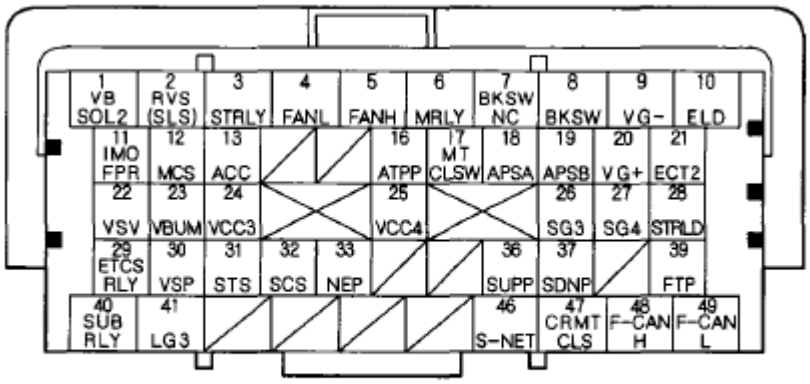


Fig. 15: Identifying ECM/PCM Inputs And Outputs At ECM/PCM Connector A ([]) (49P) Terminals
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Terminal number	Wire color	Terminal name	Description	Signal
20	BRN	VG+ (MASS AIR FLOW (MAF) SENSOR +SIDE)	Detects MAF sensor signal	At idle with warmed up engine and no electrical load: about 1.1-1.6V (between VG+ terminal and VG- terminal)
21	RED	ECT2 (ENGINE COOLANT TEMPERATURE (ECT) SENSOR 2)	Detects ECT sensor 2 signal	With ignition switch ON (II)/vehicle in ON mode: about 0.1- 4.8 V (depending on engine coolant temperature)
22	RED	VSV (EVAPORATIVE EMISSION (EVAP) CANISTER VENT SHUT VALVE)	Drives EVAP canister vent shut valve	With ignition switch ON (II)/vehicle in ON mode: battery voltage
23	YEL	VBUM (VOLTAGE BACK UP)	Power source for ECM/PCM memory	Battery voltage at all times
24	RED	VCC3 (SENSOR VOLTAGE)	Provides sensor reference voltage	With ignition switch ON (II)/vehicle in ON mode: about 5.0 V
25	BRN	VCC4 (SENSOR VOLTAGE)	Provides sensor reference voltage	With ignition switch ON (II)/vehicle in ON mode: about 5.0 V
26	BLU	SG3 (SENSOR GROUND)	Sensor ground	Less than 0.2 V at all times
27	GRN	SG4 (SENSOR GROUND)	Sensor ground	Less than 0.2 V at all times
28	PNK	STRLD	Detects starter cut relay	With starter ON: battery voltage
		ETCSRLY (ELECTRONIC	Drives electronic	With ignition switch ON

29	WHT	THROTTLE CONTROL SYSTEM (ETCS) CONTROL RELAY)	throttle control system (ETCS) control relay	(II)/vehicle in ON mode: about 0 V

ECM/PCM Inputs and Outputs at ECM/PCM Connector A ([]) (49P)



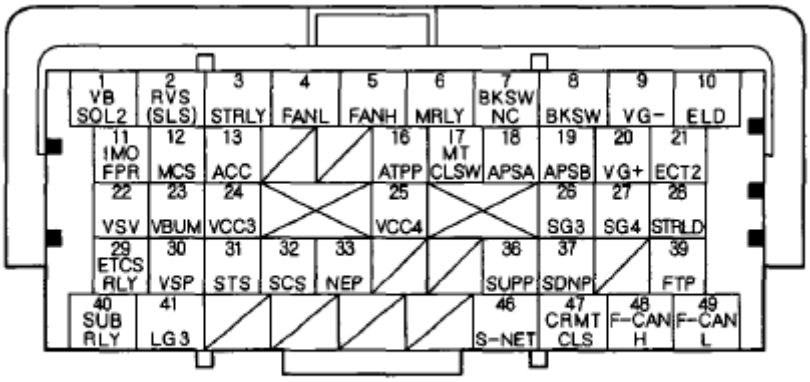
Terminal side of female terminals

Fig. 16: Identifying ECM/PCM Inputs And Outputs At ECM/PCM Connector A ([]) (49P) Terminals
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Terminal number	Wire color	Terminal name	Description	Signal
30	BLU	VSP (VEHICLE SPEED SIGNAL OUTPUT)	Sends vehicle speed signal	Depending on vehicle speed: pulses
31	LT GRN	STS (STARTER SWITCH SIGNAL)	Detects starter switch signal	With ignition switch in START (III)/vehicle in START mode: battery voltage With ignition switch in any position other than START (III)/vehicle in any mode other than START: about 0 V
32	ORN	SCS (SERVICE CHECK SIGNAL)	Detects service check signal	With service check signal shorted with the HDS: about 0 V With service check signal opened: about 5.0 V
33	BLU	NEP (ENGINE SPEED PULSE)	Outputs engine speed pulse	With engine running: pulses
36(1)	BRN	SUPP (PADDLE SHIFTER + (UPSHIFT SWITCH))	Detects paddle shifter + (upshift switch) signal	With ignition switch ON (II)/vehicle in ON mode, and paddle shifter+ (upshift switch) pressed: about 0 V With ignition switch ON (II)/vehicle in ON mode, and paddle shifter+ (upshift switch) released: battery voltage

37(1)	PUR	SDNP (PADDLE SHIFTER - (DOWNSHIFT SWITCH))	Detects paddle shifter- (downshift switch) signal	With ignition switch ON (II)/vehicle in ON mode, and paddle shifter- (downshift switch) pressed: about 0 V With ignition switch ON (II)/vehicle in ON mode, and paddle shifter- (downshift switch) released: battery voltage
39	LT GRN	FTP (FUEL TANK PRESSURE (FTP) SENSOR)	Detects FTP sensor signal	With ignition switch ON (II)/vehicle in ON mode, and fuel fill cap removed: about 2.5 V
(1) A/T				

ECM/PCM Inputs and Outputs at ECM/PCM Connector A ([]) (49P)



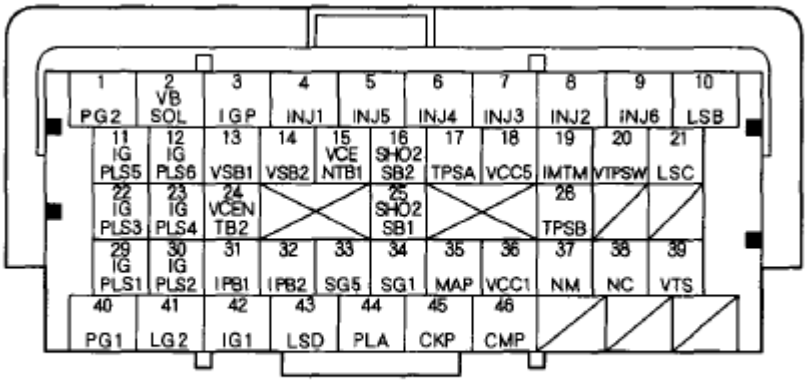
Terminal side of female terminals

Fig. 17: Identifying ECM/PCM Inputs And Outputs At ECM/PCM Connector A ([]) (49P) Terminals
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Terminal number	Wire color	Terminal name	Description	Signal
40	GRY	SUBRLY (PGM-FI SUBRELAY)	Drives PGM-FI subrelay	With ignition switch ON (II)/vehicle in ON mode: about 0 V
41	BRN	LG3 (LOGIC GROUND)	Ground circuit for ECM/PCM	Less than 0.2 V at all times
46	LT GRN	S-NET (SERIAL COMMUNICATION FOR IMMOBILIZER)	Sends serial communication signal	With ignition switch ON (II)/vehicle in ON mode: pulses
47(1)	BRN	CRMTCLS (CLUTCH PEDAL POSITION SWITCH B)	Detects clutch pedal position switch B signal	With vehicle in ON mode and clutch pedal pressed: battery voltage With vehicle in ON mode

				and clutch pedal released: about 0 V
48	WHT	F-CAN H (F-CAN COMMUNICATION SIGNAL HIGH)	Sends and receives communication signal	With ignition switch ON (II)/vehicle in ON mode: pulses
49	BLK	F-CAN L (F-CAN COMMUNICATION SIGNAL LOW)	Sends and receives communication signal	With ignition switch ON (II)/vehicle in ON mode: pulses
(1) M/T				

ECM/PCM Inputs and Outputs at ECM/PCM Connector B (delta) (49P)



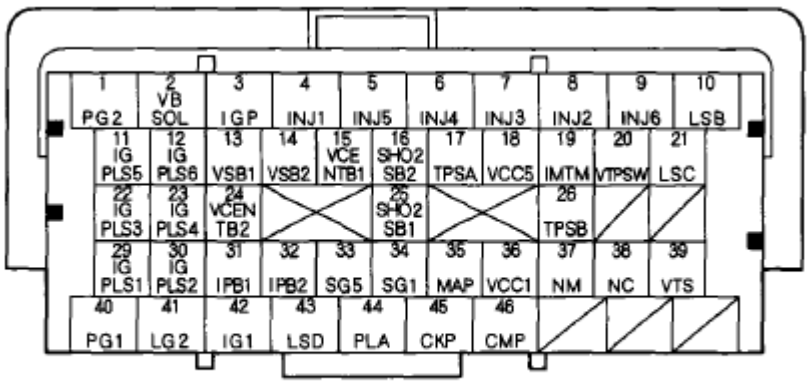
Terminal side of female terminals

Fig. 18: Identifying ECM/PCM Inputs And Outputs At ECM/PCM Connector B (delta) (49P) Terminals
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Terminal number	Wire color	Terminal name	Description	Signal
1	BLK	PG2 (POWER GROUND)	Ground circuit for ECM/PCM	Less than 0.2 V at all times
2	BLK/YEL	VBSOL (POWER SOURCE FOR SOLENOID VALVES)	Power source for solenoid valves	With ignition switch ON (II)/vehicle in ON mode: battery voltage
3	YEL/BLK	IGP (POWER SOURCE)	Power source for ECM/PCM circuit	With ignition switch ON (II)/vehicle in ON mode: battery voltage
4	BRN	INJ1 (No. 1 INJECTOR)	Drives No. 1 injector	At idle: duty controlled With ignition switch ON (II)/vehicle in ON mode: battery voltage
5	BLK/RED	INJ5 (No. 5 INJECTOR)	Drives No. 5 injector	
6	YEL	INJ4 (No. 4 INJECTOR)	Drives No. 4 injector	
7	BLU	INJ3 (No. 3 INJECTOR)	Drives No. 3 injector	
8	RED	INJ2 (No. 2 INJECTOR)	Drives No. 2 injector	
9	WHT/BLU	INJ6 (No. 6 INJECTOR)	Drives No. 6 injector	

10(1)	BRN/WHT	LSB (A/T CLUTCH PRESSURE CONTROL SOLENOID VALVE B)	Drives A/T clutch pressure control solenoid valve B	With ignition switch ON (II)/vehicle in ON mode: current controlled
(1) A/T				

ECM/PCM Inputs and Outputs at ECM/PCM Connector B (delta) (49P)



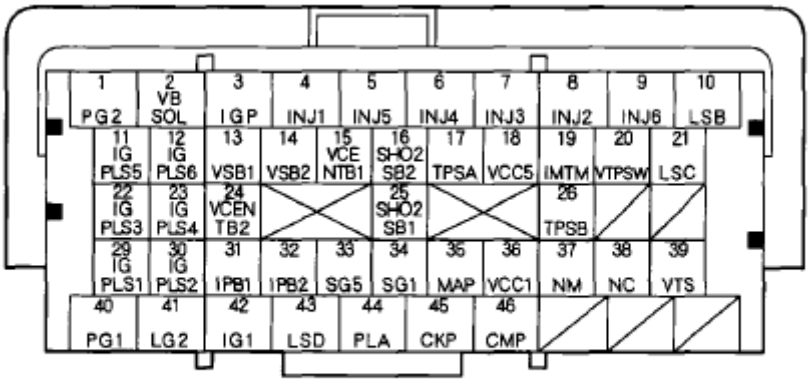
Terminal side of female terminals

Fig. 19: Identifying ECM/PCM Inputs And Outputs At ECM/PCM Connector B (delta) (49P) Terminals
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Terminal number	Wire color	Terminal name	Description	Signal
11	BLK/RED	IGPLS5 (No. 5 IGNITION COIL PULSE)	Drives No. 5 ignition coil	With ignition switch ON (II)/vehicle in ON mode: about 0 V With engine running: pulses
12	BRN/WHT	IGPLS6 (No. 6 IGNITION COIL PULSE)	Drives No. 6 ignition coil	
13	BLU	VSB1 (VS CELL+ BANK 1)	Detects rear A/F sensor (Bank 1, sensor 1)VS CELL signal	With warmed up engine running: about 3.4- 4.8 V
14	RED/BLU (WHT/RED) (1)	VSB2 (VS CELL+ BANK 2)	Detects front A/F sensor (Bank 2, sensor 1)VS CELL signal	With warmed up engine running: about 3.4- 4.8 V
15	RED	VCENTB1 (VIRTUAL GROUND BANK 1)	Reference voltage for rear A/F sensor (Bank 1, sensor 1)	With warmed up engine at idle: about 3.4- 3.8 V
16	WHT	SHO2SB2 (FRONT SECONDARY HEATED OXYGEN SENSOR (FRONT SECONDARY HO2S) (BANK	Detects front secondary HO2S (Bank 2, sensor 2)	With throttle fully opened from idle and warmed up engine: about 0.6 V

		2, SENSOR 2))	signal	With throttle quickly closed: below 0.4 V
17	RED/BLK	TPSA (THROTTLE POSITION (TP) SENSOR A)	Detects TP sensor A signal	With ignition switch ON (II)/vehicle in ON mode and accelerator pedal pressed: about 3.9 V With ignition switch ON (II)/vehicle in ON mode and accelerator pedal released: about 0.6 V
18	BLU	VCC5 (SENSOR VOLTAGE)	Provides sensor reference voltage	With ignition switch ON (II)/vehicle in ON mode: about 5.0 V
(1) A/T				

ECM/PCM Inputs and Outputs at ECM/PCM Connector B (delta) (49P)



Terminal side of female terminals

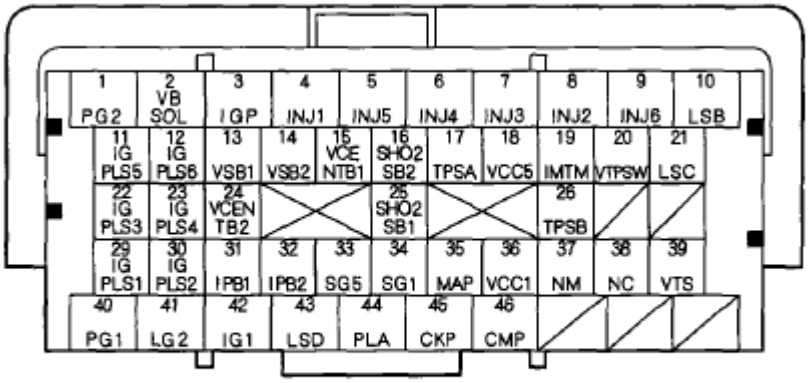
Fig. 20: Identifying ECM/PCM Inputs And Outputs At ECM/PCM Connector B (delta) (49P) Terminals
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Terminal number	Wire color	Terminal name	Description	Signal
19	WHT/BLK	IMTM (INTAKE MANIFOLD TUNING (IMT) VALVE MONITOR)	Detects IMT valve position	With ignition switch ON (II)/vehicle in ON mode: about 5.0 V With engine speed above 3, 950 RPM (J35Z6 engine) or 4, 000 RPM (J37A4 engine): about 0 V

20	BLU/BLK	VTPSW (ROCKER ARM OIL PRESSURE SWITCH)	Detects rocker arm oil pressure switch signal	At idle: about 0 V
21(1)	GRN/RED	LSC (A/T CLUTCH PRESSURE CONTROL SOLENOID VALVE C)	Drives A/T clutch pressure control solenoid valve C	With ignition switch ON (II)/vehicle in ON mode: current controlled
22	WHT/BLU	IGPLS3 (No. 3 IGNITION COIL PULSE)	Drives No. 3 ignition coil	With ignition switch ON (II)/vehicle in ON mode: about 0 V With engine running: pulses
23	BRN	IGPLS4 (No. 4 IGNITION COIL PULSE)	Drives No. 4 ignition coil	
24	RED/WHT	VCENTB2 (VIRTUAL GROUND BANK 2)	Reference voltage for front A/F sensor (Bank 2, sensor 1)	With warmed up engine at idle: about 3.4- 4.8 V
25	GRN	SHO2SB1 (REAR SECONDARY HEATED OXYGEN SENSOR (REAR SECONDARY HO2S) (BANK 1, SENSOR 2))	Detects rear secondary HO2S (Bank 1, sensor 2) signal	With throttle fully opened from idle and warmed up engine: about 0.6 V With throttle quickly closed: below 0.4 V

(1) A/T

ECM/PCM Inputs and Outputs at ECM/PCM Connector B (delta) (49P)



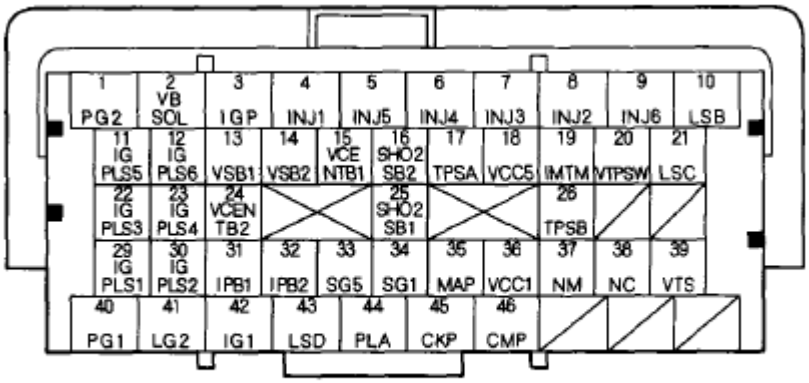
Terminal side of female terminals

Fig. 21: Identifying ECM/PCM Inputs And Outputs At ECM/PCM Connector B (delta) (49P) Terminals
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Terminal number	Wire color	Terminal name	Description	Signal
26	RED/BLU	TPSB (THROTTLE POSITION (TP)	Detects TP sensor B	With ignition switch ON (II)/vehicle in ON mode and accelerator pedal pressed: about 4.1 V

		SENSOR B)	signal	With ignition switch ON (II)/vehicle in ON mode and accelerator pedal released: about 1.7 V
29	YEL/GRN	IGPLS1 (No. 1 IGNITION COIL PULSE)	Drives No. 1 ignition coil	With ignition switch ON (II)/vehicle in ON mode: about 0 V With engine running: pulses
30	BLU/RED	IGPLS2 (No. 2 IGNITION COIL PULSE)	Drives No. 2 ignition coil	
31	GRN	IPB1 (IP CELL+ BANK 1)	Detects rear A/F sensor (Bank 1, sensor 1) pump cell	With engine running: about 2.0-5.6 V
32	GRN/RED	IPB2 (IP CELL+ BANK 2)	Detects front A/F sensor (Bank 2, sensor 1) pump cell	With engine running: about 2.0-5.6 V
33	GRN	SG5 (SENSOR GROUND)	Sensor ground	Less than 0.2 V at all times
34	GRN/WHT	SG1 (SENSOR GROUND)	Sensor ground	Less than 0.2 V at all times
35	GRN/RED	MAP (MANIFOLD ABSOLUTE PRESSURE (MAP) SENSOR)	Detects MAP sensor signal	With ignition switch ON (II)/vehicle in ON mode: about 3.0 V At idle: about 1.0 V (depending on engine speed)
36	YEL/RED	VCC1 (SENSOR VOLTAGE)	Provides sensor reference voltage	With ignition switch ON (II)/vehicle in ON mode: about 5.0 V
37	RED	NM (INPUT SHAFT (MAINSHAFT) SPEED SENSOR)	Detects input shaft (mainshaft) speed sensor signals	With ignition switch ON (II)/vehicle in ON mode: about 0 V or about 5.0 V With engine running in N: pulses

ECM/PCM Inputs and Outputs at ECM/PCM Connector B (delta) (49P)



Terminal side of female terminals

Fig. 22: Identifying ECM/PCM Inputs And Outputs At ECM/PCM Connector B (delta) (49P) Terminals
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Terminal number	Wire color	Terminal name	Description	Signal
38	BLU	NC (OUTPUT SHAFT (COUNTERSHAFT) SPEED SENSOR)	Detects output shaft (countershaft) speed sensor signal	With ignition switch ON (II)/vehicle in ON mode: about 0 V or about 5.0 V While driving: pulses
39	GRN/YEL	VTS (ROCKER ARM OIL CONTROL SOLENOID)	Drives rocker arm oil control solenoid	At idle: about 0 V
40	BLK	PG1 (POWER GROUND)	Ground circuit for ECM/PCM	Less than 0.2 V at all times
41	BRN/YEL	LG2 (LOGIC GROUND)	Ground circuit for ECM/PCM	Less than 0.2 V at all times
42	BLK/YEL	IG1 (IGNITION SIGNAL)	Detects ignition signal	With ignition switch ON (II)/vehicle in ON mode: battery voltage
43(1)	BLK/WHT	LSD (A/T CLUTCH PRESSURE CONTROL SOLENOID VALVE D)	Drives ATT clutch pressure control solenoid valve D	With ignition switch ON (II)/vehicle in ON mode: current controlled
44(1)	YEL	PLA (LINE PRESSURE CONTROL SOLENOID VALVE A)	Drive line pressure control solenoid valve A	With engine running in 1st, or reverse: about 0 V With engine running in any gear other than 1st or reverse: battery voltage
45	BLU	CKP (CRANKSHAFT POSITION (CKP) SENSOR)	Detects CKP sensor signal	With engine running: pulses
46	GRN	CMP (CAMSHAFT POSITION (CMP) SENSOR)	Detects CMP sensor signal	With engine running: pulses

(1) A/T

ECM/PCM inputs and Outputs at ECM/PCM Connector C (o) (49P)

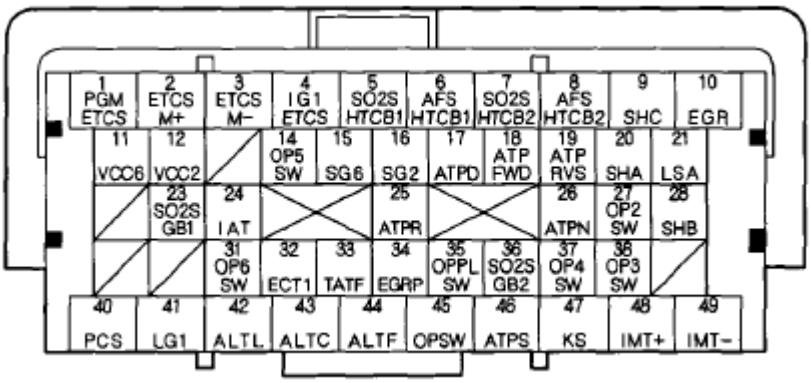


Fig. 23: Identifying ECM/PCM Inputs And Outputs At ECM/PCM Connector C (o) (49P) Terminals
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Terminal number	Wire color	Terminal name	Description	Signal
1	BLK	PGMETCS (POWER GROUND ETCS)	Ground circuit for ECM/PCM	Less than 0.2 V at all times
2	BLU	ETCSM+ (THROTTLE ACTUATOR +SIDE)	Drives throttle actuator	With ignition switch ON (II)/vehicle in ON mode: about 0 V
3	GRN	ETCSM- (THROTTLE ACTUATOR -SIDE)	Ground for throttle actuator	With ignition switch ON (II)/vehicle in ON mode: about 0 V
4	YEL/GRN	IG1ETCS (IGNITION SIGNAL ETCS)	Detects ignition signal	With ignition switch ON (II)/vehicle in ON mode: battery voltage
5	BLK/WHT	SO2SHTCB1 (REAR SECONDARY HEATED OXYGEN SENSOR (REAR SECONDARY HO2S) (BANK 1, SENSOR 2) HEATER CONTROL)	Drives rear secondary HO2S (Bank 1, sensor 2) heater	With ignition switch ON (II)/vehicle in ON mode: battery voltage With warmed up engine running: duty controlled
6	BLK/WHT	AFSHTCB1 (REAR AIR FUEL RATIO (REAR A/F) SENSOR (BANK 1, SENSOR 1)HEATER CONTROL)	Drives rear A/F sensor (Bank 1, sensor 1) heater	With ignition switch ON (II)/vehicle in ON mode: battery voltage With warmed up engine running: about 0 V or duty controlled

ECM/PCM Inputs and Outputs at ECM/PCM Connector C (o) (49P)

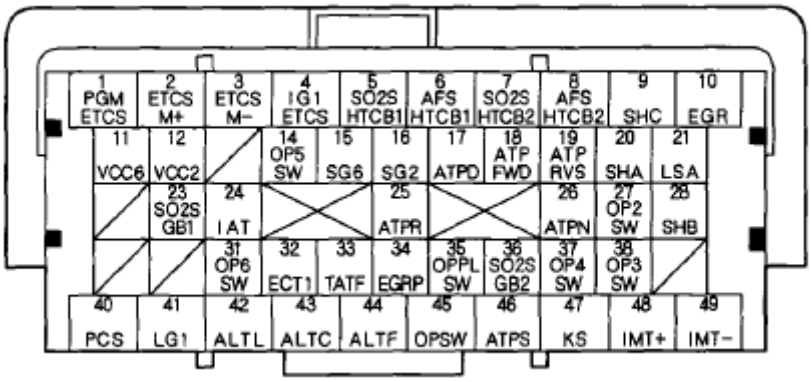


Fig. 24: Identifying ECM/PCM Inputs And Outputs At ECM/PCM Connector C (o) (49P) Terminals
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Terminal number	Wire color	Terminal name	Description	Signal
7	GRN/RED	SO2SHTCB2 (FRONT SECONDARY HEATED OXYGEN SENSOR (SECONDARY HO2S) (BANK 2, SENSOR 2) HEATER CONTROL)	Drives front secondary HO2S (Bank 2, sensor 2) heater	With ignition switch ON (II)/vehicle in ON mode: battery voltage With warmed up engine running: duty controlled
8	GRN/WHT	AFSHTCB2 (FRONT AIR FUEL RATIO (FRONT A/F) SENSOR (BANK 2, SENSOR 1) HEATER CONTROL)	Drives front A/F sensor (Bank 2, sensor 1) heater	With ignition switch ON (II)/vehicle in ON mode: battery voltage With warmed up engine running: about 0 V or duty controlled
9(1)	GRN/WHT	SHC (SHIFT SOLENOID VALVE C)	Drives shift solenoid valve C	With engine running in N, in D and S during no lock-up condition: about 0 V With engine running in P and R, and in D and S during lock-up condition: battery voltage
10	BLU/RED	EGR (EXHAUST GAS RECIRCULATION (EGR) VALVE)	Drives EGR valve	With EGR operating: duty controlled With EGR not operating: about 0 V
11	YEL/BLU	VCC6 (SENSOR VOLTAGE)	Provides sensor reference voltage	With ignition switch ON (II)/vehicle in ON mode: about 5.0 V
			Provides sensor	With ignition switch ON

12	YEL/BLU	VCC2 (SENSOR VOLTAGE)	reference voltage	(II)/vehicle in ON mode: about 5.0 V
14(1)	WHT/GRN	OP5SW (TRANSMISSION FLUID PRESSURE SWITCH D (5TH CLUTCH))	Detects transmission fluid pressure switch D (5th clutch)	With engine running: • Without 5th clutch pressure: battery voltage • With 5th clutch pressure: about 0 V
15	GRN/RED	SG6 (SENSOR GROUND)	Sensor ground	Less than 0.2 V at all times
16	GRN/YEL	SG2 (SENSOR GROUND)	Sensor ground	Less than 0.2 V at all times
(1) A/T				

ECM/PCM Inputs and Outputs at ECM/PCM Connector C (o) (49P)

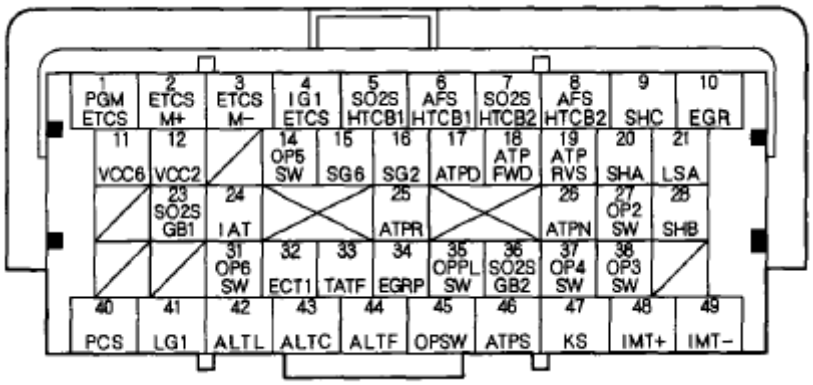


Fig. 25: Identifying ECM/PCM Inputs And Outputs At ECM/PCM Connector C (o) (49P) Terminals
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Terminal number	Wire color	Terminal name	Description	Signal
17(1)	YEL/GRN	ATPD (TRANSMISSION RANGE SWITCH D)	Detects transmission range switch D position signal	In D: about 0 V In any position other than D: about 5.0 V
18(1)	BLU/YEL	ATPFWD (TRANSMISSION RANGE SWITCH FWD)	Detects transmission range switch D, S positions signal	In D and S: about 0 V In any position other than D and S: about 5.0 V
19(1)	RED/WHT	ATPRVS (TRANSMISSION RANGE SWITCH RVS)	Detects transmission range switch R position	In R: about 0 V In any position other

			signal	than R: about 5.0 V
20(1)	BLU/YEL	SHA (SHIFT SOLENOID VALVE A)	Drives shift solenoid valve A	With engine running in 1st and 2nd gears: battery voltage With engine running in any gear other than 1st and 2nd: about 0 V
21(1)	RED	LSA (A/T CLUTCH PRESSURE CONTROL SOLENOID VALVE A)	Drives A/T clutch pressure control solenoid valve A	With ignition switch ON (II)/vehicle in ON mode: current controlled
23	WHT/RED	SO2SGB1 (REAR SECONDARY HEATED OXYGEN SENSOR (REAR SECONDARY HO2S (BANK 1, SENSOR 2)) SENSOR GROUND	Sensor ground for rear secondary HO2S (Bank 1, sensor 2)	With ignition switch ON (II)/vehicle in ON mode: about 1.5 V
24	RED/YEL	IAT (INTAKE AIR TEMPERATURE (IAT) SENSOR)	Detects IAT sensor signal	With ignition switch ON (II)/vehicle in ON mode: about 0.1-4.8 V (depending on intake air temperature)
25(1)	WHT	ATPR (TRANSMISSION RANGE SWITCH R)	Detects transmission range switch R position signal	In R: about 0 V In any position other than R: more than 5.0 V
(1) A/T				

ECM/PCM Inputs and Outputs at ECM/PCM Connector C (o) (49P)

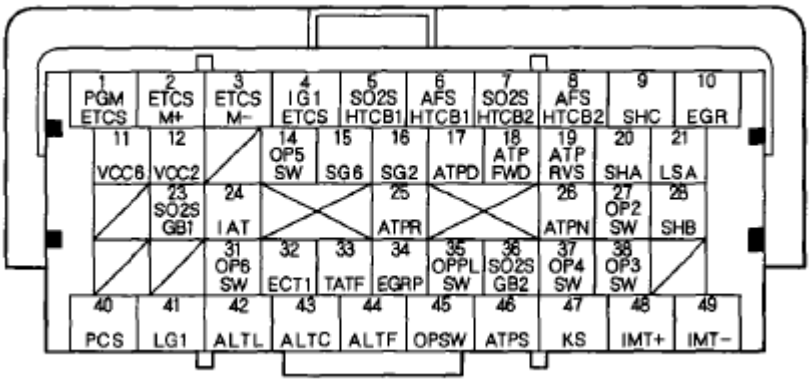


Fig. 26: Identifying ECM/PCM Inputs And Outputs At ECM/PCM Connector C (o) (49P) Terminals
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Terminal number	Wire color	Terminal name	Description	Signal
			Detects	In N: about 0 V

26(1)	RED/BLK	ATPN (TRANSMISSION RANGE SWITCH N)	transmission range switch N position signal	In any position other than N: battery voltage
27(1)	BLU/BLK	OP2SW (TRANSMISSION FLUID PRESSURE SWITCH A (2ND CLUTCH)	Detects transmission fluid pressure switch A (2nd clutch)	With engine running: • Without 2nd clutch pressure: battery voltage • With 2nd clutch pressure: about 0 V
28(1)	GRN/WHT	SHB (SHIFT SOLENOID VALVE B)	Drives shift solenoid valve B	With engine running in 1st, 2nd, and 3rd gears: battery voltage With engine running in any gear other than 1st, 2nd, and 3rd: about 0 V
31(1)	WHT/BLK	OP6SW (TRANSMISSION FLUID PRESSURE SWITCH E (6TH CLUTCH))	Detects transmission fluid pressure switch E (6th clutch)	With engine running: • Without 6th clutch pressure: battery voltage • With 6th clutch pressure: about 0 V
32	RED/WHT	ECT1 (ENGINE COOLANT TEMPERATURE SENSOR (ECT) SENSOR 1)	Detects ECT sensor 1 signal	With ignition switch ON (II)/vehicle in ON mode: about 0.1- 4.8 V (depending on engine coolant temperature)
33(1)	BLU/YEL	TATF (ATF TEMPERATURE SENSOR)	Detects ATF temperature signal	With ignition switch ON (II)/vehicle in ON mode: about 0.2- 4.0 V (about 1.8 V at operating temperature, depending on ATF temperature)
(1) A/T				

ECM/PCM Inputs and Outputs at ECM/PCM Connector C (o) (49P)

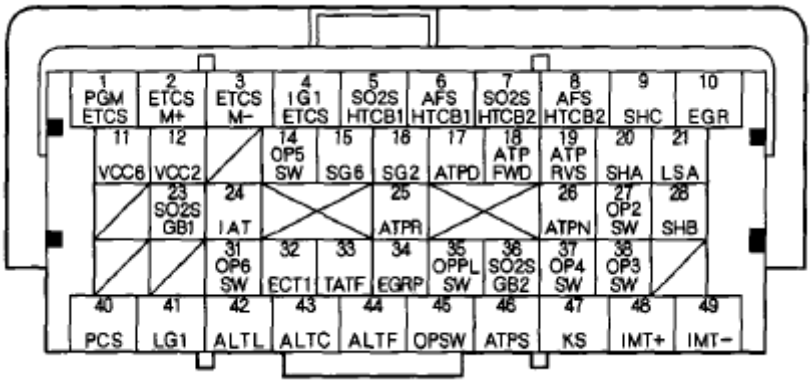


Fig. 27: Identifying ECM/PCM Inputs And Outputs At ECM/PCM Connector C (o) (49P) Terminals
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Terminal number	Wire color	Terminal name	Description	Signal
34	WHT/BLK	EGRP (EXHAUST GAS RECIRCULATION (EGR) VALVE POSITION SENSOR)	Detects EGR valve position sensor signal	With engine running: about 1.2- 3.0 V (depending on EGR valve lift)
35(1)	WHT/BLU	OPPL SW (LINE PRESSURE SWITCH)	Detects line pressure switch	With engine running: • Without line pressure: battery voltage • With line pressure: about 0 V
36	BLU	SO2SGB2 (FRONT SECONDARY HEATED OXYGEN SENSOR (FRONT SECONDARY HO2S (BANK 2, SENSOR 2)) SENSOR GROUND	Sensor ground for front secondary HO2S (Bank 2, sensor 2)	With ignition switch ON (II)/vehicle in ON mode: about 1.5 V
37(1)	BLU/YEL	OP4SW (CLUTCH TRANSMISSION FLUID PRESSURE SWITCH C (4TH CLUTCH))	Detects clutch transmission fluid pressure switch C (4th clutch)	With engine running: • Without 4th clutch pressure: battery voltage • With 4th clutch pressure: about 0 V
38(1)	BLU/WHT	OP3SW (TRANSMISSION FLUID PRESSURE SWITCH B (3RD CLUTCH))	Detects transmission fluid pressure switch B (3rd clutch)	With engine running: • Without 3rd clutch pressure: battery voltage • With 3rd clutch pressure: about 0 V
40	RED/YEL	PCS (EVAPORATIVE EMISSION (EVAP) CANISTER PURGE VALVE)	Drives EVAP canister purge valve	With engine running, engine coolant below 140 °F (60 °C): battery voltage With engine running, engine coolant above 140 °F (60 °C): duty controlled

41	BRN/YEL	LG1 (LOGIC GROUND)	Ground circuit for ECM/PCM	Less than 0.2 V at all times
(1) ATT				

ECM/PCM Inputs and Outputs at ECM/PCM Connector C (o) (49P)

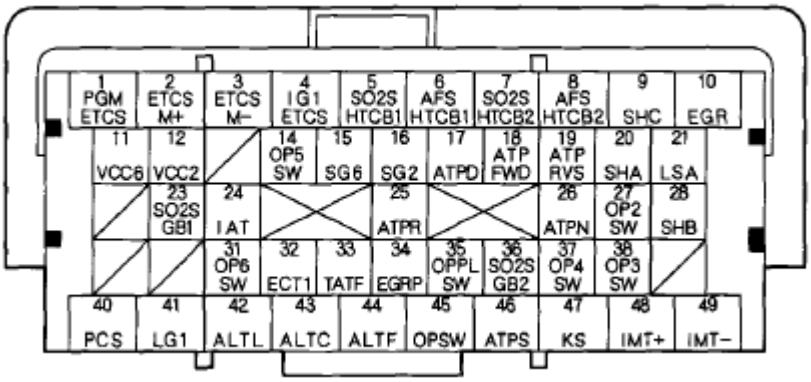


Fig. 28: Identifying ECM/PCM Inputs And Outputs At ECM/PCM Connector C (o) (49P) Terminals
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Terminal number	Wire color	Terminal name	Description	Signal
42	WHT/BLU	ALTL (ALTERNATOR L SIGNAL)	Detects alternator L signal	With ignition switch ON (II)/vehicle in ON mode: about 0 V With engine running: battery voltage
43	WHT/GRN	ALTC (ALTERNATOR CONTROL)	Sends alternator control signal	With warmed up engine running: about 7.5 V (depending on electrical load)
44	WHT/RED	ALTF (ALTERNATOR FR SIGNAL)	Detects alternator FR signal	With engine running: about 0- 5.0 V (depending on electrical load)
45	BLU/YEL	OPSW (OIL PRESSURE SWITCH)	Detects engine oil pressure signal	With ignition switch ON (II)/vehicle in ON mode: battery voltage With engine running: about 0 V
46(1)	RED	ATPS (TRANSMISSION RANGE SWITCH S)	Detects transmission switch S position signal	In S: about 0 V In any position other than S: about 5.0 V
47	RED/BLU	KS (KNOCK SENSOR)	Detects knock sensor signal	With engine knocking: pulses
		IMT+ (INTAKE MANIFOLD		With ignition switch ON

48	WHT/BLU	TUNING (IMT) ACTUATOR +SIDE)	Drives IMT actuator	(II)/vehicle in ON mode: about 0 V
49	WHT/RED	IMT- (INTAKE MANIFOLD TUNING (IMT) ACTUATOR -SIDE)	Drives IMT actuator	With ignition switch ON (II)/vehicle in ON mode: about 0 V
(1) A/T				

ECM/PCM ELECTRICAL CONNECTIONS

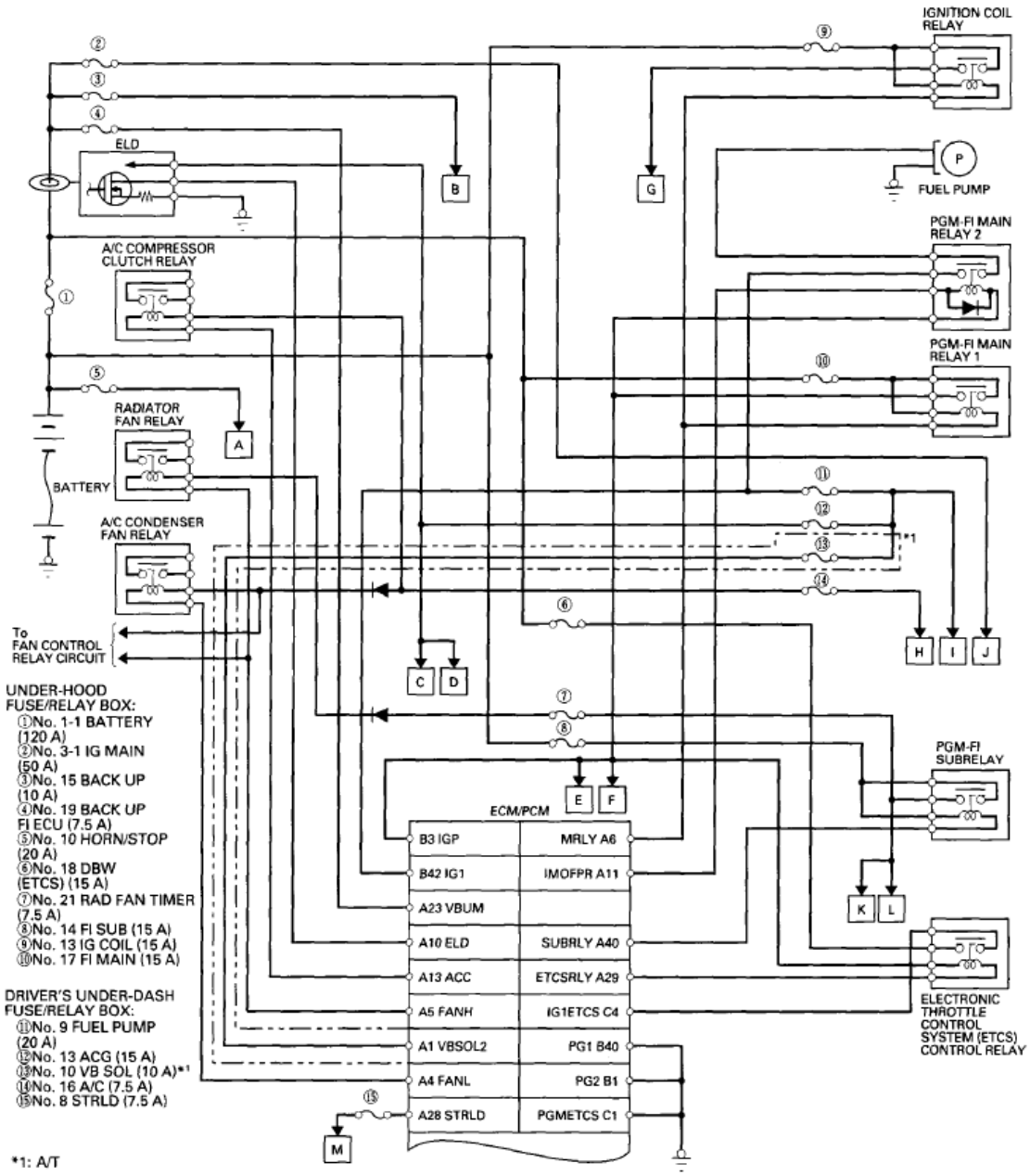


Fig. 29: ECM/PCM Electrical Connections Circuit Diagram (1 Of 7)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

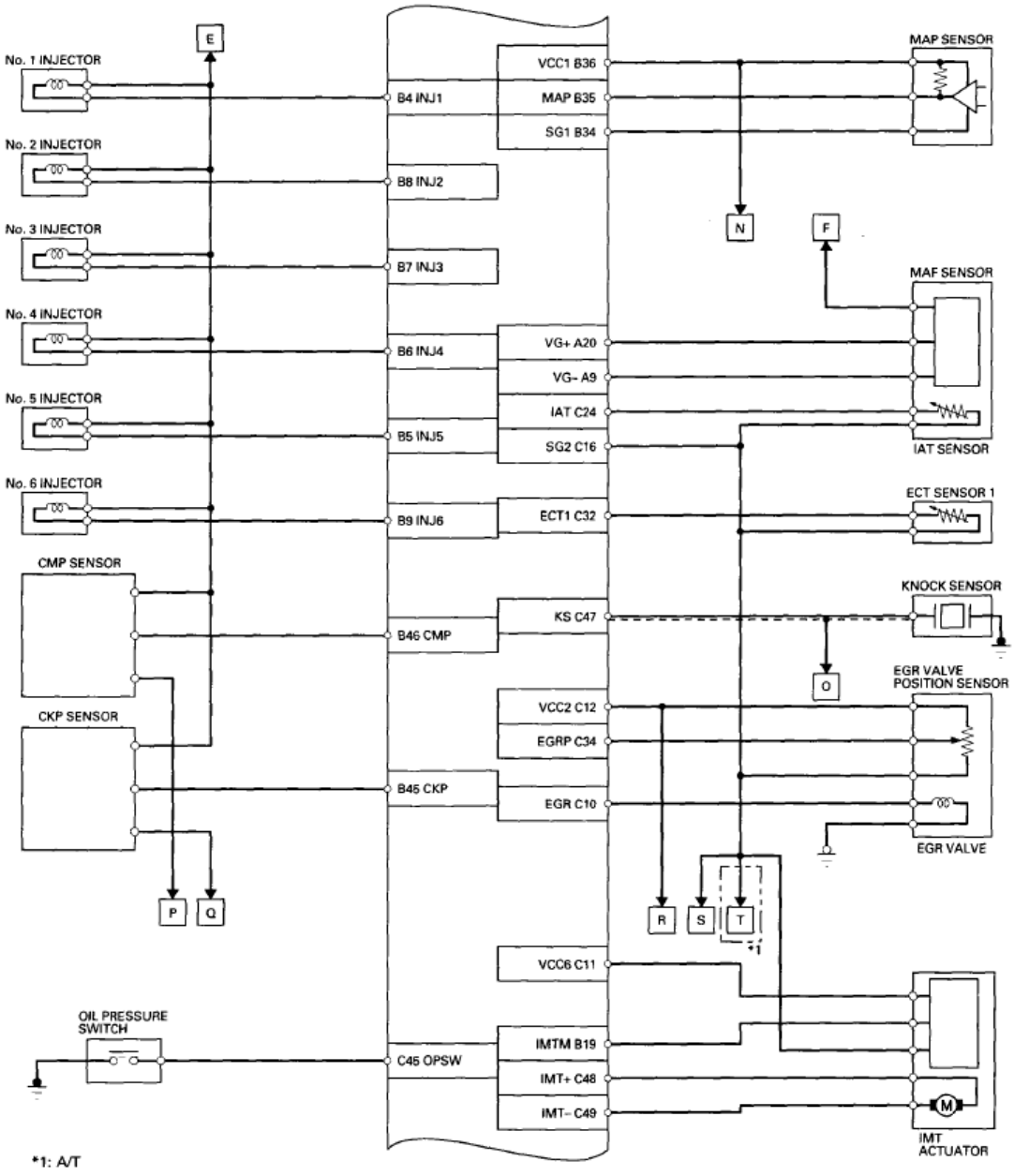


Fig. 30: ECM/PCM Electrical Connections Circuit Diagram (2 Of 7)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

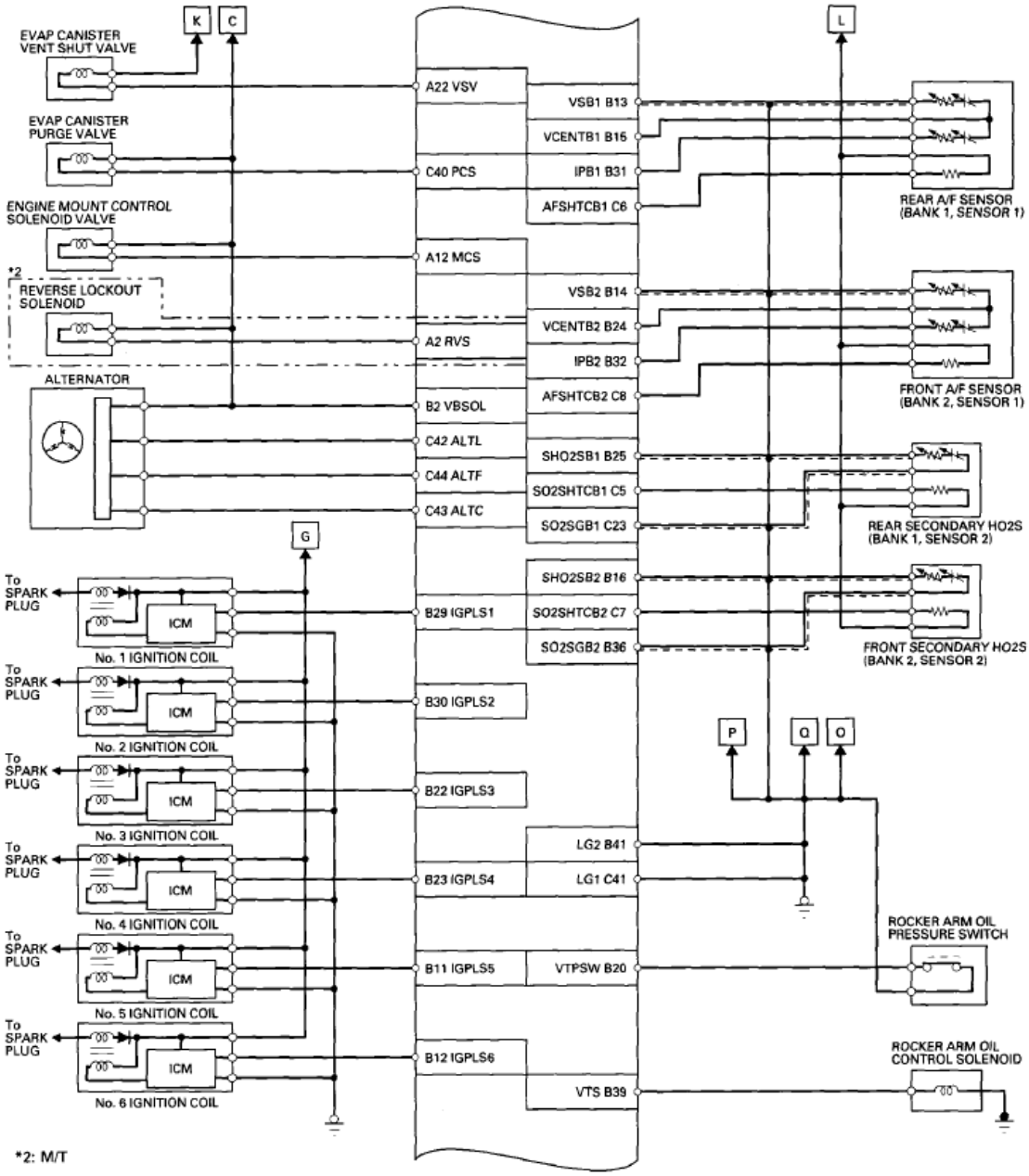


Fig. 31: ECM/PCM Electrical Connections Circuit Diagram (3 Of 7)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

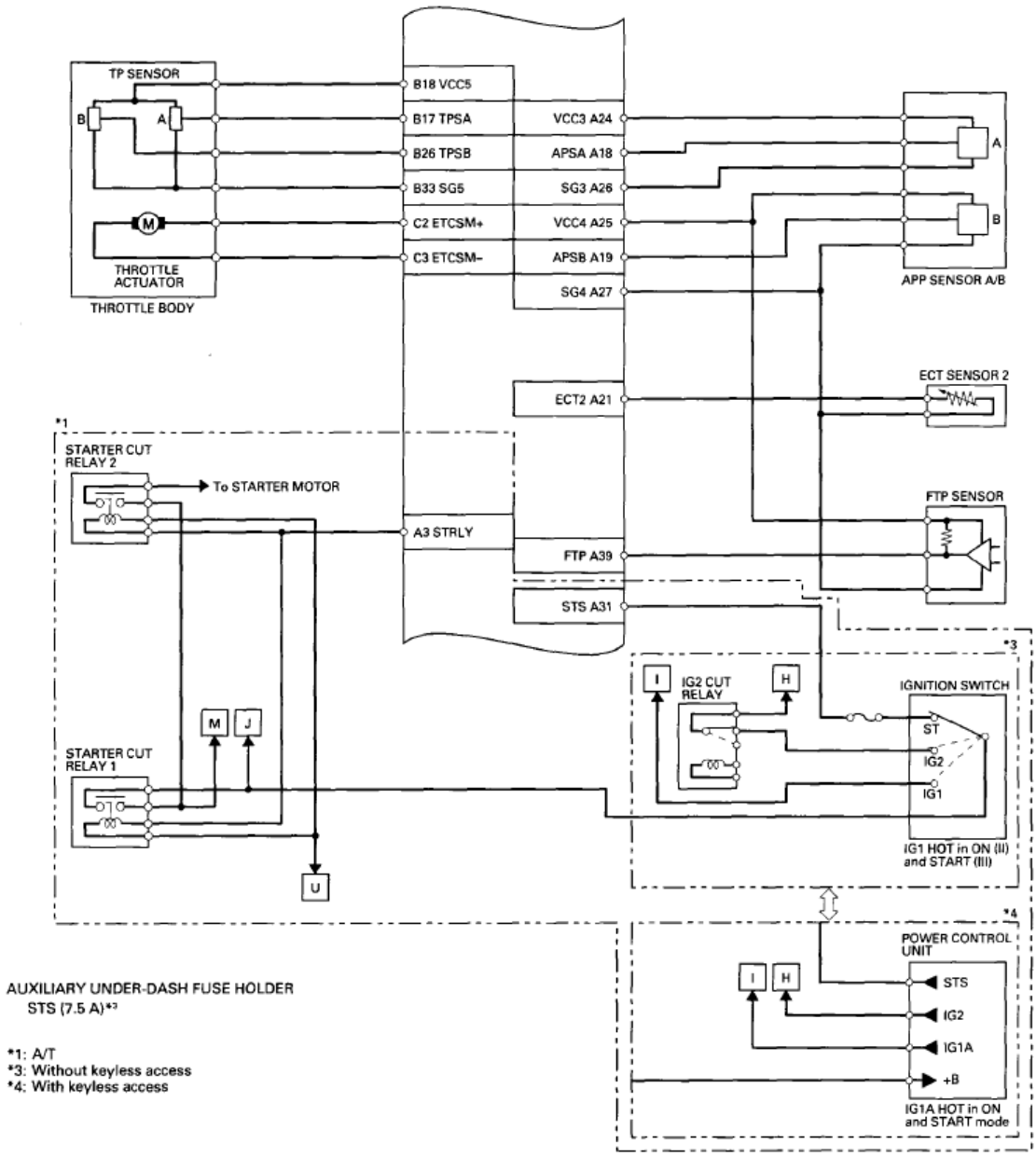


Fig. 32: ECM/PCM Electrical Connections Circuit Diagram (4 Of 7)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

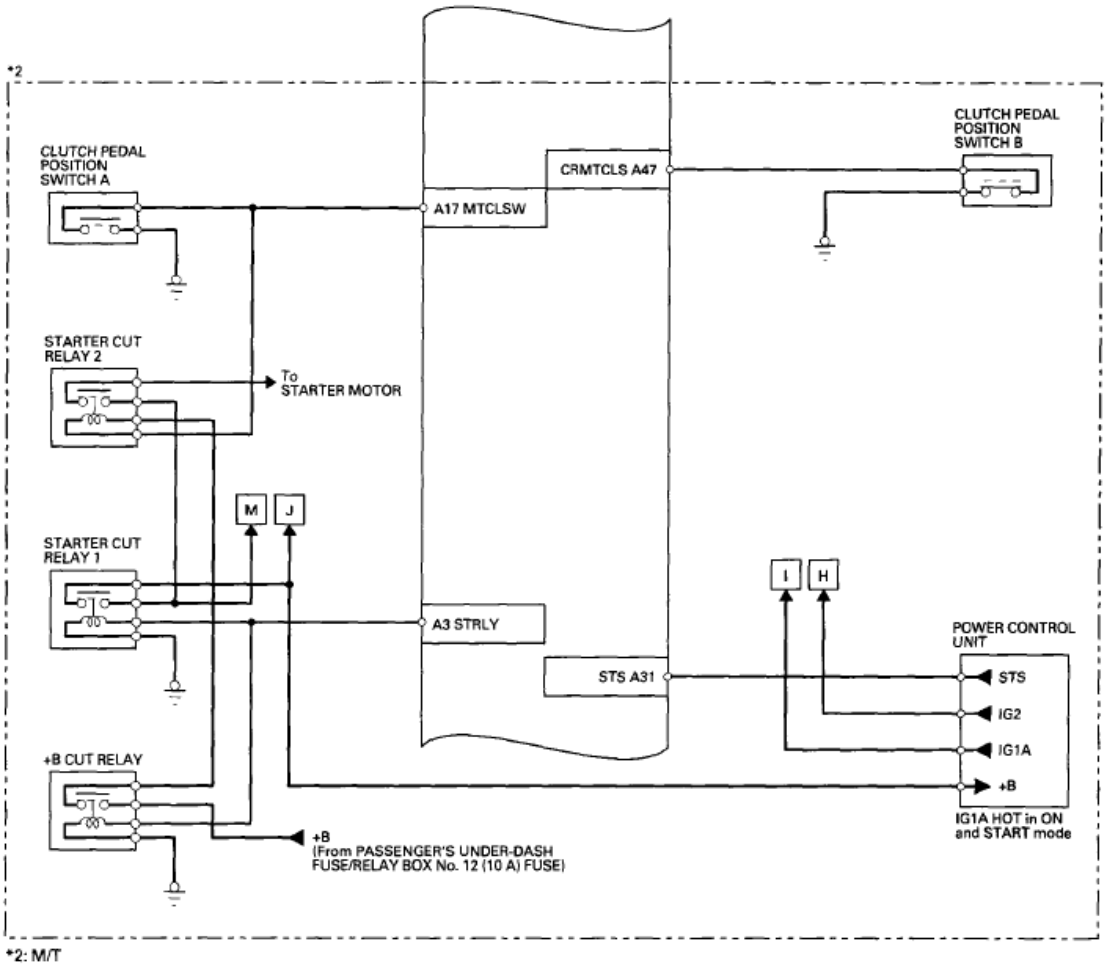


Fig. 33: ECM/PCM Electrical Connections Circuit Diagram (5 Of 7)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

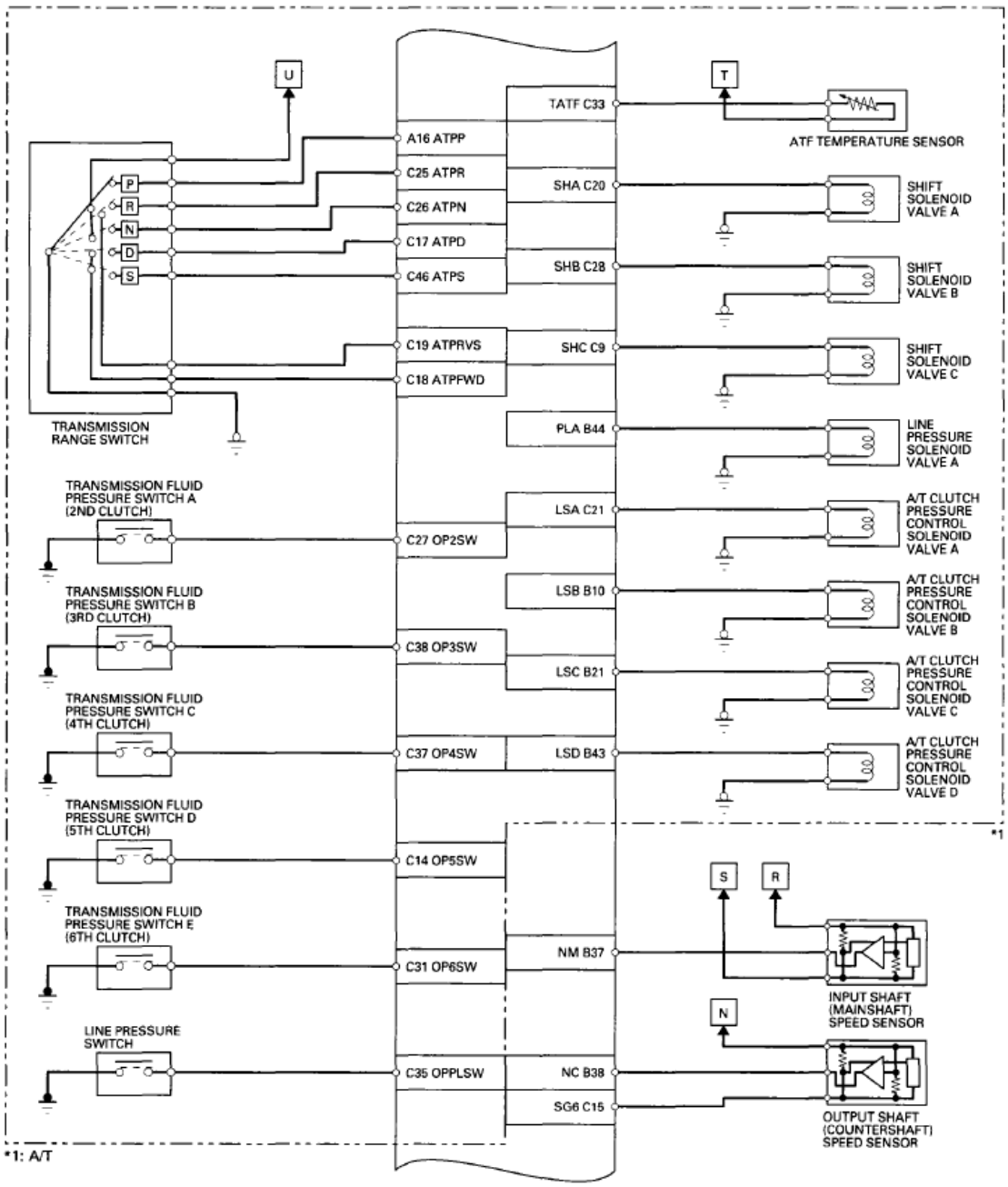


Fig. 34: ECM/PCM Electrical Connections Circuit Diagram (6 Of 7)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

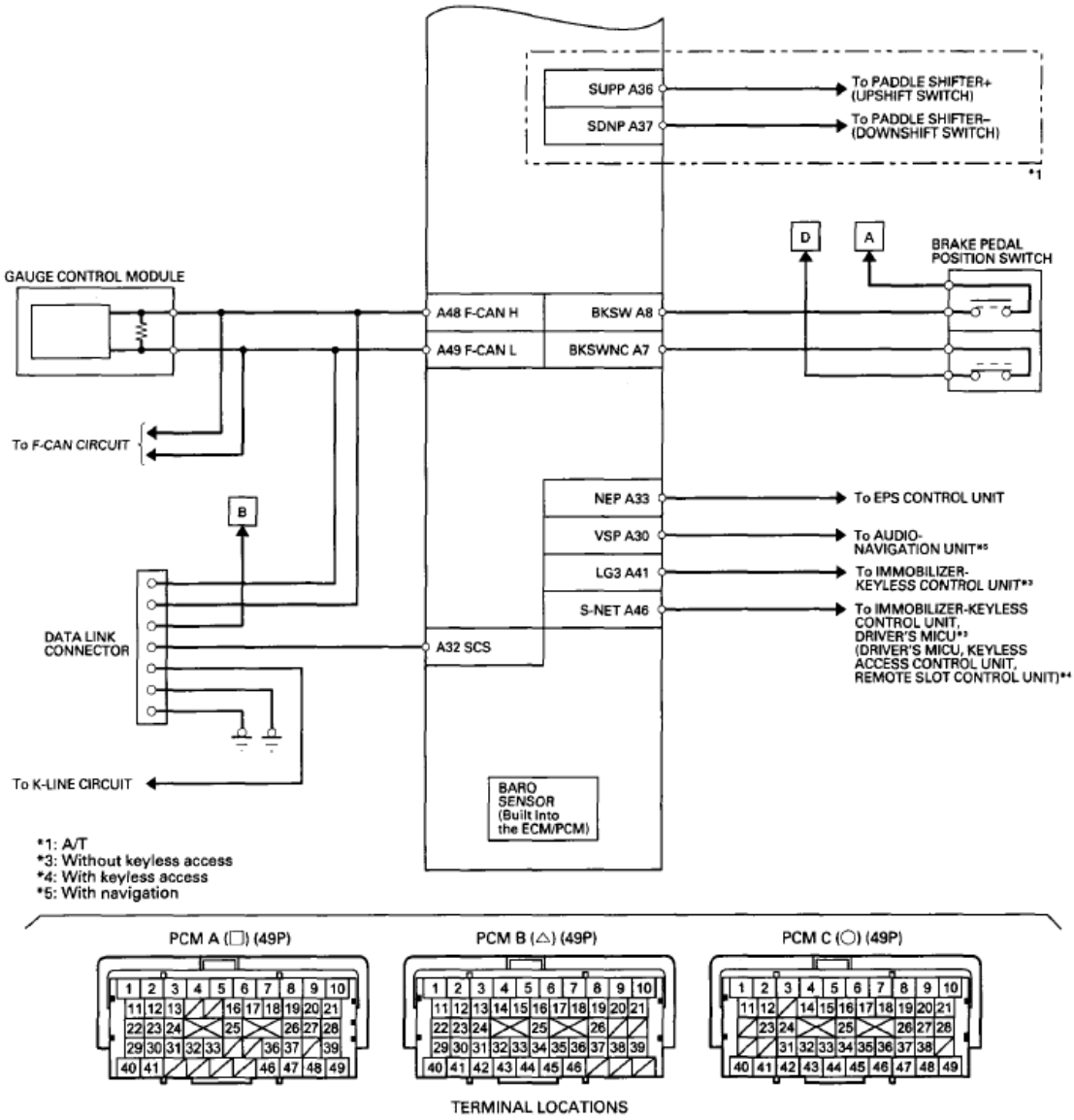


Fig. 35: ECM/PCM Electrical Connections Circuit Diagram (7 Of 7)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

ECM/PCM CIRCUIT DIAGRAM

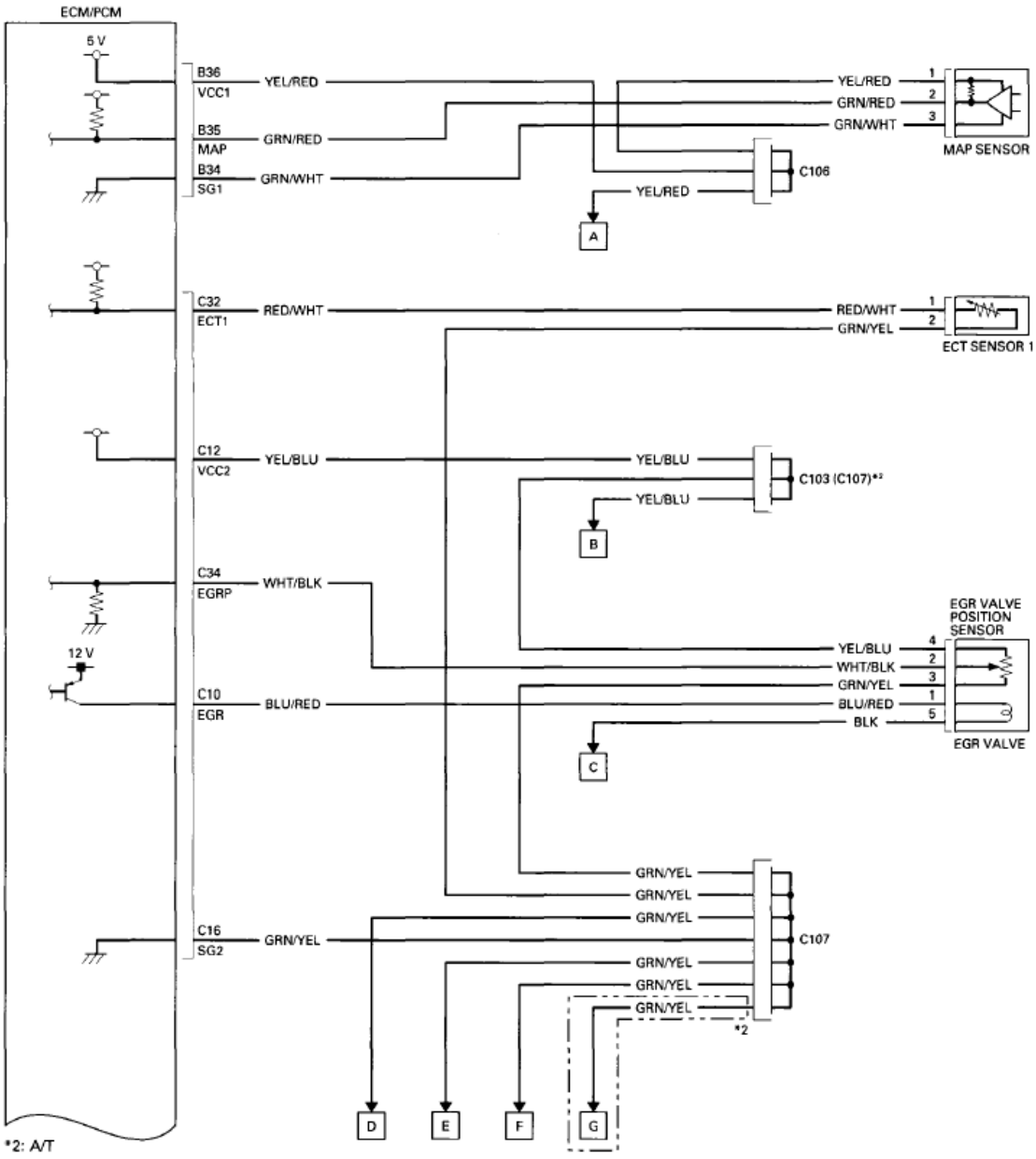


Fig. 36: ECM/PCM - Circuit Diagram (1 Of 18)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

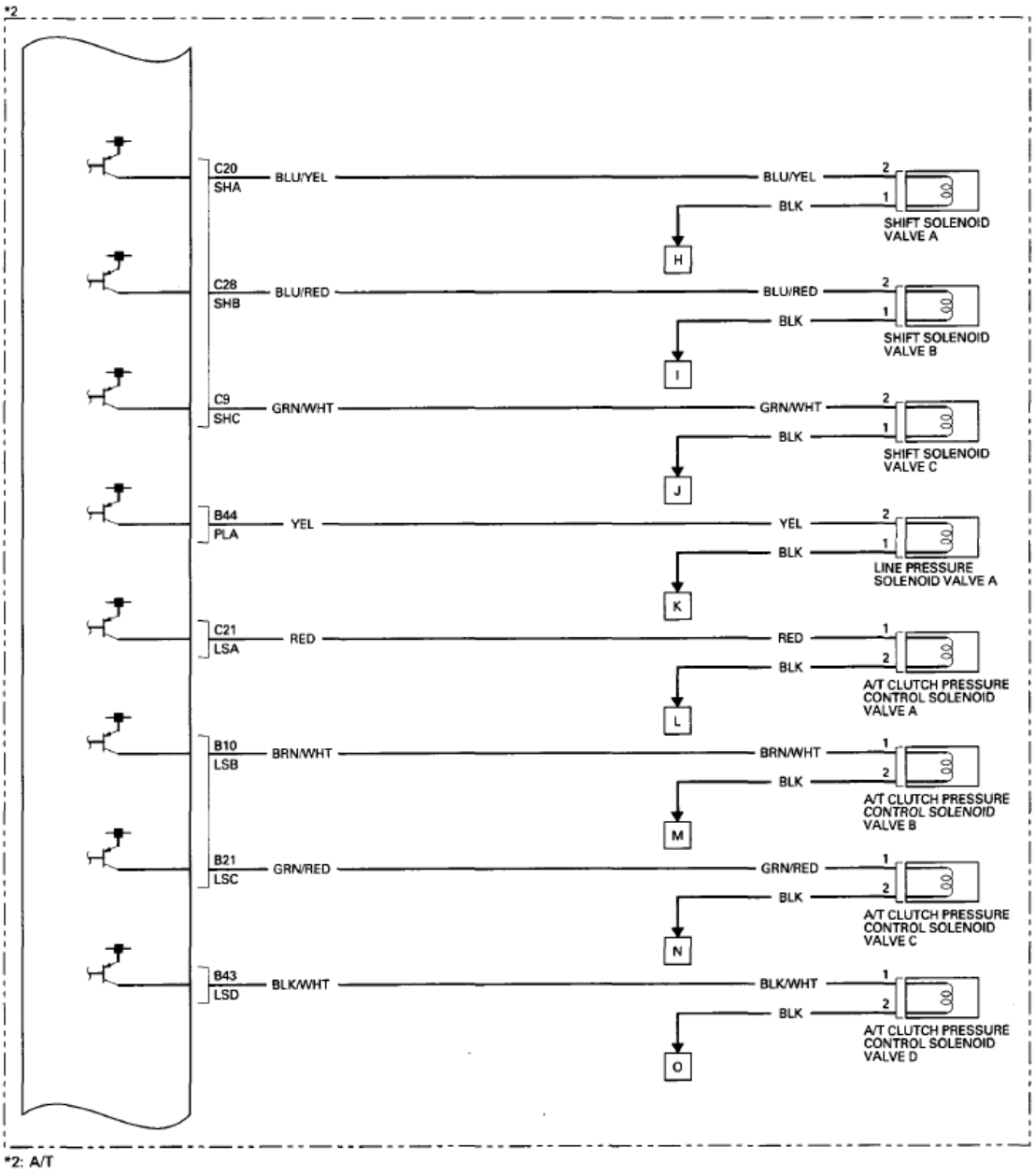


Fig. 37: ECM/PCM - Circuit Diagram (2 Of 18)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

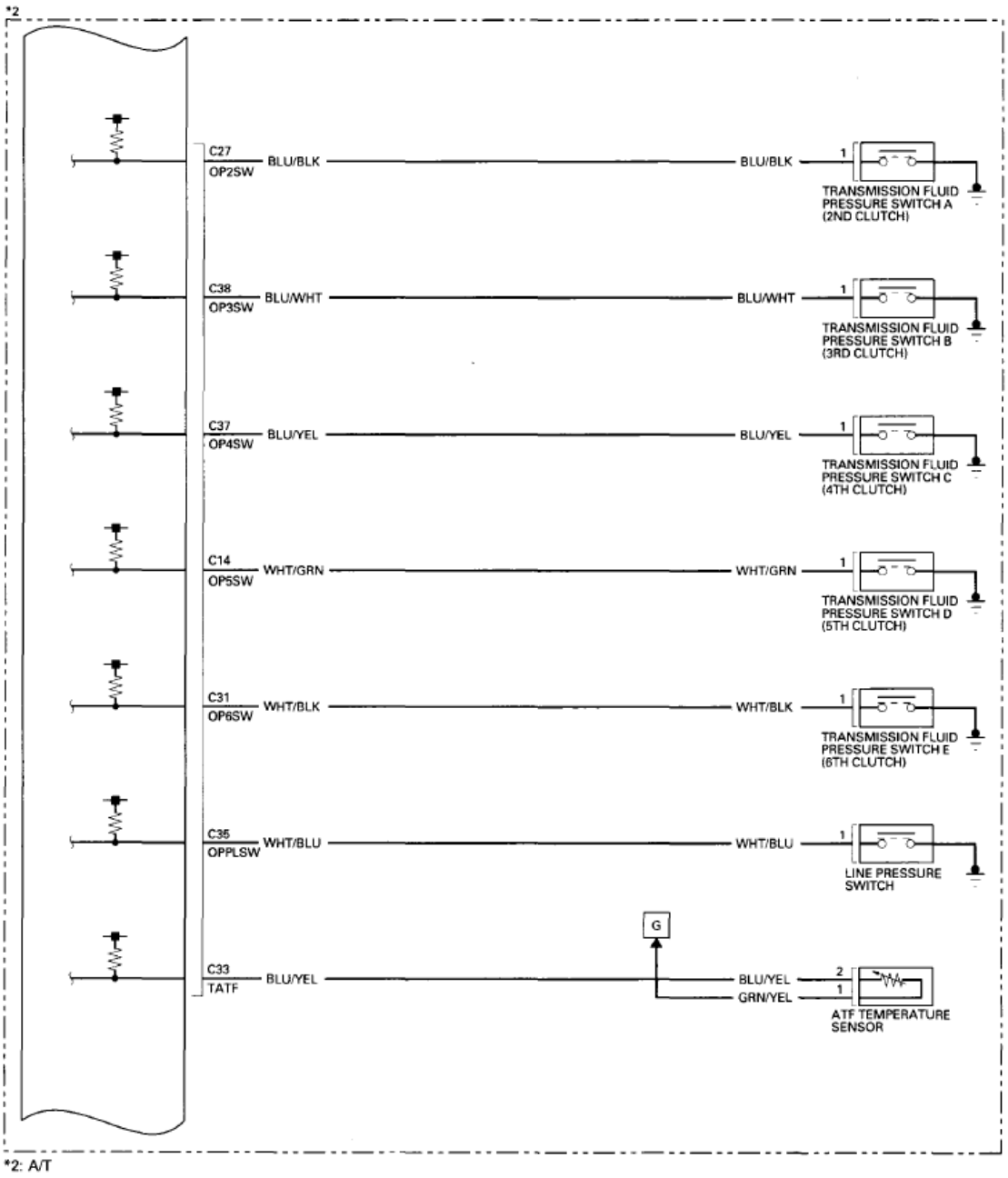


Fig. 38: ECM/PCM - Circuit Diagram (3 Of 18)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

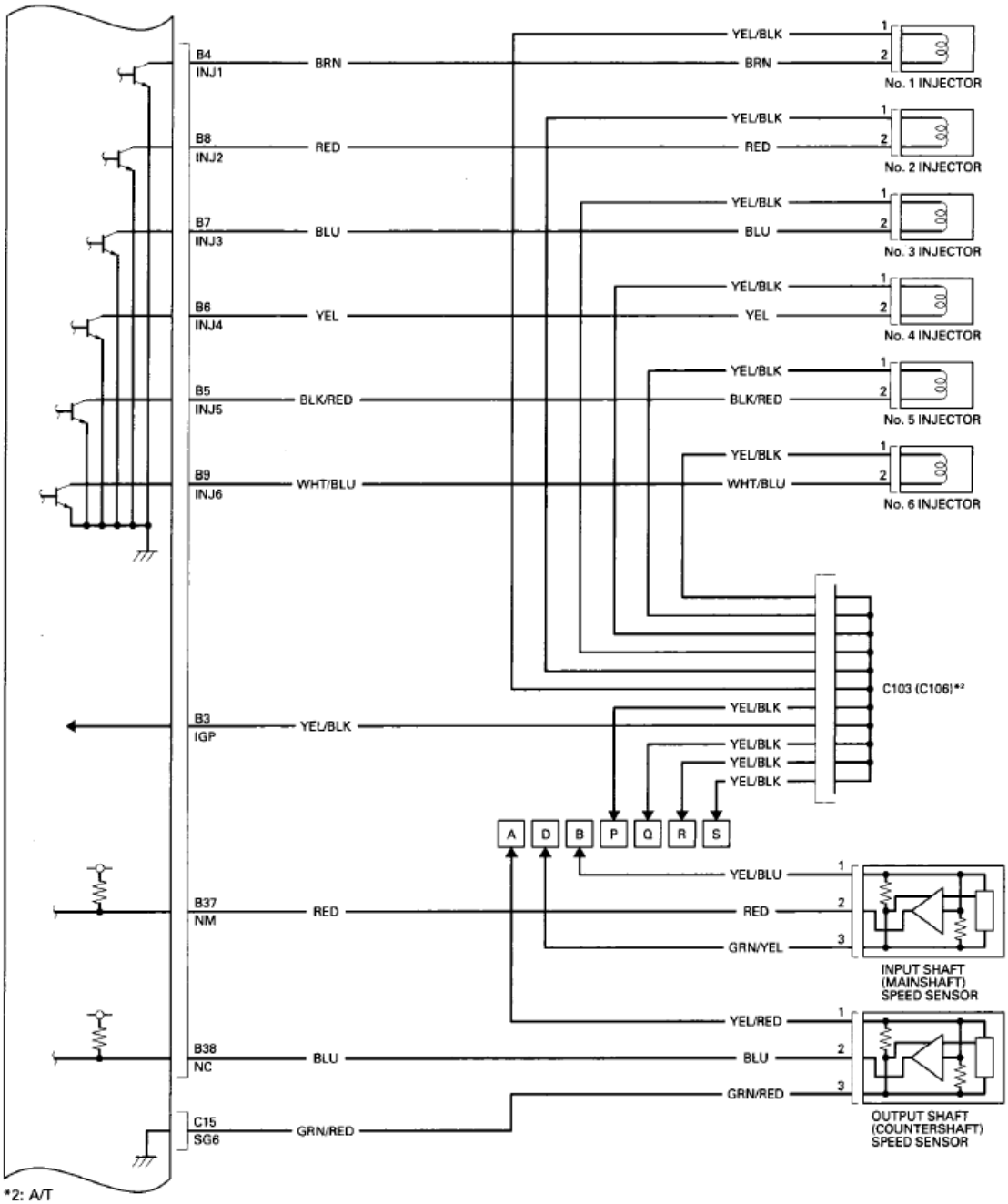


Fig. 39: ECM/PCM - Circuit Diagram (4 Of 18)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

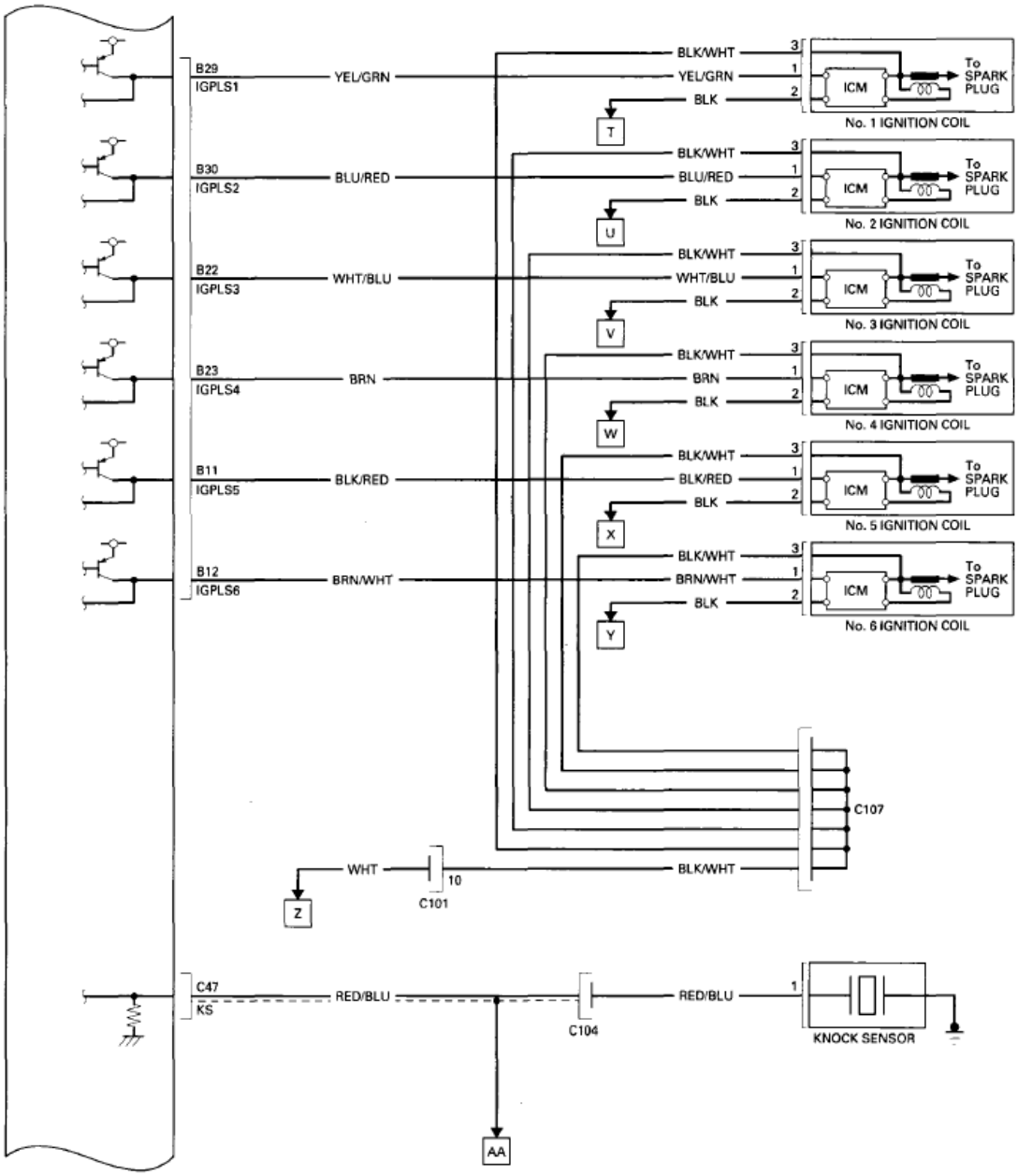


Fig. 40: ECM/PCM - Circuit Diagram (5 Of 18)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

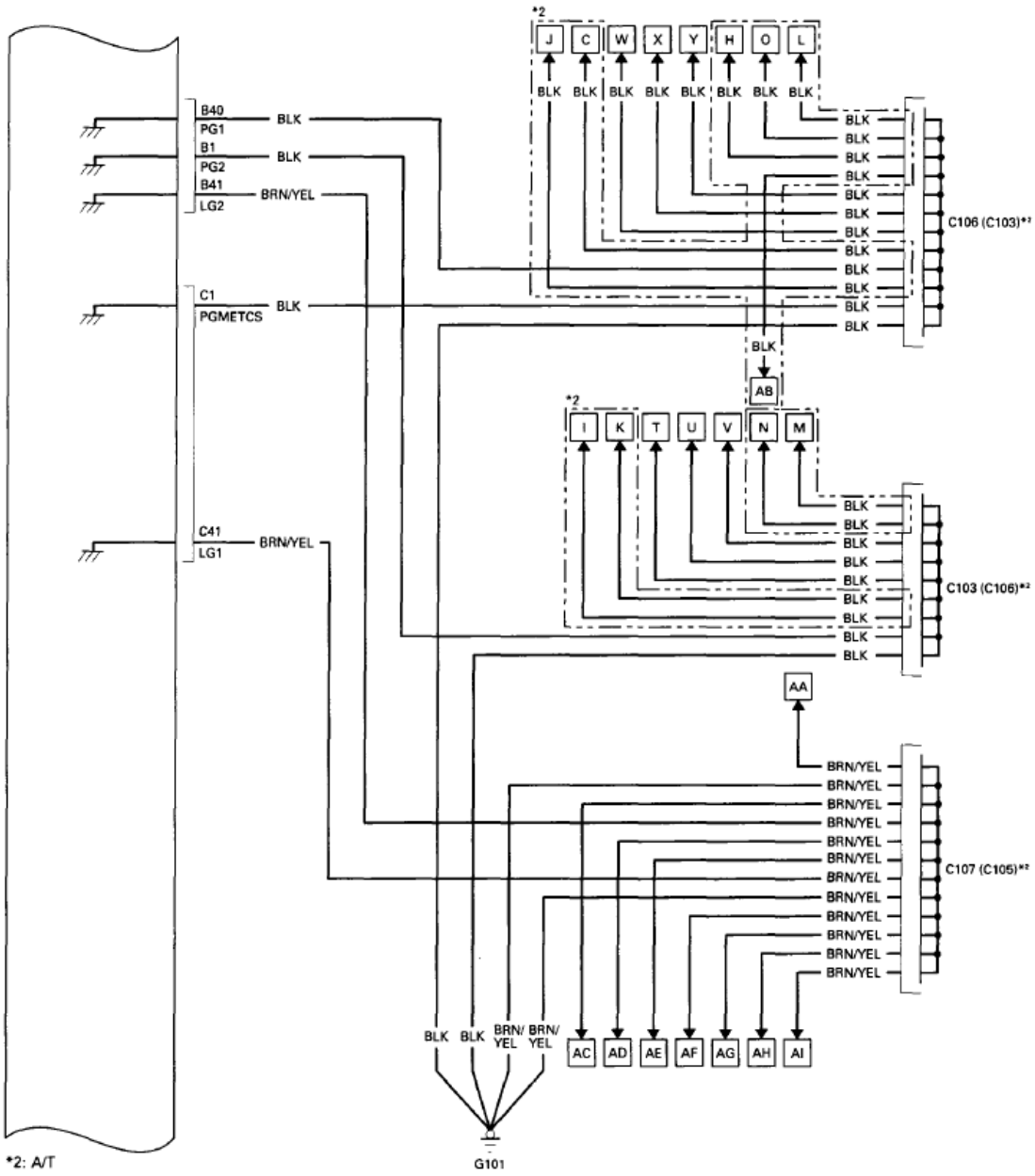


Fig. 41: ECM/PCM - Circuit Diagram (6 Of 18)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

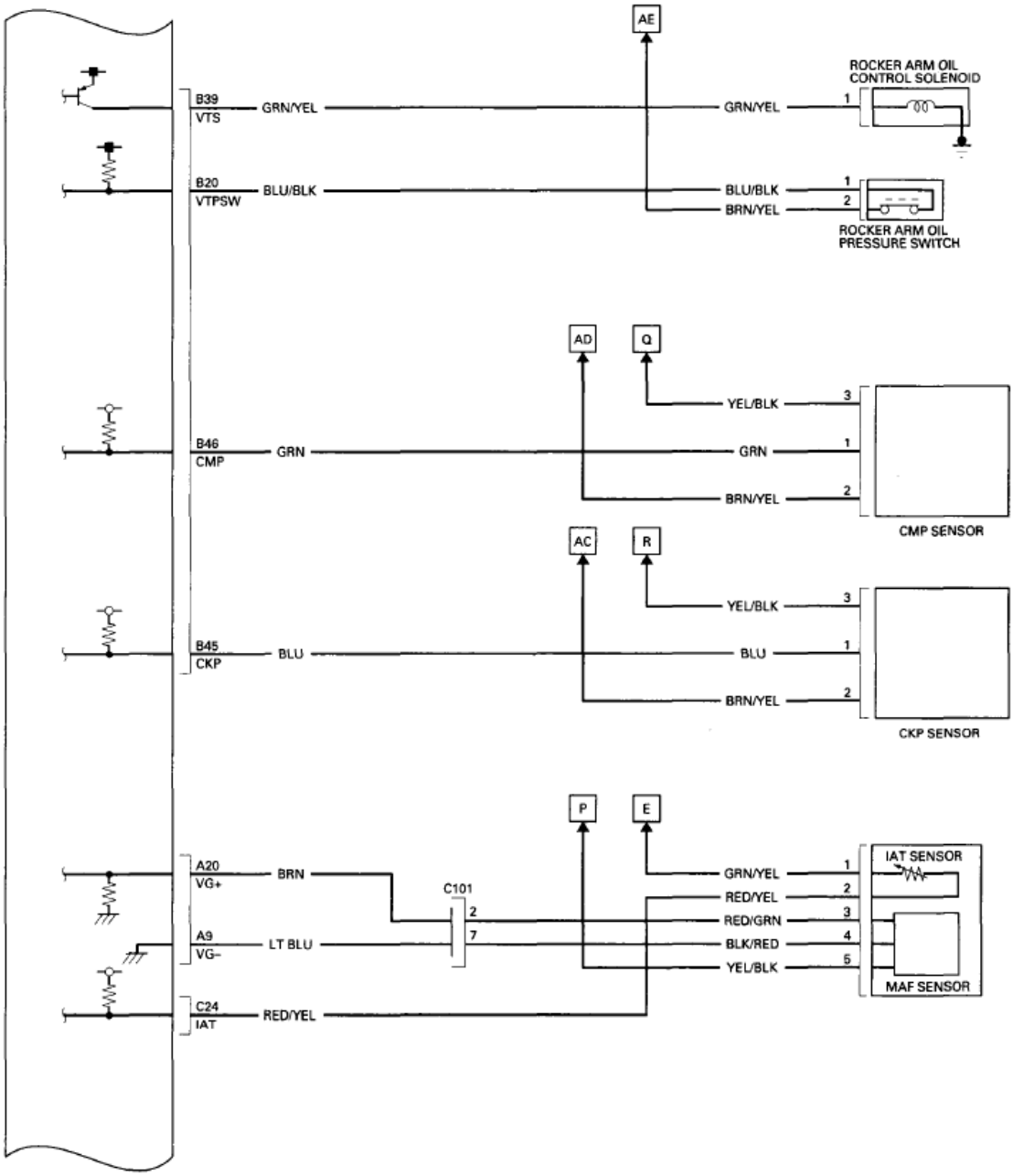


Fig. 42: ECM/PCM - Circuit Diagram (7 Of 18)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

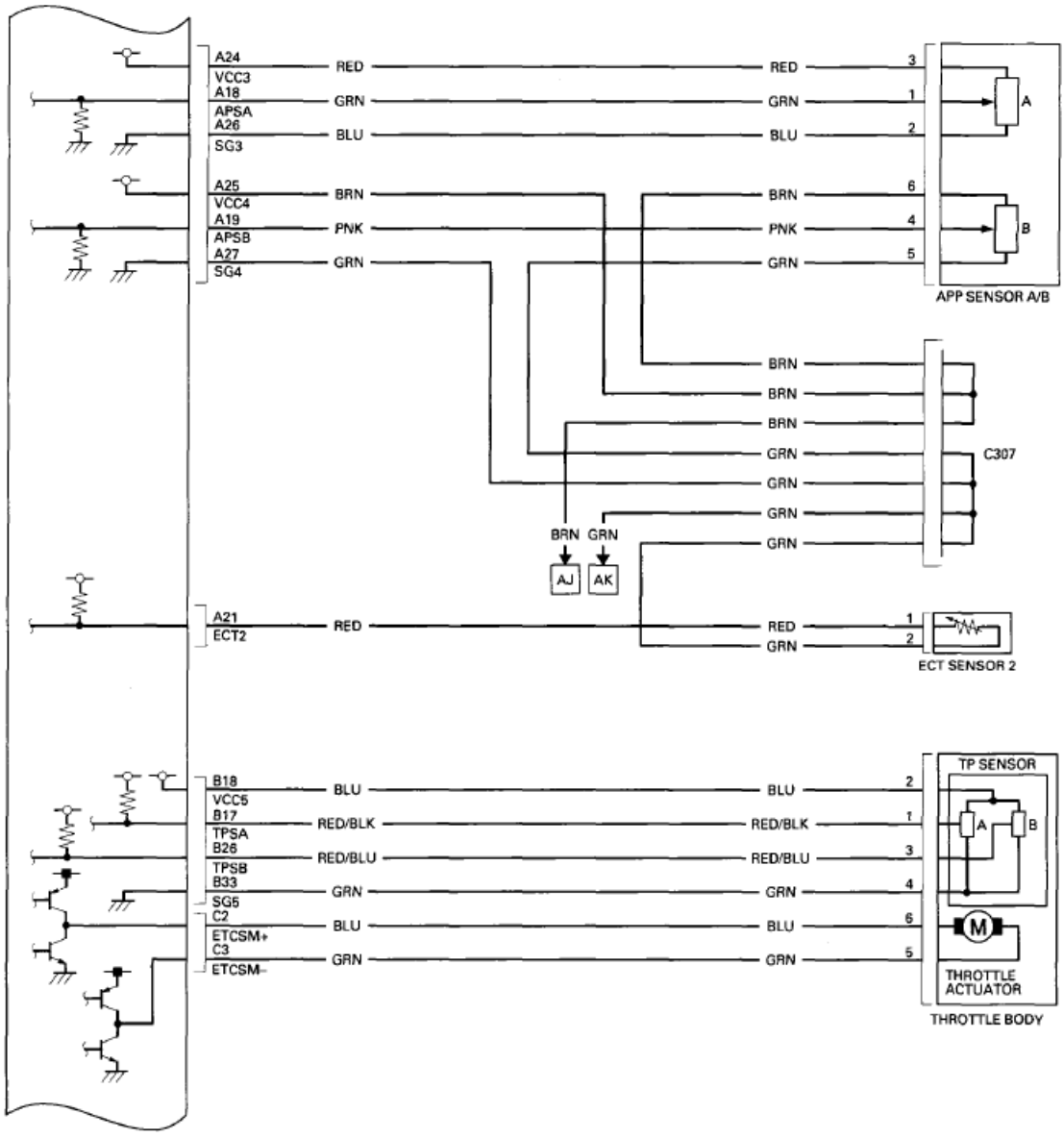


Fig. 43: ECM/PCM - Circuit Diagram (8 Of 18)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

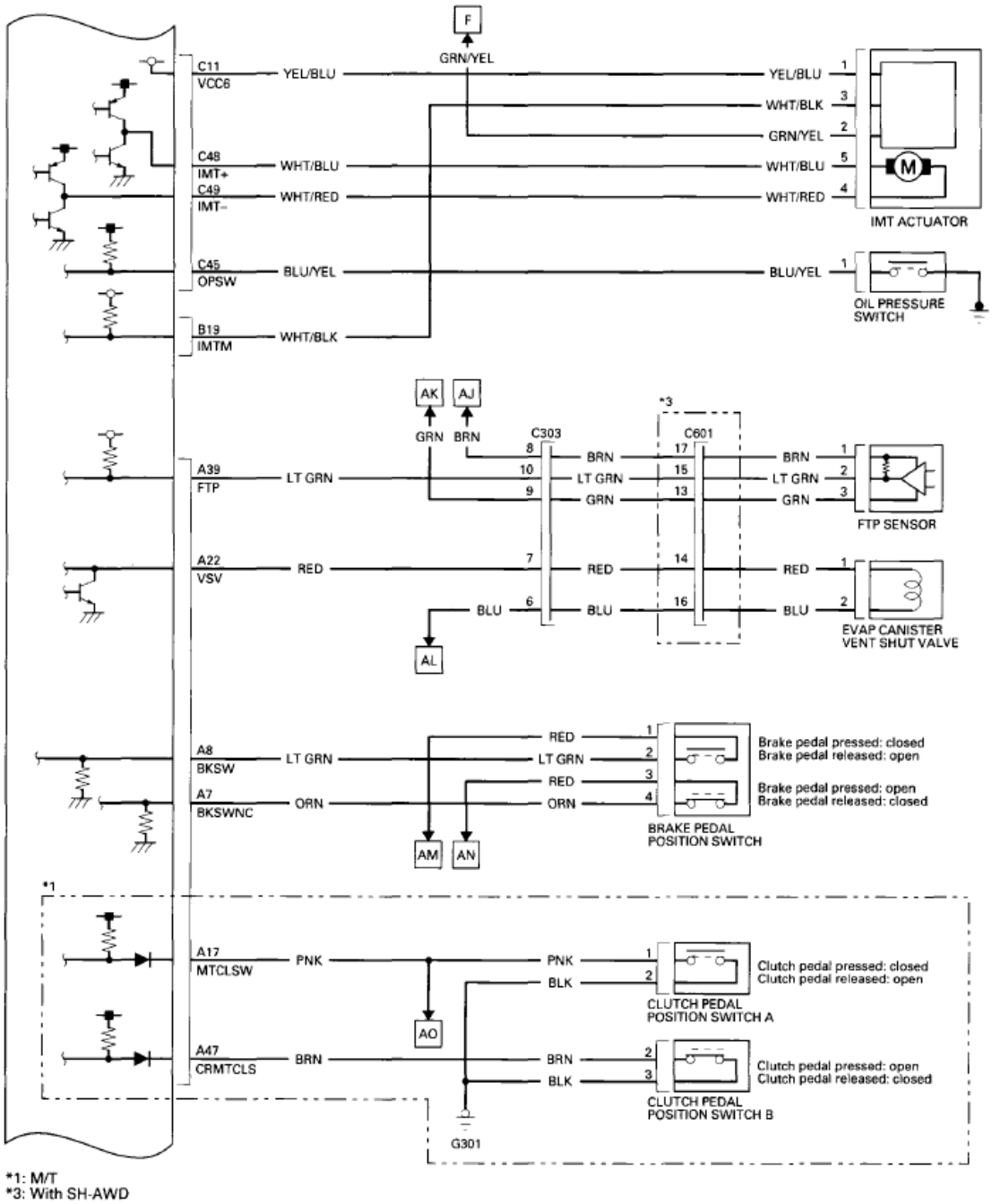


Fig. 44: ECM/PCM - Circuit Diagram (9 Of 18)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

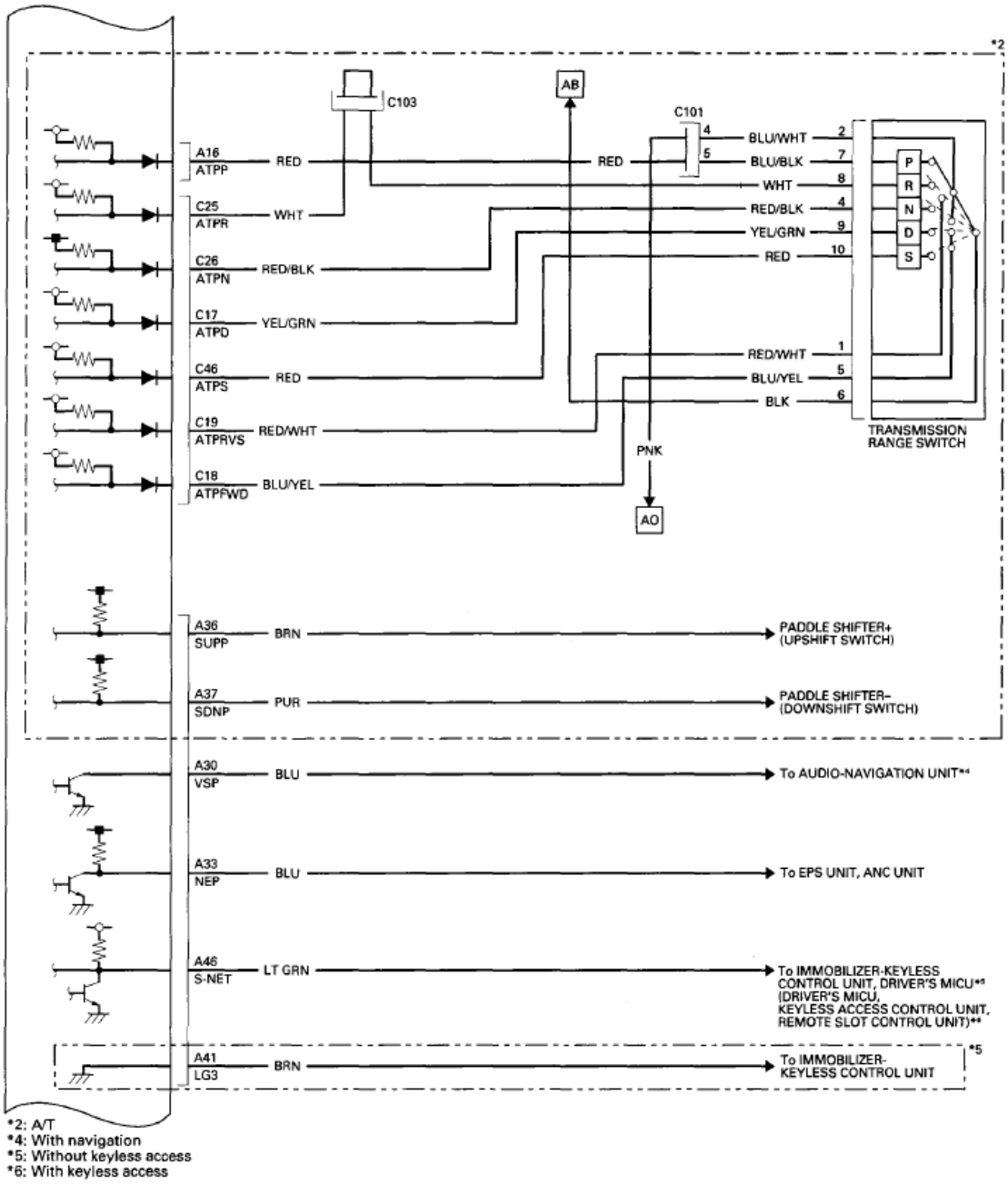


Fig. 45: ECM/PCM - Circuit Diagram (10 Of 18)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

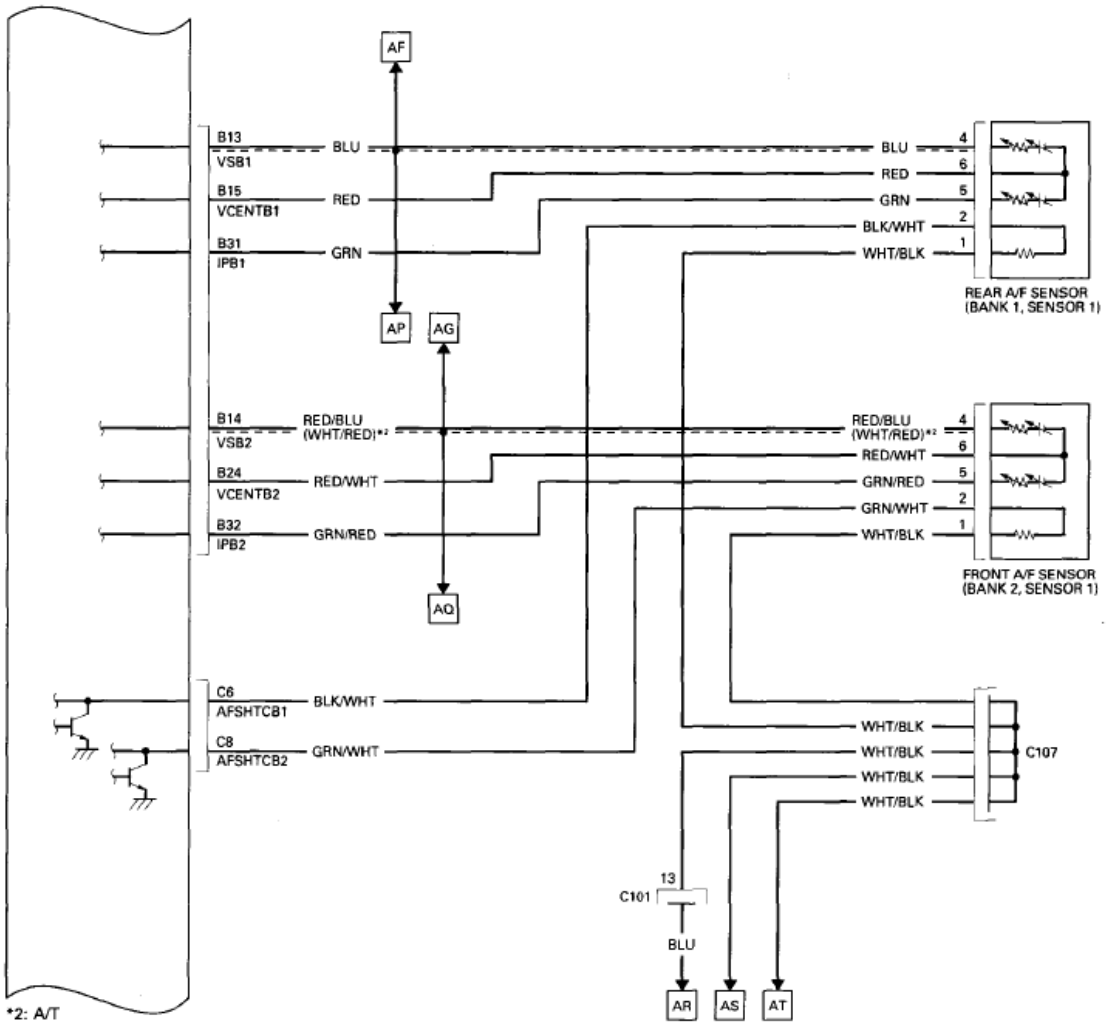


Fig. 46: ECM/PCM - Circuit Diagram (11 Of 18)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

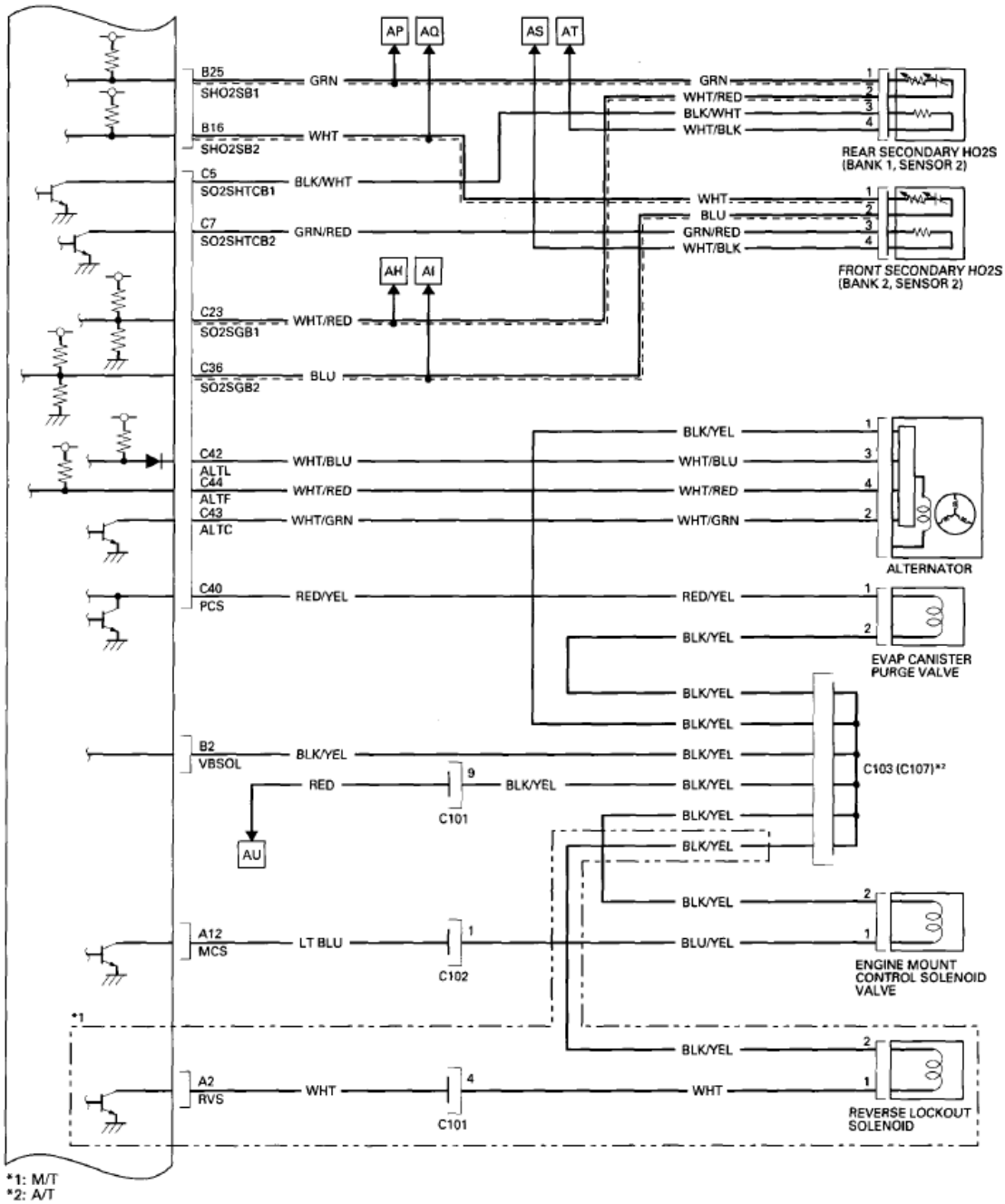


Fig. 47: ECM/PCM - Circuit Diagram (12 Of 18)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

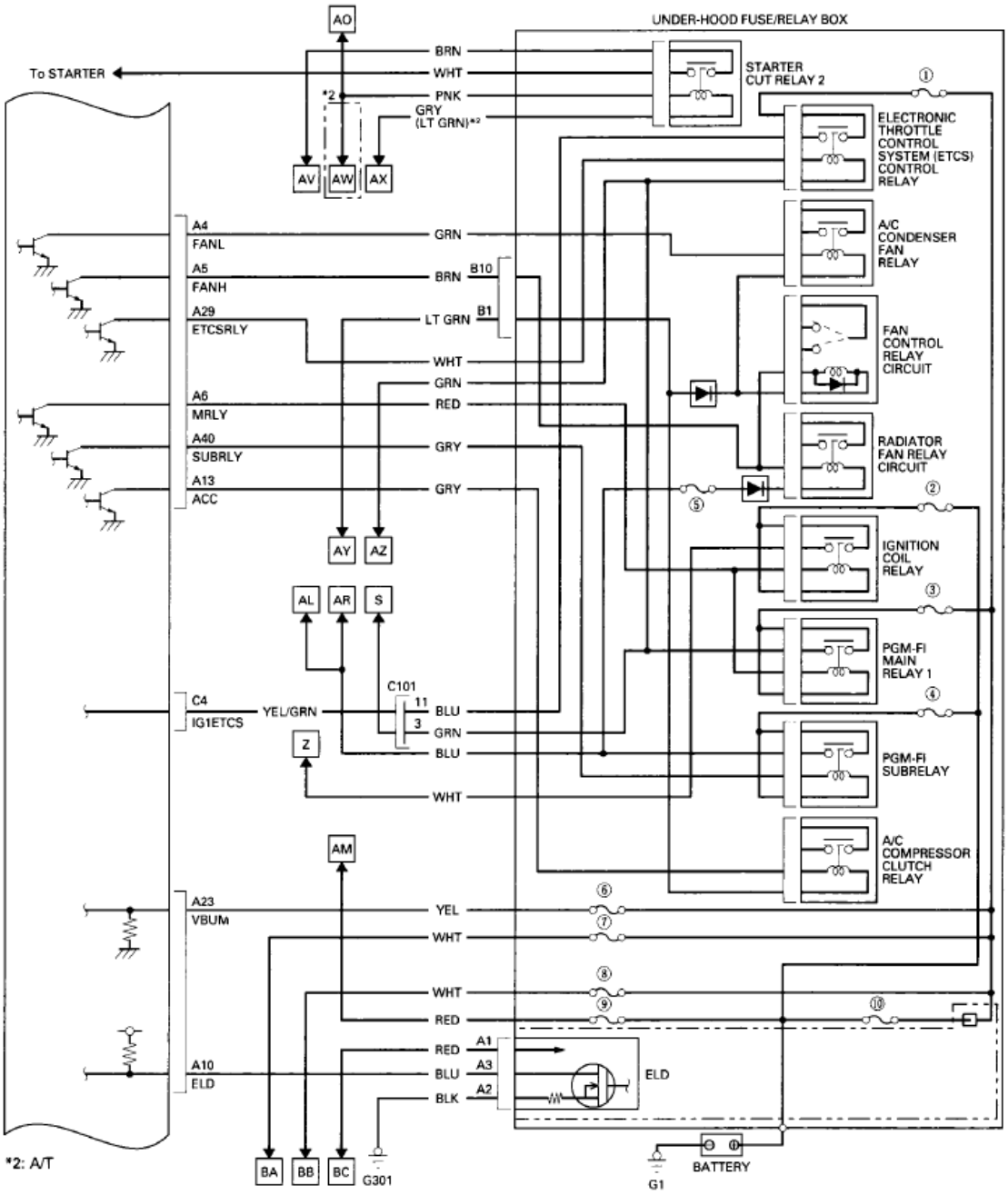


Fig. 48: ECM/PCM - Circuit Diagram (13 Of 18)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

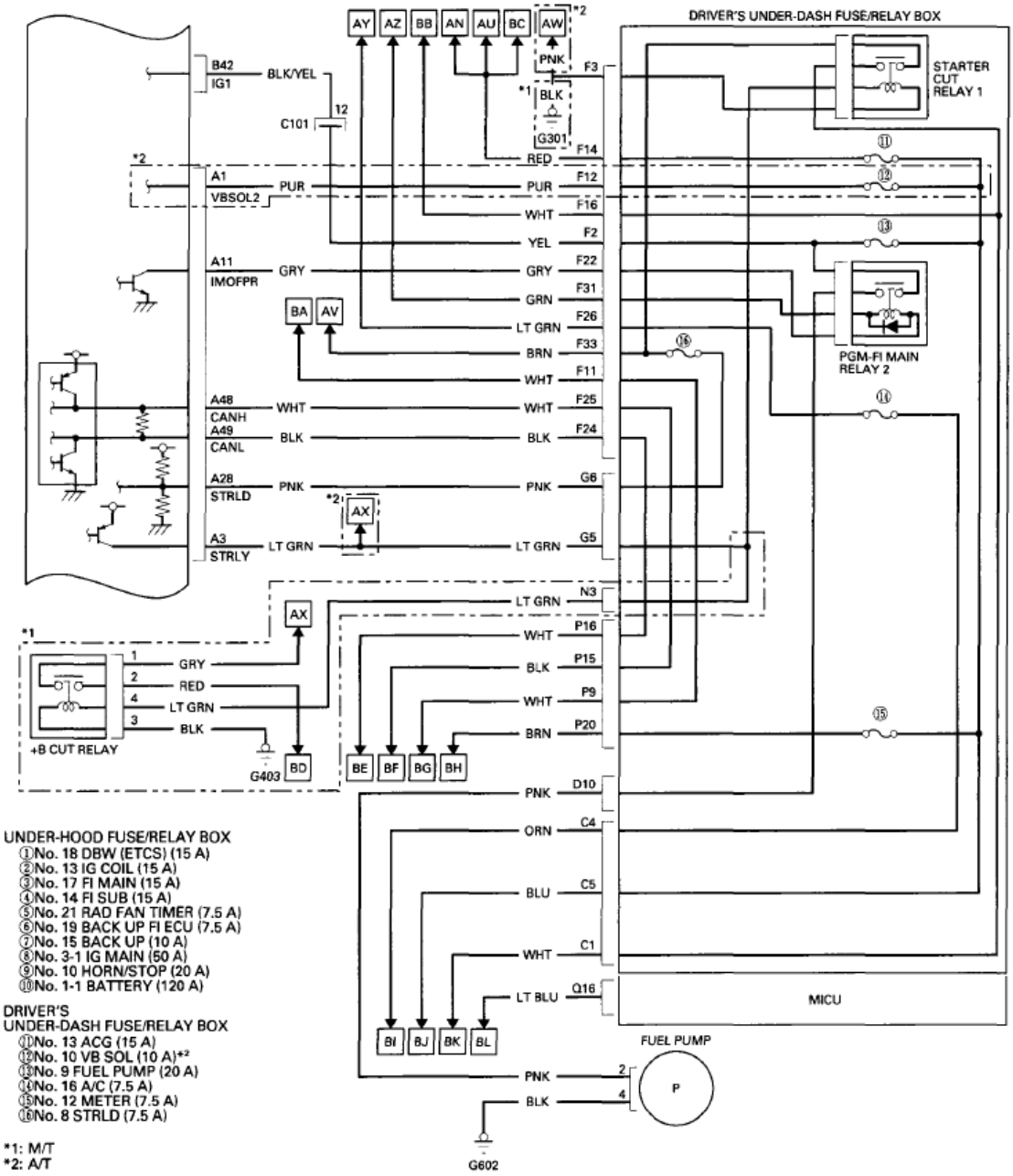


Fig. 49: ECM/PCM - Circuit Diagram (14 Of 18)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

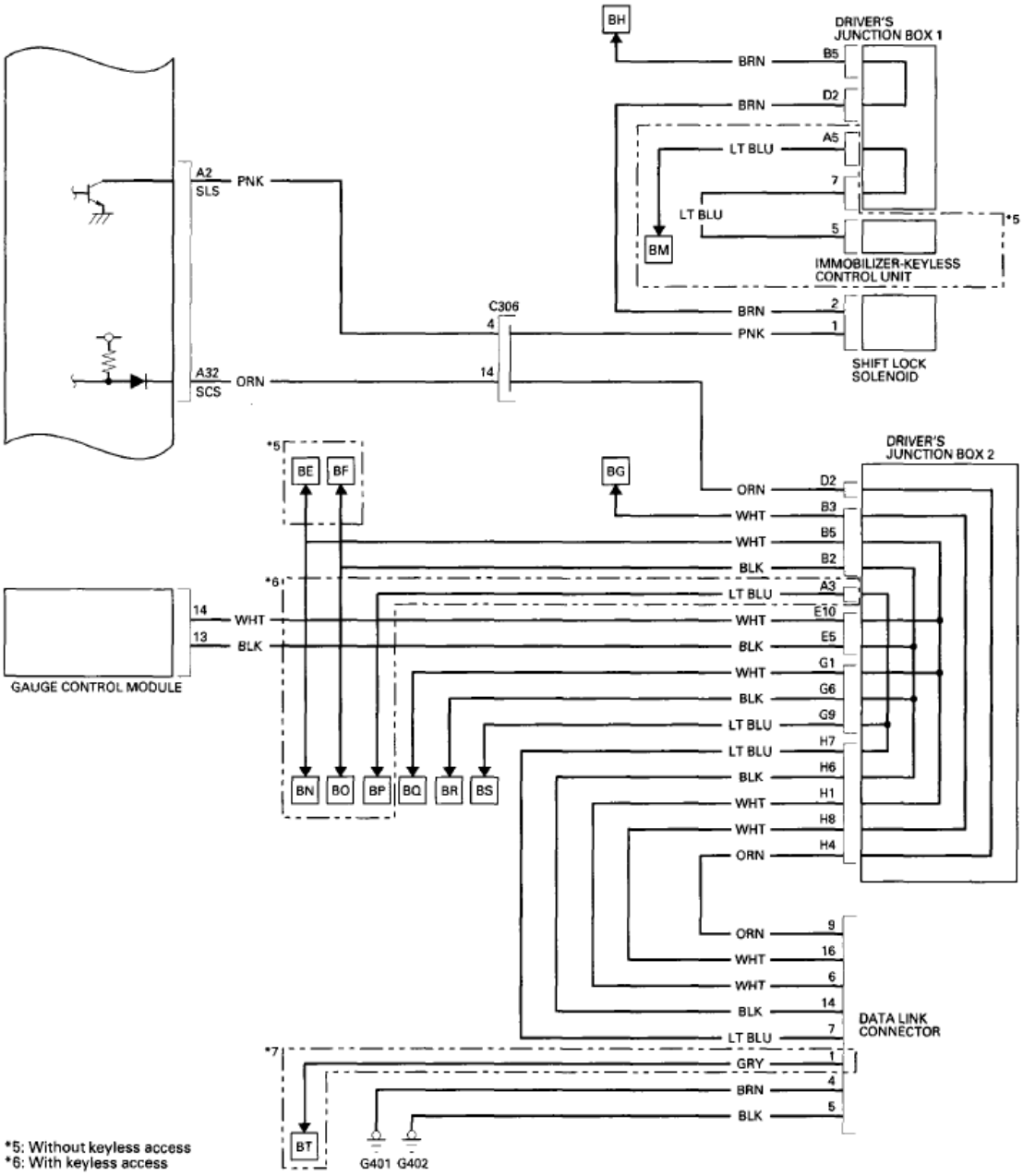


Fig. 50: ECM/PCM - Circuit Diagram (15 Of 18)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

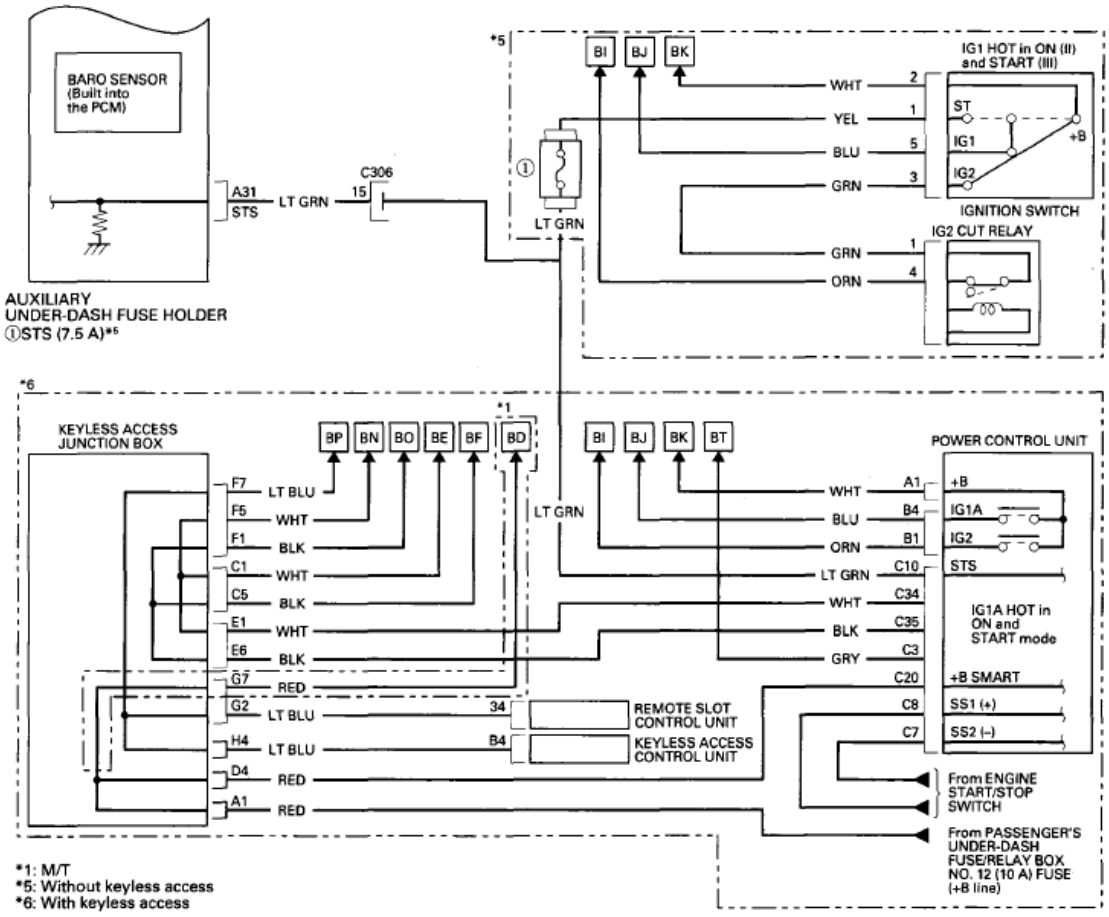


Fig. 51: ECM/PCM - Circuit Diagram (16 Of 18)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

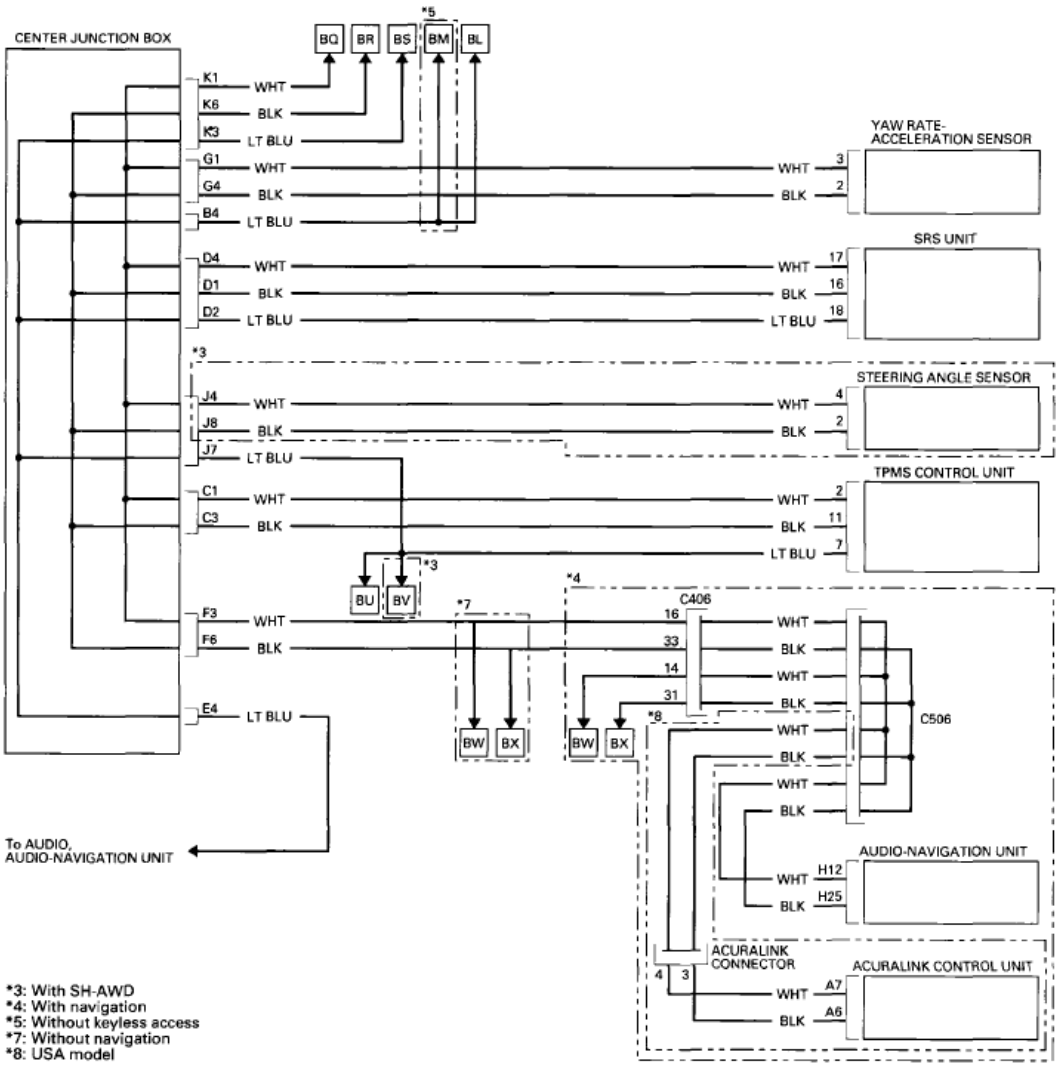


Fig. 52: ECM/PCM - Circuit Diagram (17 Of 18)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

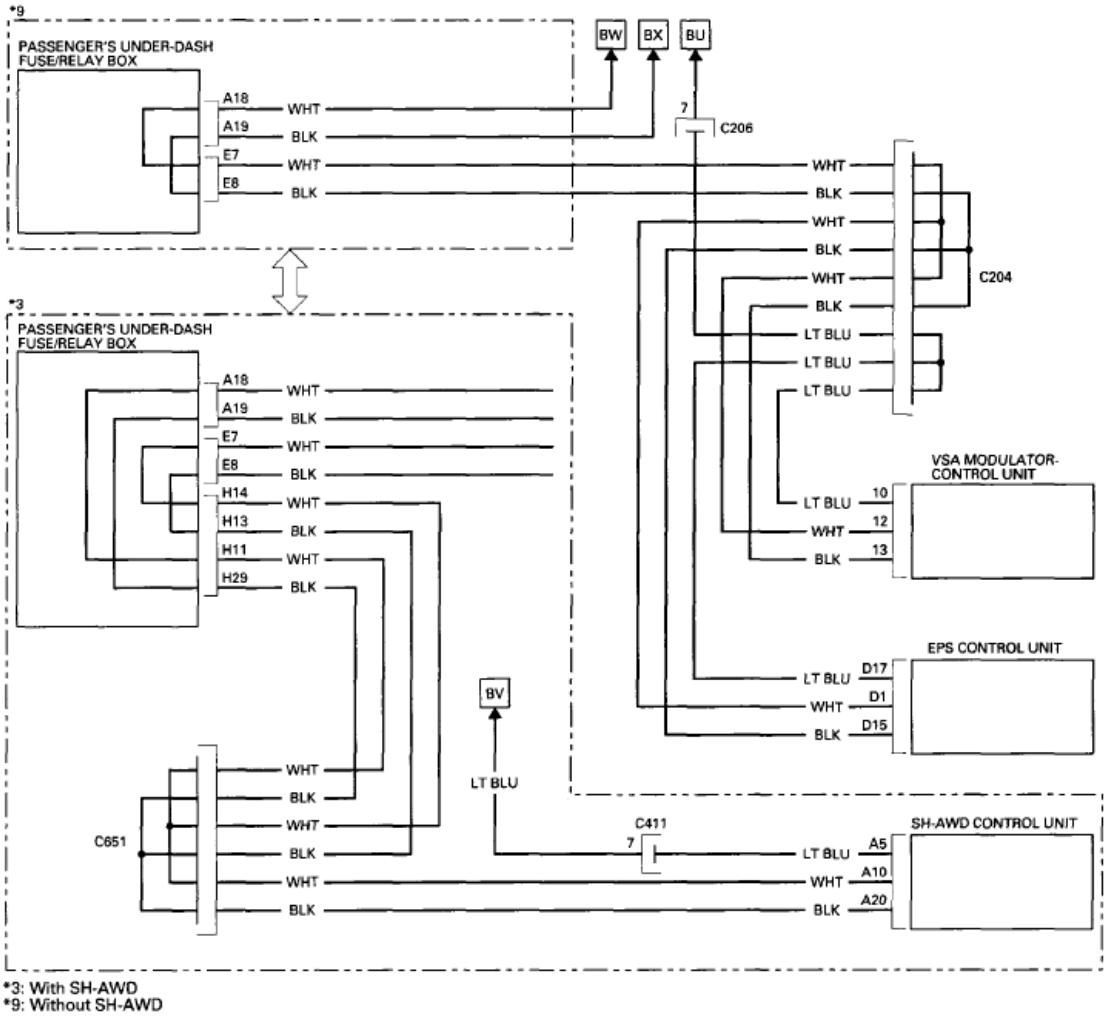


Fig. 53: ECM/PCM - Circuit Diagram (18 Of 18)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

PGM-FI SYSTEM

The programmed fuel injection (PGM-FI) system is a sequential multiport fuel injection system.

Alternator Control

The alternator signals the ECM/PCM during charging. The ECM/PCM then controls the voltage generated at the alternator according to the electrical load determined by the electrical load detector (ELD) and the driving mode. This reduces engine load to improve fuel economy.

Air Conditioning (A/C) Compressor Clutch Relay

When the ECM/PCM receives a demand for cooling from the A/C system, it delays the compressor from being energized, and enriches the mixture to assure a smooth transition to the A/C mode.

Air Fuel Ratio (A/F) Sensor

The A/F sensor operates over a wide air/fuel range. The A/F sensor is installed upstream of the warm up three way catalytic converter (WU-TWC), and it sends signals to the ECM/PCM which varies the duration of fuel injection accordingly.

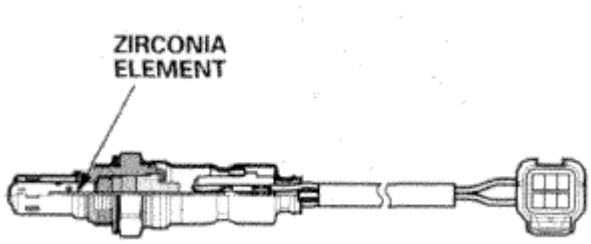


Fig. 54: Identifying Air Fuel Ratio (A/F) Sensor
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Barometric Pressure (BARO) Sensor

The BARO sensor is inside the ECM/PCM. It converts atmospheric pressure into a voltage signal that is used by the ECM/PCM to modify the basic duration of the fuel injection discharge.

Camshaft Position (CMP) Sensor

The CMP sensor detects the position of the No, 1 cylinder as a reference for sequential fuel injection to each cylinder.

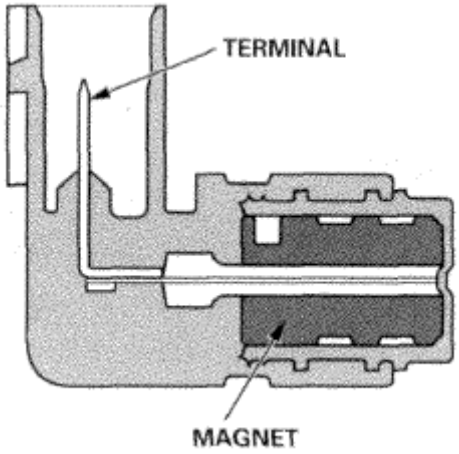


Fig. 55: Identifying Camshaft Position (CMP) Sensor
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Crankshaft Position (CKP) Sensor

The CKP sensor detects crankshaft speed, and is used by the ECM/PCM to determine ignition timing, timing for the fuel injection of each cylinder, and engine misfire detection.

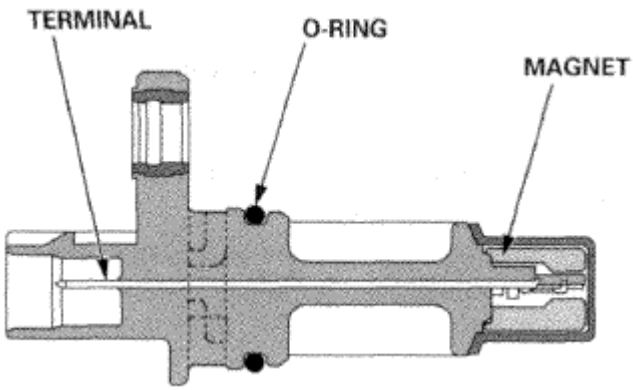


Fig. 56: Identifying Crankshaft Position (CKP) Sensor
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Engine Coolant Temperature (ECT) Sensors 1 and 2

ECT sensors 1 and 2 are temperature dependent resistors (thermistors). The resistance decreases as the engine coolant temperature increases.

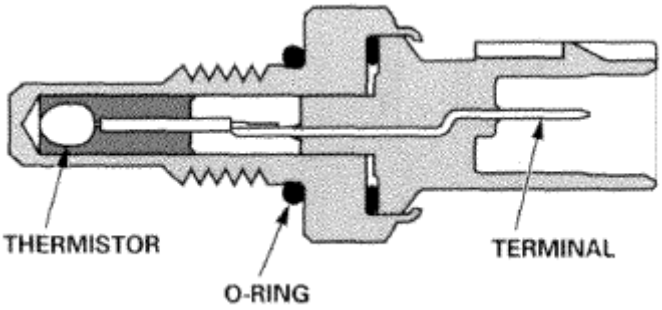


Fig. 57: Identifying Engine Coolant Sensor And Related Components
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Ignition Timing Control

The ECM/PCM contains the memory for basic ignition timing at various engine speeds and manifold absolute pressures. It also adjusts the timing according to engine coolant temperature and intake air temperature.

Injector Timing and Duration

The ECM/PCM contains the memory for basic discharge duration at various engine speeds and manifold pressures. The basic discharge duration, after being read out from the memory, is further modified by signals sent from various sensors to obtain the final discharge duration.

By monitoring long term fuel trim, the ECM/PCM detects long term malfunctions in the fuel system and sets diagnostic trouble codes (DTCs) if needed.

Input Shaft (Mainshaft) Speed Sensor

This sensor detects input shaft (mainshaft) speed.

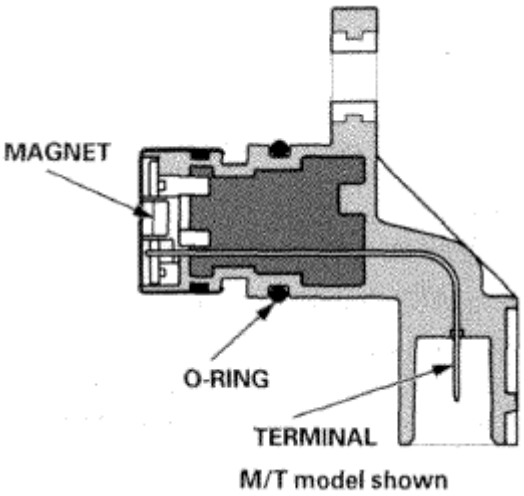


Fig. 58: Identifying Input Shaft (Mainshaft) Speed Sensor
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Knock Sensor

The knock control system adjusts the ignition timing to minimize knock.

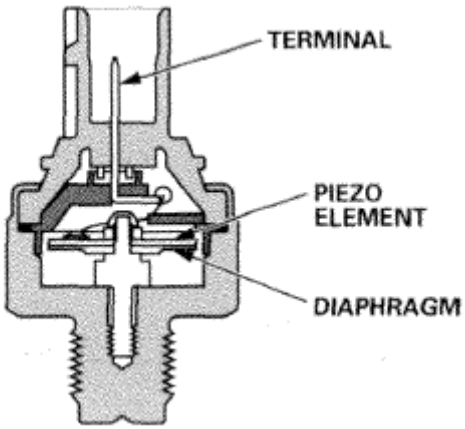


Fig. 59: Identifying Knock Sensor
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Malfunction Indicator Lamp (MIL) Indication (In relation to Readiness Codes)

The vehicle has certain readiness codes that are part of the on-board diagnostics for the emissions systems. If the vehicle's battery has been disconnected or gone dead, if DTCs have been cleared, or if the ECM/PCM has been reset, these codes are reset. In some states, part of the emissions testing is to make sure these codes are set to complete. If all of them are not set to complete, the vehicle may fail the test, or the test cannot be finished.

To check if the readiness codes are set to complete, turn the ignition switch to ON (II) or press the engine

start/stop button to select the ON mode, but do not start the engine. The MIL will come on for 15- 20 seconds. If it then goes off, the readiness codes are complete. If it flashes five times, one or more readiness codes are not set to complete. To set each code, drive the vehicle or run the engine as described in the procedures (see **readiness codes**).

Manifold Absolute Pressure (MAP) Sensor

The MAP sensor converts manifold absolute pressure into electrical signals that are sent to the ECM/PCM.

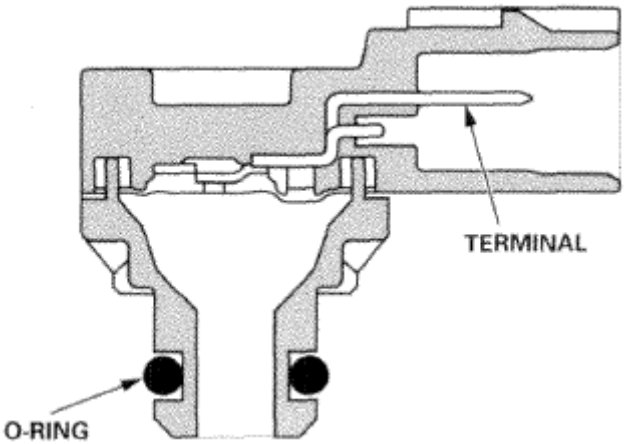


Fig. 60: Identifying Manifold Absolute Pressure (MAP) Sensor
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Mass Air Flow (MAF) Sensor/Intake Air Temperature (IAT) Sensor

The mass airflow (MAF) sensor/intake air temperature OAT) sensor contains a hot wire sensor, a cold wire sensor, and a thermistor. It is located in the intake air passage. The resistance of the hot wire sensor, a cold wire sensor, and the thermistor changes due to intake air temperature and air flow. The control circuit in the MAF sensor controls the current to keep the hot wire at a set temperature. The current is converted to voltage in the control circuit, then output to the ECM/PCM.

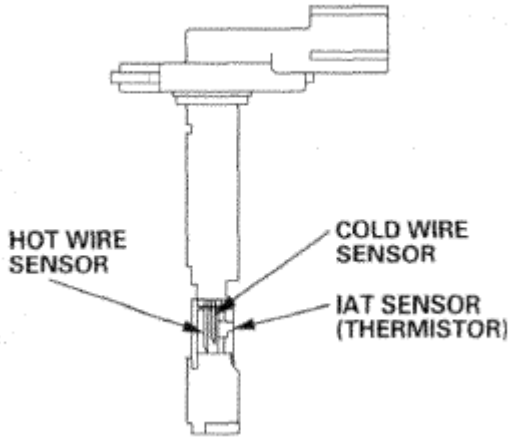


Fig. 61: Identifying Mass Air Flow (MAF) Sensor/Intake Air Temperature (IAT) Sensor

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Output Shaft (Countershaft)

Speed Sensor This sensor detects countershaft speed.

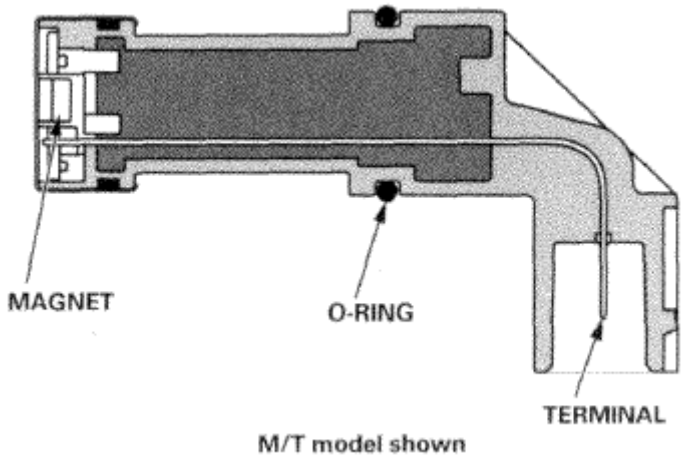


Fig. 62: Identifying Output Shaft (Countershaft) Speed Sensor
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Secondary Heated Oxygen Sensor (Secondary HO2S)

The secondary HO2S detects the oxygen content in the exhaust gas downstream of the warm up three way catalytic converter (WU-TWC), and sends signals to the ECM/PCM, To stabilize its output, the sensor has an internal heater. The ECM/PCM compares the HO2S output with the A/F sensor output to determine catalyst efficiency, A secondary HO2S is installed in each bank downstream of the WU-TWC.

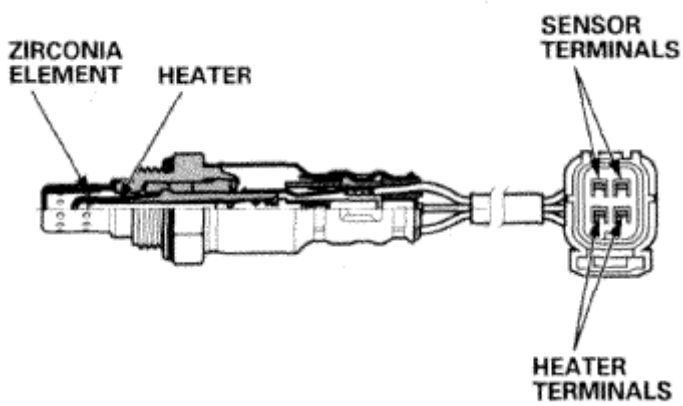


Fig. 63: Identifying Secondary Heated Oxygen Sensor (Secondary HO2S)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

STARTER CONTROL SYSTEM DIAGRAM

M/T

The starter control system controls the starter motor.

- When the engine start/stop button pressed to select the START mode, the ECM applies current to starter cut relay 1, and starter cut relay 2, and the +B cut relay is turned on. Then battery voltage is applied to the starter solenoid, and starter motor runs.
- Once the engine start/stop button is released, the ECM keeps the starter motor running until the engine starts. If the ECM detects that the engine starts, the ECM stops applying current to the relays, and the starter motor stops.
- If you press the engine start/stop button to select START mode while the engine is running, the starter motor does not operate.
- In the following cases, the ECM stops the starter motor:
  - After the starter motor operates for 10 seconds (to prevent the starter motor from overheating).
  - If the engine RPM is too high during starter motor operation.
- If there is a problem with the starter control system, a message appears on the gauge display. When the message is on, the engine can only be started by pressing and holding the engine start/stop button until the engine starts.

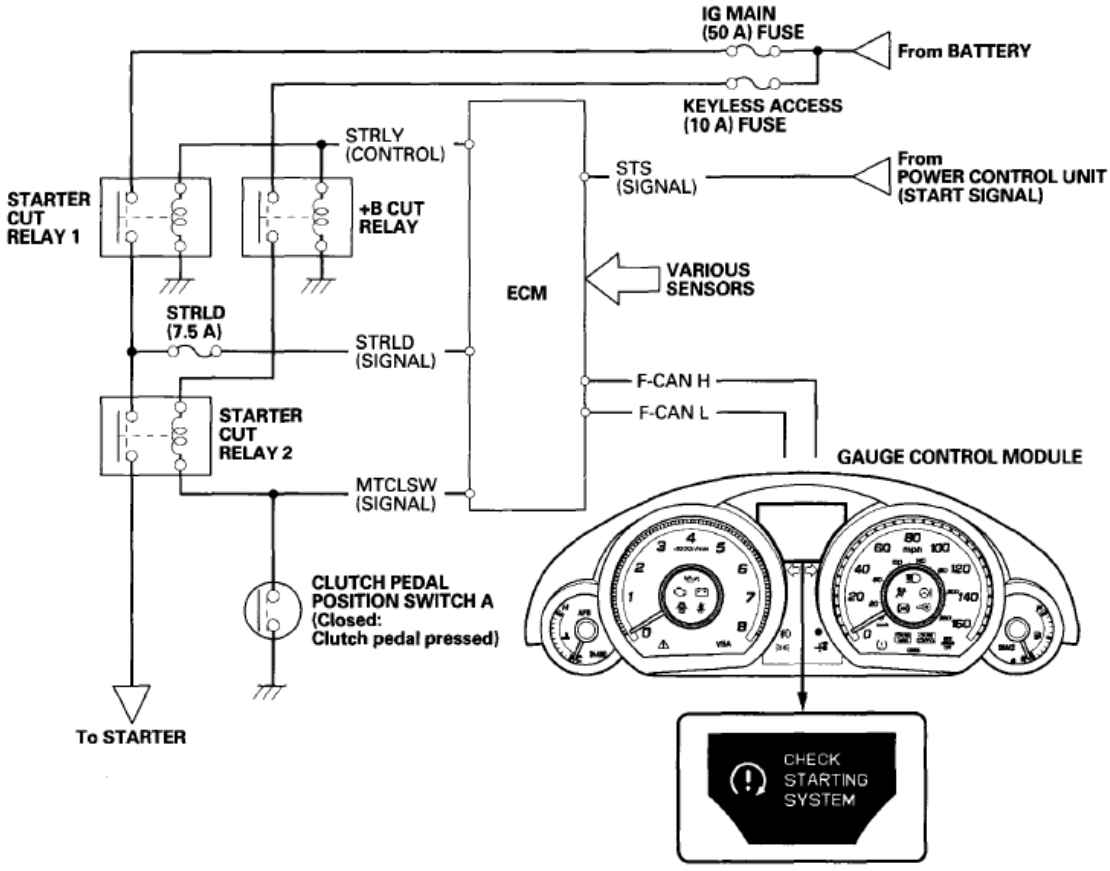


Fig. 64: Starter Control System (M/T) - Diagram
Courtesy of AMERICAN HONDA MOTOR CO., INC.

A/T

The starter control system controls the starter motor.

- When the ignition switch is turned to START (III), or the engine start/stop button pressed to select the START mode, the PCM applies current to starter cut relay 1 and starter cut relay 2, then battery voltage is applied to the starter solenoid, and starter motor runs.
- Once the ignition switch or the engine start/stop button is released, the PCM keeps the starter motor running until the engine starts. If the PCM detects that the engine starts, the PCM stops applying current to the relays, and the starter motor stops.
- If you turn the ignition switch to START (III), or press the engine start/stop button to select START mode while the engine is running, the starter motor does not operate.
- In the following cases, the PCM stops the starter motor:
  - After the starter motor operates for 10 seconds (to prevent the starter motor from overheating).
  - If the engine RPM is too high during starter motor operation.
- If there is a problem with the starter control system, a message appears on the gauge display. When the message is on, the engine can only be started by turning and holding the ignition switch in the START (III) position until the engine starts, or pressing and holding the engine start/stop button until the engine starts.

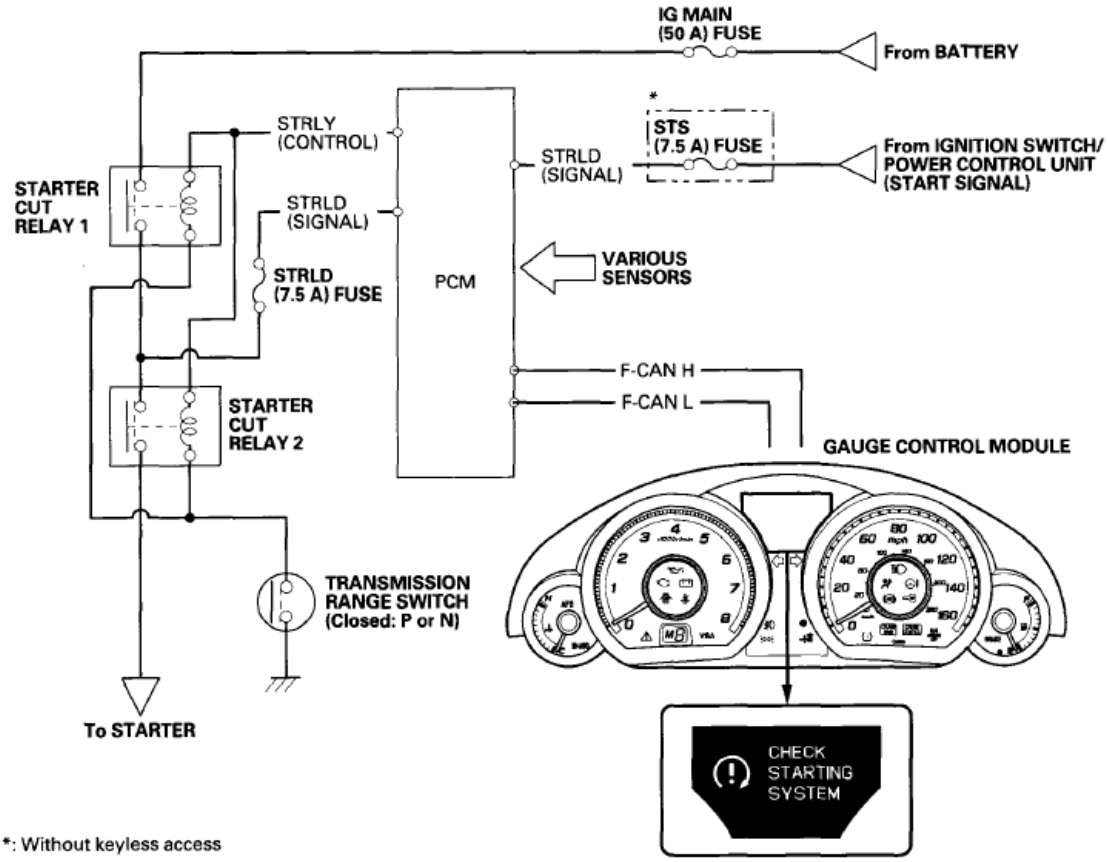


Fig. 65: Starter Control System (A/T) - Diagram
Courtesy of AMERICAN HONDA MOTOR CO., INC.

ELECTRONIC THROTTLE CONTROL SYSTEM

The throttle is electronically controlled. Refer to the system diagram to see a functional layout of the system.

Idle control: When the engine is idling, the ECM/PCM controls the throttle actuator to maintain the proper idle speed according to engine loads.

Acceleration control: When the accelerator pedal is pressed, the ECM/PCM opens the throttle valve based on the accelerator pedal position (APP) sensor signal.

Cruise control: The ECM/PCM controls the throttle actuator to maintain the set speed when cruise control is operating. The throttle actuator takes the place of the cruise control actuator.

Accelerator Pedal Position (APP) Sensor

As the accelerator pedal position changes, the sensor varies the signal voltage to the ECM/PCM which then controls the throttle position.

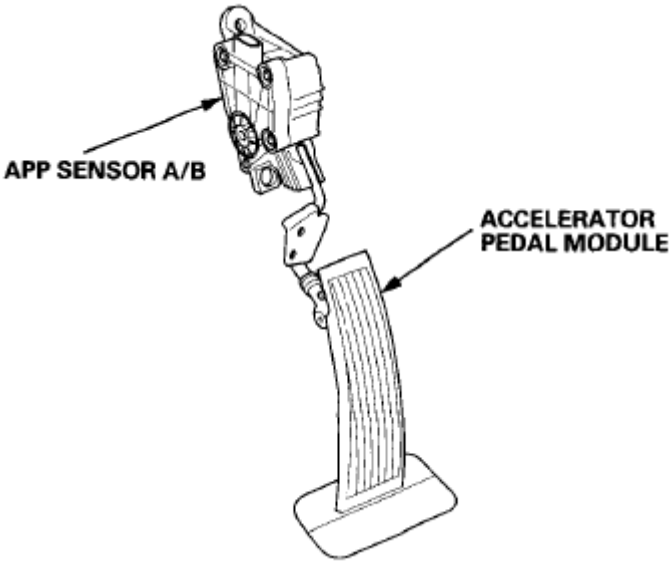


Fig. 66: Identifying Accelerator Pedal Position (APP) Sensor
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Throttle Body

The throttle body is a single-barrel side draft type. The lower portion of the throttle valve is heated by engine coolant from the cylinder head to prevent icing of the throttle plate.

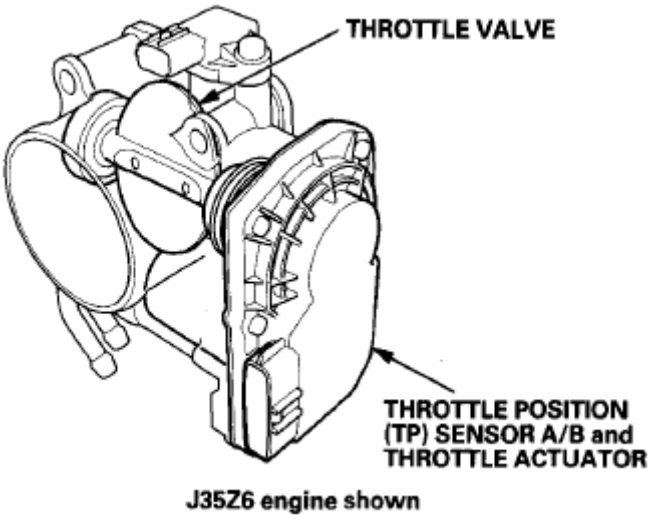


Fig. 67: Identifying Throttle Body
Courtesy of AMERICAN HONDA MOTOR CO., INC.

ELECTRONIC THROTTLE CONTROL SYSTEM DIAGRAM

The electronic throttle control system consists of the throttle actuator, throttle position (TP) sensor A/B, accelerator pedal position (APP) sensor A/B, the electronic throttle control system (ETCS) control relay, and the ECM/PCM.

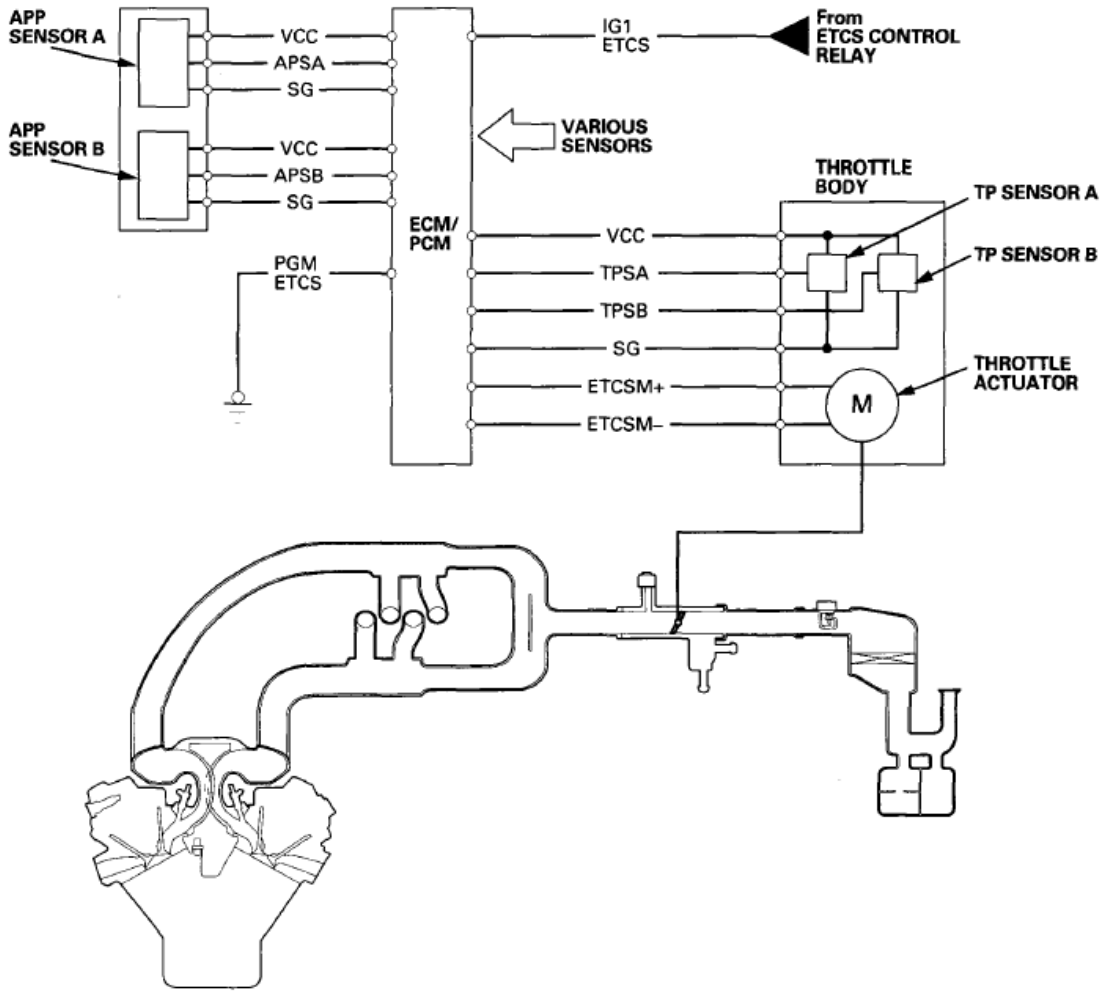


Fig. 68: Electronic Throttle Control System - Diagram
Courtesy of AMERICAN HONDA MOTOR CO., INC.

VTEC SYSTEM (J35Z6 ENGINE)

- The VTEC system changes the cam profile to correspond to engine speed. It maximizes torque at low engine speed and output at high engine speed. The low lift cam is used at low engine speeds, and the high lift cam is used at high engine speeds.
- The intake valve side has primary and secondary rocker arms. These rocker arms are locked and separated to change the cam profile by switching the oil passages. Roller rockers are used to minimize mechanical friction.

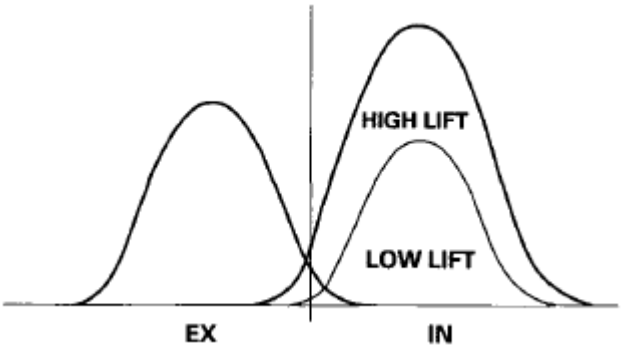


Fig. 69: Identifying VTEC System (J35Z6 Engine) Cam Profile
Courtesy of AMERICAN HONDA MOTOR CO., INC.

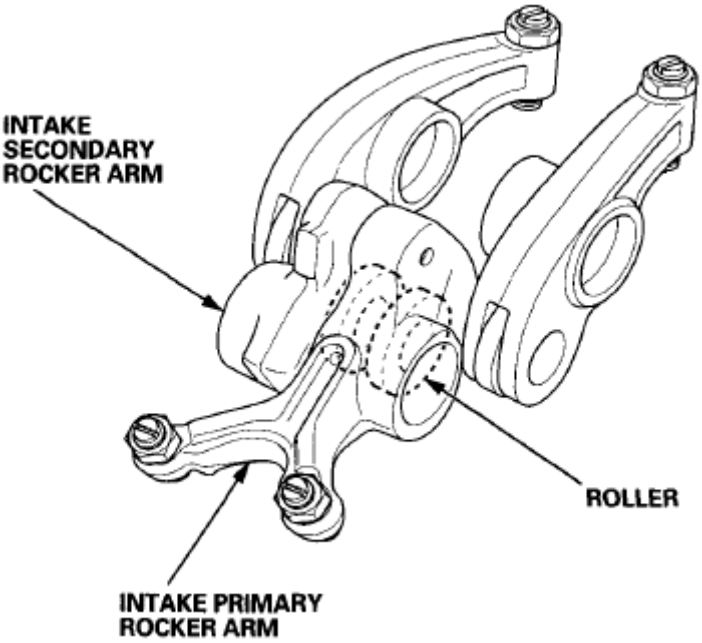


Fig. 70: Identifying Roller Rockers
Courtesy of AMERICAN HONDA MOTOR CO., INC.

- The VTEC system oil pressure is switched by the rocker arm oil control valve changing the hydraulic circuit. The rocker arm oil control valve is controlled by the rocker arm oil control solenoid. The rocker arm oil pressure switch detects VTEC system oil pressure and sends this information to the PCM.

ENGINE SPEED	ROCKER ARM OIL CONTROL SOLENOID	INTAKE VALVE LIFT
LOW	OFF	LOW
HIGH	ON	HIGH

VTEC SYSTEM OPERATION (J35Z6 ENGINE)

At low engine speed

The rocker arm oil control solenoid is turned off by the PCM, Oil pressure from the rocker arm oil control valve does not enter the rocker shaft. The intake primary and secondary rocker arms are separated by a return spring and lifted by the low lift cam lobe.

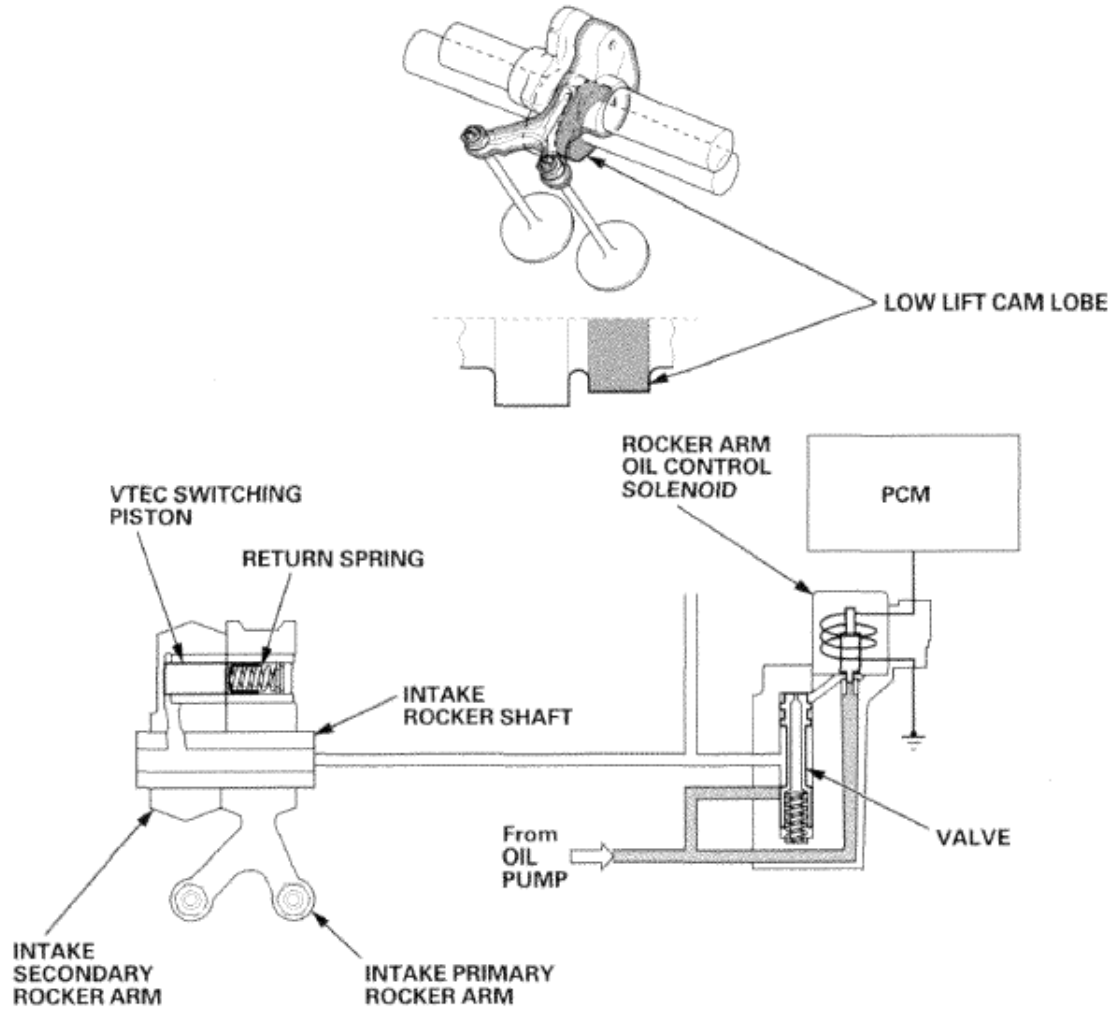


Fig. 71: Identifying VTEC System Operation (J35Z6 Engine) At Low Engine Speed
Courtesy of AMERICAN HONDA MOTOR CO., INC.

VTEC SYSTEM OPERATION (J35Z6 ENGINE)

At high engine speed

The rocker arm oil control solenoid is turned on by the PCM, Oil pressure from the rocker arm control solenoid enters into the intake secondary rocker arm via the rocker shaft, and it moves the VTEC switching piston in the intake secondary rocker arm. This causes the VTEC switching piston to slide into the primary rocker arm, locking the primary and secondary rocker arms together. Both intake rocker arms are lifted by the high lift cam lobe.

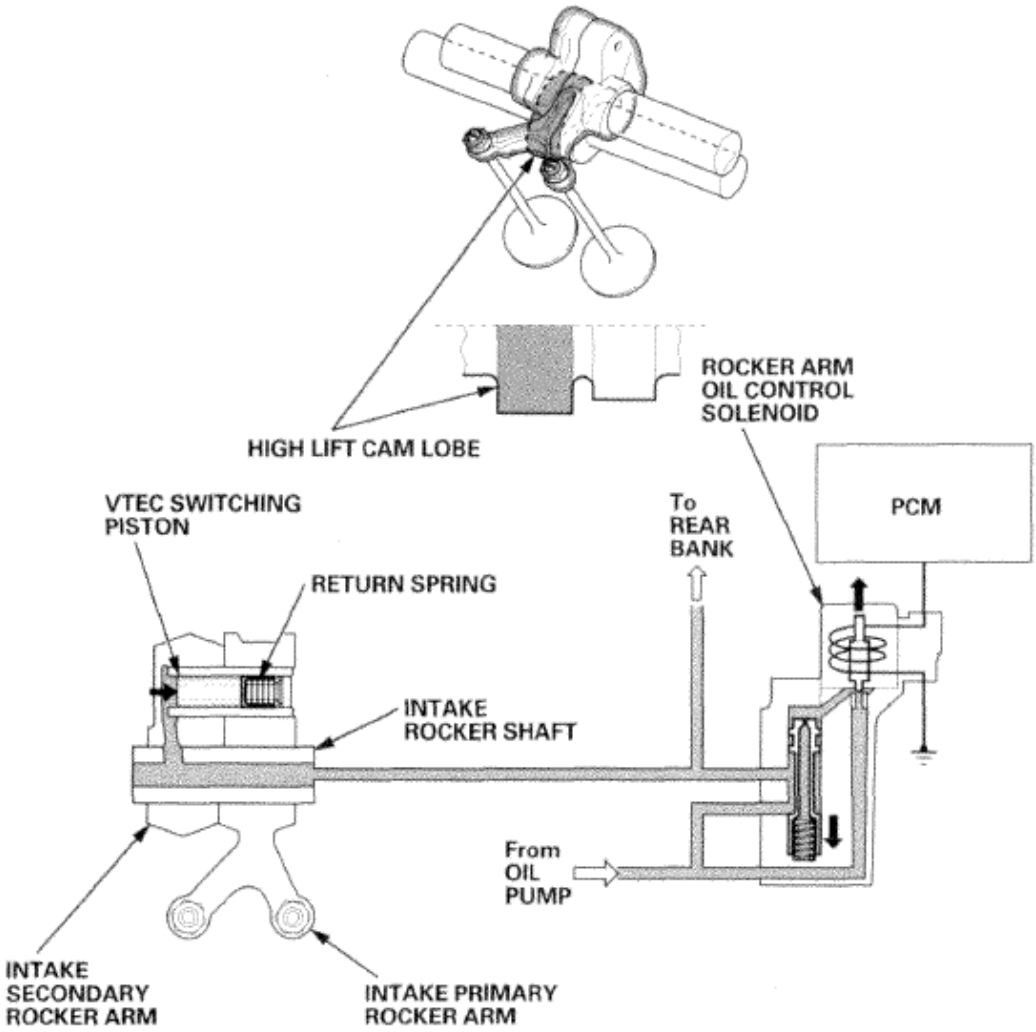


Fig. 72: Identifying VTEC System Operation (J35Z6 Engine) At High Engine Speed
Courtesy of AMERICAN HONDA MOTOR CO., INC.

VTEC SYSTEM (J37A4 ENGINE)

- The VTEC system changes the cam profile to correspond to engine speed. It maximizes torque at low engine speed and output at high engine speed. The low lift cam is used at low engine speeds, and the high lift cam is used at high engine speeds.
- Both the intake valve side and the exhaust valve side have primary and secondary rocker arms. These rocker arms are locked and separated to change the cam profile by switching the oil passages. Roller rockers are used to minimize mechanical friction.

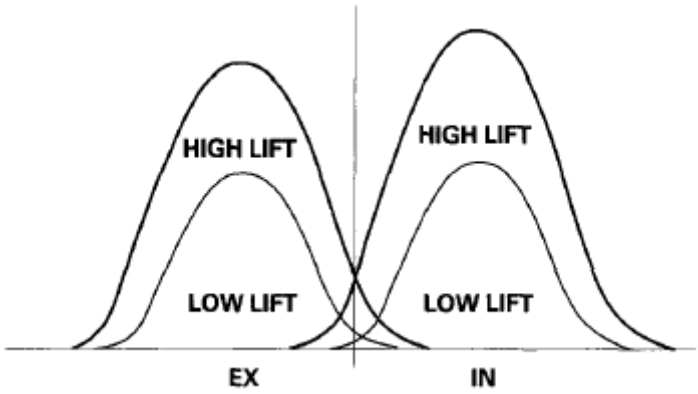


Fig. 73: Identifying VTEC System (J37A4 Engine) Cam Profile
Courtesy of AMERICAN HONDA MOTOR CO., INC.

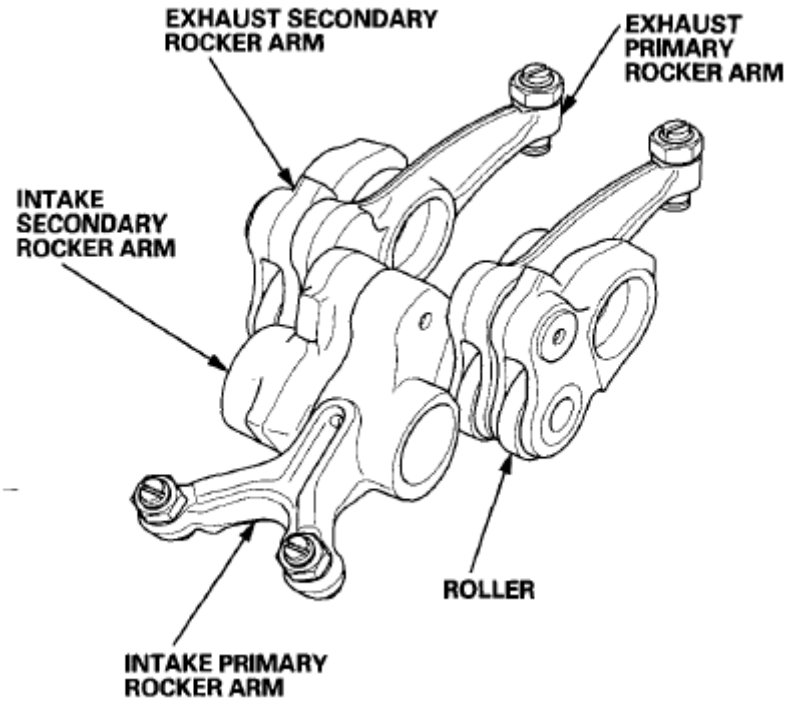


Fig. 74: Identifying Roller Rockers
Courtesy of AMERICAN HONDA MOTOR CO., INC.

- The VTEC system oil pressure switched by the rocker arm oil control valve changing the hydraulic circuit. The rocker arm oil control valve is controlled by the rocker arm oil control solenoid. The rocker arm oil pressure switch detects VTEC system oil pressure and sends this information to the ECM/PCM.

ENGINE SPEED	ROCKER ARM OIL CONTROL SOLENOID	INTAKE and EXHAUST VALVE LIFT
LOW	OFF	LOW
HIGH	ON	HIGH

VTEC SYSTEM OPERATION (J37A4 ENGINE)

At low engine speed

The rocker arm oil control solenoid is turned off by the ECM/PCM. Oil pressure from the rocker arm oil control valve does not enter the rocker shaft. The primary and secondary rocker arms are separated by a return spring and lifted by the tow lift cam lobe.

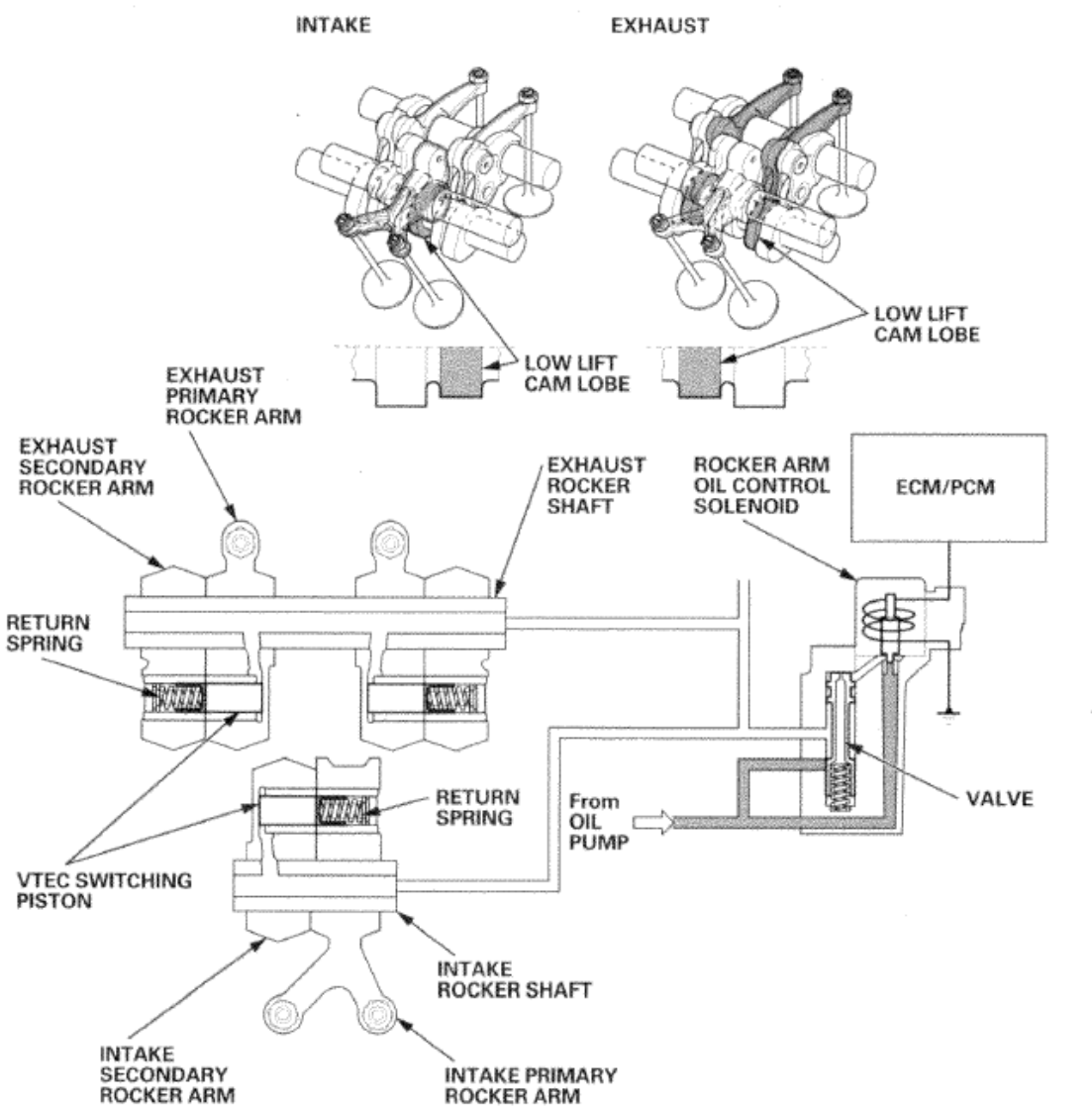


Fig. 75: Identifying VTEC System Operation (J37A4 Engine) At Low Engine Speed
Courtesy of AMERICAN HONDA MOTOR CO., INC.

VTEC SYSTEM OPERATION (J37A4 ENGINE)

At high engine speed

The rocker arm oil control solenoid is turned on by the ECM/PCM. Oil pressure from the rocker arm control

solenoid enters into the intake secondary rocker arm and the exhaust primary rocker arm via the rocker shaft, and it moves the VTEC switching piston into the intake secondary rocker arm and the exhaust primary rocker arm. This causes the VTEC switching pistons to lock both rocker arms (primary and secondary) together. Both rocker arms are then lifted by the high lift cam lobe.

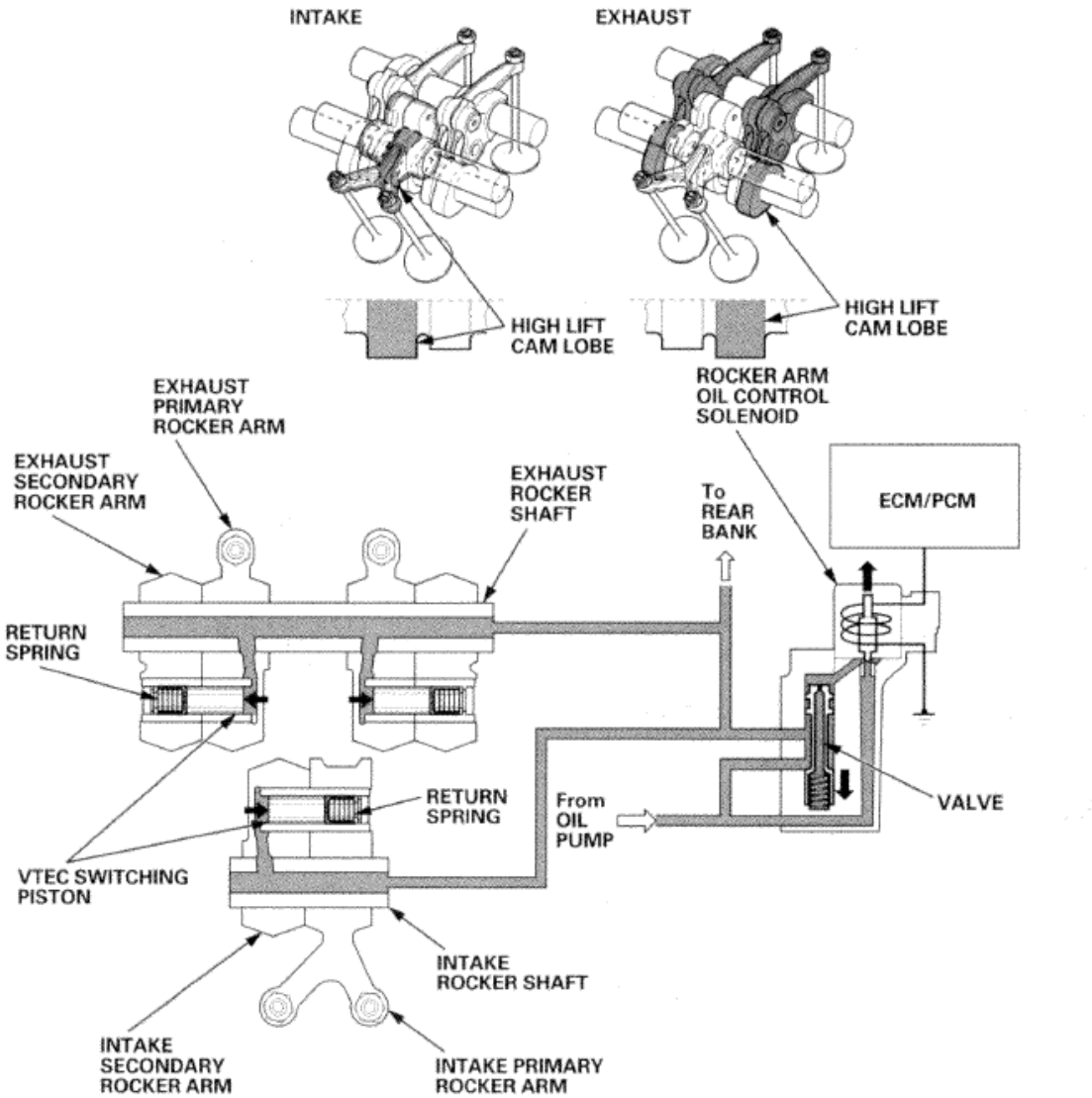


Fig. 76: Identifying VTEC System Operation (J37A4 Engine) At High Engine Speed
Courtesy of AMERICAN HONDA MOTOR CO., INC.

IDLE CONTROL SYSTEM

When the engine is cold, if the A/C compressor is on, the transmission is in gear, the brake pedal is pressed, the power steering load is high, or the alternator is charging, the ECM/PCM controls current to the throttle actuator to maintain the correct idle speed.

Brake Pedal Position Switch

The brake pedal position switch signals the ECM/PCM when the brake pedal is pressed.

FUEL SUPPLY SYSTEM

Fuel Cutoff Control

During deceleration with the throttle valve closed, current to the injectors is cut off to improve fuel economy at engine speeds over 850 RPM. Fuel cutoff control also occurs when the engine speed exceeds 6, 900 RPM (J35Z6 engine) or 6, 800 RPM (J37A4 engine), regardless of the position of the throttle valve, to protect the engine from over-revving. When the vehicle is stopped, the PCM cuts the fuel at engine speeds over 4, 000 RPM (M/T) or 5, 000 RPM (A/T). On a cold engine, fuel cut occurs at a lower engine speed.

Fuel Pump Control

When the ignition switch is turned to ON (II) or when the engine start/stop button is in ON mode, the ECM/PCM grounds PGM-FI main relay 2 which feeds current to the fuel pump for 2 seconds to pressurize the fuel system. When the engine starts, the ECM/PCM grounds PGM-FI main relay 2 and feeds current to the fuel pump. When the engine is not running and the ignition is ON (II) or the vehicle in ON mode, the ECM/PCM cuts ground to PGM-FI main relay 2 which cuts current to the fuel pump.

PGM-FI Main Relays 1 and 2

PGM-FI main relay 1 is energized whenever the ignition switch is ON (II) or whenever the vehicle is in ON mode to supply battery voltage to the ECM/PCM, power to the injectors, and power for PGM-FI main relay 2. PGM-FI main relay 2 is energized to supply power to the fuel pump for 2 seconds when the ignition switch is turned to ON (II) or when the engine start/stop button is in the ON mode, and when the engine is cranking or running.

INTAKE AIR SYSTEM

Intake Manifold Tuning (IMT) Valve

Engine power is adjusted by opening and closing the intake manifold tuning (IMT) valve. When the valve is closed, there is high torque at low engine speed. When the valve is open, there is high torque at high engine speed.

The IMT actuator contains a sensor that detects the IMT valve position and sends it to the ECM/PCM.

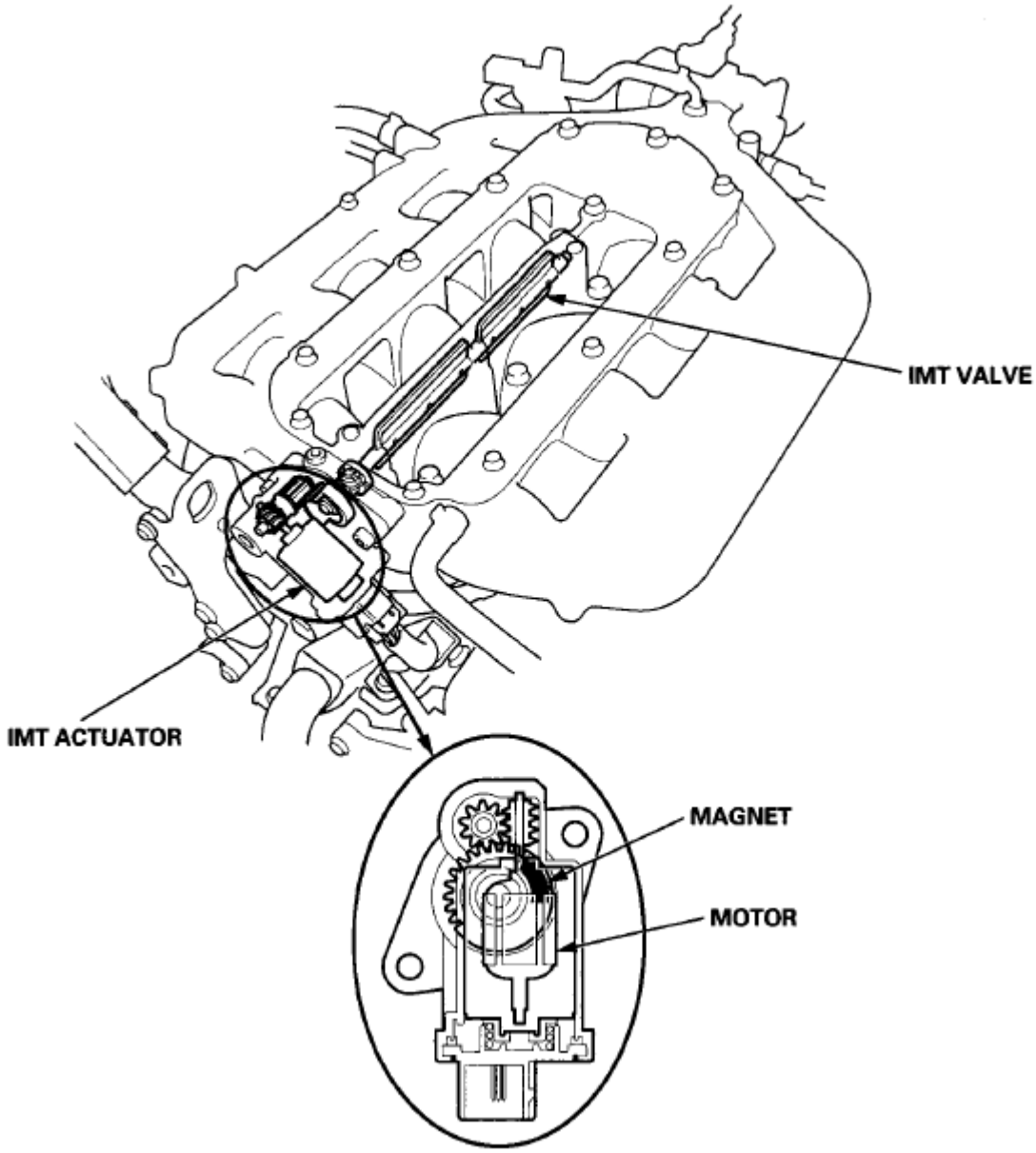


Fig. 77: Identifying Intake Air System And Related Components
Courtesy of AMERICAN HONDA MOTOR CO., INC.

CATALYTIC CONVERTER SYSTEM

Warm Up Three Way Catalytic Converter (WU-TWC) and Under-floor Three Way Catalytic Converter (Under-floor TWC)

The WU-TWC/Under-floor TWC converts hydrocarbons (HC), carbon monoxide (CO), and oxides of nitrogen (NOx) in the exhaust gas to carbon dioxide (CO_2), nitrogen (N_2), and water vapor.

WU-TWC

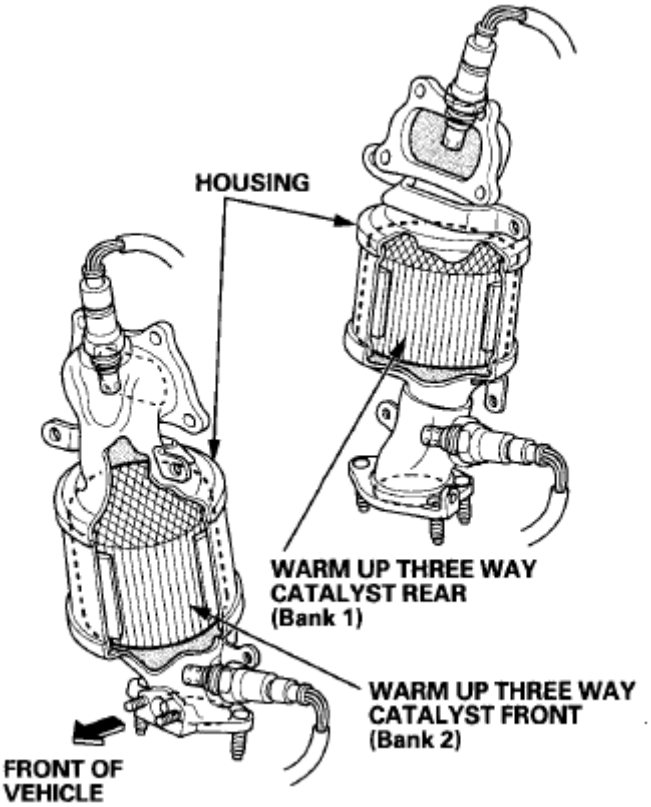


Fig. 78: Identifying Catalytic Converter (WU-TWC)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

UNDER-FLOOR TWC

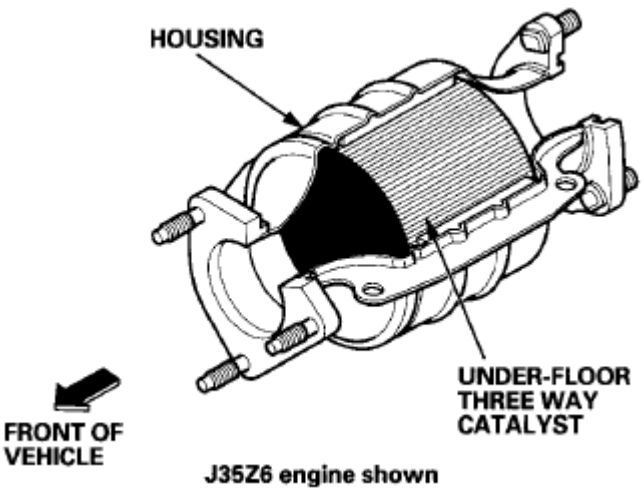


Fig. 79: Identifying Catalytic Converter (Under-Floor TWC)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

EXHAUST GAS RECIRCULATION (EGR) SYSTEM

Refer to the system diagram to see a functional layout of the system.

EGR Valve

The EGR valve lowers peak combustion temperatures and reduces oxides of nitrogen emissions (NOx) by recirculating exhaust gas through the intake manifold and into the combustion chambers.

EXHAUST GAS RECIRCULATION (EGR) SYSTEM DIAGRAM

The EGR system reduces oxides of nitrogen (NOx) emissions by recirculating exhaust gas through the EGR pipe to the intake manifold, and into the combustion chambers. Routing the exhaust gas through the EGR pipe helps to prevent carbon deposits from forming in the intake manifold and the throttle body. The ECM/PCM memory includes the ideal EGR valve position for varying operating conditions.

The EGR valve position sensor detects the amount of EGR valve lift and sends it to the ECM/PCM. The ECM/PCM then compares it with the ideal lift in its memory (based on signals sent from other sensors). If there is any difference between the two, the ECM/PCM cuts current to the EGR valve.

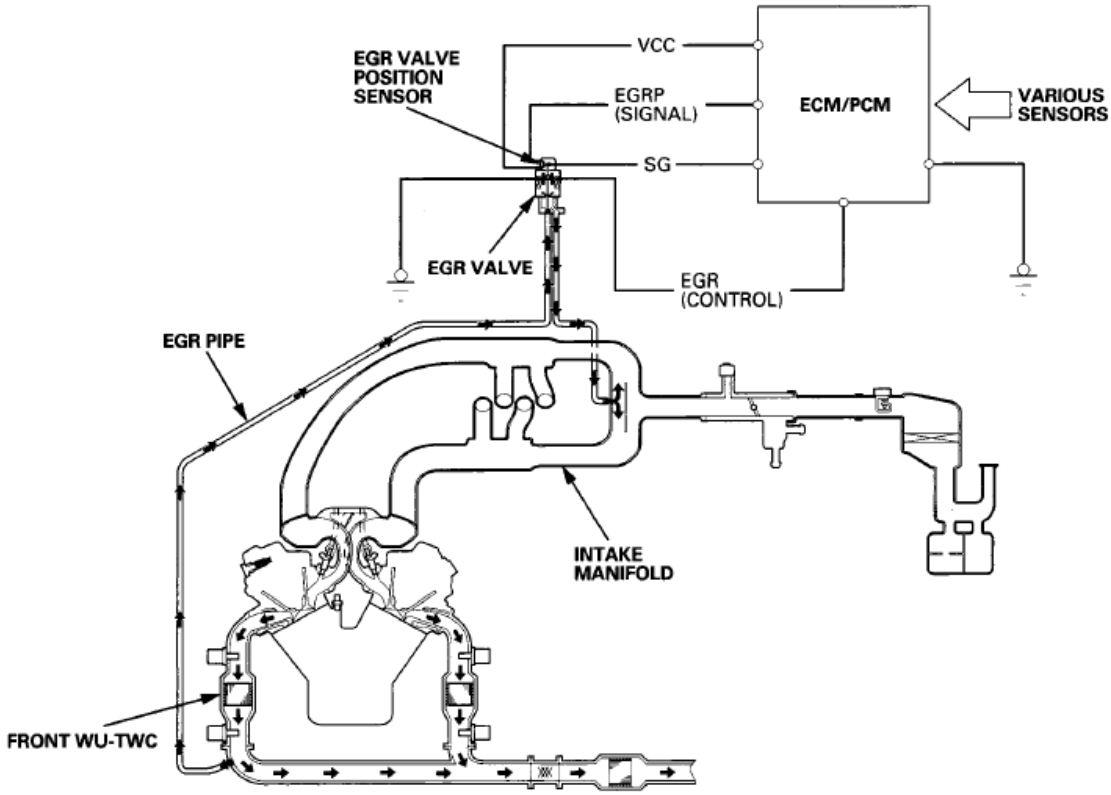


Fig. 80: Exhaust Gas Recirculation (EGR) System - Diagram
Courtesy of AMERICAN HONDA MOTOR CO., INC.

POSITIVE CRANKCASE VENTILATION (PCV) SYSTEM

The PCV valve prevents blow-by gasses from escaping into the atmosphere by venting them into the intake manifold.

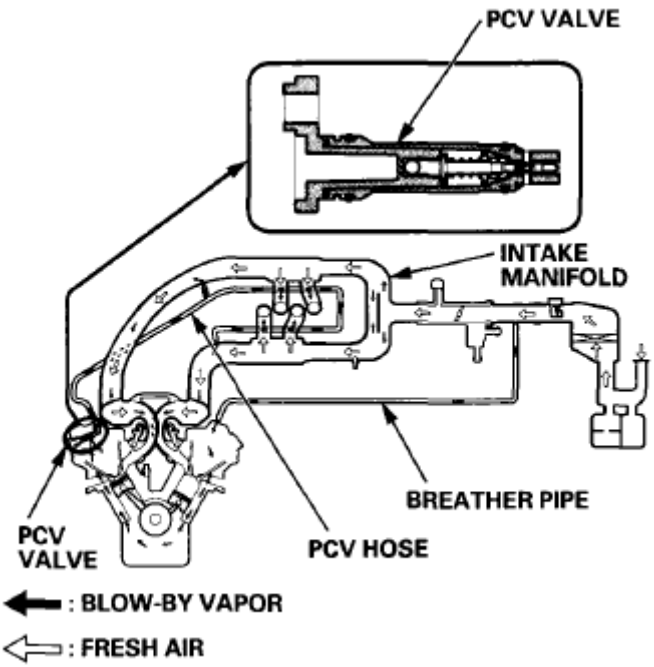


Fig. 81: Identifying Positive Crankcase Ventilation (PCV) System
Courtesy of AMERICAN HONDA MOTOR CO., INC.

EVAPORATIVE EMISSION (EVAP) CONTROL SYSTEM

Refer to the system diagram to see a functional layout of the system.

EVAP Canister

The EVAP canister temporarily stores fuel vapor from the fuel tank until it can be purged from the EVAP canister into the engine and burned.

EVAP Canister Purge Valve

When the engine coolant temperature is below 140 °F (60 °C), the ECM/PCM turns off the EVAP canister purge valve which cuts vacuum to the EVAP canister.

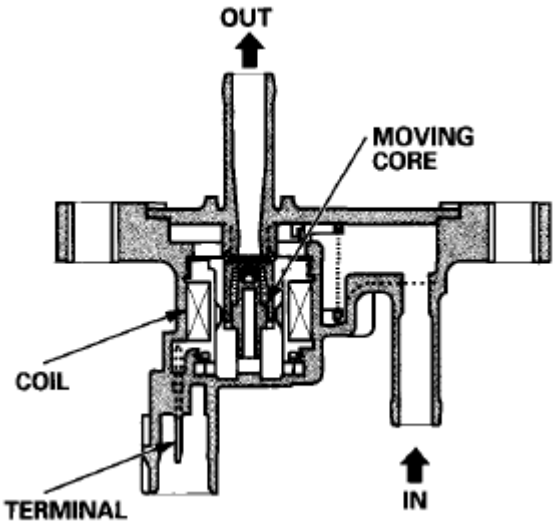


Fig. 82: Identifying EVAP Canister Purge Valve
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Fuel Tank Pressure (FTP) Sensor

The FTP sensor converts fuel tank absolute pressure into an electrical input to the ECM/PCM.

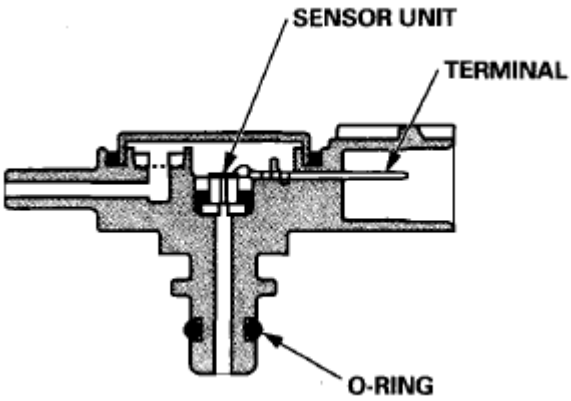


Fig. 83: Identifying Fuel Tank Pressure (FTP) Sensor
Courtesy of AMERICAN HONDA MOTOR CO., INC.

EVAP Canister Vent Shut Valve

The EVAP canister vent shut valve is on the EVAP canister.

The EVAP canister vent shut valve controls the venting of the EVAP canister.

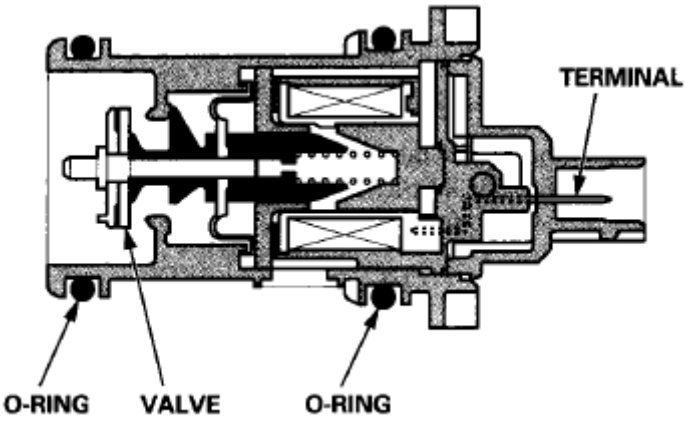


Fig. 84: Identifying EVAP Canister Vent Shut Valve
Courtesy of AMERICAN HONDA MOTOR CO., INC.

EVAPORATIVE EMISSION (EVAP) CONTROL DIAGRAM

The EVAP controls minimize the amount of fuel vapor escaping to the atmosphere. Vapor from the fuel tank is temporarily stored in the EVAP canister until it can be purged from the canister into the engine and burned.

- The EVAP canister is purged by drawing fresh air through it and into a port on the intake manifold.
- The purging vacuum is controlled by the EVAP canister purge valve, which operates whenever the engine coolant temperature is above 140 °F (60 °C).
- During refueling, the fuel tank vapor control valve opens from pressure in the fuel tank and feeds the fuel vapor to the EVAP canister.

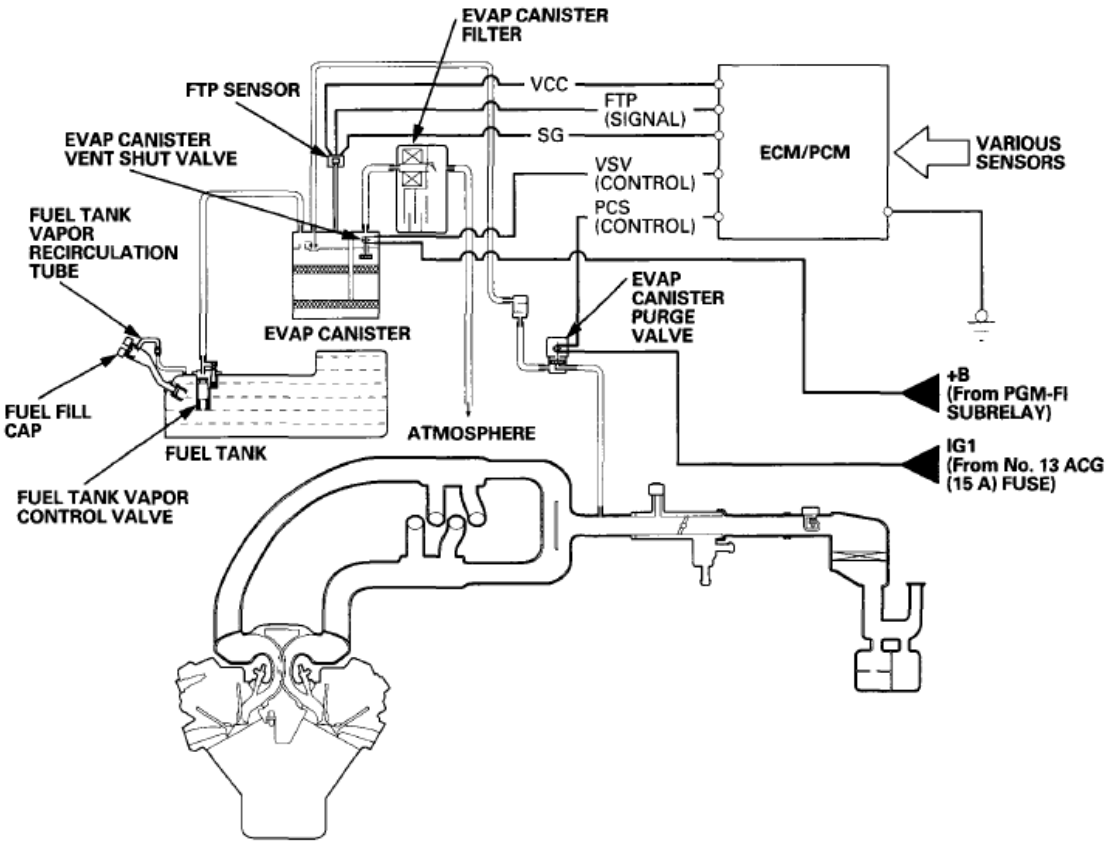


Fig. 85: Evaporative Emission (EVAP) Control - Diagram
Courtesy of AMERICAN HONDA MOTOR CO., INC.

FUEL CAP WARNING MESSAGE

The ECM/PCM detects a loose or missing fuel fill cap as an evaporative system leak and alerts the driver by showing a warning message in the gauge display.

The first time a leak is detected a TIGHTEN FUEL CAP message appears on the gauge display (A). To scroll to another message, press the select/reset button. The "TIGHTEN FUEL CAP" message appears each time you restart the engine until the system turns the message off. Turn the engine off, then replace or tighten the fuel fill cap until it clicks at least once.

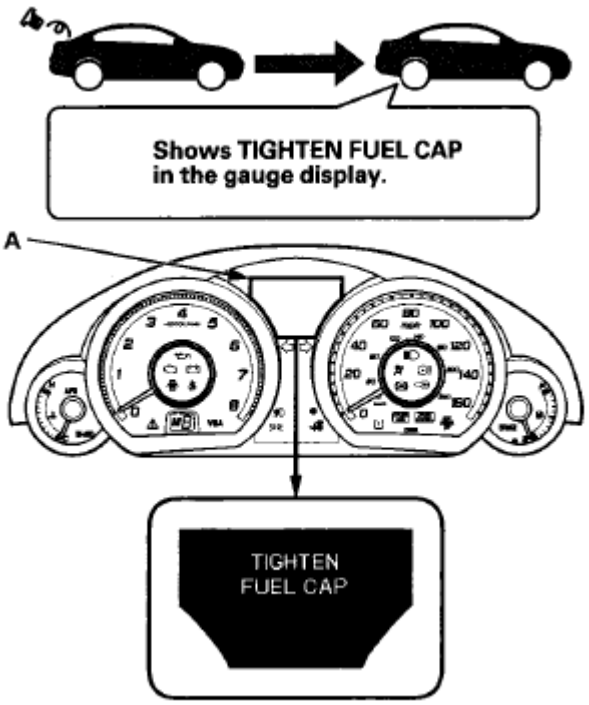


Fig. 86: Display - Fuel Cap Warning Message
Courtesy of AMERICAN HONDA MOTOR CO., INC.

HOW TO CLEAR THE MESSAGE WITH THE HDS

Procedure

1. Tighten the fuel fill cap until it clicks.
2. Clear the Pending DTC with the HDS.
3. Verify there is no leak by doing the EVAP FUNCTION TEST in the INSPECTION MENU with the HDS.

HOW TO CLEAR THE MESSAGE WITHOUT THE HDS

Procedure

1. Tighten the fuel fill cap until it clicks.
2. Start the engine, then turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
3. Repeat step 2 two more times.

HOW TO SET READINESS CODES

MALFUNCTION INDICATOR LAMP (MIL) INDICATION (IN RELATION TO READINESS CODES)

The vehicle has certain readiness codes that are part of the on-board diagnostics for the emissions systems. If the vehicle's battery has been disconnected or gone dead, if DTCs have been cleared, or if the ECM/PCM has been reset, these readiness codes are reset to incomplete. In some states, part of the emissions testing is to make sure these codes are set to complete. If all of them are not set to complete, the vehicle may fail the emission test, or the test cannot be finished.

To check if the readiness codes are set to complete, turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode, but do not start the engine. The MIL comes on for 15- 20 seconds. If it then goes off, the readiness codes are set to complete. If it flashes five times, one or more readiness codes are not set to complete. To set readiness codes from incomplete to complete, do the procedure for the appropriate code.

To check the status of a specific DTC system, check the **OBD status** in the DTC MENU with the HDS. This screen displays the DTC, the current data list of the enable criteria, and the status of the readiness testing.

CATALYTIC CONVERTER MONITOR AND READINESS CODE

NOTE:

- **During the procedure, do not turn the ignition switch to ACC (I) or LOCK (0), or select the ACC or the OFF mode.**
- **All readiness codes are cleared when the battery is disconnected, if DTCs have been cleared, or if the ECM/PCM is reset with the HDS.**
- **Low ambient temperatures or excessive stop-and-go traffic may increase the drive time needed to switch the readiness code from incomplete to complete.**
- **The readiness code will not switch to complete until all the enable criteria are met.**
- **If a fault in the secondary HO2S system caused the MIL to come on, the readiness code cannot be set to complete until you correct the fault.**

Enable Criteria

- ECT SENSOR 1 at 158 °F (70 °C) or more.
- IAT SENSOR at 20 °F (-7 °C) or more.
- Vehicle speed above 25 mph (40 km/h).

Procedure

1. Connect the HDS to the vehicle's data link connector (DLC), and bring up the READINESS CODEs screen for Catalyst in the DTCs MENU.
2. Start the engine.
3. Test-drive the vehicle under stop-and-go conditions with short periods of steady cruise. After about 5 miles (8 km), the readiness code should switch to complete.
4. If the readiness code is still not set to complete, check for a Pending DTC with the HDS. If there is no DTC, one or more of the enable criteria were probably not met; repeat the procedure.

EVAPORATIVE EMISSION (EVAP) CONTROL SYSTEM MONITOR AND READINESS CODE

NOTE: All readiness codes are cleared when the battery is disconnected, if DTCs have been cleared, or if the ECM/PCM is reset with the HDS.

ENABLE CRITERIA

- Battery voltage is more than 10.5 V.
- Engine at idle.
- ECT SENSOR 1 and 2 between 176 °F (80 °C) and 212°F (100°C).
- MAP SENSOR less than 46.6 kPa (14 inHg, 350 mmHg).
- Vehicle speed 0 mph (0 km/h).
- IAT SENSOR between 32 °F (0 °C) and 212 °F (100 °C).

Procedure

1. Connect the HDS to the DLC.
2. Start the engine.
3. Select the EVAP TEST in the INSPECTION MENU with the HDS, then select the FUNCTION TEST in the EVAP TEST MENU.
    - If the result is normal, readiness is complete.
    - If the result is not normal, go to the next step.
4. Check for a Pending DTC. If there is no DTC, one or more of the enable criteria were probably not met; repeat the procedure.

AIR FUEL RATIO (A/F) SENSOR MONITOR AND READINESS CODE

NOTE:

- **During the procedure, do not turn the ignition switch to ACC (I) or LOCK (0), or select the ACC or the OFF mode.**
- **All readiness codes are cleared when the battery is disconnected, if DTCs have been cleared, or if the ECM/PCM is reset with the HDS.**

Enable Criteria

ECT SENSOR 1 at 140 °F (60 °C) or more.

Procedure

1. Start the engine.
2. Test-drive the vehicle under stop-and-go conditions with short periods of steady cruise. During the drive, decelerate (with the throttle fully closed) for 5 seconds. After about 3.5 miles (5.6 km), the readiness code should switch from incomplete to complete.
3. Check the readiness codes screen for the AIR FUEL RATIO (A/F) SENSOR in the DTCs MENU with

the HDS.

- If the screen shows complete, readiness is complete.
- If the screen shows not complete, go to the next step.

4. Check for a Pending DTC. If there is no DTC, the enable criteria was probably not met. Select the DATA LIST Menu. Check the ECT SENSOR 1 in the ALL DATA LIST with the HDS. If the ECT SENSOR 1 is less than 140 °F (60 °C), run the engine until it is more than 140 °F (60 °C), then repeat the procedure.

AIR FUEL RATIO (A/F) SENSOR HEATER MONITOR READINESS CODE

NOTE: All readiness codes are cleared when the battery is disconnected, if DTCs have been cleared, or if the ECM/PCM is reset with the HDS.

Procedure

1. Start the engine, and let it idle for 1 minute. The readiness code should switch from incomplete to complete.
2. If the readiness code is still not set to complete, check for a Pending DTC. If there is no DTC, repeat the procedure.

MISFIRE MONITOR AND READINESS CODE

- This readiness code is always set to available because misfiring is continuously monitored.
- Monitoring pauses, and the misfire counter resets, if the vehicle is driven over a rough road.
- Monitoring also pauses, and the misfire counter holds at its current value, if the throttle position changes more than a predetermined value, or if driving conditions fall outside the range of any related enable criteria.

FUEL SYSTEM MONITOR AND READINESS CODE

- This readiness code is always set to available because the fuel system is continuously monitored during closed loop operation.
- Monitoring pauses when the catalytic converter, the EVAP control system, and the A/F sensor monitors are active.
- Monitoring also pauses when any related enable criteria are not being met. Monitoring resumes when the enable criteria is again being met.

COMPREHENSIVE COMPONENT MONITOR AND READINESS CODE

This readiness code is always set to available because the comprehensive component monitor is continuously running whenever the engine is cranking or running.

EGR MONITOR AND READINESS CODE

NOTE:

- **During the procedure, do not turn the ignition switch to ACC (I) or LOCK**

(0), or select the ACC or the OFF mode.

- **All readiness codes are cleared when the battery is disconnected, if DTCs have been cleared, or if the ECM/PCM is reset with the HDS.**

Enable Criteria

ECT SENSOR 1 at 176 °F (80 °C) or more.

Procedure

1. Connect the HDS to the DLC.
2. Start the engine.
3. Drive at a steady speed with the A/T in D, or M/T in 4th at 50- 62 mph (80- 100 km/h) or above for more than 10 seconds.
4. With the A/T in D or M/T in 4th, decelerate from 62 mph (100 km/h) or above by completely releasing the throttle for at least 5 seconds. If the engine is stopped during this procedure, go to step 3 and do the procedure again.
5. Check the OBD status screen for DTC P0401 in the DTCs MENU with the HDS.
    - If it is passed, readiness is complete.
    - If it is not passed, go to step 3 and retest.

2012 ENGINE PERFORMANCE

Fuel Supply System - TL

COMPONENT LOCATION INDEX

WITHOUT SH-AWD

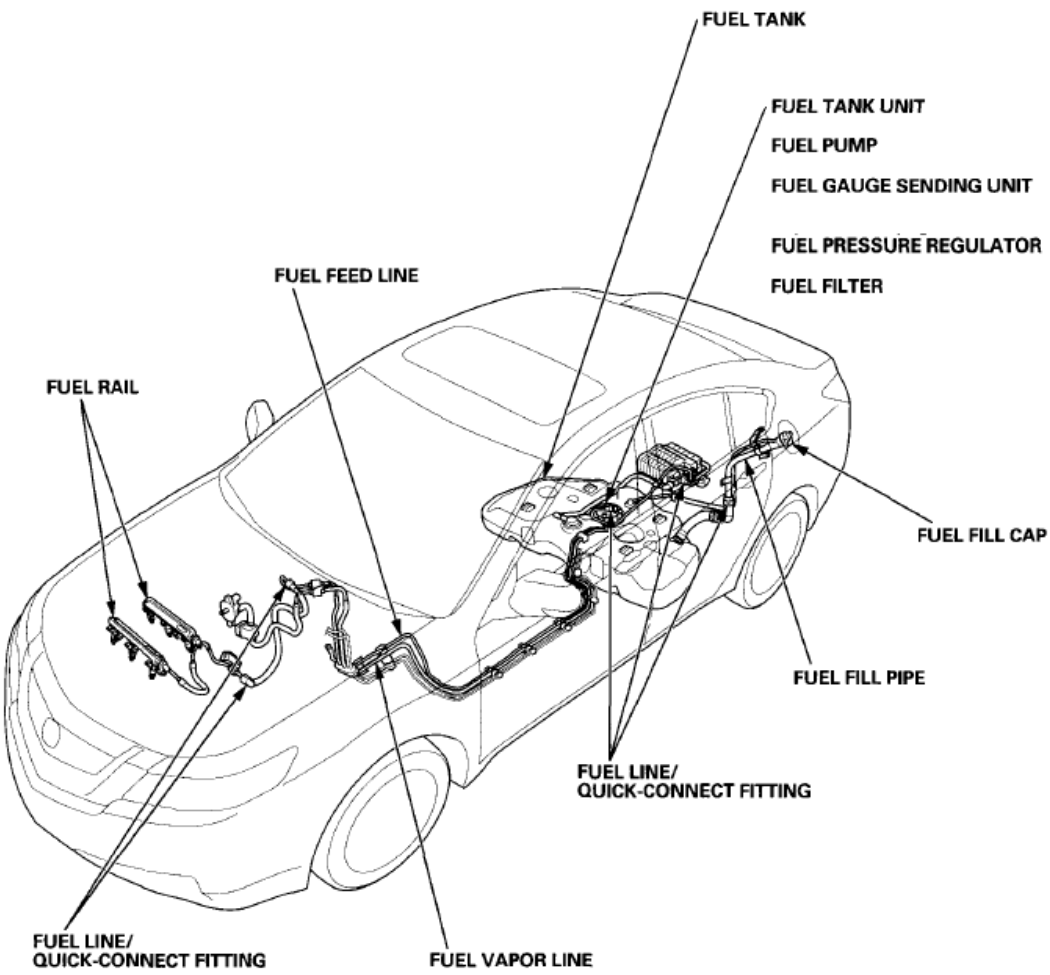


Fig. 1: Fuel Supply System Components Location (Without SH-AWD)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

WITH SH-AWD

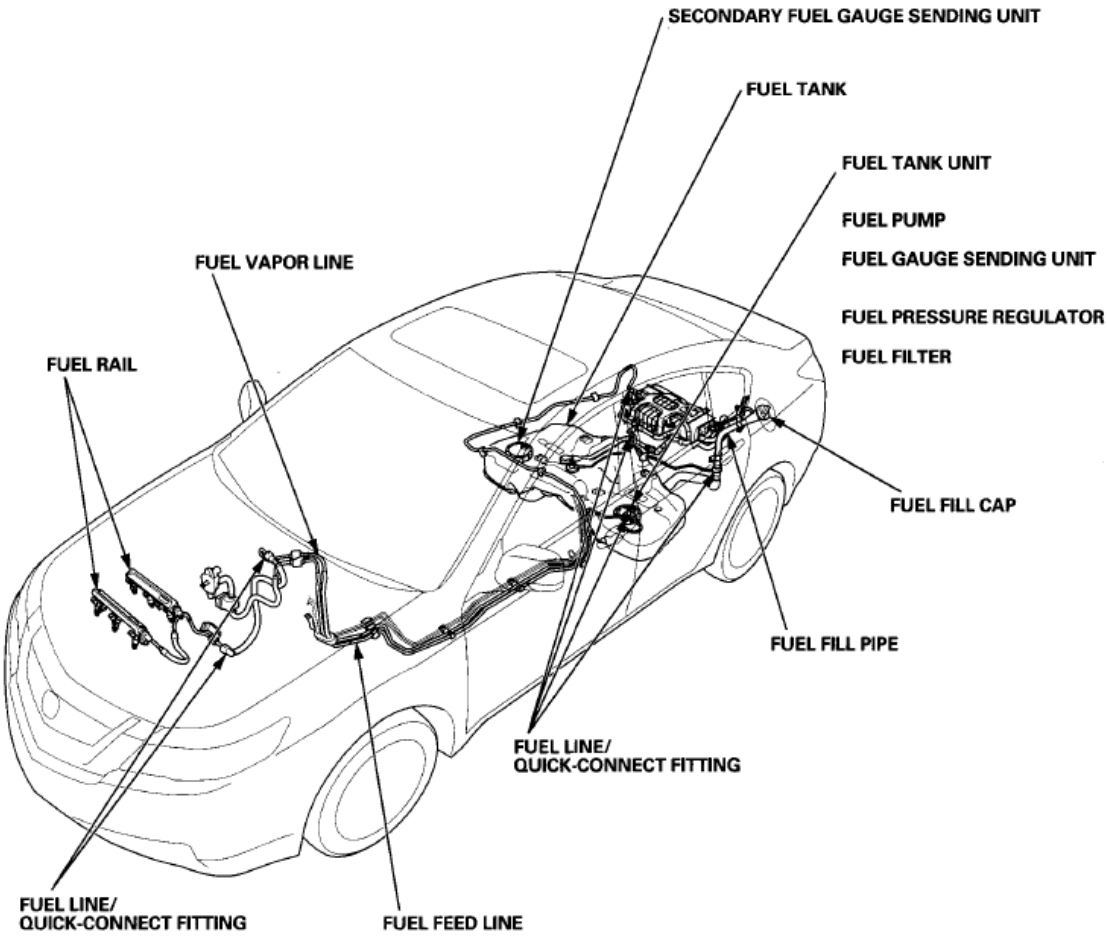


Fig. 2: Fuel Supply System Components Location (With SH-AWD)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

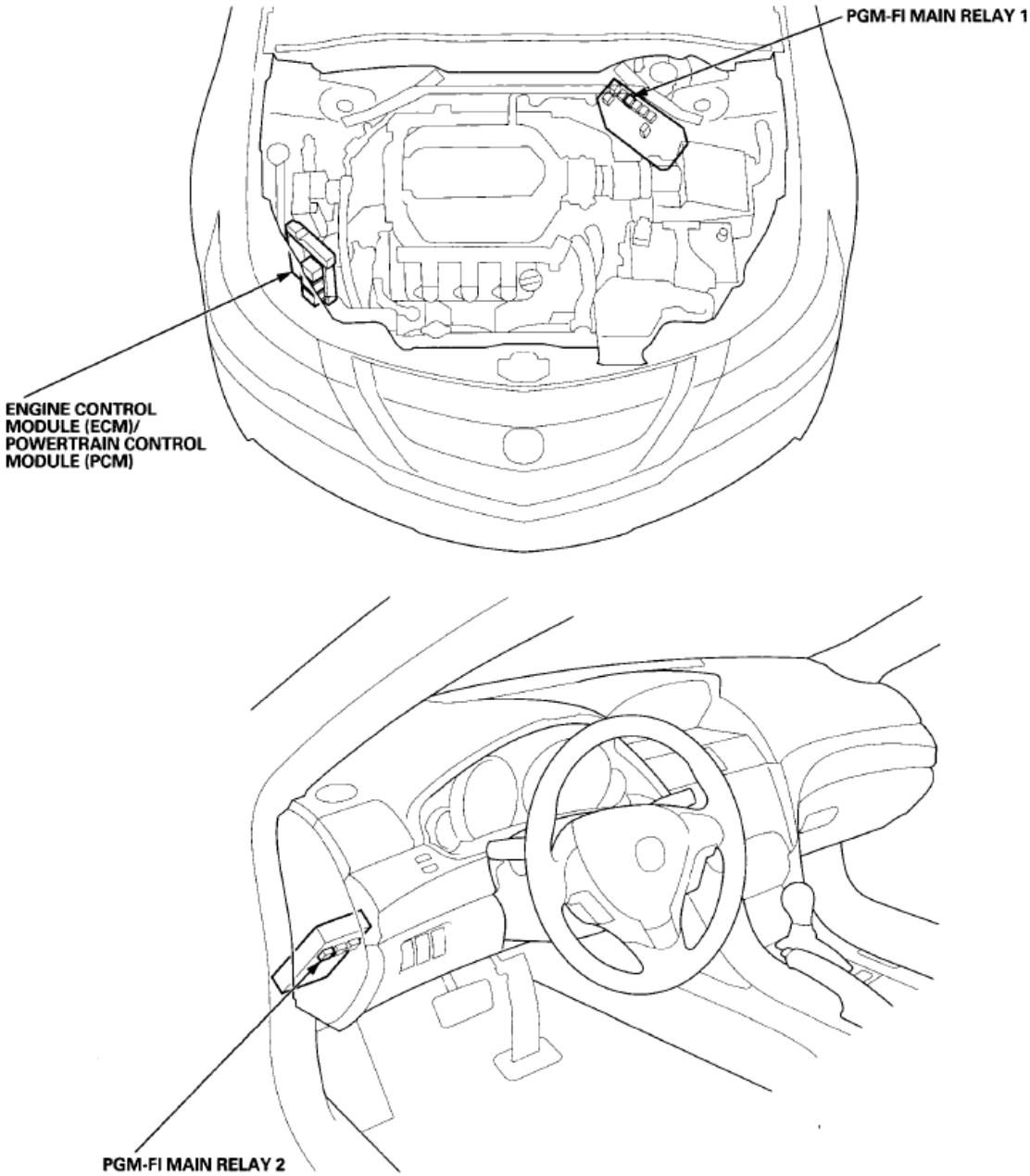


Fig. 3: Identifying ECM/PCM, PGM-FI Main Relay 1 And 2
Courtesy of AMERICAN HONDA MOTOR CO., INC.

DTC TROUBLESHOOTING

DTC P0461: FUEL LEVEL SENSOR (FUEL GAUGE SENDING UNIT) CIRCUIT RANGE/PERFORMANCE PROBLEM

NOTE:

- **Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see GENERAL TROUBLESHOOTING INFORMATION).**

- **Because it requires 162 miles (260 km) of driving without refueling to complete this diagnosis, this DTC P0461 cannot be duplicated during this troubleshooting.**

1. Test the fuel gauge sending unit; **without SH-AWD**, or **with SH-AWD**.

   Is the fuel gauge sending unit OK?

   YES - Check for poor connections or loose terminals at the fuel gauge sending unit, the secondary fuel gauge sending unit (with SH-AWD), and the gauge control module. •

   NO - Replace the **fuel gauge sending unit** and the secondary fuel gauge sending unit (**with SH-AWD**), then go to step 2.

2. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
3. Reset the ECM/PCM with the HDS.
4. Do the ECM/PCM idle learn procedure (see **ECM/PCM IDLE LEARN PROCEDURE**).
5. Check for Pending or Confirmed DTCs with the HDS.

   Are any Pending or Confirmed DTCs indicated?

   YES - Go to the indicated DTC's troubleshooting.

   NO - Troubleshooting is complete. •

DTC P0462: FUEL LEVEL SENSOR (FUEL GAUGE SENDING UNIT) CIRCUIT LOW VOLTAGE (WITHOUT SH-AWD)

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see GENERAL TROUBLESHOOTING INFORMATION).

1. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
2. Clear the DTC with the HDS, and wait 5 seconds.
3. Check for Pending or Confirmed DTCs with the HDS.

   Is DTC P0462 indicated?

   YES - Go to step 4.

   NO - Intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at the gauge control module and the fuel gauge sending unit. •

4. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
5. Remove the rear seat cushion (see **REAR SEAT REMOVAL/INSTALLATION**).

6. Remove the access **panel from the floor**.
7. Disconnect the fuel tank unit 4P connector.
8. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
9. Clear the DTC with the HDS, and wait 5 seconds.
10. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P0463 indicated?

    YES - Replace the **fuel gauge sending unit**, then go to step 23.

    NO - Go to step 11.

11. Measure the voltage between fuel tank unit 4P connector terminal No. 1 and body ground.

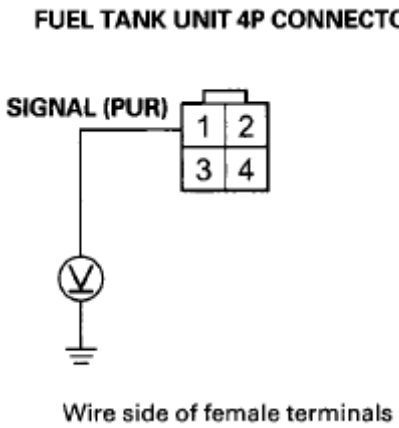


Fig. 4: Measuring Voltage Between Fuel Tank Unit 4P Connector Terminal No. 1 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there battery voltage?

YES - Go to step 16.

NO - Go to step 12.

12. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
13. Remove the gauge control module (see **GAUGE CONTROL MODULE REPLACEMENT**).
14. Disconnect the gauge control module 32P connector.
15. Check for continuity between fuel tank unit 4P connector terminal No. 1 and body ground.

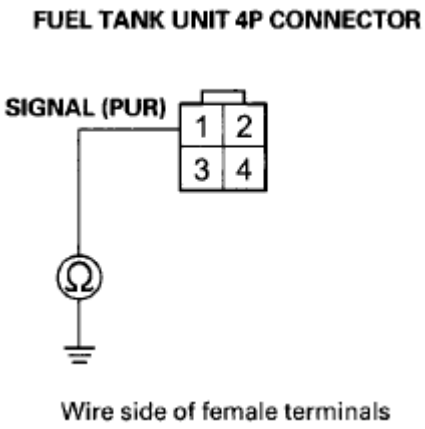


Fig. 5: Checking For Continuity Between Fuel Tank Unit 4P Connector Terminal No. 1 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair short in the wire between the gauge control module (signal line) and the fuel gauge sending unit, then go to step 24.

NO - Replace the gauge control module (see **GAUGE CONTROL MODULE REPLACEMENT**), then go to step 24.

16. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
17. Remove the **fuel tank unit**.
18. Connect the fuel tank unit 4P connector.
19. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
20. Clear the DTC with the HDS.
21. Set the float (A) to the E position.

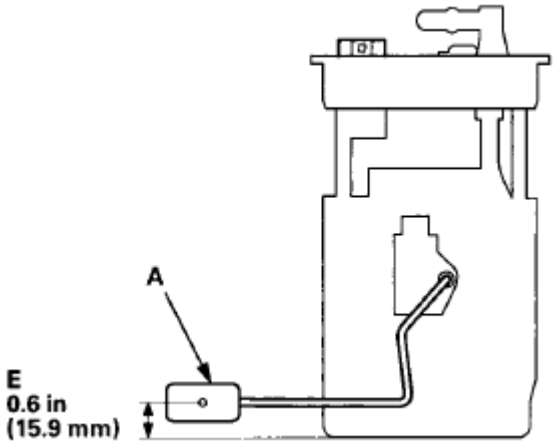


Fig. 6: Identifying Float To E Position

Courtesy of AMERICAN HONDA MOTOR CO., INC.

22. Check the fuel gauge.

    Does the fuel gauge move to the empty position?

    YES - Go to step 30.

    NO - Replace the gauge control module (see **GAUGE CONTROL MODULE REPLACEMENT**), then go to step 23.

23. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
24. Reinstall all removed parts in the reverse order of removal.
25. Reconnect all connectors.
26. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
27. Reset the PCM with the HDS.
28. Do the PCM idle learn procedure (see **ECM/PCM IDLE LEARN PROCEDURE**).
29. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P0462 indicated?

    YES - Check for poor connections or loose terminals at the fuel gauge sending unit and the gauge control module, then go to step 1.

    NO - Troubleshooting is complete. If any other Pending or Confirmed DTCs are indicated, go to the indicated DTC's troubleshooting. •

30. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
31. Reinstall all removed parts in the reverse order of removal.
32. Reconnect all connectors.
33. Update the PCM if it does not have the latest software (see **ECM/PCM UPDATE**), or substitute a known-good PCM (see **SUBSTITUTING THE ECM/PCM**).
34. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P0462 indicated?

    YES - Check for poor connections or loose terminals at the fuel gauge sending unit and the gauge control module. If the PCM was updated, substitute a known-good PCM (see **SUBSTITUTING THE ECM/PCM**), then recheck. If the PCM was substituted, go to step 1.

    NO - If the PCM was updated, troubleshooting is complete. If the PCM was substituted, replace the original PCM (see **ECM/PCM REPLACEMENT**). If any other Pending or Confirmed DTCs are indicated, go to the indicated DTC's troubleshooting. •

DTC P0462: FUEL LEVEL SENSOR (FUEL GAUGE SENDING UNIT) CIRCUIT LOW VOLTAGE

(WITH SH-AWD)

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see GENERAL TROUBLESHOOTING INFORMATION).

1. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
2. Clear the DTC with the HDS, and wait 5 seconds.
3. Check for Pending or Confirmed DTCs with the HDS.

   Is DTC P0462 indicated?

   YES - Go to step 4.

   NO - Intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at the gauge control module, the fuel gauge sending unit, and the secondary fuel gauge sending unit. •

4. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
5. Remove the rear seat cushion (see **REAR SEAT REMOVAL/INSTALLATION**).
6. Remove the access panel from the **right side of the floor**.
7. Disconnect the secondary fuel gauge sending unit 4P connector.
8. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
9. Clear the DTC with the HDS, and wait 5 seconds.
10. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P0463 indicated?

    YES - Check the **secondary fuel gauge sending unit**, then go to step 30.

    NO - Go to step 11.

11. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
12. Remove the access panel from the left **side of the floor**.
13. Disconnect the fuel tank unit 4P connector.
14. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
15. Clear the DTC with the HDS, and wait 5 seconds.
16. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P0463 indicated?

    YES - Go to step 20.

    NO - Go to step 17.

17. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
18. Remove the gauge control module (see **GAUGE CONTROL MODULE REPLACEMENT**), then disconnect the gauge control module 32P connector.
19. Check for continuity between fuel tank unit 4P connector terminal No. 1 and body ground.

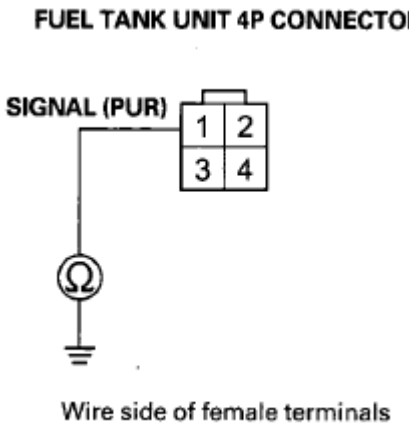


Fig. 7: Checking Continuity Between Fuel Tank Unit 4P Connector Terminal No. 1 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair short in the wire between the gauge control module (signal line) and the fuel gauge sending unit, then go to step 30.

NO - Go to step 22.

20. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
21. Check for continuity between fuel tank unit 4P connector terminal No. 3 and body ground.

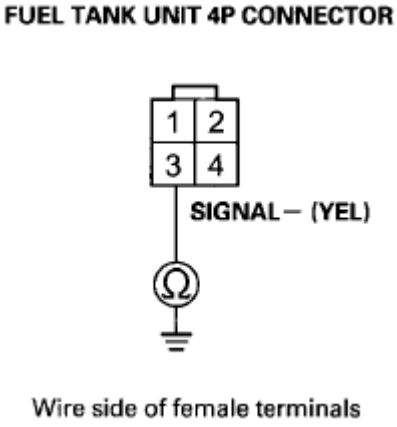


Fig. 8: Checking Continuity Between Fuel Tank Unit 4P Connector Terminal No. 3 And Body Ground

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair short in the wire between the fuel gauge sending unit and the secondary fuel gauge sending unit, then go to step 30.

NO - Check the fuel **gauge sending unit**.

22. Reconnect the gauge control module 32P connector.
23. Remove the **fuel tank unit** and the **secondary fuel gauge sending unit**.
24. Connect the fuel tank unit and the secondary fuel gauge sending unit 4P connectors.
25. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
26. Clear the DTC with the HDS.
27. Set the floats (A) to the E position.

Fuel gauge sending unit

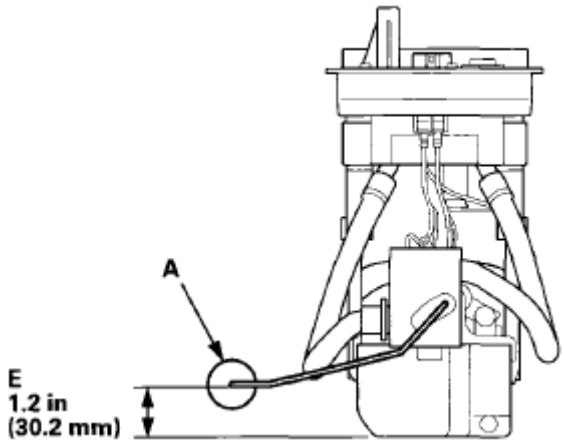


Fig. 9: Identifying Fuel Gauge Sending Unit
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Secondary fuel gauge sending unit

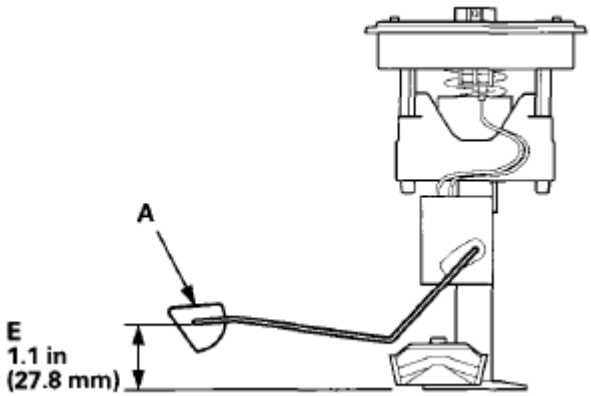


Fig. 10: Identifying Secondary Fuel Gauge Sending Unit
Courtesy of AMERICAN HONDA MOTOR CO., INC.

28. Check the fuel gauge.

    Does the gauge move to the empty position?

    YES - Go to step 36.

    NO - Replace the gauge control module (see **GAUGE CONTROL MODULE REPLACEMENT**), then go to step 29.

29. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
30. Reinstall all removed parts in the reverse order of removal.
31. Reconnect all connectors.
32. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
33. Reset the ECM/PCM with the HDS.
34. Do the ECM/PCM idle learn procedure (see **ECM/PCM IDLE LEARN PROCEDURE**).
35. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P0462 indicated?

    YES - Check for poor connections or loose terminals at the gauge control module, the fuel gauge sending unit, and the secondary fuel gauge sending unit, then go to step 1.

    NO - Troubleshooting is complete. If any other Pending or Confirmed DTCs are indicated, go to the indicated DTC's troubleshooting. •

36. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
37. Reinstall all removed parts in the reverse order of removal.
38. Reconnect all connectors.
39. Update the ECM/PCM if it does not have the latest software (see **ECM/PCM UPDATE**), or substitute a known-good ECM/PCM (see **SUBSTITUTING THE ECM/PCM**).

40. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P0462 indicated?

    YES - Check for poor connections or loose terminals at the gauge control module, the fuel gauge sending unit, and the secondary fuel gauge sending unit. If the ECM/PCM was updated, substitute a known-good ECM/PCM (see **SUBSTITUTING THE ECM/PCM**), then recheck. If the ECM/PCM was substituted, go to step 1.

    NO - If the ECM/PCM was updated, troubleshooting is complete. If the ECM/PCM was substituted, replace the original ECM/PCM (see **ECM/PCM REPLACEMENT**). If any other Pending or Confirmed DTCs are indicated, go to the indicated DTC's troubleshooting. •

DTC P0463: FUEL LEVEL SENSOR (FUEL GAUGE SENDING UNIT) CIRCUIT HIGH VOLTAGE (WITHOUT SH-AWD)

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see GENERAL TROUBLESHOOTING INFORMATION).

1. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
2. Clear the DTC with the HDS, and wait 5 seconds.
3. Check for Pending or Confirmed DTCs in the DTCs MENU with the HDS.

    Is DTC P0463 indicated?

    YES - Go to step 4.

    NO - Intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at the gauge control module and the fuel gauge sending unit. •

4. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
5. Remove the rear seat cushion (see **REAR SEAT REMOVAL/INSTALLATION**).
6. Remove the access **panel from the floor**.
7. Disconnect the fuel tank unit 4P connector.
8. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
9. Measure the voltage between fuel tank unit 4P connector terminals No. 1 and No. 3.

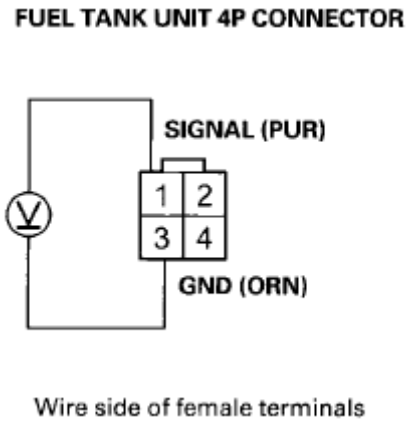


Fig. 11: Measuring Voltage Between Fuel Tank Unit 4P Connector Terminals No. 1 And No. 3
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there battery voltage?

YES - Go to step 17.

NO - Go to step 10.

10. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
11. Connect fuel tank unit 4P connector terminal No. 3 to body ground with a jumper wire.

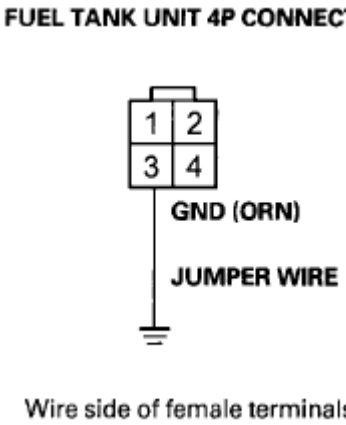


Fig. 12: Connecting Fuel Tank Unit 4P Connector Terminal No. 3 To Body Ground With Jumper Wire
Courtesy of AMERICAN HONDA MOTOR CO., INC.

12. Remove the gauge control module (see **GAUGE CONTROL MODULE REPLACEMENT**).
13. Disconnect the gauge control module 32P connector.
14. Check for continuity between gauge control module 32P connector terminal No. 2 and body ground.

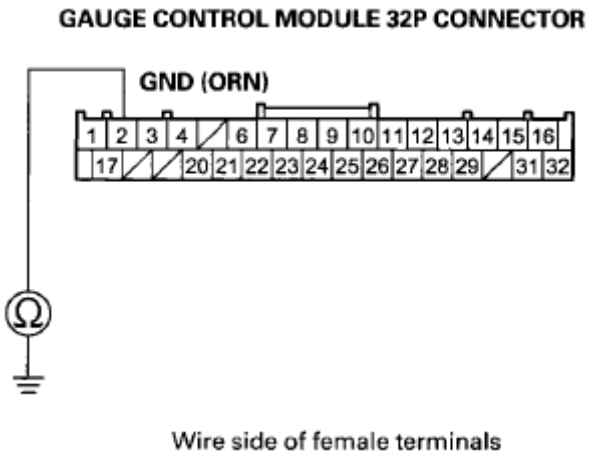


Fig. 13: Checking Continuity Between Gauge Control Module 32P Connector Terminal No. 2 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 15.

NO - Repair open in the wire between the gauge control module (GND line) and the fuel gauge sending unit, then go to step 27.

15. Connect fuel tank unit 4P connector terminal No. 1 to body ground with a jumper wire.

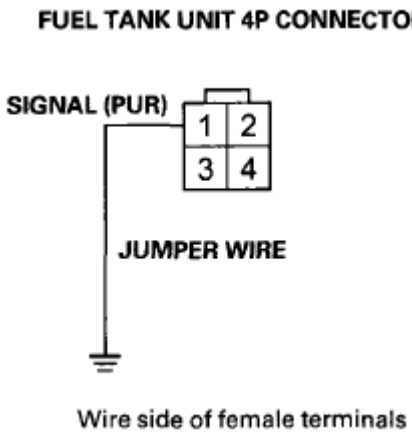


Fig. 14: Connecting Fuel Tank Unit 4P Connector Terminal No. 1 To Body Ground With Jumper Wire
Courtesy of AMERICAN HONDA MOTOR CO., INC.

16. Check for continuity between gauge control module 32P connector terminal No. 4 and body ground.

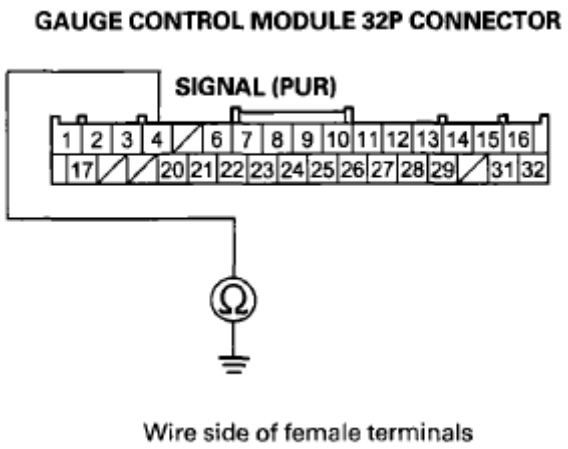


Fig. 15: Checking Continuity Between Gauge Control Module 32P Connector Terminal No. 4 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Replace the gauge control module (see **GAUGE CONTROL MODULE REPLACEMENT**), then go to step 27.

NO - Repair open in the wire between the gauge control module (signal line) and the fuel gauge sending unit, then go to step 27.

17. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
18. Remove the **fuel tank unit**.
19. Test the fuel **gauge sending unit**.

Is the fuel gauge sending unit OK?

YES - Go to step 20.

NO - Replace the **fuel gauge sending unit**, then go to step 26.

20. Connect the fuel tank unit 4P connector.
21. Reconnect the gauge control module 32P connector.
22. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
23. Clear the DTC with the HDS.
24. Set the float (A) to the F position.

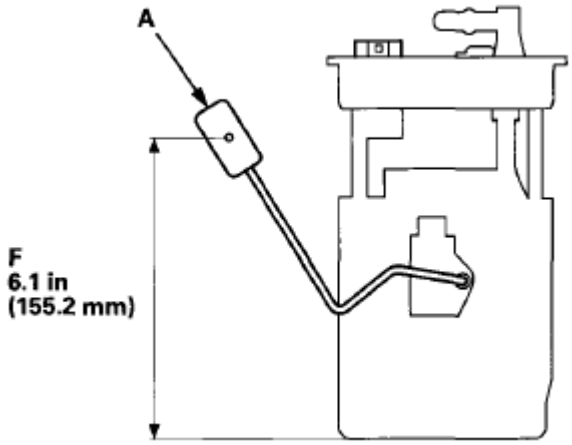


Fig. 16: Identifying Float To F Position
Courtesy of AMERICAN HONDA MOTOR CO., INC.

25. Check the fuel gauge.

    Does the gauge move to the full position?

    YES - Go to step 33.

    NO - Replace the gauge control module (see **GAUGE CONTROL MODULE REPLACEMENT**), then go to step 26.

26. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
27. Reinstall all removed parts in the reverse order of removal.
28. Reconnect ail connectors.
29. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
30. Reset the PCM with the HDS.
31. Do the PCM idle learn procedure (see **ECM/PCM IDLE LEARN PROCEDURE**).
32. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P0463 indicated?

    YES - Check for poor connections or loose terminals at the gauge control module and fuel gauge sending unit, then go to step 1.

    NO - Troubleshooting is complete. If any other Pending or Confirmed DTCs are indicated, go to the indicated DTC's troubleshooting. •

33. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
34. Reinstall all parts removed in the reverse order of removal.
35. Reconnect all connectors.
36. Update the PCM if it does not have the latest software (see **ECM/PCM UPDATE**), or substitute a

known-good PCM (see **SUBSTITUTING THE ECM/PCM**).

37. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P0463 indicated?

    YES - Check for poor connections or loose terminals at the gauge control module and the fuel gauge sending unit. If the PCM was updated, substitute a known-good PCM (see **SUBSTITUTING THE ECM/PCM**), then recheck. If the PCM was substituted, go to step 1.

    NO - If the PCM was updated, troubleshooting is complete. If the PCM was substituted, replace the original PCM (see **ECM/PCM REPLACEMENT**). If any other Pending or Confirmed DTCs are indicated, go to the indicated DTC's troubleshooting. •

DTC P0463: FUEL LEVEL SENSOR (FUEL GAUGE SENDING UNIT) CIRCUIT HIGH VOLTAGE (WITH SH-AWD)

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see GENERAL TROUBLESHOOTING INFORMATION).

1. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
2. Clear the DTC with the HDS, and wait 5 seconds.
3. Check for Pending or Confirmed DTCs with the HDS.

   Is DTC P0463 indicated?

   YES - Go to step 4.

   NO - Intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at the gauge control module, the fuel gauge sending unit, and the secondary fuel gauge sending unit. •

4. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
5. Remove the rear seat cushion (see **REAR SEAT REMOVAL/INSTALLATION**).
6. Remove the access panel from the left **side of the floor**.
7. Disconnect the fuel tank unit 4P connector.
8. Remove the access panel from the **right side of the floor**.
9. Disconnect the secondary fuel gauge sending unit 4P connector.
10. Check for continuity between fuel tank unit 4P connector terminal No. 3 and secondary fuel gauge sending unit 4P connector terminal No. 1.

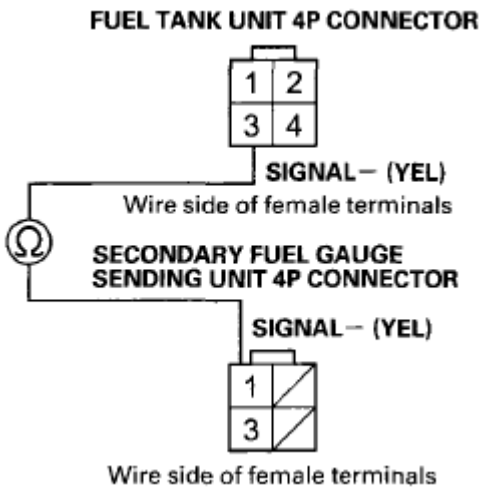


Fig. 17: Checking Continuity Between Fuel Tank Unit 4P Connector Terminal No. 3 And Secondary Fuel Gauge Sending Unit 4P Connector Terminal No. 1
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 11.

NO - Repair open in the wire between the fuel gauge sending unit and the secondary fuel gauge sending unit, then go to step 26.

11. Remove the gauge control module (see **GAUGE CONTROL MODULE REPLACEMENT**), then disconnect the gauge control module 32P connector.
12. Connect secondary fuel gauge sending unit 4P connector terminal No. 3 to body ground with a jumper wire.

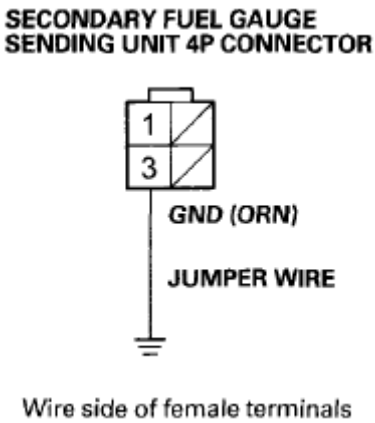


Fig. 18: Connecting Secondary Fuel Gauge Sending Unit 4P Connector Terminal No. 3 To Body Ground With Jumper Wire
Courtesy of AMERICAN HONDA MOTOR CO., INC.

13. Check for continuity between gauge control module 32P connector terminal No. 2 and body ground.

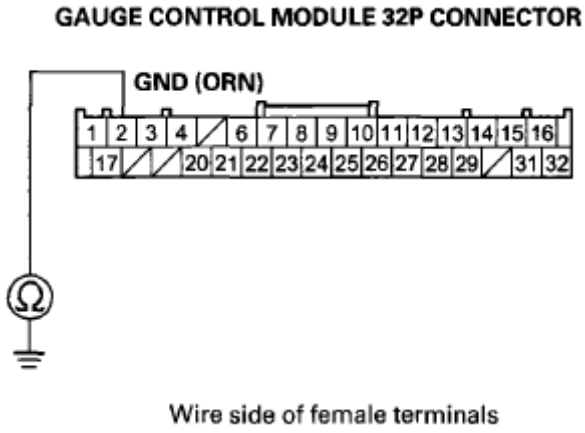


Fig. 19: Checking Continuity Between Gauge Control Module 32P Connector Terminal No. 2 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 14.

NO - Repair open in the wire between the gauge control module and the secondary fuel gauge sending unit, then go to step 26.

14. Connect fuel tank unit 4P connector terminal No. 1 to body ground with a jumper wire.

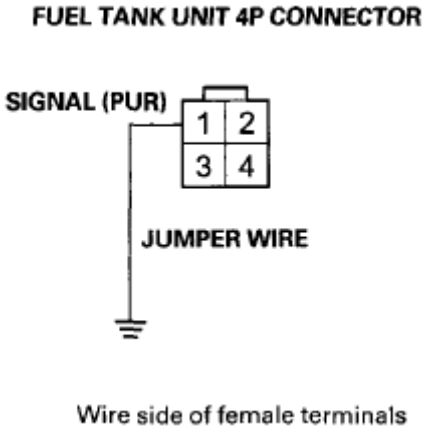


Fig. 20: Connect Fuel Tank Unit 4P Connector Terminal No. 1 To Body Ground With Jumper Wire
Courtesy of AMERICAN HONDA MOTOR CO., INC.

15. Check for continuity between gauge control module 32P connector terminal No. 4 and body ground.

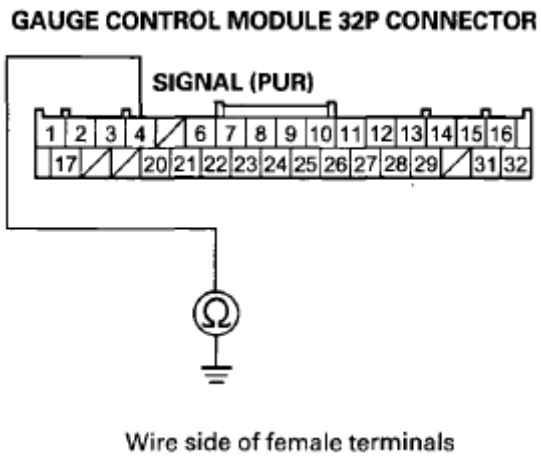


Fig. 21: Checking Continuity Between Gauge Control Module 32P Connector Terminal No. 4 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 16.

NO - Repair open in the wire between the gauge control module and the fuel gauge sending unit, then go to step 26.

16. Disconnect the jumper wire from the fuel gauge sending unit 4P connector.
17. Remove the **fuel tank unit**.
18. Test the **fuel gauge sending unit**.

Is the fuel gauge sending unit OK?

YES - Go to step 19.

NO - Replace the **fuel gauge sending unit**, then go to step 26.

19. Remove the **secondary fuel gauge sending unit**.
20. Test the **secondary fuel gauge sending unit**.

Is the secondary fuel gauge sending unit OK?

YES - Go to step 21.

NO - Replace the **secondary fuel gauge sending unit**, then go to step 26.

21. Reconnect the fuel tank unit 4P connector, the secondary fuel gauge sending unit 4P connector, and the gauge control module 32P connector.
22. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.

23. Set the floats (A) to the F position.

Fuel gauge sending unit

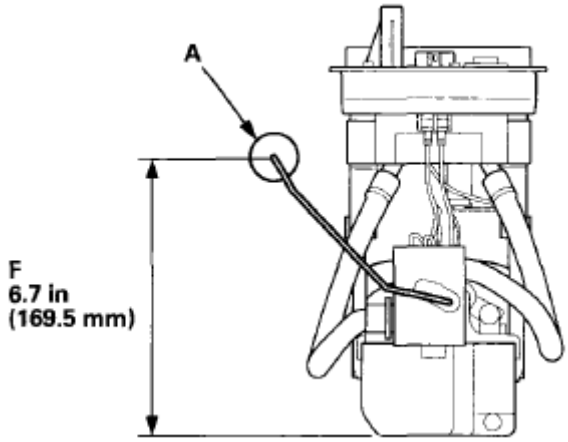


Fig. 22: Identifying Float Of Fuel Gauge Sending Unit
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Secondary fuel gauge sending unit

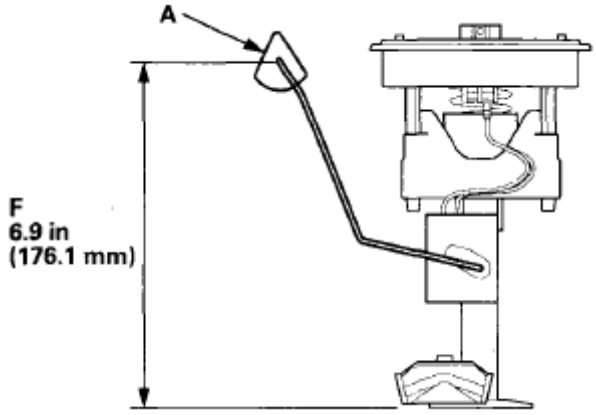


Fig. 23: Identifying Float Of Secondary Fuel Gauge Sending Unit
Courtesy of AMERICAN HONDA MOTOR CO., INC.

24. Check the fuel gauge.

Does the gauge move to the full position?

YES - Go to step 32.

NO - Replace the gauge control module (see **GAUGE CONTROL MODULE REPLACEMENT**), then go to step 25.

25. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
26. Reinstall all removed parts in the reverse order of removal.
27. Reconnect all connectors.
28. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
29. Reset the ECM/PCM with the HDS.
30. Do the ECM/PCM idle learn procedure (see **ECM/PCM IDLE LEARN PROCEDURE**).
31. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P0463 indicated?

    YES - Check for poor connections or loose terminals at the gauge control module, the fuel gauge sending unit, and the secondary fuel gauge sending unit, then go to step 1.

    NO - Troubleshooting is complete. If any other Pending or Confirmed DTCs are indicated, go to the indicated DTC's troubleshooting. •

32. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
33. Reinstall all removed parts in the reverse order of removal.
34. Reconnect all connectors.
35. Update the ECM/PCM if it does not have the latest software (see **ECM/PCM UPDATE**), or substitute a known-good ECM/PCM (see **SUBSTITUTING THE ECM/PCM**).
36. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P0463 indicated?

    YES - Check for poor connections or loose terminals at the gauge control module, the fuel gauge sending unit, and the secondary fuel gauge sending unit. If the ECM/PCM was updated, substitute a known-good ECM/PCM (see **SUBSTITUTING THE ECM/PCM**), then recheck. If the ECM/PCM was substituted, go to step 1.

    NO - If the ECM/PCM was updated, troubleshooting is complete. If the ECM/PCM was substituted, replace the original ECM/PCM (see **ECM/PCM REPLACEMENT**). If any other Pending or Confirmed DTCs are indicated, go to the indicated DTC's troubleshooting. •

FUEL PUMP CIRCUIT TROUBLESHOOTING

If you suspect a problem with the fuel pump, check that the fuel pump actually runs; when it is on, you will hear some noise if you listen to the fuel fill port with the fuel fill cap removed. The fuel pump should run for 2 seconds when the ignition switch is turned to ON (II), or press the engine start/stop button to select the ON mode. If the fuel pump does not make noise, check as follows:

1. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
2. Remove the driver's dashboard undercover (see **DRIVER'S DASHBOARD UNDERCOVER REMOVAL/INSTALLATION**).

3. Remove PGM-FI main relay 2 (A) from the driver's under-dash fuse/relay box.

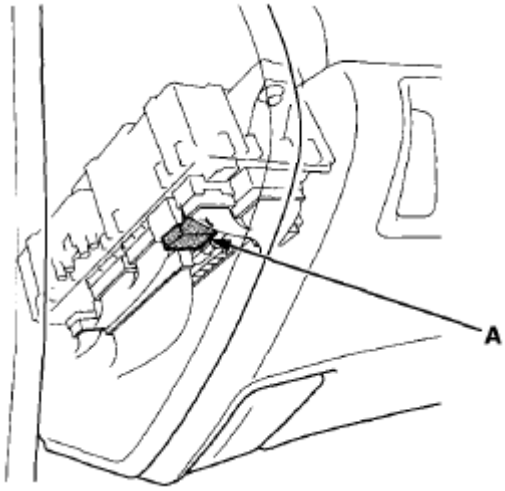


Fig. 24: Identifying PGM-FI Main Relay
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
5. Measure the voltage between PGM-FI main relay 2 4P connector terminal No. 4 and body ground.

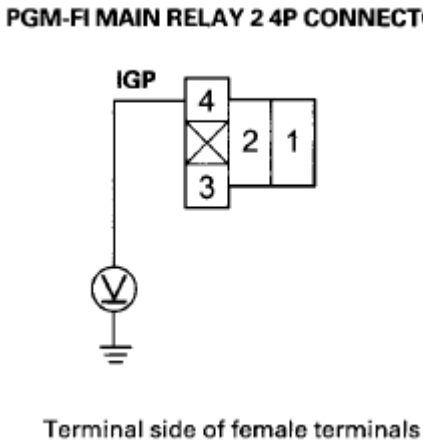


Fig. 25: Measuring Voltage Between PGM-FI Main Relay 2 4P Connector Terminal No. 4 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there battery voltage?

YES - Go to step 13.

NO - Go to step 6.

6. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.

7. Remove PGM-FI main relay 1 (A) and the ETCS control relay (B) from the under-hood fuse/relay box.

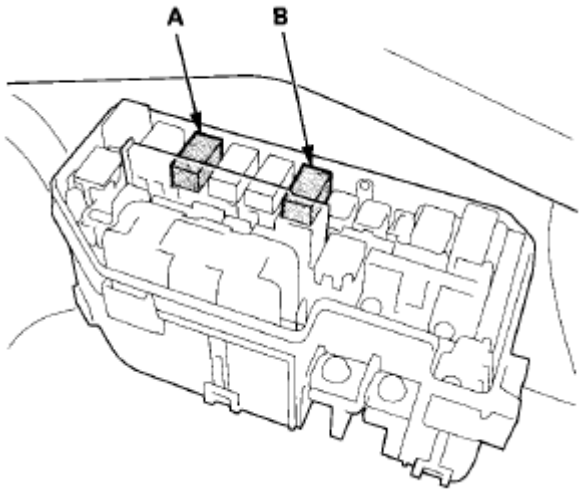


Fig. 26: Identifying PGM-FI Main Relay 1 And ETCS Control Relay
Courtesy of AMERICAN HONDA MOTOR CO., INC.

8. Jump the SCS line with the HDS.
9. Disconnect the engine wire harness 13P connector (C101).
10. Disconnect driver's under-dash fuse/relay box connector F (33P).
11. Connect PGM-FI main relay 1 4P connector terminal No. 2 to body ground with a jumper wire.

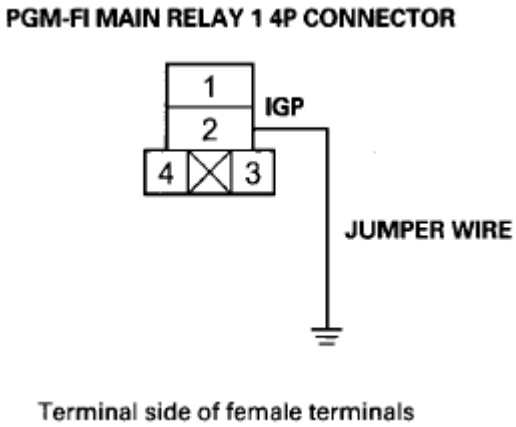


Fig. 27: Connecting PGM-FI Main Relay 1 4P Connector Terminal No. 2 To Body Ground With Jumper Wire
Courtesy of AMERICAN HONDA MOTOR CO., INC.

12. Check for continuity between driver's under-dash fuse/relay box connector F (33P) terminal No. 31 and body ground.

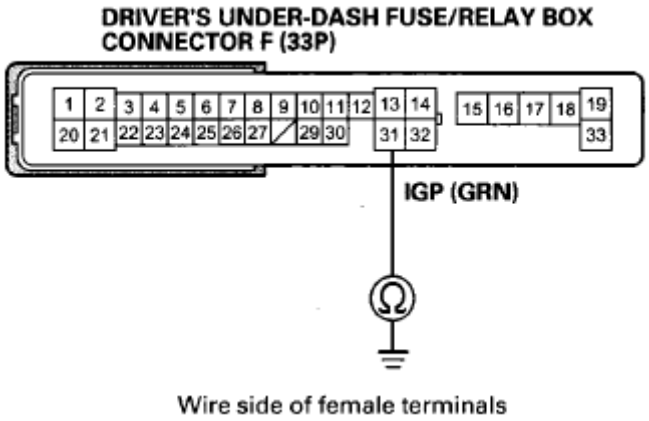


Fig. 28: Checking Continuity Between Driver's Under-Dash Fuse/Relay Box Connector F (33P) Terminal No. 31 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Replace the driver's under-dash fuse/relay box (see **DRIVER'S UNDER-DASH FUSE/RELAY BOX (MICU) REMOVAL AND INSTALLATION**). •

NO -

- Repair open in the wire between the under-hood fuse/relay box and the driver's under-dash fuse/relay box. •
- If the wire is OK, replace the under-hood fuse/relay box (see **REMOVAL AND INSTALLATION**). •

13. Measure the voltage between PGM-FI main relay 2 4P connector terminal No. 2 and body ground.

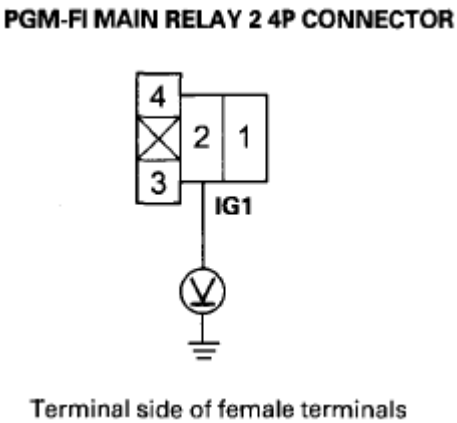


Fig. 29: Measuring Voltage Between PGM-FI Main Relay 2 4P Connector Terminal No. 2 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there battery voltage?

YES - Go to step 14.

NO -

- Check the No. 9 FUEL PUMP (20 A) fuse in the driver's under-dash fuse/relay box. •
- If the fuse is OK, replace the driver's under-dash fuse/relay box (see **DRIVER'S UNDER-DASH FUSE/RELAY BOX (MICU) REMOVAL AND INSTALLATION**). •

14. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
15. Connect PGM-FI main relay 2 4P connector terminal No. 3 to body ground with a jumper wire.

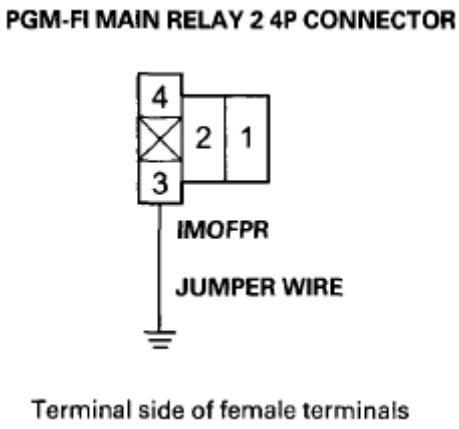


Fig. 30: Connecting PGM-FI Main Relay 2 4P Connector Terminal No. 3 To Body Ground With Jumper Wire
Courtesy of AMERICAN HONDA MOTOR CO., INC.

16. Jump the SCS line with the HDS.
17. Disconnect ECM/PCM connector A (49P).
18. Check for continuity between ECM/PCM connector terminal A11 and body ground.

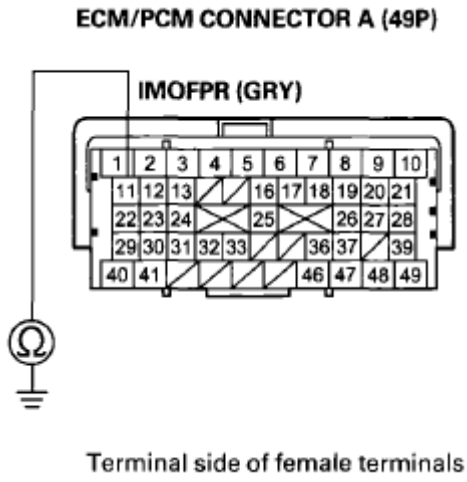


Fig. 31: Checking Continuity Between ECM/PCM Connector Terminal A11 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 19.

NO - Repair open in the wire between PGM-FI main relay 2 and the ECM/PCM (A11). •

19. Reinstall PGM-FI main relay 2.
20. Connect ECM/PCM connector terminal A6 to body ground with a jumper wire.

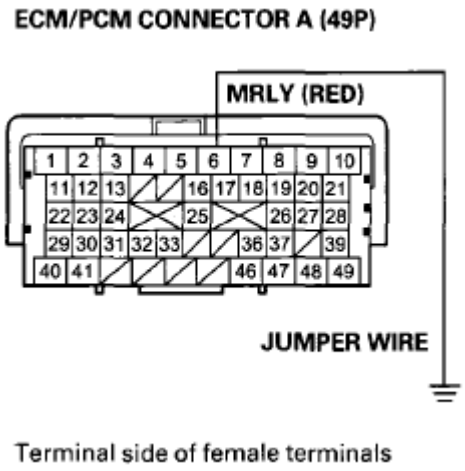


Fig. 32: Connecting ECM/PCM Connector Terminal A6 To Body Ground With Jumper Wire
Courtesy of AMERICAN HONDA MOTOR CO., INC.

21. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
22. Measure the voltage between ECM/PCM connector terminal A11 and body ground.

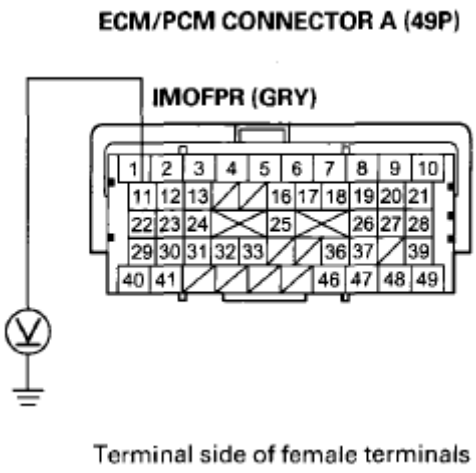


Fig. 33: Measuring Voltage Between ECM/PCM Connector Terminal A11 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there battery voltage?

YES - Go to step 23.

NO - Replace PGM-FI main relay 2. •

23. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
24. Reconnect ECM/PCM connector A (49P).
25. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode, and measure the voltage between driver's under-dash fuse/relay box connector F (33P) terminal No. 22 and body ground within 2 seconds.

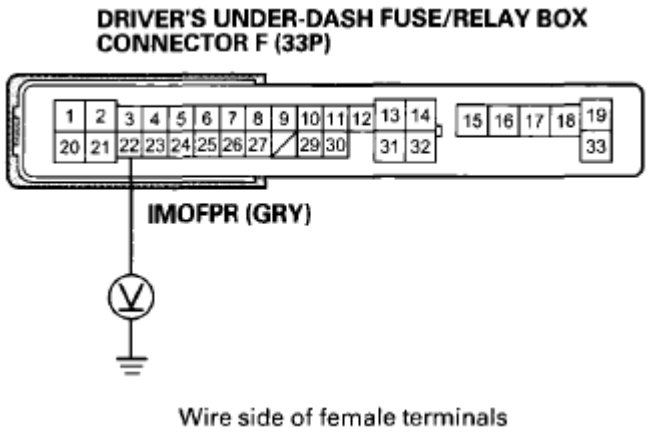


Fig. 34: Measuring Voltage Between Driver's Under-Dash Fuse/Relay Box Connector F (33P) Terminal No. 22 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there battery voltage?

YES - Update the ECM/PCM if it does not have the latest software (see **ECM/PCM UPDATE**), or substitute a known-good ECM/PCM (see **SUBSTITUTING THE ECM/PCM**), then recheck. If the symptom/indication goes away and the ECM/PCM was updated, troubleshooting is complete. If the symptom/indication goes away and the ECM/PCM was substituted, replace the original ECM/PCM (see **ECM/PCM REPLACEMENT**). •

NO - Go to step 26.

26. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode, and measure the voltage between driver's under-dash fuse/relay box connector F (33P) terminal No. 22 and body ground after 2 seconds.

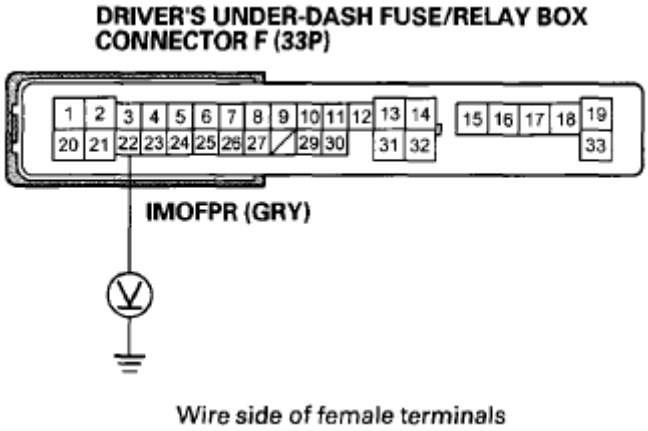


Fig. 35: Measuring Voltage Between Driver's Under-Dash Fuse/Relay Box Connector F (33P) Terminal No. 22 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there battery voltage?

YES - Go to step 27.

NO - Replace the driver's under-dash fuse/relay box (see **DRIVER'S UNDER-DASH FUSE/RELAY BOX (MICU) REMOVAL AND INSTALLATION**).

27. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
28. Remove the rear seat cushion (see **REAR SEAT REMOVAL/INSTALLATION**).
29. Remove the access panel from the floor; without SH-AWD (see **Removal (without SH-AWD)**), with SH-AWD (see **Removal (with SH-AWD)**).
30. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode, and measure the voltage between fuel tank unit 4P connector terminal No. 2 and body ground within 2 seconds.

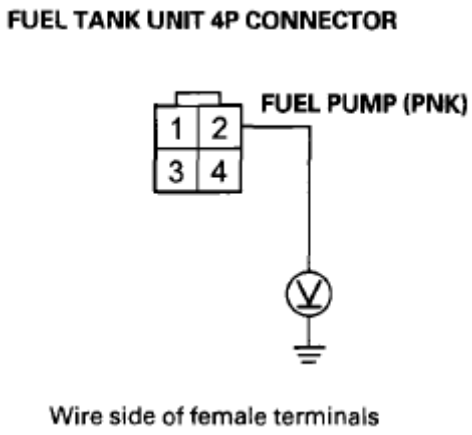


Fig. 36: Measuring Voltage Between Fuel Tank Unit 4P Connector Terminal No. 2 And Body Ground

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there battery voltage?

YES - Go to step 35.

NO - Go to step 31.

31. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
32. Remove PGM-FI main relay 2.
33. Connect PGM-FI main relay 2 4P connector terminals No. 1 and No. 2 with a jumper wire.

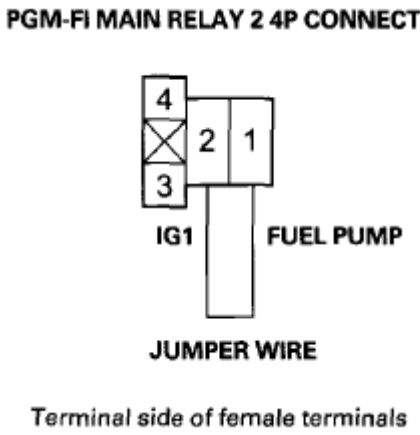


Fig. 37: Connecting PGM-FI Main Relay 2 4P Connector Terminals No. 1 And No. 2 With Jumper Wire
Courtesy of AMERICAN HONDA MOTOR CO., INC.

34. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode, and measure the voltage between fuel tank unit 4P connector terminal No. 2 and body ground.

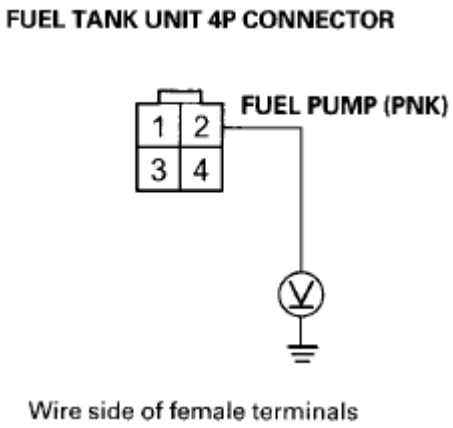


Fig. 38: Measuring Voltage Between Fuel Tank Unit 4P Connector Terminal No. 2 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there battery voltage?

YES - Replace PGM-FI main relay 2. •

NO -

- Repair open in the wire between the driver's under-dash fuse/relay box (D10) and the fuel tank unit 4P connector. •
- If the wire is OK, replace the driver's under-dash fuse/relay box (see **DRIVER'S UNDER-DASH FUSE/RELAY BOX (MICU) REMOVAL AND INSTALLATION**). •

35. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
36. Check for continuity between fuel tank unit 4P connector terminal No. 4 and body ground.

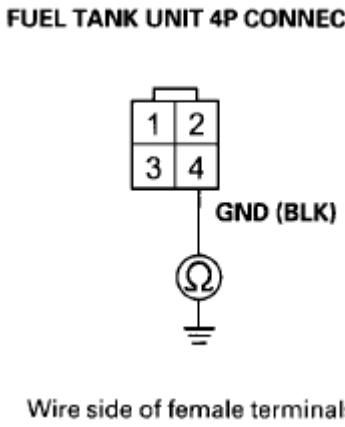


Fig. 39: Checking Continuity Between Fuel Tank Unit 4P Connector Terminal No. 4 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - **Replace the fuel pump**. •

NO - Repair open in the wire between the fuel tank unit 4P connector and G602; without SH-AWD (see **CONNECTOR TO FUSE/RELAY BOX INDEX**), with SH-AWD (see **CONNECTOR TO FUSE/RELAY BOX INDEX**). •

FUEL PRESSURE RELIEVING

Before disconnecting fuel lines or hoses, relieve pressure from the system by disabling the fuel pump and disconnecting the fuel line/quick connect fitting in the engine compartment.

WITH THE HDS

1. Connect the HDS to the data link connector (DLC) (A) located under the driver's side of the dashboard.

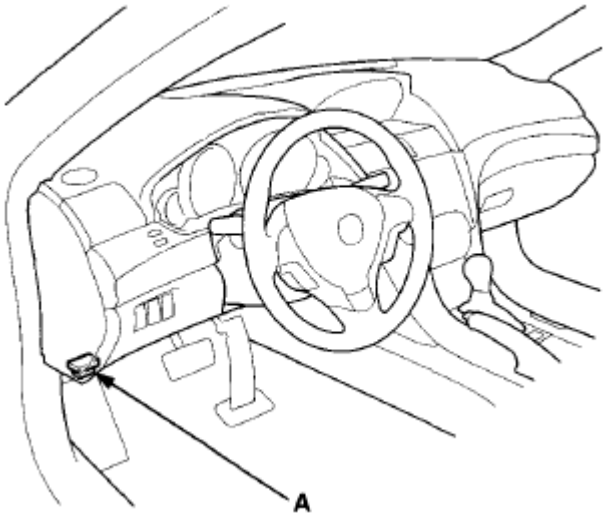


Fig. 40: Identifying Data Link Connector (With HDS)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
3. Make sure the HDS communicates with the ECM/PCM. If it doesn't, go to the DLC circuit troubleshooting (see **DLC CIRCUIT TROUBLESHOOTING**).
4. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
5. Remove the fuel fill cap to relieve the pressure in the fuel tank.
6. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
7. From the INSPECTION MENU of the HDS, select Fuel Pump OFF, then start the engine, and let it idle until it stalls.

NOTE:

- **Do not allow the engine to idle above 1, 000 RPM or the ECM/PCM will continue to operate the fuel pump.**
- **Pending or Confirmed DTC may be set during this procedure. Check for DTCs, and clear them as needed (see HDS CLEAR COMMAND).**

8. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
9. Do the battery terminal disconnection procedure (see **BATTERY TERMINAL DISCONNECTION AND RECONNECTION**).
10. Remove the cover (A) and the quick-connect fitting cover (B); **without SH-AWD system**, **with SH-AWD system**.

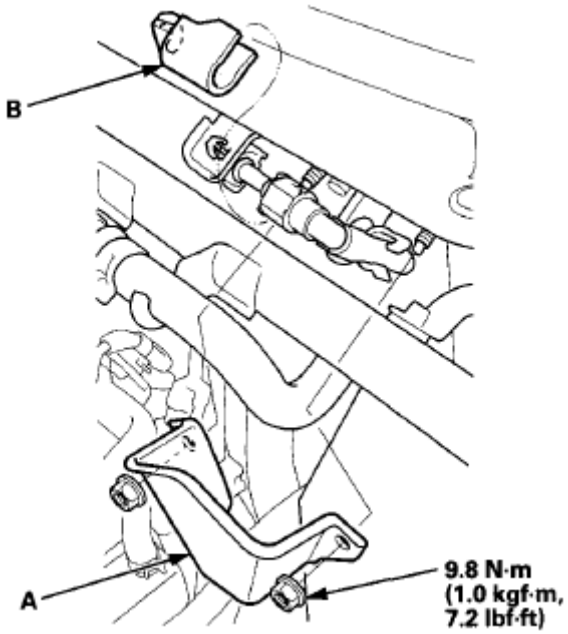


Fig. 41: Identifying Cover And Quick-Connect Fitting Cover With Torque Specifications (With HDS)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

11. Check the quick-connect fitting for dirt, and clean it if needed.
12. Place a rag or a shop towel over the quick-connect fitting (A).

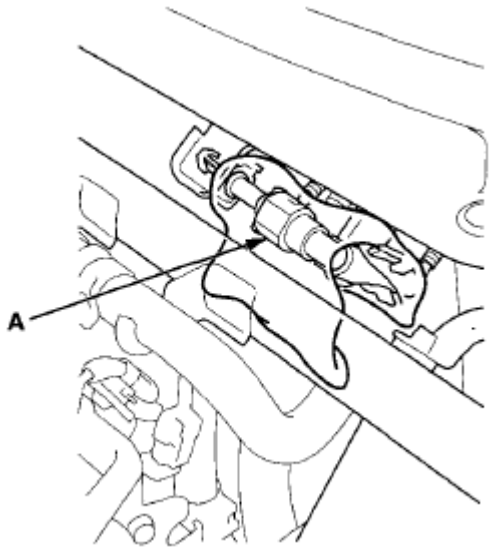


Fig. 42: Identifying Quick-Connect Fitting With Rag Or Shop Towel
Courtesy of AMERICAN HONDA MOTOR CO., INC.

13. Disconnect the quick-connect fitting (A): Hold the connector (B) with one hand, and squeeze the retainer tabs (C) with the other hand to release them from the locking tabs (D). Pull the connector off.

NOTE:

- **Be careful not to damage the line (E) or other parts.**
- **Do not use tools.**
- **If the connector does not move, keep the retainer tabs pressed down, and alternately pull and push the connector until it comes off easily.**
- **Do not remove the retainer from the line; once removed, the retainer must be replaced with a new one.**

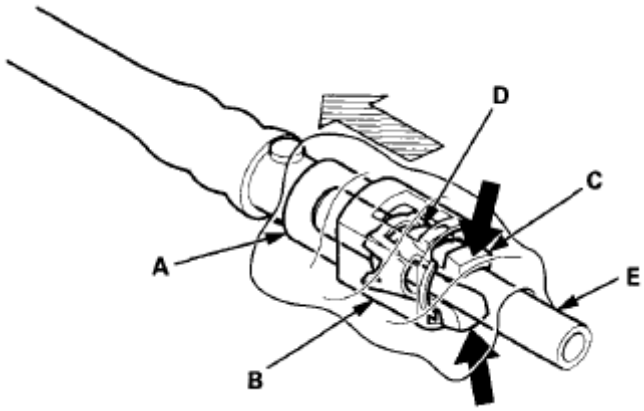


Fig. 43: Disconnecting Connector From Locking Tabs
Courtesy of AMERICAN HONDA MOTOR CO., INC.

14. After disconnecting the quick-connect fitting, check it for dirt or damage; without SH-AWD system (see step 5), with SH-AWD system (see step 5).
15. Do the battery terminal reconnection procedure (see **BATTERY TERMINAL DISCONNECTION AND RECONNECTION**).

WITHOUT THE HDS

1. Remove the driver's dashboard undercover (see **DRIVER'S DASHBOARD UNDERCOVER REMOVAL/INSTALLATION**).
2. Remove PGM-FI main relay 2 (A) from the driver's under-dash fuse/relay box.

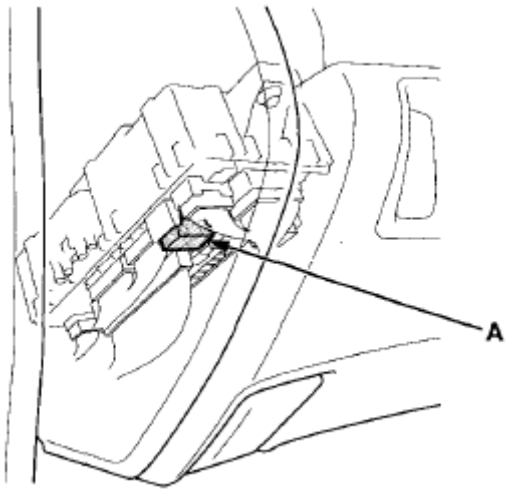


Fig. 44: Identifying PGM-FI Main Relay 2 (Without HDS)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Start the engine, and let it idle until it stalls.

NOTE: If any DTCs are stored, clear and ignore them.

4. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
5. Remove the fuel fill cap to relieve the pressure in the fuel tank.
6. Do the battery terminal disconnection procedure (see **BATTERY TERMINAL DISCONNECTION AND RECONNECTION**).
7. Remove the cover (A) and the quick-connect fitting cover (B); **without SH-AWD system**, **with SH-AWD system**.

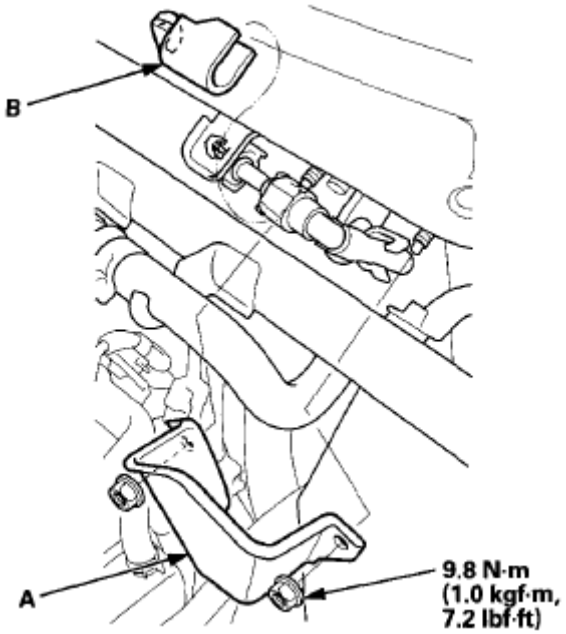


Fig. 45: Identifying Cover And Quick-Connect Fitting Cover With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

8. Check the quick-connect fitting for dirt, and clean it if needed.
9. Place a rag or a shop towel over the quick-connect fitting (A).

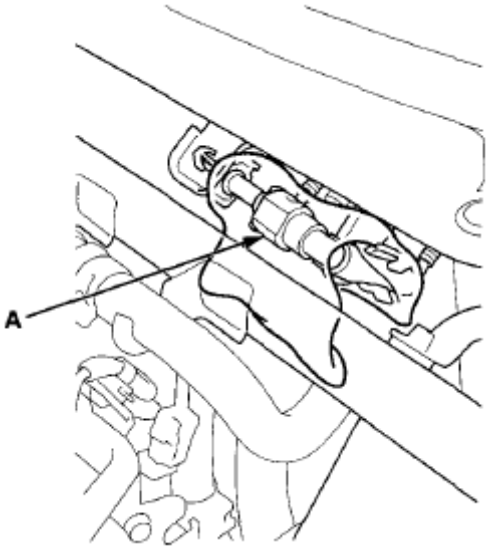


Fig. 46: Identifying Quick-Connect Fitting With Rag Or Shop Towel
Courtesy of AMERICAN HONDA MOTOR CO., INC.

10. Disconnect the quick-connect fitting (A): Hold the connector (B) with one hand, and squeeze the retainer tabs (C) with the other hand to release them from the locking tabs (D). Pull the connector off.

NOTE:

- **Be careful not to damage the line (E) or other parts.**
- **Do not use tools.**
- **If the connector does not move, keep the retainer tabs pressed down, and alternately pull and push the connector until it comes off easily.**
- **Do not remove the retainer from the line; once removed, the retainer must be replaced with a new one.**

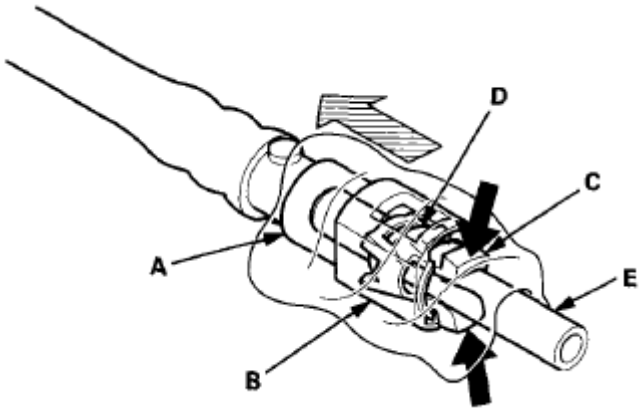


Fig. 47: Disconnecting Connector From Locking Tabs (Without HDS)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

11. After disconnecting the quick-connect fitting, check it for dirt or damage; without SH-AWD system (see step 5), with SH-AWD system (see step 5).
12. Do the battery terminal reconnection procedure (see **BATTERY TERMINAL DISCONNECTION AND RECONNECTION**).

FUEL PRESSURE TEST

Special Tools Required

- Fuel Pressure Gauge 07408-004000B
- Fuel Pressure Gauge Attachment Set 07AAJ-S8MA150

1. Relieve the **fuel pressure**.
2. Attach the fuel pressure gauge set and the fuel pressure gauge.

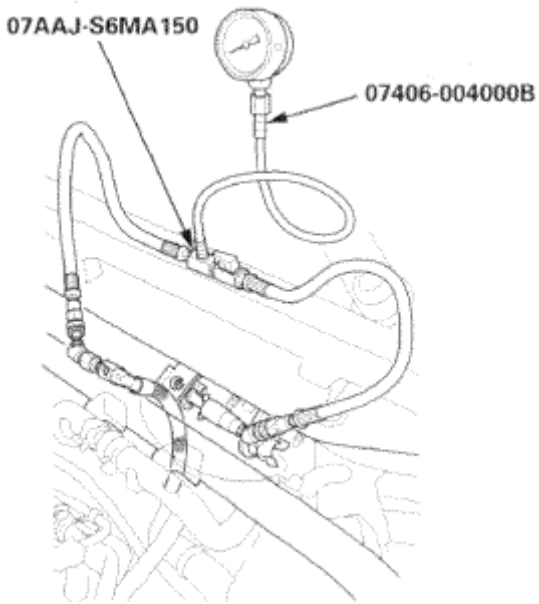


Fig. 48: Installing Fuel Pressure Gauge And Fuel Pressure Set
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Start the engine, and let it idle,
   - If the engine starts, go to step 5.
   - If the engine does not start, go to step 4,
4. Check to see if the fuel pump is running: Listen to the fuel filler port with the fuel fill cap removed. The fuel pump should run for 2 seconds when the ignition switch is first turned to ON (II) or engine start/stop button to select the ON mode.
   - If the pump runs, go to step 5,
   - If the pump does not run, do the **fuel pump circuit troubleshooting**.
5. Read the fuel pressure gauge.

   Fuel pressure should be: 390- 440 kPa (4.0- 4, 5 kgf/cm^2 , 57- 64 psi)

   - If the pressure is OK, the test is complete.
   - If the pressure is out of specification, replace the fuel pressure regulator; **without SH-AWD**, **with SH-AWD** and the fuel filter; **without SH-AWD**, **with SH-AWD**, then recheck the fuel pressure.

TRANSFER FUEL PUMP TEST

Special Tools Required

Vacuum Pump/Gauge, 0- 30 inHg Snap-on YA4000A or equivalent, commercially available

WITH SH-AWD

1. Remove the **secondary fuel gauge sending unit**.
2. Connect a vacuum pump/gauge, 0- 30 inHg, to the transfer tube (A).

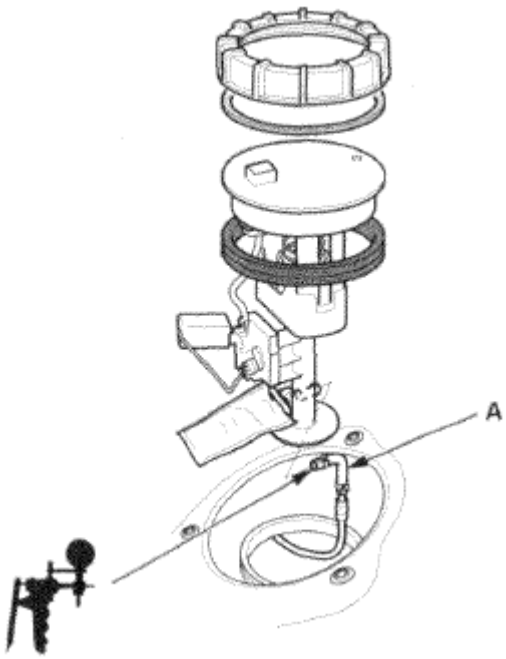


Fig. 49: Connecting Vacuum Pump/Gauge To Transfer Tube (With SH-AWD)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
4. From the INSPECTION MENU of the HDS, select Fuel Pump ON.
5. Read the vacuum pump/gauge. The vacuum should be 4, 0 kPa (1.2 inHg, 30 mmHg).
    - If the vacuum is OK, the transfer fuel pump and the transfer tube is OK.
    - If the vacuum is out of specification, go to step 6.
6. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
7. Install the **secondary fuel gauge sending unit**.
8. Remove the **fuel tank unit**.
9. Connect the vacuum pump/gauge, to the fuel tank unit (A).

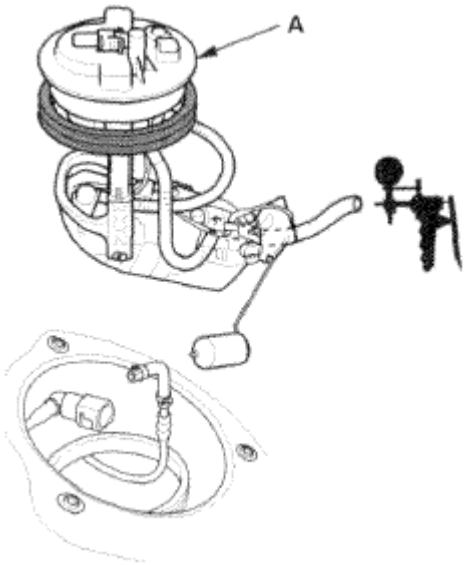


Fig. 50: Connecting Vacuum Pump/Gauge To Fuel Tank Unit
Courtesy of AMERICAN HONDA MOTOR CO., INC.

10. Lower the fuel tank unit (A) into the fuel tank until the pick up screen is submerged in the fuel.

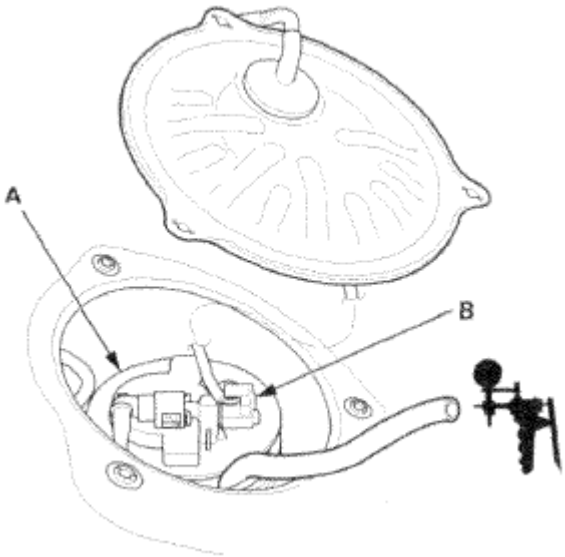


Fig. 51: Connecting 4P Connector And Fuel Tank Unit
Courtesy of AMERICAN HONDA MOTOR CO., INC.

11. Connect the fuel tank unit 4P connector (B).
12. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
13. From the INSPECTION MENU of the HDS, select Fuel Pump ON.
14. Read the vacuum pump/gauge. The vacuum should be 4.0 kPa (1.2 inHg, 30 mmHg).
    - If the vacuum is OK, replace the transfer tube, then recheck the fuel vacuum.

- If the vacuum is out of specification, replace the **fuel tank unit**, then recheck the fuel vacuum.

FUEL TANK DRAINING

1. Remove the fuel tank unit; **without SH-AWD**, or **with SH- AWD**.
2. With SH-AWD: **Remove the secondary fuel gauge sending unit**.
3. Using a hand pump, a boss, and a container suitable for fuel, draw the fuel from the fuel tank.
4. Reinstall the fuel tank unit; **without SH-AWD**, or **with SH-AWD**, and the **secondary fuel gauge sending unit (with SH-AWD)**.

FUEL LINE INSPECTION

Check the fuel system lines and hoses for damage, leaks, and deterioration. Replace any damaged parts.

WITHOUT SH-AWD

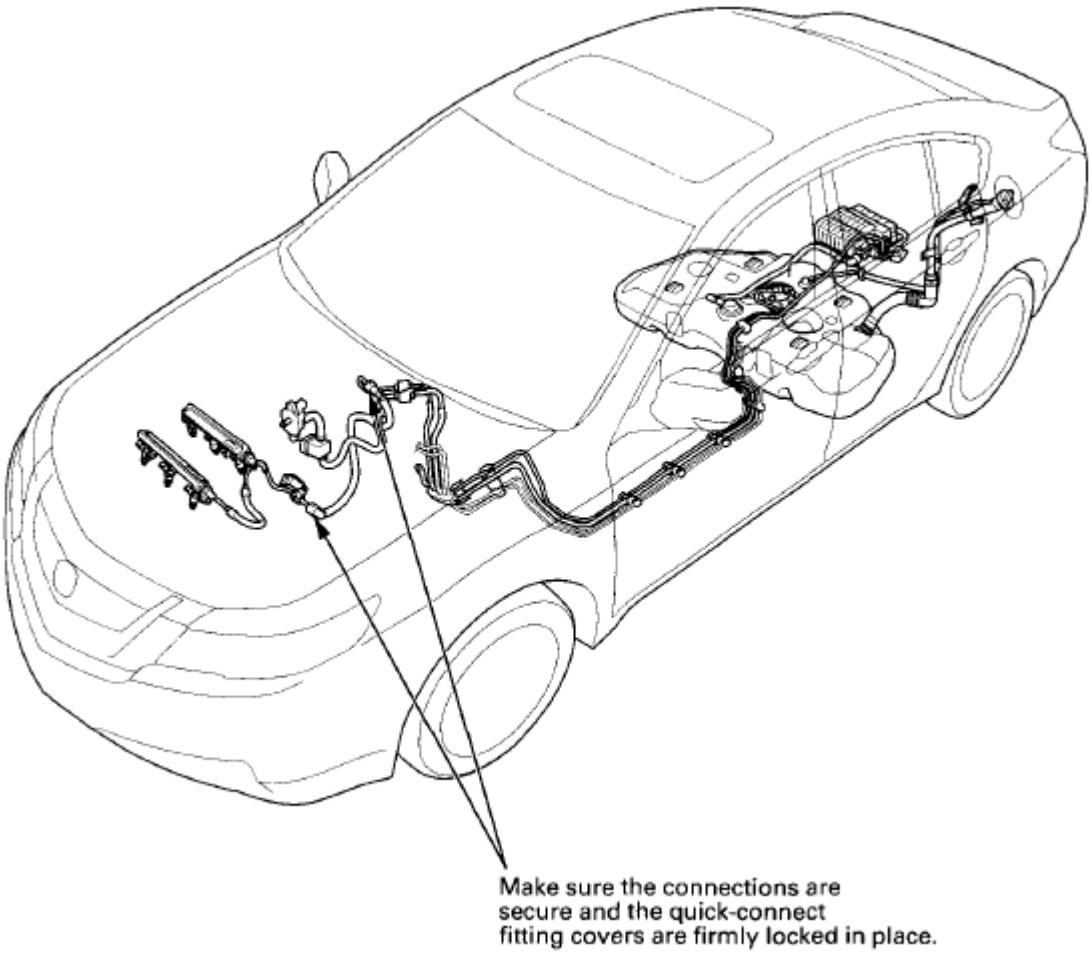


Fig. 52: Overview Of Fuel System Lines And Hoses (Without SH-AWD)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Check all clamps, and make sure they are properly positioned and tightened.

WITHOUT SH-AWD

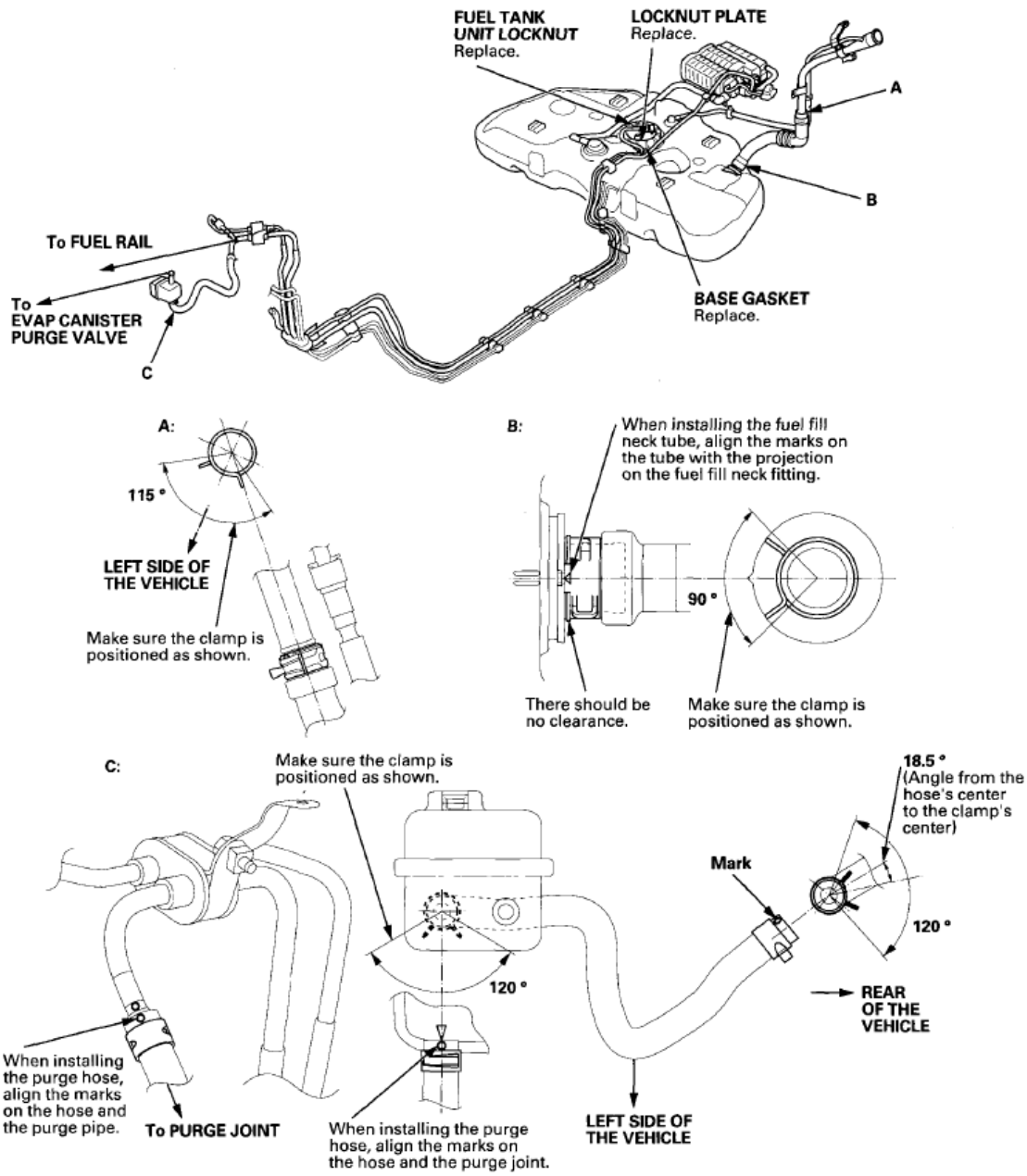


Fig. 53: Identifying Fuel Line Clamps Positions (Without SH-AWD)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Check the fuel system lines and hoses for damage, leaks, and deterioration. Replace any damaged parts.

WITH SH-AWD

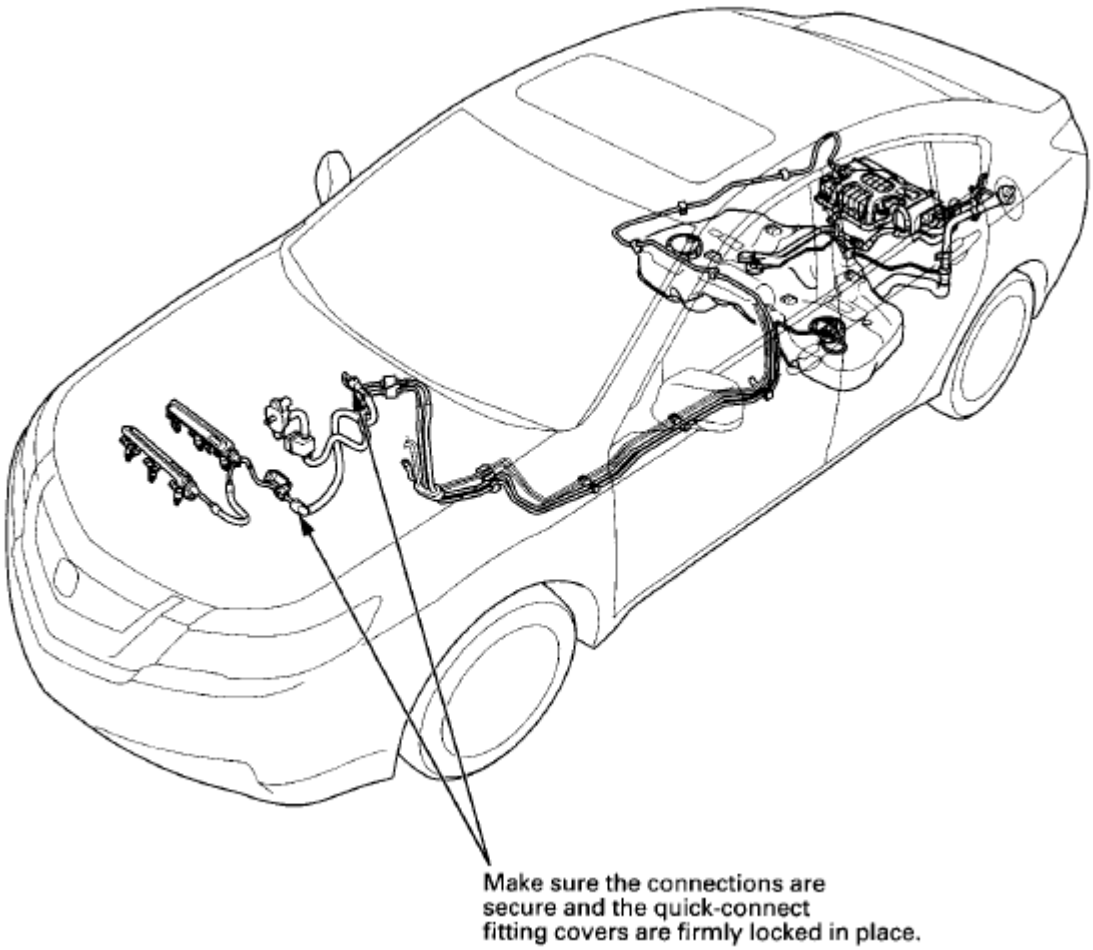


Fig. 54: Overview Of Fuel System Lines And Hoses (With SH-AWD)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Check all clamps, and make sure they are properly positioned and tightened.

WITH SH-AWD

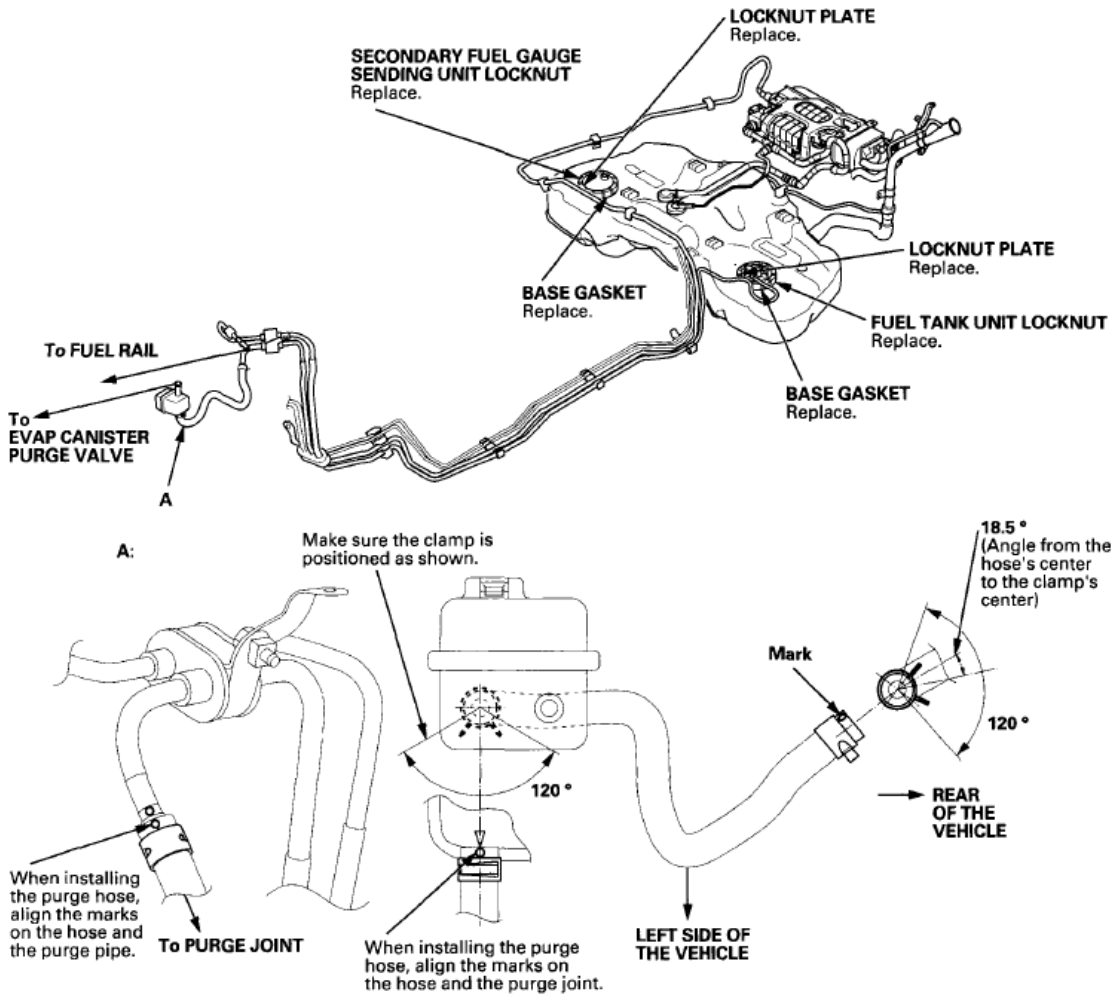


Fig. 55: Identifying Fuel Line Clamps Positions (With SH-AWD)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

FUEL LINE/QUICK-CONNECT FITTING PRECAUTIONS

WITHOUT SH-AWD

The fuel line/quick-connect fittings (A, B, C, D, and E) connect the fuel joint hose (F) to the fuel feed hose (G), the fuel feed hose to the fuel line (H), the fuel line (I) to the fuel tank unit (J), the fuel vapor line (K) to the EVAP canister (L), and the fuel tank vapor recirculation tube (M) to the fuel fill pipe (N). When removing or installing the fuel feed hose, the fuel tank unit, or the fuel tank, or when disconnecting or connecting the quick-connect fittings, pay attention to the following:

- The fuel feed hoses, the fuel line, and the quick-connect fittings are not heat-resistant; be careful not to damage them during welding or other heat-generating procedures.
- The fuel feed hoses, the fuel line, and the quick-connect fittings are not acid-proof; do not touch them with a shop towel that was used for wiping battery electrolyte. Replace them if they come in contact with electrolyte or something similar.

- When connecting or disconnecting the fuel feed hoses, the fuel line, and the quick-connect fittings, be careful not to bend or twist them excessively. Replace them if they are damaged.

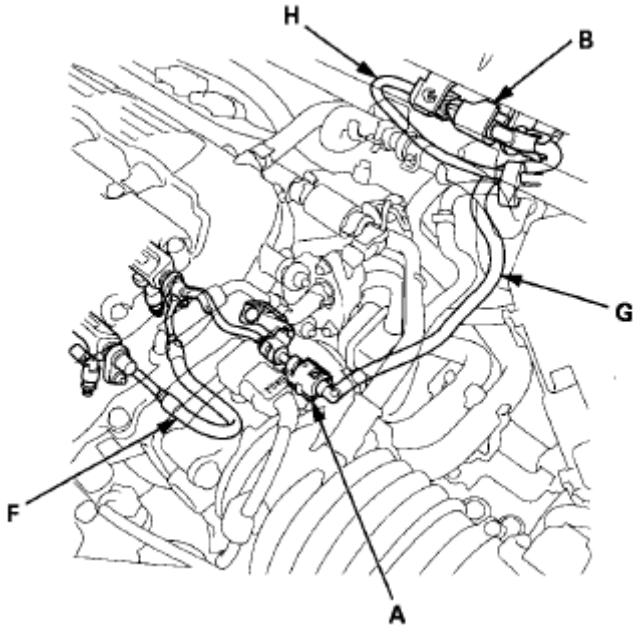


Fig. 56: Identifying Fuel Line/Quick-Connect Fitting - Without SH-AWD (1 Of 2)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

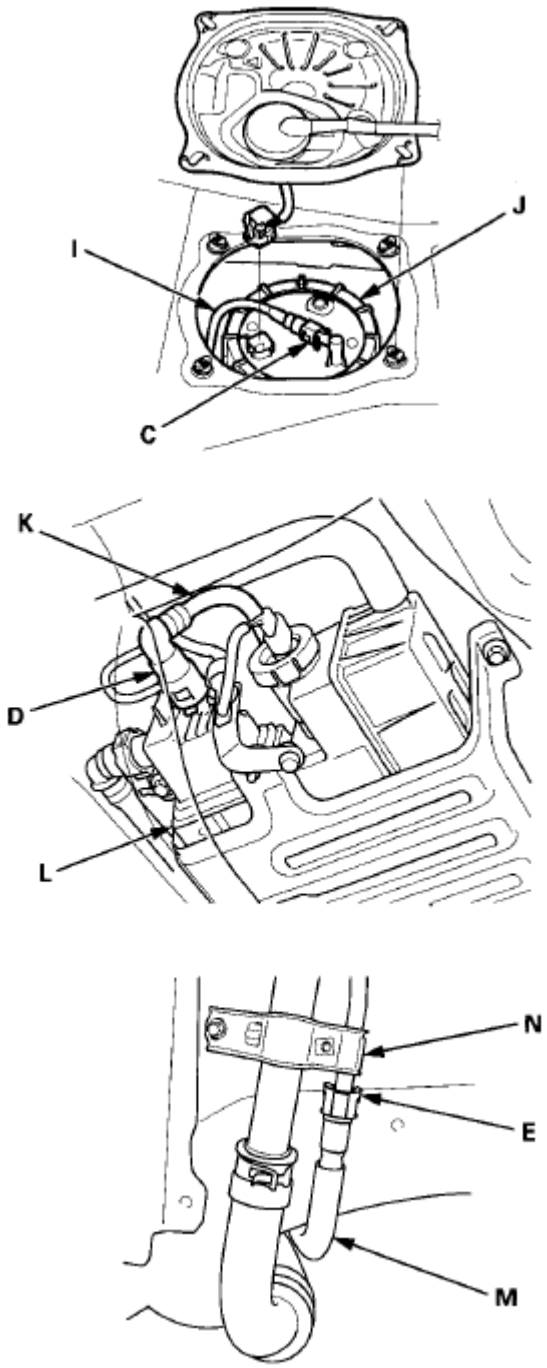


Fig. 57: Identifying Fuel Line/Quick-Connect Fitting - Without SH-AWD (2 Of 2)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

A disconnected quick-connect fitting can be reconnected, but the retainer on the mating line cannot be reused once it has been removed from the line. Replace the retainer when:

- replacing the fuel rail.
- replacing the fuel line.

- replacing the fuel pump.
- replacing the fuel filter.
- replacing the EVAP canister.
- replacing the fuel fill pipe.
- replacing the fuel tank.
- it has been removed from the line.
- it is damaged.

Use the same manufacturer retainer and the same size when the replacing the retainer.

Location	Manufacturer	Retainer color	Line diameter
A	Tokai	Blue green	0.3 in (8 mm)
B	Tokai	Blue green	0.3 in (8 mm)
C	Tokai	Orange	0.4 in (9.5 mm)
	Sanoh	White	
D	Tokai	Natural	0.5 in (12 mm)
E	Tokai	Natural	0.5 in (12 mm)

WITH SH-AWD

The fuel line/quick-connect fittings (A, B, C, D, E, F, and G) connect the fuel joint hose (H) to the fuel feed hose (I), the fuel feed hose to the fuel line (J), the fuel line (K) to the fuel tank unit (L), the fuel vapor line (M) to the EVAP canister (N), the fuel vent tube (O) to the fuel vent tube B (P) and the fuel tank vapor recirculation tube (Q) and fuel fill neck tube (R) to the fuel fill pipe (S). When removing or installing the fuel feed hose, the fuel tank unit, or the fuel tank, or when disconnecting or connecting the quick-connect fittings, pay attention to the following:

- The fuel feed hoses, the fuel line, the and quick-connect fittings are not heat-resistant; be careful not to damage them during welding or other heat-generating procedures.
- The fuel feed hoses, the fuel line, the and quick-connect fittings are not acid-proof; do not touch them with a shop towel that was used for wiping battery electrolyte. Replace them if they come in contact with electrolyte or something similar.
- When connecting or disconnecting the fuel feed hoses, the fuel line, the and quick-connect fittings, be careful not to bend or twist them excessively. Replace them if they are damaged.

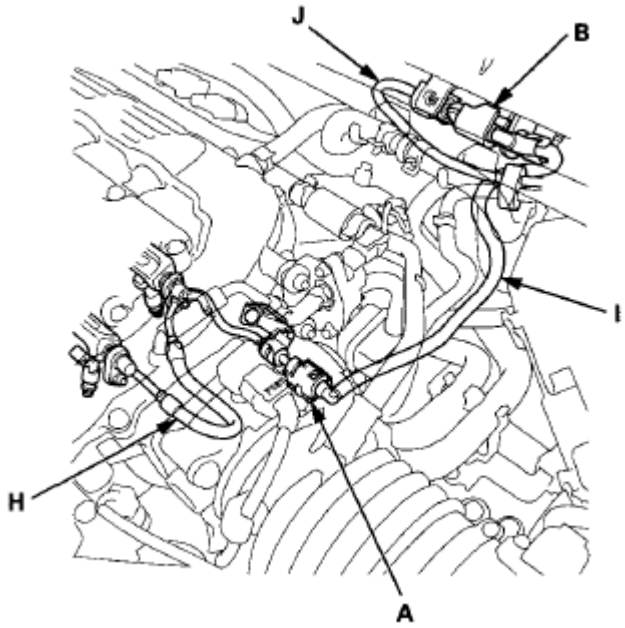


Fig. 58: Identifying Fuel Line/Quick-Connect Fitting - With SH-AWD (1 Of 3)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

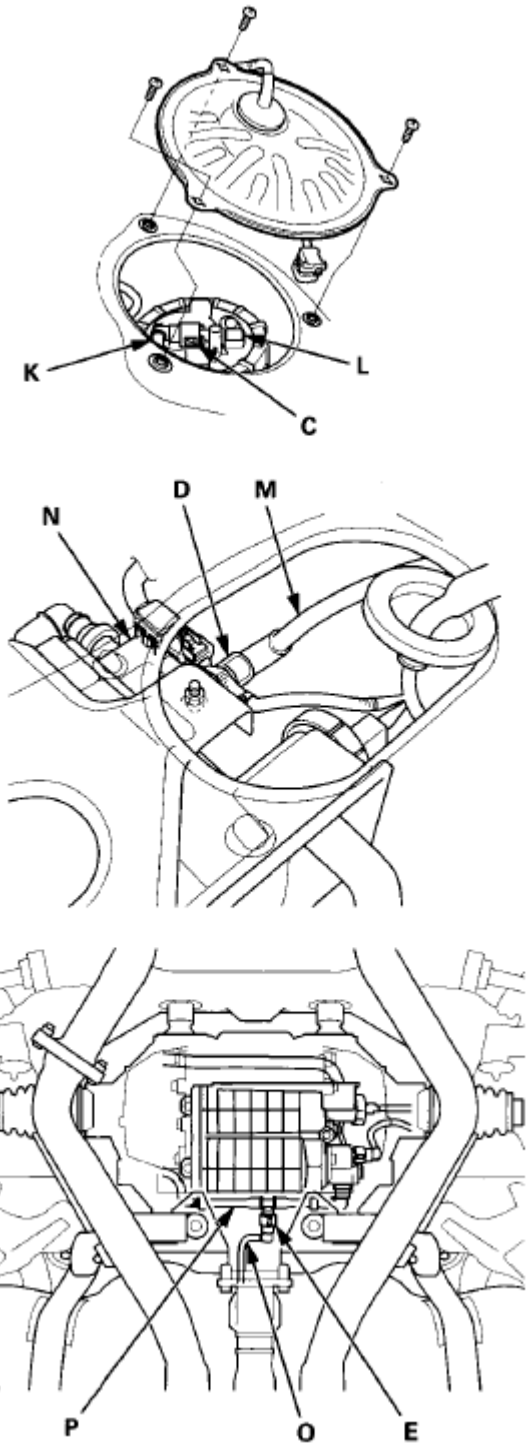


Fig. 59: Identifying Fuel Line/Quick-Connect Fitting - With SH-AWD (2 Of 3)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

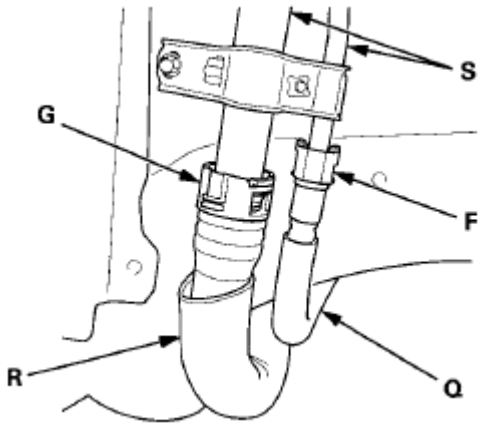


Fig. 60: Identifying Fuel Line/Quick-Connect Fitting - With SH-AWD (3 Of 3)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

A disconnected quick-connect fitting can be reconnected, but the retainer on the mating line cannot be reused once it has been removed from the line. Replace the retainer when:

- replacing the fuel rail.
- replacing the fuel line.
- replacing the fuel pump.
- replacing the fuel filter.
- replacing the EVAP canister.
- replacing the fuel fill pipe.
- replacing the fuel tank.
- it has been removed from the line.
- it is damaged.

Use the same manufacturer retainer and the same size when the replacing the retainer.

Location	Manufacturer	Retainer color	Line diameter
A	Tokai	Blue green	0.3 in (8 mm)
B	Tokai	Blue green	0.3 in (8 mm)
C	Tokai	Orange	0.4 in (9.5 mm)
	Sanoh	White	
D	Tokai	Natural	0.5 in (12 mm)
E	Toyoda gosei	White	0.3 in (8 mm)
F	Tokai	Natural	0.5 in (12 mm)
G	Tokai	Green	1.1 in (28.6 mm)

FUEL LINE/QUICK-CONNECT FITTING REMOVAL

WITHOUT SH-AWD

NOTE: Before you work on the fuel lines and fittings, read the Fuel Line/Quick-Connect Fitting Precautions.

1. If equipped, remove the quick-connect fitting cover from the fuel line. Raise the cover (A) from the fuel line (B), and remove it as shown.

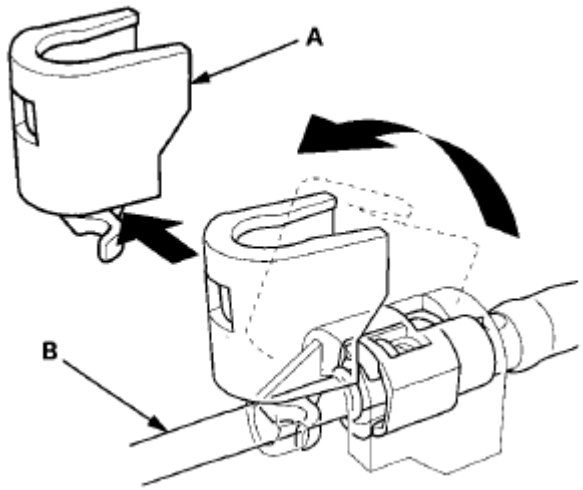


Fig. 61: Removing Quick-Connect Fitting Cover From Fuel Line (Without SH-AWD)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. **Relieve the fuel pressure**.
3. Check the fuel quick-connect fittings (A) for dirt, and clean them if needed.

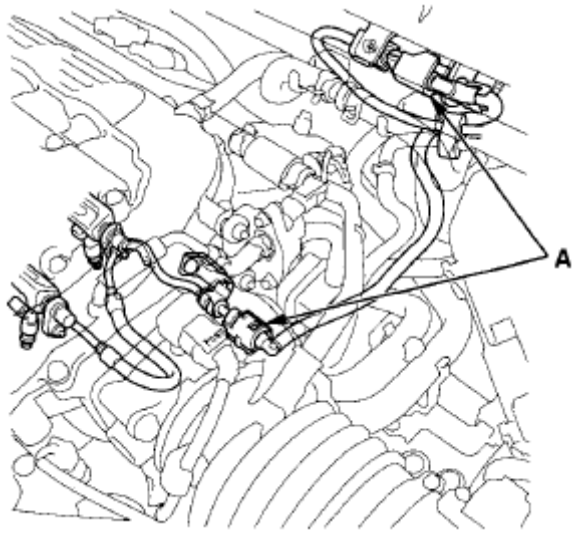


Fig. 62: Identifying Fuel Quick-Connect Fittings - Without SH-AWD (1 Of 2)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

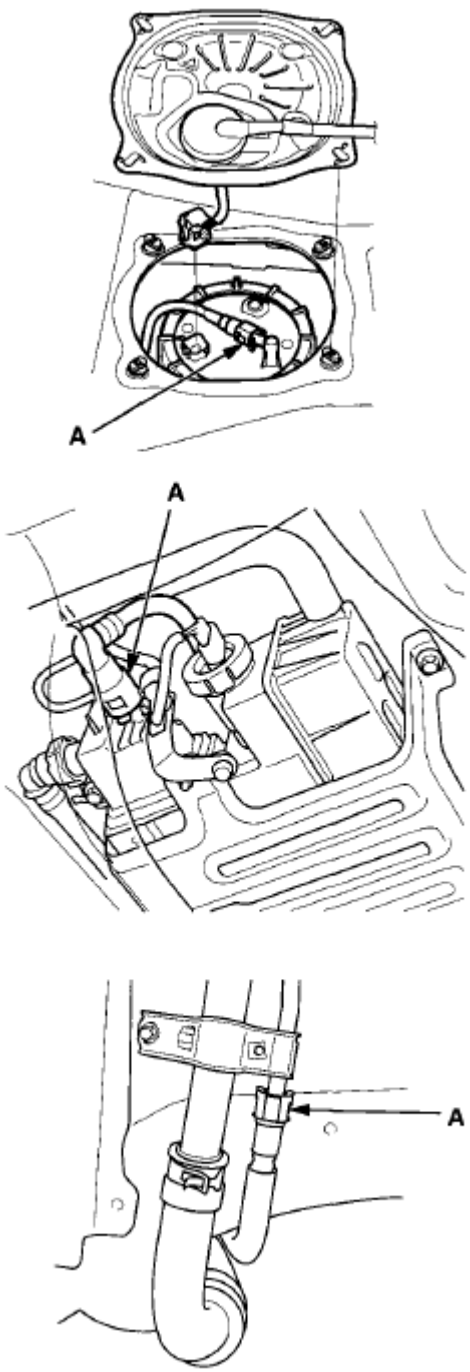


Fig. 63: Identifying Fuel Quick-Connect Fittings - Without SH-AWD (2 Of 2)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Place a rag or a shop towel over the quick-connect fitting. Hold the connector (A) with one hand, and squeeze the retainer tabs (B) with the other hand to release them from the locking tabs (C). Pull the connector off.

NOTE:

- **Be careful not to damage the line (D) or other parts. Do not use tools.**

- **If the connector does not move, keep the retainer tabs pressed down, and alternately pull and push the connector until it comes off easily.**
- **Do not remove the retainer from the line; once removed, the retainer must be replaced with a new one.**

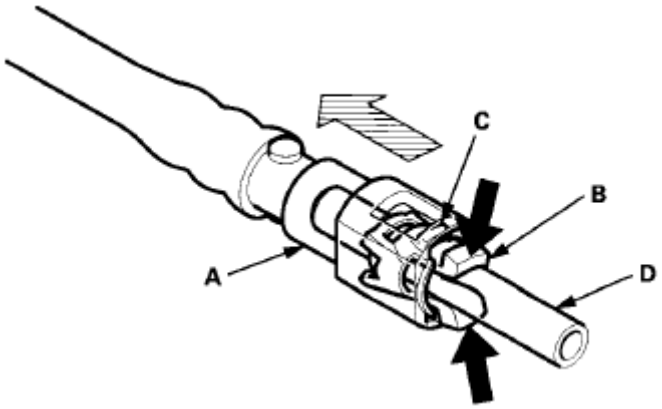


Fig. 64: Disconnecting Connector From Locking Tabs (Without SH-AWD)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Check the contact area (A) of the line (B) for dirt or damage.
   - If it is dirty, clean the connector, and dry it with the compressed air.
   - If it is damaged, replace the fuel filter or the fuel feed line.

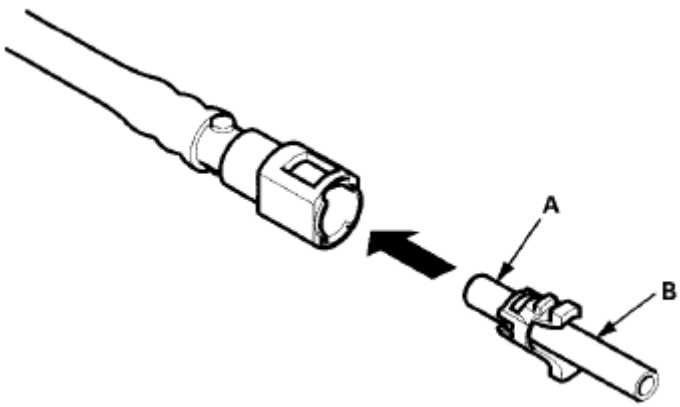


Fig. 65: Checking Contact Area Of Line For Dirt Or Damage (Without SH-AWD)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. To prevent damage and keep foreign matter out, cover the disconnected connector and line ends with plastic bags (A).

NOTE: The retainer cannot be reused once it has been removed from the line.

Replace the retainer when:

- replacing the fuel rail.
- replacing the fuel line.
- replacing the fuel pump.
- replacing the fuel filter.
- replacing the EVAP canister.
- replacing the fuel fill pipe.
- replacing the fuel tank.
- it has been removed from the line.
- it is damaged.

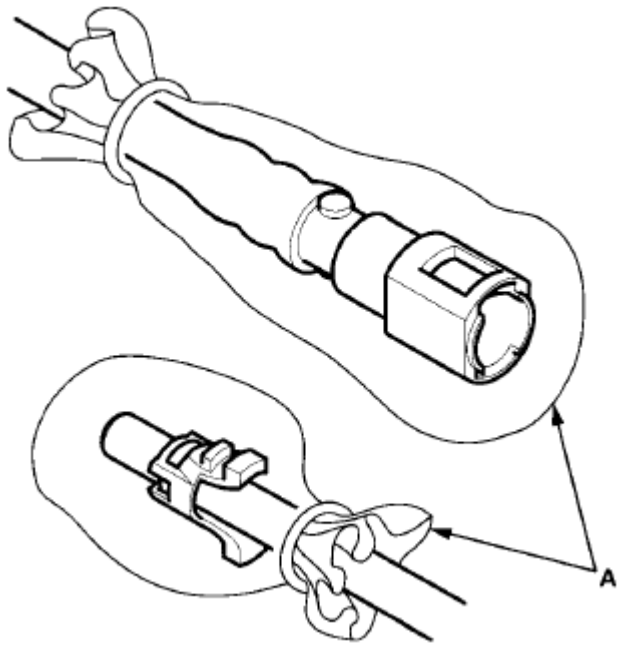


Fig. 66: Covering Connector And Line Ends Using Plastic Bags (Without SH-AWD)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

WITH SH-AWD

NOTE: Before you work on the fuel lines and fittings, read the Fuel Line/Quick-Connect Fitting Precautions.

1. If equipped, remove the quick-connect fitting cover from the fuel line. Raise the cover (A) from the fuel line (B), and remove it as shown.

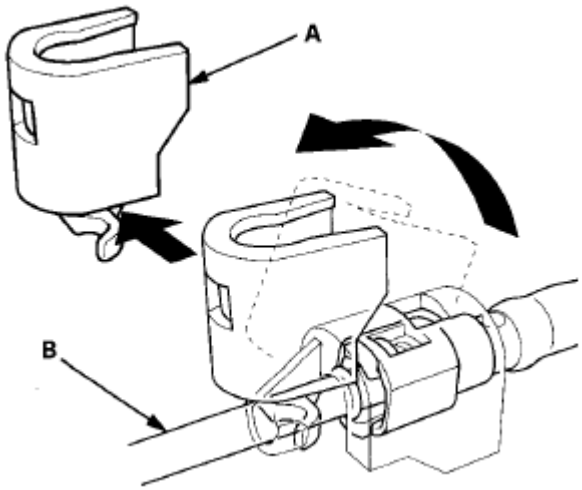


Fig. 67: Removing Quick-Connect Fitting Cover From Fuel Line (With SH-AWD)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. **Relieve the fuel pressure**.
3. Check the fuel quick-connect fittings (A) for dirt, and clean them if needed.

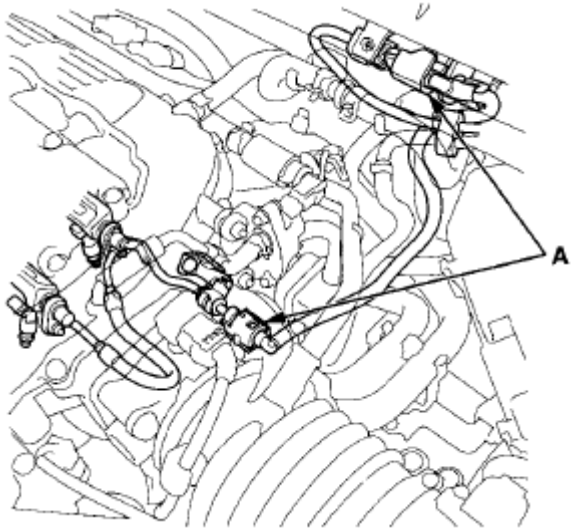


Fig. 68: Identifying Fuel Quick-Connect Fittings - With SH-AWD (1 Of 3)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

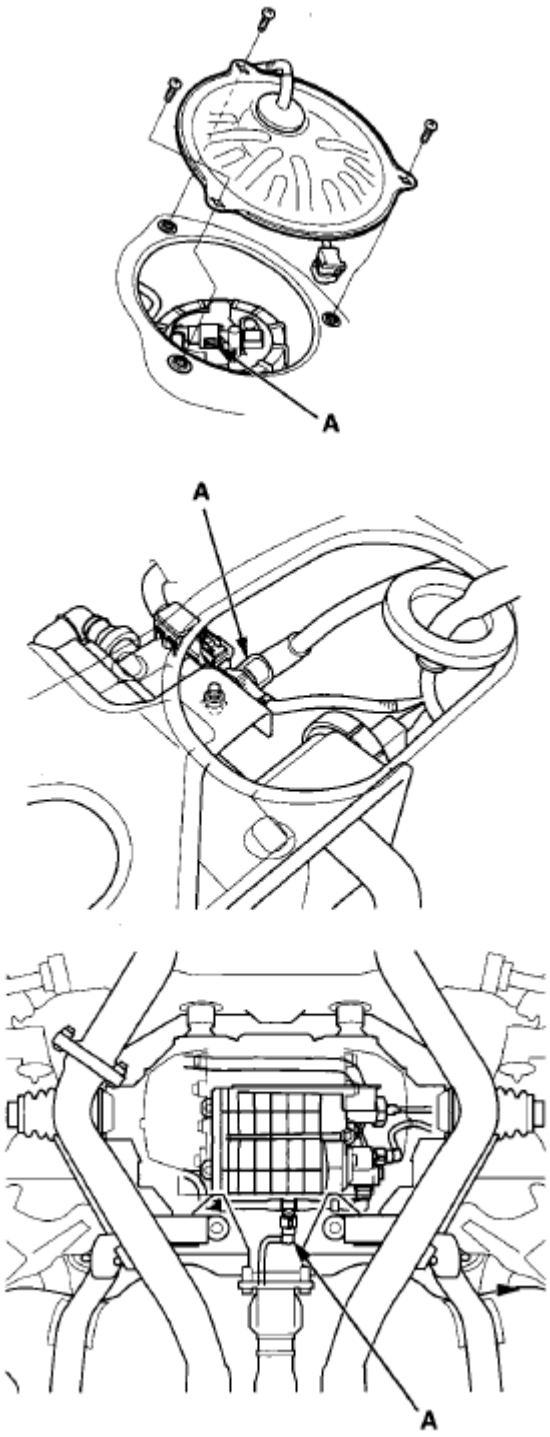


Fig. 69: Identifying Fuel Quick-Connect Fittings - With SH-AWD (2 Of 3)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

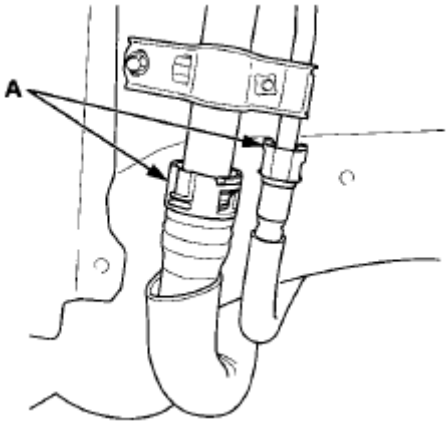


Fig. 70: Identifying Fuel Quick-Connect Fittings - With SH-AWD (3 Of 3)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Place a rag or a shop towel over the quick-connect fitting. Hold the connector (A) with one hand, and squeeze the retainer tabs (B) with the other hand to release them from the locking tabs (C). Pull the connector off.

NOTE:

- **Be careful not to damage the line (D) or other parts. Do not use tools.**
- **If the connector does not move, keep the retainer tabs pressed down, and alternately pull and push the connector until it comes off easily.**
- **Do not remove the retainer from the line; once removed, the retainer must be replaced with a new one.**

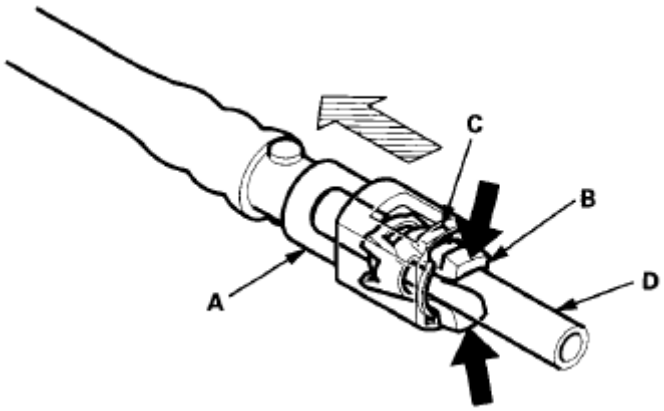


Fig. 71: Disconnecting Connector From Locking Tabs (With SH-AWD)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Check the contact area (A) of the line (B) for dirt or damage.
   - If it is dirty, clean the connector, and dry it with the compressed air.
   - If it is damaged, replace the fuel filter or the fuel feed line.

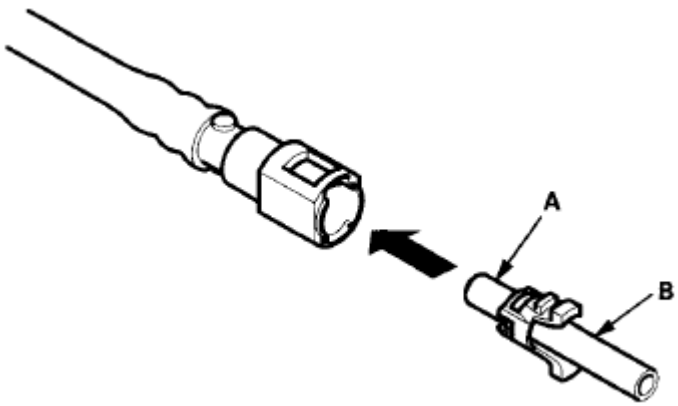


Fig. 72: Checking Contact Area Of Line For Dirt Or Damage (With SH-AWD)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. To prevent damage and keep foreign matter out, cover the disconnected connector and line ends with plastic bags (A).

NOTE: The retainer cannot be reused once it has been removed from the line.

Replace the retainer when:

- replacing the fuel rail.
- replacing the fuel line.
- replacing the fuel pump.
- replacing the fuel filter.
- replacing the EVAP canister.
- replacing the fuel fill pipe.
- replacing the fuel tank.
- it has been removed from the line.
- it is damaged.

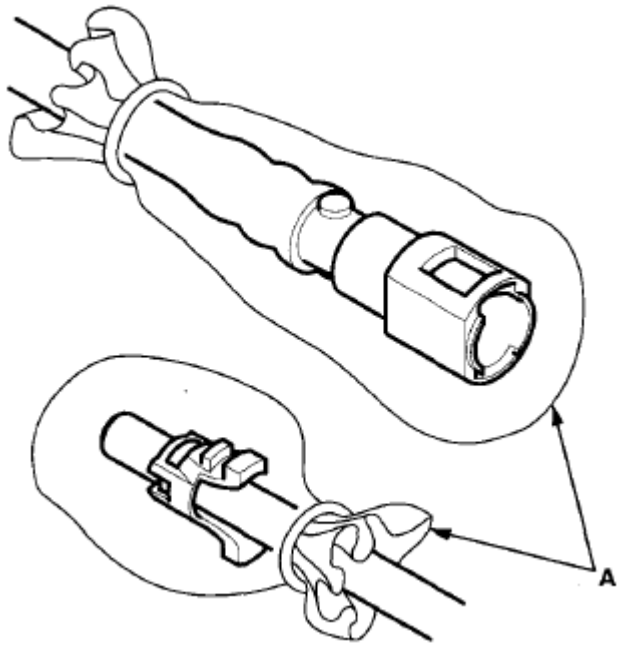


Fig. 73: Covering Connector And Line Ends Using Plastic Bags (With SH-AWD)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

FUEL LINE/QUICK-CONNECT FITTING INSTALLATION

WITHOUT SH-AWD

NOTE: Before you work on the fuel lines and fittings, read the Fuel Line/Quick-Connect Fitting Precautions.

1. Check the contact area (A) of the line (B) for dirt or damage, and clean it if needed.

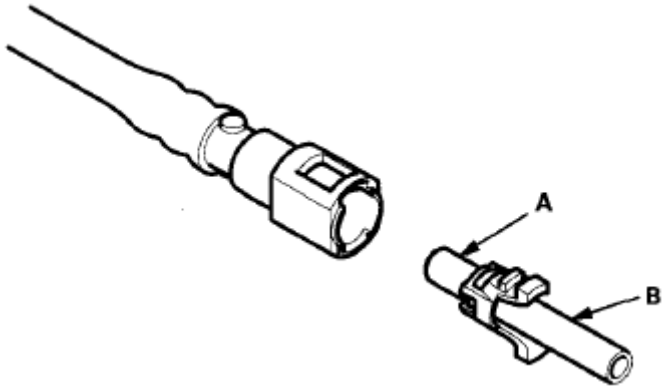


Fig. 74: Identifying Contact Area And Line For Dirt Or Damage (Without SH-AWD)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Insert a new retainer (A) into the connector (B) if the retainer is damaged, or after:

- replacing the fuel rail.
- replacing the fuel line.
- replacing the fuel pump.
- replacing the fuel filter.
- replacing the EVAP canister.
- replacing the fuel fill pipe.
- replacing the fuel tank.
- removing the retainer from the line.

Use the same manufacturer retainer and the **same size when the replacing the retainer**.

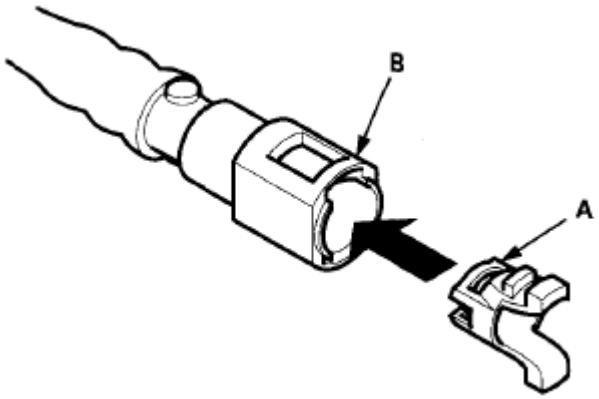


Fig. 75: Inserting Retainer Into Connector (Without SH-AWD)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Before connecting a new fuel line/quick-connect fitting assembly (A), remove the old retainer (B) from the mating line.

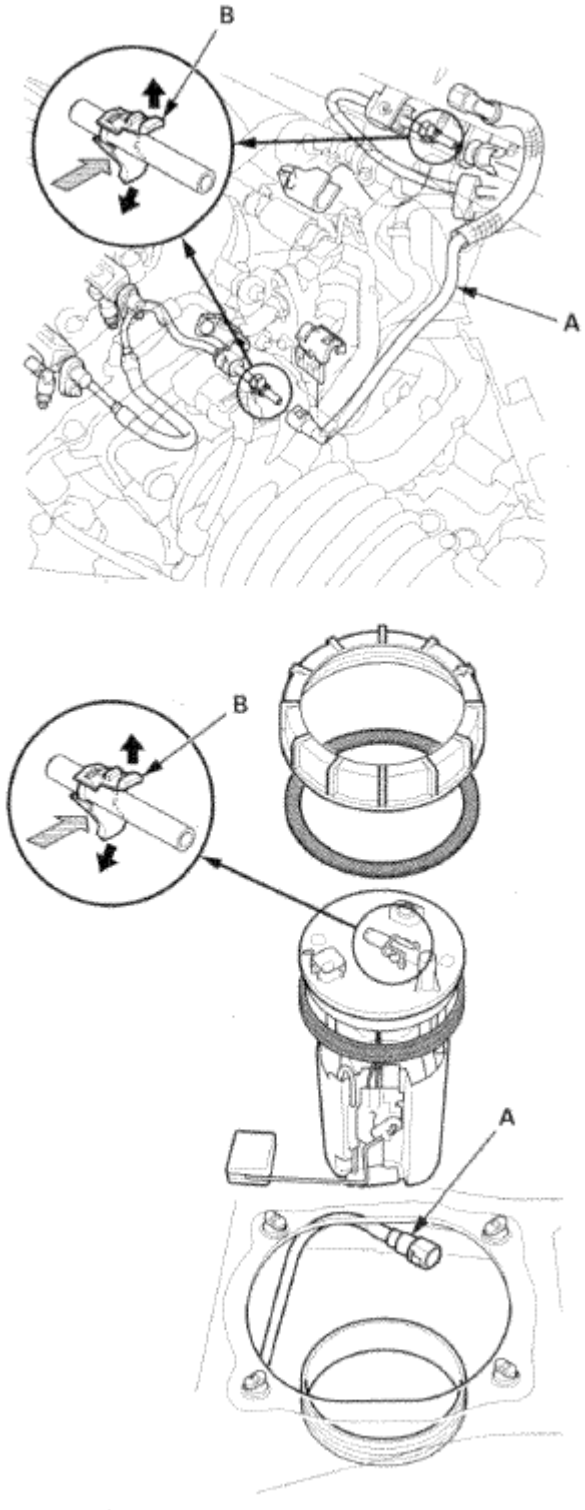


Fig. 76: Removing Retainer From Mating Line (Without SH-AWD)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

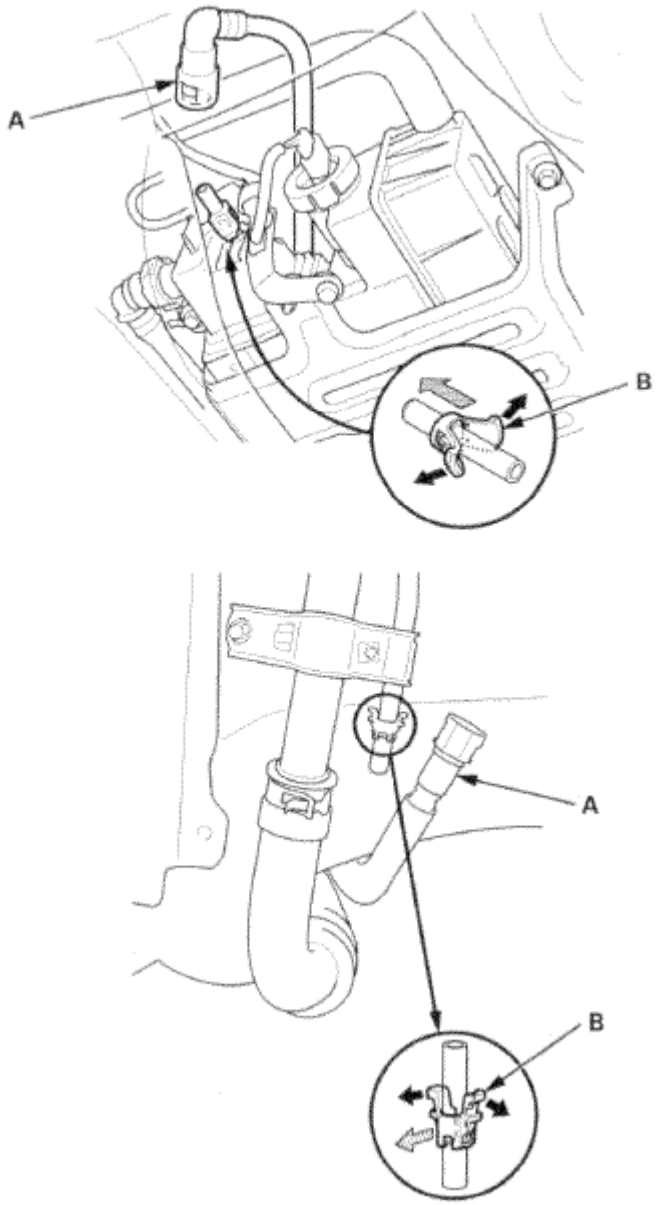


Fig. 77: Connecting Retainer To Connect Fuel Line/Quick-Connect Fitting Assembly (Without SH-AWD)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Align the quick-connect fittings with the line (A), and align the retainer locking tabs (B) with the connector grooves (C). Then press the quick-connect fittings onto the line until both retainer tabs lock with a clicking sound.

NOTE: If it is hard to connect, put a small amount of new engine oil on the line end.

Connection with new retainer

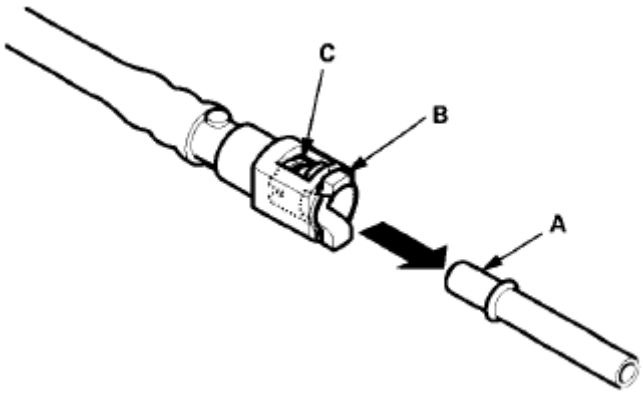


Fig. 78: Installing Fuel Line/Quick-Connect Fitting (Connection With Retainer)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Connection to new fuel line

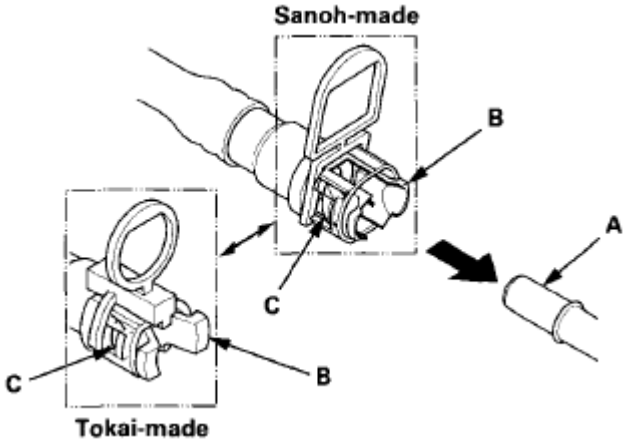


Fig. 79: Installing Fuel Line/Quick-Connect Fitting (Connecting To Fuel Line)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Reconnection to existing retainer

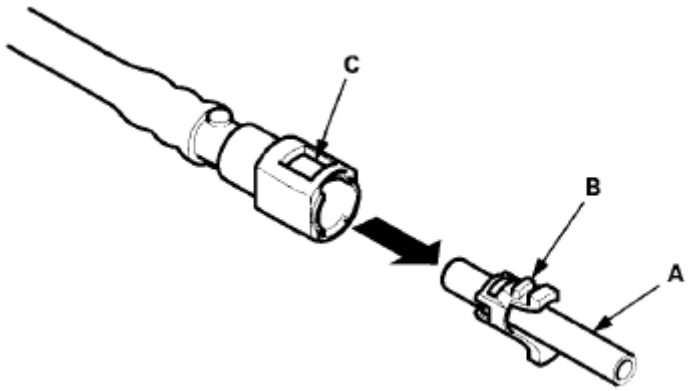


Fig. 80: Installing Fuel Line/Quick-Connect Fitting (Reconnecting To Retainer)

Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. When you reconnect the connector with the old retainer, make sure the connection is secure and the tabs (A) are firmly locked into place; check visually and also by pulling the connector (B). When you replace the fuel line with a new one, make sure you remove the ring pull (C) upwards after you confirm the connection is secure.

NOTE: Before you remove the ring pull, make sure the fuel line connection is secure. If the connection is not secure, the ring pull could break when you try to remove it.

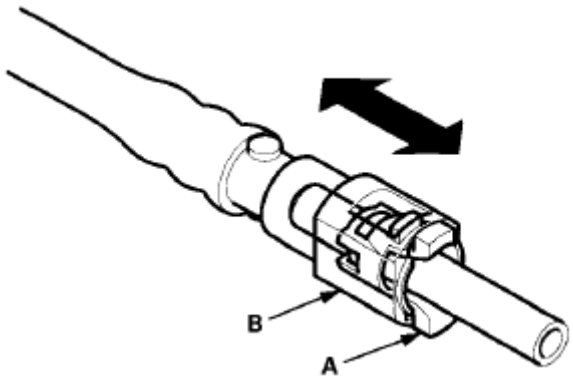


Fig. 81: Installing Fuel Line/Quick-Connect Fitting (Connection With Retainer)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Connection to new fuel line

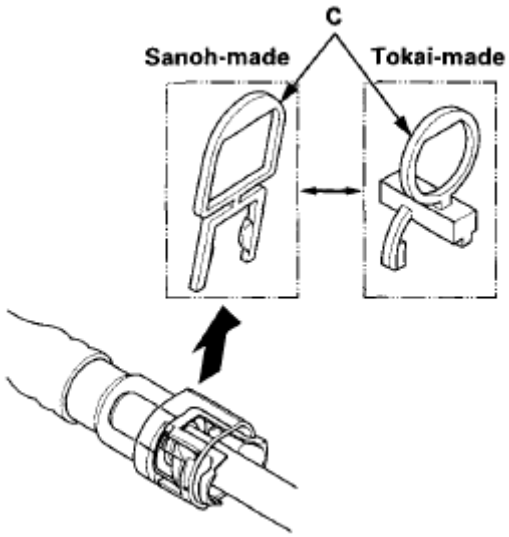


Fig. 82: Installing Fuel Line/Quick-Connect Fitting (Connection To Fuel Line)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Reconnect the negative cable to the battery, and turn the ignition switch to ON (II), or press the engine

start/stop button to select the ON mode (but do not operate the starter motor). The fuel pump runs for about 2 seconds, and fuel pressure rises. Repeat this two or three times, then make sure there are no fuel leaks.

7. If equipped, install the quick-connect fitting cover. Set the groove of the cover (A) on the fuel line (B) as shown, then install it. Make sure the cover is firmly locked in place.

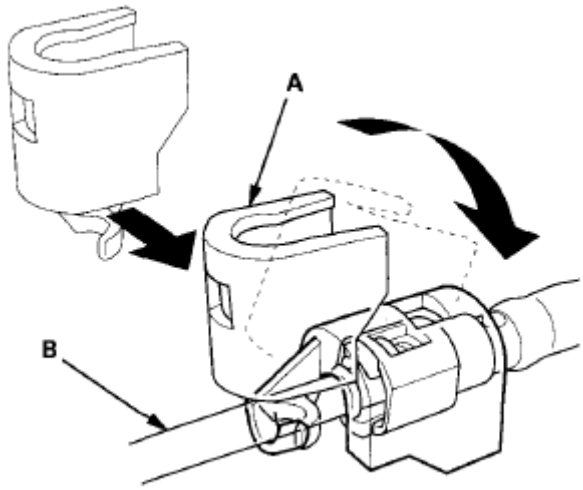


Fig. 83: Installing Quick-Connect Fitting Cover
Courtesy of AMERICAN HONDA MOTOR CO., INC.

WITH SH-AWD

NOTE: Before you work on the fuel lines and fittings, read the Fuel Line/Quick-Connect Fitting Precautions.

1. Check the contact area (A) of the line (B) for dirt or damage, and clean it if needed.

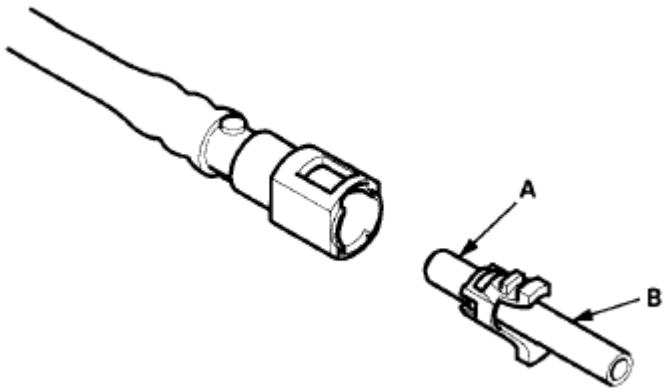


Fig. 84: Identifying Contact Area And Line (With SH-AWD)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Insert a new retainer (A) into the connector (B) if the retainer is damaged, or after:

- replacing the fuel rail.
- replacing the fuel line.
- replacing the fuel pump.
- replacing the fuel filter.
- replacing the EVAP canister.
- replacing the fuel fill pipe.
- replacing the fuel tank.
- removing the retainer from the line.

Use the same manufacturer retainer and the same size when the **replacing the retainer**.

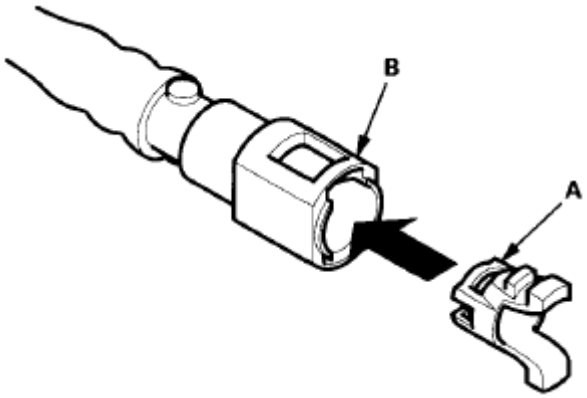


Fig. 85: Inserting Retainer Into Connector (With SH-AWD)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Before connecting a new fuel line/quick-connect fitting assembly (A), remove the old retainer (B) from the mating line.

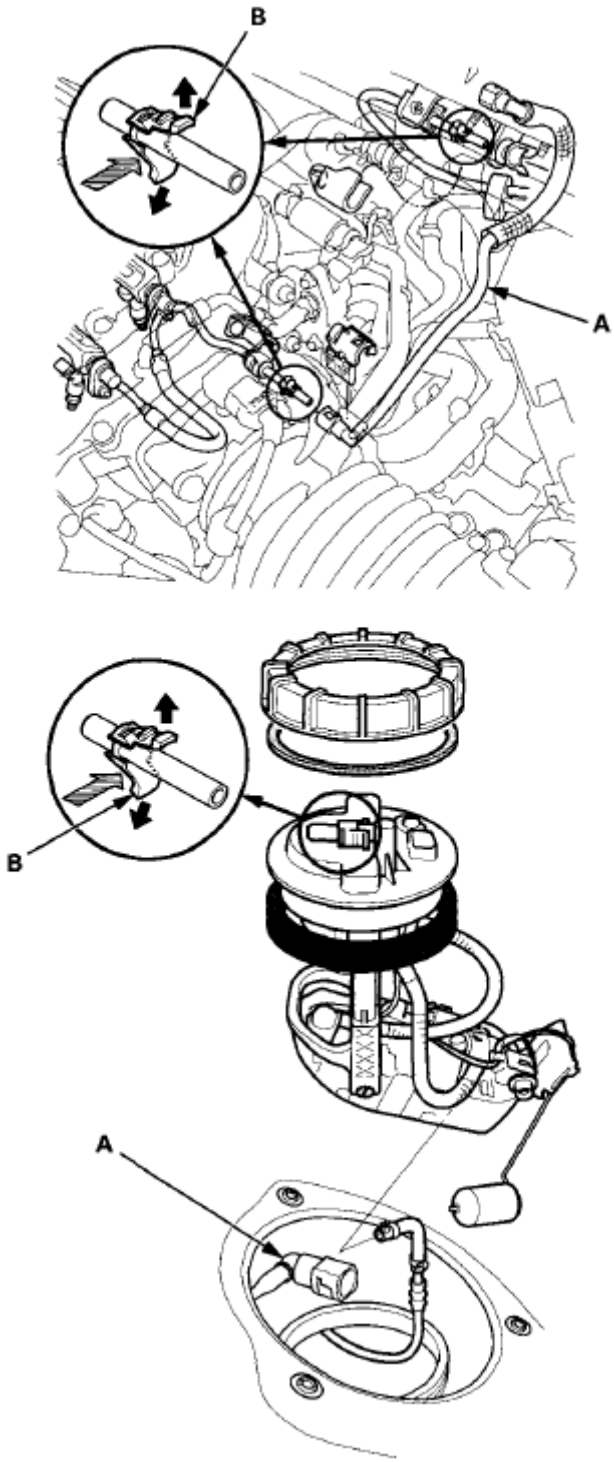


Fig. 86: Removing Retainer From Mating Line (With SH-AWD)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

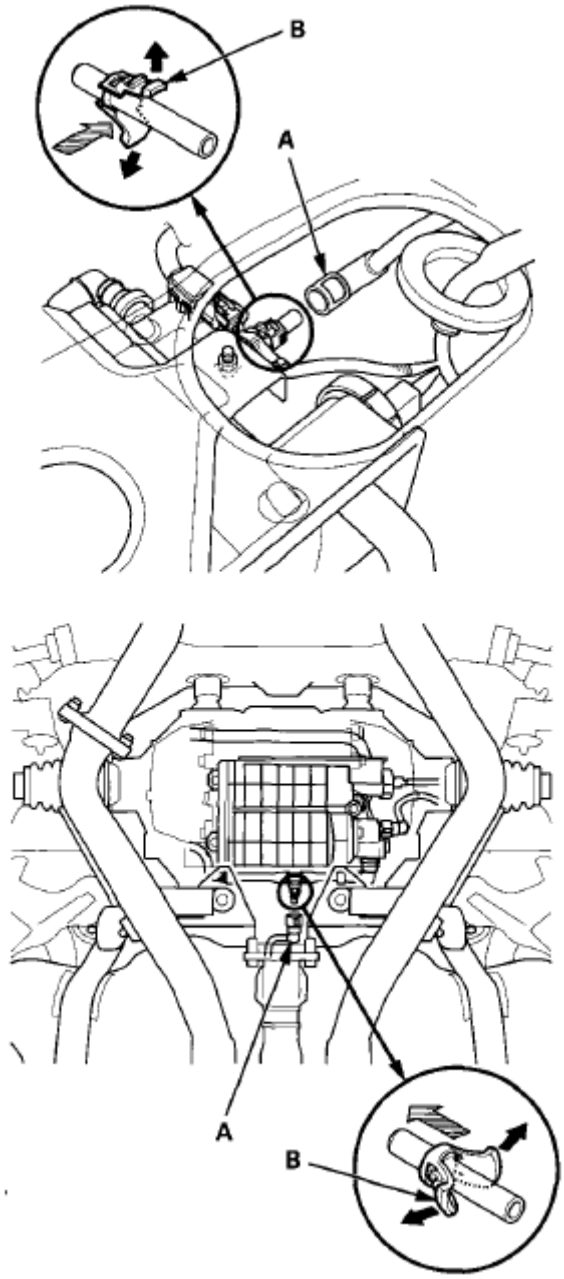


Fig. 87: Connecting Fuel Line/Quick-Connect Fitting Assembly - With SH-AWD (1 Of 2)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

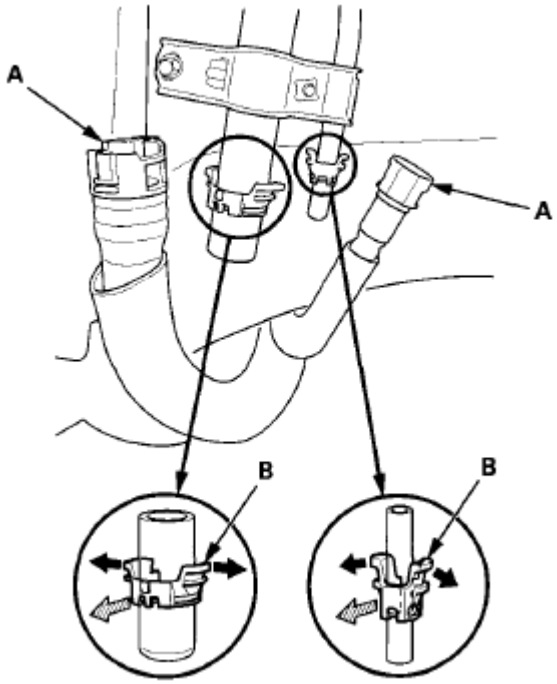


Fig. 88: Connecting Fuel Line/Quick-Connect Fitting Assembly - With SH-AWD (2 Of 2)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Align the quick-connect fittings with the line (A), and align the retainer locking tabs (B) with the connector grooves (C). Then press the quick-connect fittings onto the line until both retainer tabs lock with a clicking sound.

NOTE: If it is hard to connect, put a small amount of new engine oil on the line end.

Connection with new retainer

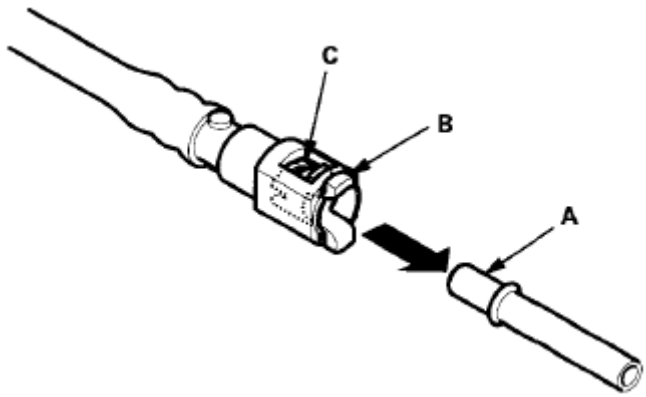


Fig. 89: Installing Fuel Line/Quick-Connect Fitting (Connection With Retainer)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Connection with new retainer: Fuel fill neck tube

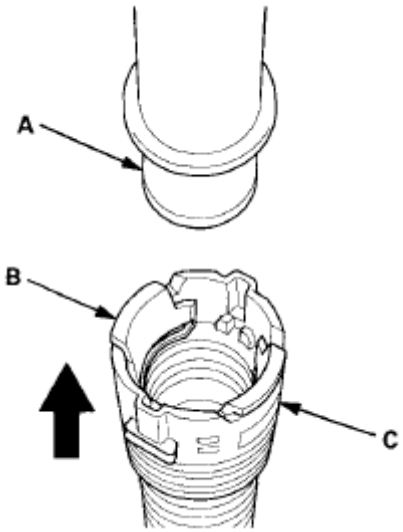


Fig. 90: Installing Fuel Line/Quick-Connect Fitting (Fuel Fill Neck Tube)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Connection to new fuel line

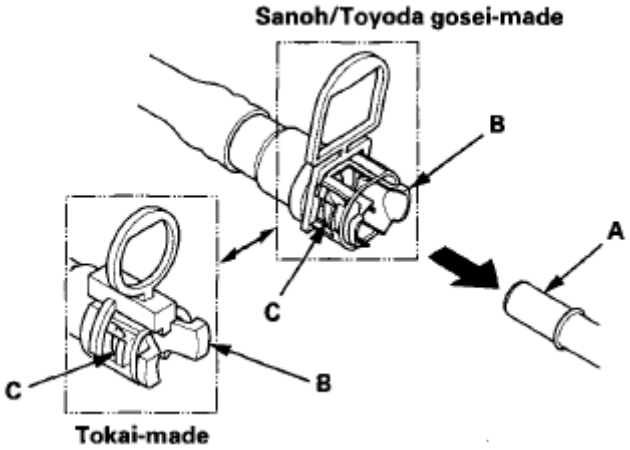


Fig. 91: Installing Fuel Line/Quick-Connect Fitting (Connection To Fuel Line)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Connection to new fuel line: Fuel fill neck tube

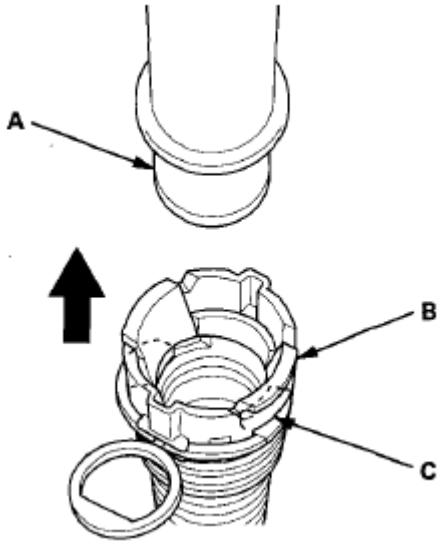


Fig. 92: Installing Fuel Line/Quick-Connect Fitting (Fuel Fill Neck Tube)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Reconnection to existing retainer

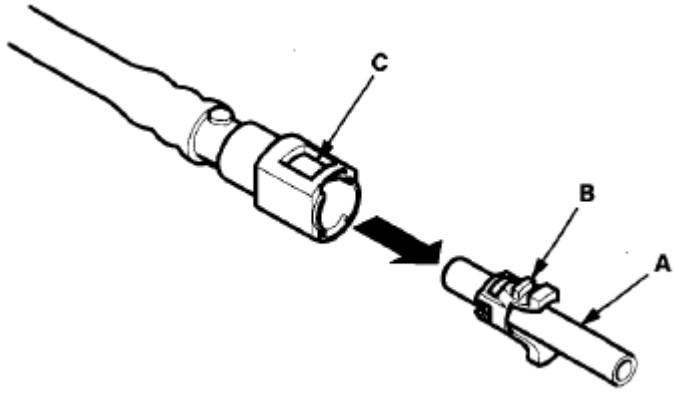


Fig. 93: Installing Fuel Line/Quick-Connect Fitting (Connecting To Retainer)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Reconnection to existing retainer: Fuel fill neck tube

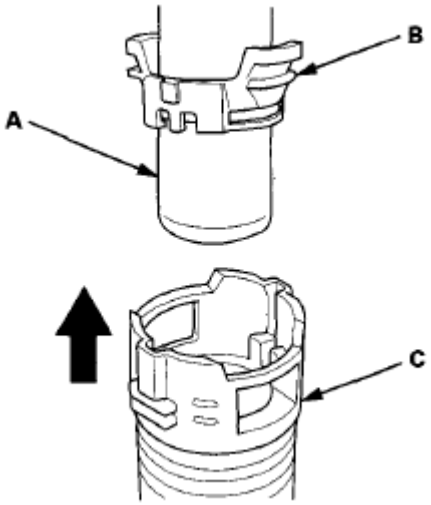


Fig. 94: Installing Fuel Line/Quick-Connect Fitting (Fuel Fill Neck Tube)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. When you reconnect the connector with the old retainer, make sure the connection is secure and the tabs (A) are firmly locked into place; check visually and also by pulling the connector (B). When you replace the fuel line with a new one, make sure you remove the ring pull (C) upwards after you confirm the connection is secure.

NOTE: Before you remove the ring pull, make sure the fuel line connection is secure. If the connection is not secure, the ring pull could break when you try to remove it.

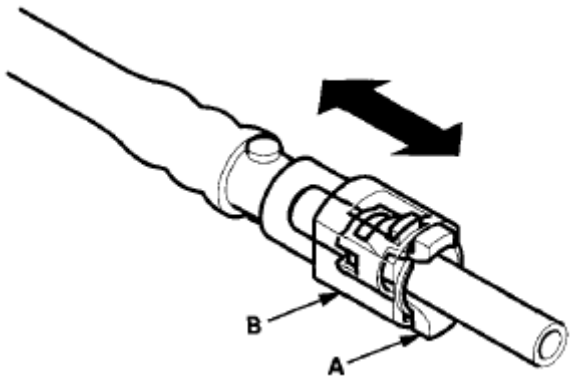


Fig. 95: Connecting Connector With Retainer
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Connection to new fuel line

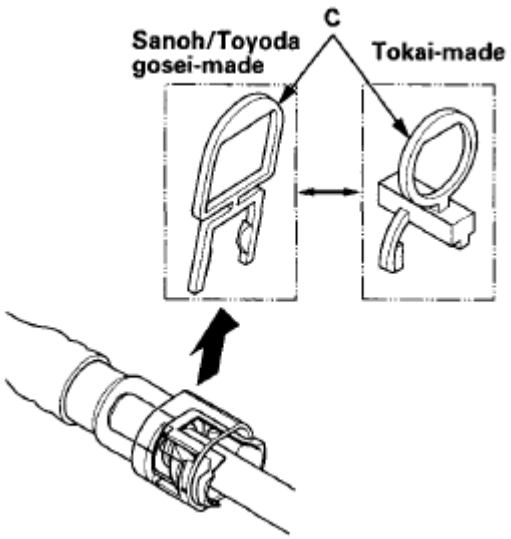


Fig. 96: Connecting To Fuel Line
Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Reconnect the negative cable to the battery, and turn the ignition switch to ON (II) or press the engine start/stop button to select the ON mode (but do not operate the starter motor). The fuel pump runs for about 2 seconds, and fuel pressure rises. Repeat this two or three times, then make sure there are no fuel leaks.
7. If equipped, install the quick-connect fitting cover. Set the groove of the cover (A) on the fuel line (B) as shown, then install it. Make sure the cover is firmly locked in place.

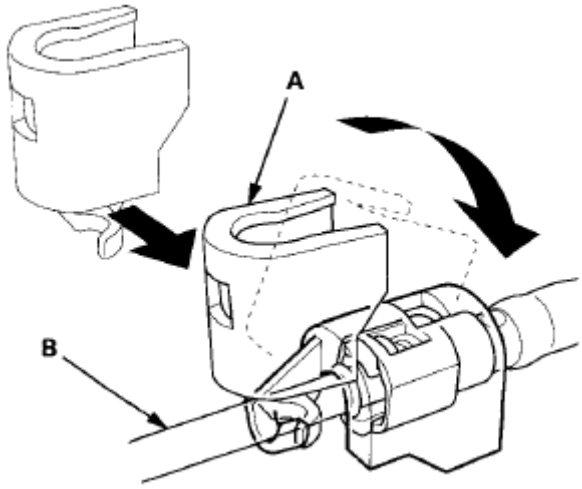


Fig. 97: Installing Quick-Connect Fitting Cover
Courtesy of AMERICAN HONDA MOTOR CO., INC.

FUEL TANK UNIT REMOVAL AND INSTALLATION

Special Tools Required

Fuel Sender Wrench 07AAA-S0XA100

REMOVAL (WITHOUT SH-AWD)

1. **Relieve the fuel pressure**.
2. Remove the rear seat cushion (see **REAR SEAT REMOVAL/INSTALLATION**).
3. Remove the access panel (A) from the floor.

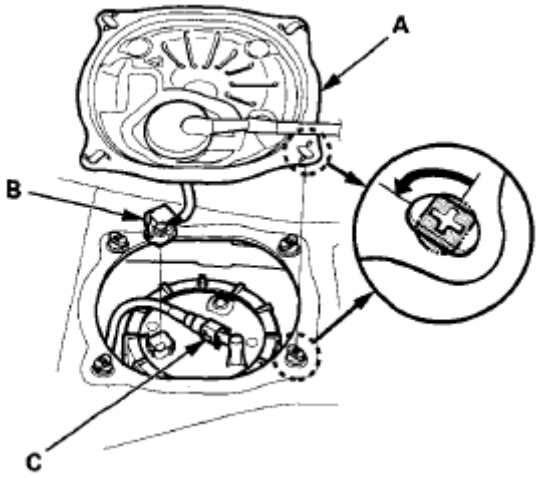


Fig. 98: Removing Access Panel From Floor (Without SH-AWD)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Disconnect the fuel tank unit 4P connector (B).
5. Disconnect the quick-connect fitting (C) from the fuel tank unit.
6. Using the special tool, loosen the locknut (A).

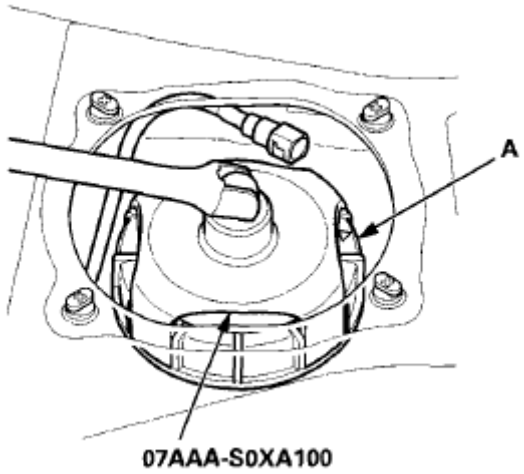


Fig. 99: Loosening Locknut Using Special Tool
Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Remove the locknut (A) and the fuel tank unit (B).

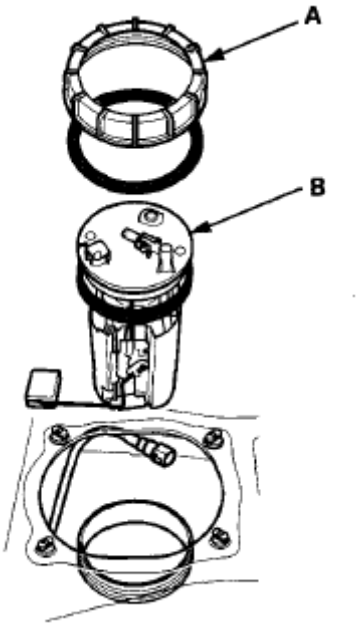


Fig. 100: Identifying Locknut And Fuel Tank Unit
Courtesy of AMERICAN HONDA MOTOR CO., INC.

INSTALLATION (WITHOUT SH-AWD)

1. Temporarily attach a new base gasket (A) to the fuel tank unit (B), then insert the fuel tank unit partially into the fuel tank.

NOTE:

- **Be careful not to damage the new base gasket.**
- **Be careful not to bend the fuel gauge sending unit.**
- **Do not coat the base gasket with oil.**

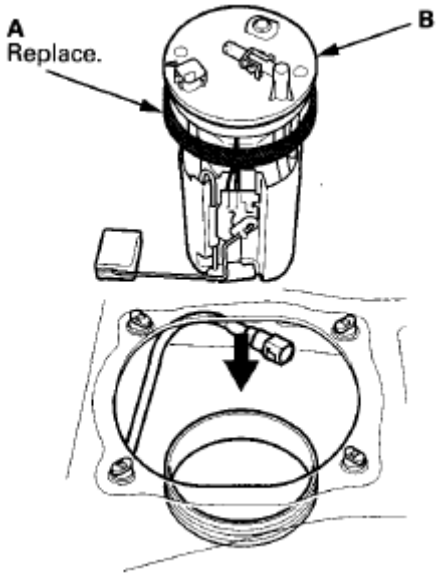


Fig. 101: Inserting Fuel Tank Unit Partially Into Fuel Tank
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Transfer the base gasket (A) from the fuel tank unit to the fuel tank.

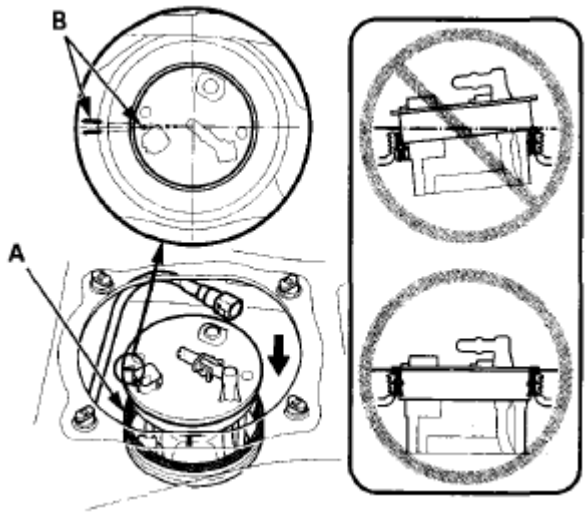


Fig. 102: Identifying Proper And Improper Position For Transferring Base Gasket From Fuel Tank Unit To Fuel Tank
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Align the marks (B) on the fuel tank and fuel tank unit, then insert the fuel tank unit into the fuel tank until the fuel tank unit rests on top of the base gasket.

NOTE: To avoid a fuel leak, check the base gasket, visually or by hand, to make sure it is not pinched.

4. Tighten a new locknut (A) by hand with a new locknut plate (B).

NOTE: Before tightening, align the mark (C) on the locknut with the start of the threads (D).

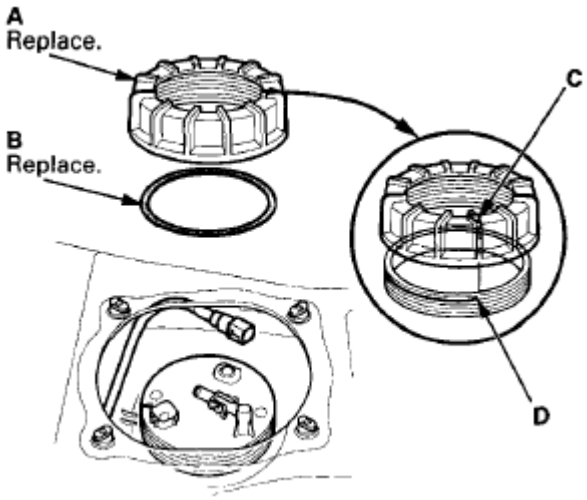


Fig. 103: Identifying Alignment Mark On Locknut And Start Of Threads
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Using the special tool, tighten the locknut to the specified torque.

NOTE:

- **After tightening, make sure the marks (A) are still aligned.**
- **After installation, check the base gasket, visually or by hand, to make sure it is not pinched.**

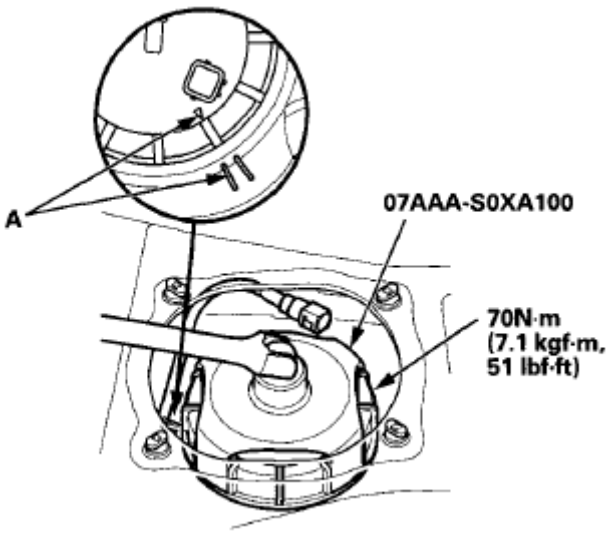


Fig. 104: Tightening Locknut Using Special Tool With Torque Specifications

Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Connect the fuel tank unit 4P connector, then connect the quick-connect fitting.
7. Reconnect the negative cable to the battery, and turn the ignition switch to ON (II) or press the engine start/stop button to select the ON mode (but do not operate the starter motor). The fuel pump runs for about 2 seconds, and fuel pressure rises. Repeat this two or three times, then make sure there are no fuel leaks.
8. Install the access panel.
9. Install the rear seat cushion (see **REAR SEAT REMOVAL/INSTALLATION**).
10. Install the fuel fill cap.

Special Tools Required

Fuel Sender Wrench 07AAA-S0XA100

REMOVAL (WITH SH-AWD)

1. **Relieve the fuel pressure**.
2. Remove the rear seat cushion (see **REAR SEAT REMOVAL/INSTALLATION**).
3. Remove the access panel (A) from the left side of the floor.

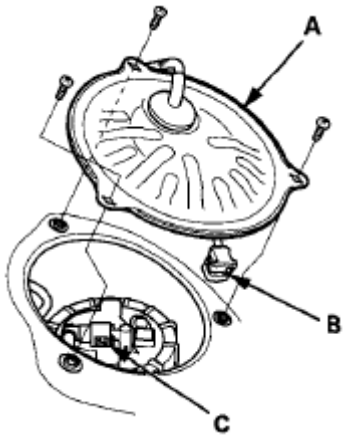


Fig. 105: Identifying Access Panel, Connector And Quick-Connect Fitting
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Disconnect the fuel tank unit 4P connector (B).
5. Disconnect the quick-connect fitting (C) from the fuel tank unit.
6. Using the special tool, loosen the locknut (A).

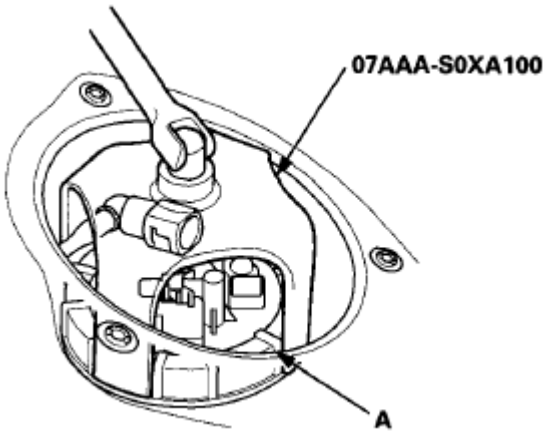


Fig. 106: Loosing Locknut By Using Special Tool
Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Remove the locknut (A), and lift up the fuel tank unit (B).

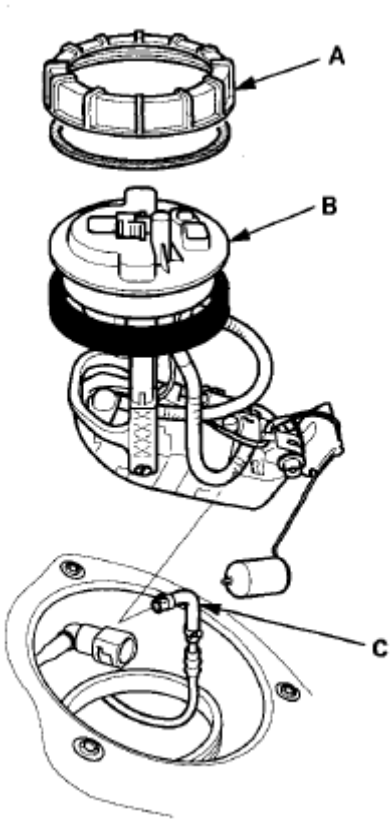


Fig. 107: Identifying Locknut, Fuel Tank Unit And Transfer Tube
Courtesy of AMERICAN HONDA MOTOR CO., INC.

8. Disconnect the transfer tube (C), and remove the fuel tank unit.

INSTALLATION (WITH SH-AWD)

1. Temporarily attach a new base gasket (A) to the fuel tank unit (B), position the mark of the transfer tube (C) up, connect the transfer tube (D), then insert the fuel tank unit partially into the fuel tank.

NOTE:

- **Be careful not to damage the new base gasket.**
- **Make sure the clamp (E) is positioned as shown.**
- **Be careful not to bend the fuel gauge sending unit.**
- **Do not coat the base gasket with oil.**

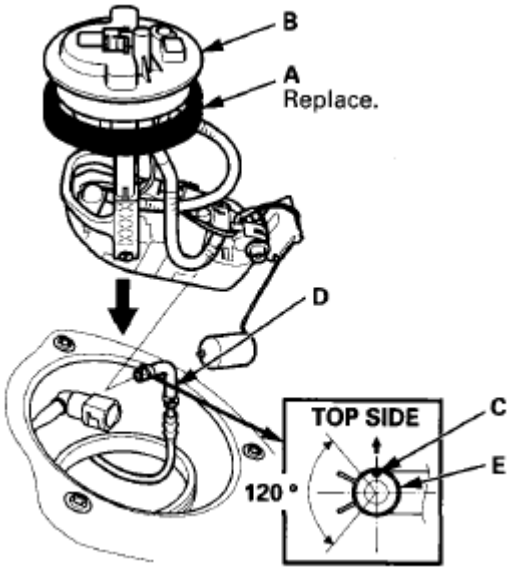


Fig. 108: Inserting Fuel Tank Unit Partially Into Fuel Tank (With SH-AWD)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Transfer the base gasket (A) from the fuel tank unit to the fuel tank.

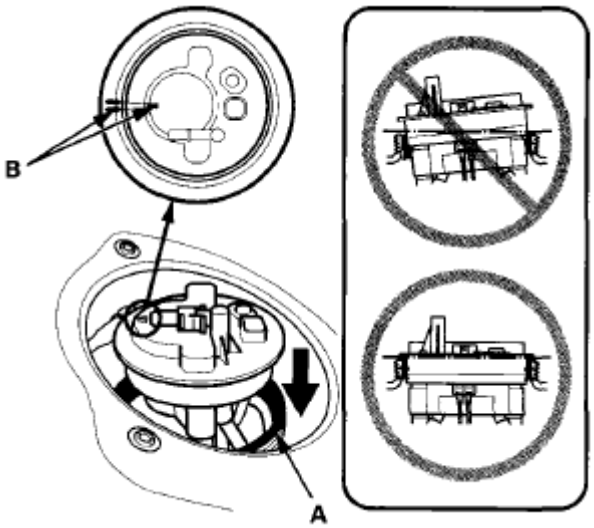


Fig. 109: Identifying Proper And Improper Position For Transferring Base Gasket From Fuel Tank Unit To Fuel Tank With Align Marks
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Align the marks (B) on the fuel tank and the fuel tank unit, then insert it straight into the fuel tank. Make sure it evenly contacts the base gasket.

NOTE: To prevent a fuel leak, check the base gasket, visually or by hand, to make sure it is not pinched.

4. Tighten a new locknut (A) by hand with a new locknut plate (B).

NOTE: Before tightening, align the mark (C) on the locknut with the start of the threads (D).

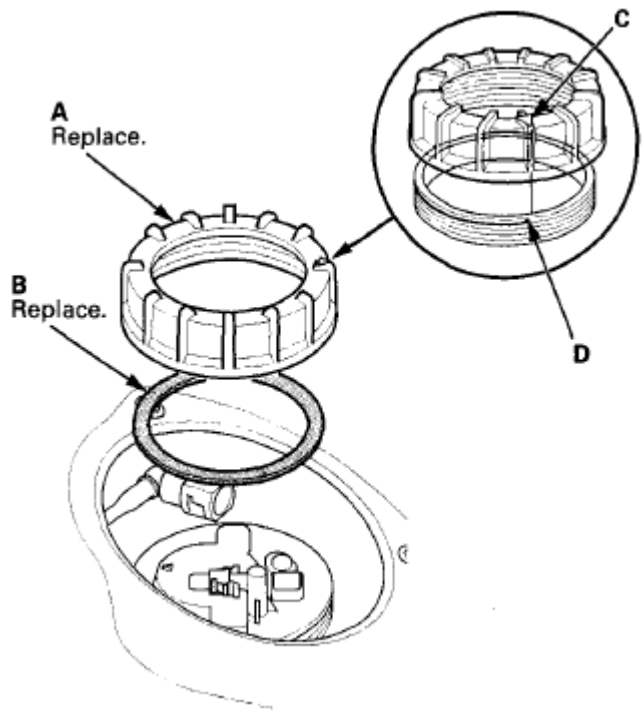


Fig. 110: Identifying Alignment Mark On Locknut And Start Of Threads
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Using the special tool, tighten the locknut to the specified torque.

NOTE:

- **After tightening, make sure the marks (A) are still aligned.**
- **After installation, check the base gasket, visually or by hand, to be sure it is not pinched.**

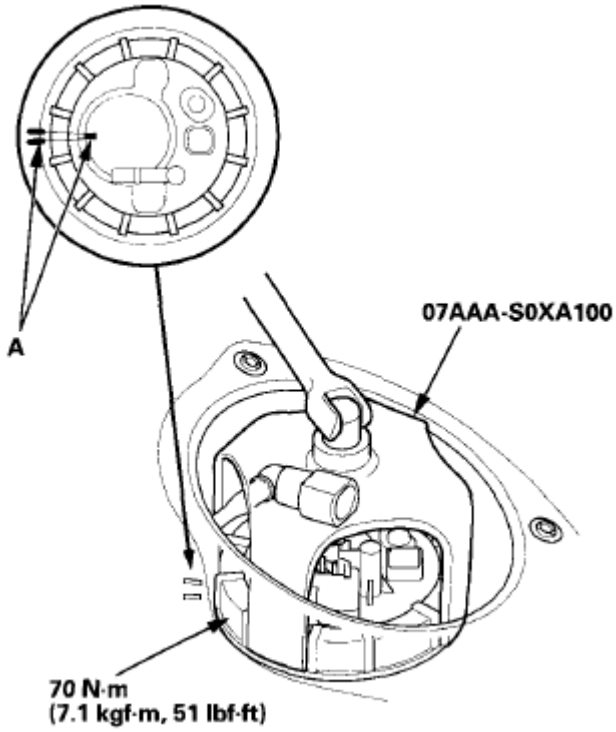


Fig. 111: Tightening Locknut Using Special Tool With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Connect the fuel tank unit 4P connector, then connect the quick-connect fitting.
7. Reconnect the negative cable to the battery, and turn the ignition switch to ON (II) or press the engine start/stop button to select the ON mode (but do not operate the starter motor). The fuel pump runs for about 2 seconds, and fuel pressure rises. Repeat two or three times, then make sure there are no fuel leaks.
8. Install the access panel.
9. Install the rear seat cushion (see **REAR SEAT REMOVAL/INSTALLATION**).
10. Install the fuel fill cap.

FUEL PRESSURE REGULATOR REPLACEMENT

WITHOUT SH-AWD

1. Remove the **fuel tank unit**.
2. Remove the reservoir (A).

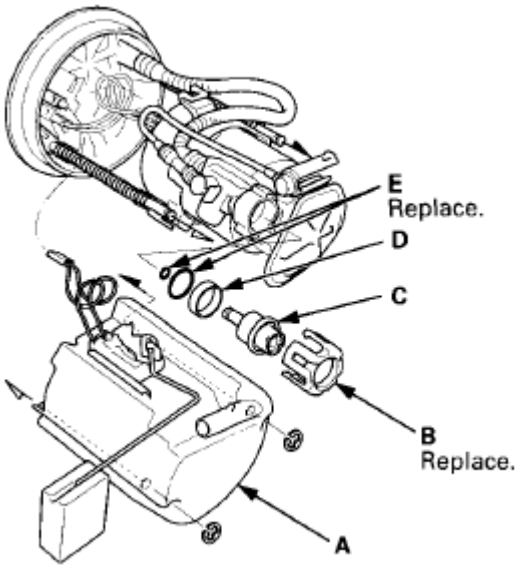


Fig. 112: Identifying Reservoir, Bracket, Pressure Regulator, Backup Ring And O-Rings (Without SH-AWD)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Remove the bracket (B).
4. Remove the fuel pressure regulator (C) and the backup ring (D).
5. Install the parts in the reverse order of removal with new O-rings (E) and a new bracket. When installing the fuel tank unit, align the marks on the **fuel tank unit and the fuel tank**.

NOTE:

- **Coat the O-rings with clean engine oil; do not use any other type oils or fluids.**
- **Do not pinch the O-rings during installation.**
- **Use all the new parts supplied in the pressure regulator replacement kit.**

WITH SH-AWD

1. Remove the **fuel tank unit**.
2. Remove the bracket (A).

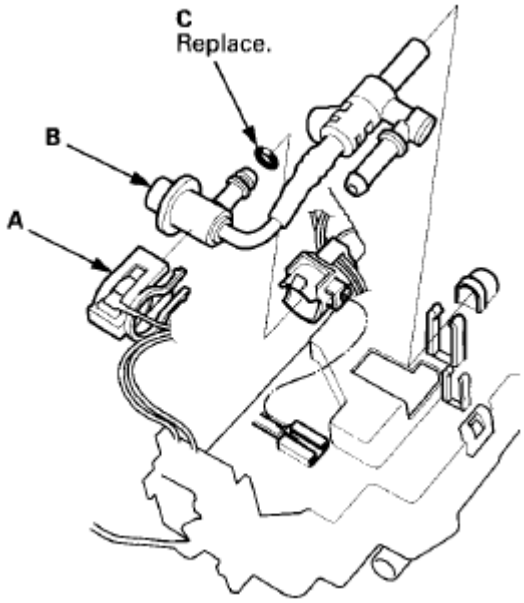


Fig. 113: Identifying Bracket, Pressure Regulator And O-Rings (With SH-AWD)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Remove the pressure regulator (B).
4. Install the parts in the reverse order of removal with new O-ring (C). When installing the fuel tank unit, align the marks on the fuel tank unit and the **fuel tank**.

NOTE:

- **Coat the O-ring with clean engine oil; do not use any other oil or fluid.**
- **Do not pinch the O-ring during installation.**
- **Use all the new parts supplied in the pressure regulator replacement kit.**

FUEL FILTER REPLACEMENT

WITHOUT SH-AWD

The fuel filter should be replaced whenever the fuel pressure drops below the **specified value**, after making sure that the fuel pump and the fuel pressure regulator are OK.

1. Remove the **fuel tank unit**.
2. Remove the fuel filter set (A).

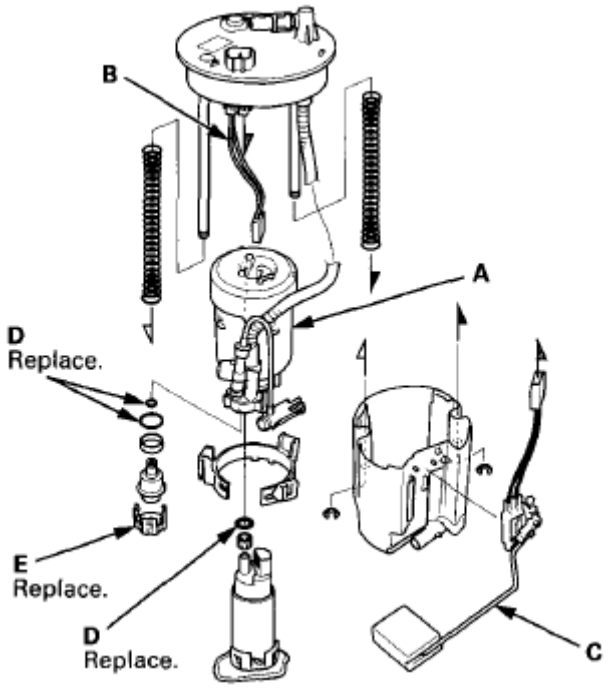


Fig. 114: Identifying Fuel Filter Set, Wire Harness, Fuel Gauge Sending Unit, O-Rings And Bracket (Without SH-AWD)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Check these items before installing the fuel tank unit:
   - When connecting the wire harness (B), make sure the connection is secure and the connectors are firmly locked into place.
   - When installing the fuel gauge sending unit (C), make sure the connection is secure and the connector is firmly locked into place. Be careful not to bend or twist it excessively.
4. Install the parts in the reverse order of removal with new O-rings (D) and a new bracket (E). When installing the fuel tank unit, align the marks on the **unit and the fuel tank**.

NOTE:
- **Coat the O-rings with clean engine oil; do not use any other oil or fluid.**
- **Do not pinch the O-rings during installation.**
- **Use all the new parts supplied in the fuel filter replacement kit.**

WITH SH-AWD

The fuel filter should be replaced whenever the fuel pressure drops below the **specified value**, after making sure that the fuel pump and fuel pressure regulator are OK.

1. Remove the **fuel tank unit**.
2. Remove the fuel filter set (A).

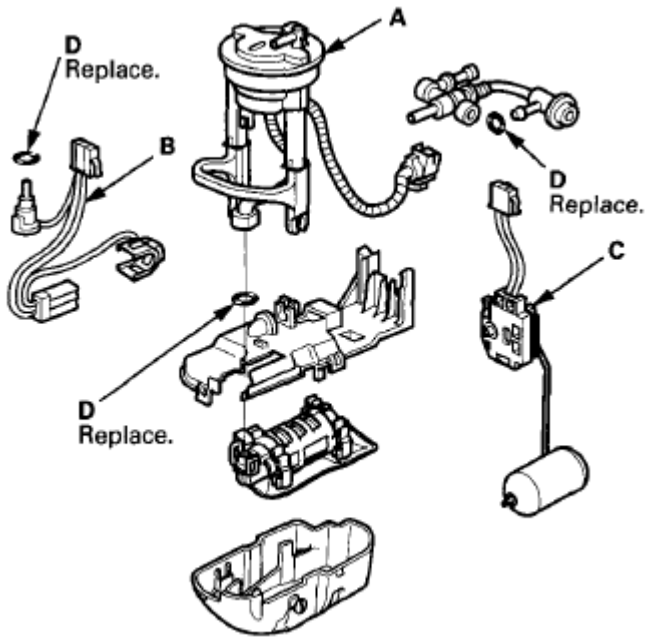


Fig. 115: Identifying Fuel Filter Set, Wire Harness, Fuel Gauge Sending Unit, O-Rings And Bracket (With SH-AWD)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Check these items before installing the fuel tank unit:
   - When connecting the wire harness (B), make sure the connection is secure and the connectors are firmly locked into place.
   - When installing the fuel gauge sending unit (C), make sure the connection is secure and the connector is firmly locked into place. Be careful not to bend or twist it excessively.
4. Install the parts in the reverse order of removal with new O-rings (D). When installing the fuel tank unit, align the marks on the unit and the **fuel tank**.

NOTE:

- **Coat the O-rings with clean engine oil; do not use any other oil or fluid.**
- **Do not pinch the O-rings during installation.**
- **Use all the new parts supplied in the fuel filter replacement kit.**

FUEL PUMP/FUEL GAUGE SENDING UNIT REPLACEMENT

1. Remove the fuel tank unit; **without SH-AWD system**, **with SH-AWD system**.
2. Remove the fuel level sensor (fuel gauge sending unit) (A) from the fuel tank unit (B).

Without SH-AWD

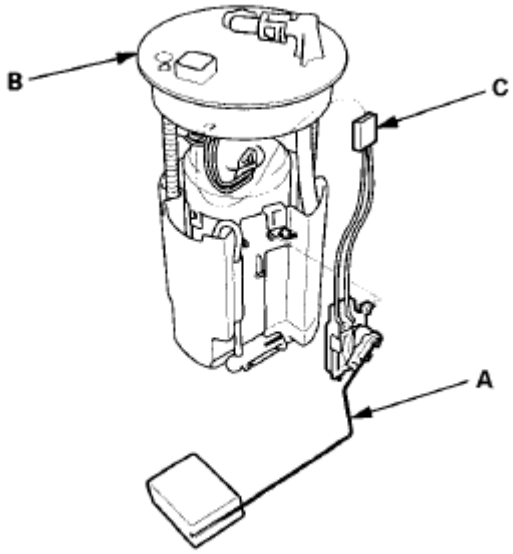


Fig. 116: Identifying Fuel Level Sensor, Fuel Tank Unit And Connector (Without SH-AWD)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

With SH-AWD

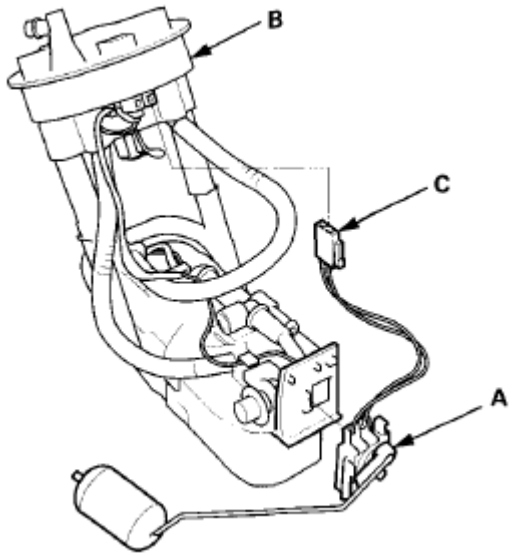


Fig. 117: Identifying Fuel Level Sensor, Fuel Tank Unit And Connector (With SH-AWD)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Check these items before installing the fuel tank unit:
   - When connecting the wire harness, make sure the connection is secure and the connector (C) is firmly locked into place.
   - When installing the fuel gauge sending unit, make sure the connection is secure. Be careful not to bend or twist it excessively.
4. Install the parts in the reverse order of removal. When installing the fuel tank unit, align the marks on the

unit and the fuel tank; **without SH-AWD system**, or **with SH-AWD system**.

SECONDARY FUEL GAUGE SENDING UNIT REMOVAL/INSTALLATION

Special Tools Required

Fuel Sender Wrench 07AAA-S0XA100

REMOVAL (WITH SH-AWD)

1. **Relieve the fuel pressure**.
2. Remove the rear seat cushion (see **REAR SEAT REMOVAL/INSTALLATION**).
3. Remove the access panel (A) from the right side of the floor.

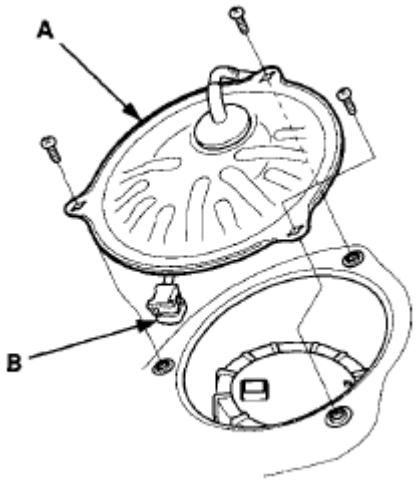


Fig. 118: Identifying Access Panel And Fuel Gauge Sending Unit 4P Connector (With SH-AWD)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Disconnect the secondary fuel gauge sending unit 4P connector (B).
5. Using the special tool, loosen the locknut (A).

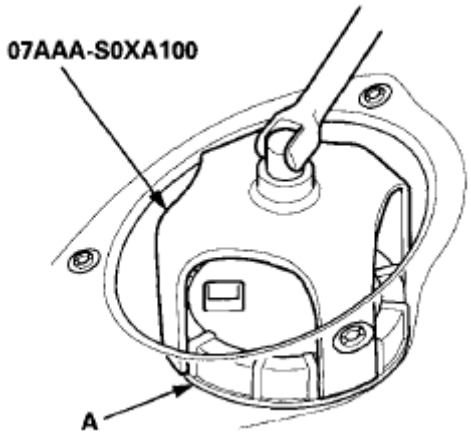


Fig. 119: Loosening Locknut Using Special Tool
Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Remove the locknut (A), and lift up the secondary fuel gauge sending unit (B) from the fuel tank.

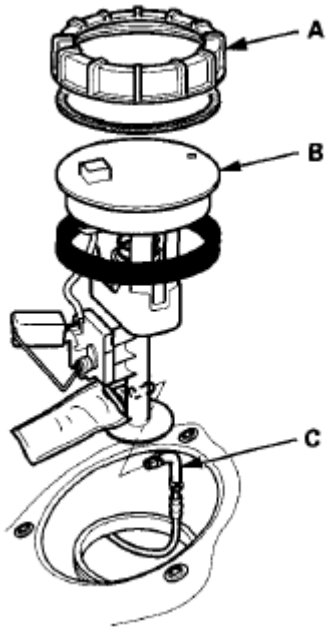


Fig. 120: Identifying Locknut, Secondary Fuel Gauge Sending Unit And Transfer Tube
Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Disconnect the transfer tube (C), and remove the secondary fuel gauge sending unit.

INSTALLATION (WITH SH-AWD)

1. Temporarily attach a new base gasket (A) to the secondary fuel gauge sending unit (B), position the mark on the transfer tube (C) up, connect the transfer tube (D), then insert the secondary fuel gauge sending unit partially into the fuel tank.

NOTE:

- **Be careful not to damage the new base gasket.**
- **Make sure the clamp (E) is positioned as shown.**
- **Be careful not to bend the secondary fuel gauge sending unit.**
- **Do not coat the base gasket with oil.**

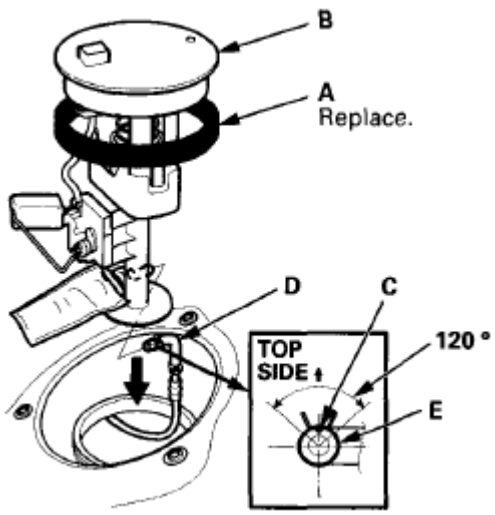


Fig. 121: Inserting Secondary Fuel Gauge Sending Unit Partially Into Fuel Tank
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Transfer the base gasket (A) from the secondary fuel gauge sending unit to the fuel tank.

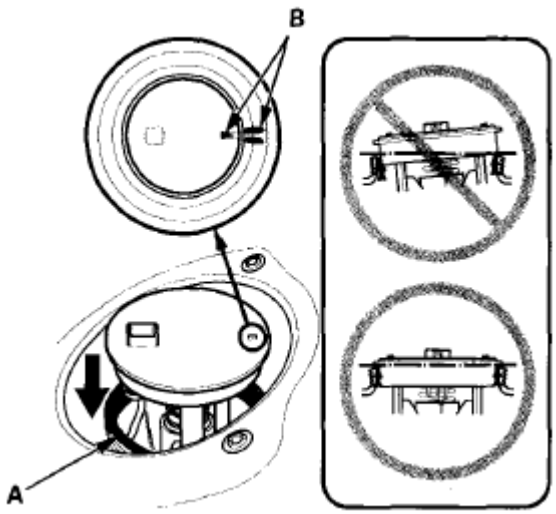


Fig. 122: Identifying Proper And Improper Position For Transfer Base Gasket From Secondary Fuel Gauge Sending Unit To Fuel Tank
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Align the marks (B) on the fuel tank and the secondary fuel gauge sending unit, then insert the secondary fuel gauge sending unit, straight into the fuel tank. Make sure it evenly contacts the base gasket.

NOTE: To avoid a fuel leak, check the base gasket, visually or by hand, to make sure it is not pinched.

4. Tighten a new locknut (A) by hand with a new locknut plate (B).

NOTE: Before tightening, align the mark (C) on the locknut with the start of the threads (D).

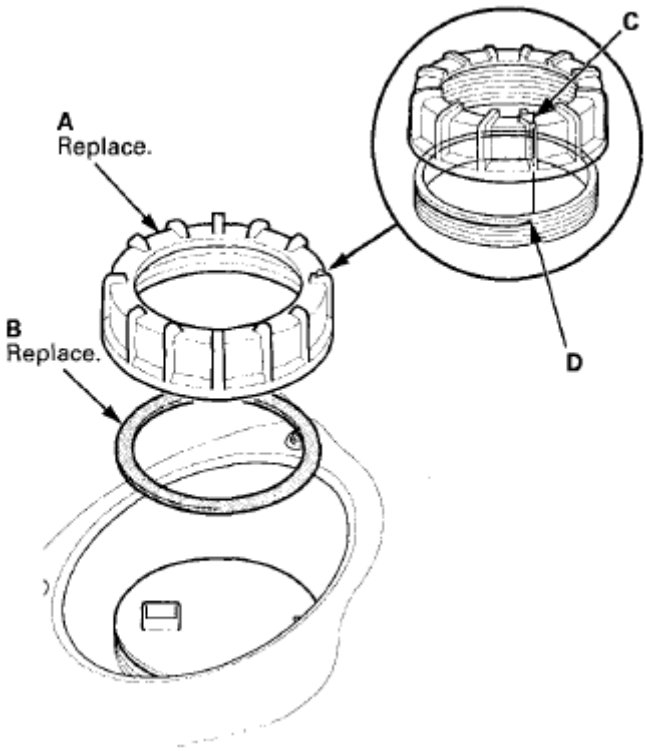


Fig. 123: Identifying Alignment Mark On Locknut And Start Of Threads
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Using the tool, tighten the locknut to the specified torque.

NOTE:

- **After tightening, make sure the marks (A) are still aligned.**
- **After installation, check the base gasket, visually or by hand, to be sure it is not pinched.**

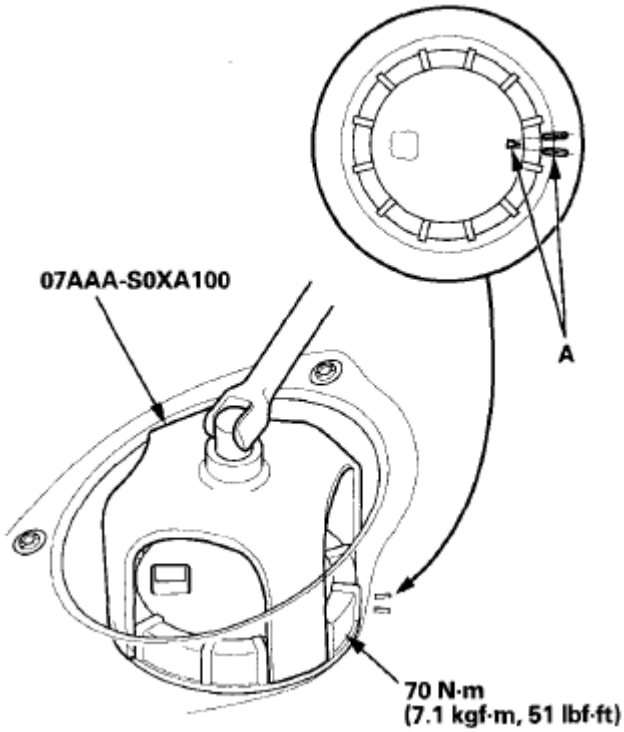


Fig. 124: Tightening Locknut With Alignment Mark Using Tool With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Connect the secondary fuel gauge sending unit 4P connector.
7. Install the parts in the reverse order of removal.

FUEL TANK REPLACEMENT

WITHOUT SH-AWD

1. **Drain the fuel tank**.
2. Reinstall the fuel tank unit without connecting the fuel tank unit 4P connector and the **quick-connect fitting**.
3. Remove the fuel fill pipe cover (see step 3).
4. Disconnect the **quick-connect fittings (A)**, and the fuel fill tube (B) from the fuel fill pipe. Slide back the clamps, then twist the hose as you pull to avoid damaging it.

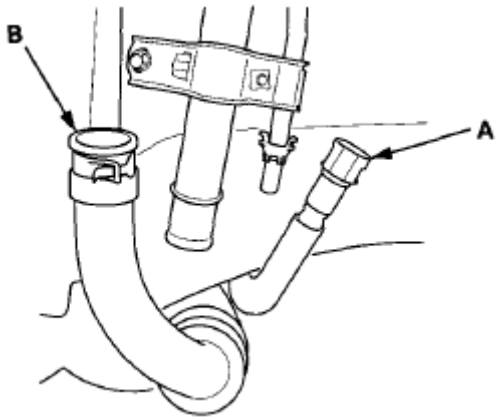


Fig. 125: Identifying Quick-Connect Fittings And Fuel Fill Tube (Without SH-AWD)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Raise the vehicle on a lift.
6. Disconnect the hose (A) from the EVAP canister.

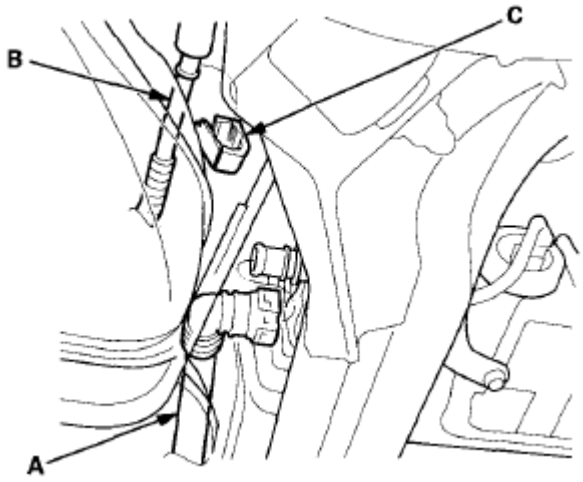


Fig. 126: Identifying Clamp And Hoses
Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Remove the hose (B) from the clamp (C).

NOTE: Be careful not to damage the hose.

8. Remove the exhaust pipe (see **EXHAUST PIPE AND MUFFLER REPLACEMENT**).
9. Remove the middle floor undercover (see **MIDDLE FLOOR UNDERCOVER REPLACEMENT**).
10. Remove the fuel tank protector (A).

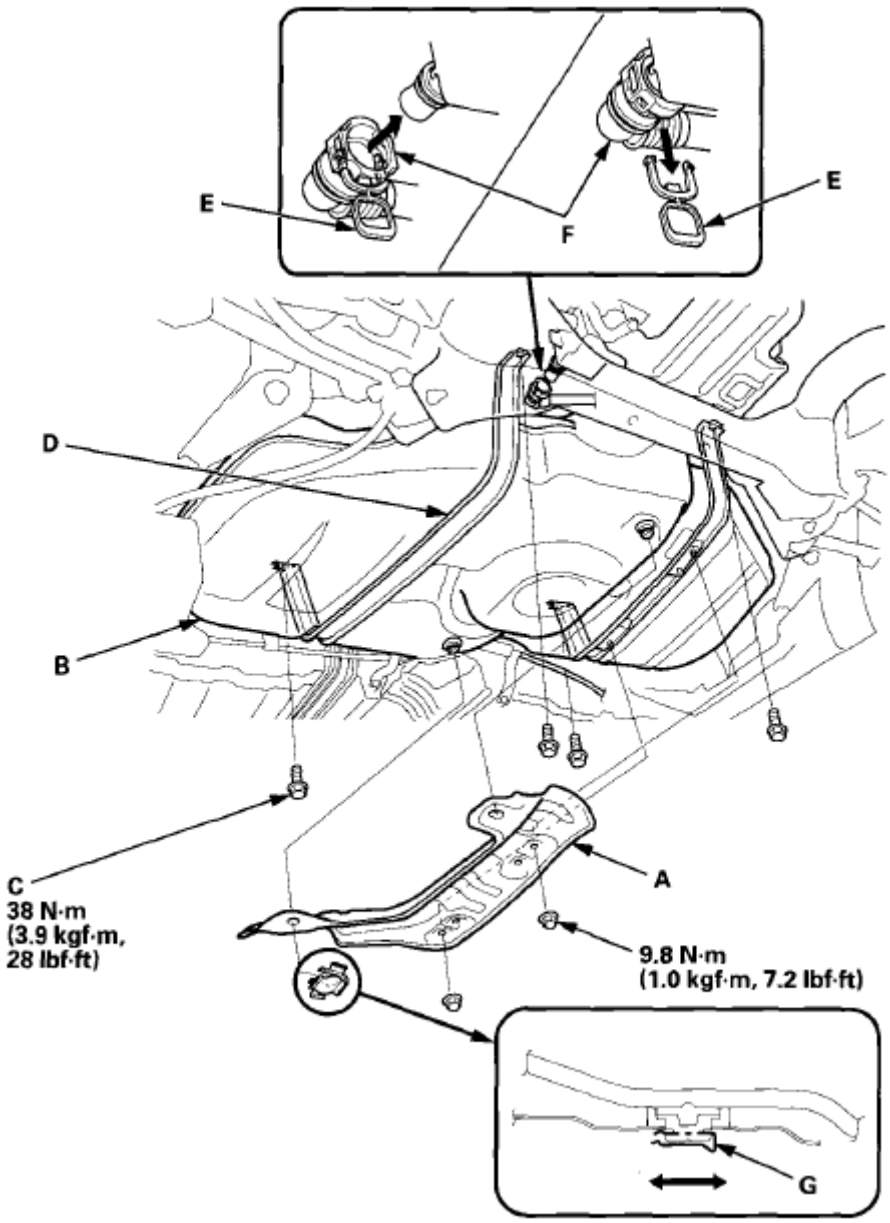


Fig. 127: Identifying Fuel Tank Components With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

11. Remove the right parking brake cable mounting bolts (see **PARKING BRAKE CABLE REPLACEMENT**).
12. Place a jack or other support under the fuel tank (B).
13. Remove the strap bolts (C) and the straps (D).
14. Remove the fuel tank.
15. Install the parts in the reverse order of removal.

NOTE:

- **New fuel tanks have ring pull (E) at the fuel vapor hose connector (F).**

When you connect the hose and confirm that the connection is secure, remove the ring pull by pulling it down.

- **Before connecting the fuel fill pipe and the quick-connect fitting, check for dirt, and clean it if needed, taking care not to damage the fuel fill pipe and other parts.**
- **When installing the fuel tank protector, make sure to insert it into the clip (G) in the direction shown.**

WITH SH-AWD

1. **Drain the fuel tank**.
2. Reinstall the fuel tank unit without connecting the connector and the **quick-connect fitting**, and reinstall secondary fuel gauge sending unit **without connecting the connector**.
3. Remove the **fuel fill pipe cover**.
4. Disconnect the quick-connect fittings from the fuel fill pipe (see step 4).
5. Raise the vehicle on a lift.
6. Remove the exhaust pipe (see **J37A4 ENGINE (WITH SH-AWD)**).
7. Remove the propeller shaft (see **PROPELLER SHAFT REMOVAL**).
8. Place a jack or other support under the fuel tank (A).

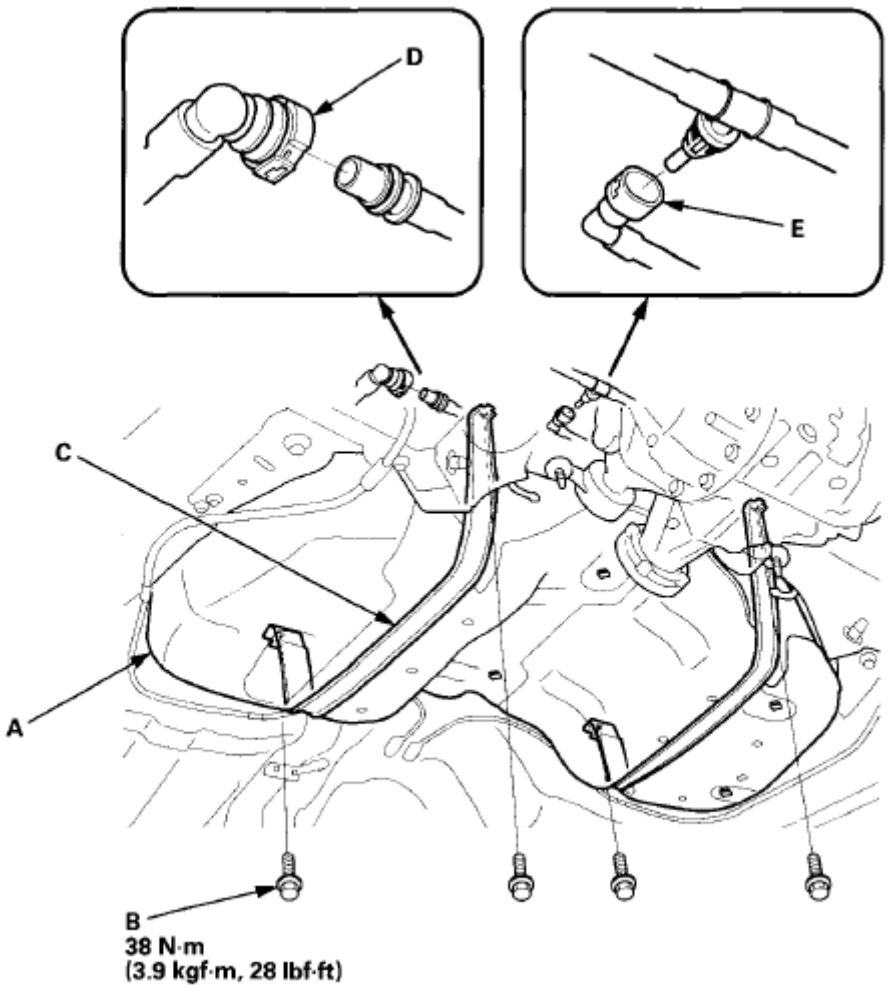


Fig. 128: Installing Jack Or Other Support Under Fuel Tank With Torque Specifications (With SH-AWD)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

9. Remove the strap bolts (B) and the straps (C).
10. Slowly lower the fuel tank, and disconnect the hose (D) and the quick-connect fitting (E).
11. Remove the fuel tank.
12. Remove the fuel tank protector (A) from the fuel tank.

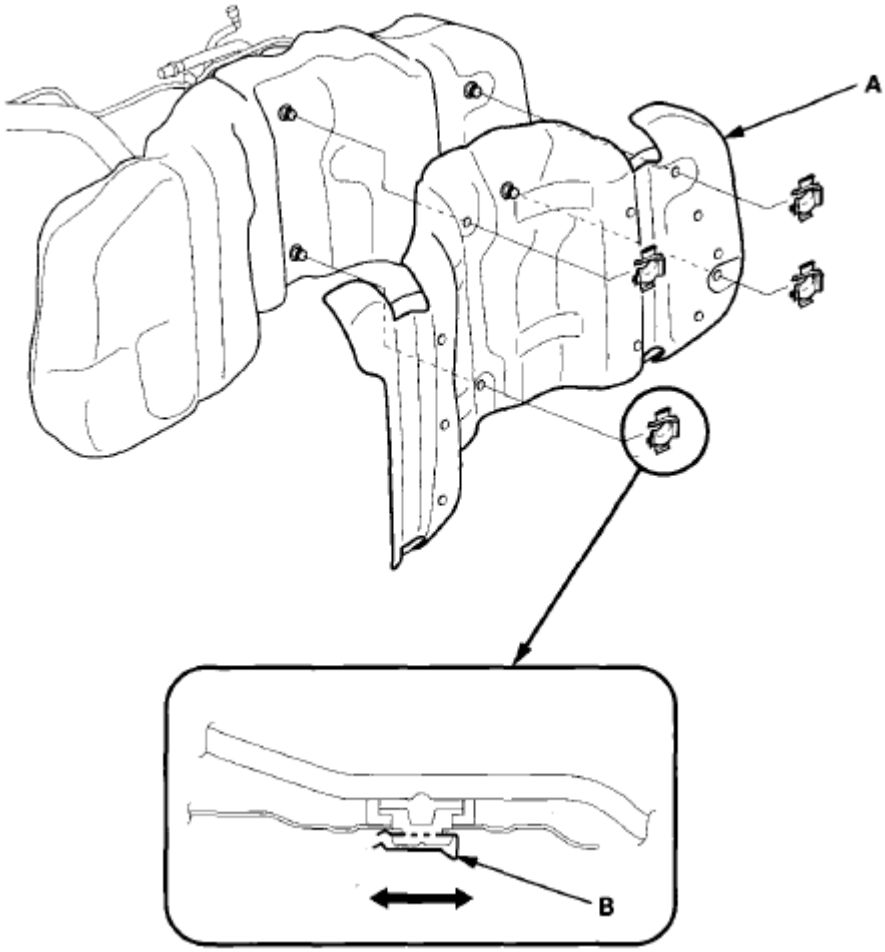


Fig. 129: Identifying Fuel Tank Protector And Clip
Courtesy of AMERICAN HONDA MOTOR CO., INC.

13. Install the parts in the reverse order of removal.

NOTE:

- **When installing the fuel tank protector, make sure to insert it into the clip (B) in the direction shown.**
- **Before connecting the fuel fill pipe and the quick-connect fittings, check for dirt, and clean them if needed, taking care not to damage the fuel fill pipe and other parts.**

FUEL FILL PIPE REMOVAL/INSTALLATION

1. **Drain the fuel tank**.
2. Remove the left rear wheel.
3. Remove the fuel fill pipe cover (A).

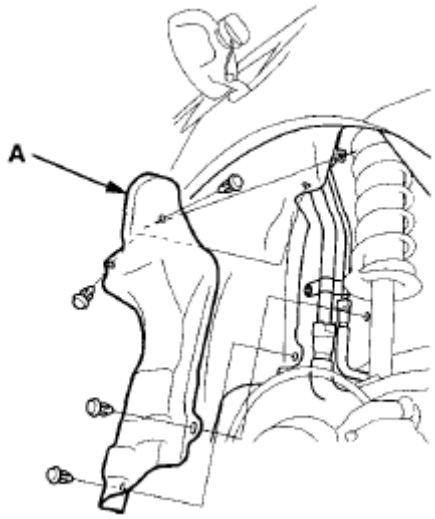


Fig. 130: Identifying Fuel Fill Pipe Cover
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Disconnect the fuel fill tube:
   - Without SH-AWD: Disconnect the **quick-connect fitting (A)**, and disconnect the fuel fill tube (B) from the fuel fill pipe by sliding back the clamp on the fuel fill tube, then twist the hose as you pull to avoid damaging the hose or pipe.
   - With SH-AWD: Disconnect the **quick-connect fittings (A)**.

Without SH-AWD

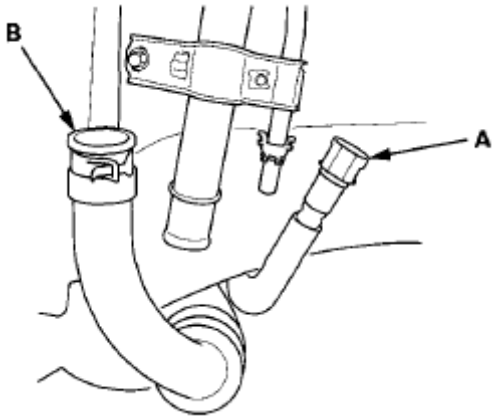


Fig. 131: Identifying Fuel Fill Tube And Quick-Connect Fitting (Without SH-AWD)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

With SH-AWD

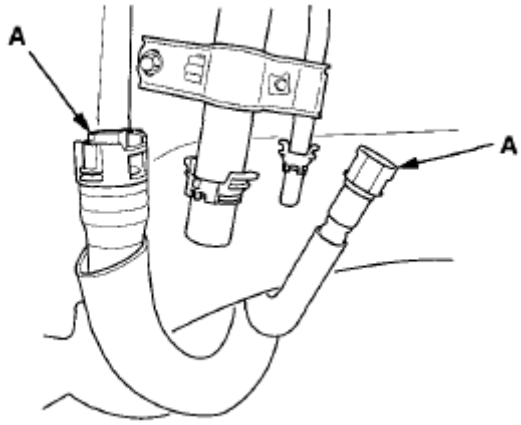


Fig. 132: Identifying Fuel Fill Tube And Quick-Connect Fitting (With SH-AWD)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Remove the fuel fill pipe (A).

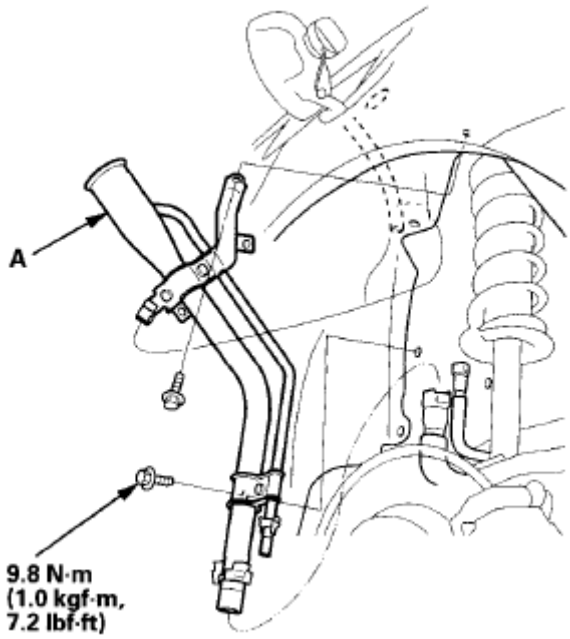


Fig. 133: Identifying Fuel Fill Pipe With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Install the parts in the reverse order of removal.

NOTE: Before connecting the fuel fill pipe and the quick-connect fitting, check for dirt, and clean it if needed, taking care not to damage the fuel fill pipe and other parts.

FUEL GAUGE SENDING UNIT TEST

WITHOUT SH-AWD

NOTE: For the fuel gauge system circuit diagram, refer to the Gauges Circuit Diagram (see CIRCUIT DIAGRAM).

1. Check the No. 12 METER (7.5 A) fuse in the driver's under-dash fuse/relay box before testing.
2. Check for body electrical system DTCs.
   - If no problem is found, go to step 3.
   - If DTC B1175 or B1176 is indicated, go to the indicated DTC's troubleshooting.
3. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
4. Remove the rear seat cushion (see **REAR SEAT REMOVAL/INSTALLATION**).
5. Remove the access panel (A) from the floor.

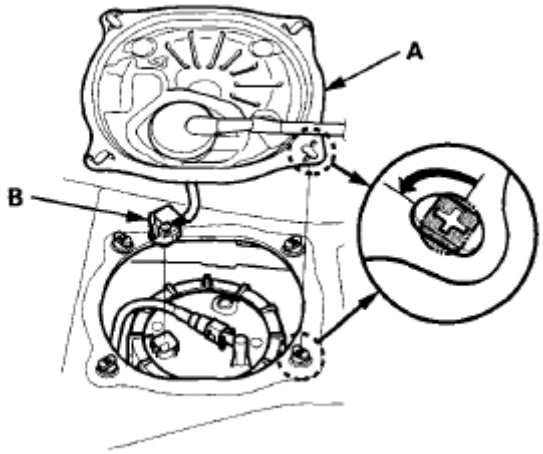


Fig. 134: Removing Access Panel From Floor (Without SH-AWD)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Disconnect the fuel tank unit 4P connector (B).
7. Measure the voltage between fuel tank unit 4P connector terminals No. 1 and No. 3 with the ignition switch turned to ON (II), or press the engine start/stop button to select the ON mode. There should be battery voltage.
   - If the voltage is OK, go to step 8.
   - If the voltage is not as specified, check for:
     - a short in the PUR wire to ground.
     - an open in the PUR or the ORN wire.

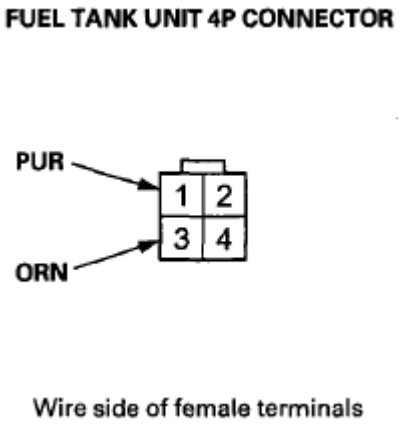


Fig. 135: Identifying Fuel Tank Unit 4P Connector Terminals
Courtesy of AMERICAN HONDA MOTOR CO., INC.

8. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
9. Remove the fuel tank unit from the **fuel tank**.
10. Measure the resistance between fuel tank unit 4P connector terminals No. 1 and No. 3 with the float at E (EMPTY), LOW (LOW FUEL INDICATOR), 1/2 (HALF FULL), and F (FULL) positions.

    If you do not get the following readings, replace the **fuel gauge sending unit**.

Float Position	F 6.1 in (155.2 mm)	1/2 3.8 in (97.6 mm)	LOW 1.6 in (40.8 mm)	E 0.6 in (15.9 mm)
Resistance (ohms)	19 to 21	196.7 to 206.7	503.8 to 589.4	772 to 788

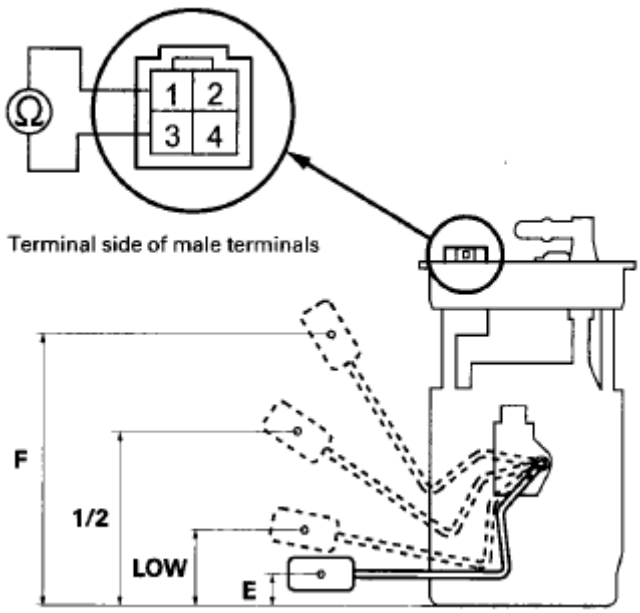


Fig. 136: Measuring Resistance Between Fuel Tank Unit 4P Connector Terminals No. 1 And No. 3

With Float At Specified Positions
Courtesy of AMERICAN HONDA MOTOR CO., INC.

11. Reconnect the fuel tank unit 4P connector.
12. Remove the No. 15 BACK UP (10 A) fuse from the under-hood fuse/relay box for at least 10 seconds, then reinstall it.
13. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
14. Check that the pointer of the fuel gauge indicates F with the float at F.
    - If the pointer of the fuel gauge does not indicate F, replace the gauge control module (see **GAUGE CONTROL MODULE REPLACEMENT**).
    - If the gauge is OK, the test is complete.

NOTE:
- **The pointer of the fuel gauge returns to the bottom of the gauge dial when the ignition switch is in ACC (I) and LOCK (0) or when the vehicle is in ACC or OFF mode, regardless of the fuel level.**
- **Remove the No. 15 BACK UP (10 A) fuse from the under-hood fuse/relay box for at least 10 seconds after completing troubleshooting, otherwise it may take up to 20 minutes for the fuel gauge to indicate the correct fuel level.**

WITH SH-AWD

NOTE: For the fuel gauge system circuit diagram, refer to the Gauges Circuit Diagram (see CIRCUIT DIAGRAM).

1. Check the No. 12 METER (7.5 A) fuse in the under-dash fuse/relay box before testing.
2. Check for body electrical system DTCs.
    - If no problem is found, go to step 3.
    - If DTC B1175 or B1176 is indicated, go to the indicated DTC's troubleshooting.
3. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
4. Remove the rear seat cushion (see **REAR SEAT REMOVAL/INSTALLATION**).
5. Remove the access panel (A) from the left side of the floor.

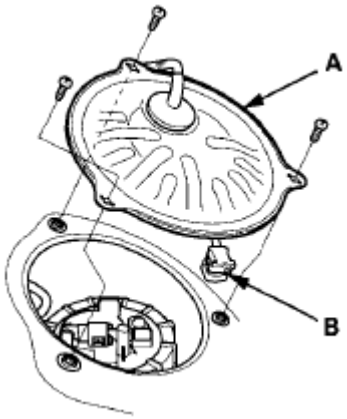


Fig. 137: Identifying Access Panel And Fuel Tank Unit 4P Connector (With SH-AWD)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Disconnect the fuel tank unit 4P connector (B).
7. Remove the fuel tank unit from the **fuel tank**.
8. Measure the resistance between the No. 1 and No. 3 terminals of the fuel tank unit 4P connector with the float at E (EMPTY), LOW (LOW FUEL INDICATOR), and F (FULL) positions.
   - If you do not get the following readings, replace the **fuel gauge sending unit**.
   - If the fuel gauge sending unit test is OK, do the **secondary fuel gauge sending unit test**.

Float Position	F 6.7 in (169.5 mm)	LOW 2.8 in (70.7 mm)	E 1.2 in (30.2 mm)
Resistance (ohms)	9 to 11	235.8 to 280	336.8 to 343.8

NOTE: Remove the No. 15 BACK UP (10 A) fuse from the under-hood fuse/relay box for at least 30 seconds after completing troubleshooting, otherwise it may take up to 20 minutes for the fuel gauge to indicate the correct fuel level.

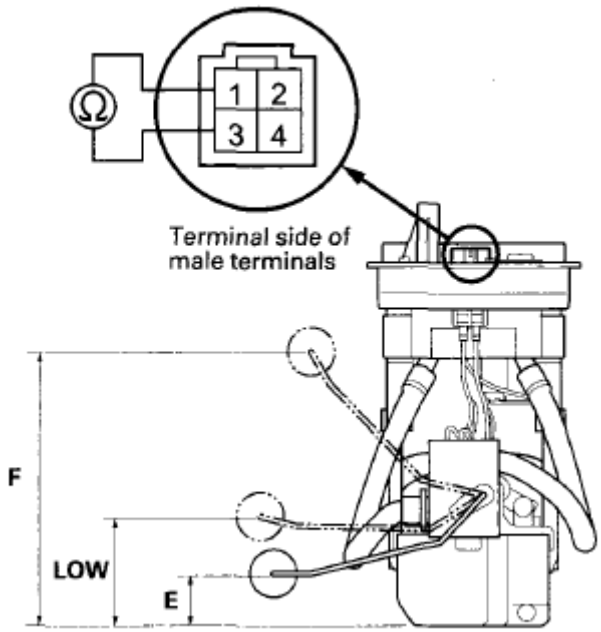


Fig. 138: Measuring Resistance Between No. 1 And No. 3 Terminals Of Fuel Tank Unit 4P Connector With Float Positions
Courtesy of AMERICAN HONDA MOTOR CO., INC.

SECONDARY FUEL GAUGE SENDING UNIT TEST

WITH SH-AWD

1. Remove the rear seat cushion (see **REAR SEAT REMOVAL/INSTALLATION**).
2. Remove the access panel (A) from the right side of the floor.

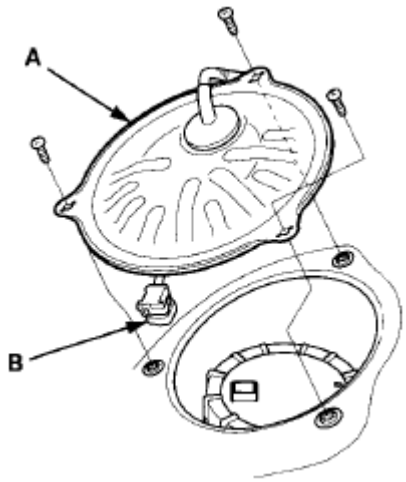


Fig. 139: Identifying Access Panel And Fuel Tank Unit 4P Connector (With SH-AWD)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Disconnect the secondary fuel gauge sending unit 4P connector (B).
4. Remove the **secondary fuel gauge sending unit from the fuel tank**.
5. Measure the resistance between the No. 1 and No. 3 terminals of the secondary fuel gauge sending unit 4P connector with the float at E (EMPTY), 1/2 (HALF FULL), and F (FULL) positions.

Float Position	F 6.9 in (176.1 mm)	1/2 1.3 in (33.3 mm)	E 1.1 in (27.8 mm)
Resistance (ohms)	9 to 11	453.2 to 444.2	453.2 to 444.2

NOTE: Remove the No. 15 BACK UP (10 A) fuse from the under-hood fuse/relay box for at least 10 seconds after completing troubleshooting, otherwise it may take up to 20 minutes for the fuel gauge to indicate the correct fuel level.

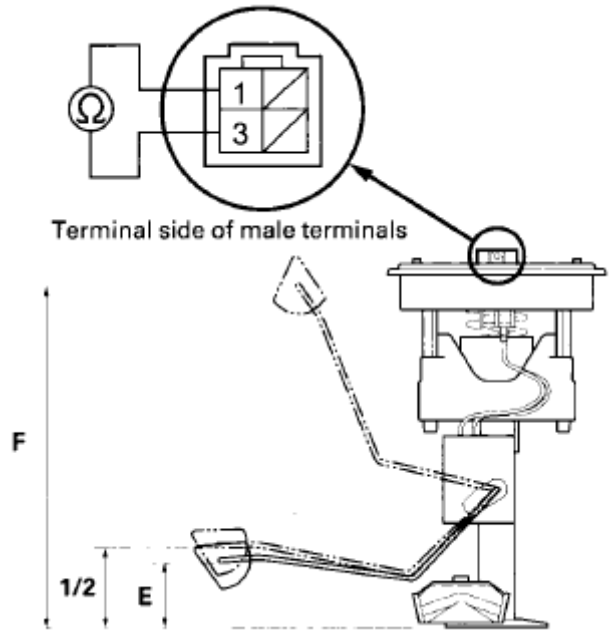


Fig. 140: Measuring Resistance Between No. 1 And No. 3 Terminals Of Fuel Tank Unit 4P Connector With Float Positions
Courtesy of AMERICAN HONDA MOTOR CO., INC.

LOW FUEL INDICATOR TEST

1. Do the gauge self-diagnostic function (see **SELF-DIAGNOSTIC FUNCTION**).
   - If the low fuel indicator flashes, go to step 2.
   - If the low fuel indicator does not flash, replace the gauge control module (see **GAUGE CONTROL MODULE REPLACEMENT**).
2. Check for body electrical system DTCs.
   - If any DTCs are indicated, do the indicated DTC's troubleshooting.
   - If no DTCs are indicated, go to step 3.

3. Do the fuel gauge sending unit test; **without SH-AWD**, or **with SH-AWD** and **secondary fuel gauge sending unit test**.

2012 ENGINE PERFORMANCE

Idle Control System - TL

COMPONENT LOCATION INDEX

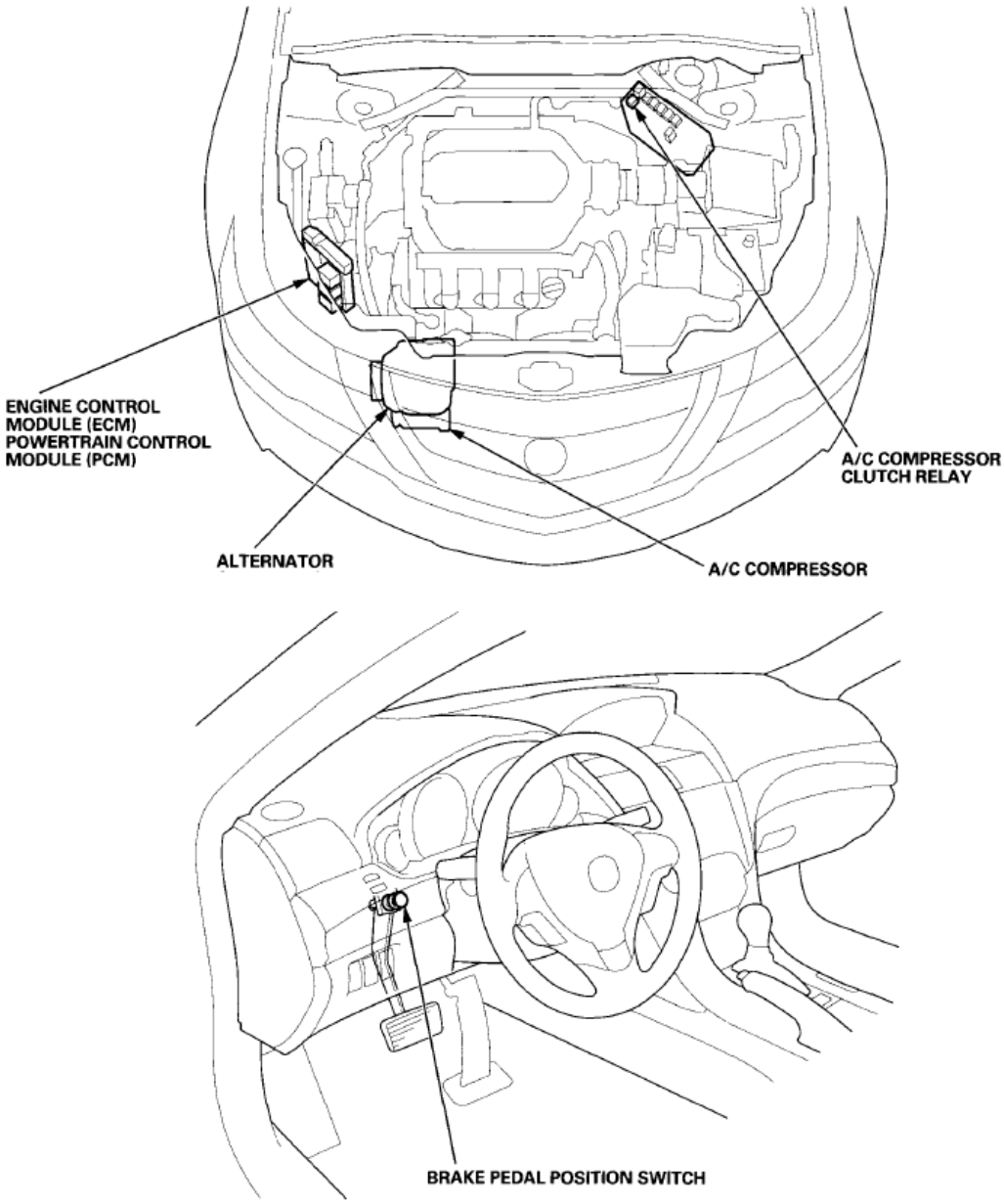


Fig. 1: Idle Control System Components Location
Courtesy of AMERICAN HONDA MOTOR CO., INC.

DTC TROUBLESHOOTING

DTC P0506: IDLE CONTROL SYSTEM RPM LOWER THAN EXPECTED

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see GENERAL TROUBLESHOOTING INFORMATION).

1. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
2. Clear the DTC with the HDS.
3. Start the engine. Hold the engine speed at 3, 000 RPM without load (A/T in P or N, M/T in neutral) until the radiator fan comes on, then let it idle for 20 seconds or more.
4. Check for these conditions in the DATA LIST with the HDS:
   - ECT SENSOR 1 above 158°F (70°C)
   - IAT SENSOR above 32°F (0°C)
   - VEHICLE SPEED is 0 mph (0 km/h)
   - ST FUEL TRIM between 0.73 and 1.47
   - FSS is CLOSED
5. Monitor the OBD STATUS for DTC P0506 in the DTCs MENU with the HDS.

   Does the screen indicate FAILED?

   YES - Go to step 6.

   NO - If the screen indicates PASSED, go to step 15. If the screen indicates EXECUTING, keep idling until a result comes on. If the screen indicates OUT OF CONDITION, go to step 4 and recheck.

6. Remove the intake air duct from the throttle body.
7. Check for dirt, carbon, or damage in the throttle bore.

   Is there dirt, carbon, or damage in the throttle bore?

   YES - If there is dirt or carbon, clean the throttle body (see **THROTTLE BODY CLEANING**). Also check for damage to the air cleaner element (see **AIR CLEANER ELEMENT INSPECTION/REPLACEMENT**), then go to step 9. If there is damage in the throttle bore, go to step 8.

   NO - Check the A/C system or the power steering system, then go to step 17.

8. Replace the throttle body (see **THROTTLE BODY REMOVAL/INSTALLATION**).
9. Reset the ECM/PCM with the HDS.
10. Do the ECM/PCM idle learn procedure (see **ECM/PCM IDLE LEARN PROCEDURE**).
11. Start the engine. Hold the engine speed at 3, 000 RPM without load (A/T in P or N, M/T in neutral) until the radiator fan comes on, then let it idle for 20 seconds or more.
12. Check for these conditions in the DATA LIST with the HDS:
    - ECT SENSOR 1 above 158°F (70°C)
    - IAT SENSOR above 32°F (0°C)

- VEHICLE SPEED is 0 mph (0 km/h)
- ST FUEL TRIM between 0.73 and 1.47
- FSS is CLOSED

13. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P0506 indicated?

    YES - Go to step 1 and recheck.

    NO - Go to step 14.

14. Monitor the OBD STATUS for DTC P0506 in the DTCs MENU with the HDS.

    Does the screen indicate PASSED?

    YES - Troubleshooting is complete. If any other Pending or Confirmed DTCs were indicated in step 13, go to the indicated **DTC'S TROUBLESHOOTING**.

    NO - If the screen indicates FAILED, check the A/C system and/or the power steering system, then go to step 1. If the screen indicates EXECUTING, keep idling until a result comes on. If the screen indicates OUT OF CONDITION, go to step 12.

15. Remove the intake air duct from the throttle body.
16. Check for dirt, carbon, or damage in the throttle bore.

    Is there dirt, carbon, or damage in the throttle bore?

    YES - If there is dirt or carbon, clean the throttle body (see **THROTTLE BODY CLEANING**). Also check for damage to the air cleaner element (see **AIR CLEANER ELEMENT INSPECTION/REPLACEMENT**), then go to step 9. If there is damage in the throttle bore, go to step 8.

    NO - Go to step 17.

17. Recheck with different load conditions (turn on the headlights, blower motor, the rear window defogger and/or the A/C, change the gear position, etc.).
18. Monitor the OBD STATUS for DTC P0506 in the DTCs MENU with the HDS.

    Does the screen indicate PASSED?

    YES - Intermittent failure, the system is OK at this time.

    NO - If the screen indicates FAILED, check the A/C system and/or the power steering system, then go to step 1. If the screen indicates EXECUTING, keep idling until a result comes on. If the screen indicates OUT OF CONDITION, go to step 12.

DTC P0507: IDLE CONTROL SYSTEM RPM HIGHER THAN EXPECTED

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see GENERAL TROUBLESHOOTING INFORMATION).

1. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
2. Clear the DTC with the HDS.
3. Start the engine. Hold the engine speed at 3, 000 RPM without load (A/T in P or N, M/T in neutral) until the radiator fan comes on, then let it idle.
4. Monitor the OBD STATUS for DTC P0507 in the DTCs MENU with the HDS.

   Does the screen indicate FAILED?

   YES - Go to step 5.

   NO - If the screen indicates PASSED, intermittent failure, the system is OK at this time. If the screen indicates EXECUTING, keep idling until a result comes on. If the screen indicates OUT OF CONDITION, recheck with different load conditions (electrical, A/C, gear position, etc.), then go to step 3.

5. Check for vacuum leaks at these parts:
   - PCV valve
   - PCV hose
   - EVAP canister purge valve
   - Throttle body
   - Intake manifold
   - Brake booster hose
   - Brake booster

   Are there any leaks?

   YES - Repair or replace the leaking part(s), then go to step 6.

   NO - Go to step 6.

6. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
7. Reset the ECM/PCM with the HDS.
8. Do the ECM/PCM idle learn procedure (see **ECM/PCM IDLE LEARN PROCEDURE**).
9. Start the engine. Hold the engine speed at 3, 000 RPM without load (A/T in P or N, M/T in neutral) until the radiator fan comes on, then let it idle.
10. Check for Pending or Confirmed DTCs with the HDS.

Is DTC P0507 indicated?

YES - Check for poor connections or loose terminals at the throttle body and the ECM/PCM, then go to step 1.

NO - Go to step 11.

11. Monitor the OBD STATUS for DTC P0507 in the DTCs MENU with the HDS.

    Does the screen indicate PASSED?

    YES - Troubleshooting is complete. If any other Pending or Confirmed DTCs were indicated instep 10, go to the indicated **DTC'S TROUBLESHOOTING**.

    NO - If the screen indicates FAILED, check for poor connections or loose terminals at the throttle body and the ECM/PCM, then go to step 1. If the screen indicates EXECUTING, keep idling until a result comes on. If the screen indicates OUT OF CONDITION, recheck with different load conditions (turn on the headlights, the blower motor, or the A/C; change the gear position, etc.), then go to step 9.

A/C SIGNAL CIRCUIT TROUBLESHOOTING

1. Start the engine.
2. Turn the blower switch on.
3. Turn the A/C switch on.
4. Check the A/C CLUTCH in the DATA LIST with the HDS.

   Does it indicate ON?

   YES - Go to step 5.

   NO - Check the A/C system (see **A/C SERVICE TIPS AND PRECAUTIONS**).

5. Check the A/C system operation.

   Does the A/C system operate?

   YES - The air conditioning system circuit is OK.

   NO - Go to step 6.

6. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
7. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
8. Activate the A/C CLUTCH in the INSPECTION MENU with the HDS.

   Is there a clicking noise from the A/C compressor clutch?

YES - Do the A/C system test (see **A/C SYSTEM TEST**).

NO - Go to step 9.

9. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
10. Jump the SCS line with the HDS.
11. Disconnect ECM/PCM connector A (49P).
12. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
13. Momentarily connect ECM/PCM connector terminal A13 to body ground with a jumper wire several times.

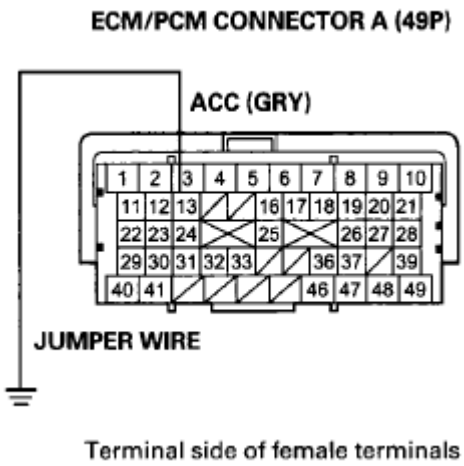


Fig. 2: Connecting ECM/PCM Connector Terminal A13 To Body Ground With Jumper Wire
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there a clicking noise from the A/C compressor clutch?

YES - Update the ECM/PCM if it does not have the latest software (see **ECM/PCM UPDATE**), or substitute a known-good ECM/PCM (see **SUBSTITUTING THE ECM/PCM**), then recheck. If the symptom/indication goes away and the ECM/PCM was updated, troubleshooting is complete. If the symptom/indication goes away and the ECM/PCM was substituted, replace the original ECM/PCM (see **ECM/PCM REPLACEMENT**).

NO - Check for poor connections or loose terminals at the A/C clutch relay and the ECM/PCM. If the connections are OK, check the A/C clutch relay (see **POWER RELAY TEST**). If needed, repair open in the wire between the ECM/PCM (A13) and the A/C clutch relay, and check the other A/C system parts.

ALTERNATOR FR SIGNAL CIRCUIT TROUBLESHOOTING

1. Start the engine, and let it idle.
2. Monitor the ALTERNATOR in the DATA LIST with the HDS.
3. Check if the indicated percentage varies when the headlight switch is turned on.

Does the percentage vary?

YES - The alternator signal circuit is OK.

NO - Go to step 4.

4. Turn the headlight switch off, and turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
5. Jump the SCS line with the HDS.
6. Disconnect the alternator 4P connector.
7. Disconnect ECM/PCM connector C (49P).
8. Check for continuity between ECM/PCM connector terminal C44 and body ground.

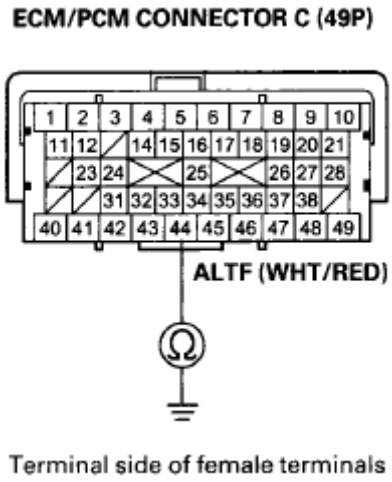


Fig. 3: Checking Continuity Between ECM/PCM Connector Terminal C44 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair short in the wire between the ECM/PCM (C44) and the alternator.

NO - Update the ECM/PCM if it does not have the latest software (see **ECM/PCM UPDATE**), or substitute a known-good ECM/PCM (see **SUBSTITUTING THE ECM/PCM**), then recheck. If the symptom/indication goes away and the ECM/PCM was updated, troubleshooting is complete. If the symptom/indication goes away and the ECM/PCM was substituted, replace the original ECM/PCM (see **ECM/PCM REPLACEMENT**).

BRAKE PEDAL POSITION SWITCH SIGNAL CIRCUIT TROUBLESHOOTING

1. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
2. Check the BRAKE SWITCH in the DATA LIST with the HDS.

Does it indicate OFF?

YES - Go to step 3.

NO - Inspect the brake pedal position switch (see **BRAKE PEDAL AND BRAKE PEDAL POSITION SWITCH ADJUSTMENT**).

3. Press the brake pedal, and check the BRAKE SWITCH in the DATA LIST with the HDS.

   Does it change to ON?

   YES - The brake pedal position switch signal circuit (BKSW line) is OK.

   NO - Go to step 4.

4. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
5. Jump the SCS line with the HDS.
6. Disconnect the brake pedal position switch 4P connector.
7. Disconnect ECM/PCM connector A (49P).
8. Check for continuity between ECM/PCM connector terminal A8 and body ground.

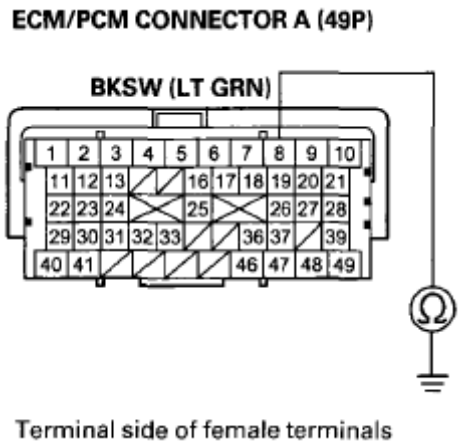


Fig. 4: Checking Continuity Between ECM/PCM Connector Terminal A8 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair short in the wire between the ECM/PCM (A8) and the brake pedal position switch. Also replace the No. 10 HORN/STOP (20 A) fuse in the under-hood fuse/relay box.

NO - Go to step 9.

9. Connect brake pedal position switch 4P connector terminal No. 2 to body ground with a jumper wire.

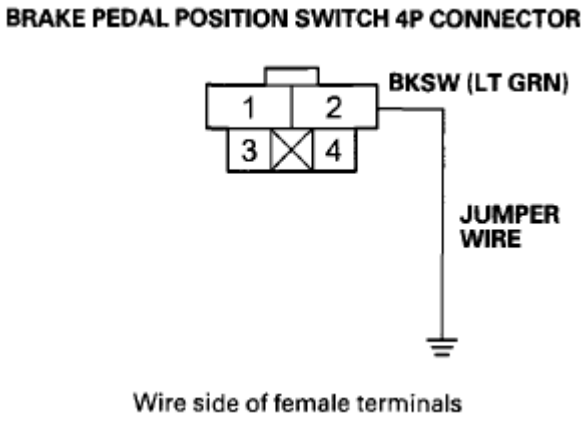


Fig. 5: Connecting Brake Pedal Position Switch 4P Connector Terminal No. 2 To Body Ground With Jumper Wire
Courtesy of AMERICAN HONDA MOTOR CO., INC.

10. Check for continuity between ECM/PCM connector terminal A8 and body ground.

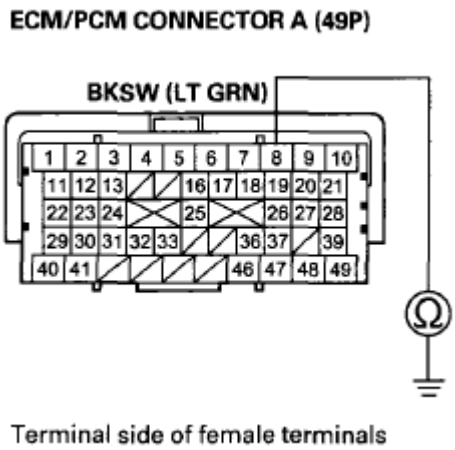


Fig. 6: Checking Continuity Between ECM/PCM Connector Terminal A8 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair open in the wire between the brake pedal position switch and the No. 10 HORN/STOP (20 A) fuse in the under-hood fuse/relay box. Also check the brake pedal position switch (see **BRAKE PEDAL AND BRAKE PEDAL POSITION SWITCH ADJUSTMENT**).

NO - Repair open in the wire between the ECM/PCM (A8) and the brake pedal position switch.

IDLE SPEED INSPECTION

NOTE:

- **Before checking the idle speed, check these items:**
  - **The malfunction indicator lamp (MIL) has not been reported on, and**

there are no DTCs.

- **Ignition timing**
- **Spark plugs**
- **Air cleaner**
- **PCV system**

- **Apply the parking brake, and make sure the headlights are off.**

1. Disconnect the evaporative emission (EVAP) canister purge valve connector.
2. Connect the HDS to the data link connector (DLC) (A) located under the driver's side of the dashboard.

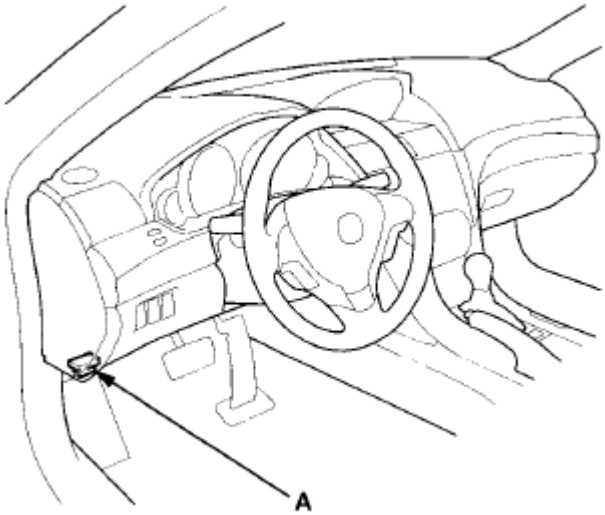


Fig. 7: Identifying HDS To Data Link Connector (DLC)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Make sure the HDS communicates with the ECM/PCM. If it doesn't, go to the DLC circuit troubleshooting (see **DLC CIRCUIT TROUBLESHOOTING**).
4. Start the engine. Hold the engine speed at 3, 000 RPM without load (A/T in P or N, M/T in neutral) until the radiator fan comes on, then let it idle.
5. Check the idle speed without load conditions: headlights, blower fan, radiator fan, and air conditioner off.

IDLE SPEED SHOULD BE

J35Z6 engine	680 ± 50 RPM (in P or N)
J37A4 engine (M/T)	750 ± 50 RPM (in neutral)
J37A4 engine (A/T)	700 ± 50 RPM (in P or N)

6. Let the engine idle for 1 minute with high electric load (the A/C on, the temperature set to max cool, the blower fan on high, the headlights on high beam).

IDLE SPEED SHOULD BE

J35Z6 engine	680 ± 50 RPM (in P or N)

J37A4 engine (M/T)	750 ± 50 RPM (in neutral)
J37A4 engine (A/T)	700 ± 50 RPM (in P or N)

NOTE: If the idle speed is not within specification, do the ECM/PCM idle learn procedure (see ECM/PCM IDLE LEARN PROCEDURE). If the idle speed is still not within specification, go to the symptom troubleshooting.

7. Reconnect the EVAP canister purge valve connector.

ECM/PCM IDLE LEARN PROCEDURE

The idle learn procedure must be done so the ECM/PCM can learn the engine idle characteristics.

Do the idle learn procedure whenever you do any of these actions:

- Replace the ECM/PCM.
- Reset the ECM/PCM.
- Update the ECM/PCM.
- Replace or clean the throttle body.
- Disassemble the engine or transmission.

NOTE: Clearing DTCs with the HDS does not require you to do the idle learn procedure.

PROCEDURE

1. Make sure all electrical items (the A/C, the audio, the lights, etc.) are off.
2. Reset the ECM/PCM with the HDS.
3. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode, and wait 2 seconds.
4. Start the engine. Hold the engine speed at 3, 000 RPM without load (A/T in P or N, M/T in neutral) until the radiator fan comes on, or until the engine coolant temperature reaches 194°F (90°C).
5. Let the engine idle for about 5 minutes with the throttle fully closed.

NOTE: If the radiator fan comes on, do not include its running time in the 5 minutes.

2012 ENGINE PERFORMANCE

Intake Air System - TL

COMPONENT LOCATION INDEX

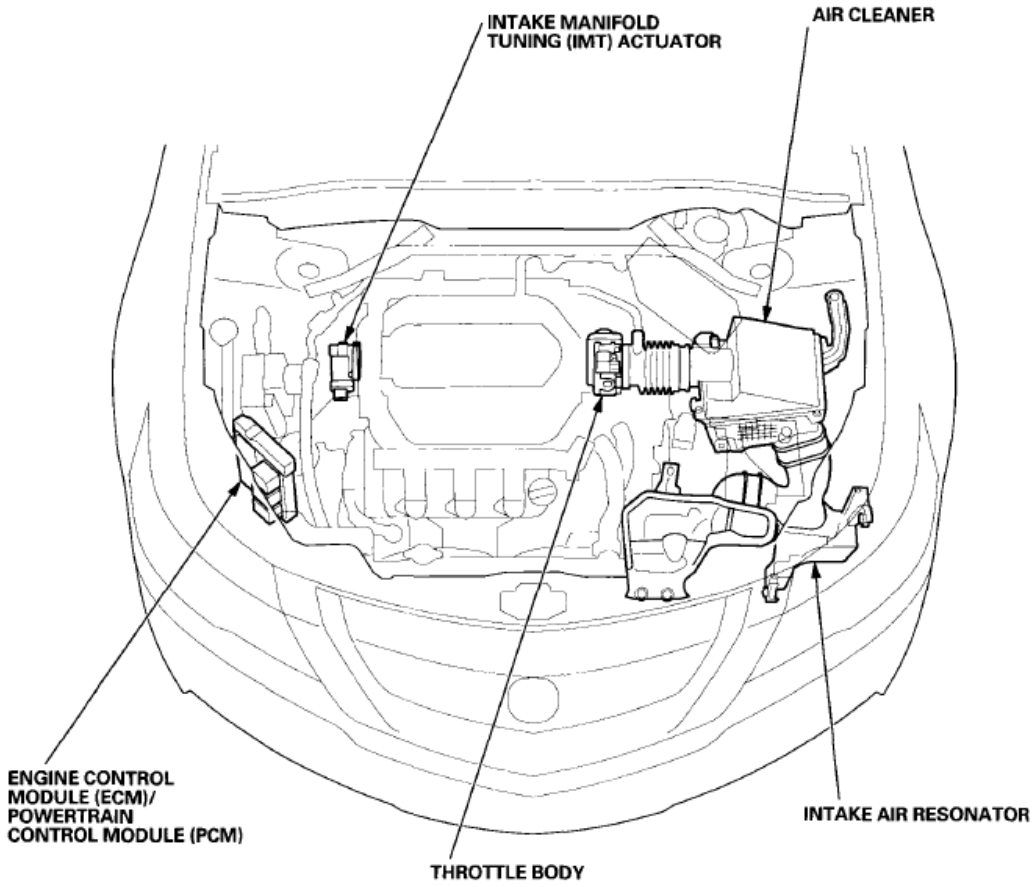


Fig. 1: Air Intake System Components Location
Courtesy of AMERICAN HONDA MOTOR CO., INC.

DTC TROUBLESHOOTING

DTC P1077: IMT VALVE STUCK IN HIGH RPM POSITION

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see GENERAL TROUBLESHOOTING INFORMATION).

1. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
2. Clear the DTC with the HDS.

3. Do the IMT TEST in the INSPECTION MENU with the HDS.

   Is the result OK?

   YES - Intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at the IMT actuator and the ECM/PCM. •

   NO - Go to step 4.

4. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
5. Disconnect the IMT actuator 5P connector.
6. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
7. Measure the voltage between IMT actuator 5P connector terminal No. 1 and body ground.

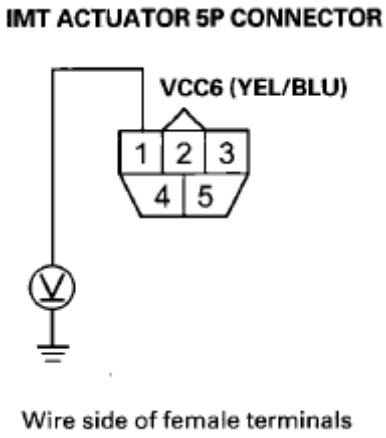


Fig. 2: Measuring Voltage Between IMT Actuator 5P Connector Terminal No. 1 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

   Is there about 5 V?

   YES - Go to step 12.

   NO - Go to step 8.

8. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
9. Jump the SCS line with the HDS.
10. Disconnect ECM/PCM connector C (49P).
11. Check for continuity between IMT actuator 5P connector terminal No. 1 and ECM/PCM connector terminal C11.

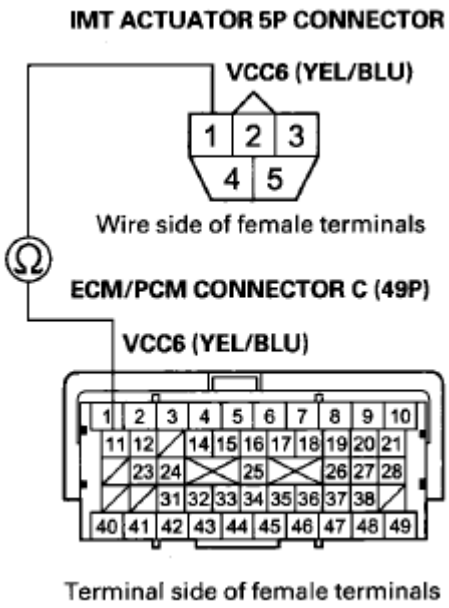


Fig. 3: Checking Continuity Between IMT Actuator 5P Connector Terminal No. 1 And ECM/PCM Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 36.

NO - Repair open in the wire between the ECM/PCM (C11) and the IMT actuator, then go to step 30.

12. Measure the voltage between IMT actuator 5P connector terminal No. 3 and body ground.

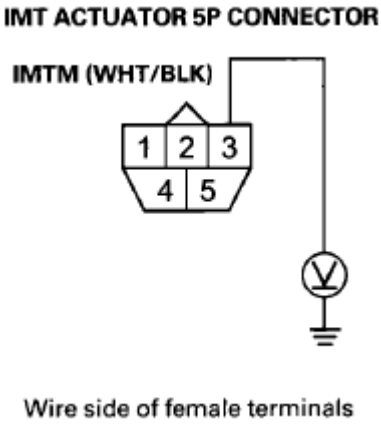


Fig. 4: Measuring Voltage Between IMT Actuator 5P Connector Terminal No. 3 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there about 5 V?

YES - Go to step 17.

NO - Go to step 13.

13. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
14. Jump the SCS line with the HDS.
15. Disconnect ECM/PCM connector B (49P).
16. Check for continuity between IMT actuator 5P connector terminal No. 3 and ECM/PCM connector terminal B19.

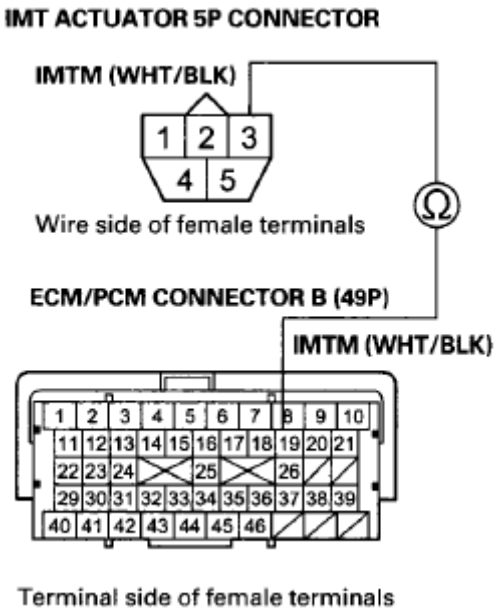


Fig. 5: Checking Continuity Between IMT Actuator 5P Connector And ECM/PCM Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 36.

NO - Repair open in the wire between the ECM/PCM (B19) and the IMT actuator, then go to step 30.

17. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
18. Jump the SCS line with the HDS.
19. Disconnect ECM/PCM connector C (49P).
20. Check for continuity between IMT actuator 5P connector terminal No. 2 and ECM/PCM connector terminal C16.

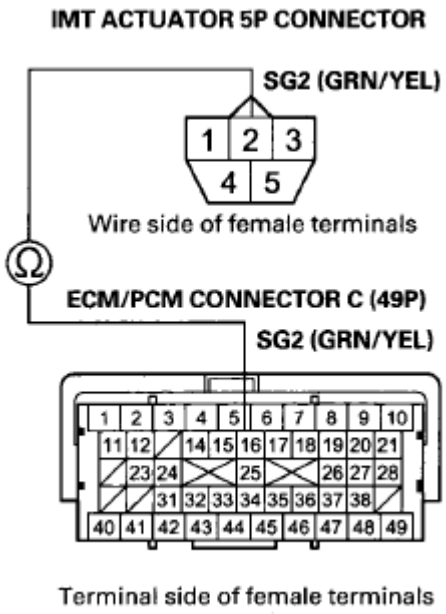


Fig. 6: Checking Continuity Between IMT Actuator 5P Connector And ECM/PCM Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 21.

NO - Repair open in the wire between the ECM/PCM (C16) and the IMT actuator, then go to step 30.

21. Check for continuity between ECM/PCM connector terminal C48 and body ground.

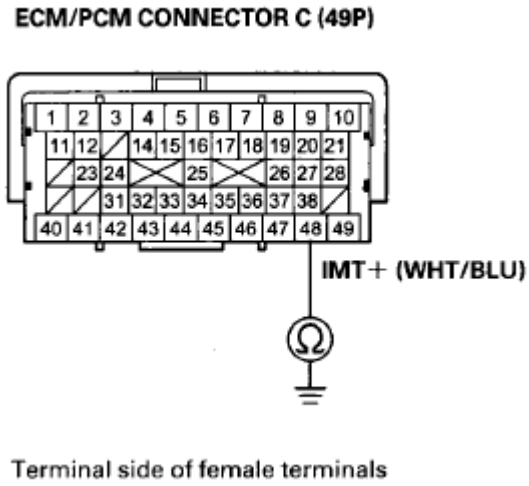


Fig. 7: Checking Continuity Between ECM/PCM Connector Terminal C48 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair short in the wire between the ECM/PCM (C48) and the IMT actuator, then go to step 30.

NO - Go to step 22.

22. Check for continuity between ECM/PCM connector terminal C49 and body ground.

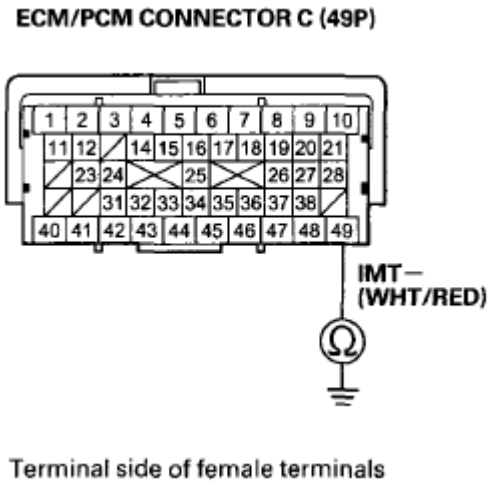


Fig. 8: Checking Continuity Between ECM/PCM Connector Terminal C49 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair short in the wire between the ECM/PCM (C49) and the IMT actuator, then go to step 30.

NO - Go to step 23.

23. Check for continuity between IMT actuator 5P connector terminal No. 5 and ECM/PCM connector terminal C48.

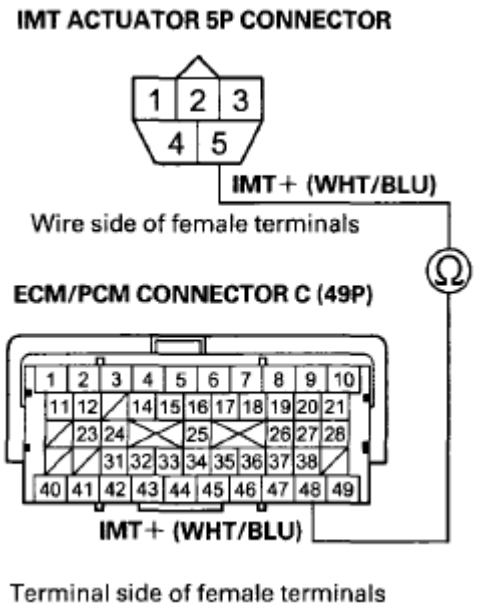


Fig. 9: Checking Continuity Between IMT Actuator 5P Connector Terminal No. 5 And ECM/PCM Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 24.

NO - Repair open in the wire between the ECM/PCM (C48) and the IMT actuator, then go to step 30.

24. Check for continuity between IMT actuator 5P connector terminal No. 4 and ECM/PCM connector terminal C49.

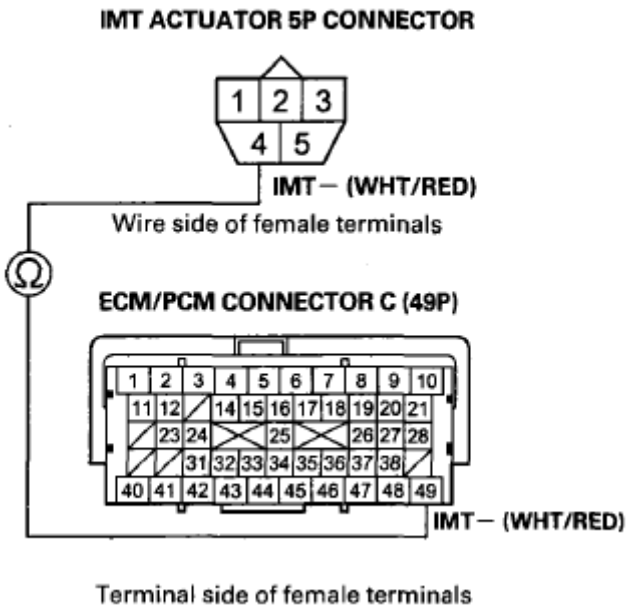


Fig. 10: Checking Continuity Between IMT Actuator 5P Connector Terminal No. 4 And ECM/PCM Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 25.

NO - Repair open in the wire between the ECM/PCM (C49) and the IMT actuator, then go to step 30.

25. Remove the **IMT actuator**.
26. Move the IMT valve by hand.

Does it move smoothly?

YES - Go to step 27.

NO - Remove the intake manifold upper cover (see step 5 under **INTAKE MANIFOLD REMOVAL AND INSTALLATION**), and repair the stuck valve. If needed, replace the intake manifold (see **REMOVAL**), then go to step 30.

27. Substitute a known-good **IMT actuator**.
28. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
29. Do the IMT TEST in the INSPECTION MENU with the HDS.

Is the result OK?

YES - Replace the original **IMT actuator**, then go to step 30.

NO - Go to step 36.

30. Reconnect all connectors.
31. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
32. Reset the ECM/PCM with the HDS.
33. Do the ECM/PCM idle learn procedure (see **ECM/PCM IDLE LEARN PROCEDURE**).
34. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P1077 indicated?

    YES - Check for poor connections or loose terminals at the IMT actuator and the ECM/PCM, then go to step 1.

    NO - Go to step 35.

35. Monitor the OBD STATUS for DTC PI 077 in the DTCs MENU with the HDS.

    Does the screen indicate PASSED?

    YES - Troubleshooting is complete. If any other Pending or Confirmed DTCs were indicated in step 34, go to the indicated DTC's troubleshooting. •

    NO - If the screen indicates FAILED, check for poor connections or loose terminals at the IMT actuator and the ECM/PCM, then go to step 1. If the screen indicates NOT COMPLETED, keep idling until a result comes on.

36. Reconnect ail connectors.
37. Update the ECM/PCM if it does not have the latest software (see **ECM/PCM UPDATE**), or substitute a known-good ECM/PCM (see **SUBSTITUTING THE ECM/PCM**).
38. Start the engine, and let it idle without load (A/T in P or N, M/T in neutral) until the radiator fan comes on.
39. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P1077 indicated?

    YES - Check for poor connections or loose terminals at the IMT actuator and the ECM/PCM. If the ECM/PCM was updated, substitute a known-good ECM/PCM (see **SUBSTITUTING THE ECM/PCM**), then go to step 38. If the ECM/PCM was substituted, go to step 1.

    NO - Go to step 40.

40. Monitor the OBD STATUS for DTC P1077 in the DTCs MENU with the HDS.

    Does the screen indicates PASSED?

YES - If the ECM/PCM was updated, troubleshooting is complete. If the ECM/PCM was substituted, replace the original ECM/PCM (see **ECM/PCM REPLACEMENT**). If any other Pending or Confirmed DTCs were indicated in step 39, go to the indicated DTC's troubleshooting. •

NO - If the screen indicated FAILED, check for poor connections or loose terminals at the IMT actuator and the ECM/PCM. If the ECM/PCM was updated, substitute a known-good ECM/PCM (see **SUBSTITUTING THE ECM/PCM**), then go to step 38. If the ECM/PCM was substituted, go to step 1. If the screen indicates NOT COMPLETED, keep idling until a result comes on.

DTC P1078: IMT VALVE STUCK IN LOW RPM POSITION

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see GENERAL TROUBLESHOOTING INFORMATION).

1. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
2. Clear the DTC with the HDS.
3. Do the IMT TEST in the INSPECTION MENU with the HDS.

   Is the result OK?

   YES - Intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at the IMT actuator and the ECM/PCM. •

   NO - Go to step 4.

4. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
5. Disconnect the IMT actuator 5P connector.
6. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
7. Check the IMT VALVE SW in the DATA LIST with the HDS.

   Is CLOSE indicated?

   YES - Go to step 12.

   NO - Go to step 8.

8. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
9. Jump the SCS line with the HDS.
10. Disconnect ECM/PCM connector B (49P).
11. Check for continuity between ECM/PCM connector terminal B19 and body ground.

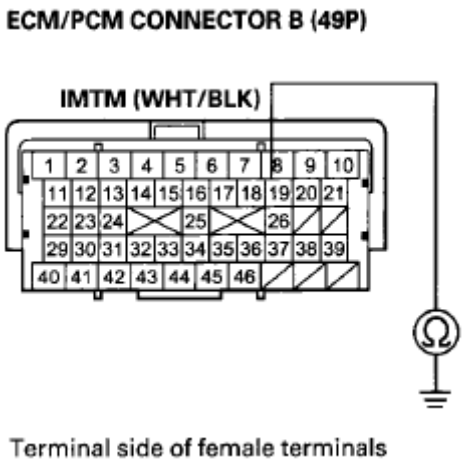


Fig. 11: Checking Continuity Between ECM/PCM Connector Terminal B19 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair short in the wire between the ECM/PCM (B19) and the IMT actuator, then go to step 24.

NO - Go to step 31.

12. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
13. Jump the SCS line with the HDS.
14. Disconnect ECM/PCM connector C (49P).
15. Check for continuity between ECM/PCM connector terminal C48 and body ground.

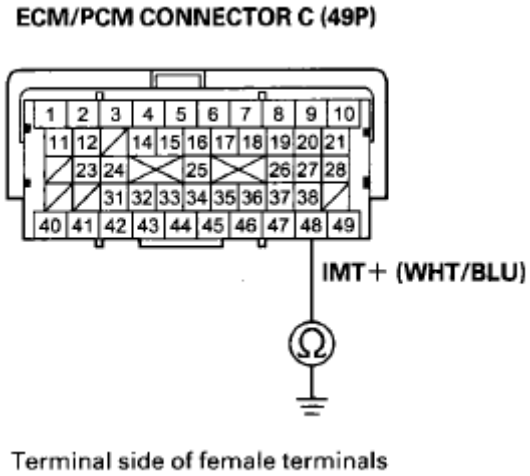


Fig. 12: Checking Continuity Between ECM/PCM Connector Terminal C48 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair short in the wire between the ECM/PCM (C48) and the IMT actuator, then go to step 24.

NO - Go to step 16.

16. Check for continuity between ECM/PCM connector terminal C49 and body ground.

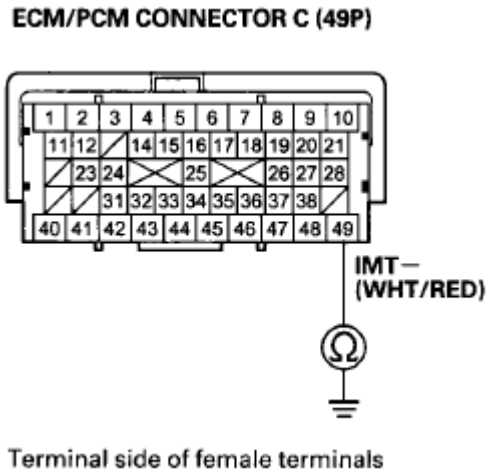


Fig. 13: Checking Continuity Between ECM/PCM Connector Terminal C49 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair short in the wire between the ECM/PCM (C49) and the IMT actuator, then go to step 24.

NO - Go to step 17.

17. Check for continuity between IMT actuator 5P connector terminal No. 5 and ECM/PCM connector terminal C48.

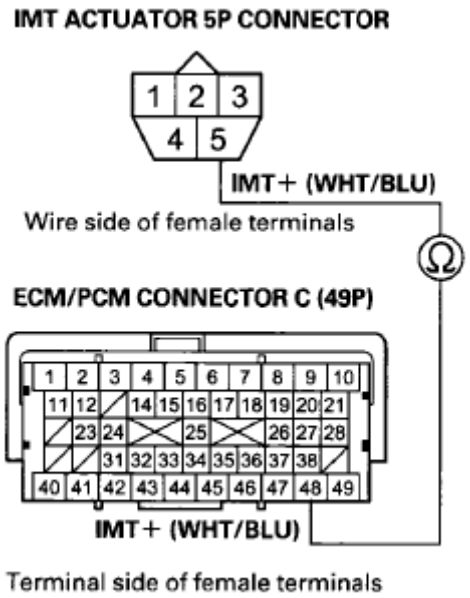


Fig. 14: Checking Continuity Between IMT Actuator 5P Connector And ECM/PCM Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 18.

NO - Repair open in the wire between the ECM/PCM (C48) and the IMT actuator, then go to step 24.

18. Check for continuity between IMT actuator 5P connector terminal No. 4 and ECM/PCM connector terminal C49.

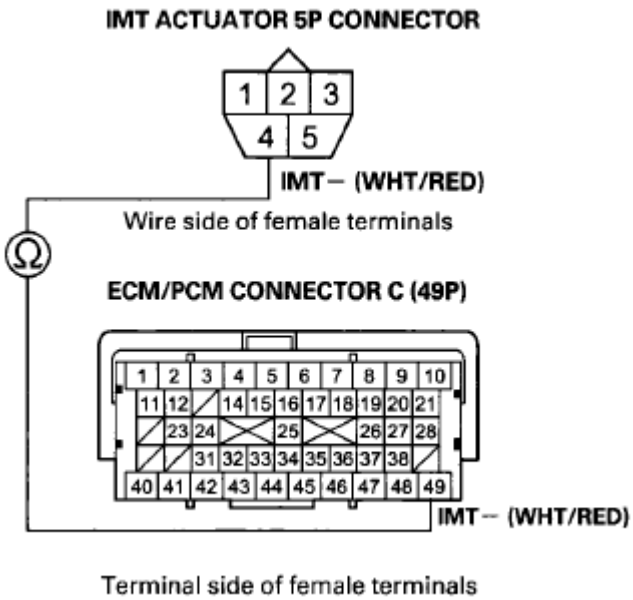


Fig. 15: Checking Continuity Between IMT Actuator 5P Connector And ECM/PCM Connector

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 19.

NO - Repair open in the wire between the ECM/PCM (C49) and the IMT actuator, then go to step 24.

19. Remove the **IMT actuator**.
20. Move the IMT valve by hand.

Does it move smoothly?

YES - Go to step 21.

NO - Remove the intake manifold upper cover (see step 5 under **INTAKE MANIFOLD REMOVAL AND INSTALLATION**), and repair the stuck valve. If needed, replace the intake manifold (see **REMOVAL**), then go to step 24.

21. Substitute a known-good **IMT actuator**.
22. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
23. Do the IMT TEST in the INSPECTION MENU with the HDS.

Is the result OK?

YES - Replace the original **IMT actuator**, then go to step 24.

NO - Go to step 32.

24. Reconnect all connectors.
25. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
26. Reset the ECM/PCM with the HDS.
27. Do the ECM/PCM idle learn procedure (see **ECM/PCM IDLE LEARN PROCEDURE**).
28. Start the engine, and let it idle without load (A/T in P or N, M/T in neutral) until the radiator fan comes on.
29. Hold the engine speed at 4, 000 RPM for 3 seconds or more, then let it idle.
30. Check for Pending or Confirmed DTCs with the HDS.

Is DTC P1078 indicated?

YES - Check for poor connections or loose terminals at the IMT actuator and the ECM/PCM, then go to step 1.

NO - Go to step 31.

31. Monitor the OBD STATUS for DTC P1078 in the DTCs MENU with the HDS.

    Does the screen indicates PASSED?

    YES - Troubleshooting is complete. If any other Pending or Confirmed DTCs were indicated in step 30, go to the indicated DTC's troubleshooting. •

    NO - If the screen indicates FAILED, check for poor connections or loose terminals at the IMT actuator and the ECM/PCM, then go to step 1. If the screen indicates NOT COMPLETED, go to step 28.

32. Reconnect all connectors.
33. Update the ECM/PCM if it does not have the latest software (see **ECM/PCM UPDATE**), or substitute a known-good ECM/PCM (see **SUBSTITUTING THE ECM/PCM**).
34. Start the engine, and let it idle without load (A/T in P or N, M/T in neutral) until the radiator fan comes on.
35. Hold the engine speed at 4, 000 RPM for 3 seconds or more, then let it idle.
36. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P1078 indicated?

    YES - Check for poor connections or loose terminals at the IMT actuator and the ECM/PCM. If the ECM/PCM was updated, substitute a known-good ECM/PCM (see **SUBSTITUTING THE ECM/PCM**), then go to step 34. If the ECM/PCM was substituted, go to step 1.

    NO - Go to step 37.

37. Monitor the OBD STATUS for DTC P1078 in the DTCs MENU with the HDS.

    Does the screen indicate PASSED?

    YES - If the ECM/PCM was updated, troubleshooting is complete. If the ECM/PCM was substituted, replace the original ECM/PCM (see **ECM/PCM REPLACEMENT**). If any other Pending or Confirmed DTCs were indicated in step 36, go to the indicated DTC's troubleshooting. •

    NO - If the screen indicated FAILED, check for poor connections or loose terminals at the IMT actuator and the ECM/PCM. If the ECM/PCM was updated, substitute a known-good ECM/PCM (see **SUBSTITUTING THE ECM/PCM**), then go to step 34. If the ECM/PCM was substituted, go to step 1. If the screen indicates NOT COMPLETED, go to step 34.

THROTTLE BODY TEST

CARBON ACCUMULATION CHECK

NOTE: If the malfunction indicator lamp (MIL) has been reported on, check for diagnostic trouble codes (DTCs).

1. Connect the HDS to the data link connector (DLC) (A) located under the driver's side of the dashboard.

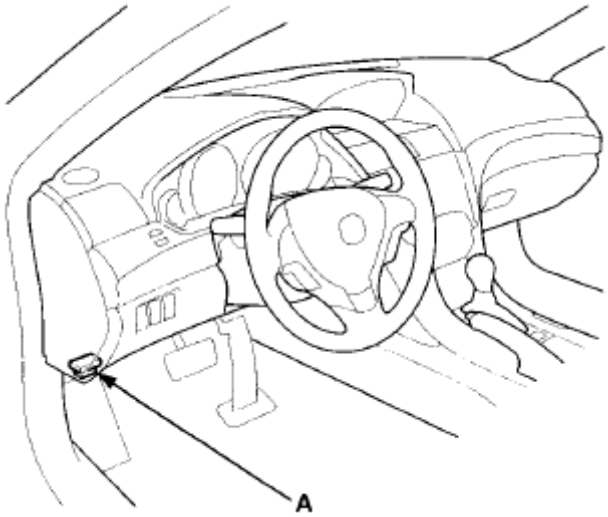


Fig. 16: Identifying Data Link Connector (DLC)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
3. Make sure the HDS communicates with the ECM/PCM. If it does not, go to the DLC circuit troubleshooting (see **DLC CIRCUIT TROUBLESHOOTING**).
4. Start the engine. Hold the engine speed at 3, 000 RPM without load (A/T in P or N, M/T in neutral) until the radiator fan comes on, then let it idle.
5. Check the REL TP SENSOR in the DATA LIST with the HDS. The reading should be below 2.46 percent. If it is not, clean the **throttle body**.

THROTTLE POSITION LEARNING CHECK

NOTE: If the malfunction indicator lamp (MIL) has been reported on, check for diagnostic trouble codes (DTCs).

1. Connect the HDS to the data link connector (DLC) (A) located under the driver's side of the dashboard.

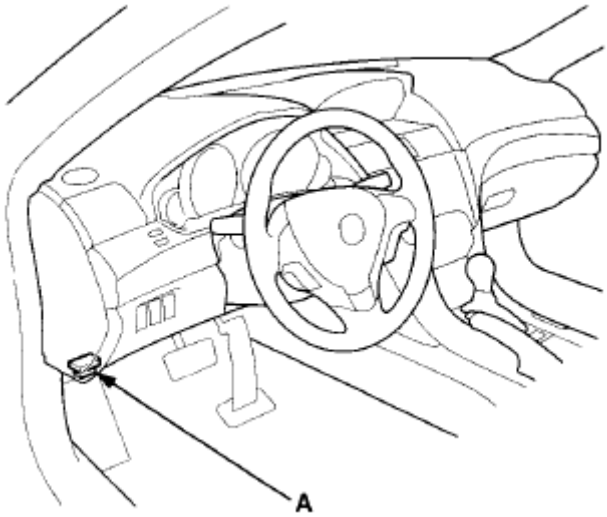


Fig. 17: Identifying Data Link Connector (DLC)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
3. Make sure the HDS communicates with the ECM/PCM. If it does not, go to the DLC circuit troubleshooting (see **DLC CIRCUIT TROUBLESHOOTING**).
4. Select the INSPECTION MENU with the HDS.
5. Do the TP LEARNING CHECK in the ETCS TEST. If needed, clean the **throttle body**.

THROTTLE BODY CLEANING

CAUTION: Do not insert your fingers into the installed throttle body when you turn the ignition switch to ON (II)/press the engine start/stop button, or while the ignition switch is in ON (II)/vehicle in ON mode. If you do, you will seriously injure your fingers if the throttle valve is activated.

1. Check for damage to the air cleaner element. If the **air cleaner element** is damaged, replace it.
2. Remove the **throttle body**.
3. Clean off the carbon from the throttle valve and inside the throttle body with a paper towel soaked in throttle plate cleaner.

NOTE:

- **Remove the throttle body to clean it.**
- **Be careful not to pinch your fingers.**
- **To avoid removing the molybdenum coating, do not clean the bearing area of the throttle shaft (A).**
- **Do not spray throttle plate cleaner directly on the throttle body.**
- **Use Acura genuine throttle plate cleaner.**

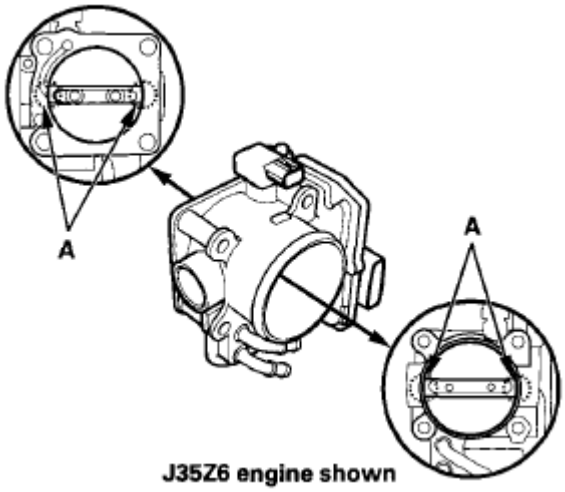


Fig. 18: Identifying Throttle Shaft
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Install the **throttle body**.
5. Reset the ECM/PCM with the HDS (see **HDS CLEAR COMMAND**).
6. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode and wait 2 seconds.
7. Do the ECM/PCM idle learn procedure (see **ECM/PCM IDLE LEARN PROCEDURE**).

AIR CLEANER REMOVAL/INSTALLATION

1. Do the battery removal procedure (see **BATTERY REMOVAL AND INSTALLATION**).
2. Disconnect the MAF sensor/IAT sensor 5P connector (A).

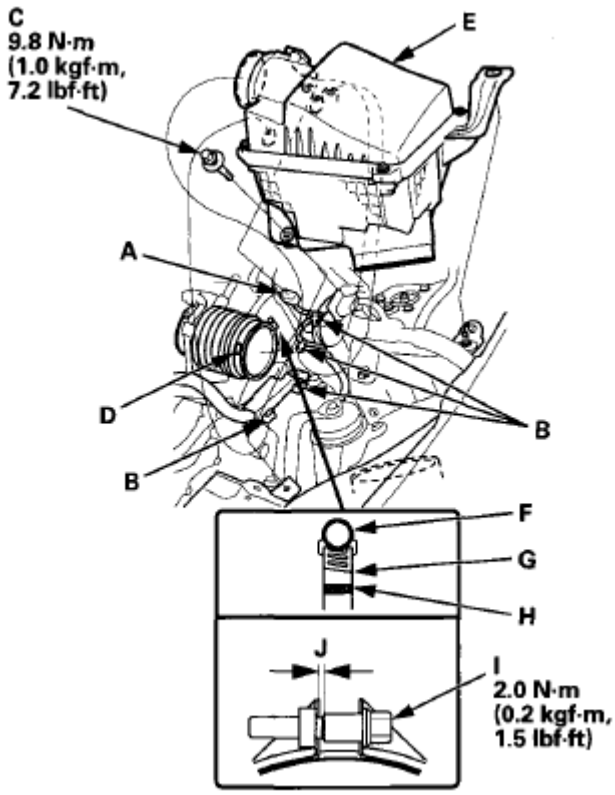


Fig. 19: Identifying 5P Connector, Clamps, Bolts, Band And Air Cleaner Housing With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Remove the harness clamps (B) and the bolt (C).
4. Loosen the band (D), then remove the air cleaner housing (E).
5. Install the parts in the reverse order of removal.

NOTE:

- **J37A4 engine:**

  Before you torque the hose clamp screw (F), align the edge of the clamp (G) within the painted mark (H).

- **J35Z6 engine:**

  After you torque the hose clamp screw (I), make sure the clearance (J) is less than 0.04 in (1.0 mm).

6. Do the battery installation procedure (see **BATTERY REMOVAL AND INSTALLATION**).

AIR CLEANER ELEMENT INSPECTION/REPLACEMENT

1. Open the air cleaner housing cover (A).

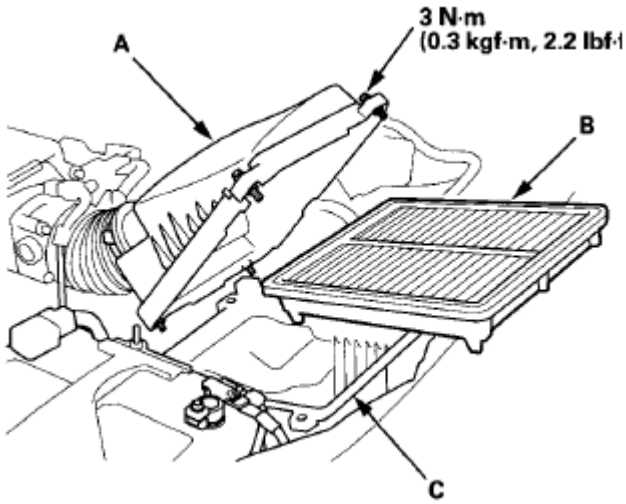


Fig. 20: Identifying Air Cleaner Housing, Element And Cover With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Remove the air cleaner element (B) from the air cleaner housing (C).
3. Check the air cleaner element for damage or clogging. If it is damaged or clogged, replace it.

NOTE: Do not use compressed air to clean the air cleaner element.

4. Clean and remove any debris from inside the air cleaner housing.
5. Install the parts in the reverse order of removal.

- If you did not replace the air cleaner element, this procedure is complete.
- If the Maintenance Minder required air cleaner element replacement, reset the Maintenance Minder (see **MAINTENANCE MINDER™**).
- If the idle speed fluctuates, do the idle speed inspection (see **ECM/PCM IDLE LEARN PROCEDURE**).

INTAKE AIR RESONATOR REMOVAL/INSTALLATION

1. Remove the splash separator (A).

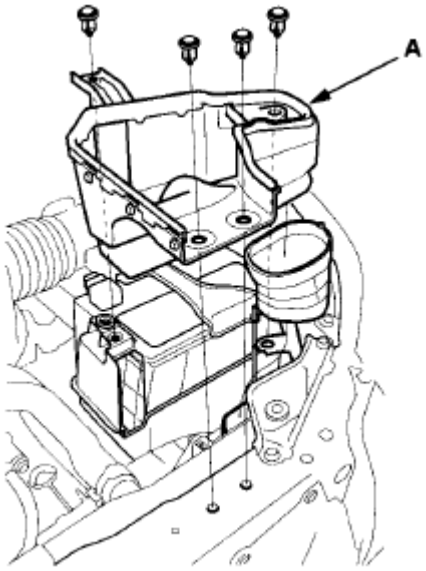


Fig. 21: Identifying Splash Separator
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Do the battery removal procedure (see **BATTERY REMOVAL AND INSTALLATION**).
3. Remove the air cleaner (see).
4. Remove the battery base (A).

A/T

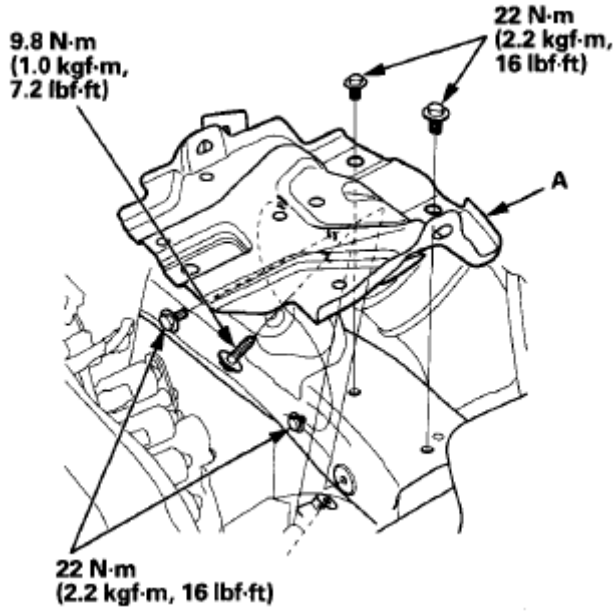


Fig. 22: Identifying Battery Base With Torque Specifications (A/T)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

M/T

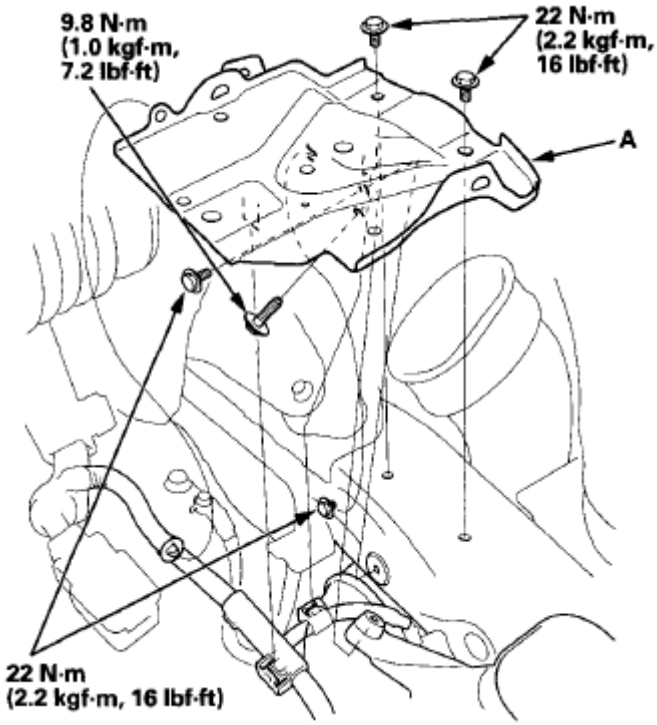


Fig. 23: Identifying Battery Base With Torque Specifications (M/T)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Remove the intake air duct (A).

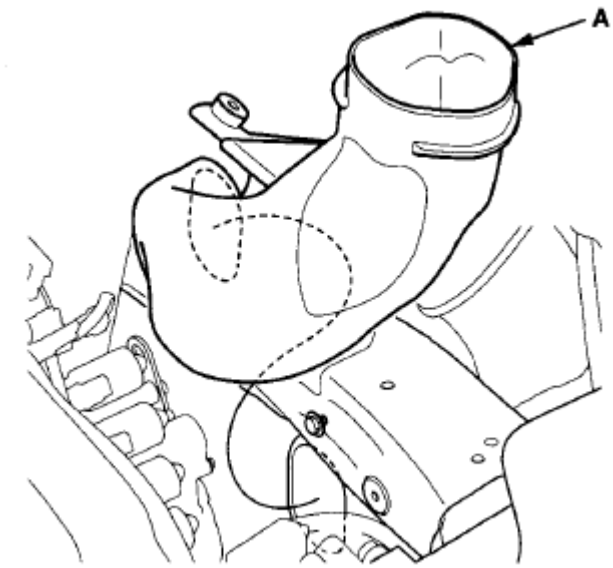


Fig. 24: Identifying Intake Air Duct
Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Remove the front bumper (see **FRONT BUMPER REMOVAL/INSTALLATION**).
7. Remove the intake air resonator (A).

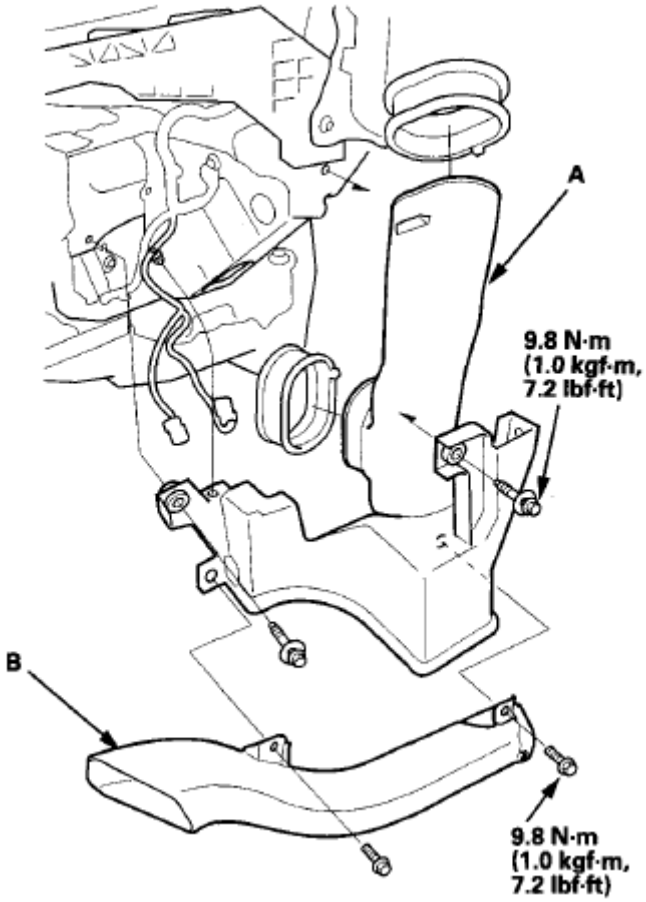


Fig. 25: Identifying Intake Air Resonator And Brake Duct With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

8. J37A4 engine: Remove the brake duct (B).
9. Install the parts in the reverse order of removal.
10. Do the battery installation procedure (see **BATTERY REMOVAL AND INSTALLATION**).

IMT ACTUATOR REPLACEMENT

1. Disconnect the IMT actuator 5P connector (A).

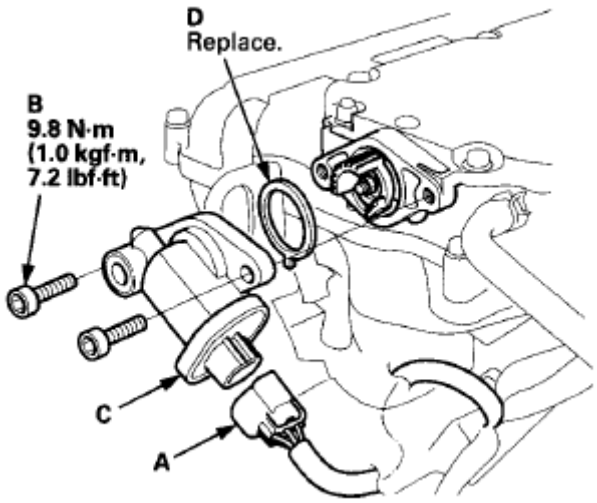


Fig. 26: Identifying IMT Actuator 5P Connector And Actuator, O-Ring And Bolts With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Remove the bolts (B) and the IMT actuator (C).
3. Install the parts in the reverse order of removal with a new O-ring (D).

THROTTLE BODY REMOVAL/INSTALLATION

CAUTION: Do not insert your fingers into the installed throttle body when you turn the ignition switch to ON (II)/press the engine start/stop button, or while the ignition switch is in ON (II)/vehicle in ON mode. If you do, you will seriously injure your fingers if the throttle valve is activated.

NOTE: If you are replacing or cleaning the throttle body, begin at step 1. If you are removing the throttle body temporarily, begin at step 4.

1. Connect the HDS while the engine is stopped.
2. Select the INSPECTION MENU with the HDS.
3. Do the TP POSITION CHECK in the ETCS TEST.
4. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
5. Disconnect the MAP sensor connector (A).

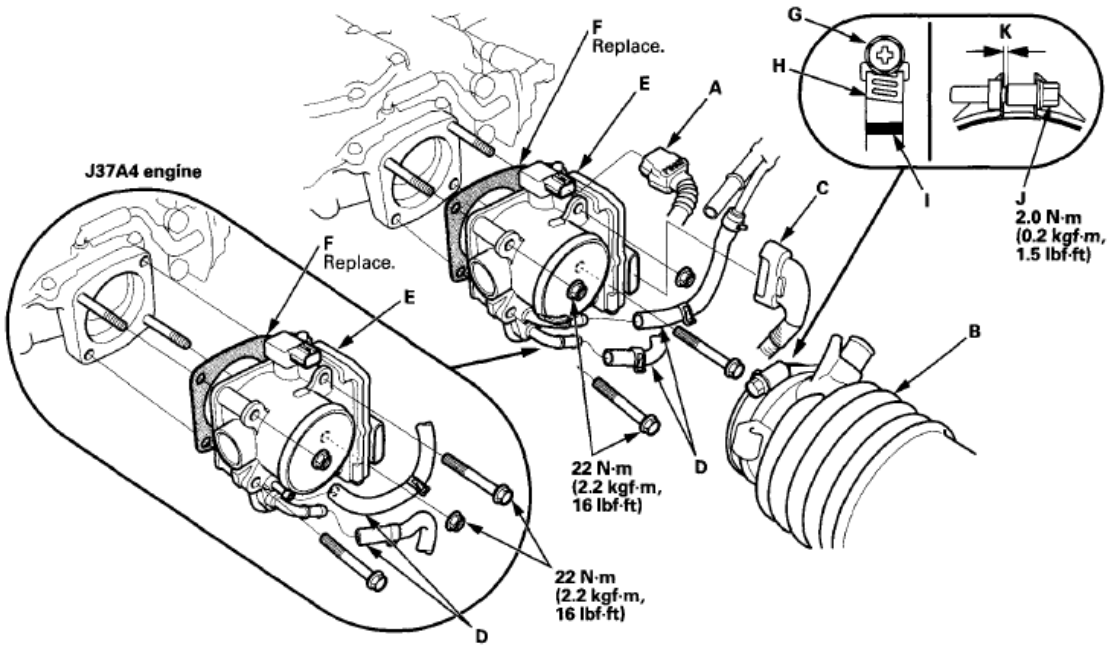


Fig. 27: Exploded View Of Throttle Body With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Remove the intake air duct (B).
7. Disconnect the throttle body connector (C).
8. Disconnect and plug the water bypass hoses (D), then remove the throttle body (E).
9. Install the parts in the reverse order of removal with a new gasket (F).

NOTE:

- **J37A4 engine: Before you torque the hose clamp screw (G), align the edge of the clamp (H) with the painted mark (I).**
- **J35Z6 engine: After you torque the hose clamp screw (J), make sure the clearance (K) is less than 0.04 in (1.0 mm).**

10. Refill the radiator with engine coolant (see **COOLANT CHECK**).
11. Do the ECM/PCM idle learn procedure (see **ECM/PCM IDLE LEARN PROCEDURE**).

2012 ENGINE PERFORMANCE

Mode 6 - Acura

INTRODUCTION

Mode 6 is designed to allow access to the results of onboard diagnostic monitoring tests of specific components/systems that are not continuously monitored. These systems include the catalytic converter, EVAP system, oxygen sensor, oxygen sensor heater, EGR system, secondary AIR system, and sometimes misfire.

Mode 6 data is output from the PCM/ECM in hexadecimal form. The $ sign indicates a hexadecimal number. Depending on the software in the scanner, the output could be displayed in hexadecimal numbers (no conversion), raw data (conversion to decimal numbers), or measurable values (applying conversion factor to raw data).

Before reading mode 6 information, ensure that the monitor for the information you are accessing has run to completion. If the monitor is not complete, the mode 6 data will not be accurate.

MONITOR ID BY MODEL: TL, ZDX, RDX, TSX L4 & TSX V6

OBD Monitor ID by Model: TL, ZDX, RDX, TSX L4 & TSX V6

Monitor	OBD Monitor ID	Test ID	Unit and Scaling ID	TL	ZDX	RDX	TSX L4	TSX V6
A/F Sensor (Bank 1)	$01	$80	$11	X	X	X	X	X
	$01	$81	$14					
	$01	$82	$0B	X	X			X
	$01	$83	$8D	X	X	X	X	X
	$01	$84	$8D	X	X	X	X	X
	$01	$85	$01	X	X	X	X	X
	$01	$86	$8D	X	X	X	X	X
	$01	$87	$14	X	X	X	X	X
	$01	$88	$0B	X	X			X
	$01	$89	$01					
A/F Sensor (Bank 2)	$05	$80	$11	X	X			X
	$05	$81	$14					
	$05	$82	$0B	X	X			X
	$05	$83	$8D	X	X			X
	$05	$84	$8D	X	X			X
	$05	$85	$01	X	X			X
	$05	$86	$8D	X	X			X
	$05	$87	$14	X	X			X
	$05	$88	$0B	X	X			X
	$02	$98	$0B			X		

Secondary HO2S (Bank 1)	$02	$99	$0B			X		
	$02	$9A	$0B			X		
	$02	$9B	$10			X		
	$02	$9C	$0B			X		
	$02	$9D	$0B	X	X		X	X
	$02	$9E	$0B	X	X		X	X
Secondary HO2S (Bank 2)	$06	$98	$0B					
	$06	$99	$0B					
	$06	$9A	$0B					
	$06	$9B	$10					
	$06	$9C	$0B					
	$06	$9D	$0B	X	X			X
	$06	$9E	$0B	X	X			X
Catalyst (Bank 1)	$21	$A0	$01			X		
	$21	$A1	$0B	X	X		X	X
Catalyst (Bank 2)	$22	$A0	$01					
	$22	$A1	$0B	X	X			X
EGR System	$31	$D0	$32	X	X			X
	$31	$D1	$32	X	X			X
	$31	$D2	$39	X	X			X
	$31	$D3	$01	X	X			X
VTC (VVT) System	$35	$D4	$1C			X	X	
	$35	$D5	$1C			X		
	$35	$D6	$1C					
	$35	$D7	$1C					
	$35	$D9	$9C				X	
EVAP System	$39	$B2	$FD					
	$3A	$B3	$FD					
	$3A	$BA	$12	X	X	X	X	X
	$3C	$B4	$06	X	X	X	X	X
	$3C	$B5	$83	X	X	X	X	X
	$3C	$B6	$12	X	X	X	X	X
	$3C	$B7	$10		X			
	$3C	$B8	$FE		X			
	$3D	$B0	$FD					
	$3D	$B1	$FD					
	$3D	$B9	$30	X	X	X	X	X
	$3D	$BB	$30			X		
	$3D	$BC	$10			X		
Fuel System (Bank 1)	$81	$D8	$05					

Fuel System (Bank 2)	$82	$D8	$05					
Misfire	$A2	$0B	$24	X	X	X	X	X
	$A2	$0C	$24	X	X	X	X	X
	$A3	$0B	$24	X	X	X	X	X
	$A3	$0C	$24	X	X	X	X	X
	$A4	$0B	$24	X	X	X	X	X
	$A4	$0C	$24	X	X	X	X	X
	$A5	$0B	$24	X	X	X	X	X
	$A5	$0C	$24	X	X	X	X	X
	$A6	$0B	$24	X	X			X
	$A6	$0C	$24	X	X			X
	$A7	$0B	$24	X	X			X
	$A7	$0C	$24	X	X			X

OBD MONITOR ID BY MODEL: MDX & RL

OBD Monitor ID by Model: MDX & RL

Monitor L4	OBD Monitor ID	Test ID	Unit and Scaling ID	MDX	RL
A/F Sensor (Bank 1)	$01	$80	$11	X	X
	$01	$81	$14		
	$01	$82	$0B	X	X
	$01	$83	$8D	X	X
	$01	$84	$8D	X	X
	$01	$85	$01	X	X
	$01	$86	$8D	X	X
	$01	$87	$14	X	X
	$01	$88	$0B	X	X
	$01	$89	$01		
A/F Sensor (Bank 2)	$05	$80	$11	X	X
	$05	$81	$14		
	$05	$82	$0B	X	X
	$05	$83	$8D	X	X
	$05	$84	$8D	X	X
	$05	$85	$01	X	X
	$05	$86	$8D	X	X
	$05	$87	$14	X	X
	$05	$88	$0B	X	X
	$02	$98	$0B		
	$02	$99	$0B		

Secondary HO2S (Bank 1)	$02	$9A	$0B		
	$02	$9B	$10		
	$02	$9C	$0B		
	$02	$9D	$0B	X	X
	$02	$9E	$0B	X	X
Secondary HO2S (Bank 2)	$06	$98	$0B		
	$06	$99	$0B		
	$06	$9A	$0B		
	$06	$9B	$10		
	$06	$9C	$0B		
	$06	$9D	$0B	X	X
	$06	$9E	$0B	X	X
Catalyst (Bank 1)	$21	$A0	$01		
	$21	$A1	$0B	X	X
Catalyst (Bank 2)	$22	$A0	$01		
	$22	$A1	$0B	X	X
EGR System	$31	$D0	$32	X	X
	$31	$D1	$32	X	X
	$31	$D2	$39	X	X
	$31	$D3	$01	X	X
VTC (VVT) System	$35	$D4	$1C		
	$35	$D5	$1C		
	$35	$D6	$1C		
	$35	$D7	$1C		
	$35	$D9	$9C		
EVAP System	$39	$B2	$FD		
	$3A	$B3	$FD		
	$3A	$BA	$12	X	X
	$3C	$B4	$06	X	X
	$3C	$B5	$83	X	X
	$3C	$B6	$12	X	X
	$3C	$B7	$10	X	
	$3C	$B8	$FE	X	
	$3D	$B0	$FD		
	$3D	$B1	$FD		
	$3D	$B9	$30	X	X
	$3D	$BB	$30		
	$3D	$BC	$10		
Fuel System (Bank 1)	$81	$D8	$05		
Fuel System	$82	$D8	$05		

(Bank 2)					
Misfire	$A2	$0B	$24	X	X
	$A2	$0C	$24	X	X
	$A3	$0B	$24	X	X
	$A3	$0C	$24	X	X
	$A4	$0B	$24	X	X
	$A4	$0C	$24	X	X
	$A5	$0B	$24	X	X
	$A5	$0C	$24	X	X
	$A6	$0B	$24	X	X
	$A6	$0C	$24	X	X
	$A7	$0B	$24	X	X
	$A7	$0C	$24	X	X

SAE J1979 SERVICE $06 INFORMATION BY OBD MONITOR ID

A/F SENSOR (BANK 1)

DTC P0134: MONITOR ID $01: TEST ID $80

OBD Monitor ID	**$01**	**Test ID**	**$80**	**Unit and Scaling ID**	**$11**
DTC		P0134			
Test Description		Check of A/F sensor "non-activation" time. See Test ID $81 and $82 for "non-activation" criteria.			
Store Timing		Normal judgment/Failure judgment			
Conversion to Engineering Units		Measured value: Output value (Decimal) x 0.1 (sec.) The lowest limit value: Not applicable The highest limit value: Output value (Decimal) x 0.1 (sec.)			

DTC P0134: MONITOR ID $01: TEST ID $82

OBD Monitor ID	**$01**	**Test ID**	**$82**	**Unit and Scaling ID**	**$0B**
DTC		P0134			
Test Description		Check of A/F sensor "non-activation" by monitoring the sensor cell voltage.			
Store Timing		Failure judgment			
Conversion to Engineering Units		Measured value: Output value (Decimal) x 0.01 (V) The lowest limit value: Output value (Decimal) x 0.01 (V) The highest limit value: Output value (Decimal) x 0.01 (V)			

DTC P2195: MONITOR ID $01: TEST ID $83

OBD Monitor ID	**$01**	**Test ID**	**$83**	**Unit and Scaling ID**	**$8D**
DTC		P2195			
Test Description		Check of the A/F sensor "too lean" by monitoring the A/F sensor signal.			
Store Timing		Normal judgment/Failure judgment			

Conversion to Engineering Units	Measured value: Output value (Decimal) x 0.003906 (mA) The lowest limit value: Output value (Decimal) x 0.003906 (mA) The highest limit value: Not applicable

DTC P2A00: MONITOR ID $01: TEST ID $84

OBD Monitor ID	$01	Test ID	$84	Unit and Scaling ID	$8D
DTC		P2A00			
Test Description		Check of A/F sensor rationality by monitoring the sensor signal during fuel cut condition.			
Store Timing		Normal judgment/Failure judgment			
Conversion to Engineering Units		Measured value: Output value (Decimal) x 0.003906 (mA) The lowest limit value: Output value (Decimal) x 0.003906 (mA) The highest limit value: Output value (Decimal) x 0.003906 (mA)			

DTC P0133: MONITOR ID $01: TEST ID $85

OBD Monitor ID	$01	Test ID	$85	Unit and Scaling ID	$01
DTC		P0133			
Test Description		Response check of A/F sensor by monitoring the amplitude of filtered sensor signal during stable driving condition.			
Store Timing		Normal judgment/Failure judgment			
Conversion to Engineering Units		Measured value: No unit The lowest limit value: No unit The highest limit value: Not applicable			

DTC P1172: MONITOR ID $01: TEST ID $86

OBD Monitor ID	$01	Test ID	$86	Unit and Scaling ID	$8D
DTC		P1172			
Test Description		Check of A/F sensor "out of range" by monitoring the sensor signal.			
Store Timing		Normal judgment/Failure judgment			
Conversion to Engineering Units		Measured value: Output value (Decimal) x 0.003906 (mA) The lowest limit value: Output value (Decimal) x 0.003906 (mA) The highest limit value: Not applicable			

DTC P0134: MONITOR ID $01: TEST ID $87

OBD Monitor ID	$01	Test ID	$87	Unit and Scaling ID	$14
DTC		P0134			
Test Description		Check of A/F sensor "non-activation" by monitoring the sensor element resistance during A/F feedback control.			
Store Timing		Failure judgment			
Conversion to Engineering Units		Measured value: Output value (Decimal) x 1 (W) The lowest limit value: Not applicable The highest limit value: Output value (Decimal) x 1 (W)			

DTC P0134: MONITOR ID $01: TEST ID $88

OBD Monitor ID	$01	Test ID	$88	Unit and Scaling ID	$0B
DTC		P0134			
Test Description		Check of A/F sensor "non-activation" by monitoring the sensor cell voltage during A/F feedback control.			
Store Timing		Failure judgment			
Conversion to Engineering Units		Measured value: Output value (Decimal) x 0.01 (V) The lowest limit value: Output value (Decimal) x 0.01 (V) The highest limit value: Output value (Decimal) x 0.01 (V)			

A/F SENSOR (BANK 2)

DTC P0154: MONITOR ID $05: TEST ID $80

OBD Monitor ID	$05	Test ID	$80	Unit and Scaling ID	$11
DTC		P0154			
Test Description		Check of A/F sensor "non-activation" by monitoring the sensor non-activation time.			
Store Timing		Normal judgment/Failure judgment			
Conversion to Engineering Units		Measured value: Output value (Decimal) x 0.1 (sec.) The lowest limit value: Not applicable The highest limit value: Output value (Decimal) x 0.1 (sec.)			

DTC P0154: MONITOR ID $05: TEST ID $82

OBD Monitor ID	$05	Test ID	$82	Unit and Scaling ID	$0B
DTC		P0154			
Test Description		Check of A/F sensor "non-activation" by monitoring the sensor cell voltage.			
Store Timing		Failure judgment			
Conversion to Engineering Units		Measured value: Output value (Decimal) x 0.01 (V) The lowest limit value: Output value (Decimal) x 0.01 (V) The highest limit value: Output value (Decimal) x 0.01 (V)			

DTC P2197: MONITOR ID $05: TEST ID $83

OBD Monitor ID	$05	Test ID	$83	Unit and Scaling ID	$8D
DTC		P2197			
Test Description		Check of the A/F sensor "too lean" by monitoring the A/F sensor signal.			
Store Timing		Normal judgment/Failure judgment			
Conversion to Engineering Units		Measured value: Output value (Decimal) x 0.003906 (mA) The lowest limit value: Output value (Decimal) x 0.003906 (mA) The highest limit value: Not applicable			

DTC P2A03: MONITOR ID $05: TEST ID $84

OBD Monitor ID	$05	Test ID	$84	Unit and Scaling ID	$8D
DTC		P2A03			

Test Description	Check of A/F sensor rationality by monitoring the sensor signal during fuel cut condition.
Store Timing	Normal judgment/Failure judgment
Conversion to Engineering Units	Measured value: Output value (Decimal) x 0.003906 (mA) The lowest limit value: Output value (Decimal) x 0.003906 (mA) The highest limit value: Output value (Decimal) x 0.003906 (mA)

DTC P0153: MONITOR ID $05: TEST ID $85

OBD Monitor ID	$05	Test ID	$85	Unit and Scaling ID	$01
DTC		P0153			
Test Description		Response check of A/F sensor by monitoring the amplitude of filtered sensor signal during stable driving condition.			
Store Timing		Normal judgment/Failure judgment			
Conversion to Engineering Units		Measured value: No unit The lowest limit value: No unit The highest limit value: Not applicable			

DTC P1174: MONITOR ID $05: TEST ID $86

OBD Monitor ID	$05	Test ID	$86	Unit and Scaling ID	$8D
DTC		P1174			
Test Description		Check of A/F sensor "out of range" by monitoring the sensor signal.			
Store Timing		Normal judgment/Failure judgment			
Conversion to Engineering Units		Measured value: Output value (Decimal) x 0.003906 (mA) The lowest limit value: Output value (Decimal) x 0.003906 (mA) The highest limit value: Not applicable			

DTC P0154: MONITOR ID $05: TEST ID $87

OBD Monitor ID	$05	Test ID	$87	Unit and Scaling ID	$14
DTC		P0154			
Test Description		Check of A/F sensor "non-activation" by monitoring the sensor element resistance during A/F feedback control.			
Store Timing		Failure judgment			
Conversion to Engineering Units		Measured value: Output value (Decimal) x 1 (W) The lowest limit value: Not applicable The highest limit value: Output value (Decimal) x 1 (W)			

DTC P0154: MONITOR ID $05: TEST ID $88

OBD Monitor ID	$05	Test ID	$88	Unit and Scaling ID	$0B
DTC		P0154			
Test Description		Check of A/F sensor "non-activation" by monitoring the sensor cell voltage during A/F feedback control.			
Store Timing		Failure judgment			
Conversion to		Measured value: Output value (Decimal) x 0.01 (V)			

Engineering Units	The lowest limit value: Output value (Decimal) x 0.01 (V) The highest limit value: Output value (Decimal) x 0.01 (V)

SECONDARY HO2S (BANK 1)

DTC P2270: MONITOR ID $02: TEST ID $98

OBD Monitor ID	$02	Test ID	$98	Unit and Scaling ID	$0B
DTC		P2270			
Test Description		Check of secondary heated oxygen sensor signal "lean" stuck by monitoring the sensor output voltage after fuel cut condition.			
Store Timing		Normal judgment/Failure judgment			
Conversion to Engineering Units		Measured value: Output value (Decimal) x 0.001 (V) The lowest limit value: Output value (Decimal) x 0.001 (V) The highest limit value: Not applicable			

DTC P2271: MONITOR ID $02: TEST ID $99

OBD Monitor ID	$02	Test ID	$99	Unit and Scaling ID	$0B
DTC		P2271			
Test Description		Check of secondary heated oxygen sensor signal "rich" stuck by monitoring the sensor output voltage after fuel cut condition.			
Store Timing		Normal judgment/Failure judgment			
Conversion to Engineering Units		Measured value: Output value (Decimal) x 0.001 (V) The lowest limit value: Not applicable The highest limit value: Output value (Decimal) x 0.001 (V)			

DTC P0137: MONITOR ID $02: TEST ID $9A

OBD Monitor ID	$02	Test ID	$9A	Unit and Scaling ID	$0B
DTC		P0137			
Test Description		Circuit check of secondary heated oxygen sensor by monitoring the sensor output voltage.			
Store Timing		Normal judgment/Failure judgment			
Conversion to Engineering Units		Measured value: Output value (Decimal) x 0.001 (V) The lowest limit value: Not applicable The highest limit value: Output value (Decimal) x 0.001 (V)			

DTC P0139: MONITOR ID $02: TEST ID $9B

OBD Monitor ID	$02	Test ID	$9B	Unit and Scaling ID	$10
DTC		P0139			
Test Description		Response check of secondary heated oxygen sensor by monitoring the sensor output voltage after fuel cut condition.			
Store Timing		Normal judgment/Failure judgment			
Conversion to Engineering Units		Measured value: Output value (Decimal) x 1 (sec.) The lowest limit value: Not applicable The highest limit value: Output value (Decimal) x 1 (sec.)			

DTC P0138: MONITOR ID $02: TEST ID $9C

OBD Monitor ID	$02	Test ID	$9C	Unit and Scaling ID	$0B
DTC		P0138			
Test Description		Circuit check of secondary heated oxygen sensor by monitoring the sensor output voltage.			
Store Timing		Normal judgment/Failure judgment			
Conversion to Engineering Units		Measured value: Output value (Decimal) x 0.001 (V) The lowest limit value: Output value (Decimal) x 0.001 (V) The highest limit value: Not applicable			

DTC P0139: MONITOR ID $02: TEST ID $9D

OBD Monitor ID	$02	Test ID	$9D	Unit and Scaling ID	$0B
DTC		P0139			
Test Description		Response check of secondary heated oxygen sensor by monitoring the sensor output voltage during fuel cut condition.			
Store Timing		Normal judgment/Failure judgment			
Conversion to Engineering Units		Measured value: Output value (Decimal) x 0.001 (V) The lowest limit value: Not applicable The highest limit value: Output value (Decimal) x 0.001 (V)			

DTC P2270: MONITOR ID $02: TEST ID $9E

OBD Monitor ID	$02	Test ID	$9E	Unit and Scaling ID	$0B
DTC		P2270			
Test Description		Circuit check of secondary heated oxygen sensor by monitoring the sensor output voltage.			
Store Timing		Normal judgment/Failure judgment			
Conversion to Engineering Units		Measured value: Output value (Decimal) x 0.001 (V) The lowest limit value: Output value (Decimal) x 0.001 (V) The highest limit value: Not applicable			

SECONDARY HO2S (BANK 2)

DTC P0159: MONITOR ID $06: TEST ID $9D

OBD Monitor ID	$06	Test ID	$9D	Unit and Scaling ID	$0B
DTC		P0159			
Test Description		Response check of secondary heated oxygen sensor by monitoring the sensor output voltage during fuel cut condition.			
Store Timing		Normal judgment/Failure judgment			
Conversion to Engineering Units		Measured value: Output value (Decimal) x 0.001 (V) The lowest limit value: Not applicable The highest limit value: Output value (Decimal) x 0.001 (V)			

DTC P2272: MONITOR ID $06: TEST ID $9E

OBD Monitor ID	$06	Test ID	$9E	Unit and Scaling ID	$0B

DTC	P2272
Test Description	Circuit check of secondary heated oxygen sensor by monitoring the sensor output voltage.
Store Timing	Normal judgment/Failure judgment
Conversion to Engineering Units	Measured value: Output value (Decimal) x 0.001 (V) The lowest limit value: Output value (Decimal) x 0.001 (V) The highest limit value: Not applicable

CATALYST (BANK 1)

DTC P0420: MONITOR ID $21: TEST ID $A0

OBD Monitor ID	**$21**	**Test ID**	**$A0**	**Unit and Scaling ID**	**$01**
DTC		P0420			
Test Description		Catalyst capability, monitored by measuring the fluctuation of the secondary heated oxygen sensor output value.			
Store Timing		Normal judgment/Failure judgment			
Conversion to Engineering Units		Measured value: No unit The lowest limit value: Not applicable The highest limit value: No unit			

DTC P0420: MONITOR ID $21: TEST ID $A1

OBD Monitor ID	**$21**	**Test ID**	**$A1**	**Unit and Scaling ID**	**$0B**
DTC		P0420			
Test Description		Catalyst capability, monitored by measuring the stability of the secondary heated oxygen sensor output value.			
Store Timing		Normal judgment/Failure judgment			
Conversion to Engineering Units		Measured value: Output value (Decimal) x 0.001 (V) The lowest limit value: Not applicable The highest limit value: Output value (Decimal) x 0.001 (V)			

CATALYST (BANK 2)

DTC P0430: MONITOR ID $22: TEST ID $0B

OBD Monitor ID	**$22**	**Test ID**	**$A1**	**Unit and Scaling ID**	**$0B**
DTC		P0430			
Test Description		Check of catalyst capability by monitoring the stability of the secondary heated oxygen sensor output value.			
Store Timing		Normal judgment/Failure judgment			
Conversion to Engineering Units		Measured value: Output value (Decimal) x 0.001 (V) The lowest limit value: Not applicable The highest limit value: Output value (Decimal) x 0.001 (V)			

EGR SYSTEM

DTC P0404: MONITOR ID $31: TEST ID $D0

OBD Monitor ID	$31	Test ID	$D0	Unit and Scaling ID	$32
DTC		P0404			
Test Description		Check of EGR valve by comparing the actual valve lift value to the PCM commanded valve lift value.			
Store Timing		Normal judgment/Failure judgment			
Conversion to Engineering Units		Measured value: Output value (Decimal) x 0.0000305 (inch) The lowest limit value: Not applicable The highest limit value: Output value (Decimal) x 0.0000305 (inch)			

DTC P2413: MONITOR ID $31: TEST ID $D1

OBD Monitor ID	$31	Test ID	$D1	Unit and Scaling ID	$32
DTC		P2413			
Test Description		Check of EGR valve by comparing the actual valve lift value to the PCM commanded valve lift value.			
Store Timing		Normal judgment/Failure judgment			
Conversion to Engineering Units		Measured value lift: Output value (Decimal) x 0.0000305 (inch) The lowest limit value lift: Output value (Decimal) x 0.0000305 (inch) The highest limit value lift: Not applicable			

DTC P0401: MONITOR ID $31: TEST ID $D2

OBD Monitor ID	$31	Test ID	$D2	Unit and Scaling ID	$39
DTC		P0401			
Test Description		Check EGR flow by monitoring the change in intake manifold pressure between EGR valve open and closed during fuel cut.			
Store Timing		Normal judgment/Failure judgment			
Conversion to Engineering Units		Measured value: Output value (Decimal) x 0.01 (%) The lowest limit value: Output value (Decimal) x 0.01 (%) The highest limit value: Not applicable			

DTC P0400: MONITOR ID $31: TEST ID $D3

OBD Monitor ID	$31	Test ID	$D3	Unit and Scaling ID	$01
DTC		P0400			
Test Description		Check for a broken EGR pipe by monitoring the A/F sensor output.			
Store Timing		Normal judgment/Failure judgment			
Conversion to Engineering Units		Measured value: No unit The lowest limit value: Not applicable The highest limit value: No unit			

VTC (VVT) SYSTEM

DTC P0011: MONITOR ID $35: TEST ID $D4

OBD Monitor ID	$35	Test ID	$D4	Unit and Scaling ID	$1C

DTC	P0011
Test Description	Response check of VTC (VVT) system by monitoring divergence of actual camshaft angle from target angle.
Store Timing	Normal judgment/Failure judgment
Conversion to Engineering Units	Measured value: Output value (Decimal) x 0.01 (deg.) The lowest limit value: Output value (Decimal) x 0.01 (deg.) The highest limit value: Output value (Decimal) x 0.01 (deg.)

DTC P1009: MONITOR ID $35: TEST ID $D5

OBD Monitor ID	**$35**	**Test ID**	**$D5**	**Unit and Scaling ID**	**$1C**
DTC		P1009			
Test Description		Check of VTC (VVT) system by comparing the actual camshaft angle to the target camshaft angle.			
Store Timing		Failure judgment			
Conversion to Engineering Units		Measured value: Output value (Decimal) x 0.01 (deg.) The lowest limit value: Not applicable The highest limit value: Output value (Decimal) x 0.01 (deg.)			

DTC P0341: MONITOR ID $35: TEST ID $D9

OBD Monitor ID	**$35**	**Test ID**	**$D9**	**Unit and Scaling ID**	**$9C**
DTC		P0341			
Test Description		Check of the VTC (VVT) system by monitoring divergence of camshaft angle from basis position during VTC (VVT) system stop.			
Store Timing		Failure judgment			
Conversion to Engineering Units		Measured value: Output value (Decimal) x 0.01 (deg.) The lowest limit value: Output value (Decimal) x 0.01 (deg.) The highest limit value: Output value (Decimal) x 0.01 (deg.)			

EVAP SYSTEM

DTC P0455: MONITOR ID $3A: TEST ID $BA

OBD Monitor ID	**$3A**	**Test ID**	**$BA**	**Unit and Scaling ID**	**$12**
DTC		P0455			
Test Description		Large (gross) leak check of EVAP system by monitoring time of the fuel tank pressure sensor value which is equal atmosphere after the engine off. (EONV)			
Store Timing		Failure judgment			
Conversion to Engineering Units		Measured value: Output value (Decimal) x 1.0 (sec.) The lowest limit value: Not applicable The highest limit value: Output value (Decimal) x 1.0 (sec.)			

DTC P0456: MONITOR ID $B4: TEST ID $BA

OBD Monitor ID	**$3C**	**Test ID**	**$B4**	**Unit and Scaling ID**	**$06**

DTC	P0456
Test Description	Leak check of EVAP system by monitoring the fuel tank pressure sensor value after the engine off. (EONV)
Store Timing	Normal judgment/Failure judgment
Conversion to Engineering Units	Measured value: Output value (Decimal) x 0.0000305 The lowest limit value: Not applicable The highest limit value: Output value (Decimal) x 0.0000305

DTC P0456: MONITOR ID $3C: TEST ID $B5

OBD Monitor ID	**$3C**	**Test ID**	**$B5**	**Unit and Scaling ID**	**$83**
DTC		P0456			
Test Description		Leak check of EVAP system by monitoring the fuel tank pressure sensor value after the engine off. (EONV)			
Store Timing		Normal judgment/Failure judgment			
Conversion to Engineering Units		Measured value: Output value (Decimal) x 0.01 The lowest limit value: Not applicable The highest limit value: Output value (Decimal) x 0.01			

DTC P0456: MONITOR ID $3C: TEST ID $B6

OBD Monitor ID	**$3C**	**Test ID**	**$B6**	**Unit and Scaling ID**	**$12**
DTC		P0456			
Test Description		Leak check of EVAP system by monitoring time of the fuel tank pressure sensor value which is equal atmosphere after the engine off. (EONV)			
Store Timing		Failure judgment			
Conversion to Engineering Units		Measured value: Output value (Decimal) x 1.0 (sec.) The lowest limit value: Not applicable The highest limit value: Output value (Decimal) x 1.0 (sec.)			

DTC P0456: MONITOR ID $3C: TEST ID $B7

OBD Monitor ID	**$3C**	**Test ID**	**$B7**	**Unit and Scaling ID**	**$10**
DTC		P0456			
Test Description		Check of fuel tank pressure sensor signal unstable after the engine off. (early EONV)			
Store Timing		Failure judgment			
Conversion to Engineering Units		Measured value: Output value (Decimal) x 1.0 (msec.) The lowest limit value: Not applicable The highest limit value: Output value (Decimal) x 1.0 (msec.)			

DTC P0456: MONITOR ID $3C: TEST ID $B8

OBD Monitor ID	**$3C**	**Test ID**	**$B8**	**Unit and Scaling ID**	**$FE**
DTC		P0456			
Test Description		Check of EVAP system by monitoring the fuel tank pressure sensor signal after			

	the engine off. (comparison with atmosphere)
Store Timing	Normal judgment/Failure judgment
Conversion to Engineering Units	Measured value: Output value (Decimal) x 0.25 (Pa) The lowest limit value: Output value (Decimal) x 0.25 (Pa) The highest limit value: Output value (Decimal) x 0.25 (Pa)

DTC P0457, P0496, P145C: MONITOR ID $3D: TEST ID $B9

OBD Monitor ID	$3D	Test ID	$B9	Unit and Scaling ID	$30
DTC		P0457, P0496, P145C			
Test Description		Purge flow and/or EVAP canister purge valve check by monitoring fuel tank pressure sensor value while the engine is running.			
Store Timing		Normal judgment/Failure judgment			
Conversion to Engineering Units		Measured value: Output value (Decimal) x 0.001526 (%) The lowest limit value: Not applicable The highest limit value: Output value (Decimal) x 0.001526 (%)			

DTC P145A, P145D: MONITOR ID $3D: TEST ID $BB

OBD Monitor ID	$3D	Test ID	$BB	Unit and Scaling ID	$30
DTC		P145A, P145D			
Test Description		Purge flow and/or EVAP canister purge valve check by monitoring fuel tank pressure sensor value while the engine is running with positive pressure condition.			
Store Timing		Normal judgment/Failure judgment			
Conversion to Engineering Units		Measured value lift: Output value (Decimal) x 0.001526 (%) The lowest limit value lift: Not applicable The highest limit value lift: Output value (Decimal) x 0.001526 (%)			

DTC P145B: MONITOR ID $3D: TEST ID $BC

OBD Monitor ID	$3D	Test ID	$BC	Unit and Scaling ID	$10
DTC		P145B			
Test Description		Purge flow and/or check valve check by monitoring fuel tank pressure sensor value while the engine is running.			
Store Timing		Normal judgment/Failure judgment			
Conversion to Engineering Units		Measured value lift: Output value (Decimal) x 1 (msec.) The lowest limit value lift: Output value (Decimal) x 1 (msec.) The highest limit value lift: Not applicable			

MISFIRE

DTC P0301: MONITOR ID $A2: TEST ID $0B

OBD Monitor ID	$A2	Test ID	$0B	Unit and Scaling ID	$24
DTC		P0301			
Test Description		The average number of misfires detected during the last ten driving cycles for #1 cylinder.			

	(current misfire counts) x 0.1 + (previous misfire counts average) x 0.9
Store Timing	Normal judgment/Failure judgment
Conversion to Engineering Units	Measured value: Output value (Decimal) x 1 (time) The lowest limit value: Not applicable The highest limit value: Not applicable

DTC P0301: MONITOR ID $A2: TEST ID $0C

OBD Monitor ID	**$A2**	**Test ID**	**$0C**	**Unit and Scaling ID**	**$24**
DTC		P0301			
Test Description		Total misfire counters in #1 cylinder on the present drive cycle. Previous drive cycle misfire counters are indicated from ignition switch is turned to ON (II) until engine start.			
Store Timing		Normal judgment/Failure judgment			
Conversion to Engineering Units		Measured value: Output value (Decimal) x 1 (time) The lowest limit value: Not applicable The highest limit value: Not applicable			

DTC P0302: MONITOR ID $A3: TEST ID $0B

OBD Monitor ID	**$A3**	**Test ID**	**$0B**	**Unit and Scaling ID**	**$24**
DTC		P0302			
Test Description		The average number of misfires detected during the last ten driving cycles for #2 cylinder. (current misfire counts) x 0.1 + (previous misfire counts average) x 0.9			
Store Timing		Normal judgment/Failure judgment			
Conversion to Engineering Units		Measured value: Output value (Decimal) x 1 (time) The lowest limit value: Not applicable The highest limit value: Not applicable			

DTC P0302: MONITOR ID $A3: TEST ID $0C

OBD Monitor ID	**$A3**	**Test ID**	**$0C**	**Unit and Scaling ID**	**$24**
DTC		P0302			
Test Description		Total misfire counters in #2 cylinder on the present drive cycle. Previous drive cycle misfire counters are indicated from ignition switch is turned to ON (II) until engine start.			
Store Timing		Normal judgment/Failure judgment			
Conversion to Engineering Units		Measured value: Output value (Decimal) x 1 (time) The lowest limit value: Not applicable The highest limit value: Not applicable			

DTC P0303: MONITOR ID $A4: TEST ID $0B

OBD Monitor ID	**$A4**	**Test ID**	**$0B**	**Unit and Scaling ID**	**$24**
DTC		P0303			

Test Description	The average number of misfires detected during the last ten driving cycles for #3 cylinder. (current misfire counts) x 0.1 + (previous misfire counts average) x 0.9
Store Timing	Normal judgment/Failure judgment
Conversion to Engineering Units	Measured value: Output value (Decimal) x 1 (time) The lowest limit value: Not applicable The highest limit value: Not applicable

DTC P0303: MONITOR ID $A4: TEST ID $0C

OBD Monitor ID	**$A4**	**Test ID**	**$0C**	**Unit and Scaling ID**	**$24**
DTC		P0303			
Test Description		Total misfire counters in #3 cylinder on the present drive cycle. Previous drive cycle misfire counters are indicated from ignition switch is turned to ON (II) until engine start.			
Store Timing		Normal judgment/Failure judgment			
Conversion to Engineering Units		Measured value: Output value (Decimal) x 1 (time) The lowest limit value: Not applicable The highest limit value: Not applicable			

DTC P0304: MONITOR ID $A5: TEST ID $0B

OBD Monitor ID	**$A5**	**Test ID**	**$0B**	**Unit and Scaling ID**	**$24**
DTC		P0304			
Test Description		The average number of misfires detected during the last ten driving cycles for #4 cylinder. (current misfire counts) x 0.1 + (previous misfire counts average) x 0.9			
Store Timing		Normal judgment/Failure judgment			
Conversion to Engineering Units		Measured value: Output value (Decimal) x 1 (time) The lowest limit value: Not applicable The highest limit value: Not applicable			

DTC P0304: MONITOR ID $A5: TEST ID $0C

OBD Monitor ID	**$A5**	**Test ID**	**$0C**	**Unit and Scaling ID**	**$24**
DTC		P0304			
Test Description		Total misfire counters in #4 cylinder on the present drive cycle. Previous drive cycle misfire counters are indicated from ignition switch is turned to ON (II) until engine start.			
Store Timing		Normal judgment/Failure judgment			
Conversion to Engineering Units		Measured value: Output value (Decimal) x 1 (time) The lowest limit value: Not applicable The highest limit value: Not applicable			

DTC P0305: MONITOR ID $A6: TEST ID $0B

OBD Monitor ID	$A6	Test ID	$0B	Unit and Scaling ID	$24
DTC		P0305			
Test Description		The average number of misfires detected during the last ten driving cycles for #5 cylinder. (current misfire counts) x 0.1 + (previous misfire counts average) x 0.9			
Store Timing		Normal judgment/Failure judgment			
Conversion to Engineering Units		Measured value: Output value (Decimal) x 1 (time) The lowest limit value: Not applicable The highest limit value: Not applicable			

DTC P0305: MONITOR ID $A6: TEST ID $0C

OBD Monitor ID	$A6	Test ID	$0C	Unit and Scaling ID	$24
DTC		P0305			
Test Description		Total misfire counters in #5 cylinder on the present drive cycle. Previous drive cycle misfire counters are indicated from ignition switch is turned to ON (II) until engine start.			
Store Timing		Normal judgment/Failure judgment			
Conversion to Engineering Units		Measured value lift: Output value (Decimal) x 1 (time) The lowest limit value lift: Not applicable The highest limit value lift: Not applicable			

DTC P0306: MONITOR ID $A7: TEST ID $0B

OBD Monitor ID	$A7	Test ID	$0B	Unit and Scaling ID	$24
DTC		P0306			
Test Description		The average number of misfires detected during the last ten driving cycles for #6 cylinder. (current misfire counts) x 0.1 + (previous misfire counts average) x 0.9			
Store Timing		Normal judgment/Failure judgment			
Conversion to Engineering Units		Measured value: Output value (Decimal) x 1 (time) The lowest limit value: Not applicable The highest limit value: Not applicable			

DTC P0306: MONITOR ID $A7: TEST ID $0C

OBD Monitor ID	$A7	Test ID	$0C	Unit and Scaling ID	$24
DTC		P0306			
Test Description		Total misfire counters in #6 cylinder on the present drive cycle. Previous drive cycle misfire counters are indicated from ignition switch is turned to ON (II) until engine start.			
Store Timing		Normal judgment/Failure judgment			
Conversion to Engineering Units		Measured value lift: Output value (Decimal) x 1 (time) The lowest limit value lift: Not applicable The highest limit value lift: Not applicable			

2012 ENGINE PERFORMANCE

PCV System - TL

COMPONENT LOCATION INDEX

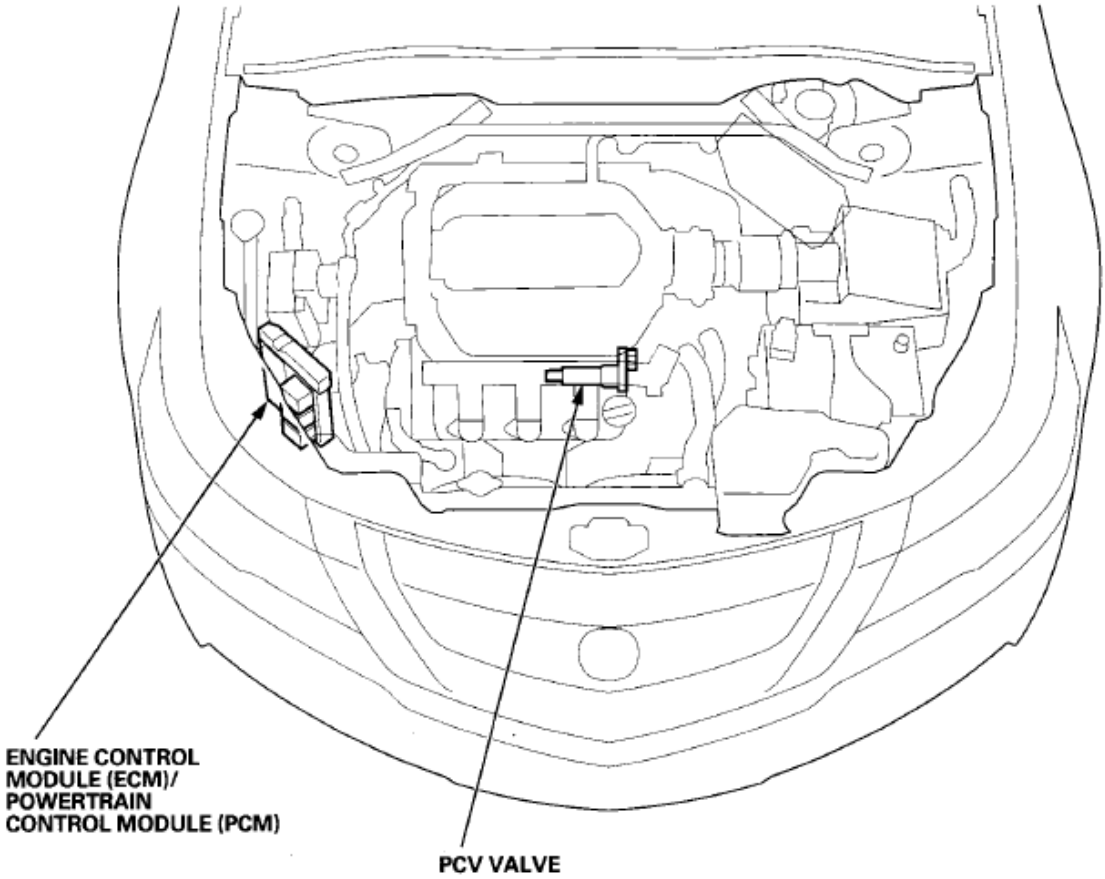


Fig. 1: PCV System Components Location
Courtesy of AMERICAN HONDA MOTOR CO., INC.

DTC TROUBLESHOOTING

DTC P2279: INTAKE AIR SYSTEM LEAK

NOTE:

- **Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see GENERAL TROUBLESHOOTING INFORMATION).**
- **If DTC P0443 is stored at the same time as DTC P2279, troubleshoot DTC P0443 first, then recheck for DTC P2279.**

1. Check for vacuum leaks at these parts:
   - PCV valve
   - PCV hose
   - Purge (PCS) line
   - Throttle body
   - Intake manifold
   - Brake booster
   - Brake booster hose
   - Engine mount
   - Engine mount control solenoid valve
   - Vacuum hose/line of the engine mount control system

   Are the parts OK?

   YES - Go to step 2.

   NO - Repair or replace any damaged part(s), then go to step 4.

2. Start the engine. Hold the engine speed at 3, 000 RPM without load (A/T in P or N, M/T in neutral) until the radiator fan comes on, then let it idle 1 minute.
3. Monitor the OBD STATUS for DTC P2279 in the DTCs MENU with the HDS.

   Does the screen indicate FAILED?

   YES - Check the camshaft timing (see **TIMING BELT INSTALLATION**), then go to step 4.

   NO - If the screen indicates PASSED, intermittent failure, the system is OK at this time. If the screen indicates EXECUTING, keep idling until a result comes on. If the screen indicates OUT OF CONDITION, go to step 2 and recheck.

4. Reset the ECM/PCM with the HDS.
5. Do the ECM/PCM idle learn procedure (see **ECM/PCM IDLE LEARN PROCEDURE**).
6. Check for Pending or Confirmed DTCs with the HDS.

   Is DTC P2279 indicated?

   YES - Check for vacuum leaks at the PCV valve, the PCV hose, the purge (PCS) line, the throttle body, the intake manifold, the brake booster, the brake booster hose, and the engine mount control system, then go to step 1.

   NO - Go to step 7.

7. Monitor the OBD STATUS for DTC P2279 in the DTCs MENU with the HDS.

Does the screen indicate PASSED?

YES - Troubleshooting is complete. If any other Pending or Confirmed DTCs were indicated in step 6, go to the indicated DTC's troubleshooting. •

NO - If the screen indicates FAILED, go to step 1. If the screen indicates EXECUTING or OUT OF CONDITION, keep idling until a result comes on.

PCV VALVE INSPECTION

1. Check the PCV valve (A), the hoses (B), and connections for leaks or restrictions.

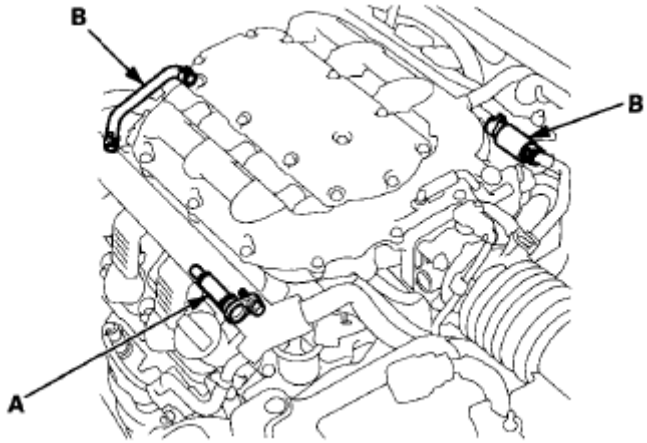


Fig. 2: Identifying PCV Valve And Hoses
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. At idle, listen to the PCV valve (A) with a stethoscope as you lightly pinch the PCV hose (B) with your fingers or pliers several times. Each time the hose is pinched, the valve should click.

   If there is no clicking sound, check the PCV valve collar and O-rings for cracks or damage. If they are OK, replace the PCV valve (see **PCV Valve Replacement**) and recheck.

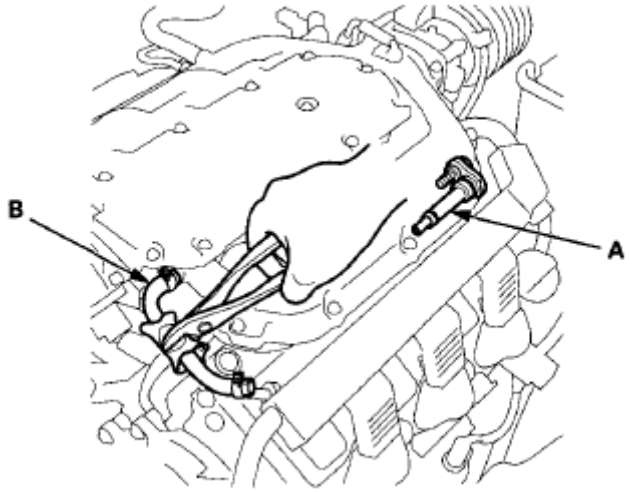


Fig. 3: Identifying PCV Valve And Hose
Courtesy of AMERICAN HONDA MOTOR CO., INC.

PCV VALVE REPLACEMENT

1. Lift up the harness cover (A).

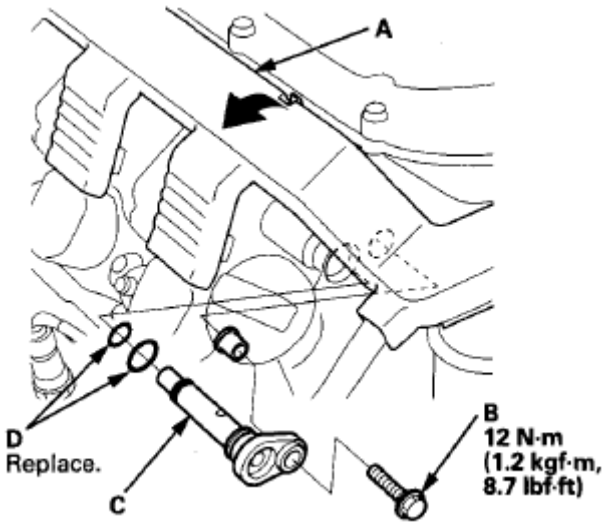


Fig. 4: Identifying Harness Cover, Bolt And PCV Valve With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Remove the bolt (B).
3. Remove the PCV valve (C).

NOTE: Do not to spill oil on the hot exhaust manifold.

4. Install the parts in the reverse order of removal.

NOTE:

- **When installing a new PCV valve, make sure the O-rings (D) are in place.**
- **When installing a used PCV valve, use new O-rings.**

2012 ENGINE PERFORMANCE

PGM-FI System - TL

COMPONENT LOCATION INDEX

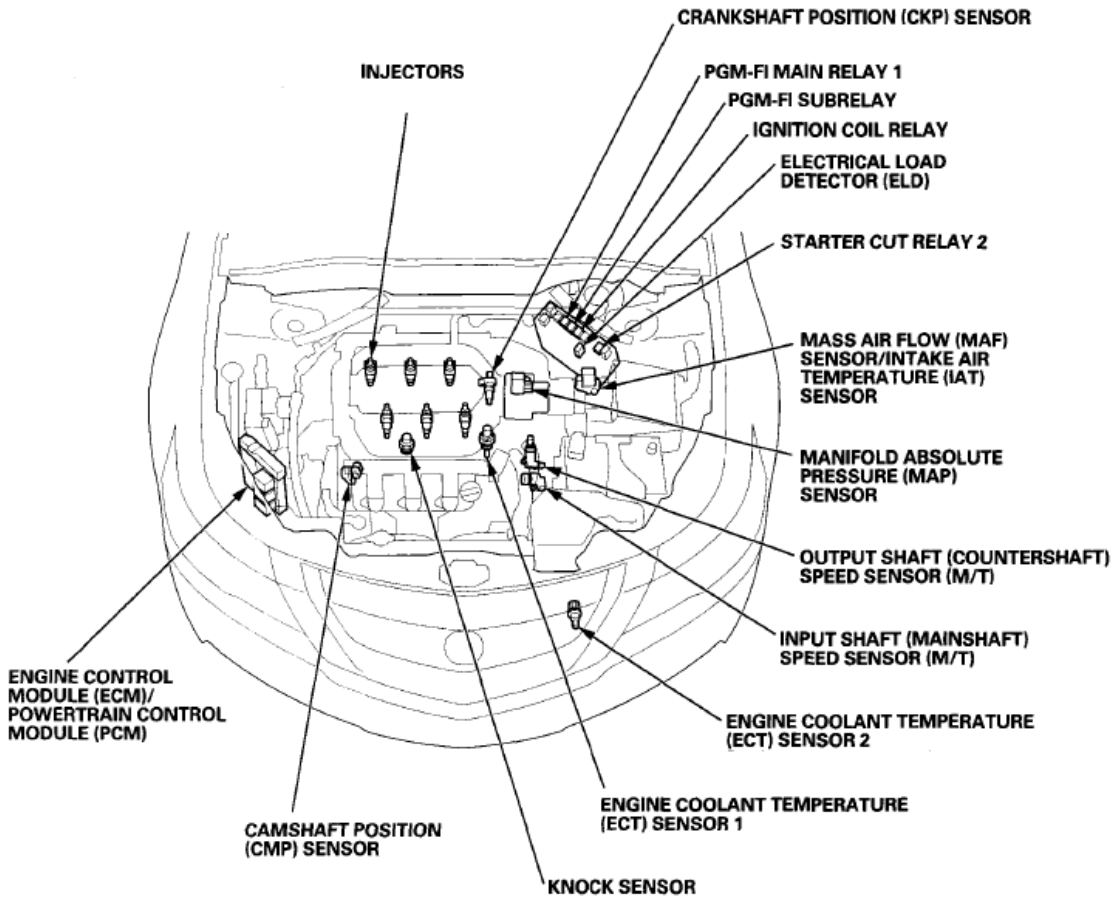


Fig. 1: PGM-FI System Components Location (1 Of 2)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

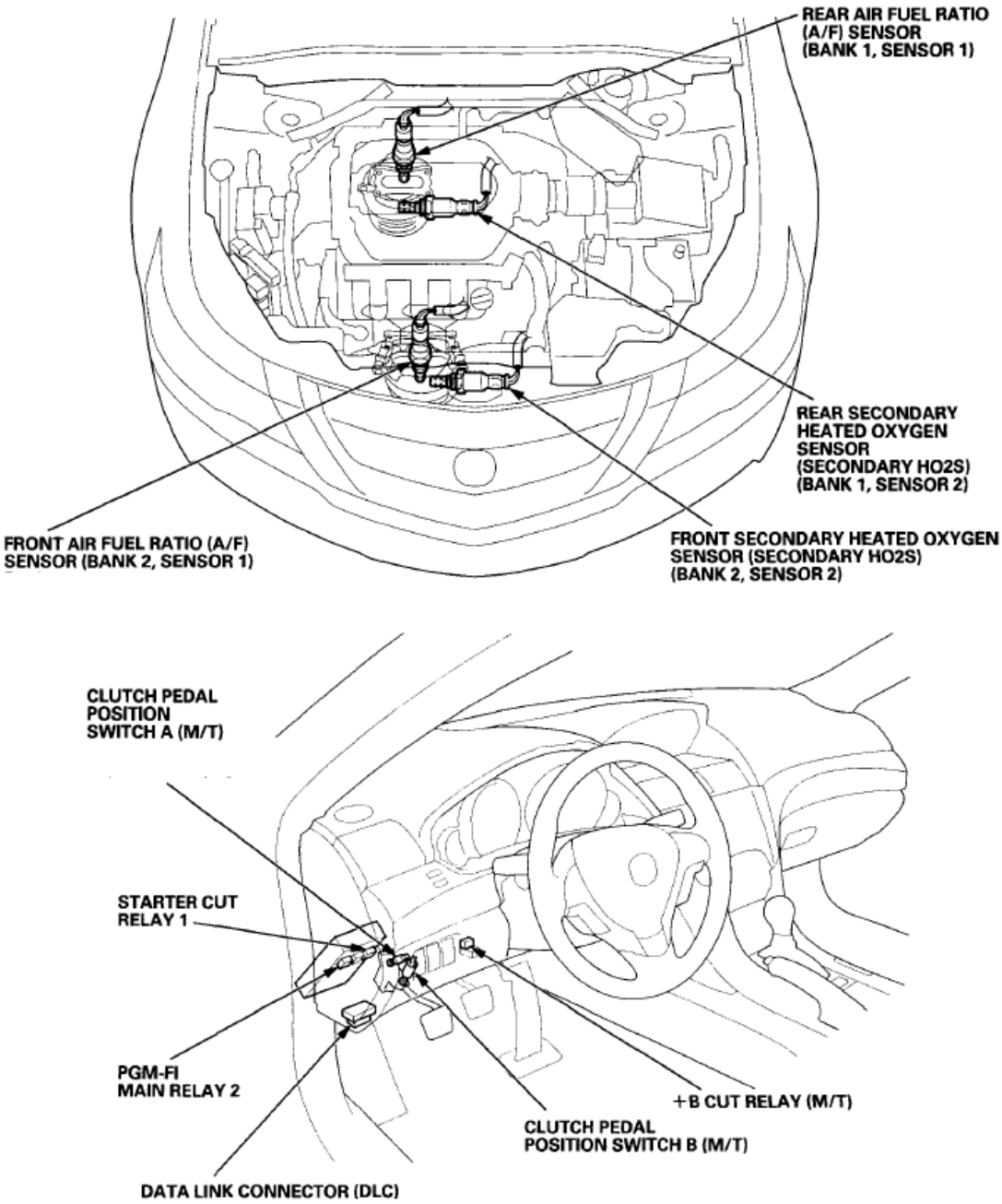


Fig. 2: PGM-FI System Components Location (2 Of 2)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

DTC TROUBLESHOOTING

DTC P0101: MAF SENSOR CIRCUIT RANGE/PERFORMANCE PROBLEM

NOTE:

- **Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see**

GENERAL TROUBLESHOOTING INFORMATION).

- **If DTC P1128, P1129, P2228, and/or P2229 are stored at the same time as DTC P0101, troubleshoot those DTCs first, then recheck for DTC P0101.**

1. Check for poor connections or damage to these parts:
   - PCV hose
   - Intake air duct
   - Air cleaner
   - Purge (PCS) line
   - Brake booster
   - Brake booster hose

   Are the parts OK?

   YES - Go to step 2.

   NO - Repair or replace the damaged part(s), then go to step 14.

2. Check for damage or looseness at the intake air duct in the air cleaner.

   Is it OK?

   YES - Go to step 3.

   NO - Reconnect or replace the intake air duct, then go to step 14.

3. Check for a dirty air cleaner element.

   Is it dirty?

   YES - Replace the air cleaner element (see **AIR CLEANER ELEMENT INSPECTION/REPLACEMENT**), then go to step 14.

   NO - Go to step 4.

4. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
5. Check the MAF SENSOR in the DATA LIST with the HDS.

   Is there about 0.2 gm/s or 0.5 V?

   YES - Go to step 6.

   NO - Go to step 12.

6. Start the engine.

7. Vary the engine speed between 2, 000 and 3, 000 RPM.
8. Check the MAF SENSOR in the DATA LIST with the HDS.

   Does the reading change?

   YES - Go to step 9.

   NO - Go to step 12.

9. Hold the engine speed at 3, 000 RPM without load (A/T in P or N, M/T in neutral) until the radiator fan comes on, then let it idle.
10. Test-drive the vehicle for several minutes in the range of these recorded freeze data parameters:
    - ENGINE SPEED
    - VEHICLE SPEED
    - MAP SENSOR
    - MAF SENSOR
11. Monitor the OBD STATUS for DTC P0101 in the DTCs MENU with the HDS.

    Does the screen indicate FAILED?

    YES - Go to step 12.

    NO - If the screen indicates PASSED, intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at the MAF sensor/IAT sensor and the ECM/PCM. If the screen indicates NOT COMPLETED, go to step 10 and recheck.

12. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
13. Replace the MAF sensor/IAT sensor (see **MAF Sensor/IAT Sensor Replacement**).
14. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
15. Reset the ECM/PCM with the HDS.
16. Do the ECM/PCM idle learn procedure (see **ECM/PCM IDLE LEARN PROCEDURE**).
17. Test-drive the vehicle for several minutes in the range of these recorded freeze data parameters:
    - ENGINE SPEED
    - VEHICLE SPEED
    - MAP SENSOR
    - MAF SENSOR
18. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P0101 indicated?

    YES - Check for poor connections or loose terminals at the MAF sensor/IAT sensor and the ECM/PCM, then go to step 1.

NO - Go to step 19.

19. Monitor the OBD STATUS for DTC P0101 in the DTCs MENU with the HDS.

    Does the screen indicate PASSED?

    YES - Troubleshooting is complete. If any other Pending or Confirmed DTCs were indicated in step 18, go to the indicated DTC's troubleshooting. •

    NO - If the screen indicates FAILED, check for poor connections or loose terminals at the MAF sensor/IAT sensor and the ECM/PCM, then go to step 1. If the screen indicates NOT COMPLETED, go to step 17.

DTC P0102: MAF SENSOR CIRCUIT LOW VOLTAGE

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see GENERAL TROUBLESHOOTING INFORMATION).

1. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode, and wait 2 seconds.
2. Check the MAF SENSOR in the DATA LIST with the HDS.

   Is about 0 gm/s, or 0.1 V or less indicated?

   YES - Go to step 3.

   NO - Intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at the MAF sensor/IAT sensor and the ECM/PCM. •

3. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
4. Disconnect the MAF sensor/IAT sensor 5P connector.
5. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
6. Measure the voltage between MAF sensor/IAT sensor 5P connector terminal No. 5 and body ground.

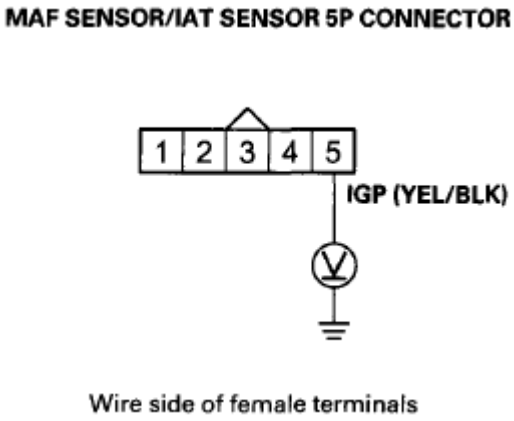


Fig. 3: Measuring Voltage Between MAF Sensor/IAT Sensor 5P Connector Terminal No. 5 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there battery voltage?

YES - Go to step 7.

NO - Repair open in the wire between PGM-FI main relay 1 and the MAF sensor/IAT sensor, then go to step 19.

7. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
8. Measure the resistance between MAF sensor/IAT sensor 5P connector terminal No. 3 and body ground.

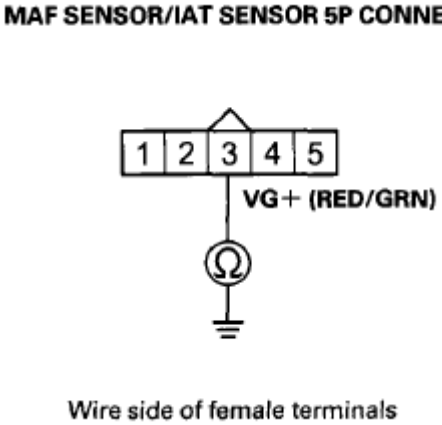


Fig. 4: Measuring Resistance Between MAF Sensor/IAT Sensor 5P Connector Terminal No. 3 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there 190- 210 kohms?

YES - Go to step 13.

NO - Go to step 9.

9. Jump the SCS line with the HDS.
10. Disconnect ECM/PCM connector A (49P).
11. Check for continuity between ECM/PCM connector terminal A20 and body ground.

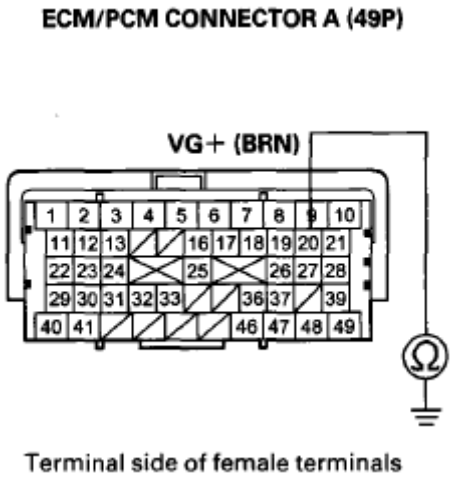


Fig. 5: Checking Continuity Between ECM/PCM Connector Terminal A20 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair short in the wire between the ECM/PCM (A20) and the MAF sensor/IAT sensor, then go to step 20.

NO - Go to step 12.

12. Check for continuity between MAF sensor/IAT sensor 5P connector terminal No. 3 and ECM/PCM connector terminal A20.

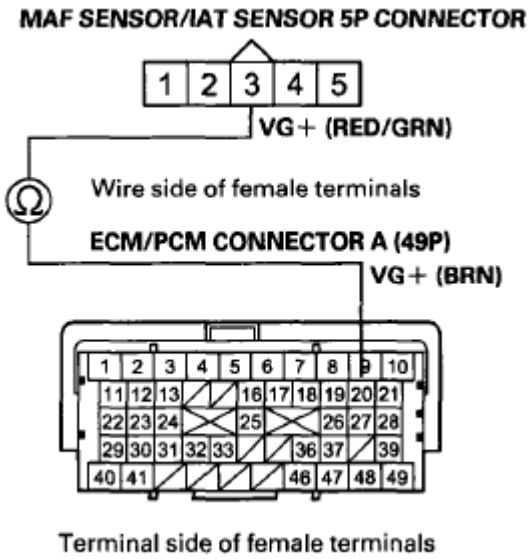


Fig. 6: Checking Continuity Between MAF Sensor/IAT Sensor 5P Connector And ECM/PCM Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 25.

NO - Repair open in the wire between the ECM/PCM (A20) and the MAF sensor/IAT sensor, then go to step 20.

13. Substitutes known-good **MAF sensor/IAT sensor**.
14. Reconnect all connectors.
15. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
16. Clear the DTC with the HDS.
17. Start the engine. Hold the engine speed at 2, 000 RPM without load (A/T in P or N, M/T in neutral).
18. Check for Pending or Confirmed DTCs with the HDS.

Is DTC P0102 indicated?

YES - Reinstall the original MAF sensor/IAT sensor, then go to step 26.

NO - Replace the original **MAF sensor/IAT sensor**, then go to step 19.

19. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
20. Reconnect all connectors.
21. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
22. Reset the ECM/PCM with the HDS.
23. Do the ECM/PCM idle learn procedure (see **ECM/PCM IDLE LEARN PROCEDURE**).

24. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P0102 indicated?

    YES - Check for poor connections or loose terminals at the MAF sensor/IAT sensor and the ECM/PCM, then go to step 1.

    NO - Troubleshooting is complete. If any other Pending or Confirmed DTCs are indicated, go to the indicated DTC's troubleshooting. •

25. Reconnect all connectors.
26. Update the ECM/PCM if it does not have the latest software (see **ECM/PCM Update**), or substitute a known-good ECM/PCM (see **SUBSTITUTING THE ECM/PCM**).
27. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P0102 indicated?

    YES - Check for poor connections or loose terminals at the MAF sensor/IAT sensor and the ECM/PCM. If the ECM/PCM was updated, substitute a known-good ECM/PCM (see **SUBSTITUTING THE ECM/PCM**), then recheck. If the ECM/PCM was substituted, go to step 1.

    NO - If the ECM/PCM was updated, troubleshooting is complete. If the ECM/PCM was substituted, replace the original ECM/PCM (see **ECM/PCM Replacement**). If any other Pending or Confirmed DTCs are indicated, go to the indicated DTC's troubleshooting. •

DTC P0103: MAF SENSOR CIRCUIT HIGH VOLTAGE

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see GENERAL TROUBLESHOOTING INFORMATION).

1. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode, and wait 2 seconds.
2. Check the MAF SENSOR in the DATA LIST with the HDS.

    Is about 202 gm/s, or 4.89 V or more indicated?

    YES - Go to step 3.

    NO - Intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at the MAF sensor/IAT sensor and the ECM/PCM. •

3. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
4. Jump the SCS line with the HDS.
5. Disconnect the MAF sensor/IAT sensor 5P connector.

6. Disconnect ECM/PCM connector A (49P).
7. Check for continuity between MAF sensor/IAT sensor 5P connector terminal No. 4 and ECM/PCM connector terminal A9.

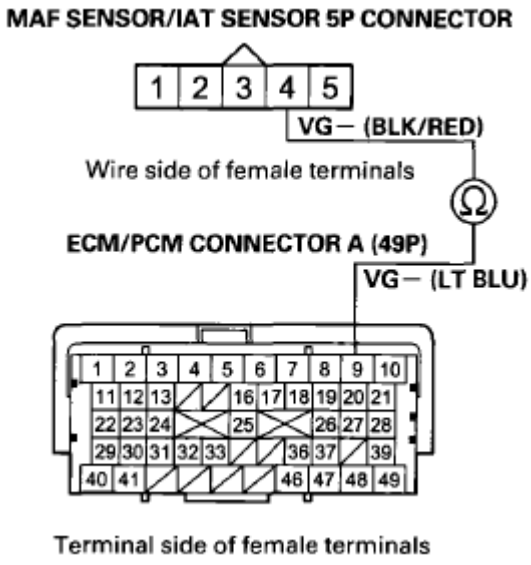


Fig. 7: Checking Continuity Between MAF Sensor/IAT Sensor 5P Connector And ECM/PCM Connector Terminal A20
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 8.

NO - Repair open in the wire between the ECM/PCM (A9) and the MAF sensor/IAT sensor, then go to step 15.

8. Reconnect ECM/PCM connector A (49P).
9. Connect MAF sensor/IAT sensor 5P connector terminals No. 3 and No. 4 with a jumper wire.

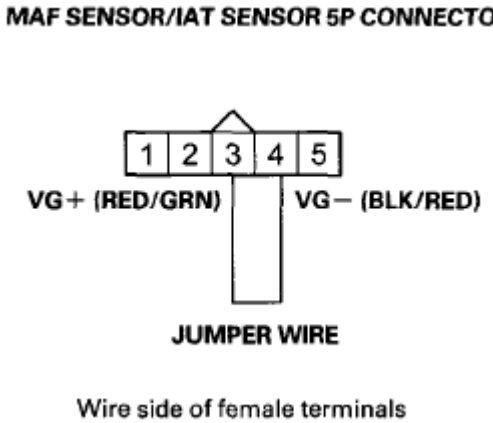


Fig. 8: Connecting MAF Sensor/IAT Sensor 5P Connector Terminals No. 3 And No. 4 With Jumper Wire
Courtesy of AMERICAN HONDA MOTOR CO., INC.

10. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
11. Clear the DTC with the HDS.
12. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P0103 indicated?

    YES - Go to step 20.

    NO - Go to step 13.

13. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
14. Replace the **MAF sensor/IAT sensor**.
15. Reconnect all connectors.
16. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
17. Reset the ECM/PCM with the HDS.
18. Do the ECM/PCM idle learn procedure (see **ECM/PCM IDLE LEARN PROCEDURE**).
19. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P0103 indicated?

    YES - Check for poor connections or loose terminals at the MAF sensor/IAT sensor and the ECM/PCM, then go to step 1.

    NO - Troubleshooting is complete. If any other Pending or Confirmed DTCs are indicated, go to the indicated DTC's troubleshooting. •

20. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
21. Reconnect all connectors.
22. Update the ECM/PCM if it does not have the latest software (see **ECM/PCM Update**), or substitute a known-good ECM/PCM (see **SUBSTITUTING THE ECM/PCM**).
23. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P0103 indicated?

    YES - Check for poor connections or loose terminals at the MAF sensor/IAT sensor and the ECM/PCM. If the ECM/PCM was updated, substitute a known-good ECM/PCM (see **SUBSTITUTING THE ECM/PCM**), then recheck. If the ECM/PCM was substituted, go to step 1.

    NO - If the ECM/PCM was updated, troubleshooting is complete. If the ECM/PCM was substituted, replace the original ECM/PCM (see **ECM/PCM Replacement**). If any other Pending or Confirmed DTCs are indicated, go to the indicated DTC's troubleshooting. •

DTC P0107: MAP SENSOR CIRCUIT LOW VOLTAGE

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see GENERAL TROUBLESHOOTING INFORMATION).

1. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
2. Check the MAP SENSOR in the DATA LIST with the HDS.

   Is about 3 kPa (1.0 inHg, 26 mmHg), or 0.23 V or less indicated?

   YES - Go to step 3.

   NO - Intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at the MAP sensor and the ECM/PCM. •

3. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
4. Disconnect the MAP sensor 3P connector.
5. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
6. Check the MAP SENSOR in the DATA LIST with the HDS.

   Is about 3 kPa (1.0 inHg, 26 mmHg), or 0.23 V or less indicated?

   YES - Go to step 12.

   NO - Go to step 7.

7. Measure the voltage between MAP sensor 3P connector terminals No. 1 and No. 3.

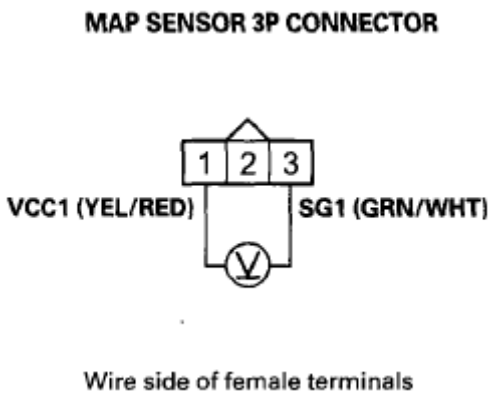


Fig. 9: Measuring Voltage Between MAP Sensor 3P Connector Terminals No. 1 And No. 3
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there about 5 V?

YES - Go to step 16.

NO - Go to step 8.

8. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
9. Jump the SCS line with the HDS.
10. Disconnect ECM/PCM connector B (49P).
11. Check for continuity between ECM/PCM connector terminal B36 and MAP sensor 3P connector terminal No. 1.

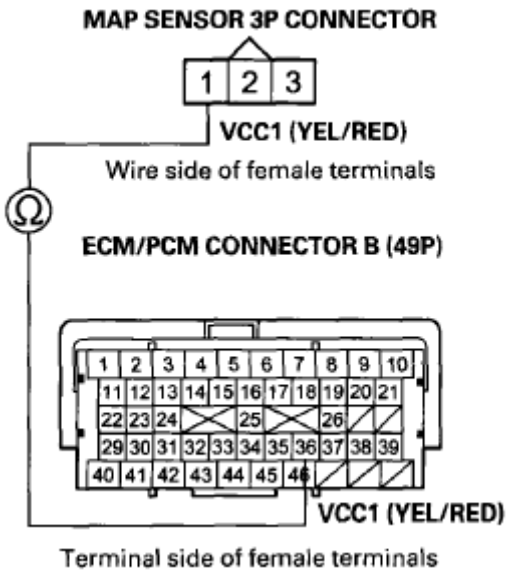


Fig. 10: Checking Continuity Between ECM/PCM Connector Terminal B36 And MAP Sensor 3P Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 23.

NO - Repair open in the wire between the ECM/PCM (B36) and the MAP sensor, then go to step 18.

12. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
13. Jump the SCS line with the HDS.
14. Disconnect ECM/PCM connector B (49P).
15. Check for continuity between MAP sensor 3P connector terminal No. 2 and body ground.

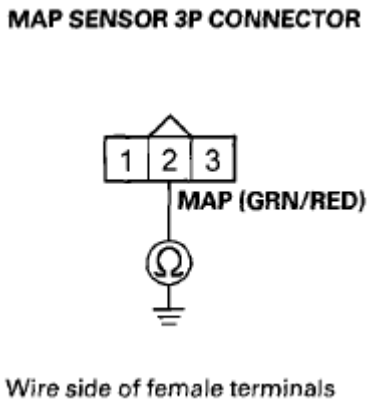


Fig. 11: Checking Continuity Between MAP Sensor 3P Connector Terminal No. 2 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair short in the wire between the ECM/PCM (B35) and the MAP sensor, then go to step 18.

NO - Go to step 23.

16. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
17. Replace the MAP sensor (see **MAP Sensor Replacement**).
18. Reconnect all connectors.
19. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
20. Reset the ECM/PCM with the HDS.
21. Do the ECM/PCM idle learn procedure (see **ECM/PCM IDLE LEARN PROCEDURE**).
22. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P0107 indicated?

    YES - Check for poor connections or loose terminals at the MAP sensor and the ECM/PCM, then go to step 1.

    NO - Troubleshooting is complete. If any other Pending or Confirmed DTCs are indicated, go to the indicated DTC's troubleshooting. •

23. Reconnect all connectors.
24. Update the ECM/PCM if it does not have the latest software (see **ECM/PCM Update**), or substitute a known-good ECM/PCM (see **SUBSTITUTING THE ECM/PCM**).
25. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P0107 indicated?

YES - Check for poor connections or loose terminals at the MAP sensor and the ECM/PCM. If the ECM/PCM was updated, substitute a known-good ECM/PCM (see **SUBSTITUTING THE ECM/PCM**), then recheck. If the ECM/PCM was substituted, go to step 1.

NO - If the ECM/PCM was updated, troubleshooting is complete. If the ECM/PCM was substituted, replace the original ECM/PCM (see **ECM/PCM Replacement**). If any other Pending or Confirmed DTCs are indicated, go to the indicated DTC's troubleshooting. •

DTC P0108: MAP SENSOR CIRCUIT HIGH VOLTAGE

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see GENERAL TROUBLESHOOTING INFORMATION).

1. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
2. Check the MAP SENSOR in the DATA LIST with the HDS.

   Is about 160 kPa (47.1 inHg, 1, 197 mmHg), or 4.49 V or more indicated?

   YES - Go to step 3.

   NO - Intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at the MAP sensor and the ECM/PCM. •

3. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
4. Disconnect the MAP sensor 3P connector.
5. Connect MAP sensor 3P connector terminals No. 2 and No. 3 with a jumper wire.

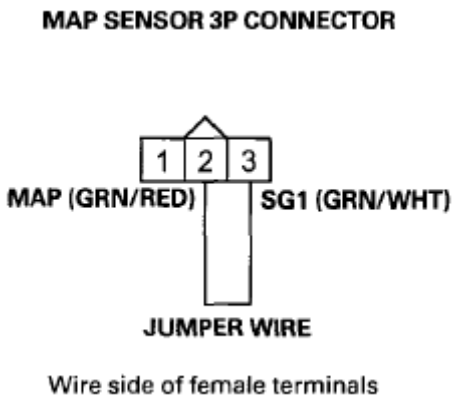


Fig. 12: Connecting MAP Sensor 3P Connector Terminals No. 2 And No. 3 With Jumper Wire
Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
7. Check the MAP SENSOR in the DATA LIST with the HDS.

Is about 160 kPa (47.1 inHg, 1, 197 mmHg), or 4.49 V or more indicated?

YES - Go to step 8.

NO - Go to step 18.

8. Remove the jumper wire from the MAP sensor 3P connector.
9. Measure the voltage between MAP sensor 3P connector terminals No. 1 and No. 3.

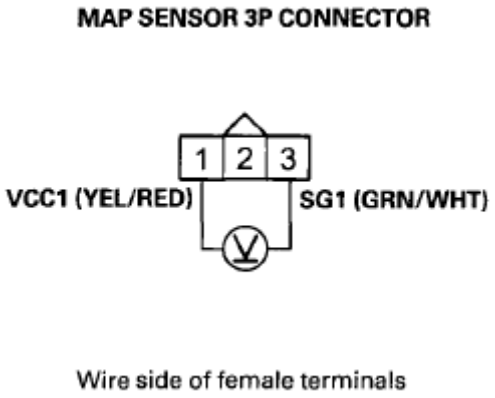


Fig. 13: Measuring Voltage Between MAP Sensor 3P Connector Terminals No. 1 And No. 3
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there about 5 V?

YES - Go to step 14.

NO - Go to step 10.

10. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
11. Jump the SCS line with the HDS.
12. Disconnect ECM/PCM connector B (49P).
13. Check for continuity between ECM/PCM connector terminal B34 and MAP sensor 3P connector terminal No. 3.

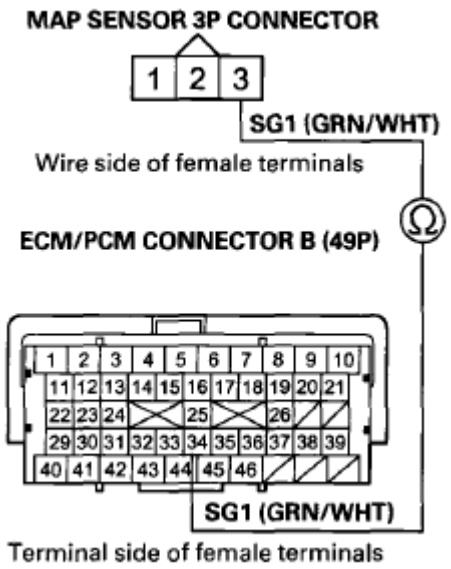


Fig. 14: Checking Continuity Between ECM/PCM Connector Terminal B34 And MAP Sensor 3P Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 25.

NO - Repair open in the wire between the ECM/PCM (B34) and the MAP sensor, then go to step 20.

14. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
15. Jump the SCS line with the HDS.
16. Disconnect ECM/PCM connector B (49P).
17. Check for continuity between ECM/PCM connector terminal B35 and MAP sensor 3P connector terminal No. 2.

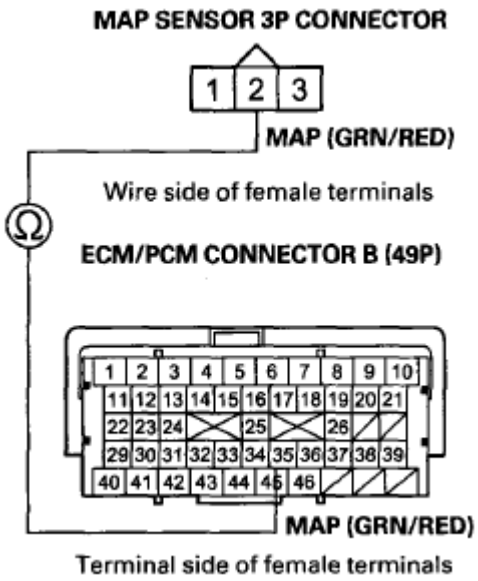


Fig. 15: Checking Continuity Between ECM/PCM Connector Terminal B35 And MAP Sensor 3P Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 25.

NO - Repair open in the wire between the ECM/PCM (B35) and the MAP sensor, then go to step 20.

18. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
19. Replace the MAP sensor (see **MAP Sensor Replacement**).
20. Reconnect all connectors.
21. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
22. Reset the ECM/PCM with the HDS.
23. Do the ECM/PCM idle learn procedure (see **ECM/PCM IDLE LEARN PROCEDURE**).
24. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P0108 indicated?

    YES - Check for poor connections or loose terminals at the MAP sensor and the ECM/PCM, then go to step 1.

    NO - Troubleshooting is complete. If any other Pending or Confirmed DTCs are indicated, go to the indicated DTC's troubleshooting. •

25. Reconnect all connectors.
26. Update the ECM/PCM if it does not have the latest software (see **ECM/PCM Update**), or substitute a known-good ECM/PCM (see **SUBSTITUTING THE ECM/PCM**).

27. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P0108 indicated?

    YES - Check for poor connections or loose terminals at the MAP sensor and the ECM/PCM. If the ECM/PCM was updated, substitute a known-good ECM/PCM (see **SUBSTITUTING THE ECM/PCM**), then recheck. If the ECM/PCM was substituted, go to step 1.

    NO - If the ECM/PCM was updated, troubleshooting is complete. If the ECM/PCM was substituted, replace the original ECM/PCM (see **ECM/PCM Replacement**). If any other Pending or Confirmed DTCs are indicated, go to the indicated DTC's troubleshooting. •

DTC P0111: IAT SENSOR CIRCUIT RANGE/PERFORMANCE PROBLEM

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see GENERAL TROUBLESHOOTING INFORMATION).

1. Check for poor connections or loose terminals at ECT sensors 1 and 2, and the MAF sensor/IAT sensor.

   Are the connections and terminals OK?

   YES - Go to step 2.

   NO - Repair the connections or terminals, then go to step 15.

2. Remove the **MAF sensor/IAT sensor**.
3. Allow the MAF sensor/IAT sensor to cool to the ambient temperature.
4. Note the ambient temperature.
5. Connect the MAF sensor/IAT sensor to its 5P connector, but do not install it.
6. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
7. Quickly note the value of the IAT SENSOR in the DATA LIST with the HDS.
8. Compare the value of the IAT SENSOR to the ambient temperature.

   Does the value of the IAT SENSOR differ 5.4°F (3°C) or more from ambient temperature?

   YES - Go to step 13.

   NO - Go to step 9.

9. Disconnect the MAF sensor/IAT sensor from its 5P connector.
10. Using a heat gun, blow hot air on the MAF sensor/IAT sensor for a few seconds. Do not apply the heat longer than a few seconds or you will damage the sensor.
11. Connect the MAF sensor/IAT sensor to its 5P connector, but do not install it.

12. Check the IAT SENSOR in the DATA LIST with the HDS.

    Does the IAT SENSOR change 68°F (38°C) or more?

    YES - Intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at the MAF sensor/IAT sensor and the ECM/PCM. •

    NO - Go to step 13.

13. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
14. Replace the **MAF sensor/IAT sensor**.
15. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
16. Reset the ECM/PCM with the HDS.
17. Do the ECM/PCM idle learn procedure (see **ECM/PCM IDLE LEARN PROCEDURE**).
18. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P0111 indicated?

    YES - Check for poor connections or loose terminals at the MAF sensor/IAT sensor and the ECM/PCM, then go to step 1.

    NO - Troubleshooting is complete. If any other Pending or Confirmed DTCs are indicated, go to the indicated DTC's troubleshooting. •

DTC P0112: IAT SENSOR CIRCUIT LOW VOLTAGE

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see GENERAL TROUBLESHOOTING INFORMATION).

1. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
2. Check the IAT SENSOR in the DATA LIST with the HDS.

    Is about 356°F (180°C) or more, or 0.08 V or less indicated?

    YES - Go to step 3.

    NO - Intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at the MAF sensor/IAT sensor and the ECM/PCM. •

3. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
4. Disconnect the MAF sensor/IAT sensor 5P connector.
5. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
6. Check the IAT SENSOR in the DATA LIST with the HDS.

Is about 356°F (180°C) or more, or 0.08 V or less indicated?

YES - Go to step 7.

NO - Go to step 11.

7. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
8. Jump the SCS line with the HDS.
9. Disconnect ECM/PCM connector C (49P).
10. Check for continuity between MAF sensor/IAT sensor 5P connector terminal No. 2 and body ground.

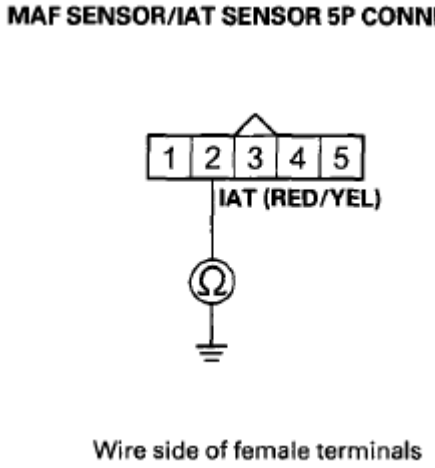


Fig. 16: Checking Continuity Between MAF Sensor/IAT Sensor 5P Connector Terminal No. 2 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair short in the wire between the MAF sensor/IAT sensor and the ECM/PCM (C24), then go to step 13.

NO - Go to step 18.

11. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
12. Replace the **MAF sensor/IAT sensor**.
13. Reconnect all connectors.
14. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
15. Reset the ECM/PCM with the HDS.
16. Do the ECM/PCM idle learn procedure (see **ECM/PCM IDLE LEARN PROCEDURE**).
17. Check for Pending or Confirmed DTCs with the HDS.

Is DTC P0112 indicated?

YES - Check for poor connections or loose terminals at the MAF sensor/IAT sensor and the ECM/PCM, then go to step 1.

NO - Troubleshooting is complete. If any other Pending or Confirmed DTCs are indicated, go to the indicated DTC's troubleshooting. •

18. Reconnect all connectors.
19. Update the ECM/PCM if it does not have the latest software (see **ECM/PCM Update**), or substitute a known-good ECM/PCM (see **SUBSTITUTING THE ECM/PCM**).
20. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P0112 indicated?

    YES - Check for poor connections or loose terminals at the MAF sensor/IAT sensor and the ECM/PCM. If the ECM/PCM was updated, substitute a known-good ECM/PCM (see **SUBSTITUTING THE ECM/PCM**), then recheck. If the ECM/PCM was substituted, go to step 1.

    NO - If the ECM/PCM was updated, troubleshooting is complete. If the ECM/PCM was substituted, replace the original ECM/PCM (see **ECM/PCM Replacement**). If any other Pending or Confirmed DTCs are indicated, go to the indicated DTC's troubleshooting. •

DTC P0113: IAT SENSOR CIRCUIT HIGH VOLTAGE

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see GENERAL TROUBLESHOOTING INFORMATION).

1. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
2. Check the IAT SENSOR in the DATA LIST with the HDS.

   Is about - 40°F (- 40°C) or less, or 4.92 V or more indicated?

   YES - Go to step 3.

   NO - Intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at the MAF sensor/IAT sensor and the ECM/PCM. •

3. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
4. Disconnect the MAF sensor/IAT sensor 5P connector.
5. Connect MAF sensor/IAT sensor 5P connector terminals No. 1 and No. 2 with a jumper wire.

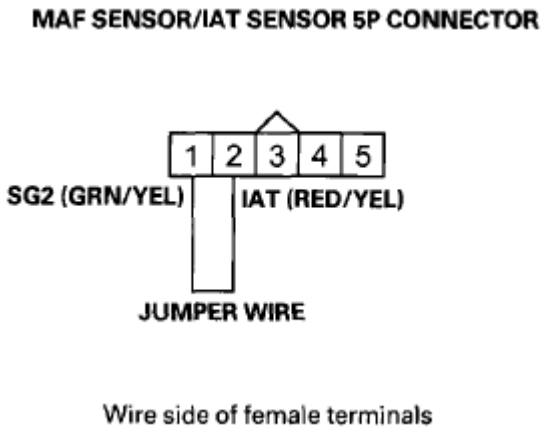


Fig. 17: Connecting MAF Sensor/IAT Sensor 5P Connector Terminals No. 1 And No. 2 With Jumper Wire
Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
7. Check the IAT SENSOR in the DATA LIST with the HDS.

   Is about -40°F (-40°C) or less, or 4.92 V or more indicated?

   YES - Go to step 8.

   NO - Go to step 20.

8. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
9. Remove the jumper wire from the MAF sensor/IAT sensor 5P connector.
10. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
11. Measure the voltage between MAF sensor/IAT sensor 5P connector terminal No. 2 and body ground.

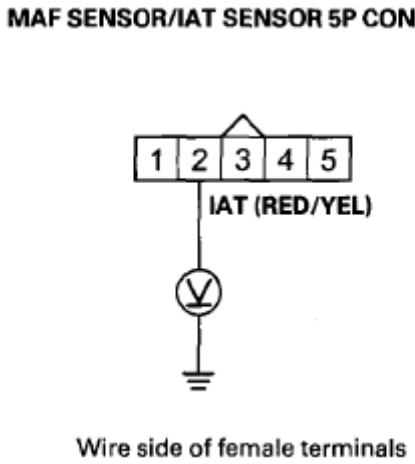


Fig. 18: Measuring Voltage Between MAF Sensor/IAT Sensor 5P Connector Terminal No. 2 And Body Ground

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there about 5 V?

YES - Go to step 12.

NO - Go to step 16.

12. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
13. Jump the SCS line with the HDS.
14. Disconnect ECM/PCM connector C (49P).
15. Check for continuity between ECM/PCM connector terminal C16 and MAF sensor/IAT sensor 5P connector terminal No. 1.

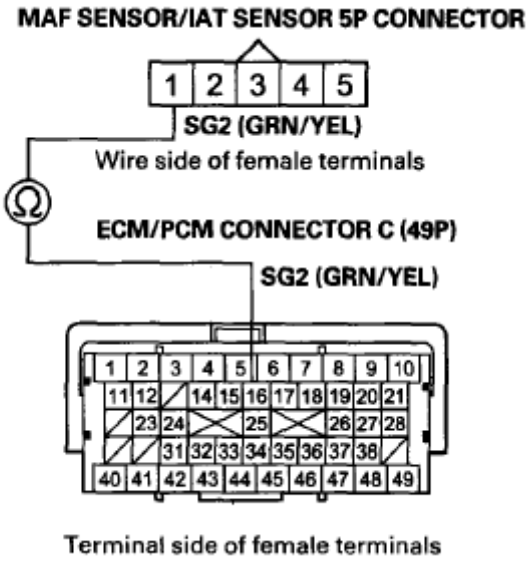


Fig. 19: Checking Continuity Between ECM/PCM Connector And MAF Sensor/IAT Sensor 5P Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 27.

NO - Repair open in the wire between the ECM/PCM (C16) and the MAF sensor/IAT sensor, then go to step 22.

16. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
17. Jump the SCS line with the HDS.
18. Disconnect ECM/PCM connector C (49P).
19. Check for continuity between ECM/PCM connector terminal C24 and MAF sensor/IAT sensor 5P

connector terminal No. 2.

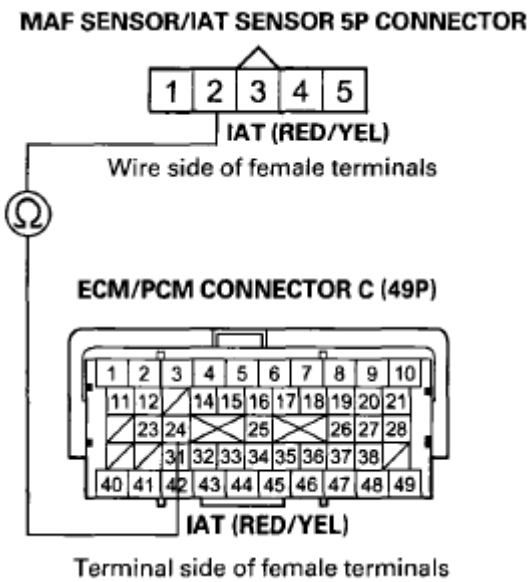


Fig. 20: Checking Continuity Between ECM/PCM Connector And MAF Sensor/IAT Sensor 5P Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 27.

NO - Repair open in the wire between the ECM/PCM (C24) and the MAF sensor/IAT sensor, then go to step 22.

20. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
21. Replace the **MAF sensor/IAT sensor**.
22. Reconnect all connectors.
23. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
24. Reset the ECM/PCM with the HDS.
25. Do the ECM/PCM idle learn procedure (see **ECM/PCM IDLE LEARN PROCEDURE**).
26. Check for Pending or Confirmed DTCs with the HDS.

Is DTC P0113 indicated?

YES - Check for poor connections or loose terminals at the MAF sensor/IAT sensor and the ECM/PCM, then go to step 1.

NO - Troubleshooting is complete. If any other Pending or Confirmed DTCs are indicated, go to the indicated DTC's troubleshooting. •

27. Reconnect all connectors.
28. Update the ECM/PCM if it does not have the latest software (see **ECM/PCM Update**), or substitute a known-good ECM/PCM (see **SUBSTITUTING THE ECM/PCM**).
29. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P0113 indicated?

    YES - Check for poor connections or loose terminals at the MAF sensor/IAT sensor and the ECM/PCM. If the ECM/PCM was updated, substitute a known-good ECM/PCM (see **SUBSTITUTING THE ECM/PCM**), then recheck. If the ECM/PCM was substituted, go to step 1.

    NO - If the ECM/PCM was updated, troubleshooting is complete. If the ECM/PCM was substituted, replace the original **ECM/PCM** (see **ECM/PCM Replacement**). If any other Pending or Confirmed DTCs are indicated, go to the indicated DTC's troubleshooting. •

DTC P0116: ECT SENSOR 1 CIRCUIT RANGE/PERFORMANCE PROBLEM

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see GENERAL TROUBLESHOOTING INFORMATION).

1. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
2. Check ECT SENSOR 1 in the DATA LIST with the HDS.

   Is about 176°F (80°C) or more, or 0.78 V or less indicated?

   YES - Go to step 6.

   NO - Go to step 3.

3. Note the value of ECT SENSOR 1 in the DATA LIST with the HDS.
4. Start the engine. Hold the engine speed at 3, 000 RPM without load (A/T in P or N, M/T in neutral) until the radiator fan comes on, then let it idle.
5. Check ECT SENSOR 1 in the DATA LIST with the HDS.

   Does ECT SENSOR 1 change 18°F (10°C) or more?

   YES - Intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at ECT sensor 1 and the ECM/PCM. •

   NO - Go to step 11.

6. Note the value of ECT SENSOR 1 in the DATA LIST with the HDS.
7. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
8. Open the hood, and let the engine cool for 3 hours.

9. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
10. Check ECT SENSOR 1 in the DATA LIST with the HDS.

    Does ECT SENSOR 1 change 18°F (10°C) or more?

    YES - Intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at ECT sensor 1 and the ECM/PCM. •

    NO - Go to step 11.

11. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
12. Replace ECT sensor 1 (see **ECT Sensor 1 Replacement**).
13. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
14. Reset the ECM/PCM with the HDS.
15. Do the ECM/PCM idle learn procedure (see **ECM/PCM IDLE LEARN PROCEDURE**).
16. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P0116 indicated?

    YES - Check for poor connections or loose terminals at ECT sensor 1 and the ECM/PCM, then go to step 1.

    NO - Troubleshooting is complete. If any other Pending or Confirmed DTCs are indicated, go to the indicated DTC's troubleshooting. •

DTC P0117: ECT SENSOR 1 CIRCUIT LOW VOLTAGE

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see GENERAL TROUBLESHOOTING INFORMATION).

1. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
2. Check ECT SENSOR 1 in the DATA LIST with the HDS.

    Is about 356°F (180°C) or more, or 0.08 V or less indicated?

    YES - Go to step 3.

    NO - Intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at ECT sensor 1 and the ECM/PCM. •

3. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
4. Disconnect the ECT sensor 1 2P connector.
5. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.

6. Check ECT SENSOR 1 in the DATA LIST with the HDS.

   Is about 356°F (180°C) or more, or 0.08 V or less indicated?

   YES - Go to step 7.

   NO - Go to step 11.

7. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
8. Jump the SCS line with the HDS.
9. Disconnect ECM/PCM connector C (49P).
10. Check for continuity between ECT sensor 1 2P connector terminal No. 1 and body ground.

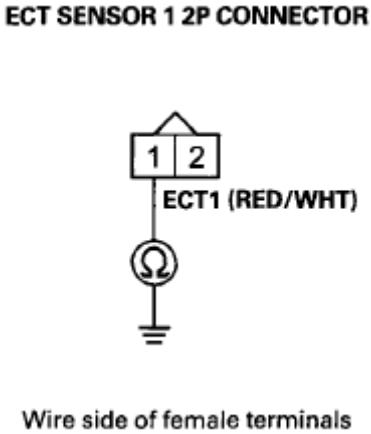


Fig. 21: Checking Continuity Between ECT Sensor 1 2P Connector Terminal No. 1 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair short in the wire between ECT sensor 1 and the ECM/PCM (C32), then go to step 13.

NO - Go to step 18.

11. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
12. Replace ECT sensor 1 (see **ECT Sensor 1 Replacement**).
13. Reconnect all connectors.
14. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
15. Reset the ECM/PCM with the HDS.
16. Do the ECM/PCM idle learn procedure (see **ECM/PCM IDLE LEARN PROCEDURE**).
17. Check for Pending or Confirmed DTCs with the HDS.

Is DTC P0117 indicated?

YES - Check for poor connections or loose terminals at ECT sensor 1 and the ECM/PCM, then go to step 1.

NO - Troubleshooting is complete. If any other Pending or Confirmed DTCs are indicated, go to the indicated DTC's troubleshooting. •

18. Reconnect all connectors.
19. Update the ECM/PCM if it does not have the latest software (see **ECM/PCM Update**), or substitute a known-good ECM/PCM (see **SUBSTITUTING THE ECM/PCM**).
20. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P0117 indicated?

    YES - Check for poor connections or loose terminals at ECT sensor 1 and the ECM/PCM. If the ECM/PCM was updated, substitute a known-good ECM/PCM (see **SUBSTITUTING THE ECM/PCM**), then recheck. If the ECM/PCM was substituted, go to step 1.

    NO - If the ECM/PCM was updated, troubleshooting is complete. If the ECM/PCM was substituted, replace the original ECM/PCM (see **ECM/PCM Replacement**). If any other Pending or Confirmed DTCs are indicated, go to the indicated DTC's troubleshooting. •

DTC P0118: ECT SENSOR 1 CIRCUIT HIGH VOLTAGE

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see GENERAL TROUBLESHOOTING INFORMATION).

1. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
2. Check ECT SENSOR 1 in the DATA LIST with the HDS.

   Is about - 40°F (- 40°C) or less, or 4.92 V or more indicated?

   YES - Go to step 3.

   NO - Intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at ECT sensor 1 and the ECM/PCM. •

3. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
4. Disconnect the ECT sensor 1 2P connector.
5. Connect ECT sensor 1 2P connector terminals No. 1 and No. 2 with a jumper wire.

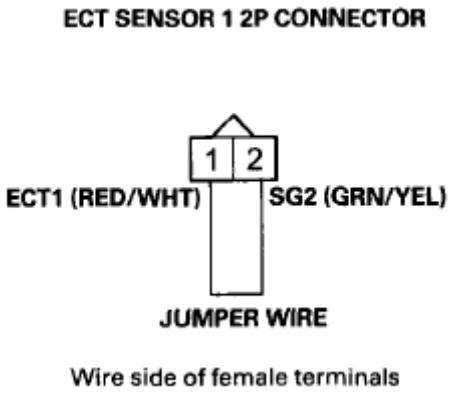


Fig. 22: Connecting ECT Sensor 1 2P Connector Terminals No. 1 And No. 2 With Jumper Wire
Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
7. Check ECT SENSOR 1 in the DATA LIST with the HDS.

   Is about - 40°F (- 40°C) or less, or 4.92 V or more indicated?

   YES - Go to step 8.

   NO - Go to step 20.

8. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
9. Remove the jumper wire from the ECT sensor 1 2P connector.
10. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
11. Measure the voltage between ECT sensor 1 2P connector terminal No. 1 and body ground.

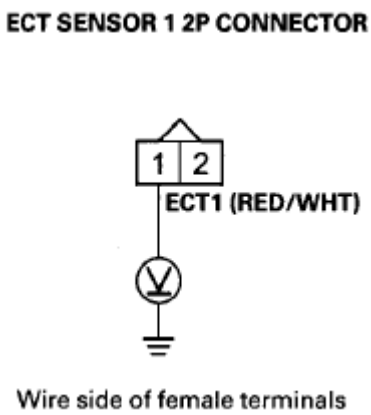


Fig. 23: Measuring Voltage Between ECT Sensor 1 2P Connector Terminal No. 1 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there about 5 V?

YES - Go to step 12.

NO - Go to step 16.

12. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
13. Jump the SCS line with the HDS.
14. Disconnect ECM/PCM connector C (49P).
15. Check for continuity between ECM/PCM connector terminal C16 and ECT sensor 1 2P connector terminal No. 2.

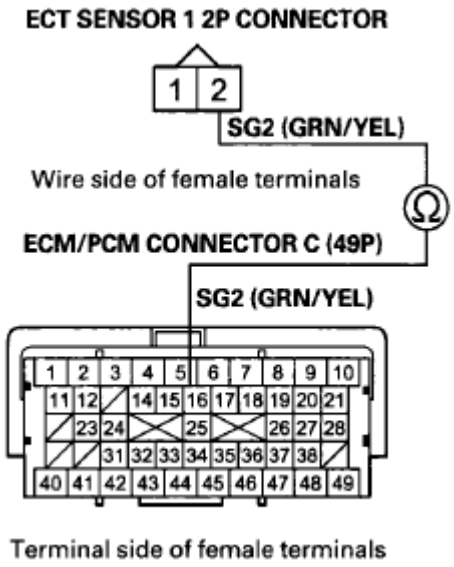


Fig. 24: Checking Continuity Between ECM/PCM Connector Terminal C16 And ECT Sensor 1 2P Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 27.

NO - Repair open in the wire between the ECM/PCM (C16) and ECT sensor 1, then go to step 22.

16. Turn the ignition switch to LOCK(0), or press the engine start/stop button to select the OFF mode.
17. Jump the SCS line with the HDS.
18. Disconnect ECM/PCM connector C (49P).
19. Check for continuity between ECM/PCM connector terminal C32 and ECT sensor 1 2P connector terminal No. 1.

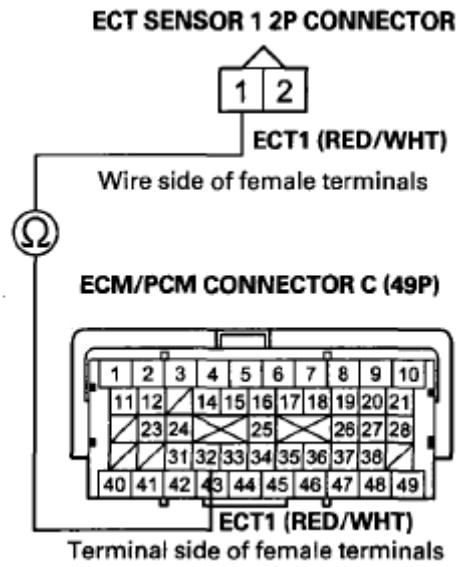


Fig. 25: Checking Continuity Between ECM/PCM Connector Terminal C32 And ECT Sensor 1 2P Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 27.

NO - Repair open in the wire between the ECM/PCM (C32) and ECT sensor 1, then go to step 22.

20. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
21. Replace ECT sensor 1 (see **ECT Sensor 1 Replacement**).
22. Reconnect all connectors.
23. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
24. Reset the ECM/PCM with the HDS.
25. Do the ECM/PCM idle learn procedure (see **ECM/PCM IDLE LEARN PROCEDURE**).
26. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P0118 indicated?

    YES - Check for poor connections or loose terminals at ECT sensor 1 and the ECM/PCM, then go to step 1.

    NO - Troubleshooting is complete. If any other Pending or Confirmed DTCs are indicated, go to the indicated DTC's troubleshooting. •

27. Reconnect all connectors.
28. Update the ECM/PCM if it does not have the latest software (see **ECM/PCM Update**), or substitute a known-good ECM/PCM (see **SUBSTITUTING THE ECM/PCM**).

29. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P0118 indicated?

    YES - Check for poor connections or loose terminals at ECT sensor 1 and the ECM/PCM. If the ECM/PCM was updated, substitute a known-good ECM/PCM (see **SUBSTITUTING THE ECM/PCM**), then recheck. If the ECM/PCM was substituted, go to step 1.

    NO - If the ECM/PCM was updated, troubleshooting is complete. If the ECM/PCM was substituted, replace the original ECM/PCM (see **ECM/PCM Replacement**). If any other Pending or Confirmed DTCs are indicated, go to the indicated DTC's troubleshooting. •

DTC P0125: ECT SENSOR 1 MALFUNCTION/SLOW RESPONSE

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see GENERAL TROUBLESHOOTING INFORMATION).

1. Start the engine, and let it idle for 5 minutes or more.
2. Check ECT SENSOR 1 in the DATA LIST with the HDS.

   Is about 10°F (-12°C) or less indicated?

   YES - Check for poor connections or loose terminals at ECT sensor 1, ECT sensor 2, and the ECM/PCM. If the connections and the terminals are OK, replace ECT sensor 1 (see **ECT Sensor 1 Replacement**), then go to step 7.

   NO - Go to step 3.

3. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
4. Allow the engine to cool to 104°F (40°C) or less.
5. Start the engine, and let it idle until ECT SENSOR 1 goes up to about 158°F (70°C).

   Does ECT SENSOR 2 also read about 158°F (70°C)?

   YES - Go to step 6.

   NO - Intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at ECT sensor 1, ECT sensor 2, and the ECM/PCM. •

6. Check the thermostat (see **FAN MOTOR TEST**).

   Is the thermostat OK?

   YES - Check for poor connections or loose terminals at ECT sensor 1, ECT sensor 2, and the ECM/PCM. If the connections and the terminals are OK, replace ECT sensor 1 (see **ECT Sensor 1 Replacement**),

then go to step 7.

NO - Replace the thermostat (see **THERMOSTAT REPLACEMENT**), then go to step 7.

7. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
8. Reset the ECM/PCM with the HDS.
9. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
10. Allow the engine to cool to 104°F (40°C) or less.
11. Start the engine, and let it idle until ECT SENSOR 1 goes up to about 158°F (70°C).

Does ECT SENSOR 2 also read about 158°F (70°C)?

YES - Go to step 1 and recheck.

NO - Troubleshooting is complete. •

DTC P0128: COOLING SYSTEM MALFUNCTION

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see GENERAL TROUBLESHOOTING INFORMATION).

1. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
2. Clear the DTC with the HDS.
3. Turn the blower switch OFF.
4. Check the FAN HIGH CONTROL and FAN LOW CONTROL in the DATA LIST with the HDS.

Is it OFF?

YES - Go to step 5.

NO - Wait until the FAN HIGH CONTROL and FAN LOW CONTROL is off, then go to step 5.

5. Check the radiator fan operation.

Does the radiator fan keep running?

YES - Check the radiator fan high speed circuit (see **RADIATOR FAN HIGH SPEED CIRCUIT TROUBLESHOOTING**), and the radiator fan relay (see **POWER RELAY TEST**). If the circuit and the relay are OK, go to step 19.

NO - Go to step 6.

6. Let the engine cool until the coolant temperature is 104°F (40°C) or less.
7. Note the value of ECT SENSOR 1 and ECT SENSOR 2 in the DATA LIST with the HDS.

8. Start the engine, and let it idle.
9. Let the engine idle until ECT SENSOR 1 goes up 34°F (19°C) or more from the recorded temperature.
10. Check ECT SENSOR 2 in the DATA LIST with the HDS.
11. Compare the recorded value of ECT SENSOR 2 and the present value of ECT SENSOR 2.

    Did the temperature rise 9°F (5°C) or more?

    YES - Test the thermostat (see **FAN MOTOR TEST**), then go to step 12.

    NO - Intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at ECT sensor 1, ECT sensor 2, and the ECM/PCM. •

12. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
13. Reset the ECM/PCM with the HDS.
14. Let the engine cool until the coolant temperature is between 21°F (-6°C) and 104°F (40°C).
15. Do the ECM/PCM idle learn procedure (see **ECM/PCM IDLE LEARN PROCEDURE**).
16. Test-drive at a steady speed between 15- 75 mph (24-120 km/h) for 10 minutes.
17. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P0128 indicated?

    YES - Check the cooling the system, then go to step 19.

    NO - Go to step 18.

18. Monitor the OBD STATUS for DTC P0128 in the DTCs MENU with the HDS.

    Does the screen indicate PASSED?

    YES - Troubleshooting is complete. If any other Pending or Confirmed DTCs were indicated in step 17, go to the indicated DTC's troubleshooting. •

    NO - If the screen indicates FAILED, check the cooling the system, then go to step 19. If the screen indicates NOT COMPLETED, go to step 14.

19. Update the ECM/PCM if it does not have the latest software (see **ECM/PCM Update**), or substitute a known-good ECM/PCM (see **SUBSTITUTING THE ECM/PCM**).
20. Let the engine cool until the coolant temperature is between 21°F (-6°C) and 104°F (40°C).
21. Start the engine. Hold the engine speed at 3, 000 RPM without load (A/T in P or N, M/T in neutral) until the radiator fan comes on, then let it idle.
22. Test-drive at a steady speed between 15- 75 mph (24-120 km/h) for 10 minutes.
23. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P0128 indicated?

YES - Check for poor connections or loose terminals at ECT sensor 1, ECT sensor 2, and the ECM/PCM. If the ECM/PCM was updated, substitute a known-good ECM/PCM (see **SUBSTITUTING THE ECM/PCM**), then go to step 20. If the ECM/PCM was substituted, go to step 1.

NO - Go to step 24.

24. Monitor the OBD STATUS for DTC P0128 in the DTCs MENU with the HDS.

    Does the screen indicate PASSED?

    YES - If the ECM/PCM was updated, troubleshooting is complete. If the ECM/PCM was substituted, replace the original ECM/PCM (see **ECM/PCM Replacement**). If any other Pending or Confirmed DTCs were indicated in step 23, go to the indicated DTC's troubleshooting. •

    NO - If the screen indicates FAILED, check for poor connections or loose terminals at ECT sensor 1, ECT sensor 2, and the ECM/PCM. If the ECM/PCM was updated, substitute a known-good ECM/PCM (see **SUBSTITUTING THE ECM/PCM**), then go to step 20. If the ECM/PCM was substituted, go to step 1. If the screen indicates NOT COMPLETED, go to step 20.

DTC P0133: REAR A/F SENSOR (BANK 1, SENSOR 1) MALFUNCTION/SLOW RESPONSE; DTC P0153: FRONT A/F SENSOR (BANK 2, SENSOR 1) MALFUNCTION/SLOW RESPONSE

NOTE:

- **Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see GENERAL TROUBLESHOOTING INFORMATION).**
- **If DTC P0139 and/or P0159* is stored at the same time as DTC P0133 and/or P0153*, troubleshoot DTC P0139 and/or P0159* first, then recheck for DTC P0133 and/or P0153*.**
- **Information marked with an asterisk (*) applies to the front bank (Bank 2).**

1. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
2. Clear the DTC with the HDS.
3. Start the engine. Hold the engine speed at 3, 000 RPM without load (A/T in P or N, or M/T in neutral) until the radiator fan comes on, then let it idle.
4. Test-drive under these conditions:
   - Engine coolant temperature (ECT SENSOR 1) above 158°F (70°C)
   - A/T in D, or M/T in 5th
   - Engine speed between 1, 250- 2, 100 RPM
   - Drive the vehicle at 25 mph (40 km/h) or less for 5 minutes, then drive at a steady speed of 35 mph (57 km/h) or more
5. Monitor the OBD STATUS for DTC P0133 and/or P0153* in the DTCs MENU with the HDS.

   Does the screen indicate FAILED?

YES - Go to step 6.

NO - If the screen indicates PASSED, intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at the A/F sensor (Sensor 1) and the ECM/PCM. If the screen indicates EXECUTING, keep driving until a result comes on. If the screen indicates OUT OF CONDITION, go to step 3 and recheck.

6. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
7. Replace the **A/F sensor (Sensor 1)**.
8. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
9. Reset the ECM/PCM with the HDS.
10. Do the ECM/PCM idle learn procedure (see **ECM/PCM IDLE LEARN PROCEDURE**).
11. Start the engine. Hold the engine speed at 3, 000 RPM without load (A/T in P or N, M/T in neutral) until the radiator fan comes on, then let it idle.
12. Test-drive under these conditions:
    - Engine coolant temperature (ECT SENSOR 1) above 158°F (70°C)
    - A/T in D, or M/T in 5th
    - Engine speed between 1, 250- 2, 100 RPM
    - Drive the vehicle at 25 mph (40 km/h) or less for 5 minutes, then drive at a steady speed of 35 mph (57 km/h) or more
13. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P0133 and/or P0153 indicated?*

    YES - Check for poor connections or loose terminals at the A/F sensor (Sensor 1) and the ECM/PCM, then go to step 1.

    NO - Go to step 14.

14. Monitor the OBD STATUS for DTC P0133 and/or P0153* in the DTCs MENU with the HDS.

    Does the screen indicate PASSED?

    YES - Troubleshooting is complete. If any other Pending or Confirmed DTCs were indicated in step 13, go to the indicated DTC's troubleshooting. •

    NO - If the screen indicates FAILED, check for poor connections or loose terminals at the A/F sensor (Sensor 1) and the ECM/PCM, then go to step 1. If the screen indicates EXECUTING, keep driving until a result comes on. If the screen indicates OUT OF CONDITION, go to step 11.

DTC P0134: REAR A/F SENSOR (BANK 1, SENSOR 1) HEATER SYSTEM MALFUNCTION; DTC P0154: FRONT A/F SENSOR (BANK 2, SENSOR 1) HEATER SYSTEM MALFUNCTION

NOTE:

- **Before you troubleshoot, record all freeze data and any on-board**

snapshot, and review the general troubleshooting information (see GENERAL TROUBLESHOOTING INFORMATION).

- **If DTC P2251 and/or P2254* is stored at the same time as DTC P0134 and/or P0154*, troubleshoot DTC P2251 and/or P2254* first, then recheck for P0134 and/or P0154*.**
- **Information marked with an asterisk (*) applies to the front bank (Bank 2).**

1. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
2. Clear the DTC with the HDS.
3. Start the engine, and let it idle without load (A/T in P or N, M/T in neutral) for at least 1 minute.
4. Check for Pending or Confirmed DTCs with the HDS.

   Is DTC P0134 and/or P0154 indicated?*

   YES - Go to step 5.

   NO - Intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at the A/F sensor (Sensor 1), the PGM-FI subrelay, and the ECM/PCM. •

5. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
6. Jump the SCS line with the HDS.
7. Disconnect the A/F sensor (Sensor 1) 6P connector.
8. Disconnect ECM/PCM connector B (49P).
9. Check for continuity between A/F sensor (Sensor 1) 6P connector terminal No. 4 and ECM/PCM connector terminal B13(B14)*.

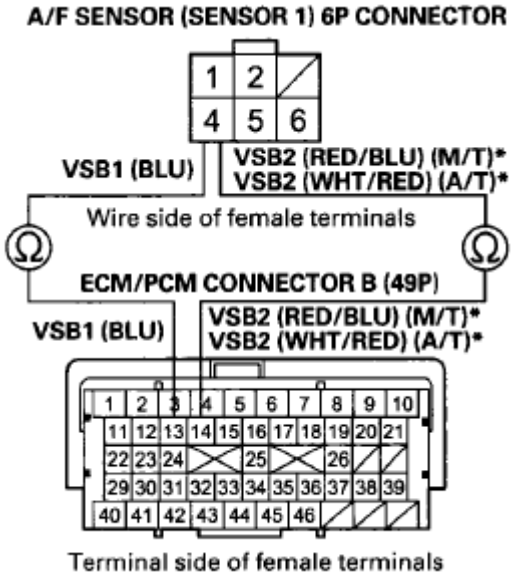


Fig. 26: Checking Continuity Between A/F Sensor (Sensor 1) 6P Connector Terminal No. 4 And ECM/PCM Connector

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 10.

NO - Repair open in the wire between the ECM/PCM (B13 (B14)*) and A/F sensor (Sensor 1), then go to step 14.

10. Reconnect ECM/PCM connector B (49P).
11. Start the engine, and let it idle without load (A/T in P or N, M/T in neutral) for at least 1 minute.
12. Measure the voltage between A/F sensor (Sensor 1) 6P connector terminal No. 4 and body ground.

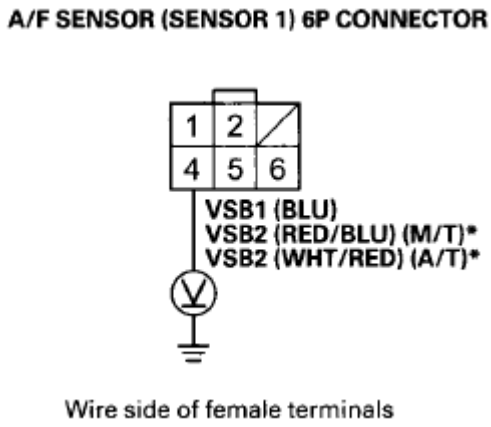


Fig. 27: Measuring Voltage Between A/F Sensor (Sensor 1) 6P Connector Terminal No. 4 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there about 0.2 V or less?

YES - Go to step 20.

NO - Go to step 13.

13. Replace **A/F sensor (Sensor 1)**.
14. Reconnect all connectors.
15. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
16. Reset the ECM/PCM with the HDS.
17. Do the ECM/PCM idle learn procedure (see **ECM/PCM IDLE LEARN PROCEDURE**).
18. Check for Pending or Confirmed DTCs with the HDS.

Is DTC P0134 and/or P0154 indicated?*

YES - Check for poor connections or loose terminals at A/F sensor (Sensor 1), the PGM-FI subrelay, and

the ECM/PCM, then go to step 1.

NO - Go to step 19.

19. Monitor the OBD STATUS for DTC P0134 and/or P0154* in the DTCs MENU with the HDS.

    Does the screen indicate PASSED?

    YES - Troubleshooting is complete. If any other Pending or Confirmed DTCs were indicated in step 18, go to the indicated DTC's troubleshooting. •

    NO - If the screen indicates FAILED, check for poor connections or loose terminals at A/F sensor (Sensor 1), the PGM-FI subrelay, and the ECM/PCM, then go to step 1. If the screen indicates NOT COMPLETED, keep idling until a result comes on.

20. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
21. Reconnect all connectors.
22. Update the **ECM/PCM** if it does not have the latest software (see **ECM/PCM Update**), or substitute a known-good ECM/PCM (see **SUBSTITUTING THE ECM/PCM**).
23. Start the engine, and let it idle without load (A/T in P or N, M/T in neutral) for at least 1 minute.
24. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P0134 and/or P0154 indicated?*

    YES - Check for poor connections or loose terminals at the A/F sensor (Sensor 1), the PGM-FI subrelay, and the ECM/PCM. If the ECM/PCM was updated, substitute a known-good ECM/PCM (see **SUBSTITUTING THE ECM/PCM**), then go to step 23. If the ECM/PCM was substituted, go to step 1.

    NO - Go to step 25.

25. Monitor the OBD STATUS for DTC P0134 and/or P0154* in the DTCs MENU with the HDS.

    Does the screen indicate PASSED?

    YES - If the ECM/PCM was updated, troubleshooting is complete. If the ECM/PCM was substituted, replace the original **ECM/PCM** (see **ECM/PCM Replacement**). If any other Pending or Confirmed DTCs were indicated in step 24, go to the indicated DTC's troubleshooting. •

    NO - If the screen indicates FAILED, check for poor connections or loose terminals at A/F sensor (Sensor 1), the PGM-FI subrelay, and the ECM/PCM. If the ECM/PCM was updated, substitute a known-good ECM/PCM (see **SUBSTITUTING THE ECM/PCM**), then go to step 23. If the ECM/PCM was substituted, go to step 1. If the screen indicates NOT COMPLETED, keep idling until a result comes on.

DTC P0135: REAR A/F SENSOR (BANK 1, SENSOR 1) HEATER CIRCUIT MALFUNCTION; DTC P0155: FRONT A/F SENSOR (BANK 2, SENSOR 1) HEATER CIRCUIT MALFUNCTION

NOTE:

- **Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see GENERAL TROUBLESHOOTING INFORMATION).**
- **Information marked with an asterisk (*) applies to the front bank (Bank 2).**

1. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
2. Clear the DTC with the HDS.
3. Start the engine.
4. Check for Pending or Confirmed DTCs with the HDS.

   Is DTC P0135 and/or P0155 indicated?*

   YES - Go to step 5.

   NO - Intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at A/F sensor (Sensor 1), the PGM-FI subrelay, and the ECM/PCM. •

5. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
6. Check the No. 14 Fl SUB (15 A) fuse in the under-hood fuse/relay box.

   Is the fuse OK?

   YES - Go to step 7.

   NO - Go to step 20.

7. Remove the PGM-FI subrelay (A) from the under-hood fuse/relay box.

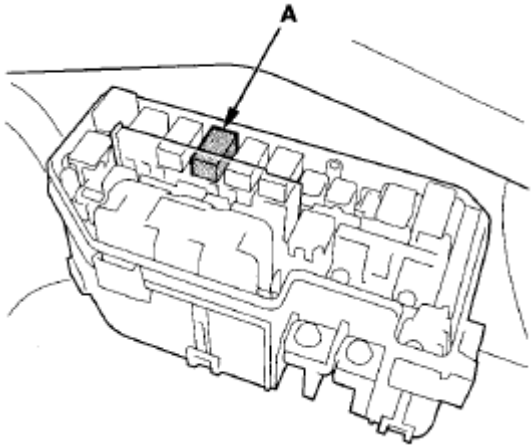


Fig. 28: Identifying PGM-FI Subrelay
Courtesy of AMERICAN HONDA MOTOR CO., INC.

8. Test the PGM-FI subrelay (see **POWER RELAY TEST**).

Is the relay OK?

YES - Go to step 9.

NO - Replace the PGM-FI subrelay, then go to step 26.

9. Disconnect the A/F sensor (Sensor 1) 6P connector.
10. At the sensor side, measure the resistance between A/F sensor (Sensor 1) 6P connector terminals No. 1 and No. 2.

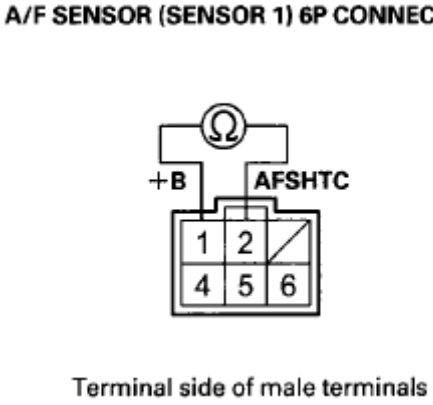


Fig. 29: Measuring Resistance Between A/F Sensor (Sensor 1) 6P Connector Terminals No. 1 And No. 2
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there 2.5- 4.0 ohms at the room temperature?

YES - Go to step 11.

NO - Go to step 25.

11. At the sensor side, check for continuity between each terminal of at the A/F sensor (Sensor 1) 6P connector and body ground.

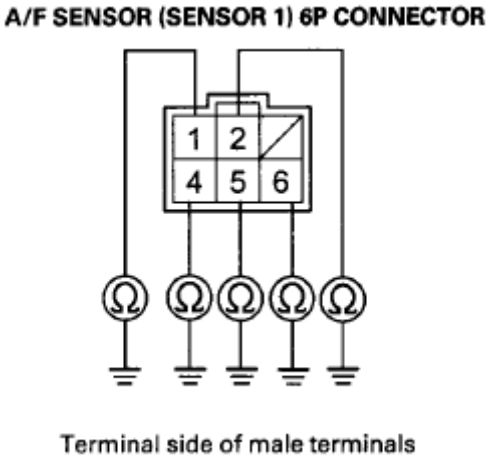


Fig. 30: Checking Continuity Between Each Terminal Of At A/F Sensor (Sensor 1) 6P Connector And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity to ground at any of the terminals?

YES - Go to step 25.

NO - Go to step 12.

12. At the sensor side, check for continuity between A/F sensor (Sensor 1) 6P connector terminal No. 1 and each of the other terminals in the connectors individually.

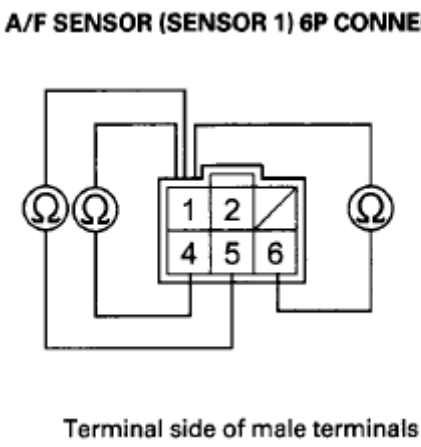


Fig. 31: Checking Continuity Between A/F Sensor 6P Connector And Terminals In Connectors
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 25.

NO - Go to step 13.

13. Jump the SCS line with the HDS.
14. Disconnect ECM/PCM connector C (49P).
15. Check for continuity between ECM/PCM connector terminal C6 (C8)* and body ground.

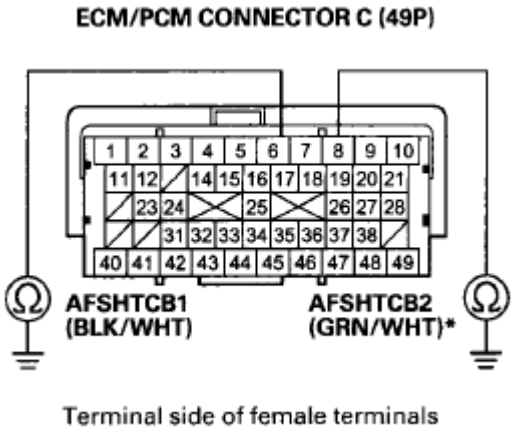


Fig. 32: Checking Continuity Between ECM/PCM Connector Terminal C6 (C8)* And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair short in the wire between the ECM/PCM (C6 (C8)*) and A/F sensor (Sensor 1), then go to step 26.

NO - Go to step 16.

16. Check for continuity between A/F sensor (Sensor 1)6P connector terminal No. 2 and ECM/PCM connector terminal C6(C8)\

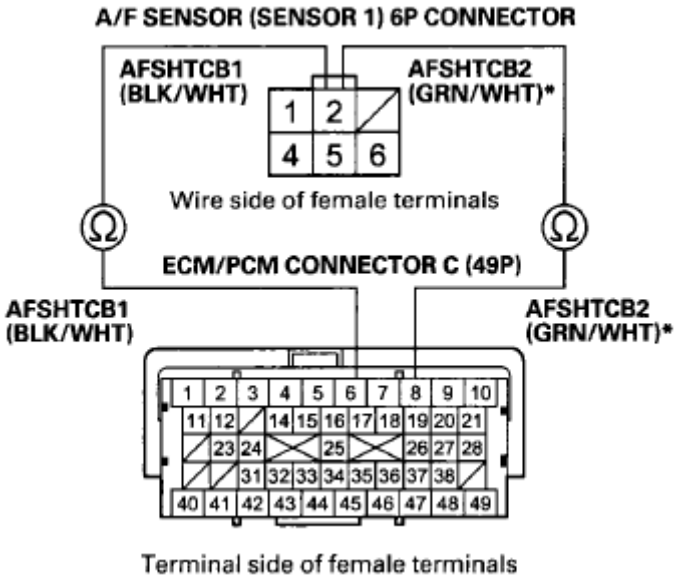


Fig. 33: Checking Continuity Between A/F Sensor 6P Connector Terminal No. 2 And ECM/PCM Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 17.

NO - Repair open in the wire between the ECM/PCM (C6 (C8)*) and A/F sensor (Sensor 1), then go to step 26.

17. Check for continuity between A/F sensor (Sensor 1) 6P connector terminal No. 1 and PGM-FI subrelay 4P connector terminal No. 2.

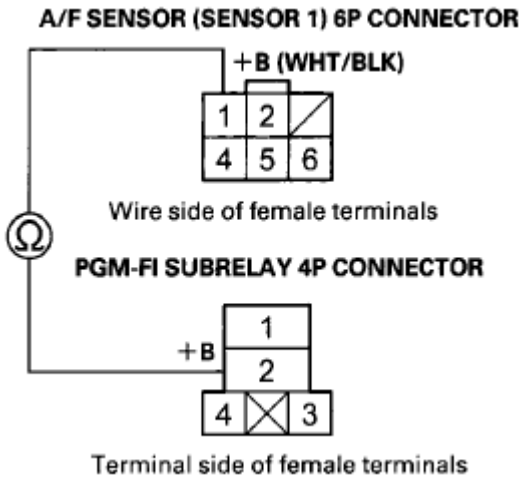


Fig. 34: Checking Continuity Between A/F Sensor 6P Connector Terminal No. 1 And PGM-FI Subrelay 4P Connector

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 18.

NO - Repair open in the wire between A/F sensor (Sensor 1) and the PGM-FI subrelay, then go to step 26.

18. Disconnect ECM/PCM connector A (49P).
19. Check for continuity between PGM-FI subrelay 4P connector terminal No. 3 and ECM/PCM connector terminal A40.

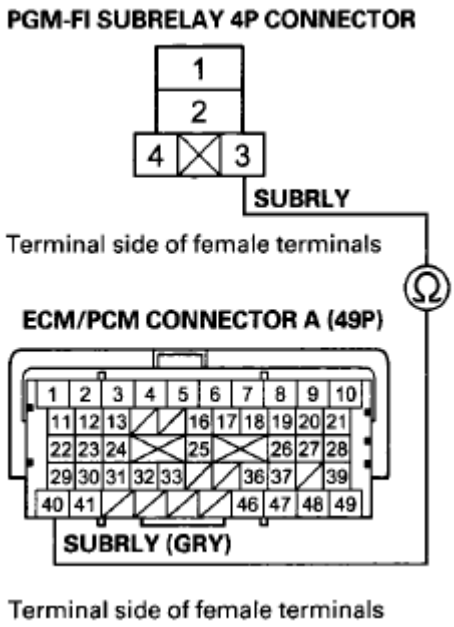


Fig. 35: Checking Continuity Between PGM-FI Subrelay 4P Connector Terminal No. 3 And ECM/PCM Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 32.

NO - Repair open in the wire between the PGM-FI subrelay, and the ECM/PCM (A40), then go to step 26.

20. Remove the PGM-FI subrelay (A) from the under-hood fuse/relay box.

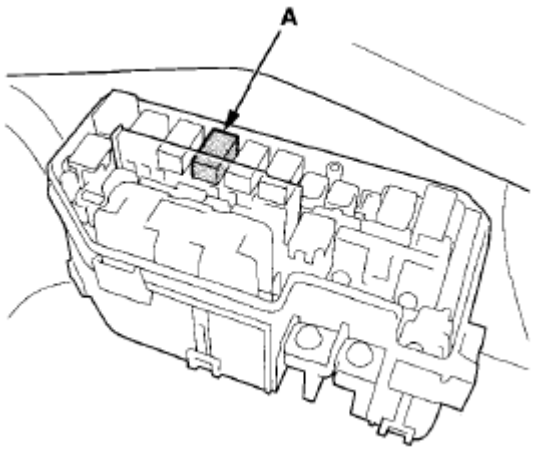


Fig. 36: Identifying PGM-FI Subrelay
Courtesy of AMERICAN HONDA MOTOR CO., INC.

21. Disconnect the front and rear A/F sensor (Sensor 1) 6P connectors.
22. Disconnect the front and rear secondary HO2S (Sensor 2) 4P connectors.
23. Disconnect the EVAP canister vent shut valve 2P connector.
24. Check for continuity between A/F sensor (Sensor 1) 6P connector terminal No. 1 and body ground.

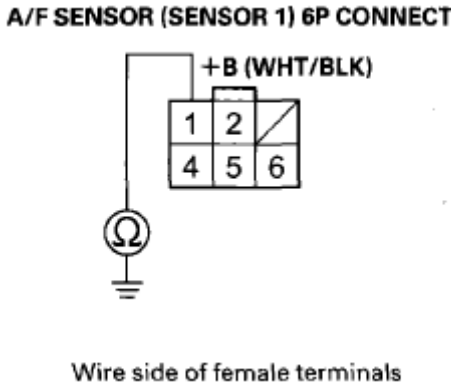


Fig. 37: Checking Continuity Between A/F Sensor 6P Connector Terminal No. 1 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair short in the wire between the PGM-FI subrelay and A/F sensor (Sensor 1), then go to step 26.

NO - Check the under-hood fuse/relay box, and replace it if needed (see **REMOVAL AND INSTALLATION**). Also replace the No. 14 FI SUB (15 A) fuse, then go to step 26.

25. Replace **A/F sensor (Sensor 1)**.
26. Reconnect all connectors.

27. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
28. Reset the ECM/PCM with the HDS.
29. Do the ECM/PCM idle learn procedure (see **ECM/PCM IDLE LEARN PROCEDURE**).
30. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P0135 and/or P0155 indicated?*

    YES - Check for poor connections or loose terminals at A/F sensor (Sensor 1), the PGM-FI subrelay, and the ECM/PCM, then go to step 1.

    NO - Go to step 31.

31. Monitor the OBD STATUS for DTC P0135 and/or P0155* in the DTCs MENU with the HDS.

    Does the screen indicate PASSED?

    YES - Troubleshooting is complete. If any other Pending or Confirmed DTCs were indicated in step 30, go to the indicated DTC's troubleshooting. •

    NO - If the screen indicates FAILED, check for poor connections or loose terminals at A/F sensor (Sensor 1), the PGM-FI subrelay, and the ECM/PCM, then go to step 1. If the screen indicates NOT COMPLETED, keep idling until a result comes on.

32. Reconnect all connectors.
33. Update the ECM/PCM if it does not have the latest software (see **ECM/PCM Update**), or substitute a known-good ECM/PCM (see **SUBSTITUTING THE ECM/PCM**).
34. Start the engine, and let it idle.
35. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P0135 and/or P0155 indicated?*

    YES - Check for poor connections or loose terminals at A/F sensor (Sensor 1), the PGM-FI subrelay, and the ECM/PCM. If the ECM/PCM was updated, substitute a known-good ECM/PCM (see **SUBSTITUTING THE ECM/PCM**), then go to step 34. If the ECM/PCM was substituted, go to step 1.

    NO - Go to step 36.

36. Monitor the OBD STATUS for DTC P0135 and/or P0155* in the DTCs MENU with the HDS.

    Does the screen indicate PASSED?

    YES - If the ECM/PCM was updated, troubleshooting is complete. If the ECM/PCM was substituted, replace the original **ECM/PCM** (see **ECM/PCM Replacement**). If any other Pending or Confirmed DTCs were indicated in step 35, go to the indicated DTC's troubleshooting. •

NO - If the screen indicates FAILED, check for poor connections or loose terminals at A/F sensor (Sensor 1), the PGM-FI subrelay, and the ECM/PCM. If the ECM/PCM was updated, substitute a known-good ECM/PCM (see **SUBSTITUTING THE ECM/PCM**), then go to step 34. If the ECM/PCM was substituted, go to step 1. If the screen indicates NOT COMPLETED, keep idling until a result comes on.

DTC P0137: REAR SECONDARY HO2S (BANK 1, SENSOR 2) CIRCUIT LOW VOLTAGE; DTC P0157: FRONT SECONDARY HO2S (BANK 2, SENSOR 2) CIRCUIT LOW VOLTAGE

NOTE:

- **Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see GENERAL TROUBLESHOOTING INFORMATION).**
- **Information marked with an asterisk (*) applies to the front bank (Bank 2).**

1. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
2. Clear the DTC with the HDS.
3. Start the engine. Hold the engine speed at 3, 000 RPM without load (A/T in P or N, M/T in neutral) until the radiator fan comes on, then let it idle.
4. Monitor the OBD STATUS for DTC P0137 and/or P0157* in the DTCs MENU with the HDS.

   Does the HDS indicate FAILED?

   YES - Go to step 5.

   NO - If the HDS indicates PASSED, intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at secondary HO2S (Sensor 2) and the ECM/PCM. If the HDS indicates EXECUTING or OUT OF CONDITION, keep idling until a result comes on.

5. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
6. Disconnect the secondary HO2S (Sensor 2) 4P connector.
7. Connect secondary HO2S (Sensor 2) 4P connector terminal No. 1 and No. 2 with a jumper wire.

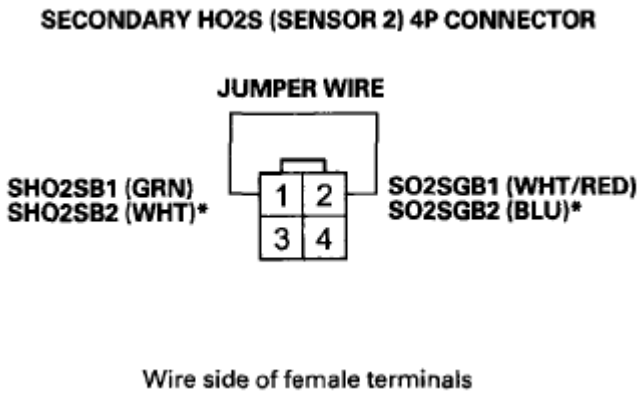


Fig. 38: Connecting Secondary HO2S (Sensor 2) 4P Connector Terminal No. 1 And No. 2 With Jumper Wire
Courtesy of AMERICAN HONDA MOTOR CO., INC.

8. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
9. Check the HO2S B1 S2 OUTPUT VOLTAGE and/or HO2S B2 S2 OUTPUT VOLTAGE* in the DATA LIST with the HDS.

   Does the voltage stay at 0.12 V or less?

   YES - Go to step 10.

   NO - Go to step 22.

10. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
11. Remove the jumper wire from the secondary HO2S (Sensor 2) 4P connector.
12. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
13. Check the HO2S B1 S2 OUTPUT VOLTAGE and/or HO2S B2 S2 OUTPUT VOLTAGE* in the DATA LIST with the HDS.

    Is there about 5 V?

    YES - Go to step 14.

    NO - Go to step 18.

14. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
15. Jump the SCS line with the HDS.
16. Disconnect ECM/PCM connector C (49P).
17. Check for continuity between ECM/PCM connector terminal C23 (C36)* and body ground.

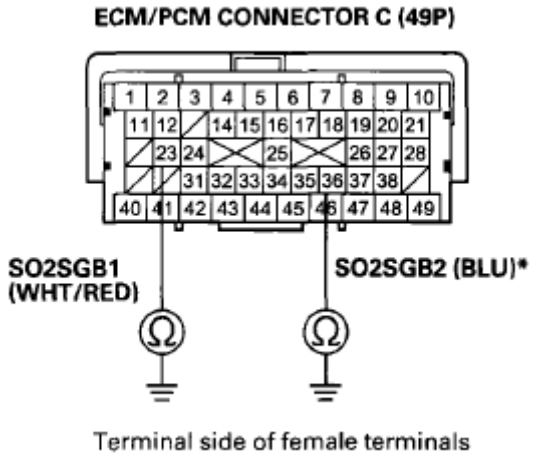


Fig. 39: Checking Continuity Between ECM/PCM Connector Terminal C23 (C36) And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair a short in the wire between the ECM/PCM (C23 (C36)*) and secondary HO2S (Sensor 2), then go to step 24.

NO - Go to step 31.

18. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
19. Jump the SCS line with the HDS.
20. Disconnect ECM/PCM connector B (49P).
21. Check for continuity between ECM/PCM connector terminal B25 (B16)* and body ground.

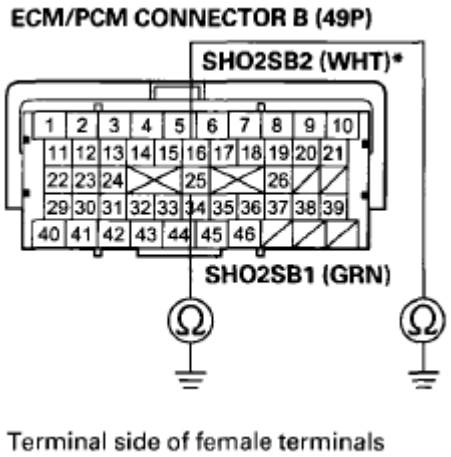


Fig. 40: Checking Continuity Between ECM/PCM Connector Terminal B25 (B16) And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair a short in the wire between the ECM/PCM (B25 (B16)*) and secondary HO2S (Sensor 2), then go to step 24.

NO - Go to step 31.

22. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
23. Replace **secondary HO2S (Sensor 2)**.
24. Reconnect all connectors.
25. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
26. Reset the ECM/PCM with the HDS.
27. Do the ECM/PCM idle learn procedure (see **ECM/PCM IDLE LEARN PROCEDURE**).
28. Start the engine. Hold the engine speed at 3, 000 RPM without load (A/T in P or N, M/T in neutral) until the radiator fan comes on, then let it idle.
29. Check for Pending or Confirmed DTCs with the HDS.

Is DTC P0137 and/or P0157 indicated?*

YES - Check for poor connections or loose terminals at secondary HO2S (Sensor 2) and the ECM/PCM, then go to step 1.

NO - Go to step 30.

30. Monitor the OBD STATUS for DTC P0137 and/or P0157* in the DTCs MENU with the HDS.

    Does the HDS indicate PASSED?

    YES - Troubleshooting is complete. If any other Pending or Confirmed DTCs were indicated in step 29, go to the indicated DTC's troubleshooting. •

    NO - If the HDS indicates FAILED, check for poor connections or loose terminals at secondary HO2S (Sensor 2) and the ECM/PCM, then go to step 1. If the HDS indicates EXECUTING or OUT OF CONDITION, keep idling until a result comes on.

31. Reconnect all connectors.
32. Update the **ECM/PCM** if it does not have the latest software (see **ECM/PCM Update**), or substitute a known-good ECM/PCM (see **SUBSTITUTING THE ECM/PCM**).
33. Start the engine. Hold the engine speed at 3, 000 RPM without load (A/T in P or N, M/T in neutral) until the radiator fan comes on, then let it idle.
34. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P0137 and/or P0157 indicated?*

    YES - Check for poor connections or loose terminals at secondary HO2S (Sensor 2) and the ECM/PCM. If the ECM/PCM was updated, substitute a known-good PCM (see **SUBSTITUTING THE ECM/PCM**), then go to step 33. If the ECM/PCM was substituted, go to step 1.

    NO - Go to step 35.

35. Monitor the OBD STATUS for DTC P0137 and/or P0157* in the DTCs MENU with the HDS.

    Does the HDS indicate PASSED?

    YES - If the ECM/PCM was updated, troubleshooting is complete. If the ECM/PCM was substituted, replace the original **ECM/PCM** (see **ECM/PCM Replacement**). If any other Pending or Confirmed DTCs were indicated in step 34, go to the indicated DTC's troubleshooting. •

    NO - If the HDS indicates FAILED, check for poor connections or loose terminals at secondary HO2S (Sensor 2) and the PCM. If the PCM was updated, substitute a known-good PCM (see **SUBSTITUTING THE ECM/PCM**), then go to step 33. If the PCM was substituted, go to step 1. If the HDS indicates EXECUTING or OUT OF CONDITION, keep idling until a result comes on.

DTC P0138: REAR SECONDARY HO2S (BANK 1, SENSOR 2) CIRCUIT HIGH VOLTAGE; DTC

P0158: FRONT SECONDARY HO2S (BANK 2, SENSOR 2) CIRCUIT HIGH VOLTAGE

NOTE:

- **Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see GENERAL TROUBLESHOOTING INFORMATION).**
- **Information marked with an asterisk (*) applies to the front bank (Bank 2).**

1. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
2. Clear the DTC with the HDS.
3. Start the engine, and let it idle without load (A/T in P or N, M/T in neutral) until the radiator fan comes on.
4. Check the HO2S B1 S2 OUTPUT VOLTAGE and/or HO2S B2 S2 OUTPUT VOLTAGE* in the DATA LIST with the HDS.

   Does the voltage stay at 1.27 V or more?

   YES - Go to step 5.

   NO - Intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at secondary HO2S (Sensor 2) and the ECM/PCM. •

5. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
6. Disconnect the secondary HO2S (Sensor 2) 4P connector.
7. Connect secondary HO2S (Sensor 2) 4P connector terminals No. 1 and No. 2 with a jumper wire.

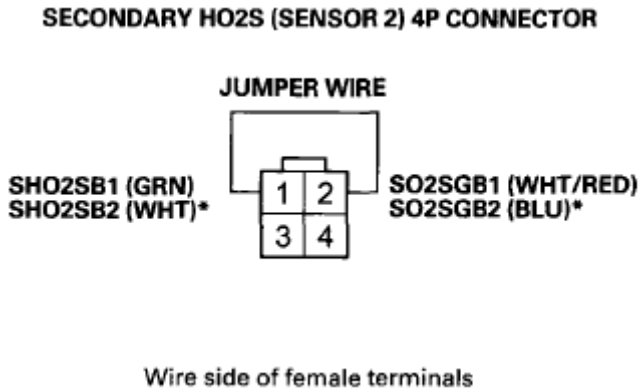


Fig. 41: Connecting Secondary HO2S (Sensor 2) 4P Connector Terminals No. 1 And No. 2 With Jumper Wire
Courtesy of AMERICAN HONDA MOTOR CO., INC.

8. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
9. Check the HO2S B1 S2 OUTPUT VOLTAGE and/or HO2S B2 S2 OUTPUT VOLTAGE* in the DATA LIST with the HDS.

Does the voltage stay at 1.27 V or more?

YES - Go to step 10.

NO - Go to step 19.

10. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
11. Remove the jumper wire from the secondary HO2S (Sensor 2) 4P connector.
12. Connect secondary HO2S (Sensor 2) 4P connector terminal No. 1 to body ground with a jumper wire.

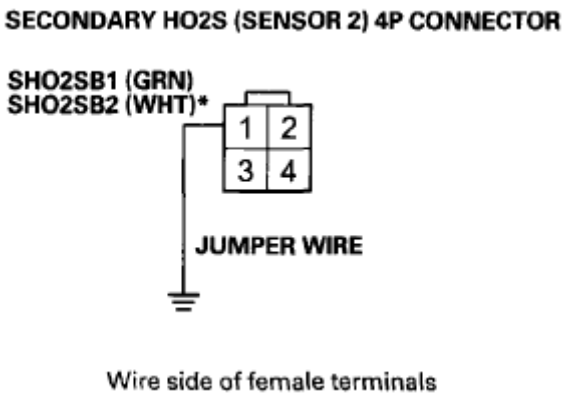


Fig. 42: Connecting Secondary HO2S 4P Connector Terminal No. 1 To Body Ground With Jumper Wire
Courtesy of AMERICAN HONDA MOTOR CO., INC.

13. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
14. Check the HO2S B1 S2 OUTPUT VOLTAGE and/or HO2S B2 S2 OUTPUT VOLTAGE* in the DATA LIST with the HDS.

Does the voltage stay at 1.27 V or more?

YES - Go to step 15.

NO - Repair an open in the wire between the ECM/PCM (C23 (C36)*) and secondary HO2S (Sensor 2), then go to step 21.

15. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
16. Jump the SCS line with the HDS.
17. Disconnect ECM/PCM connector B (49P).
18. With the jumper wire still connected between secondary HO2S terminal No. 1 and body ground, check for continuity between ECM/PCM connector terminal B25 (B16)* and body ground.

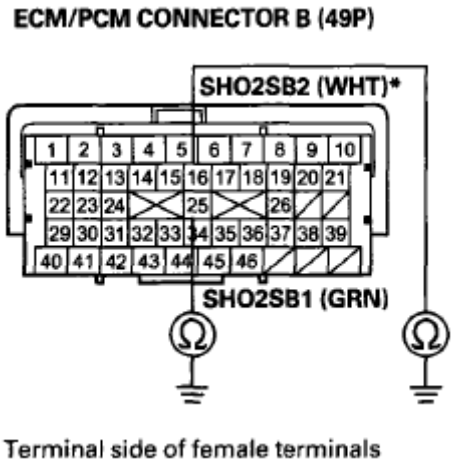


Fig. 43: Checking Continuity Between ECM/PCM Connector Terminal B25 (B16) And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 29.

NO - Repair an open in the wire between the ECM/PCM (B25 (B16)*) and secondary HO2S (Sensor 2), then go to step 21.

19. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
20. Replace **secondary HO2S (Sensor 2)**.
21. Reconnect all connectors.
22. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
23. Reset the ECM/PCM with the HDS.
24. Do the ECM/PCM idle learn procedure (see **ECM/PCM IDLE LEARN PROCEDURE**).
25. Start the engine, and let it idle without load (A/T in P or N, M/T in neutral) until the radiator fan comes on.
26. Test-drive under these conditions:
    - Engine coolant temperature (ECT SENSOR 1) above 158°F (70°C)
    - A/T in D, or M/T in 4th
    - Engine speed at 1, 500- 3, 000 RPM
    - Maintain a steady speed for 5 seconds or more
27. Check for Pending or Confirmed DTCs with the HDS.

Is DTC P0138 and/or P0158 indicated?*

YES - Check for poor connections or loose terminals at secondary HO2S (Sensor 2) and the ECM/PCM, then go to step 1.

NO - Go to step 28.

28. Monitor the OBD STATUS for DTC P0138 and/or P0158* in the DTCs MENU with the HDS.

    Does the HDS indicate PASSED?

    YES - Troubleshooting is complete. If any other Pending or Confirmed DTCs were indicated in step 27, go to the indicated DTC's troubleshooting. •

    NO - If the HDS indicates FAILED, check for poor connections or loose terminals at secondary HO2S (Sensor 2) and the ECM/PCM, then go to step 1. If the HDS indicates EXECUTING, keep driving until a result comes on. If the HDS indicates OUT OF CONDITION, go to step 25.

29. Reconnect all connectors.
30. Update the **ECM/PCM** if it does not have the latest software (see **ECM/PCM Update**), or substitute a known-good ECM/PCM (see **SUBSTITUTING THE ECM/PCM**).
31. Start the engine, and let it idle without load (A/T in P or N, M/T in neutral) until the radiator fan comes on.
32. Test-drive under these conditions:
    - Engine coolant temperature (ECT SENSOR 1) above 158°F (70°C)
    - A/T in D, or M/T in 4th
    - Engine speed at 1, 500- 3, 000 RPM
    - Maintain a steady speed for 5 seconds or more
33. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P0138 and/or P0758 indicated?*

    YES - Check for poor connections or loose terminals at secondary HO2S (Sensor 2) and the ECM/PCM. If the ECM/PCM was updated, substitute a known-good PCM (see **SUBSTITUTING THE ECM/PCM**), then go to step 32. If the ECM/PCM was substituted, go to step 1.

    NO - Go to step 34.

34. Monitor the OBD STATUS for DTC P0138 and/or P0158* in the DTCs MENU with the HDS.

    Does the HDS indicate PASSED?

    YES - If the ECM/PCM was updated, troubleshooting is complete. If the ECM/PCM was substituted, replace the **original PCM** (see **ECM/PCM Replacement**). If any other Pending or Confirmed DTCs were indicated in step 33, go to the indicated DTC's troubleshooting. •

    NO - If the HDS indicates FAILED, check for poor connections or loose terminals at secondary HO2S (Sensor 2) and the ECM/PCM. If the ECM/PCM was updated, substitute a known-good PCM (see **SUBSTITUTING THE ECM/PCM**), then go to step 31. If the ECM/PCM was substituted, go to step 1. If the HDS indicates EXECUTING, keep driving until a result comes on. If the HDS indicates OUT OF

CONDITION, go to step 31.

DTC P0139: REAR SECONDARY HO2S (BANK 1, SENSOR 2) SLOW RESPONSE; DTC P0159: FRONT SECONDARY HO2S (BANK 2, SENSOR 2) SLOW RESPONSE

NOTE:

- **Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see GENERAL TROUBLESHOOTING INFORMATION).**
- **Information marked with an asterisk (*) applies to the front bank (Bank 2).**

1. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
2. Clear the DTC with the HDS.
3. Start the engine. Hold the engine speed at 3, 000 RPM without load (A/T in P or N, M/T in neutral) until the radiator fan comes on, then let it idle.
4. Test-drive under these conditions:
   - Engine coolant temperature (ECT SENSOR 1) above 158°F (70°C)
   - A/T in D, or M/T in 4th
   - Drive at a steady speed between 55- 75 mph (88- 120 km/h) for 1 minute, then decelerate (with the throttle fully closed) for 10 seconds.
5. Monitor the OBD STATUS for DTC P0139 and/or P0159* in the DTCs MENU with the HDS.

   Does the screen indicate FAILED?

   YES - Go to step 6.

   NO - If the screen indicates PASSED, intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at secondary HO2S (Sensor 2) and the ECM/PCM. If the screen indicates EXECUTING, keep driving until a result comes on. If the screen indicates OUT OF CONDITION, go to step 3 and recheck.

6. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
7. Replace **secondary HO2S (Sensor 2)**.
8. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
9. Reset the ECM/PCM with the HDS.
10. Do the ECM/PCM idle learn procedure (see **ECM/PCM IDLE LEARN PROCEDURE**).
11. Start the engine, and let it idle without load (A/T in P or N, M/T in neutral) until the radiator fan comes on.
12. Test-drive under these conditions:
    - Engine coolant temperature (ECT SENSOR 1) above 158°F (70°C)
    - A/T in D, or M/T in 4th
    - Drive at a steady speed between 55- 75 mph (88- 120 km/h) for 1 minute, then decelerate (with the throttle fully closed) for 10 seconds.

13. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P0139 and/or P0159 indicated?*

    YES - Check for poor connections or loose terminals at secondary HO2S (Sensor 2) and the ECM/PCM, then go to step 1.

    NO - Go to step 14.

14. Monitor the OBD STATUS for DTC P0139 and/or P0159* in the DTCs MENU with the HDS.

    Does the screen indicate PASSED?

    YES - Troubleshooting is complete. If any other Pending or Confirmed DTCs were indicated in step 13, go to the indicated DTC's troubleshooting. •

    NO - If the screen indicates FAILED, check for poor connections or loose terminals at secondary HO2S (Sensor 2) and the ECM/PCM, then go to step 1. If the screen indicates EXECUTING, keep driving until a result comes on. If the screen indicates OUT OF CONDITION, go to step 11.

DTC P0141: REAR SECONDARY HO2S (BANK 1, SENSOR 2) HEATER CIRCUIT MALFUNCTION; DTC P0161: FRONT SECONDARY HO2S (BANK 2, SENSOR 2) HEATER CIRCUIT MALFUNCTION

NOTE:

- **Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see GENERAL TROUBLESHOOTING INFORMATION).**
- **Information marked with an asterisk (*) applies to the front bank (Bank 2).**

1. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
2. Clear the DTC with the HDS.
3. Start the engine.
4. Check for Pending or Confirmed DTCs with the HDS.

   Is DTC P0141 and/or P0161 indicated?*

   YES - Go to step 5.

   NO - Intermittent failure, the systems is OK at this time. Check for poor connections or loose terminals at secondary HO2S (Sensor 2), the PGM-FI subrelay, and the ECM/PCM. •

5. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
6. Check the No. 14 Fl SUB (15 A) fuse in the under-hood fuse/relay box.

   Is the fuse OK?

YES - Go to step 7.

NO - Go to step 19.

7. Remove the PGM-FI subrelay (A) from the under-hood fuse/relay box.

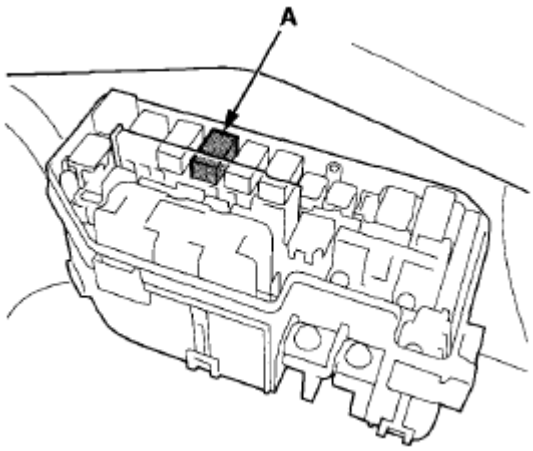


Fig. 44: Identifying PGM-FI Subrelay
Courtesy of AMERICAN HONDA MOTOR CO., INC.

8. Test the PGM-FI subrelay (see **POWER RELAY TEST**).

Is the relay OK?

YES - Go to step 9.

NO - Replace the PGM-FI subrelay, then go to step 25.

9. Disconnect the secondary HO2S (Sensor 2) 4P connector.
10. At the sensor side, measure the resistance between secondary HO2S (Sensor 2) 4P connector terminals No. 3 and No. 4.

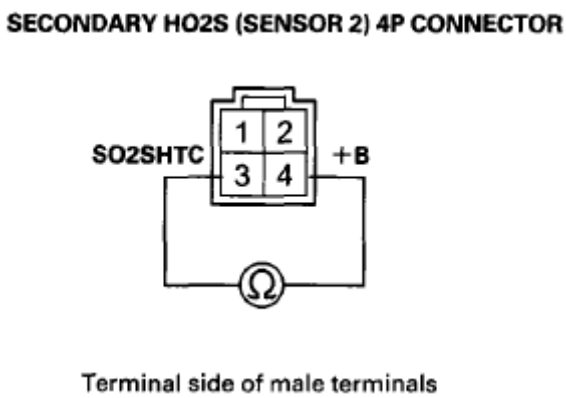


Fig. 45: Measuring Resistance Between Secondary HO2S 4P Connector Terminals No. 3 And No. 4

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there 5.4- 7.3 ohms at room temperature?

YES - Go to step 11.

NO - Go to step 24.

11. At the sensor side, check for continuity between body ground and secondary HO2S (Sensor 2) 4P connector terminals No. 3 and No. 4 individually.

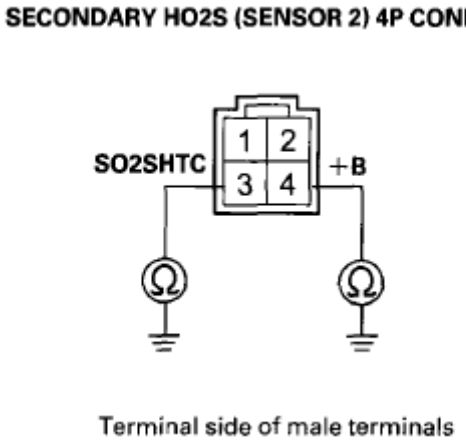


Fig. 46: Checking Continuity Between Body Ground And Secondary HO2S 4P Connector Terminals No. 3 And No. 4
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 24.

NO - Go to step 12.

12. Jump the SCS line with the HDS.
13. Disconnect ECM/PCM connector C (49P).
14. Check for continuity between ECM/PCM connector terminal C5 (C7)* and body ground.

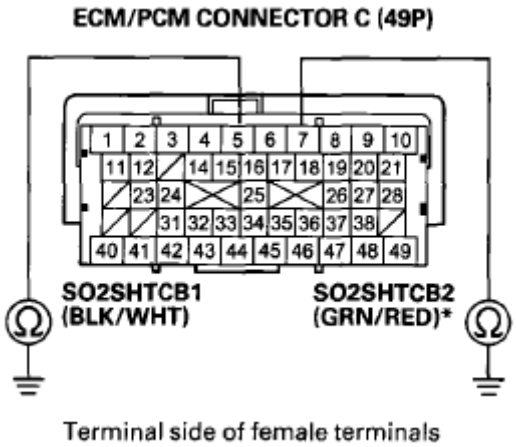


Fig. 47: Checking Continuity Between ECM/PCM Connector Terminal C5 (C7) And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair short in the wire between the ECM/PCM (C5 (C7)*) and secondary HO2S (Sensor 2), then go to step 25.

NO - Go to step 15.

15. Check for continuity between secondary HO2S (Sensor 2) 4P connector terminal No. 3 and ECM/PCM connector terminal C5 (C7)*.

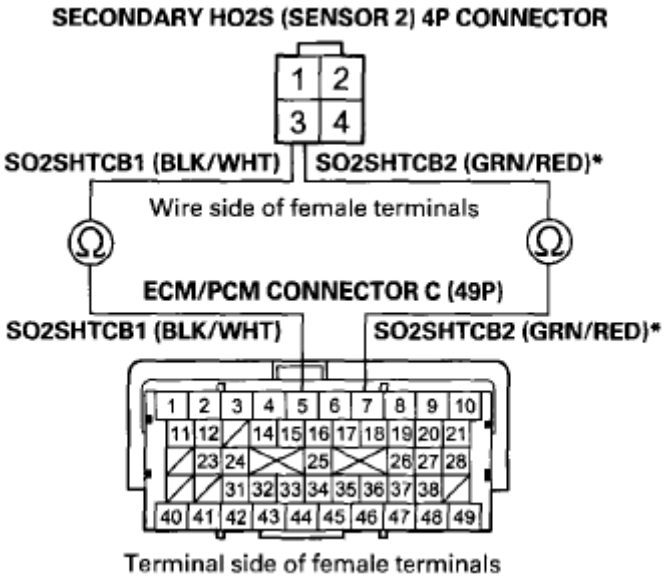


Fig. 48: Checking Continuity Between Secondary HO2S 4P Connector Terminal No. 3 And ECM/PCM Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 16.

NO - Repair open in the wire between the ECM/PCM (C5 (C7)*) and secondary HO2S (Sensor 2), then go to step 25.

16. Check for continuity between secondary HO2S (Sensor 2) 4P connector terminal No. 4 and PGM-FI subrelay 4P connector terminal No. 2.

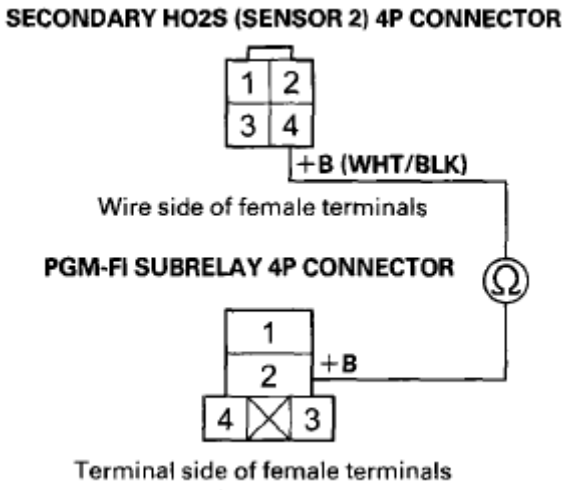


Fig. 49: Checking Continuity Between Secondary HO2S 4P Connector Terminal No. 4 And PGM-FI Subrelay 4P Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 17.

NO - Repair open in the wire between secondary HO2S (Sensor 2) and the PGM-FI subrelay, then go to step 25.

17. Disconnect ECM/PCM connector A (49P).
18. Check for continuity between PGM-FI subrelay 4P connector terminal No. 3 and ECM/PCM connector terminal A40.

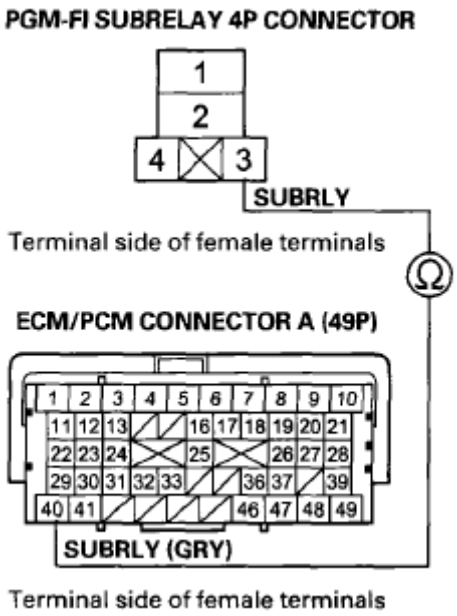


Fig. 50: Checking Continuity Between PGM-FI Subrelay 4P Connector Terminal No. 3 And ECM/PCM Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 31.

NO - Repair open in the wire between the PGM-FI subrelay, and the ECM/PCM (A40), then go to step 25.

19. Remove the PGM-FI subrelay (A) from the under-hood fuse/relay box.

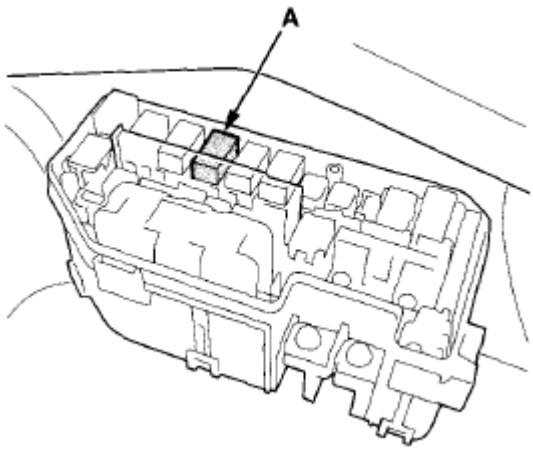


Fig. 51: Identifying PGM-FI Subrelay
Courtesy of AMERICAN HONDA MOTOR CO., INC.

20. Disconnect the front and rear secondary HO2S (Sensor 2) 4P connectors.
21. Disconnect the front and rear A/F sensor (Sensor 1) 6P connectors.
22. Disconnect the EVAP canister vent shut valve 2P connector.
23. Check for continuity between secondary HO2S (Sensor 2) 4P connector terminal No. 4 and body ground.

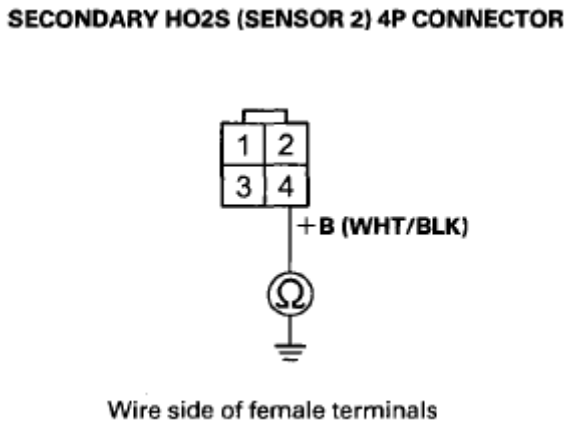


Fig. 52: Checking Continuity Between Secondary HO2S 4P Connector Terminal No. 4 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair short in the wire between the PGM-FI subrelay and secondary HO2S (Sensor 2), then go to step 25.

NO - Check the under-hood fuse/relay box, and replace it if needed (see **REMOVAL AND INSTALLATION**). Also replace the No. 14 Fl SUB (15 A) fuse, then go to step 25.

24. Replace **secondary HO2S (Sensor 2)**.
25. Reconnect all connectors.
26. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
27. Reset the ECM/PCM with the HDS.
28. Do the ECM/PCM idle learn procedure (see **ECM/PCM IDLE LEARN PROCEDURE**).
29. Check for Pending or Confirmed DTCs with the HDS.

Is DTC P0141 and/or P0161 indicated?*

YES - Check for poor connections or loose terminals at secondary HO2S (Sensor 2), the PGM-FI subrelay, and the ECM/PCM, then go to step 1.

NO - Go to step 30.

30. Monitor the OBD STATUS for DTC P0141 and/or P0161* in the DTCs MENU with the HDS.

Does the screen indicate PASSED?

YES - Troubleshooting is complete. If any other Pending or Confirmed DTCs were indicated in step 29, go to the indicated DTC's troubleshooting. •

NO - If the screen indicates FAILED, check for poor connections or loose terminals at secondary HO2S (Sensor 2), the PGM-FI subrelay, and the ECM/PCM, then go to step 1. If the screen indicates NOT COMPLETED, keep idling until a result comes on.

31. Reconnect all connectors.
32. Update the ECM/PCM if it does not have the latest software (see **ECM/PCM Update**), or substitute a known-good ECM/PCM (see **SUBSTITUTING THE ECM/PCM**).
33. Start the engine, and let it idle.
34. Check for Pending or Confirmed DTCs with the HDS.

Is DTC P0141 and/or P0161 indicated?*

YES - Check for poor connections or loose terminals at secondary HO2S (Sensor 2), the PGM-FI subrelay, and the ECM/PCM. If the ECM/PCM was updated, substitute a known-good ECM/PCM (see **SUBSTITUTING THE ECM/PCM**), then go to step 33. If the ECM/PCM was substituted, go to step 1.

NO - Go to step 35.

35. Monitor the OBD STATUS for DTC P0141 and/or P0161* in the DTCs MENU with the HDS.

Does the screen indicate PASSED?

YES - If the ECM/PCM was updated, troubleshooting is complete. If the ECM/PCM was substituted, replace the original **ECM/PCM** (see **ECM/PCM Replacement**). If any other Pending or Confirmed DTCs were indicated in step 34, go to the indicated DTC's troubleshooting. •

NO - If the screen indicates FAILED, check for poor connections or loose terminals at secondary HO2S (Sensor 2), the PGM-FI subrelay, and the ECM/PCM. If the ECM/PCM was updated, substitute a known-good ECM/PCM (see **SUBSTITUTING THE ECM/PCM**), then go to step 33. If the ECM/PCM was substituted, go to step 1. If the screen indicates NOT COMPLETED, keep idling until a result comes on.

DTC P0171: REAR BANK (BANK 1) FUEL SYSTEM TOO LEAN; DTC P0172: REAR BANK (BANK 1) FUEL SYSTEM TOO RICH; DTC P0174: FRONT BANK (BANK 2) FUEL SYSTEM TOO LEAN; DTC P0175: FRONT BANK (BANK 2) FUEL SYSTEM TOO RICH

NOTE:

- **Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see GENERAL TROUBLESHOOTING INFORMATION).**
- **Poor fuel quality can also cause DTC P0171/P0174.**
- **If any of the DTCs listed below are stored at the same time as DTC P0171, P0172, P0174, and/or P0175, troubleshoot those DTCs first, then recheck**

for P0171, P0172, P0174, and/or P0175:

P0101, P0102, P0103: MAF sensor

P0107, P0108, P1128, P1129: MAP sensor

P0133, P0153, P1172, P1174, P2195, P2197, P2237,

P2238, P2240, P2241, P2243, P2245, P2247, P2249,

P2251, P2252, P2254, P2255, P2A00, P2A03: A/F sensor (Sensor 1)

P0134, P0135, P0154, P0155: A/F sensor (Sensor 1) heater

P0137, P0138, P0139, P0157, P0158, P0159, P2270,

P2271, P2272, P2273: Secondary HO2S (Sensor 2)

P0141, P0161: Secondary HO2S (Sensor 2) heater

P0401, P0404, P0406, P2413: EGR system

P2279: Intake air leakage

P2646, P2647, P2648, P2649: VTEC system

1. Check the fuel pressure (see **FUEL PRESSURE TEST**).

   Is the fuel pressure OK?

   YES - Go to step 2.

   NO - Check these items:

   - If the pressure is too high, replace the fuel pressure regulator; without SH-AWD (see **FUEL PRESSURE REGULATOR REPLACEMENT**), with SH-AWD (see **FUEL PRESSURE REGULATOR REPLACEMENT**), then go to step 6.
   - If the pressure is too low, check the fuel pump, the fuel pressure regulator, the fuel filter, and the fuel lines for restrictions, then go to step 6.
2. Start the engine. Hold the engine speed at 3, 000 RPM without load (A/T in P or IM, M/T in neutral) until the radiator fan comes on, then let it idle.
3. Check for these conditions:
   - Engine coolant temperature (ECT SENSOR 1) above 158°F (70°C)
   - A/T in P or N, M/T in neutral
   - All electrical loads off

4. Monitor the ENGINE SPEED in the DATA LIST with the HDS, and hold the engine speed at 2, 500 RPM. Once the engine speed is met, hold the accelerator pedal steady for more than 10 seconds.

   Did the engine speed vary more than 100 RPM from 2, 500 RPM?

   YES - Repeat step 4.

   NO - Go to step 5.

5. While holding the engine speed at 2, 500 RPM, check the MAF SENSOR in the DATA LIST with the HDS.

   Is there about 11.0- 15.5 gm/s (J35Z6 engine) or 11.8- 16.6 gm/s (J37A4 engine)?

   YES - Check the engine valve clearances, and adjust them if needed (see **VALVE CLEARANCE ADJUSTMENT**). If the valve clearances are OK, replace the **injectors**, then go to step 6.

   NO - Replace the **MAF sensor/IAT sensor**, then go to step 6.

6. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
7. Reset the ECM/PCM with the HDS.
8. Do the ECM/PCM idle learn procedure (see **ECM/PCM IDLE LEARN PROCEDURE**).
9. Start the engine. Hold the engine speed at 3, 000 RPM without load (A/T in P or N, M/T in neutral) until the radiator fan comes on, then let it idle.
10. Test-drive under these conditions:
    - Engine coolant temperature (ECT SENSOR 1) above 158°F (70°C)
    - A/T in D, or M/T in 4th
    - Drive at a steady speed between 15- 75 mph (24- 120 km/h) for 15 minutes.

    NOTE: DTC P0171, P0172, P0174, and/or P0175 may take up to 80 minutes of test driving to set. Using the HDS, monitor the short term fuel trim (ST FUEL TRIM). If the ST FUEL TRIM stays within 0.8-1.21, there is no problem at this time.

11. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P0171, P0172, P0174, or P0175 indicated?

    YES - Go to step 1.

    NO - Troubleshooting is complete. If any other Pending or Confirmed DTCs are indicated, go to the indicated DTC's troubleshooting. •

DTC P0300: RANDOM MISFIRE AND ANY COMBINATION OF THE FOLLOWING:; DTC P0301: NO. 1 CYLINDER MISFIRE DETECTED; DTC P0302: NO. 2 CYLINDER MISFIRE DETECTED;

DTC P0303: NO. 3 CYLINDER MISFIRE DETECTED; DTC P0304: NO. 4 CYLINDER MISFIRE DETECTED DTC P0305: NO. 5 CYLINDER MISFIRE DETECTED; DTC P0306: NO. 6 CYLINDER MISFIRE DETECTED

Special Tools Required

- Pressure Gauge Adapter 07NAJ-P07010A
- A/T Low Pressure Gauge w/Panel 07406-0070301
- AT Pressure Test Hose 07AAJ-PY4A100
- A/T Pressure Adapter 07MAJ-PY40120
- Oil Pressure Hose 07ZAJ-S5AA200

NOTE:

- **Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see GENERAL TROUBLESHOOTING INFORMATION).**
- **If the misfire is frequent enough to trigger detection of increased emissions during two consecutive driving cycles, the MIL will come on, and DTC P0300 (and some combination of P0301 through P0306) will be stored.**
- **If the misfire is frequent enough to damage the catalyst, the MIL will blink whenever the misfire occurs, and DTC P0300 (and some combination of P0301 through P0306) will be stored. When the misfire stops, the MIL will remain on.**
- **Troubleshoot the following DTCs first, if any of them were stored along with the random misfire DTC(s) (Because parts can sometimes fail without setting DTCs you should also do a physical inspection of the systems listed below):**

  P0101, P0102, P0103: MAF sensor

  P0107, P0108, P1128, P1129: MAP sensor

  P0171, P0172, P0174, P0175: Fuel system

  P0335, P0339: CKP sensor

  P0506, P0507: Idle control system

  P0365, P0369: CMP sensor

  P0401, P0404, P0406, P2413: EGR system

  P2646, P2647, P2648, P2649: VTEC system

1. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.

2. Clear the DTC with the HDS.
3. Start the engine, and let it idle without load (A/T in P or N, M/Tin neutral).
4. Monitor the OBD STATUS for DTC P0301, P0302, P0303, P0304, P0305, or P0306 in the DTCs MENU with the HDS.

   Does the screen indicate FAILED?

   YES - Go to step 9.

   NO - If the screen indicates PASSED, go to step 5. If the screen indicates EXECUTING, keep idling until a result comes on. If the screen indicates OUT OF CONDITION, wait for several minutes, then recheck.

5. Check the CYL1 MISFIRE, CYL2 MISFIRE, CYL3 MISFIRE, CYL4 MISFIRE, CYL5 MISFIRE, and/or CYL6 MISFIRE in the DATA LIST for 10 minutes with the HDS.

   Does CYL1 MISFIRE, CYL2 MISFIRE, CYL3 MISFIRE, CYL4 MISFIRE, CYL5 MISFIRE, and/or CYL6 MISFIRE show misfire counts?

   YES - Go to step 9.

   NO - Go to step 6.

6. Test-drive the vehicle for several minutes in the range of these recorded freeze data parameters:
   - ENGINE SPEED
   - VEHICLE SPEED
   - REL TP SENSOR
   - CLV (calculated load value)
   - ECT SENSOR 1
   - APP SENSOR
7. Monitor the OBD STATUS for DTC P0301, P0302, P0303, P0304, P0305, or P0306 in the DTCs MENU with the HDS.

   Does the screen indicate FAILED?

   YES - Go to step 9.

   NO - If the screen indicates PASSED, go to step 8. If the screen indicates EXECUTING, keep driving until a result comes on. If the screen indicates OUT OF CONDITION, go to step 6 and recheck.

8. Check the CYL1 MISFIRE, CYL2 MISFIRE, CYL3 MISFIRE, CYL4 MISFIRE, CYL5 MISFIRE, and/or CYL6 MISFIRE in the DATA LIST for 10 minutes with the HDS.

   Does CYL1 MISFIRE, CYL2 MISFIRE, CYL3 MISFIRE, CYL4 MISFIRE, CYL5 MISFIRE, and/or CYL6 MISFIRE show misfire counts?

YES - Go to step 9.

NO - Intermittent failure, the system is OK at this time. •

9. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
10. Check the fuel quality.

    Is the quality good?

    YES - Go to step 11.

    NO - Drain the fuel tank, and fill it with known-good fuel, then go to step 23.

11. Inspect the spark plugs (see **SPARK PLUG INSPECTION**). If the spark plugs are fouled or worn, replace them.
12. Test-drive the vehicle for several minutes in the range of these recorded freeze data parameters:
    - ENGINE SPEED
    - VEHICLE SPEED
    - REL TP SENSOR
    - CLV (calculated load value)
    - ECT SENSOR 1
    - APP SENSOR
13. Check the CYL1 MISFIRE, CYL2 MISFIRE, CYL3 MISFIRE, CYL4 MISFIRE, CYL5 MISFIRE, and/or CYL6 MISFIRE in the DATA LIST for 10 minutes with the HDS.

    Does CYL1 MISFIRE, CYL2 MISFIRE, CYL3 MISFIRE, CYL4 MISFIRE, CYL5 MISFIRE, and/or CYL6 MISFIRE show misfire counts?

    YES - Go to step 14.

    NO - Go to step 23.

14. Check the fuel pressure (see **FUEL PRESSURE TEST**).

    Is the fuel pressure OK?

    YES - Go to step 15.

    NO -

    - If the pressure is too high, replace the fuel pressure regulator; without SH-AWD (see **FUEL PRESSURE REGULATOR REPLACEMENT**), with SH-AWD (see **FUEL PRESSURE REGULATOR REPLACEMENT**), then go to step 23.
    - If the pressure is too low, check the fuel pump, the fuel feed lines, and the fuel filter. If they are OK, replace the fuel pressure regulator; without SH-AWD (see **FUEL PRESSURE**

REGULATOR REPLACEMENT), with SH-AWD (see **FUEL PRESSURE REGULATOR REPLACEMENT**), then go to step 23.

15. Start the engine. Hold the engine speed at 3, 000 RPM without load (A/T in P or N, M/T in neutral) until the radiator fan comes on, then let it idle.
16. Check under these conditions:
    - Engine coolant temperature (ECT SENSOR 1) above 176°F (80°C)
    - A/T in N, M/T in neutral
    - All electrical loads off
17. Monitor the ENGINE SPEED in the DATA LIST with the HDS, and hold the engine speed at 2, 500 RPM. Once the engine speed is met, hold the accelerator pedal steady for more than 10 seconds.

    Did the engine speed vary more than 100 RPM from 2, 500 RPM?

    YES - Repeat step 17.

    NO - Go to step 18.

18. While holding the engine speed at 2, 500 RPM, check the MAF SENSOR in the DATA LIST with the HDS.

    Is there about 11.0- 15.5 gm/s (J35Z6 engine) or 11.8- 16.6 gm/s (J37A4 engine)?

    YES - Go to step 19.

    NO - Replace the **MAF sensor/IAT sensor**, then go to step 23.

19. Remove the rocker arm oil pressure switch (A), and attach the special tools as shown in illustration below, then attach the rocker arm oil pressure switch to the pressure gauge adapter (B).

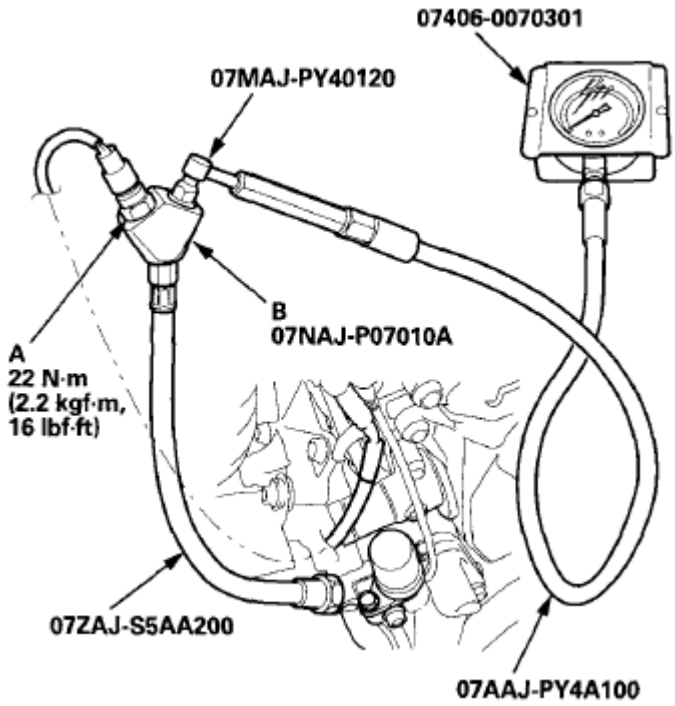


Fig. 53: Identifying Rocker Arm Oil Pressure Switch And Pressure Gauge Adapter With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

20. Reconnect the rocker arm oil pressure switch 2P connector.
21. Start the engine. Hold the engine speed at 3, 000 RPM without load (A/T in P or N, M/T in neutral) until the radiator fan comes on.
22. Check the oil pressure at engine speeds of 1, 000 and 2, 000 RPM. Keep the measuring time as short as possible (less than 1 minute) because the engine is running without load.

    Is the oil pressure below 49 kPa (0.5 kgf/cm^2 , 7 psi)?

    YES - Remove the special tools, and reinstall the rocker arm oil pressure switch with a new O-ring, then go to step 23.

    NO - Inspect the VTEC system, then go to step 23.

23. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
24. Reset the ECM/PCM with the HDS.
25. Do the ECM/PCM idle learn procedure (see **ECM/PCM IDLE LEARN PROCEDURE**).
26. Do the CKP pattern clear/CKP pattern learn procedure (see **CKP PATTERN CLEAR/CKP PATTERN LEARN**).
27. Test-drive the vehicle for several minutes in the range of these recorded freeze data parameters:
    - ENGINE SPEED
    - VEHICLE SPEED

- REL TP SENSOR
- CLV (calculated load value)
- ECT SENSOR 1
- APP SENSOR

28. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P0300 and any combination of DTC P0301, P0302, P0303, P0304, P0305, or P0306 indicated?

    YES - Check for poor connections or loose terminals at the ignition coils, the injectors, and the ECM/PCM, then go to the DTC P0301, P0302, P0303, P0304, P0305, or P0306 troubleshooting (see **DTC Troubleshooting**).

    NO - Go to step 29.

29. Monitor the OBD STATUS for DTC P0301, P0302, P0303, P0304, P0305, or P0306 in the DTCs MENU with the HDS.

    Does the screen indicate PASSED?

    YES - Troubleshooting is complete. If any other Pending or Confirmed DTCs were indicated in step 28, go to the indicated DTC's troubleshooting. •

    NO - If the screen indicates FAILED, check for poor connection or loose terminals at the ignition coils, the injectors, and the ECM/PCM, then go to step 1. If the screen indicates EXECUTING, keep driving until a result comes on. If the screen indicates OUT OF CONDITION, go to step 27.

DTC P0301: NO. 1 CYLINDER MISFIRE DETECTED; DTC P0302: NO. 2 CYLINDER MISFIRE DETECTED; DTC P0303: NO. 3 CYLINDER MISFIRE DETECTED; DTC P0304: NO. 4 CYLINDER MISFIRE DETECTED; DTC P0305: NO. 5 CYLINDER MISFIRE DETECTED; DTC P0306: NO. 6 CYLINDER MISFIRE DETECTED

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see GENERAL TROUBLESHOOTING INFORMATION).

1. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
2. Clear the DTC with the HDS.
3. Start the engine, and let it idle without load for 2 minutes (A/T in P or N, M/T in neutral).
4. Monitor the OBD STATUS for DTC P0301, P0302, P0303, P0304, P0305, or P0306 in the DTCs MENU with the HDS.

    Does the screen indicate FAILED?

    YES - Go to step 9.

NO - If the screen indicates PASSED, go to step 5. If the screen indicates EXECUTING, keep idling until a result comes on. If the screen indicates OUT OF CONDITION, wait for several minutes, and recheck.

5. Check the CYL1 MISFIRE, CYL2 MISFIRE, CYL3 MISFIRE, CYL4 MISFIRE, CYL5 MISFIRE, and/or CYL6 MISFIRE in the DATA LIST for 10 minutes with the HDS.

   Does CYL1 MISFIRE, CYL2 MISFIRE, CYL3 MISFIRE, CYL4 MISFIRE, CYL5 MISFIRE, and/or CYL6 MISFIRE show misfire counts?

   YES - Go to step 9.

   NO - Go to step 6.

6. Test-drive the vehicle for several minutes in the range of these recorded freeze data parameters:
   - ENGINE SPEED
   - VEHICLE SPEED
   - REL TP SENSOR
   - CLV (calculated load value)
   - GEAR POSITION
   - ECT SENSOR 1
7. Monitor the OBD STATUS for DTC P0301, P0302, P0303, P0304, P0305, or P0306 in the DTCs MENU with the HDS.

   Does the screen indicate FAILED?

   YES - Go to step 9.

   NO - If the screen indicates PASSED, go to step 8. If the screen indicates EXECUTING, keep driving until a result comes on. If the screen indicates OUT OF CONDITION, go to step 6.

8. Check the CYL1 MISFIRE, CYL2 MISFIRE, CYL3 MISFIRE, CYL4 MISFIRE, CYL5 MISFIRE, and/or CYL6 MISFIRE in the DATA LIST for 10 minutes with the HDS.

   Does CYL1 MISFIRE, CYL2 MISFIRE, CYL3 MISFIRE, CYL4 MISFIRE, CYL5 MISFIRE, and/or CYL6 MISFIRE show misfire counts?

   YES - Go to step 9.

   NO - Intermittent failure, the system is OK at this time. Check for poor connections or loose terminals in the fuel system and ignition system. •

9. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
10. Exchange the ignition coil from the problem cylinder with one from another cylinder.
11. Test-drive the vehicle for several minutes in the range of these recorded freeze data parameters:
    - ENGINE SPEED

- VEHICLE SPEED
- REL TP SENSOR
- CLV (calculated load value)
- GEAR POSITION
- ECT SENSOR 1

12. Check the CYL1 MISFIRE, CYL2 MISFIRE, CYL3 MISFIRE, CYL4 MISFIRE, CYL5 MISFIRE, and/or CYL6 MISFIRE in the DATA LIST for 10 minutes with the HDS.

    Does CYL1 MISFIRE, CYL2 MISFIRE, CYL3 MISFIRE, CYL4 MISFIRE, CYL5 MISFIRE, and/or CYL6 MISFIRE show misfire counts?

    YES - Go to step 13.

    NO - Intermittent failure due to poor contact at the ignition coil contactor (no misfire at this time). Make sure that the ignition coil connectors are secure. •

13. Determine which cylinder had the misfire.

    Does the misfire occur in the cylinder where the ignition coil was moved?

    YES - Replace the faulty ignition coil (see **IGNITION COIL AND SPARK PLUG REMOVAL/INSTALLATION**), then go to step 44.

    NO - Go to step 14.

14. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
15. Exchange the spark plug from the problem cylinder with one from another cylinder.
16. Test-drive the vehicle for several minutes in the range of these recorded freeze data parameters:
    - ENGINE SPEED
    - VEHICLE SPEED
    - REL TP SENSOR
    - CLV (calculated load value)
    - GEAR POSITION
    - ECT SENSOR 1
17. Check the CYL1 MISFIRE, CYL2 MISFIRE, CYL3 MISFIRE, CYL4 MISFIRE, CYL5 MISFIRE, and/or CYL6 MISFIRE in the DATA LIST for 10 minutes with the HDS.

    Does CYL1 MISFIRE, CYL2 MISFIRE, CYL3 MISFIRE, CYL4 MISFIRE, CYL5 MISFIRE, and/or CYL6 MISFIRE show misfire counts?

    YES - Go to step 18.

    NO - Intermittent failure due to spark plug fouling (no misfire at this time). •

18. Determine which cylinder had the misfire.

    Does the misfire occur in the cylinder where the spark plug was moved?

    YES - Replace the faulty spark plug, then go to step 44.

    NO - Go to step 19.

19. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
20. Jump the SCS line with the HDS.
21. Disconnect ECM/PCM connector B (49P).
22. Remove the intake manifold (see **REMOVAL**).
23. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
24. Measure the voltage between body ground and the appropriate ECM/PCM connector terminal (see table).

PROBLEM CYLINDER	DTC	ECM/PCM TERMINAL	WIRE COLOR
No. 1	P0301	B4	BRN
No. 2	P0302	B8	RED
No. 3	P0303	B7	BLU
No. 4	P0304	B6	YEL
No. 5	P0305	B5	BLK/RED
No. 6	P0306	B9	WHT/BLU

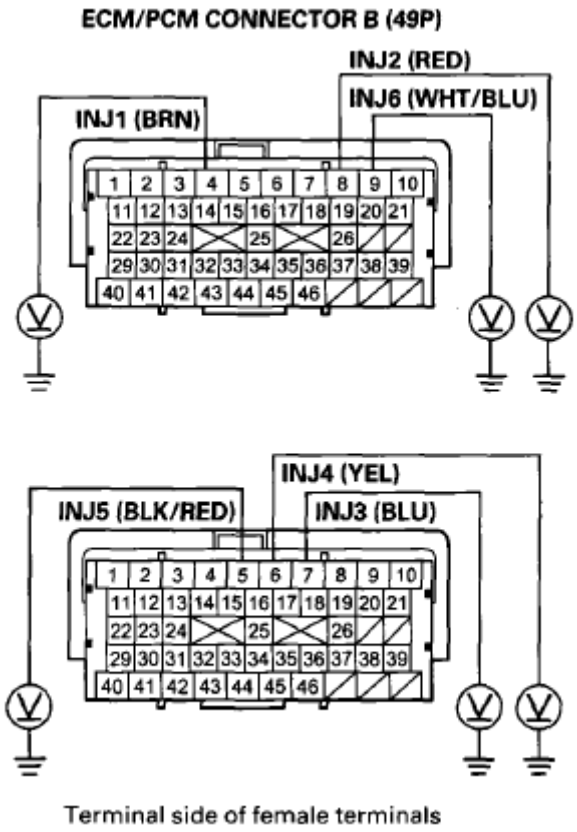


Fig. 54: Measuring Voltage Between Body Ground And Appropriate ECM/PCM Connector Terminal
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there battery voltage?

YES - Go to step 29.

NO - Go to step 25.

25. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
26. Disconnect the injector 2P connector from the problem cylinder.
27. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
28. Measure the voltage between injector 2P connector terminal No. 1 and body ground.

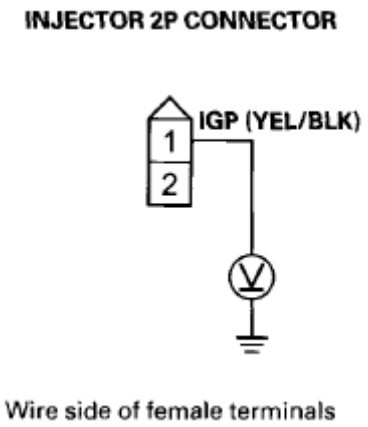


Fig. 55: Measuring Voltage Between Injector 2P Connector Terminal No. 1 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there battery voltage?

YES - Go to step 29.

NO - Repair open in the wire between the injector and PGM-FI main relay 1, then go to step 44.

29. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
30. Check for continuity between body ground and the appropriate ECM/PCM connector terminal (see table).

PROBLEM CYLINDER	DTC	ECM/PCM TERMINAL	WIRE COLOR
No. 1	P0301	B4	BRN
No. 2	P0302	B8	RED
No. 3	P0303	B7	BLU
No. 4	P0304	B6	YEL
No. 5	P0305	B5	BLK/RED
No. 6	P0306	B9	WHT/BLU

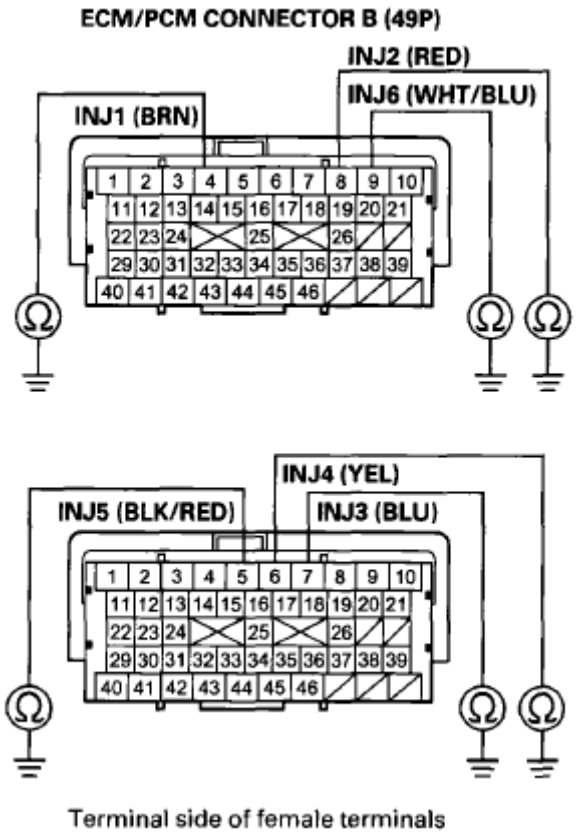


Fig. 56: Checking Continuity Between Body Ground And Appropriate ECM/PCM Connector Terminal
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair short in the wire between the ECM/PCM and the injector, then go to step 44.

NO - Go to step 31.

31. Check for continuity between appropriate injector 2P connector terminal No. 2 and the ECM/PCM connector terminal of the problem cylinder (see table).

PROBLEM CYLINDER	DTC	ECM/PCM TERMINAL	WIRE COLOR
No. 1	P0301	B4	BRN
No. 2	P0302	B8	RED
No. 3	P0303	B7	BLU
No. 4	P0304	B6	YEL
No. 5	P0305	B5	BLK/RED
No. 6	P0306	B9	WHT/BLU

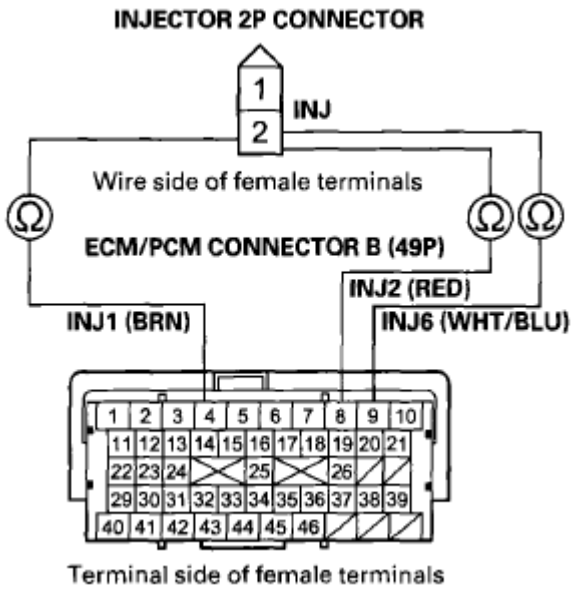


Fig. 57: Checking Continuity Between Appropriate Injector 2P Connector And ECM/PCM Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

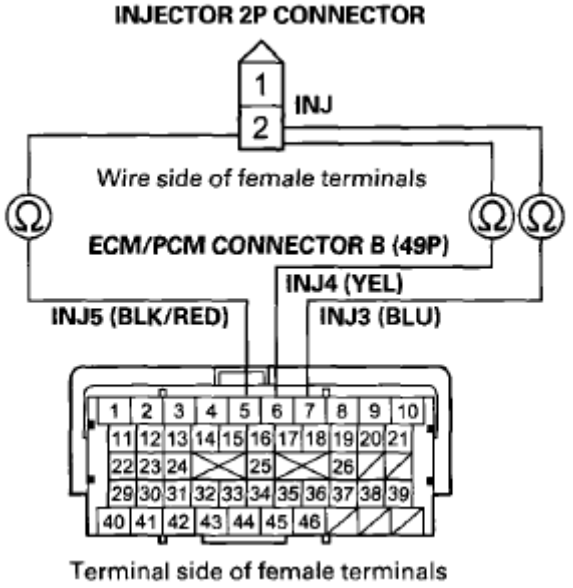


Fig. 58: Checking Continuity Between Appropriate Injector 2P Connector And ECM/PCM Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Check for poor connections or loose terminals at the injector and PGM-FI main relay 1, then go to step 32.

NO - Repair open in the wire between the ECM/PCM and the injector, then go to step 44.

32. At the injector side, measure the resistance between injector 2P connector terminals No. 1 and No. 2.

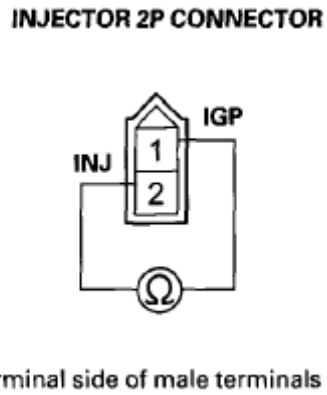


Fig. 59: Measuring Resistance Between Injector 2P Connector Terminals No. 1 And No. 2
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there 10- 13 ohms at room temperature?

YES - Go to step 33.

NO - Replace the **injector**, then go to step 44.

33. Exchange the injector from the problem cylinder with the one from another cylinder. Also check the injector fuel inlet screen for debris, and clean it if needed.
34. Reconnect all connectors, and install the intake manifold (see **INSTALLATION**).
35. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
36. Clear the DTCs with the HDS.
37. Start the engine, and let it idle without load (A/T in P or N, M/T in neutral) for 2 minutes.
38. Test-drive the vehicle for several minutes in the range of these recorded freeze data parameters:
    - ENGINE SPEED
    - VEHICLE SPEED
    - REL TP SENSOR
    - CLV (calculated load value)
    - GEAR POSITION
    - ECT SENSOR 1
39. Check the CYL1 MISFIRE, CYL2 MISFIRE, CYL3 MISFIRE, CYL4 MISFIRE, CYL5 MISFIRE, and/or CYL6 MISFIRE in the DATA LIST for 10 minutes with the HDS.

    Does CYL1 MISFIRE, CYL2 MISFIRE, CYL3 MISFIRE, CYL4 MISFIRE, CYL5 MISFIRE, and/or CYL6 MISFIRE show misfire counts?

YES - Go to step 40.

NO - Intermittent failure due to poor contact in the injector connector (no misfire at this time). Check for poor connections or loose terminals at the injector. •

40. Determine which cylinder had the misfire.

    Does the misfire occur in the cylinder where the injector was moved?

    YES - Replace the faulty **injector**, then go to step 44.

    NO - Go to step 41.

41. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
42. Do an engine compression and a cylinder leakdown test (see **ENGINE COMPRESSION INSPECTION**).

    Did the engine pass both tests?

    YES - Go to step 43.

    NO - Repair the engine, then go to step 44.

43. Do the VTEC rocker arm test (see **VTEC ROCKER ARM TEST**).

    Did the engine pass the test?

    YES - Go to step 51.

    NO - Repair the VTEC rocker arm, then go to step 44.

44. Reconnect all connectors.
45. Reset the ECM/PCM with the HDS.
46. Do the ECM/PCM idle learn procedure (see **ECM/PCM IDLE LEARN PROCEDURE**).
47. Do the CKP pattern learn/CKP pattern learn procedure (see **CKP PATTERN CLEAR/CKP PATTERN LEARN**).
48. Test-drive the vehicle for several minutes in the range of these recorded freeze data parameters:
    - ENGINE SPEED
    - VEHICLE SPEED
    - REL TP SENSOR
    - CLV (calculated load value)
    - GEAR POSITION
    - ECT SENSOR 1
49. Check for Pending or Confirmed DTCs with the HDS.

Is DTC P0301, P0302, P0303, P0304, P0305, or P0306 indicated?

YES - Check for poor connections or loose terminals at the ignition coils, the injectors, and the ECM/PCM, then go to step then go to troubleshooting **DTC P0300, P0301, P0302, P0303, P0304, P0305, or P0306** (see **DTC Troubleshooting**).

NO - Go to step 50.

50. Monitor the OBD STATUS for DTC P0301, P0302, P0303, P0304, P0305, or P0306 in the DTCs MENU with the HDS.

    Does the screen indicate PASSED?

    YES - Troubleshooting is complete. If any other Pending or Confirmed DTCs were indicated in step 49, go to the indicated DTC's troubleshooting. •

    NO - If the screen indicates FAILED, check for poor connections or loose terminals at the ignition coils, the injectors, and the ECM/PCM, then go to step 1. If the screen indicates EXECUTING, keep driving until a result comes on. If the screen indicates OUT OF CONDITION, go to step 48.

51. Reconnect all connectors.
52. Update the **ECM/PCM** if it does not have the latest software (see **ECM/PCM Update**), or substitute a known-good ECM/PCM (see **SUBSTITUTING THE ECM/PCM**).
53. Test-drive the vehicle for several minutes in the range of these recorded freeze data parameters:
    - ENGINE SPEED
    - VEHICLE SPEED
    - REL TP SENSOR
    - CLV (calculated load value)
    - GEAR POSITION
    - ECT SENSOR 1
54. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P0301, P0302, P0303, P0304, P0305, or P0306 indicated?

    YES - Check for poor connections or loose terminals at the ignition coils, the injectors, and the ECM/PCM. If the ECM/PCM was updated, substitute a known-good ECM/PCM (see **SUBSTITUTING THE ECM/PCM**), then go to step 53. If the ECM/PCM was substituted, go to step 1.

    NO - Go to step 55.

55. Monitor the OBD STATUS for DTC P0301, P0302, P0303, P0304, P0305, or P0306 in the DTCs MENU with the HDS.

    Is the screen indicate PASSED?

YES - If the ECM/PCM was updated, troubleshooting is complete. If the ECM/PCM was substituted, replace the original **ECM/PCM** (see). If any other Pending or Confirmed DTCs were indicated in step 54, go to the indicated DTC's troubleshooting. •

NO - If the screen indicates FAILED, check for poor connections or loose terminals at the ignition coils, the injectors, and the ECM/PCM. If the ECM/PCM was updated, substitute a known-good ECM/PCM (see **SUBSTITUTING THE ECM/PCM**), then go to step 53. If the ECM/PCM was substituted, go to step 1. If the screen indicates EXECUTING, keep driving until a result comes on. If the screen indicates OUT OF CONDITION, go to step 53.

DTC P0325: KNOCK SENSOR CIRCUIT MALFUNCTION

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see GENERAL TROUBLESHOOTING INFORMATION).

1. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
2. Clear the DTC with the HDS.
3. Start the engine. Hold the engine speed at 3, 000 RPM without load (A/T in P or N, M/T in neutral) until the radiator fan comes on, then let it idle.
4. Hold the engine speed at 3, 000- 4, 000 RPM for at least 10 seconds.
5. Check for Pending or Confirmed DTCs with the HDS.

   Is DTC P0325 indicated?

   YES - Go to step 6.

   NO - Intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at the knock sensor and the ECM/PCM. •

6. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
7. Jump the SCS line with the HDS.
8. Disconnect the knock sensor subharness 1P connector.
9. Disconnect ECM/PCM connector C (49P).
10. Check for continuity between ECM/PCM connector terminal C47 and body ground.

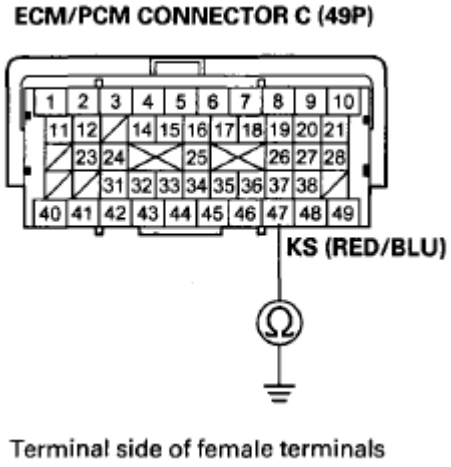


Fig. 60: Checking Continuity Between ECM/PCM Connector Terminal C47 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair short in the wire between the ECM/PCM (C47) and the knock sensor subharness, then go to step 20.

NO - Go to step 11.

11. Connect the engine wire harness C104 1P connector terminal to body ground with a jumper wire.

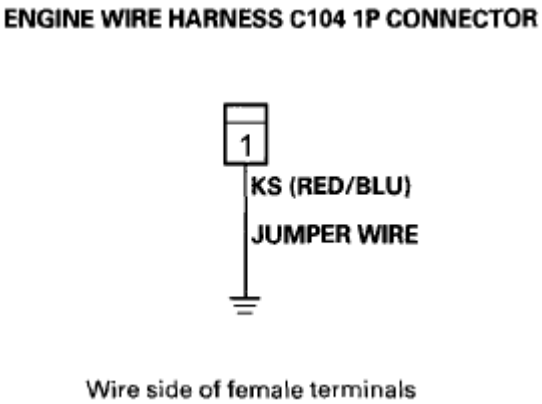


Fig. 61: Connecting Engine Wire Harness C104 1P Connector Terminal To Body Ground With Jumper Wire
Courtesy of AMERICAN HONDA MOTOR CO., INC.

12. Check for continuity between ECM/PCM connector terminal C47 and body ground.

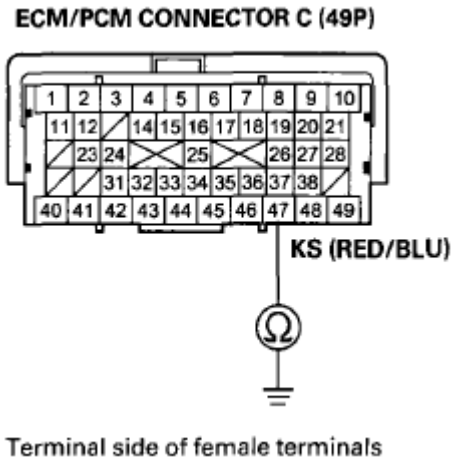


Fig. 62: Checking Continuity Between ECM/PCM Connector Terminal C47 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 13.

NO - Repair open in the wire between the ECM/PCM (C47) and the engine wire harness (C104 connector), then go to step 20.

13. Remove the jumper wire from the engine wire harness.
14. Remove the intake manifold (see **REMOVAL**), and the injector base (see **INJECTOR BASE REMOVAL AND INSTALLATION**).
15. Disconnect the knock sensor 1P connector.
16. Check for continuity between the knock sensor 1P connector terminal and body ground.

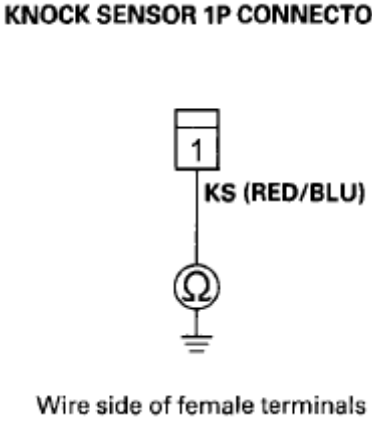


Fig. 63: Checking Continuity Between Knock Sensor 1P Connector Terminal And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair short in the knock sensor subharness, then go to step 19.

NO - Go to step 17.

17. Check for an open in the knock sensor subharness.

    Is the harness OK?

    YES - Go to step 18.

    NO - Repair open in the knock sensor subharness, then go to step 19.

18. Replace the **knock sensor**.
19. Install the injector base (see **INJECTOR BASE REMOVAL AND INSTALLATION**), and the intake manifold (see **INSTALLATION**).
20. Reconnect all connectors.
21. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
22. Reset the ECM/PCM with the HDS.
23. Do the ECM/PCM idle learn procedure (see **ECM/PCM IDLE LEARN PROCEDURE**).
24. Hold the engine speed at 3, 000- 4, 000 RPM for at least 10 seconds.
25. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P0325 indicated?

    YES - Check for poor connections or loose terminals at the knock sensor and the ECM/PCM, then go to step 27.

    NO - Go to step 26.

26. Monitor the OBD STATUS for DTC P0325 in the DTCs MENU with the HDS.

    Does the screen indicate PASSED?

    YES - Troubleshooting is complete. If any other Pending or Confirmed DTCs were indicated in step 25, go to the indicated DTC's troubleshooting. •

    NO - If the screen indicates FAILED, check for poor connections or loose terminals at the knock sensor and the ECM/PCM, then go to step 1. If the screen indicates NOT COMPLETED, go to step 24.

27. Update the **ECM/PCM** if it does not have the latest software (see **ECM/PCM Update**), or substitute a known-good ECM/PCM (see **SUBSTITUTING THE ECM/PCM**).
28. Start the engine. Hold the engine speed at 3, 000 RPM without load (A/T in P or N, M/T in neutral) until the radiator fan comes on, then let it idle.
29. Hold the engine speed at 3, 000- 4, 000 RPM for at least 10 seconds.
30. Check for Pending or Confirmed DTCs with the HDS.

Is DTC P0325 indicated?

YES - Check for poor connections or loose terminals at the knock sensor and the ECM/PCM. If the ECM/PCM was updated, substitute a known-good ECM/PCM (see **SUBSTITUTING THE ECM/PCM**), then go to step 28. If the ECM/PCM was substituted, go to step 1.

NO - Go to step 31.

31. Monitor the OBD STATUS for DTC P0325 in the DTCs MENU with the HDS.

    Does the screen indicate PASSED?

    YES - If the ECM/PCM was updated, troubleshooting is complete. If the ECM/PCM was substituted, replace the original ECM/PCM (see **ECM/PCM Replacement**). If any other Pending or Confirmed DTCs were indicated in step 30, go to the indicated DTC's troubleshooting. •

    NO - If the screen indicates FAILED, check for poor connections or loose terminals at the knock sensor and the ECM/PCM. If the ECM/PCM was updated, substitute a known-good ECM/PCM (see **SUBSTITUTING THE ECM/PCM**), then go to step 28. If the ECM/PCM was substituted, go to step 1. If the screen indicates NOT COMPLETED, go to step 28.

DTC P0335: CKP SENSOR NO SIGNAL

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see GENERAL TROUBLESHOOTING INFORMATION).

1. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
2. Clear the DTC with the HDS.
3. Start the engine.
4. Check for Pending or Confirmed DTCs with the HDS.

   Is DTC P0335 indicated?

   YES - Go to step 5.

   NO - Intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at the CKP sensor and the ECM/PCM. •

5. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
6. Disconnect the CKP sensor 3P connector.
7. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
8. Measure the voltage between CKP sensor 3P connector terminal No. 3 and body ground.

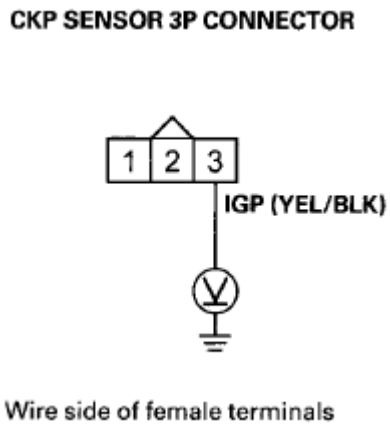


Fig. 64: Measuring Voltage Between CKP Sensor 3P Connector Terminal No. 3 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there battery voltage?

YES - Go to step 9.

NO - Repair open in the wire between the CKP sensor and PGM-FI main relay 1, then go to step 19.

9. Measure the voltage between CKP sensor 3P connector terminal No. 1 and body ground.

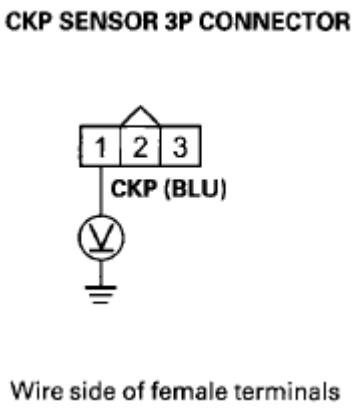


Fig. 65: Measuring Voltage Between CKP Sensor 3P Connector Terminal No. 1 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there about 5 V?

YES - Go to step 10.

NO - Go to step 11.

10. Measure the voltage between CKP sensor 3P connector terminals No. 2 and No. 3.

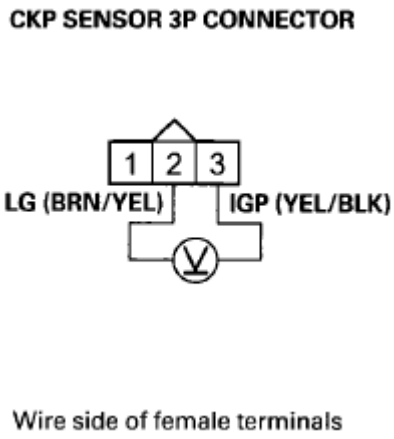


Fig. 66: Measuring Voltage Between CKP Sensor 3P Connector Terminals No. 2 And No. 3
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there battery voltage?

YES - Go to step 17.

NO - Repair open in the wire between the CKP sensor and G101; M/T (see **CONNECTOR TO FUSE/RELAY BOX INDEX**), A/T (see **CONNECTOR TO FUSE/RELAY BOX INDEX**), then go to step 19.

11. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
12. Jump the SCS line with the HDS.
13. Disconnect ECM/PCM connector B (49P).
14. Check for continuity between ECM/PCM connector terminal B45 and body ground.

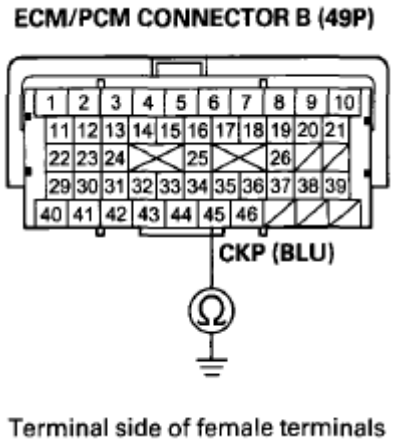


Fig. 67: Checking Continuity Between ECM/PCM Connector Terminal B45 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair short in the wire between the ECM/PCM (B45) and the CKP sensor, then go to step 19.

NO - Go to step 15.

15. Connect CKP sensor 3P connector terminal No. 1 to body ground with a jumper wire.

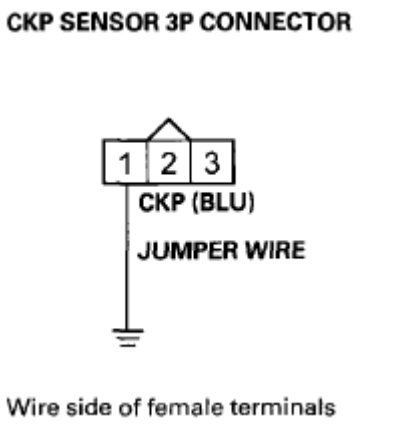


Fig. 68: Connecting CKP Sensor 3P Connector Terminal No. 1 To Body Ground With Jumper Wire
Courtesy of AMERICAN HONDA MOTOR CO., INC.

16. Check for continuity between ECM/PCM connector terminal B45 and body ground.

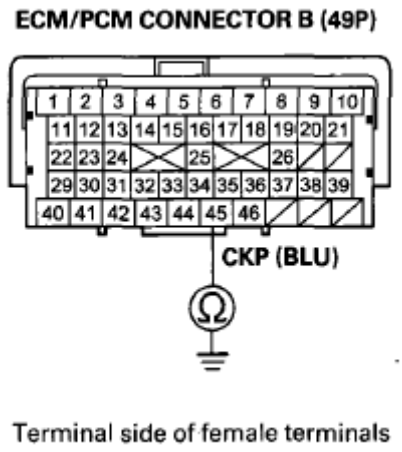


Fig. 69: Checking Continuity Between ECM/PCM Connector Terminal B45 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 25.

NO - Repair open in the wire between the ECM/PCM (B45) and the CKP sensor, then go to step 19.

17. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
18. Replace the **CKP sensor**.
19. Reconnect all connectors.
20. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
21. Reset the ECM/PCM with the HDS.
22. Do the ECM/PCM idle learn procedure (see **ECM/PCM IDLE LEARN PROCEDURE**).
23. Do the CKP pattern clear/CKP pattern learn procedure (see **CKP PATTERN CLEAR/CKP PATTERN LEARN**).
24. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P0335 indicated?

    YES - Check for poor connections or loose terminals at the CKP sensor and the ECM/PCM, then go to step 1.

    NO - Troubleshooting is complete. If any other Pending or Confirmed DTCs are indicated, go to the indicated DTC's troubleshooting. •

25. Reconnect all connectors.
26. Update the **ECM/PCM** if it does not have the latest software (see **ECM/PCM Update**), or substitute a known-good ECM/PCM (see **SUBSTITUTING THE ECM/PCM**).
27. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P0335 indicated?

    YES - Check for poor connections or loose terminals at the CKP sensor and the ECM/PCM. If the ECM/PCM was updated, substitute a known-good ECM/PCM (see **SUBSTITUTING THE ECM/PCM**), then recheck. If the ECM/PCM was substituted, go to step 1.

    NO - If the ECM/PCM was updated, troubleshooting is complete. If the ECM/PCM was substituted, replace the original **ECM/PCM** (see **ECM/PCM Replacement**). If any other Pending or Confirmed DTCs are indicated, go to the indicated DTC's troubleshooting. •

DTC P0339: CKP SENSOR CIRCUIT INTERMITTENT INTERRUPTION

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see GENERAL TROUBLESHOOTING INFORMATION).

1. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
2. Clear the DTC with the HDS.
3. Start the engine, and let it idle for 10 seconds.
4. Check the CKP NOISE in the DATA LIST with the HDS.

Are 0 counts indicated?

YES - Go to step 7.

NO - Go to step 5.

5. Test-drive the vehicle for several minutes in the range of these recorded freeze data parameters:
   - ENGINE SPEED
   - VEHICLE SPEED
6. Check the CKP NOISE in the DATA LIST with the HDS.

   Are 0 counts indicated?

   YES - Go to step 7.

   NO - Intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at the CKP sensor and the ECM/PCM. •

7. Check for poor connections or loose terminals and terminals at these locations:
   - CKP sensor
   - ECM/PCM
   - Engine ground
   - Body ground

   Are the connections and terminals OK?

   YES - Go to step 8.

   NO - Repair the connections or terminals, then go to step 11.

8. Remove the oil pan (see **OIL PAN REMOVAL**), and check for damage to the CKP pulse plate.

   Is the pulse plate damaged?

   YES - Replace the CKP pulse plate (see **CKP PULSE PLATE REPLACEMENT**), then go to step 11.

   NO - Go to step 9.

9. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
10. Replace the **CKP sensor**.
11. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
12. Reset the ECM/PCM with the HDS.
13. Do the ECM/PCM idle learn procedure (see **ECM/PCM IDLE LEARN PROCEDURE**).
14. Do the CKP pattern clear/CKP pattern learn procedure (see **CKP PATTERN CLEAR/CKP PATTERN**

LEARN).

15. Start the engine, and let it idle for 10 seconds.
16. Check for Pending or Confirmed DTCs with the HDS.

Is DTC P0339 indicated?

YES - Check for poor connections or loose terminals at the CKP sensor and the ECM/PCM, then go to step 1.

NO - Troubleshooting is complete. If any other Pending or Confirmed DTCs are indicated, go to the indicated DTC's troubleshooting. •

DTC P0351: NO. 1 CYLINDER IGNITION COIL CIRCUIT MALFUNCTION; DTC P0352: NO. 2 CYLINDER IGNITION COIL CIRCUIT MALFUNCTION; DTC P0353: NO. 3 CYLINDER IGNITION COIL CIRCUIT MALFUNCTION; DTC P0354: NO. 4 CYLINDER IGNITION COIL CIRCUIT MALFUNCTION; DTC P0355: NO. 5 CYLINDER IGNITION COIL CIRCUIT MALFUNCTION; DTC P0356: NO. 6 CYLINDER IGNITION COIL CIRCUIT MALFUNCTION

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see GENERAL TROUBLESHOOTING INFORMATION).

1. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
2. Clear the DTC with the HDS.
3. Start the engine.
4. Check for Pending or Confirmed DTCs with the HDS.

Is DTC P0351, P0352, P0353, P0354, P0355, and/or P0356 indicated?

YES - Go to step 5.

NO - Intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at the ignition coil(s) and the ECM/PCM. •

5. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
6. Exchange the ignition coil from the problem cylinder with one from another cylinder.
7. Start the engine.
8. Check for Pending or Confirmed DTCs with the HDS.

Is an ignition coil DTC indicated at the exchanged cylinder?

YES - Replace the faulty ignition coil (see **IGNITION COIL AND SPARK PLUG REMOVAL/INSTALLATION**), then go to step 27.

NO - Go to step 9.

9. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
10. Check the No. 13 IG COIL (15 A) fuse in the under-hood fuse/relay box.

    Is the fuse OK?

    YES - Go to step 11.

    NO - Go to step 13.

11. Remove the ignition coil relay (A) from the under-hood fuse/relay box.

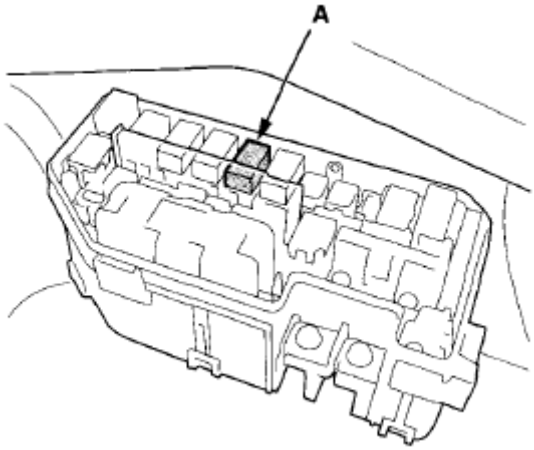


Fig. 70: Identifying Ignition Relay Coil
Courtesy of AMERICAN HONDA MOTOR CO., INC.

12. Test the ignition coil relay (see **POWER RELAY TEST**).

    Is the relay OK?

    YES - Go to step 16.

    NO - Replace the ignition coil relay, then go to step 26.

13. Remove the ignition coil relay (A) from the under-hood fuse/relay box.

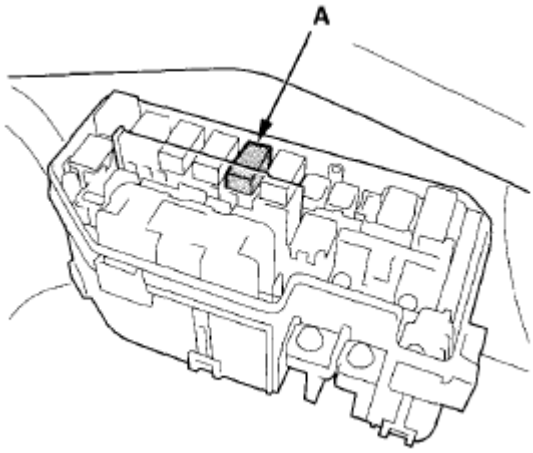


Fig. 71: Identifying Ignition Coil Relay
Courtesy of AMERICAN HONDA MOTOR CO., INC.

14. Disconnect all ignition coil 3P connectors.
15. Check for continuity between No. 1 ignition coil 3P connector terminal No. 3 and body ground.

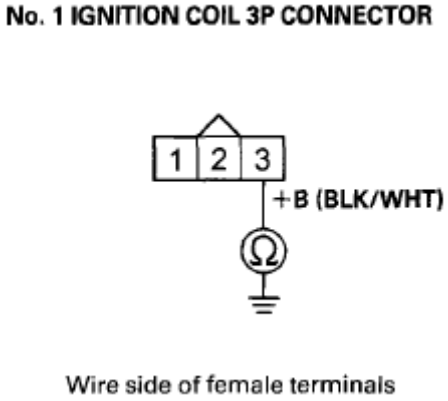


Fig. 72: Checking Continuity Between No. 1 Ignition Coil 3P Connector Terminal No. 3 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair short in the wire between the ignition coils and the ignition coil relay. Also replace the No. 13 IG COIL (15 A) fuse, then go to step 26.

NO - Check the under-hood fuse/relay box, and replace it if needed (see **REMOVAL AND INSTALLATION**), then go to step 26.

16. Reinstall the ignition coil relay.
17. Disconnect the ignition coil 3P connector from the problem cylinder.
18. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.

19. Measure the voltage between ignition coil 3P connector terminal No. 3 of the problem cylinder and body ground (see table).

PROBLEM CYLINDER	DTC
No. 1	P0351
No. 2	P0352
No. 3	P0353
No. 4	P0354
No. 5	P0355
No. 6	P0356

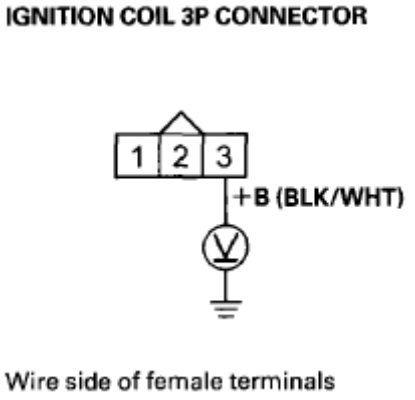


Fig. 73: Measuring Voltage Between Ignition Coil 3P Connector Of Problem Cylinder And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there battery voltage?

YES - Go to step 20.

NO - Repair open in the wire between the ignition coil and the ignition coil relay, then go to step 26.

20. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
21. Check for continuity between ignition coil 3P connector terminal No. 2 of the problem cylinder and body ground (see table).

PROBLEM CYLINDER	DTC
No. 1	P0351
No. 2	P0352
No. 3	P0353
No. 4	P0354
No. 5	P0355
No. 6	P0356

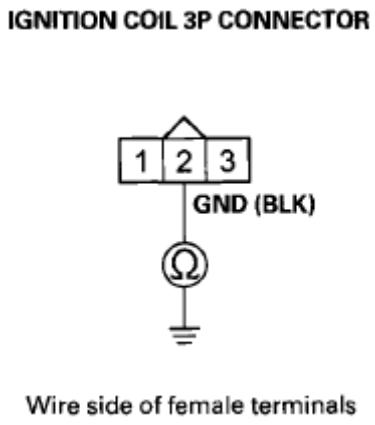


Fig. 74: Checking Continuity Between Ignition Coil 3P Connector Of Problem Cylinder And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 22.

NO - Repair open in the wire between the ignition coil and G101; M/T (see **CONNECTOR TO FUSE/RELAY BOX INDEX**), A/T (see **CONNECTOR TO FUSE/RELAY BOX INDEX**), then go to step 26.

22. Jump the SCS line with the HDS.
23. Disconnect ECM/PCM connector B (49P).
24. Check for continuity between body ground and the appropriate ECM/PCM connector terminal (see table).

PROBLEM CYLINDER	DTC	ECM/PCM TERMINAL	WIRE COLOR
No. 1	P0351	B29	YEL/GRN
No. 2	P0352	B30	BLU/RED
No. 3	P0353	B22	WHT/BLU
No. 4	P0354	B23	BRN
No. 5	P0355	B11	BLK/RED
No. 6	P0356	B12	BRN/WHT

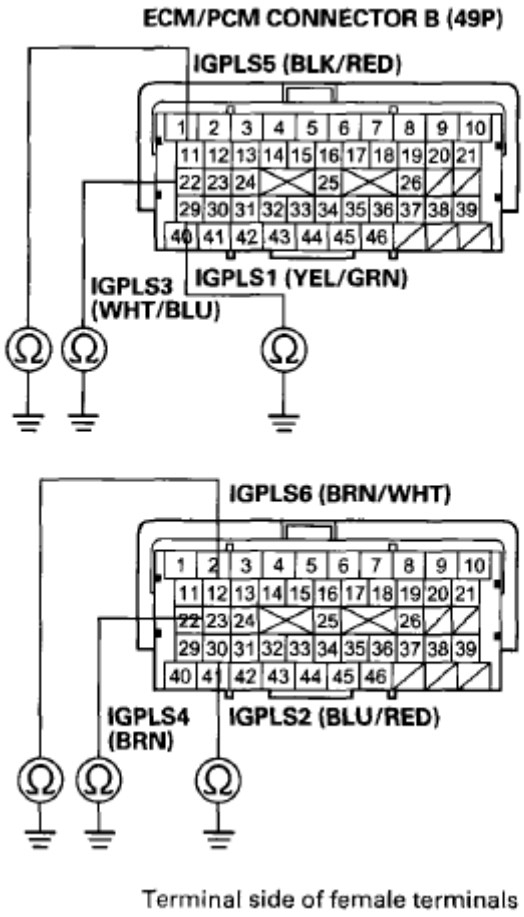


Fig. 75: Checking Continuity Between Body Ground And Appropriate ECM/PCM Connector Terminal
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair short in the wire between the ECM/PCM and the ignition coil, then go to step 26.

NO - Go to step 25.

25. Check for continuity between appropriate ignition coil 3P connector terminal No. 1 and the ECM/PCM connector terminal of the problem cylinder (see table).

PROBLEM CYLINDER	DTC	ECM/PCM TERMINAL	WIRE COLOR
No. 1	P0351	B29	YEL/GRN
No. 2	P0352	B30	BLU/RED
No. 3	P0353	B22	WHT/BLU
No. 4	P0354	B23	BRN
No. 5	P0355	B11	BLK/RED
No. 6	P0356	B12	BRN/WHT

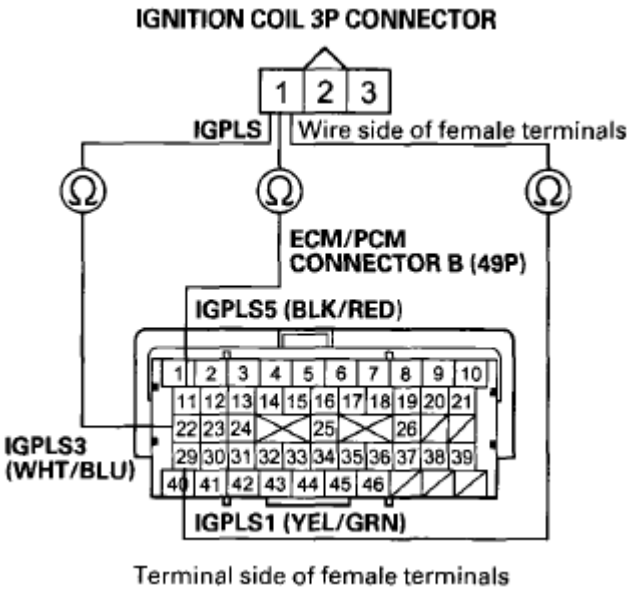


Fig. 76: Checking Continuity Between Appropriate Ignition Coil 3P Connector And ECM/PCM Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

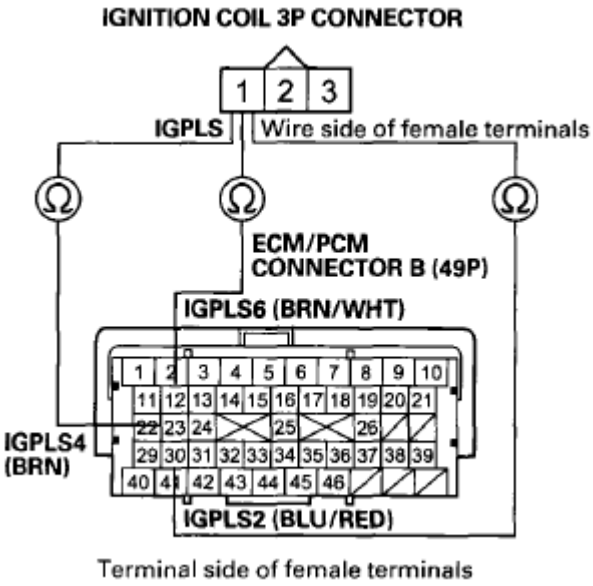


Fig. 77: Checking Continuity Between Appropriate Ignition Coil 3P Connector And ECM/PCM Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 32.

NO - Repair open in the wire between the ECM/PCM and the ignition coil, then go to step 26.

26. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
27. Reconnect all connectors.
28. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
29. Reset the ECM/PCM with the HDS.
30. Do the ECM/PCM idle learn procedure (see **ECM/PCM IDLE LEARN PROCEDURE**).
31. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P0351, P0352, P0353, P0354, P0355, and/or P0356 indicated?

    YES - Check for poor connections or loose terminals at the ignition coil(s) and the ECM/PCM, then go to step 1.

    NO - Troubleshooting is complete. If any other Pending or Confirmed DTCs are indicated, go to the indicated DTC's troubleshooting. •

32. Reconnect all connectors.
33. Update the **ECM/PCM** if it does not have the latest software (see **ECM/PCM Update**), or substitute a known-good ECM/PCM (see **SUBSTITUTING THE ECM/PCM**).
34. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P0351, P0352, P0353, P0354, P0355, and/or P0356 indicated?

    YES - Check for poor connections or loose terminals at the ignition coil(s) and the ECM/PCM. If the ECM/PCM was updated, substitute a known-good ECM/PCM (see **SUBSTITUTING THE ECM/PCM**), then recheck. If the ECM/PCM was substituted, go to step 1.

    NO - --If the ECM/PCM was updated, troubleshooting is complete. If the ECM/PCM was substituted, replace the original **ECM/PCM** (see **ECM/PCM Replacement**). If any other Pending or Confirmed DTCs are indicated, go to the indicated DTC's troubleshooting. •

DTC P0365: CMP SENSOR CIRCUIT NO SIGNAL

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see GENERAL TROUBLESHOOTING INFORMATION).

1. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
2. Clear the DTC with the HDS.
3. Start the engine.
4. Check for Pending or Confirmed DTCs with the HDS.

   Is DTC P0365 indicated?

   YES - Go to step 5.

NO - Intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at the CMP sensor and the ECM/PCM. •

5. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
6. Disconnect the CMP sensor 3P connector.
7. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
8. Measure the voltage between CMP sensor 3P connector terminal No. 3 and body ground.

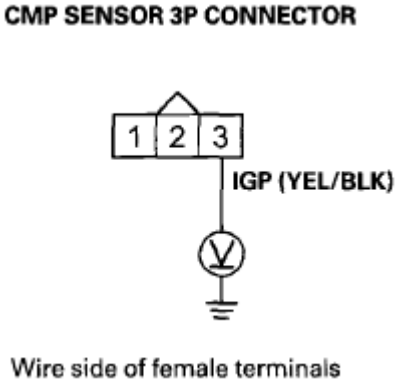


Fig. 78: Measuring Voltage Between CMP Sensor 3P Connector Terminal No. 3 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there battery voltage?

YES - Go to step 9.

NO - Repair open in the wire between the CMP sensor and PGM-FI main relay 1, then go to step 18.

9. Measure the voltage between CMP sensor 3P connector terminal No. 1 and body ground.

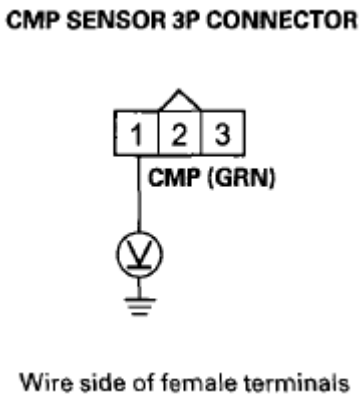


Fig. 79: Measuring Voltage Between CMP Sensor 3P Connector Terminal No. 1 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there about 5 V?

YES - Go to step 10.

NO - Go to step 11.

10. Measure the voltage between CMP sensor 3P connector terminals No. 2 and No. 3.

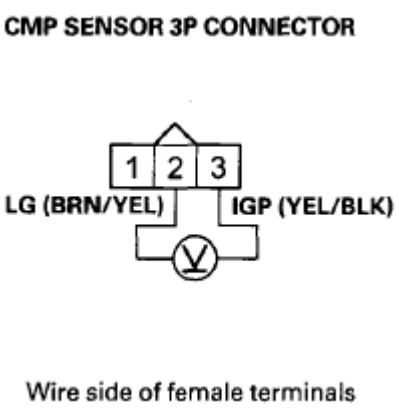


Fig. 80: Measuring Voltage Between CMP Sensor 3P Connector Terminals No. 2 And No. 3
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there battery voltage?

YES - Go to step 16.

NO - Repair open in the wire between the CMP sensor and G101; M/T (see **CONNECTOR TO FUSE/RELAY BOX INDEX**), A/T (see **CONNECTOR TO FUSE/RELAY BOX INDEX**), then go to step 18.

11. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
12. Jump the SCS line with the HDS.
13. Disconnect ECM/PCM connector B (49P).
14. Check for continuity between ECM/PCM connector terminal B46 and body ground.

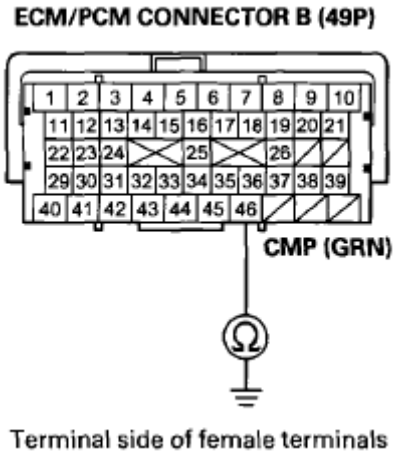


Fig. 81: Checking Continuity Between ECM/PCM Connector Terminal B46 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair short in the wire between the ECM/PCM (B46) and the CMP sensor, then go to step 18.

NO - Go to step 15.

15. Check for continuity between CMP sensor 3P connector terminal No. 1 and ECM/PCM connector terminal B46.

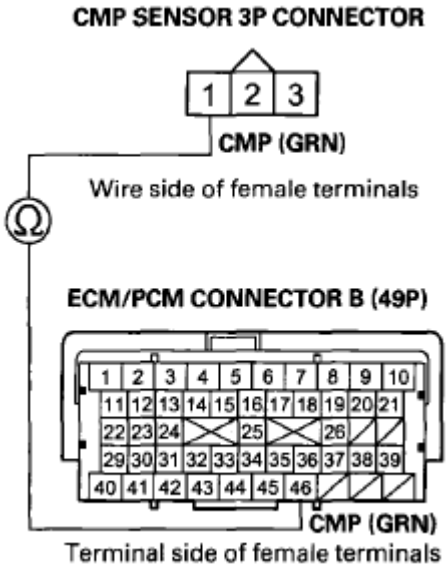


Fig. 82: Checking Continuity Between CMP Sensor 3P Connector Terminal No. 1 And ECM/PCM Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 23.

NO - Repair open in the wire between the ECM/PCM (B46) and the CMP sensor, then go to step 18.

16. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
17. Replace the **CMP sensor**.
18. Reconnect all connectors.
19. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
20. Reset the ECM/PCM with the HDS.
21. Do the ECM/PCM idle learn procedure (see **ECM/PCM IDLE LEARN PROCEDURE**).
22. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P0365 indicated?

    YES - Check for poor connections or loose terminals at the CMP sensor and the ECM/PCM, then go to step 1.

    NO - Troubleshooting is complete. If any other Pending or Confirmed DTCs are indicated, go to the indicated DTC's troubleshooting. •

23. Reconnect all connectors.
24. Update the **ECM/PCM** if it does not have the latest software (see **ECM/PCM Update**), or substitute a known-good ECM/PCM (see **SUBSTITUTING THE ECM/PCM**).
25. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P0365 indicated?

    YES - Check for poor connections or loose terminals at the CMP sensor and the ECM/PCM. If the ECM/PCM was updated, substitute a known-good ECM/PCM (see **SUBSTITUTING THE ECM/PCM**), then recheck. If the ECM/PCM was substituted, go to step 1.

    NO - If the ECM/PCM was updated, troubleshooting is complete. If the ECM/PCM was substituted, replace the original **ECM/PCM** (see **ECM/PCM Replacement**). If any other Pending or Confirmed DTCs are indicated, go to the indicated DTC's troubleshooting. •

DTC P0369: CMP SENSOR CIRCUIT INTERMITTENT INTERRUPTION

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see GENERAL TROUBLESHOOTING INFORMATION).

1. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
2. Clear the DTC with the HDS.
3. Start the engine, and let it idle for 10 seconds.

4. Check the CMP B NOISE in the DATA LIST with the HDS.

   Are 0 counts indicated?

   YES - Go to step 7.

   NO - Go to step 5.

5. Test-drive the vehicle for several minutes in the range of these recorded freeze data parameters:
   - ENGINE SPEED
   - VEHICLE SPEED
6. Check the CMP B NOISE in the DATA LIST with the HDS.

   Are 0 counts indicated?

   YES - Go to step 7.

   NO - Intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at the CMP sensor and the ECM/PCM. •

7. Check for poor connections or loose terminals at these locations:
   - CMP sensor
   - ECM/PCM
   - Engine ground
   - Body ground

   Are the connections and terminals OK?

   YES - Go to step 8.

   NO - Repair the connections or the terminals, then go to step 11.

8. Check for damage to the front camshaft pulley (**CMP** pulse plate).

   Is the pulse plate damaged?

   YES - Replace the front camshaft pulley (CMP pulse plate); J35Z6 engine (see **CAMSHAFT REPLACEMENT**), J37A4 engine (see **CAMSHAFT REPLACEMENT**), then go to step 11.

   NO - Go to step 9.

9. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
10. Replace the **CMP sensor**.
11. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.

12. Reset the ECM/PCM with the HDS.
13. Do the ECM/PCM idle learn procedure (see **ECM/PCM IDLE LEARN PROCEDURE**).
14. Start the engine, and let it idle for 10 seconds.
15. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P0369 indicated?

    YES - Check for poor connections or loose terminals at the CMP sensor and the ECM/PCM, then go to step 1.

    NO - Troubleshooting is complete. If any other Pending or Confirmed DTCs are indicated, go to the indicated DTC's troubleshooting. •

DTC P050A: COLD START IDLE AIR CONTROL SYSTEM PERFORMANCE PROBLEM

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see GENERAL TROUBLESHOOTING INFORMATION).

1. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
2. Check for Pending or Confirmed DTCs with the HDS.

   Are any Pending or Confirmed DTCs other than P050A indicated?

   YES - Go to the indicated DTC's troubleshooting. •

   NO - Go to step 3.

3. Check for poor connections or a blockage at the intake air duct.

   Is it OK?

   YES - Go to step 4.

   NO - Reconnect or repair the intake air duct, then go to step 19.

4. Check for damage at the air cleaner housing.

   Is it OK?

   YES - Go to step 5.

   NO - Replace the air cleaner housing (see **THROTTLE BODY CLEANING**), then go to step 19.

5. Check for dirt or debris in the air cleaner element.

Is it dirty?

YES - Replace the air cleaner element or remove the debris (see **AIR CLEANER ELEMENT INSPECTION/REPLACEMENT**), then go to step 19.

NO - Go to step 6.

6. Let the engine cool until the value of ECT SENSOR 1 is 122°F (50°C) or less.
7. Clear the DTC with the HDS.
8. Start the engine, and let it idle for 10 seconds or more.
9. Monitor the OBD STATUS for DTC P050A in the DTCs MENU with the HDS.

   Does the screen indicate FAILED?

   YES - Go to step 10.

   NO - If the screen indicates PASSED, intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at the throttle body, the MAF sensor/IAT sensor, and the ECM/PCM. If the screen indicates EXECUTING, keep idling until a result comes on. If the screen indicates OUT OF CONDITION, go to step 6.

10. Do the ETCS TEST in the INSPECTION MENU with the HDS.

    Is the THROTTLE ACTUATOR CONTROL VALVE normal?

    YES - Go to step 11.

    NO - Replace the throttle body (see **THROTTLE BODY REMOVAL/INSTALLATION**), then go to step 19.

11. Start the engine. Hold the engine speed at 3, 000 RPM without load (A/T in P or N, M/T in neutral) until the radiator fan comes on, then let it idle.
12. While holding the engine speed at 2, 500 RPM for 30 seconds, check the MAF SENSOR in the DATA LIST with the HDS.

    Is there about 11.0- 15.5 gm/s (J35Z6 engine) or 11.8- 16.6 gm/s (J37A4 engine)?

    YES - Go to step 13.

    NO - Replace the **MAF sensor/IAT sensor**, then go to step 19.

13. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
14. Allow the engine to cool to the ambient temperature.
15. Note the ambient temperature.
16. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.

17. Quickly note the value of IAT SENSOR in the DATA LIST with the HDS.
18. Compare the value of the IAT SENSOR and the ambient temperature.

    Does the value of the IAT SENSOR differ 5.4°F (3°C) or more from ambient temperature?

    YES - Replace the **MAF sensor/IAT sensor**, then go to step 19.

    NO - Check for dirt, carbon, or damage in the throttle bore. If there is dirt or carbon, clean the throttle body (see **THROTTLE BODY CLEANING**), then go to step 19. If there is damage in the throttle bore, replace the throttle body (see **THROTTLE BODY REMOVAL/INSTALLATION**), then go to step 19.

19. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
20. Reset the PCM with the HDS.
21. Do the ECM/PCM idle learn procedure (see **ECM/PCM IDLE LEARN PROCEDURE**).
22. Let the engine cool until the value of ECT SENSOR 1 is 122°F (50°C) or less.
23. Start the engine, and let it idle for 10 seconds or more.
24. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P050A indicated?

    YES - Check for poor connections or loose terminals at the throttle body, the MAF sensor/IAT sensor, and the ECM/PCM, then go to step 1.

    NO - Go to step 25.

25. Monitor the OBD STATUS for DTC P050A in the DTCs MENU with the HDS.

    Does the screen indicate PASSED?

    YES - Troubleshooting is complete. If any other Pending or Confirmed DTCs were indicated in step 24, go to the indicated DTC's troubleshooting. •

    NO - If the screen indicates FAILED, check for poor connections or loose terminals at the throttle body, the MAF sensor/IAT sensor, and the PCM, then go to step 1. If the screen indicates EXECUTING, keep idling until a result comes on. If the screen indicates OUT OF CONDITION, go to step 22.

DTC P050B: COLD START IGNITION TIMING CONTROL SYSTEM PERFORMANCE PROBLEM

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see GENERAL TROUBLESHOOTING INFORMATION).

1. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
2. Check for Pending or Confirmed DTCs with the HDS.

Are any Pending or Confirmed DTCs other than P050B indicated?

YES - Go to the indicated DTC's troubleshooting. •

NO - Go to step 3.

3. Check for poor connections or a blockage at the intake air duct.

   Is it OK?

   YES - Go to step 4.

   NO - Correct the problem, then reconnect the intake air duct, and go to step 21.

4. Check for damage at the air cleaner housing.

   Is it OK?

   YES - Go to step 5.

   NO - Replace the air cleaner housing (see **THROTTLE BODY CLEANING**), then go to step 21.

5. Check for dirt or debris in the air cleaner element.

   Is it dirty?

   YES - Replace the air cleaner element or remove the debris (see **AIR CLEANER ELEMENT INSPECTION/REPLACEMENT**), then go to step 21.

   NO - Go to step 6.

6. Let the engine cool until the value of ECT SENSOR 1 is 122°F (50°C) or less.
7. Clear the DTC with the HDS.
8. Start the engine, and let it idle for 10 seconds or more.
9. Monitor the OBD STATUS for DTC P050B in the DTCs MENU with the HDS.

   Does the screen indicate FAILED?

   YES - Go to step 10.

   NO - If the screen indicates PASSED, intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at the CKP sensor, the throttle body, the MAF sensor/IAT sensor, ECT sensor 1, ECT sensor 2, and the ECM/PCM. If the screen indicates EXECUTING, keep idling until a result comes on. If the screen indicates OUT OF CONDITION, go to step 6.

10. Inspect the ignition timing (see **IGNITION TIMING INSPECTION**).

Is the ignition timing OK?

YES - Go to step 12.

NO - Go to step 11.

11. Check for damage at the **CKP sensor** and the CKP pulse plate (see **CKP PULSE PLATE REPLACEMENT**).

    Is the CKP sensor and/or the CKP pulse plate damaged?

    YES - Replace the **CKP sensor** and/or the CKP pulse plate (see **CKP PULSE PLATE REPLACEMENT**), then go to step 21.

    NO - Go to step 28.

12. Do the ETCS TEST in the INSPECTION MENU with the HDS.

    Is the THROTTLE ACTUATOR CONTROL VALVE normal?

    YES - Go to step 13.

    NO - Replace the throttle body (see **THROTTLE BODY REMOVAL/INSTALLATION**), then go to step 21.

13. Start the engine. Hold the engine speed at 3, 000 RPM without load (A/T in P or N, M/T in neutral) until the radiator fan comes on, then let it idle.
14. While holding the engine speed at 2, 500 RPM for 30 seconds, check the MAF SENSOR in the DATA LIST with the HDS.

    Is there about 11.0- 15.5 gm/s (J35Z6 engine) or 11.8- 16.6 gm/s (J37A4 engine)?

    YES - Go to step 15.

    NO - Replace the **MAF sensor/IAT sensor**, then go to step 21.

15. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
16. Allow ECT sensor 1 and ECT sensor 2 to cool to the ambient temperature.
17. Note the ambient temperature.
18. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
19. Quickly note the value of ECT SENSOR 1 and ECT SENSOR 2 in the DATA LIST with the HDS.
20. Compare the value of ECT SENSOR 1 and the ambient temperature, and the value of ECT SENSOR 2 and the ambient temperature individually.

    Does either sensor differ more than 5.4°F (3°C) from the ambient temperature?

YES - Replace the sensor that differed more than 5.4°F (3°C) from the ambient temperature. Refill the cooling system (see **COOLANT CHECK**), then go to step 21.

NO - Check and repair any problems with the following items. Repair or replace them if needed, then go to step 21. If all of the items are OK, go to step 28.

- Engine compression and cylinder leakdown
- VTEC system
- Engine oil
- A/C system
- Power steering

21. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
22. Reset the ECM/PCM with the HDS.
23. Do the ECM/PCM idle learn procedure (see **ECM/PCM IDLE LEARN PROCEDURE**).
24. Let the engine cool until the value of ECT SENSOR 1 is 122°F (50°C) or less.
25. Start the engine, and let it idle for 10 seconds or more.
26. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P050B indicated?

    YES - Check for poor connections or loose terminals at the CKP sensor, the throttle body, the MAF sensor/IAT sensor, ECT sensor 1, ECT sensor 2, and the ECM/PCM, then go to step 1.

    NO - Go to step 27.

27. Monitor the OBD STATUS for DTC P050B in the DTCs MENU with the HDS.

    Does the screen indicate PASSED?

    YES - Troubleshooting is complete. If any other Pending or Confirmed DTCs were indicated in step 26, go to the indicated DTC's troubleshooting. •

    NO - If the screen indicates FAILED, check for poor connections or loose terminals at the CKP sensor, the throttle body, the MAF sensor/IAT sensor, ECT sensor 1, ECT sensor 2, and the ECM/PCM, then go to step 1. If the screen indicates EXECUTING, keep idling until a result comes on. If the screen indicates OUT OF CONDITION, go to step 24.

28. Update the **ECM/PCM** if it does not have the latest software (see **ECM/PCM Update**), or substitute a known-good ECM/PCM (see **SUBSTITUTING THE ECM/PCM**).
29. Do the ECM/PCM idle learn procedure (see **ECM/PCM IDLE LEARN PROCEDURE**).
30. Let the engine cool until the value of ECT SENSOR 1 is 122°F (50°C) or less.
31. Start the engine, and let it idle for 10 seconds or more.
32. Check for Pending or Confirmed DTCs with the HDS.

Is DTC P050B indicated?

YES - Check for poor connections or loose terminals at the CKP sensor, the throttle body, the MAF sensor/IAT sensor, ECT sensor 1, ECT sensor 2, and the ECM/PCM. If the ECM/PCM was updated, substitute a known-good ECM/PCM (see **SUBSTITUTING THE ECM/PCM**), then go to step 30. If the ECM/PCM was substituted, go to step 1.

NO - Go to step 33.

33. Monitor the OBD STATUS for DTC P050B in the DTCs MENU with the HDS.

    Does the screen indicate PASSED?

    YES - If the ECM/PCM was updated, troubleshooting is complete. If the ECM/PCM was substituted, replace the original **ECM/PCM** (see **ECM/PCM Replacement**). If any other Pending or Confirmed DTCs were indicated in step 32, go to the indicated DTC's troubleshooting. •

    NO - If the screen indicates FAILED, check for poor connections or loose terminals at the CKP sensor, the throttle body, the MAF sensor/IAT sensor, ECT sensor 1, ECT sensor 2, and the ECM/PCM. If the ECM/PCM was updated, substitute a known-good ECM/PCM (see **SUBSTITUTING THE ECM/PCM**), then go to step 30. If the ECM/PCM was substituted, go to step 1. If the screen indicates EXECUTING, keep idling until a result comes on. If the screen indicates OUT OF CONDITION, go to step 30.

DTC P0560: PCM POWER SOURCE CIRCUIT UNEXPECTED VOLTAGE

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see GENERAL TROUBLESHOOTING INFORMATION).

1. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
2. Clear the DTC with the HDS.
3. Start the engine, and let it idle.
4. Check for Pending or Confirmed DTCs with the HDS.

   Is DTC P0560 indicated?

   YES - Go to step 5.

   NO - Intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at the No. 19 BACK UP Fl ECU (7.5 A) fuse in the under-hood fuse relay box and the ECM/PCM. •

5. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
6. Check the No. 19 BACK UP Fl ECU (7.5 A) fuse in the under-hood fuse relay box.

   Is the fuse OK?

YES - Go to step 7.

NO - Go to step 10.

7. Jump the SCS line with the HDS.
8. Disconnect ECM/PCM connector A (49P).
9. Measure the voltage between ECM/PCM connector terminal A23 and body ground.

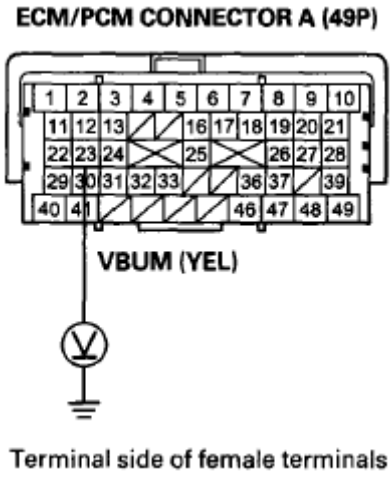


Fig. 83: Measuring Voltage Between ECM/PCM Connector Terminal A23 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there battery voltage?

YES - Go to step 19.

NO - Repair open in the wire between the ECM/PCM (A23) and the No. 19 BACK UP Fl ECU (7.5 A) fuse, then go to step 13.

10. Jump the SCS line with the HDS.
11. Disconnect ECM/PCM connector A (49P).
12. Check for continuity between ECM/PCM connector terminal A23 and body ground.

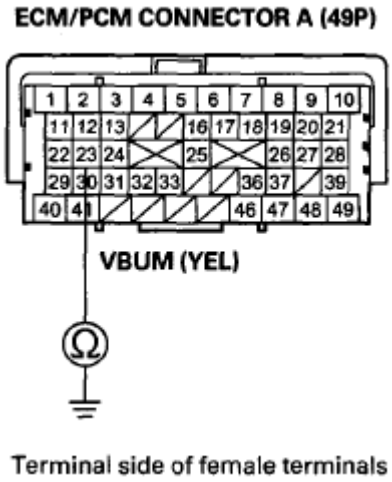


Fig. 84: Checking Continuity Between ECM/PCM Connector Terminal A23 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair short in the wire between the ECM/PCM (A23) and the No. 19 BACK UP Fl ECU (7.5 A) fuse. Also replace the No. 19 BACK UP Fl ECU (7.5 A) fuse, then go to step 13.

NO - Check the under-hood fuse/relay box, and replace it if needed (see **REMOVAL AND INSTALLATION**). Also replace the No. 19 BACK UP Fl ECU (7.5 A) fuse, then go to step 13.

13. Reconnect all connectors.
14. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
15. Reset the ECM/PCM with the HDS.
16. Do the ECM/PCM idle learn procedure (see **ECM/PCM IDLE LEARN PROCEDURE**).
17. Start the engine, and let it idle.
18. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P0560 indicated?

    YES - Check for poor connections or loose terminals at the No. 19 BACK UP Fl ECU (7.5 A) fuse and the ECM/PCM, then go to step 1.

    NO - Troubleshooting is complete. If any other Pending or Confirmed DTCs are indicated, go to the indicated DTC's troubleshooting. •

19. Reconnect all connectors.
20. Update the **ECM/PCM** if it does not have the latest software (see **ECM/PCM Update**), or substitute a known-good ECM/PCM (see **SUBSTITUTING THE ECM/PCM**).
21. Start the engine, and let it idle.
22. Check for Pending or Confirmed DTCs with the HDS.

Is DTC P0560 indicated?

YES - Check for poor connections or loose terminals at the No. 19 BACK UP Fl ECU (7.5 A) fuse and the ECM/PCM. If the ECM/PCM updated, substitute a known-good ECM/PCM, then go to step 21. If the ECM/PCM was substituted, go to step 1.

NO - If the ECM/PCM was updated, troubleshooting is complete. If the ECM/PCM was substituted, replace the original **ECM/PCM** (see **ECM/PCM Replacement**). If any other Pending or Confirmed DTCs are indicated, go to the indicated DTC's troubleshooting. •

DTC P0562: CHARGING SYSTEM LOW VOLTAGE

NOTE:

- **Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see GENERAL TROUBLESHOOTING INFORMATION).**
- **If any high current load accessories are installed, this DTC can be set.**
- **If DTC P16BB and/or P16BC is stored at the same time as DTC P0562, troubleshoot DTC P16BB and/or P16BC first, then recheck for DTC P0562.**

1. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
2. Clear the DTC with the HDS.
3. Start the engine.
4. Check under these conditions:
   - A/C on
   - Temperature control at maximum cool
   - Blower fan at maximum speed
   - Headlights on high beam
   - Rear window defogger on
5. Hold the engine speed at 2, 000 RPM (A/T in P or N, M/T in neutral) for 1 minute.
6. Check for Pending or Confirmed DTCs with the HDS.

Is DTC P0562 indicated?

YES - Replace the alternator (see **ALTERNATOR REMOVAL AND INSTALLATION**), then go to step 7.

NO - Intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at the alternator and the under-hood fuse/relay box, and check the battery performance (see **BATTERY TEST**). •

7. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
8. Reset the ECM/PCM with the HDS.
9. Do the ECM/PCM idle learn procedure (see **ECM/PCM IDLE LEARN PROCEDURE**).

10. Start the engine.
11. Check under these conditions:
    - A/C on
    - Temperature control at maximum cool
    - Blower fan at maximum speed
    - Headlights on high beam
    - Rear window defogger on
12. Hold the engine speed at 2, 000 RPM (A/T in P or N, M/T in neutral) for 1 minute.
13. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P0562 indicated?

    YES - Check for poor connections or loose terminals at the alternator and the under-hood fuse/relay box, then go to step 1.

    NO - Troubleshooting is complete. If any other Pending or Confirmed DTCs are indicated, go to the indicated DTC's troubleshooting. •

DTC P0563: ECM/PCM POWER SOURCE CIRCUIT UNEXPECTED VOLTAGE

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see GENERAL TROUBLESHOOTING INFORMATION).

1. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
2. Clear the DTC with the HDS.
3. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
4. Wait 10 seconds.
5. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
6. Check for Pending or Confirmed DTCs with the HDS.

   Is DTC P0563 indicated?

   YES - Go to step 7.

   NO - Intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at PGM-FI main relay 1 and the ECM/PCM. •

7. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
8. Jump the SCS line with the HDS.
9. Disconnect ECM/PCM connector A (49P).
10. Measure the voltage between ECM/PCM connector terminal A6 and body ground.

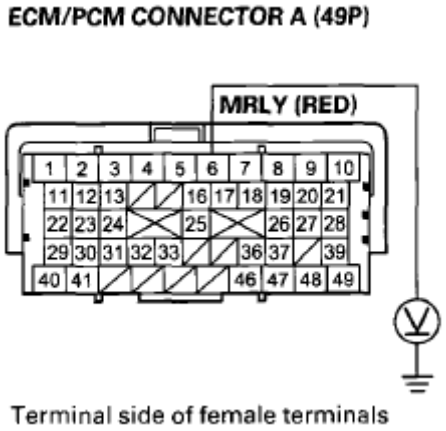


Fig. 85: Measuring Voltage Between ECM/PCM Connector Terminal A6 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there battery voltage?

YES - Go to step 13.

NO - Go to step 11.

11. Remove PGM-FI main relay 1 (A) from the under-hood fuse/relay box.

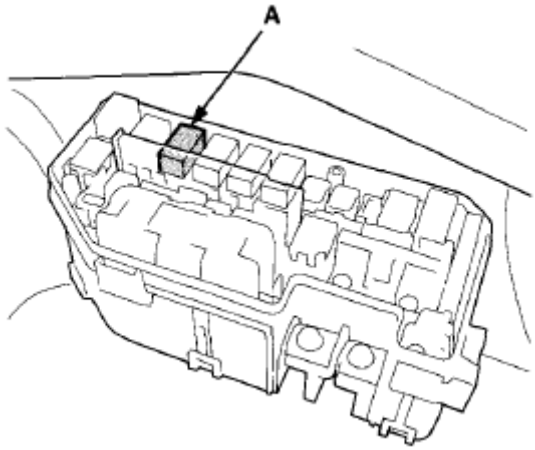


Fig. 86: Identifying PGM-FI Main Relay
Courtesy of AMERICAN HONDA MOTOR CO., INC.

12. Check for continuity between ECM/PCM connector terminal A6 and body ground.

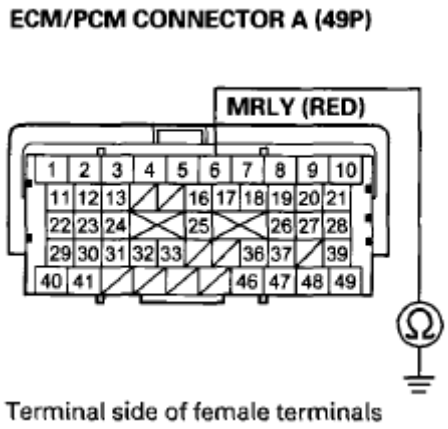


Fig. 87: Checking Continuity Between ECM/PCM Connector Terminal A6 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair short in the wire between the ECM/PCM (A6) and PGM-FI main relay 1, then go to step 19.

NO - Go to step 18.

13. Reconnect ECM/PCM connector A (49P).
14. Disconnect ECM/PCM connector B (49P).
15. Measure the voltage between ECM/PCM connector terminal B3 and body ground.

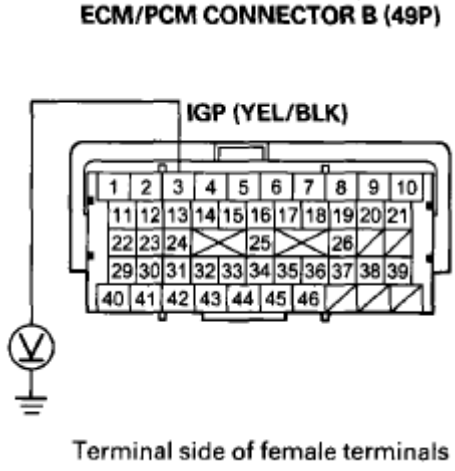


Fig. 88: Measuring Voltage Between ECM/PCM Connector Terminal B3 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there battery voltage?

YES - Go to step 16.

NO - Go to step 26.

16. Remove PGM-FI main relay 1 (A) from the under-hood fuse/relay box.

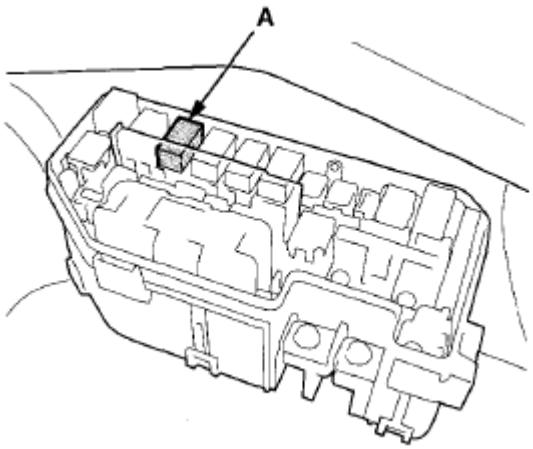


Fig. 89: Identifying PGM-FI Main Relay
Courtesy of AMERICAN HONDA MOTOR CO., INC.

17. Measure the voltage between ECM/PCM connector terminal B3 and body ground.

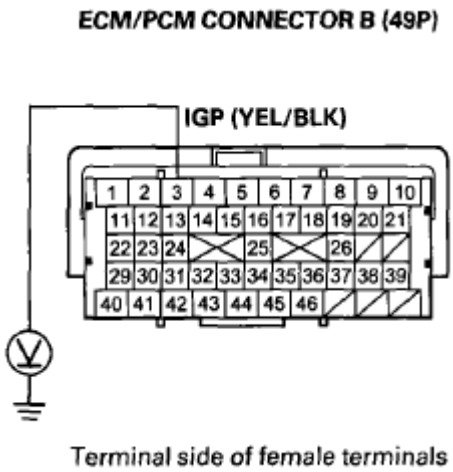


Fig. 90: Measuring Voltage Between ECM/PCM Connector Terminal B3 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there battery voltage?

YES - Repair short to power in the wire between the ECM/PCM (B3) and PGM-FI main relay 1, then go to step 19.

NO - Go to step 18.

18. Test PGM-FI main relay 1 (see **POWER RELAY TEST**).

Is the relay OK?

YES - Go to step 26.

NO - Replace PGM-FI main relay 1, then go to step 19.

19. Reconnect all connectors.
20. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
21. Reset the ECM/PCM with the HDS.
22. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
23. Wait 10 seconds.
24. Do the ECM/PCM idle learn procedure (see **ECM/PCM IDLE LEARN PROCEDURE**).
25. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P0563 indicated?

    YES - Check for poor connections or loose terminals at PGM-FI main relay 1 and the ECM/PCM, then go to step 1.

    NO - Troubleshooting is complete. If any other Pending or Confirmed DTCs are indicated, go to the indicated DTC's troubleshooting. •

26. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
27. Reconnect all connectors.
28. Update the **ECM/PCM** if it does not have the latest software (see **ECM/PCM Update**), or substitute a known-good ECM/PCM (see **SUBSTITUTING THE ECM/PCM**).
29. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P0563 indicated?

    YES - Check for poor connections or loose terminals at PGM-FI main relay 1 and the ECM/PCM. If the ECM/PCM was updated, substitute a known-good ECM/PCM (see **SUBSTITUTING THE ECM/PCM**), then recheck. If the ECM/PCM was substituted, go to step 1.

    NO - --If the ECM/PCM was updated, troubleshooting is complete. If the ECM/PCM was substituted, replace the original **ECM/PCM** (see **ECM/PCM Replacement**). If any other Pending or Confirmed DTCs are indicated, go to the indicated DTC's troubleshooting. •

DTC P0602: ECM/PCM PROGRAMMING ERROR

NOTE:

- **Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see GENERAL TROUBLESHOOTING INFORMATION).**
- **This DTC is indicated when an ECM/PCM update is not completed.**

- **Do not turn the ignition switch to ACC (I) or LOCK (0) or do not press the engine start/stop button while updating the ECM/PCM. If you do, the ECM/PCM can be damaged.**

1. Do the **ECM/PCM update** procedure.
2. Check for Pending or Confirmed DTCs with the HDS.

   Is DTC P0602 indicated?

   YES - Replace the original **ECM/PCM** (see **ECM/PCM Replacement**). •

   NO - The update is complete. •

DTC P060A: ECM/PCM INTERNAL CONTROL MODULE MALFUNCTION

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see GENERAL TROUBLESHOOTING INFORMATION).

1. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
2. Clear the DTC with the HDS.
3. Check for Pending or Confirmed DTCs with the HDS.

   Is DTC P060A indicated?

   YES - Go to step 4.

   NO - Intermittent failure, the system is OK at this time. •

4. Update the **ECM/PCM** if it does not have the latest software (see **ECM/PCM Update**), or substitute a known-good ECM/PCM (see **SUBSTITUTING THE ECM/PCM**).
5. Check for Pending or Confirmed DTCs with the HDS.

   Is DTC P060A indicated?

   YES - If the ECM/PCM was updated, substitute a known-good ECM/PCM (see **SUBSTITUTING THE ECM/PCM**), then recheck. If the ECM/PCM was substituted, go to step 1.

   NO - If the ECM/PCM was updated, troubleshooting is complete. If the ECM/PCM was substituted, replace the original **ECM/PCM** (see **ECM/PCM Replacement**). If any other Pending or Confirmed DTCs are indicated, go to the indicated DTC's troubleshooting. •

DTC P0615: STARTER CUT RELAY STRLD CIRCUIT MALFUNCTION (M/T)

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot, and

review the general troubleshooting information (see GENERAL TROUBLESHOOTING INFORMATION).

1. Press the engine start/stop button to select the ON mode.
2. Check for Pending or Confirmed DTCs with the HDS.

   Are DTC P16BD and P0615 indicated at the same time?

   YES - Go to the troubleshooting for **DTC P16BD**.

   NO - Go to step 3.

3. Clear the DTC with the HDS.
4. Press the engine start/stop button to select the START mode, for 1 second or more.
5. Check for Pending or Confirmed DTCs with the HDS.

   Is DTC P0615 indicated?

   YES - Go to step 6.

   NO - Intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at starter cut relay 1, starter cut relay 2, the + B cut relay, and the ECM. •

6. Try to start engine.

   Does the engine start?

   YES - Go to step 7.

   NO - Go to step 17.

7. Press the engine start/stop button to select the OFF mode.
8. Remove the driver's dashboard undercover (see **DRIVER'S DASHBOARD UNDERCOVER REMOVAL/INSTALLATION**), then check the No. 8 STRLD (7.5 A) fuse in the driver's under-dash fuse/relay box.

   Is the fuse OK?

   YES - Go to step 9.

   NO - Replace the fuse, then go to step 26.

9. Jump the SCS line with the HDS.
10. Disconnect ECM connector A (49P).
11. Remove starter cut relay 1 (A) from the driver's under-dash fuse/relay box.

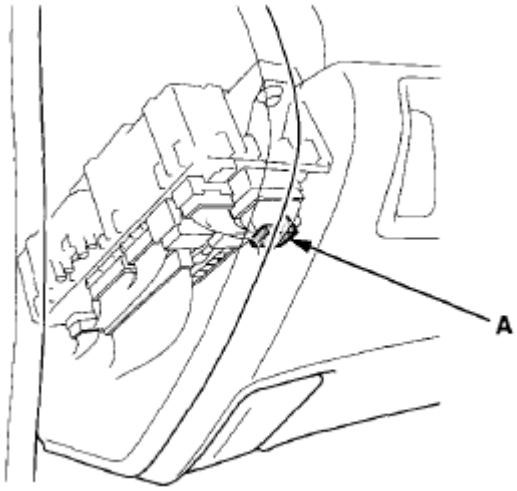


Fig. 91: Identifying Starter Cut Relay
Courtesy of AMERICAN HONDA MOTOR CO., INC.

12. Connect starter cut relay 1 4P connector terminal No. 1 to body ground with a jumper wire.

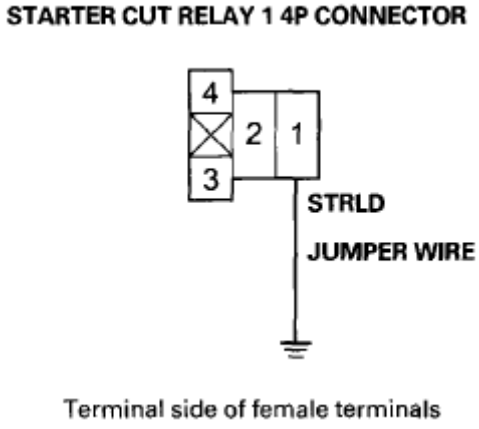


Fig. 92: Connecting Starter Cut Relay 4P Connector Terminal No. 1 To Body Ground With Jumper Wire
Courtesy of AMERICAN HONDA MOTOR CO., INC.

13. Check for continuity between ECM connector terminal A28 and body ground.

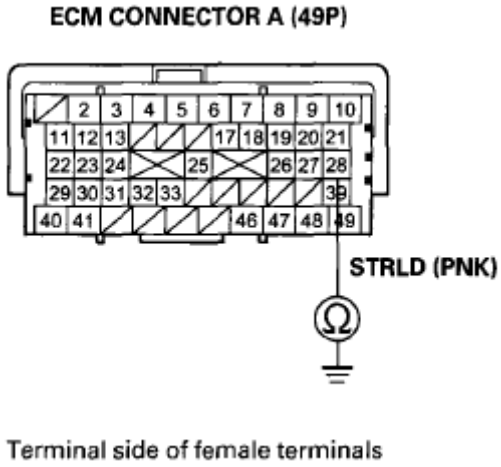


Fig. 93: Checking Continuity Between ECM Connector Terminal A28 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 30.

NO - Go to step 14.

14. Disconnect driver's under-dash fuse/relay box connector G (13P).
15. Connect driver's under-dash fuse/relay box connector G (13P) terminal No. 6 to body ground with a jumper wire.

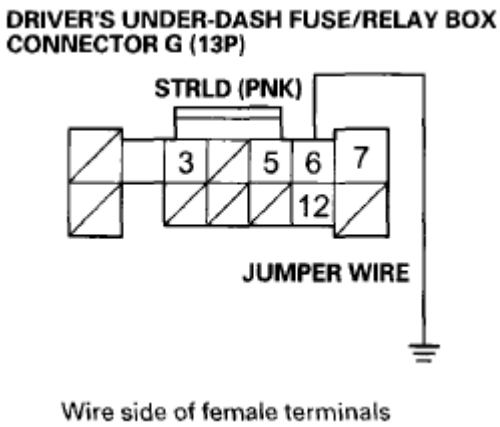


Fig. 94: Connecting Driver's Under-Dash Fuse/Relay Box Connector G (13P) To Body Ground With Jumper Wire
Courtesy of AMERICAN HONDA MOTOR CO., INC.

16. Check for continuity between ECM connector terminal A28 and body ground.

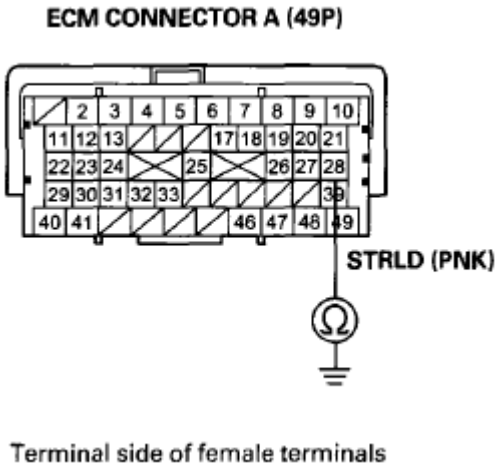


Fig. 95: Checking Continuity Between ECM Connector Terminal A28 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Replace the driver's under-dash fuse/relay box (see **DRIVER'S UNDER-DASH FUSE/RELAY BOX (MICU) REMOVAL AND INSTALLATION**), then go to step 25.

NO - Repair open in the wire between the ECM (A28) and the driver's under-dash fuse/relay box, then go to step 25.

17. Press the engine start/stop button to select the OFF mode.
18. Remove the driver's dashboard undercover (see **DRIVER'S DASHBOARD UNDERCOVER REMOVAL/INSTALLATION**), then remove starter cut relay 1 (A) from the driver's under-dash fuse/relay box.

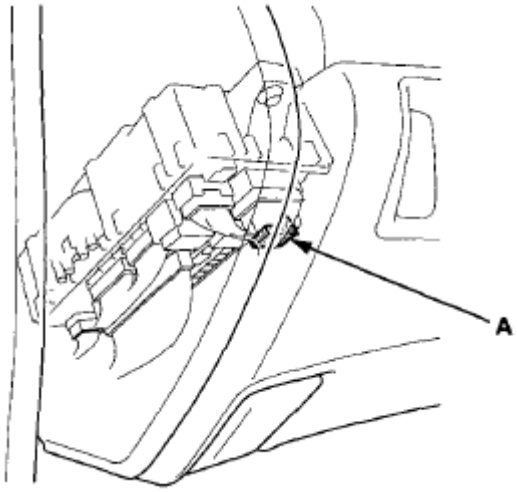


Fig. 96: Identifying Starter Cut Relay
Courtesy of AMERICAN HONDA MOTOR CO., INC.

19. Check for continuity between starter cut relay 1 4P connector terminal No. 3 and body ground.

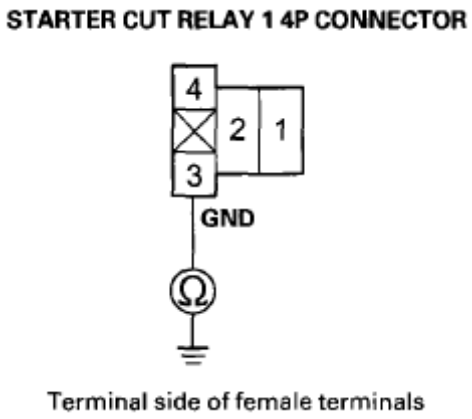


Fig. 97: Checking Continuity Between Starter Cut Relay 4P Connector Terminal No. 3 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 20.

NO - Repair open in the wire between starter cut relay 1 and G301 (see **CONNECTOR TO FUSE/RELAY BOX INDEX**), then go to step 25.

20. Check for continuity between the +B cut relay terminal No. 3 and body ground.

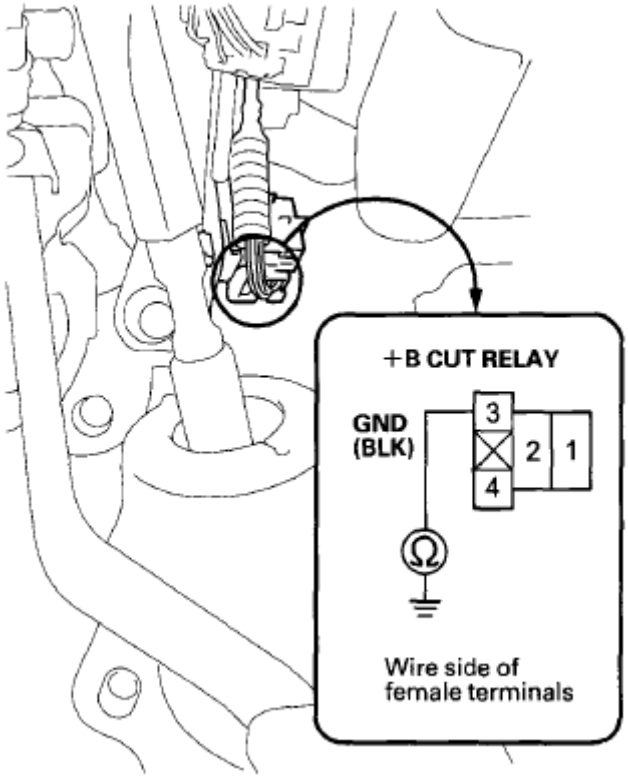


Fig. 98: Checking Continuity Between +B Cut Relay Terminal No. 3 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 21.

NO - Repair open in the wire between the +B cut relay and G403 (see **CONNECTOR TO FUSE/RELAY BOX INDEX**), then go to step 25.

21. Jump the SCS line with the HDS.
22. Disconnect ECM connector A (49P).
23. Connect starter cut relay 1 4P connector terminal No. 4 to body ground with a jumper wire.

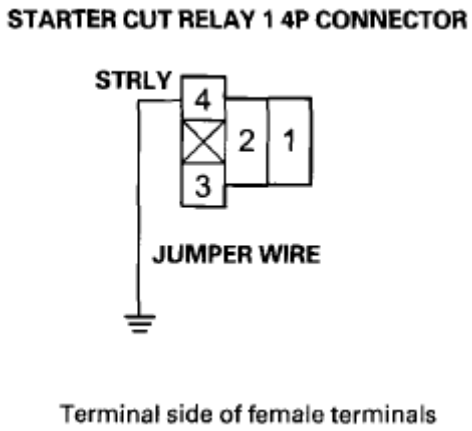


Fig. 99: Connecting Starter Cut Relay 4P Connector Terminal No. 4 To Body Ground With Jumper Wire
Courtesy of AMERICAN HONDA MOTOR CO., INC.

24. Check for continuity between ECM connector terminal A3 and body ground.

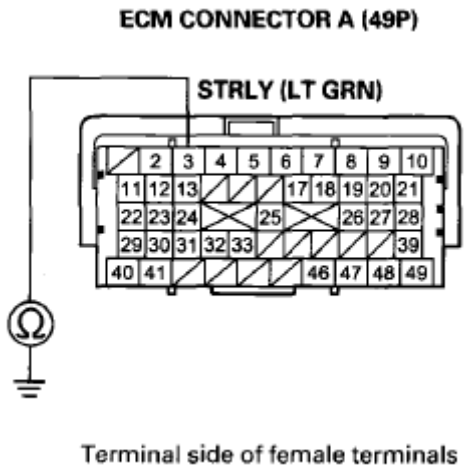


Fig. 100: Checking Continuity Between ECM Connector Terminal A3 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 30.

NO - Repair open in the wire between the ECM (A3) and starter cut relay 1, then go to step 25.

25. Reconnect all connectors.
26. Press the engine start/stop button to select the ON mode.
27. Reset the ECM with the HDS.
28. Do the ECM idle learn procedure (see **ECM/PCM IDLE LEARN PROCEDURE**).
29. Check for Pending or Confirmed DTCs with the HDS.

Is DTC P0615 indicated?

YES - Check for poor connections or loose terminals at starter cut relay 1, starter cut relay 2, the +B cut relay, and the ECM, then go to step 1.

NO - Troubleshooting is complete. If any other Pending or Confirmed DTCs are indicated, go to the indicated DTC's troubleshooting. •

30. Reconnect all connectors.
31. Update the **ECM** if it does not have the latest software (see **ECM/PCM Update**), or substitute a known-good ECM (see **SUBSTITUTING THE ECM/PCM**).
32. Check for Pending or Confirmed DTCs with the HDS.

Is DTC P0615 indicated?

YES - Check for poor connections or loose terminals at starter cut relay 1, starter cut relay 2, the +B cut relay, and the ECM. If the ECM was updated, substitute a known-good ECM (see **SUBSTITUTING THE ECM/PCM**), then recheck. If the ECM was substituted, go to step 1.

NO - If the ECM was updated, troubleshooting is complete. If the ECM was substituted, replace the original **ECM** (see **ECM/PCM Replacement**). If any other Pending or Confirmed DTCs are indicated, go to the indicated DTC's troubleshooting.

DTC P0615: STARTER CUT RELAY STRLD CIRCUIT MALFUNCTION (A/T)

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see GENERAL TROUBLESHOOTING INFORMATION).

1. Turn the ignition switch to ON (II), or press the engine start/stop button to the select the ON mode.
2. Check for Pending or Confirmed DTCs with the HDS.

Are DTC P16BD and P0615 indicated at the same time?

YES - Go to the troubleshooting for **DTC P16BD**.

NO - Go to step 3.

3. Clear the DTC with the HDS.
4. Turn the ignition switch to START (III), or press the engine start/stop button to select the START mode, for 1 second or more.
5. Check for Pending or Confirmed DTCs with the HDS.

Is DTC P0615 indicated?

YES - Go to step 6.

NO - Intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at starter cut relay 1, starter cut relay 2, and the PCM. •

6. Try to start engine.

   Does the engine start?

   YES - Go to step 7.

   NO - Go to step 17.

7. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
8. Remove the driver's dashboard undercover (see **DRIVER'S DASHBOARD UNDERCOVER REMOVAL/INSTALLATION**), then check the No. 8 STRLD (7.5 A) fuse in the driver's under-dash fuse/relay box.

   Is the fuse OK?

   YES - Go to step 9.

   NO - Replace the fuse, then go to step 32.

9. Jump the SCS line with the HDS.
10. Disconnect PCM connector A (49P).
11. Remove starter cut relay 1 (A) from the driver's under-dash fuse/relay box.

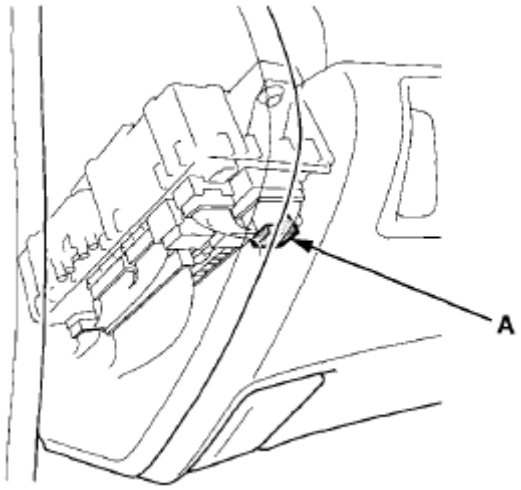


Fig. 101: Identifying Starter Cut Relay
Courtesy of AMERICAN HONDA MOTOR CO., INC.

12. Connect starter cut relay 1 4P connector terminal No. 1 to body ground with a jumper wire.

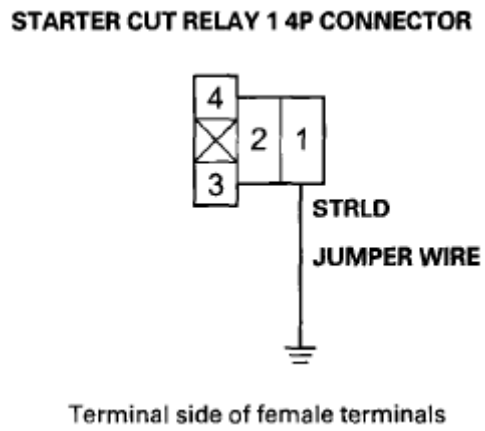


Fig. 102: Connecting Starter Cut Relay 4P Connector Terminal No. 1 To Body Ground With Jumper Wire
Courtesy of AMERICAN HONDA MOTOR CO., INC.

13. Check for continuity between PCM connector terminal A28 and body ground.

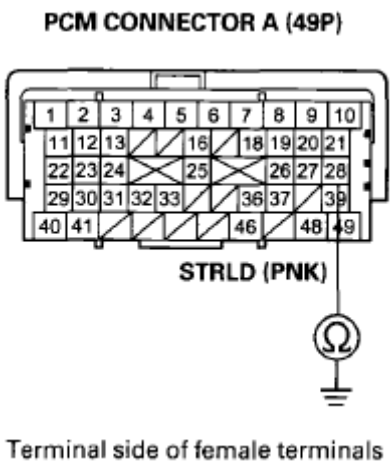


Fig. 103: Checking Continuity Between PCM Connector Terminal A28 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 36.

NO - Go to step 14.

14. Disconnect driver's under-dash fuse/relay box connector G(13P).
15. Connect driver's under-dash fuse/relay box connector G (13P) terminal No. 6 to body ground with a jumper wire.

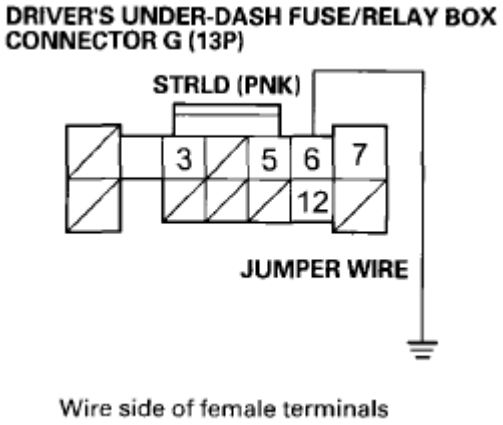


Fig. 104: Connecting Driver's Under-Dash Fuse/Relay Box Connector G (13P) To Body Ground With Jumper Wire
Courtesy of AMERICAN HONDA MOTOR CO., INC.

16. Check for continuity between PCM connector terminal A28 and body ground.

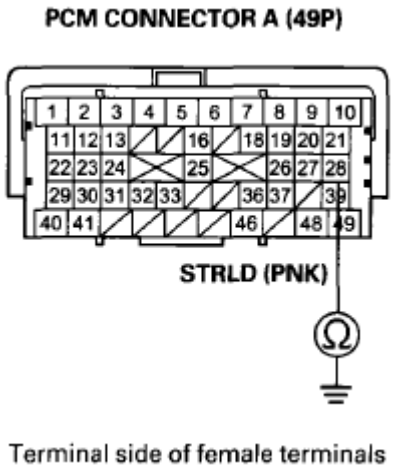


Fig. 105: Checking Continuity Between PCM Connector Terminal A28 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Replace the driver's under-dash fuse/relay box (see **DRIVER'S UNDER-DASH FUSE/RELAY BOX (MICU) REMOVAL AND INSTALLATION**), then go to step 31.

NO - Repair open in the wire between the PCM (A28) and the driver's under-dash fuse/relay box, then go to step 31.

17. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
18. Remove the driver's dashboard undercover (see **DRIVER'S DASHBOARD UNDERCOVER REMOVAL/INSTALLATION**), then remove starter cut relay 1 (A) from the driver's under-dash fuse/relay box.

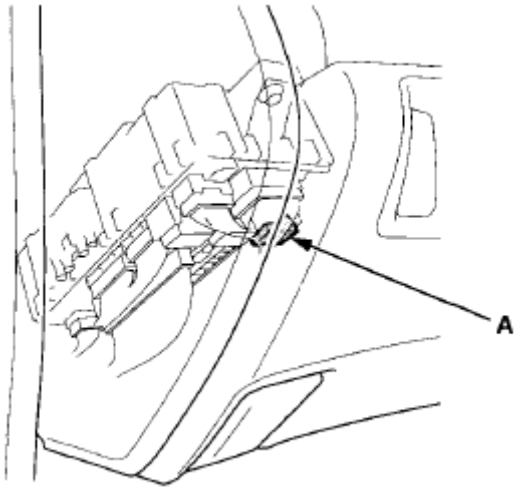


Fig. 106: Identifying Starter Cut Relay 1
Courtesy of AMERICAN HONDA MOTOR CO., INC.

19. Remove starter cut relay 2 (A) from the under-hood fuse/relay box.

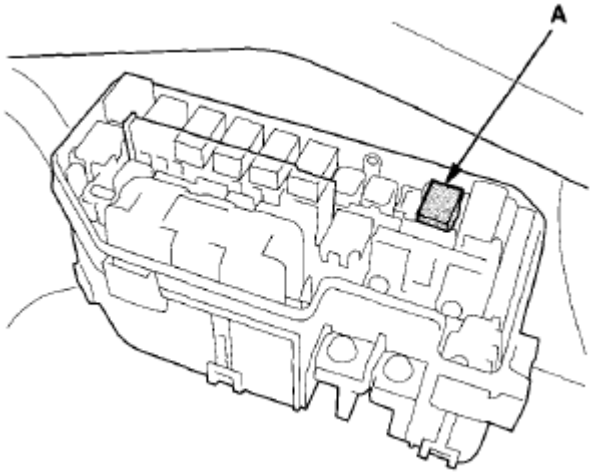


Fig. 107: Identifying Starter Cut Relay 2
Courtesy of AMERICAN HONDA MOTOR CO., INC.

20. Connect starter cut relay 1 4P connector terminal No. 4 to body ground with a jumper wire.

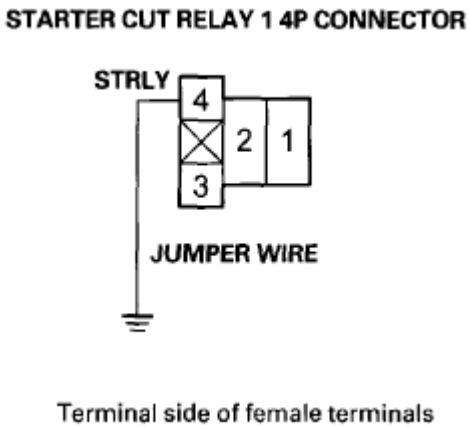


Fig. 108: Connecting Starter Cut Relay 1 4P Connector Terminal No. 4 To Body Ground With Jumper Wire
Courtesy of AMERICAN HONDA MOTOR CO., INC.

21. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
22. Check the STARTER RELAY CONTROL RETURN in the DATA LIST with the HDS while the ignition switch is in START (III) or when you press the engine start/stop button to select the START mode.

    Is OFF indicated?

    YES - Go to step 23.

    NO - Go to step 27.

23. Remove the jumper wire from the starter cut relay 1 4P connector.
24. Turn the ignition switch to LOCK (0).
25. Disconnect the transmission range switch 10P connector (see **TRANSMISSION RANGE SWITCH TEST**).
26. At the switch side, check for continuity between transmission range switch 10P connector terminals No. 2 and No. 6 with the shift lever in N, and then in P.

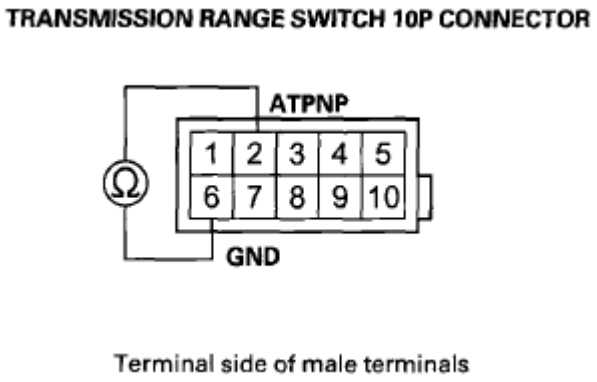


Fig. 109: Checking Continuity Between Transmission Range Switch 10P Connector Terminals No.

2 And No. 6
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity in each shift lever position?

YES - Repair open in the wire between the transmission range switch and starter cut relay 1, starter cut relay 2, or G101 (see **CONNECTOR TO FUSE/RELAY BOX INDEX**), then go to step 31.

NO - Replace the transmission range switch (see **TRANSMISSION RANGE SWITCH TEST**), then go to step 31.

27. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
28. Jump the SCS line with the HDS.
29. Disconnect PCM connector A (49P).
30. Check for continuity between PCM connector terminal A3 and body ground.

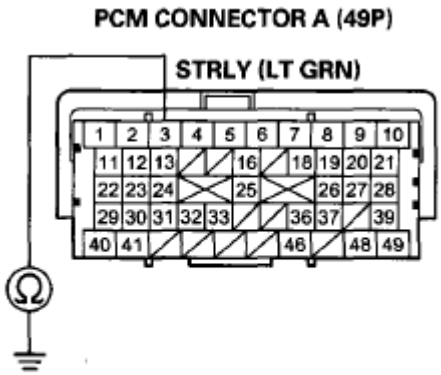


Fig. 110: Checking Continuity Between PCM Connector Terminal A3 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 36.

NO - Repair open in the wire between the PCM (A3) and the starter cut relay 1, then go to step 31.

31. Reconnect all connectors.
32. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
33. Reset the PCM with the HDS.
34. Do the PCM idle learn procedure (see **ECM/PCM IDLE LEARN PROCEDURE**).
35. Check for Pending or Confirmed DTCs with the HDS.

Is DTC P0615 indicated?

YES - Check for poor connections or loose terminals at starter cut relay 1, starter cut relay 2, and the PCM, then go to step 1.

NO - Troubleshooting is complete. If any other Pending or Confirmed DTCs are indicated, go to the indicated DTC's troubleshooting. •

36. Reconnect all connectors.
37. Update the **PCM** if it does not have the latest software (see **ECM/PCM Update**), or substitute a known-good PCM (see **SUBSTITUTING THE ECM/PCM**).
38. Check for Pending or Confirmed DTCs with the HDS.

Is DTC P0615 indicated?

YES - Check for poor connections or loose terminals at starter cut relay 1, starter cut relay 2, and the PCM. If the PCM was updated, substitute a known-good PCM (see **SUBSTITUTING THE ECM/PCM**), then recheck. If the PCM was substituted, go to step 1.

NO - If the PCM was updated, troubleshooting is complete. If the PCM was substituted, replace the original **PCM** (see **ECM/PCM Replacement**), If any other Pending or Confirmed DTCs are indicated, go to the indicated DTC's troubleshooting.

DTC P062F: ECM/PCM INTERNAL CONTROL MODULE KEEP ALIVE MEMORY (KAM) ERROR

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see GENERAL TROUBLESHOOTING INFORMATION).

1. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
2. Clear the DTC with the HDS.
3. Check for Pending or Confirmed DTCs with the HDS.

Are any Pending or Confirmed DTCs indicated?

YES - Go to step 4.

NO - Intermittent failure, the system is OK at this time. •

4. Update the **ECM/PCM** if it does not have the latest software (see **ECM/PCM Update**), or substitute a known-good ECM/PCM (see **SUBSTITUTING THE ECM/PCM**).
5. Check for Pending or Confirmed DTCs with the HDS.

Is DTC P062F indicated?

YES - If the ECM/PCM was updated, substitute a known-good ECM/PCM (see **SUBSTITUTING THE ECM/PCM**), then recheck. If the ECM/PCM was substituted, go to step 1.

NO - If the ECM/PCM was updated, troubleshooting is complete. If the ECM/PCM was substituted, replace the original **ECM/PCM** (see **ECM/PCM Replacement**). If any other Pending or Confirmed DTCs are indicated, go to the indicated DTC's troubleshooting. •

DTC P0630: VIN NOT PROGRAMMED OR MISMATCH

NOTE:

- **Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see GENERAL TROUBLESHOOTING INFORMATION).**
- **This DTC is stored only when the ECM/PCM does not have the VIN information of the vehicle. Use the HDS to input the missing VIN information.**

1. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
2. Check the VIN with the HDS.

   Does the HDS show the vehicle's VIN?

   YES - Go to step 5.

   NO - Go to step 3.

3. Input the VIN to the ECM/PCM with the HDS.

   Does the screen show COMPLETE?

   YES - Go to step 5.

   NO - Go to step 4.

4. Check for DTCs with the HDS.

   Is DTC P062F indicated?

   YES - Go to the **DTC P062F** troubleshooting. •

   NO - Go to step 9.

5. Clear the DTC with the HDS.
6. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
7. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode, and wait 5 seconds.
8. Check for Pending or Confirmed DTCs with the HDS.

   Is DTC P0630 indicated?

YES - Go to step 9.

NO - Intermittent failure, the system is OK at this time. If any other Pending or Confirmed DTCs are indicated, go to the indicated DTC's troubleshooting. •

9. Update the **ECM/PCM** if it does not have the latest software (see **ECM/PCM Update**), or substitute a known-good ECM/PCM (see **SUBSTITUTING THE ECM/PCM**).
10. Check for Pending or Confirmed DTCs with the HDS.

Is DTC P0630 indicated?

YES - If the ECM/PCM was updated, substitute a known-good ECM/PCM (see **SUBSTITUTING THE ECM/PCM**), then recheck. If the ECM/PCM was substituted, go to step 1.

NO - If the ECM/PCM was updated, troubleshooting is complete. If the ECM/PCM was substituted, replace the original **ECM/PCM** (see **ECM/PCM Replacement**). If any other Pending or Confirmed DTCs are indicated, go to the indicated DTC's troubleshooting. •

DTC P0641: SENSOR REFERENCE VOLTAGE A MALFUNCTION

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see GENERAL TROUBLESHOOTING INFORMATION).

1. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
2. Clear the DTC with the HDS.
3. Check for Pending or Confirmed DTCs with the HDS.

Is DTC P0641 indicated?

YES - Go to step 4.

NO - Intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at the ECM/PCM and these parts: •

- Throttle body
- EGR valve
- Input shaft (mainshaft) speed sensor
- APP sensor

4. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
5. Disconnect the connectors of these parts:
   - Throttle body
   - EGR valve
   - Input shaft (mainshaft) speed sensor

- APP sensor

6. Turn the ignition switch ON (II), or press the engine start/stop button to select the ON mode.
7. Clear the DTC with the HDS.
8. Check for Pending or Confirmed DTCs with the HDS.

   Is DTC P0641 indicated?

   YES - Go to step 10.

   NO - Go to step 9.

9. Check for Pending or Confirmed DTCs with the HDS while reconnecting these parts, one at a time:
   - Throttle body
   - EGR valve
   - Input shaft (mainshaft) speed sensor
   - APP sensor

   Is DTC P0641 indicated?

   YES - Replace the part that caused the DTC when it was reconnected, then go to step 14.

   NO - Check for poor connections or loose terminals at the ECM/PCM and the following parts, then go to step 1.

   - Throttle body
   - EGR valve
   - Input shaft (mainshaft) speed sensor
   - APP sensor

10. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
11. Jump the SCS line with the HDS.
12. Disconnect ECM/PCM connectors A (49P), B (49P), and C (49P).
13. Check for continuity between body ground and ECM/PCM connector terminals A24, B18, and C12 individually.

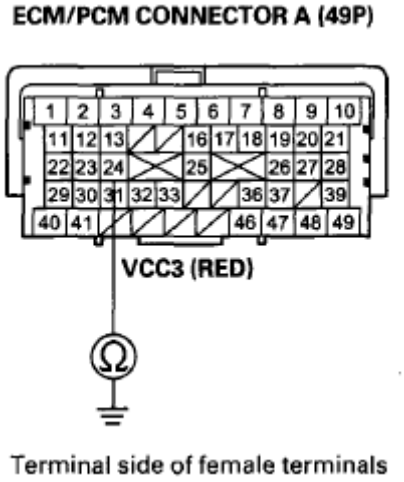


Fig. 111: Checking Continuity Between Body Ground And ECM/PCM Connector Terminals A24
Courtesy of AMERICAN HONDA MOTOR CO., INC.

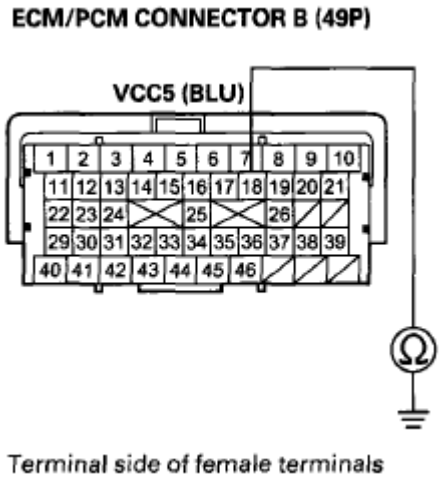


Fig. 112: Checking Continuity Between Body Ground And ECM/PCM Connector Terminals B18
Courtesy of AMERICAN HONDA MOTOR CO., INC.

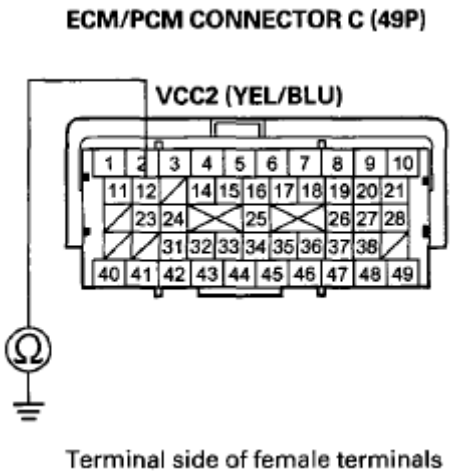


Fig. 113: Checking Continuity Between Body Ground And ECM/PCM Connector Terminals C12
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair short in the wire between the ECM/PCM (A24, B18, or C12) and each part that was disconnected in step 5, then go to step 14.

NO - Go to step 20.

14. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
15. Reconnect all connectors.
16. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
17. Reset the ECM/PCM with the HDS.
18. Do the ECM/PCM idle learn procedure (see **ECM/PCM IDLE LEARN PROCEDURE**).
19. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P0641 indicated?

    YES - Check for poor connections or loose terminals at the ECM/PCM and the following parts, then go to step 1.

    - Throttle body
    - EGR valve
    - Input shaft (mainshaft) speed sensor
    - APP sensor

    NO - Troubleshooting is complete. If any other Pending or Confirmed DTCs are indicated, go to the indicated DTC's troubleshooting. •

20. Reconnect all connectors.

21. Update the **ECM/PCM** if it does not have the latest software (see **ECM/PCM Update**), or substitute a known-good ECM/PCM (see **SUBSTITUTING THE ECM/PCM**).
22. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P0641 indicated?

    YES - If the ECM/PCM was updated, substitute a known-good ECM/PCM (see **SUBSTITUTING THE ECM/PCM**), then recheck. If the ECM/PCM was substituted, check for poor connections or loose terminals at the ECM/PCM and the following parts, then go to step 1.

    - Throttle body
    - EGR valve
    - Input shaft (mainshaft) speed sensor
    - APP sensor

    NO - If the ECM/PCM was updated, troubleshooting is complete. If the ECM/PCM was substituted, replace the original **ECM/PCM** (see **ECM/PCM Replacement**). If any other Pending or Confirmed DTCs are indicated, go to the indicated DTC's troubleshooting. •

DTC P0651: SENSOR REFERENCE VOLTAGE B MALFUNCTION

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see GENERAL TROUBLESHOOTING INFORMATION).

1. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
2. Clear the DTC with the HDS.
3. Check for Pending or Confirmed DTCs with the HDS.

   Is DTC P0651 indicated?

   YES - Go to step 4.

   NO - Intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at the ECM/PCM and these parts: •

   - MAP sensor
   - Output shaft (countershaft) speed sensor
   - IMT actuator
   - APP sensor
   - FTP sensor
4. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
5. Disconnect the connectors of these parts:

- MAP sensor
- Output shaft (countershaft) speed sensor
- IMT actuator
- APP sensor
- FTP sensor

6. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
7. Clear the DTC with the HDS.
8. Check for Pending or Confirmed DTCs with the HDS.

   Is DTC P0651 indicated?

   YES - Go to step 10.

   NO - Go to step 9.

9. Check for Pending or Confirmed DTCs with the HDS while reconnecting these parts, one at a time:
   - MAP sensor
   - Output shaft (countershaft) speed sensor
   - IMT actuator
   - APP sensor
   - FTP sensor 4

   Is DTC P0651 indicated?

   YES - Replace the part that caused the DTC when it was reconnected, then go to step 14.

   NO - Check for poor connections or loose terminals at the ECM/PCM and the following parts, then go to step 1.

   - MAP sensor
   - Output shaft (countershaft) speed sensor
   - IMT actuator
   - APP sensor
   - FTP sensor

10. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
11. Jump the SCS line with the HDS.
12. Disconnect ECM/PCM connectors A (49P), B (49P), and C (49P).
13. Check for continuity between body ground and ECM/PCM connector terminals A25, B36, and C11 individually.

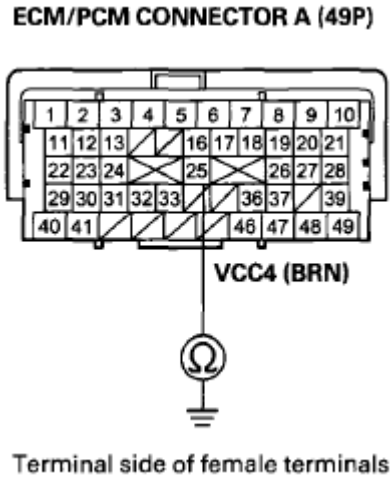


Fig. 114: Checking For Continuity Between Body Ground And ECM/PCM Connector Terminals A25
Courtesy of AMERICAN HONDA MOTOR CO., INC.

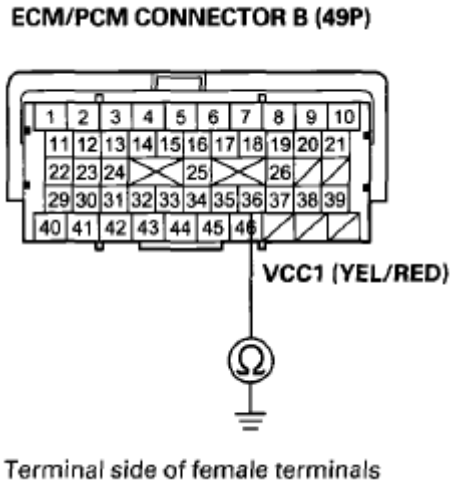


Fig. 115: Checking For Continuity Between Body Ground And ECM/PCM Connector Terminals B36
Courtesy of AMERICAN HONDA MOTOR CO., INC.

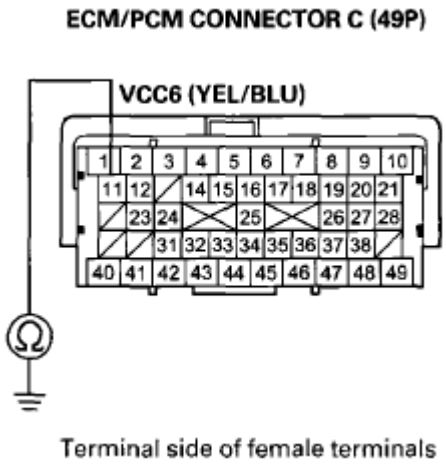


Fig. 116: Checking For Continuity Between Body Ground And ECM/PCM Connector Terminals C11
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair short in the wire between the ECM/PCM (A25, B36, or C11) and each part that was disconnected in step 5, then go to step 14.

NO - Go to step 20.

14. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
15. Reconnect all connectors.
16. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
17. Reset the ECM/PCM with the HDS.
18. Do the ECM/PCM idle learn procedure (see **ECM/PCM IDLE LEARN PROCEDURE**).
19. Check for Pending or Confirmed DTCs with the HDS.

Is DTC P0651 indicated?

YES - Check for poor connections or loose terminals at the ECM/PCM and the following parts, then go to step 1.

- MAP sensor
- Output shaft (countershaft) speed sensor
- IMT actuator
- APP sensor
- FTP sensor

NO - Troubleshooting is complete. If any other Pending or Confirmed DTCs are indicated, go to the indicated DTC's troubleshooting. •

20. Reconnect all connectors.
21. Update the **ECM/PCM** if it does not have the latest software (see **ECM/PCM Update**), or substitute a known-good ECM/PCM (see **SUBSTITUTING THE ECM/PCM**).
22. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P0651 indicated?

    YES - If the ECM/PCM was updated, substitute a known-good ECM/PCM (see **SUBSTITUTING THE ECM/PCM**), then recheck. If the ECM/PCM was substituted, check for poor connections or loose terminals at the ECM/PCM and the following parts, then go to step 1.

    - MAP sensor
    - Output shaft (countershaft) speed sensor
    - IMT actuator
    - APP sensor
    - FTP sensor

    NO - If the ECM/PCM was updated, troubleshooting is complete. If the ECM/PCM was substituted, replace the original **ECM/PCM** (see **ECM/PCM Replacement**). If any other Pending or Confirmed DTCs are indicated, go to the indicated DTC's troubleshooting. •

DTC P0685: ECM/PCM POWER CONTROL CIRCUIT/INTERNAL CIRCUIT MALFUNCTION

NOTE:

- **Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see GENERAL TROUBLESHOOTING INFORMATION).**
- **If the problem doesn't return after you clear the DTC, or if this DTC is stored intermittently, check for loose terminals at the IGP line connectors before replacing the ECM/PCM.**

1. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
2. Clear the DTC with the HDS.
3. Start the engine, and let it idle for 30 seconds.
4. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
5. Start the engine, and let it idle for 30 seconds.
6. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
7. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
8. Check for Pending or Confirmed DTCs with the HDS.

   Is DTC P0685 indicated?

   YES - Go to step 9.

NO - Intermittent failure, the system is OK at this time. •

9. Update the **ECM/PCM** if it does not have the latest software (see **ECM/PCM Update**), or substitute a known-good ECM/PCM (see **SUBSTITUTING THE ECM/PCM**).
10. Start the engine, and let it idle for 30 seconds.
11. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
12. Start the engine, and let it idle for 30 seconds.
13. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
14. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
15. Check for Pending or Confirmed DTCs with the HDS.

Is DTC P0685 indicated?

YES - If the ECM/PCM was updated, substitute a known-good ECM/PCM (see **SUBSTITUTING THE ECM/PCM**), then go to step 10. If the ECM/PCM was substituted, go to step 1.

NO - If the ECM/PCM was updated, troubleshooting is complete. If the ECM/PCM was substituted, replace the original **ECM/PCM** (see **ECM/PCM Replacement**). If any other Pending or Confirmed DTCs are indicated, go to the indicated DTC's troubleshooting. •

DTC P0715: INPUT SHAFT (MAINSHAFT) SPEED SENSOR CIRCUIT MALFUNCTION

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see GENERAL TROUBLESHOOTING INFORMATION).

1. Start the engine. Hold the engine speed at 3, 000 RPM without load (in neutral) until the radiator fan comes on, then let it idle.
2. Test-drive several minutes.
3. Check the M SHAFT SPD in the DATA LIST with the HDS.

Is any vehicle speed indicated?

YES - Intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at the input shaft (mainshaft) speed sensor and the ECM. •

NO - Go to step 4.

4. Press the engine start/stop button to select the OFF mode.
5. Disconnect the input shaft (mainshaft) speed sensor 3P connector.
6. Press the engine start/stop button to select the ON mode.
7. Measure the voltage between input shaft (mainshaft) speed sensor 3P connector terminal No. 1 and body ground.

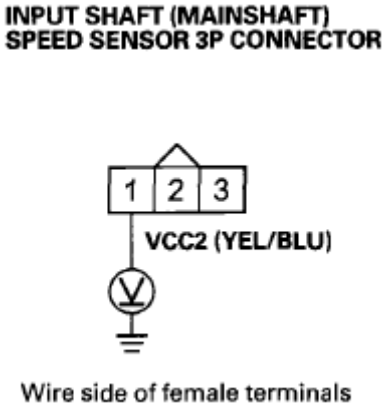


Fig. 117: Measuring Voltage Between Input Shaft Speed Sensor 3P Connector Terminal No. 1 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there about 5 V?

YES - Go to step 8.

NO - Repair open in the wire between the ECM (C12) and the input shaft (mainshaft) speed sensor, then go to step 18.

8. Measure the voltage between input shaft (mainshaft) speed sensor 3P connector terminal No. 2 and body ground.

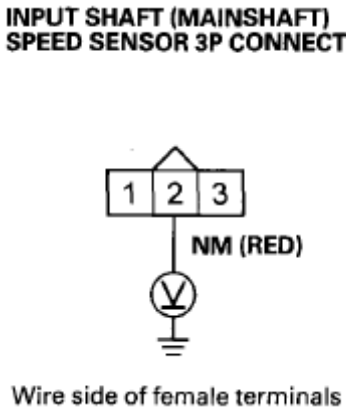


Fig. 118: Measuring Voltage Between Input Shaft Speed Sensor 3P Connector Terminal No. 2 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there about 5 V?

YES - Go to step 9.

NO - Go to step 10.

9. Measure the voltage between input shaft (mainshaft) speed sensor 3P connector terminals No. 1 and No. 3.

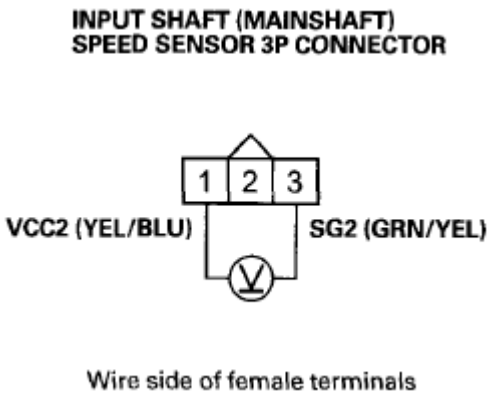


Fig. 119: Measuring Voltage Between Input Shaft Speed Sensor 3P Connector Terminals No. 1 And No. 3
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there about 5 V?

YES - Go to step 16.

NO - Repair open in the wire between the ECM (C16) and the input shaft (mainshaft) speed sensor, then go to step 18.

10. Press the engine start/stop button to select the OFF mode.
11. Jump the SCS line with the HDS.
12. Disconnect ECM connector B (49P).
13. Check for continuity between ECM connector terminal B37 and body ground.

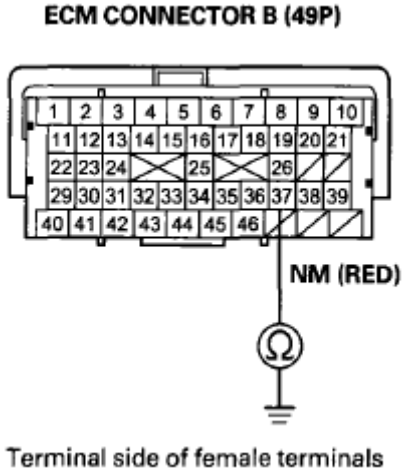


Fig. 120: Checking Continuity Between ECM Connector Terminal B37 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair short in the wire between the ECM (B37) and the input shaft (mainshaft) speed sensor, then go to step 18.

NO - Go to step 14.

14. Connect input shaft (mainshaft) speed sensor 3P connector terminal No. 2 to body ground with a jumper wire.

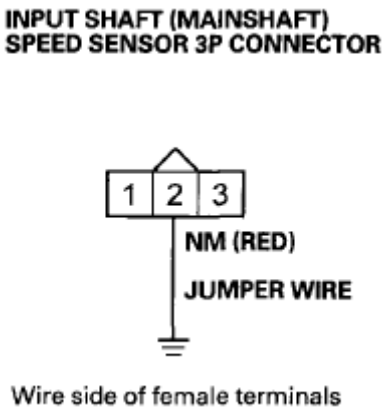


Fig. 121: Connecting Input Shaft Speed Sensor 3P Connector Terminal No. 2 To Body Ground With Jumper Wire
Courtesy of AMERICAN HONDA MOTOR CO., INC.

15. Check for continuity between ECM connector terminal B37 and body ground.

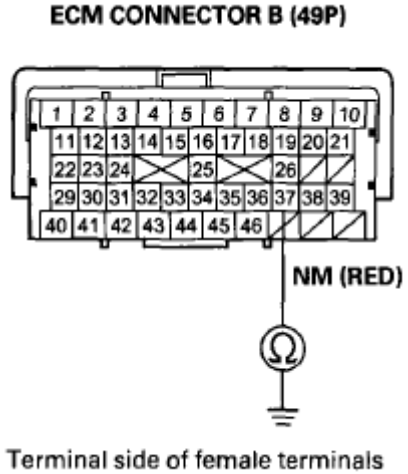


Fig. 122: Checking Continuity Between ECM Connector Terminal B37 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 25.

NO - Repair open in the wire between the ECM (B37) and the input shaft (mainshaft) speed sensor, then go to step 18.

16. Press the engine start/stop button to select the OFF mode.
17. Replace the input shaft (mainshaft) speed sensor (see **Input Shaft (Mainshaft) Speed Sensor Replacement**).
18. Reconnect all connectors.
19. Press the engine start/stop button to select the ON mode.
20. Reset the ECM with the HDS.
21. Do the ECM idle learn procedure (see **ECM/PCM IDLE LEARN PROCEDURE**).
22. Test-drive under these conditions:
    - Engine coolant temperature (ECT SENSOR 1) above 176°F (80°C)
    - Transmission in 5th
    - Engine speed between 2, 000- 3, 000 RPM
    - Drive for several minutes, then decelerate (with the throttle fully closed) for 8 seconds
23. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P0715 indicated?

    YES - Check for poor connections or loose terminals at the input shaft (mainshaft) speed sensor and the ECM, then go to step 1.

    NO - Go to step 24.

24. Monitor the OBD STATUS for DTC P0715 in the DTCs MENU with the HDS.

    Does the screen indicate PASSED?

    YES - Troubleshooting is complete. If any other Pending or Confirmed DTCs were indicated in step 23, go to the indicated DTC's troubleshooting. •

    NO - If the screen indicates FAILED, check for poor connections or loose terminals at the input shaft (mainshaft) speed sensor and the ECM, then go to step 1. If the screen indicates NOT COMPLETED, go to step 22.

25. Reconnect all connectors.
26. Update the **ECM** if does not have the latest software (see **ECM/PCM Update**), or substitute a known-good ECM (see **SUBSTITUTING THE ECM/PCM**).
27. Test-drive under these conditions:
    - Engine coolant temperature (ECT SENSOR 1) above 176°F (80°C)
    - Transmission in 5th

- Engine speed between 2, 000- 3, 000 RPM
- Drive for several minutes, then decelerate (with the throttle fully closed) for 8 seconds

28. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P0715 indicated?

    YES - Check for poor connections or loose terminals at the input shaft (mainshaft) speed sensor and the ECM. If the ECM was updated, substitute a known-good ECM (see **SUBSTITUTING THE ECM/PCM**), then go to step 27. If the ECM was substituted, go to step 1.

    NO - Go to step 29.

29. Monitor the OBD STATUS for DTC P0715 in the DTCs MENU with the HDS.

    Does the screen indicate PASSED?

    YES - If the ECM was updated, troubleshooting is complete. If the ECM was substituted, replace the original **ECM** (see **ECM/PCM Replacement**). If any other Pending or Confirmed DTCs were indicated in step 28, go to the indicated DTC's troubleshooting. •

    NO - If the screen indicates FAILED, check for poor connections or loose terminals at the input shaft (mainshaft) speed sensor and the ECM. If the ECM was updated, substitute a known-good ECM (see **SUBSTITUTING THE ECM/PCM**), then go to step 27. If the ECM was substituted, go to step 1. If the screen indicates NOT COMPLETED, go to step 27.

DTC P0720: OUTPUT SHAFT (COUNTERSHAFT) SPEED SENSOR CIRCUIT MALFUNCTION

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see GENERAL TROUBLESHOOTING INFORMATION).

1. Start the engine. Hold the engine speed at 3, 000 RPM without load (in neutral) until the radiator fan comes on, then let it idle.
2. Test-drive several minutes.
3. Check the C SHAFT SPD in the DATA LIST with the HDS.

    Is any vehicle speed indicated?

    YES - Intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at the output shaft (countershaft) speed sensor and the ECM. •

    NO - Go to step 4.

4. Press the engine start/step button to select the OFF mode.
5. Disconnect the output shaft (countershaft) speed sensor 3P connector.

6. Press the engine start/stop button to select the ON mode.
7. Measure the voltage between output shaft (countershaft) speed sensor 3P connector terminal No. 1 and body ground.

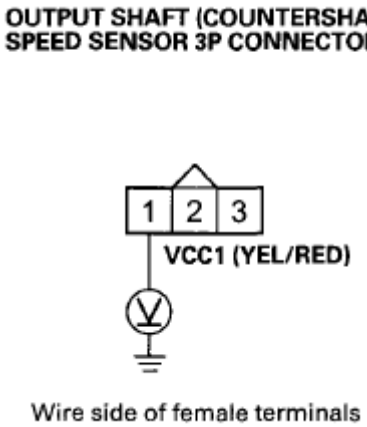


Fig. 123: Measuring Voltage Between Output Shaft Speed Sensor 3P Connector Terminal No. 1 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there about 5 V?

YES - Go to step 8.

NO - Repair open in the wire between the ECM (B36) and the output shaft (countershaft) speed sensor, then go to step 18.

8. Measure the voltage between output shaft (countershaft) speed sensor 3P connector terminal No. 2 and body ground.

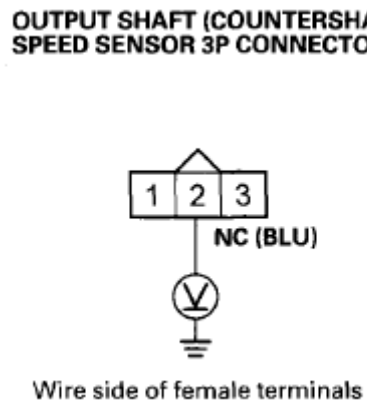


Fig. 124: Measuring Voltage Between Output Shaft Speed Sensor 3P Connector Terminal No. 2 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there about 5 V?

YES - Go to step 9.

NO - Go to step 10.

9. Measure the voltage between output shaft (countershaft) speed sensor 3P connector terminals No. 1 and No. 3.

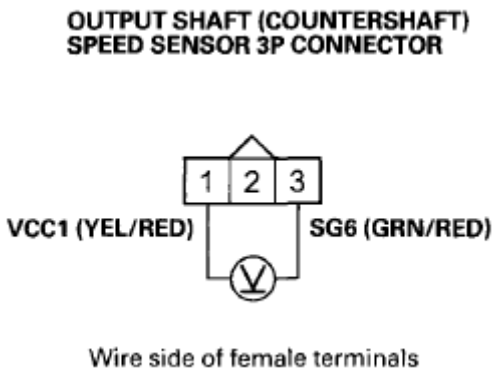


Fig. 125: Measuring Voltage Between Output Shaft Speed Sensor 3P Connector Terminals No. 1 And No. 3
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there about 5 V?

YES - Go to step 16.

NO - Repair open in the wire between the ECM (C15) and the output shaft (countershaft) speed sensor, then go to step 18.

10. Press the engine start/stop button to select the OFF mode.
11. Jump the SCS line with the HDS.
12. Disconnect ECM connector B (49P).
13. Check for continuity between ECM connector terminal B38 and body ground.

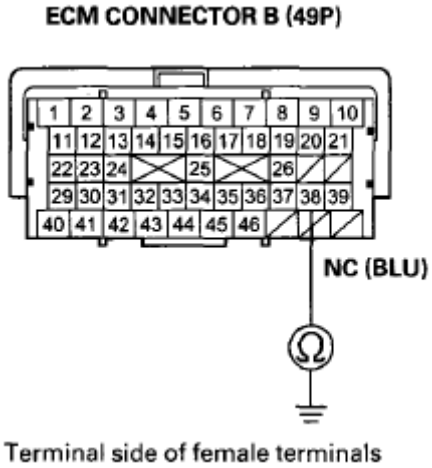


Fig. 126: Checking Continuity Between ECM Connector Terminal B38 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair short in the wire between the ECM (B38) and the output shaft (countershaft) speed sensor, then go to step 18.

NO - Go to step 14.

14. Connect output shaft (countershaft) speed sensor 3P connector terminal No. 2 to body ground with a jumper wire.

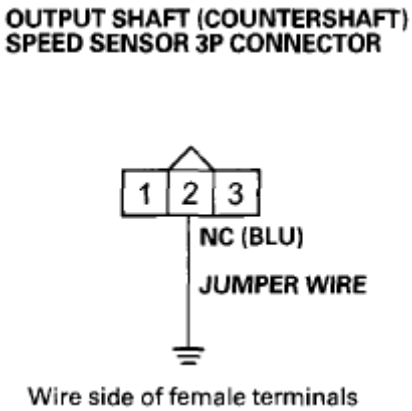


Fig. 127: Connecting Output Shaft Speed Sensor 3P Connector Terminal No. 2 To Body Ground With Jumper Wire
Courtesy of AMERICAN HONDA MOTOR CO., INC.

15. Check for continuity between ECM connector terminal B38 and body ground.

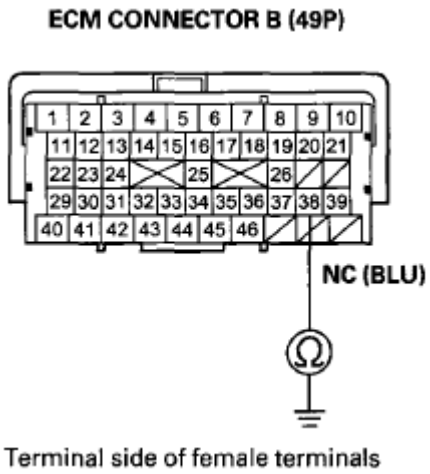


Fig. 128: Checking Continuity Between ECM Connector Terminal B38 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 25.

NO - Repair open in the wire between the ECM (B38) and the output shaft (countershaft) speed sensor, then go to step 18.

16. Press the engine start/stop button to select the OFF mode.
17. Replace the **output shaft (countershaft) speed sensor**.
18. Reconnect all connectors.
19. Press the engine start/stop button to select the ON mode.
20. Reset the ECM with the HDS.
21. Do the ECM idle learn procedure (see **ECM/PCM IDLE LEARN PROCEDURE**).
22. Test-drive under these conditions:
    - Engine coolant temperature (ECT SENSOR 1) above 176°F (80°C)
    - Transmission in 5th
    - Engine speed between 2, 000- 3, 000 RPM
    - Drive for several minutes, then decelerate (with the throttle fully closed) for 8 seconds
23. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P0720 indicated?

    YES - Check for poor connections or loose terminals at the output shaft (countershaft) speed sensor and the ECM, then go to step 1.

    NO - Go to step 24.

24. Monitor the OBD STATUS for DTC P0720 in the DTCs MENU with the HDS.

Does the screen indicate PASSED?

YES - Troubleshooting is complete. If any other Pending or Confirmed DTCs were indicated in step 23, go to the indicated DTC's troubleshooting. •

NO - If the screen indicates FAILED, check for poor connections or loose terminals at the output shaft (countershaft) speed sensor and the ECM, then go to step 1. If the screen indicates NOT COMPLETED, go to step 22.

25. Reconnect the all connectors.
26. Update the **ECM** if does not have the latest software (see **ECM/PCM Update**), or substitute a known-good ECM (see **SUBSTITUTING THE ECM/PCM**).
27. Test-drive under these conditions:
    - Engine coolant temperature (ECT SENSOR 1) above 176°F (80°C)
    - Transmission in 5th
    - Engine speed between 2, 000- 3, 000 RPM
    - Drive for several minutes, then decelerate (with the throttle fully closed) for 8 seconds
28. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P0720 indicated?

    YES - Check for poor connections or loose terminals at the output shaft (countershaft) speed sensor and the ECM. If the ECM was updated, substitute a known-good ECM (see **SUBSTITUTING THE ECM/PCM**), then go to step 27. If the ECM was substituted, go to step 1.

    NO - Go to step 29.

29. Monitor the OBD STATUS for DTC P0720 in the DTCs MENU with the HDS.

    Does the screen indicate PASSED?

    YES - If the ECM was updated, troubleshooting is complete. If the ECM was substituted, replace the original **ECM** (see **ECM/PCM Replacement**). If any other Pending or Confirmed DTCs were indicated in step 28, go to the indicated DTC's troubleshooting. •

    NO - If the screen indicates FAILED, check for poor connections or loose terminals at the output shaft (countershaft) speed sensor and the ECM. If the ECM was updated, substitute a known-good ECM (see **SUBSTITUTING THE ECM/PCM**), then go to step 27. If the ECM was substituted, go to step 1. If the screen indicates NOT COMPLETED, go to step 27.

DTC P0831: CLUTCH PEDAL POSITION SWITCH A CIRCUIT HIGH VOLTAGE

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see GENERAL TROUBLESHOOTING INFORMATION).

1. Press the engine start/stop button to select the ON mode.
2. Clear the DTC with the HDS.
3. Check the CLUTCH PEDAL POSITION SWITCH A in the DATA LIST with the HDS.

   Is CLOSE indicated?

   YES - Go to step 4.

   NO - Intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at clutch pedal position switch A and the ECM, and check the installation of clutch pedal position switch A.
   •

4. Check clutch pedal position switch A.

   Is it damaged or loose?

   YES - Repair or replace clutch pedal position switch A, then go to step 11.

   NO - Go to step 5.

5. Disconnect the clutch pedal position switch A 2P connector.
6. Check the CLUTCH PEDAL POSITION SWITCH A in the DATA LIST with the HDS.

   Is OPEN indicated?

   YES - Replace clutch pedal position switch A (see **CLUTCH PEDAL POSITION SWITCH A TEST**), then go to step 11.

   NO - Go to step 7.

7. Press the engine start/stop button to select the OFF mode.
8. Jump the SCS line with the HDS.
9. Disconnect ECM connector A (49P).
10. Check for continuity between the clutch pedal position switch A 2P connector terminal No. 1 and body ground.

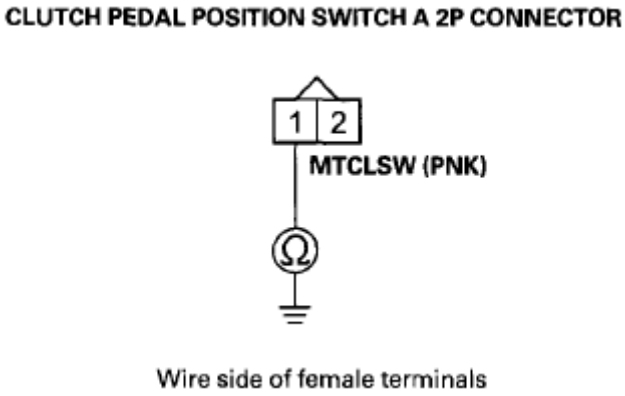


Fig. 129: Checking Continuity Between Clutch Pedal Position Switch A 2P Connector And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair short in the wire between clutch pedal position switch A and the ECM (A17), then go to step 11.

NO - Go to step 16.

11. Reconnect all connectors.
12. Press the engine start/stop button to select the ON mode.
13. Reset the ECM with the HDS.
14. Do the ECM idle learn procedure (see **ECM/PCM IDLE LEARN PROCEDURE**).
15. Check the CLUTCH PEDAL POSITION SWITCH A in the DATA LIST with the HDS.

Is CLOSE indicated?

YES - Check for poor connections or loose terminals at clutch pedal position switch A and the ECM, then go to step 1.

NO - Troubleshooting is complete. If any other Pending or Confirmed DTCs are indicated, go to the indicated DTC's troubleshooting. •

16. Reconnect all connectors.
17. Update the **ECM** if it does not have the latest software (see **ECM/PCM Update**), or substitute a known-good ECM (see **SUBSTITUTING THE ECM/PCM**).
18. Check the CLUTCH PEDAL POSITION SWITCH A in the DATA LIST with the HDS.

Is CLOSE indicated?

YES - Check for poor connections or loose terminals at clutch pedal position switch A and the ECM. If the ECM was updated, substitute a known-good ECM (see **SUBSTITUTING THE ECM/PCM**), then

recheck. If the ECM was substituted, go to step 1.

NO - If the ECM was updated, troubleshooting is complete. If the ECM was substituted, replace the original **ECM** (see **ECM/PCM Replacement**). If any other Pending or Confirmed DTCs are indicated, go to the indicated DTC's troubleshooting. •

DTC P0835: CLUTCH PEDAL POSITION SWITCH B CIRCUIT LOW VOLTAGE

NOTE: Before you troubleshoot, record all freeze data and any on-board snap shot, and review the general troubleshooting information (see GENERAL TROUBLESHOOTING INFORMATION).

1. Press the engine start/stop button to select the ON mode.
2. Clear the DTC with the HDS.
3. Check the CLUTCH PEDAL POSITION SWITCH B in the DATA LIST with the HDS.

   Is OPEN indicated?

   YES - Go to step 4.

   NO - Intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at clutch pedal position switch B and the ECM, and check the installation of the clutch pedal position switch B.

4. Check clutch pedal position switch B.

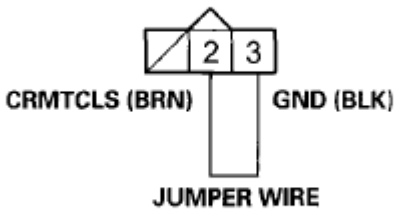
   Is it damaged or loose?

   YES - Repair or replace clutch pedal position switch B, then go to step 14.

   NO - Go to step 5.

5. Disconnect the clutch pedal position switch B 3P connector.
6. Connect the clutch pedal position switch B 3P connector terminal No. 2 and No. 3 with a jumper wire.

CLUTCH PEDAL POSITION SWITCH B 3P CONNECTOR



Wire side of female terminals

Fig. 130: Connecting Clutch Pedal Position Switch B 3P Connector Terminal No. 2 And No. 3 With Jumper Wire
Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Check the CLUTCH PEDAL POSITION SWITCH B in the DATA LIST with the HDS.

   Is OPEN indicated?

   YES - Go to step 8.

   NO - Replace clutch pedal position switch B (see **CLUTCH PEDAL POSITION SWITCH B TEST**), then go to step 14.

8. Connect the clutch pedal position switch B 3P connector terminal No. 2 to body ground with a jumper wire.

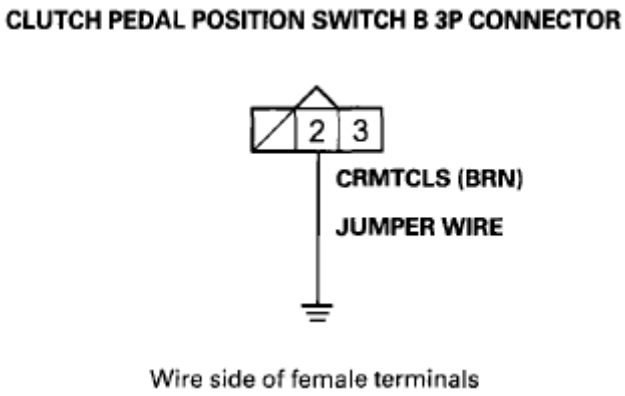


Fig. 131: Connecting Clutch Pedal Position Switch B 3P Connector Terminal No. 2 To Body Ground With Jumper Wire
Courtesy of AMERICAN HONDA MOTOR CO., INC.

9. Check the CLUTCH PEDAL POSITION SWITCH B in the DATA LIST with the HDS.

   Is OPEN indicated?

   YES - Go to step 10.

   NO - Repair open in the wire between clutch pedal position switch B and the G301 (see **CONNECTOR TO FUSE/RELAY BOX INDEX**), then go to step 14.

10. Press the engine start/stop button to select the OFF mode.
11. Jump the SCS line with the HDS.
12. Disconnect ECM connector A (49P).
13. Check for continuity between ECM connector terminal A47 and body ground.

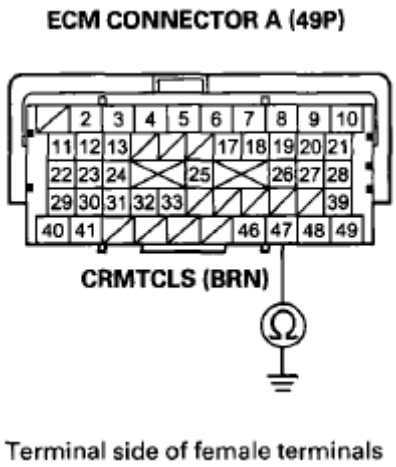


Fig. 132: Checking Continuity Between ECM Connector Terminal A47 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 19.

NO - Repair open in the wire between clutch pedal position switch B and the ECM (A47), then go to step 14.

14. Reconnect all connectors.
15. Press the engine start/stop button to select the ON mode.
16. Reset the ECM with the HDS.
17. Do the ECM idle learn procedure (see **ECM/PCM IDLE LEARN PROCEDURE**).
18. Check the CLUTCH PEDAL POSITION SWITCH B in the DATA LIST with the HDS.

    Is OPEN indicated?

    YES - Check for poor connections or loose terminals at clutch pedal position switch B and the ECM, then go to step 1.

    NO - Troubleshooting is complete. If any other Pending or Confirmed DTCs are indicated, go to the indicated DTC's troubleshooting. •

19. Reconnect all connectors.
20. Update the **ECM** if it does not have the latest software (see **ECM/PCM Update**), or substitute a known-good ECM (see **SUBSTITUTING THE ECM/PCM**).
21. Check the CLUTCH PEDAL POSITION SWITCH B in the DATA LIST with the HDS.

    Is OPEN indicated?

    YES - Check for poor connections or loose terminals at clutch pedal position switch B and the ECM. If

the ECM was updated, substitute a known-good ECM (see **SUBSTITUTING THE ECM/PCM**), then recheck. If the ECM was substituted, go to step 1.

NO - If the ECM was updated, troubleshooting is complete. If the ECM was substituted, replace the original **ECM** (see **ECM/PCM Replacement**). If any other Pending or Confirmed DTCs are indicated, go to the indicated DTC's troubleshooting. •

DTC P1116: ECT SENSOR 1 CIRCUIT RANGE/PERFORMANCE PROBLEM

NOTE:

- **Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see GENERAL TROUBLESHOOTING INFORMATION).**
- **If DTC P0111 is stored at the same time as DTC P1116, troubleshoot DTC P0111 first, then recheck for DTC P1116.**

1. Check for poor connections or loose terminals at ECT sensor 1 and ECT sensor 2.

   Are the connections and the terminals OK?

   YES - Go to step 2.

   NO - Repair the connectors or terminals, then go to step 21.

2. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
3. Check for Pending or Confirmed DTCs with the HDS.

   Are DTC P1116 and P2183 indicated at the same time?

   YES - Go to step 12.

   NO - Go to step 4.

4. Start the engine, and let it idle for 10 minutes.
5. Check ECT SENSOR 1 in the DATA LIST with the HDS.

   Is about 108°F (42°C) or less indicated?

   YES - Replace **ECT sensor 1**, then go to step 21.

   NO - Go to step 6.

6. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
7. Allow ECT sensor 1 to cool to the ambient temperature.
8. Note the ambient temperature.
9. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.

10. Quickly note the value of ECT SENSOR 1 in the DATA LIST with the HDS.
11. Compare the value of ECT SENSOR 1 to the ambient temperature.

    Does the value of ECT SENSOR 1 differ 5.4°F (3°C) or more from ambient temperature?

    YES - Replace **ECT sensor 1**, then go to step 21.

    NO - Intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at ECT sensor 1, ECT sensor 2, and the ECM/PCM. •

12. Start the engine, and let it idle for 10 minutes.
13. Check ECT SENSOR 1 in the DATA LIST with the HDS.

    Is about 108°F (42°C) or less indicated?

    YES - Replace **ECT sensor 1**, then go to step 21.

    NO - Go to step 14.

14. Check ECT SENSOR 2 in the DATA LIST with the HDS.

    Is about 108°F (42°C) or less indicated?

    YES - Replace **ECT sensor 2**, then go to step 21.

    NO - Go to step 15.

15. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
16. Allow ECT sensor 1 and ECT sensor 2 to cool to the ambient temperature.
17. Note the ambient temperature.
18. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
19. Quickly note the value of ECT SENSOR 1 and ECT SENSOR 2 in the DATA LIST with the HDS.
20. Compare the value of ECT SENSOR 1 and the ambient temperature, and the value of ECT SENSOR 2 and the ambient temperature individually.

    Does either sensor differ more than 5.4°F (3°C) from the ambient temperature?

    YES - Replace the sensor that differed more than 5.4 CF (3°C) from the ambient temperature. Refill the cooling system (see **COOLANT REPLACEMENT**), then go to step 21.

    NO - Intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at ECT sensor 1, ECT sensor 2, and the ECM/PCM. •

21. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
22. Reset the ECM/PCM with the HDS.

23. Do the ECM/PCM idle learn procedure (see **ECM/PCM IDLE LEARN PROCEDURE**).
24. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P1116 indicated?

    YES - Check for poor connections or loose terminals at ECT sensor 1, ECT sensor 2, and the ECM/PCM, then go to step 1.

    NO - Troubleshooting is complete. If any other Pending or Confirmed DTCs are indicated, go to the indicated DTC's troubleshooting. •

DTC P1128: MAP SENSOR SIGNAL LOWER THAN EXPECTED

NOTE:

- **Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see GENERAL TROUBLESHOOTING INFORMATION).**
- **Before starting this troubleshooting, check for poor connections or a blockage at the intake air duct.**

1. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
2. Check the MAP SENSOR in the DATA LIST with the HDS.

   Is less than 54.1 kPa (16.0 inHg, 406 mmHg) or 1.61 V held for more than 5 seconds?

   YES - Go to step 7.

   NO - Go to step 3.

3. Clear the DTC with the HDS.
4. Start the engine. Hold the engine speed at 3, 000 RPM without load (AT in P or N, M/T in neutral) until the radiator fan comes on, then let it idle.
5. Test-drive under these conditions:
   - Engine coolant temperature (ECT SENSOR 1) above 158°F (70°C)
   - Engine speed about 1, 200 RPM or more
   - A/T in D, or M/T in 3rd
   - Vehicle speed about 25 mph (40 km/h) or more under half throttle
6. Monitor the OBD STATUS for DTC P1128 in the DTCs MENU with the HDS.

   Does the screen indicate FAILED?

   YES - Go to step 7.

   NO - If the screen indicates PASSED, intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at the MAP sensor and the ECM/PCM. If the screen indicates NOT

COMPLETED, go to step 4 and recheck.

7. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
8. Replace the **MAP sensor**.
9. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
10. Reset the ECM/PCM with the HDS.
11. Do the ECM/PCM idle learn procedure (see **ECM/PCM IDLE LEARN PROCEDURE**).
12. Start the engine. Hold the engine speed at 3, 000 RPM without load (A/T in P or N, M/T in neutral) until the radiator fan comes on, then let it idle.
13. Test-drive under these conditions:
    - Engine coolant temperature (ECT SENSOR 1) above 158°F (70°C)
    - Engine speed about 1, 200 RPM or more
    - A/T in D, or M/T in 3rd
    - Vehicle speed about 25 mph (40 km/h) or more under half throttle
14. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P1128 indicated?

    YES - Check for poor connections or loose terminals at the MAP sensor and the ECM/PCM, then go to step 1.

    NO - Go to step 15.

15. Monitor the OBD STATUS for DTC P1128 in the DTCs MENU with the HDS.

    Does the screen indicate PASSED?

    YES - Troubleshooting is complete. If any other Pending or Confirmed DTCs were indicated in step 14, go to the indicated DTC's troubleshooting. •

    NO - If the screen indicates FAILED, check for poor connections or loose terminals at the MAP sensor and the ECM/PCM, then go to step 1. If the screen indicates NOT COMPLETED, go to step 12.

DTC P1129: MAP SENSOR SIGNAL HIGHER THAN EXPECTED

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see GENERAL TROUBLESHOOTING INFORMATION).

1. Check for vacuum leaks at these parts:
    - PCV valve
    - PCV hose
    - EVAP canister purge valve

- Throttle body
- Intake manifold
- Brake booster
- Brake booster hose

Are there any vacuum leaks?

YES - Repair or replace the part(s) with vacuum leaks, then go to step 9.

NO - Go to step 2.

2. Start the engine. Hold the engine speed at 3, 000 RPM without load (A/T in P or N, M/T in neutral) until the radiator fan comes on, then let it idle.
3. Check the MAP SENSOR in the DATA LIST with the HDS.

   Is there more than 36.9 kPa (11.0 inHg, 277 mmHg), or 1.14 V held for more than 5 seconds?

   YES - Go to step 7.

   NO - Go to step 4.

4. Clear the DTC with the HDS.
5. Test-drive under these conditions:
   - Engine coolant temperature (ECT SENSOR 1) above 158°F (70°C)
   - Engine speed between 1, 200 and 5, 900 RPM
   - A/T in D, or M/T in 5th
   - Drive at a steady speed between 55- 75 mph (88-120 km/h) for 10 seconds, then decelerate (with the throttle fully closed) for 5 seconds
6. Monitor the OBD STATUS for DTC P1129 in the DTCs MENU with the HDS.

   Does the screen indicate FAILED?

   YES - Go to step 7.

   NO - If the screen indicates PASSED, intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at the MAP sensor and the ECM/PCM. If the screen indicates NOT COMPLETED, go to step 5 and recheck.

7. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
8. Replace the **MAP sensor**.
9. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
10. Reset the ECM/PCM with the HDS.
11. Do the ECM/PCM idle learn procedure (see **ECM/PCM IDLE LEARN PROCEDURE**).

12. Start the engine. Hold the engine speed at 3, 000 RPM without load (A/T in P or IM, M/T in neutral) until the radiator fan comes on, then let it idle.
13. Test-drive under these conditions:
    - Engine coolant temperature (ECT SENSOR 1) above 158°F (70°C)
    - Engine speed between 1, 200 and 5, 900 RPM
    - A/T in D, or M/T in 5th
    - Drive at a steady speed between 55- 75 mph (88- 120 km/h) for 10 seconds, then decelerate (with the throttle fully closed) for 5 seconds
14. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P1129 indicated?

    YES - Check for poor connections or loose terminals at the MAP sensor and the ECM/PCM, then go to step 1.

    NO - Go to step 15.

15. Monitor the OBD STATUS for DTC P1129 in the DTCs MENU with the HDS.

    Does the screen indicate PASSED?

    YES - Troubleshooting is complete. If any other Pending or Confirmed DTCs were indicated in step 14, go to the indicated DTC's troubleshooting. •

    NO - If the screen indicates FAILED, check for poor connections or loose terminals at the MAP sensor and the ECM/PCM, then go to step 1. If the screen indicates NOT COMPLETED, go to step 12.

DTC P1172: REAR A/F SENSOR (BANK 1, SENSOR 1) CIRCUIT OUT OF RANGE HIGH; DTC P1174: FRONT A/F SENSOR (BANK 2, SENSOR 1) CIRCUIT OUT OF RANGE HIGH

NOTE:

- **Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see GENERAL TROUBLESHOOTING INFORMATION).**
- **Information marked with an asterisk (*) applies to the front bank (Bank 2).**

1. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
2. Clear the DTC with the HDS.
3. Start the engine. Hold the engine speed at 3, 000 RPM without load (A/T in P or N, M/T in neutral) until the radiator fan comes on, then let it idle.
4. Monitor the OBD STATUS for P1172 and/or P1174* in the DTCs MENU with the HDS.

   Does the screen indicate FAILED?

   YES - Go to step 5.

NO - If the screen indicates PASSED, intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at the A/F sensor (Sensor 1) and the ECM/PCM. If the screen indicates EXECUTING, keep driving until a result comes on. If the screen indicates OUT OF CONDITION, go to step 3 and recheck.

5. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
6. Replace the **A/F sensor (Sensor 1)**.
7. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
8. Reset the ECM/PCM with the HDS.
9. Do the ECM/PCM idle learn procedure (see **ECM/PCM IDLE LEARN PROCEDURE**).
10. Start the engine. Hold the engine speed at 3, 000 RPM without load (A/T in P or N, M/T in neutral) until the radiator fan comes on, then let it idle.
11. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P1172 and/or P1174 indicated?*

    YES - Check for poor connections or loose terminals at the A/F sensor (Sensor 1) and the ECM/PCM, then go to step 1.

    NO - Go to step 12.

12. Monitor the OBD STATUS for DTC P1172 and/or P1174* in the DTCs MENU with the HDS.

    Does the screen indicate PASSED?

    YES - Troubleshooting is complete. If any other Pending or Confirmed DTCs were indicated in step 11, go to the indicated DTC's troubleshooting. •

    NO - If the screen indicates FAILED, check for poor connections or loose terminals at the A/F sensor (Sensor 1) and the ECM/PCM, then go to step 1. If the screen indicates EXECUTING keep idling until a result comes on. If the screen indicates OUT OF CONDITION, go to step 10.

DTC P1297: ELD CIRCUIT LOW VOLTAGE

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see GENERAL TROUBLESHOOTING INFORMATION).

1. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
2. Check the ELD in the DATA LIST with the HDS.

   Is 72 A or more indicated?

   YES - Go to step 3.

NO - Intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at the ELD and the ECM/PCM. •

3. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
4. Disconnect the ELD 3P connector.
5. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
6. Check the ELD in the DATA LIST with the HDS.

Is 72 A or more indicated?

YES - Go to step 7.

NO - Go to step 11.

7. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
8. Jump the SCS line with the HDS.
9. Disconnect ECM/PCM connector A (49P).
10. Check for continuity between ECM/PCM connector terminal A10 and body ground.

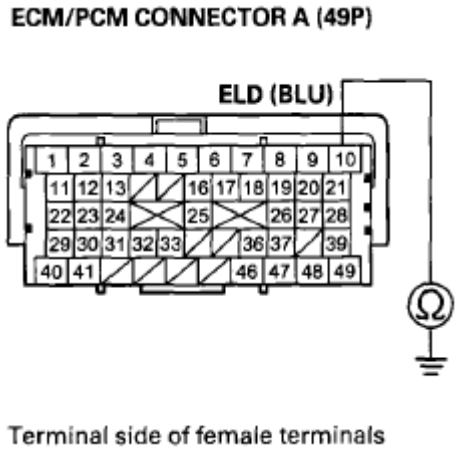


Fig. 133: Checking Continuity Between ECM/PCM Connector Terminal A10 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair short in the wire between the ECM/PCM (A10) and the ELD, then go to step 13.

NO - Go to step 20.

11. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
12. Replace the **ELD**.
13. Reconnect all connectors.
14. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.

15. Reset the ECM/PCM with the HDS.
16. Do the ECM/PCM idle learn procedure (see **ECM/PCM IDLE LEARN PROCEDURE**).
17. Start the engine.
18. Turn on the headlights.
19. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P1297 indicated?

    YES - Check for poor connections or loose terminals at the ELD and the ECM/PCM, then go to step 1.

    NO - Troubleshooting is complete. If any other Pending or Confirmed DTCs are indicated, go to the indicated DTC's troubleshooting. •

20. Reconnect all connectors.
21. Update the **ECM/PCM** if it does not have the latest software (see **ECM/PCM Update**), or substitute a known-good ECM/PCM (see **SUBSTITUTING THE ECM/PCM**).
22. Start the engine.
23. Turn on the headlights.
24. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P1297 indicated?

    YES - Check for poor connections or loose terminals at the ELD and the ECM/PCM. If the ECM/PCM was updated, substitute a known-good ECM/PCM (see **SUBSTITUTING THE ECM/PCM**), then go to step 22. If the ECM/PCM was substituted, go to step 1.

    NO - If the ECM/PCM was updated, troubleshooting is complete. If the ECM/PCM was substituted, replace the original **ECM/PCM** (see **ECM/PCM Replacement**). If any other Pending or Confirmed DTCs are indicated, go to the indicated DTC's troubleshooting. •

DTC P1298: ELD CIRCUIT HIGH VOLTAGE

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see GENERAL TROUBLESHOOTING INFORMATION).

1. Start the engine, and let it idle.
2. Check the ELD in the DATA LIST with the HDS.

   Is 0.2 A or less indicated?

   YES - Go to step 3.

   NO - Intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at

the ELD and the ECM/PCM. •

3. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
4. Disconnect the ELD 3P connector.
5. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
6. Measure the voltage between ELD 3P connector terminal No. 1 and body ground.

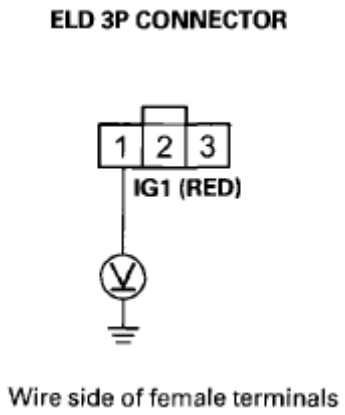


Fig. 134: Measuring Voltage Between ELD 3P Connector Terminal No. 1 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there battery voltage?

YES - Go to step 7.

NO - Repair open in the wire between the No. 13 ACG (15 A) fuse in the driver's under-dash fuse/relay box and the ELD, then go to step 13.

7. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
8. Jump the SCS line with the HDS.
9. Disconnect ECM/PCM connector A (49P).
10. Check for continuity between ECM/PCM connector terminal A10 and ELD 3P connector terminal No. 3.

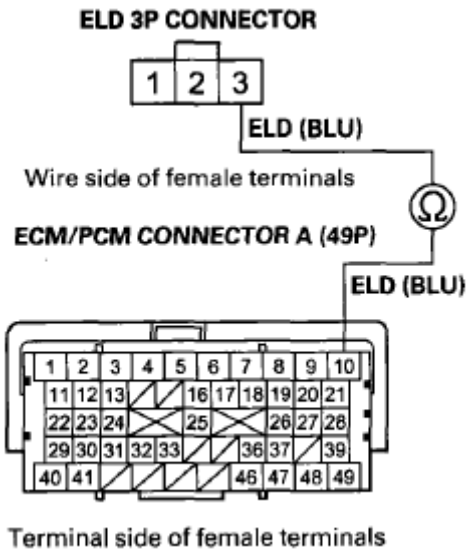


Fig. 135: Checking Continuity Between ECM/PCM Connector Terminal A10 And ELD 3P Connector Terminal No. 3
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 11.

NO - Repair open in the wire between the ECM/PCM (A10) and the ELD, then go to step 13.

11. Check for continuity between ELD 3P connector terminal No. 2 and body ground.

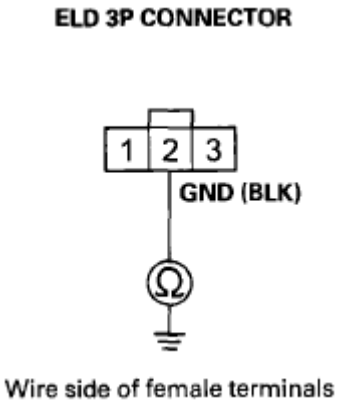


Fig. 136: Checking Continuity Between ELD 3P Connector Terminal No. 2 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 12.

NO - Repair open in the wire between the ELD and G301 (see **CONNECTOR TO FUSE/RELAY BOX INDEX**), then go to step 13.

12. Replace the ELD (see **ELD Replacement**).
13. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
14. Reset the ECM/PCM with the HDS.
15. Do the ECM/PCM idle learn procedure (see **ECM/PCM IDLE LEARN PROCEDURE**).
16. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P1298 indicated?

    YES - Check for poor connections or loose terminals at the ELD and the ECM/PCM, then go to step 17.

    NO - Troubleshooting is complete. If any other Pending or Confirmed DTCs are indicated, go to the indicated DTC's troubleshooting. •

17. Update the **ECM/PCM** if it does not have the latest software (see **ECM/PCM Update**), or substitute a known-good ECM/PCM (see **SUBSTITUTING THE ECM/PCM**).
18. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P1298 indicated?

    YES - Check for poor connections or loose terminals at the ELD and the ECM/PCM. If the ECM/PCM was updated, substitute a known-good ECM/PCM (see **SUBSTITUTING THE ECM/PCM**), then recheck. If the ECM/PCM was substituted, go to step 1.

    NO - If the ECM/PCM was updated, troubleshooting is complete. If the ECM/PCM was substituted, replace the original **ECM/PCM** (see **ECM/PCM Replacement**). If any other Pending or Confirmed DTCs are indicated, go to the indicated DTC's troubleshooting. •

DTC P1549: CHARGING SYSTEM HIGH VOLTAGE

NOTE:

- **Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see GENERAL TROUBLESHOOTING INFORMATION).**
- **If a high voltage battery (24 V, etc.) is connected to the vehicle, this DTC can be stored.**

1. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
2. Clear the DTC with the HDS.
3. Start the engine.
4. Check under these conditions:
   - A/C off
   - Headlights off

- Rear window defogger off

5. Hold the engine speed at 2, 000 RPM (A/T in P or N, M/T in neutral) 1 minute.
6. Check for Pending or Confirmed DTCs with the HDS.

   Is DTC P1549 indicated?

   YES - Replace the alternator (see **ALTERNATOR REMOVAL AND INSTALLATION**), then go to step 7.

   NO - Intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at the alternator and the under-hood fuse/relay box. •

7. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
8. Reset the ECM/PCM with the HDS.
9. Do the ECM/PCM idle learn procedure (see **ECM/PCM IDLE LEARN PROCEDURE**).
10. Start the engine.
11. Check under these conditions:
    - A/C off
    - Headlights off
    - Rear window defogger off
12. Hold the engine speed at 2, 000 RPM (A/T in P or N, M/T in neutral) 1 minute.
13. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P1549 indicated?

    YES - Check for poor connections or loose terminals at the alternator and the under-hood fuse/relay box, then go to step 1.

    NO - Troubleshooting is complete. If any other Pending or Confirmed DTCs are indicated, go to the indicated DTC's troubleshooting. •

DTC P16BB: ALTERNATOR B TERMINAL CIRCUIT LOW VOLTAGE

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see GENERAL TROUBLESHOOTING INFORMATION).

1. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
2. Clear the DTC with the HDS.
3. Start the engine.
4. Check under these conditions:
   - A/C on
   - Temperature control at maximum cool

- Blower fan at maximum speed
- Headlights on high beam
- Rear window defogger on

5. Hold the engine speed at 2, 000 RPM (A/T in P or N, M/T in neutral) 1 minute.
6. Check for Pending or Confirmed DTCs with the HDS.

   Is DTC P16BB indicated?

   YES - Go to step 7.

   NO - Intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at the alternator and the under-hood fuse/relay box, and check the battery performance (see **BATTERY TEST**). •

7. Check for poor connections or loose terminals at the alternator and the under-hood fuse/relay box

   Are the connections and terminals OK?

   YES - Go to step 8.

   NO - Repair the connections or the terminals, then go to step 9.

8. Check for an open in the wire between the alternator and the under-hood fuse/relay box at the engine harness.

   Is the harness OK?

   YES - Replace the alternator (see **ALTERNATOR REMOVAL AND INSTALLATION**), then go to step 9.

   NO - Repair open in the wire between the alternator and the under-hood fuse/relay box, then go to step 9.

9. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
10. Reset the ECM/PCM with the HDS.
11. Do the ECM/PCM idle learn procedure (see **ECM/PCM IDLE LEARN PROCEDURE**).
12. Start the engine.
13. Check under these conditions:
    - A/C on
    - Temperature control at maximum cool
    - Blower fan at maximum speed
    - Headlights on high beam
    - Rear window defogger on
14. Hold the engine speed at 2, 000 RPM (A/T in P or N, M/T in neutral) 1 minute.

15. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P16BB indicated?

    YES - Check for poor connections or loose terminals at the alternator and the under-hood fuse/relay box, then go to step 1.

    NO - Troubleshooting is complete. If any other Pending or Confirmed DTCs are indicated, go to the indicated DTC's troubleshooting. •

DTC P16BC: ALTERNATOR FR TERMINAL CIRCUIT/IGP CIRCUIT LOW VOLTAGE

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see GENERAL TROUBLESHOOTING INFORMATION).

1. Check for poor connections or loose terminals at the alternator 4P connector.

   Are the connections and terminals OK?

   YES - Go to step 2.

   NO - Repair the connections or terminals, then go to step 18.

2. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
3. Clear the DTC with the HDS.
4. Start the engine.
5. Check under these conditions:
   - A/C on
   - Temperature control at maximum cool
   - Blower fan at maximum speed
   - Headlights on high beam
   - Rear window defogger on
6. Hold the engine speed at 2, 000 RPM (A/T in P or N, M/T in neutral) for 1 minute.
7. Check for Pending or Confirmed DTCs with the HDS.

   Is DTC P16BC indicated?

   YES - Go to step 8.

   NO - Intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at the alternator. •

8. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.

9. Disconnect the alternator 4P connector.
10. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
11. Measure the voltage between alternator 4P connector terminal No. 1 and body ground.

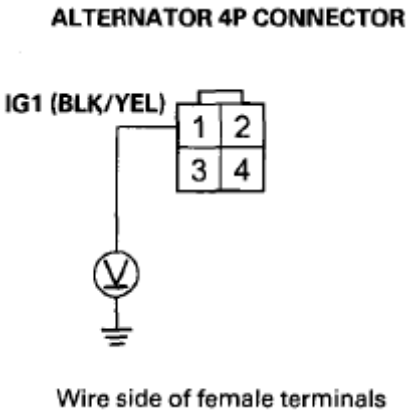


Fig. 137: Measuring Voltage Between Alternator 4P Connector Terminal No. 1 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there battery voltage?

YES - Go to step 12.

NO - Repair open in the wire between the alternator (IG1 line) and the No. 13 ACG (15 A) fuse in the driver's under-dash fuse/relay box, then go to step 17.

12. Measure the voltage between alternator 4P connector terminal No. 4 and body ground.

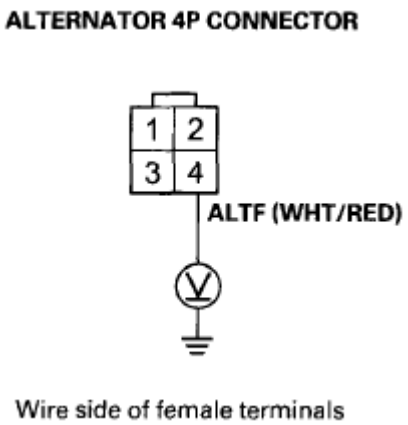


Fig. 138: Measuring Voltage Between Alternator 4P Connector Terminal No. 4 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there about 5 V?

YES - Replace the alternator (see **ALTERNATOR REMOVAL AND INSTALLATION**), then go to

step 17.

NO - Go to step 13.

13. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
14. Jump the SCS line with the HDS.
15. Disconnect ECM/PCM connector C (49P).
16. Check for continuity between alternator 4P connector terminal No. 4 and ECM/PCM connector terminal C44.

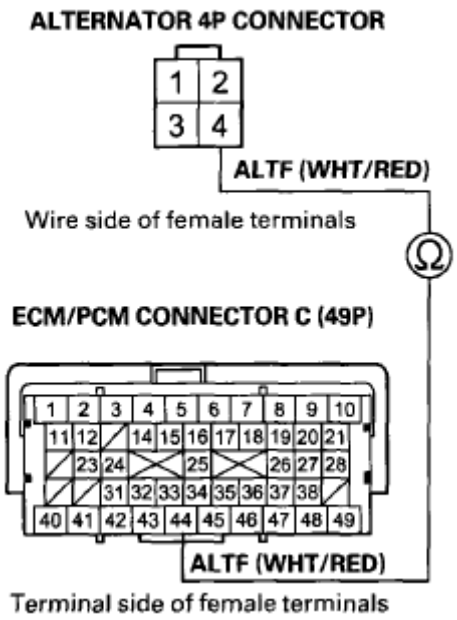


Fig. 139: Checking Continuity Between Alternator 4P Connector Terminal No. 4 And ECM/PCM Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 26.

NO - Repair open in the wire between the ECM/PCM (C44) and the alternator, then go to step 18.

17. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
18. Reconnect all connectors.
19. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
20. Reset the ECM/PCM with the HDS.
21. Do the ECM/PCM idle learn procedure (see **ECM/PCM IDLE LEARN PROCEDURE**).
22. Start the engine.
23. Check under these conditions:

- A/C on
- Temperature control at maximum cool
- Blower fan at maximum speed
- Headlights on high beam
- Rear window defogger on

24. Hold the engine speed at 2, 000 RPM (A/T in P or N, M/T in neutral) for 1 minute.
25. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P16BC indicated?

    YES - Check for poor connections or loose terminals at the alternator and the ECM/PCM, then go to step 1.

    NO - Troubleshooting is complete. If any other Pending or Confirmed DTCs are indicated, go to the indicated DTC's troubleshooting. •

26. Reconnect all connectors.
27. Update the **ECM/PCM** if it does not have the latest software (see **ECM/PCM Update**), or substitute a known-good ECM/PCM (see **SUBSTITUTING THE ECM/PCM**).
28. Start the engine.
29. Check under these conditions:
    - A/C on
    - Temperature control at maximum cool
    - Blower fan at maximum speed
    - Headlights on high beam
    - Rear window defogger on
30. Hold the engine speed at 2, 000 RPM (A/T in P or N, M/T in neutral) for 1 minute.
31. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P16BC indicated?

    YES - Check for poor connections or loose terminals at the alternator and the ECM/PCM. If the ECM/PCM was updated, substitute a known-good ECM/PCM (see **SUBSTITUTING THE ECM/PCM**), then go to step 28. If the ECM/PCM was substituted, go to step 1.

    NO - If the ECM/PCM was updated, troubleshooting is complete. If the ECM/PCM was substituted, replace the original **ECM/PCM** (see **ECM/PCM Replacement**). If any other Pending or Confirmed DTCs are indicated, go to the indicated DTC's troubleshooting. •

DTC P16BD: STARTER CUT RELAY 2 MALFUNCTION (M/T)

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see GENERAL

TROUBLESHOOTING INFORMATION).

1. Press the engine start/stop button to select the ON mode.
2. Clear the DTC with the HDS.
3. Check the STARTER CUT RELAY in the DATA LIST with the HDS.

   Is 2.2 V or less indicated?

   YES - Go to step 4.

   NO - Intermittent failure, the system is OK at this time. Check for poor connections and loose terminals at starter cut relay 1, starter cut relay 2, and the ECM. •

4. Try to start engine.

   Does the engine start?

   YES - Go to step 5.

   NO - Go to step 13.

5. Press the engine start/stop button to select the OFF mode.
6. Check the No. 8 STRLD (7.5 A) fuse in the driver's under-dash fuse/relay box.

   Is the fuse OK?

   YES - Replace starter cut relay 2, then go to step 17.

   NO - Go to step 7.

7. Remove the blown fuse the driver's under-dash fuse/relay box.
8. Jump the SCS line with the HDS.
9. Disconnect ECM connector A (49P).
10. Check for continuity between the ECM connector terminal A28 and body ground.

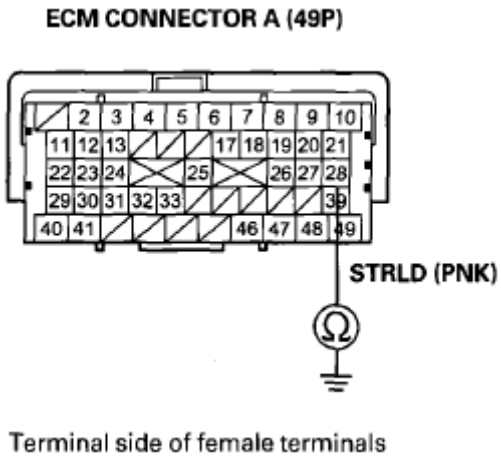


Fig. 140: Checking Continuity Between ECM Connector Terminal A28 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 11.

NO - Replace the No. 8 STRLD (7.5 A) fuse, then go to step 22.

11. Disconnect driver's under-dash fuse/relay box connector G (13P).
12. Check for continuity between the ECM connector terminal A28 and the body ground.

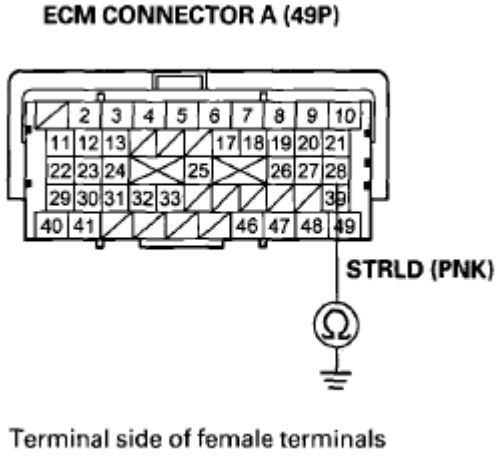


Fig. 141: Checking Continuity Between ECM Connector Terminal A28 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair short in the wire between the ECM (A28) and the driver's under-dash fuse/relay box, then go to step 17.

NO - Replace the driver's under-dash fuse/relay box (see **DRIVER'S UNDER-DASH FUSE/RELAY BOX (MICU) REMOVAL AND INSTALLATION**), then go to step 17.

13. Remove the driver's dashboard undercover (see **DRIVER'S DASHBOARD UNDERCOVER REMOVAL/INSTALLATION**), then remove starter cut relay 1 (A) from the driver's under-dash fuse/relay box.

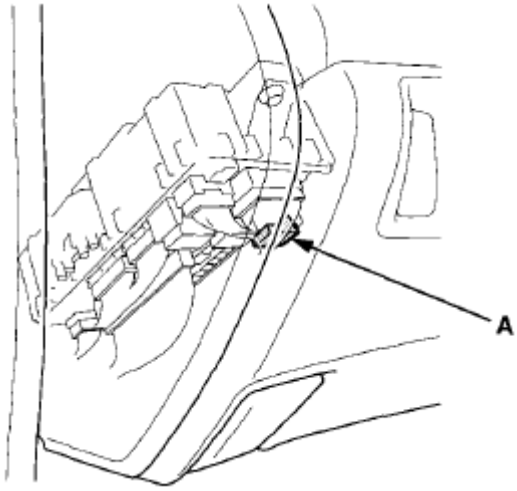


Fig. 142: Identifying Starter Cut Relay
Courtesy of AMERICAN HONDA MOTOR CO., INC.

14. Check the STARTER CUT RELAY in the DATA LIST with the HDS.

    Is 2.2 V or less indicated?

    YES - Go to step 15.

    NO - Replace starter cut relay 1, then go to step 17.

15. Disconnect driver's under-dash fuse/relay box connectors F (33P) and G (13P).
16. Check for continuity between starter cut relay 1 4P connector terminal No. 1 and body ground.

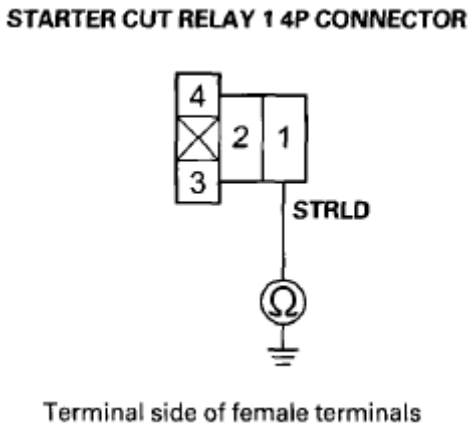


Fig. 143: Checking Continuity Between Starter Cut Relay 1 4P Connector Terminal No. 1 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Replace the driver's under-dash fuse/relay box (see **DRIVER'S UNDER-DASH FUSE/RELAY BOX (MICU) REMOVAL AND INSTALLATION**), then go to step 17.

NO - Repair short in the wire between the driver's under-dash fuse/relay box and the under-hood fuse/relay box (starter cut relay 2), then go to step 17.

17. Reconnect all connectors.
18. Press the engine start/stop button to select the ON mode.
19. Reset the ECM with the HDS.
20. Do the ECM idle learn procedure (see **ECM/PCM IDLE LEARN PROCEDURE**).
21. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P16BD indicated?

    YES - Check for poor connections or loose terminals at starter cut relay 1, starter cut relay 2, and the ECM, then go to step 1.

    NO - Troubleshooting is complete. If any other Pending or Confirmed DTCs are indicated, go to the indicated DTC's troubleshooting. •

22. Reconnect all connectors.
23. Update the ECM if it does not have the latest software (see **ECM/PCM Update**), or substitute a known-good ECM (see **SUBSTITUTING THE ECM/PCM**).
24. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P16BD indicated?

YES - Check for poor connections or loose terminals at starter cut relay 1, starter cut relay 2, and the ECM. If the ECM was updated, substitute a known-good ECM (see **SUBSTITUTING THE ECM/PCM**), then recheck. If the ECM was substituted, go to step 1.

NO - If the ECM was updated, troubleshooting is complete. If the ECM was substituted, replace the original **ECM** (see **ECM/PCM Replacement**). If any other Pending or Confirmed DTCs are indicated, go to the indicated DTC's troubleshooting. •

DTC P16BD: STARTER CUT RELAY 2 MALFUNCTION (A/T)

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see GENERAL TROUBLESHOOTING INFORMATION).

1. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
2. Clear the DTC with the HDS.
3. Check the STARTER CUT RELAY in the DATA LIST with the HDS.

   Is 2.2 V or less indicated?

   YES - Go to step 4.

   NO - Intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at starter cut relay 1, starter cut relay 2, and the PCM. •

4. Try to start engine.

   Does the engine start?

   YES - Go to step 5.

   NO - Go to step 13.

5. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
6. Check the No. 8 STRLD (7.5 A) fuse in the driver's under-dash fuse/relay box.

   Is the fuse OK?

   YES - Replace starter cut relay 2, then go to step 20.

   NO - Go to step 7.

7. Remove the blown fuse from the driver's under-dash fuse/relay box.
8. Jump the SCS line with the HDS.
9. Disconnect PCM connector A (49P).

10. Check for continuity between the PCM connector terminal A28 and body ground.

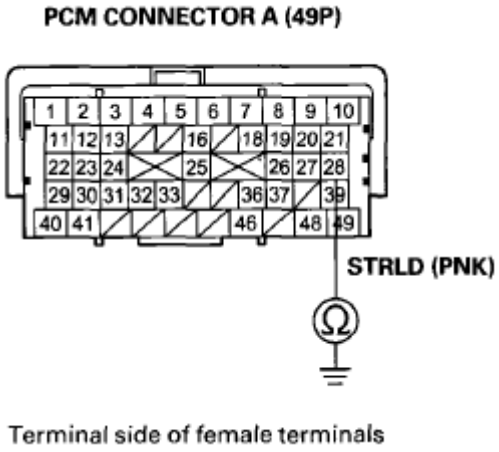


Fig. 144: Checking Continuity Between PCM Connector Terminal A28 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 11.

NO - Replace the No. 8 STRLD (7.5 A) fuse, then go to step 25.

11. Disconnect driver's under-dash fuse/relay box connector G (13P).
12. Check for continuity between the PCM connector terminal A28 and the body ground.

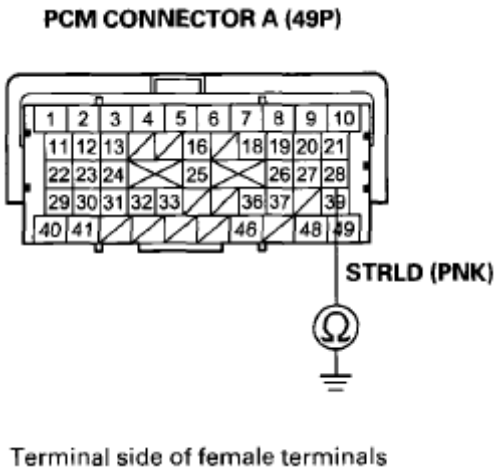


Fig. 145: Checking Continuity Between PCM Connector Terminal A28 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair short in the wire between the PCM (A28) and the driver's under-dash fuse/relay box. Also

replace the No. 8 STRLD (7.5 A) fuse, then go to step 20.

NO - Replace the driver's under-dash fuse/relay box (see **DRIVER'S UNDER-DASH FUSE/RELAY BOX (MICU) REMOVAL AND INSTALLATION**), then go to step 20.

13. Remove the driver's dashboard undercover (see **DRIVER'S DASHBOARD UNDERCOVER REMOVAL/INSTALLATION**), then remove starter cut relay 1 (A) from the driver's under-dash fuse/relay box.

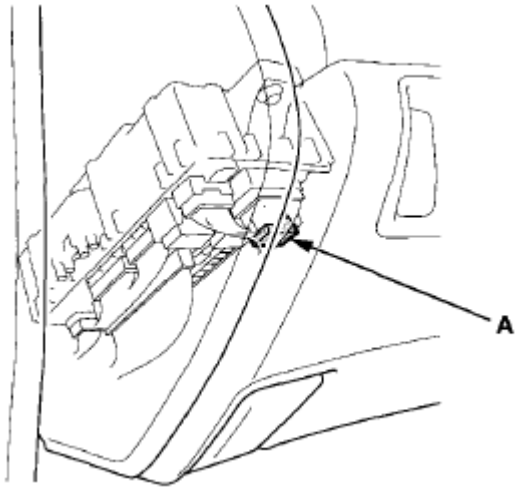


Fig. 146: Identifying Starter Cut Relay
Courtesy of AMERICAN HONDA MOTOR CO., INC.

14. Check the STARTER CUT RELAY in the DATA LIST with the HDS.

Is 2.2 V or less indicated?

YES - Go to step 15.

NO - Replace starter cut relay 1, then go to step 20.

15. Remove the starter cut relay 2 (A) from the under-hood fuse/relay box.

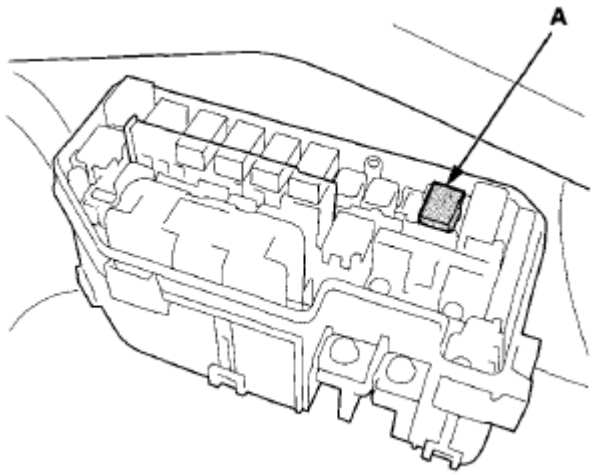


Fig. 147: Identifying Starter Cut Relay 2
Courtesy of AMERICAN HONDA MOTOR CO., INC.

16. Check the STARTER CUT RELAY in the DATA LIST with the HDS.

    Is 2.2 V or less indicated?

    YES - Go to step 17.

    NO - Replace starter cut relay 2, then go to step 20.

17. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
18. Disconnect driver's under-dash fuse/relay box connectors F (33P) and G (13P).
19. Check for continuity between starter cut relay 1 4P connector terminal No. 1 and body ground.

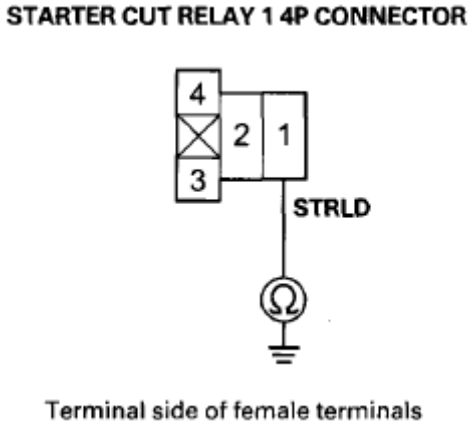


Fig. 148: Checking Continuity Between Starter Cut Relay 1 4P Connector Terminal No. 1 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Replace the driver's under-dash fuse/relay box (see **DRIVER'S UNDER-DASH FUSE/RELAY BOX (MICU) REMOVAL AND INSTALLATION**), then go to step 20.

NO - Repair short in the wire between the driver's under-dash fuse/relay box and the under-hood fuse/relay box (starter cut relay 2), then go to step 20.

20. Reconnect all connectors.
21. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
22. Reset the PCM with the HDS.
23. Do the PCM idle learn procedure (see **ECM/PCM IDLE LEARN PROCEDURE**).
24. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P16BD indicated?

    YES - Check for poor connections or loose terminals at starter cut relay 1, starter cut relay 2, and the PCM, then go to step 1.

    NO - Troubleshooting is complete. If any other Pending or Confirmed DTCs are indicated, go to the indicated DTC's troubleshooting. •

25. Reconnect all connectors.
26. Update the **PCM** if it does not have the latest software (see **ECM/PCM Update**), or substitute a known-good PCM (see **SUBSTITUTING THE ECM/PCM**).
27. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P16BD indicated?

    YES - Check for poor connections or loose terminals at starter cut relay 1, starter cut relay 2, and the PCM. If the PCM was updated, substitute a known-good PCM (see **SUBSTITUTING THE ECM/PCM**), then recheck. If the PCM was substituted, go to step 1.

    NO - If the PCM was updated, troubleshooting is complete. If the PCM was substituted, replace the original **PCM** (see **ECM/PCM Replacement**). If any other Pending or Confirmed DTCs are indicated, go to the indicated DTC's troubleshooting. •

DTC P16BE: STARTER CUT RELAY 1 MALFUNCTION (M/T)

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see GENERAL TROUBLESHOOTING INFORMATION).

1. Press the engine start/stop button to select the ON mode.
2. Clear the DTC with the HDS.
3. Check the STARTER CUT RELAY in the DATA LIST with the HDS.

Is 3.0 V or more indicated?

YES - Go to step 4.

NO - Intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at starter cut relay 1, starter cut relay 2, and the ECM. •

4. Remove the No. 8 STRLD (7.5 A) fuse from the driver's under-dash fuse/relay box.
5. Check the STARTER CUT RELAY in the DATA LIST with the HDS.

Is 3.0 V or more indicated?

YES - Go to step 6.

NO - Go to step 13.

6. Press the engine start/stop button to select the OFF mode.
7. Jump the SCS line with the HDS.
8. Disconnect ECM connector A (49P).
9. Press the engine start/stop button to select the ON mode.
10. Measure the voltage between ECM connector terminal A28 and body ground.

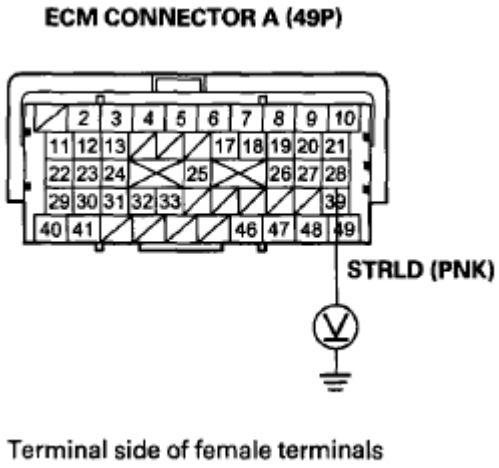


Fig. 149: Measuring Voltage Between ECM Connector Terminal A28 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there 3.0 V or more?

YES - Go to step 11.

NO - Reinstall the No. 8 STRLD (7.5 A) fuse, then go to step 23.

11. Disconnect driver's under-dash fuse/relay box connector G (13P).

12. Measure the voltage between ECM connector terminal A28 and body ground.

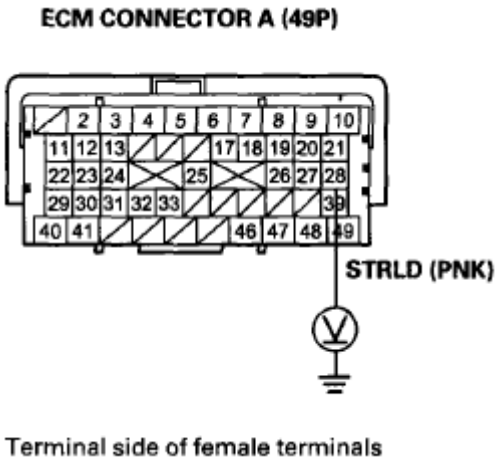


Fig. 150: Measuring Voltage Between ECM Connector Terminal A28 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there 3.0 V or more?

YES - Repair short to power in the wire between the driver's under-dash fuse/relay box and the ECM (A28), then go to step 18.

NO - Replace the driver's under-dash fuse/relay box (see **DRIVER'S UNDER-DASH FUSE/RELAY BOX (MICU) REMOVAL AND INSTALLATION**), then go to step 18.

13. Remove starter cut relay 1 from the driver's under-dash fuse/relay box.

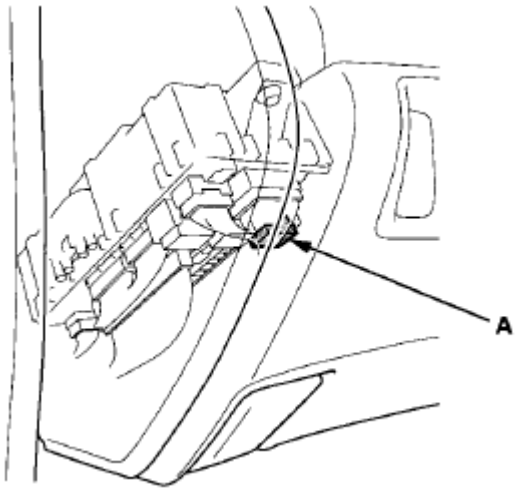


Fig. 151: Identifying Starter Cut Relay 1
Courtesy of AMERICAN HONDA MOTOR CO., INC.

14. Check the STARTER CUT RELAY in the DATA LIST with the HDS.

Is 3.0 V or more indicated?

YES - Go to step 15.

NO - Replace starter cut relay 1, then go to step 18.

15. Press the engine start/stop button to select the OFF mode.
16. Disconnect under-dash fuse/relay box connector F (33P).
17. Measure the voltage between the starter cut relay 1 terminal No. 1 and body ground.

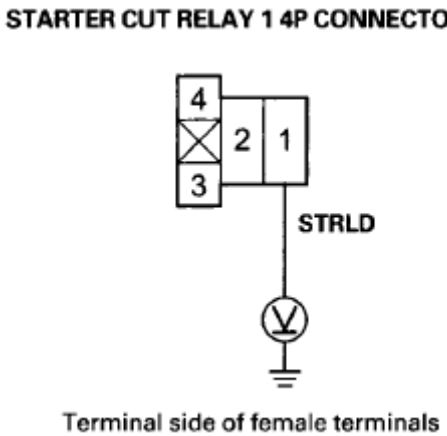


Fig. 152: Measuring Voltage Between Starter Cut Relay 1 Terminal No. 1 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there 3.0 V or more?

YES - Replace the driver's under-dash fuse/relay box (see **DRIVER'S UNDER-DASH FUSE/RELAY BOX (MICU) REMOVAL AND INSTALLATION**), then go to step 18.

NO - Repair short to power in the wire between the driver's under-dash fuse/relay box and the under-hood fuse/relay box (starter cut relay 2), then go to step 18.

18. Reconnect all connectors.
19. Press the engine start/stop button to select the ON mode.
20. Reset the ECM with the HDS.
21. Do the ECM idle learn procedure (see **ECM/PCM IDLE LEARN PROCEDURE**).
22. Check for Pending or Confirmed DTCs with the HDS.

Is DTC P16BE indicated?

YES - Check for poor connections or loose terminals at starter cut relay 1, starter cut relay 2, and the ECM, then go to step 1.

NO - Troubleshooting is complete. If any other Pending or Confirmed DTCs are indicated, go to the

indicated DTC's troubleshooting. •

23. Reconnect all connectors.
24. Update the **ECM** if it does not have the latest software (see **ECM/PCM Update**), or substitute a known-good ECM (see **SUBSTITUTING THE ECM/PCM**).
25. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P16BE indicated?

    YES - Check for poor connections or loose terminals at starter cut relay 1, starter cut relay 2, and the ECM. If the ECM was updated, substitute a known-good ECM (see **SUBSTITUTING THE ECM/PCM**), then recheck. If the ECM was substituted, go to step 1.

    NO - If the ECM was updated, troubleshooting is complete. If the ECM was substituted, replace the original **ECM** (see **ECM/PCM Replacement**). If any other Pending or Confirmed DTCs are indicated, go to the indicated DTC's troubleshooting. •

DTC P16BE: STARTER CUT RELAY 1 MALFUNCTION (A/T)

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see GENERAL TROUBLESHOOTING INFORMATION).

1. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
2. Clear the DTC with the HDS, and wait 5 seconds.
3. Check the STARTER CUT RELAY in the DATA LIST with the HDS.

   Is 3.0 V or more indicated?

   YES - Go to step 4.

   NO - Intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at starter cut relay 1, starter cut relay 2, and the PCM. •

4. Remove the driver's dashboard undercover (see **DRIVER'S DASHBOARD UNDERCOVER REMOVAL/INSTALLATION**), then remove starter cut relay 1 (A) from the driver's under-dash fuse/relay box.

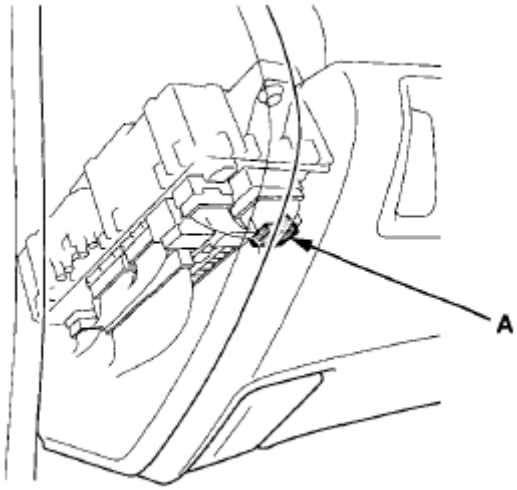


Fig. 153: Identifying Starter Cut Relay
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Check the STARTER CUT RELAY in the DATA LIST with the HDS.

   Is 3.0 V or more indicated?

   YES - Go to step 6.

   NO - Replace starter cut relay 1, then go to step 7.

6. Measure the voltage between starter cut relay 1 4P connector terminal No. 1 and body ground.

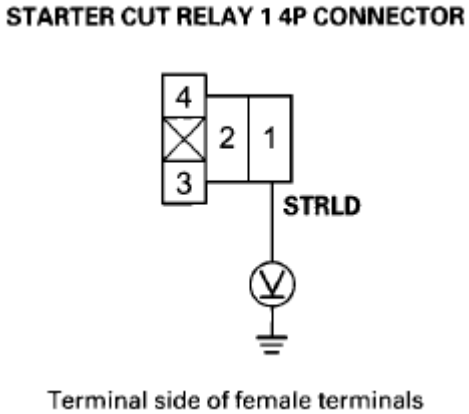


Fig. 154: Measuring Voltage Between Starter Cut Relay 1 4P Connector Terminal No. 1 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is 3.0 V or more?

YES - Repair short to power in the wire between starter cut relay 1, starter cut relay 2, and the PCM, then

go to step 7.

NO - Go to step 11.

7. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
8. Reset the PCM with the HDS.
9. Do the PCM idle learn procedure (see **ECM/PCM IDLE LEARN PROCEDURE**).
10. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P16BE indicated?

    YES - Check for poor connections or loose terminals at starter cut relay 1, starter cut relay 2, and the PCM, then go to step 1.

    NO - Troubleshooting is complete. If any other Pending or Confirmed DTCs are indicated, go to the indicated DTC's troubleshooting. •

11. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
12. Reconnect all connectors.
13. Update the **PCM** if it does not have the latest software (see **ECM/PCM Update**), or substitute a known-good PCM (see **SUBSTITUTING THE ECM/PCM**).
14. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P16BE indicated?

    YES - Check for poor connections or loose terminals at starter cut relay 1, starter cut relay 2, and the PCM. If the PCM was updated, substitute a known-good PCM (see **SUBSTITUTING THE ECM/PCM**), then recheck. If the PCM was substituted, go to step 1.

    NO - If the PCM was updated, troubleshooting is complete. If the PCM was substituted, replace the original **PCM** (see **ECM/PCM Replacement**). If any other Pending or Confirmed DTCs are indicated, go to the indicated DTC's troubleshooting. •

DTC P16BF: STARTER CUT RELAY STRLY CIRCUIT MALFUNCTION (M/T)

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see GENERAL TROUBLESHOOTING INFORMATION).

1. Press the engine start/stop button to select the ON mode.
2. Clear the DTC with the HDS.
3. Check the STARTER RELAY CONTROL RETURN in the DATA LIST with the HDS.

   Is ON indicated?

YES - Go to step 4.

NO - Go to step 21.

4. Remove the driver's dashboard undercover (see **DRIVER'S DASHBOARD UNDERCOVER REMOVAL/INSTALLATION**), then remove start cut relay 1 (A) from the driver's under-dash fuse/relay box.

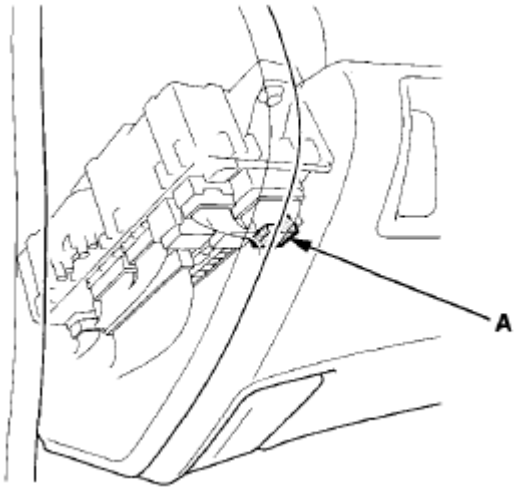


Fig. 155: Identifying Start Cut Relay 1
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Check the STARTER RELAY CONTROL RETURN in the DATA LIST with the HDS.

   Is ON indicated?

   YES - Go to step 6.

   NO - Replace starter cut relay 1, then go to step 34.

6. Remove the +B cut relay (A) from the relay holder.

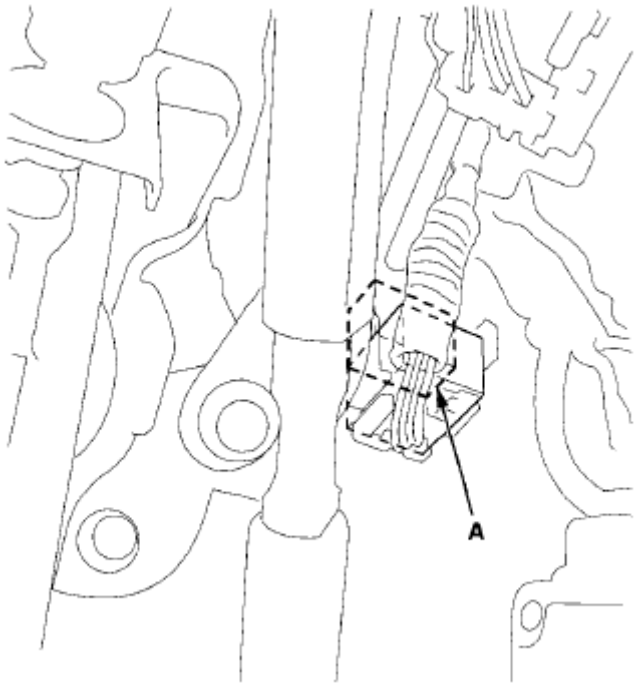


Fig. 156: Identifying +B Cut Relay
Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Check the STARTER RELAY CONTROL RETURN in the DATA LIST with the HDS.

   Is ON indicated?

   YES - Go to step 8.

   NO - Replace the + B cut relay, then go to step 34.

8. Press the engine start/stop button to select the OFF mode.
9. Disconnect driver's under-dash fuse/relay box connector N (16P).
10. Press the engine start/stop button to select the ON mode.
11. Measure the voltage between the +B cut relay 4P connector terminal No. 4 and body ground.

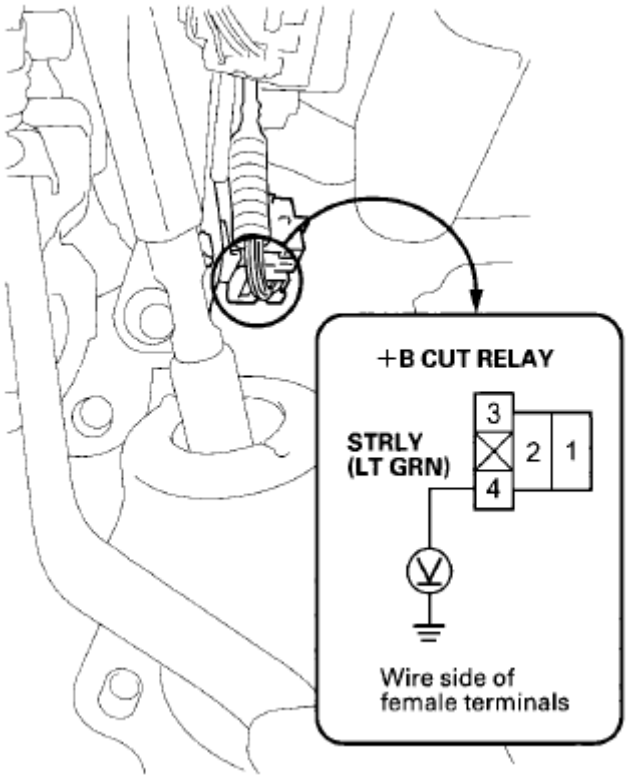


Fig. 157: Measuring Voltage Between +B Cut Relay 4P Connector Terminal No. 4 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there 1.0 V or more?

YES - Go to step 12.

NO - Repair short to power in the wire between the +B cut relay and the driver's under-dash fuse/relay box, then go to step 34.

12. Press the engine start/stop button to select the OFF mode.
13. Disconnect driver's under-dash fuse/relay box connector G (13P).
14. Press the engine start/stop button to select the ON mode.
15. Measure the voltage between starter cut relay 1 4P connector terminal No. 4 and body ground.

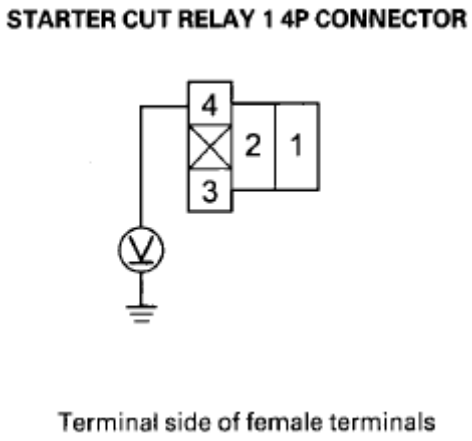


Fig. 158: Measuring Voltage Between Starter Cut Relay 1 4P Connector Terminal No. 4 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there 1.0 V or more?

YES - Go to step 16.

NO - Replace the driver's under-dash fuse/relay box (see **DRIVER'S UNDER-DASH FUSE/RELAY BOX (MICU) REMOVAL AND INSTALLATION**), then go to step 34.

16. Press the engine start/stop button to select the OFF mode.
17. Jump the SCS line with the HDS.
18. Disconnect ECM connector A (49P)
19. Press the engine start/stop button to select the ON mode.
20. Measure the voltage between ECM connector terminal A3 and body ground.

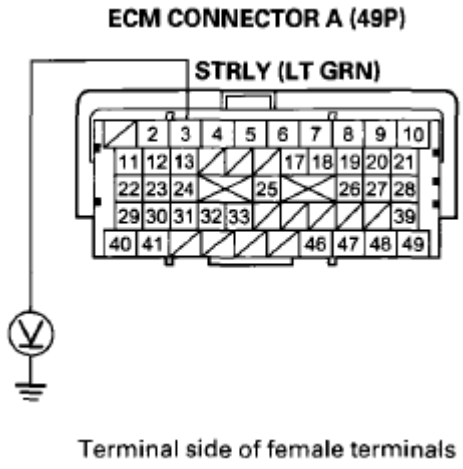


Fig. 159: Measuring Voltage Between ECM Connector Terminal A3 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there 1.0 V or more?

YES - Repair short to power in the between the driver's under-dash fuse/relay box and the ECM (A3), then go to step 34.

NO - Go to step 39.

21. While pressing the engine start/stop button to select the START mode, check the STARTER RELAY CONTROL RETURN in the DATA LIST with the HDS.

    Is OFF indicated?

    YES - Go to step 22.

    NO - Intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at the starter cut relay 1, the +B cut relay, and the ECM.

22. Remove starter cut relay 1 (A) from the driver's under-dash fuse/relay box.

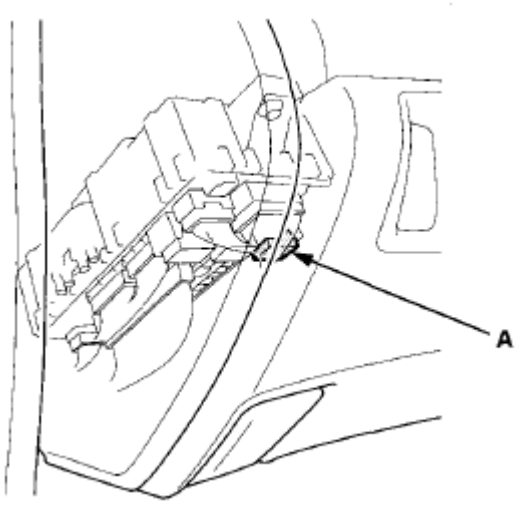


Fig. 160: Identifying Starter Cut Relay 1
Courtesy of AMERICAN HONDA MOTOR CO., INC.

23. While pressing the engine start/stop button to select the START mode, check the STARTER RELAY CONTROL RETURN in the DATA LIST with the HDS.

    Is OFF indicated?

    YES - Go to step 24.

    NO - Replace starter cut relay 1, then go to step 34.

24. Remove the driver's dashboard undercover (see **DRIVER'S DASHBOARD UNDERCOVER**

REMOVAL/INSTALLATION), then remove the + B cut relay (A) from the relay holder.

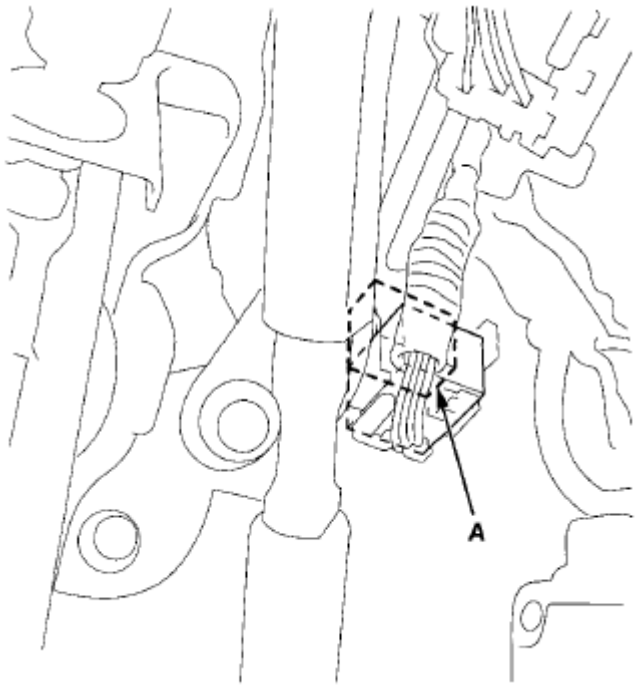


Fig. 161: Identifying +B Cut Relay
Courtesy of AMERICAN HONDA MOTOR CO., INC.

25. While pressing the engine start/stop button to select the START mode, check the STARTER RELAY CONTROL RETURN in the DATA LIST with the HDS.

    Is ON indicated?

    YES - Go to step 26.

    NO - Replace the +B cut relay, then go to step 34.

26. Press the engine start/stop button to select the OFF mode.
27. Disconnect driver's under-dash fuse/relay box connector N (16P).
28. Check for continuity between +B cut relay terminal No. 4 and body ground.

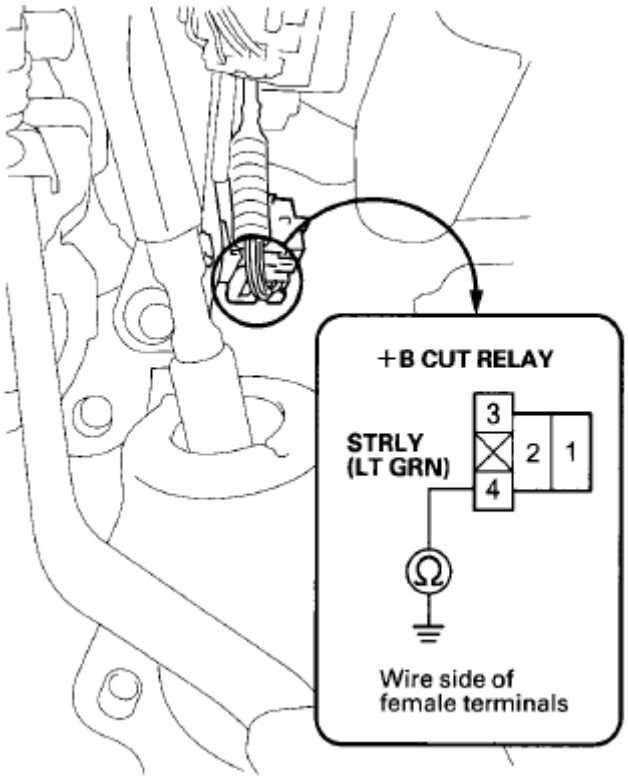


Fig. 162: Checking Continuity Between +B Cut Relay Terminal No. 4 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair short in the wire between the driver's under-dash fuse/relay box and the +B cut relay, then go to step 34.

NO - Go to step 29.

29. Disconnect driver's under-dash fuse/relay box connector G (13P).
30. Check for continuity between starter cut relay 1 terminal No. 4 and body ground.

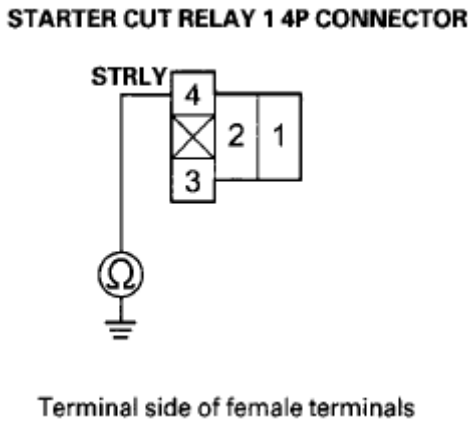


Fig. 163: Checking Continuity Between Starter Cut Relay 1 Terminal No. 4 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Replace the driver's under-dash fuse/relay box (see **DRIVER'S UNDER-DASH FUSE/RELAY BOX (MICU) REMOVAL AND INSTALLATION**), then go to step 34.

NO - Go to step 31.

31. Jump the SCS line with the HDS.
32. Disconnect ECM connector A (49P).
33. Check for continuity between ECM connector terminal A3 and body ground.

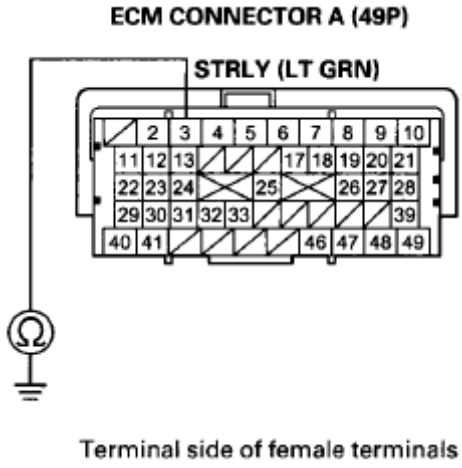


Fig. 164: Checking Continuity Between ECM Connector Terminal A3 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair short in the wire between the driver's under-dash fuse/relay box and the ECM (A3), then go to step 34.

NO - Go to step 39.

34. Reconnect all connectors.
35. Press the engine start/stop button to select the ON mode.
36. Reset the ECM with the HDS.
37. Do the ECM idle learn procedure, (see **ECM/PCM IDLE LEARN PROCEDURE**)
38. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P16BF indicated?

    YES - Check for poor connections or loose terminals at starter cut relay 1, the +B cut relay, and the ECM, then go to step 1.

    NO - Troubleshooting is complete. If any other Pending or Confirmed DTCs are indicated, go to the indicated DTC's troubleshooting. •

39. Reconnect all connectors.
40. Update the **ECM** if it does not have the latest software (see **ECM/PCM Update**), or substitute a known-good ECM (see **SUBSTITUTING THE ECM/PCM**).
41. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P16BF indicated?

    YES - Check for poor connections or loose terminals at starter cut relay 1, the +B cut relay, and the ECM. If the ECM was updated, substitute a known-good ECM (see **SUBSTITUTING THE ECM/PCM**), then recheck. If the ECM was substituted, go to step 1.

    NO - If the ECM was updated, troubleshooting is complete. If the ECM was substituted, replace the original **ECM** (see **ECM/PCM Replacement**). If any other Pending or Confirmed DTCs are indicated, go to the indicated DTC's troubleshooting. •

DTC P16BF: STARTER CUT RELAY STRLY CIRCUIT MALFUNCTION (A/T)

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see GENERAL TROUBLESHOOTING INFORMATION).

1. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
2. Clear the DTC with the HDS, and wait 5 seconds.
3. Check the STARTER RELAY CONTROL RETURN in the DATA LIST with the HDS.

    Is OFF indicated?

    YES - Go to step 4.

NO - Go to step 13.

4. Turn the ignition switch to START (III), or press the engine start/stop button to select the START mode, for 5 second or more.
5. While holding the ignition switch in START (III) or pressing the engine start/stop button to select START mode, check the STARTER RELAY CONTROL RETURN in the DATA LIST with the HDS.

   Is OFF indicated?

   YES - Go to step 6.

   NO - Intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at starter cut relay 1, starter cut relay 2, and the PCM. •

6. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
7. Remove the driver's dashboard undercover (see **DRIVER'S DASHBOARD UNDERCOVER REMOVAL/INSTALLATION**), then remove starter cut relay 1 (A) from the driver's under-dash fuse/relay box.

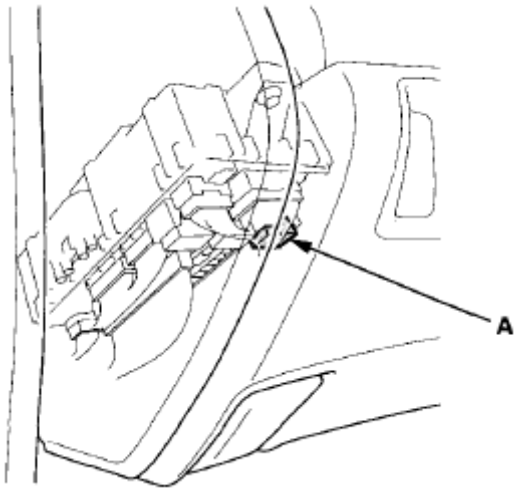


Fig. 165: Identifying Starter Cut Relay
Courtesy of AMERICAN HONDA MOTOR CO., INC.

8. Remove starter cut relay 2 (A) from the under-hood fuse/relay box.

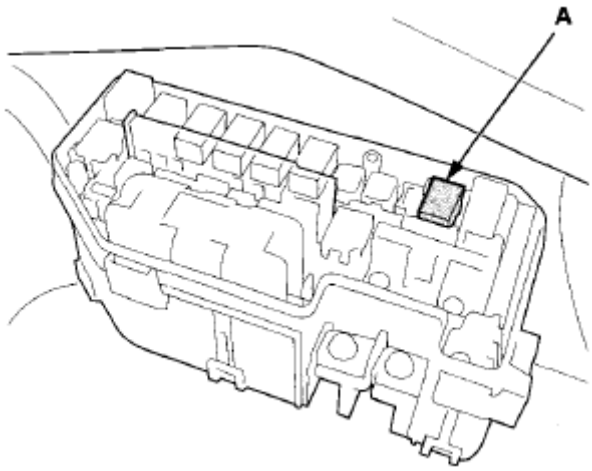


Fig. 166: Identifying Starter Cut Relay 2
Courtesy of AMERICAN HONDA MOTOR CO., INC.

9. Test the starter cut relays (see **POWER RELAY TEST**).

   Are the relays OK?

   YES - Go to step 10.

   NO - Replace starter cut relay 1 and/or starter cut relay 2, then go to step 21.

10. Jump the SCS line with the HDS.
11. Disconnect PCM connector A (49P).
12. Check for continuity between PCM connector terminal A3 and body ground.

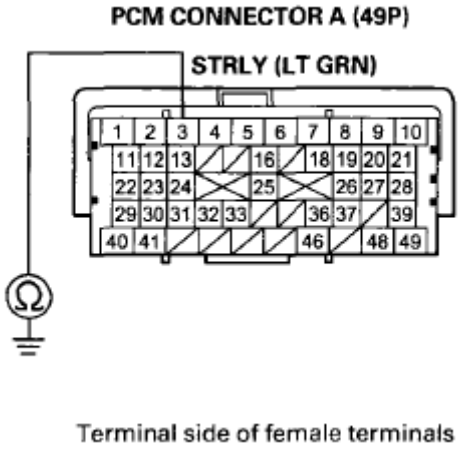


Fig. 167: Checking Continuity Between PCM Connector Terminal A3 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair short in the wire between the PCM (A3) and starter cut relay 1 or starter cut relay 2, then go to step 21.

NO - Go to step 27.

13. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
14. Remove the driver's dashboard undercover (see **DRIVER'S DASHBOARD UNDERCOVER REMOVAL/INSTALLATION**), then remove starter cut relay 1 (A) from the driver's under-dash fuse/relay box.

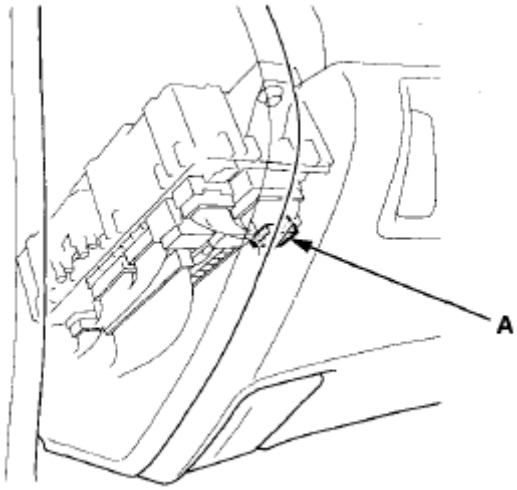


Fig. 168: Identifying Starter Cut Relay
Courtesy of AMERICAN HONDA MOTOR CO., INC.

15. Remove starter cut relay 2 (A) from the under-hood fuse/relay box.

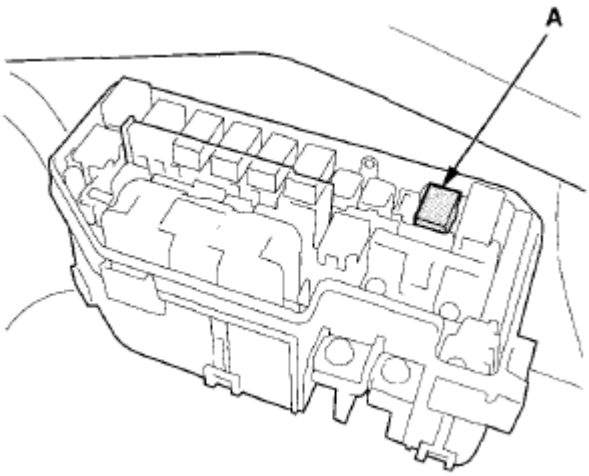


Fig. 169: Identifying Starter Cut Relay 2
Courtesy of AMERICAN HONDA MOTOR CO., INC.

16. Test the starter cut relays (see **POWER RELAY TEST**).

Are the relays OK?

YES - Go to step 17.

NO - Replace starter cut relay 1 and/or starter cut relay 2, then go to step 21.

17. Jump the SCS line with the HDS.
18. Disconnect PCM connector A (49P).
19. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
20. Measure the voltage between PCM connector terminal A3 and body ground.

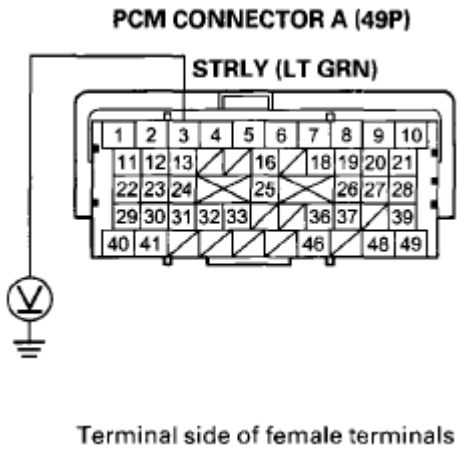


Fig. 170: Measuring Voltage Between PCM Connector Terminal A3 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there 1.0 V or more?

YES - Repair short to power in the wire between starter cut relay 1, starter cut relay 2, and the PCM (A3) then go to step 21.

NO - Go to step 26.

21. Reconnect all connectors.
22. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
23. Reset the PCM with the HDS.
24. Do the PCM idle learn procedure (see **ECM/PCM IDLE LEARN PROCEDURE**).
25. Check for Pending or Confirmed DTCs with the HDS.

Is DTC P16BF indicated?

YES - Check for poor connections or loose terminals at starter cut relay 1, starter cut relay 2, and the PCM, then go to step 1.

NO - Troubleshooting is complete. If any other Pending or Confirmed DTCs are indicated, go to the indicated DTC's troubleshooting. •

26. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
27. Reconnect all connectors.
28. Update the **PCM** if it does not have the latest software (see **ECM/PCM Update**), or substitute a known-good PCM (see **SUBSTITUTING THE ECM/PCM**).
29. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P16BF indicated?

    YES - Check for poor connections or loose terminals at starter cut relay 1, starter cut relay 2, and the PCM. If the PCM was updated, substitute a known-good PCM (see **SUBSTITUTING THE ECM/PCM**), then recheck. If the PCM was substituted, go to step 1.

    NO - If the PCM was updated, troubleshooting is complete. If the PCM was substituted, replace the original **PCM** (see **ECM/PCM Replacement**). If any other Pending or Confirmed DTCs are indicated, go to the indicated DTC's troubleshooting. •

DTC P16E1: +B CUT RELAY CIRCUIT MALFUNCTION

NOTE: Before you troubleshoot, record all freeze data and any on-board snap shot, and review the general troubleshooting information (see GENERAL TROUBLESHOOTING INFORMATION).

1. Press the engine start/stop button to select the ON mode.
2. Clear the DTC with the HDS.
3. Check the STARTER CUT RELAY in the DATA LIST with the HDS.

   Is 1.74 V or less indicated when the clutch pedal is pressed?

   YES - Go to step 4.

   NO - Intermittent failure, the system is OK at this time. Check for poor connections and loose terminals at the + B cut relay, starter cut relay 2, and the ECM. •

4. Remove the driver's dashboard under cover (see **DRIVER'S DASHBOARD UNDERCOVER REMOVAL/INSTALLATION**), then remove the +B cut relay (A).

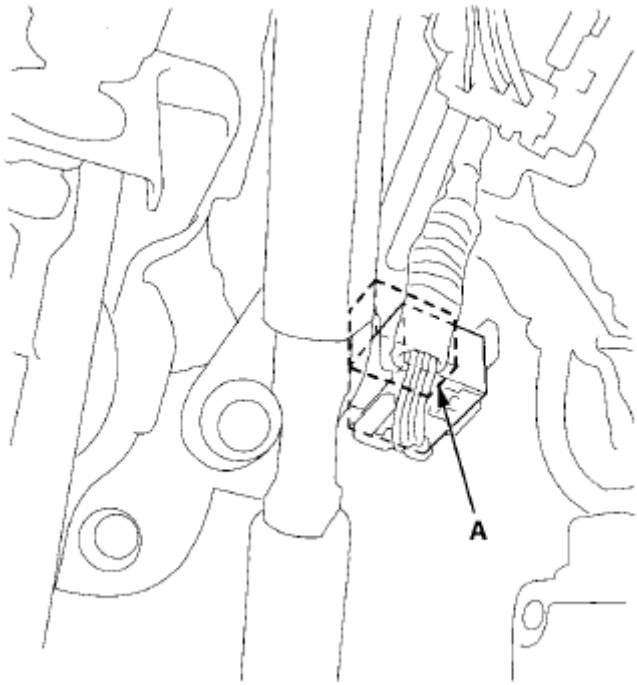


Fig. 171: Identifying +B Cut Relay
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Check the STARTER CUT RELAY in the DATA LIST with the HDS.

   Is 1.74 V or less indicated only when clutch pedal is pressed?

   YES - Go to step 6.

   NO - Replace the +B cut relay, then go to step 10.

6. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
7. Remove starter cut relay 2 (A) from the under-hood fuse/relay box.

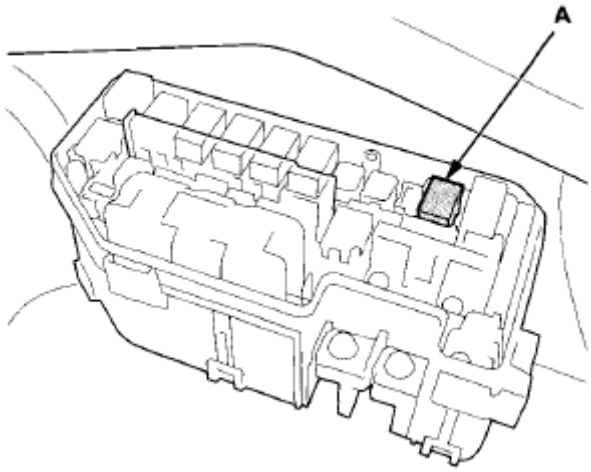


Fig. 172: Identifying Starter Cut Relay 2
Courtesy of AMERICAN HONDA MOTOR CO., INC.

8. Press the engine start/stop button to select the ON mode.
9. Measure the voltage between starter cut relay 2 4P connector terminal No. 4 and body ground.

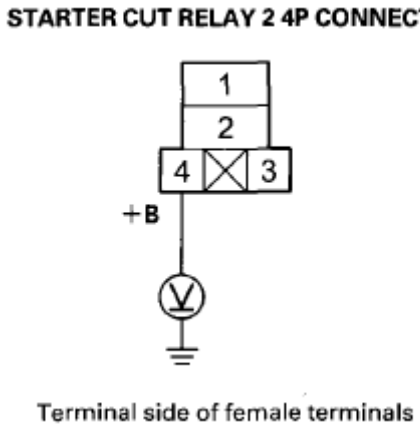


Fig. 173: Measuring Voltage Between Starter Cut Relay 2 4P Connector Terminal No. 4 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there 1.0 V or less?

YES - Replace starter cut relay 2, then go to step 10.

NO - Repair short to power in the wire between the +B cut relay and the under-hood fuse/relay box (starter cut relay 2), then go to step 10.

10. Reconnect all connectors.
11. Press the engine start/stop button to select the ON mode.
12. Reset the ECM with the HDS.

13. Do the ECM idle learn procedure (see **ECM/PCM IDLE LEARN PROCEDURE**).
14. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P16E1 indicated?

    YES - Check for poor connections or loose terminals at the +B cut relay, starter cut relay 2, and the ECM, then go to step 1.

    NO - Troubleshooting is complete. If any other Pending or Confirmed DTCs are indicated, go to the indicated DTC's troubleshooting. •

DTC P2183: ECT SENSOR 2 CIRCUIT RANGE/PERFORMANCE PROBLEM

NOTE:

- **Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see GENERAL TROUBLESHOOTING INFORMATION).**
- **If DTC P0111 is stored at the same time as DTC P2183, troubleshoot DTC P0111 first, then recheck for DTC P2183.**

1. Check for poor connections or loose terminals at ECT sensor 1 and ECT sensor 2.

   Are the connections and terminals OK?

   YES - Go to step 2.

   NO - Repair the connections or terminals, then go to step 21.

2. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
3. Check for Pending or Confirmed DTCs with the HDS.

   Are DTC P1116 and P2183 indicated at the same time?

   YES - Go to step 12.

   NO - Go to step 4.

4. Start the engine, and let it idle for 10 minutes.
5. Check ECT SENSOR 2 in the DATA LIST with the HDS.

   Is about 120°F (49°C) or less indicated?

   YES - Replace **ECT sensor 2**, then go to step 21.

   NO - Go to step 6.

6. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
7. Allow ECT sensor 2 to cool to the ambient temperature.
8. Note the ambient temperature.
9. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
10. Quickly note the value of ECT SENSOR 2 in the DATA LIST with the HDS.
11. Compare the value of ECT SENSOR 2 and the ambient temperature.

    Does ECT SENSOR 2 differ 5.4°F (3°C) or more from the ambient temperature?

    YES - Replace **ECT sensor 2**, then go to step 21.

    NO - Intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at ECT sensor 1, ECT sensor 2, and the ECM/PCM. •

12. Start the engine, and let it idle for 10 minutes.
13. Check ECT SENSOR 1 in the DATA LIST with the HDS.

    Is about 120°F (49°C) or less indicated?

    YES - Replace **ECT sensor 1**, then go to step 21.

    NO - Go to step 14.

14. Check ECT SENSOR 2 in the DATA LIST with the HDS.

    Is about 120°F (49°C) or less indicated?

    YES - Replace **ECT sensor 2**, then go to step 21.

    NO - Go to step 15.

15. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
16. Allow ECT sensor 1 and ECT sensor 2 to cool to the ambient temperature.
17. Note the ambient temperature.
18. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
19. Quickly note the value of ECT SENSOR 1 and ECT SENSOR 2 in the DATA LIST with the HDS.
20. Compare the value of ECT SENSOR 1 and the ambient temperature, and the value of ECT SENSOR 2 and the ambient temperature individually.

    Does either sensor differ more than 5.4°F (3°C) from the ambient temperature?

    YES - Replace the sensor that differed more than 5.4°F (3°C) from the ambient temperature. Refill the cooling system (see **COOLANT REPLACEMENT**), then go to step 21.

NO - Intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at ECT sensor 1, ECT sensor 2, and the ECM/PCM. •

21. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
22. Reset the ECM/PCM with the HDS.
23. Do the ECM/PCM idle learn procedure (see **ECM/PCM IDLE LEARN PROCEDURE**).
24. Check for Pending or Confirmed DTCs with the HDS.

Is DTC P2183 indicated?

YES - Check for poor connections or loose terminals at ECT sensor 1, ECT sensor 2, and the ECM/PCM, then go to step 1.

NO - Troubleshooting is complete. If any other Pending or Confirmed DTCs are indicated, go to the indicated DTC's troubleshooting. •

DTC P2184: ECT SENSOR 2 CIRCUIT LOW VOLTAGE

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see GENERAL TROUBLESHOOTING INFORMATION).

1. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
2. Check ECT SENSOR 2 in the DATA LIST with the HDS.

Is about 356°F (180°C) or more, or 0.08 V or less indicated?

YES - Go to step 3.

NO - Intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at ECT sensor 2 and the ECM/PCM. •

3. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
4. Disconnect the ECT sensor 2 2P connector.
5. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
6. Check ECT SENSOR 2 in the DATA LIST with the HDS.

Is about 356°F (180°C) or more, or 0.08 V or less indicated?

YES - Go to step 7.

NO - Go to step 11.

7. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
8. Jump the SCS line with the HDS.

9. Disconnect ECM/PCM connector A (49P).
10. Check for continuity between ECT sensor 2 2P connector terminal No. 1 and body ground.

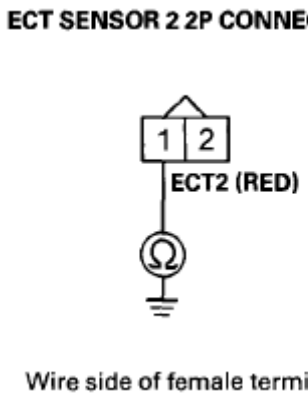


Fig. 174: Checking Continuity Between ECT Sensor 2 2P Connector Terminal No. 1 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair short in the wire between ECT sensor 2 and the ECM/PCM (A21), then go to step 13.

NO - Go to step 18.

11. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
12. Replace **ECT sensor 2**.
13. Reconnect all connectors.
14. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
15. Reset the ECM/PCM with the HDS.
16. Do the ECM/PCM idle learn procedure (see **ECM/PCM IDLE LEARN PROCEDURE**).
17. Check for Pending or Confirmed DTCs with the HDS.

Is DTC P2184 indicated?

YES - Check for poor connections or loose terminals at ECT sensor 2 and the ECM/PCM, then go to step 1.

NO - Troubleshooting is complete. If any other Pending or Confirmed DTCs are indicated, go to the indicated DTC's troubleshooting. •

18. Reconnect all connectors.
19. Update the **ECM/PCM** if it does not have the latest software (see **ECM/PCM Update**), or substitute a known-good ECM/PCM (see **SUBSTITUTING THE ECM/PCM**).
20. Check for Pending or Confirmed DTCs with the HDS.

Is DTC P2184 indicated?

YES - Check for poor connections or loose terminals at ECT sensor 2 and the ECM/PCM. If the ECM/PCM was updated, substitute a known-good ECM/PCM (see **SUBSTITUTING THE ECM/PCM**), then recheck. If the ECM/PCM was substituted, go to step 1.

NO - If the ECM/PCM was updated, troubleshooting is complete. If the ECM/PCM was substituted, replace the original **ECM/PCM** (see **ECM/PCM Replacement**). If any other Pending or Confirmed DTCs are indicated, go to the indicated DTC's troubleshooting. •

DTC P2185: ECT SENSOR 2 CIRCUIT HIGH VOLTAGE

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see GENERAL TROUBLESHOOTING INFORMATION).

1. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
2. Check ECT SENSOR 2 in the DATA LIST with the HDS.

   Is about -40°F (-40°C) or less, or 4.92 V or more indicated?

   YES - Go to step 3.

   NO - Intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at ECT sensor 2 and the ECM/PCM. •

3. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
4. Disconnect the ECT sensor 2 2P connector.
5. Connect ECT sensor 2 2P connector terminals No. 1 and No. 2 with a jumper wire.

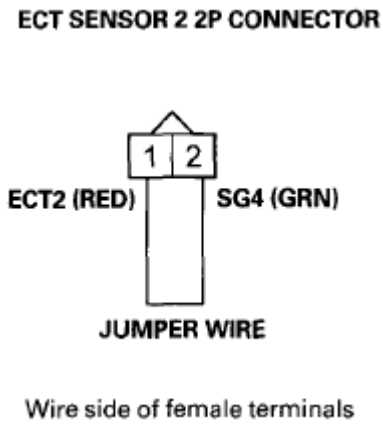


Fig. 175: Connecting ECT Sensor 2 2P Connector Terminals No. 1 And No. 2 With Jumper Wire
Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.

7. Check ECT SENSOR 2 in the DATA LIST with the HDS.

   Is about - 40°F (-40°C) or less, or 4.92 V or more indicated?

   YES - Go to step 8.

   NO - Go to step 20.

8. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
9. Remove the jumper wire from the ECT sensor 2 2P connector.
10. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
11. Measure the voltage between ECT sensor 2 2P connector terminal No. 1 and body ground.

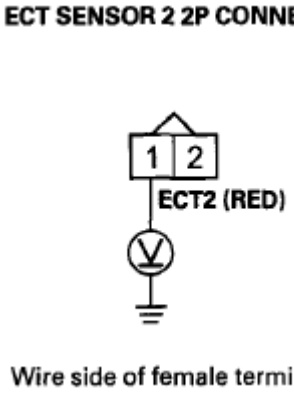


Fig. 176: Measuring Voltage Between ECT Sensor 2 2P Connector Terminal No. 1 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

   Is there about 5 V?

   YES - Go to step 12.

   NO - Go to step 16.

12. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
13. Jump the SCS line with the HDS.
14. Disconnect ECM/PCM connector A (49P).
15. Check for continuity between ECM/PCM connector terminal A27 and ECT sensor 2 2P connector terminal No. 2.

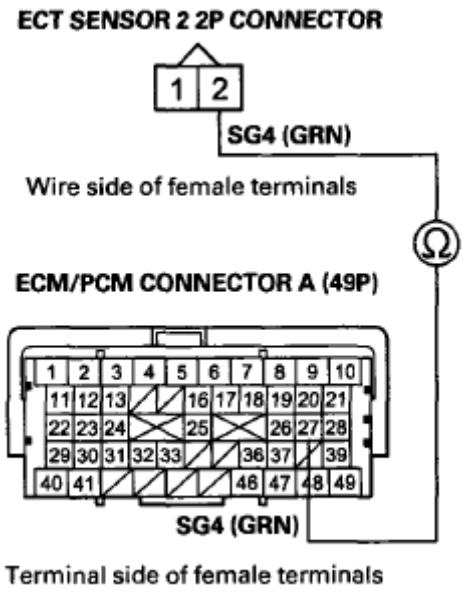


Fig. 177: Checking Continuity Between ECM/PCM Connector And ECT Sensor 2 2P Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 27.

NO - Repair open in the wire between the ECM/PCM (A27) and ECT sensor 2, then go to step 22.

16. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
17. Jump the SCS line with the HDS.
18. Disconnect ECM/PCM connector A (49P).
19. Check for continuity between ECM/PCM connector terminal A21 and ECT sensor 2 2P connector terminal No. 1.

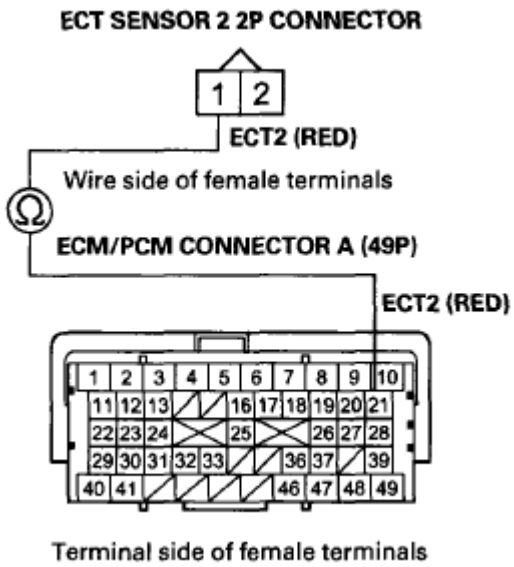


Fig. 178: Checking Continuity Between ECM/PCM Connector And ECT Sensor 2 2P Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 27.

NO - Repair open in the wire between the ECM/PCM (A21) and ECT sensor 2, then go to step 22.

20. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
21. Replace **ECT sensor 2**.
22. Reconnect all connectors.
23. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
24. Reset the ECM/PCM with the HDS.
25. Do the ECM/PCM idle learn procedure (see **ECM/PCM IDLE LEARN PROCEDURE**).
26. Check for Pending or Confirmed DTCs with the HDS.

Is DTC P2185 indicated?

YES - Check for poor connections or loose terminals at ECT sensor 2 and the ECM/PCM, then go to step 1.

NO - Troubleshooting is complete. If any other Pending or Confirmed DTCs are indicated, go to the indicated DTC's troubleshooting. •

27. Reconnect all connectors.
28. Update the **ECM/PCM** if it does not have the latest software (see **ECM/PCM Update**), or substitute a known-good ECM/PCM (see **SUBSTITUTING THE ECM/PCM**).
29. Check for Pending or Confirmed DTCs with the HDS.

Is DTC P2185 indicated?

YES - Check for poor connections or loose terminals at ECT sensor 2 and the ECM/PCM. If the ECM/PCM was updated, substitute a known-good ECM/PCM (see **SUBSTITUTING THE ECM/PCM**), then recheck. If the ECM/PCM was substituted, go to step 1.

NO - If the ECM/PCM was updated, troubleshooting is complete. If the ECM/PCM was substituted, replace the original **ECM/PCM** (see **ECM/PCM Replacement**). If any other Pending or Confirmed DTCs are indicated, go to the indicated DTC's troubleshooting. •

DTC P2195: REAR A/F SENSOR (BANK 1, SENSOR 1) SIGNAL STUCK LEAN; DTC P2197: FRONT A/F SENSOR (BANK 2, SENSOR 1) SIGNAL STUCK LEAN

NOTE:

- **Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see GENERAL TROUBLESHOOTING INFORMATION).**
- **Information marked with an asterisk (*) applies to the front bank (Bank 2).**
- **If the vehicle was out of fuel and the engine stalled before this DTC was stored, refuel, and clear the DTC with the HDS.**
- **If DTC P2101, P2118, P2135, P2138, P2176, or a combination of P2122 and P2127, P2122 and P2138, or P2127 and P2138 is stored at the same time as DTC P2195 (P2197)*, troubleshoot those DTCs first, then recheck for DTC P2195 (P2197)*.**

1. Check for dirt or debris on the MAF sensor/IAT sensor.

   Is it dirty?

   YES - Remove the debris. If needed, replace the **MAF sensor/IAT sensor**, then go to step 9.

   NO - Go to step 2.

2. Check the installation of the A/F sensor (Sensor 1).

   Is the A/F sensor loose or disconnected from the exhaust pipe?

   YES - Go to step 7.

   NO - Go to step 3.

3. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
4. Clear the DTC with the HDS.
5. Start the engine, and let it idle for 2 minutes.
6. Check for Pending or Confirmed DTCs with the HDS.

Is DTC P2195 and/or P2197 indicated?*

YES - Check for poor connections or loose terminals at the A/F sensor (Sensor 1) and the ECM/PCM, then go to step 14.

NO - Intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at the A/F sensor (Sensor 1) and the ECM/PCM. If any other Pending or Confirmed DTCs are indicated, go to the indicated DTC's troubleshooting. •

7. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
8. Reinstall the **A/F sensor (Sensor 1)**.
9. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
10. Reset the ECM/PCM with the HDS.
11. Do the ECM/PCM idle learn procedure (see **ECM/PCM IDLE LEARN PROCEDURE**).
12. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P2195 and/or P2197 indicated?*

    YES - Check for poor connections or loose terminals at the A/F sensor (Sensor 1) and the ECM/PCM, then go to step 1.

    NO - Go to step 13.

13. Monitor the OBD STATUS for DTC P2195 and/or P2197* in the DTCs MENU with the HDS.

    Does the screen indicate PASSED?

    YES - Troubleshooting is complete. If any other Pending or Confirmed DTCs were indicated in step 12, go to the indicated DTC's troubleshooting. •

    NO - If the screen indicates FAILED, check for poor connections or loose terminals at the A/F sensor (Sensor 1) and the ECM/PCM, then go to step 1. If the screen indicates NOT COMPLETED, keep idling until a result comes on.

14. Update the **ECM/PCM** if it does not have the latest software (see **ECM/PCM Update**), or substitute a known-good PCM (see **SUBSTITUTING THE ECM/PCM**).
15. Start the engine, and let it idle for 2 minutes.
16. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P2195 and/or P2197 indicated?*

    YES - Check for poor connections or loose terminals at the A/F sensor (Sensor 1) and the ECM/PCM. If the ECM/PCM was updated, substitute a known-good ECM/PCM (see **SUBSTITUTING THE ECM/PCM**), then go to step 15. If the ECM/PCM was substituted, go to step 1.

    NO - Go to step 17.

17. Monitor the OBD STATUS for DTC P2195 and/or P2197* in the DTCs MENU with the HDS.

    Does the screen indicate PASSED?

    YES - If the ECM/PCM was updated, troubleshooting is complete. If the ECM/PCM was substituted, replace the original **ECM/PCM** (see **ECM/PCM Replacement**). If any other Pending or Confirmed DTCs were indicated instep 16, go to the indicated DTC's troubleshooting. •

    NO - If the screen indicates FAILED, check for poor connections or loose terminals at the A/F sensor (Sensor 1) and the ECM/PCM. If the ECM/PCM was updated, substitute a known-good ECM/PCM (see **SUBSTITUTING THE ECM/PCM**), then go to step 15. If the ECM/PCM was substituted, go to step 1. If the screen indicates NOT COMPLETED, keep idling until a result comes on.

DTC P2227: BARO SENSOR CIRCUIT RANGE/PERFORMANCE PROBLEM

NOTE:

- **Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see GENERAL TROUBLESHOOTING INFORMATION).**
- **If DTC P0107, P0108, P1128, and/or P1129 are stored at the same time as DTC P2227, troubleshoot those DTCs first, then recheck for DTC P2227.**

1. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode, and wait 2 seconds.
2. Check the BARO SENSOR in the DATA LIST with the HDS.

   Is about 101 kPa (29.9 inHg, 760 mmHg), or about 2.9 V at sea level indicated?

   YES - Go to step 3.

   NO - Go to step 15.

3. Clear the DTC with the HDS.
4. Start the engine. Hold the engine speed at 3, 000 RPM without load (A/T in P or N, M/T in neutral) until the radiator fan comes on, then let it idle.
5. Test-drive under these conditions:
   - Engine coolant temperature (ECT SENSOR 1) above 158°F (70°C)
   - A/T in D, or M/T in 4th
   - Throttle position between 16 and 31 degrees for at least 3 seconds
6. Monitor the OBD STATUS for DTC P2227 in the DTCs MENU with the HDS.

   Does the screen indicate FAILED?

   YES - Go to step 7.

NO - If the screen indicates PASSED, intermittent failure, the system is OK at this time. If the screen indicates NOT COMPLETED, go to step 4 and recheck.

7. Check the intake air system for clogging or the restrictions (foreign material, dirty air cleaner element, etc).

   Is the intake air system clogged or restricted?

   YES - Remove the clog or restriction, then go to step 8.

   NO - Go to step 15.

8. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
9. Reset the ECM/PCM with the HDS.
10. Do the ECM/PCM idle learn procedure (see **ECM/PCM IDLE LEARN PROCEDURE**).
11. Start the engine. Hold the engine speed at 3, 000 RPM without load (A/T in P or N, M/T in neutral) until the radiator fan comes on, then let it idle.
12. Test-drive under these conditions:
    - Engine coolant temperature (ECT SENSOR 1) above 158°F (70°C)
    - A/T in D, or M/T in 4th
    - Throttle position between 16 and 31 degrees for at least 3 seconds
13. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P2227 indicated?

    YES - Check for poor connections or loose terminals at the ECM/PCM, then go to step 1.

    NO - Go to step 14.

14. Monitor the OBD STATUS for DTC P2227 in the DTCs MENU with the HDS.

    Does the screen indicate PASSED?

    YES - Troubleshooting is complete. If any other Pending or Confirmed DTCs were indicated instep 13, go to the indicated DTC's troubleshooting. •

    NO - If the screen indicates FAILED, check for poor connections or loose terminals at the ECM/PCM, then go to step 1. If the screen indicates NOT COMPLETED, go to step 11.

15. Update the **ECM/PCM** if it does not have the latest software (see **ECM/PCM Update**), or substitute a known-good ECM/PCM (see **SUBSTITUTING THE ECM/PCM**).
16. Start the engine. Hold the engine speed at 3, 000 RPM without load (A/T in P or N, M/T in neutral) until the radiator fan comes on, then let it idle.
17. Test-drive under these conditions:

- Engine coolant temperature (ECT SENSOR 1) above 158°F (70°C)
- A/T in D, or M/T in 4th
- Throttle position between 16 and 31 degrees for at least 3 seconds

18. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P2227 indicated?

    YES - Check for poor connections or loose terminals at the ECM/PCM. If the ECM/PCM was updated, substitute a known-good ECM/PCM (see **SUBSTITUTING THE ECM/PCM**), then go to step 16. If the ECM/PCM was substituted, go to step 1.

    NO - Go to step 19.

19. Monitor the OBD STATUS for DTC P2227 in the DTCs MENU with the HDS.

    Does the screen indicate PASSED?

    YES - If the ECM/PCM was updated, troubleshooting is complete. If the ECM/PCM was substituted, replace the original **ECM/PCM** (see **ECM/PCM Replacement**). If any other Pending or Confirmed DTCs were indicated instep 18, go to the indicated DTC's troubleshooting. •

    NO - If the screen indicates FAILED, check for poor connections or loose terminals at the ECM/PCM. If the ECM/PCM was updated, substitute a known-good ECM/PCM (see **SUBSTITUTING THE ECM/PCM**), then go to step 16. If the ECM/PCM was substituted, go to step 1. If the screen indicates NOT COMPLETED, go to step 16.

DTC P2228: BARO SENSOR CIRCUIT LOW VOLTAGE

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see GENERAL TROUBLESHOOTING INFORMATION).

1. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
2. Check the BARO SENSOR in the DATA LIST with the HDS.

   Is about 53 kPa (15.6 inHg, 397 mmHg), or 1.08 V or less indicated?

   YES - Go to step 3.

   NO - Intermittent failure, the system is OK at this time. •

3. Update the **ECM/PCM** if it does not have the latest software (see **ECM/PCM Update**), or substitute a known-good ECM/PCM (see **SUBSTITUTING THE ECM/PCM**).
4. Check for Pending or Confirmed DTCs with the HDS.

Is DTC P2228 indicated?

YES - Check for poor connections or loose terminals at the ECM/PCM. If the ECM/PCM was updated, substitute a known-good ECM/PCM (see **SUBSTITUTING THE ECM/PCM**), then recheck. If the ECM/PCM was substituted, go to step 1.

NO - If the ECM/PCM was updated, troubleshooting is complete. If the ECM/PCM was substituted, replace the original **ECM/PCM** (see **ECM/PCM Replacement**). If any other Pending or Confirmed DTCs are indicated, go to the indicated DTC's troubleshooting. •

DTC P2229: BARO SENSOR CIRCUIT HIGH VOLTAGE

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see GENERAL TROUBLESHOOTING INFORMATION).

1. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
2. Check the BARO SENSOR in the DATA LIST with the HDS.

   Is about 160 kPa (47.2 inHg, 1, 200 mmHg), or 4.95 V or more indicated?

   YES - Go to step 3.

   NO - Intermittent failure, the system is OK at this time. •

3. Update the **ECM/PCM** if it does not have the latest software (see **ECM/PCM Update**), or substitute a known-good ECM/PCM (see **SUBSTITUTING THE ECM/PCM**).
4. Check for Pending or Confirmed DTCs with the HDS.

   Is DTC P2229 indicated?

   YES - Check for poor connections or loose terminals at the ECM/PCM. If the ECM/PCM was updated, substitute a known-good ECM/PCM (see **SUBSTITUTING THE ECM/PCM**), then recheck. If the ECM/PCM was substituted, go to step 1.

   NO - If the ECM/PCM was updated, troubleshooting is complete. If the ECM/PCM was substituted, replace the original **ECM/PCM** (see **ECM/PCM Replacement**). If any other Pending or Confirmed DTCs are indicated, go to the indicated DTC's troubleshooting. •

DTC P2237: REAR A/F SENSOR (BANK 1, SENSOR 1) IP CIRCUIT HIGH VOLTAGE; DTC P2240: FRONT A/F SENSOR (BANK 2, SENSOR 1) IP CIRCUIT HIGH VOLTAGE

NOTE:

- **Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see GENERAL TROUBLESHOOTING INFORMATION).**
- **Information marked with an asterisk (*) applies to the front bank (Bank 2).**

1. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
2. Clear the DTC with the HDS.
3. Start the engine. Hold the engine speed at 3, 000 RPM without load (A/T in P or N, M/T in neutral) until the radiator fan comes on, then let it idle for 2 minutes.
4. Check for Pending or Confirmed DTCs with the HDS.

   Is DTC P2237 and/or P2240 indicated?*

   YES - Go to step 5.

   NO - Intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at the A/F sensor (Sensor 1) and the ECM/PCM. •

5. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
6. Jump the SCS line with the HDS.
7. Disconnect the A/F sensor (Sensor 1) 6P connector.
8. Disconnect ECM/PCM connector B (49P).
9. Check for continuity between A/F sensor (Sensor 1) 6P connector terminal No. 5 and ECM/PCM connector terminal B31 (B32)*.

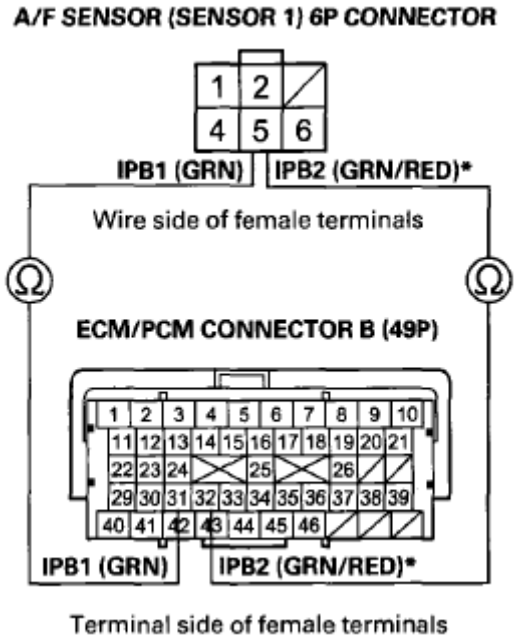


Fig. 179: Checking Continuity Between A/F Sensor 6P Connector Terminal No. 5 And ECM/PCM Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 10.

NO - Repair open in the wire between the ECM/PCM (B31 (B32)*) and the A/F sensor (Sensor 1), then go to step 14.

10. Reconnect ECM/PCM connector B (49P).
11. Start the engine. Hold the engine speed at 3, 000 RPM without load (A/T in P or N, M/T in neutral) until the radiator fan comes on, then let it idle for 2 minutes.
12. Measure the voltage between A/F sensor (Sensor 1) 6P connector terminal No. 5 and body ground.

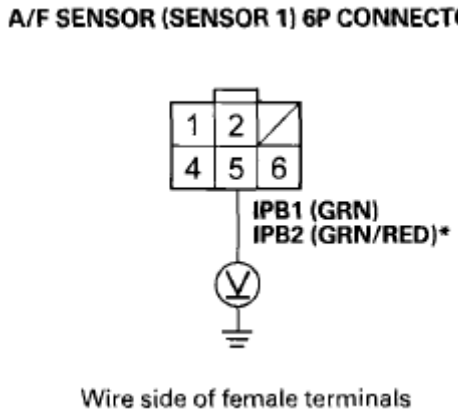


Fig. 180: Measuring Voltage Between A/F Sensor 6P Connector Terminal No. 5 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there about 0.2 V or less?

YES - Go to step 20.

NO - Go to step 13.

13. Replace the **A/F sensor (Sensor 1)**.
14. Reconnect all connectors.
15. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
16. Reset the ECM/PCM with the HDS.
17. Do the ECM/PCM idle learn procedure (see **ECM/PCM IDLE LEARN PROCEDURE**).
18. Check for Pending or Confirmed DTCs with the HDS.

Is DTC P2237 and/or P2240 indicated?*

YES - Check for poor connections or loose terminals at the A/F sensor (Sensor 1) and the ECM/PCM, then go to step 1.

NO - Go to step 19.

19. Monitor the OBD STATUS for DTC P2237 and/or P2240* in the DTCs MENU with the HDS.

Does the screen indicate PASSED?

YES - Troubleshooting is complete. If any other Pending or Confirmed DTCs were indicated in step 18, go to the indicated DTC's troubleshooting. •

NO - If the screen indicates FAILED, check for poor connections or loose terminals at the A/F sensor (Sensor 1) and the ECM/PCM, then go to step 1. If the screen indicates NOT COMPLETED, keep idling until a result comes on.

20. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
21. Reconnect all connectors.
22. Update the **ECM/PCM** if it does not have the latest software (see **ECM/PCM Update**), or substitute a known-good ECM/PCM (see **SUBSTITUTING THE ECM/PCM**).
23. Start the engine, and let it idle.
24. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P2237 and/or P2240 indicated?*

    YES - Check for poor connections or loose terminals at the A/F sensor (Sensor 1) and the ECM/PCM. If the ECM/PCM was updated, substitute a known-good ECM/PCM (see **SUBSTITUTING THE ECM/PCM**), then go to step 23. If the ECM/PCM was substituted, go to step 1.

    NO - Go to step 25.

25. Monitor the OBD STATUS for DTC P2237 and/or P2240* in the DTCs MENU with the HDS.

    Does the screen indicate PASSED?

    YES - If the ECM/PCM was updated, troubleshooting is complete. If the ECM/PCM was substituted, replace the original **ECM/PCM** (see **ECM/PCM Replacement**). If any other Pending or Confirmed DTCs were indicated in step 24, go to the indicated DTC's troubleshooting. •

    NO - If the screen indicates FAILED, check for poor connections or loose terminals at the A/F sensor (Sensor 1) and the ECM/PCM. If the ECM/PCM was updated, substitute a known-good ECM/PCM (see **SUBSTITUTING THE ECM/PCM**), then go to step 23. If the ECM/PCM was substituted, go to step 1. If the screen indicates NOT COMPLETED, keep idling until a result comes on.

DTC P2238: REAR A/F SENSOR (BANK 1, SENSOR 1) IP CIRCUIT LOW VOLTAGE; DTC P2241: FRONT A/F SENSOR (BANK 2, SENSOR 1) IP CIRCUIT LOW VOLTAGE

NOTE:

- **Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see GENERAL TROUBLESHOOTING INFORMATION).**
- **Information marked with an asterisk (*) applies to the front bank (Bank 2).**

1. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.

2. Clear the DTC with the HDS.
3. Start the engine. Hold the engine speed at 3, 000 RPM without load (A/T in P or N, M/T in neutral) until the radiator fan comes on, then let it idle for 2 minutes.
4. Check for Pending or Confirmed DTCs with the HDS.

   Is DTC P2238 and/or P2241 indicated?*

   YES - Go to step 5.

   NO - Intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at the A/F sensor (Sensor 1) and the ECM/PCM. •

5. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
6. Jump the SCS line with the HDS.
7. Disconnect the A/F sensor (Sensor 1) 6P connector.
8. Disconnect ECM/PCM connector B (49P).
9. Check for continuity between ECM/PCM connector terminal B31 (832)* and body ground.

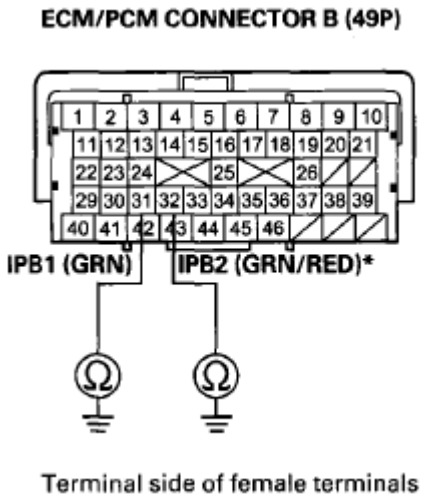


Fig. 181: Checking Continuity Between ECM/PCM Connector Terminal B31 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair short in the wire between the ECM/PCM (B31 (B32)*) and the A/F sensor (Sensor 1), then go to step 14.

NO - Go to step 10.

10. Reconnect ECM/PCM connector B (49P).
11. Start the engine. Hold the engine speed at 3, 000 RPM without load (A/T in P or N, M/T in neutral) until the radiator fan comes on, then let it idle for 2 minutes.

12. Measure the voltage between A/F sensor (Sensor 1) 6P connector terminal No. 5 and body ground.

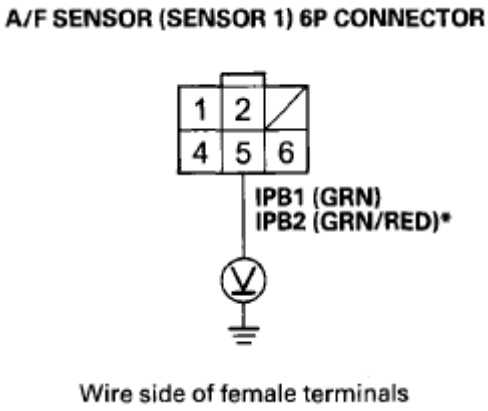


Fig. 182: Measuring Voltage Between A/F Sensor 6P Connector Terminal No. 5 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there about 0.2 V or less?

YES - Go to step 20.

NO - Go to step 13.

13. Replace the **A/F sensor (Sensor 1)**.
14. Reconnect all connectors.
15. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
16. Reset the ECM/PCM with the HDS.
17. Do the ECM/PCM idle learn procedure (see **ECM/PCM IDLE LEARN PROCEDURE**).
18. Check for Pending or Confirmed DTCs with the HDS.

Is DTC P2238 and/or P2241 indicated?*

YES - Check for poor connections or loose terminals at the A/F sensor (Sensor 1) and the ECM/PCM, then go to step 1.

NO - Go to step 19.

19. Monitor the OBD STATUS for DTC P2238 and/or P2241* in the DTCs MENU with the HDS.

Does the screen indicate PASSED?

YES - Troubleshooting is complete. If any other Pending or Confirmed DTCs were indicated in step 18, go to the indicated DTC's troubleshooting. •

NO - If the screen indicates FAILED, check for poor connections or loose terminals at the A/F sensor (Sensor 1) and the ECM/PCM, then go to step 1. If the screen indicates NOT COMPLETED, keep idling

until a result comes on.

20. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
21. Reconnect all connectors.
22. Update the **ECM/PCM** if it does not have the latest software (see **ECM/PCM Update**), or substitute a known-good ECM/PCM (see **SUBSTITUTING THE ECM/PCM**).
23. Start the engine, and let it idle.
24. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P2238 and/or P2241 indicated?*

    YES - Check for poor connections or loose terminals at the A/F sensor (Sensor 1) and the ECM/PCM. If the ECM/PCM was updated, substitute a known-good ECM/PCM (see **SUBSTITUTING THE ECM/PCM**), then go to step 23. If the ECM/PCM was substituted, go to step 1.

    NO - Go to step 25.

25. Monitor the OBD STATUS for DTC P2238 and/or P2241* in the DTCs MENU with the HDS.

    Does the screen indicate PASSED?

    YES - If the ECM/PCM was updated, troubleshooting is complete. If the ECM/PCM was substituted, replace the original **ECM/PCM** (see **ECM/PCM Replacement**). If any other Pending or Confirmed DTCs were indicated in step 24, go to the indicated DTC's troubleshooting. •

    NO - If the screen indicates FAILED, check for poor connections or loose terminals at the A/F sensor (Sensor 1) and the ECM/PCM. If the ECM/PCM was updated, substitute a known-good ECM/PCM (see **SUBSTITUTING THE ECM/PCM**), then go to step 23. If the ECM/PCM was substituted, go to step 1. If the screen indicates NOT COMPLETED, keep idling until a result comes on.

DTC P2243: REAR A/F SENSOR (BANK 1, SENSOR 1) VCENT CIRCUIT HIGH VOLTAGE; DTC P2247: FRONT A/F SENSOR (BANK 2, SENSOR 1) VCENT CIRCUIT HIGH VOLTAGE

NOTE:

- **Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see GENERAL TROUBLESHOOTING INFORMATION).**
- **Information marked with an asterisk (*) applies to the front bank (Bank 2).**

1. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
2. Clear the DTC with the HDS.
3. Start the engine. Hold the engine speed at 3, 000 RPM without load (A/T in P or N, M/T in neutral) until the radiator fan comes on, then let it idle for 2 minutes.
4. Check for Pending or Confirmed DTCs with the HDS.

   Is DTC P2243 and/or P2247 indicated?*

YES - Go to step 5.

NO - Intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at the A/F sensor (Sensor 1) and the ECM/PCM. •

5. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
6. Jump the SCS line with the HDS.
7. Disconnect the A/F sensor (Sensor 1) 6P connector.
8. Disconnect ECM/PCM connector B (49P).
9. Check for continuity between A/F sensor (Sensor 1) 6P connector terminal No. 6 and ECM/PCM connector terminal B15 (B24)*.

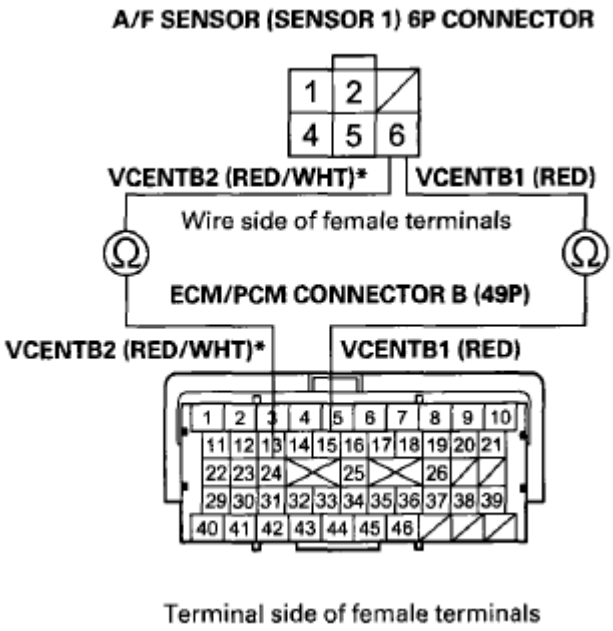


Fig. 183: Checking Continuity Between A/F Sensor 6P Connector Terminal No. 6 And ECM/PCM Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 10.

NO - Repair open in the wire between the ECM/PCM (B15 (B24)*) and the A/F sensor (Sensor 1), then go to step 14.

10. Reconnect ECM/PCM connector B (49P).
11. Start the engine. Hold the engine speed at 3, 000 RPM without load (A/T in P or N, M/T in neutral) until the radiator fan comes on, then let it idle for 2 minutes.
12. Measure the voltage between A/F sensor (Sensor 1) 6P connector terminal No. 6 and body ground.

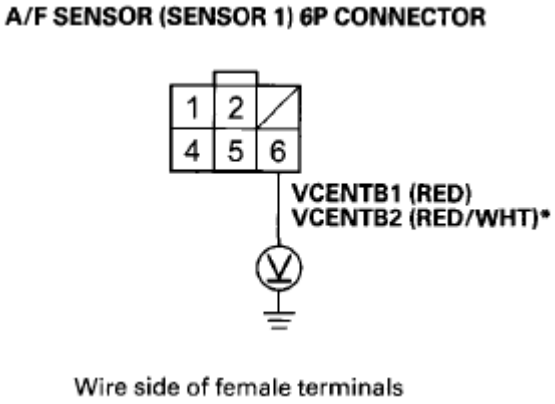


Fig. 184: Measuring Voltage Between A/F Sensor 6P Connector Terminal No. 6 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there about 0.2 V or less?

YES - Go to step 20.

NO - Go to step 13.

13. Replace the **A/F sensor (Sensor 1)**.
14. Reconnect all connectors.
15. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
16. Reset the ECM/PCM with the HDS.
17. Do the ECM/PCM idle learn procedure (see **ECM/PCM IDLE LEARN PROCEDURE**).
18. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P2243 and/or P2241 indicated?*

    YES - Check for poor connections or loose terminals at the A/F sensor (Sensor 1) and the ECM/PCM, then go to step 1.

    NO - Go to step 19.

19. Monitor the OBD STATUS for DTC P2243 and/or P2247* in the DTCs MENU with the HDS.

    Does the screen indicate PASSED?

    YES - Troubleshooting is complete. If any other Pending or Confirmed DTCs were indicated in step 18, go to the indicated DTC's troubleshooting. •

    NO - If the screen indicates FAILED, check for poor connections or loose terminals at the A/F sensor (Sensor 1) and the ECM/PCM, then go to step 1. If the screen indicates NOT COMPLETED, keep idling until a result comes on.

20. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
21. Reconnect all connectors.
22. Update the **ECM/PCM** if it does not have the latest software (see **ECM/PCM Update**), or substitute a known-good ECM/PCM (see **SUBSTITUTING THE ECM/PCM**).
23. Start the engine, and let it idle.
24. Check for Pending or Confirmed DTCs with the HDS.

    If DTC P2243 and/or P2247 indicated?*

    YES - Check for poor connections or loose terminals at the A/F sensor (Sensor 1) and the ECM/PCM. If the ECM/PCM was updated, substitute a known-good ECM/PCM (see **SUBSTITUTING THE ECM/PCM**), then go to step 23. If the ECM/PCM was substituted, go to step 1.

    NO - Go to step 25.

25. Monitor the OBD STATUS for DTC P2243 and/or P2247* in the DTCs MENU with the HDS.

    Does the screen indicate PASSED?

    YES - If the ECM/PCM was updated, troubleshooting is complete. If the ECM/PCM was substituted, replace the original **ECM/PCM** (see **ECM/PCM Replacement**). If any other Pending or Confirmed DTCs were indicated in step 24, go to the indicated DTC's troubleshooting. •

    NO - If the screen indicates FAILED, check for poor connections or loose terminals at the A/F sensor (Sensor 1) and the ECM/PCM. If the ECM/PCM was updated, substitute a known-good ECM/PCM (see **SUBSTITUTING THE ECM/PCM**), then go to step 23. If the ECM/PCM was substituted, go to step 1. If the screen indicates NOT COMPLETED, keep idling until a result comes on.

DTC P2245: REAR A/F SENSOR (BANK 1, SENSOR 1) VCENT CIRCUIT LOW VOLTAGE; DTC P2249: FRONT A/F SENSOR (BANK 2, SENSOR 1) VCENT CIRCUIT LOW VOLTAGE

NOTE:

- **Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see GENERAL TROUBLESHOOTING INFORMATION).**
- **Information marked with an asterisk (*) applies to the front bank (Bank 2).**

1. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
2. Clear the DTC with the HDS.
3. Start the engine. Hold the engine speed at 3, 000 RPM without load (A/T in P or N, M/T in neutral) until the radiator fan comes on, then let it idle for 2 minutes.
4. Check for Pending or Confirmed DTCs with the HDS.

   Is DTC P2245 and/or P2249 indicated?*

YES - Go to step 5.

NO - Intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at the A/F sensor (Sensor 1) and the ECM/PCM. •

5. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
6. Jump the SCS line with the HDS.
7. Disconnect the A/F sensor (Sensor 1) 6P connector.
8. Disconnect ECM/PCM connector B (49P).
9. Check for continuity between ECM/PCM connector terminal B15 (B24)* and body ground.

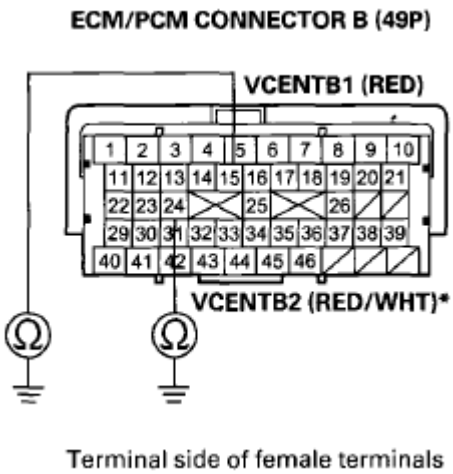


Fig. 185: Checking Continuity Between ECM/PCM Connector Terminal B15 (B24) And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair short in the wire between the ECM/PCM (B15 (B24)*) and the A/F sensor (Sensor 1), then go to step 14.

NO - Go to step 10.

10. Reconnect ECM/PCM connector B (49P).
11. Start the engine. Hold the engine speed at 3, 000 RPM without load (A/T in P or N, M/T in neutral) until the radiator fan comes on, then let it idle for 2 minutes.
12. Measure the voltage between A/F sensor (Sensor 1) 6P connector terminal No. 6 and body ground.

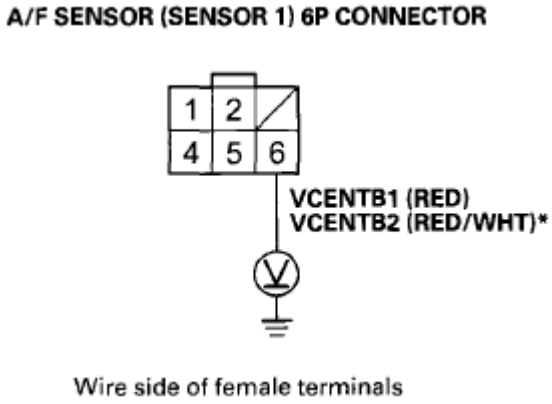


Fig. 186: Measuring Voltage Between A/F Sensor 6P Connector Terminal No. 6 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there about 0.2 V or less?

YES - Go to step 20.

NO - Go to step 13.

13. Replace the **A/F sensor (Sensor 1)**.
14. Reconnect all connectors.
15. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
16. Reset the ECM/PCM with the HDS.
17. Do the ECM/PCM idle learn procedure (see **ECM/PCM IDLE LEARN PROCEDURE**).
18. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P2245 and/or P2249 indicated?*

    YES - Check for poor connections or loose terminals at the A/F sensor (Sensor 1) and the ECM/PCM, then go to step 1.

    NO - Go to step 19.

19. Monitor the OBD STATUS for DTC P2245 and/or P2249* in the DTCs MENU with the HDS.

    Does the screen indicate PASSED?

    YES - Troubleshooting is complete. If any other Pending or Confirmed DTCs were indicated in step 18, go to the indicated DTC's troubleshooting. •

    NO - If the screen indicates FAILED, check for poor connections or loose terminals at the A/F sensor (Sensor 1) and the ECM/PCM, then go to step 1. If the screen indicates NOT COMPLETED, keep idling until a result comes on.

20. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
21. Reconnect all connectors.
22. Update the **ECM/PCM** if it does not have the latest software (see **ECM/PCM Update**), or substitute a known-good ECM/PCM (see **SUBSTITUTING THE ECM/PCM**).
23. Start the engine, and let it idle.
24. Check for Pending or Confirmed DTCs with the HDS.

    If DTC P2245 and/or P2249 indicated?*

    YES - Check for poor connections or loose terminals at the A/F sensor (Sensor 1) and the ECM/PCM. If the ECM/PCM was updated, substitute a known-good ECM/PCM (see **SUBSTITUTING THE ECM/PCM**), then go to step 23. If the ECM/PCM was substituted, go to step 1.

    NO - Go to step 25.

25. Monitor the OBD STATUS for DTC P2245 and/or P2249* in the DTCs MENU with the HDS.

    Does the screen indicate PASSED?

    YES - If the ECM/PCM was updated, troubleshooting is complete. If the ECM/PCM was substituted, replace the original **ECM/PCM** (see **ECM/PCM Replacement**). If any other Pending or Confirmed DTCs were indicated in step 24, go to the indicated DTC's troubleshooting. •

    NO - If the screen indicates FAILED, check for poor connections or loose terminals at the A/F sensor (Sensor 1) and the ECM/PCM. If the ECM/PCM was updated, substitute a known-good ECM/PCM (see **SUBSTITUTING THE ECM/PCM**), then go to step 23. If the ECM/PCM was substituted, go to step 1. If the screen indicates NOT COMPLETED, keep idling until a result comes on.

DTC P2251: REAR A/F SENSOR (BANK 1, SENSOR 1) VS CIRCUIT HIGH VOLTAGE; DTC P2254: FRONT A/F SENSOR (BANK 2, SENSOR 1) VS CIRCUIT HIGH VOLTAGE

NOTE:

- **Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see GENERAL TROUBLESHOOTING INFORMATION).**
- **If DTC P2251 and/or P2254* is stored at the same time as DTC P0134 and/or P0154*, troubleshoot DTC P2251 and/or P2254* first, then recheck for P0134 and/or P0154*.**
- **Information marked with an asterisk (*) applies to the front bank (Bank 2).**

1. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
2. Clear the DTC with the HDS.
3. Start the engine. Hold the engine speed at 3, 000 RPM without load (A/T in P or N, M/T in neutral) until the radiator fan comes on, then let it idle for 2 minutes.
4. Check for Pending or Confirmed DTCs with the HDS.

Is DTC P2251 and/or P225 indicated?*

YES - Go to step 5.

NO - Intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at the A/F sensor (Sensor 1) and the ECM/PCM. •

5. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
6. Jump the SCS line with the HDS.
7. Disconnect the A/F sensor (Sensor 1) 6P connector.
8. Disconnect ECM/PCM connector B (49P).
9. Check for continuity between A/F sensor (Sensor 1) 6P connector terminal No. 4 and ECM/PCM connector terminal B13(B14)*.

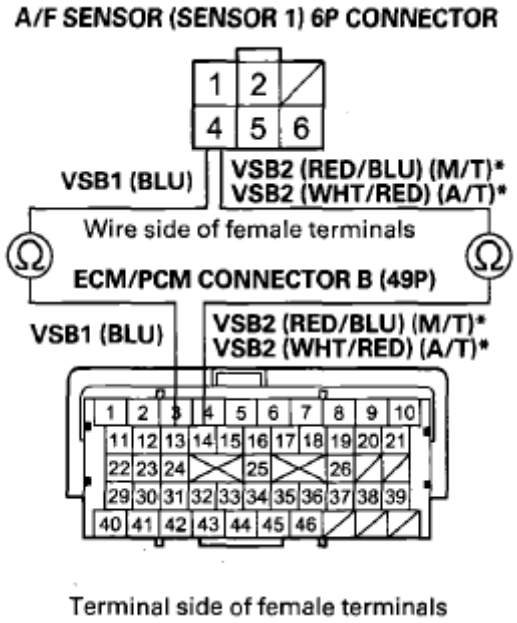


Fig. 187: Checking Continuity Between A/F Sensor 6P Connector Terminal No. 4 And ECM/PCM Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 10.

NO - Repair open in the wire between the ECM/PCM (B13 (B14)*) and the A/F sensor (Sensor 1), then go to step 14.

10. Reconnect ECM/PCM connector B (49P).
11. Start the engine. Hold the engine speed at 3, 000 RPM without load (A/T in P or N, M/T in neutral) until the radiator fan comes on, then let it idle for 2 minutes.

12. Measure the voltage between A/F sensor (Sensor 1) 6P connector terminal No. 4 and body ground.

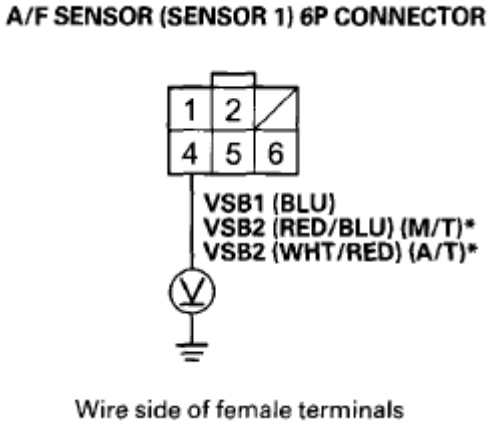


Fig. 188: Measuring Voltage Between A/F Sensor 6P Connector Terminal No. 4 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there about 0.2 V or less?

YES - Go to step 20.

NO - Go to step 13.

13. Replace the **A/F sensor (Sensor 1)**.
14. Reconnect all connectors.
15. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
16. Reset the ECM/PCM with the HDS.
17. Do the ECM/PCM idle learn procedure (see **ECM/PCM IDLE LEARN PROCEDURE**).
18. Check for Pending or Confirmed DTCs with the HDS.

Is DTC P2251 and/or P225 indicated?*

YES - Check for poor connections or loose terminals at the A/F sensor (Sensor 1) and the ECM/PCM, then go to step 1.

NO - Go to step 19.

19. Monitor the OBD STATUS for DTC P2251 and/or P2254* in the DTCs MENU with the HDS.

Does the screen indicate PASSED?

YES - Troubleshooting is complete. If any other Pending or Confirmed DTCs were indicated in step 18, go to the indicated DTC's troubleshooting. •

NO - If the screen indicates FAILED, check for poor connections or loose terminals at the A/F sensor

(Sensor 1) and the ECM/PCM, then go to step 1. If the screen indicates NOT COMPLETED, keep idling until a result comes on.

20. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
21. Reconnect all connectors.
22. Update the **ECM/PCM** if it does not have the latest software (see **ECM/PCM Update**), or substitute a known-good ECM/PCM (see **SUBSTITUTING THE ECM/PCM**).
23. Start the engine, and let it idle.
24. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P2251 and/or P2254 indicated?*

    YES - Check for poor connections or loose terminals at the A/F sensor (Sensor 1) and the ECM/PCM. If the ECM/PCM was updated, substitute a known-good ECM/PCM (see **SUBSTITUTING THE ECM/PCM**), then go to step 23. If the ECM/PCM was substituted, go to step 1.

    NO - Go to step 25.

25. Monitor the OBD STATUS for DTC P2251 and/or P2254* in the DTCs MENU with the HDS.

    Does the screen indicate PASSED?

    YES - If the ECM/PCM was updated, troubleshooting is complete. If the ECM/PCM was substituted, replace the original **ECM/PCM** (see **ECM/PCM Replacement**). If any other Pending or Confirmed DTCs were indicated in step 24, go to the indicated DTC's troubleshooting. •

    NO - If the screen indicates FAILED, check for poor connections or loose terminals at the A/F sensor (Sensor 1) and the ECM/PCM. If the ECM/PCM was updated, substitute a known-good ECM/PCM (see **SUBSTITUTING THE ECM/PCM**), then go to step 23. If the ECM/PCM was substituted, go to step 1. If the screen indicates NOT COMPLETED, keep idling until a result comes on.

DTC P2252: REAR A/F SENSOR (BANK 1, SENSOR 1) VS CIRCUIT LOW VOLTAGE; DTC P2255: FRONT A/F SENSOR (BANK 2, SENSOR 1) VS CIRCUIT LOW VOLTAGE

NOTE:

- **Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see GENERAL TROUBLESHOOTING INFORMATION).**
- **Information marked with an asterisk (*) applies to the front bank (Bank 2).**

1. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
2. Clear the DTC with the HDS.
3. Start the engine. Hold the engine speed at 3, 000 RPM without load (A/T in P or N, M/T in neutral) until the radiator fan comes on, then let it idle for 2 minutes.
4. Check for Pending or Confirmed DTCs with the HDS.

Is DTC P2252 and/or P2255 indicated?*

YES - Go to step 5.

NO - Intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at the A/F sensor (Sensor 1) and the ECM/PCM. •

5. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
6. Jump the SCS line with the HDS.
7. Disconnect the A/F sensor (Sensor 1) 6P connector.
8. Disconnect ECM/PCM connector B (49P).
9. Check for continuity between ECM/PCM connector terminal B13 (B14)* and body ground.

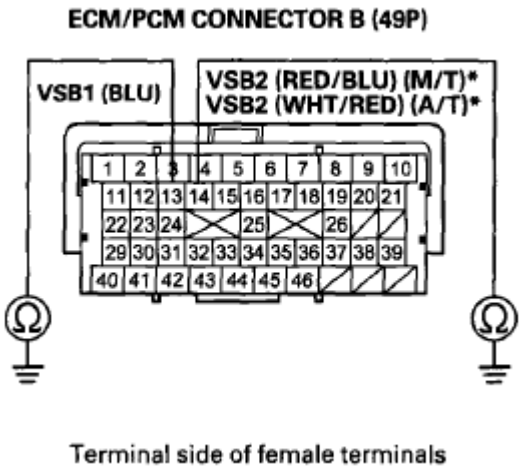


Fig. 189: Checking Continuity Between ECM/PCM Connector Terminal B13 (B14) And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair short in the wire between the ECM/PCM (B13 (B14)*) and the A/F sensor (Sensor 1), then go to step 14.

NO - Go to step 10.

10. Reconnect ECM/PCM connector B (49P).
11. Start the engine. Hold the engine speed at 3, 000 RPM without load (A/T in P or N, M/T in neutral) until the radiator fan comes on, then let it idle for 2 minutes.
12. Measure the voltage between A/F sensor (Sensor 1) 6P connector terminal No. 4 and body ground.

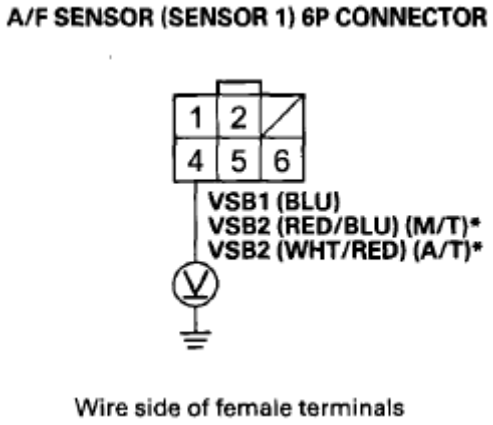


Fig. 190: Measuring Voltage Between A/F Sensor 6P Connector Terminal No. 4 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there about 0.2 V or less?

YES - Go to step 20.

NO - Go to step 13.

13. Replace the **A/F sensor (Sensor 1)**.
14. Reconnect all connectors.
15. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
16. Reset the ECM/PCM with the HDS.
17. Do the ECM/PCM idle learn procedure (see **ECM/PCM IDLE LEARN PROCEDURE**).
18. Check for Pending or Confirmed DTCs with the HDS.

Is DTC P2252 and/or P2255 indicated?*

YES - Check for poor connections or loose terminals at the A/F sensor (Sensor 1) and the ECM/PCM, then go to step 1.

NO - Go to step 19.

19. Monitor the OBD STATUS for DTC P2252 and/or P22551 in the DTCs MENU with the HDS.

Does the screen indicate PASSED?

YES - Troubleshooting is complete. If any other Pending or Confirmed DTCs were indicated in step 18, go to the indicated DTC's troubleshooting. •

NO - If the screen indicates FAILED, check for poor connections or loose terminals at the A/F sensor (Sensor 1) and the ECM/PCM, then go to step 1. If the screen indicates NOT COMPLETED, keep idling until a result comes on.

20. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
21. Reconnect all connectors.
22. Update the **ECM/PCM** if it does not have the latest software (see **ECM/PCM Update**), or substitute a known-good ECM/PCM (see **SUBSTITUTING THE ECM/PCM**).
23. Start the engine, and let it idle.
24. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P2252 and/or P2255 indicated?*

    YES - Check for poor connections or loose terminals at the A/F sensor (Sensor 1) and the ECM/PCM. If the ECM/PCM was updated, substitute a known-good ECM/PCM (see **SUBSTITUTING THE ECM/PCM**), then go to step 23. If the ECM/PCM was substituted, go to step 1.

    NO - Go to step 25.

25. Monitor the OBD STATUS for DTC P2252 and/or P2255* in the DTCs MENU with the HDS.

    Does the screen indicate PASSED?

    YES - If the ECM/PCM was updated, troubleshooting is complete. If the ECM/PCM was substituted, replace the original **ECM/PCM** (see **ECM/PCM Replacement**). If any other Pending or Confirmed DTCs were indicated in step 24, go to the indicated DTC's troubleshooting. •

    NO - If the screen indicates FAILED, check for poor connections or loose terminals at the A/F sensor (Sensor 1) and the ECM/PCM. If the ECM/PCM was updated, substitute a known-good ECM/PCM (see **SUBSTITUTING THE ECM/PCM**), then go to step 23. If the ECM/PCM was substituted, go to step 1. If the screen indicates NOT COMPLETED, keep idling until a result comes on.

DTC P2270: REAR SECONDARY HO2S (BANK 1, SENSOR 2) CIRCUIT SIGNAL STUCK LEAN;
DTC P2272: FRONT SECONDARY HO2S (BANK 2, SENSOR 2) CIRCUIT SIGNAL STUCK LEAN

NOTE:

- **Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see GENERAL TROUBLESHOOTING INFORMATION).**
- **Information marked with an asterisk (*) applies to the front bank (Bank 2).**

1. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
2. Clear the DTC with the HDS.
3. Start the engine. Hold the engine speed at 3, 000 RPM without load (A/T in P or N, M/T in neutral) until the radiator fan comes on, then let it idle.
4. Test-drive under these conditions:
   - Engine coolant temperature (ECT SENSOR 1) above 158°F (70°C)
   - A/T in D, or M/T in 4th
   - Engine speed between 1, 500 - 3, 000 RPM

- Drive 35 seconds or more

5. Monitor the OBD STATUS for DTC P2270 and/or P2272* in the DTCs MENU with the HDS.

   Does the HDS indicate FAILED?

   YES - Go to step 6.

   NO - If the HDS indicates PASSED, intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at the secondary HO2S (Sensor 2) and the ECM/PCM. If the HDS indicates NOT COMPLETED, go to step 3 and recheck.

6. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
7. Replace the **secondary HO2S (Sensor 2)**.
8. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
9. Reset the ECM/PCM with the HDS.
10. Do the ECM/PCM idle learn procedure (see **ECM/PCM IDLE LEARN PROCEDURE**).
11. Start the engine. Hold the engine speed at 3, 000 RPM without load (A/T in P or N, M/T in neutral) until the radiator fan comes on, then let it idle.
12. Test-drive under these conditions:
    - Engine coolant temperature (ECT SENSOR 1) above 158°F (70°C)
    - A/T in D, or M/T in 4th
    - Engine speed between 1, 500- 3, 000 RPM
    - Drive 35 seconds or more
13. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P2270 and/or P2272 indicated?*

    YES - Check for poor connections or loose terminals at the secondary HO2S (Sensor 2) and the ECM/PCM, then go to step 1.

    NO - Go to step 14.

14. Monitor the OBD STATUS for DTC P2270 and/or P2272* in the DTCs MENU with the HDS.

    Does the HDS indicate PASSED?

    YES - Troubleshooting is complete. If any other Pending or Confirmed DTCs were indicated instep 13, go to the indicated DTC's troubleshooting. •

    NO - If the HDS indicates FAILED, check for poor connections or loose terminals at the secondary HO2S (Sensor 2) and the ECM/PCM, then go to step 1. If the HDS indicates NOT COMPLETED, go to step 11.

DTC P2610: ECM/PCM IGNITION OFF INTERNAL TIMER MALFUNCTION

NOTE: **Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see GENERAL TROUBLESHOOTING INFORMATION).**

1. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
2. Clear the DTC with the HDS.
3. Check for Pending or Confirmed DTCs with the HDS.

   Is DTC P2610 indicated?

   YES - Go to step 4.

   NO - Intermittent failure, the system is OK at this time. If any other Pending or Confirmed DTCs are indicated, go to the indicated DTC's troubleshooting. •

4. Update the **ECM/PCM** if it does not have the latest software (see **ECM/PCM Update**), or substitute a known-good ECM/PCM (see **SUBSTITUTING THE ECM/PCM**).
5. Check for Pending or Confirmed DTCs with the HDS.

   Is DTC P2610 indicated?

   YES - If the ECM/PCM was updated, substitute a known-good ECM/PCM (see **SUBSTITUTING THE ECM/PCM**), then recheck. If the ECM/PCM was substituted, go to step 1.

   NO - If the ECM/PCM was updated, troubleshooting is complete. If the ECM/PCM was substituted, replace the original **ECM/PCM** (see **ECM/PCM Replacement**). If any other Pending or Confirmed DTCs are indicated, go to the indicated DTC's troubleshooting. •

DTC P2A00: REAR A/F SENSOR (BANK 1, SENSOR 1) CIRCUIT RANGE/PERFORMANCE PROBLEM; DTC P2A03: FRONT A/F SENSOR (BANK 2, SENSOR 1) CIRCUIT RANGE/PERFORMANCE PROBLEM

NOTE:

- **Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see GENERAL TROUBLESHOOTING INFORMATION).**
- **Information marked with an asterisk (*) applies to the front bank (Bank 2).**

1. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
2. Clear the DTC with the HDS.
3. Start the engine. Hold the engine speed at 3, 000 RPM without load (A/T in P or N, M/T in neutral) until the radiator fan comes on, then let it idle.
4. Test-drive under these conditions:
   - Engine coolant temperature (ECT SENSOR 1) above 158°F (70°C)
   - A/T in D, or M/T in 3rd

- Vehicle speed between 25- 55 mph (40- 88 km/h) for 5 minutes
- Drive at a steady speed between 55- 75 mph (88 - 120 km/h) for 10 seconds, then decelerate (with the throttle fully closed) for 6 seconds

5. Monitor the OBD STATUS for DTC P2A00 and/or P2A03* in the DTCs MENU with the HDS.

   Does the screen indicate FAILED?

   YES - Go to step 6.

   NO - If the screen indicates PASSED, intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at the A/F sensor (Sensor 1) and the ECM/PCM. If the screen indicates EXECUTING, keep driving until a result comes on. If the screen indicates OUT OF CONDITION, go to step 3 and recheck.

6. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
7. Replace the **A/F sensor (Sensor 1)**.
8. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
9. Reset the ECM/PCM with the HDS.
10. Do the ECM/PCM idle learn procedure (see **ECM/PCM IDLE LEARN PROCEDURE**).
11. Test-drive under these conditions:
    - Engine coolant temperature (ECT SENSOR 1) above 158°F (70°C)
    - A/T in D, or M/T in 3rd
    - Vehicle speed between 25- 55 mph (40- 88 km/h) for 5 minutes
    - Drive at a steady speed between 55- 75 mph (88- 120 km/h) for 10 seconds, then decelerate (with the throttle fully closed) for 6 seconds
12. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P2A00 and/or P2A03 indicated?*

    YES - Check for poor connections or loose terminals at the A/F sensor (Sensor 1) and the ECM/PCM, then go to step 1.

    NO - Go to step 13.

13. Monitor the OBD STATUS for DTC P2A00 and/or P2A03* in the DTCs MENU with the HDS.

    Does the screen indicate PASSED?

    YES - Troubleshooting is complete. If any other Pending or Confirmed DTCs were indicated in step 12, go to the indicated DTC's troubleshooting. •

    NO - If the screen indicates FAILED, check for poor connections or loose terminals at the A/F sensor (Sensor 1) and the ECM/PCM, then go to step 1. If the screen indicates EXECUTING, keep driving until a result comes on. If the screen indicates OUT OF CONDITION, go to step 11.

DTC U0029: F-CAN MALFUNCTION (BUS-OFF (ECM/PCM))

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see GENERAL TROUBLESHOOTING INFORMATION).

1. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
2. Clear the DTC with the HDS.
3. Check for Pending or Confirmed DTCs with the HDS.

   Is DTC U0029 indicated?

   YES - Go to step 4.

   NO - Intermittent failure, the system is OK at this time. •

4. Update the **ECM/PCM** if it does not have the latest software (see **ECM/PCM Update**), or substitute a known-good ECM/PCM (see **SUBSTITUTING THE ECM/PCM**).
5. Check for Pending or Confirmed DTCs with the HDS.

   Is DTC U0029 indicated?

   YES - If the ECM/PCM was updated, substitute a known-good ECM/PCM (see **SUBSTITUTING THE ECM/PCM**), then recheck. If the ECM/PCM was substituted, go to step 1.

   NO - If the ECM/PCM was updated, troubleshooting is complete. If the ECM/PCM was substituted, replace the original **ECM/PCM** (see **ECM/PCM Replacement**). If any other Pending or Confirmed DTCs are indicated, go to the indicated DTC's troubleshooting. •

DTC U0114: F-CAN MALFUNCTION (ECM/PCM-SH-AWD CONTROL UNIT)

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see GENERAL TROUBLESHOOTING INFORMATION).

1. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
2. Check for Pending or Confirmed DTCs with the HDS.

   Are DTC U0029 and U0114 indicated at the same time?

   YES - Go to troubleshooting for **DTC U0029**. •

   NO - Go to step 3.

3. Clear the DTC with the HDS.

4. Check for Pending or Confirmed DTCs with the HDS.

   Is DTC U0114 indicated?

   YES - Go to step 5.

   NO - Intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at the SH-AWD control unit and the ECM/PCM. •

5. Check for communication to the SH-AWD system with the HDS.

   Does the HDS communicate with the SH-AWD control unit?

   YES - Go to step 6.

   NO - Go to the symptom troubleshooting for the SH-AWD indicator does not go off, and no DTCs are stored (see **DTC 91-1: SH-AWD CONTROL UNIT PROGRAMMING ERROR**). •

6. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
7. Jump the SCS line with the HDS.
8. Disconnect SH-AWD control unit connector A (20P).
9. Disconnect ECM/PCM connector A (49P).
10. Check for continuity between ECM/PCM connector terminals A48 and SH-AWD control unit connector A (20P) terminal No. 10.

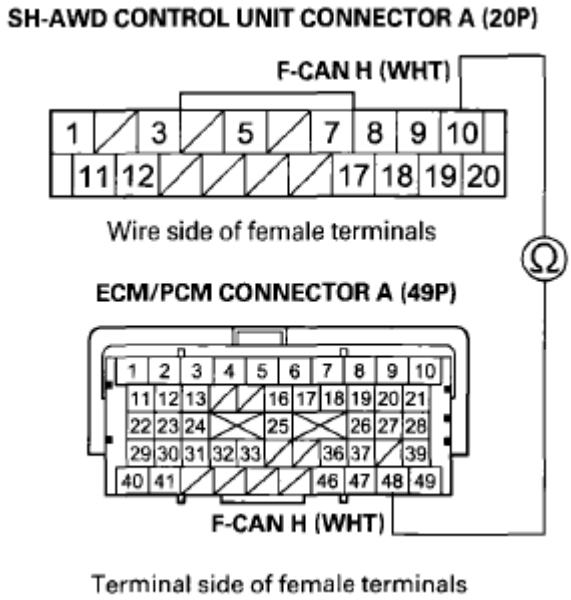


Fig. 191: Checking Continuity Between ECM/PCM Connector Terminals A48 And SH-AWD Control Unit Connector A (20P)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 11.

NO - Repair open in the wire between the ECM/PCM (A48) and the SH-AWD control unit, then go to step 12.

11. Check for continuity between ECM/PCM connector terminal A49 and SH-AWD control unit connector A (20P) terminal No. 20.

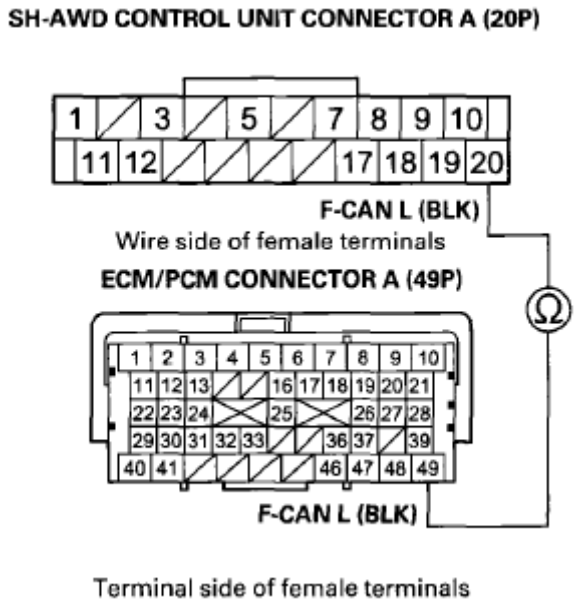


Fig. 192: Checking Continuity Between ECM/PCM Connector Terminal A49 And SH-AWD Control Unit Connector A (20P)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Update the SH-AWD control unit if it does not have the latest software (see **SH-AWD® CONTROL UNIT UPDATE**), or substitute a known-good SH-AWD control unit (see **REAR DIFFERENTIAL FLUID TEMPERATURE SENSOR REPLACEMENT**), then go to step 12 and recheck. If DTC U0114 is not indicated after substitution, replace the original SH-AWD control unit (see **REAR DIFFERENTIAL FLUID TEMPERATURE SENSOR REPLACEMENT**), then go to step 12.

NO - Repair open in the wire between the PCM (A49) and the SH-AWD control unit, then go to step 12.

12. Reconnect all connectors.
13. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
14. Reset the ECM/PCM with the HDS.
15. Do the ECM/PCM idle learn procedure (see **ECM/PCM IDLE LEARN PROCEDURE**).

16. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC U0114 indicated?

    YES - Check for poor connections or loose terminals at the SH-AWD control unit and the ECM/PCM, then go to step 1.

    NO - Troubleshooting is complete. If any other Pending or Confirmed DTCs are indicated, go to the indicated DTC's troubleshooting. •

DTC U0122: F-CAN MALFUNCTION (ECM/PCM-VSA MODULATOR-CONTROL UNIT)

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see GENERAL TROUBLESHOOTING INFORMATION).

1. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
2. Check for Pending or Confirmed DTCs with the HDS.

   Are DTC U0029 and U0122 indicated at the same time?

   YES - Go to the troubleshooting for DTC U0029 (see **DTC U0029**). •

   NO - Go to step 3.

3. Clear the DTC with the HDS.
4. Check for Pending or Confirmed DTCs with the HDS.

   Is DTC U0122 indicated?

   YES - Go to step 5.

   NO - Intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at the VSA modulator-control unit and the ECM/PCM. •

5. Check for communication to the VSA system with the HDS.

   Does the HDS communicate with the VSA modulator-control unit?

   YES - Go to step 6.

   NO - Go to the symptom troubleshooting for ABS indicator, brake system indicator, and VSA indicator do not go off (see **ABS INDICATOR, BRAKE SYSTEM INDICATOR, AND VSA INDICATOR DO NOT GO OFF**). •

6. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.

7. Jump the SCS line with the HDS.
8. Disconnect the VSA modulator-control unit 47P connector.
9. Disconnect ECM/PCM connector A (49P).
10. Check for continuity between ECM/PCM connector terminal A48 and VSA modulator-control unit 47P connector terminal No. 12.

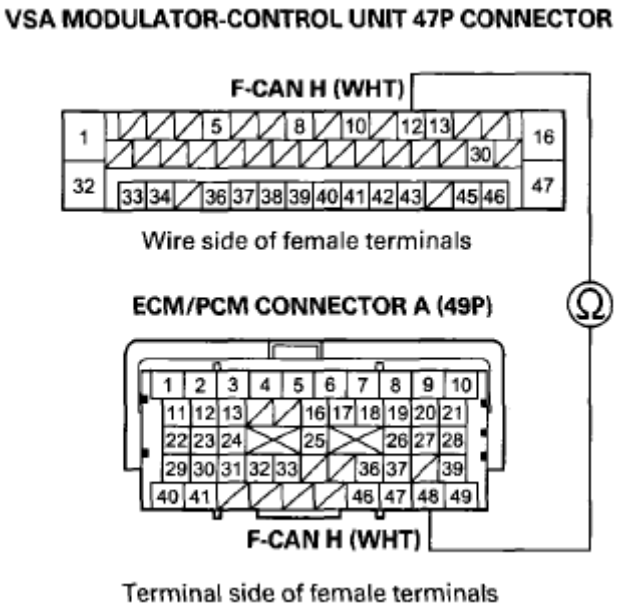


Fig. 193: Checking Continuity Between ECM/PCM Connector Terminal A48 And VSA Modulator-Control Unit 47P Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 11.

NO - Repair open in the wire between the ECM/PCM (A48) and the VSA modulator-control unit, then go to step 12.

11. Check for continuity between ECM/PCM connector terminal A49 and VSA modulator-control unit 47P connector terminal No. 13.

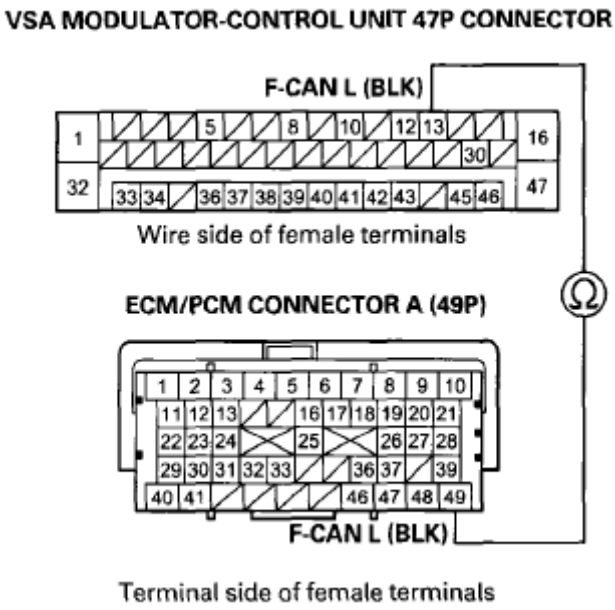


Fig. 194: Checking Continuity Between ECM/PCM Connector Terminal A49 And VSA Modulator-Control Unit 47P Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Update the VSA modulator-control unit if it does not have the latest software (see **VSA MODULATOR-CONTROL UNIT UPDATE**), or substitute a known-good VSA modulator-control unit (see **VSA MODULATOR-CONTROL UNIT REMOVAL AND INSTALLATION**), then go to step 12 and recheck. If DTC U0122 is not indicated after substitution, replace the original VSA modulator-control unit (see **VSA MODULATOR-CONTROL UNIT REMOVAL AND INSTALLATION**), then go to step 12.

NO - Repair open in the wire between the ECM/PCM (A49) and the VSA modulator-control unit, then go to step 12.

12. Reconnect all connectors.
13. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
14. Reset the ECM/PCM with the HDS.
15. Do the ECM/PCM idle learn procedure (see **ECM/PCM IDLE LEARN PROCEDURE**).
16. Check for Pending or Confirmed DTCs with the HDS.

Is DTC U0122 indicated?

YES - Check for poor connections or loose terminals at the VSA modulator-control unit and the ECM/PCM, then go to step 1.

NO - Troubleshooting is complete. If any other Pending or Confirmed DTCs are indicated, go to the indicated DTC's troubleshooting. •

DTC U0131: F-CAN MALFUNCTION (ECM/PCM-EPS CONTROL UNIT)

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see GENERAL TROUBLESHOOTING INFORMATION).

1. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
2. Check for Pending or Confirmed DTCs with the HDS.

   Are DTC U0029 and U0131 indicated at the same time?

   YES - Go to the troubleshooting for **DTC U0029**. •

   NO - Go to step 3.

3. Clear the DTC with the HDS.
4. Check for Pending or Confirmed DTCs with the HDS.

   Is DTC U0131 indicated?

   YES - Go to step 5.

   NO - Intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at the EPS control unit, and the ECM/PCM. •

5. Check for communication the EPS system with the HDS.

   Does the HDS communicate with the EPS control unit?

   YES - Go to step 6.

   NO - Go to the symptom troubleshooting for EPS indicator does not go off, and no DTCs are stored (see **EPS INDICATOR DOES NOT GO OFF, AND NO DTCS ARE STORED**). •

6. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
7. Jump the SCS line with the HDS.
8. Disconnect EPS control unit connector D (28P).
9. Disconnect ECM/PCM connector A (49P).
10. Check for continuity between ECM/PCM connector terminal A48 and EPS control unit connector D (28P) terminal No. 1.

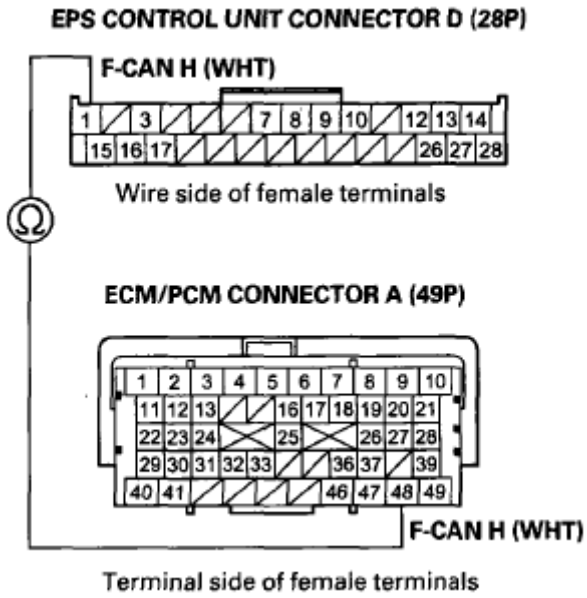


Fig. 195: Checking Continuity Between ECM/PCM Connector Terminal A48 And EPS Control Unit Connector D (28P)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 11.

NO - Repair open in the wire between the ECM/PCM (A48) and the EPS control unit, then go to step 12.

11. Check for continuity between ECM/PCM connector terminal A49 and EPS control unit connector D (28P) terminal No. 15.

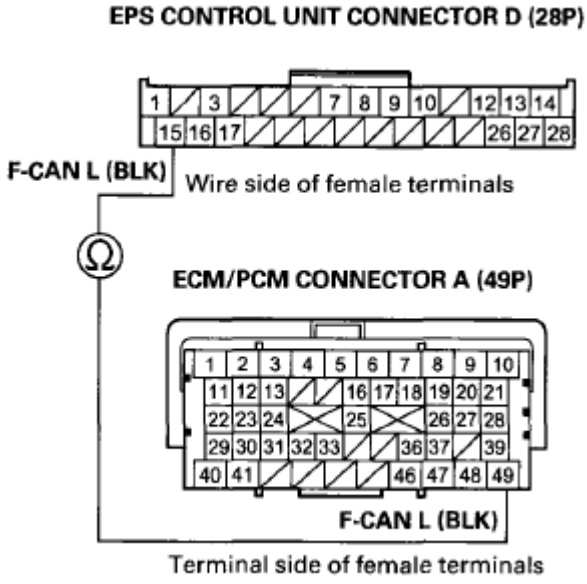


Fig. 196: Checking Continuity Between ECM/PCM Connector Terminal A49 And EPS Control Unit Connector D (28P)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Substitute a known-good EPS control unit (see **RACK GUIDE REMOVAL/INSTALLATION**), then go to step 12 and recheck. If DTC U0131 is not indicated, replace the original EPS control unit (see **RACK GUIDE REMOVAL/INSTALLATION**), then go to step 12.

NO - Repair open in the wire between the ECM/PCM (A49) and the EPS control unit, then go to step 12.

12. Reconnect all connectors.
13. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
14. Reset the ECM/PCM with the HDS.
15. Do the ECM/PCM idle learn procedure (see **ECM/PCM IDLE LEARN PROCEDURE**).
16. Check for Pending or Confirmed DTCs with the HDS.

Is DTC U0131 indicated?

YES - Check for poor connections or loose terminals at the EPS control unit and the ECM/PCM, then go to step 1.

NO - Troubleshooting is complete. If any other Pending or Confirmed DTCs are indicated, go to the indicated DTC's troubleshooting. •

DTC U0155: F-CAN MALFUNCTION (ECM/PCM-GAUGE CONTROL MODULE)

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see GENERAL TROUBLESHOOTING INFORMATION).

1. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
2. Clear the DTC with the HDS.
3. Check for Pending or Confirmed DTCs with the HDS.

Is DTC U0155 indicated?

YES - Go to step 4.

NO - Intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at the gauge control module and the ECM/PCM. •

4. Check for body electrical DTCs in the DTCs MENU with the HDS.

Is DTC U0029 and/or U0100 indicated?

YES - Go to step 5.

NO - Do the gauge control module input test (see **GAUGE CONTROL MODULE INPUT TEST**). •

5. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
6. Jump the SCS line with the HDS.
7. Remove the gauge control module (see **GAUGE CONTROL MODULE REPLACEMENT**).
8. Disconnect the gauge control module 32P connector.
9. Disconnect ECM/PCM connector A (49P).
10. Check for continuity between ECM/PCM connector terminal A48 and gauge control module 32P connector terminal No. 14.

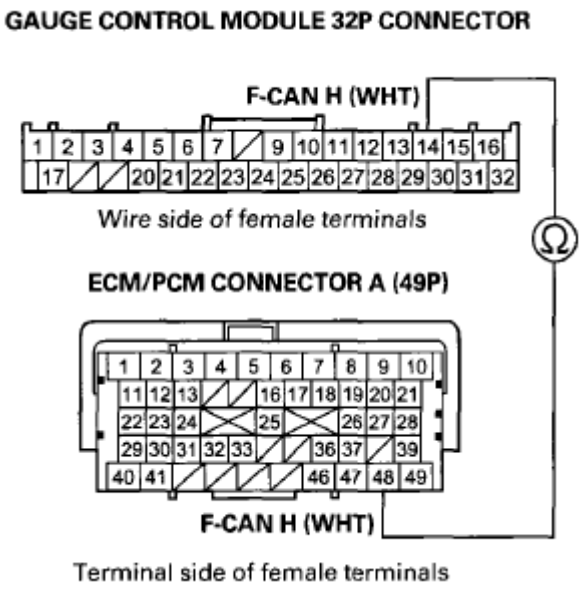


Fig. 197: Checking Continuity Between ECM/PCM Connector And Gauge Control Module 32P Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 11.

NO - Repair open in the wire between the ECM/PCM (A48) and the gauge control module, then go to step 12.

11. Check for continuity between ECM/PCM connector terminal A49 and gauge control module 32P connector terminal No. 13.

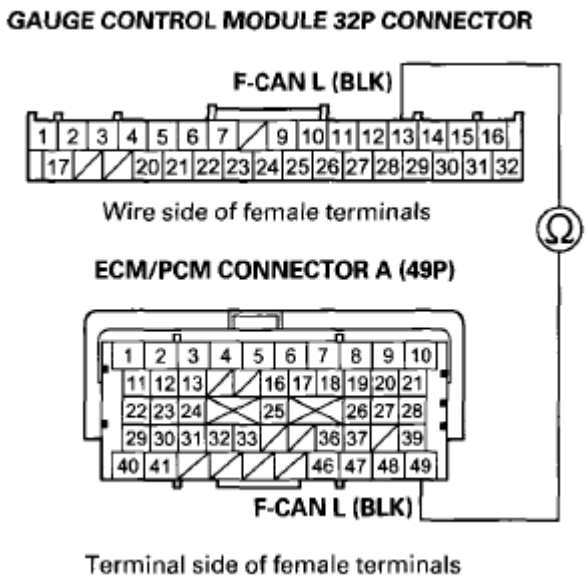


Fig. 198: Checking Continuity Between ECM/PCM Connector And Gauge Control Module 32P Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Substitute a known-good gauge control module (see **GAUGE CONTROL MODULE REPLACEMENT**), then go to step 12 and recheck. If DTC U0155 is not indicated after substitution, replace the original gauge control module, then go to step 12.

NO - Repair open in the wire between the ECM/PCM (A49) and the gauge control module, then go to step 12.

12. Reconnect all connectors.
13. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
14. Reset the ECM/PCM with the HDS.
15. Do the ECM/PCM idle learn procedure (see **ECM/PCM IDLE LEARN PROCEDURE**).
16. Check for Pending or Confirmed DTCs with the HDS.

Is DTC U0155 indicated?

YES - Check for poor connections or loose terminals at the gauge control module and the ECM/PCM, then go to step 1.

NO - Troubleshooting is complete. If any other Pending or Confirmed DTCs are indicated, go to the indicated DTC's troubleshooting. •

F-CAN CIRCUIT TROUBLESHOOTING

1. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
2. Jump the SCS line with the HDS.
3. Disconnect ECM/PCM connector A (49P).
4. Measure the resistance between ECM/PCM connector terminals A48 and A49.

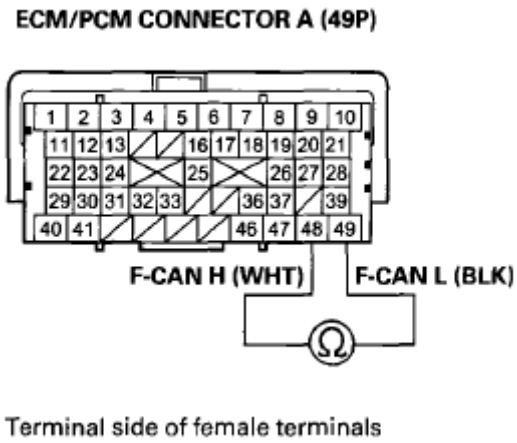


Fig. 199: Measuring Resistance Between ECM/PCM Connector Terminals A48 And A49
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there 74- 107 ohms?

YES - Go to step 17.

NO - Go to step 5.

5. Disconnect these connectors:
   - Gauge control module 32P connector (see **GAUGE CONTROL MODULE REPLACEMENT**).
   - VSA modulator-control unit 47P connector (see **VSA MODULATOR-CONTROL UNIT REMOVAL AND INSTALLATION**).
   - EPS control unit connector D(28P) (see **RACK GUIDE REMOVAL/INSTALLATION**).
   - SH-AWD control unit connector A (20P) (with SH-AWD) (see **REAR DIFFERENTIAL FLUID TEMPERATURE SENSOR REPLACEMENT**).
   - Yaw rate-lateral acceleration sensor 4P connector (see **YAW RATE-ACCELERATION SENSOR REPLACEMENT**).
   - Steering angle sensor 5P connector (with SH-AWD) (see **STEERING ANGLE SENSOR REPLACEMENT**).
   - SRS unit connector A (39P) (see **SRS UNIT REPLACEMENT**).
   - TPMS control unit 20P connector (see **TPMS CONTROL UNIT REPLACEMENT**).
   - Power control unit connector C (36P) (with keyless access) (see **RF UNIT REPLACEMENT**).
   - Audio-Navigation unit connector H (28P) (with navigation) (see **AUDIO-NAVIGATION UNIT REMOVAL/INSTALLATION**).

- AcuraLink control unit connector A (32P) (USA model with navigation) (see **ACURALINK CONTROL UNIT (XM RECEIVER) REMOVAL/INSTALLATION**).

6. Check for continuity between ECM/PCM connector terminals A48 and A49.

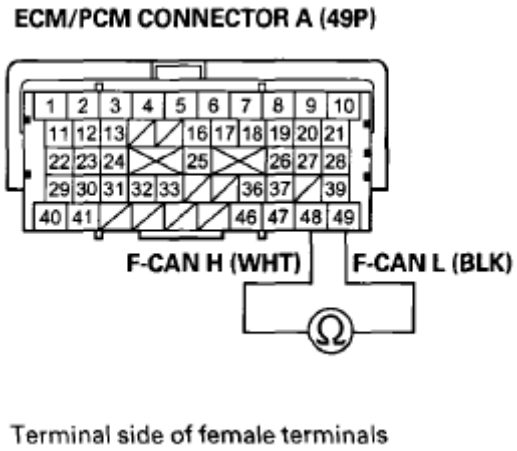


Fig. 200: Checking Continuity Between ECM/PCM Connector Terminals A48 And A49
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair short in the wires between ECM/PCM connector terminals A48 and A49. •

NO - Go to step 7.

7. Check for continuity between ECM/PCM connector terminals A48 and gauge control module 32P connector terminal No. 14.

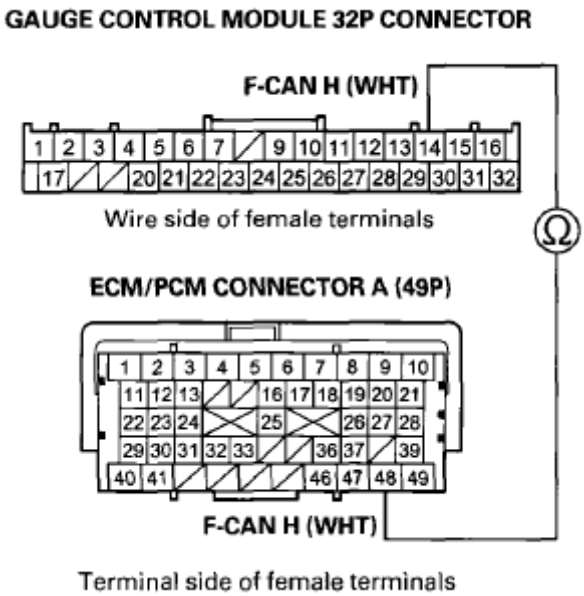


Fig. 201: Checking Continuity Between ECM/PCM Connector And Gauge Control Module 32P Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 8.

NO - Repair open in the wire between the ECM/PCM (A48) and the gauge control module. •

8. Check for continuity between ECM/PCM connector terminals A48 and VSA modulator-control unit 47P connector terminal No. 12.

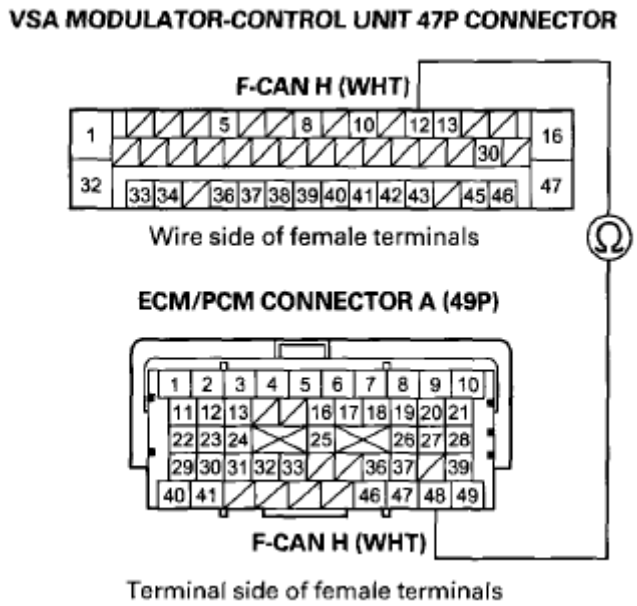


Fig. 202: Checking Continuity Between ECM/PCM Connector And VSA Modulator-Control Unit 47P Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 9.

NO - Repair open in the wire between the ECM/PCM (A48) and the VSA modulator-control unit. •

9. Check for continuity between ECM/PCM connector terminals A48 and EPS control unit connector D (28P) terminal No. 1.

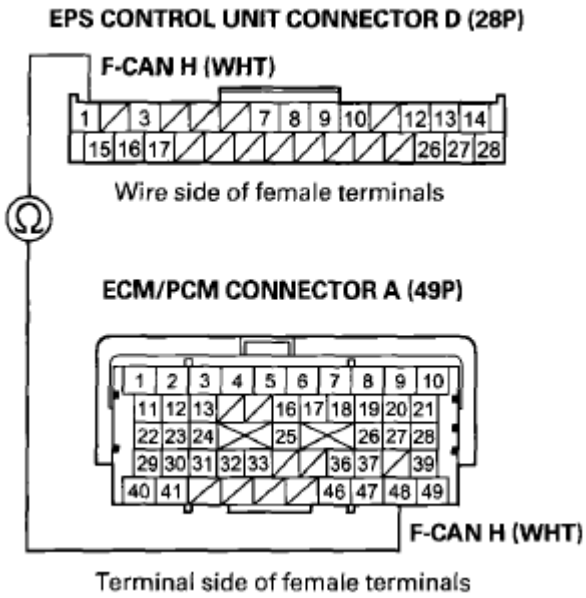


Fig. 203: Checking Continuity Between ECM/PCM Connector And EPS Control Unit Connector D (28P)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES -

- With SH-AWD: Go to step 10.
- Without SH-AWD: Go to step 11.

NO - Repair open in the wire between the ECM/PCM (A48) and the EPS control unit. •

10. Check for continuity between ECM/PCM connector terminals A48 and SH-AWD control unit connector A (20P) terminal No. 10.

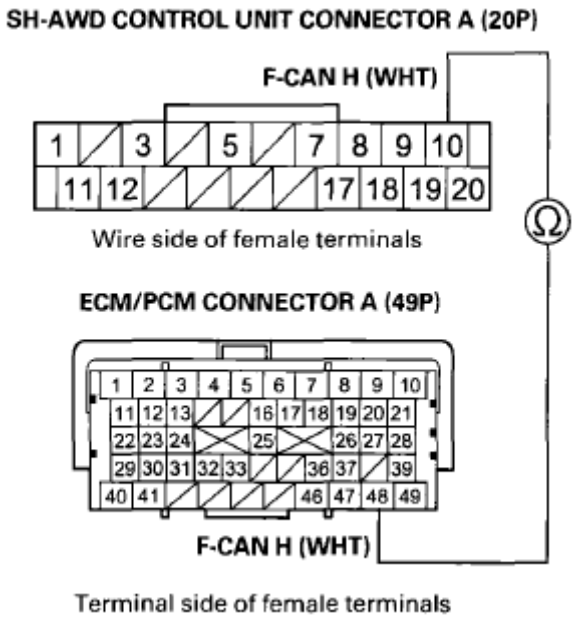


Fig. 204: Checking Continuity Between ECM/PCM Connector And SH-AWD Control Unit Connector A (20P)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 11.

NO - Repair open in the wire between the ECM/PCM (A48) and the SH-AWD control unit. •

11. Check for continuity between ECM/PCM connector terminals A49 and gauge control module 32P connector terminal No. 13.

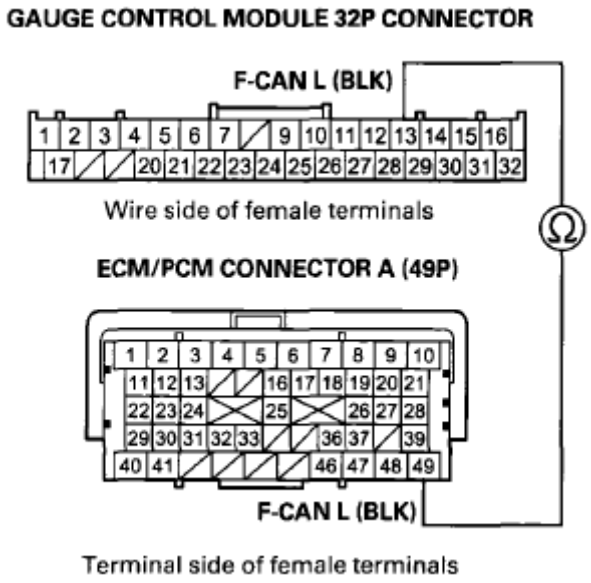


Fig. 205: Checking Continuity Between ECM/PCM Connector And Gauge Control Module 32P Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 12.

NO - Repair open in the wire between the ECM/PCM (A49) and the gauge control module. •

12. Check for continuity between ECM/PCM connector terminals A49 and VSA modulator-control unit 47P connector terminal No. 13.

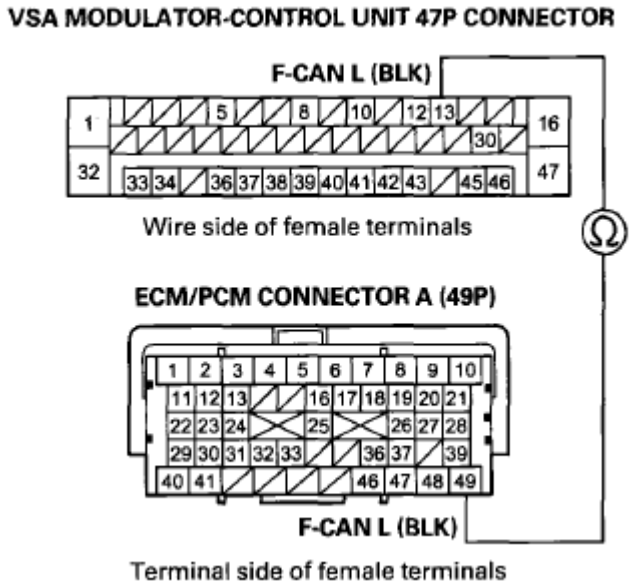


Fig. 206: Checking Continuity Between ECM/PCM Connector And VSA Modulator-Control Unit 47P Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 13.

NO - Repair open in the wire between the ECM/PCM (A49) and the VSA modulator-control unit. •

13. Check for continuity between ECM/PCM connector terminals A49 and EPS control unit connector D (28P) terminal No. 15.

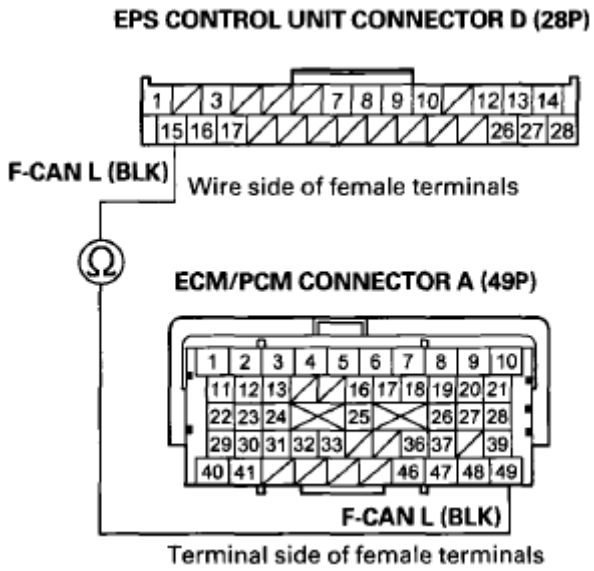


Fig. 207: Checking Continuity Between ECM/PCM Connector And EPS Control Unit Connector D (28P)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES -

- With SH-AWD: Go to step 14.
- Without SH-AWD: Go to step 15.

NO - Repair open in the wire between the ECM/PCM (A49) and the EPS control unit. •

14. Check for continuity between ECM/PCM connector terminals A49 and SH-AWD control unit connector A (20P) terminal No. 20.

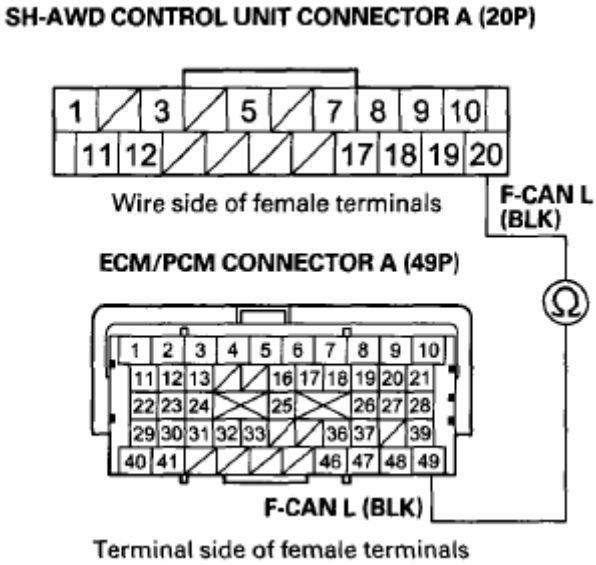


Fig. 208: Checking Continuity Between ECM/PCM Connector And SH-AWD Control Unit Connector A (20P)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 15.

NO - Repair open in the wire between the ECM/PCM (A49) and the SH-AWD control unit. •

15. Reconnect the VSA modulator-control unit 47P connector.
16. Measure the resistance between ECM/PCM connector terminals A48 and A49.

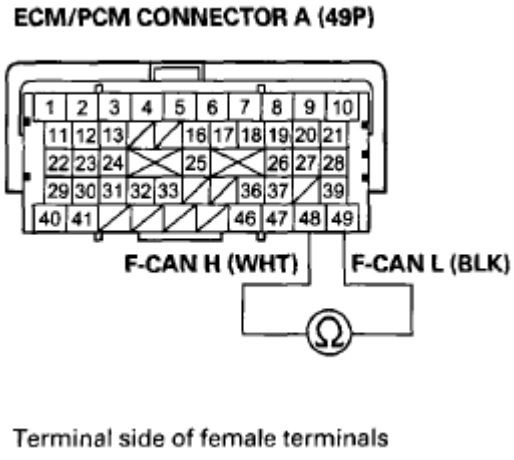


Fig. 209: Measuring Resistance Between ECM/PCM Connector Terminals A48 And A49
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there about 108-132 ohms?

YES - Disconnect the VSA modulator-control unit 47P connector, then go to step 17.

NO - Substitute a known-good VSA modulator-control unit (see **VSA MODULATOR-CONTROL UNIT REMOVAL AND INSTALLATION**), and reconnect ECM/PCM connector A (49P). If the HDS identifies the vehicle, replace the original VSA modulator-control unit (see **VSA MODULATOR-CONTROL UNIT REMOVAL AND INSTALLATION**). •

17. Disconnect these connectors:
    - Gauge control module 32P connector (see **GAUGE CONTROL MODULE REPLACEMENT**).
    - VSA modulator-control unit 47P connector (see **VSA MODULATOR-CONTROL UNIT REMOVAL AND INSTALLATION**).
    - EPS control unit connector D(28P) (see **RACK GUIDE REMOVAL/INSTALLATION**).
    - SH-AWD control unit connector A (20P) (with SH-AWD) (see **REAR DIFFERENTIAL FLUID TEMPERATURE SENSOR REPLACEMENT**).
    - Yaw rate-lateral acceleration sensor 4P connector (see **YAW RATE-ACCELERATION SENSOR REPLACEMENT**).
    - Steering angle sensor 5P connector (with SH-AWD) (see **STEERING ANGLE SENSOR REPLACEMENT**).
    - SRS unit connector A (39P) (see **SRS UNIT REPLACEMENT**).
    - TPMS control unit 20P connector (see **TPMS CONTROL UNIT REPLACEMENT**).
    - Power control unit connector C (36P) (with keyless access) (see **RF UNIT REPLACEMENT**).
    - Audio-navigation unit connector H (28P) (with navigation) (see **AUDIO-NAVIGATION UNIT REMOVAL/INSTALLATION**).
    - AcuraLink control unit connector A (32P) (USA model with navigation) (see **ACURALINK CONTROL UNIT (XM RECEIVER) REMOVAL/INSTALLATION**).
18. Check for continuity between ECM/PCM connector terminal A48 and body ground.

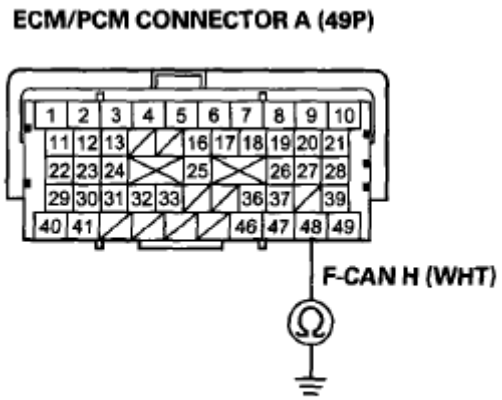


Fig. 210: Checking Continuity Between ECM/PCM Connector Terminal A48 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair short in the wire between the ECM/PCM terminals A48 and the gauge control module, the VSA modulator-control unit, the yaw rate-lateral acceleration sensor, the EPS control unit, the SH-AWD control unit (with SH-AWD), the steering angle sensor (with SH-AWD), the SRS unit, the TPMS control unit, the audio-navigation unit (with navigation), the AcuraLink control unit (USA model with navigation), the power control unit (with keyless access), or the DLC. •

NO - Go to step 19.

19. Check for continuity between ECM/PCM connector terminal A49 and body ground.

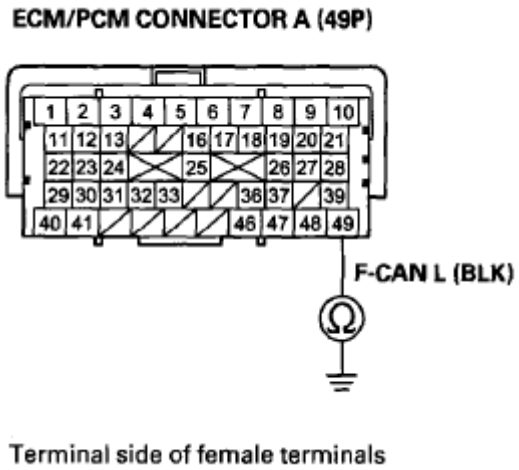


Fig. 211: Checking Continuity Between ECM/PCM Connector Terminal A49 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair short in the wire between the ECM/PCM terminals A49 and the gauge control module, the VSA modulator-control unit, the yaw rate-lateral acceleration sensor, the EPS control unit, the SH-AWD control unit (with SH-AWD), the steering angle sensor (with SH-AWD), the SRS unit, the TPMS control unit, the audio-navigation unit (with navigation), the AcuraLink control unit (USA model with navigation), the power control unit (with keyless access), or the DLC. •

NO - Go to step 20.

20. Reconnect all connectors.
21. Connect the HDS to the DLC (see **GENERAL TROUBLESHOOTING INFORMATION**).
22. Disconnect the gauge control module 32P connector.
23. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode, and read the HDS.

Does the HDS identify the vehicle?

YES - Replace the gauge control module (see **GAUGE CONTROL MODULE REPLACEMENT**). •

NO - Go to step 24.

24. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
25. Reconnect the gauge control module 32P connector.
26. Disconnect the VSA modulator-control unit 47P connector.
27. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode, and read the HDS.

    Does the HDS identify the vehicle?

    YES - Replace the VSA modulator-control unit (see **VSA MODULATOR-CONTROL UNIT REMOVAL AND INSTALLATION**). •

    NO - Go to step 28.

28. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
29. Reconnect the VSA modulator-control unit 47P connector.
30. Disconnect EPS control unit connector D (28P).
31. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode, and read the HDS.

    Does the HDS identify the vehicle?

    YES - Replace the EPS control unit (see **RACK GUIDE REMOVAL/INSTALLATION**). •

    NO -

    - With SH-AWD: Go to step 32.
    - Without SH-AWD: Turn the ignition switch to LOCK (0), or press the engine start/stop button to select OFF mode, then reconnect EPS control unit connector D (28P), and go to step 38.

32. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
33. Reconnect EPS control unit connector D (28P).
34. Disconnect SH-AWD control unit connector A (20P).
35. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode, and read the HDS.

    Does the HDS identify the vehicle?

    YES - Replace the SH-AWD control unit (see **REAR DIFFERENTIAL FLUID TEMPERATURE SENSOR REPLACEMENT**). •

    NO - Go to step 36.

36. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
37. Reconnect SH-AWD control unit connector A (20P).
38. Disconnect or the yaw rate-lateral acceleration sensor 5P connector.
39. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode, and read the HDS.

    Does the HDS identify the vehicle?

    YES - Replace the yaw rate-lateral acceleration sensor (see **YAW RATE-ACCELERATION SENSOR REPLACEMENT**). •

    NO -

    - With SH-AWD: Go to step 40.
    - Without SH-AWD: Turn the ignition switch to LOCK (0), or press the engine start/stop button to select OFF mode, then reconnect yaw rate-lateral acceleration sensor 5P connector, then go to step 46.
40. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
41. Reconnect the yaw rate-lateral acceleration sensor 5P connector.
42. Disconnect the steering angle sensor 5P connector.
43. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode, and read the HDS.

    Does the HDS identify the vehicle?

    YES - Replace the steering angle sensor (see **STEERING ANGLE SENSOR REPLACEMENT**). •

    NO - Go to step 44.

44. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
45. Reconnect the steering angle sensor 5P connector.
46. Disconnect SRS unit connector A (39P).
47. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode, and read the HDS.

    Does the HDS identify the vehicle?

    YES - Replace the SRS unit (see **SRS UNIT REPLACEMENT**). •

    NO - Go to step 48.

48. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
49. Reconnect SRS unit connector A (39P).
50. Disconnect the TPMS control unit 20P connector.

51. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode, and read the HDS.

    Does the HDS identify the vehicle?

    YES - Replace the TPMS control unit (see **TPMS CONTROL UNIT REPLACEMENT**). •

    NO -

    - With keyless access: Go to step 52.
    - Without keyless access: Update the **ECM/PCM** if it does not have the latest software (see **ECM/PCM Update**), or substitute a known-good ECM/PCM (see **SUBSTITUTING THE ECM/PCM**), then recheck. If the HDS identifies the vehicle and the ECM/PCM was updated, troubleshooting is complete. If the HDS identifies the vehicle and the ECM/PCM was substituted, replace the original **ECM/PCM** (see **ECM/PCM Replacement**). •
52. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
53. Reconnect the TPMS control unit 20P connector.
54. Disconnect power control unit connector C (36P).
55. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode, and read the HDS.

    Does the HDS identify the vehicle?

    YES - Replace the power control unit (see **RF UNIT REPLACEMENT**). •

    NO -

    - With navigation: Go to step 56.
    - Without navigation: Update the **ECM/PCM** if it does not have the latest software (see **ECM/PCM Update**), or substitute a known-good ECM/PCM (see **SUBSTITUTING THE ECM/PCM**), then recheck. If the HDS identifies the vehicle and the ECM/PCM was updated, troubleshooting is complete. If the HDS identifies the vehicle and the ECM/PCM was substituted, replace the original **ECM/PCM** (see **ECM/PCM Replacement**). •
56. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
57. Reconnect power control unit connector C (36P).
58. Disconnect audio-navigation unit connector H (28P).
59. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode, and read the HDS.

    Does the HDS identify the vehicle?

    YES - Replace the audio-navigation unit (see **AUDIO-NAVIGATION UNIT REMOVAL/INSTALLATION**). •

    NO -

- USA model (with AcuraLink): Go to step 60.
- Canada model (without AcuraLink): Update the **ECM/PCM** if it does not have the latest software (see **ECM/PCM Update**), or substitute a known-good ECM/PCM (see **SUBSTITUTING THE ECM/PCM**), then recheck. If the HDS identifies the vehicle and the ECM/PCM was updated, troubleshooting is complete. If the HDS identifies the vehicle and the ECM/PCM was substituted, replace the original **ECM/PCM** (see **ECM/PCM Replacement**). •

60. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
61. Reconnect audio-navigation unit connector H (28P).
62. Disconnect AcuraLink control unit connector A (32P).
63. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode, and read the HDS.

    Does the HDS identify the vehicle?

    YES - Replace the AcuraLink control unit (see **ACURALINK CONTROL UNIT (XM RECEIVER) REMOVAL/INSTALLATION**). •

    NO - Update the **ECM/PCM** if it does not have the latest software (see **ECM/PCM Update**), or substitute a known-good ECM/PCM (see **SUBSTITUTING THE ECM/PCM**), then recheck. If the HDS identifies the vehicle and the ECM/PCM was updated, troubleshooting is complete. If the HDS identifies the vehicle and the ECM/PCM was substituted, replace the original **ECM/PCM** (see **ECM/PCM Replacement**). •

MIL CIRCUIT TROUBLESHOOTING

1. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
2. Do the gauge self-diagnostic function (see **SELF-DIAGNOSTIC FUNCTION**).

   Does the MIL flash?

   YES - Go to step 3.

   NO - Substitute a known-good gauge control module, and recheck. If the symptom/indication goes away with a known-good gauge control module, replace the original gauge control module (see **GAUGE CONTROL MODULE REPLACEMENT**). •

3. Connect the HDS to the DLC (see **GENERAL TROUBLESHOOTING INFORMATION**).
4. Check the SCS in the DATA LIST with the HDS.

   Is a short indicated?

   YES - Go to step 5.

   NO - Update the **ECM/PCM** if it does not have the latest software (see **ECM/PCM Update**), or substitute a known-good ECM/PCM (see **SUBSTITUTING THE ECM/PCM**), then recheck. If the

symptom/indication goes away and the ECM/PCM was updated, troubleshooting is complete. If the symptom/indication goes away and the ECM/PCM was substituted, replace the original **ECM/PCM** (see **ECM/PCM Replacement**). •

5. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
6. Disconnect ECM/PCM connector A (49P), then disconnect the HDS.
7. Check for continuity between ECM/PCM connector terminal A32 and body ground.

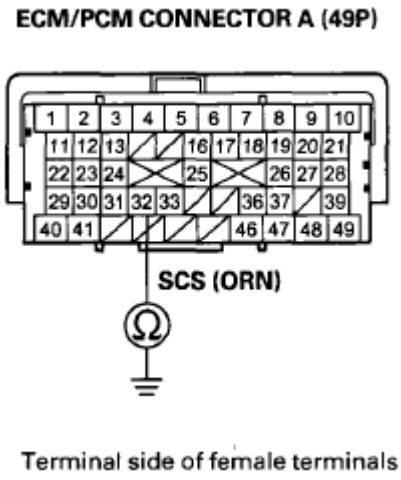


Fig. 212: Checking Continuity Between ECM/PCM Connector Terminal A32 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair short in the wire between the ECM/PCM (A32) and the DLC. •

NO - Update the **ECM/PCM** if it does not have the latest software (see **ECM/PCM Update**), or substitute a known-good ECM/PCM (see **SUBSTITUTING THE ECM/PCM**), then recheck. If the symptom/indication goes away and the ECM/PCM was updated, troubleshooting is complete. If the symptom/indication goes away and the ECM/PCM was substituted, replace the original **ECM/PCM** (see **ECM/PCM Replacement**). •

DLC CIRCUIT TROUBLESHOOTING

NOTE: If you suspect the HDS or the HDS DLC cable may be the source of the communication problem, verify that they are working properly by connecting them to a known-good, like vehicle and system, and checking for communication problem.

1. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
2. Connect the HDS to the DLC (see **GENERAL TROUBLESHOOTING INFORMATION**).
3. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode, and read the HDS.

Does the HDS identify the vehicle?

YES - Go to step 4.

NO - Go to step 27.

4. Check for Pending or Confirmed DTCs in the PGM-FI system with the HDS.

   Are any Pending or Confirmed DTCs indicated?

   YES - Go to the indicated DTC's troubleshooting. •

   NO -

   - If the HDS does not communicate with the SRS, go to step 5.
   - If the HDS does not communicate with the VSA system, go to step 7.
   - If the HDS does not communicate with the EPS, go to step 9.
   - If the HDS does not communicate with the SH-AWD system, go to step 11.
   - If the HDS does not communicate with the TPMS, go to step 13.
   - If the HDS does not communicate with the IMMOBI (immobilizer) system, go to step 15.
   - If the HDS does not communicate with the ONE PUSH START system, go to step 17.
   - If the HDS does not communicate with the BODY ELECTRICAL system, go to step 19.
5. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
6. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode, and watch the SRS indicator.

   Does the SRS indicator come on and go off?

   YES - Go to step 21.

   NO - Go to the SRS general troubleshooting information (see **GENERAL TROUBLESHOOTING INFORMATION**). •

7. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
8. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode, and watch the VSA indicator.

   Does the VSA indicator come on and go off?

   YES - Go to step 21.

   NO - Go to the symptom troubleshooting for ABS indicator, brake system indicator, VSA indicator do not go off (see **ABS INDICATOR, BRAKE SYSTEM INDICATOR, AND VSA INDICATOR DO NOT GO OFF**). •

9. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
10. Start the engine, and watch the EPS indicator.

    Does the EPS indicator come on and go off?

    YES - Go to step 21.

    NO - Go to the symptom troubleshooting for EPS indicator dose not go off, and no DTCs are stored (see **EPS INDICATOR DOES NOT GO OFF, AND NO DTCS ARE STORED**). •

11. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
12. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode, and watch the SH-AWD indicator.

    Does the SH-AWD indicator come on and go off?

    YES - Go to step 21.

    NO - Go to the symptom troubleshooting for SH-AWD indicator dose not go off, and no DTCs are stored (see **DTC 91-1: SH-AWD CONTROL UNIT PROGRAMMING ERROR**). •

13. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
14. Turn the ignition switch to ON (II), and watch the TPMS indicator.

    Does the TPMS indicator come on and go off?

    YES - Go to step 21.

    NO - Go to the symptom troubleshooting for TPMS indicator dose not go off, and no DTCs are stored (see **TPMS INDICATOR DOES NOT GO OFF, AND NO DTCS ARE STORED**). •

15. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
16. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode, and watch the immobilizer indicator.

    Does the immobilizer indicator stay on or flash?

    YES - Go to the immobilizer system's troubleshooting; without keyless access (see **SYMPTOM TROUBLESHOOTING INFORMATION**), with keyless access (see **SYMPTOM TROUBLESHOOTING INFORMATION**). •

    NO - Go to step 21.

17. Press the engine start/stop button to select the OFF mode.
18. Press the engine start/stop button to select the ON mode, and watch the keyless access indicator.

Does the keyless access indicator stay on?

YES - Go to the keyless access system general troubleshooting information (see **GENERAL TROUBLESHOOTING INFORMATION**). •

NO - Go to step 21.

19. Do the gauge self-diagnostic function (see **SELF-DIAGNOSTIC FUNCTION**).
20. Check the gauge display.

Is B-CAN- - ERROR indicated?

YES - Check for B-CAN system DTCs (see **TROUBLESHOOTING - B-CAN SYSTEM DIAGNOSIS TEST MODE 1 AND TEST MODE 2 (WITHOUT THE HDS)**). •

NO - Go to step 21.

21. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
22. Disconnect the HDS from the DLC.
23. Check for continuity between DLC terminal No. 7 and body ground (with keyless access; between body ground and DLC terminals No. 1 and No. 7 individually).

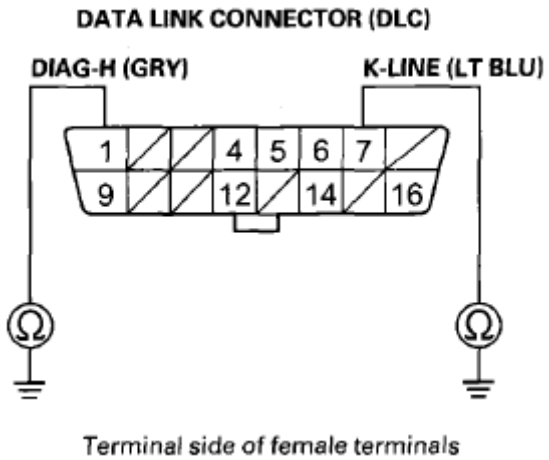


Fig. 213: Checking Continuity Between DLC Terminal No. 7 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 24.

NO - Go to step 25.

24. Continue to check for continuity between DLC terminal No. 7 and body ground (with keyless access; between body ground and DLC terminals No. 1 and No. 7 individually), while disconnecting these

connectors, one at a time:

- SRS unit A (39P)
- VSA modulator-control unit 47P
- EPS control unit D (28P)
- SH-AWD control unit A (20P) (with SH-AWD)
- TPMS control unit 20P
- Immobilizer-keyless control unit 7P (without keyless access)
- Audio unit A (24P) (without navigation)
- Audio-navigation unit A (24P) (with navigation)
- Driver's under-dash fuse/relay box Q (20P)
- Remote slot control unit 40P (with keyless access)
- Keyless access control unit B (32P) (with keyless access)
- Power control unit C (36P) (with keyless access)

Does continuity go away when one of the above connectors is disconnected?

YES - Replace the part that caused continuity go away when it was disconnected. •

NO - Repair short in the wire between the DLC No. 7 (K-Line) and the VSA modulator-control unit, the EPS control unit, the SH-AWD control unit, the SRS unit, the TPMS control unit, the immobilizer-keyless control unit, the audio unit, the audio-navigation unit, the driver's under-dash fuse/relay box, the remote slot control unit, the keyless access control unit, or the DLC No. 1 (Diag-H line) and the power control unit (with keyless access). •

25. Connect DLC terminal No. 7 to body ground with a jumper wire (with keyless access system, also connect DLC terminal No. 1 to body ground with a jumper wire).

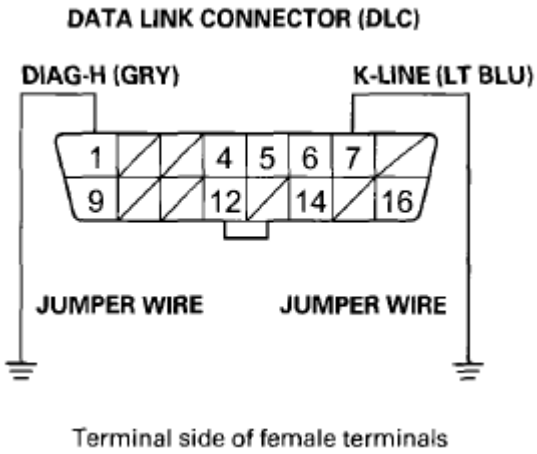


Fig. 214: Connecting DLC Terminal No. 7 To Body Ground With Jumper Wire
Courtesy of AMERICAN HONDA MOTOR CO., INC.

26. Check for continuity between body ground and these connector terminals:

Connector	Terminal
SRS unit A (39P)	No. 18 (LT BLU)
VSA modulator-control unit 47P	No. 10 (LT BLU)
EPS control unit D (28P)	No. 17 (LT BLU)
SH-AWD control unit A (20P) (with SH-AWD)	No. 5 (LT BLU)
TPMS control unit 20P	No. 7 (LT BLU)
Immobilizer-keyless control unit 7P (without keyless access)	No. 5 (LT BLU)
Audio unit A (24P) (without navigation)	No. 3 (LT BLU)
Audio-navigation unit connector A (24P) (with navigation)	No. 3 (LT BLU)
Driver's under-dash fuse/relay box Q (20P)	No. 16 (LT BLU)
Remote slot control unit 40P (with keyless access)	No. 34 (LT BLU)
Keyless access control unit B (32P) (with keyless access)	No. 4 (LT BLU)
Power control unit C (36P) (with keyless access)	No. 3 (GRY)

Is there continuity between the body ground and each of the terminals in the chart?

YES - Replace the part that does not communicate with the HDS. •

NO - Repair open in the wire between the DLC (K-Line or Diag-H) and the appropriate connector. •

27. Check for B-CAN system DTCs without the HDS (see **TROUBLESHOOTING - B-CAN SYSTEM DIAGNOSIS TEST MODE 1 AND TEST MODE 2 (WITHOUT THE HDS)**).

    Is DTC U0029 and/or U0100 indicated?

    YES - Go to step 38.

    NO - Go to step 28.

28. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
29. Disconnect the HDS from the DLC.
30. Measure the voltage between DLC terminal No. 16 and body ground.

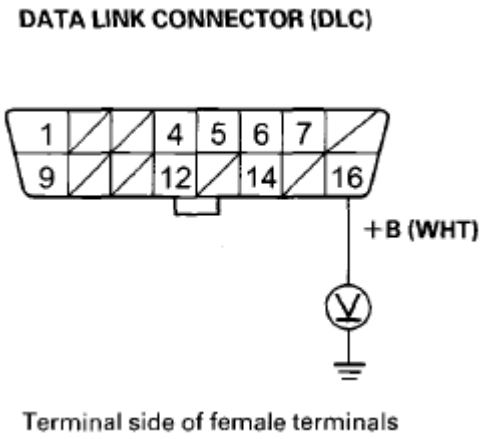


Fig. 215: Measuring Voltage Between DLC Terminal No. 16 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there battery voltage?

YES - Go to step 31.

NO - Repair open in the wire between DLC terminal No. 16 and the No. 15 BACK UP (10 A) fuse in the under-hood fuse/relay box. •

31. Measure the voltage between DLC terminals No. 4 and No. 16.

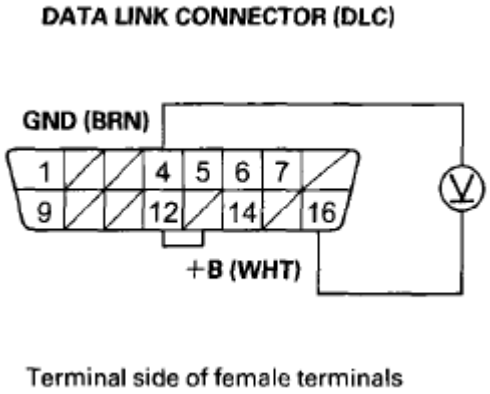


Fig. 216: Measuring Voltage Between DLC Terminals No. 4 And No. 16
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there battery voltage?

YES - Go to step 32.

NO - Repair open in the wire between DLC terminal No. 4 and body ground (G401 (see **CONNECTOR TO FUSE/RELAY BOX INDEX**)). •

32. Connect the HDS to the DLC (see **GENERAL TROUBLESHOOTING INFORMATION**).

33. Jump the SCS line with the HDS.
34. Disconnect ECM/PCM connector A (49P).
35. Disconnect the HDS from the DLC.
36. Check for continuity between ECM/PCM connector terminal A48 and DLC terminal No. 6.

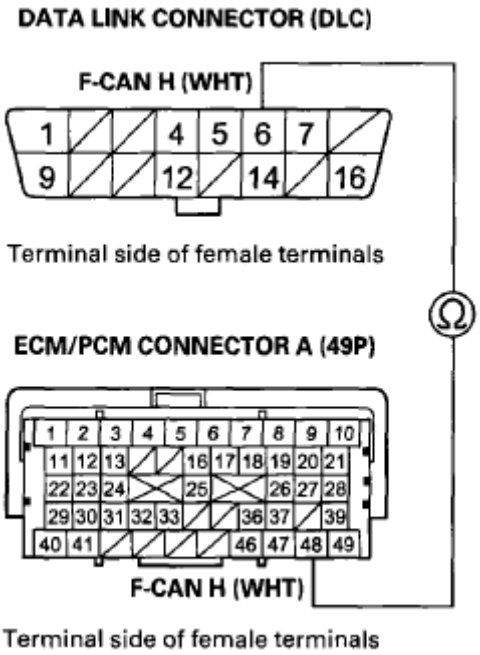


Fig. 217: Checking Continuity Between ECM/PCM Connector Terminal A48 And DLC Terminal No. 6
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 37.

NO - Repair open in the wire between the ECM/PCM (A48) and DLC terminal No. 6. •

37. Check for continuity between ECM/PCM connector terminal A49 and DLC terminal No. 14.

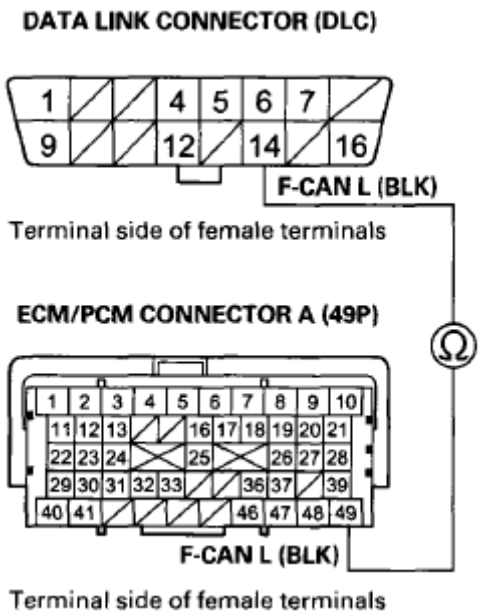


Fig. 218: Checking Continuity Between ECM/PCM Connector Terminal A49 And DLC Terminal No. 14
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Update the **ECM/PCM** if it does not have the latest software (see **ECM/PCM Update**), or substitute a known-good ECM/PCM (see **SUBSTITUTING THE ECM/PCM**), then recheck. If the symptom/indication goes away and the ECM/PCM was updated, troubleshooting is complete. If the symptom/indication goes away and the ECM/PCM was substituted, replace the original **ECM/PCM** (see **ECM/PCM Replacement**). •

NO - Repair open in the wire between the ECM/PCM (A49) and DLC terminal No. 14. •

38. Try to start the engine.

    Does the engine start and idle?

    YES - Go to the **F-CAN circuit troubleshooting**. •

    NO -

    - If the starter does not crank, go to step 39.
    - If the starter cranks, turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode; and go to step 41.
39. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
40. Check the No. 3-1 IG MAIN (50 A) fuse in the under-hood fuse/relay box.

    Is the fuse OK?

YES - Repair open in the wire between the No. 3-1 IG MAIN (50 A) fuse and the ignition switch (without keyless access) or power control unit (with keyless access). If the wire is OK, go to step 41.

NO - Repair short in the wire between the No. 3-1 IG MAIN (50 A) fuse and the ignition switch (without keyless access) or power control unit (with keyless access). Also replace the No. 3-1 IG MAIN (50 A) fuse. •

41. Inspect the No. 17 Fl MAIN (15 A) fuse in the under-hood fuse/relay box.

    Is the fuse OK?

    YES - Go to step 48.

    NO - Go to step 42.

42. Remove the blown No. 17 Fl MAIN (15 A) fuse from the under-hood fuse/relay box.
43. Remove PGM-FI main relay 1 (A) from the under-hood fuse/relay box.

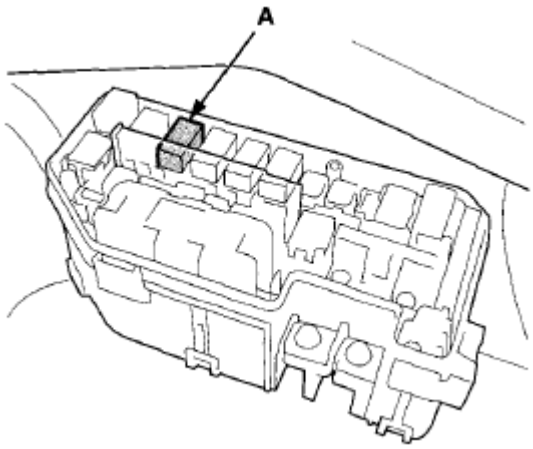


Fig. 219: Identifying PGM-FI Main Relay 1
Courtesy of AMERICAN HONDA MOTOR CO., INC.

44. Check for continuity between body ground and PGM-FI main relay 1 4P connector terminals No. 1 and No. 4 individually.

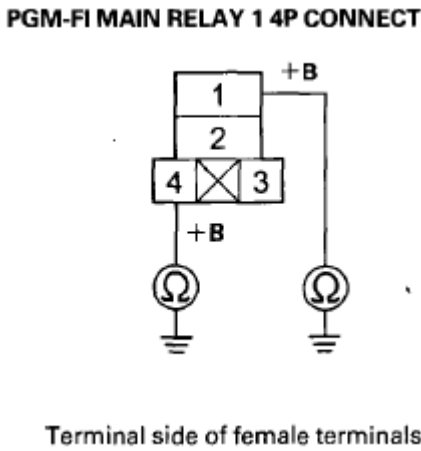


Fig. 220: Checking Continuity Between Body Ground And PGM-FI Main Relay 1 4P Connector Terminals No. 1 And No. 4
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Replace the under-hood fuse/relay box (see **REMOVAL AND INSTALLATION**). Also replace the No. 17 Fl MAIN (15 A) fuse. •

NO - Go to step 45.

45. While disconnecting each of the parts or connectors below, one at a time, check for continuity between PGM-FI main relay 1 4P connector terminal No. 2 and body ground:
    - PGM-FI main relay 2
    - ECM/PCM connector B (49P)
    - Each injector 2P connector
    - CMP sensor 3P connector
    - CKP sensor 3P connector
    - MAF sensor/IAT sensor 5P connector
    - Electronic throttle control system (ETCS) control relay

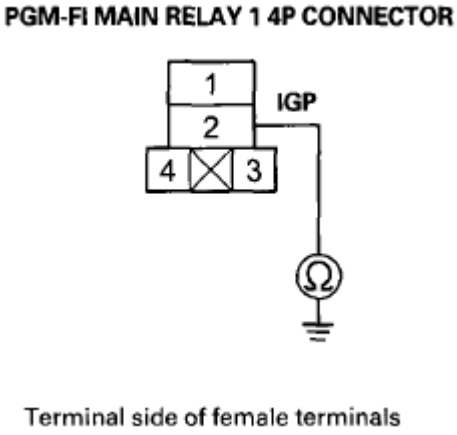


Fig. 221: Checking Continuity Between PGM-FI Main Relay 1 4P Connector Terminal No. 2 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Does continuity go away when one of the above parts or connectors is disconnected?

YES - Replace the part that made the short to body ground go away when disconnected. If the part is the ECM/PCM, update the **ECM/PCM** if it does not have the latest software (see **ECM/PCM Update**), or substitute a known-good ECM/PCM (see **SUBSTITUTING THE ECM/PCM**), then recheck. If the symptom/indication goes away and the ECM/PCM was updated, troubleshooting is complete. If the symptom/indication goes away and the ECM/PCM was substituted, replace the original **ECM/PCM** (see **ECM/PCM Replacement**). Also replace the No. 17 Fl MAIN (15 A) fuse. •

NO - Go to step 46.

46. Disconnect the connectors from these components:
    - PGM-FI main relay 2
    - ECM/PCM connector B (49P)
    - Injectors
    - CMP sensor
    - CKP sensor
    - MAF sensor/IAT sensor
    - Electronic throttle control system (ETCS) control relay
47. Check for continuity between PGM-FI main relay 1 4P connector terminal No. 2 and body ground.

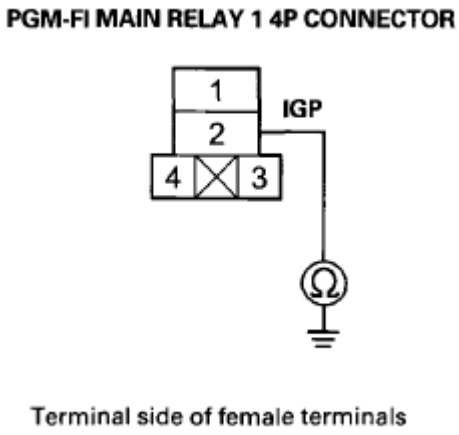


Fig. 222: Checking Continuity Between PGM-FI Main Relay 1 4P Connector Terminal No. 2 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair short in the wire between PGM-FI main relay 1 and each part. Also replace the No. 17 Fl MAIN (15A)fuse. •

NO - Replace PGM-FI main relay 1. Also replace the No. 17 FI MAIN (15A)fuse. •

48. Inspect the No. 9 FUEL PUMP (20 A) fuse in the driver's under-dash fuse/relay box.

    Is the fuse OK?

    YES - Go to step 60.

    NO - Go to step 49.

49. Remove the blown No. 9 FUEL PUMP (20 A) fuse from the driver's under-dash fuse/relay box.
50. Remove the driver's dashboard undercover (see **DRIVER'S DASHBOARD UNDERCOVER REMOVAL/INSTALLATION**), then remove PGM-FI main relay 2 (A) from the driver's under-dash fuse/relay box.

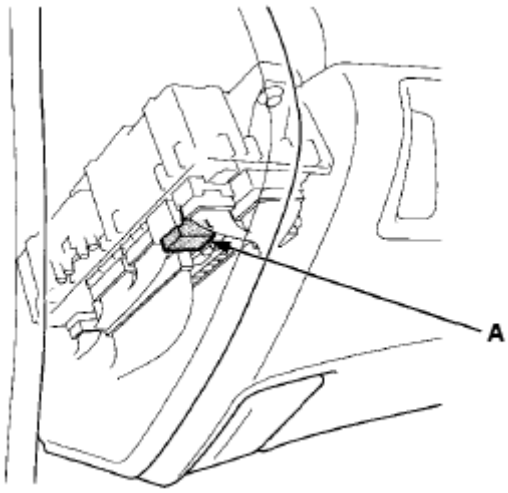


Fig. 223: Identifying PGM-FI Main Relay
Courtesy of AMERICAN HONDA MOTOR CO., INC.

51. Test PGM-FI main relay 2 (see **POWER RELAY TEST**).

    Is the relay OK?

    YES - Go to step 52.

    NO - Replace PGM-FI main relay 2. Also replace the No. 9 FUEL PUMP (20 A) fuse. •

52. Check for continuity between PGM-FI main relay 2 4P connector terminal No. 2 and body ground.

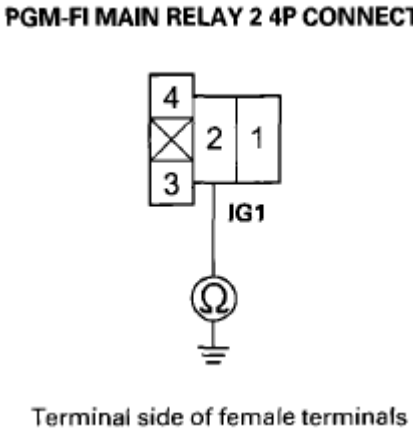


Fig. 224: Checking Continuity Between PGM-FI Main Relay 2 4P Connector Terminal No. 2 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 53.

NO - Go to step 56.

53. Jump the SCS line with the HDS.
54. Disconnect ECM/PCM connector B (49P).
55. Check for continuity between ECM/PCM connector terminal B42 and body ground.

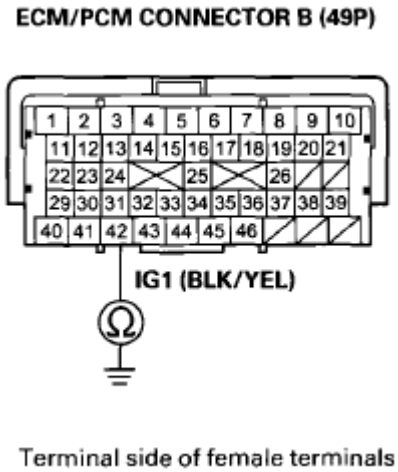


Fig. 225: Checking Continuity Between ECM/PCM Connector Terminal B42 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair short in the wire between the No. 9 FUEL PUMP (20 A) fuse and the ECM/PCM (B42), between the No. 9 FUEL PUMP (20 A) fuse and PGM-FI main relay 2, or between the No. 9 FUEL PUMP (20 A) fuse and the immobilizer control unit. Also replace the No. 9 FUEL PUMP (20 A) fuse. •

NO - Replace the No. 9 FUEL PUMP (20 A) fuse, and update the **ECM/PCM** if it does not have the latest software (see **ECM/PCM Update**), or substitute a known-good ECM/PCM (see **SUBSTITUTING THE ECM/PCM**), then recheck. If the symptom/indication goes away and the ECM/PCM was updated, troubleshooting is complete. If the symptom/indication goes away and the ECM/PCM was substituted, replace the original **ECM/PCM** (see **ECM/PCM Replacement**). •

56. Remove the rear seat cushion (see **REAR SEAT REMOVAL/INSTALLATION**).
57. Remove the access panel from the floor (see **FUEL TANK UNIT REMOVAL AND INSTALLATION**).
58. Disconnect the fuel pump 4P connector.
59. Check for continuity between fuel pump 4P connector terminal No. 2 and body ground.

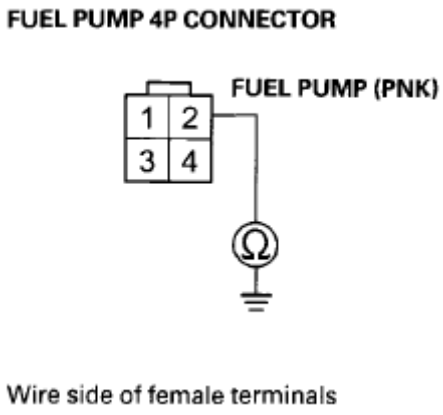


Fig. 226: Checking Continuity Between Fuel Pump 4P Connector Terminal No. 2 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair short in the wire between the fuel pump and PGM-FI main relay 2. Also replace the No. 9 FUEL PUMP(20A)fuse. •

NO - Check the fuel pump, and replace it if needed (see **FUEL PUMP/FUEL GAUGE SENDING UNIT REPLACEMENT**). Also replace the No. 9 FUEL PUMP (20 A) fuse. •

60. Jump the SCS line with the HDS.
61. Disconnect ECM/PCM connectors A (49P) and B (49P).
62. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
63. Measure the voltage between ECM/PCM connector terminal B42 and body ground.

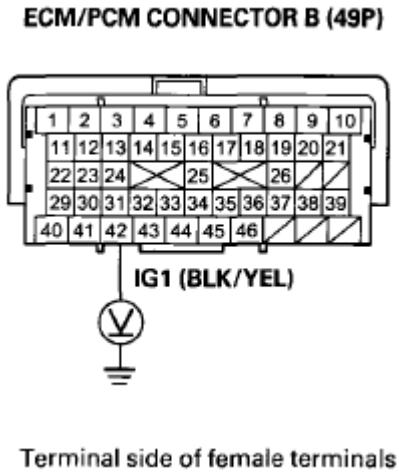


Fig. 227: Measuring Voltage Between ECM/PCM Connector Terminal B42 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there battery voltage?

YES - Go to step 64.

NO - Repair open in the wire between the No. 9 FUEL PUMP (20 A) fuse and the ECM/PCM (B42). •

64. Measure the voltage between ECM/PCM connector terminal A6 and body ground.

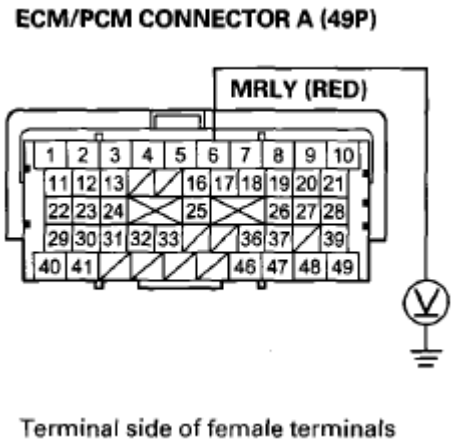


Fig. 228: Measuring Voltage Between ECM/PCM Connector Terminal A6 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there battery voltage?

YES - Go to step 69.

NO - Go to step 65.

65. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
66. Remove PGM-FI main relay 1 (A) from the under-hood fuse/relay box.

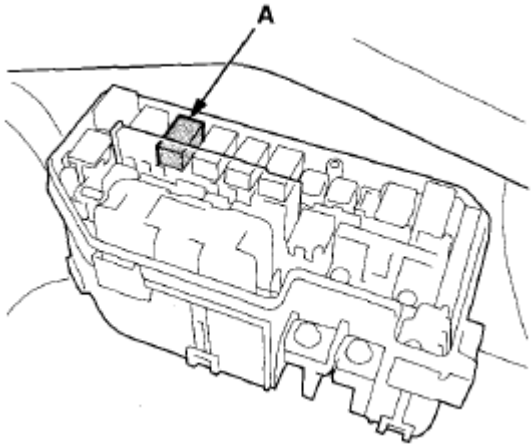


Fig. 229: Identifying PGM-FI Main Relay 1

Courtesy of AMERICAN HONDA MOTOR CO., INC.

67. Measure the voltage between PGM-FI main relay 1 4P connector terminal No. 4 and body ground.

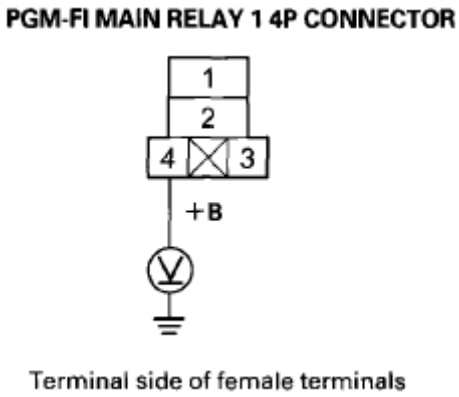


Fig. 230: Measuring Voltage Between PGM-FI Main Relay 1 4P Connector Terminal No. 4 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there battery voltage?

YES - Go to step 68.

NO - Replace the under-hood fuse/relay box (see **REMOVAL AND INSTALLATION**). •

68. Check for continuity between PGM-FI main relay 1 4P connector terminal No. 3 and ECM/PCM connector terminal A6.

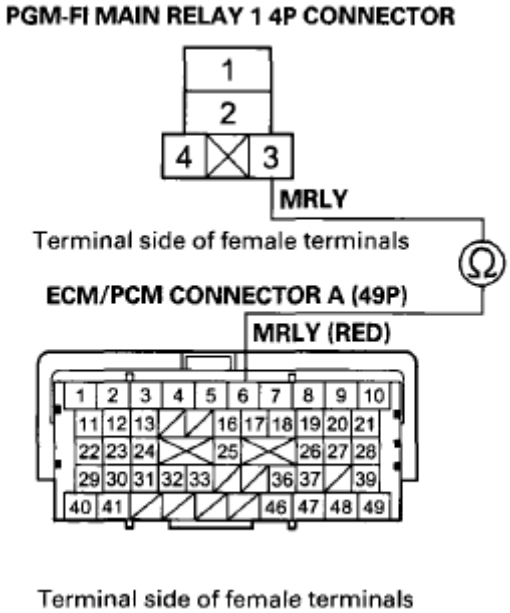


Fig. 231: Checking Continuity Between PGM-FI Main Relay 1 4P Connector Terminal No. 3 And

ECM/PCM Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Test PGM-FI main relay 1 (see **POWER RELAY TEST**). If the relay is OK, update the **ECM/PCM** if it does not have the latest software (see **ECM/PCM Update**), or substitute a known-good ECM/PCM (see **SUBSTITUTING THE ECM/PCM**), then recheck. If the symptom/indication goes away and the ECM/PCM was updated, troubleshooting is complete. If the symptom/indication goes away and the ECM/PCM was substituted, replace the original **ECM/PCM** (see **ECM/PCM Replacement**). •

NO - Repair open in the wire between the ECM/PCM (A6) and PGM-FI main relay 1. •

69. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
70. Remove PGM-FI main relay 1 (A) from the under-hood fuse/relay box.

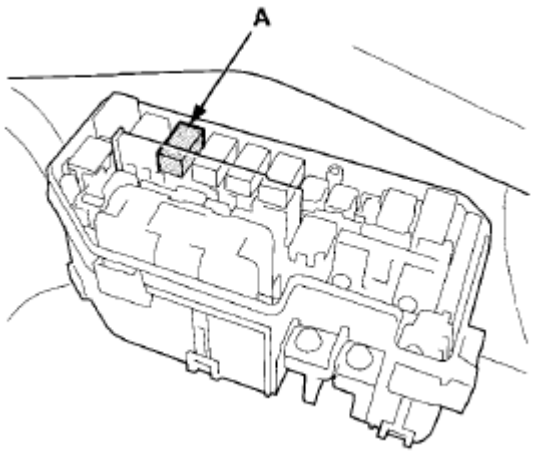


Fig. 232: Identifying PGM-FI Main Relay 1
Courtesy of AMERICAN HONDA MOTOR CO., INC.

71. Measure the voltage between PGM-FI main relay 1 4P connector terminal No. 1 and body ground.

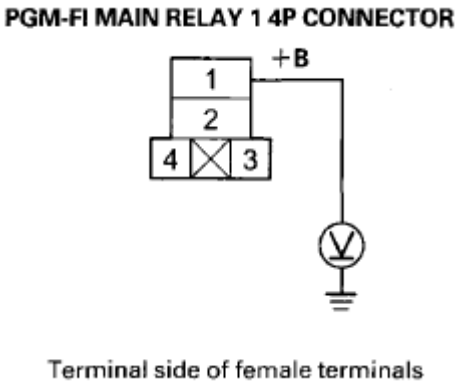


Fig. 233: Measuring Voltage Between PGM-FI Main Relay 1 4P Connector Terminal No. 1 And

Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there battery voltage?

YES - Go to step 72.

NO - Replace the under-hood fuse/relay box (see **REMOVAL AND INSTALLATION**). •

72. Check for continuity between PGM-FI main relay 1 4P connector terminal No. 2 and ECM/PCM connector terminal B3.

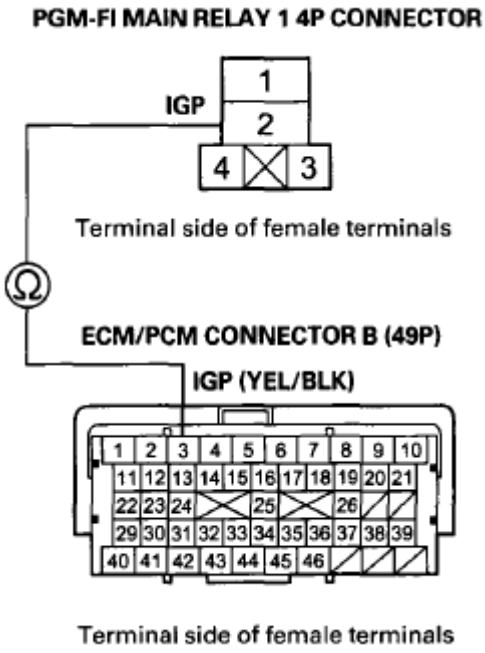


Fig. 234: Checking Continuity Between PGM-FI Main Relay 1 4P Connector Terminal No. 2 And ECM/PCM Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 73.

NO - Repair open in the wire between the ECM/PCM (B3) and PGM-FI main relay 1. •

73. Test PGM-FI main relay 1 (see **POWER RELAY TEST**).

Is PGM-FI main relay 1 OK?

YES - Go to step 74.

NO - Replace PGM-FI main relay 1. •

74. Disconnect ECM/PCM connectors A (49P), B (49P), and C (49P).
75. Check for continuity between body ground and

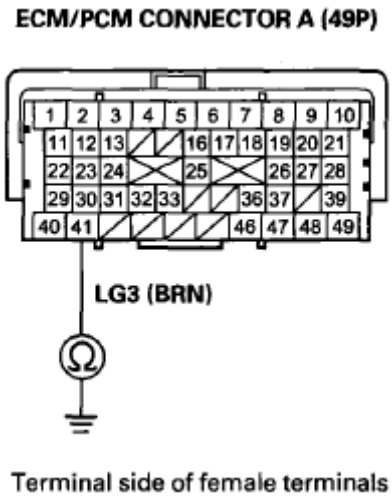


Fig. 235: Checking Continuity Between Body Ground And ECM/EPM Connector A(49P)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

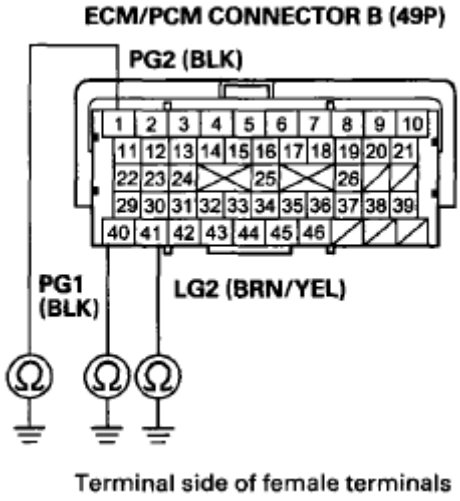


Fig. 236: Checking Continuity Between Body Ground And ECM/EPM Connector B(49P)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

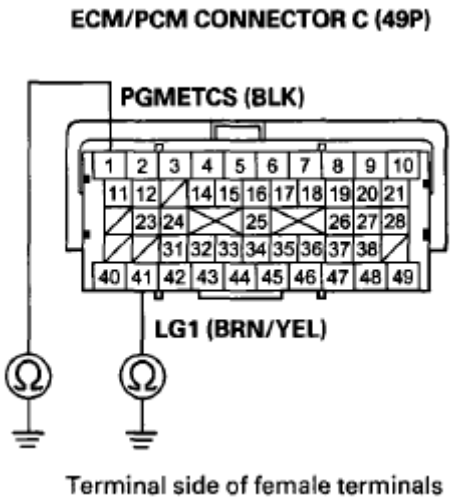


Fig. 237: Checking Continuity Between Body Ground And ECM/EPM Connector C(49P)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Update the **ECM/PCM** if it does not have the latest software (see **ECM/PCM Update**), or substitute a known-good ECM/PCM (see **SUBSTITUTING THE ECM/PCM**), then recheck. If the symptom/indication goes away and the ECM/PCM was updated, troubleshooting is complete. If the symptom/indication goes away and the ECM/PCM was substituted, replace the original **ECM/PCM**. •

NO - Repair open in the wire(s) between the PCM (A41, B1, B40, B41, C1, C41)and body ground (G101; M/T (see **CONNECTOR TO FUSE/RELAY BOX INDEX**), A/T (see **CONNECTOR TO FUSE/RELAY BOX INDEX**)). •

INJECTOR REPLACEMENT

1. Relieve the fuel pressure (see **FUEL PRESSURE RELIEVING**).
2. Remove the intake manifold (see **REMOVAL**).
3. Disconnect the quick-connect fitting (A); without SH-AWD (see **FUEL LINE/QUICK-CONNECT FITTING REMOVAL**), with SH-AWD (see **WITH SH-AWD**).

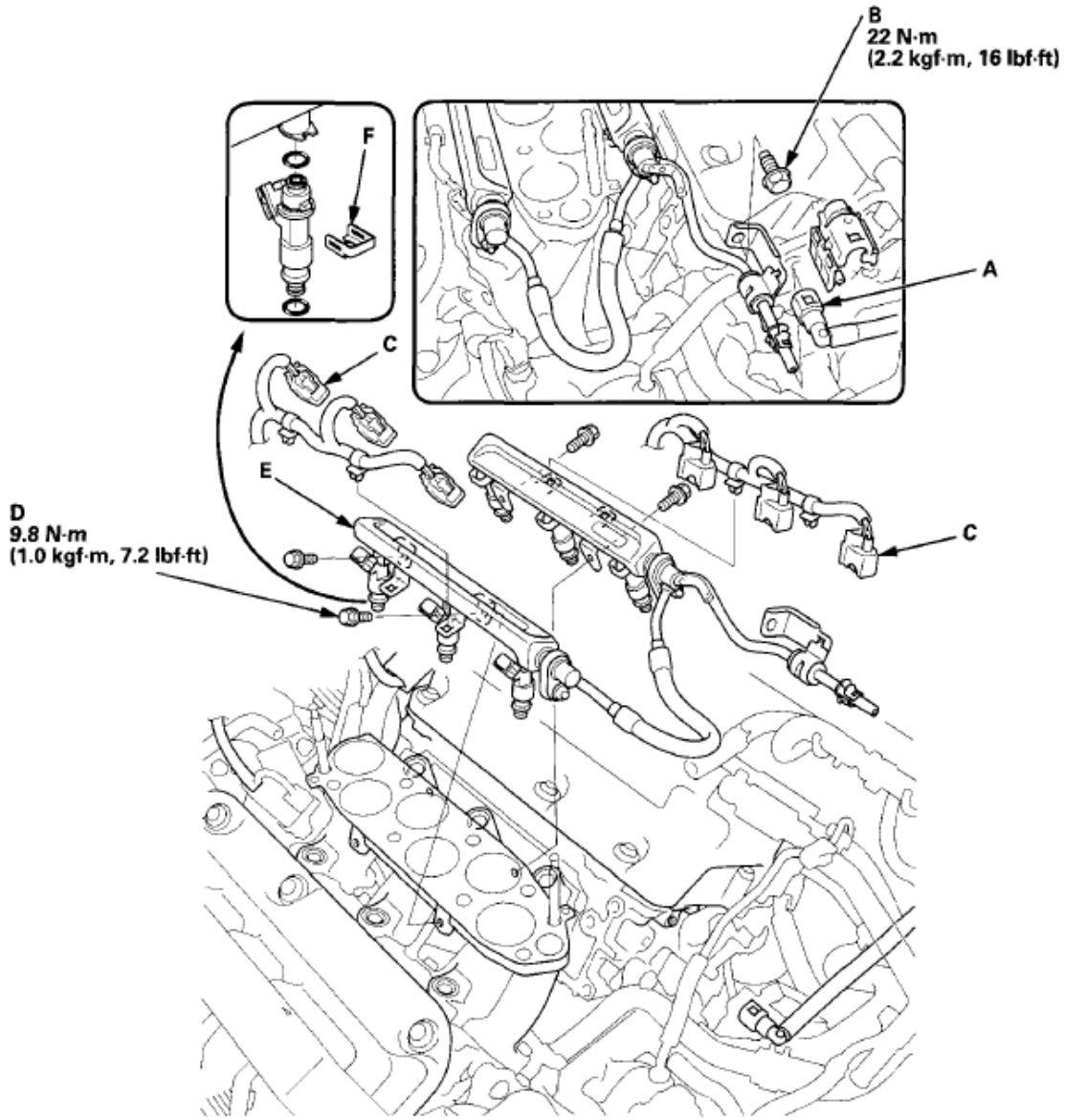


Fig. 238: Identifying Injector And Related Components With Torque Specifications (Without SH-AWD)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Remove the fuel joint hose mounting bolt (B).
5. Disconnect the connectors (C) from the injectors.
6. Remove the fuel rail mounting bolts (D) from the fuel rails (E).
7. Remove the fuel rails and the injectors from the injector base.
8. Remove the injector clips (F) from the fuel rails.
9. Remove the injectors from the fuel rails.
10. Coat the new O-rings (black) (A) with clean engine oil, and insert the injectors (B) into the fuel rails (C).

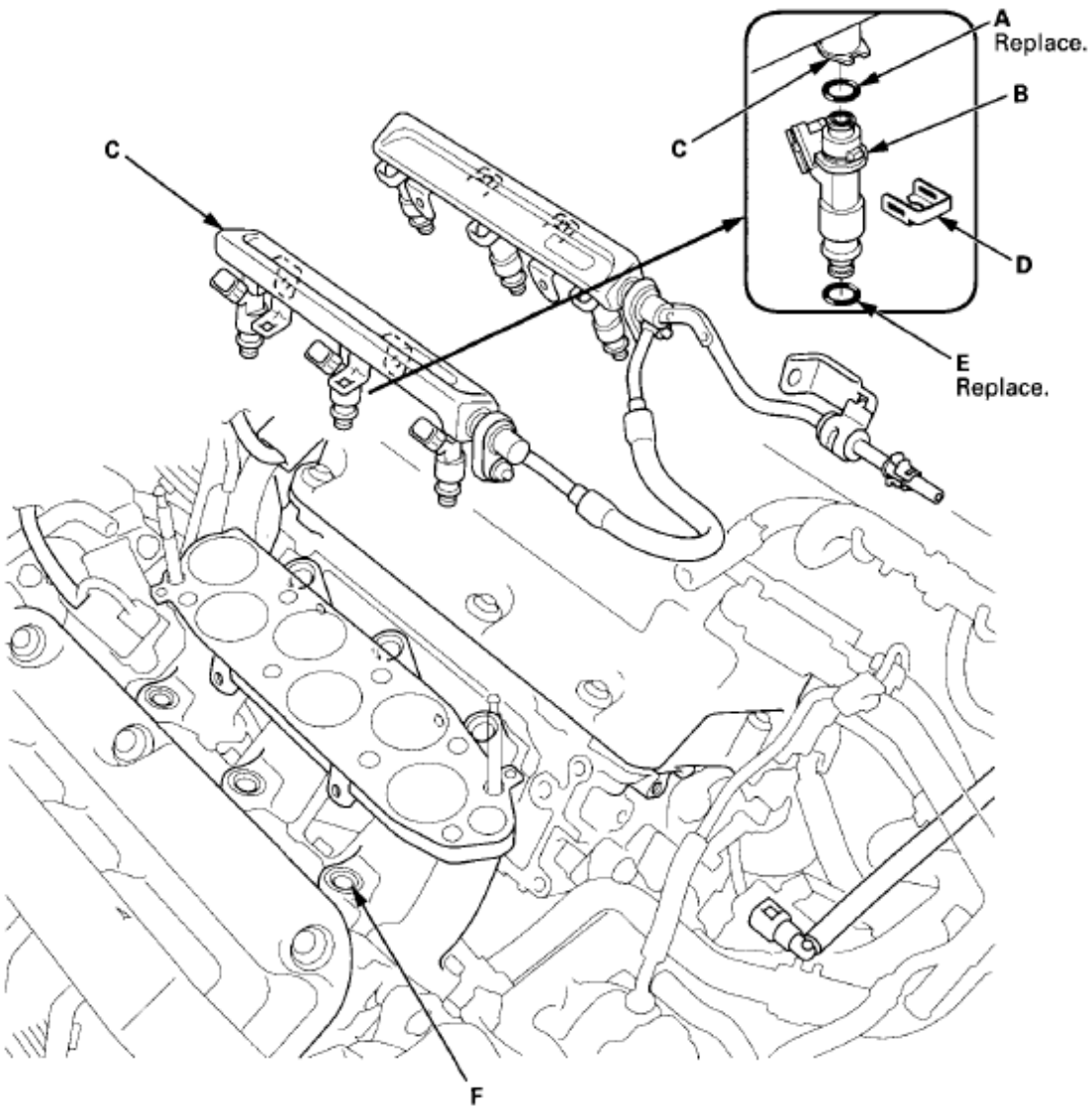


Fig. 239: Identifying Injector And Related Components (With SH-AWD)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

11. Install the injector clips (D).
12. Coat the new O-rings (green) (E) with clean engine oil.
13. Install the fuel rails and the injectors in the injector base (F).
14. Install the fuel rail mounting bolts, and connect the injector connectors.
15. Install the fuel joint hose mounting bolt.
16. Connect the quick-connect fitting; without SH-AWD (see **FUEL LINE/QUICK-CONNECT FITTING INSTALLATION**), with SH-AWD (see **WITH SH-AWD**).
17. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode, but do not operate the starter. After the fuel pump runs for about 2 seconds, the fuel rail will be pressurized. Repeat this two or three times, then make sure there are no fuel leaks.
18. Install the intake manifold with a new gasket (see **INSTALLATION**).

MAP SENSOR REPLACEMENT

1. Disconnect the MAP sensor connector (A).

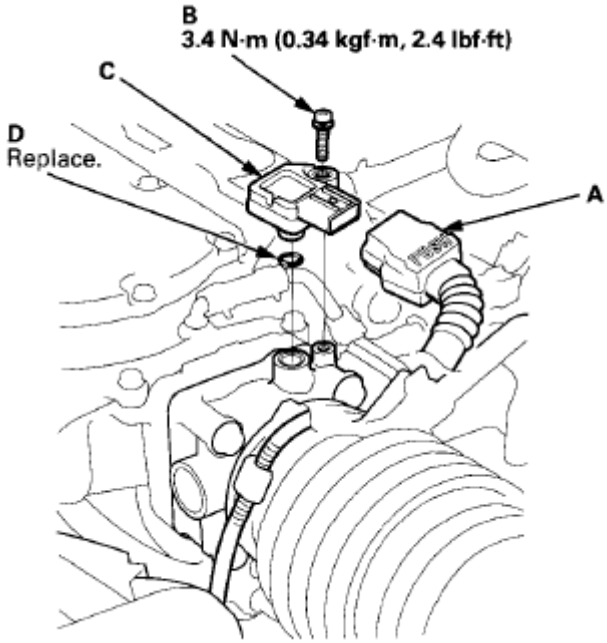


Fig. 240: Identifying MAP Sensor Connector, Screw, MAP Sensor And O-Ring With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Remove the screw (B).
3. Remove the MAP sensor (C).
4. Install the parts in the reverse order of removal with a new O-ring (D).

MAF SENSOR/IAT SENSOR REPLACEMENT

1. Disconnect the MAF sensor/IAT senor 5P connector (A).

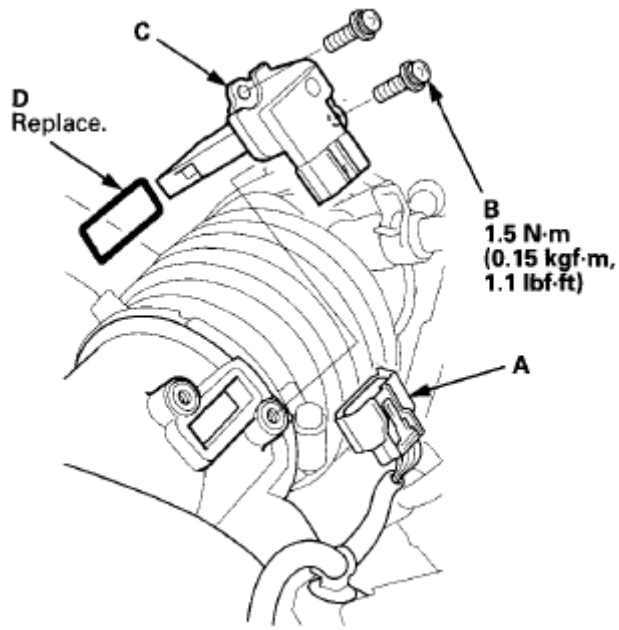


Fig. 241: Identifying MAF Sensor/IAT Sensor And Connector, Screws And O-Ring With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Remove the screws (B).
3. Remove the MAF sensor/IAT sensor (C).
4. Install the parts in the reverse order of removal with a new O-ring (D).

ECT SENSOR 1 REPLACEMENT

1. Drain the engine coolant (see **COOLANT CHECK**).
2. Disconnect the ECT sensor 1 2P connector (A).

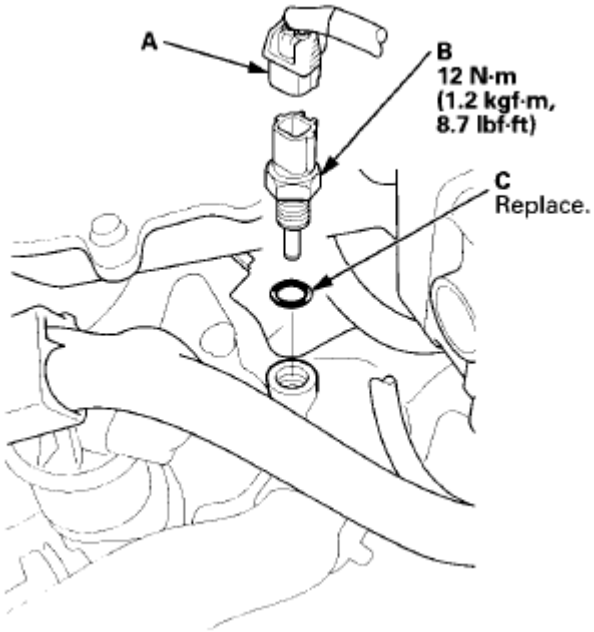


Fig. 242: Identifying ECT Sensor 12P Connector, ECT Sensor And O-Ring With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Remove ECT sensor 1 (B).
4. Install the parts in the reverse order of removal with a new O-ring (C), then refill the radiator with engine coolant (see **COOLANT CHECK**).

ECT SENSOR 2 REPLACEMENT

1. Remove the splash shield.
2. Drain the engine coolant (see **COOLANT CHECK**).
3. Disconnect the ECT sensor 2 2P connector (A).

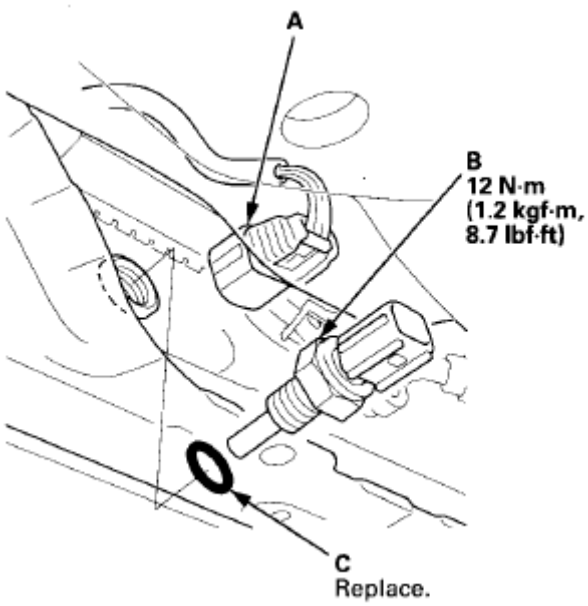


Fig. 243: Identifying ECT Sensor 2 2P Connector, ECT Sensor 2 And O-Ring With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Remove ECT sensor 2 (B).
5. Install the parts in the reverse order of removal with a new O-ring (C), then refill the radiator with engine coolant (see **COOLANT CHECK**).

A/F SENSOR REPLACEMENT

Special Tools Required

O2 Sensor Socket Wrench Snap-on SWR2 or O2 Sensor Wrench Snap-on YA8875, commercially available

FRONT BANK (BANK 2)

1. Disconnect the front A/F sensor 6P connector (A), then remove the A/F sensor (B).

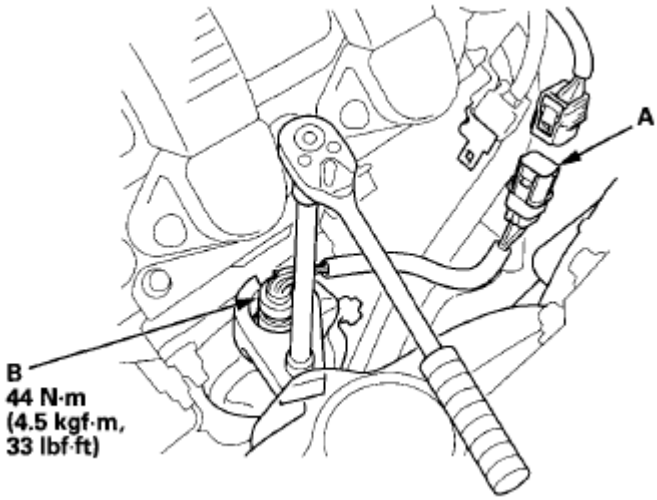


Fig. 244: Identifying Front A/F Sensor 6P Connector And A/F Sensor With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Install the parts in the reverse order of removal.

REAR BANK(BANK 1)

1. Disconnect the rear A/F sensor 6P connector (A), then remove the A/F sensor (B).

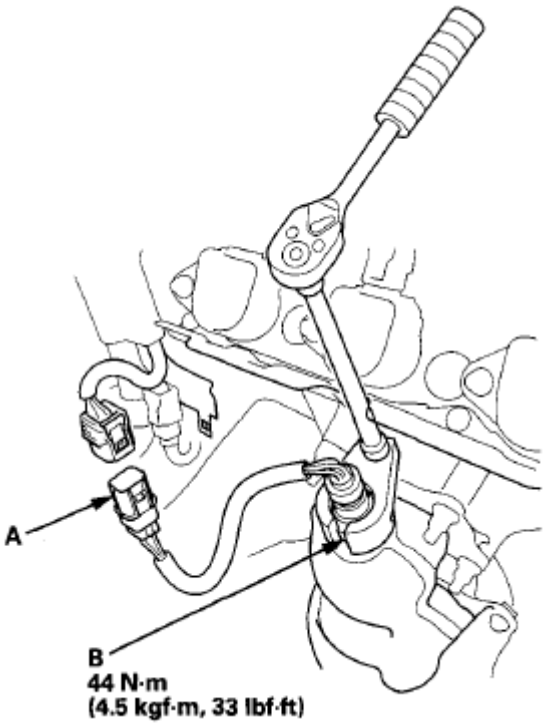


Fig. 245: Identifying Rear A/F Sensor 6P Connector And A/F Sensor With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Install the parts in the reverse order of removal.

SECONDARY HO2S REPLACEMENT

SPECIAL TOOLS REQUIRED

O2 Sensor Socket Wrench Snap-on SWR2 or O2 Sensor Wrench Snap-on YA8875, commercially available

FRONT BANK (BANK 2)

M/T

1. Raise the vehicle on a lift.
2. Disconnect the front secondary HO2S 4P connector (A), and remove the harness clamp (B).

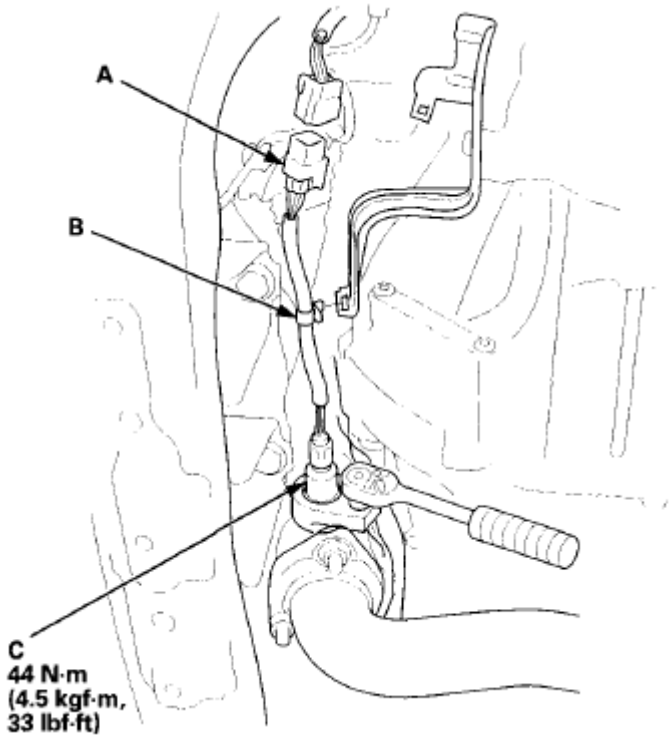


Fig. 246: Identifying Front Secondary HO2S 4P Connector And Harness Clamp With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Remove front secondary HO2S (C).
4. Install the parts in the reverse order of removal.

FRONT BANK (BANK 2)

A/T

1. Disconnect the front secondary HO2S 4P connector (A), and remove the harness clamps (B) and the bolt (C).

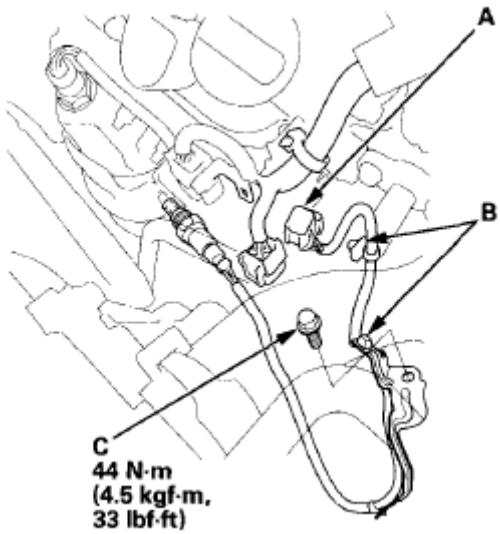


Fig. 247: Identifying Front Secondary HO2S 4P Connector, Harness Clamps And Bolt With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Raise the vehicle on a lift.
3. Remove front secondary HO2S (A).

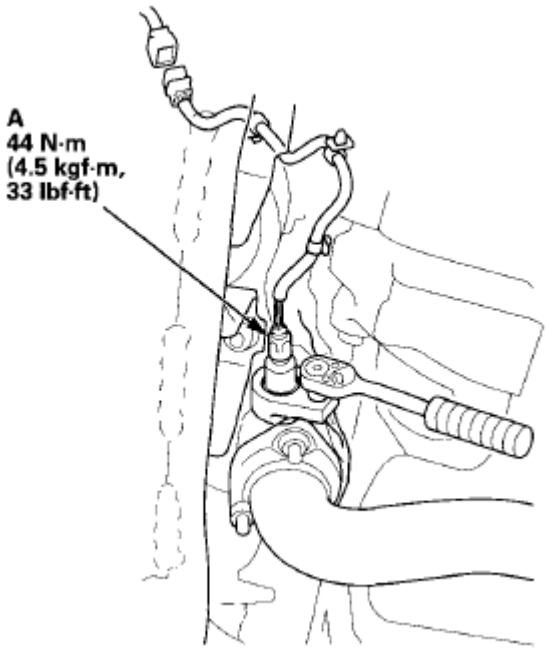


Fig. 248: Identifying Front Secondary HO2S With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Install the parts in the reverse order of removal.

REAR BANK(BANK 1)

1. Raise the vehicle on a lift.
2. Disconnect the rear secondary HO2S 4P connector (A), and remove the harness clamps (B).

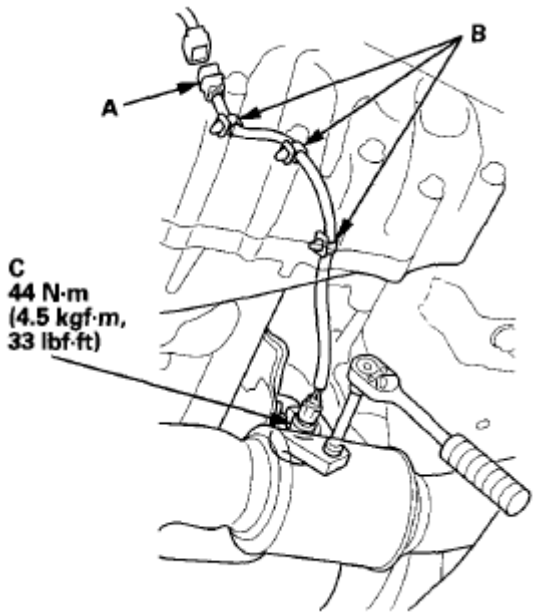


Fig. 249: Identifying Rear Secondary HO2S 4P Connector And Harness Clamps With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Remove rear secondary HO2S (C).
4. Install the parts in the reverse order of removal.

CMP SENSOR REPLACEMENT

1. Remove the timing belt (see **TIMING BELT REMOVAL**).
2. Remove the front camshaft pulley (CMP sensor pulse plate) (A).

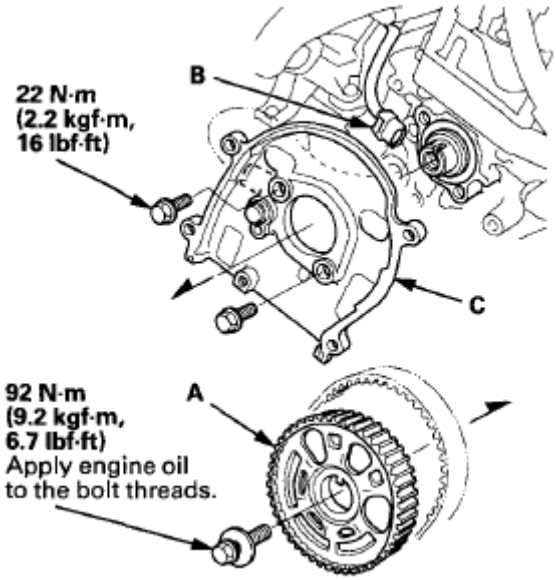


Fig. 250: Identifying Front Camshaft Pulley (CMP Sensor Pulse Plate) With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Disconnect the CMP sensor connector (B), then remove the back cover (C).
4. Remove the CMP sensor (A) from the back cover.

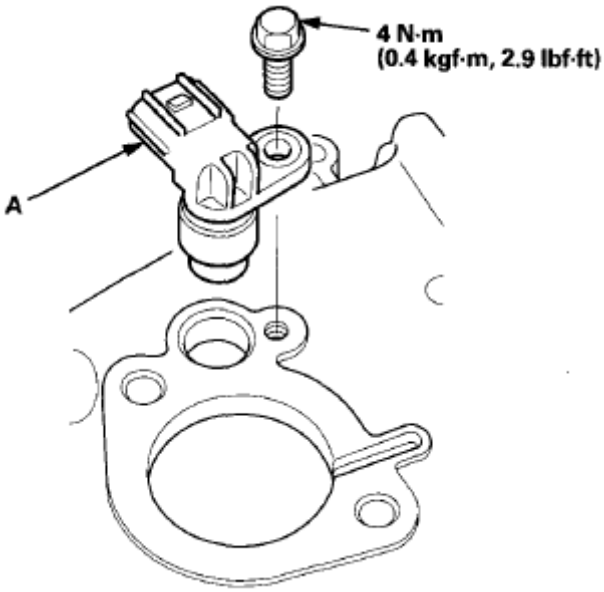


Fig. 251: Identifying CMP Sensor On Back Cover With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Install the parts in the reverse order of removal. Install the timing belt (see **TIMING BELT INSTALLATION**).
6. Do the CKP pattern clear/CKP pattern learn procedure (see **CKP PATTERN CLEAR/CKP PATTERN LEARN**).

CKP SENSOR REPLACEMENT

1. Raise the vehicle on a lift.

NOTE: Make the vehicle is level, because engine oil will drip out when you remove the sensor.

2. Remove the CKP sensor cover (A).

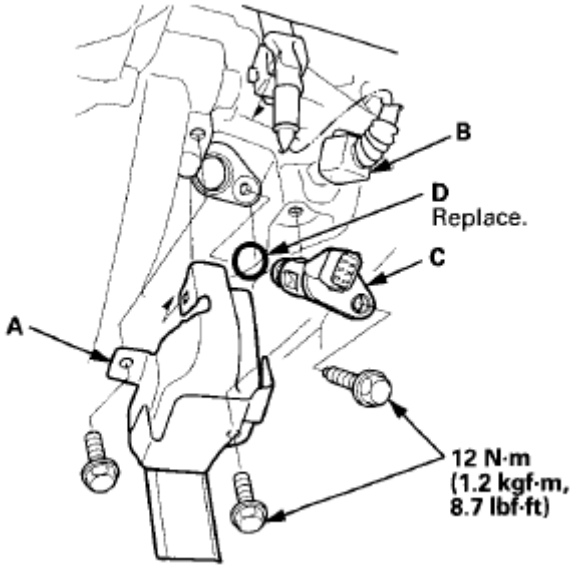


Fig. 252: Identifying CKP Sensor Cover With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Disconnect the CKP sensor connector (B).
4. Remove the CKP sensor (C).
5. Install the parts in the reverse order of removal with a new O-ring (D).
6. Do the CKP pattern clear/CKP pattern learn procedure (see **CKP PATTERN CLEAR/CKP PATTERN LEARN**).
7. Check for engine oil level, and add more oil if needed.

KNOCK SENSOR REPLACEMENT

1. Remove the intake manifold (see **REMOVAL**).
2. Remove the injector base (see **INJECTOR BASE REMOVAL AND INSTALLATION**).
3. Disconnect the knock sensor connector (A).

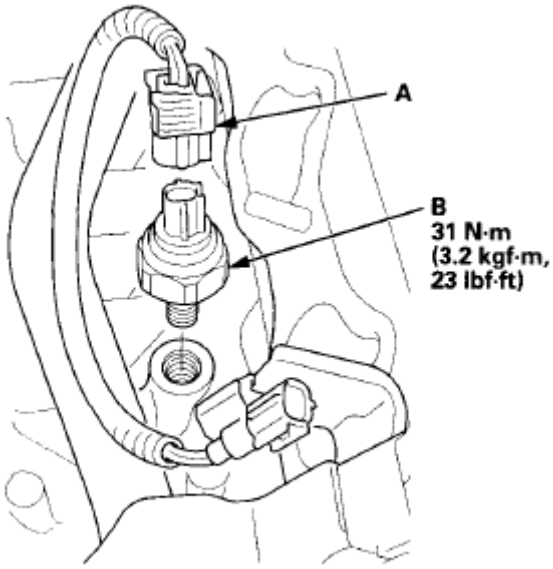


Fig. 253: Identifying Knock Sensor Connector With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Remove the knock sensor (B).
5. Install the parts in the reverse order of removal.

INPUT SHAFT (MAINSHAFT) SPEED SENSOR REPLACEMENT

NOTE: For A/T models (see INPUT SHAFT (MAINSHAFT) SPEED SENSOR REPLACEMENT).

M/T

1. Raise the vehicle on a lift.
2. Remove the splash shield.
3. Disconnect the input shaft (mainshaft) speed sensor connector (A).

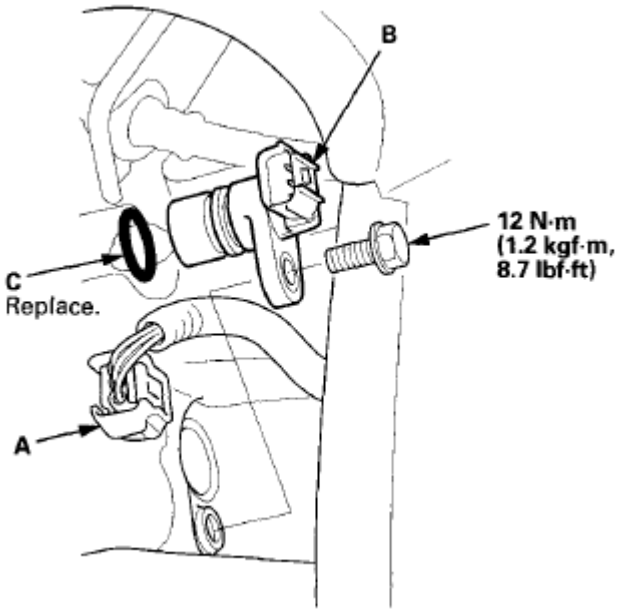


Fig. 254: Identifying Input Shaft Speed Sensor Connector With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Remove the input shaft (mainshaft) speed sensor (B).
5. Install the parts in the reverse order of removal with a new O-ring (C).
6. If needed, refill the manual transmission fluid (see **TRANSMISSION FLUID INSPECTION AND REPLACEMENT**).

OUTPUT SHAFT (COUNTERSHAFT) SPEED SENSOR REPLACEMENT

NOTE: For A/T models (see INPUT SHAFT (MAINSHAFT) SPEED SENSOR REPLACEMENT).

M/T

1. Raise the vehicle on a lift.
2. Remove the splash shield.
3. Disconnect the output shaft (countershaft) speed sensor connector (A).

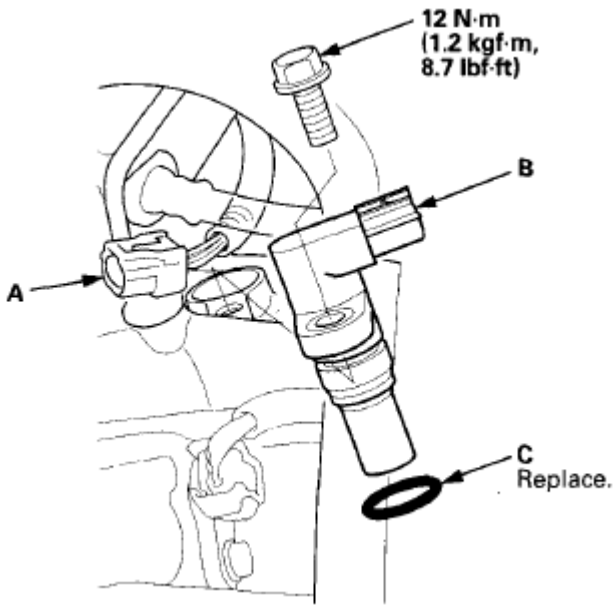


Fig. 255: Identifying Output Shaft Speed Sensor Connector With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Remove the output shaft (countershaft) speed sensor (B).
5. Install the parts in the reverse order of removal with a new O-ring (C).

ELD REPLACEMENT

1. Do the battery terminal disconnection procedure (see **BATTERY TERMINAL DISCONNECTION AND RECONNECTION**).
2. Remove the upper cover (A), then remove the two positive (+) terminals (B).

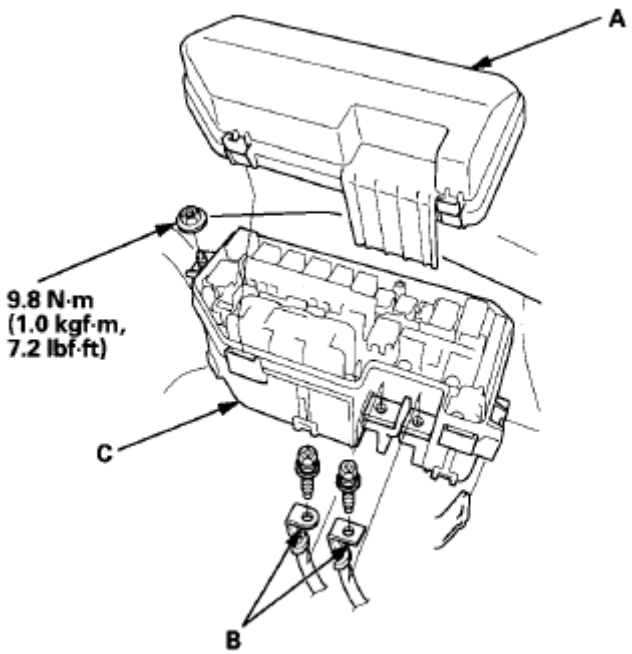


Fig. 256: Identifying Upper Cover With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Remove the under-hood fuse/relay box (C) from the bracket.
4. Remove the lower cover (A). A-

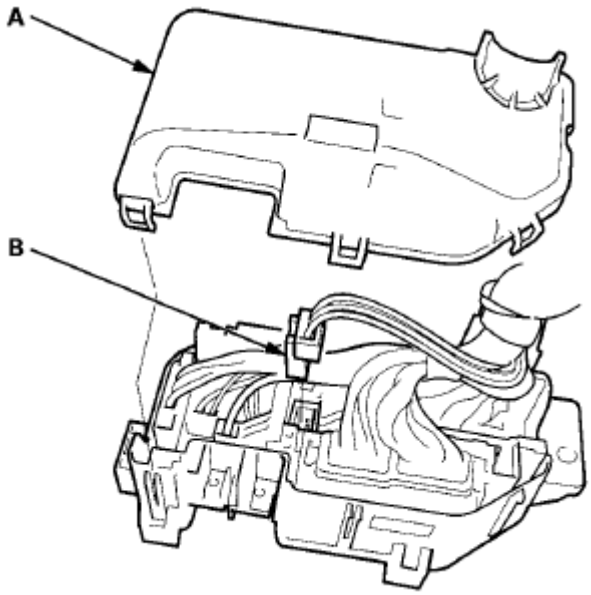


Fig. 257: Identifying Lower Cover
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Disconnect the ELD 3P connector (B).
6. Remove the fuses (A and B).

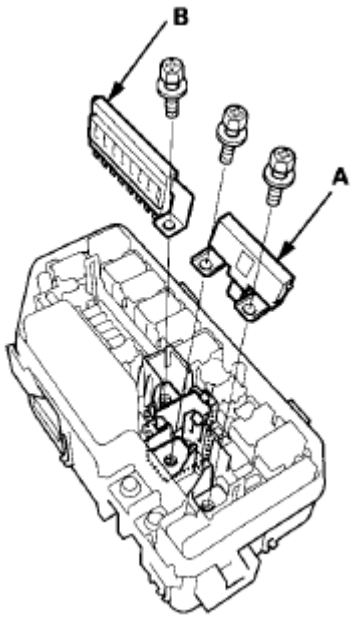


Fig. 258: Identifying Fuses
Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Release the three lock tabs (A), then remove the ELD (B).

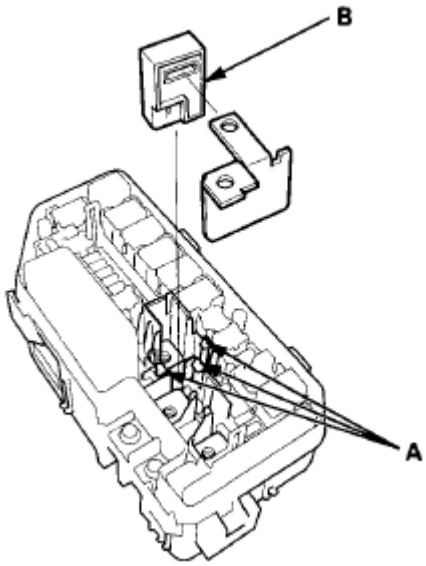


Fig. 259: Identifying Lock Tabs And ELD
Courtesy of AMERICAN HONDA MOTOR CO., INC.

8. Install the parts in the reverse order of removal.
9. Do the battery terminal reconnection procedure (see **BATTERY TERMINAL DISCONNECTION AND RECONNECTION**).

ECM/PCM UPDATE

Special Tools Required

- Honda Diagnostic System (HDS) tablet tester
- Honda Interface Module (HIM) and an iN workstation with the latest HDS software version
- HDS pocket tester
- GNA600 and an iN workstation with the latest HDS software version
- MVCI unit with the latest control module (CM) update software installed

Any one of the above updating tools can be used.

NOTE:

- **Make sure the HDS/iN workstation or the MVCI unit has the latest HDS software version.**
- **Before you update the ECM/PCM, make sure the battery in the vehicle is fully charged, and connect a jumper battery (not a battery charger) to maintain system voltage.**
- **Never turn the ignition switch to ACC (I) or LOCK (0), or never press the engine start/stop button to select the OFF or ACC mode during the update. If there is a problem with the update, leave the ignition switch ON (II) or vehicle in the ON mode.**
- **To prevent ECM/PCM damage, do not operate anything electrical (headlights, audio system, brakes, A/C, power windows, moonroof, door locks, etc.) during the update.**
- **To ensure the latest program is installed, do a ECM/PCM update whenever the ECM/PCM is substituted or replaced.**
- **You cannot update a ECM/PCM with a program it already has. It will only accept a new program.**
- **High temperature in the engine compartment might cause the ECM/PCM to become too hot to run the update. If the engine has been running before this procedure, open the hood and cool the engine compartment.**
- **If you need to diagnose the Honda interface module (HIM) because the HIM's red (#3) light came on or was flashing during the update, leave the ignition switch in ON (II) or vehicle in the ON mode when you disconnect the HIM from the data link connector (DLC). This will prevent ECM/PCM damage.**

1. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode, but do not start the engine.
2. Connect the HDS to the data link connector (DLC) (A) located under the driver's side of the dashboard.

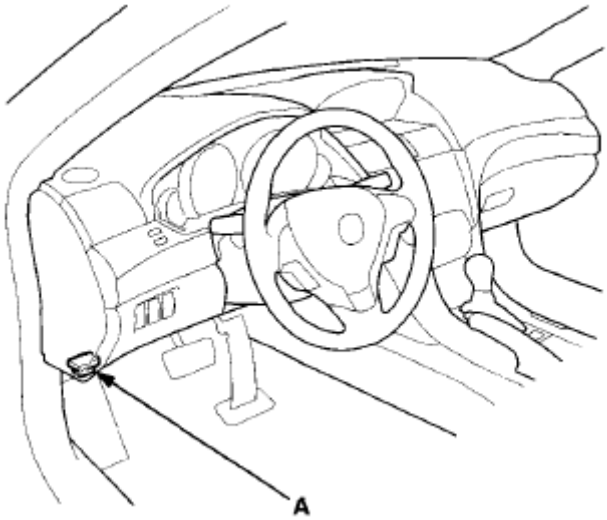


Fig. 260: Identifying Data Link Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Make sure the HDS communicates with the ECM/PCM and other vehicle systems. If it doesn't, go to the **DLC circuit troubleshooting**. If you are returning from the DLC circuit troubleshooting, skip steps 4 and 5, and clean the throttle body (see **THROTTLE BODY CLEANING**) after updating the ECM/PCM.
4. Select the INSPECTION MENU with the HDS.
5. Select the ETCS TEST, then select the TP POSITION CHECK, and follow the HDS screen prompts.

NOTE: If the TP POSITION CHECK indicates FAILED, continue this procedure.

6. Exit the HDS diagnostic system, then select the update mode, and follow the screen prompts to update the ECM/PCM.
7. If the software in the ECM/PCM is the latest, disconnect the updating tool from the DLC, and go back to the procedure that you were doing. If the software in the ECM/PCM is not the latest, follow the instructions on the screen. If prompted to choose the PGM-FI system or the A/T system, make sure you update both.

NOTE: If the ECM/PCM update system requires you to cool the ECM/PCM, follow the instructions on screen. If you run into a problem during the update procedure (programming takes over 15 minutes, status bar goes over 100 %, D or immobilizer indicator flashes, HDS tablet freezes, etc.), follow these steps to minimize the chance of damaging the ECM/PCM:

- Leave the ignition switch in ON (II) or vehicle in the ON mode.
- Connect a jumper battery (do not connect a battery charger).
- Shut down the updating tool.
- Disconnect the updating tool from the DLC.
- Reboot the updating tool.

- Reconnect the updating tool to the DLC, and try the update procedure again.

8. If the TP POSITION CHECK failed in step 5, clean the throttle body (see **THROTTLE BODY CLEANING**).
9. Do the ECM/PCM idle learn procedure (see **ECM/PCM IDLE LEARN PROCEDURE**).
10. Do the CKP pattern clear/CKP pattern learn procedure (see **CKP PATTERN CLEAR/CKP PATTERN LEARN**).

ECM/PCM REPLACEMENT

Special Tools Required

- Honda Diagnostic System (HDS) tablet tester
- Honda Interface Module (HIM) and an iN workstation with the latest HDS software version
- HDS pocket tester
- GNA600 and an iN workstation with the latest HDS software version
- MVCI unit with the latest control module (CM) update software installed

Any one of the above updating tools can be used.

NOTE: Make sure the HDS/iN workstation or the MVCI unit has the latest HDS software version.

1. Connect HDS to the data link connector (DLC) (A) located under the driver's side of the dashboard.

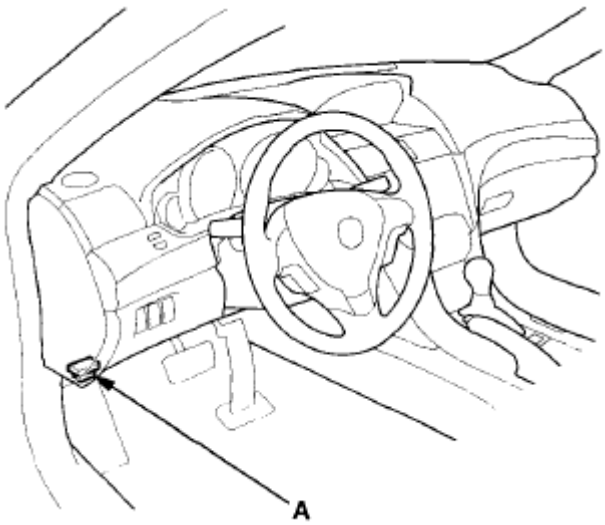


Fig. 261: Identifying Data Link Connector (DLC)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
3. Make sure the HDS communicates with the ECM/PCM and other vehicle systems. If it doesn't, go to the

DLC circuit troubleshooting. If you are returning from the DLC circuit troubleshooting, skip steps 4 through 9, 17 through 22, and 25 through 27, and do this after replacing the ECM/PCM:

- Replace the engine oil (see **ENGINE OIL LEVEL CHECK**) and the engine oil filter (see **ENGINE OIL FILTER REPLACEMENT**).
- Replace the ATF (A/T) (see **ATF REPLACEMENT**).
- Clean the throttle body (see **THROTTLE BODY CLEANING**).

4. Select the PGM-FI system with the HDS.
5. Select the INSPECTION MENU with the HDS.
6. Select the ETCS TEST, then select the TP POSITION CHECK, and follow the screen prompts.

NOTE: If the TP POSITION CHECK indicates FAILED, continue with this procedure.

7. Select the REPLACE PCM MENU, then select READ DATA, and follow the screen prompts.

NOTE:

- **Doing this step copies (READS) the engine oil life data from the original ECM/PCM so you can later download (WRITES) it into the new ECM/PCM.**
- **If READ DATA indicates FAILED, continue with this procedure.**

8. A/T: Select the A/T system with the HDS.
9. A/T: Select the REPLACE TCM/PCM MENU, then select READ DATA, and follow the screen prompts.

NOTE:

- **Doing this step copies (READS) the ATF life data from the original PCM so you can later download (WRITES) it into the new PCM.**
- **If READ DATA indicates FAILED, continue with this procedure.**

10. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
11. Jump the SCS line with the HDS.
12. Disconnect ECM/PCM connectors A, B, and C, then remove the ECM/PCM assembly (D).

NOTE: ECM/PCM connectors A, B, and C have symbols (A=[], B=delta, C=o) embossed on them for identification.

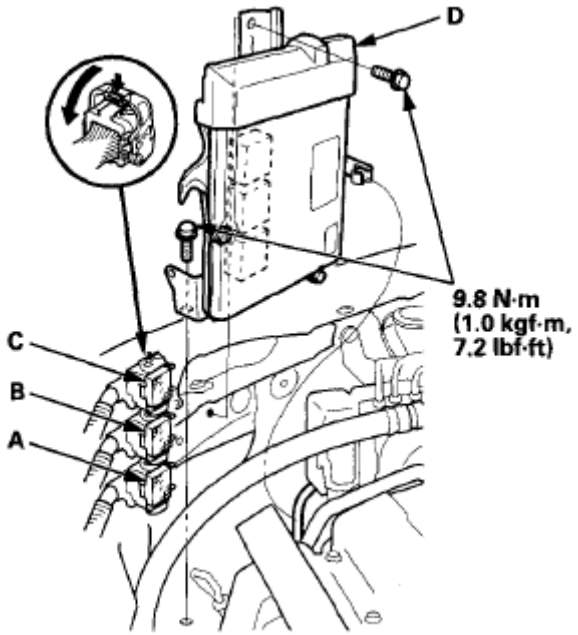


Fig. 262: Identifying ECM/PCM Connectors A, B And C With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

13. Remove the cover (A) and the bracket (B) from the ECM/PCM (C).

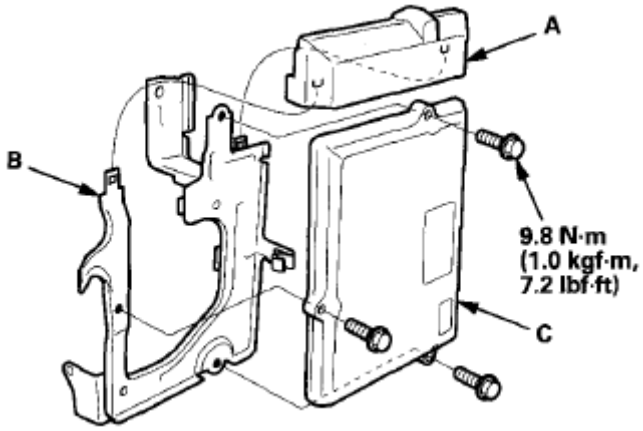


Fig. 263: Identifying Cover, Bracket And ECM/PCM With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

14. Install the ECM/PCM in the reverse order of removal.
15. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
16. Manually input the VIN to the ECM/PCM with the HDS.

NOTE: DTC P0630 VIN Not Programmed or Mismatch may be stored because the VIN has not been programmed into the ECM/PCM; ignore it, and continue this procedure.

17. If the READ DATA (engine oil life) failed in step 7, go to step 20 (A/T) or step 23 (M/T). Otherwise, go to step 18.
18. Select the PGM-FI system with the HDS.
19. Select the REPLACE PCM MENU, then select WRITE DATA, and follow the screen prompts.

NOTE: If the WRITE DATA indicates FAILED, continue with this procedure.

20. A/T: If the READ DATA (ATF life) failed in step 9, go to step 23. Otherwise go to step 21.
21. A/T: Select the A/T SYSTEM with the HDS.
22. A/T: Select the REPLACE TCM/PCM MENU, then select WRITE DATA, and follow the screen prompts.

NOTE: If the WRITE DATA indicates FAILED, continue with this procedure.

23. Select IMMOBI system (without keyless access) or ONE PUSH START system (with keyless access) with the HDS.
24. Enter the immobilizer ECM/PCM code that you got from the iN, and use the ECM/PCM replacement procedure in the IMMOBI Menu (without keyless access) or ONE PUSH START Menu (with keyless access) of the HDS; it allows you to start the engine.
25. If the TP POSITION CHECK failed in step 6 clean the throttle body (see **THROTTLE BODY CLEANING**), then go to step 26.
26. If the READ DATA failed in step 7 or the WRITE DATA failed in step 19, replace the engine oil (see **ENGINE OIL LEVEL CHECK**) and engine oil filter (see **ENGINE OIL FILTER REPLACEMENT**), then go to step 27 (A/T) or step 28 (M/T).
27. If the READ DATA failed in step 9 or the WRITE DATA failed in step 22, replace the ATF (see **ATF REPLACEMENT**), then go to step 28.
28. Select PGM-FI system, and reset the ECM/PCM with the HDS.
29. Update the **ECM/PCM** if it does not have the latest software.
30. Do the ECM/PCM idle learn procedure (see **ECM/PCM IDLE LEARN PROCEDURE**).
31. Do the CKP pattern clear/CKP pattern learn procedure (see **CKP PATTERN CLEAR/CKP PATTERN LEARN**).

2012 ENGINE PERFORMANCE

VTEC - TL

COMPONENT LOCATION INDEX

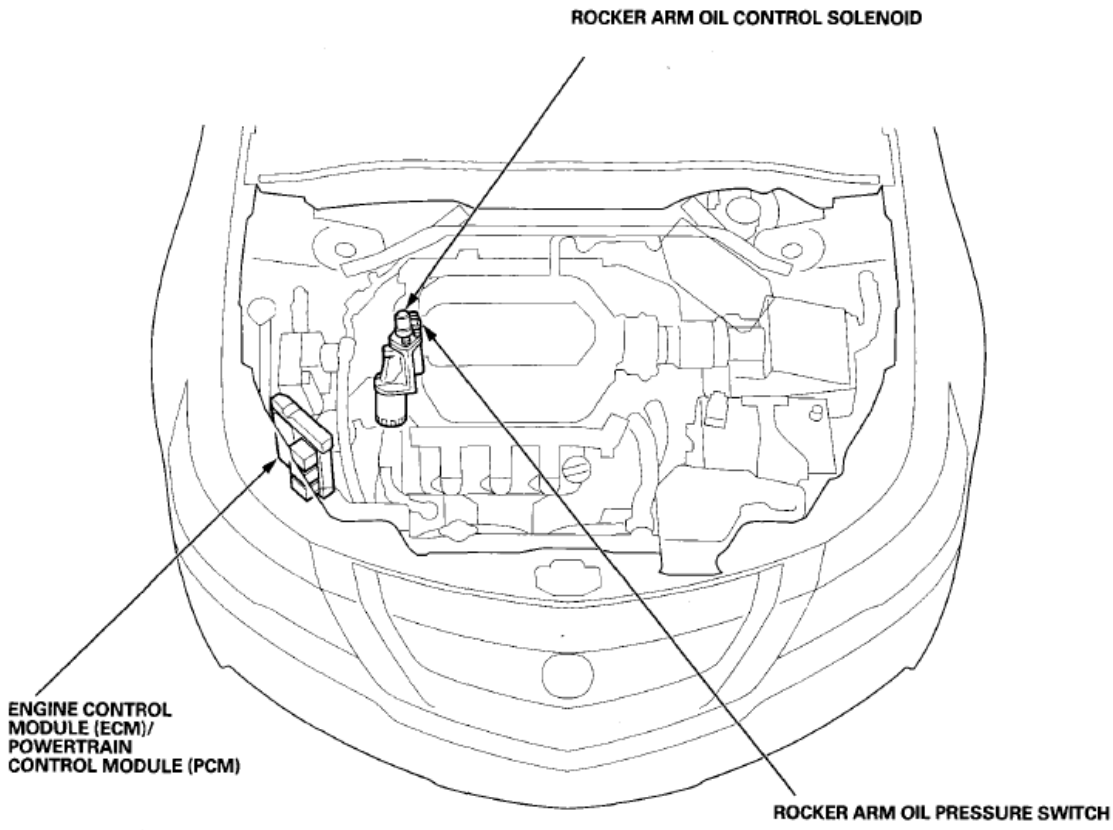


Fig. 1: VTEC Components Location
Courtesy of AMERICAN HONDA MOTOR CO., INC.

DTC TROUBLESHOOTING

DTC P2646: ROCKER ARM OIL PRESSURE SWITCH CIRCUIT LOW VOLTAGE

Special Tools Required

- Pressure Gauge Adapter 07NAJ-P07010A
- A/T Low Pressure Gauge w/Panel 07406-0070301
- AT Pressure Test Hose 07AAJ-PY4A100
- A/T Pressure Adapter 07MAJ-PY40120
- Oil Pressure Hose 07ZAJ-S5AA200

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see GENERAL TROUBLESHOOTING INFORMATION).

1. Check the engine oil level.

   Is the engine oil level OK?

   YES - Go to step 2.

   NO - Adjust the engine oil to the proper level, then go to step 19.

2. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
3. Clear the DTC with the HDS.
4. Do the VTEC TEST in the INSPECTION MENU with the HDS.

   Is the result OK?

   YES - Intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at the rocker arm oil pressure switch, the rocker arm oil control solenoid, and the ECM/PCM. •

   NO - Go to step 5.

5. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
6. Disconnect the rocker arm oil pressure switch 2P connector.
7. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
8. Check the VTEC PRES SW in the DATA LIST with the HDS.

   Is switch ON indicated?

   YES - Go to step 14.

   NO - Go to step 9.

9. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
10. Remove the rocker arm oil pressure switch (A), attach the special tools as shown in illustration below, then attach the rocker arm oil pressure switch to the oil pressure gauge adapter (B).

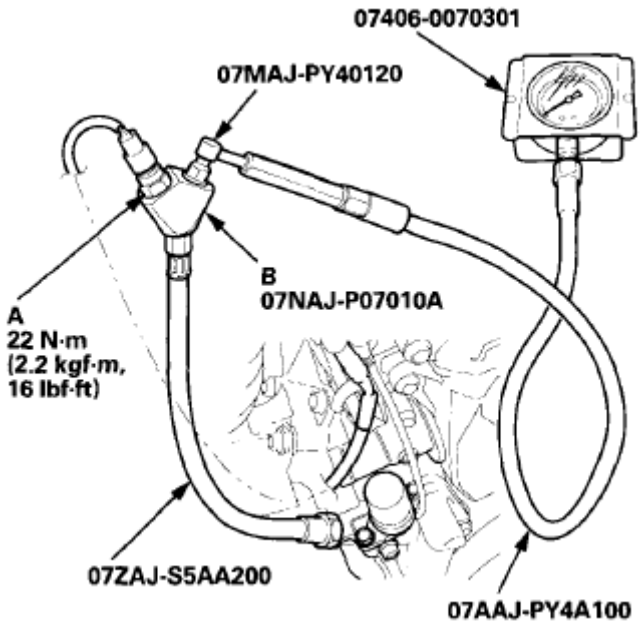


Fig. 2: Installing Special Switch And Rocker Arm Oil Pressure Switch With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

11. Start the engine.
12. Do the VTEC TEST in the INSPECTION MENU with the HDS.
13. Check the oil pressure.

    Does the oil pressure increase to at least 392 kPa (4.0 kgf/cm^2 , 56.9 psi)?

    YES - Replace the **rocker arm oil pressure switch**, then go to step 18.

    NO - Inspect the VTEC system. If it is OK, replace the **rocker arm oil control solenoid**, then go to step 18.

14. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
15. Jump the SCS line with the HDS.
16. Disconnect ECM/PCM connector B (49P).
17. Check for continuity between ECM/PCM connector terminal B20 and body ground.

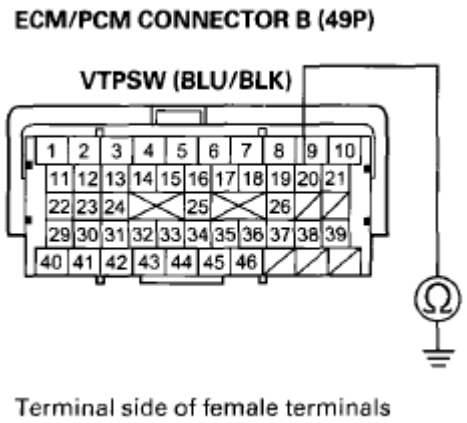


Fig. 3: Checking Continuity Between ECM/PCM Connector Terminal B20 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair short in the wire between the ECM/PCM (B20) and the rocker arm oil pressure switch, then go to step 18.

NO - Go to step 24.

18. Reconnect all connectors.
19. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
20. Reset the ECM/PCM with the HDS.
21. Do the ECM/PCM idle learn procedure (see **ECM/PCM IDLE LEARN PROCEDURE**).
22. Do the VTEC TEST in the INSPECTION MENU with the HDS.
23. Check for Pending or Confirmed DTCs with the HDS.

Is DTC P2646 indicated?

YES - Check for poor connections or loose terminals at the rocker arm oil pressure switch, the rocker arm oil control solenoid, and the ECM/PCM, then go to step 1.

NO - Troubleshooting is complete. If any other Pending or Confirmed DTCs are indicated, go to the indicated DTC's troubleshooting. •

24. Reconnect all connectors.
25. Update the ECM/PCM if it does not have the latest software (see **ECM/PCM UPDATE**), or substitute a known-good ECM/PCM (see **SUBSTITUTING THE ECM/PCM**).
26. Do the VTEC TEST in the INSPECTION MENU with the HDS.
27. Check for Pending or Confirmed DTCs with the HDS.

Is DTC P2646 indicated?

YES - Check for poor connections or loose terminals at the rocker arm oil pressure switch, the rocker arm oil control solenoid, and the ECM/PCM. If the ECM/PCM was updated, substitute a known-good ECM/PCM (see **SUBSTITUTING THE ECM/PCM**), then go to step 26. If the ECM/PCM was substituted, go to step 1.

NO - If the ECM/PCM was updated, troubleshooting is complete. If the ECM/PCM was substituted, replace the original ECM/PCM (see **ECM/PCM REPLACEMENT**). If any other Pending or Confirmed DTCs are indicated, go to the indicated DTC's troubleshooting. •

DTC P2647: ROCKER ARM OIL PRESSURE SWITCH CIRCUIT HIGH VOLTAGE

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see GENERAL TROUBLESHOOTING INFORMATION).

1. Check the engine oil level.

   Is the engine oil level OK?

   YES - Go to step 2.

   NO - Adjust the engine oil level, then go to step 17.

2. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
3. Clear the DTC with the HDS.
4. Check the rocker arm oil pressure switch in the DATA LIST with the HDS.

   Does the screen indicate OFF?

   YES - Go to step 5.

   NO - Intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at the rocker arm oil pressure switch, the rocker arm oil control solenoid, and the ECM/PCM. •

5. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
6. Disconnect the rocker arm oil pressure switch 2P connector.
7. Connect rocker arm oil pressure switch 2P connector terminals No. 1 and No. 2 with a jumper wire.

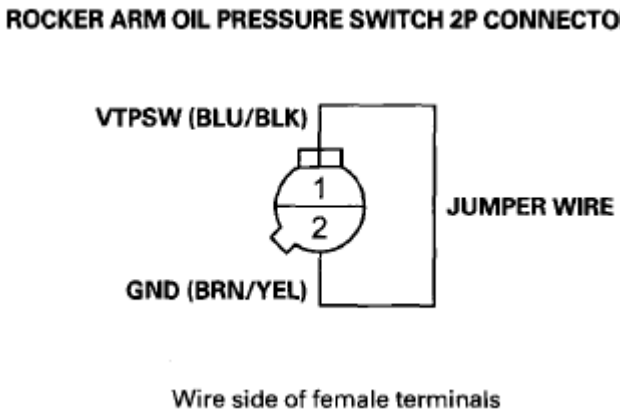


Fig. 4: Connecting Rocker Arm Oil Pressure Switch 2P Connector Terminals No. 1 And No. 2 With Jumper Wire
Courtesy of AMERICAN HONDA MOTOR CO., INC.

8. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
9. Check the rocker arm oil pressure switch in the DATA LIST with the HDS.

   Does the screen indicate ON?

   YES - Replace the **rocker arm oil pressure switch**, then go to step 16.

   NO - Go to step 10.

10. Turn the ignition switch to LOCK(0), or press the engine start/stop button to select the OFF mode.
11. Remove the jumper wire from the rocker arm oil pressure switch.
12. Jump the SCS line with the HDS.
13. Disconnect ECM/PCM connector B (49P).
14. Check for continuity between ECM/PCM connector terminal B20 and rocker arm oil pressure switch 2P connector terminal No. 1.

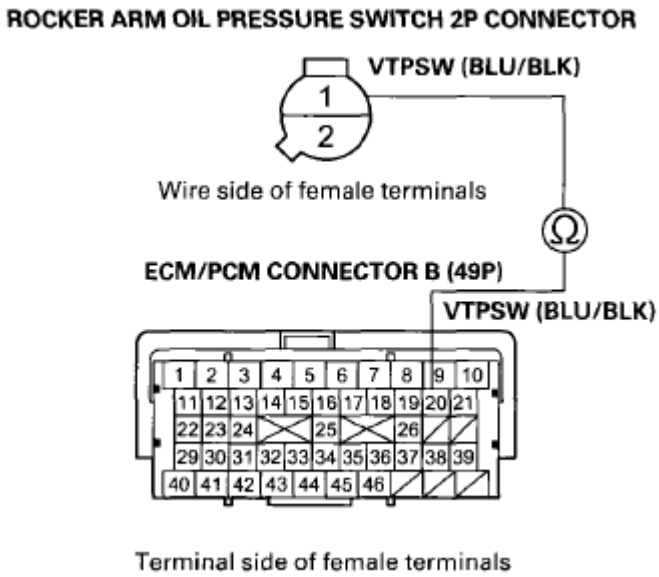


Fig. 5: Checking Continuity Between ECM/PCM Connector Terminal B20 And Rocker Arm Oil Pressure Switch 2P Connector Terminal No. 1
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 15.

NO - Repair open in the wire between the ECM/PCM (B20) and the rocker arm oil pressure switch, then go to step 16.

15. Check for continuity between the rocker arm oil pressure switch 2P connector terminal No. 2 and body ground.

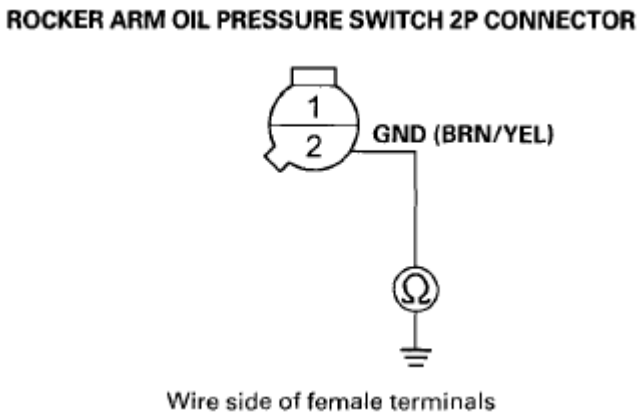


Fig. 6: Checking Continuity Between Rocker Arm Oil Pressure Switch 2P Connector Terminal No. 2 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 22.

NO - Repair open in the wire between the rocker arm oil pressure switch and G101; M/T (see **CONNECTOR TO FUSE/RELAY BOX INDEX**), ATT (see **CONNECTOR TO FUSE/RELAY BOX INDEX**), then go to step 16.

16. Reconnect all connectors.
17. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
18. Reset the ECM/PCM with the HDS.
19. Do the ECM/PCM idle learn procedure (see **ECM/PCM IDLE LEARN PROCEDURE**).
20. Check for Pending or Confirmed DTCs with the HDS.

Is DTC P2647 indicated?

YES - Check for poor connections or loose terminals at the rocker arm oil pressure switch, the rocker arm oil control solenoid, and the ECM/PCM, then go to step 1.

NO - Go to step 21.

21. Monitor the OBD STATUS for DTC P2647 in the DTCs MENU with the HDS.

Does the screen indicate PASSED?

YES - Troubleshooting is complete. If any other Pending or Confirmed DTCs were indicated in step 20, go to the indicated DTC's troubleshooting. •

NO - If the screen indicates FAILED, check for poor connections or loose terminals at the rocker arm oil pressure switch, the rocker arm oil control solenoid, and the ECM/PCM, then go to step 1. If the screen indicates NOT COMPLETED, keep idling until a result comes on.

22. Reconnect all connectors.
23. Update the ECM/PCM if it does not have the latest software (see **ECM/PCM UPDATE**), or substitute a known-good ECM/PCM (see **SUBSTITUTING THE ECM/PCM**).
24. Start the engine, and let it idle.
25. Check for Pending or Confirmed DTCs with the HDS.

Is DTC P2647 indicated?

YES - Check for poor connections or loose terminals at the rocker arm oil pressure switch, the rocker arm oil control solenoid, and the ECM/PCM. If the ECM/PCM was updated, substitute a known-good ECM/PCM (see **SUBSTITUTING THE ECM/PCM**), then go to step 24. If the ECM/PCM was substituted, go to step 1.

NO - Go to step 26.

26. Monitor the OBD STATUS for DTC P2647 in the DTCs MENU with the HDS.

    Does the screen indicate PASSED?

    YES - If the ECM/PCM was updated, troubleshooting is complete. If the ECM/PCM was substituted, replace the original ECM/PCM (see **ECM/PCM REPLACEMENT**). If any other Pending or Confirmed DTCs were indicated in step 25, go to the indicated DTC's troubleshooting. •

    NO - If the screen indicates FAILED, check for poor connections or loose terminals at the rocker arm oil pressure switch, the rocker arm oil control solenoid, and the ECM/PCM. If the ECM/PCM was updated, substitute a known-good ECM/PCM (see **SUBSTITUTING THE ECM/PCM**), then go to step 24. If the ECM/PCM was substituted, go to step 1. If the screen indicates NOT COMPLETED, keep idling until a result comes on.

DTC P2648: ROCKER ARM OIL CONTROL SOLENOID CIRCUIT LOW VOLTAGE

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see GENERAL TROUBLESHOOTING INFORMATION).

1. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
2. Clear the DTC with the HDS.
3. Do the VTEC TEST in the INSPECTION MENU with the HDS.

   Is the result OK?

   YES - Intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at the rocker arm oil control solenoid and the ECM/PCM. •

   NO - Go to step 4.

4. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
5. Disconnect the rocker arm oil control solenoid 1P connector.
6. At the solenoid side, measure the resistance between the rocker arm oil control solenoid 1P connector terminal and the solenoid valve body.

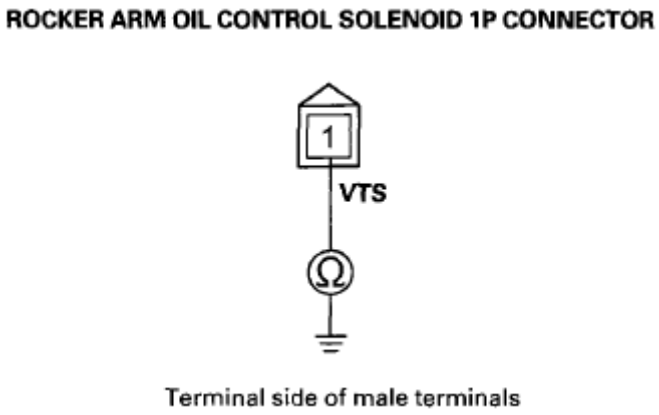


Fig. 7: Measuring Resistance Between Rocker Arm Oil Control Solenoid 1P Connector Terminal And Solenoid Valve Body
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there 14- 30 ohms at room temperature?

YES - Go to step 7.

NO - Go to step 10.

7. Jump the SCS line with the HDS.
8. Disconnect ECM/PCM connector B (49P).
9. Check for continuity between ECM/PCM connector terminal B39 and body ground.

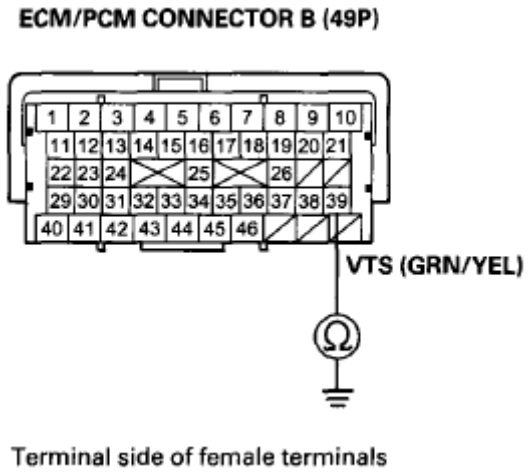


Fig. 8: Checking Continuity Between ECM/PCM Connector Terminal B39 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair short in the wire between the ECM/PCM (B39) and the rocker arm oil control solenoid, then go to step 11.

NO - Go to step 18.

10. Replace the rocker arm oil control solenoid (see **Rocker Arm Oil Control Solenoid Replacement**).
11. Reconnect all connectors.
12. Turn the ignition switch ON (II), or press the engine start/stop button to select the ON mode.
13. Reset the ECM/PCM with the HDS.
14. Do the ECM/PCM idle learn procedure (see **ECM/PCM IDLE LEARN PROCEDURE**).
15. Do the VTEC TEST in the INSPECTION MENU with the HDS.
16. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P2648 indicated?

    YES - Check for poor connections or loose terminals at the rocker arm oil control solenoid and the ECM/PCM, then go to step 1.

    NO - Go to step 17.

17. Monitor the OBD STATUS for DTC P2648 in the DTCs MENU with the HDS.

    Does the screen indicate PASSED?

    YES - Troubleshooting is complete. If any other Pending or Confirmed DTCs were indicated in step 16, go to the indicated DTC's troubleshooting. •

    NO - If the screen indicates FAILED, check for poor connections or loose terminals at the rocker arm oil control solenoid and the ECM/PCM, then go to step 1. If the screen indicates NOT COMPLETED, go to step 15.

18. Reconnect all connectors.
19. Update the ECM/PCM if it does not have the latest software (see **ECM/PCM UPDATE**), or substitute a known-good ECM/PCM (see **SUBSTITUTING THE ECM/PCM**).
20. Do the VTEC TEST in the INSPECTION MENU with the HDS.
21. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P2648 indicated?

    YES - Check for poor connections or loose terminals at the rocker arm oil control solenoid and the ECM/PCM. If the ECM/PCM was updated, substitute a known-good ECM/PCM (see **SUBSTITUTING THE ECM/PCM**), then go to step 20. If the ECM/PCM was substituted, go to step 1.

    NO - Go to step 22.

22. Monitor the OBD STATUS for DTC P2648 in the DTCs MENU with the HDS.

    Does the screen indicate PASSED?

YES - If the ECM/PCM was updated, troubleshooting is complete. If the ECM/PCM was substituted, replace the original ECM/PCM (see **ECM/PCM REPLACEMENT**). If any other Pending or Confirmed DTCs were indicated in step 21, go to the indicated DTC's troubleshooting. •

NO - If the screen indicates FAILED, check for poor connections or loose terminals at the rocker arm oil control solenoid and the ECM/PCM. If the ECM/PCM was updated, substitute a known-good ECM/PCM (see **SUBSTITUTING THE ECM/PCM**), then go to step 20. If the ECM/PCM was substituted, go to step 1. If the screen indicates NOT COMPLETED, go to step 20.

DTC P2649: ROCKER ARM OIL CONTROL SOLENOID CIRCUIT HIGH VOLTAGE

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see GENERAL TROUBLESHOOTING INFORMATION).

1. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
2. Clear the DTC with the HDS.
3. Start the engine. Hold the engine speed at 3, 000 RPM without load (A/T in P or N, M/T in neutral) until the radiator fan comes on, then let it idle.
4. Check for Pending or Confirmed DTCs with the HDS.

   Is DTC P2649 indicated?

   YES - Go to step 5.

   NO - Intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at the rocker arm oil control solenoid and the ECM/PCM. •

5. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
6. Disconnect the rocker arm oil control solenoid 1P connector.
7. At the solenoid side, measure the resistance between the rocker arm oil control solenoid 1P connector terminal and the solenoid valve body.

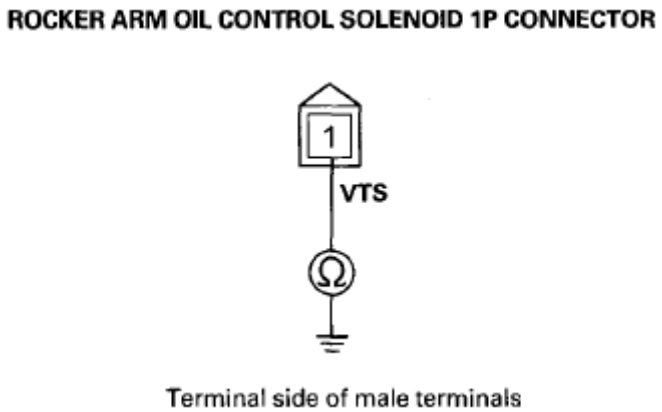


Fig. 9: Measuring Resistance Between Rocker Arm Oil Control Solenoid 1P Connector Terminal

And Solenoid Valve Body
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there 14- 30 ohms at room temperature?

YES - Go to step 8.

NO - Go to step 11.

8. Jump the SCS line with the HDS.
9. Disconnect ECM/PCM connector B (49P).
10. Check for continuity between ECM/PCM connector terminal B39 and the rocker arm oil control solenoid 1P connector terminal.

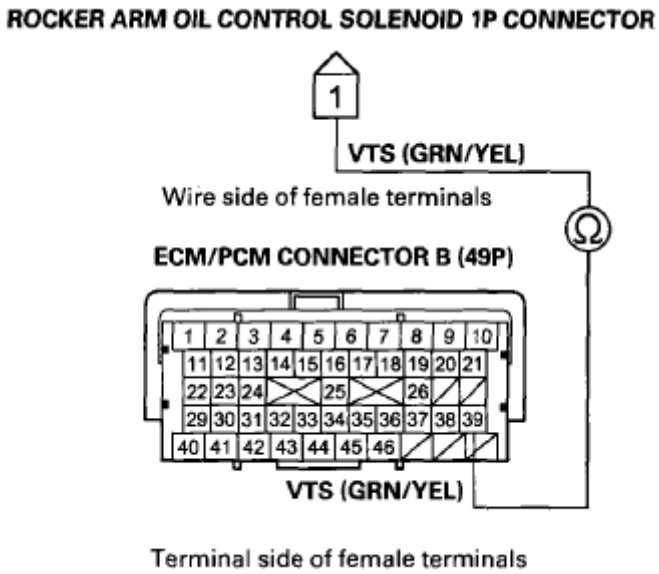


Fig. 10: Checking Continuity Between ECM/PCM Connector Terminal B39 And Rocker Arm Oil Control Solenoid 1P Connector Terminal
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 18.

NO - Repair open in the wire between the ECM/PCM (B39) and the rocker arm oil control solenoid, then go to step 12.

11. Replace the rocker arm oil control solenoid (see **Rocker Arm Oil Control Solenoid Replacement**).
12. Reconnect all connectors.
13. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
14. Reset the ECM/PCM with the HDS.

15. Do the ECM/PCM idle learn procedure (see **ECM/PCM IDLE LEARN PROCEDURE**).
16. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P2649 indicated?

    YES - Check for poor connections or loose terminals at the rocker arm oil control solenoid and the ECM/PCM, then go to step 1.

    NO - Go to step 17.

17. Monitor the OBD STATUS for DTC P2649 in the DTCs MENU with the HDS.

    Does the screen indicate PASSED?

    YES - Troubleshooting is complete. If any other Pending or Confirmed DTCs were indicated instep 16, go to the indicated DTC's troubleshooting. •

    NO - If the screen indicates FAILED, go to step 1 and recheck. If the screen indicates NOT COMPLETED, keep idling until a result comes on.

18. Reconnect all connectors.
19. Update the ECM/PCM if it does not have the latest software (see **ECM/PCM UPDATE**), or substitute a known-good ECM/PCM (see **SUBSTITUTING THE ECM/PCM**).
20. Start the engine, and let it idle.
21. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P2649 indicated?

    YES - Check for poor connections or loose terminals at the rocker arm oil control solenoid and the ECM/PCM. If the ECM/PCM was updated, substitute a known-good ECM/PCM (see **SUBSTITUTING THE ECM/PCM**), then recheck. If the ECM/PCM was substituted, go to step 1.

    NO - Go to step 22.

22. Monitor the OBD STATUS for DTC P2649 in the DTCs MENU with the HDS.

    Does the screen indicate PASSED?

    YES - If the ECM/PCM was updated, troubleshooting is complete. If the ECM/PCM was substituted, replace the original ECM/PCM (see **ECM/PCM REPLACEMENT**). If any other Pending or Confirmed DTCs were indicated in step 21, go to the indicated DTC's troubleshooting. •

    NO - If the screen indicates FAILED, check for poor connections or loose terminals at the rocker arm oil control solenoid and the ECM/PCM. If the ECM/PCM was updated, substitute a known-good ECM/PCM (see **SUBSTITUTING THE ECM/PCM**), then recheck. If the ECM/PCM was substituted, go to step 1. If the screen indicates NOT COMPLETED, keep idling until a result comes on.

ROCKER ARM OIL CONTROL SOLENOID REPLACEMENT

1. Disconnect the rocker arm oil control solenoid connector (A).

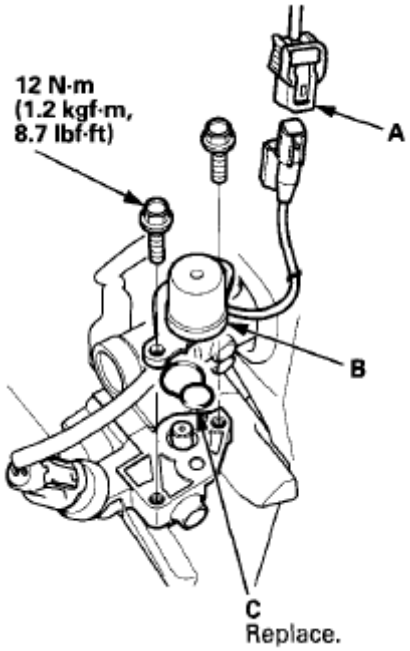


Fig. 11: Identifying Rocker Arm Oil Control Solenoid, Connector And O-Ring With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Remove the rocker arm oil control solenoid (B).
3. Install the parts in the reverse order of removal with a new O-ring (C).

ROCKER ARM OIL PRESSURE SWITCH REMOVAL/INSTALLATION

1. Disconnect the rocker arm oil pressure switch connector (A), then remove the rocker arm oil pressure switch (B).

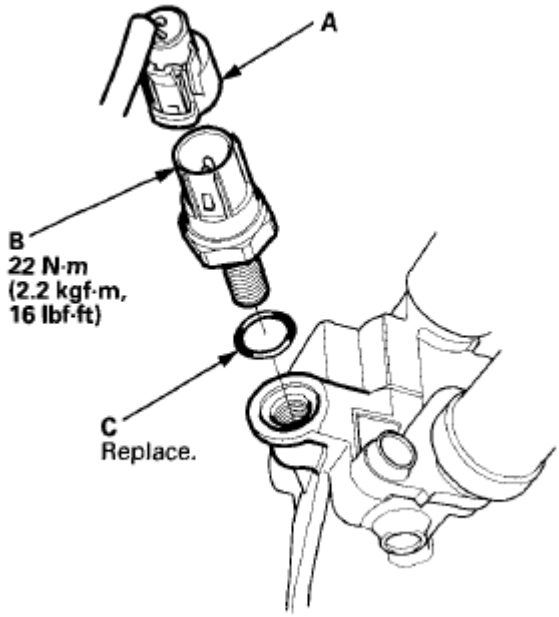


Fig. 12: Identifying O-Ring, Rocker Arm Oil Pressure Connector And Switch With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Install the parts in the reverse order of removal with a new O-ring (C).

2009-2014 CABIN AIR FILTER

Acura - TSX & TL

REMOVAL & INSTALLATION

NOTE: Manufacturer's terminology for this filter is dust and pollen filter.

1. Open the glove box. Remove the glove box separator (A) by carefully pulling it straight back.

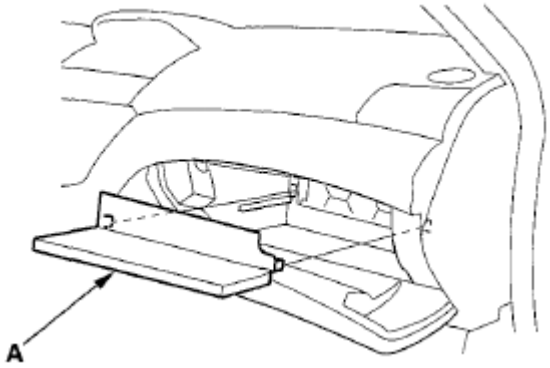


Fig. 1: Identifying Glove Box Separator
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Remove the dust and pollen filter assembly (A) from the blower unit.

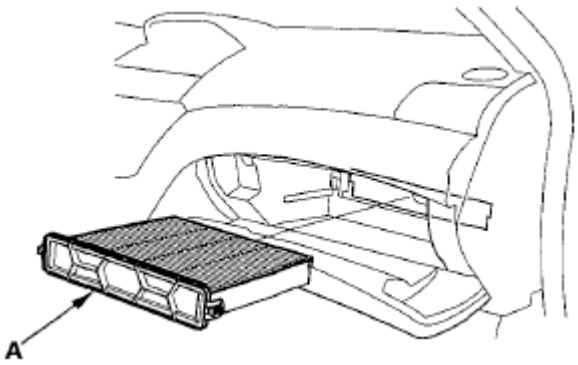


Fig. 2: Identifying Dust And Pollen Filter Assembly
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Remove the filter (A) from the housing (B), and replace the filter.

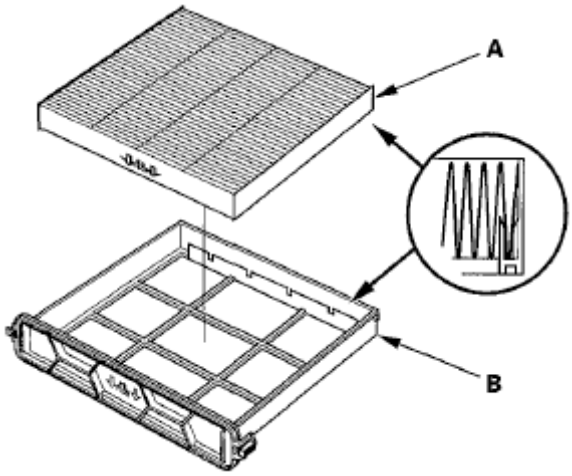


Fig. 3: Identifying Filter And Housing
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Install the filter in the reverse order of removal. Make sure that there is no air leaking out of the blower unit.

2012 HVAC

Climate Control - TL

COMPONENT LOCATION INDEX

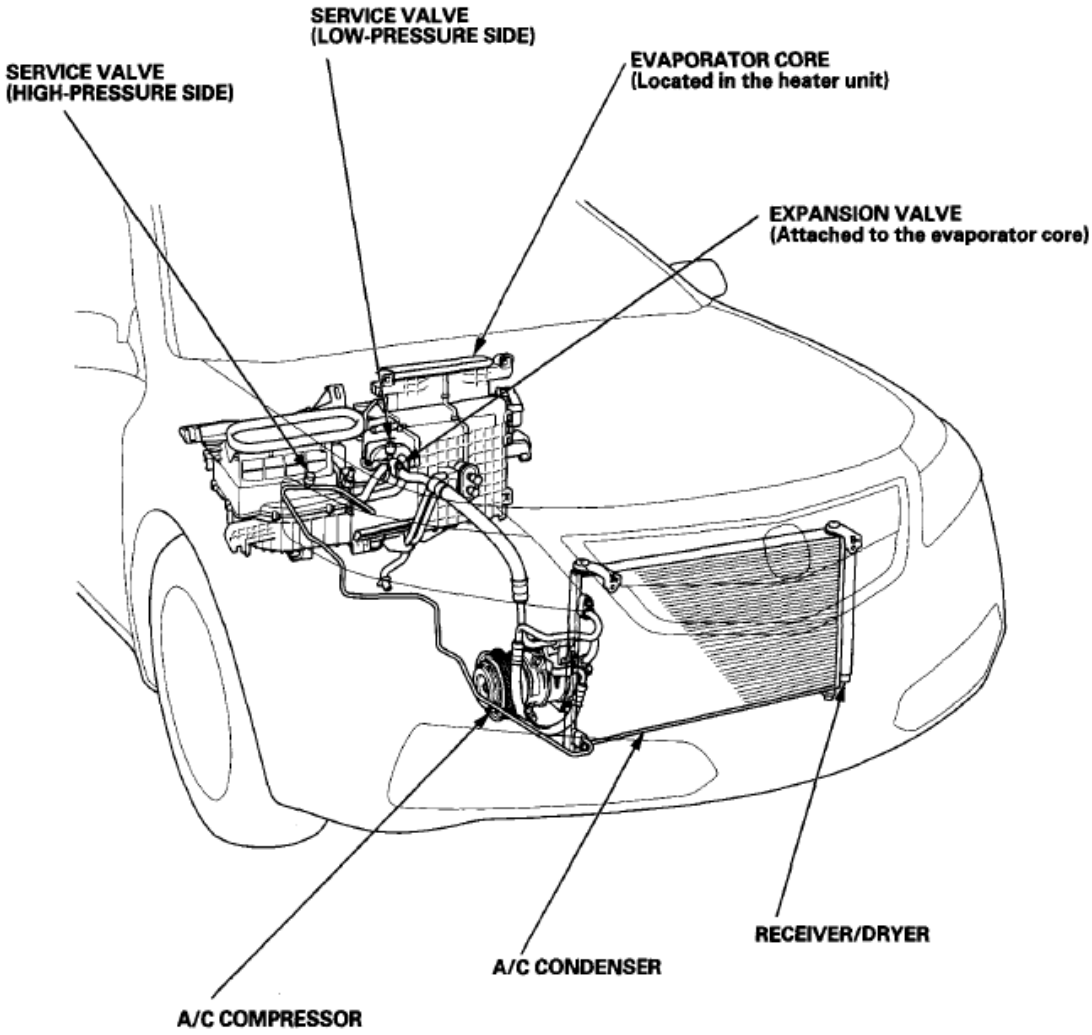


Fig. 1: Climate Control Components Location (1 Of 3)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

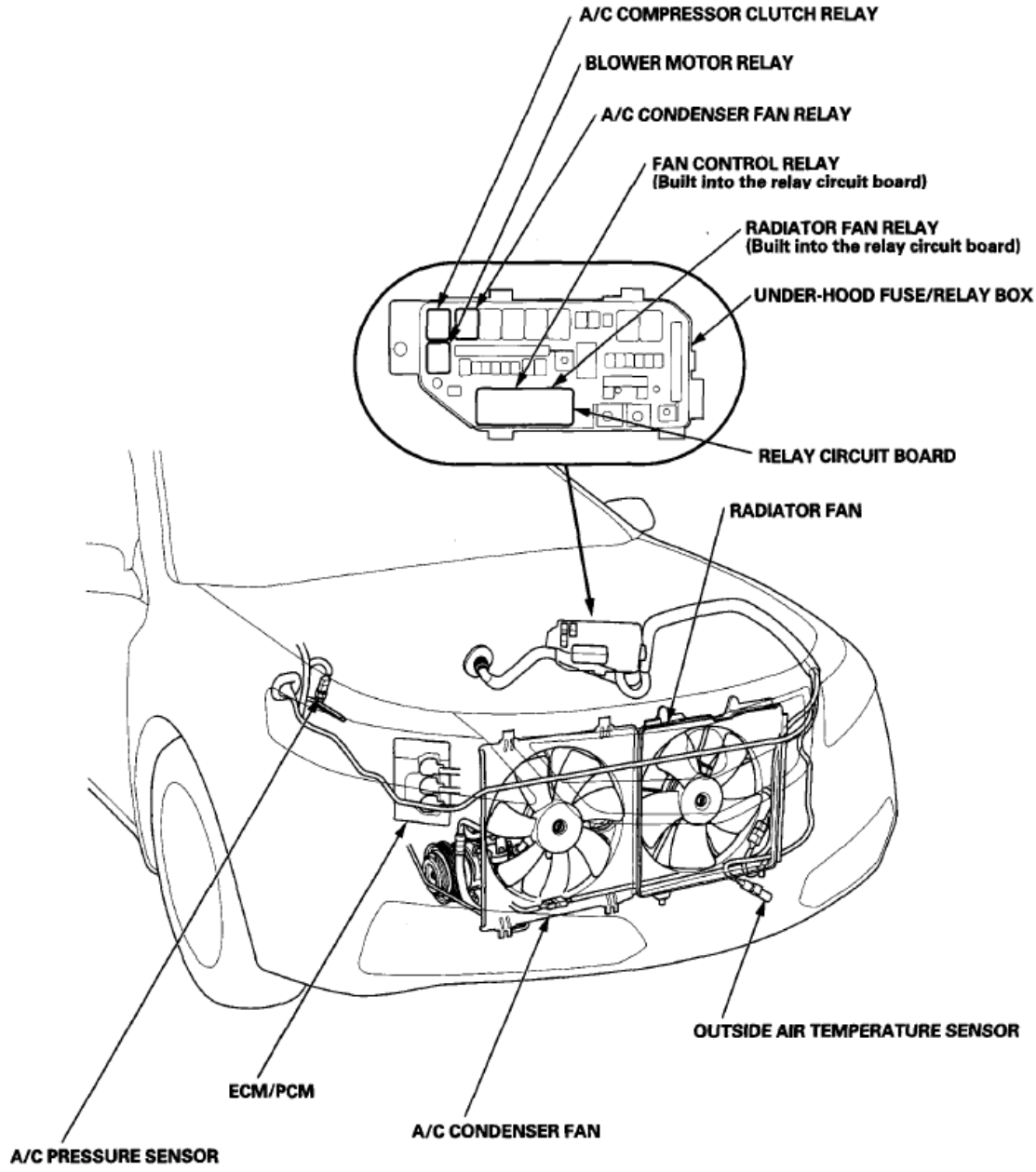


Fig. 2: Climate Control Components Location (2 Of 3)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

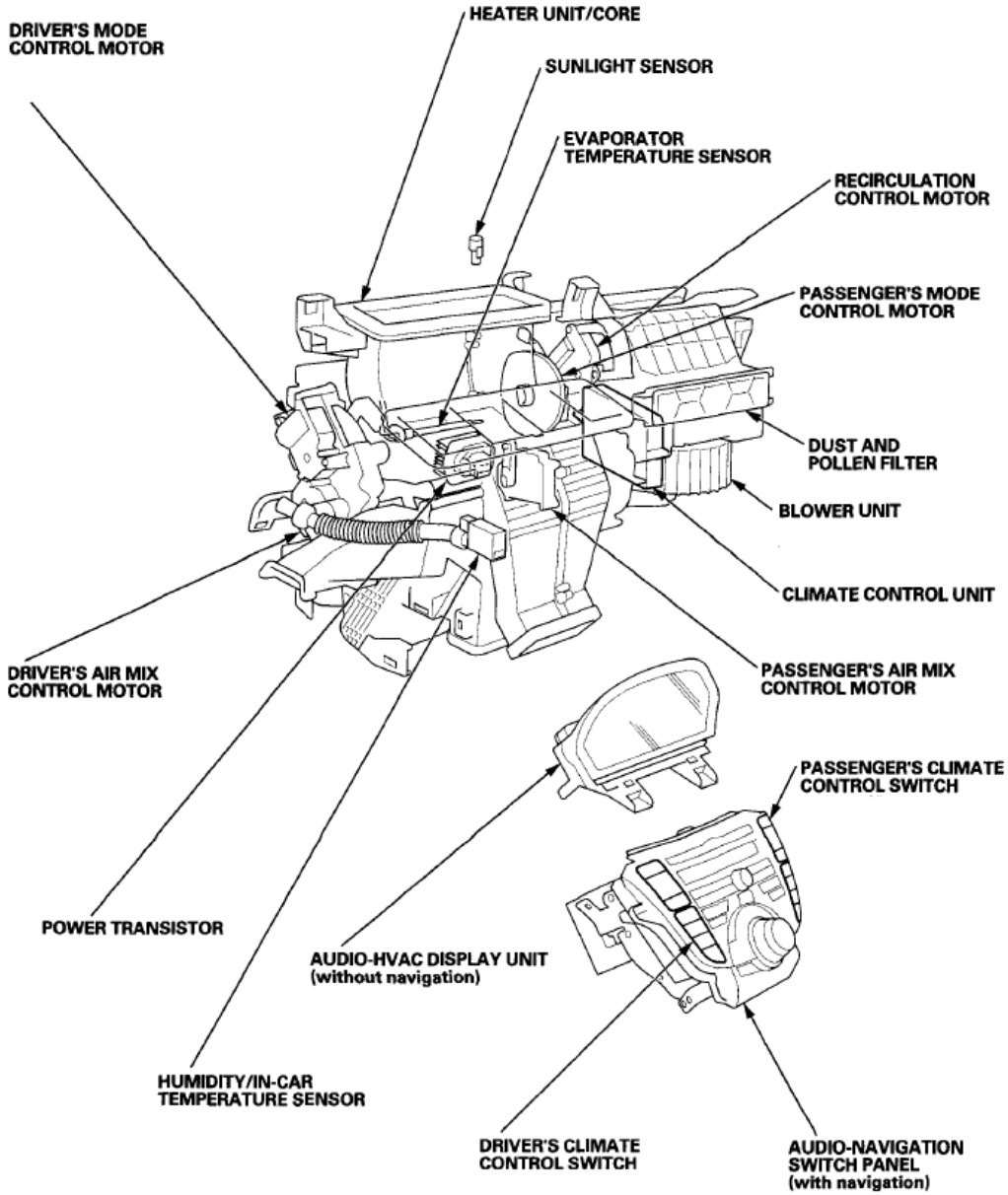


Fig. 3: Climate Control Components Location (3 Of 3)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

A/C SERVICE TIPS AND PRECAUTIONS

WARNING:

- **Compressed air mixed with the R-134a forms a combustible vapor.**
- **The vapor can burn or explode causing serious injury.**
- **Never use compressed air to pressure test R-134a service equipment or vehicle air conditioning systems.**

CAUTION:

- **Air conditioning refrigerant or lubricant vapor can irritate your eyes,**

nose, or throat.

- **Be careful when connecting service equipment.**
- **Do not breathe refrigerant or vapor.**

The air conditioning system uses HFC-134a (R-134a) refrigerant and polyalkyleneglycol (PAG) refrigerant oil.

Use only service equipment that is U.L.-listed and is certified to meet the requirements of SAE J2788 to remove R-134a from the air conditioning system.

If accidental system discharge occurs, ventilate the work area before resuming service.

R-134a service equipment or vehicle air conditioning systems should not be pressure tested or leak tested with compressed air.

Additional health and safety information may be obtained from the refrigerant and lubricant manufacturers.

- Always disconnect the negative cable from the battery whenever replacing air conditioning parts.
- Keep moisture and dirt out of the system. When disconnecting any lines, plug or cap the fittings immediately; do not remove the caps or plugs until just before you reconnect each line.
- Before connecting any hose or line, apply a few drops of refrigerant oil to the O-ring.
- When tightening or loosening a fitting, use a second wrench to support the matching fitting.
- When discharging the system, use an R-134a refrigerant recovery/recycling/charging station; do not release refrigerant into the atmosphere.

A/C SYSTEM INSPECTION

NOTE: For A/C system noise, go to the A/C SYSTEM NOISE CHECK.

Before troubleshooting any problem with the air conditioning system, do the following:

1. Check that the HVAC air intake plenum at the base of the windshield is not blocked by leaves or debris. Remove any blockage.
2. Check for kinks or sharp bends in the A/C lines and hoses (which can greatly reduce system performance). If any of the A/C lines and hoses are kinked or bent, replace them (see **A/C LINE REPLACEMENT**).
3. Inspect the A/C components, the pressure lines, and the hoses for stains that may indicate a refrigerant or an A/C compressor oil leak. If there is any indication of leaks, do the Refrigerant Leak Check (see **REFRIGERANT LEAK CHECK**) to confirm the leak(s).

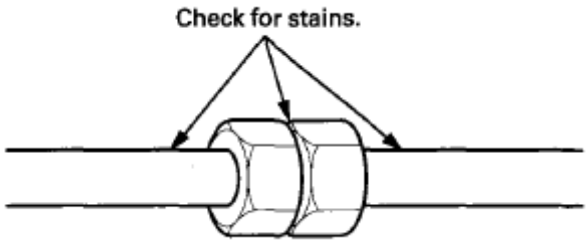


Fig. 4: Inspecting A/C System
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Inspect the drive belt for physical damage or signs of slippage (see **DRIVE BELT INSPECTION**). If the drive belt is damaged or shows signs of slippage, replace it and recheck.
5. Check the A/C condenser (A) for material clogging the fins (dirt, insects, etc.). If the A/C condenser is clogged or restricted, carefully clean any material from the A/C condenser fins with water and detergent. If deeper cleaning is required, clean the fins with HondaBrite cleaner (P/N 08732-0020B). Do not perform pressure test until the A/C condenser is completely dry.

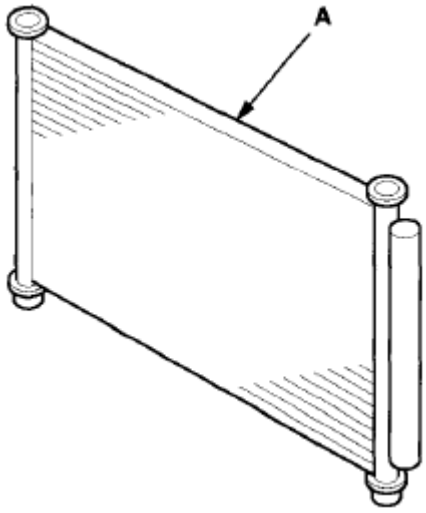


Fig. 5: Identifying A/C Condenser
Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Check the A/C condenser for fin damage (bent fins). If any of the A/C condenser fins are bent, try to comb them straight. Do the Refrigerant Leak Check (see **REFRIGERANT LEAK CHECK**) to check for leaks if there is visible damage to the A/C condenser. If the A/C condenser is leaking or the fins cannot be straightened, replace the A/C condenser.
7. Check the dust and pollen filter. If the dust and pollen filter is clogged or restricted, replace it (see **DUST AND POLLEN FILTER REPLACEMENT**).
8. Check for climate control DTCs using the Self-Diagnostic Function (see **HOW TO USE THE SELF-DIAGNOSTIC FUNCTION WITHOUT THE HDS**). If there are any DTCs, go to the **APPROPRIATE TROUBLESHOOTING**.
9. Start the engine, turn the air conditioning system on, and allow it to run for a few minutes and reach stable operation.

10. Check that the A/C operates at each position of the fan control switch (except OFF). If the A/C does not operate at all fan control switch positions, refer to the symptom troubleshooting.
11. Check that the A/C compressor clutch pressure plate (A) is rotating at the same speed as the pulley and is engaging. If the A/C compressor clutch is not engaging properly, go to the **A/C COMPRESSOR CLUTCH CIRCUIT TROUBLESHOOTING**.

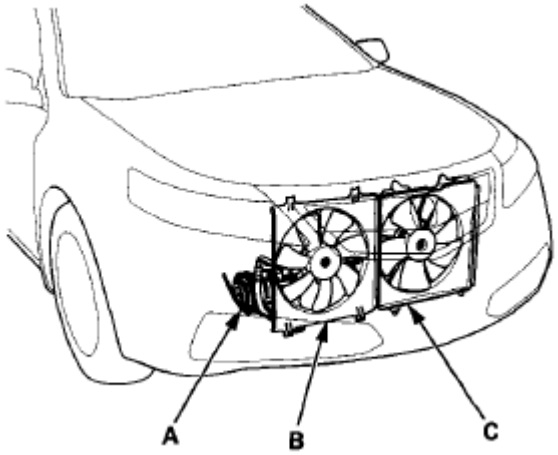


Fig. 6: Identifying A/C Compressor Clutch Plate, A/C Condenser Fan And Radiator Fan
Courtesy of AMERICAN HONDA MOTOR CO., INC.

12. Check that the A/C condenser fan (B) and the radiator fan (C) operate when the A/C compressor clutch is engaged and blow air toward the engine compartment. If one or both of the fans is not working properly, refer to the symptom troubleshooting.
13. Check that the engine idle speed is correctly maintained when the A/C is switched on and off, (A/C compressor clutch is engaged and disengaged). If the idle speed increases more than 100 RPM when the A/C compressor engages, confirm that the A/C compressor is the cause of the idle speed increase. Replace the A/C compressor, if necessary.

GENERAL TROUBLESHOOTING INFORMATION

HOW TO CHECK FOR DTCS WITH THE HDS

NOTE:

- **There are three methods used to check for DTCs. The recommended method is to use the Honda Diagnostic System (HDS) with the appropriate software, plugged into the data link connector (DLC).**
- **The second method is to run the self-diagnostic function built into the HVAC control unit.**
- **The third method is to use B-CAN system diagnosis test mode A (see TROUBLESHOOTING - B-CAN SYSTEM DIAGNOSIS TEST MODE A).**

1. Make sure the ignition switch is in LOCK(0), or the vehicle ignition is in the OFF mode.
2. Connect the Honda Diagnostic System (HDS) to the data link connector (DLC) (A) located under the

driver's side of the dashboard.

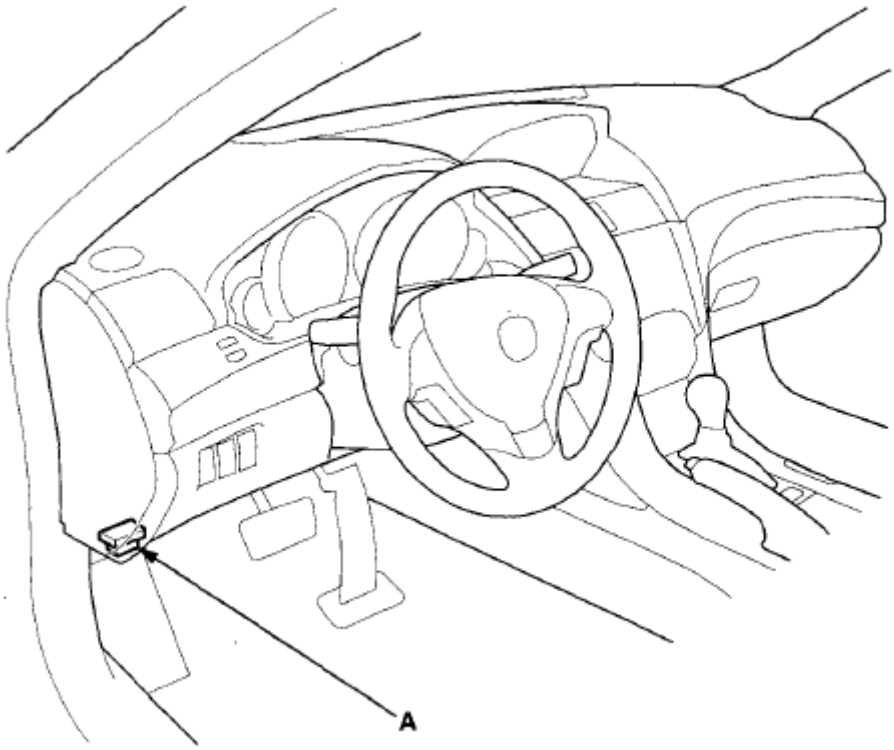


Fig. 7: Identifying Data Link Connector (DLC)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
4. Make sure the HDS communicates with the vehicle and the climate control unit. If it does not, go to the DLC circuit troubleshooting (see **DLC CIRCUIT TROUBLESHOOTING**).
5. Select HVAC/CLIMATE CONTROL in the BODY ELECTRICAL menu.
6. Select DTCs in the HVAC/CLIMATE CONTROL menu.
7. Check for DTCs. If any DTCs are indicated, write down the DTCs, then go to the indicated **DTC TROUBLESHOOTING**. If no DTCs are indicated, do all system scan, then refer to symptom troubleshooting.

NOTE:

- **After troubleshooting, clear the DTCs with the HDS.**
- **For specific operations, refer to the user's manual that came with the HDS.**

HOW TO USE THE SELF-DIAGNOSTIC FUNCTION WITH THE HDS

NOTE: This method is only available if the HDS can communication with the HVAC control unit. If there is a communicate problem with the HDS, go to B-CAN system diagnosis test mode A (see TROUBLESHOOTING - B-CAN SYSTEM DIAGNOSIS TEST MODE A).

1. Make sure the ignition switch is in LOCK (0), or the vehicle ignition is in the OFF mode.
2. Connect the HDS to the DLC.
3. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
4. Make sure the HDS communicates with the vehicle and the climate control unit. If it does not, go to the DLC circuit troubleshooting (see **DLC CIRCUIT TROUBLESHOOTING**).
5. Select HVAC/CLIMATE CONTROL in the BODY ELECTRICAL menu.
6. Select INSPECTION in the HVAC/CLIMATE CONTROL menu.
7. Select CLIMATE CONTROL SELF TEST in the INSPECTION menu.
8. Check for DTCs. If any DTCs are indicated, write down the DTCs, then go to the indicated **DTC TROUBLESHOOTING**.

NOTE:

- **After troubleshooting, clear the DTCs with the HDS.**
- **For specific operations, refer to the user's manual that came with the HDS.**

HOW TO USE THE SELF-DIAGNOSTIC FUNCTION WITHOUT THE HDS

The climate control unit has a self-diagnostic function. To run the self-diagnostic function, do the following:

1. Turn the ignition switch to LOCK (0) and then back to ON (II), or press the engine start/stop button to select the OFF mode and then the ON mode.
2. Press and hold the ON/OFF button, then within 10 seconds press and release the REAR WINDOW DEFOGGER/MIRROR DEFOGGER button five times. Release the ON/OFF button, then the self-diagnosis begins.

NOTE:

- **The blower motor runs at various speeds regardless of what the panel is displaying.**
- **If there is a problem with the system, it will flash AUTO, 88 and AUTO, 88 and WINDSHIELD DEFROST, or 88 and MODE, and one or more of the 14 indicator segments (A through N). Refer to checking for DTCs.**
- **If there is more than one DTC, they are displayed one at a time in sequence followed by a pause (all the display indicator segments illuminate) between the DTCs.**
- **If there are no problems detected, the segments do not illuminate, and the system appears to be turned off.**

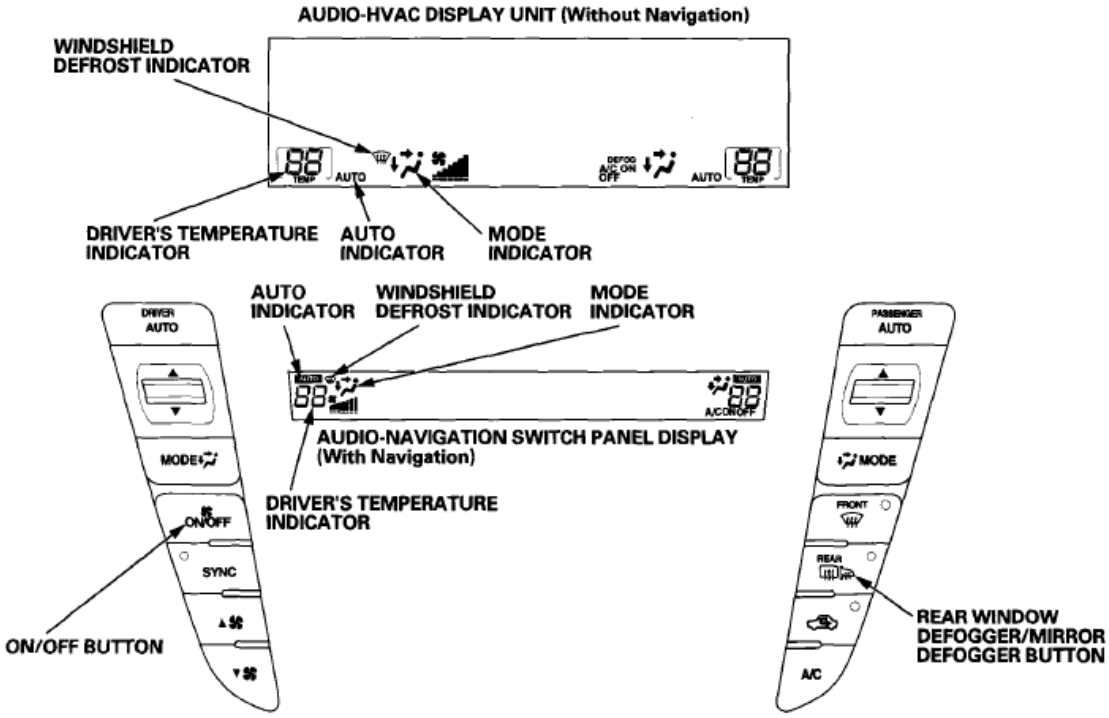


Fig. 8: Identifying Audio-HVAC Display Unit (Without Navigation)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Canceling the Self-Diagnostic Function

3. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode to cancel the self-diagnostic function. After completing repair work, run the self-diagnostic function again to make sure that there are no other DTCs.

CHECKING FOR DTCS

The temperature display indicates single or multiple DTCs. If no DTCs are present, the indicator remains blank.

NOTE: If the driver's indicator segments A, C, E, G, J, and M, with the AUTO indicator, MODE indicator, and the WINDSHIELD DEFROST indicator are on at the same time, there may be an open in the sensor common ground wire.

DRIVER'S TEMPERATURE INDICATOR

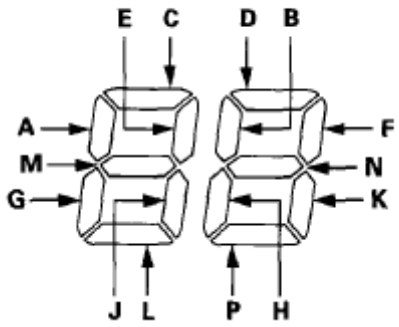


Fig. 9: Identifying Driver's Temperature Indicator
Courtesy of AMERICAN HONDA MOTOR CO., INC.

AUTO INDICATOR



Fig. 10: Identifying Auto Indicator
Courtesy of AMERICAN HONDA MOTOR CO., INC.

MODE INDICATOR



Fig. 11: Identifying Mode Indicator
Courtesy of AMERICAN HONDA MOTOR CO., INC.

WINDSHIELD DEFROST INDICATOR



Fig. 12: Identifying Windshield Defrost Indicator
Courtesy of AMERICAN HONDA MOTOR CO., INC.

DTC (Driver's Temperature Indicator Segment, AUTO, MODE, and WINDSHIELD DEFROST Indicator)	Detection Item
AUTO	Engine coolant temperature (ECT) sensor signal error. Check for DTCs (P2183, P2184, or P2185) in the PGM-FI system and go to the indicated **DTC'S TROUBLESHOOTING**. If no DTCs are found, replace the climate control unit (see **CLIMATE CONTROL UNIT REMOVAL/INSTALLATION**)
A and AUTO	An open in the in-car temperature sensor circuit (see **DTC B1225 OR DTC INDICATOR A AND AUTO: AN OPEN IN THE IN-CAR TEMPERATURE SENSOR CIRCUIT**)
B and AUTO	A short in the in-car temperature sensor circuit (see **DTC B1226 OR DTC INDICATOR B AND AUTO: A SHORT IN THE IN-CAR TEMPERATURE SENSOR CIRCUIT**)
C and AUTO	An open in the outside air temperature sensor circuit (see **DTC B1227 OR DTC INDICATOR C AND AUTO: AN OPEN IN THE OUTSIDE AIR TEMPERATURE SENSOR CIRCUIT**)
D and AUTO	A short in the outside air temperature sensor circuit (see **DTC B1228 OR DTC INDICATOR D AND AUTO: A SHORT IN THE OUTSIDE AIR TEMPERATURE SENSOR CIRCUIT**)
E and AUTO	An open in the sunlight sensor circuit (see **DTC B1229 OR DTC INDICATOR E AND AUTO: AN OPEN IN THE SUNLIGHT SENSOR CIRCUIT**)
F and AUTO	A short in the sunlight sensor circuit (see **DTC B1230 OR DTC INDICATOR F AND AUTO: A SHORT IN THE SUNLIGHT SENSOR CIRCUIT**)
G and AUTO	An open in the evaporator temperature sensor circuit (see **DTC B1231 OR DTC INDICATOR G AND AUTO: AN OPEN IN THE EVAPORATOR TEMPERATURE SENSOR CIRCUIT**)
H and AUTO	A short in the evaporator temperature sensor circuit (see **DTC B1232 OR DTC INDICATOR H AND AUTO: A SHORT IN THE EVAPORATOR TEMPERATURE SENSOR CIRCUIT**)

J and AUTO	An open in the air mix control motor circuit (driver's) (see **DTC B1233 OR DTC INDICATOR J AND AUTO: AN OPEN IN THE AIR MIX CONTROL MOTOR CIRCUIT (DRIVER'S)**)
K and AUTO	A short in the air mix control motor circuit (driver's) (see **DTC B1234 OR DTC INDICATOR K AND AUTO: A SHORT IN THE AIR MIX CONTROL MOTOR CIRCUIT (DRIVER'S)**)
L and AUTO	A problem in the air mix control motor circuit, linkage, door, or motor (driver's) (see **DTC B1235 OR DTC INDICATOR L AND AUTO: A PROBLEM IN THE AIR MIX CONTROL MOTOR CIRCUIT, LINKAGE, DOOR, OR MOTOR (DRIVER'S)**)
M and AUTO	An open in the passenger's air mix control motor circuit (see **DTC B1236 OR DTC INDICATOR M AND AUTO: AN OPEN IN THE PASSENGER'S AIR MIX CONTROL MOTOR CIRCUIT**)
N and AUTO	A short in the passenger's air mix control motor circuit (see **DTC B1237 OR DTC INDICATOR N AND AUTO: A SHORT IN THE PASSENGER'S AIR MIX CONTROL MOTOR CIRCUIT**)
P and AUTO	A problem in the passenger's air mix control motor circuit, linkage, door, or motor (see **DTC B1238 OR DTC INDICATOR P AND AUTO: A PROBLEM IN THE PASSENGER'S AIR MIX CONTROL MOTOR CIRCUIT, LINKAGE, DOOR, OR MOTOR**)
A and WINDSHIELD DEFROST	An open in the humidity sensor circuit (see **DTC B2967 OR DTC INDICATOR A AND WINDSHIELD DEFROST: AN OPEN IN THE HUMIDITY SENSOR CIRCUIT**)
B and WINDSHIELD DEFROST	A short in the humidity sensor circuit (see **DTC B2968 OR DTC INDICATOR B AND WINDSHIELD DEFROST: A SHORT IN THE HUMIDITY SENSOR CIRCUIT**)
E and WINDSHIELD DEFROST	An open in the A/C pressure sensor circuit (see **DTC B2979 OR DTC INDICATOR E AND WINDSHIELD DEFROST: AN OPEN IN THE A/C PRESSURE SENSOR CIRCUIT**)
F and WINDSHIELD DEFROST	A short in the A/C pressure sensor circuit (see **DTC B2980 OR DTC INDICATOR F AND WINDSHIELD DEFROST: A SHORT IN THE A/C PRESSURE SENSOR CIRCUIT**)
A and MODE	An open or short in the mode control motor circuit (driver's) (see **DTC B1239 OR DTC INDICATOR A AND MODE: AN OPEN OR SHORT IN THE MODE CONTROL MOTOR CIRCUIT (DRIVER'S)**)
B and MODE	A problem in the mode control motor circuit, linkage, doors, or motor (see **DTC B1240 OR DTC INDICATOR B AND MODE: A PROBLEM IN THE MODE CONTROL MOTOR CIRCUIT, LINKAGE, DOORS, OR MOTOR (DRIVER'S)**)
C and MODE	A problem in the blower motor circuit (see **DTC B1241 OR DTC INDICATOR C AND MODE: A PROBLEM IN THE BLOWER MOTOR CIRCUIT**)
E and MODE	An open or short in the passenger's mode control motor circuit (see **DTC B1242 OR DTC INDICATOR E AND MODE: AN OPEN OR SHORT IN THE PASSENGER'S MODE CONTROL MOTOR**

	CIRCUIT)
F and MODE	A problem in the passenger's mode control motor circuit, linkage, doors, or motor (see **DTC B1243 OR DTC INDICATOR F AND MODE: A PROBLEM IN THE PASSENGER'S MODE CONTROL MOTOR CIRCUIT, LINKAGE, DOORS, OR MOTOR**)
J and MODE	An open or short in the recirculation control motor circuit (see **DTC B1215 OR DTC INDICATOR J AND MODE: AN OPEN OR SHORT IN THE RECIRCULATION CONTROL MOTOR CIRCUIT**)
K and MODE	A problem in the recirculation control motor circuit, linkage, door, or motor (see **DTC B2983 OR DTC INDICATOR K AND MODE: A PROBLEM IN THE RECIRCULATION CONTROL MOTOR CIRCUIT, LINKAGE, DOOR, OR MOTOR**)

DISPLAYING SENSOR INPUTS AT THE CLIMATE CONTROL UNIT

The climate control unit has a mode that displays the sensor inputs it receives. This mode shows you what the climate control unit is receiving from each of the sensors, one at a time, and it can help you determine if a sensor is faulty.

CHECKS BEFORE USING THE SENSOR INPUT DISPLAY MODE

1. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode, and check the recirculation door function; press the recirculation button to switch from FRESH to RECIRC. The air volume and sound should change slightly.
2. Set the desired test temperature using the driver's control switch:

   Press the SYNC button off, the LED turns off.

   When selecting the test temperature, note these items:

   - "Lo" temperature setting will default to MAX COOL, VENT, and RECIRC.
   - "Hi" temperature setting will default to MAX HOT, HEAT, and FRESH.
   - 58 through 86°F settings will use the automatic climate control logic.
3. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.

RUN THE SENSOR INPUT DISPLAY MODE

1. Make sure the ignition switch is in LOCK (0), or the vehicle ignition is in the OFF mode.
2. Press and hold both the passenger's AUTO and RECIRCULATION CONTROL buttons, then start the engine.
3. After the engine starts, release both buttons. The display panel control unit flashes the sensor number, then the value for that sensor. Record the value displayed.
4. To advance to the next sensor, press the REAR WINDOW DEFOGGER/MIRROR DEFOGGER button.

NOTE:

- **The sensor values are displayed in degrees Celsius (°C) or an alphanumeric code. Use the charts to convert degrees Fahrenheit (° F), or convert the alphanumeric code to a numerical value.**
- **If the sensor value displays "Er", this indicates there is an open or short in the circuit or sensor. Check for DTCs using the HDS, or use the climate control unit self-diagnostic function.**
- **If necessary, compare the sensor input display to a known-good vehicle under the same test conditions.**
- **If the sensor displayed value is out of the normal range, refer to the sensor test or substitute a known-good sensor, and recheck.**

Sensor	Item	Displayed Value
1	In-car temperature	°C
2	Outside air temperature	°C
3	Solar radiation sensor value: dark = 00, flashlight = 04, cloudy = 10, sunny = 65	$kcal/m^2$ .h
4	Engine coolant temperature	°C
5	Evaporator outlet air temperature	°C
6	Driver's air mix opening (low value indicates cooler air distribution, higher value indicates warmer air distribution)	% of opening
	Passenger's air mix opening (low value indicates cooler air distribution, higher value indicates warmer air distribution) (passenger's side of display)	% of opening
7	Vent temperature air out (TAO)	°C
8	Vehicle speed (vehicle must be driven to display speed)	km/h
9	A/C pressure	10kPa
A	Humidity sensor value	%rh
b	Fog margin	°C
C	Solar radiation azimuth (with navigation)	10°
d	Solar radiation angle of elevation (with navigation)	10°

CELSIUS TO 1 FAHRENHEIT CONVERSION TABLE

°C	°F
0	32
1	34
2	36
3	37
4	39
5	41
6	43
7	45
8	46
9	48

10	50
11	52
12	54
13	55
14	57
15	59
16	61
17	63
18	64
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99	210

ALPHANUMERIC CONVERSION TABLE

Display Reading (Alphanumeric)	°C	°F	%
A1 thru A9	- 1 thru -9	30 thru 16	-1 thru -9
B0 thru B9	-10 thru -19	14 thru -2	-10 thru-19
C0 thru C9	-20 thru-29	-4 thru -20	-20 thru-29
D0 thru D9	-30 thru -39	-22 thru -38	-30 thru-39
E0 thru E9	-40 thru-49	-40 thru -58	-40 thru -49
F0 thru F9	-50 thru -59	-58 thru -74	+ 100 thru +109

5. To cancel the sensor input display mode, press the driver's AUTO button or turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.

DTC TROUBLESHOOTING INDEX

CHECKING DTCS WITH HDS

DTC	Detection Item or Symptom	ECU	DTC Type
U1280	Communication bus line error (BUS-OFF)	Climate control unit	Loss of communication
U0155	Lost communication with gauge control module (climate control unit)	Climate control unit	Loss of communication
B1215	An open or short in the recirculation control motor circuit	Climate control unit	Signal error
B1225	An open in the in-car temperature sensor circuit	Climate control unit	Signal error
B1226	A short in the in-car temperature sensor circuit	Climate control unit	Signal error
B1227	An open in the outside air temperature sensor circuit	Climate control unit	Signal error
B1228	A short in the outside air temperature sensor circuit	Climate control unit	Signal error
B1229	An open in the sunlight	Climate control unit	Signal error

	sensor circuit		
B1230	A short in the sunlight sensor circuit	Climate control unit	Signal error
B1231	An open in the evaporator temperature sensor circuit	Climate control unit	Signal error
B1232	A short in the evaporator temperature sensor circuit	Climate control unit	Signal error
B1233	An open in the air mix control motor circuit (driver's)	Climate control unit	Signal error
B1234	A short in the air mix control motor circuit (driver's)	Climate control unit	Signal error
B1235	A problem in the air mix control motor circuit, linkage, door, or motor (driver's)	Climate control unit	Signal error
B1236	An open in the passenger's air mix control motor circuit	Climate control unit	Signal error
B1237	A short in the passenger's air mix control motor circuit	Climate control unit	Signal error
B1238	A problem in the passenger's air mix control motor circuit, linkage, door, or motor	Climate control unit	Signal error

CHECKING DTCS WITH HDS

DTC	Detection Item or Symptom	ECU	DTC Type
B1239	An open or short in the mode control motor circuit (driver's)	Climate control unit	Signal error
B1240	A problem in the mode control motor circuit, linkage, doors, or motor (driver's)	Climate control unit	Signal error
B1241	A problem in the blower motor circuit	Climate control unit	Signal error
B1242	An open or short in the passenger's mode control motor circuit	Climate control unit	Signal error
B1243	A problem in the passenger's mode control motor circuit, linkage, doors, or motor	Climate control unit	Signal error

B2967	An open in the humidity sensor circuit	Climate control unit	Signal error
B2968	A short in the humidity sensor circuit	Climate control unit	Signal error
B2969	Climate control unit lost communication with driver's MICU (WIPSW message)	Climate control unit	Loss of communication
B2979	An open in the A/C pressure sensor circuit	Climate control unit	Signal error
B2980	A short in the A/C pressure sensor circuit	Climate control unit	Signal error
B2983	A problem in the recirculation control motor circuit, linkage, door, or motor	Climate control unit	Signal error

Symptom	Diagnostic procedure	Also check for
The blower and heater controls and the A/C system do not work	Probable cause: The climate control unit has malfunctioned, or has lost power or ground Do the climate control power and ground circuit troubleshooting (see **CLIMATE CONTROL POWER AND GROUND CIRCUIT TROUBLESHOOTING**)	• Climate control DTCs (see **HOW TO CHECK FOR DTCS WITH THE HDS**) • Blown fuse No. 16 (7.5 A) in the driver's under-dash fuse/relay box • Poor ground at G403 (see **CONNECTOR TO FUSE/RELAY BOX INDEX**) • Poor or loose connections at the terminals
The A/C compressor clutch and the A/C condenser/radiator fans are inoperative, but the blower and heater controls work	Probable cause: A/C pressure sensor circuit malfunction **NOTE:** **When the A/C pressure sensor malfunctions, it may or may not set a DTC**	• Climate control DTCs (see **HOW TO CHECK FOR DTCS WITH THE HDS**) • Powertrain DTCs • Poor or loose connections at the terminals • A/C signal circuit problem in the ECM/PCM (see **A/C SIGNAL CIRCUIT TROUBLESHOOTING**) • Check sensor input display mode (see **RUN THE SENSOR INPUT DISPLAY MODE**): ○ Sensor #5 Evaporator ○ Sensor #9 A/C Pressure

The A/C compressor clutch does not engage, but the A/C condenser/radiator fans operate, and the blower and heater controls work	Probable cause: • No power to the A/C compressor clutch Do the A/C compressor clutch circuit troubleshooting (see **A/C COMPRESSOR CLUTCH CIRCUIT TROUBLESHOOTING**) • Low speed idle • High engine coolant temperature (ECT) • Do the evaporator temperature sensor test (see **EVAPORATOR TEMPERATURE SENSOR TEST**)	• Climate control DTCs (see **HOW TO CHECK FOR DTCS WITH THE HDS**) • Powertrain DTCs • Blown fuse No. 20 (7.5 A) in the under-hood fuse/relay box • A/C system pressure is normal (see **SYSTEM DESCRIPTION**) • Poor or loose connections at the terminals
The A/C condenser fan and/or the radiator fan do not run with the A/C on	Probable cause: A/C condenser/radiator fan low speed circuit malfunction Do the radiator and A/C condenser fan low speed circuit troubleshooting (see **RADIATOR AND A/C CONDENSER FAN LOW SPEED CIRCUIT TROUBLESHOOTING**)	• Climate control DTCs (see **HOW TO CHECK FOR DTCS WITH THE HDS**) • Powertrain DTCs • Blown fuse No. 3-3 (SUB FAN) (30 A) • Poor ground at G301 (see **CONNECTOR TO FUSE/RELAY BOX INDEX**) • Poor or loose connections at the terminals
The A/C condenser/radiator fans do not run at high speed, but do run at low speed	Probable cause: Malfunction in the fan high speed circuit(s) Do the following troubleshooting as needed: • A/C condenser fan high speed circuit troubleshooting (see **A/C CONDENSER FAN HIGH SPEED CIRCUIT TROUBLESHOOTING**) • Radiator fan high speed circuit troubleshooting (see **RADIATOR FAN HIGH SPEED CIRCUIT TROUBLESHOOTING**)	• Climate control DTCs (see **HOW TO CHECK FOR DTCS WITH THE HDS**) • Powertrain DTCs • Blown fuse on the fan circuit: ○ No. 3-3 (SUB FAN) (30 A) ○ No. 3-5 (MAIN FAN) (30 A, without SH-AWD), (40 A, with SH-AWD) • Poor ground at G301 (see **CONNECTOR TO FUSE/RELAY BOX INDEX**) • Poor or loose connections at the terminals
	Probable cause: Communication problem between the climate control unit and the	• Climate control DTCs (see **HOW TO CHECK FOR DTCS WITH THE HDS**)

Voice commands do not work	audio-navigation unit Do the navigation communication line circuit troubleshooting (see **NAVIGATION COMMUNICATION LINE CIRCUIT TROUBLESHOOTING**)	• Navigation unit DTCs (see **HOW TO CHECK ERROR HISTORY (NAVIGATION DTCS)**) • Poor or loose connections at the terminals
The climate control display is inoperative	Probable cause: Communication problem between the climate control unit and the audio-HVAC display unit (without navigation) or the audio-navigation switch panel (with navigation) Do the audio communication line circuit troubleshooting (see **AUDIO COMMUNICATION LINE CIRCUIT TROUBLESHOOTING**)	• Climate control DTCs (see **HOW TO CHECK FOR DTCS WITH THE HDS**) • Audio-HVAC display failure • Poor or loose connections at the terminals
Blower fan runs slower than expected in cold weather (when in AUTO mode) **NOTE:** **It is normal for the blower fan to run slowly until the coolant temperature rises when in AUTO mode**	Probable cause: Engine coolant temperature (ECT) circuit malfunction Troubleshoot ECT Sensor 2 Circuit Range/ Performance Problem (see **DTC P2183: ECT SENSOR 2 CIRCUIT RANGE/PERFORMANCE PROBLEM**)	• Climate control DTCs (see **HOW TO CHECK FOR DTCS WITH THE HDS**) • Powertrain DTCs • Manual blower motor operation
The A/C compressor clutch cycles rapidly on and off	Probable cause: • A/C system is very low on refrigerant, indicating a possible leak. Do the refrigerant leak check (see **REFRIGERANT LEAK CHECK**) and repair any leaks • Evaporator temperature sensor malfunction Do the evaporator temperature sensor test (see **EVAPORATOR TEMPERATURE SENSOR TEST**)	• Climate control DTCs (see **HOW TO CHECK FOR DTCS WITH THE HDS**) • If there is no leak and the refrigerant level is normal, do the A/C compressor clutch circuit troubleshooting (see **A/C COMPRESSOR CLUTCH CIRCUIT TROUBLESHOOTING**), and look for an intermittent problem
	Probable cause: The A/C compressor clutch circuit is on (energized) continuously, shorted to ground, stuck A/C compressor clutch relay, or the A/C	

The A/C compressor clutch does not disengage when the A/C switch is off	compressor clutch is mechanically jammed • Do the A/C compressor clutch circuit troubleshooting (see **A/C COMPRESSOR CLUTCH CIRCUIT TROUBLESHOOTING**), and repair any circuit problems • If the A/C compressor clutch circuit is OK, then do the A/C compressor clutch check (see **A/C COMPRESSOR CLUTCH CHECK**), and repair any problems with the A/C compressor clutch	The A/C compressor relief valve. If it has vented refrigerant to the atmosphere, correct the problem with the A/C compressor clutch or clutch circuit, then replace the relief valve (see **A/C COMPRESSOR RELIEF VALVE REPLACEMENT**)
The A/C compressor relief valve has vented refrigerant **NOTE:** **This indicates the A/C system pressure was very high**	Probable cause: A high-side restriction, the A/C condenser/radiator fans are inoperative, or the A/C compressor clutch is not disengaging • If the fans and A/C compressor clutch operate normally, recover refrigerant (see **REFRIGERANT RECOVERY**), and check for restrictions • If the A/C compressor clutch will not disengage, troubleshoot the clutch circuit (see **A/C COMPRESSOR CLUTCH CIRCUIT TROUBLESHOOTING**), and check for mechanical problems (see **A/C COMPRESSOR CLUTCH CHECK**) • If the fans are inoperative, troubleshoot the fan circuits (see **RADIATOR AND A/C CONDENSER FAN LOW SPEED CIRCUIT TROUBLESHOOTING**)	Powertrain DTCs
HDS does not communicate with the climate control unit or the vehicle	Troubleshoot the DLC circuit (see **DLC CIRCUIT TROUBLESHOOTING**)	
	1. Check the coolant level (see **COOLANT CHECK**)	

Insufficient heating	2. Check the radiator cap (see **RADIATOR CAP TEST**) 3. Check the coolant temperature during normal operation 4. Check the heater core inlet hose temperature: • If it is COLD, check for restrictions in the hose, a damaged or leaking thermostat, or a damaged or leaking water pump • If it is HOT, check for restrictions in the heater core. Back flush or replace the heater core 5. Check the operation of the air mix doors: • Drive's (see **DRIVER'S AIR MIX CONTROL MOTOR TEST** • Passenger's (see **PASSENGER'S AIR MIX CONTROL MOTOR REPLACEMENT**) 6. Check the blower motor unit for obstructions 7. Check for air leaks around the ducts and vents	• Climate control DTCs (see **HOW TO CHECK FOR DTCS WITH THE HDS**) • Damaged cylinder head gasket

SYSTEM DESCRIPTION

The air conditioning (A/C) system removes heat from the passenger compartment by transferring heat from the ambient air to the evaporator. The A/C system refrigerant expands in the evaporator, and the evaporator becomes very cold and absorbs the heat from the ambient air. The blower fan pushes air across the evaporator where the heat is absorbed, and then it blows the cool air into the passenger compartment.

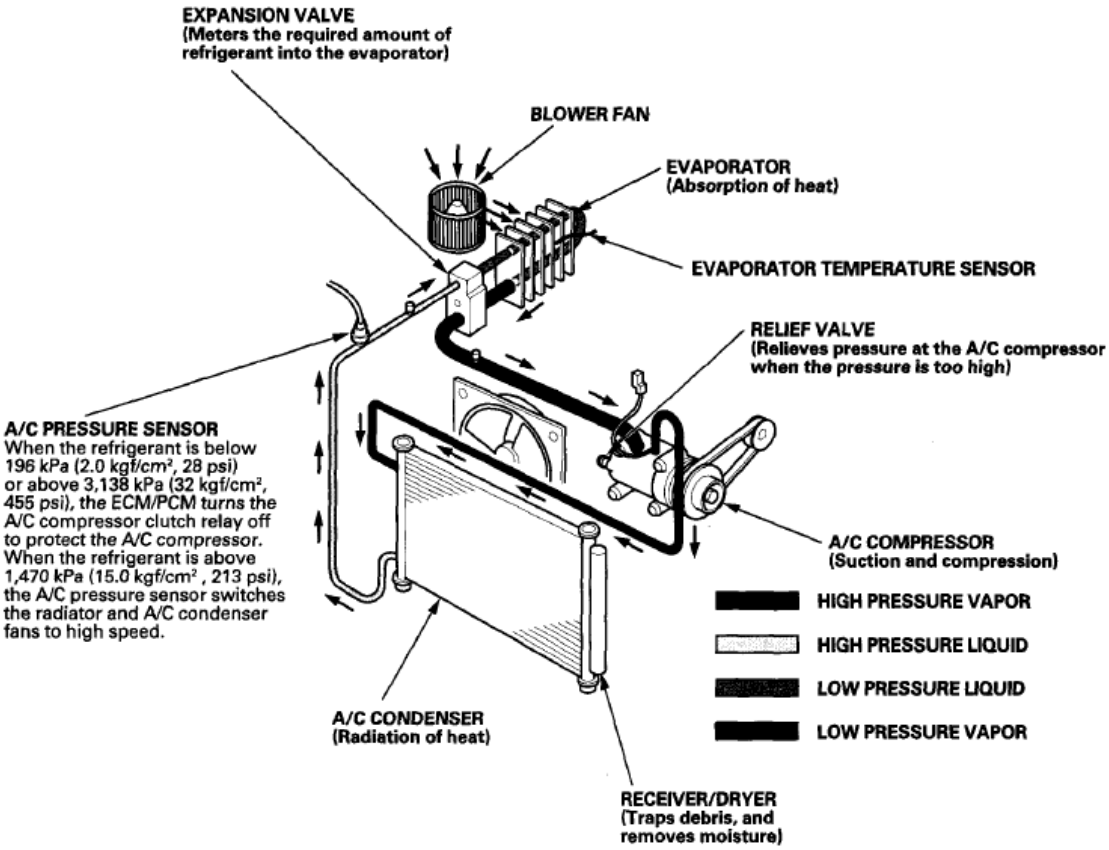


Fig. 13: Climate Control System Diagram
Courtesy of AMERICAN HONDA MOTOR CO., INC.

This vehicle uses HFC-134a (R-134a) refrigerant, which does not contain chlorofluorocarbons. Pay attention to the following service items:

- Use only the recommended polyalkyleneglycol (PAG) refrigerant oil (DENSO ND-OIL 8) designed for the R-134a A/C compressor. Intermixing the recommended (PAG) refrigerant oil with any other refrigerant oil will result in A/C compressor failure.
- All A/C system parts (A/C compressor, discharge line, suction line, evaporator, A/C condenser, receiver/dryer, expansion valve, O-rings for joints) are designed for refrigerant R-134a.
- Use a halogen gas leak detector designed for refrigerant R-134a.
- Use only a recovery/recycling/charging station that is U.L.-listed and is certified to meet the requirements of SAE J2788 to service the R-134a air conditioning systems.
- Always recover refrigerant R-134a with an approved recovery/recycling/charging station before disconnecting any A/C fitting.

A/C PRESSURE SENSOR

The A/C pressure sensor converts A/C pressure into electrical signals to the ECM/PCM.

	Sensor	

A/C System Pressure(1)	Output Voltage (V out)	System Operation
Abnormally low pressure: Below 196 kPa (2.0 kgf/cm^2 , 28 psi)	Below 0.685 V	The ECM/PCM disengages the A/C compressor clutch. The radiator and A/C condenser fans operate based on engine coolant temperature.
Normal operating pressure: • Above 196 kPa (2.0 kgf/cm^2 , 28 psi) • Below 1, 470 kPa (15.0 kgf/cm^2 , 213 psi)	0.686 V to 1.944 V	The ECM/PCM cycles the A/C compressor clutch based on cooling demand. The radiator and A/C condenser fans operate at low speed unless the engine coolant temperature exceeds 206°F (97 °C).
High operating pressure: • Above 1, 470 kPa (15.0 kgf/cm^2 , 213 psi) • Below 3, 138 kPa (32 kgf/cm^2 , 455 psi)	1.945 V to 4.575 V	The ECM/PCM cycles the A/C compressor clutch based on cooling demand. The radiator and A/C condenser fans operate at high speed.
Abnormally high pressure: More than 3, 138 kPa (32 kgf/cm^2 , 455 psi)	Above 4.575 V	The ECM/PCM disengages the A/C compressor clutch. The radiator and A/C condenser fans operate based on engine coolant temperature.
(1) The A/C system pressure can be monitored through the climate control sensor input display function (see **RUN THE SENSOR INPUT DISPLAY MODE**).		

The response of the A/C pressure sensor is shown in the graph in illustration below.

NOTE: **When the refrigerant is below 196 kPa (2.0 kgf/cm^2 , 28 psi) or above 3, 138 kPa (32 kgf/cm^2 , 455 psi), the ECM/PCM turns the A/C compressor clutch relay off to protect the A/C compressor. When the refrigerant pressure is above 1, 470 kPa (15.0 kgf/cm^2 , 213 psi), the ECM/PCM switches the radiator and A/C condenser fans to high speed.**

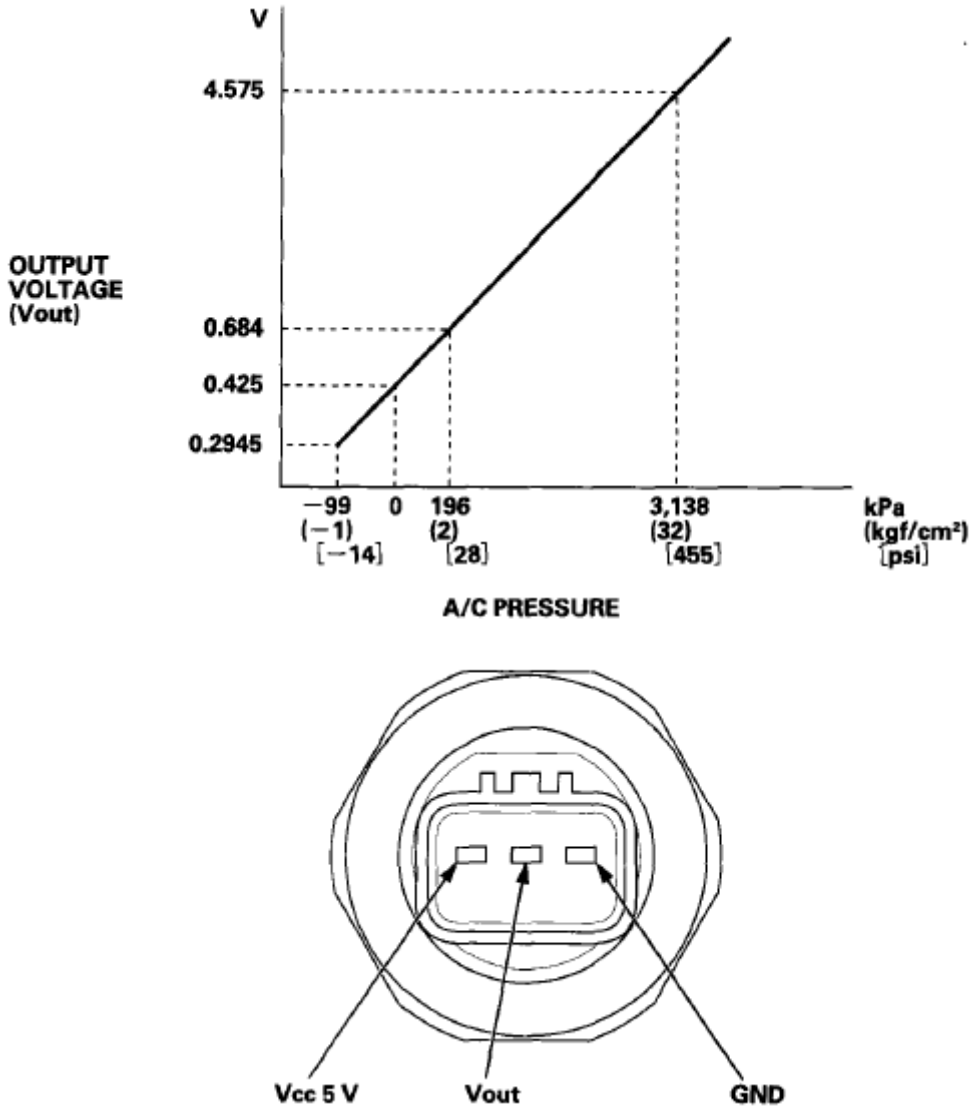


Fig. 14: A/C Pressure Sensor Graph
Courtesy of AMERICAN HONDA MOTOR CO., INC.

CLIMATE CONTROL DOOR POSITIONS

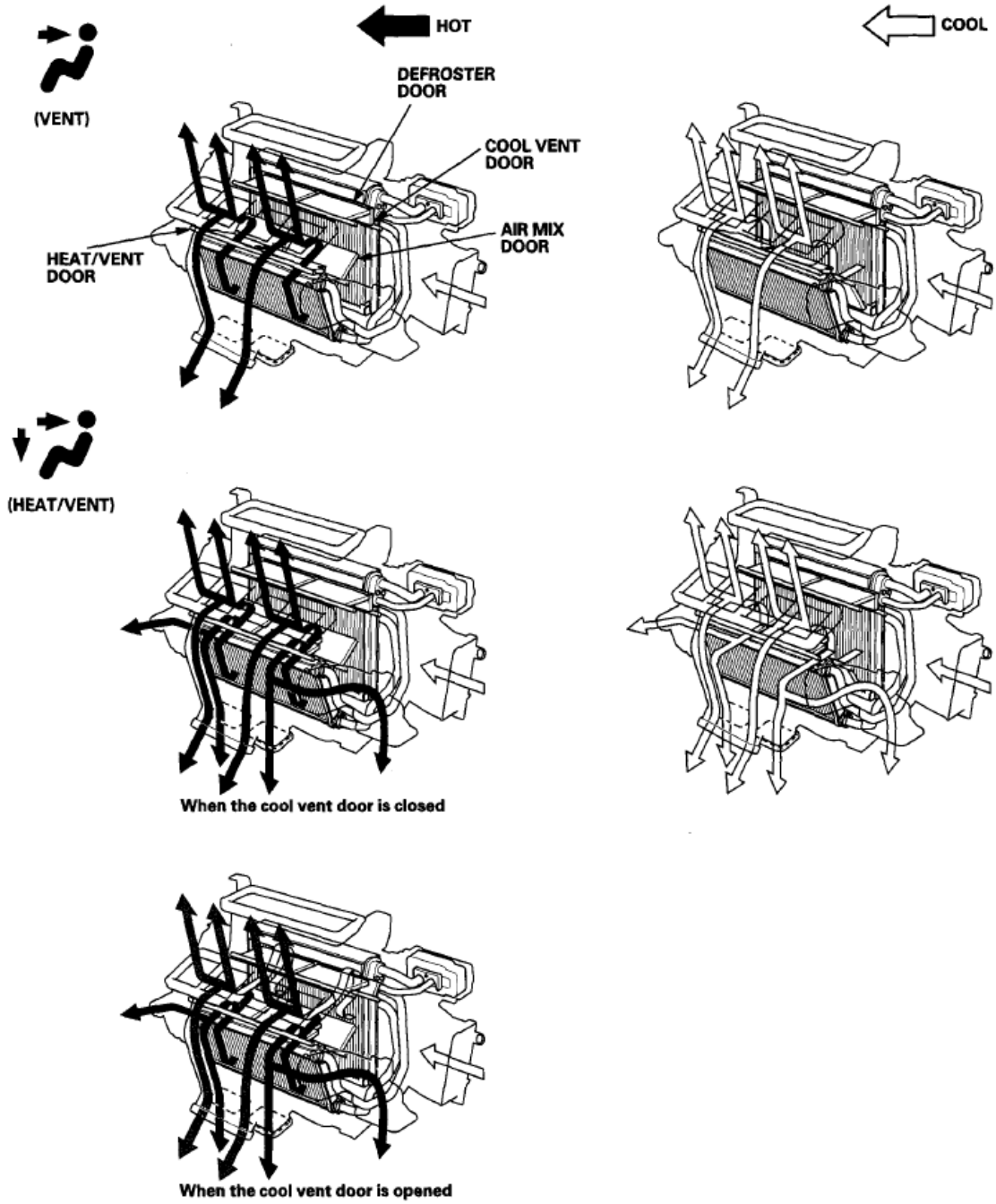


Fig. 15: Climate Control Door Position Diagram (1 Of 2)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

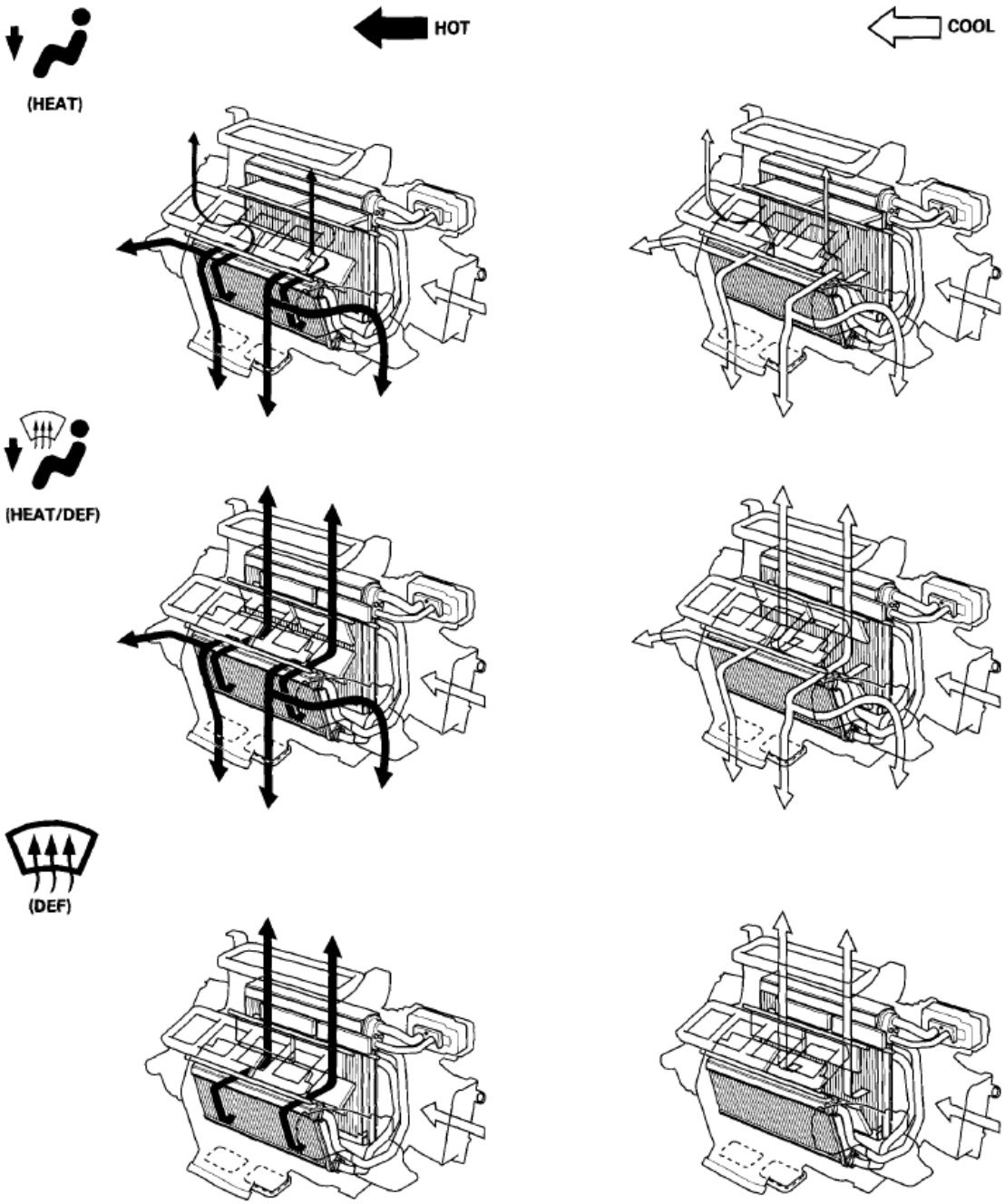


Fig. 16: Climate Control Door Position Diagram (2 Of 2)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

DUAL AIR MIX CONTROL SYSTEM

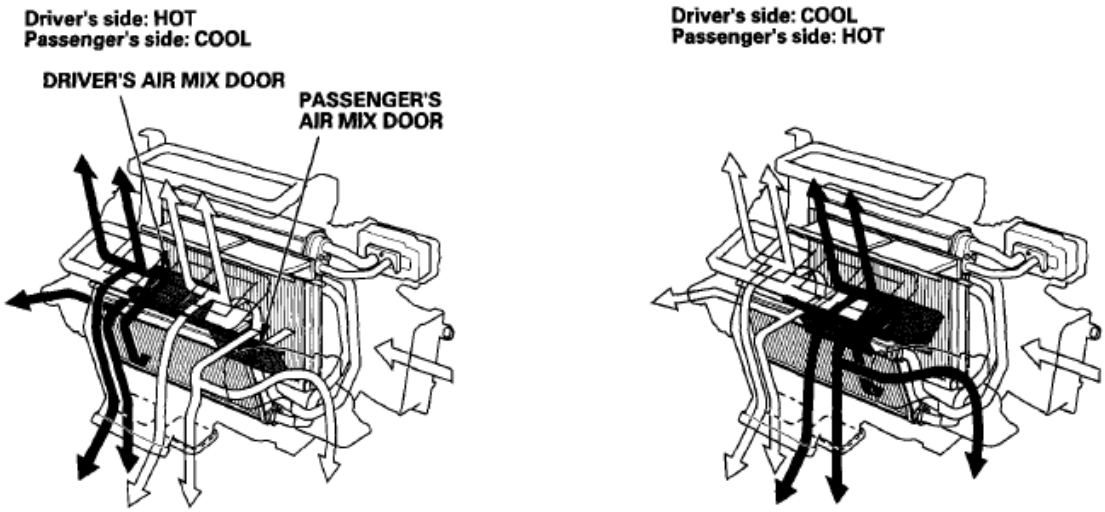


Fig. 17: Climate Control System Diagram (Dual Air Mix Control System)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

DUAL MODE CONTROL SYSTEM

All modes (except defroster) can be controlled independently.

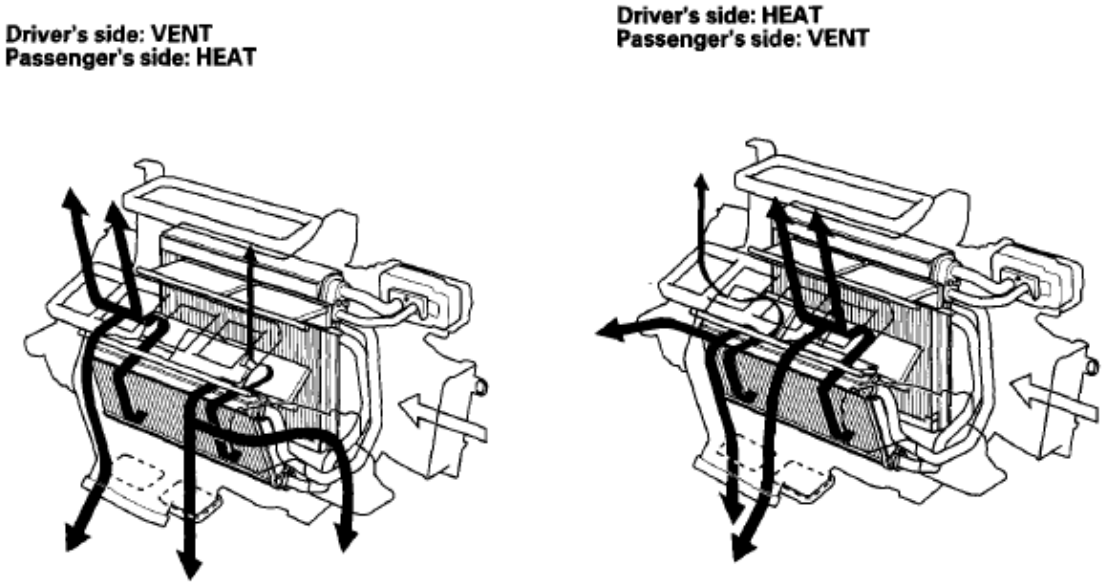


Fig. 18: Climate Control System Diagram (Dual Mode Control System)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

I-DUAL CLIMATE CONTROL SYSTEM (WITH NAVIGATION)

The i-Dual climate control system automatically controls the temperature and the air direction to the driver and passenger's side depending on the angle of the sun and the direction of the vehicle. It calculates information such as date, time, longitude, and latitude from the navigation system, as well as the radiant strength of the sun

from the sunlight sensor, to determine the appropriate mode position and temperature to be directed to each side.

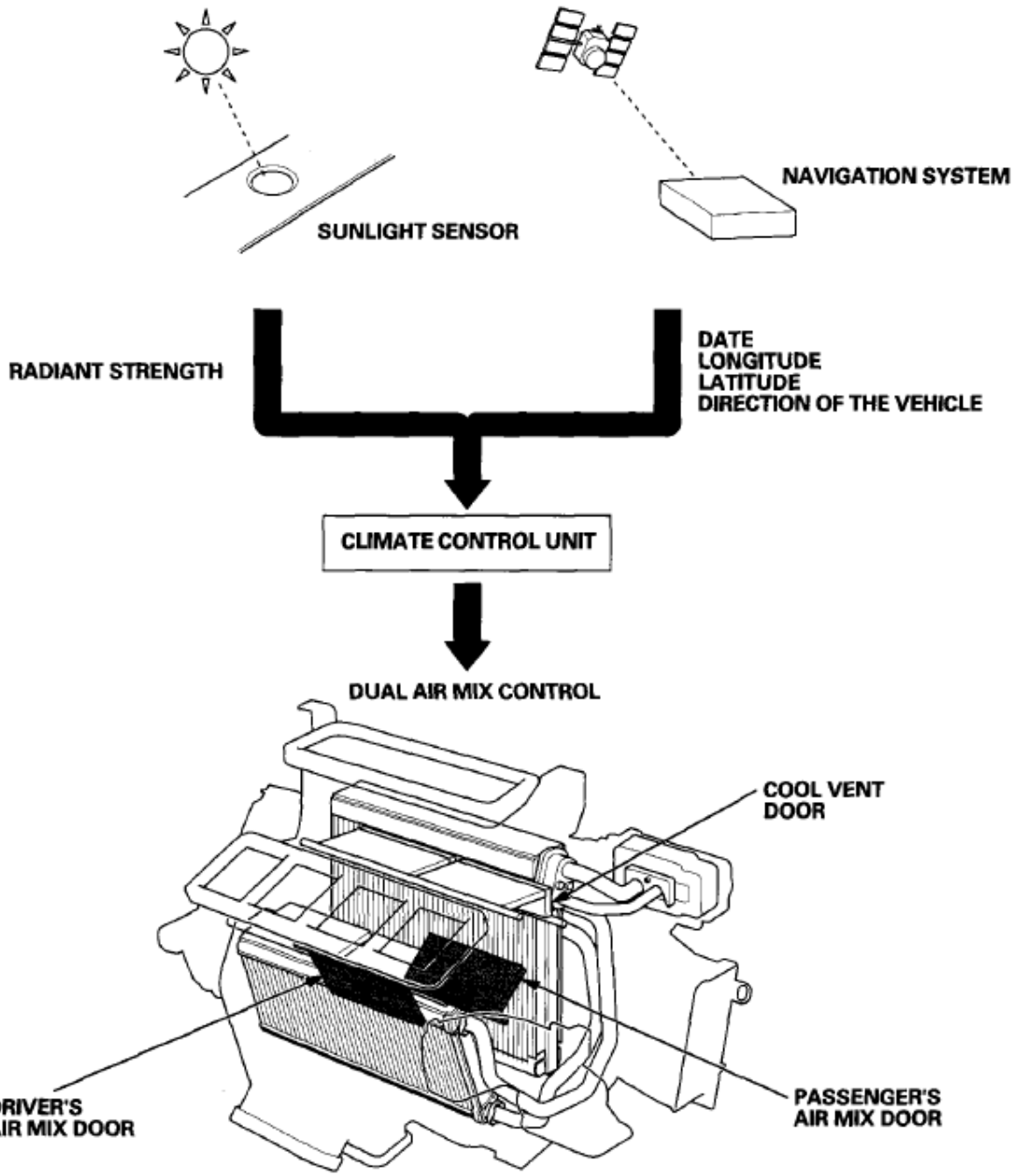


Fig. 19: Identifying I-Dual Climate Control System (With Navigation)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

In the event that the navigation system malfunctions, or when driving in areas where the navigation system cannot determine the vehicle position (non-coverage areas, tunnels, etc.), the climate control system will operate the same as a vehicle without navigation.

CLIMATE CONTROL UNIT INPUTS AND OUTPUTS

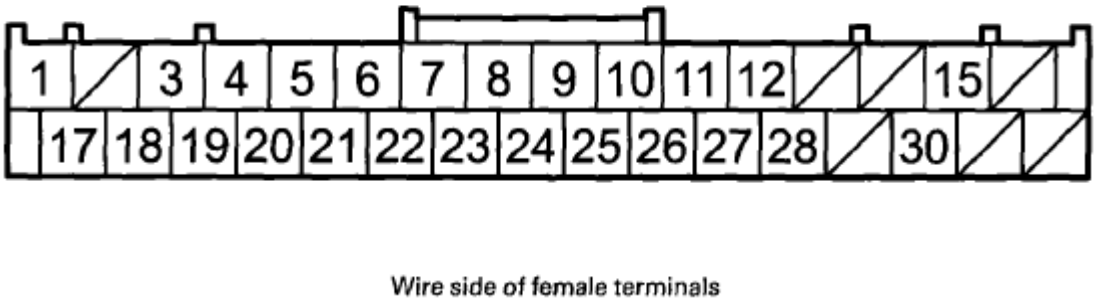


Fig. 20: Identifying Climate Control Unit A (32P) Connector End View
Courtesy of AMERICAN HONDA MOTOR CO., INC.

CONNECTOR A

Cavity	Wire color	Terminal name	Description	Signal
1	BLK	GND	Climate control unit ground (G403)	Less than 0.2 V at all times
3	RED	DISP CLK	Inputs clock signal from audio-HVAC display unit	With ignition switch ON (II), or vehicle in ON mode: pulses
4	PUR	DISP SO	Outputs display data to audio-HVAC display unit	With ignition switch ON (II), or vehicle in ON mode: pulses
5	BLU	M-DEF (Ps)	Drives passenger's mode control motor to DEF	With ignition switch ON (II), or vehicle in ON mode, and motor moving to DEF: battery voltage
6	GRY	M-VENT (Ps)	Drives passenger's mode control motor to VENT	With ignition switch ON (II), or vehicle in ON mode, and motor moving to VENT: battery voltage
7	GRY	M-DEF (Dr)	Drives driver's mode control motor to DEF	With ignition switch ON (II), or vehicle in ON mode, and motor moving to DEF: battery voltage
8	WHT	M-VENT (Dr)	Drives driver's mode control motor to VENT	With ignition switch ON (II), or vehicle in ON mode, and motor moving to VENT: battery voltage
9	LT BLU	M-COOL (Ps)	Drives passenger's air mix control motor to COOL	With ignition switch ON (II), or vehicle in ON mode, and motor moving to COOL: battery voltage
10	LT GRN	M-HOT (Ps)	Drives passenger's air mix control motor to HOT	With ignition switch ON (II), or vehicle in ON mode, and motor moving to HOT: battery voltage
11	LT BLU	M-COOL (Dr)	Drives driver's air mix control motor to COOL	With ignition switch ON (II), or vehicle in ON mode, and motor moving to COOL: battery voltage
12	PNK	M-HOT	Drives driver's air mix	With ignition switch ON (II), or vehicle in ON

		(Dr)	control motor to HOT	mode, and motor moving to HOT: battery voltage
15	LT GRN	IG2	IG2 power supply	With ignition switch ON (II), or vehicle in ON mode: battery voltage
17	GRN	MODE 1 (Ps)	Passenger's mode control motor position feedback	With ignition switch ON (II), or vehicle in ON mode: about 0 V or about 5 V (depending on motor position)
18	BRN	MODE 2 (Ps)	Passenger's mode control motor position feedback	With ignition switch ON (II), or vehicle in ON mode: about 0 V or about 5 V (depending on motor position)
19	BLU	MODE 3 (Ps)	Passenger's mode control motor position feedback	With ignition switch ON (II), or vehicle in ON mode: about 0 V or about 5 V (depending on motor position)
20	LT GRN	MODE 4 (Ps)	Passenger's mode control motor position feedback	With ignition switch ON (II), or vehicle in ON mode: about 0 V or about 5 V (depending on motor position)
21	LT GRN	MODE 1 (Dr)	Driver's mode control motor position feedback	With ignition switch ON (II), or vehicle in ON mode: about 0 V or about 5 V (depending on motor position)
22	BRN	MODE 2 (Dr)	Driver's mode control motor position feedback	With ignition switch ON (II), or vehicle in ON mode: about 0 V or about 5 V (depending on motor position)
23	YEL	MODE 3 (Dr)	Driver's mode control motor position feedback	With ignition switch ON (II), or vehicle in ON mode: about 0 V or about 5 V (depending on motor position)
24	BLU	MODE 4 (Dr)	Driver's mode control motor position feedback	With ignition switch ON (II), or vehicle in ON mode: about 0 V or about 5 V (depending on motor position)
25	GRY	AMD-P (Dr)	Driver's air mix control motor position feedback	With ignition switch ON (II), or vehicle in ON mode: between 1.0 V and 4.0 V (depending on motor position)
26	YEL	AMD-P (Ps)	Passenger's air mix control motor position feedback	With ignition switch ON (II), or vehicle in ON mode: between 1.0 V and 4.0 V (depending on motor position)
27	BLU	BLW-V	Feedback of power transistor drain voltage	With ignition switch ON (II), or vehicle in ON mode, and fan switch OFF: about 8 V. Voltage decreases as fan speed increases
28	YEL	BLW-G	Outputs power transistor gate voltage	With ignition switch ON (II), or vehicle in ON mode, and fan switch at MIN: about 2 V. Voltage increases to about 10 V with fan switch at MAX
30	GRY	ILL +	Power source for illumination	With combination light switch ON: battery voltage

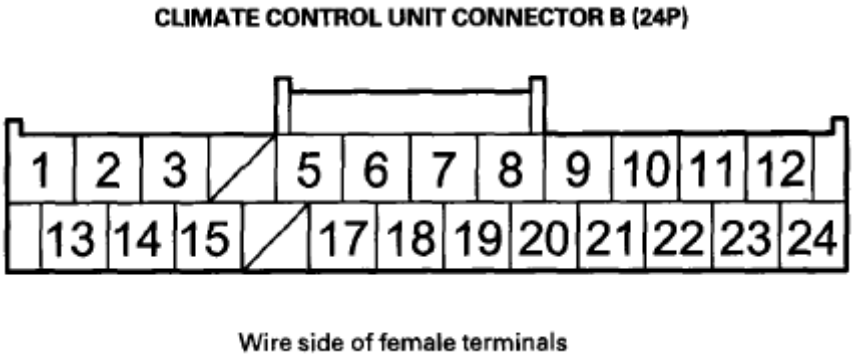


Fig. 21: Identifying Climate Control Unit B(24P) Connector End View
Courtesy of AMERICAN HONDA MOTOR CO., INC.

CONNECTOR B

Cavity	Wire color	Terminal name	Description	Signal
1	RED	RrDEF LED	Switches rear window defogger/mirror defogger button LED ON/OFF	- -
2	PNK	DEF LED	Switches defroster button LED ON/OFF	- -
3	LT BLU	PS IND PWM	Inputs indicator LED PWM (Pulse Width Modulation) control signal	-
5	PUR	PS IN1	Inputs AUTO button signal	- -
6	WHT	PS IN 2	Inputs passenger's temperature UP button signal	- -
7	YEL	PS IN 3	Inputs passenger's temperature DOWN button signal	- -
8	BRN	PS IN 4	Inputs passenger's MODE button signal	- -
9	GRN	PS IN 5	Inputs rear window defogger/mirror defogger button signal	- -
10	GRY	PS IN 6	Inputs air conditioning button signal	- -
11	BLU	PS IN 7	Inputs recirculation button signal	- -
12	LT GRN	PS IN 8	Inputs defroster button signal	- -
13	PUR	SYNC LED	Switches SYNC button LED ON/OFF	- -
14	ORN	R/F LED	Switches recirculation button LED ON/OFF	- -
15	WHT	DR IND PWM	Inputs indicator LED PWM (Pulse Width Modulation) control signal	- -
17	BRN	DR IN 1	Inputs AUTO button signal	- -
18	GRN	DR IN 2	Inputs driver's temperature UP button signal	- -
19	GRY	DR IN 3	Inputs driver's temperature DOWN button signal	- -
20	BLU	DR IN 4	Inputs driver's MODE button signal	- -
21	LT GRN	DR IN 5	Inputs SYNC button signal	- -
22	ORN	DR IN 6	Inputs FAN UP button signal	- -
23	PNK	DR IN 7	Inputs FAN DOWN button signal	- -
24	RED	DR IN 8	Inputs ON/OFF button signal	- -

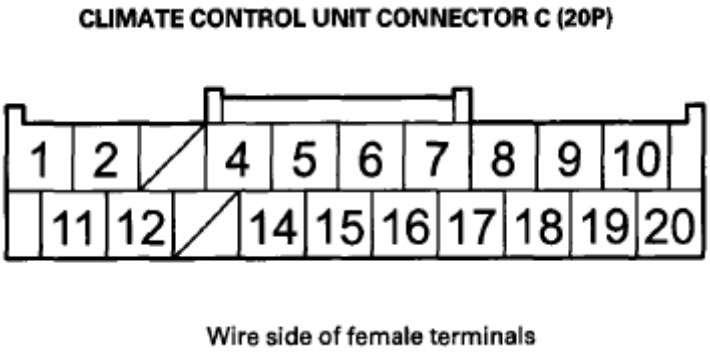


Fig. 22: Identifying Climate Control Unit C (20P) Connector End View
Courtesy of AMERICAN HONDA MOTOR CO., INC.

CONNECTOR C

Cavity	Wire color	Terminal name	Description	Signal
1	RED	SENS-COM	Ground for sensors	Less than 0.2 V at all times
2	BRN	S5V	Power source for sensors	With ignition switch ON (II), or vehicle in ON mode: about 5 V
4(1)	ORN	NAVI SI	Outputs NAVI communication data from audio-navigation unit	With ignition switch ON (II), or vehicle in ON mode: pulses
5(1)	PUR	NAVI SO	Inputs NAVI communication data from audio-navigation unit	With ignition switch ON (II), or vehicle in ON mode: pulses
6(1)	BRN	NAVI CLK	Inputs clock signal from audio-navigation unit	With ignition switch ON (II), or vehicle in ON mode: pulses
7	BLU	B-CAN L	B-CAN communication line	With ignition switch ON (II), or vehicle in ON mode: pulses
8	PNK	B-CAN H	B-CAN communication line	With ignition switch ON (II), or vehicle in ON mode: pulses
9	PUR	M-FRS	Drives recirculation control motor to FRESH	With ignition switch ON (II), or vehicle in ON mode, and motor moving to FRESH: battery voltage
10	ORN	M-REC	Drives recirculation control motor to RECIRCULATE	With ignition switch ON (II), or vehicle in ON mode, and motor moving to RECIRCULATE: battery voltage
11	YEL	Pd	A/C pressure sensor signal	With engine running and A/C compressor clutch engaged: about 0.7-4.5 V (depending on A/C pressure)
12	YEL	Hum	Inputs humidity sensor signal	With ignition switch ON (II), or vehicle in ON mode: about 1.0-4.0 V (depending on humidity)
14	PUR	Tsun	Inputs sunlight sensor	With ignition switch ON (II), or vehicle in ON mode, and vehicle in direct sunlight: Less than

			signal	3.56 V. Voltage rises above 3.56 V when vehicle is out of direct sunlight
15	LT BLU	Tr	Inputs in-car sensor signal	With ignition switch ON (II), or vehicle in ON mode: about 1.0-4.0 V (depending on in-car temperature)
16	BRN	Teva	Inputs evaporator temperature sensor signal	With ignition switch ON (II), or vehicle in ON mode: about 1.0-4.0 V (depending on evaporator temperature)
17	WHT	Tarn	Inputs outside air temperature sensor signal	With ignition switch ON (II), or vehicle in ON mode: about 1.0-4.0 V (depending on ambient temperature)
18	GRN	MODE 1	Recirculation control motor position feedback 1 signal	With ignition switch ON (II), or vehicle in ON mode: about 0 V or about 5 V (depending on motor position)
19	BLU	MODE 2	Recirculation control motor position feedback 2 signal	With ignition switch ON (II), or vehicle in ON mode: about 0 V or about 5 V (depending on motor position)
20	ORN	MODE 3	Recirculation control motor position feedback 3 signal	With ignition switch ON (II), or vehicle in ON mode: about 0 V or about 5 V (depending on motor position)
(1) With navigation				

CIRCUIT DIAGRAM

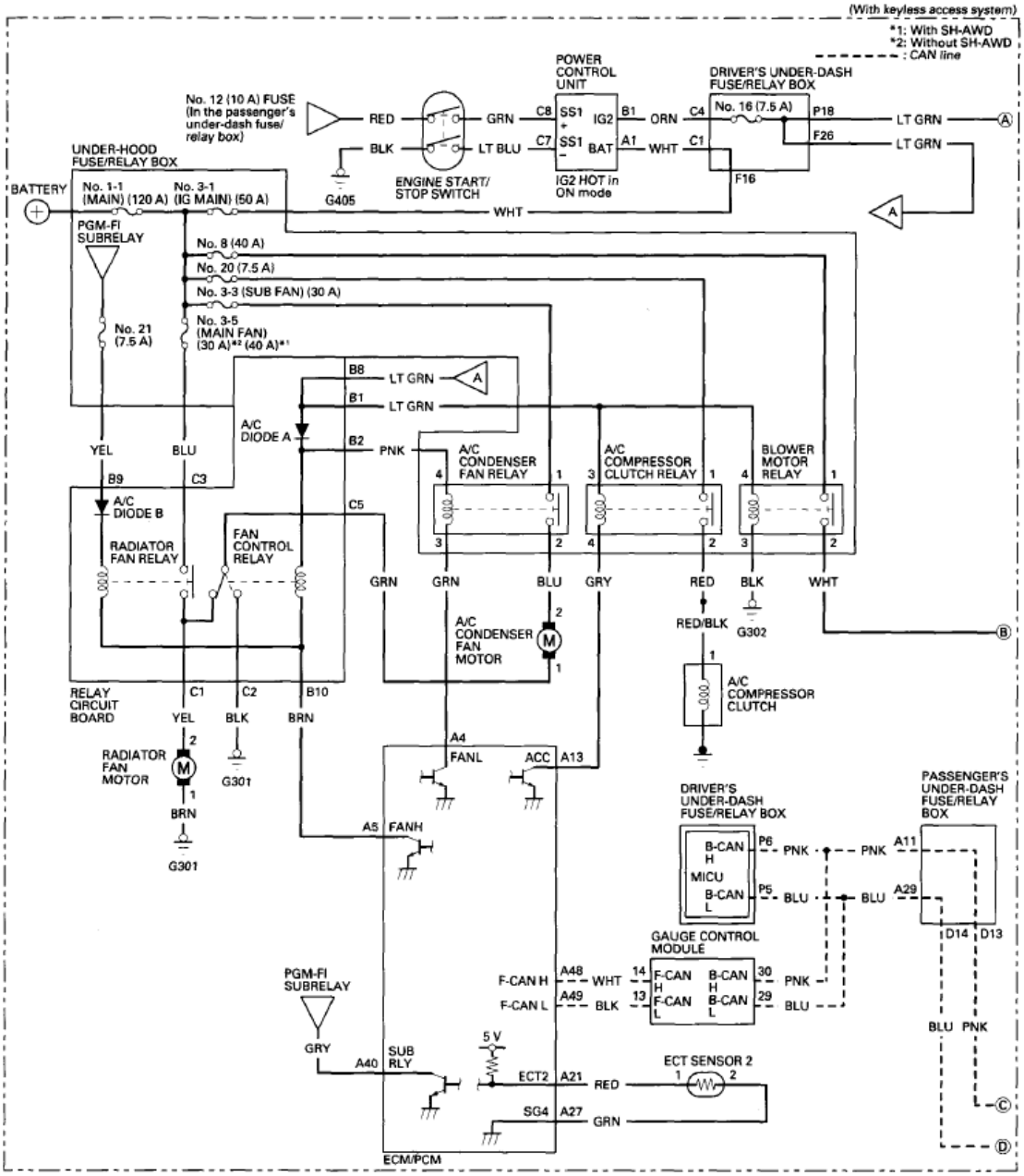


Fig. 23: Climate Control - Circuit Diagram (1 Of 5)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

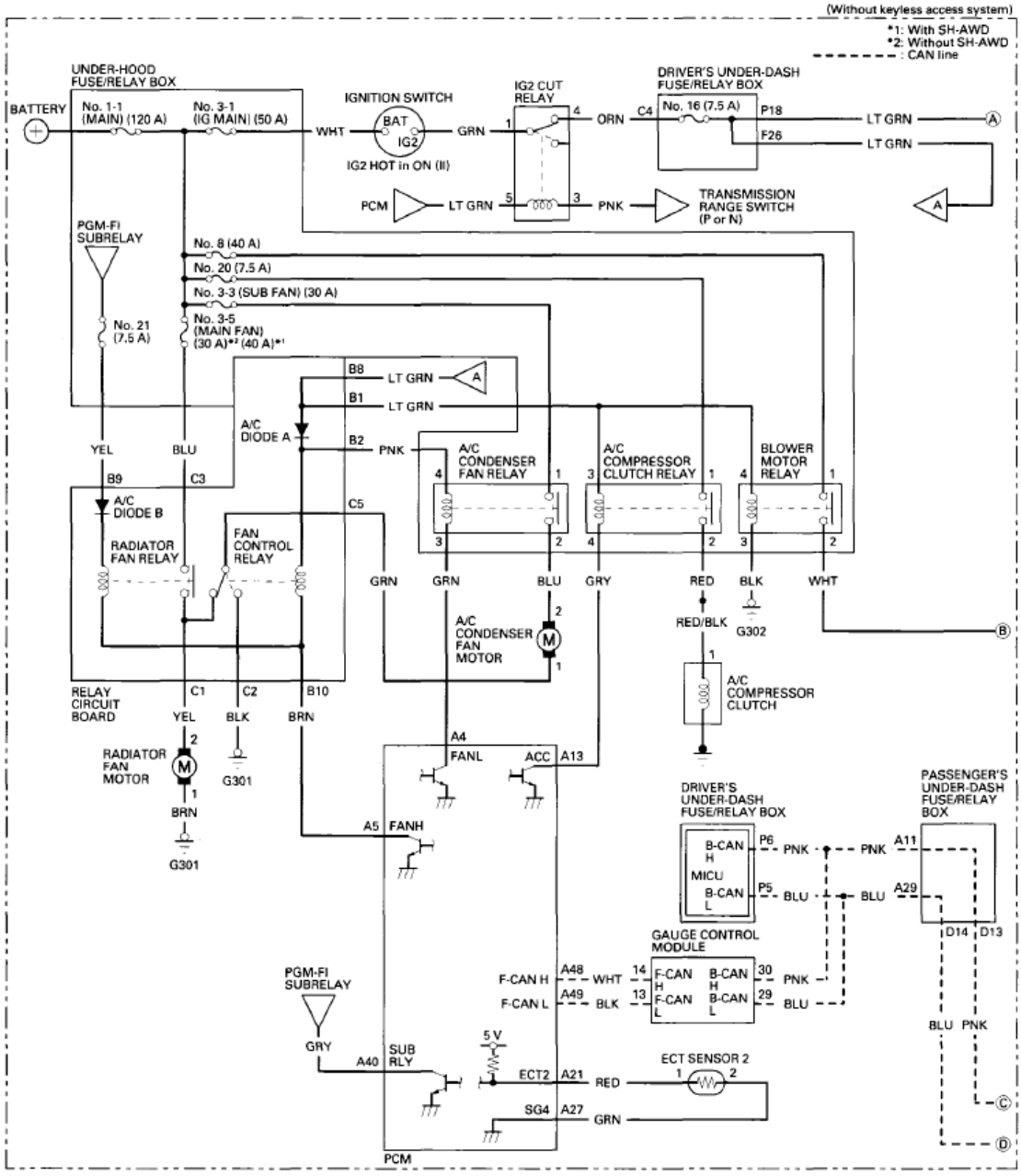


Fig. 24: Climate Control - Circuit Diagram (2 Of 5)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

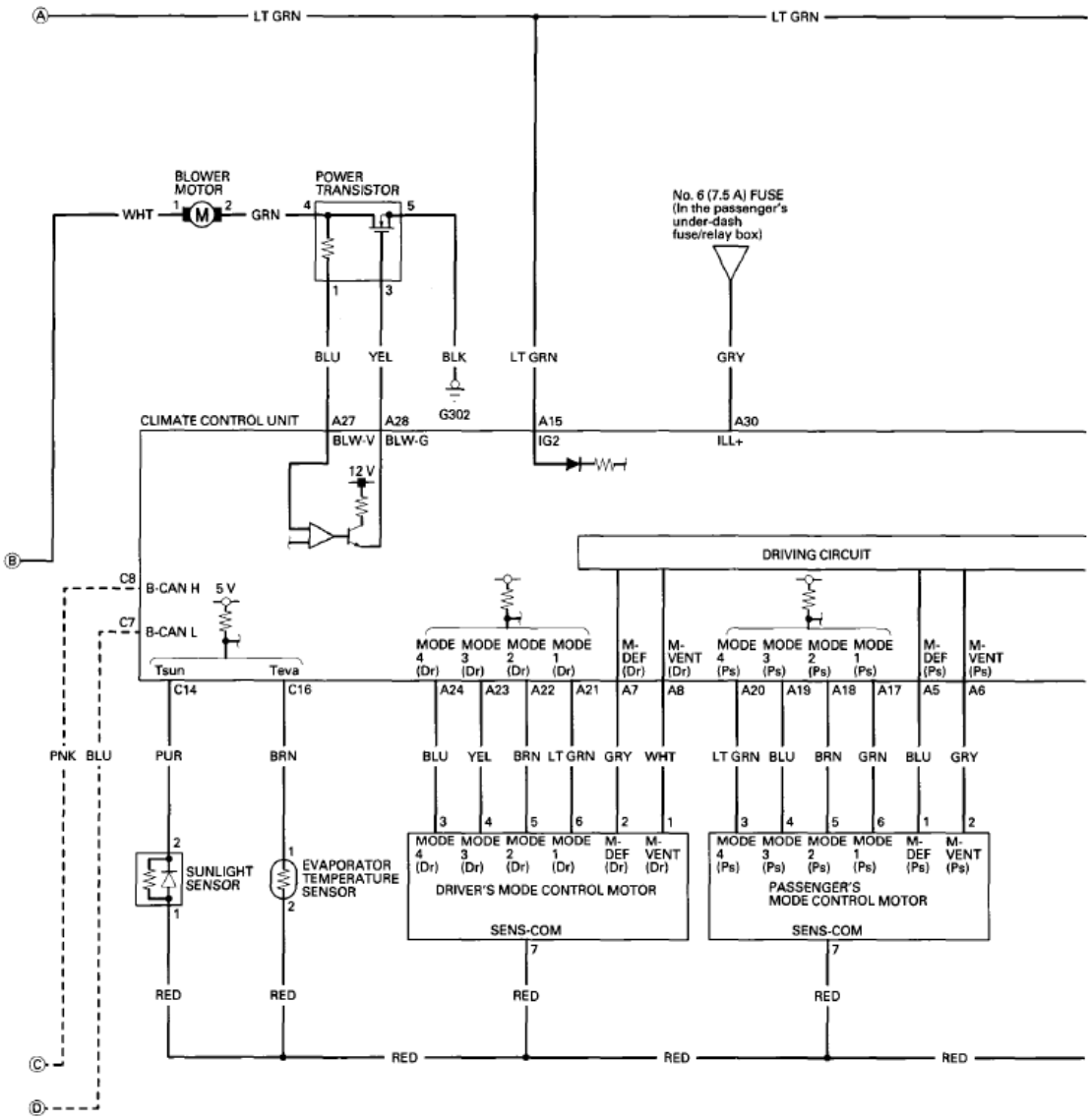


Fig. 25: Climate Control - Circuit Diagram (3 Of 5)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

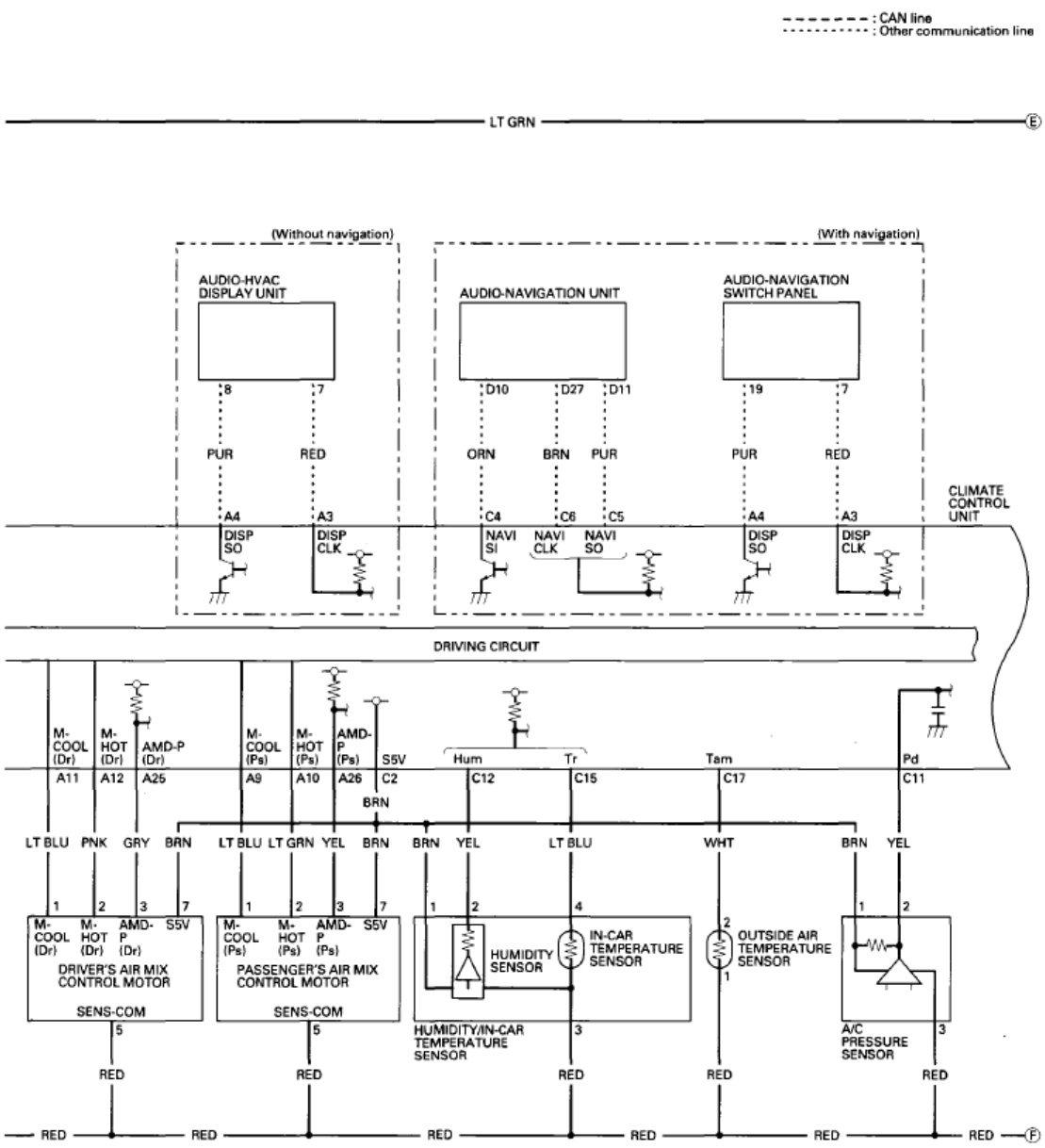


Fig. 26: Climate Control - Circuit Diagram (4 Of 5)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

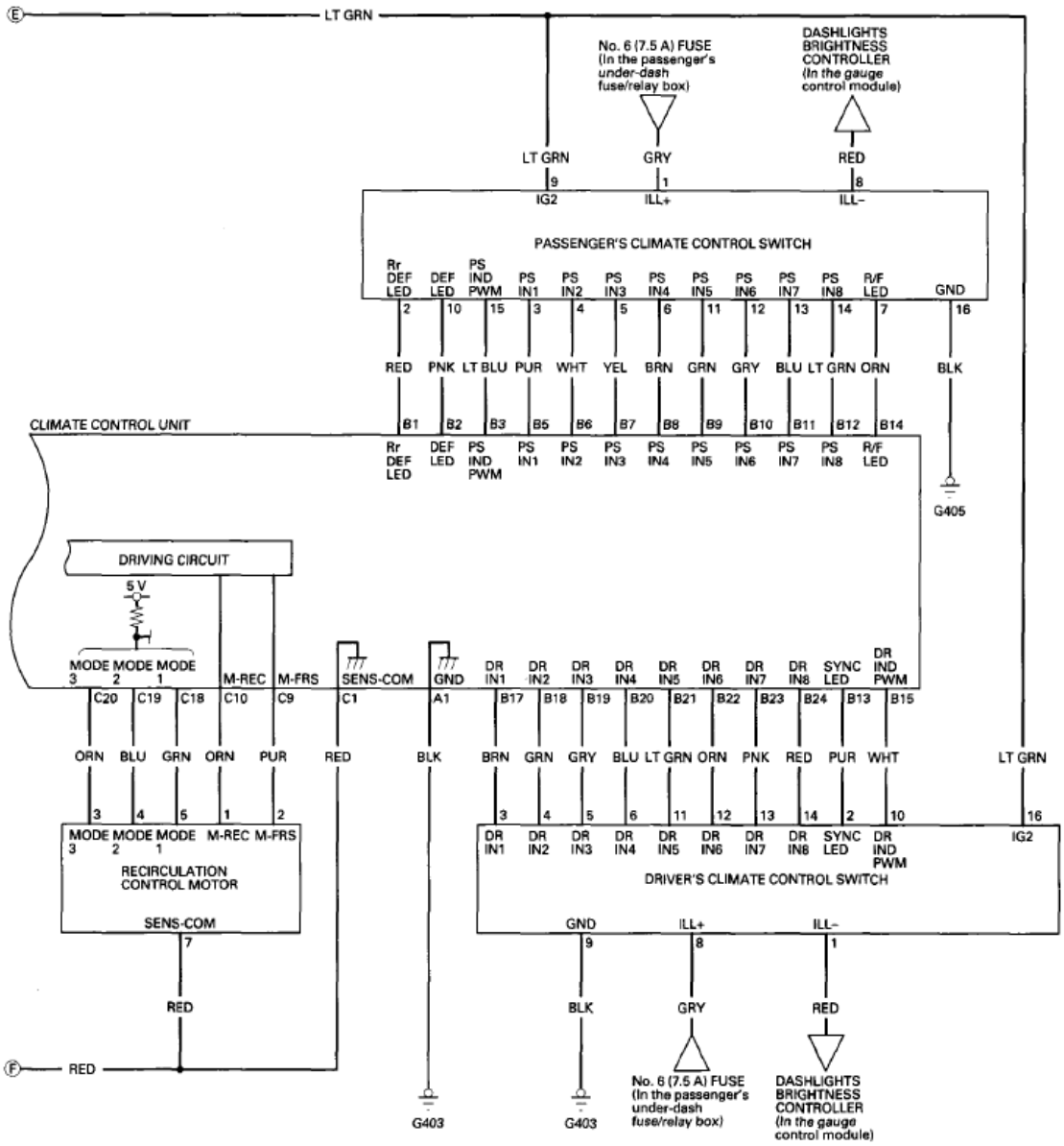


Fig. 27: Climate Control - Circuit Diagram (5 Of 5)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

DTC TROUBLESHOOTING

DTC U0155: LOST COMMUNICATION WITH GAUGE CONTROL MODULE (CLIMATE CONTROL UNIT)

NOTE: If you are troubleshooting multiple DTCs, be sure to follow the instructions in B-CAN System Diagnosis Test Mode A (see TROUBLESHOOTING - B-CAN SYSTEM DIAGNOSIS TEST MODE A).

1. Clear the DTC with the HDS.

2. Turn the ignition switch to LOCK (0), and then back to ON (II), or press the engine start/stop button to select the OFF mode, and then the ON mode.
3. Do the Self-Diagnostic Function with the HDS (see **HOW TO USE THE SELF-DIAGNOSTIC FUNCTION WITH THE HDS**).
4. Check for DTCs.

   Is DTC U0155 indicated?

   YES - Go to step 5.

   NO - The system is OK at this time. Check for loose wires or poor connections on the B-CAN lines between the gauge control module and the climate control unit.

5. Select B-CAN Control Units Information in the BODY ELECTRICAL menu.
6. Select Check Connected Units in the B-CAN Control Units Information menu.

   Is the gauge control module detected?

   YES - Substitute a known-good climate control unit, and recheck. If the symptom/indication goes away, replace the original climate control unit (see **CLIMATE CONTROL UNIT REMOVAL/INSTALLATION**).

   NO - Go to step 7.

7. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
8. Disconnect the gauge control module 32P connector.
9. Disconnect climate control unit connector C (20P).
10. Check for continuity between the following terminals of the gauge control module 32P connector and climate control unit connector C (20P).

    32P: 20P:

    No. 29 No. 7

    No. 30 No. 8

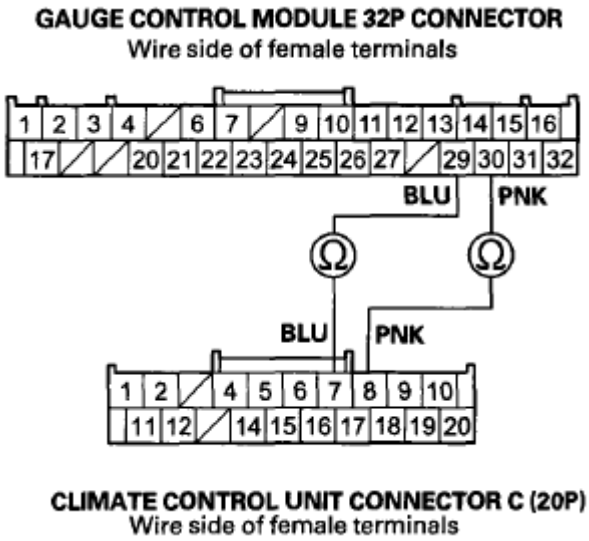


Fig. 28: Checking Continuity Between Terminals Of Gauge Control Module 32P Connector And Climate Control Unit Connector C (20P)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to the gauge control module input test (see **GAUGE CONTROL MODULE INPUT TEST**).

NO - Repair an open in the wire(s) between the climate control unit and the gauge control module.

DTC B1215 OR DTC INDICATOR J AND MODE: AN OPEN OR SHORT IN THE RECIRCULATION CONTROL MOTOR CIRCUIT

1. Clear the DTC with the HDS.
2. Turn the ignition switch to LOCK (0), and then ON (II) or press the engine start/stop button to select the OFF mode, and then the ON mode.
3. Do the Self-Diagnostic Function with the HDS (see **HOW TO USE THE SELF-DIAGNOSTIC FUNCTION WITH THE HDS**) or the climate control unit (see **HOW TO USE THE SELF-DIAGNOSTIC FUNCTION WITHOUT THE HDS**).
4. Check for DTCs.

   Is DTC B1215 or J and MODE indicated?

   YES - Go to step 5.

   NO - Intermittent failure. Check for loose wires or poor connections on the recirculation control motor circuit.

5. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
6. Test the recirculation control motor (see **RECIRCULATION CONTROL MOTOR TEST**).

Is the recirculation control motor OK?

YES - Go to step 7.

NO - Replace the recirculation control motor (see **RECIRCULATION CONTROL MOTOR REPLACEMENT**).

7. Disconnect the recirculation control motor 7P connector.
8. Disconnect climate control unit connector C (20P).
9. Check for continuity between the following terminals of climate control unit connector C (20P) and the recirculation control motor 7P connector.

   20P: 7P:

   No. 1 No. 7

   No. 18 No. 5

   No. 19 No. 4

   No. 20 No. 3

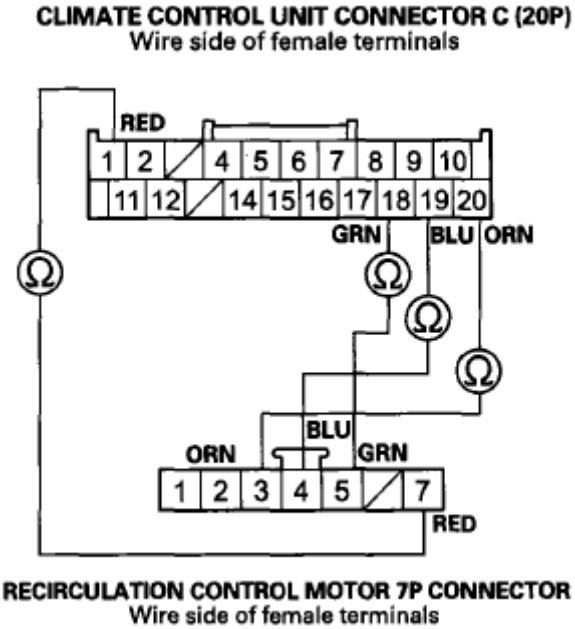


Fig. 29: Checking Continuity Between Terminals Of Climate Control Unit Connector And Recirculation Control Motor 7P Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 10.

NO - Repair an open in the wire(s) between the climate control unit and the recirculation control motor.

10. Check for continuity between body ground and climate control unit connector C (20P) terminals No. 18, No. 19, and No. 20 individually.

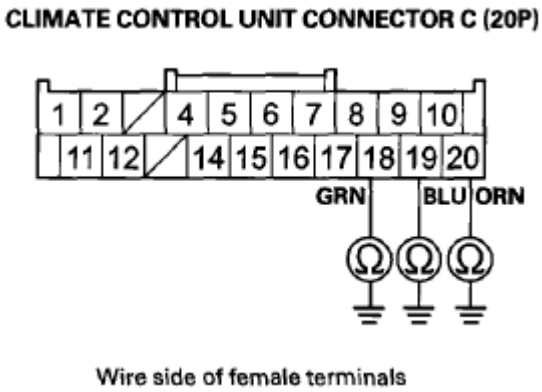


Fig. 30: Checking For Continuity Between Body Ground And Climate Control Unit Connector C (20P) Terminals
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair a short to body ground in the wire(s) between the climate control unit and the recirculation control motor.

NO - Go to step 11.

11. Check for continuity between climate control unit connector C (20P) terminals as follows.

From terminal	To terminals
18	19, 20
19	20

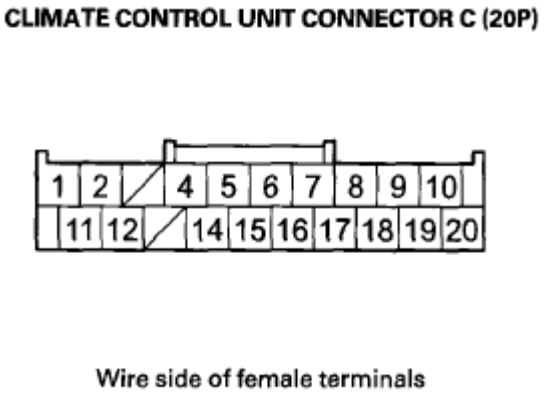


Fig. 31: Checking Continuity Between Climate Control Unit Connector C (20P) Terminals
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity between any of the terminals?

YES - Repair a short in the wire(s).

NO - Go to step 12.

12. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode, and measure the voltage between body ground and climate control unit connector C(20P) terminals No. 18, No. 19 and No. 20 individually.

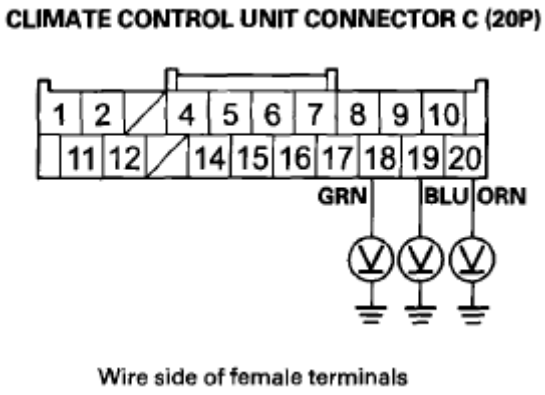


Fig. 32: Measuring Voltage Between Body Ground And Climate Control Unit Connector C(20P) Terminals
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there any voltage?

YES - Repair a short to power in the wire(s) between the climate control unit and the recirculation control motor. This short may also damage the climate control unit. Repair a short to power before replacing the climate control unit.

NO - Check for loose wires or poor connections at climate control unit connector C (20P) and at the

recirculation control motor 7P connector. If the connections are good, substitute a known-good climate control unit, and recheck. If the symptom/indication goes away, replace the original climate control unit (see **CLIMATE CONTROL UNIT REMOVAL/INSTALLATION**).

DTC B1225 OR DTC INDICATOR A AND AUTO: AN OPEN IN THE IN-CAR TEMPERATURE SENSOR CIRCUIT

1. Clear the DTC with the HDS.
2. Turn the ignition switch to LOCK (0), and then back to ON (II), or press the engine start/stop button to select the OFF mode, and then the ON mode.
3. Do the Self-Diagnostic Function with the HDS (see **HOW TO USE THE SELF-DIAGNOSTIC FUNCTION WITH THE HDS**) or the climate control unit (see **HOW TO USE THE SELF-DIAGNOSTIC FUNCTION WITHOUT THE HDS**).
4. Check for DTCs.

   Is DTC B1225 or A and AUTO indicated?

   YES - Go to step 5.

   NO - Intermittent failure. Check for loose wires or poor connections on the in-car temperature sensor circuit

5. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
6. Remove the in-car temperature sensor (see **HUMIDITY/IN-CAR TEMPERATURE SENSOR REPLACEMENT**), and test it (see **HUMIDITY/IN-CAR TEMPERATURE SENSOR TEST**).

   Is the in-car temperature sensor OK?

   YES - With the humidity/in-car temperature sensor disconnected, go to step 7.

   NO - Replace the humidity/in-car temperature sensor (see **HUMIDITY/IN-CAR TEMPERATURE SENSOR REPLACEMENT**).

7. Disconnect climate control unit connectors C (20P).
8. Check for continuity between climate control unit connector C (20P) terminal No. 15 and humidity/in-car temperature sensor 4P connector terminal No. 4.

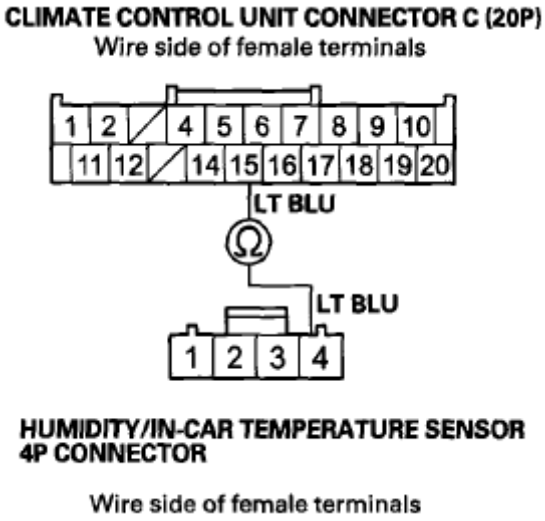


Fig. 33: Checking Continuity Between Climate Control Unit Connector C (20P) And Humidity/In-Car Temperature Sensor 4P Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 9.

NO - Repair an open in the wire between the climate control unit and the in-car temperature sensor.

9. Check for continuity between climate control unit connector C (20P) terminal No. 1 and humidity/in-car temperature sensor 4P connector terminal No. 3.

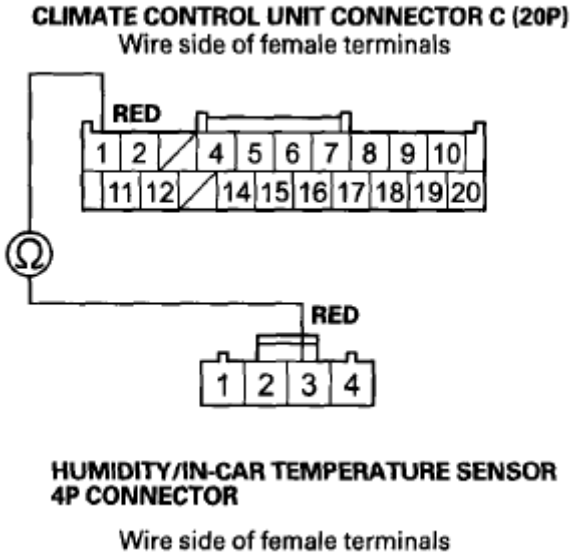


Fig. 34: Checking Continuity Between Climate Control Unit Connector C (20P) And Humidity/In-Car Temperature Sensor 4P Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Check for loose wires or poor connections at climate control unit connectors C (20P) and at the in-car temperature sensor 4P connector. If the connections are good, substitute a known-good climate control unit, and recheck. If the symptom/indication goes away, replace the original climate control unit (see **CLIMATE CONTROL UNIT REMOVAL/INSTALLATION**).

NO - Repair an open in the wire between the climate control unit and the in-car temperature sensor.

DTC B1226 OR DTC INDICATOR B AND AUTO: A SHORT IN THE IN-CAR TEMPERATURE SENSOR CIRCUIT

1. Clear the DTC with the HDS.
2. Turn the ignition switch to LOCK (0), and then back to ON (II), or press the engine start/stop button to select the OFF mode, and then the ON mode.
3. Do the Self-Diagnostic Function with the HDS (see **HOW TO USE THE SELF-DIAGNOSTIC FUNCTION WITH THE HDS**) or the climate control unit (see **HOW TO USE THE SELF-DIAGNOSTIC FUNCTION WITHOUT THE HDS**).
4. Check for DTCs.

   Is DTC B1226 or B and AUTO indicated?

   YES - Go to step 5.

   NO - Intermittent failure. Check for loose wires or poor connections on the in-car temperature sensor circuit.

5. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
6. Remove the humidity/in-car temperature sensor (see **HUMIDITY/IN-CAR TEMPERATURE SENSOR REPLACEMENT**), and test it (see **HUMIDITY/IN-CAR TEMPERATURE SENSOR TEST**).

   Is the in-car temperature sensor OK?

   YES - With the humidity/in-car temperature sensor disconnected, go to step 7.

   NO - Replace the humidity/in-car temperature sensor (see **HUMIDITY/IN-CAR TEMPERATURE SENSOR REPLACEMENT**).

7. Disconnect climate control unit connector C (20P).
8. Check for continuity between climate control unit connector C(20P) terminal No. 15 and body ground.

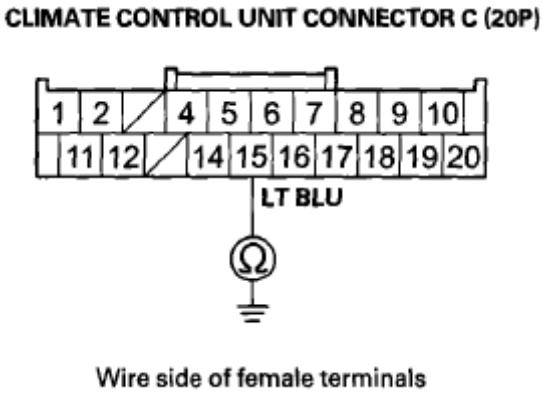


Fig. 35: Checking Continuity Between Climate Control Unit Connector C(20P) Terminal And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair a short to body ground in the wire between the climate control unit and the in-car temperature sensor.

NO - Go to step 9.

9. Check for continuity between climate control unit connector C (20P) terminals No. 1 and No. 15.

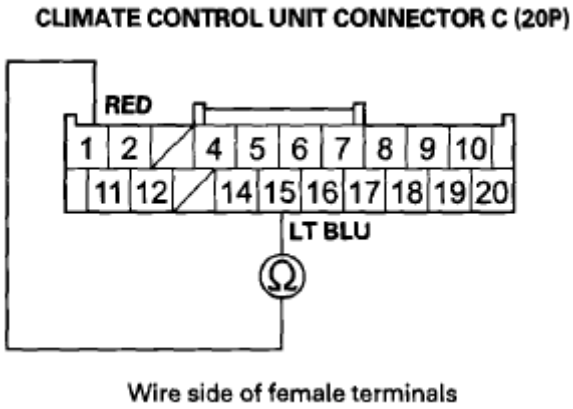


Fig. 36: Checking Continuity Between Climate Control Unit Connector C (20P) Terminals No. 1 And No. 15
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair a short in the wires between the climate control unit and the in-car temperature sensor.

NO - Substitute a known-good climate control unit, and recheck. If the symptom/indication goes away, replace the original climate control unit (see **CLIMATE CONTROL UNIT REMOVAL/INSTALLATION**).

DTC B1227 OR DTC INDICATOR C AND AUTO: AN OPEN IN THE OUTSIDE AIR TEMPERATURE SENSOR CIRCUIT

1. Clear the DTC with the HDS.
2. Turn the ignition switch to LOCK (0), and then back to ON (II), or press the engine start/stop button to select the OFF mode, and then the ON mode.
3. Do the Self-Diagnostic Function with the HDS (see **HOW TO USE THE SELF-DIAGNOSTIC FUNCTION WITH THE HDS**) or the climate control unit (see **HOW TO USE THE SELF-DIAGNOSTIC FUNCTION WITHOUT THE HDS**).
4. Check for DTCs.

   Is DTC B1227 or C and AUTO indicated?

   YES - Go to step 5.

   NO - Intermittent failure. Check for loose wires or poor connections on the outside air temperature sensor circuit.

5. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
6. Remove the outside air temperature sensor (see **OUTSIDE AIR TEMPERATURE SENSOR REPLACEMENT**), and test it (see **OUTSIDE AIR TEMPERATURE SENSOR TEST**).

   Is the outside air temperature sensor OK?

   YES - With the outside air temperature sensor disconnected, go to step 7.

   NO - Replace the outside air temperature sensor (see **OUTSIDE AIR TEMPERATURE SENSOR REPLACEMENT**).

7. Disconnect climate control unit connector C (20P).
8. Check for continuity between climate control unit connector C (20P) terminal No. 17 and outside air temperature sensor 2P connector terminal No. 2.

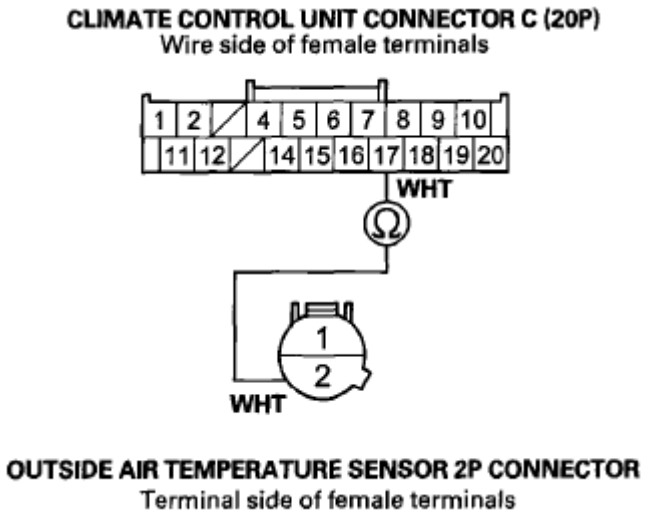


Fig. 37: Checking Continuity Between Climate Control Unit Connector C (20P) And Outside Air Temperature Sensor 2P Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 9.

NO - Repair an open in the wire between the climate control unit and the outside air temperature sensor.

9. Check for continuity between climate control unit connector C (20P) terminal No. 1 and outside air temperature sensor 2P connector terminal No. 1.

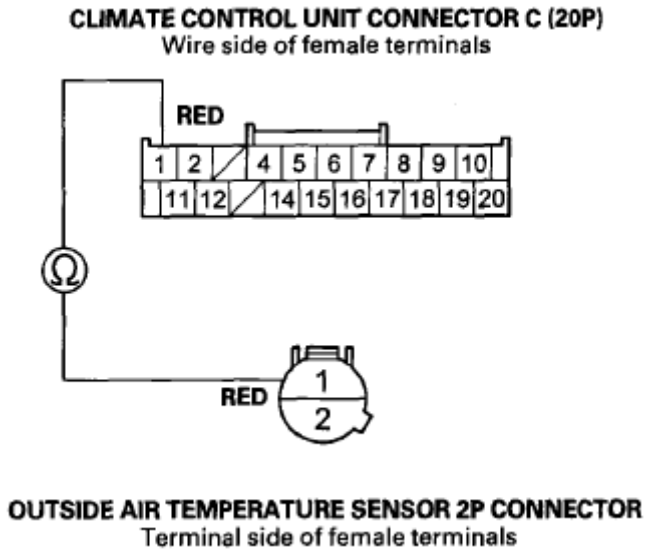


Fig. 38: Checking Continuity Between Climate Control Unit Connector C (20P) And Outside Air Temperature Sensor 2P Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Check for loose wires or poor connections at climate control unit connectors C (20P) and at the outside air temperature sensor 2P connector. If the connections are good, substitute a known-good climate control unit, and recheck. If the symptom/indication goes away, replace the original climate control unit (see **CLIMATE CONTROL UNIT REMOVAL/INSTALLATION**).

NO - Repair an open in the wire between the climate control unit and the outside air temperature sensor.

DTC B1228 OR DTC INDICATOR D AND AUTO: A SHORT IN THE OUTSIDE AIR TEMPERATURE SENSOR CIRCUIT

1. Clear the DTC with the HDS.
2. Turn the ignition switch to LOCK (0), and then back to ON (II), or press the engine start/stop button to select the OFF mode, and then the ON mode.
3. Do the Self-Diagnostic Function with the HDS (see **HOW TO USE THE SELF-DIAGNOSTIC FUNCTION WITH THE HDS**) or the climate control unit (see **HOW TO USE THE SELF-DIAGNOSTIC FUNCTION WITHOUT THE HDS**).
4. Check for DTCs.

   Is DTC B1228 or D and AUTO indicated?

   YES - Go to step 5.

   NO - Intermittent failure. Check for loose wires or poor connections on the outside air temperature sensor circuit.

5. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
6. Remove the outside air temperature sensor (see **OUTSIDE AIR TEMPERATURE SENSOR REPLACEMENT**), and test it (see **OUTSIDE AIR TEMPERATURE SENSOR TEST**).

   Is the outside air temperature sensor OK?

   YES - With the outside air temperature sensor disconnected, go to step 7.

   NO - Replace the outside air temperature sensor.

7. Disconnect climate control unit connector C (20P).
8. Check for continuity between climate control unit connector C (20P) terminal No. 17 and body ground.

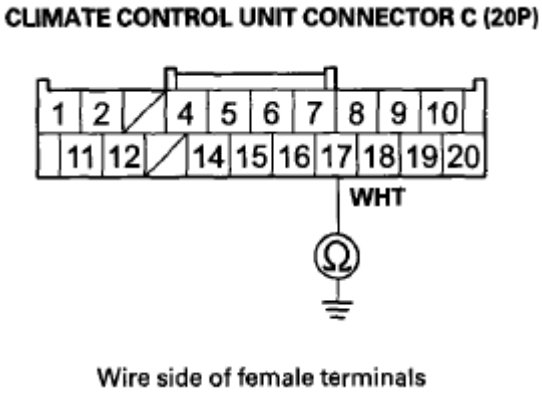


Fig. 39: Checking Continuity Between Climate Control Unit Connector C (20P) Terminal No. 17 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair a short to body ground in the wire between the climate control unit and the outside air temperature sensor.

NO - Go to step 9.

9. Check for continuity between climate control unit connector C (20P) terminals No. 1 and No. 17.

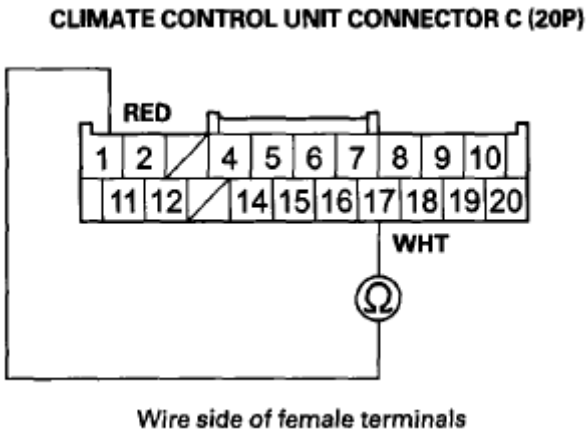


Fig. 40: Checking Continuity Between Climate Control Unit Connector C (20P) Terminals No. 1 And No. 17
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair a short in the wires between the climate control unit and the outside air temperature sensor.

NO - Substitute a known-good climate control unit, and recheck. If the symptom/indication goes away, replace the original climate control unit (see **CLIMATE CONTROL UNIT**

REMOVAL/INSTALLATION).

DTC B1229 OR DTC INDICATOR E AND AUTO: AN OPEN IN THE SUNLIGHT SENSOR CIRCUIT

1. Clear the DTC with the HDS.
2. Turn the ignition switch to LOCK (0), and then back to ON (II), or press the engine start/stop button to select the OFF mode, and then the ON mode.
3. Do the Self-Diagnostic Function with the HDS (see **HOW TO USE THE SELF-DIAGNOSTIC FUNCTION WITH THE HDS**) or the climate control unit (see **HOW TO USE THE SELF-DIAGNOSTIC FUNCTION WITHOUT THE HDS**).
4. Check for DTCs.

   Is DTC B1229 or E and AUTO indicated?

   YES - Go to step 5.

   NO - Intermittent failure. Check for loose wires or poor connections on the sunlight sensor circuit.

5. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
6. Disconnect the sunlight sensor 2P connector.
7. Disconnect climate control unit connector C (20P).
8. Check for continuity between climate control unit connector C (20P) terminal No. 14 and sunlight sensor 2P connector terminal No. 2.

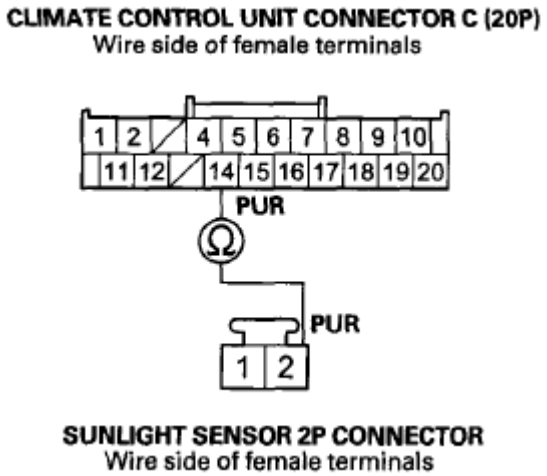


Fig. 41: Checking Continuity Between Climate Control Unit Connector C (20P) And Sunlight Sensor 2P Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 9.

NO - Repair an open in the wire between the climate control unit and the sunlight sensor.

9. Check for continuity between climate control unit connector C (20P) terminal No. 1 and sunlight sensor 2P connector terminal No. 1.

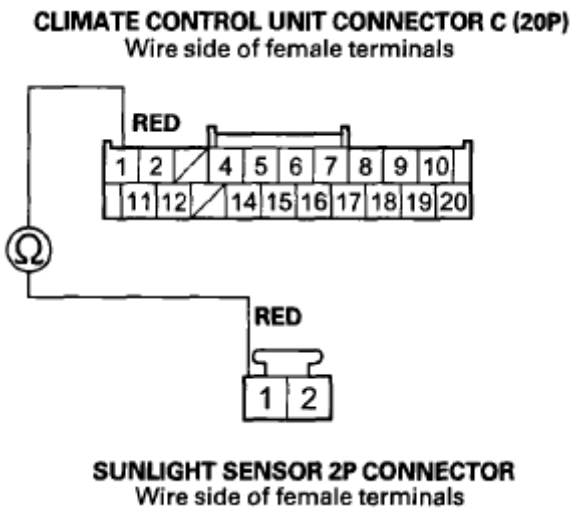


Fig. 42: Checking Continuity Between Climate Control Unit Connector C (20P) And Sunlight Sensor 2P Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 10.

NO - Repair an open in the wire between the climate control unit and the sunlight sensor.

10. Reconnect the sunlight sensor 2P connector.
11. Reconnect climate control unit connector C (20P).
12. Test the sunlight sensor (see **SUNLIGHT SENSOR TEST**).

Is the sunlight sensor OK?

YES - Check for loose wires or poor connections at climate control unit connector C (20P) and at the sunlight sensor 2P connector. If the connections are good, substitute a known-good climate control unit, and recheck. If the symptom/indication goes away, replace the original climate control unit (see **CLIMATE CONTROL UNIT REMOVAL/INSTALLATION**).

NO - Replace the sunlight sensor (see **SUNLIGHT SENSOR REPLACEMENT**).

DTC B1230 OR DTC INDICATOR F AND AUTO: A SHORT IN THE SUNLIGHT SENSOR CIRCUIT

1. Clear the DTC with the HDS.
2. Turn the ignition switch to LOCK (0), and then back to ON (II), or press the engine start/stop button to

select the OFF mode, and then the ON mode.

3. Do the Self-Diagnostic Function with the HDS (see **HOW TO USE THE SELF-DIAGNOSTIC FUNCTION WITH THE HDS**) or the climate control unit (see **HOW TO USE THE SELF-DIAGNOSTIC FUNCTION WITHOUT THE HDS**).
4. Check for DTCs.

   Is DTC B1230 or F and AUTO indicated?

   YES - Go to step 5.

   NO - Intermittent failure. Check for loose wires or poor connections on the sunlight sensor circuit.

5. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
6. Disconnect the sunlight sensor 2P connector.
7. Disconnect climate control unit connector C (20P).
8. Check for continuity between climate control unit connector C (20P) terminal No. 14 and body ground.

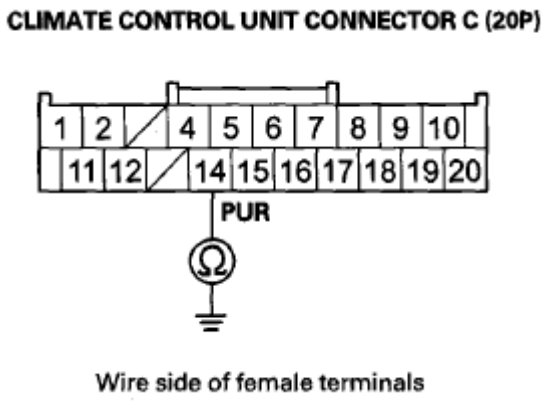


Fig. 43: Checking Continuity Between Climate Control Unit Connector C (20P) Terminal No. 14 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

   Is there continuity?

   YES - Repair a short to body ground in the wire between the climate control unit and the sunlight sensor.

   NO - Go to step 9.

9. Check for continuity between climate control unit connector C (20P) terminals No. 1 and No. 14.

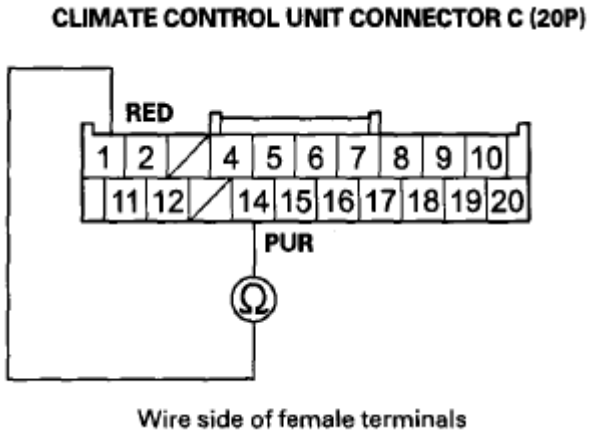


Fig. 44: Checking Continuity Between Climate Control Unit Connector C (20P) Terminals No. 1 And No. 14
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair a short in the wires between the climate control unit and the sunlight sensor.

NO - Go to step 10.

10. Reconnect the sunlight sensor 2P connector.
11. Reconnect climate control unit connector C (20P).
12. Test the sunlight sensor (see **SUNLIGHT SENSOR TEST**).

Is the sunlight sensor OK?

YES - Substitute a known-good climate control unit, and recheck. If the symptom/indication goes away, replace the original climate control unit (see **CLIMATE CONTROL UNIT REMOVAL/INSTALLATION**).

NO - Replace the sunlight sensor (see **SUNLIGHT SENSOR REPLACEMENT**).

DTC B1231 OR DTC INDICATOR G AND AUTO: AN OPEN IN THE EVAPORATOR TEMPERATURE SENSOR CIRCUIT

1. Clear the DTC with the HDS.
2. Turn the ignition switch to LOCK (0), and then back to ON (II), or press the engine start/stop button to select the OFF mode, and then the ON mode.
3. Do the Self-Diagnostic Function with the HDS (see **HOW TO USE THE SELF-DIAGNOSTIC FUNCTION WITH THE HDS**) or the climate control unit (see **HOW TO USE THE SELF-DIAGNOSTIC FUNCTION WITHOUT THE HDS**).
4. Check for DTCs.

Is DTC B1231 or G and AUTO indicated?

YES - Go to step 5.

NO - Intermittent failure. Check for loose wires or poor connections on the evaporator temperature sensor circuit.

5. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
6. Disconnect climate control unit connector C (20P).
7. Disconnect the evaporator temperature sensor 2P connector.
8. Check for continuity between climate control unit connector C (20P) terminal No. 16 and evaporator temperature sensor 2P connector terminal No. 1.

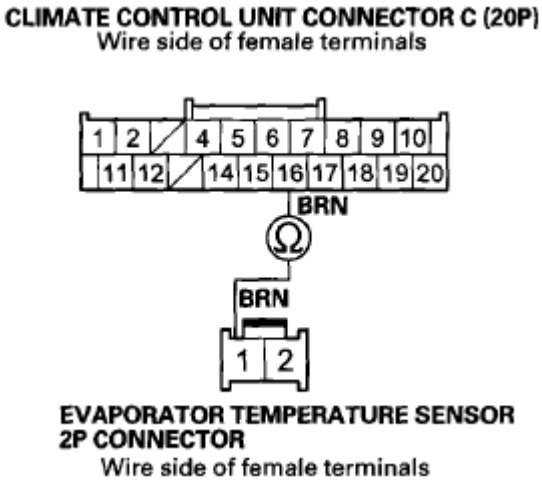


Fig. 45: Checking Continuity Between Climate Control Unit Connector C (20P) And Evaporator Temperature Sensor 2P Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 9.

NO - Repair an open in the wire between the climate control unit and the evaporator temperature sensor.

9. Check for continuity between climate control unit connector C (20P) terminal No. 1 and evaporator temperature sensor 2P connector terminal No. 2.

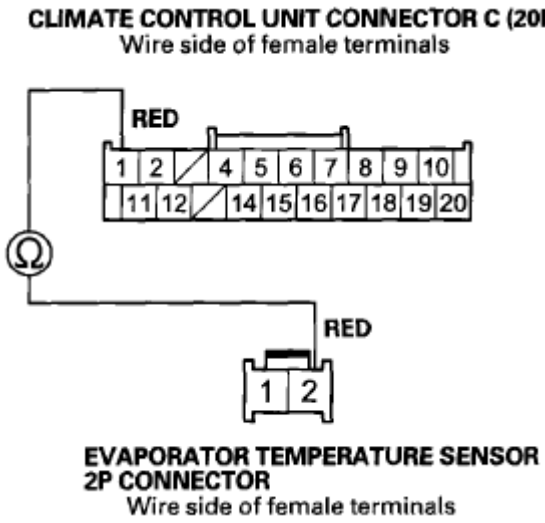


Fig. 46: Checking Continuity Between Climate Control Unit Connector C (20P) And Evaporator Temperature Sensor 2P Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 10.

NO - Repair an open in the wire between the climate control unit and the evaporator temperature sensor.

10. Remove the evaporator temperature sensor (see **EVAPORATOR TEMPERATURE SENSOR REPLACEMENT**), and test it (see **EVAPORATOR TEMPERATURE SENSOR TEST**).

    Is the evaporator temperature sensor OK?

    YES - Check for loose wires or poor connections at climate control unit connector C (20P) and at the evaporator temperature sensor 2P connector. If the connections are good, substitute a known-good climate control unit, and recheck. If the symptom/indication goes away, replace the original climate control unit (see **CLIMATE CONTROL UNIT REMOVAL/INSTALLATION**).

    NO - Replace the evaporator temperature sensor (see **EVAPORATOR TEMPERATURE SENSOR REPLACEMENT**).

DTC B1232 OR DTC INDICATOR H AND AUTO: A SHORT IN THE EVAPORATOR TEMPERATURE SENSOR CIRCUIT

1. Clear the DTC with the HDS.
2. Turn the ignition switch to LOCK (0), and then back to ON (II), or press the engine start/stop button to select the OFF mode, and then the ON mode.
3. Do the Self-Diagnostic Function with the HDS (see **HOW TO USE THE SELF-DIAGNOSTIC FUNCTION WITH THE HDS**) or the climate control unit (see **HOW TO USE THE SELF-DIAGNOSTIC FUNCTION WITHOUT THE HDS**).

4. Check for DTCs.

   Is DTC B1232 or H and AUTO indicated?

   YES - Go to step 5.

   NO - Intermittent failure. Check for loose wires or poor connections on the evaporator temperature sensor circuit

5. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
6. Disconnect climate control unit connector C (20P).
7. Disconnect the evaporator temperature sensor 2P connector.
8. Check for continuity between climate control unit connector C (20P) terminal No. 16 and body ground.

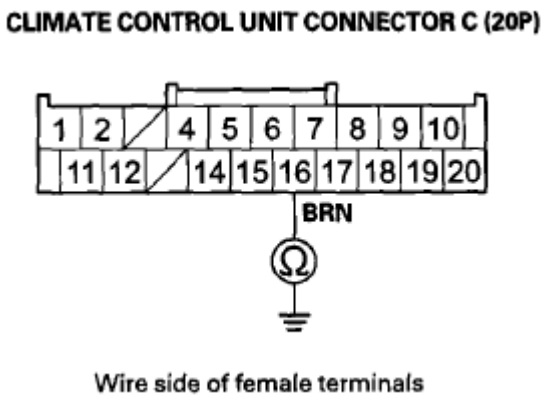


Fig. 47: Checking Continuity Between Climate Control Unit Connector C (20P) And Evaporator Temperature Sensor 2P Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

   Is there continuity?

   YES - Repair a short to body ground in the wire between the climate control unit and the evaporator temperature sensor.

   NO - Go to step 9.

9. Check for continuity between climate control unit connector C (20P) terminals No. 1 and No. 16.

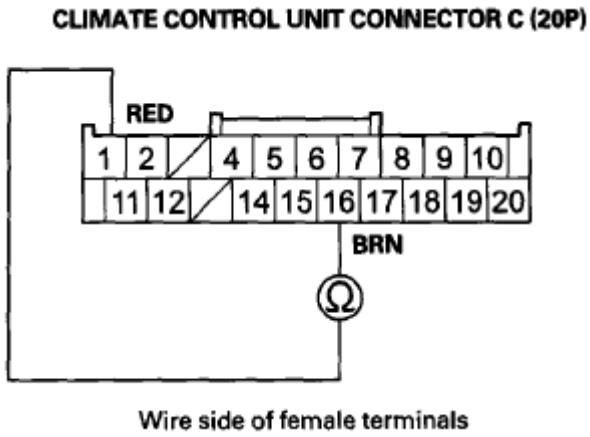


Fig. 48: Checking Continuity Between Climate Control Unit Connector C (20P) Terminals No. 1 And No. 16
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair a short in the wires between the climate control unit and the evaporator temperature sensor.

NO - Go to step 10.

10. Remove the evaporator temperature sensor (see **EVAPORATOR TEMPERATURE SENSOR REPLACEMENT**), and test it (see **EVAPORATOR TEMPERATURE SENSOR TEST**).

    Is the evaporator temperature sensor OK?

    YES - Substitute a known-good climate control unit, and recheck. If the symptom/indication goes away, replace the original climate control unit (see **CLIMATE CONTROL UNIT REMOVAL/INSTALLATION**).

    NO - Replace the evaporator temperature sensor (see **EVAPORATOR TEMPERATURE SENSOR REPLACEMENT**).

DTC B1233 OR DTC INDICATOR J AND AUTO: AN OPEN IN THE AIR MIX CONTROL MOTOR CIRCUIT (DRIVER'S)

1. Clear the DTC with the HDS.
2. Turn the ignition switch to LOCK (0), and then back to ON (II), or press the engine start/stop button to select the OFF mode, and then the ON mode.
3. Do the Self-Diagnostic Function with the HDS (see **HOW TO USE THE SELF-DIAGNOSTIC FUNCTION WITH THE HDS**) or the climate control unit (see **HOW TO USE THE SELF-DIAGNOSTIC FUNCTION WITHOUT THE HDS**).
4. Check for DTCs.

   Is DTC B1233 or J and AUTO indicated?

YES - Go to step 5.

NO - Intermittent failure. Check for loose wires or poor connections on the driver's air mix control motor circuit

5. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
6. Test the driver's air mix control motor (see **DRIVER'S AIR MIX CONTROL MOTOR TEST**).

   Is the driver's air mix control motor OK?

   YES - Go to step 7.

   NO - Replace the driver's air mix control motor (see **DRIVER'S AIR MIX CONTROL MOTOR REPLACEMENT**).

7. Disconnect the driver's air mix control motor 7P connector.
8. Disconnect climate control unit connectors A (32P) and C (20P).
9. Check for continuity between the following terminals of climate control unit connectors A (32P), C (20P), and the driver's air mix control motor 7P connector.

   32P 7P:

   No. 25 No. 3

   20P 7P:

   No. 1 No. 5

   No. 2 No. 7

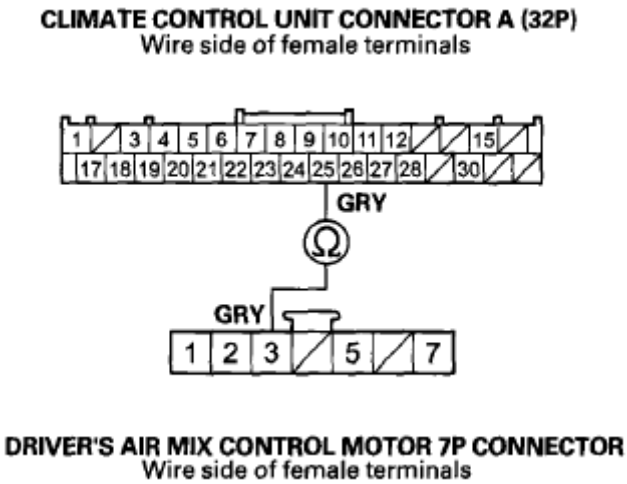


Fig. 49: Checking Continuity Between Terminals Of Climate Control Unit Connectors And Driver's Air Mix Control Motor 7P Connector

Courtesy of AMERICAN HONDA MOTOR CO., INC.

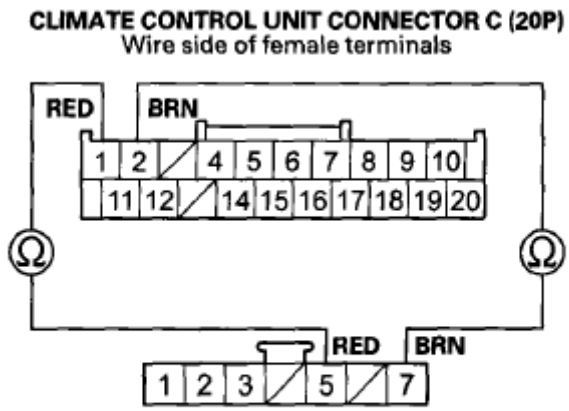


Fig. 50: Measuring Resistance Climate Control Unit Connector And Driver's Air Mix Control Motor 7P Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity between any of the terminals?

YES - Check for loose wires or poor connections at climate control unit connectors A (32P), C (20P), and at the driver's air mix control motor 7P connector. If the connections are good, substitute a known-good climate control unit, and recheck. If the symptom/indication goes away, replace the original climate control unit (see **CLIMATE CONTROL UNIT REMOVAL/INSTALLATION**).

NO - Repair an open in the wire(s) between the climate control unit and the driver's air mix control motor.

DTC B1234 OR DTC INDICATOR K AND AUTO: A SHORT IN THE AIR MIX CONTROL MOTOR CIRCUIT (DRIVER'S)

1. Clear the DTC with the HDS.
2. Turn the ignition switch to LOCK (0), and then back to ON (II), or press the engine start/stop button to select the OFF mode, and then the ON mode.
3. Do the Self-Diagnostic Function with the HDS (see **HOW TO USE THE SELF-DIAGNOSTIC FUNCTION WITH THE HDS**) or the climate control unit (see **HOW TO USE THE SELF-DIAGNOSTIC FUNCTION WITHOUT THE HDS**).
4. Check for DTCs.

   Is DTC B1234 or K and AUTO indicated?

   YES - Go to step 5.

   NO - Intermittent failure. Check for loose or poor connection on the driver's air mix control motor circuit.

5. Check for DTCs.

   Are these DTCs also present; B1237 or N and AUTO, and/or B2968 or B and WINDSHIELD DEFROST, and/or B2980 or F and WINDSHIELD DEFROST?

   YES - Go to step 13.

   NO - Go to step 6.

6. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
7. Test the driver's air mix control motor (see **DRIVER'S AIR MIX CONTROL MOTOR TEST**).

   Is the driver's air mix control motor OK?

   YES - Go to step 8.

   NO - Replace the driver's air mix control motor (see **DRIVER'S AIR MIX CONTROL MOTOR REPLACEMENT**).

8. Disconnect the driver's air mix control motor 7P connector.
9. Disconnect climate control unit connectors A (32P) and C (20P).
10. Check for continuity between climate control unit connector A (32P) terminal No. 25 and body ground

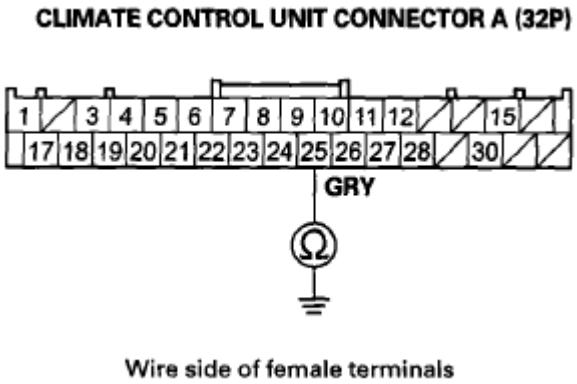


Fig. 51: Checking Continuity Between Climate Control Unit Connector A (32P) Terminal No. 25 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair a short to body ground in the wire between the climate control unit and the driver's air mix control motor.

NO - Go to step 11.

11. Check for continuity between climate control unit connector A (32P) terminal No. 25 and climate control

unit connector C (20P) terminal No. 2.

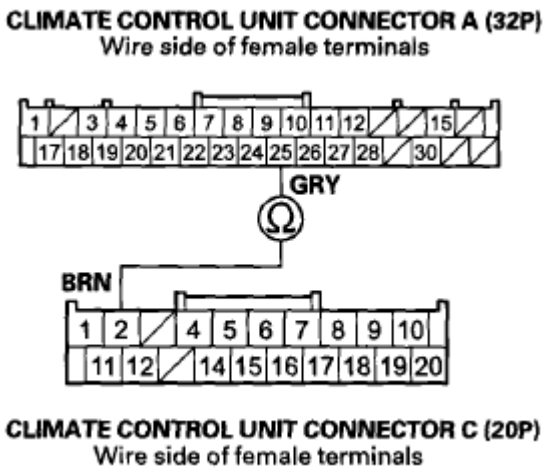


Fig. 52: Checking Continuity Between Climate Control Unit Connector A (32P) And Climate Control Unit Connector C (20P)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair a short in the wires.

NO - Go to step 12.

12. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode, and measure the voltage between climate control unit connector A (32P) terminal No. 25 and body ground.

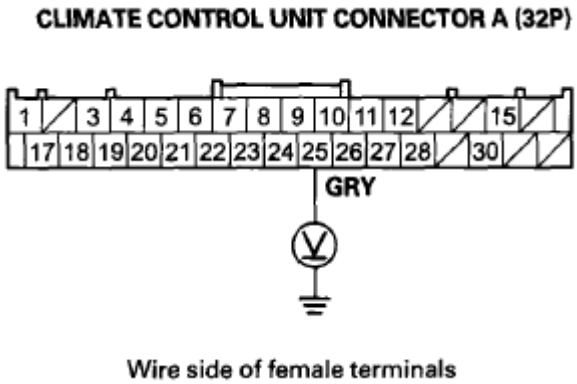


Fig. 53: Measuring Voltage Between Climate Control Unit Connector A (32P) Terminal No. 25 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there any voltage?

YES - Repair a short to power in the wire between the climate control unit and the driver's air mix control

motor. This short may also damage the climate control unit. Repair a short to power before replacing the climate control unit.

NO - Substitute a known-good climate control unit, and recheck. If the symptom/indication goes away, replace the original climate control unit (see **CLIMATE CONTROL UNIT REMOVAL/INSTALLATION**).

13. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode, and disconnect climate control unit connector C (20P).
14. Disconnect these items:
    - Driver's air mix control motor
    - Passenger's air mix control motor
    - Humidity/in-car temperature sensor
    - A/C pressure sensor
15. Check for continuity between climate control unit connector C (20P) terminal No. 2 and body ground.

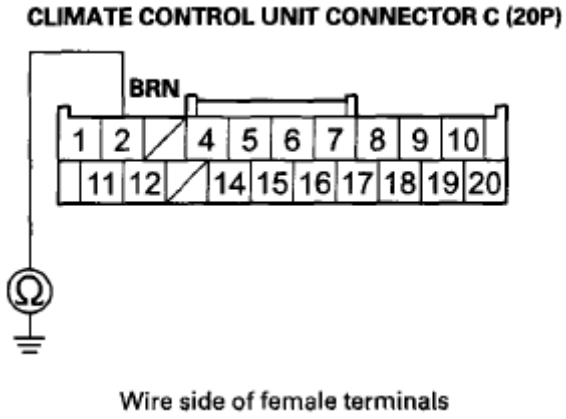


Fig. 54: Checking Continuity Between Climate Control Unit Connector C (20P) Terminal No. 2 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair a short to body ground in the wire.

NO - Go to step 16.

16. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode, and measure the voltage between climate control unit connector C (20P) terminal No. 2 and body ground.

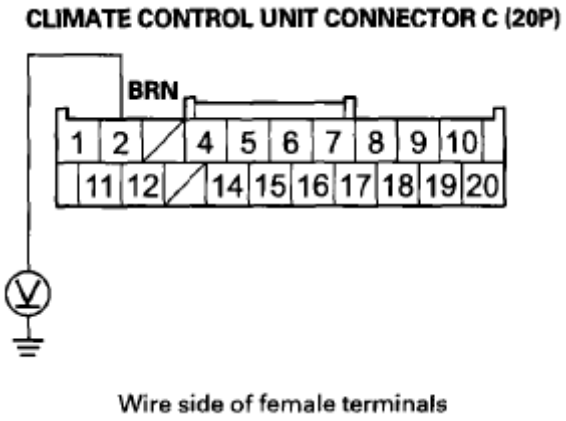


Fig. 55: Measuring Voltage Between Climate Control Unit Connector C (20P) Terminal No. 2 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there any voltage?

YES - Repair a short to power in the wire. This short may have also damaged the climate control unit. Repair a short to power before replacing the climate control unit.

NO - Go to step 17.

17. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
18. Reconnect climate control unit connector C (20P).
19. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode, and measure the voltage between climate control unit connector C (20P) terminal No. 2 and body ground.

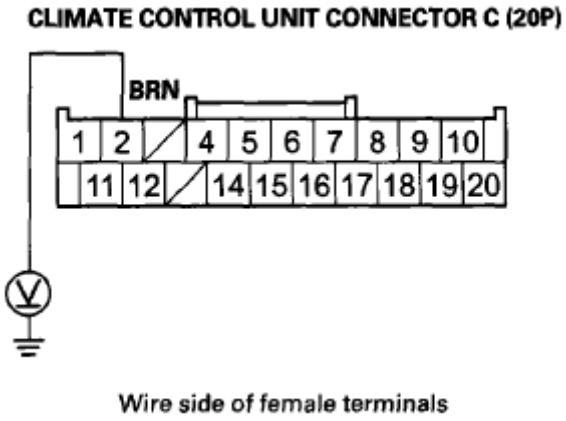


Fig. 56: Measuring Voltage Between Climate Control Unit Connector C (20P) Terminal No. 2 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there about 5 V?

YES - Go to step 20.

NO - Check for a loose wire or poor connection at climate control unit connector C (20P). If the connection is good, substitute a known-good climate control unit, and recheck. If the symptom/indication goes away, replace the original climate control unit (see **CLIMATE CONTROL UNIT REMOVAL/INSTALLATION**).

20. While measuring the voltage between climate control unit connector C (20P) terminal No. 2 and body ground, reconnect these items individually and note the voltage reading each time:
    - Driver's air mix control motor
    - Passenger's air mix control motor
    - Humidity/in-car temperature sensor
    - A/C pressure sensor

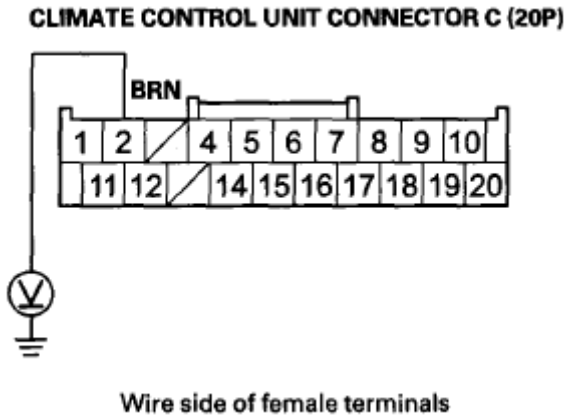


Fig. 57: Measuring Voltage Between Climate Control Unit Connector C (20P) Terminal No. 2 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Does the voltage remain at about 5 V?

YES - Substitute a known-good climate control unit, and recheck. If the symptom/indication goes away, replace the original climate control unit (see **CLIMATE CONTROL UNIT REMOVAL/INSTALLATION**).

NO - Replace the component that caused the voltage drop.

DTC B1235 OR DTC INDICATOR L AND AUTO: A PROBLEM IN THE AIR MIX CONTROL MOTOR CIRCUIT, LINKAGE, DOOR, OR MOTOR (DRIVER'S)

1. Clear the DTC with the HDS.
2. Turn the ignition switch to LOCK (0), and then to ON (II), or press the engine start/stop button to select the OFF mode, and then the ON mode.
3. Do the Self-Diagnostic Function with the HDS (see **HOW TO USE THE SELF-DIAGNOSTIC**

FUNCTION WITH THE HDS) or the climate control unit (see **HOW TO USE THE SELF-DIAGNOSTIC FUNCTION WITHOUT THE HDS**).

4. Check for DTCs.

   Is DTC B1235 or L and AUTO indicated?

   YES - Go to step 5.

   NO - Intermittent failure. Check for loose wires or poor connections on the driver's air mix control motor circuit.

5. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
6. Test the driver's air mix control motor (see **DRIVER'S AIR MIX CONTROL MOTOR TEST**).

   Is the driver's air mix control motor OK?

   YES - Go to step 7.

   NO - Replace the driver's air mix control motor (see **DRIVER'S AIR MIX CONTROL MOTOR REPLACEMENT**), or repair the driver's air mix control linkage or door.

7. Disconnect the driver's air mix control motor 7P connector.
8. Disconnect climate control unit connector A (32P).
9. Check for continuity between the following terminals of climate control unit connector A (32P) and the driver's air mix control motor 7P connector.

   32P: 7P:

   No. 11 No. 1

   No. 12 No. 2

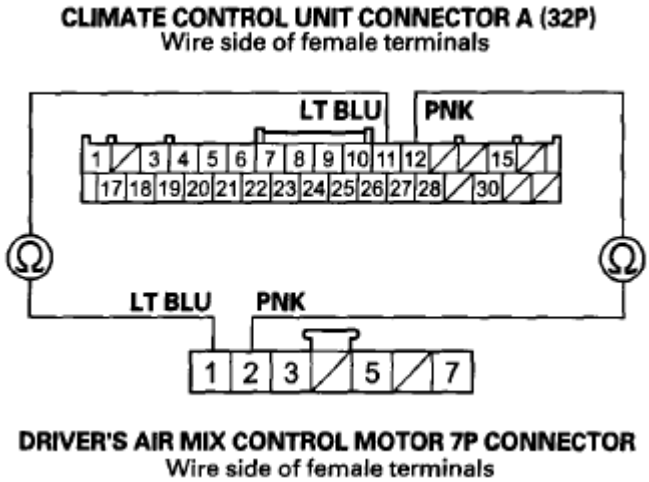


Fig. 58: Checking Continuity Between Terminals Of Climate Control Unit Connector And Driver's Air Mix Control Motor 7P Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 10.

NO - Repair an open in the wire(s) between the climate control unit and the driver's air mix control motor.

10. Check for continuity between body ground and climate control unit connector A (32P) terminals No. 11 and No. 12 individually.

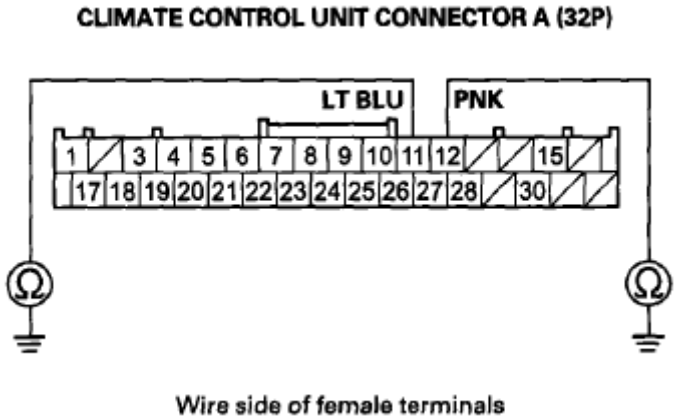


Fig. 59: Checking Continuity Between Body Ground And Climate Control Unit Connector A (32P) Terminals No. 11 And No. 12
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair a short to body ground in the wire(s) between the climate control unit and the driver's air mix control motor.

NO - Substitute a known-good climate control unit, and recheck. If the symptom/indication goes away, replace the original climate control unit (see **CLIMATE CONTROL UNIT REMOVAL/INSTALLATION**).

DTC B1236 OR DTC INDICATOR M AND AUTO: AN OPEN IN THE PASSENGER'S AIR MIX CONTROL MOTOR CIRCUIT

1. Clear the DTC with the HDS.
2. Turn the ignition switch to LOCK (0), and then back to ON (II), or press the engine start/stop button to select the OFF mode, and then the ON mode.
3. Do the Self-Diagnostic Function with the HDS (see **HOW TO USE THE SELF-DIAGNOSTIC**

FUNCTION WITH THE HDS) or the climate control unit (see **HOW TO USE THE SELF-DIAGNOSTIC FUNCTION WITHOUT THE HDS**).

4. Check for DTCs.

   Is DTC B1236 or M and AUTO indicated?

   YES - Go to step 5.

   NO - Intermittent failure. Check for loose wires or poor connections on the passenger's air mix control motor circuit

5. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
6. Test the passenger's air mix control motor (see **PASSENGER'S AIR MIX CONTROL MOTOR TEST**).

   Is the passenger's air mix control motor OK?

   YES - Go to step 7.

   NO - Replace the passenger's air mix control motor (see **PASSENGER'S AIR MIX CONTROL MOTOR REPLACEMENT**).

7. Disconnect the passenger's air mix control motor 7P connector.
8. Disconnect climate control unit connectors A (32P) and C (20P).
9. Check for continuity between the following terminals of climate control unit connectors A (32P), C (20P), and the passenger's air mix control motor 7P connector.

   32P: 7P:

   No. 26 No. 3

   20P: 7P:

   No. 1 No. 5

   No. 2 No. 7

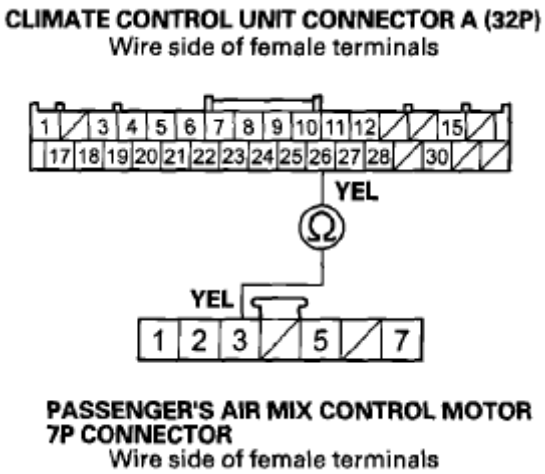


Fig. 60: Checking Continuity Between Terminals Of Climate Control Unit Connectors And Passenger's Air Mix Control Motor 7P Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

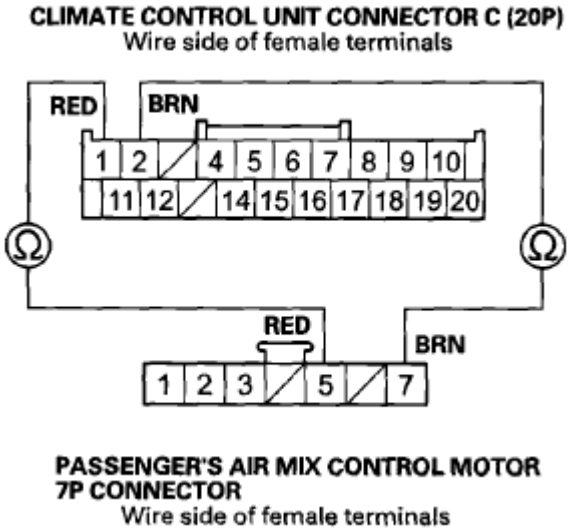


Fig. 61: Measuring Resistance Between Climate Control Unit Connector C And Passenger's Air Mix Control Motor 7P Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Check for loose wires or poor connections at climate control unit connectors A (32P), C (20P), and at the passenger's air mix control motor 7P connector. If the connections are good, substitute a known-good climate control unit and recheck. If the symptom/indication goes away, replace the original climate control unit (see **CLIMATE CONTROL UNIT REMOVAL/INSTALLATION**).

NO - Repair an open in the wire(s) between the climate control unit and the passenger's air mix control motor.

DTC B1237 OR DTC INDICATOR N AND AUTO: A SHORT IN THE PASSENGER'S AIR MIX CONTROL MOTOR CIRCUIT

1. Clear the DTC with the HDS.
2. Turn the ignition switch to LOCK (0), and then back to ON (II), or press the engine start/stop button to select the OFF mode, and then the ON mode.
3. Do the Self-Diagnostic Function with the HDS (see **HOW TO USE THE SELF-DIAGNOSTIC FUNCTION WITH THE HDS**) or the climate control unit (see **HOW TO USE THE SELF-DIAGNOSTIC FUNCTION WITHOUT THE HDS**).
4. Check for DTCs.

   Is DTC B1237 or N and AUTO indicated?

   YES - Go to step 5.

   NO - Intermittent failure. Check for loose or poor connection on the passenger's air mix control motor circuit

5. Check for DTCs.

   Are these DTCs also present; B1234 or K and AUTO, and/or B2968 or B and WINDSHIELD DEFROST, and/or B2980 or F and WINDSHIELD DEFROST?

   YES - Go to step 13.

   NO - Go to step 6.

6. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
7. Test the passenger's air mix control motor (see **PASSENGER'S AIR MIX CONTROL MOTOR TEST**).

   Is the passenger's air mix control motor OK?

   YES - Go to step 8.

   NO - Replace the passenger's air mix control motor (see **PASSENGER'S AIR MIX CONTROL MOTOR REPLACEMENT**).

8. Disconnect the passenger's air mix control motor 7P connector.
9. Disconnect climate control unit connectors A (32P) and C (20P).
10. Check for continuity between climate control unit connector A (32P) terminal No. 26 and body ground.

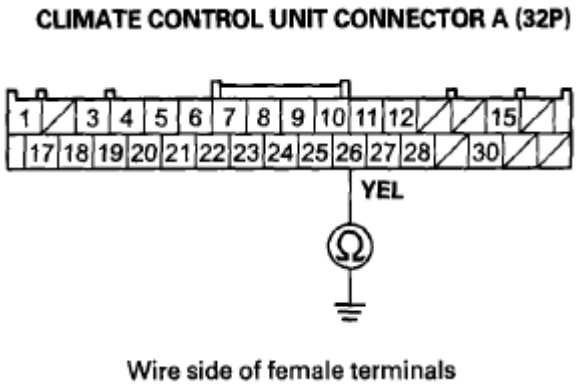


Fig. 62: Checking Continuity Between Climate Control Unit Connector A (32P) Terminal No. 26 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair a short to body ground in the wire between the climate control unit and the passenger's air mix control motor.

NO - Go to step 11.

11. Check for continuity between climate control unit connector A (32P) terminal No. 26 and climate control unit connector C (20P) terminal No. 2.

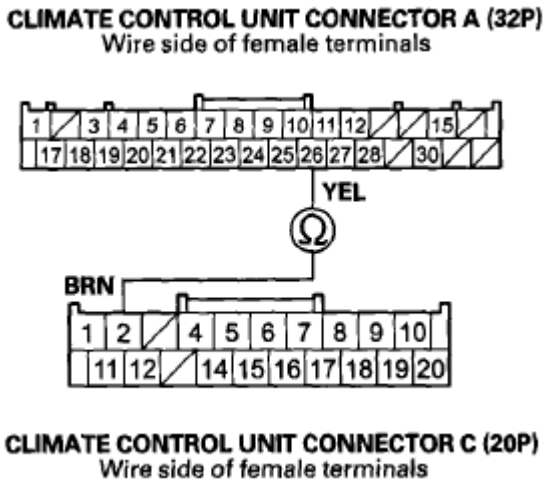


Fig. 63: Checking Continuity Between Climate Control Unit Connector A (32P) And Climate Control Unit Connector C (20P)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair a short in the wire.

NO - Go to step 12.

12. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode, and measure the voltage between climate control unit connector A (32P) terminal No. 26 and body ground.

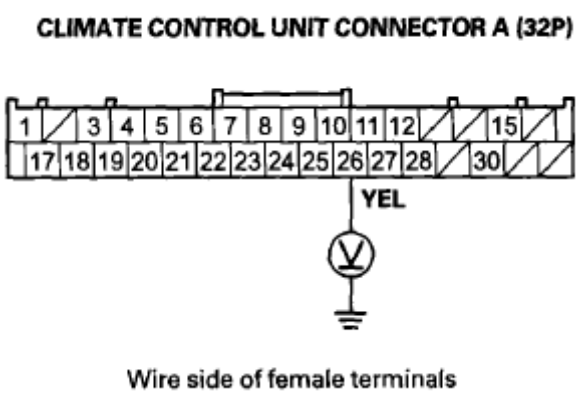


Fig. 64: Measuring Voltage Between Climate Control Unit Connector A (32P) Terminal No. 26 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there any voltage?

YES - Repair a short to power in the wire(s) between the climate control unit and the passenger's air mix control motor. This short may also damage the climate control unit. Repair a short to power before replacing the climate control unit.

NO - Substitute a known-good climate control unit, and recheck. If the symptom/indication goes away, replace the original climate control unit (see **CLIMATE CONTROL UNIT REMOVAL/INSTALLATION**).

13. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode, and disconnect climate control unit connector C (20P).
14. Disconnect these items:
    - Driver's air mix control motor
    - Passenger's air mix control motor
    - Humidity/in-car temperature sensor
    - A/C pressure sensor
15. Check for continuity between climate control unit connector C (20P) terminal No. 2 and body ground.

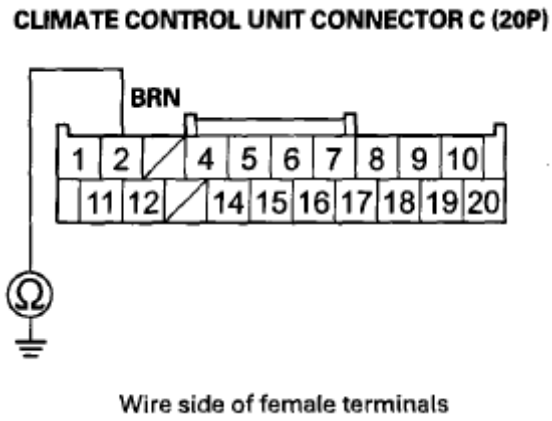


Fig. 65: Checking Continuity Between Climate Control Unit Connector C (20P) Terminal No. 2 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair a short to body ground in the wire.

NO - Go to step 16.

16. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode, and measure the voltage between climate control unit connector C (20P) terminal No. 2 and body ground.

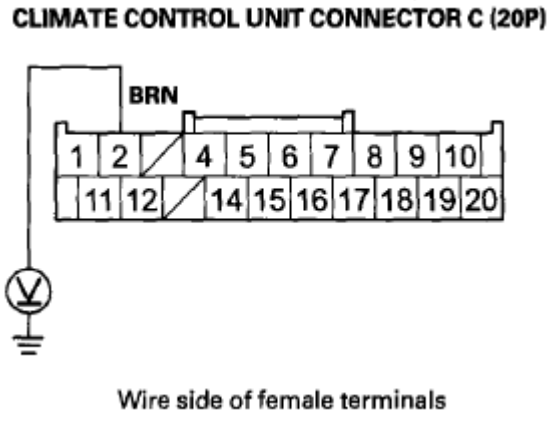


Fig. 66: Measuring Voltage Between Climate Control Unit Connector C (20P) Terminal No. 2 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there any voltage?

YES - Repair a short to power in the wire. This short may have also damaged the climate control unit. Repair a short to power before replacing the climate control unit.

NO - Go to step 17.

17. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
18. Reconnect climate control unit connector C (20P).
19. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode, and measure the voltage between climate control unit connector C (20P) terminal No. 2 and body ground.

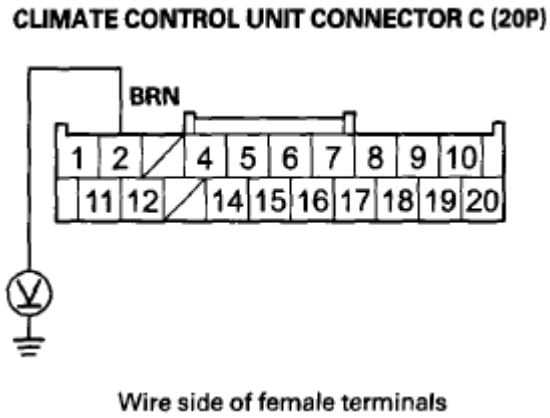


Fig. 67: Measuring Voltage Between Climate Control Unit Connector C (20P) Terminal No. 2 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there about 5 V?

YES - Go to step 20.

NO - Check for a loose wire or poor connection at climate control unit connector C (20P). If the connection is good, substitute a known-good climate control unit, and recheck. If the symptom/indication goes away, replace the original climate control unit (see **CLIMATE CONTROL UNIT REMOVAL/INSTALLATION**).

20. While measuring the voltage between climate control unit connector C (20P) terminal No. 2 and body ground, reconnect these items individually and note the voltage reading each time:
    - Driver's air mix control motor
    - Passenger's air mix control motor
    - Humidity/in-car temperature sensor
    - A/C pressure sensor

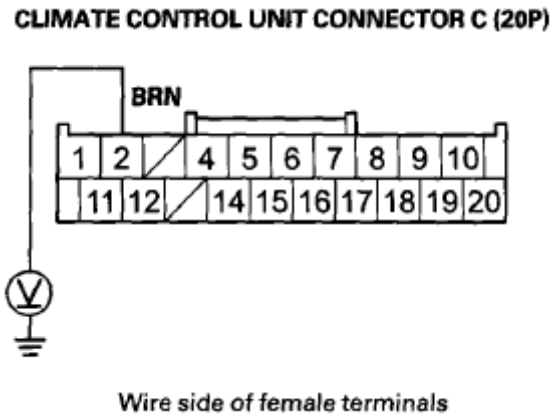


Fig. 68: Measuring Voltage Between Climate Control Unit Connector C (20P) Terminal No. 2 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Does the voltage remain at about 5 V?

YES - Substitute a known-good climate control unit, and recheck. If the symptom/indication goes away, replace the original climate control unit (see **CLIMATE CONTROL UNIT REMOVAL/INSTALLATION**).

NO - Replace the component that caused the voltage drop.

DTC B1238 OR DTC INDICATOR P AND AUTO: A PROBLEM IN THE PASSENGER'S AIR MIX CONTROL MOTOR CIRCUIT, LINKAGE, DOOR, OR MOTOR

1. Clear the DTC with the HDS.
2. Turn the ignition switch to LOCK (0), and then back to ON (II) or press the engine start/stop button to select the OFF mode, and then the ON mode.
3. Do the Self-Diagnostic Function with the HDS (see **HOW TO USE THE SELF-DIAGNOSTIC FUNCTION WITH THE HDS**) or the climate control unit (see **HOW TO USE THE SELF-DIAGNOSTIC FUNCTION WITHOUT THE HDS**).
4. Check for DTCs.

   Is DTC B1238 or P and AUTO indicated?

   YES - Go to step 5.

   NO - Intermittent failure. Check for loose wires or poor connections on the passenger's air mix control motor circuit

5. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
6. Test the passenger's air mix control motor (see **PASSENGER'S AIR MIX CONTROL MOTOR TEST**).

Is the passenger's air mix control motor OK?

YES - Go to step 7.

NO - Replace the passenger's air mix control motor (see **PASSENGER'S AIR MIX CONTROL MOTOR REPLACEMENT**), or repair the passenger's air mix control linkage or door.

7. Disconnect the passenger's air mix control motor 7P connector.
8. Disconnect climate control unit connector A (32P).
9. Check for continuity between the following terminals of climate control unit connector A (32P) and the passenger's air mix control motor 7P connector.

   32P: 7P:

   No. 9 No. 1

   No. 10 No. 2

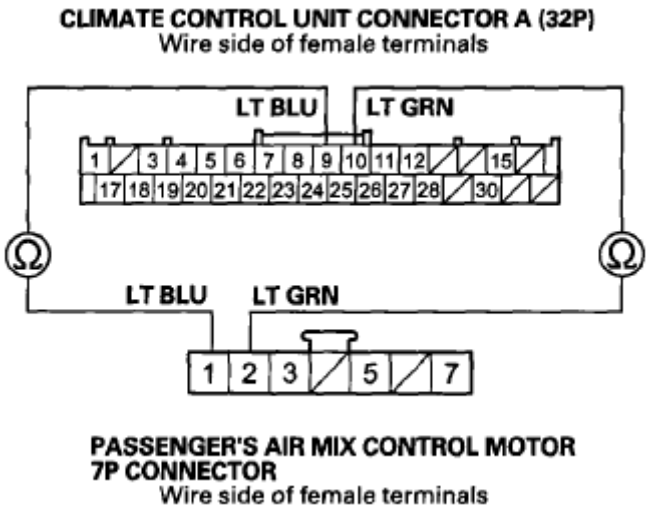


Fig. 69: Checking Continuity Between Terminals Of Climate Control Unit Connector And Passenger's Air Mix Control Motor 7P Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 10.

NO - Repair an open in the wire(s) between the climate control unit and the passenger's air mix control motor.

10. Check for continuity between body ground and climate control unit connector A (32P) terminals No. 9 and No. 10 individually.

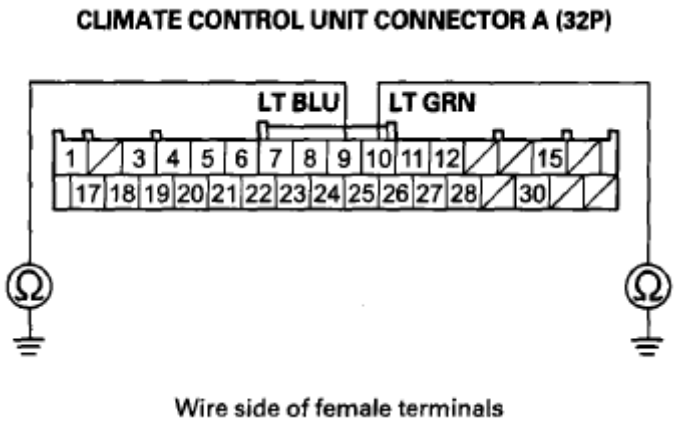


Fig. 70: Checking Continuity Between Body Ground And Climate Control Unit Connector A (32P) Terminals No. 9 And No. 10
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair a short to body ground in the wire(s) between the climate control unit and the passenger's air mix control motor.

NO - Substitute a known-good climate control unit, and recheck. If the symptom/indication goes away, replace the original climate control unit (see **CLIMATE CONTROL UNIT REMOVAL/INSTALLATION**).

DTC B1239 OR DTC INDICATOR A AND MODE: AN OPEN OR SHORT IN THE MODE CONTROL MOTOR CIRCUIT (DRIVER'S)

1. Clear the DTC with the HDS.
2. Turn the ignition switch to LOCK (0), and then back to ON (II) or press the engine start/stop button to select the OFF mode, and then the ON mode.
3. Do the Self-Diagnostic Function with the HDS (see **HOW TO USE THE SELF-DIAGNOSTIC FUNCTION WITH THE HDS**) or the climate control unit (see **HOW TO USE THE SELF-DIAGNOSTIC FUNCTION WITHOUT THE HDS**).
4. Check for DTCs.

   Is DTC B1239 or A and MODE indicated?

   YES - Go to step 5.

   NO - Intermittent failure. Check for loose wires or poor connections on the driver's mode control motor circuit.

5. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
6. Test the driver's mode control motor (see **DRIVER'S MODE CONTROL MOTOR TEST**).

Is the driver's mode control motor OK?

YES - Go to step 7.

NO - Replace the driver's mode control motor (see **PASSENGER'S AIR MIX CONTROL MOTOR REPLACEMENT**).

7. Disconnect the driver's mode control motor 7P connector.
8. Disconnect climate control unit connectors A (32P) and C (20P)
9. Check for continuity between the following terminals of climate control unit connector A (32P), C (20P) and the driver's mode control motor 7P connector.

   32P: 7P:

   No. 21 No. 6

   No. 22 No. 5

   No. 23 No. 4

   No. 24 No. 3

   20P: 7P:

   No. 1 No. 7

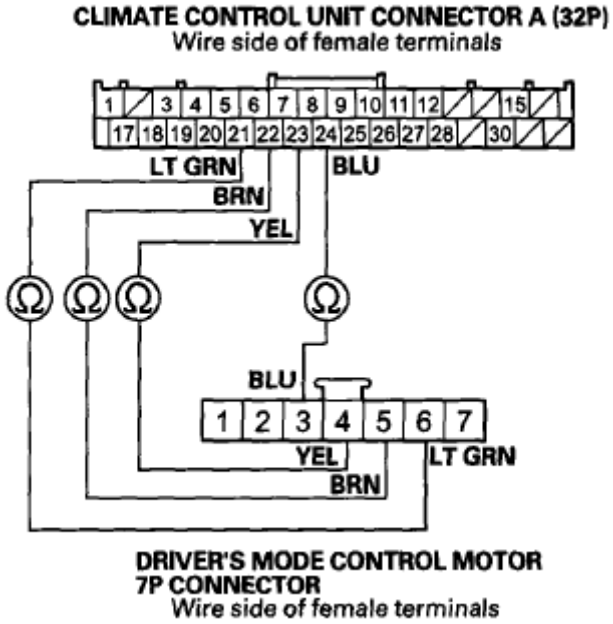


Fig. 71: Checking Continuity Between Terminals Of Climate Control Unit Connector And Driver's Mode Control Motor 7P Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

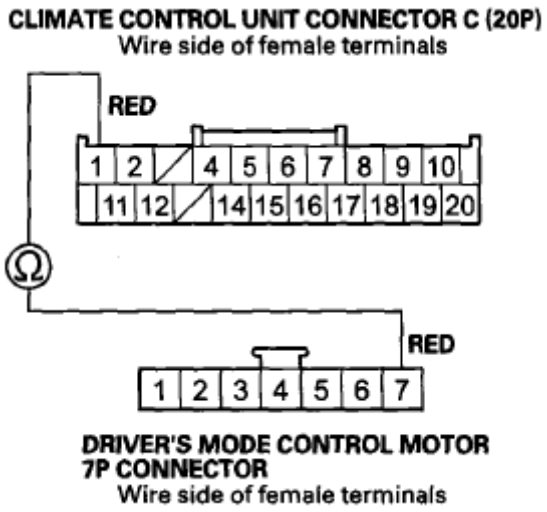


Fig. 72: Measuring Resistance Between Climate Control Unit Connector C And Driver's Mode Control Motor 7P Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 10.

NO - Repair an open in the wire(s) between the climate control unit and the driver's mode control motor.

10. Check for continuity between body ground and climate control unit connector A (32P) terminals No. 21, No. 22, No. 23, and No. 24 individually.

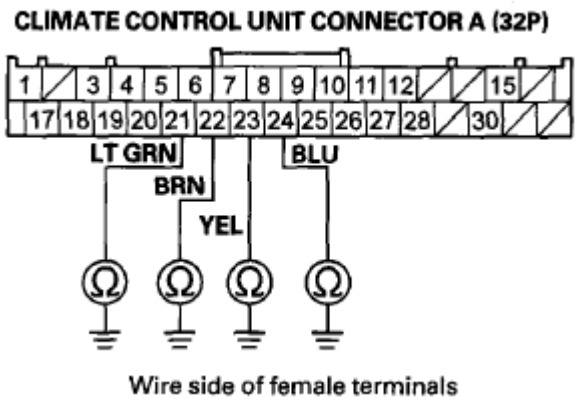


Fig. 73: Checking Continuity Between Body Ground And Climate Control Unit Connector A (32P) Terminals
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair a short to body ground in the wire(s) between the climate control unit and the driver's mode

control motor

NO - Go to step 11.

11. Check for continuity between climate control unit connector A (32P) terminals as follows.

From terminal	To terminals
21	22, 23, 24
22	23, 24
23	24

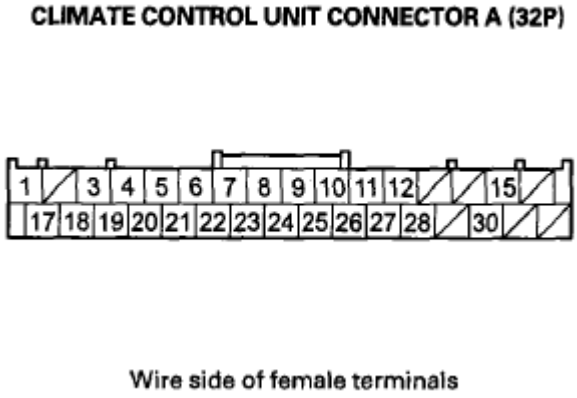


Fig. 74: Checking Continuity Between Climate Control Unit Connector A (32P) Terminals
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity between any of the terminals?

YES - Repair a short in the wires.

NO - Go to step 12.

12. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode, and measure the voltage between body ground and climate control unit connector A (32P) terminals No. 21, No. 22, No. 23, and No. 24 individually.

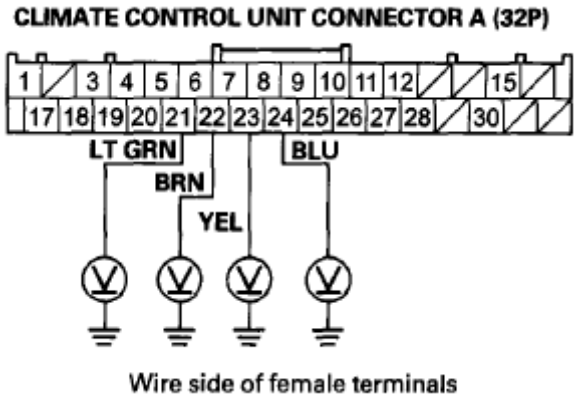


Fig. 75: Measuring Voltage Between Body Ground And Climate Control Unit Connector A (32P) Terminals
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there any voltage?

YES - Repair a short to power in the wire(s) between the climate control unit and the driver's mode control motor. This short may also damage the climate control unit. Repair a short to power before replacing the climate control unit.

NO - Check for loose wires or poor connections at climate control unit connector A (32P) and at the driver's mode control motor 7P connector. If the connections are good, substitute a known-good climate control unit, and recheck. If the symptom/indication goes away, replace the original climate control unit (see **CLIMATE CONTROL UNIT REMOVAL/INSTALLATION**).

DTC B1240 OR DTC INDICATOR B AND MODE: A PROBLEM IN THE MODE CONTROL MOTOR CIRCUIT, LINKAGE, DOORS, OR MOTOR (DRIVER'S)

1. Clear the DTC with the HDS.
2. Turn the ignition switch to LOCK (0), and then back to ON (II), or press the engine start/stop button to select the OFF mode, and then the ON mode.
3. Do the Self-Diagnostic Function with the HDS (see **HOW TO USE THE SELF-DIAGNOSTIC FUNCTION WITH THE HDS**) or the climate control unit (see **HOW TO USE THE SELF-DIAGNOSTIC FUNCTION WITHOUT THE HDS**).
4. Check for DTCs.

   Is DTC B1240 or B and MODE indicated?

   YES - Go to step 5.

   NO - Intermittent failure. Check for loose wires or poor connections on the driver's mode control motor circuit.

5. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
6. Test the driver's mode control motor (see **DRIVER'S MODE CONTROL MOTOR TEST**).

Is the driver's mode control motor OK?

YES - Go to step 7.

NO - Replace the driver's mode control motor (see **PASSENGER'S AIR MIX CONTROL MOTOR REPLACEMENT**), or repair the driver's mode control linkage or doors.

7. Disconnect the driver's mode control motor 7P connector.
8. Disconnect climate control unit connector A (32P).
9. Check for continuity between the following terminals of climate control unit connector A (32P) and the driver's mode control motor 7P connector.

   32P: 7P:

   No. 7 No. 2

   No. 8 No. 1

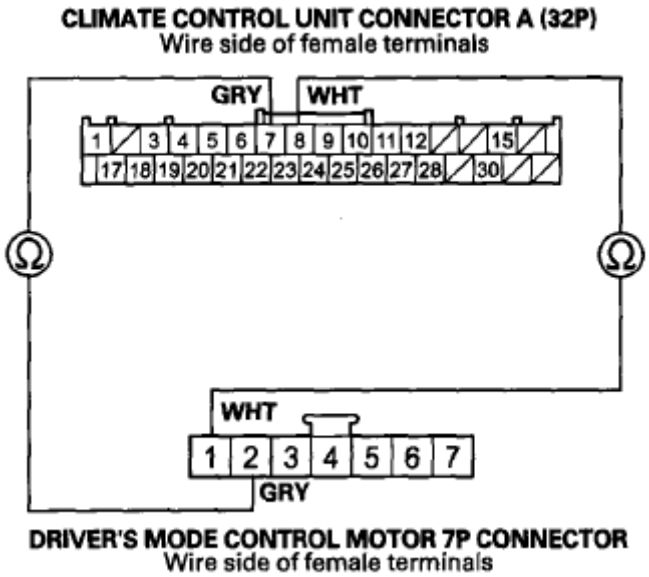


Fig. 76: Checking Continuity Between Terminals Of Climate Control Unit Connector And Driver's Mode Control Motor 7P Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 10.

NO - Repair an open in the wire(s) between the climate control unit and the driver's mode control motor.

10. Check for continuity between body ground and climate control unit connector A (32P) terminals No. 7 and No. 8 individually.

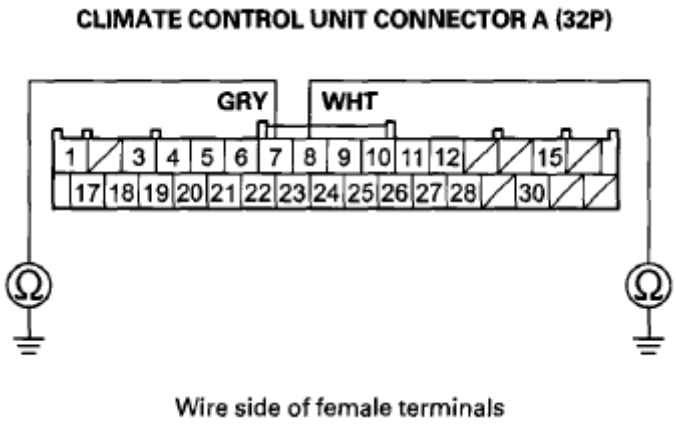


Fig. 77: Checking Continuity Between Body Ground And Climate Control Unit Connector A (32P) Terminals
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair a short to body ground in the wire(s) between the climate control unit and the driver's mode control motor.

NO - Substitute a known-good climate control unit, and recheck. If the symptom/indication goes away, replace the original climate control unit (see **CLIMATE CONTROL UNIT REMOVAL/INSTALLATION**).

DTC B1241 OR DTC INDICATOR C AND MODE: A PROBLEM IN THE BLOWER MOTOR CIRCUIT

1. Clear the DTC with the HDS.
2. Turn the ignition switch to LOCK (0), and then back to ON (II), or press the engine start/stop button to select the OFF mode, and then the ON mode.
3. Do the Self-Diagnostic Function with the HDS (see **HOW TO USE THE SELF-DIAGNOSTIC FUNCTION WITH THE HDS**) or the climate control unit (see **HOW TO USE THE SELF-DIAGNOSTIC FUNCTION WITHOUT THE HDS**).
4. Check for DTCs.

   Is DTC B1241 or C and MODE indicated?

   YES - Go to step 5.

   NO - Intermittent failure. Check for loose wires or poor connections on the blower motor circuit.

5. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
6. Check the No. 8 (40 A) fuse in the under-hood fuse/relay box, and the No. 16 (7.5 A) fuse in the driver's under-dash fuse/relay box.

Are the fuses OK?

YES - Go to step 7.

NO - Replace the fuse(s), and recheck. If the fuse(s) blow again, check for a short in the No. 8 (40 A) fuse and the No. 16 (7.5 A) fuse circuits.

7. Connect blower motor 2P connector terminal No. 2 to body ground with a jumper wire.

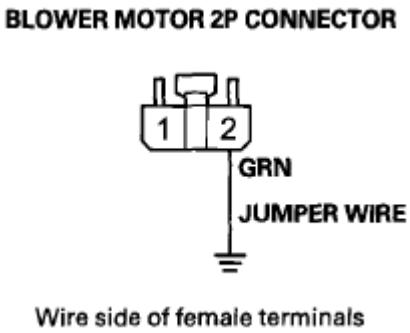


Fig. 78: Connecting Blower Motor 2P Connector Terminal No. 2 To Body Ground With Jumper Wire
Courtesy of AMERICAN HONDA MOTOR CO., INC.

8. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.

   Does the blower motor run?

   YES - Go to step 9.

   NO - Go to step 24.

9. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
10. Disconnect the jumper wire.
11. Disconnect the power transistor 5P connector.
12. Check for continuity between power transistor 5P connector terminal No. 5 and body ground.

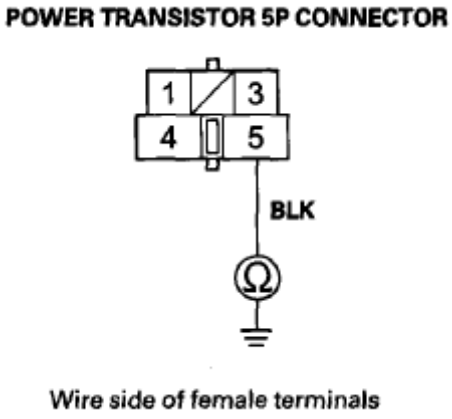


Fig. 79: Checking Continuity Between Power Transistor 5P Connector Terminal No. 5 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 13.

NO - Check for an open in the wire between the power transistor and body ground. If the wire is OK, check for poor ground at G302 (see **CONNECTOR TO FUSE/RELAY BOX INDEX**).

13. Connect power transistor 5P connector terminals No. 4 and No. 5 with a jumper wire.

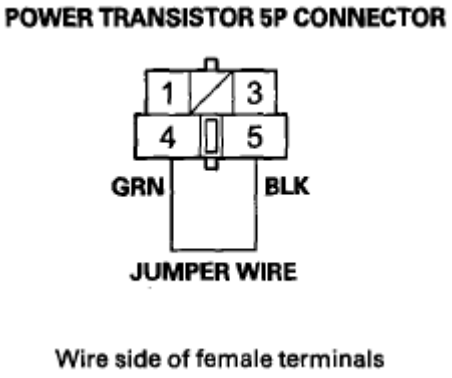


Fig. 80: Connecting Power Transistor 5P Connector Terminals No. 4 And No. 5 With Jumper Wire
Courtesy of AMERICAN HONDA MOTOR CO., INC.

14. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.

Does the blower motor run at high speed?

YES - Go to step 15.

NO - Repair an open in the GRN wire between the power transistor and the blower motor.

15. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF.
16. Disconnect the jumper wire.
17. Disconnect climate control unit connector A (32P).
18. Check for continuity between body ground and climate control unit connector A (32P) terminals No. 27 and No. 28 individually.

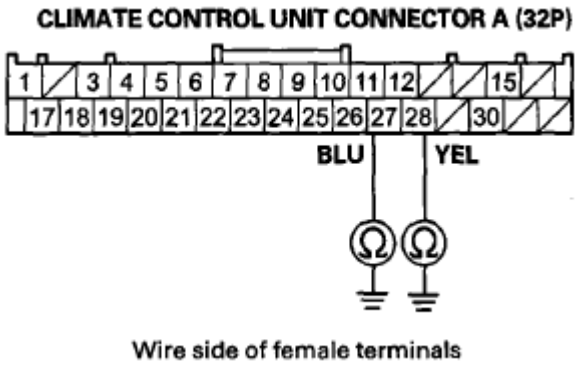


Fig. 81: Checking Continuity Between Body Ground And Climate Control Unit Connector A (32P) Terminals
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair a short to body ground in the wire(s) between the climate control unit and the power transistor.

NO - Go to step 19.

19. Check for continuity between the following terminals of the climate control unit connector A (32P) and the power transistor 5P connector.

    32P: 5P:

    No. 27 No. 1

    No. 28 No. 3

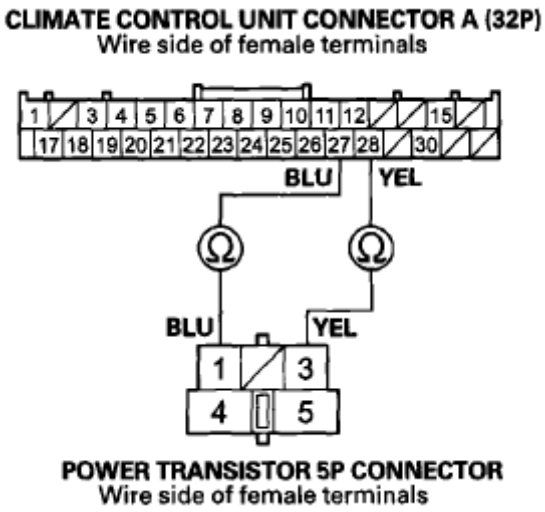


Fig. 82: Checking Continuity Between Terminals Of Climate Control Unit Connector A (32P) And Power Transistor 5P Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 20.

NO - Repair an open in the wire(s) between the climate control unit and the power transistor.

20. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
21. Measure the voltage between body ground and climate control unit connector A (32P) terminals No. 27 and No. 28 individually.

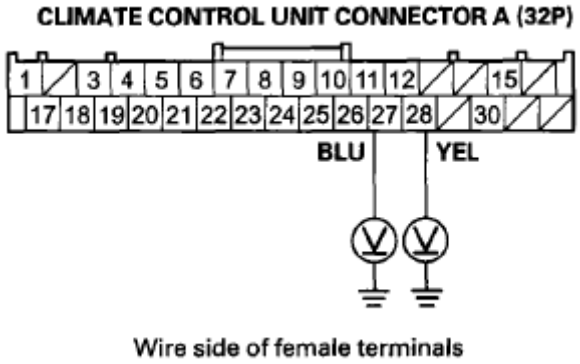


Fig. 83: Measuring Voltage Between Body Ground And Climate Control Unit Connector A (32P) Terminals
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there voltage?

YES - Repair a short to power in the wire(s).

NO - Go to step 22.

22. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
23. Test the power transistor (see **POWER TRANSISTOR TEST**).

Is the power transistor OK?

YES - Check for loose wires or poor connections at the climate control unit connector A (32P) and at the power transistor 5P connector. If the connections are good, substitute a known-good climate control unit, and recheck. If the symptom/indication goes away, replace the original climate control unit (see **CLIMATE CONTROL UNIT REMOVAL/INSTALLATION**).

NO - Replace the power transistor.

NOTE: If the power transistor is faulty, check the blower motor for damage. If necessary, replace the blower motor.

24. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
25. Disconnect the jumper wire.
26. Disconnect the blower motor 2P connector.
27. Measure the voltage between blower motor 2P connector terminal No. 1 and body ground.

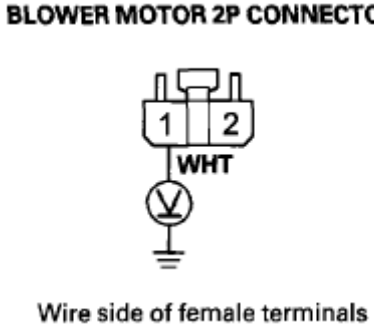


Fig. 84: Measuring Voltage Between Blower Motor 2P Connector Terminal No. 1 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there battery voltage?

YES - Replace the blower motor (see **BLOWER UNIT COMPONENT REPLACEMENT**).

NO - Go to step 28.

28. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
29. Remove the blower motor relay from the under-hood fuse/relay box, and test it (see **POWER RELAY TEST**).

Is the relay OK?

YES - Go to step 30.

NO - Replace the blower motor relay.

30. Check for continuity between blower motor relay 4P socket terminal No. 2 and blower motor 2P connector terminal No. 1.

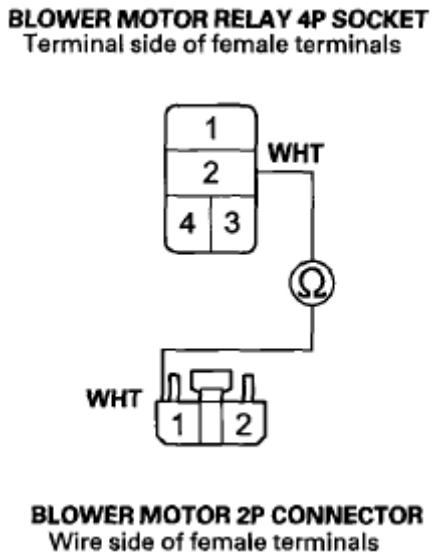


Fig. 85: Checking Continuity Between Blower Motor Relay 4P Socket Terminal No. 2 And Blower Motor 2P Connector Terminal No. 1
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 31.

NO - Repair an open in the wire between the blower motor relay and blower motor.

31. Measure the voltage between blower motor relay 4P socket terminal No. 1 and body ground.

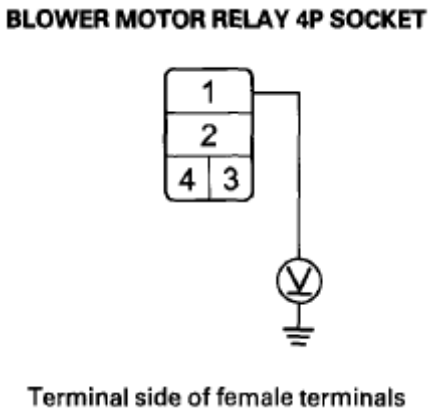


Fig. 86: Measuring Voltage Between Blower Motor Relay 4P Socket Terminal No. 1 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there battery voltage?

YES - Go to step 32.

NO - Replace the under-hood fuse/relay box (see **REMOVAL AND INSTALLATION**).

32. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
33. Measure the voltage between blower motor relay 4P socket terminal No. 4 and body ground.

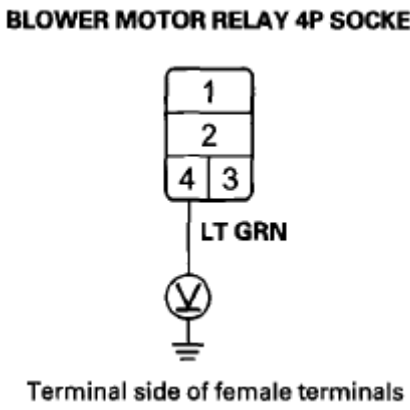


Fig. 87: Measuring Voltage Between Blower Motor Relay 4P Socket Terminal No. 4 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there battery voltage?

YES - Check for an open in the wire between blower motor relay 4P socket terminal No. 3 and body ground. If the wire is OK, check for poor body ground at G302 (see **CONNECTOR TO FUSE/RELAY BOX INDEX**).

NO - Repair an open in the wire between the No. 16 (7.5 A) fuse in the driver's under-dash fuse/relay box and the blower motor relay 4P socket.

DTC B1242 OR DTC INDICATOR E AND MODE: AN OPEN OR SHORT IN THE PASSENGER'S MODE CONTROL MOTOR CIRCUIT

1. Clear the DTC with the HDS.
2. Turn the ignition switch to LOCK (0), and then back to ON (II), or press the engine start/stop button to select the OFF mode, and then the ON mode.
3. Do the Self-Diagnostic Function with the HDS (see **HOW TO USE THE SELF-DIAGNOSTIC FUNCTION WITH THE HDS**) or the climate control unit (see **HOW TO USE THE SELF-DIAGNOSTIC FUNCTION WITHOUT THE HDS**).
4. Check for DTCs.

   Is DTC B1242 or E and MODE indicated?

   YES - Go to step 5.

   NO - Intermittent failure. Check for loose wires or poor connections on the passenger's mode control motor circuit.

5. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
6. Test the passenger's mode control motor (see **RECIRCULATION CONTROL MOTOR TEST**).

   Is the passenger's mode control motor OK?

   YES - Go to step 7.

   NO - Replace the passenger's mode control motor (see **PASSENGER'S MODE CONTROL MOTOR REPLACEMENT**).

7. Disconnect the passenger's mode control motor 7P connector.
8. Disconnect climate control unit connectors A (32P) and C (20P).
9. Check for continuity between the following terminals of climate control unit connector A (32P), C (20P) and the passenger's mode control motor 7P connector.

   32P: 7P:

   No. 17 No. 6

   No. 18 No. 5

   No. 19 No. 4

   No. 20 No. 3

20P: 7P:

No. 1 No. 7

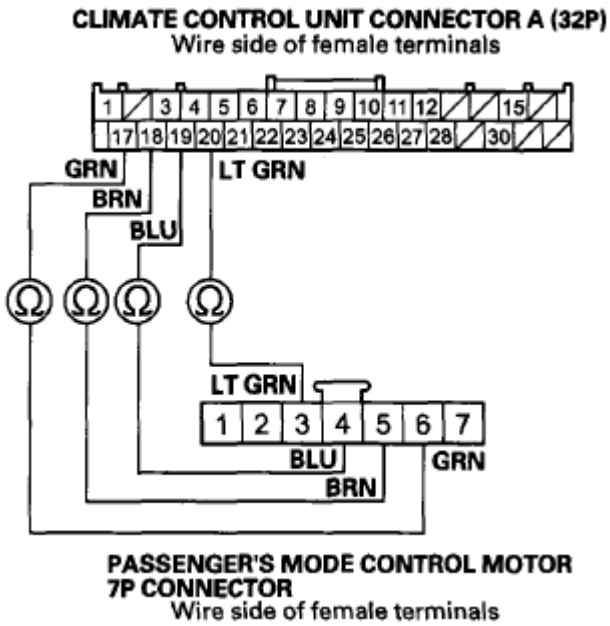


Fig. 88: Checking Continuity Between Terminals Of Climate Control Unit Connector And Passenger's Mode Control Motor 7P Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

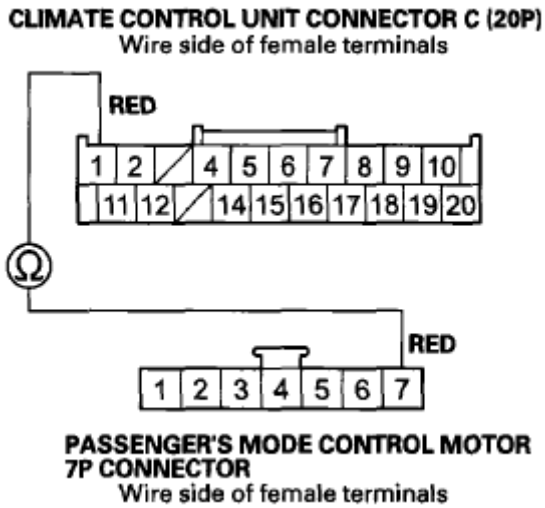


Fig. 89: Measuring Resistance Between Climate Control Unit Connector C And Passenger's Mode Control Motor 7P Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 10.

NO - Repair an open in the wire(s) between the climate control unit and the passenger's mode control motor.

10. Check for continuity between body ground and climate control unit connector A (32P) terminals No. 17, No. 18, No. 19, and No. 20 individually.

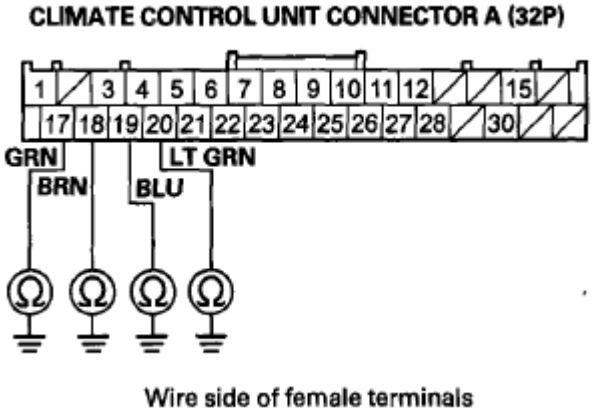


Fig. 90: Checking Continuity Between Body Ground And Climate Control Unit Connector A (32P) Terminals
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair a short to body ground in the wire(s) between the climate control unit and the passenger's mode control motor.

NO - Go to step 11.

11. Check for continuity between climate control unit connector A (32P) terminals as follows.

From terminal	To terminals
17	18, 19, 20
18	19, 20
19	20

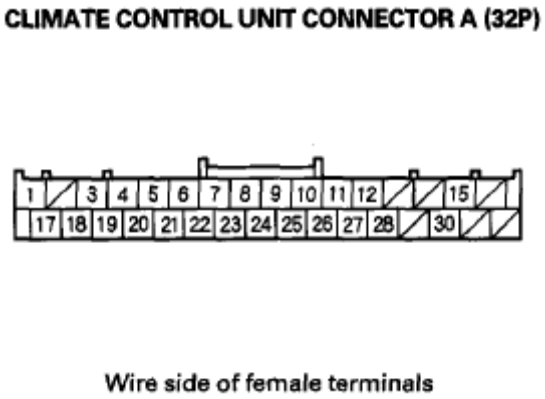


Fig. 91: Checking Continuity Between Climate Control Unit Connector A (32P) Terminals
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity between any of the terminals?

YES - Repair a short in the wires.

NO - Go to step 12.

12. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode, and measure the voltage between body ground and climate control unit connector A (32P) terminals No. 17, No. 18, No. 19, and No. 20 individually.

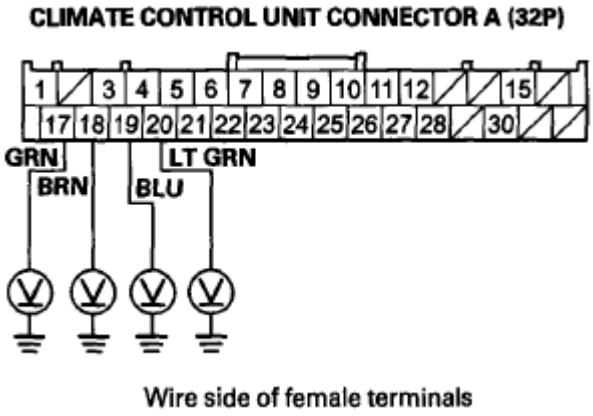


Fig. 92: Measuring Voltage Between Body Ground And Climate Control Unit Connector A (32P) Terminals
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there any voltage?

YES - Repair a short to power in the wire(s) between the climate control unit and the passenger's mode control motor. This short may also damage the climate control unit. Repair a short to power before replacing the climate control unit

NO - Check for loose wires or poor connections at climate control unit connector A (32P) and at the passenger's mode control motor 7P connector. If the connections are good, substitute a known-good climate control unit, and recheck. If the symptom/indication goes away, replace the original climate control unit (see **CLIMATE CONTROL UNIT REMOVAL/INSTALLATION**).

DTC B1243 OR DTC INDICATOR F AND MODE: A PROBLEM IN THE PASSENGER'S MODE CONTROL MOTOR CIRCUIT, LINKAGE, DOORS, OR MOTOR

1. Clear the DTC with the HDS.
2. Turn the ignition switch to LOCK (0), and then back to ON (II), or press the engine start/stop button to select the OFF mode and then the ON mode.
3. Do the Self-Diagnostic Function with the HDS (see **HOW TO USE THE SELF-DIAGNOSTIC FUNCTION WITH THE HDS**) or the climate control unit (see **HOW TO USE THE SELF-DIAGNOSTIC FUNCTION WITHOUT THE HDS**).
4. Check for DTCs.

   Is DTC B1243 or F and MODE indicated?

   YES - Go to step 5.

   NO - Intermittent failure. Check for loose wires or poor connections on the passenger's mode control motor circuit

5. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
6. Test the passenger's mode control motor (see **RECIRCULATION CONTROL MOTOR TEST**).

   Is the passenger's mode control motor OK?

   YES - Go to step 7.

   NO - Replace the passenger's mode control motor (see **PASSENGER'S MODE CONTROL MOTOR REPLACEMENT**), or repair the Passenger's mode control linkage or doors.

7. Disconnect the passenger's mode control motor 7P connector.
8. Disconnect climate control unit connector A (32P).
9. Check for continuity between the following terminals of climate control unit connector A (32P) and the passenger's mode control motor 7P connector.

   32P: 7P:

   No. 5 No. 1

   No. 6 No. 2

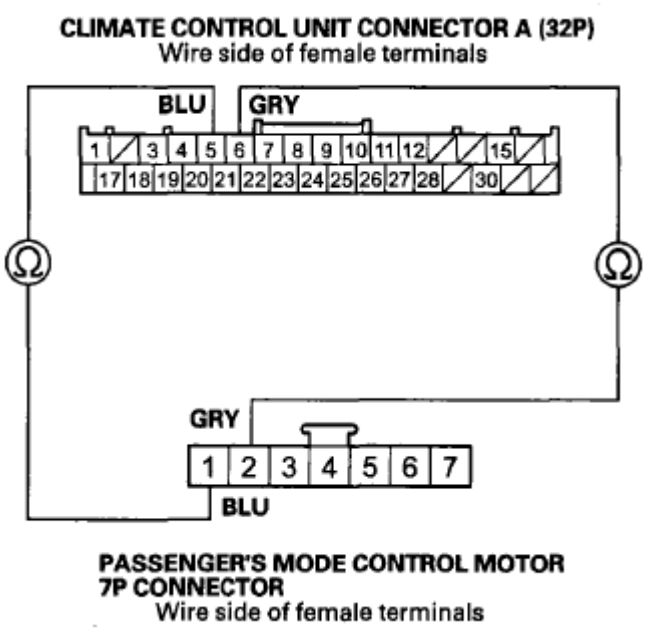


Fig. 93: Checking Continuity Between Terminals Of Climate Control Unit Connector And Passenger's Mode Control Motor 7P Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 10.

NO - Repair an open in the wire(s) between the climate control unit and the passenger's mode control motor.

10. Check for continuity between body ground and climate control unit connector A (32P) terminals No. 5 and No. 6 individually.

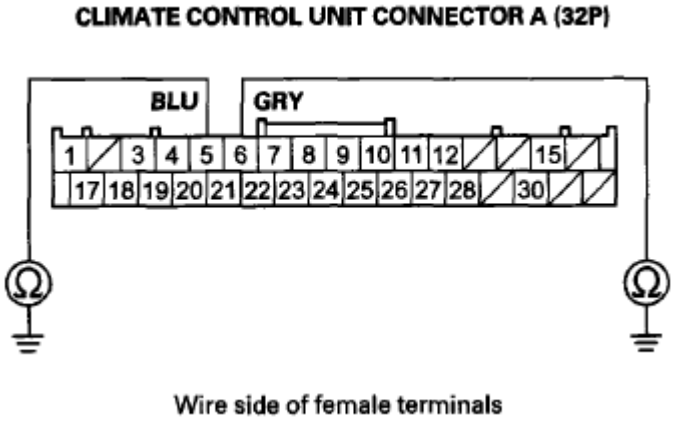


Fig. 94: Checking Continuity Between Body Ground And Climate Control Unit Connector A (32P) Terminals No. 5 And No. 6

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair a short to body ground in the wire(s) between the climate control unit and the passenger's mode control motor.

NO - Substitute a known-good climate control unit, and recheck. If the symptom/indication goes away, replace the original climate control unit (see **CLIMATE CONTROL UNIT REMOVAL/INSTALLATION**).

DTC B2967 OR DTC INDICATOR A AND WINDSHIELD DEFROST: AN OPEN IN THE HUMIDITY SENSOR CIRCUIT

1. Clear the DTC with the HDS.
2. Turn the ignition switch to LOCK (0), and then back to ON (II), or press the engine start/stop button to select the OFF mode and then the ON mode.
3. Do the Self-Diagnostic Function with the HDS (see **HOW TO USE THE SELF-DIAGNOSTIC FUNCTION WITH THE HDS**) or the climate control unit (see **HOW TO USE THE SELF-DIAGNOSTIC FUNCTION WITHOUT THE HDS**).
4. Check for DTCs.

   Is DTC B2967 or A and WINDSHIELD DEFROST indicated?

   YES - Go to step 5.

   NO - Intermittent failure, check for loose wires or poor connections on the humidity sensor circuit

5. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
6. Remove the humidity/in-car temperature sensor (see **HUMIDITY/IN-CAR TEMPERATURE SENSOR REPLACEMENT**), and test it (see **HUMIDITY/IN-CAR TEMPERATURE SENSOR TEST**).

   Is the humidity sensor OK?

   YES - Go to step 7.

   NO - Replace the humidity/in-car temperature sensor (see **HUMIDITY/IN-CAR TEMPERATURE SENSOR REPLACEMENT**).

7. Disconnect the humidity/in-car temperature sensor 4P connector.
8. Disconnect climate control unit connector C (20P).
9. Check for continuity between the following terminals of climate control unit connector C (20P) and the humidity/in-car temperature sensor 4P connector.

   20P: 4P:

No. 1 No. 3

No. 2 No. 1

No. 12 No. 2

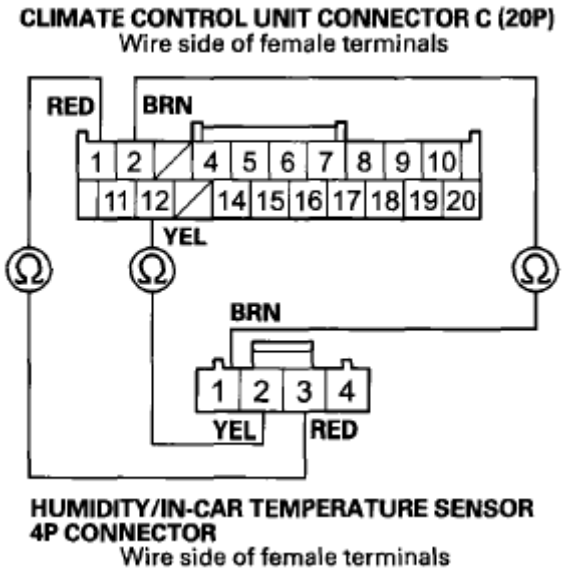


Fig. 95: Checking Continuity Between Terminals Of Climate Control Unit Connector And Humidity/In-Car Temperature Sensor 4P Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Check for loose wires or poor connections at climate control unit connector C (20P) and at the humidity/in-car temperature sensor 4P connector. If the connections are good, substitute a known-good climate control unit, and recheck. If the symptom/indication goes away, replace the original climate control unit (see **CLIMATE CONTROL UNIT REMOVAL/INSTALLATION**).

NO - Repair an open in the wire(s) between the climate control unit and the humidity sensor.

DTC B2968 OR DTC INDICATOR B AND WINDSHIELD DEFROST: A SHORT IN THE HUMIDITY SENSOR CIRCUIT

1. Clear the DTC with the HDS.
2. Turn the ignition switch to LOCK (0), and then back to ON (II), or press the engine start/stop button to select the OFF mode and then the ON mode.
3. Do the Self-Diagnostic Function with the HDS (see **HOW TO USE THE SELF-DIAGNOSTIC FUNCTION WITH THE HDS**) or the climate control unit (see **HOW TO USE THE SELF-DIAGNOSTIC FUNCTION WITHOUT THE HDS**).
4. Check for DTCs.

Is DTC B2968 or B and WINDSHIELD DEFROST indicated?

YES - Go to step 5.

NO - Intermittent failure. Check for loose wires or poor connections on the humidity sensor circuit.

5. Check for DTCs.

   Are these DTCs also present; B1234 or K and AUTO, and/or B1237 or N and AUTO, and/or B2980 or F and WINDSHIELD DEFROST?

   YES - Go to step 13.

   NO - Go to step 6.

6. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
7. Remove the humidity/in-car temperature sensor (see **HUMIDITY/IN-CAR TEMPERATURE SENSOR REPLACEMENT**), and test it (see **HUMIDITY/IN-CAR TEMPERATURE SENSOR TEST**).

   Is the humidity sensor OK?

   YES - Go to step 8.

   NO - Replace the humidity/in-car temperature sensor (see **HUMIDITY/IN-CAR TEMPERATURE SENSOR REPLACEMENT**).

8. Disconnect the humidity/in-car temperature sensor 4P connector.
9. Disconnect climate control unit connector C (20P).
10. Check for continuity between climate control unit connector C (20P) terminal No. 12 and body ground.

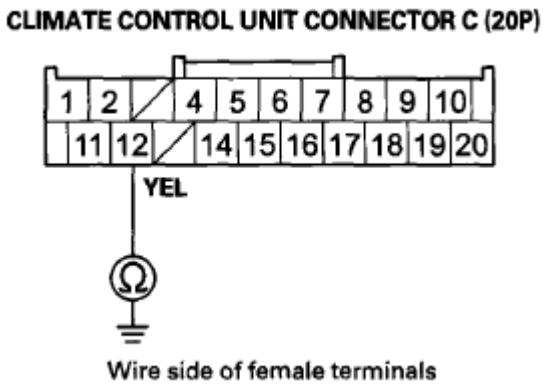


Fig. 96: Checking Continuity Between Climate Control Unit Connector C (20P) Terminal No. 12 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair a short to body ground in the wire between the climate control unit and the humidity sensor.

NO - Go to step 11.

11. Check for continuity between climate control unit connector C (20P) terminals No. 2 and No. 12.

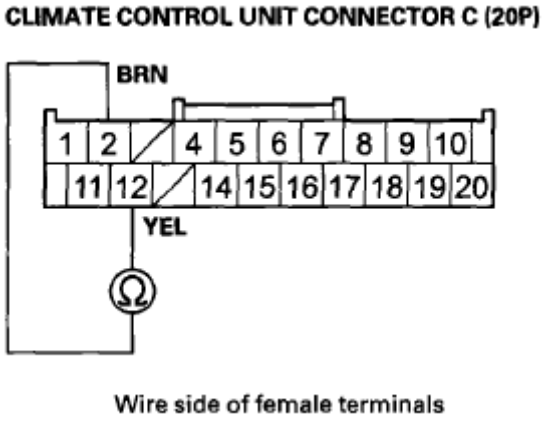


Fig. 97: Checking Continuity Between Climate Control Unit Connector C (20P) Terminals No. 2 And No. 12
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair a short in the wires.

NO - Go to step 12.

12. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode, and measure the voltage between climate control unit connector C (20P) terminal No. 12 and body ground.

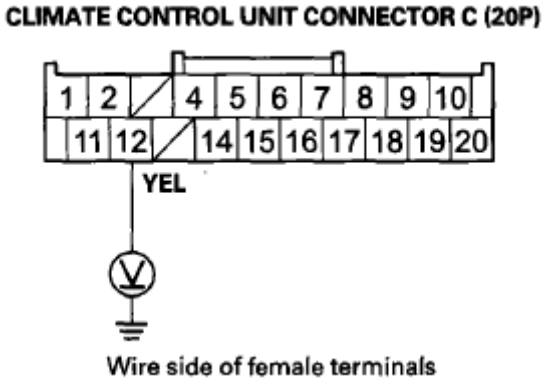


Fig. 98: Measuring Voltage Between Climate Control Unit Connector C (20P) Terminal No. 12 And Body Ground

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there any voltage?

YES - Repair a short to power in the wire between the climate control unit and the humidity sensor. This short may also damage the climate control unit. Repair a short to power before replacing the climate control unit.

NO - Substitute a known-good climate control unit, and recheck. If the symptom/indication goes away, replace the original climate control unit (see **CLIMATE CONTROL UNIT REMOVAL/INSTALLATION**).

13. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode, and disconnect climate control unit connector C (20P).
14. Disconnect these items:
    - Driver's air mix control motor
    - Passenger's air mix control motor
    - Humidity/in-car temperature sensor
    - A/C pressure sensor
15. Check for continuity between climate control unit connector C (20P) terminal No. 2 and body ground.

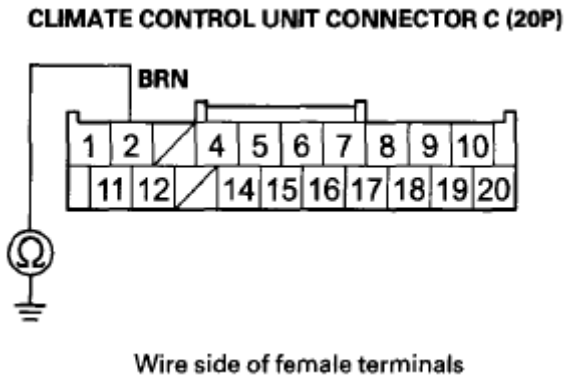


Fig. 99: Checking Continuity Between Climate Control Unit Connector C (20P) Terminal No. 2 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair a short to body ground in the wire.

NO - Go to step 16.

16. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode, and measure the voltage between climate control unit connector C (20P) terminal No. 2 and body ground.

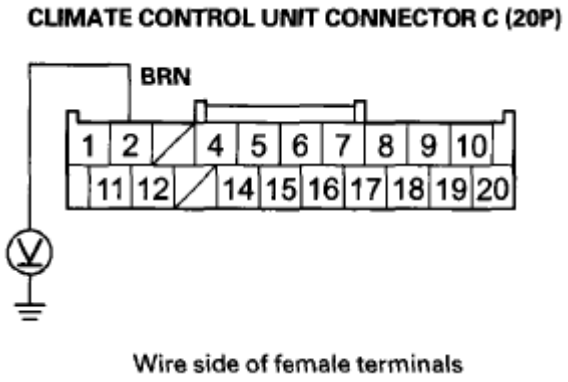


Fig. 100: Measuring Voltage Between Climate Control Unit Connector C (20P) Terminal No. 2 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there any voltage?

YES - Repair a short to power in the wire. This short may have also damaged the climate control unit. Repair the short to power before replacing the climate control unit

NO - Go to step 17.

17. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
18. Reconnect the climate control unit connector C (20P).
19. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode and measure the voltage between climate control unit connector C (20P) terminal No. 2 and body ground.

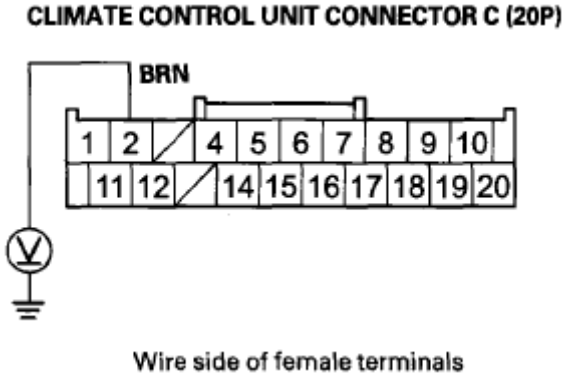


Fig. 101: Measuring Voltage Between Climate Control Unit Connector C (20P) Terminal No. 2 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there about 5 V?

YES - Go to step 20.

NO - Check for a loose wire or poor connection at climate control unit connector C (20P). If the connection is good, substitute a known-good climate control unit and recheck. If the symptom/indication goes away, replace the original climate control unit (see **CLIMATE CONTROL UNIT REMOVAL/INSTALLATION**).

20. While measuring the voltage between climate control unit connector C (20P) terminal No. 2 and body ground, reconnect these items individually and note the voltage reading each time:
    - Driver's air mix control motor
    - Passenger's air mix control motor
    - Humidity/in-car temperature sensor
    - A/C pressure sensor

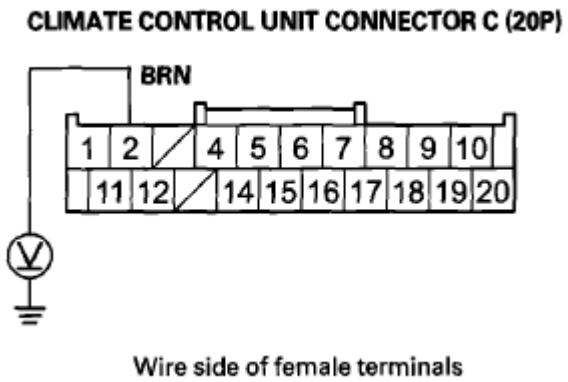


Fig. 102: Measuring Voltage Between Climate Control Unit Connector C (20P) Terminal No. 2 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Does the voltage remain at about 5 V?

YES - Substitute a known-good climate control unit, and recheck. If the symptom/indication goes away, replace the original climate control unit (see **CLIMATE CONTROL UNIT REMOVAL/INSTALLATION**).

NO - Replace the component that caused the voltage drop.

DTC B2969: CLIMATE CONTROL UNIT LOST COMMUNICATION WITH DRIVER'S MICU (WIPSW MESSAGE)

NOTE: If you are troubleshooting multiple DTCs, be sure to follow the instructions in the B-CAN system diagnosis test mode A (see TROUBLESHOOTING - B-CAN SYSTEM DIAGNOSIS TEST MODE A).

1. Clear the DTC with the HDS.
2. Turn the ignition switch to LOCK (0), and then back to ON (II), or press the engine start/stop button to select the OFF mode and then the ON mode.

3. Wait for at least 6 seconds.
4. Do the Self-Diagnostic Function with the HDS (see **HOW TO USE THE SELF-DIAGNOSTIC FUNCTION WITH THE HDS**).
5. Check the DTCs.

   Is DTC B2969 indicated?

   YES - Go to step 6.

   NO - The system is OK at this time. Check for loose wires or poor connections on the driver's MICU and climate control unit circuit

6. Select B-CAN Control Units Information in the BODY ELECTRICAL menu.
7. Select Check Connected Control Units in the B-CAN Control Units Information menu.

   Is the driver's MICU detected?

   YES - Substitute a known-good climate control unit, and recheck. If the symptom/indication goes away, replace the original climate control unit (see **CLIMATE CONTROL UNIT REMOVAL/INSTALLATION**).

   NO - Go to step 8.

8. Disconnect driver's under-dash fuse/relay box connector P (20P).
9. Disconnect climate control unit connector C (20P).
10. Check for continuity between the following terminals of climate control unit connector C (20P) and driver's under-dash fuse/relay box connector P (20P).

    20P: 20P:

    No. 7 No. 5

    No. 8 No. 6

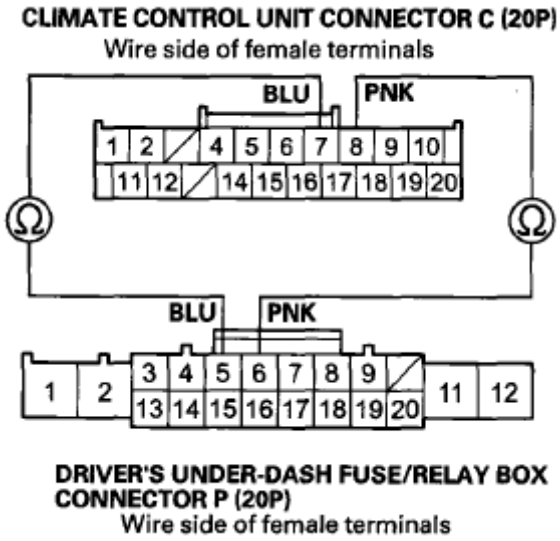


Fig. 103: Checking Continuity Between Terminals Of Climate Control Unit Connector And Driver's Under-Dash Fuse/Relay Box Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to the driver's MICU input test (see **MICU INPUT TEST**).

NO - Repair an open in the wire(s) between the driver's MICU and the climate control unit.

DTC B2979 OR DTC INDICATOR E AND WINDSHIELD DEFROST: AN OPEN IN THE A/C PRESSURE SENSOR CIRCUIT

1. Clear the DTC with the HDS.
2. Turn the ignition switch to LOCK (0) and then back to ON (II), or press the engine start/stop button to select the OFF mode and then the ON mode.
3. Do the Self-Diagnostic Function with the HDS (see **HOW TO USE THE SELF-DIAGNOSTIC FUNCTION WITH THE HDS**) or the climate control unit (see **HOW TO USE THE SELF-DIAGNOSTIC FUNCTION WITHOUT THE HDS**).
4. Check for DTCs.

   Is DTC B2979 or E and WINDSHIELD DEFROST indicated?

   YES - Go to step 5.

   NO - Intermittent failure. Check for loose wires or poor connections on the A/C pressure sensor circuit.

5. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
6. Disconnect the A/C pressure sensor 3P connector.
7. Disconnect climate control unit connector C (20P).

8. Check for continuity between the following terminals of climate control unit connector C (20P) and the A/C pressure sensor 3P connector.

   20P: 3P:

   No. 1 No. 3

   No. 2 No. 1

   No. 11 No. 2

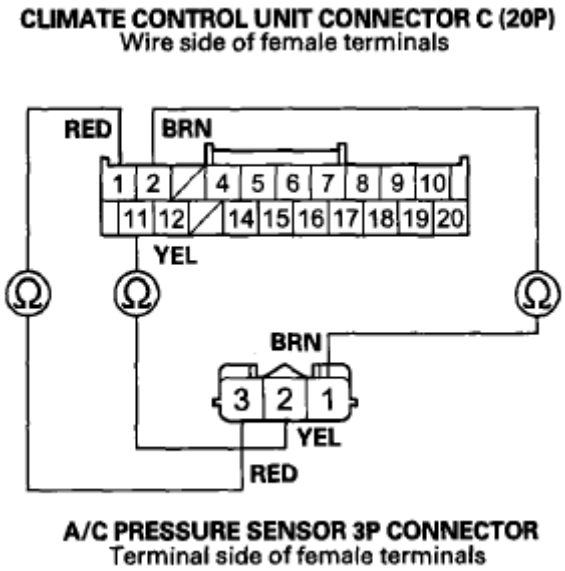


Fig. 104: Checking Continuity Between Terminals Of Climate Control Unit Connector And A/C Pressure Sensor 3P Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 9.

NO - Repair an open in the wire(s) between the climate control unit and the A/C pressure sensor.

9. Reconnect climate control unit connector C (20P).
10. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
11. Measure the voltage between climate control unit connector C (20P) terminals No. 1 and No. 2, and between climate control unit connector C (20P) terminals No. 1 and No. 11.

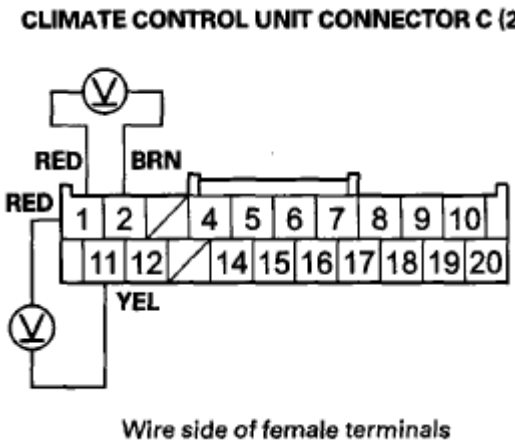


Fig. 105: Measuring Voltage Between Climate Control Unit Connector C (20P) Terminals No. 1 And No. 2
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there about 5 V?

YES - Replace the A/C pressure sensor.

NO - Check for loose wires or poor connections at climate control unit connector C (20P) and at the A/C pressure sensor 3P connector. If the connections are good, substitute a known-good climate control unit, and recheck. If the symptom/indication goes away, replace the original climate control unit (see **CLIMATE CONTROL UNIT REMOVAL/INSTALLATION**).

DTC B2980 OR DTC INDICATOR F AND WINDSHIELD DEFROST: A SHORT IN THE A/C PRESSURE SENSOR CIRCUIT

1. Clear the DTC with the HDS.
2. Turn the ignition switch to LOCK (0) and then back to ON (II), or press the engine start/stop button to select the OFF mode and then the ON mode.
3. Do the Self-Diagnostic Function with the HDS (see **HOW TO USE THE SELF-DIAGNOSTIC FUNCTION WITH THE HDS**) or the climate control unit (see **HOW TO USE THE SELF-DIAGNOSTIC FUNCTION WITHOUT THE HDS**).
4. Check for DTCs.

   Is DTC B2980 or F and WINDSHIELD DEFROST indicated?

   YES - Go to step 5.

   NO - Intermittent failure. Check for loose wires or poor connections on the A/C pressure sensor circuit.

5. Check for DTCs.

   Are these DTCs also present; B1234 or K and AUTO, and/or B1237 or N and AUTO, and/or B2968 or B and WINDSHIELD DEFROST?

YES - Go to step 16.

NO - Go to step 6.

6. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
7. Disconnect the A/C pressure sensor 3P connector.
8. Disconnect climate control unit connector C (20P).
9. Check for continuity between climate control unit connector C (20P) terminal No. 11 and body ground.

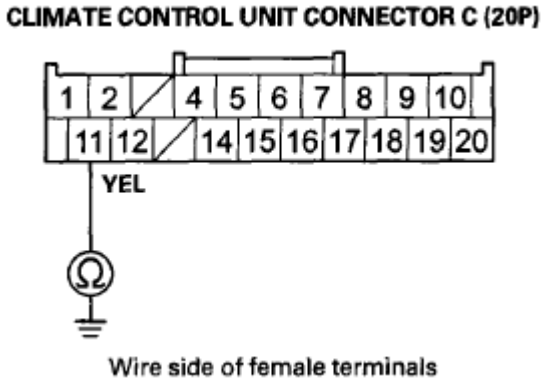


Fig. 106: Checking Continuity Between Climate Control Unit Connector C (20P) Terminal No. 11 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair a short to body ground in the wire between the climate control unit and the A/C pressure sensor.

NO - Go to step 10.

10. Check for continuity between climate control unit connector C (20P) terminals No. 2 and No. 11.

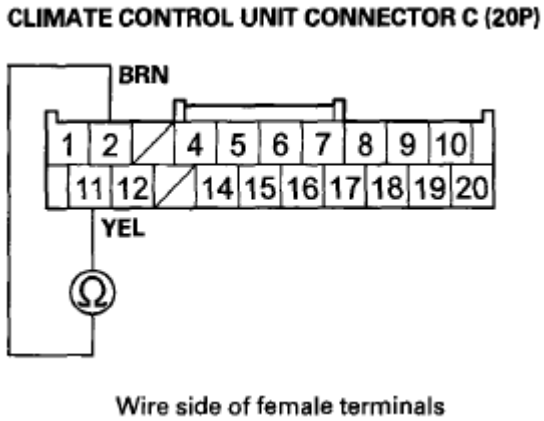


Fig. 107: Checking Continuity Between Climate Control Unit Connector C (20P) Terminals No. 2

And No. 11
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair a short in the wires.

NO - Go to step 11.

11. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode, and measure the voltage between climate control unit connector C (20P) terminal No. 11 and body ground.

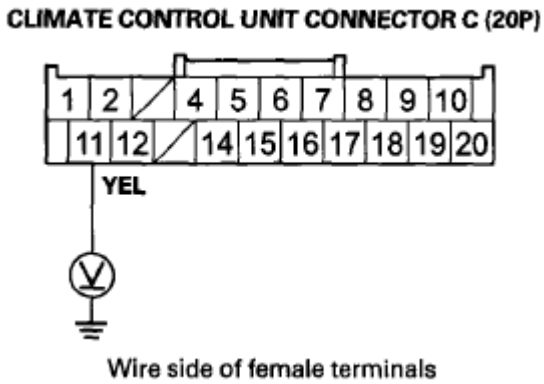


Fig. 108: Measuring Voltage Between Climate Control Unit Connector C (20P) Terminal No. 11 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there any voltage?

YES - Repair a short to power in the wire between the climate control unit and the A/C pressure sensor. This short may also damage the climate control unit. Repair a short to power before replacing the climate control unit.

NO - Go to step 12.

12. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
13. Reconnect climate control unit connector C (20P).
14. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
15. Measure the voltage between climate control unit connector C (20P) terminals No. 1 and No. 2, and between climate control unit connector C (20P) terminals No. 1 and No. 11.

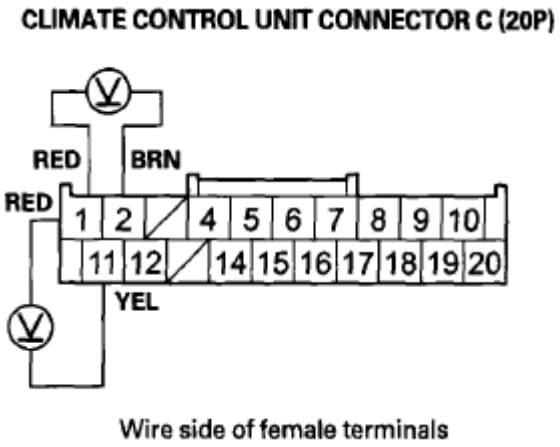


Fig. 109: Measuring Voltage Between Climate Control Unit Connector C (20P) Terminals No. 1 And No. 2
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there about 5 V?

YES - Replace the A/C pressure sensor.

NO - Check for loose wires or poor connections at climate control unit connector C (20P) and at the A/C pressure sensor 3P connector. If the connections are good, substitute a known-good climate control unit, and recheck. If the symptom/indication goes away, replace the original climate control unit (see **CLIMATE CONTROL UNIT REMOVAL/INSTALLATION**).

16. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode, and disconnect climate control unit connector C (20P).
17. Disconnect these items:
    - Driver's air mix control motor
    - Passenger's air mix control motor
    - Humidity/in-car temperature sensor
    - A/C pressure sensor
18. Check for continuity between climate control unit connector C (20P) terminal No. 2 and body ground.

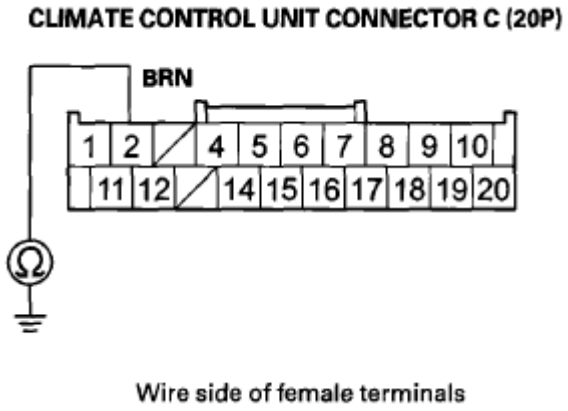


Fig. 110: Checking Continuity Between Climate Control Unit Connector C (20P) Terminal No. 2 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair a short to body ground in the wire.

NO - Go to step 19.

19. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode, and measure the voltage between climate control unit connector C (20P) terminal No. 2 and body ground.

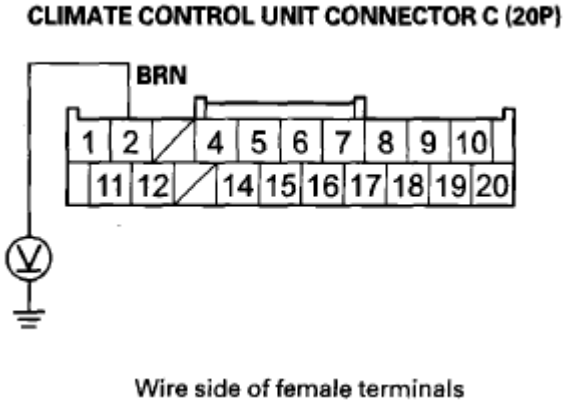


Fig. 111: Measuring Voltage Between Climate Control Unit Connector C (20P) Terminal No. 2 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there any voltage?

YES - Repair a short to power in the wire. This short may have also damaged the climate control unit. Repair the short to power before replacing the climate control unit.

NO - Go to step 20.

20. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
21. Reconnect climate control unit connector C (20P).
22. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode, and measure the voltage between climate control unit connector C (20P) terminal No. 2 and body ground.

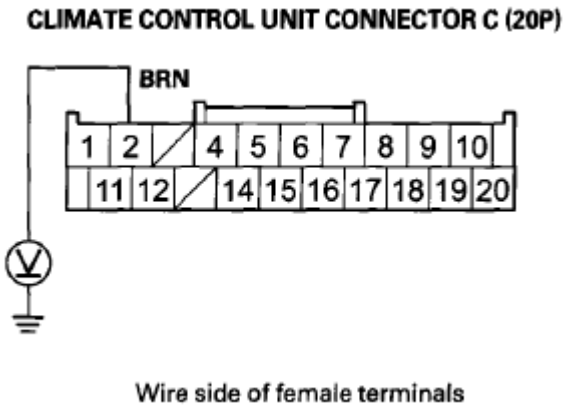


Fig. 112: Measuring Voltage Between Climate Control Unit Connector C (20P) Terminal No. 2 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there about 5 V?

YES - Go to step 23.

NO - Check for a loose wire or poor connection at climate control unit connector C (20P). If the connection is good, substitute a known-good climate control unit, and recheck. If the symptom/indication goes away, replace the original climate control unit (see **CLIMATE CONTROL UNIT REMOVAL/INSTALLATION**).

23. While measuring the voltage between climate control unit connector C (20P) terminal No. 2 and body ground, reconnect these items individually and note the voltage reading each time:
    - Driver's air mix control motor
    - Passenger's air mix control motor
    - Humidity/in-car temperature sensor
    - A/C pressure sensor

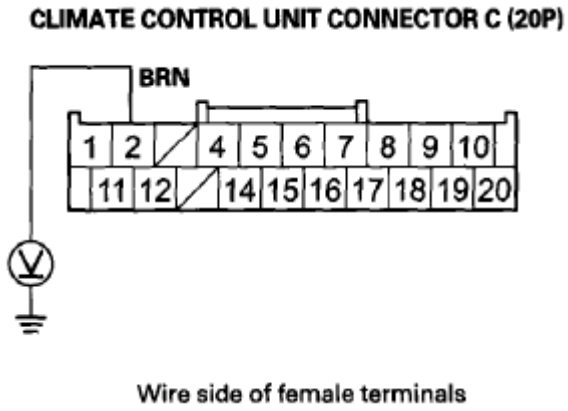


Fig. 113: Measuring Voltage Between Climate Control Unit Connector C (20P) Terminal No. 2 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Does the voltage remain at about 5 V?

YES - Substitute a known-good climate control unit, and recheck. If the symptom/indication goes away, replace the original climate control unit (see **CLIMATE CONTROL UNIT REMOVAL/INSTALLATION**).

NO - Replace the component that caused the voltage drop.

DTC B2983 OR DTC INDICATOR K AND MODE: A PROBLEM IN THE RECIRCULATION CONTROL MOTOR CIRCUIT, LINKAGE, DOOR, OR MOTOR

1. Clear the DTC with the HDS.
2. Turn the ignition switch to LOCK (0) and then back to ON (II), or press the engine start/stop button to select the OFF mode and then the ON mode.
3. Do the Self-diagnostic Function with the HDS (see **HOW TO USE THE SELF-DIAGNOSTIC FUNCTION WITH THE HDS**) or with the climate control unit (see **HOW TO USE THE SELF-DIAGNOSTIC FUNCTION WITHOUT THE HDS**).
4. Check the DTCs.

   Is DTC B2983 or K and MODE indicated?

   YES - Go to step 5.

   NO - Intermittent failure. Check for loose wires or poor connections on the recirculation control motor circuit.

5. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
6. Test the recirculation control motor (see **RECIRCULATION CONTROL MOTOR TEST**).

   Is the recirculation control motor OK?

YES - Go to step 7.

NO - Replace the recirculation control motor (see **RECIRCULATION CONTROL MOTOR REPLACEMENT**), or repair the recirculation control linkage or door.

7. Disconnect the recirculation control motor 7P connector.
8. Disconnect climate control unit connector C (20P).
9. Check for continuity between the following terminals of climate control unit connector C (20P) and the recirculation control motor 7P connector.

   20P: 7P:

   No. 9 No. 2

   No. 10 No. 1

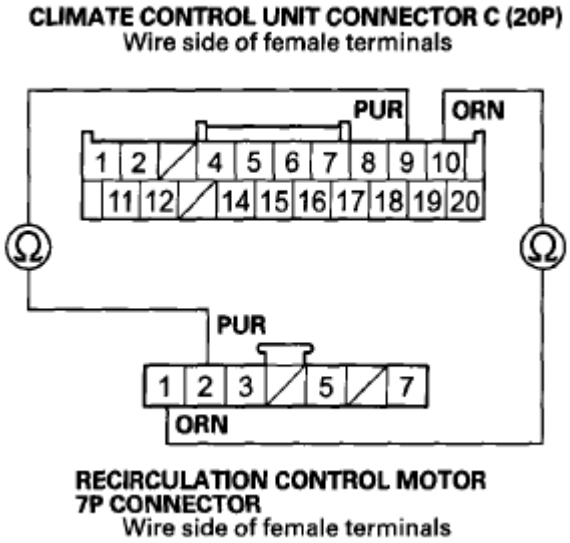


Fig. 114: Checking Continuity Between Terminals Of Climate Control Unit Connector And Recirculation Control Motor 7P Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 10.

NO - Repair an open in the wire(s) between the climate control unit and the recirculation control motor.

10. Check for continuity between body ground and climate control unit connector C (20P) terminals No. 9 and No. 10 individually.

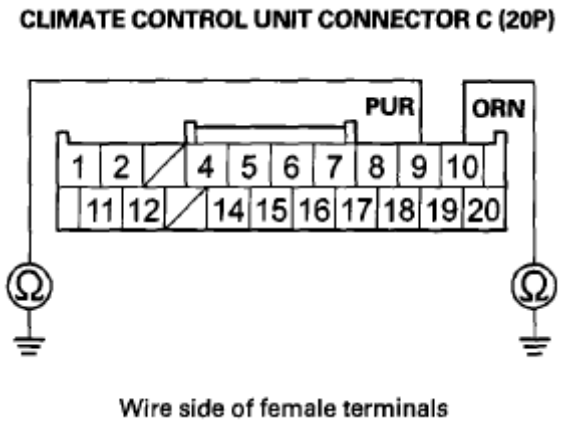


Fig. 115: Checking Continuity Between Body Ground And Climate Control Unit Connector C (20P) Terminals
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair a short to body ground in the wire(s) between the climate control unit and the recirculation control motor.

NO - Substitute a known-good climate control unit, and recheck. If the symptom/indication goes away, replace the original climate control unit (see **CLIMATE CONTROL UNIT REMOVAL/INSTALLATION**).

CLIMATE CONTROL POWER AND GROUND CIRCUIT TROUBLESHOOTING

1. Check the No. 16(7.5 A) fuse in the driver's under-dash fuse/relay box.

   Is the fuse OK?

   YES - Go to step 2.

   NO - Replace the fuse, and recheck. If the fuse blows again, check for a short in the No. 16 (7.5 A) fuse circuit.

2. Disconnect climate control unit connector A (32P).
3. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
4. Measure the voltage between climate control unit connector A (32P) terminal No. 15 and body ground.

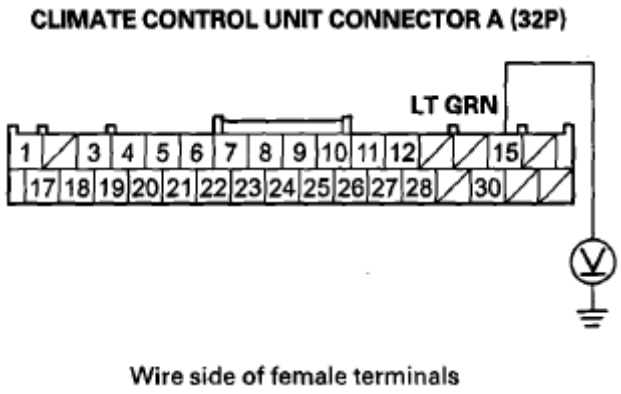


Fig. 116: Measuring Voltage Between Climate Control Unit Connector A (32P) Terminal No. 15 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there battery voltage?

YES - Go to step 5.

NO - Repair an open in the wire between the No. 16 (7.5 A) fuse in the driver's under-dash fuse/relay box and the climate control unit.

5. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
6. Check for continuity between climate control unit connector A (32P) terminal No. 1 and body ground.

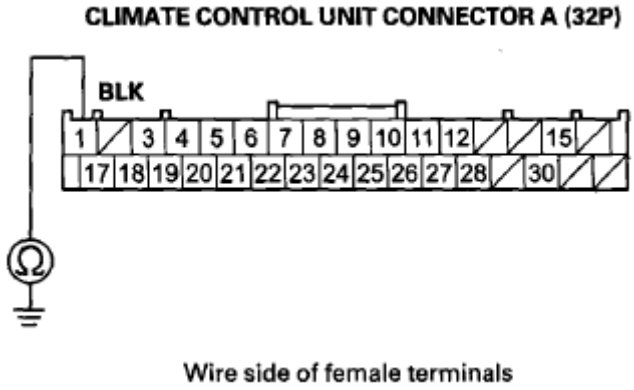


Fig. 117: Checking Continuity Between Climate Control Unit Connector A (32P) Terminal No. 1 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Check for loose wires or poor connections at climate control unit connector A (32P). If the connections are good, substitute a known-good climate control unit (see **CLIMATE CONTROL UNIT REMOVAL/INSTALLATION**), and recheck.

NO - Check for an open in the wire between the climate control unit and body ground. If the wire is OK, check for poor body ground at G403 (see **CONNECTOR TO FUSE/RELAY BOX INDEX**).

RADIATOR AND A/C CONDENSER FAN LOW SPEED CIRCUIT TROUBLESHOOTING

NOTE:

- **Do not use this troubleshooting procedure if the A/C compressor is inoperative. Refer to the symptom troubleshooting.**
- **Before doing symptom troubleshooting, check for PGM-FI DTCs (see GENERAL TROUBLESHOOTING INFORMATION).**

1. Check the No. 3-3 (SUB FAN) (30 A) fuse in the under-hood fuse/relay, and the No. 16 (7.5 A) fuse in the driver's under-dash fuse/relay box.

   Are the fuses OK?

   YES - Go to step 2.

   NO - Replace the fuse(s), and recheck. If the fuse(s) blow again, check for a short in the No. 3-3 (SUB FAN) (30 A) fuse in the under-hood fuse/relay, and the No. 16 (7.5 A) fuse circuits.

2. Remove the A/C condenser fan relay from the relay block, and test it (see **POWER RELAY TEST**).

   Is the relay OK?

   YES - Go to step 3.

   NO - Replace the A/C condenser fan relay.

3. Reinstall the A/C condenser fan relay.
4. Connect the HDS to the DLC.
5. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
6. Turn on the A/C.
7. Check the FAN LOW CTRL in the PGM-FI Data List with the HDS.

   Is the FAN LOW CTRL on?

   YES - Go to step 8.

   NO - Substitute a known-good ECM/PCM (see **ECM/PCM REPLACEMENT**), and retest. If the symptom/indication goes away with a known-good ECM/PCM, replace the original ECM/PCM (see **ECM/PCM REPLACEMENT**).

8. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
9. Jump the SCS line with the HDS.

NOTE: This step must be done to protect the ECM/PCM from damage.

10. Disconnect ECM/PCM connector A (49P).
11. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
12. Measure the voltage between ECM/PCM connector A terminal No. 4 and body ground.

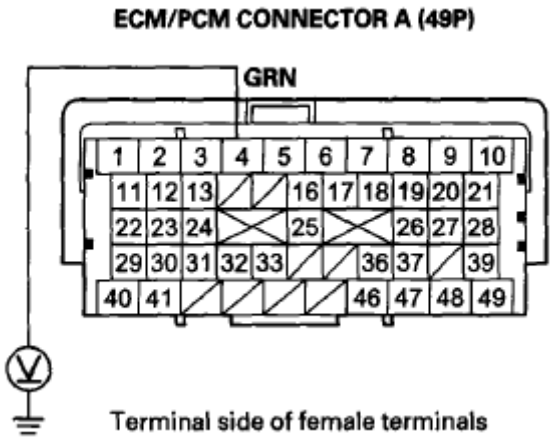


Fig. 118: Measuring Voltage Between ECM/PCM Connector A Terminal No. 4 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there battery voltage?

YES - Go to step 13.

NO - Repair an open in the wires between the under-hood fuse/relay box and the ECM/PCM, or between the No. 16 (7.5 A) fuse in driver's under-dash fuse/relay box and the under-hood fuse/relay box. If wires are OK, replace the under-hood fuse/relay box (see **REMOVAL AND INSTALLATION**).

13. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
14. Connect the ECM/PCM connector A (49P) terminal No. 4 to body ground with a jumper wire.

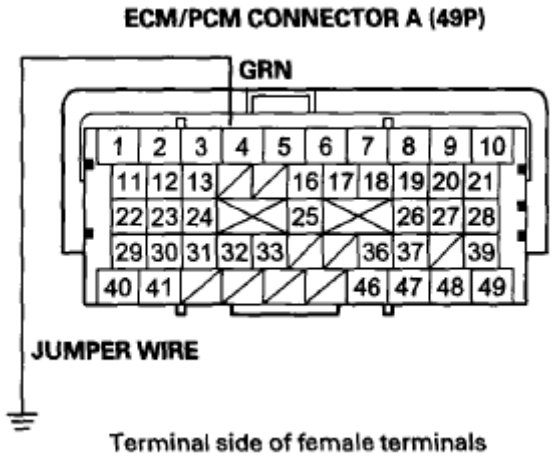


Fig. 119: Connecting ECM/PCM Connector A (49P) Terminal No. 4 To Body Ground With Jumper Wire
Courtesy of AMERICAN HONDA MOTOR CO., INC.

15. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.

    Do the A/C condenser and radiator fans run on low?

    YES - Check for loose wires or poor connections at ECM/PCM connector A (49P) terminal No. 4. If the connections are good, substitute a known-good ECM/PCM (see **SUBSTITUTING THE ECM/PCM**), and recheck. If the symptom/indication goes away, replace the original ECM/PCM (see **ECM/PCM REPLACEMENT**).

    NO - Go to step 16.

16. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
17. Disconnect the jumper wire.
18. Reconnect ECM/PCM connector A (49P).
19. Disconnect the A/C condenser fan motor 2P connector.
20. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode, then set the A/C button and fan control button ON.
21. Measure the voltage between A/C condenser fan motor 2P connector terminal No. 2 and body ground.

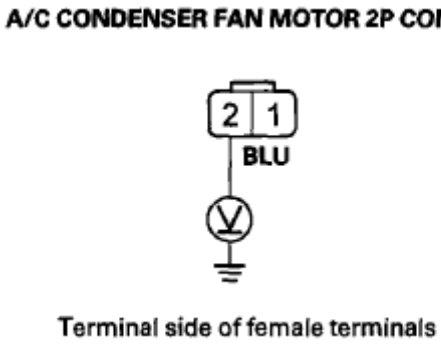


Fig. 120: Measuring Voltage Between A/C Condenser Fan Motor 2P Connector Terminal No. 2 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there battery voltage?

YES - Go to step 22.

NO - Repair an open in the wire between the under-hood fuse/relay box and the A/C condenser fan motor. If the wire is OK, replace the under-hood fuse/relay box (see **REMOVAL AND INSTALLATION**).

22. Set the A/C button and fan control button OFF, then turn the ignition switch to LOCK (0), or press the

engine start/stop button to select the OFF mode.

23. Test the A/C condenser fan motor (see **FAN MOTOR TEST**).

    Is the A/C condenser fan motor OK?

    YES - Go to step 24.

    NO - Replace the A/C condenser fan motor (see **FAN, FAN MOTOR, AND SHROUD REMOVAL AND INSTALLATION** .

24. Remove the relay circuit board (see **REMOVAL AND INSTALLATION**) from the under-hood fuse/relay box, and test the fan control relay (see **POWER RELAY TEST**).

    Is the relay OK?

    YES - Go to step 25.

    NO - Replace the relay circuit board.

25. Disconnect under-hood fuse/relay box connector C (5P).
26. Disconnect the A/C condenser fan motor 2P connector. *
27. Check for continuity between under-hood fuse/relay box connector C (5P) terminal No. 5 and A/C condenser fan motor 2P connector terminal No. 1.

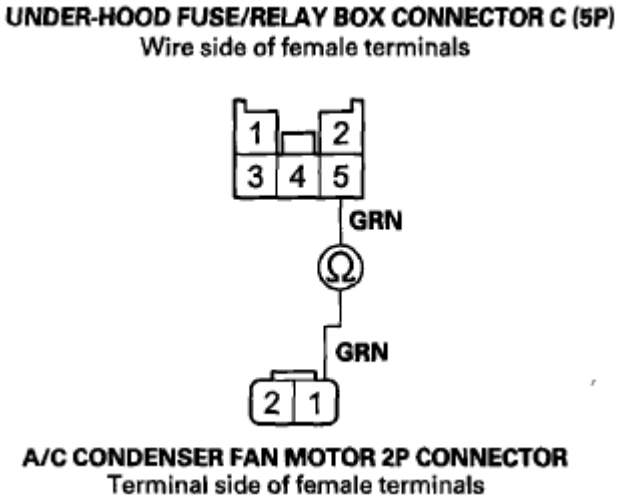


Fig. 121: Checking Continuity Between Under-Hood Fuse/Relay Box Connector And A/C Condenser Fan Motor 2P Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 28.

NO - Repair an open in the wire between the under-hood fuse/relay box and the A/C condenser fan motor.

28. Disconnect the radiator fan motor 2P connector.
29. Check for continuity between under-hood fuse/relay box connector C (5P) terminal No. 1 and radiator fan motor 2P connector terminal No. 2.

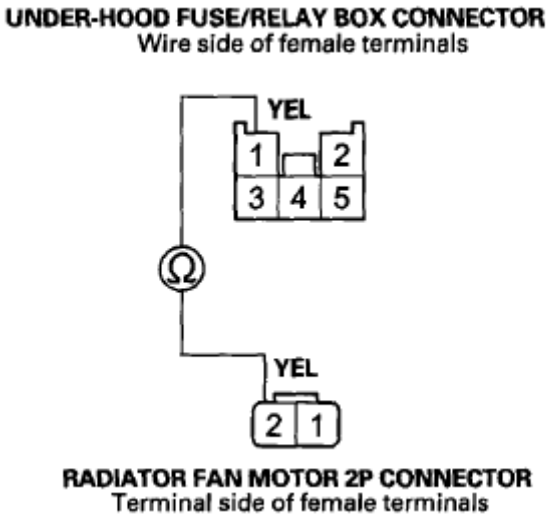


Fig. 122: Checking Continuity Between Under-Hood Fuse/Relay Box Connector And Radiator Fan Motor 2P Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 30.

NO - Repair an open in wire between the under-hood fuse/relay box and the radiator fan motor.

30. Check for continuity between radiator fan motor 2P connector terminal No. 1 and body ground.

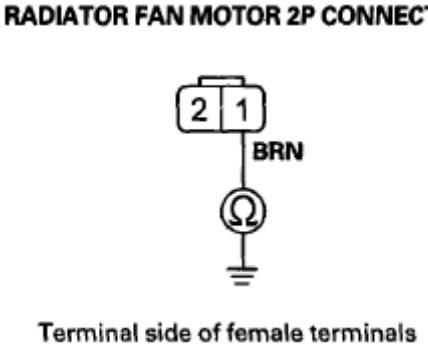


Fig. 123: Checking Continuity Between Radiator Fan Motor 2P Connector Terminal No. 1 And Body Ground

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Replace the radiator fan motor (see **FAN, FAN MOTOR, AND SHROUD REMOVAL AND INSTALLATION**).

NO - Check for an open in the wire between the radiator fan motor and body ground. If the wire is OK, check for poor body ground at G301 (see **CONNECTOR TO FUSE/RELAY BOX INDEX**).

A/C CONDENSER FAN HIGH SPEED CIRCUIT TROUBLESHOOTING

NOTE:

- **Do not use this troubleshooting procedure if the A/C compressor is inoperative. Refer to the symptom troubleshooting.**
- **Before doing any symptom troubleshooting, check for PGM-FI DTCs (see GENERAL TROUBLESHOOTING INFORMATION).**

1. Check the No. 3-3 (SUB FAN) (30 A) fuse in the under-hood fuse/relay, and the No. 16 (7.5 A) fuse in the driver's under-dash fuse/relay box.

   Are the fuses OK?

   YES - Go to step 2.

   NO - Replace the fuse(s), and recheck. If fuse(s) blow again, check for a short in the No. 3-3 (SUB FAN) (30 A) fuse in the under-hood fuse/relay, and the No. 16 (7.5 A) fuse circuits.

2. Jump the SCS line with the HDS.

   NOTE: This step must be done to protect the ECM/PCM from damage.

3. Disconnect ECM/PCM connector A (49P).
4. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
5. Measure the voltage between ECM/PCM connector A terminal No. 5 and body ground.

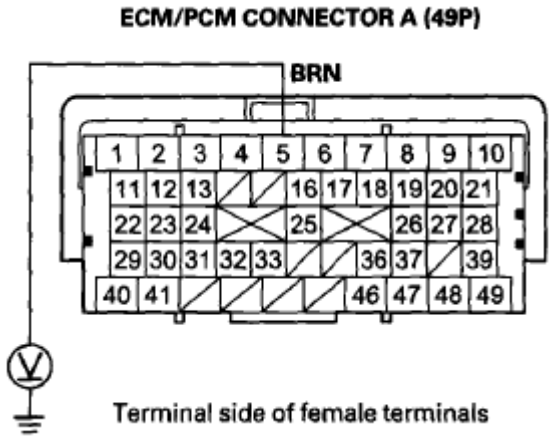


Fig. 124: Measuring Voltage Between ECM/PCM Connector A Terminal No. 5 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there battery voltage?

YES - Go to step 6.

NO - Repair an open in the wire between the under-hood fuse/relay box and the ECM/PCM. If the wire is OK, replace the under-hood fuse/relay box (see **REMOVAL AND INSTALLATION**).

6. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
7. Connect the ECM/PCM connector A (49P) terminals No. 4, No. 5, and No. 40 to body ground with jumper wires.

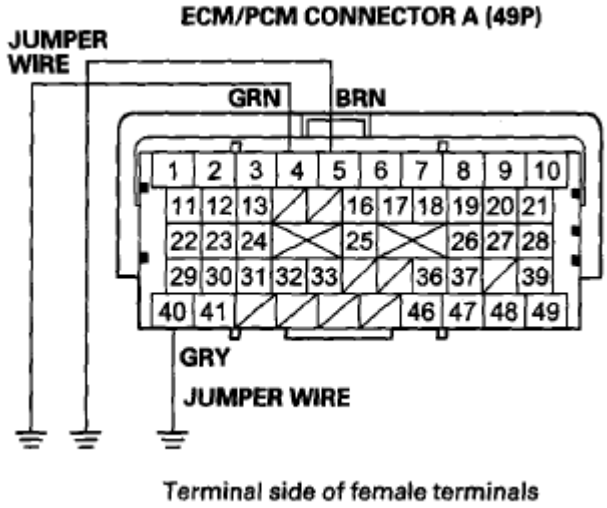


Fig. 125: Connecting ECM/PCM Connector A (49P) Terminals No. 4, No. 5, And No. 40 To Body Ground With Jumper Wires
Courtesy of AMERICAN HONDA MOTOR CO., INC.

8. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.

Does the A/C condenser fan and radiator fan run on high?

YES - Check for loose wires or poor connections at ECM/PCM connector A (49P) terminals No. 4, No. 5, and No. 40. If the connections are good, substitute a known-good ECM/PCM (see **SUBSTITUTING THE ECM/PCM**), and recheck. If the symptom/indication goes away, replace the original ECM/PCM (see **ECM/PCM REPLACEMENT**).

NO - Go to step 9.

9. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
10. Disconnect under-hood fuse/relay box connector C (5P).
11. Check for continuity between under-hood fuse/relay box connector C (5P) terminal No. 2 and body ground.

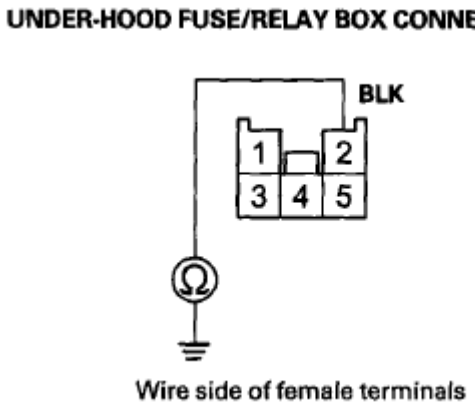


Fig. 126: Checking Continuity Between Under-Hood Fuse/Relay Box Connector C (5P) Terminal No. 2 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Replace the under-hood fuse/relay box (see **REMOVAL AND INSTALLATION**).

NO - Check for an open in the wire between the under-hood fuse/relay box and body ground. If the wire is OK, check for poor ground at G301 (see **CONNECTOR TO FUSE/RELAY BOX INDEX**).

A/C COMPRESSOR CLUTCH CIRCUIT TROUBLESHOOTING

NOTE:

- **It is normal for the A/C compressor to turn off under certain conditions, such as low idle, high engine coolant temperature, hard acceleration, or high/low refrigerant pressure.**
- **Do not use this troubleshooting procedure if the fans are also inoperative with the A/C on. Refer to the symptom troubleshooting.**
- **Before doing any symptom troubleshooting, check for PGM-FI DTCs (see**

GENERAL TROUBLESHOOTING INFORMATION).

1. Check the No. 20 (7.5 A) fuse in the under-hood fuse/relay box.

   Is the fuse OK?

   YES - Go to step 2.

   NO - Replace the fuse, and recheck. If the fuse blow again, check for a short in the No. 20 (7.5 A) fuse circuit.

2. Connect the HDS to the DLC.
3. Start the engine.
4. Turn on the A/C.
5. Check the A/C switch in the PGM-FI Data List with the HDS.

   Is the A/C switch ON?

   YES - Go to step 6.

   NO - Go to A/C Signal Circuit Troubleshooting (see **A/C SIGNAL CIRCUIT TROUBLESHOOTING**).

6. Using the HDS, confirm the following values in the PGM-FI Data List at idle.

TP SENSOR	About 0.5 V
ENGINE IDLE	J35Z6 engine: 630-730 RPM
	J37A4 engine (M/T): 700-800 RPM
	J37A4 engine (A/T): 650-750 RPM
ECT SENSOR 2	176-212°F (80-100 °C)
A/C SWITCH	ON
A/C CLUTCH	ON

   Are all the values within specifications?

   YES - Go to step 7.

   NO - Troubleshoot the value that is not within the specifications.

7. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
8. Remove the A/C compressor clutch relay from the under-hood fuse/relay box, and test it (see **POWER RELAY TEST**).

   Is the relay OK?

YES - Go to step 9.

NO - Replace the A/C compressor clutch relay.

9. Measure the voltage between A/C compressor clutch relay 4P socket terminal No. 1 and body ground.

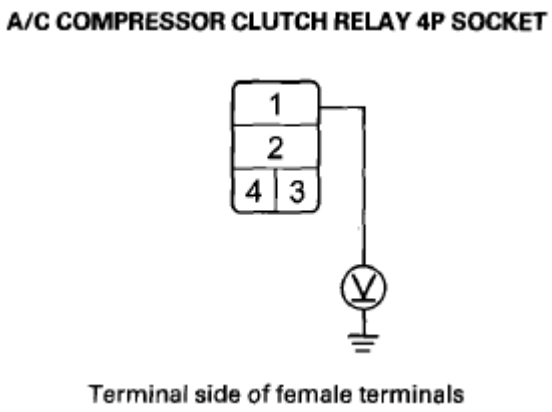


Fig. 127: Measuring Voltage Between A/C Compressor Clutch Relay 4P Socket Terminal No. 1 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there battery voltage?

YES - Go to step 10.

NO - Replace the under-hood fuse/relay box (see **REMOVAL AND INSTALLATION**).

10. Connect A/C compressor clutch relay 4P socket terminals No. 1 and No. 2 with a jumper wire.

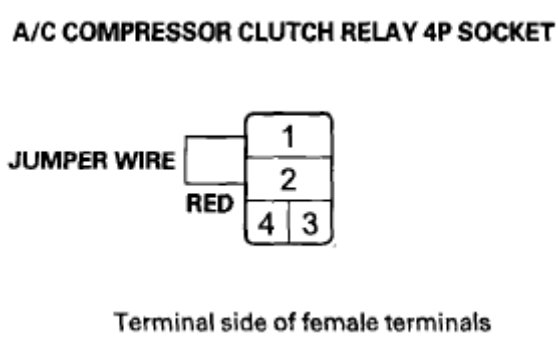


Fig. 128: Connecting A/C Compressor Clutch Relay 4P Socket Terminals No. 1 And No. 2 With Jumper Wire
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Does the A/C compressor clutch click?

YES - Go to step 11.

NO - Go to step 20.

11. Disconnect the jumper wire.
12. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
13. Measure the voltage between A/C compressor clutch relay 4P socket terminal No. 3 and body ground.

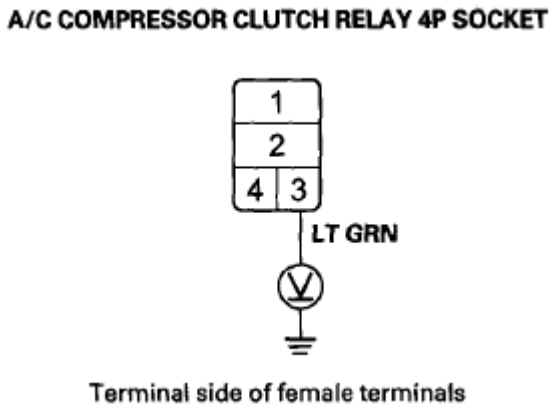


Fig. 129: Measuring Voltage Between A/C Compressor Clutch Relay 4P Socket Terminal No. 3 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there battery voltage?

YES - Go to step 14.

NO - Repair an open in the wire between the No. 16 (7.5 A) fuse in the driver's under-dash fuse/relay box and the A/C compressor clutch relay.

14. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
15. Reinstall the A/C compressor clutch relay.
16. Jump the SCS line with the HDS.

NOTE: This step must be done to protect the ECM/PCM from damage.

17. Disconnect ECM/PCM connector A (49P).
18. Connect ECM/PCM connector A (49P) terminal No. 13 to body ground with a jumper wire.

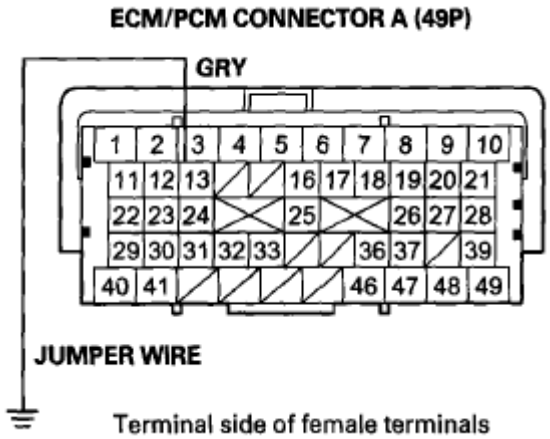


Fig. 130: Connecting ECM/PCM Connector A (49P) Terminal No. 13 To Body Ground With Jumper Wire
Courtesy of AMERICAN HONDA MOTOR CO., INC.

19. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.

    Does the A/C compressor clutch click?

    YES - Check for loose wires or poor connections at ECM/PCM connector A (49P). If the connections are good, check the ECM/PCM grounds. If the grounds are good, substitute a known-good ECM/PCM (see **SUBSTITUTING THE ECM/PCM**), and recheck. If the symptom/indication goes away, replace the original ECM/PCM (see **ECM/PCM REPLACEMENT**).

    NO - Repair an open in the wire between the A/C compressor clutch relay and the ECM/PCM.

20. Disconnect the jumper wire.
21. Disconnect the A/C compressor clutch 1P connector.
22. Check for continuity between A/C compressor clutch relay 4P socket terminal No. 2 and A/C compressor clutch 1P connector terminal No. 1.

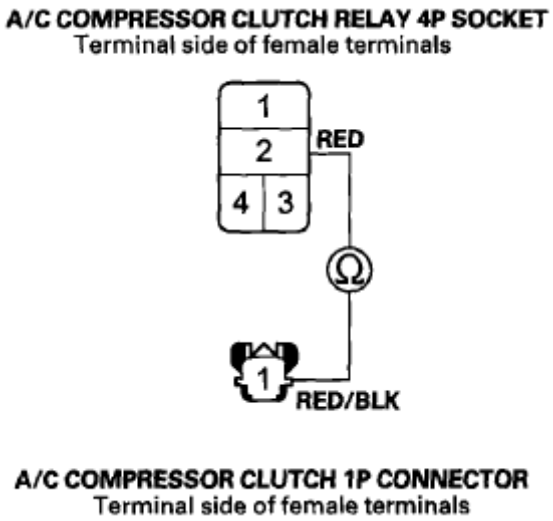


Fig. 131: Checking Continuity Between A/C Compressor Clutch Relay 4P Socket Terminal No. 2 And A/C Compressor Clutch 1P Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Check the A/C compressor clutch clearance, and the A/C compressor clutch field coil (see **A/C COMPRESSOR CLUTCH CHECK**). Repair as needed.

NO - Repair an open in the wire between the A/C compressor clutch relay and the A/C compressor clutch.

AUDIO COMMUNICATION LINE CIRCUIT TROUBLESHOOTING

WITH NAVIGATION

1. Disconnect climate control unit connector A (32P) and the audio-navigation switch panel 24P connector.
2. Check for continuity between the following terminals of climate control unit connector A (32P) and the audio-navigation switch panel 24P connector.

   32P: 24P:

   No. 3 No. 7

   No. 4 No. 19

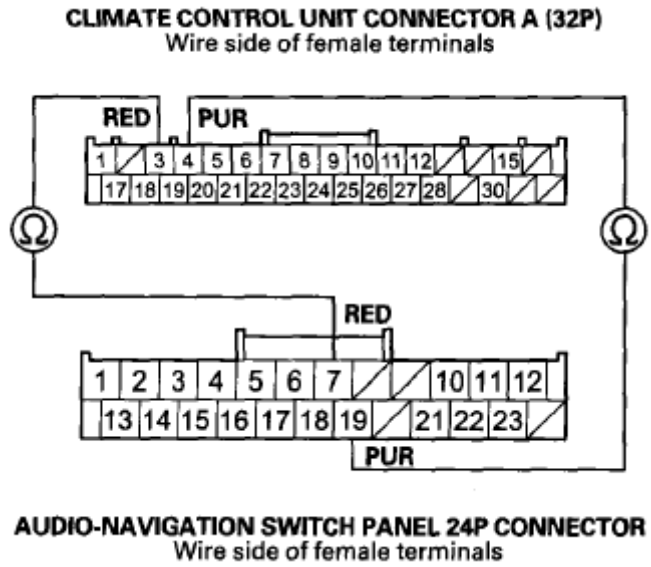


Fig. 132: Checking Continuity Between Terminals Of Climate Control Unit Connector And Audio-Navigation Switch Panel 24P Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 3.

NO - Repair an open in the wire between climate control unit connector A (32P) and the audio-navigation switch panel 24P connector.

3. Check for continuity between body ground and climate control unit connector A (32P) terminals No. 3 and No. 4 individually.

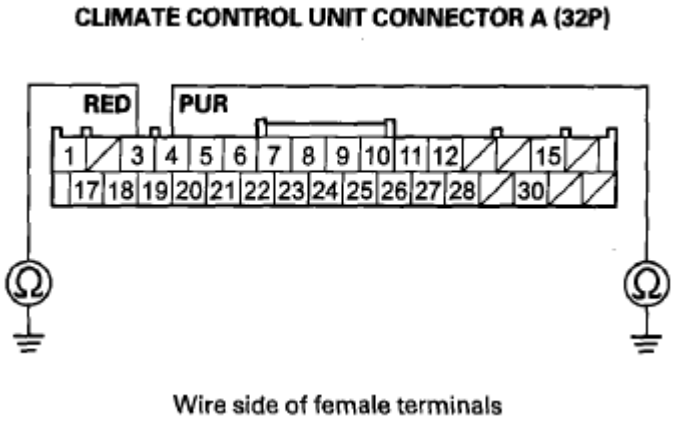


Fig. 133: Checking Continuity Between Body Ground And Climate Control Unit Connector A (32P) Terminals No. 3 And No. 4
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair a short to body ground in the wire between climate control unit connector A (32P) and the audio-navigation switch panel 24P connector.

NO - Go to step 4.

4. Reconnect climate control unit connector A (32P).
5. Connect audio-navigation switch panel 24P connector terminals No. 7 and No. 19 with a jumper wire.

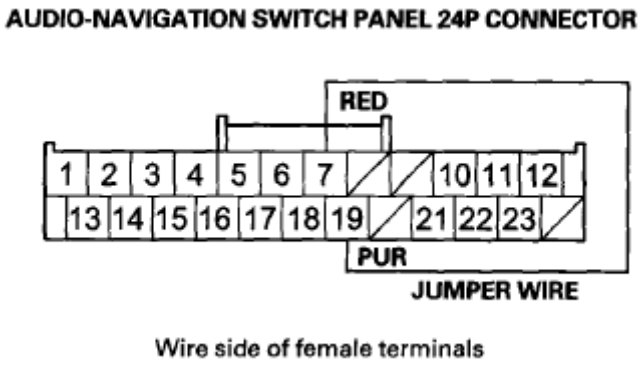


Fig. 134: Connecting Audio-Navigation Switch Panel 24P Connector Terminals No. 7 And No. 19 With Jumper Wire
Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
7. Press and hold the front DEF button and OFF button.

Is the front DEF button LED blinking?

YES - The audio-navigation switch panel is faulty, replace the audio-navigation switch panel (see **AUDIO-NAVIGATION SWITCH PANEL REMOVAL/INSTALLATION**).

NO - The climate control unit is faulty, replace the climate control unit (see **CLIMATE CONTROL UNIT REMOVAL/INSTALLATION**).

WITHOUT NAVIGATION

1. Disconnect climate control unit connector A (32P) and the audio-HVAC display unit 12P connector.
2. Check for continuity between the following terminals of climate control unit connector A (32P) and the audio-HVAC display unit 12P connector.

32P: 12P:

No. 3 No. 7

No. 4 No. 8

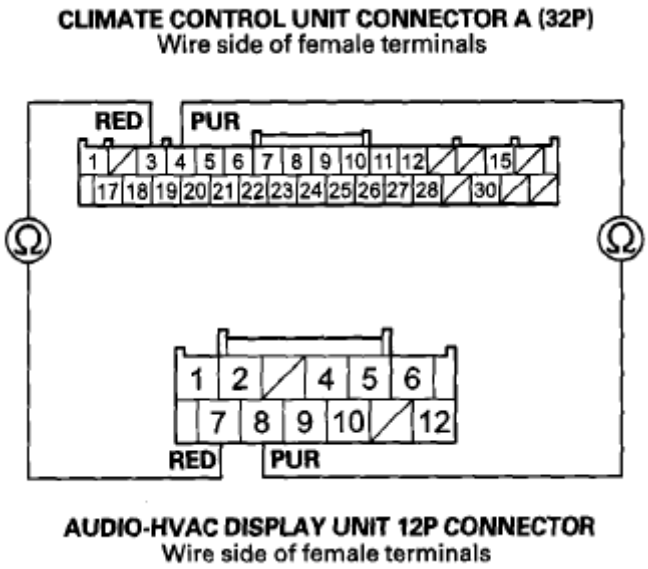


Fig. 135: Checking Continuity Between Terminals Of Climate Control Unit Connector And Audio-HVAC Display Unit 12P Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 3.

NO - Repair an open in the wire between climate control unit connector A (32P) and the audio-HVAC display unit 12P connector.

3. Check for continuity between body ground and climate control unit connector A (32P) terminals No. 3 and No. 4 individually.

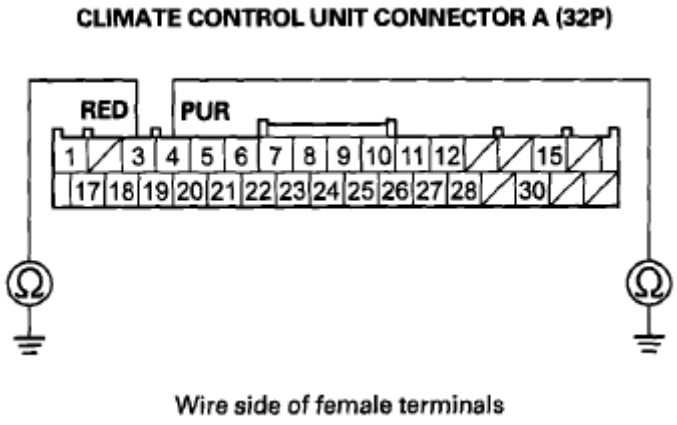


Fig. 136: Checking Continuity Between Body Ground And Climate Control Unit Connector Terminals No. 3 And No. 4
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair a short to body ground in the wire between climate control unit connector A (32P) and the audio-HVAC display unit 12P connector.

NO - Go to step 4.

4. Reconnect climate control unit connector A (32P).
5. Connect audio-HVAC display unit 12P connector terminals No. 7 and No. 8 with a jumper wire.

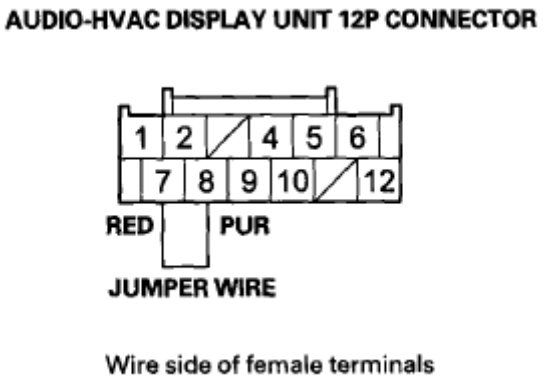


Fig. 137: Connecting Audio-HVAC Display Unit 12P Connector Terminals No. 7 And No. 8 With Jumper Wire
Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Turn the ignition switch to ON (II).
7. Press and hold the front DEF button and OFF button.

Is the front DEF button LED blinking?

YES - The audio-HVAC display unit is faulty, replace the audio-HVAC display unit (see **AUDIO-HVAC DISPLAY UNIT REMOVAL/INSTALLATION**).

NO - The climate control unit is faulty, replace the climate control unit (see **CLIMATE CONTROL UNIT REMOVAL/INSTALLATION**).

NAVIGATION COMMUNICATION LINE CIRCUIT TROUBLESHOOTING

1. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
2. Operate the climate control system in several modes.

Is the climate control system OK?

YES - Go to step 3.

NO - Do the Self-Diagnostic Function with the HDS (see **HOW TO USE THE SELF-DIAGNOSTIC**

FUNCTION WITH THE HDS) or the climate control unit (see **HOW TO USE THE SELF-DIAGNOSTIC FUNCTION WITHOUT THE HDS**).

3. Go into the System Diagnostic Mode (see **SYSTEM DIAGNOSTIC MODE**), and select the Self-Diagnosis Mode to check the System Link.

   Is the A/C or Mic icon red?

   YES -

   - If A/C icon is red, go to step 4.
   - If Mic icon is red, go to "Voice control does not work/respond" in the navigation system Symptom Troubleshooting (see **VOICE CONTROL DOES NOT WORK/RESPOND**).

   NO - Go to step 10.

4. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
5. Disconnect audio-navigation unit connector D (36P).
6. Disconnect climate control unit connector C (20P).
7. Check for continuity between the following terminals of climate control unit connector C (20P) and audio-navigation unit connector D (36P).

   20P: 36P:

   No. 4 No. 10

   No. 5 No. 11

   No. 6 No. 27

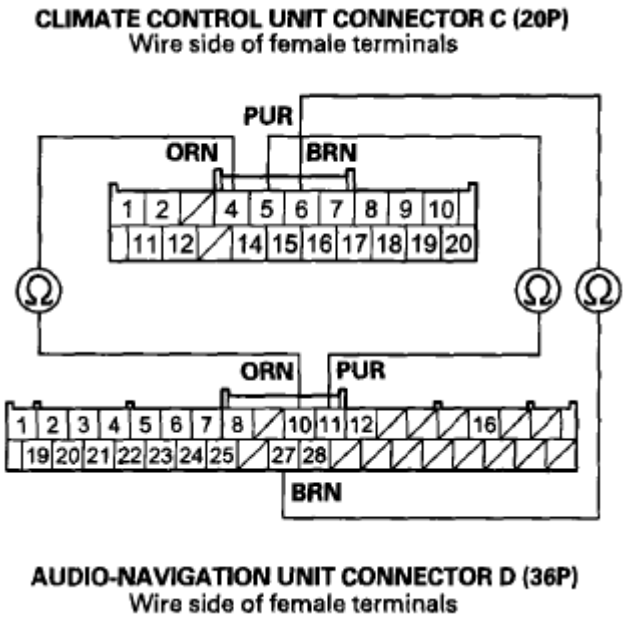


Fig. 138: Checking Continuity Between Terminals Of Climate Control Unit Connector C (20P) And Audio-Navigation Unit Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 8.

NO - Repair an open in the wire(s) between the climate control unit and the audio-navigation unit.

8. Check for continuity between body ground and climate control unit connector terminals No. 4, No. 5, and No. 6 individually.

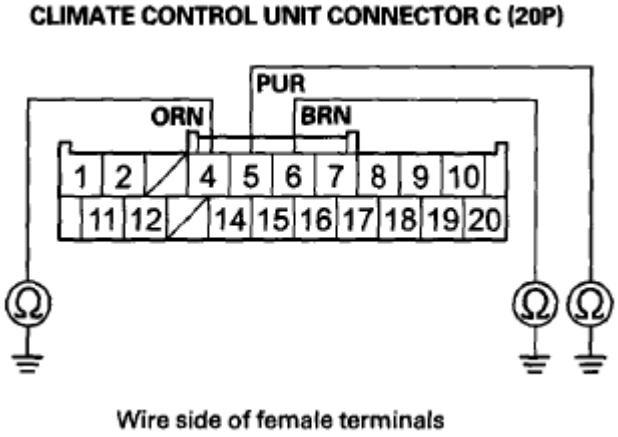


Fig. 139: Checking Continuity Between Body Ground And Climate Control Unit Connector Terminals
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair a short to body ground in the wire(s) between the climate control unit and the audio-navigation unit.

NO - Go to step 9.

9. Reconnect climate control unit connector C (20P).
10. Connect audio-navigation unit connector D (36P) terminals No. 10 and No. 11, then terminals No. 11 and No. 27 with jumper wires.

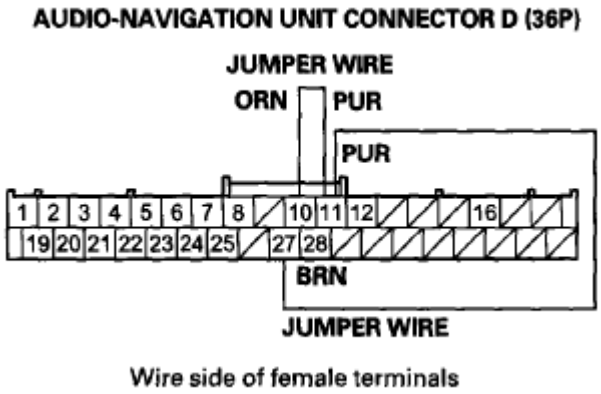


Fig. 140: Connecting Audio-Navigation Unit Connector D (36P) Terminals No. 11 And No. 27 With Jumper Wires
Courtesy of AMERICAN HONDA MOTOR CO., INC.

11. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
12. Press and hold the AUTO button, then press and hold the OFF button.

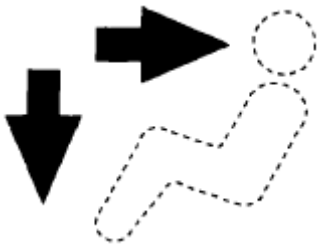


Fig. 141: Pressing Auto Button
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is the HEAT/VENT indicator solid with the remaining icons blinking?

YES - Do the Unit Check with the navigation system (see **UNIT CHECK (QUICK CHECK)**).

NO - Substitute a known-good climate control unit, and recheck. If the symptom goes away, replace the original climate control unit (see **CLIMATE CONTROL UNIT REMOVAL/INSTALLATION**).

HUMIDITY/IN-CAR TEMPERATURE SENSOR TEST

HUMIDITY SENSOR TEST

NOTE: Before testing the sensor, check for climate control DTCs (see HOW TO CHECK FOR DTCS WITH THE HDS).

1. Remove the humidity/in-car temperature sensor (see **HUMIDITY/IN-CAR TEMPERATURE SENSOR REPLACEMENT**).
2. Connect the humidity/in-car temperature sensor 4P connector.
3. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode. Measure the voltage between the terminals with the (+) probe on terminal No. 2 and the (-) probe on terminal No. 3 with the connector connected.

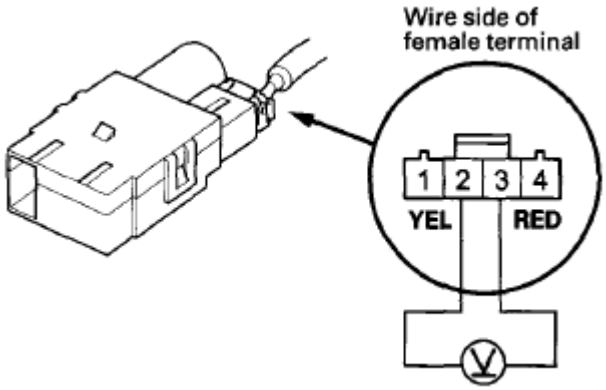


Fig. 142: Measuring Voltage Between Terminals With (+) Terminal And (-) Terminal With Connector Connected
Courtesy of AMERICAN HONDA MOTOR CO., INC.

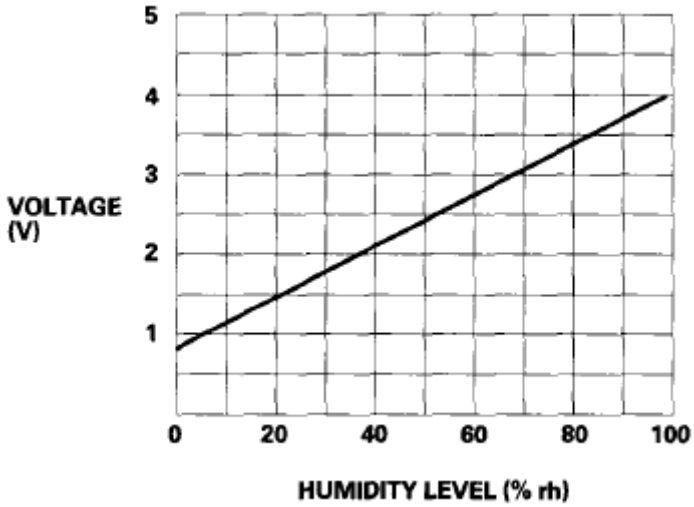


Fig. 143: Humidity Sensor Graph
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. If the voltage is not as specified, replace the humidity/in-car temperature sensor (see **HUMIDITY/IN-CAR TEMPERATURE SENSOR REPLACEMENT**).

IN-CAR TEMPERATURE SENSOR TEST

NOTE: Before testing the sensor, check for climate control DTCs (see HOW TO CHECK FOR DTCS WITH THE HDS).

1. Remove the humidity/in-car temperature sensor (see **HUMIDITY/IN-CAR TEMPERATURE SENSOR REPLACEMENT**).
2. Test the humidity/in-car temperature sensor while holding it in front of the dashboard center vent.
   - Measure the resistance with the system set to Max Cool.
   - Measure the resistance with the system set to Max Hot.
3. Compare the resistance reading between terminals No. 3 and No. 4 of the humidity/in-car temperature sensor with the specifications shown in the graph in illustration below; the resistance should be within the specifications.

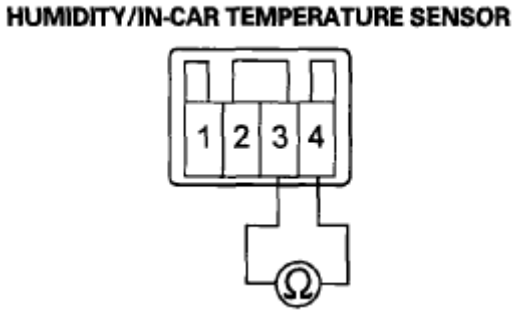


Fig. 144: Comparing Resistance Reading Between Terminals No. 3 And No. 4 Of Humidity/In-Car Temperature Sensor
Courtesy of AMERICAN HONDA MOTOR CO., INC.

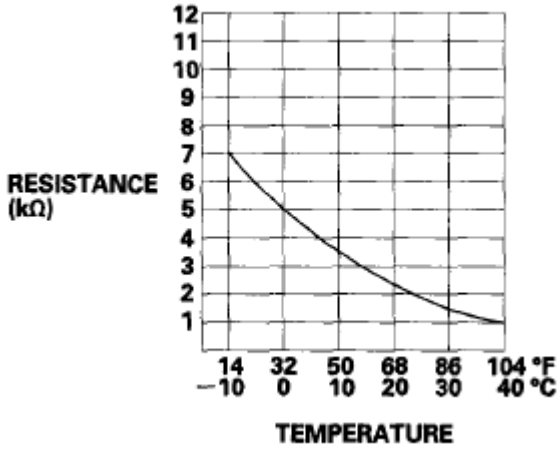


Fig. 145: In-Car Temperature Sensor Graph
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. If the resistance is not as specified, replace the humidity/in-car temperature sensor (see **HUMIDITY/IN-CAR TEMPERATURE SENSOR REPLACEMENT**).
5. Clear any DTCs set when you disconnected the humidity/in-car temperature sensor.

OUTSIDE AIR TEMPERATURE SENSOR TEST

NOTE: before testing the sensor, check for climate control DTCs (see HOW TO CHECK FOR DTCS WITH THE HDS).

1. Remove the outside air temperature sensor (see **OUTSIDE AIR TEMPERATURE SENSOR REPLACEMENT**).
2. Dip the sensor in ice water, and measure the resistance. Then pour warm water on the sensor, and check for a change in resistance.
3. Compare the resistance reading between terminals No. 1 and No. 2 of the outside air temperature sensor with the specifications shown in the graph in illustration below; the resistance should be within the specifications.

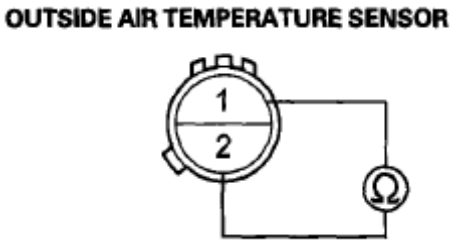


Fig. 146: Comparing Resistance Reading Between Terminals No. 1 And No. 2 Of Outside Air Temperature Sensor
Courtesy of AMERICAN HONDA MOTOR CO., INC.

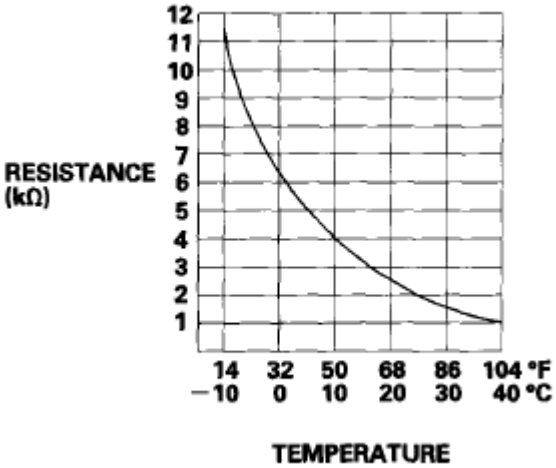


Fig. 147: Outside Air Temperature Sensor Graph
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. If the resistance is not as specified, replace the outside air temperature sensor (see **OUTSIDE AIR TEMPERATURE SENSOR REPLACEMENT**).

SUNLIGHT SENSOR TEST

NOTE: Before testing the sensor, check for climate control DTCs (see HOW TO CHECK FOR DTCS WITH THE HDS).

1. Remove the sunlight sensor (A) (see **SUNLIGHT SENSOR REPLACEMENT**).

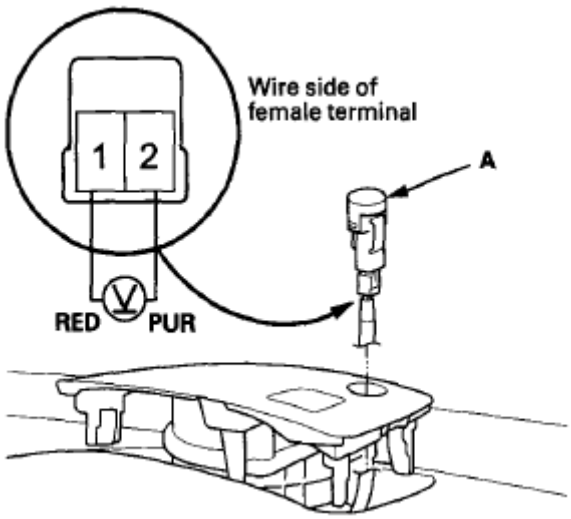


Fig. 148: Identifying Sunlight Sensor
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Turn the ignition switch to ON (II). Measure the voltage between terminals with the (+) probe on terminal No. 2 and the (-) probe on terminal No. 1 with the connector connected.

NOTE: The voltage readings do not change under the light of a flashlight or a fluorescent lamp.

Voltage should be:

- 3.56 V with no sunlight or the sensor covered up
- Less than 3.56 V with sunlight on the sensor (depending on sunlight intensity)

3. If the voltage is not as specified, replace the sunlight sensor (see **SUNLIGHT SENSOR REPLACEMENT**).

EVAPORATOR TEMPERATURE SENSOR TEST

NOTE: Before testing the sensor, check for climate control DTCs (see HOW TO CHECK FOR DTCS WITH THE HDS).

1. Remove the evaporator temperature sensor (see **EVAPORATOR TEMPERATURE SENSOR REPLACEMENT**).
2. Dip the sensor in ice water, and measure the resistance between terminals No. 1 and No. 2.

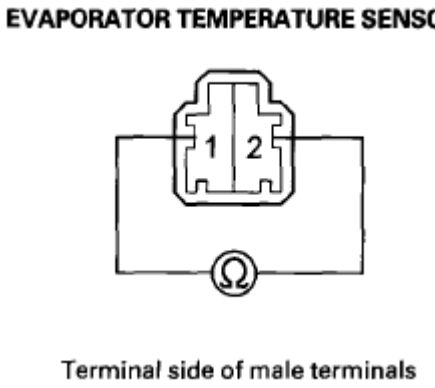


Fig. 149: Measuring Resistance Between Terminals No. 1 And No. 2
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Pour warm water on the sensor, and measure the resistance.
4. Compare the resistance readings with the specifications shown in the graph in illustration below; the resistance should be within the specifications.

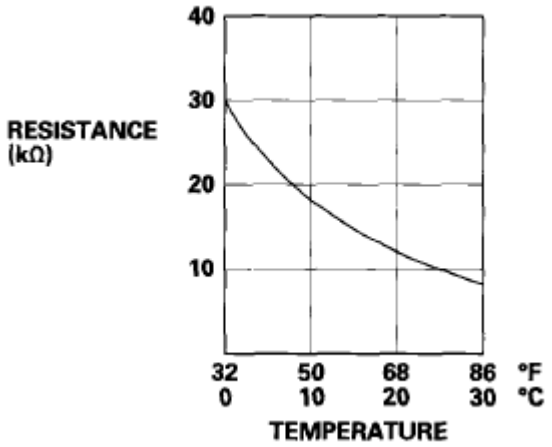


Fig. 150: Evaporator Temperature Sensor Graph
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. If the resistance is not as specified, replace the evaporator temperature sensor (see **EVAPORATOR TEMPERATURE SENSOR REPLACEMENT**).

POWER TRANSISTOR TEST

1. Remove the passenger's dashboard undercover (see **GLOVE BOX DAMPER REPLACEMENT**).
2. Disconnect the 5P connector from the power transistor.

3. Measure the resistance between terminals No. 1 and No. 4 of the power transistor. It should be about 1.5 kohms.
   - If the resistance is within the specifications, go to step 4.
   - If the resistance is not within the specifications, replace the power transistor.

NOTE: Also check the blower motor. Power transistor failure can be caused by a defective blower motor.

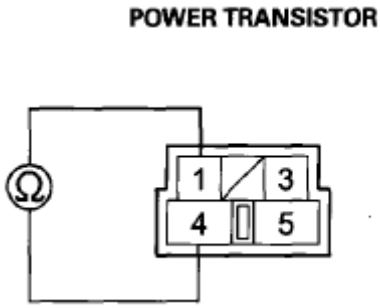


Fig. 151: Measuring Resistance Between Terminals No. 1 And No. 4 Of Power Transistor
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Reconnect the 5P connector to the power transistor.
5. Disconnect climate control unit connector A (32P).
6. Connect climate control unit connector A (32P) terminals No. 15 and No. 28 with a jumper wire.

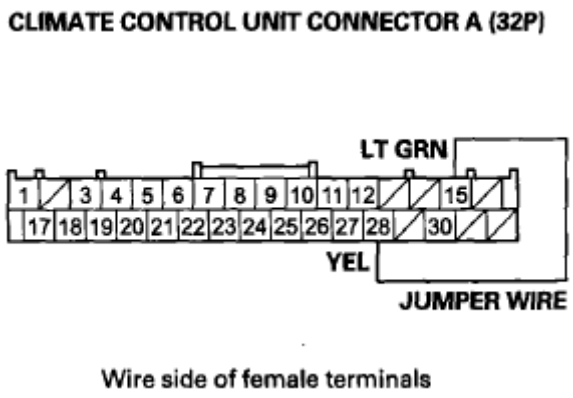


Fig. 152: Connecting Climate Control Unit Connector A (32P) Terminals No. 15 And No. 28 With Jumper Wire
Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode, and check that the blower motor runs.
   - If the blower motor does not run, replace the power transistor.

NOTE: A faulty blower motor can cause the power transistor to fail. If the

power transistor is replaced, also check the blower motor for binding, and replace it if necessary.

- If the blower motor runs, the power transistor is OK.

DRIVER'S AIR MIX CONTROL MOTOR TEST

Special Tools Required

Backprobe Set 07SAZ-001000A

NOTE: Before testing the motor, check for climate control DTCs (see HOW TO CHECK FOR DTCS WITH THE HDS).

1. Disconnect the 7P connector from the driver's air mix control motor.

   NOTE: Incorrectly applying power and ground to the air mix control motor will damage it. Follow the instructions carefully.

2. Connect battery power to terminal No. 1 of the driver's air mix control motor, and ground terminal No. 2; the driver's air mix control motor should run, and stop at Max Cool. If it does not, reverse the connections; the driver's air mix control motor should run, and stop at Max Hot. When the driver's air mix control motor stops running, disconnect battery power immediately.

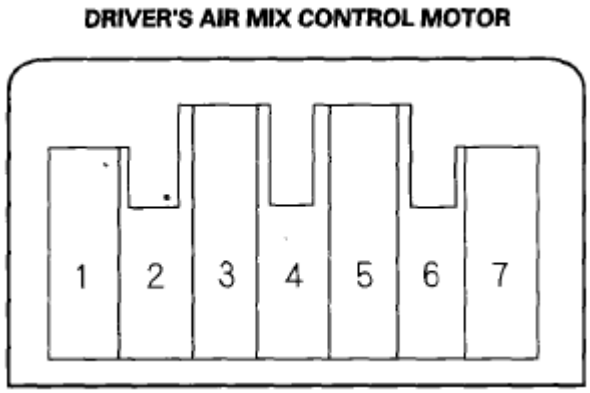


Fig. 153: Identifying Driver's Air Mix Control Motor
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. If the driver's air mix control motor did not run in step 2, remove it, then check the driver's air mix control linkage and door for smooth movement.
   - If the linkage and door move smoothly, replace the driver's air mix control motor (see **DRIVER'S AIR MIX CONTROL MOTOR REPLACEMENT**).
   - If the linkage or door sticks or binds, repair them as needed.
   - If the air mix control motor runs smoothly, go to step 4.

4. Measure the resistance between terminals No. 5 and No. 7 of the driver's air mix control motor. It should be between 4.2 and 7.8 kohms.
5. Reconnect the air mix control motor 7P connector, then turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
6. Using the backprobe set (07SAZ-001000A), measure the voltage between terminals No. 3 and No. 7.

   Max Cool: About 1.0 V

   Max Hot: About 4.0 V

7. If either the resistance or the voltage readings are not as specified, replace the driver's air mix control motor (see **DRIVER'S AIR MIX CONTROL MOTOR REPLACEMENT**).

PASSENGER'S AIR MIX CONTROL MOTOR TEST

Special Tools Required

Backprobe Set 07SAZ-001000A

NOTE: Before testing the motor, check for climate control DTCs (see HOW TO CHECK FOR DTCS WITH THE HDS).

1. Disconnect the 7P connector from the driver's air mix control motor.

   NOTE: Incorrectly applying power and ground to the passenger's air mix control motor will damage it. Follow the instructions carefully.

2. Connect battery power to terminal No. 1 of the passenger's air mix control motor, and ground terminal No. 2; the passenger's air mix control motor should run, and stop at Max Cool. If it does not, reverse the connections; the passenger's air mix control motor should run, and stop at Max Hot. When the passenger's air mix control motor stops running, disconnect battery power immediately.

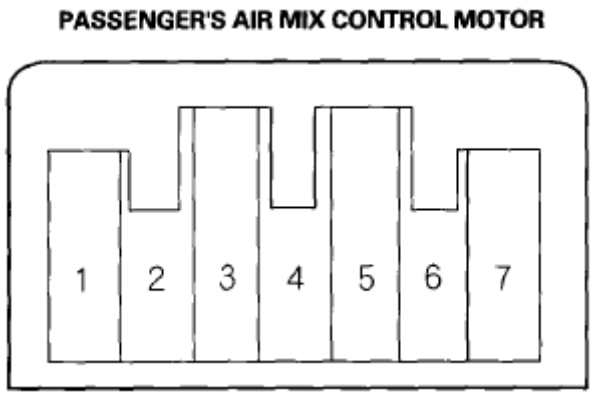


Fig. 154: Identifying Passenger's Air Mix Control Motor
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. If the passenger's air mix control motor did not run in step 2, remove it, then check the passenger's air mix control linkage and door for smooth movement.
   - If the linkage and door move smoothly, replace the passenger's air mix control motor (see **PASSENGER'S AIR MIX CONTROL MOTOR REPLACEMENT**).
   - If the linkage or door sticks or binds, repair them as needed.
   - If the passenger's air mix control motor runs smoothly, go to step 4.
4. Measure the resistance between terminals No. 5 and No. 7 of the passenger's air mix control motor. It should be between 4.2 and 7.8 kohms.
5. Reconnect the air mix control motor 7P connector, then turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
6. Using the backprobe set (07SAZ-001000A), measure the voltage between terminals No. 3 and No. 5.

   Max Cool: About 1.0 V

   Max Hot: About 4.0 V

7. If either the resistance or the voltage readings are not as specified, replace the passenger's air mix control motor (see **PASSENGER'S AIR MIX CONTROL MOTOR REPLACEMENT**).

DRIVER'S MODE CONTROL MOTOR TEST

NOTE: Before testing the motor, check for climate control DTCs (see HOW TO CHECK FOR DTCS WITH THE HDS).

1. Disconnect the 7P connector from the driver's mode control motor.

   NOTE: Incorrectly applying power and ground to the driver's mode control motor will damage it. Follow the instructions carefully.

2. Connect battery power to terminal No. 1 of the driver's mode control motor, and ground terminal No. 2; the driver's mode control motor should run, and stop at Vent. If it does not, reverse the connections; the driver's mode control motor should run, and stop at Defrost. When the driver's mode control motor stops running, disconnect battery power immediately.

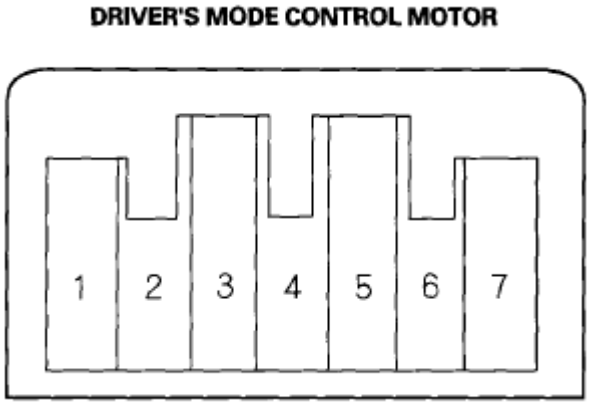


Fig. 155: Identifying Driver's Mode Control Motor
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. If the driver's mode control motor did not run in step 2, remove it, then check the mode control linkage and door for smooth movement.
   - If the linkage and door move smoothly, replace the driver's mode control motor (see **PASSENGER'S AIR MIX CONTROL MOTOR REPLACEMENT**).
   - If the linkage or door sticks or binds, repair them as needed.
   - If the driver's mode control motor runs smoothly, go to step 4.
4. Use a digital multimeter with an output of 1 mA or less at the 20 kohms range. Operate the driver's mode control motor as in step 2, and check for continuity between terminals No. 3, No. 4, No. 5, and No. 6 and terminal No. 7 individually. There should be continuity for a moment at each terminal as the motor moves through its travel.
5. If there is no continuity for a moment at each terminal, replace the driver's mode control motor (see **PASSENGER'S AIR MIX CONTROL MOTOR REPLACEMENT**).

PASSENGER'S MODE CONTROL MOTOR TEST

NOTE: Before testing the motor, check for climate control DTCs (see HOW TO CHECK FOR DTCS WITH THE HDS).

1. Disconnect the 7P connector from the passenger's mode control motor.

NOTE: Incorrectly applying power and ground to the mode control motor will damage it. Follow the instructions carefully.

2. Connect battery power to terminal No. 2 of the passenger's mode control motor, and ground terminal No. 1; the passenger's mode control motor should run, and stop at Vent. If it does not, reverse the connections; the passenger's mode control motor should run, and stop at Defrost. When the passenger's mode control motor stops running, disconnect battery power immediately.

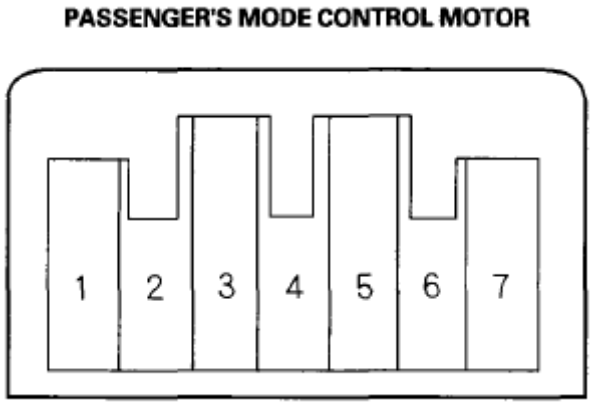


Fig. 156: Identifying Passenger's Mode Control Motor
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. If the passenger's mode control motor did not run in step 2, remove it, then check the mode control linkage and door for smooth movement.
   - If the linkage and door move smoothly, replace the passenger's mode control motor (see **PASSENGER'S MODE CONTROL MOTOR REPLACEMENT**).
   - If the linkage or door sticks or binds, repair them as needed.
   - If the passenger's mode control motor runs smoothly, go to step 4.
4. Use a digital multimeter with an output of 1 mA or less at the 20 kohms range. Operate the passenger's mode control motor as in step 2, and check for continuity between terminals No. 3, No. 4, No. 5, and No. 6 and terminal No. 7 individually. There should be continuity for a moment at each terminal as the motor moves through its travel.
5. If there is no continuity for a moment at each terminal, replace the passenger's mode control motor (see **PASSENGER'S MODE CONTROL MOTOR REPLACEMENT**).

RECIRCULATION CONTROL MOTOR TEST

NOTE: Before testing the motor, check for climate control DTCs (see HOW TO CHECK FOR DTCS WITH THE HDS).

1. Disconnect the 7P connector from the recirculation control motor.

NOTE: Incorrectly applying power and ground to the recirculation control motor will damage it. Follow the instructions carefully.

2. Connect battery power to terminal No. 1 of the recirculation control motor, and ground terminal No. 2; the recirculation control motor should run smoothly, and stop at Recirculate. If it does not, reverse the connections; the recirculation control motor should run smoothly, and stop at Fresh. When the recirculation control motor stops running, disconnect battery power immediately.

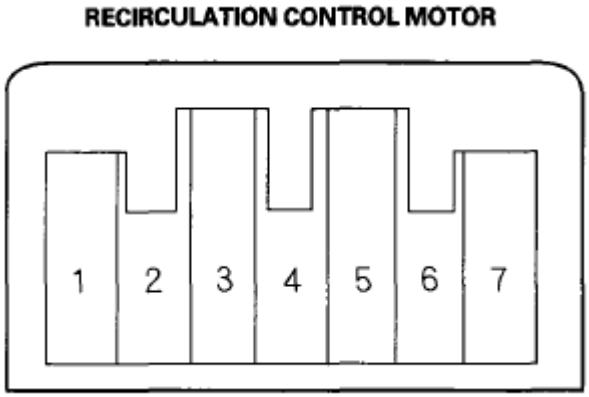


Fig. 157: Identifying Recirculation Control Motor
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. If the recirculation control motor did not run in step 2, remove it, then check the recirculation control linkage and door for smooth movement.
   - If the linkage and door move smoothly, replace the recirculation control motor (see **RECIRCULATION CONTROL MOTOR REPLACEMENT**).
   - If the linkage or door stick or bind, repair them as needed.
   - If the recirculation control motor runs smoothly, go to step 4.
4. Use a digital multimeter with an output of 1 mA or less at the 20 kohms range. Operate the recirculation control motor running as in step 2, and check for continuity between terminals No. 3, No. 4, and No. 5 and terminal No. 1 individually. There should be continuity for a moment at each terminal as the motor through its travel.
5. If there is no continuity for a moment at each terminal, replace the recirculation control motor (see **RECIRCULATION CONTROL MOTOR REPLACEMENT**).

A/C COMPRESSOR CLUTCH CHECK

1. Check the pressure plate for discoloration, peeling, or other damage. If there is damage, replace the clutch set (see **A/C COMPRESSOR CLUTCH OVERHAUL**).
2. Check the pulley bearing play and drag by rotating the pulley by hand. Also check for grease leakage from the bearing. Replace the clutch set with a new one if it is noisy, has excessive play/drag (see **A/C COMPRESSOR CLUTCH OVERHAUL**).

NOTE: The pulley and the pressure plate were mated at the factory by a burnishing operation. Always replace the pulley and the pressure plate as a set. Replacing only one part of the clutch set will cause clutch slippage.

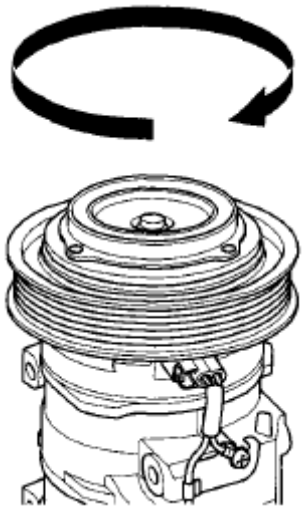


Fig. 158: Rotating Pulley By Hand
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Measure the clearance between the rotor pulley (A) and the pressure plate (B) all the way around. If the clearance is not within specified limits, remove the pressure plate (see **A/C COMPRESSOR CLUTCH OVERHAUL**) and add or remove shims as needed to increase or decrease clearance.

   Clearance: 0.35-0.60 mm (0.014-0.023 in)

   NOTE: The shims are available in three thicknesses: 0.1 mm, 0.3 mm, and 0.5 mm.

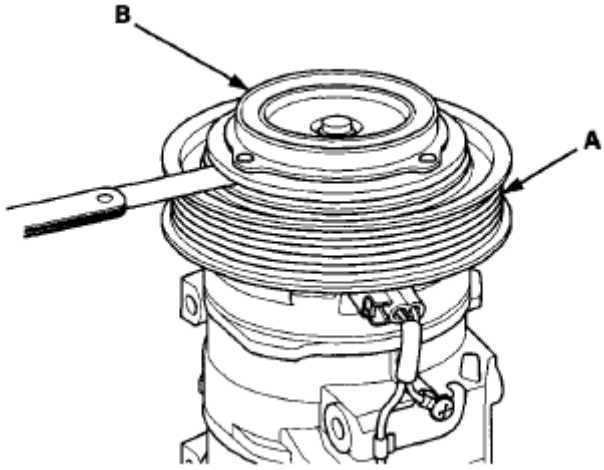


Fig. 159: Measuring Clearance Between Rotor Pulley And Pressure Plate
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Remove the pressure plate (see **A/C COMPRESSOR CLUTCH OVERHAUL**), and inspect the pressure plate and pulley friction surface for wear. If there is excessive wear, roughness, or scoring, replace the clutch set.
5. Inspect the friction surfaces and the A/C compressor shaft hub for excess oil. If excess oil is present, and

it is not from the engine or power steering system, then the A/C compressor shaft seal is leaking. In that case, replace the A/C compressor (see **A/C COMPRESSOR REPLACEMENT**).

6. Check the resistance of the field coil. If resistance is not within specifications, replace the field coil (see **A/C COMPRESSOR CLUTCH OVERHAUL**).

   Field Coil Resistance: 3.9-4.3 ohms at 68°F (20 °C)

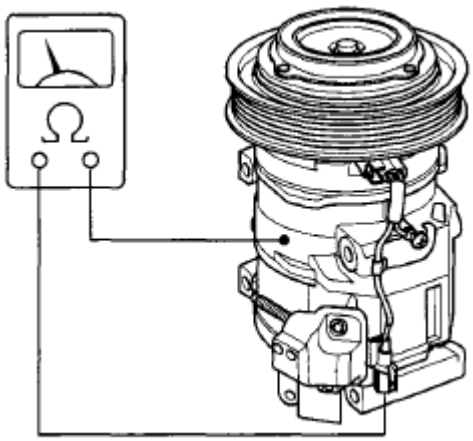


Fig. 160: Checking Resistance Of Field Coil
Courtesy of AMERICAN HONDA MOTOR CO., INC.

REFRIGERANT LEAK CHECK

Special Tools Required

- Leak Detector YGK-H-10PM*
- Leak Detector HLD-100*
- Leak Detector TIFZX-1*
- OPTIMAX Jr. A/C Leak Detection Kit TRP124893*

*: These tools are available through the Acura Tool and Equipment Program; call 888-424-6857

CAUTION:

- **Air conditioning refrigerant or lubricant vapor can irritate your eyes, nose, or throat.**
- **Be careful when connecting service equipment.**
- **Do not breathe refrigerant or vapor.**

NOTE:

- **If accidental system discharge occurs, ventilate the work area before resuming service.**
- **Additional health and safety information may be obtained from the refrigerant and lubricant manufacturers.**
- **Check the system for leaks using an R-134a refrigerant leak detector with**

an accuracy of 14 g (0.5 oz) per year or better.

LEAK DETECTOR USAGE TIPS (REFER TO THE OPERATOR'S MANUAL FOR COMPLETE OPERATING INSTRUCTIONS)

- Position the vehicle in a wind-free work area. This will aid in detecting small leaks.
- When using the leak detector for the first time, allow it to warm up for 2 minutes with the probe in a clean atmosphere. This lets the temperature sensor in the detector stabilize.
- The calibration check should be done in the "Search 2" mode. Once that is done, the other check modes do not need calibrating.
- When leak checking through the HVAC module drain hose, avoid drawing water into the probe. Water can damage the internal pump and sensor.
- Avoid creasing the flexible probe extension. Creases can restrict air flow and give false readings.
- Because the detector recalibrates itself for ambient gases, it may be necessary to move the detector away from the leak to clear the sensor. Once the sensor has cleared, recheck the suspected leak.
- When removing the clear probe tip, be careful not to lose the flow ball.
- R-134a is heavier than air; always check below and to the sides of all potential leak sources.
- Halogen leak detectors are sensitive to chemicals: windshield washing solutions, solvents/cleaners, and some vehicle adhesives. Keep these chemicals out of the area when doing leak detection.

FLUORESCENT DYE USAGE TIPS

- Use only Tracer-Stick single dose fluorescent dye capsules from Tracerline®. Other dyes contain solvents that may contaminate the refrigerant oil, leading to component failure.
- Adding excessive amounts of dye can damage the A/C compressor.
- PAG oil is water soluble, so condensation on the evaporator core or the refrigerant lines may wash the PAG oil and fluorescent dye away from the actual leak. Condensation may also carry dye through the evaporator module drain.
- After checking and repairing leaks, thoroughly clean any residual dye from the areas where leaks were found. Use GLO-AWAY dye cleaner, from Tracerline®, and hot water to remove the dye (follow the instructions on the bottle). Residual dye stains can cause misdiagnosis of any future A/C system leaks.
- If any refrigerant dye contacts an exterior paint surface, remove it by doing this:

  - Carefully wash the affected surfaces to remove any dirt, and to prevent paint scratching.
  - Mix water and isopropyl alcohol in a 50/50 mixture.
  - Soak a soft cotton towel with the water/alcohol mixture, and place the cloth on the affected areas to remove the dye.
  - After removing the dye with the water/alcohol-soaked cloth, carefully wash the affected areas, and check that there is no remaining dye.

1. Connect an R-134a refrigerant recovery/recycling/charging station (A) to the high-pressure service port (B) and the low-pressure service port (C), as shown, following the equipment manufacturer's instructions.

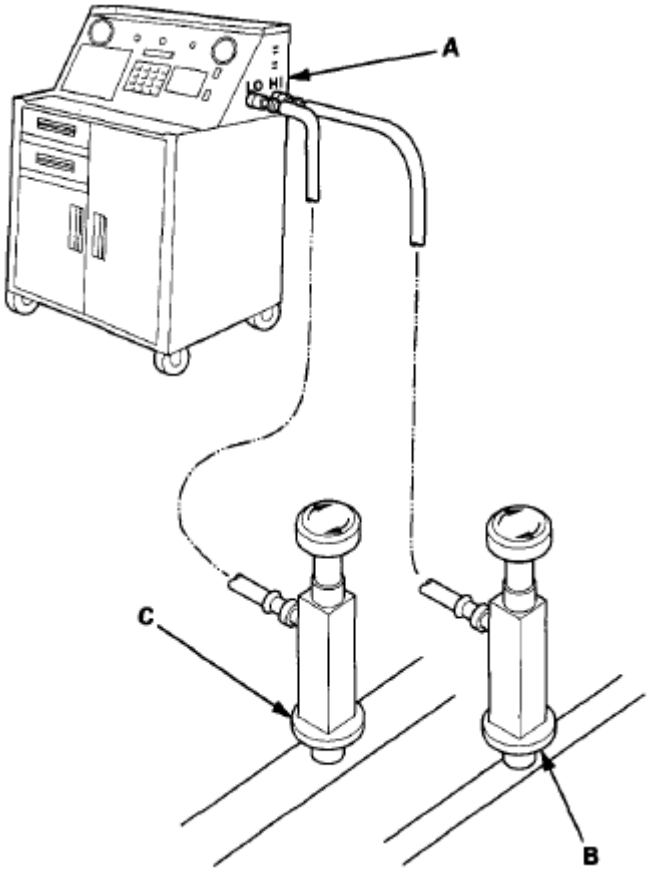


Fig. 161: Connecting R-134A Refrigerant Recovery/Recycling/Charging Station To High-Pressure Service Port And Low-Pressure Service Port
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Recover refrigerant from the A/C system (see **REFRIGERANT RECOVERY**), and evacuate the system (see **SYSTEM EVACUATION**). If the system achieves a vacuum of approximately -93.3 kPa (-700 mmHg, -27.6 inHg) in 15 minutes, and holds the vacuum for 15 minutes, then the system does not have a leak at this time. If the system cannot achieve or hold a vacuum, continue the refrigerant leak check.
3. Open the high pressure valve to charge the system to the specified capacity.

   Select the appropriate units of measure for your refrigerant charging station.

   Refrigerant Capacity:

   505 to 555g

   17.8 to 19.6 oz

   0.505 to 0.555 kg

   1.11 to 1.22 lbs

4. With the engine OFF, use a halogen leak detector first to detect the leak source. Follow a continuous path in order to ensure that you will not miss any possible leaks. Test the following areas of the system for leaks:

Possible Leak Area	Diagnostic Procedure with the Leak Detector	Notes
Service ports	• Check the service ports • If the detector "sniffs" a leak, use fluorescent dye to confirm it	When capping the service ports, ensure that the seals on the port caps are in place, and that the caps are tight. The caps are used as the final seals in the system
A/C condenser	If the detector "sniffs" a leak, use fluorescent dye to confirm it	• Check for joints or connections coated with oily dust • Check for damaged and corroded areas • Check all fittings, couplings, brazed/welded areas and areas around attachment points • Move the probe slowly (1 inch/second or less), and keep it within 1/4 inch of the component being checked. This maximizes the chance of detecting a leak • If you detect a leak, blow compressed air over the area, then recheck for leaks. For large leaks, cleaning the area with compressed air may help you pinpoint the leak source
Evaporator	• Check at the evaporator drain hose • Check at the passenger's side vent and turn blower on low speed	
A/C lines	• Wiggle the rubber hoses when checking crimped metal ends • If the detector "sniffs" a leak, use fluorescent dye to confirm it	• Check all fittings, couplings, pressure switches, brazed/welded areas, and areas around attachment points on A/C lines and components • Check for damaged and corroded areas • Move the probe slowly (1 inch/second or less), and keep it within 1/4 inch of the component being checked. This maximizes the chance of detecting a leak

5. Close the quick coupler valves, then disconnect the quick couplers from the vehicle service ports.
6. Attach the universal connect set, from the Optimax Jr. Leak Detection Kit, to the service valve fitting. Close the control valve (the black knob on the connect set).
7. Attach the charging station low pressure hose quick coupler to the service valve fitting, and open the quick coupler valve. Evacuate the connect set using the charging station vacuum pump, then close the quick coupler valve.
8. Detach the universal connect set, and install a Tracer-Stick® dye capsule between the connect set and the

service valve fitting (see the manufacturer's instructions for more detail).

9. Attach the quick coupler on the universal connect set to the low pressure service port on the vehicle. Open the charging station low pressure hose quick coupler valve, but do not open the control valve.
10. Start the engine, and set the A/C system to maximum cooling. Open the control valve to let refrigerant and the dye enter the A/C system through the low pressure service port. Close the control valve when the Tracer-Stick® dye capsule is empty.
11. Run the engine and A/C system for 15 minutes to thoroughly circulate the dye. Then shut the engine off, and inspect the following areas of the system for leaks.

NOTE:

- **Check for leaks in a dark work area, and use the UV light and the special glasses from the leak check kit. Other UV lights may not work well with the Tracer-Stick® dye.**
- **Small leaks may take up to 1 week of vehicle operation (with normal A/C use) to become visible.**

Possible Leak Area	Diagnostic Procedure with Fluorescent Dye
Service ports	If a leak is found, replace the cap/o-ring seal or A/C line as needed
A/C lines	• Use a permanent marker pen to circle the leak area • If a leak is found, remove and replace the A/C line (see **A/C LINE REPLACEMENT**)
A/C condenser	• If a leak is found, remove the A/C condenser (see **A/C CONDENSER REPLACEMENT**) • Determine whether leak is in the A/C condenser or the receiver/dryer • Use a permanent marker pen to circle the leak area • Replace either the receiver/dryer (see **RECEIVER/DRYER DESICCANT REPLACEMENT**), or the A/C condenser (see **A/C CONDENSER REPLACEMENT**), depending upon which is leaking
A/C compressor	• Check for leaks at all of the A/C compressor joints, the clutch center, the A/C compressor front housing bolts, and the scroll bolts on the back of the A/C compressor • If a leak is found, use a permanent marker pen to circle the leak area • If the A/C compressor relief valve appears to be leaking, determine whether the leak is coming from the relief valve, or the joint between the A/C compressor casing and the valve. If the leak is from the relief valve, check the A/C system pressures, and refer to the pressure test table in the A/C system test (see **A/C SYSTEM TEST**). If the leak is from the casing/valve joint, replace the A/C compressor relief valve (see **A/C COMPRESSOR RELIEF VALVE REPLACEMENT**) • If the leak is coming from the suction hose and/or discharge hose fittings on the A/C compressor, clean the A/C fittings and replace the suction/discharge fitting O-rings • For all other A/C compressor leaks, remove and replace the A/C compressor (see

	A/C COMPRESSOR REPLACEMENT)
Evaporator	• Start checking for evaporator leaks by illuminating the evaporator drain tube area • If a leak is found, remove the evaporator core (see **EVAPORATOR CORE REPLACEMENT**) • Determine whether leak is from evaporator or expansion valve • Use a permanent marker pen to circle leak area • Replace the expansion valve (see **EXPANSION VALVE REPLACEMENT**), or the evaporator core (see **EVAPORATOR CORE REPLACEMENT**), depending upon which is leaking

A/C SYSTEM NOISE CHECK

CAUTION:

- **Air conditioning refrigerant or lubricant vapor can irritate your eyes, nose, or throat.**
- **Be careful when connecting service equipment.**
- **Do not breathe refrigerant or vapor.**

The A/C system noise check will help you determine the source of abnormal A/C system noise.

NOTE:

- **If accidental system discharge occurs, ventilate the work area before resuming service.**
- **Additional health and safety information may be obtained from the refrigerant and lubricant manufacturers.**
- **Identify the conditions when the noise occurs. The weather, the vehicle speed, the vehicle being in gear or in neutral, the engine temperature, or other conditions may be factors in determining the noise source.**
- **Do the A/C system inspection (see A/C SYSTEM INSPECTION), and correct any problems found prior to diagnosing abnormal noises.**
- **Abnormal A/C noises can be misleading. For example, a sound similar to a failed bearing may be caused by loose fasteners, loose mounting brackets, or a faulty A/C compressor clutch assembly.**

1. Inspect the air inlet grille in the cowl cover for debris. If debris is present, remove it.
2. Sit inside the vehicle, close the doors and windows, and turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode, but do not start the engine. Cycle the HVAC system through all blower speeds and all air distribution modes to determine where and when the noise occurs.
3. Operate the blower at each speed with the engine and A/C off, and check for unusual noises and excessive vibration. If noise and/or vibration are present, do the following checks:
    1. If the noise or vibration occurs only in a specific mode or setting, then check these items:
        - Operation of the mode control motor(s), door(s), and linkage
        - Operation of the air mix control motor(s), door(s), and linkage

- Operation of the recirculation control motor, door, and linkage

2. If there is a squeaking or chirping noise, but no unusual vibration, replace the blower motor (see **BLOWER UNIT COMPONENT REPLACEMENT**).
3. Remove the blower unit (see **BLOWER UNIT REMOVAL/INSTALLATION**), and check for foreign material (leaves or twigs, for example) on the blower motor and fan. If foreign material is present, remove it, and recheck for noise. If you do not find any foreign material, remove the blower motor (see **BLOWER UNIT COMPONENT REPLACEMENT**), and check these items:

- Check if the fan blades are cracked or broken
- Make sure the fan retainer is tight
- Inspect the fan alignment on the blower motor shaft

Replace the blower motor if any problems are present.

4. Set up the vehicle for the running A/C checks:
   - Select a quiet area for testing
   - Apply the parking brake
   - Shift the vehicle to P or N (A/T) or neutral (M/T)
   - Start the engine
   - Set the temperature control switches to Max Cool
   - Set the mode control buttons to Vent
   - Set the fan control buttons to minimum (but not OFF)
   - Turn the air conditioning button ON

   Switch the A/C compressor on and off several times to clearly identify the sound during A/C compressor operation. Listen to the noise while the A/C compressor clutch is engaged and disengaged. Probe the A/C system with a stethoscope to pinpoint the noise.

   NOTE: If the noise does not change when the A/C compressor clutch engages or disengages, the noise may be caused by an engine-related component. Probe the engine area with a stethoscope to pinpoint the noise.

5. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode, and check the drive belt for excessive wear, oil contamination, improper routing, or a faulty belt tensioner (see **DRIVE BELT INSPECTION**). Correct any problems found. Start the engine, run the A/C system, and check if the noise is coming from the drive belt, the belt tensioner or any of the pulleys. Repair or replace any faulty components.
6. Listen for noises coming from the A/C lines, the A/C hoses, the A/C condenser, the evaporator, the receiver/dryer, or the expansion valve, and check these items:
   - Noises caused by A/C components touching other components or the body. Reroute or insulate the A/C component(s) as needed, and recheck for noise.
   - Loose, damaged or excessively worn A/C components or mounting hardware. Repair or replace the faulty component(s) or hardware, and recheck for noise.
   - A moaning noise from the A/C suction line. If there is a moaning noise, check the system

refrigerant charge (see **SYSTEM CHARGING**). If the refrigerant charge is OK, replace the receiver/dryer.

- A whistling or hissing noise from the expansion valve. Evacuate the system for 3 hours (see **SYSTEM EVACUATION**), then recheck. If the noise is still present, replace the expansion valve (see **EXPANSION VALVE REPLACEMENT**).

7. Check the operation of the A/C compressor clutch:
   - Make sure A/C compressor clutch engages without slipping. If the clutch does not engage, troubleshoot the A/C compressor clutch circuit (see **A/C COMPRESSOR CLUTCH CIRCUIT TROUBLESHOOTING**). If the A/C compressor clutch slips, replace the A/C compressor clutch assembly (see **A/C COMPRESSOR CLUTCH OVERHAUL**). And if there is a leak from the shaft seal when the A/C compressor clutch slips, replace the A/C compressor also (see **A/C COMPRESSOR REPLACEMENT**).
   - Make sure the A/C compressor clutch disengages. If the clutch does not disengage, do the A/C compressor clutch circuit troubleshooting (see **A/C COMPRESSOR CLUTCH CIRCUIT TROUBLESHOOTING**). If the clutch circuit is OK, do the A/C compressor clutch check (see **A/C COMPRESSOR CLUTCH CHECK**), and see if the clutch is mechanically jammed. If there are no electrical or mechanical problems with the A/C compressor clutch, replace the A/C compressor (see **A/C COMPRESSOR REPLACEMENT**).
   - Make sure the A/C compressor clutch cycles normally. If the A/C compressor clutch is cycling rapidly, the A/C system is probably low on refrigerant due to a leak. Do the refrigerant leak check (see **REFRIGERANT LEAK CHECK**). If the refrigerant charge is OK, and there are no leaks, troubleshoot the A/C compressor clutch circuit.
8. Listen with a stethoscope for noises coming from the A/C compressor, and check these items:
   - The noise changes when the A/C compressor clutch disengages. If the noise does not change when the A/C compressor disengages, the noise may be caused by an engine-related component. Probe the engine area with a stethoscope to pinpoint the noise.
   - The A/C system operating pressures are normal. If the system pressures are abnormal, troubleshoot the problem using the pressure test table in the A/C system test (see **A/C SYSTEM TEST**). Correct the pressure-related problem(s), and recheck for noise.
   - The A/C compressor hose connections, mounting brackets, and fasteners are in good condition. If any of these components are loose, damaged, or excessively worn, repair or replace the faulty component(s), and recheck for noise. If these components are in good condition, and the noise is still present, replace the A/C compressor (see **A/C COMPRESSOR REPLACEMENT**).

A/C SYSTEM TEST

Special Tools Required

- Big Digit Hygro-Thermometer PYR445703, commercially available
- Throttle Pedal Depressor Tool B240B, commercially available

PERFORMANCE TEST

CAUTION:
- **Air conditioning refrigerant or lubricant vapor can irritate your eyes,**

nose, or throat.

- **Be careful when connecting service equipment.**
- **Do not breathe refrigerant or vapor.**

The performance test will help determine if the A/C system is operating within specifications.

NOTE:

- **If accidental system discharge occurs, ventilate the work area before resuming service.**
- **Additional health and safety information may be obtained from the refrigerant and lubricant manufacturers.**

1. Do the A/C system inspection (see **A/C SYSTEM INSPECTION**), and correct any problems found.
2. Connect an R-134a refrigerant recovery/recycling/charging station to the high-pressure service port and the low-pressure service port, following the equipment manufacturer's instructions.
3. Determine the relative humidity and air temperature.
4. Remove the glove box (see **GLOVE BOX REMOVAL/INSTALLATION**).
5. Insert a thermometer (A) in the center vent.

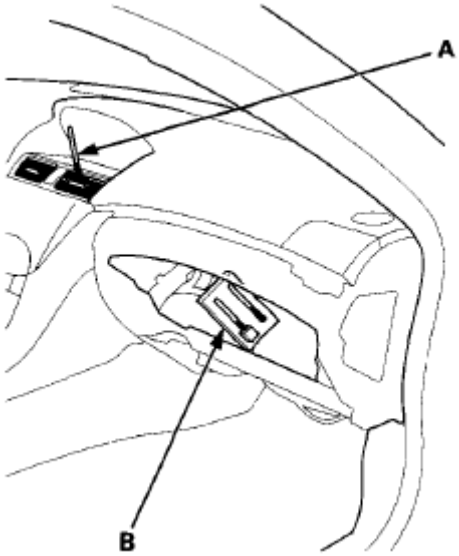


Fig. 162: Identifying Thermometers
Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Place a thermometer (B) near the blower unit's recirculation inlet duct.
7. Test conditions:
   - Move the vehicle out of direct sunlight and let it cool down to the surrounding (ambient) temperature. If necessary, wash the vehicle to cool it down more quickly.
   - The blower intake temperature must be at least 68°F (20 °C).
   - Open the hood.

- Open the front doors.
- Start the engine. Set the temperature control switches to Max Cool, the mode control buttons to Vent, and the recirculation control button to Recirculate.
- Turn the air conditioning button ON and the fan control button to Max.
- Run the engine speed at 1, 500 RPM.
- No driver or passengers in the vehicle.

8. Inspect the A/C components for the following conditions:
   - A/C compressor clutch not engaged.
   - Abnormal frost areas.
   - Unusual noises.

   If you observe any of these conditions, refer to the Symptom Troubleshooting.

9. After running the air conditioning for 10 minutes under the above test conditions, read the delivery temperature from the thermometer in the center vent, the intake temperature near the blower unit, and the discharge (high) and suction (low) pressures on the A/C gauges.
10. To complete the vent (delivery)/intake temperature chart:
    - Mark the vent (delivery) temperature on the vertical line.
    - Mark the intake temperature on the bottom line.
    - Draw a vertical line from the intake temperature mark.
    - Draw a horizontal line from the vent (delivery) temperature mark until it intersects the vertical line.

NOTE: The vent temperature and the ambient air temperature should intersect in the shaded area. Any measurements outside the area may indicate the need for further inspection.

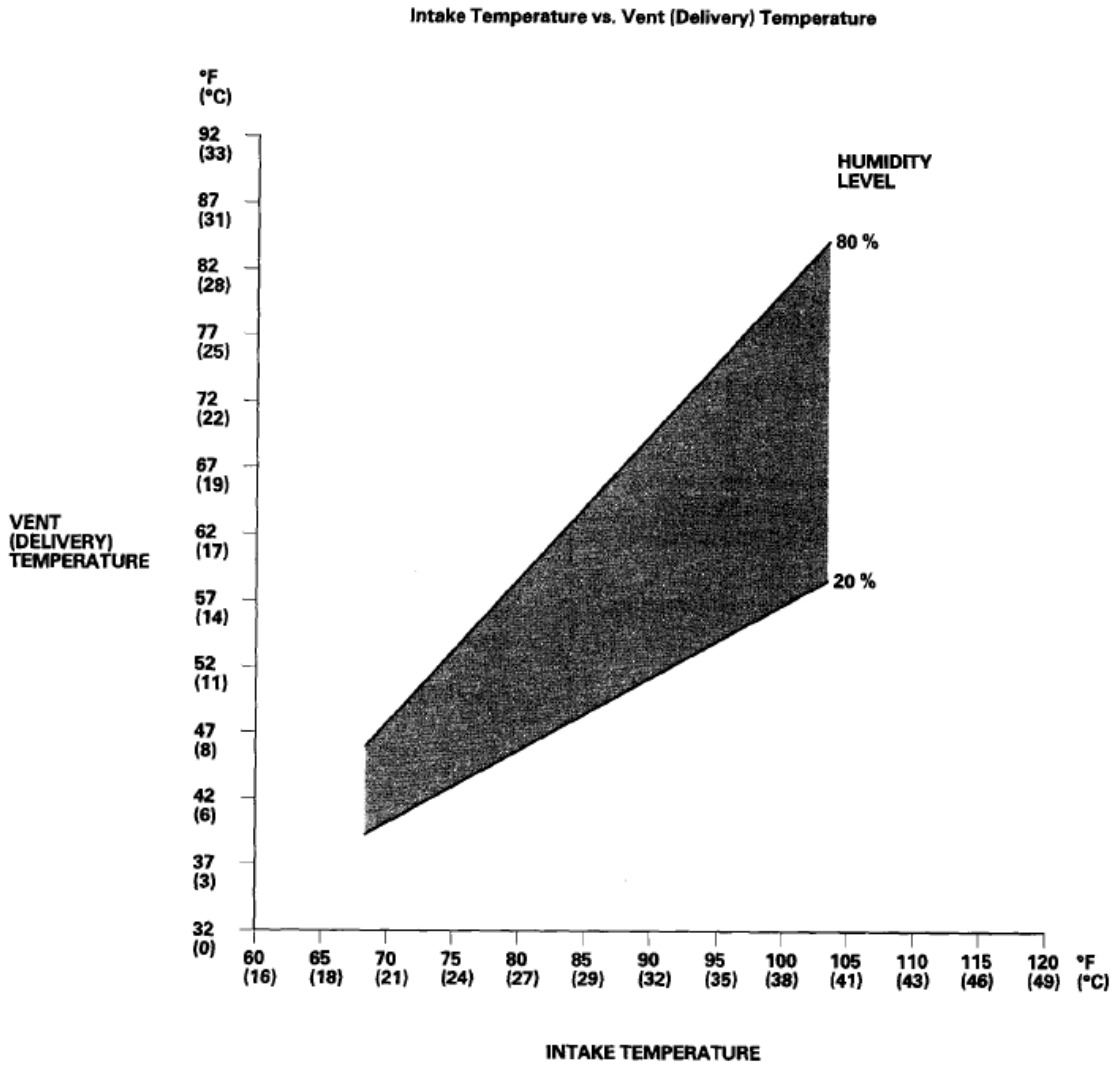


Fig. 163: Intake Temperature Versus Vent (Delivery) Temperature Graph
Courtesy of AMERICAN HONDA MOTOR CO., INC.

11. To complete the high side (discharge) pressure/intake temperature chart:
    - Mark the high side (discharge) pressure on the vertical line.
    - Mark the intake temperature on the bottom line.
    - Draw a vertical line from the intake temperature mark.
    - Draw a horizontal line from the high side (discharge) pressure mark until it intersects the vertical line.

NOTE: The high side pressure and the ambient air temperature should intersect in the shaded area. Any measurements outside the area may indicate the need for further inspection.

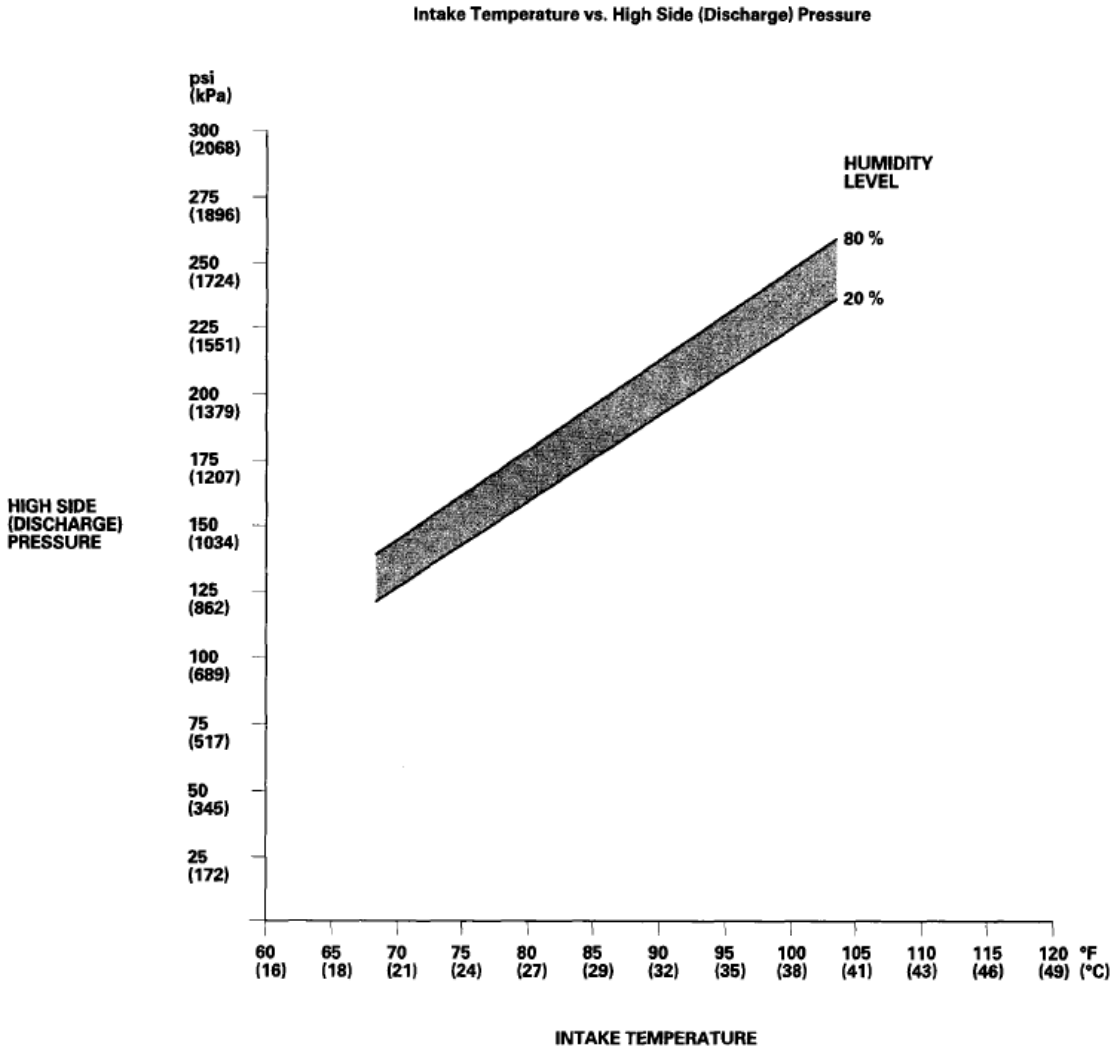


Fig. 164: Intake Temperature Versus High Side (Discharge) Pressure
Courtesy of AMERICAN HONDA MOTOR CO., INC.

12. To complete the low side (suction) pressure/intake temperature chart:
    - Mark the low side (suction) pressure along the vertical line.
    - Mark the intake temperature along the bottom line.
    - Draw a vertical line from the intake temperature mark.
    - Draw a horizontal line from the low side (suction) pressure mark until it intersects the vertical line.

NOTE: The low side pressure and the ambient air temperature should intersect in the shaded area. Any measurements outside the area may indicate the need for further inspection.

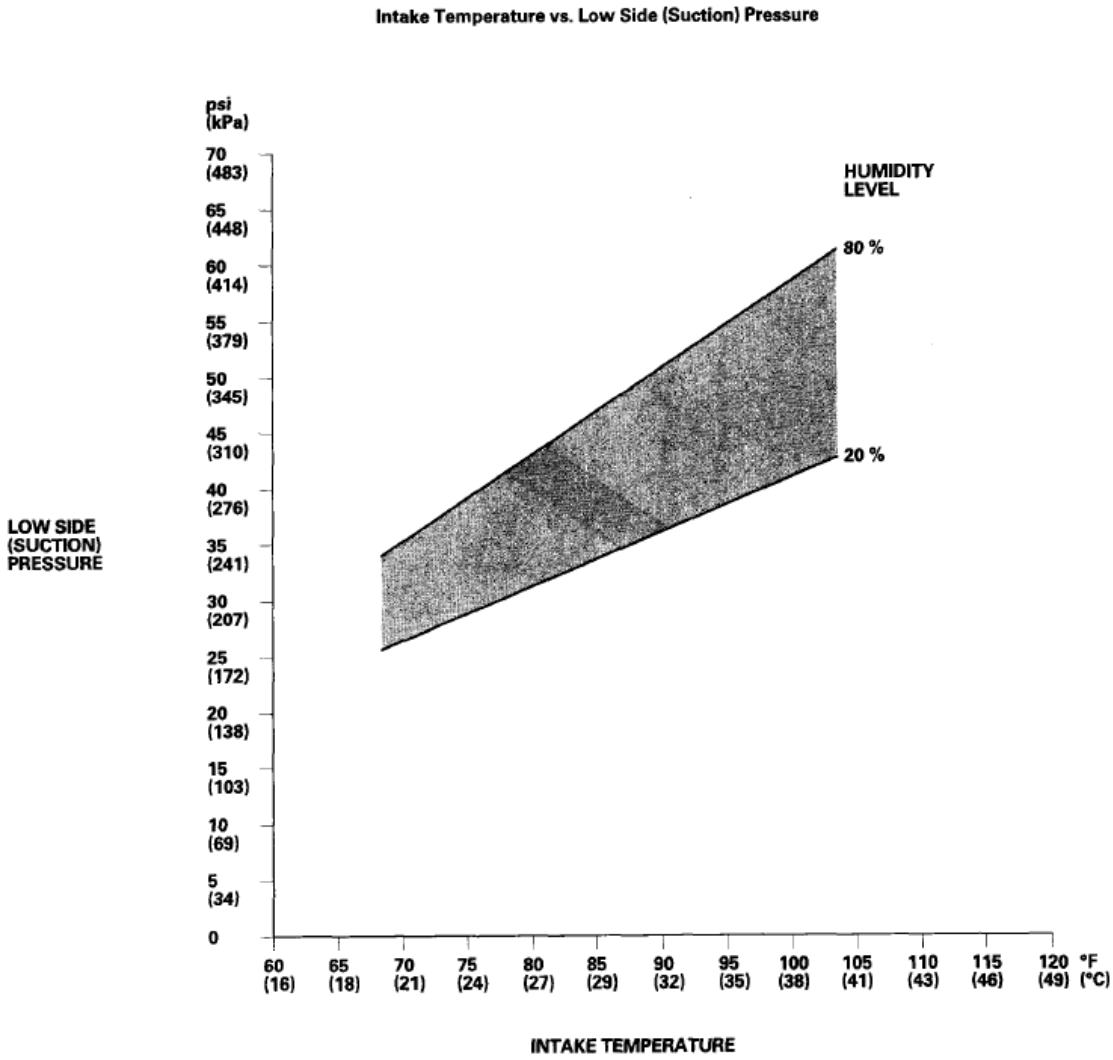


Fig. 165: Intake Temperature Versus Low (Suction) Pressure
Courtesy of AMERICAN HONDA MOTOR CO., INC.

PRESSURE TEST

Test results	Related symptoms	Probable cause
Driver and passenger's side A/C vent temperatures may vary by approximately 20°F (11 ° C) or more	Suction pressure may be low	• Low refrigerant charge • Expansion valve not opening sufficiently
	Driver's or passenger's air mix door DTCs present	One air mix door stuck or inoperative
	• Discharge pressure reduced when A/C condenser cooled with water spray • With doors open, fresh air selected and radiator and A/C condenser fan	Significant refrigerant overcharge

	run on high speed, temperature drop across A/C condenser inlet to outlet is less than about 41°F (5 °C)	
Discharge pressure abnormally High	Restricted/weak airflow through A/C condenser	• Dirty A/C condenser or damaged fins • Debris between A/C condenser and radiator • One or more cooling fans malfunctioning
Discharge pressure abnormally Low	• Suction and discharge pressures equalize rapidly after stopping A/C compressor • Suction pressure higher than normal	Faulty A/C compressor discharge valve or seal
Suction pressure abnormally Low	Weak or insufficient airflow across evaporator	Restricted blower intake or dust and pollen filter
	Suction pressure varies from near normal to a vacuum, as moisture freezes in expansion valve orifice	• Moisture in the system • Faulty expansion valve
	• Reduced airflow from vents • Vent temperature is very low	• Condensation freezing on evaporator • Faulty evaporator temperature sensor (check DTC) • Faulty expansion valve or A/C compressor clutch relay
Suction pressure abnormally High	• Lack of slight suction pressure variation at 1, 500 RPM when "Recirculated" airflow is switched to "Fresh Air" • Discharge pressure near normal	Expansion valve stuck open or open too long
Suction and Discharge pressures abnormally High	• Sheet of paper does not stick to front of A/C condenser surface with cooling fans on • With doors open, fresh air selected and radiator and A/C condenser fan run on high speed, temperature drop across A/C condenser inlet to outlet is less than about 41°F (5 °C)	One (or both) cooling fan motor inoperative or wires reversed
	• A/C compressor clutch remains engaged during off cycle	• Insufficient A/C compressor clutch clearance • A/C compressor clutch

	• Pressure relief valve may open	relay or circuit problem • Excessive air in system
Suction and Discharge pressures abnormally Low	Suction line from expansion valve to A/C compressor is not cold	Excessively low refrigerant charge
	Lack of slight suction pressure variation at 1, 500 RPM when "Recirculated" airflow is switched to "Fresh Air"	Expansion valve clogged with debris/desiccant, stuck closed, or not opening sufficiently
	More than 50-60°F (10-16 °C) temperature drop across A/C condenser inlet to outlet pipes	Blocked or restricted A/C condenser internal passages or lines/components restricting refrigerant flow
	Significant temperature difference along high or low side A/C lines or components **NOTE:** **Some restrictions may not show up until 3, 000 RPM)**	Restriction in A/C suction or discharge lines or components (check temperatures to isolate)
Suction pressure High and Discharge pressure Low	• Excessive A/C compressor noise • Pressures equalize quickly and noise after A/C compressor turns off	A/C compressor internal damage (Check for A/C system debris contamination)
Suction and discharge pressures normal (or near normal)	Vent temperature too high	• Slightly low refrigerant charge • Air mix door sticking, misadjusted or inoperative • Excessive refrigerant oil in system
	Static pressures high with A/C system equalized. (After engine is off 4- 12 hours)	• Air/Non-condensable gasses in system • Contaminated or incorrect refrigerant

A/C CONDENSER REPLACEMENT

1. Recover the refrigerant with a recovery/recycling/charging station (see **REFRIGERANT RECOVERY**).
2. Do the battery terminal disconnection procedure (see **BATTERY TERMINAL DISCONNECTION AND RECONNECTION**).
3. Remove the front bumper (see **FRONT BUMPER REMOVAL/INSTALLATION**).
4. Remove the intake duct (see **THROTTLE BODY REMOVAL/INSTALLATION**).
5. Remove the bolt, then disconnect the receiver line (A) from the A/C condenser. Remove the O-ring (B).

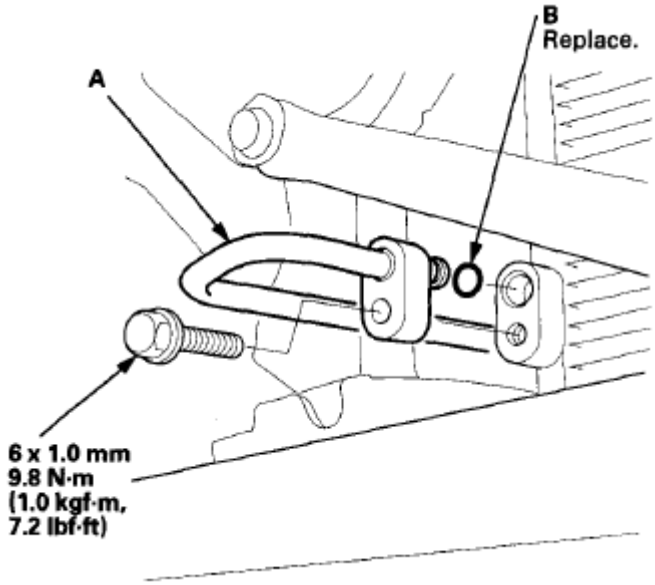


Fig. 166: Identifying Receiver Line And O-Ring With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Remove the bolts, then disconnect the discharge hose (A) from the A/C condenser. Remove the O-ring (B)

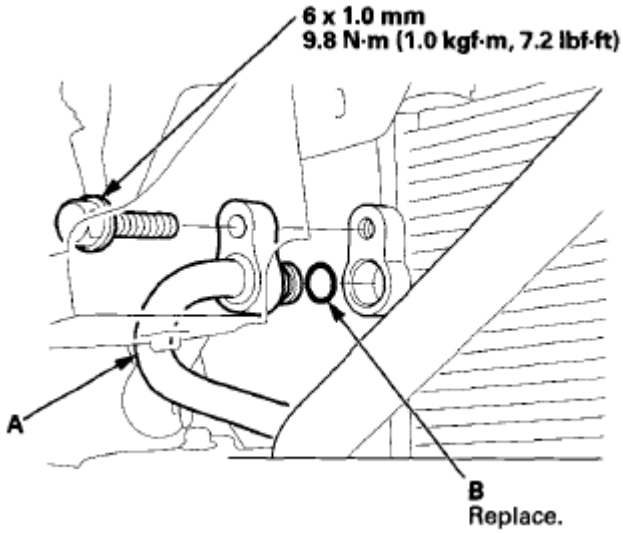


Fig. 167: Identifying Discharge Hose And O-Ring With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Remove the bolts and the radiator upper mount brackets (A). Remove the clips and the front bulkhead brace cover (B).

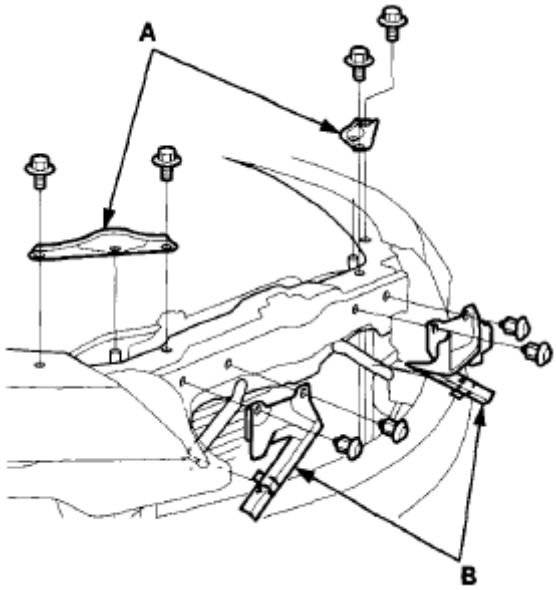


Fig. 168: Identifying Radiator Upper Mount Brackets And Bulkhead Brace Cover
Courtesy of AMERICAN HONDA MOTOR CO., INC.

8. Remove the bolts and the A/C condenser upper mount brackets (A).

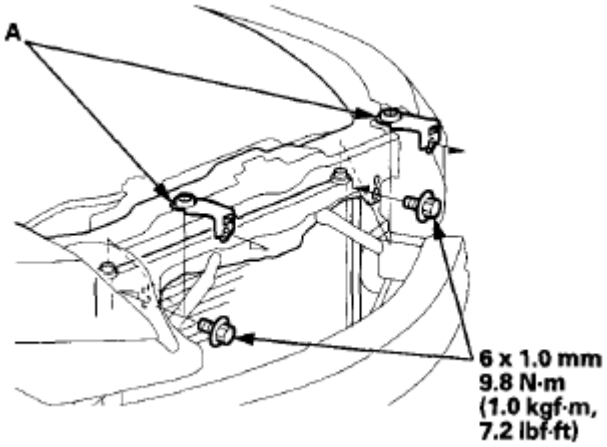


Fig. 169: Identifying A/C Condenser Upper Mount Brackets With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

9. Remove the A/C condenser (A) by lifting it up. Be careful not to damage the radiator or the A/C condenser fins when removing the A/C condenser.

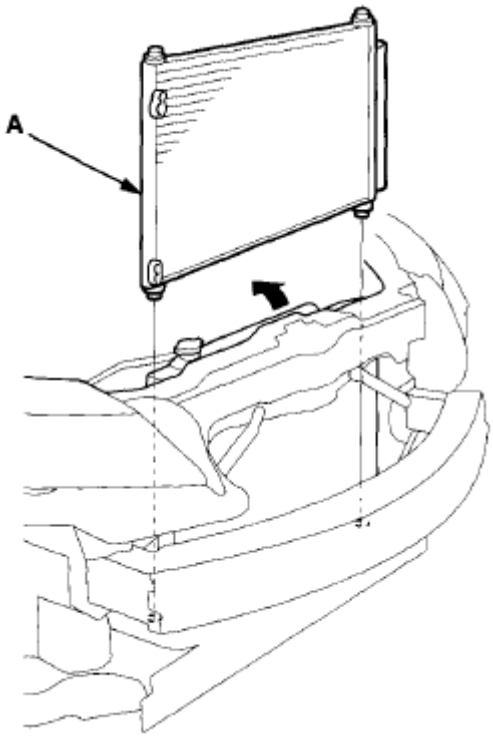


Fig. 170: Lifting A/C Condenser To Remove It
Courtesy of AMERICAN HONDA MOTOR CO., INC.

10. Install the A/C condenser in the reverse order of removal, and note these items:
    - If you're installing a new A/C condenser, add refrigerant oil (DENSO ND-OIL 8) (see **A/C SYSTEM INSPECTION**).
    - Replace the O-rings with new ones at each fitting, and apply a thin coat of refrigerant oil before installing them. Be sure to use the correct O-rings for HFC-134a (R-134a) to avoid leakage.
    - Immediately after using the oil, reinstall the cap on the container, and seal it to avoid moisture absorption.
    - Do not spill the refrigerant oil on the vehicle; it may damage the paint; if the refrigerant oil contacts the paint, wash it off immediately.
    - Be careful not to damage the radiator or the A/C condenser fins when installing the A/C condenser.
    - Charge the system (see **SYSTEM CHARGING**).
11. Do the battery terminal reconnection procedure (see **BATTERY TERMINAL DISCONNECTION AND RECONNECTION**).

RECEIVER/DRYER DESICCANT REPLACEMENT

NOTE: Install the receiver/dryer as quickly as possible to prevent the system from absorbing moisture from the air.

1. Remove the A/C condenser (see **A/C CONDENSER REPLACEMENT**).

2. Remove the cap (A) from the bottom of the A/C condenser. Remove the O-ring (B) and the desiccant (C).

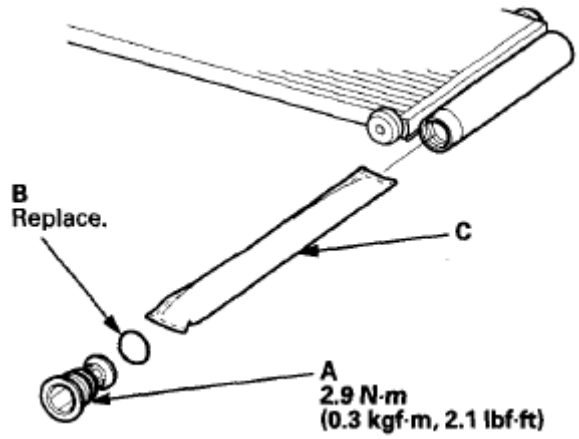


Fig. 171: Identifying Cap, O-Ring And Desiccant With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Install the receiver/dryer in the reverse order of removal, and note these items:
   - If you are installing a new desiccant, add refrigerant oil (DENSO ND-OIL 8) (see **A/C REFRIGERANT OIL REPLACEMENT**)
   - Replace the O-rings with new ones, and apply a thin coat of refrigerant oil (DENSO ND-OIL 8) before installing them. Be sure to use the correct O-rings for HFC-134a (R-134a) to avoid leakage.
   - Install the cap to the specified torque. It is made of plastic and can be easily stripped.

A/C COMPRESSOR REPLACEMENT

NOTE: Do not install the A/C compressor into a system unless you are completely sure that the system is free of contamination. Installing the A/C compressor into a contaminated system can result in premature A/C compressor failure.

1. If the A/C compressor is marginally operable, run the engine at idle speed, and let the air conditioning work for a few minutes, then shut the engine off.
2. Recover the refrigerant with a recovery/recycling/charging station (see **REFRIGERANT RECOVERY**).
3. Remove the A/C condenser fan shroud assembly (see **FAN, FAN MOTOR, AND SHROUD REMOVAL AND INSTALLATION**).

NOTE: To avoid damage to the radiator, cover it with cardboard until reinstalling the fan.

4. Remove the alternator (see **ALTERNATOR REMOVAL AND INSTALLATION**).
5. Disconnect the A/C compressor clutch connector (A). Remove the bolts and the nut, then disconnect the suction hose (B) and the discharge hose (C) from the A/C compressor. Remove the O-rings (D). Plug or cap the lines immediately after disconnecting them to avoid moisture and dust contamination.

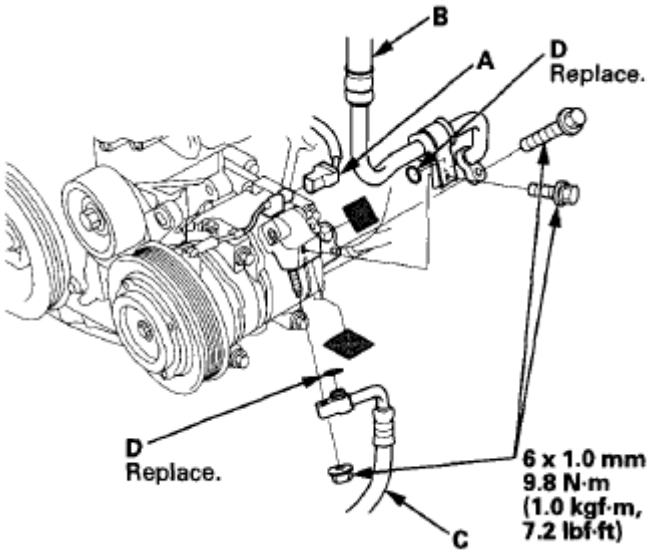


Fig. 172: Identifying A/C Compressor Clutch Connector, Suction Hose, Discharge Hose And O-Rings With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Remove the mounting bolts and the A/C compressor (A). Be careful not to damage the radiator fins when removing the A/C compressor.

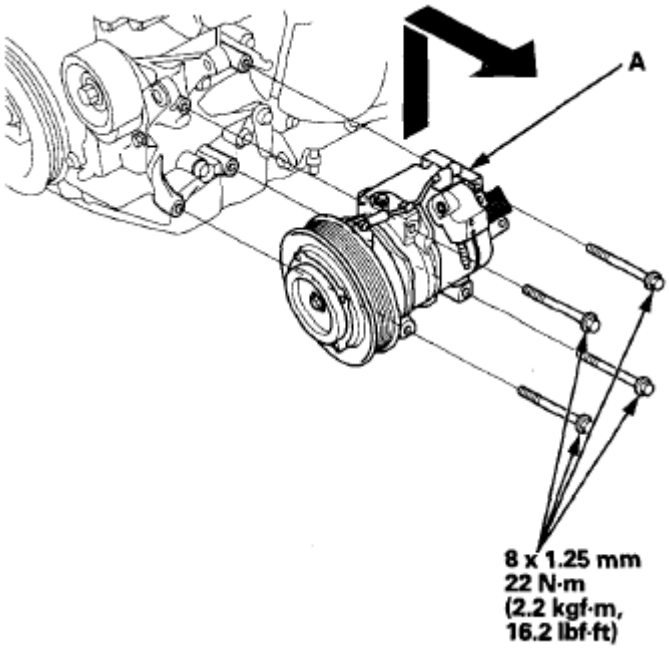


Fig. 173: Removing Mounting Bolts And A/C Compressor With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Install the A/C compressor in the reverse order of removal, and note these items:
   - Inspect the A/C lines for any signs of contamination.

- Before installing a new A/C compressor, adjust the A/C compressor oil level (see **A/C REFRIGERANT OIL REPLACEMENT**).
- Replace the O-rings with new ones at each fitting, and apply a thin coat of refrigerant oil before installing them. Be sure to use the correct O-rings for HFC-134a (R-134a) to avoid leakage.
- Use only refrigerant oil (DENSO ND-OIL 8) for HFC-134a DENSO A/C compressors only.
- To avoid contamination, do not return the oil to the container once dispensed, and never mix it with other refrigerant oils.
- Immediately after using the oil, reinstall the cap on the container, and seal it to avoid moisture absorption.
- Do not spill the refrigerant oil on the vehicle; it may damage the paint. If the refrigerant oil contacts the paint, wash it off immediately.
- Be careful not to damage the radiator fins when installing the A/C compressor and the A/C condenser fan shroud.
- Charge the system (see **SYSTEM CHARGING**).

A/C COMPRESSOR CLUTCH OVERHAUL

Special Tools Required

A/C Compressor Kit 07AAF-000A150

1. Remove the center bolt (A) while holding the pressure plate with the A/C clutch holder (B).

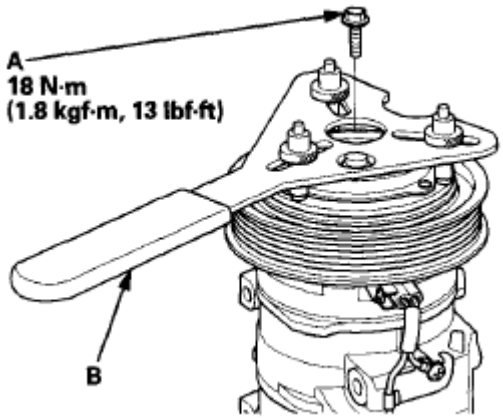


Fig. 174: Identifying Center Bolt And A/C Clutch Holder With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Remove the pressure plate (A) and the shim(s) (B), taking care not to lose the shim(s). If the clutch needs adjustment, increase or decrease the number and thickness of shims as necessary, then reinstall the pressure plate, and recheck its clearance (see **A/C COMPRESSOR CLUTCH CHECK**).

NOTE:

- **The shims are available in three thicknesses: 0.1 mm, 0.3 mm, and 0.5 mm.**

- **Do not pry on the pressure plate with screwdrivers or similar tools. Prying damages the pressure plate and the pulley.**
- **When replacing the clutch set, place a trial stack of shims, 1 mm total thickness, on the A/C compressor shaft. Install the pressure plate, and check its clearance (see A/C COMPRESSOR CLUTCH CHECK). If the clearance is not with specification, add or subtract shims as needed.**

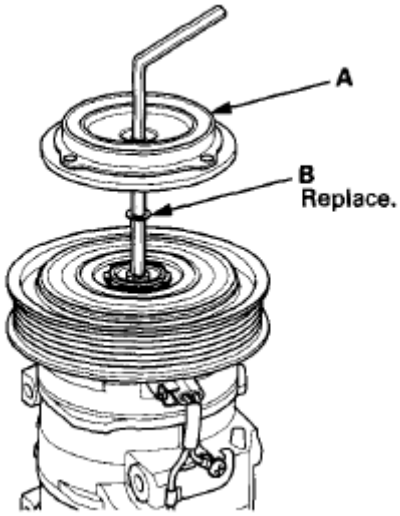


Fig. 175: Identifying Pressure Plates And Shim
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. If you are replacing the field coil, remove the snap ring (A) with snap ring pliers, then remove the pulley (B). Be careful not to damage the pulley or the A/C compressor.

NOTE: Do not hammer or pry on the pulley to remove it. Using a hammer damages the A/C compressor. If the pulley is difficult to remove, use a commercially available pulley removing tool. Make sure the jaws of the pulling tool engage the back face of the pulley, not the pulley grooves.

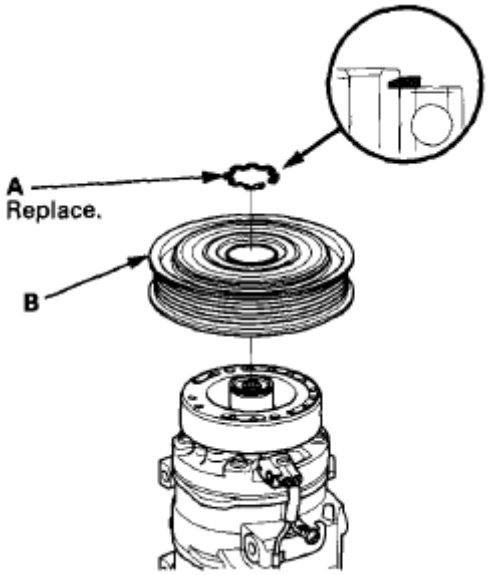


Fig. 176: Identifying Snap Ring And Pulley
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Remove the screw from the field coil ground terminal (A), then remove the wire harness (B) and the bracket (C). Disconnect the field coil connector (D). Remove the snap ring (E) with snap ring pliers, then remove the field coil (F). Be careful not to damage the field coil or the A/C compressor.

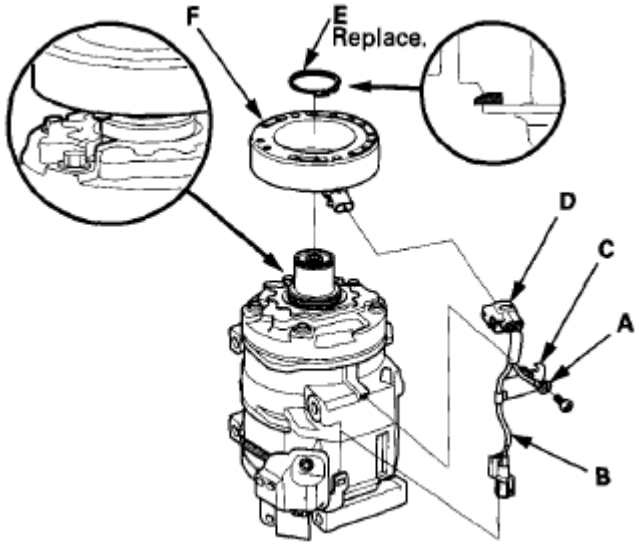


Fig. 177: Identifying Field Coil Ground Terminal, Wire Harness, Bracket, Connector, Snap Ring And Field Coils
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Reassemble the clutch in the reverse order of disassembly, and note these items:
   - When replacing the field coil, check that the new coil has the correct resistance (see step 6).
   - Install the field coil with the wire side facing down, and align the boss on the field coil with the

hole in the A/C compressor.

- Clean the pulley and A/C compressor friction surfaces with contact cleaner or other non-petroleum solvent.
- Install new snap rings, note the installation direction, and make sure they are fully seated in the grooves.
- Make sure that the pulley turns smoothly after it's reassembled.
- Route and clamp the wires properly to prevent damage by the pulley.

6. Cycle the A/C clutch approximately 20 times by running the engine at 1, 500-2, 000 RPM and setting the climate control temperature to Lo with the air conditioning button ON. This procedure seats the clutch friction surfaces, and increases clutch torque capacity.

A/C COMPRESSOR RELIEF VALVE REPLACEMENT

NOTE: If the A/C compressor relief valve released refrigerant to the atmosphere, determine and correct the cause of the excessive system pressure, then replace the relief valve.

1. Recover the refrigerant with a recovery/recycling/charging station (see **REFRIGERANT RECOVERY**).
2. Remove the relief valve (A) and the O-ring (B). Plug the opening to keep moisture and foreign material from entering the system, and the A/C compressor oil from running out.

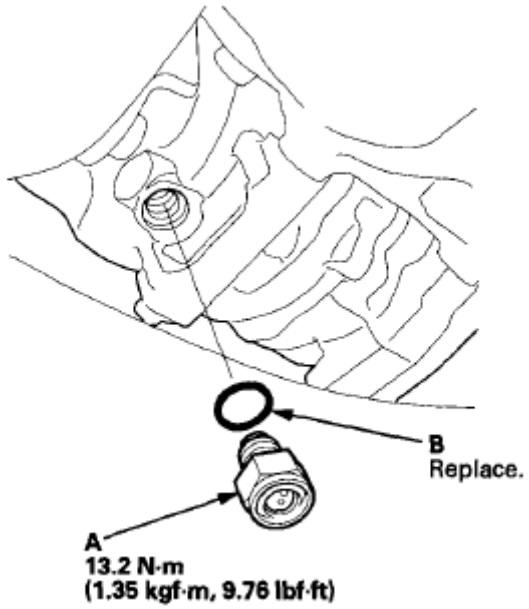


Fig. 178: Identifying Relief Valve And O-Ring With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Clean the mating surfaces.
4. Replace the O-ring with a new one, and apply a thin coat of refrigerant oil before installing it.

5. Remove the plug you installed in step 2, then install and tighten the relief valve.
6. Charge the system (see **SYSTEM CHARGING**).

A/C REFRIGERANT OIL REPLACEMENT

Special Tools Required

Oil Injector Tool Robinair ROB16256*, commercially available

*Available through the Acura Tool and Equipment Program; call 888-424-6857

Recommended PAG oil: DENSO ND-OIL 8

P/N 38897-PR7-A01AH: 120 mL (4 fl.oz)

It is important to have the correct amount of refrigerant oil in the A/C system to ensure proper lubrication of the A/C compressor. Too little oil damages the A/C compressor; too much oil reduces the cooling capacity of the system, and can produce high vent temperatures.

- To avoid contamination, do not return the oil to the container once dispensed, and never mix it with other refrigerant oils.
- Immediately after using the oil, reinstall the cap on the container, and seal it to avoid moisture absorption.
- Do not spill the refrigerant oil on the vehicle; it may damage the paint; if it gets on the paint, wash it off immediately.

Add the recommended refrigerant oil in the amount listed if you replace any of the following parts:

A/C condenser (including Dryer Desiccant).....35 mL (1 1/5 fl.oz)

Evaporator.....35 mL (1 1/5 fl.oz)

Line or hose.....10 mL (1/3 fl.oz)

Dryer desiccant.....10 mL (1/3 fl.oz)

Leakage repair.... 25 mL (5/6 fl.oz)

A/C compressor.... For A/C compressor replacement, subtract the volume of oil drained from the removed A/C compressor from 82 mL (2 7/9 fl-oz), and drain the calculated volume of oil from the new A/C compressor: 82 mL (2 7/9 fl-oz) - Volume of removed A/C compressor = Volume to drain from new A/C compressor.

NOTE: Even if no oil is drained from the removed A/C compressor, do not drain more than 50 mL (1 2/3 fl.oz) from the new A/C compressor.

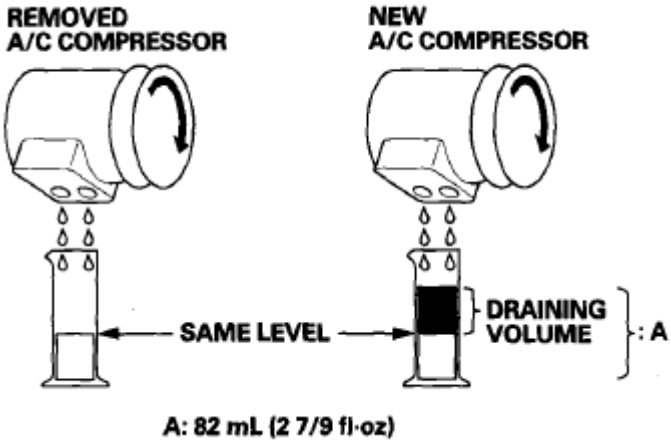
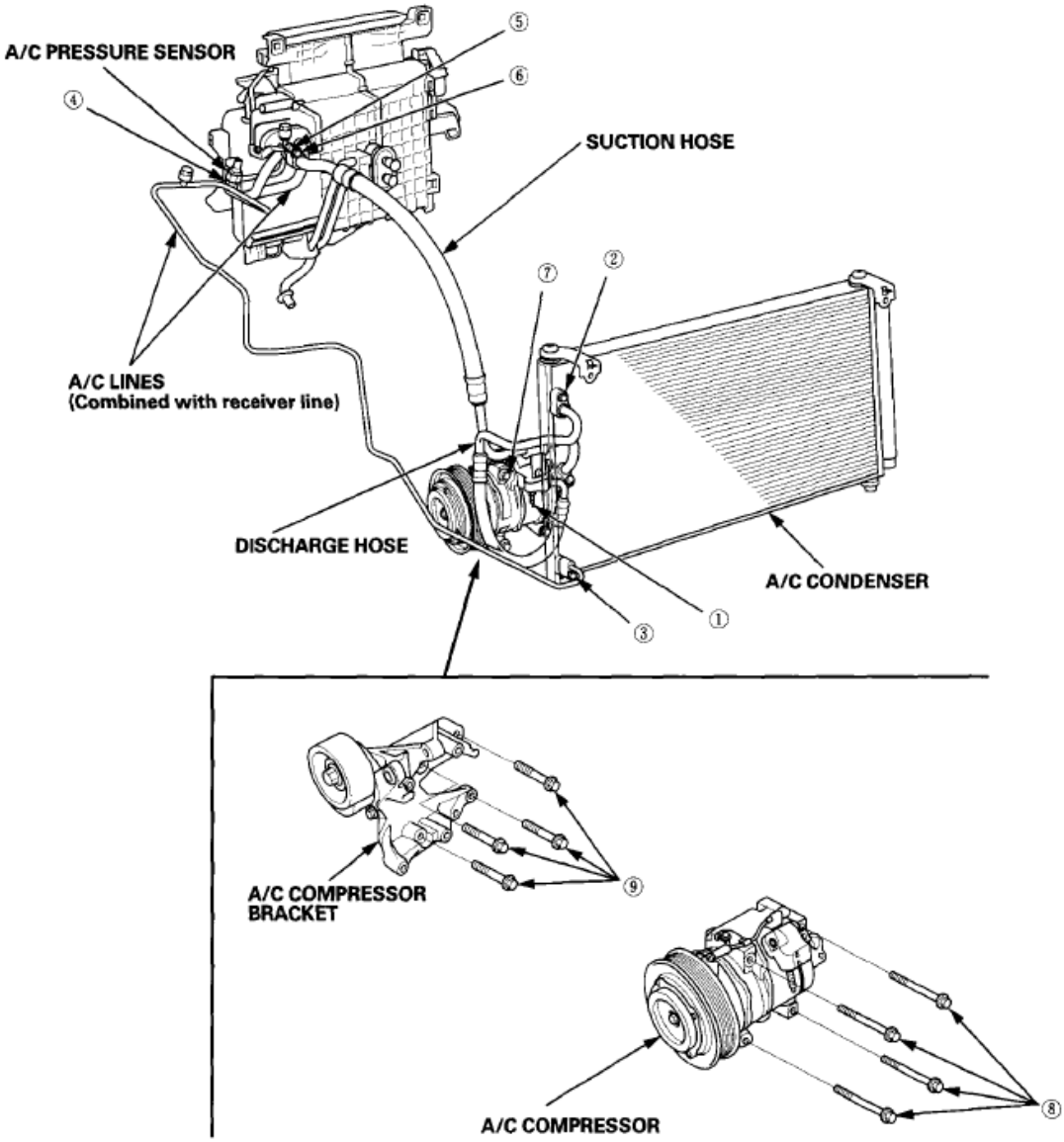


Fig. 179: Identifying A/C Compressor Oil Level
Courtesy of AMERICAN HONDA MOTOR CO., INC.

A/C LINE REPLACEMENT



① Discharge hose to the A/C compressor (6 x 1.0 mm): 9.8 N·m (1.0 kgf·m, 7.2 lbf·ft)
② Discharge hose to the A/C condenser (6 x 1.0 mm): 9.8 N·m (1.0 kgf·m, 7.2 lbf·ft)
③ Receiver line to the A/C condenser (6 x 1.0 mm): 9.8 N·m (1.0 kgf·m, 7.2 lbf·ft)
④ A/C pressure sensor to the receiver line (11 x 1.0 mm): 10.8 N·m (1.1 kgf·m, 8.0 lbf·ft)
⑤ A/C lines to the evaporator (6 x 1.0 mm): 9.8 N·m (1.0 kgf·m, 7.2 lbf·ft)
⑥ A/C line to the suction hose (6 x 1.0 mm): 9.8 N·m (1.0 kgf·m, 7.2 lbf·ft)
⑦ Suction hose to the A/C compressor (6 x 1.0 mm): 9.8 N·m (1.0 kgf·m, 7.2 lbf·ft)
⑧ A/C compressor to the A/C compressor bracket (8 x 1.25 mm): 22 N·m (2.2 kgf·m, 16.2 lbf·ft)
⑨ A/C compressor bracket to the engine block (10 x 1.25 mm): 44 N·m (4.5 kgf·m, 32.5 lbf·ft)

Fig. 180: Identifying A/C Line & Related Components
Courtesy of AMERICAN HONDA MOTOR CO., INC.

DUST AND POLLEN FILTER REPLACEMENT

1. Open the glove box. Remove the glove box separator (A) by carefully pulling it straight back.

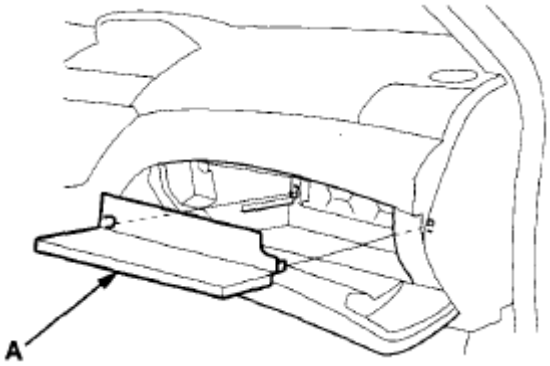


Fig. 181: Identifying Glove Box Separator
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Remove the dust and pollen filter assembly (A) from the blower unit.

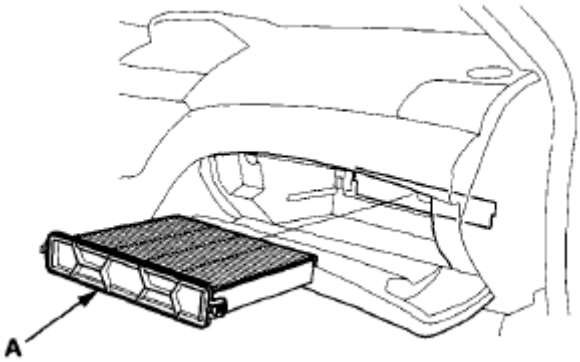


Fig. 182: Identifying Dust And Pollen Filter Assembly
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Remove the filter (A) from the housing (B), and replace the filter.

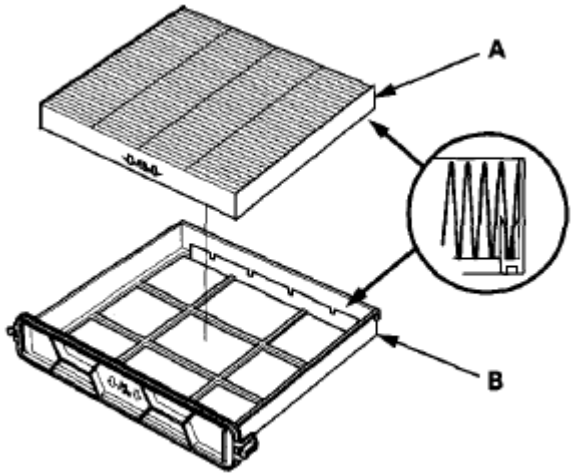


Fig. 183: Identifying Filter And Housing

Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Install the filter in the reverse order of removal. Make sure that there is no air leaking out of the blower unit.

BLOWER UNIT REMOVAL/INSTALLATION

1. Remove the passenger's dashboard undercover (see **GLOVE BOX DAMPER REPLACEMENT**).
2. Remove the passenger's dashboard trim (see **PASSENGER'S DASHBOARD TRIM REMOVAL/INSTALLATION**).
3. Remove the glove box (see **GLOVE BOX REMOVAL/INSTALLATION**).
4. Detach the harness clips (A). Remove the bolts, and the glove box frame (B).

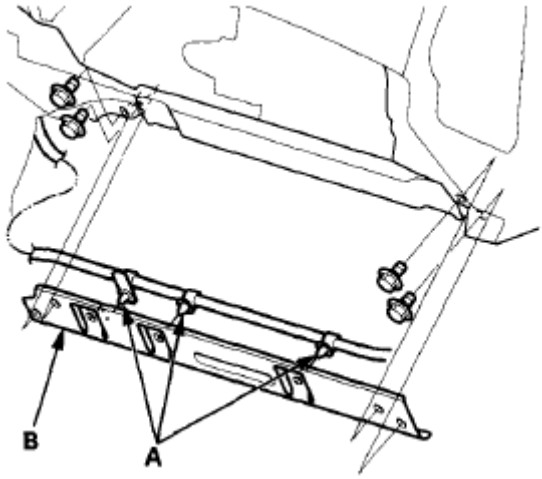


Fig. 184: Identifying Harness Clips And Glove Box Frame
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Cut the plastic cross brace (A) in the glove box opening with diagonal cutters in the area shown, and discard it.

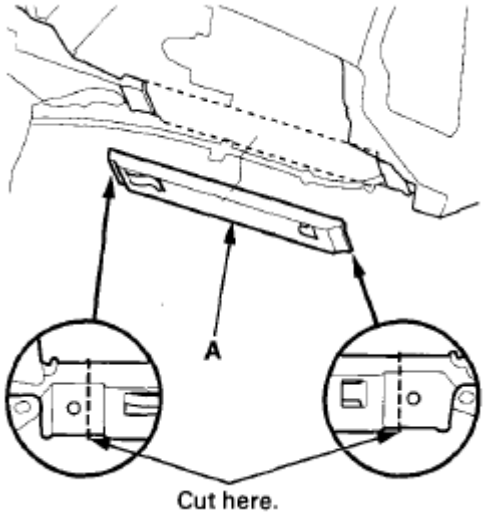


Fig. 185: Identifying Cross Brace
Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Release the harness clip (A), then remove the self-tapping screws, and the passenger's heater duct (B).

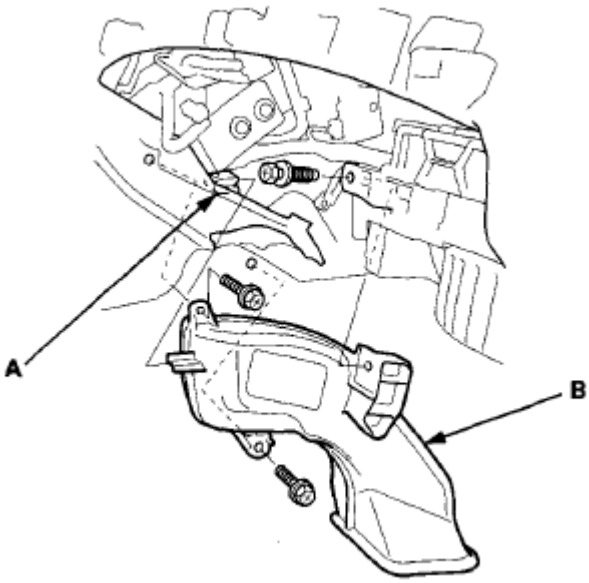


Fig. 186: Identifying Harness Clip And Passenger's Heater Duct
Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Disconnect the connector (A) from the blower motor, and detach the harness clips (B).

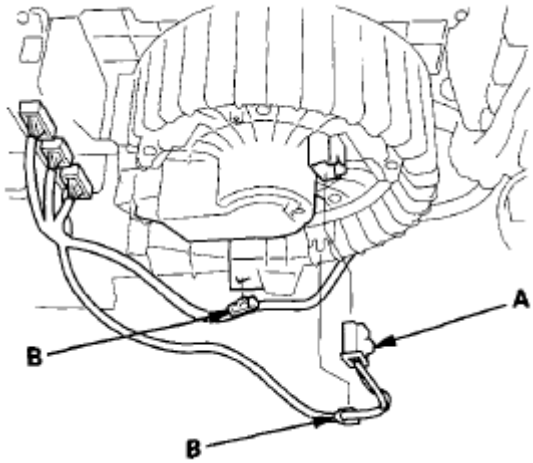


Fig. 187: Identifying Connector And Harness Clip
Courtesy of AMERICAN HONDA MOTOR CO., INC.

8. Remove the self-tapping screws and disconnect the climate control unit connectors (A), and recirculation control motor connector (B).

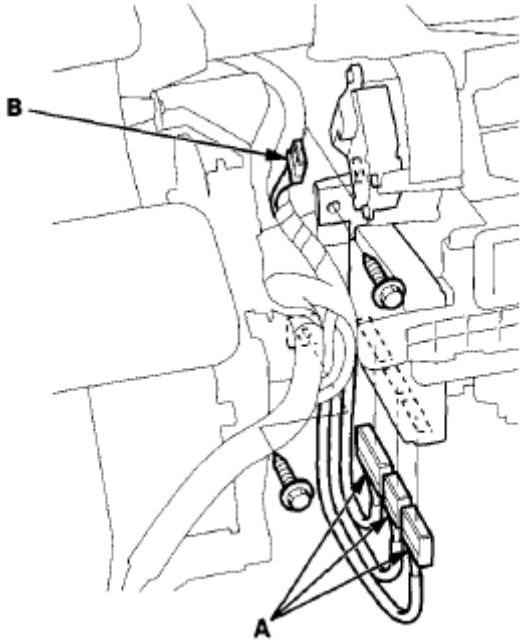


Fig. 188: Identifying Unit Connectors And Recirculation Control Motor Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

9. Disconnect the right engine compartment harness connector (A) and harness clips (B). Remove the mounting nuts, and the blower unit (C).

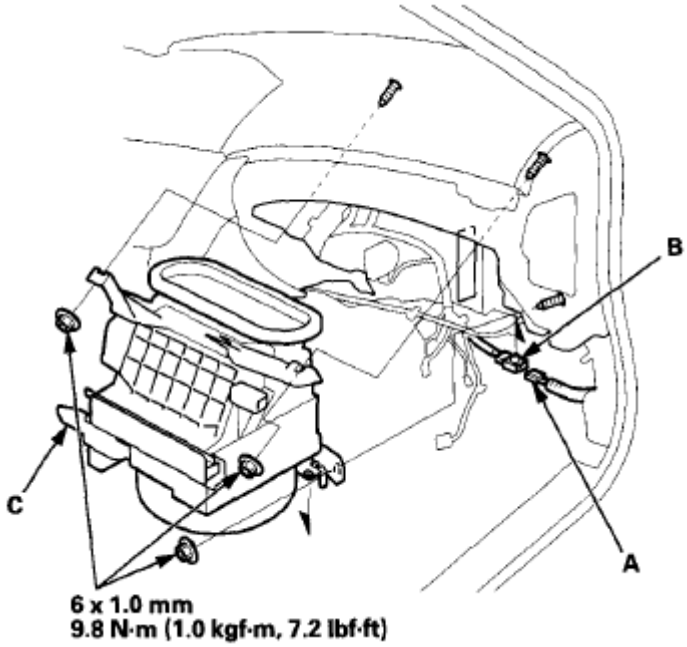


Fig. 189: Identifying Harness Connector, Harness Clips And Blower Unit With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

10. Install the unit in the reverse order of removal. Make sure that there are no air leaks.

BLOWER UNIT COMPONENT REPLACEMENT

Note these items when overhauling the blower unit:

- The recirculation control motor (A), the blower motor (B), and the dust and pollen filter (C) can be replaced without removing the blower unit.
- Before reassembly, make sure that the recirculation control linkage and door move smoothly without binding.
- After reassembly, make sure the recirculation control motor runs smoothly (see **RECIRCULATION CONTROL MOTOR TEST**).

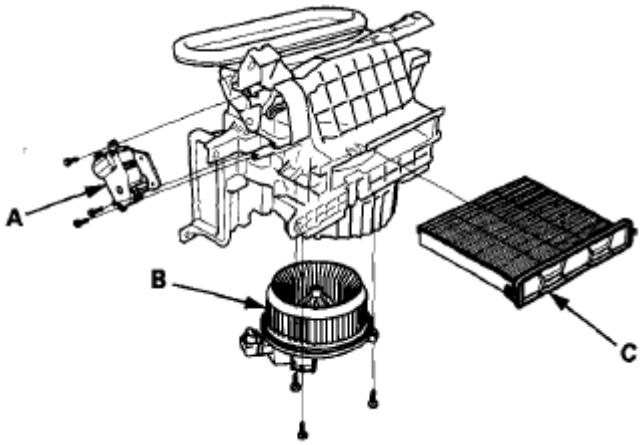


Fig. 190: Identifying Recirculation Control Motor, Blower Motor And Pollen Filter
Courtesy of AMERICAN HONDA MOTOR CO., INC.

EXPANSION VALVE REPLACEMENT

1. Remove the evaporator core (see **EVAPORATOR CORE REPLACEMENT**).
2. Remove the insulator (A) and bolts, then remove the expansion valve (B) and the O-rings (C).

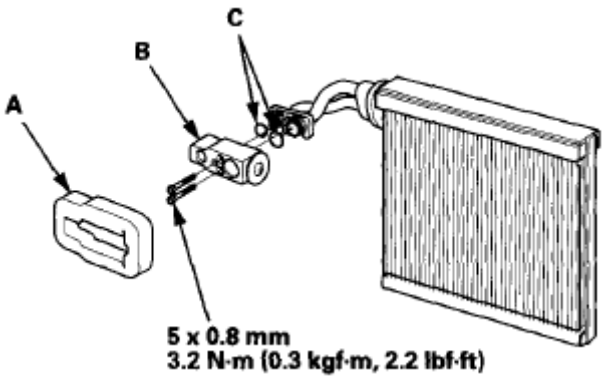


Fig. 191: Identifying Insulator, Expansion Valve And O-Rings With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Install the expansion valve in the reverse order of removal, and note these items:
   - Replace the O-rings with new ones at each fitting, and apply a thin coat of refrigerant oil before installing them. Be sure to use the correct O-rings for HFC-134a (R-134a> to avoid leakage.
   - Immediately after using the oil, reinstall the cap on the container, and seal it to avoid moisture absorption.
   - Do not spill the refrigerant oil on the vehicle; it may damage the paint; if the refrigerant oil contacts the paint, wash it off immediately.
   - Make sure that there are no air leaks.
   - Charge the system (see **SYSTEM CHARGING**).

EVAPORATOR CORE REPLACEMENT

1. Recover the refrigerant with a recovery/recycling/charging station (see **REFRIGERANT RECOVERY**).
2. Remove the bolt from the A/C line clamp (A).

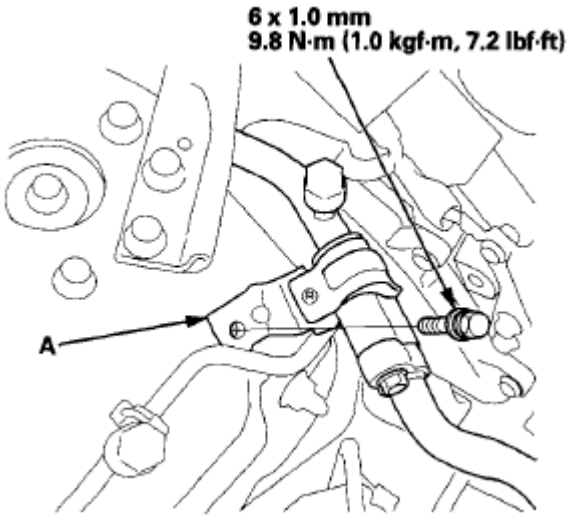


Fig. 192: Identifying A/C Line Clamp With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Remove the bolt, then disconnect the A/C line (A) from the evaporator core. Replace the O-rings (B).

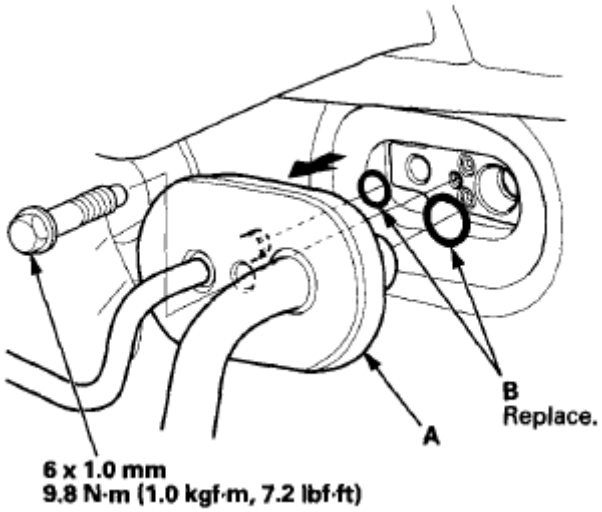


Fig. 193: Identifying A/C Line And O-Rings With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Remove the blower unit (see **BLOWER UNIT REMOVAL/INSTALLATION**).
5. Disconnect the power transistor connector (A). Detach the harness clips (B). Remove the self-tapping

screws, the joint duct (C), and the seal (D).

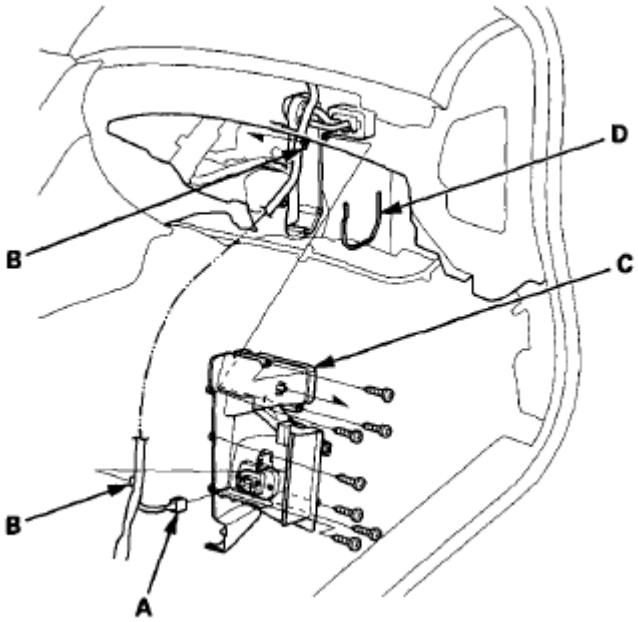


Fig. 194: Identifying Power Transistor Connector, Harness Clips, Joint Duct And Seal
Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Carefully pull out the evaporator core (A) without bending the lines, then remove the plate (B).

NOTE: Be careful not to damage the wire harness.

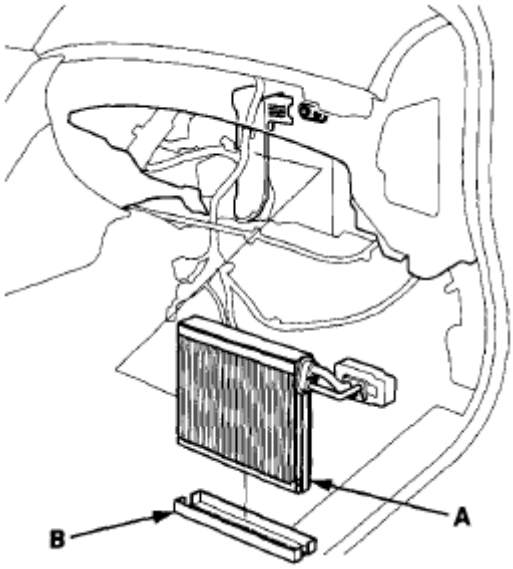


Fig. 195: Identifying Evaporator Core And Plate
Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Install the core in the reverse order of removal, and note these items:
   - If you're installing a new evaporator core, add refrigerant oil (DENSO ND-OIL 8) (see **A/C REFRIGERANT OIL REPLACEMENT**).
   - Replace the O-rings with new ones at each fitting, and apply a thin coat of refrigerant oil before installing them. Be sure to use the correct O-rings for HFC-134a (R-134a) to avoid leakage.
   - Immediately after using the oil, reinstall the cap on the container, and seal it to avoid moisture absorption.
   - Do not spill the refrigerant oil on the vehicle; it may damage the paint; if the refrigerant oil contacts the paint, wash it off immediately.
   - Make sure that there is no air leakage.
   - Charge the system (see **SYSTEM CHARGING**).

HEATER UNIT/CORE REPLACEMENT

SRS components are located in this area. Review the SRS component locations (see **COMPONENT LOCATION INDEX**) and the precautions and procedures (see **PRECAUTIONS AND PROCEDURES**) before doing repairs or service.

1. Do the battery terminal disconnection procedure (see **BATTERY TERMINAL DISCONNECTION AND RECONNECTION**).
2. Recover the refrigerant with a recovery/recycling/charging station (see **REFRIGERANT RECOVERY**).
3. Disconnect the A/C line from the evaporator core (see **EVAPORATOR CORE REPLACEMENT**).
4. When the engine is cool, drain the engine coolant from the radiator (see **COOLANT CHECK**).
5. From under the hood, slide the hose clamps (A) back. Disconnect the inlet heater hose (B) and the outlet heater hose (C) from the heater unit. Note the layout of the hoses.

   Engine coolant will run out when the hoses are disconnected; drain it into a clean drip pan. Be sure not to let coolant spill on the electrical parts or the painted surfaces. If any coolant spills, rinse it off immediately.

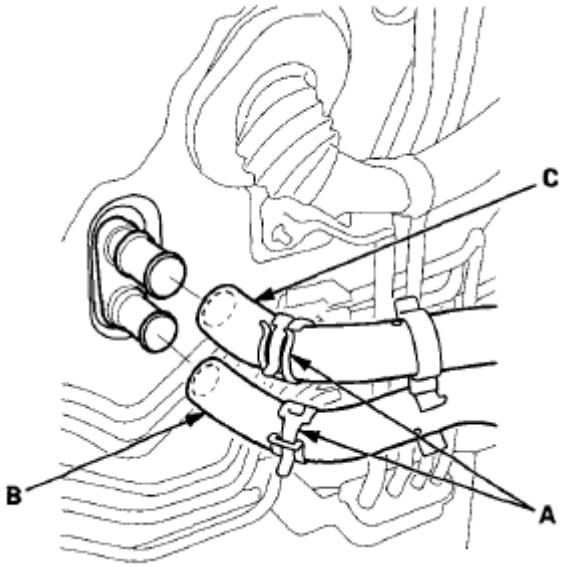


Fig. 196: Identifying Hose Clamps, Inlet And Outlet Heater Hose
Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Remove the mounting nut from the heater unit. Take care not to damage or bend the fuel lines or the brake lines.

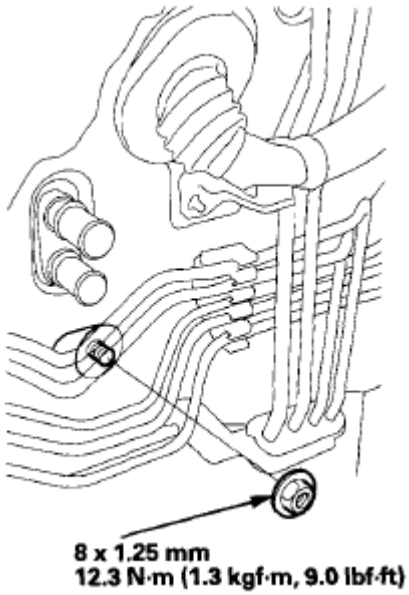


Fig. 197: Removing Mounting Nut From Heater Unit With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Remove the dashboard (see **DASHBOARD REPLACEMENT**).
8. Disconnect the left engine compartment wire harness connectors (A). Remove the ducts (B), and the drain hose (C). Then remove the mounting nuts, and the blower-heater unit (D).

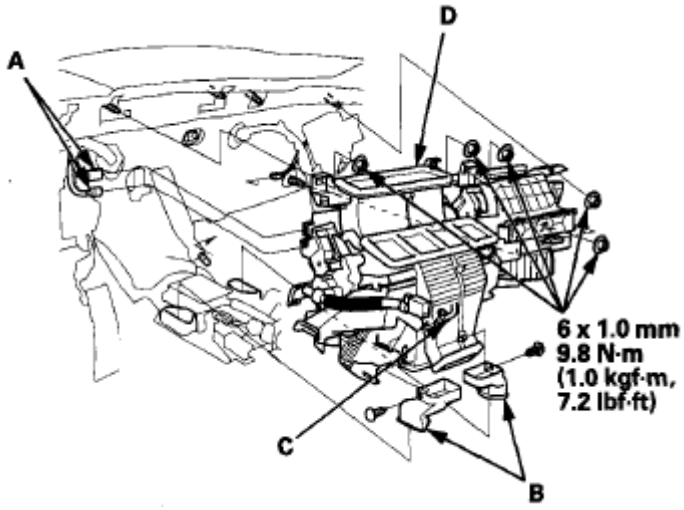


Fig. 198: Identifying Harness Connectors, Ducts, Drain Hose And Blower-Heater Unit With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

9. Disconnect the connector (A) from the blower motor. Detach the harness clips (B).

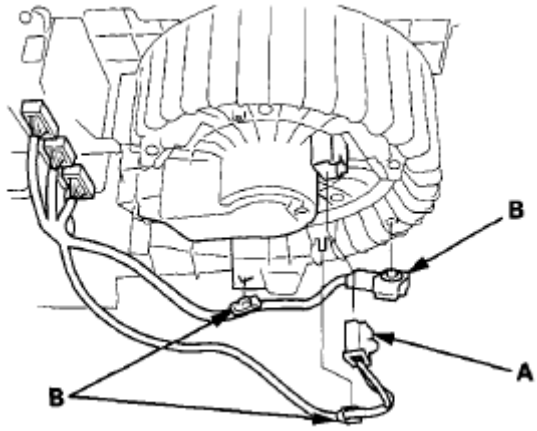


Fig. 199: Identifying Connector And Clips
Courtesy of AMERICAN HONDA MOTOR CO., INC.

10. Disconnect these connectors (A): The passenger's mode control motor, the power transistor, and the passenger's air mix control motor. Detach the harness clips (B).

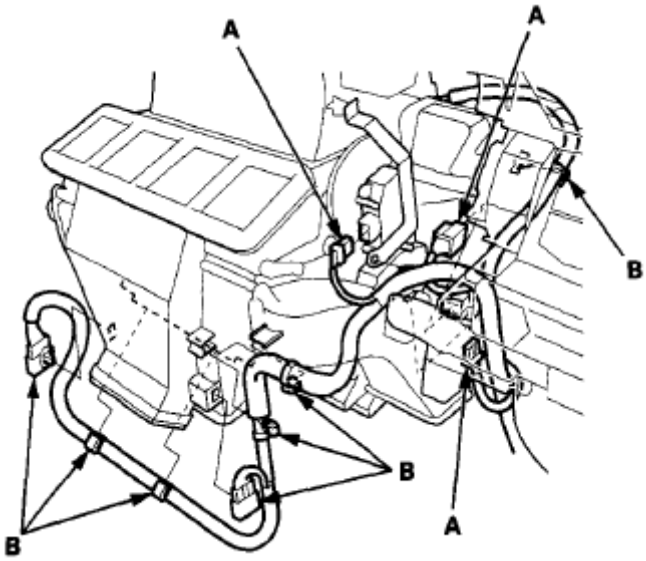


Fig. 200: Identifying Connectors And Harness Clips
Courtesy of AMERICAN HONDA MOTOR CO., INC.

11. Disconnect these connectors (A): The recirculation control motor, and the climate control unit. Detach the harness clip (B).

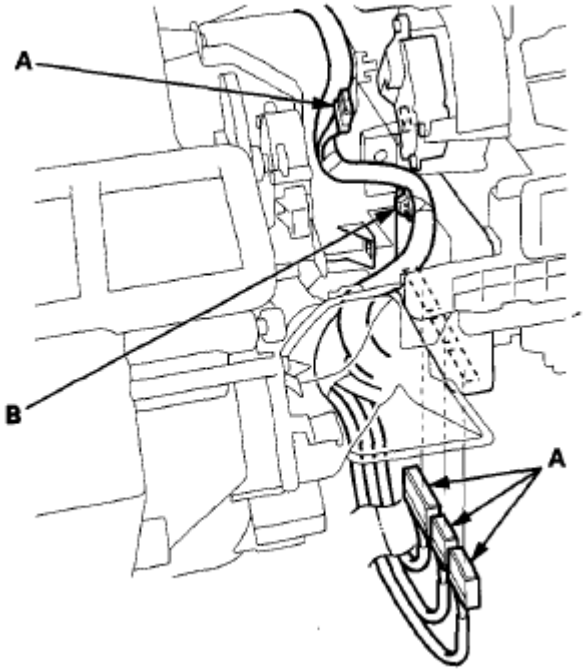


Fig. 201: Identifying Connectors And Harness Clips
Courtesy of AMERICAN HONDA MOTOR CO., INC.

12. Disconnect these connectors (A): the driver's air mix control motor, the driver's mode control motor, and evaporator temperature sensor. Detach the harness clips (B), and remove the wire harness (C).

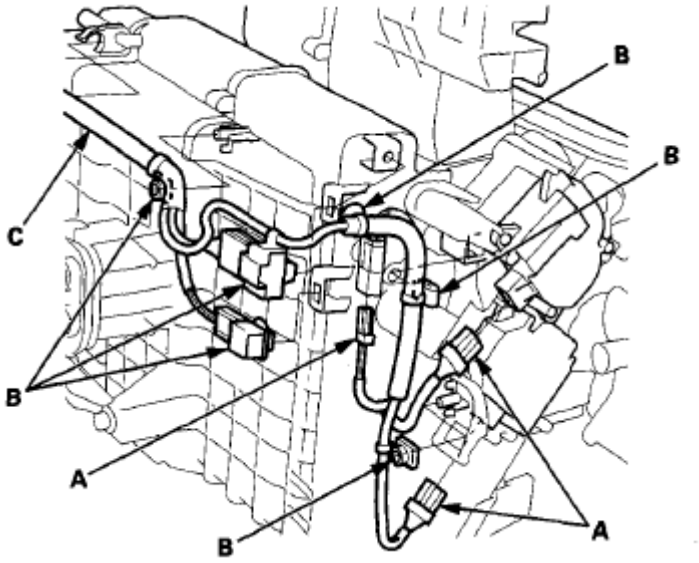


Fig. 202: Identifying Connectors, Wire Harness And Harness Clip
Courtesy of AMERICAN HONDA MOTOR CO., INC.

13. Remove the self-tapping screws and the passenger's heater duct (A). Remove the self-tapping screws and the joint duct (B). Remove the self-tapping screw and the heater core cover (C). Remove the self-tapping screw, the heater pipe bracket (D), and the grommet (E), and carefully pull out the heater core (F).

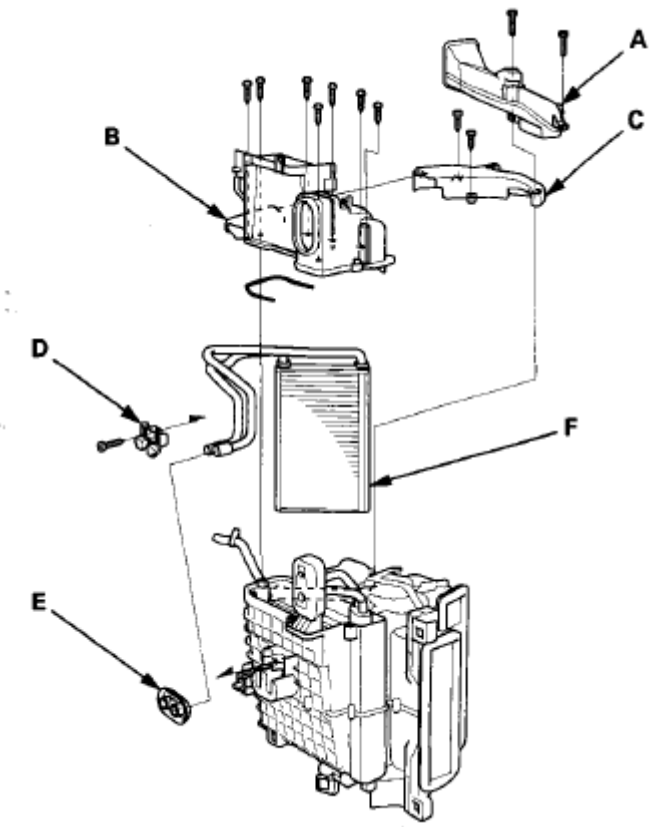


Fig. 203: Identifying Joint Duct, Passenger's Heater Duct, Heater Core Cover, Grommet And Heater Core
Courtesy of AMERICAN HONDA MOTOR CO., INC.

14. Install the heater core in the reverse order of removal.
15. Install the heater unit in the reverse order of removal, and note these items:
    - Do not interchange the inlet and outlet heater hoses, and install the hose clamps securely.
    - Refill the cooling system with engine coolant (see **COOLANT CHECK**).
    - Make sure that there is no coolant leakage.
    - Make sure that there is no air leakage.
    - Charge the system (see **SYSTEM CHARGING**).
16. Do the battery terminal reconnection procedure (see **BATTERY TERMINAL DISCONNECTION AND RECONNECTION**).

DRIVER'S AIR MIX CONTROL MOTOR REPLACEMENT

1. Remove the driver's dashboard undercover (see **DRIVER'S DASHBOARD UNDERCOVER REMOVAL/INSTALLATION**).
2. Remove the self-tapping screws, the aspirator hose (A), and the driver's heater duct (B).

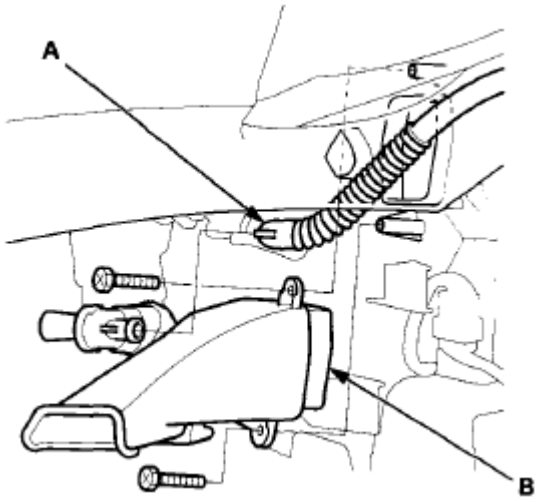


Fig. 204: Identifying Aspirator's Hose And Driver's Heater Duct
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Disconnect the 7P connector (A) from the driver's air mix control motor (B). Remove the self-tapping screws and the driver's air mix control motor from the heater unit.

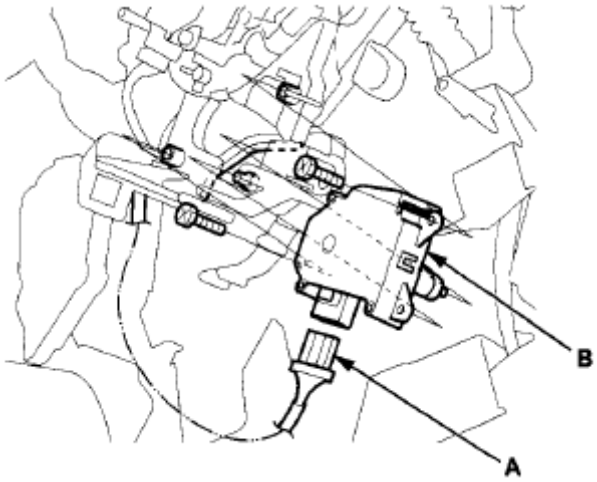


Fig. 205: Identifying Connector And Driver's Air Mix Control Motor
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Install the motor in the reverse order of removal. Make sure the pin on the motor is properly engaged with the linkage. After installation, make sure the motor runs smoothly.

PASSENGER'S AIR MIX CONTROL MOTOR REPLACEMENT

1. Remove the passenger's dashboard undercover (see **GLOVE BOX DAMPER REPLACEMENT**).
2. Remove the glove box (see **GLOVE BOX REMOVAL/INSTALLATION**).
3. Release the harness clip (A), then remove the self-tapping screws and the passenger's heater duct (B).

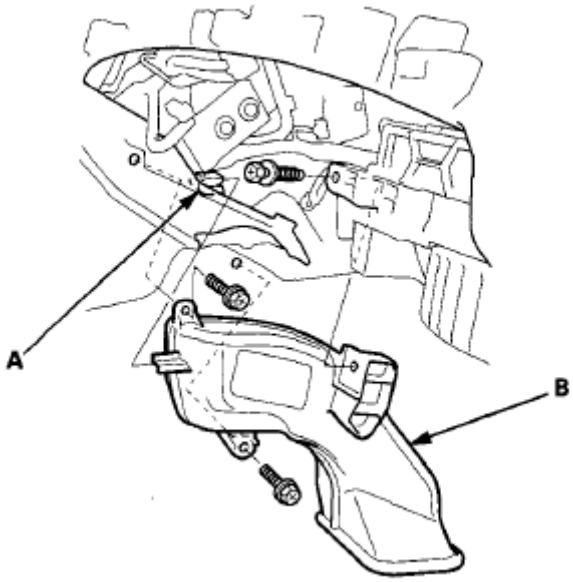


Fig. 206: Identifying Harness Clip And Passenger's Heater Duct
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Disconnect the 5P connector (A) from the power transistor, and the 7P connector (B) from the passenger's air mix control motor (C). Remove the self-tapping screws and the passenger's air mix control motor from the heater unit.

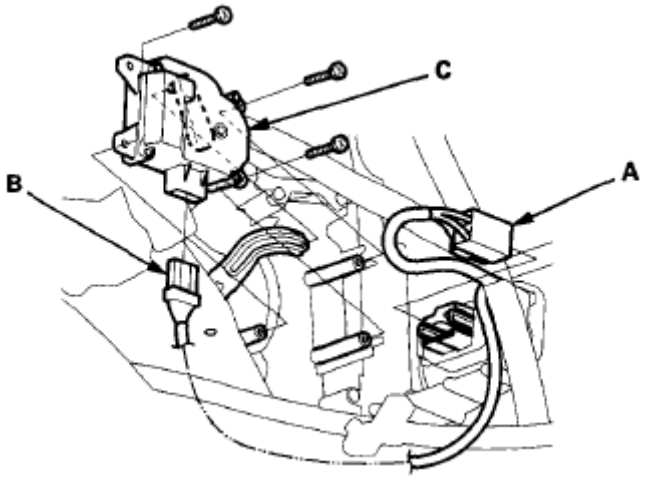


Fig. 207: Identifying Connectors And Passenger's Air Mix Control Motor
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Install the motor in the reverse order of removal. Make sure the pin on the motor is properly engaged with the linkage. After installation, make sure the motor runs smoothly.

DRIVER'S MODE CONTROL MOTOR REPLACEMENT

1. Remove the driver's dashboard undercover (see **DRIVER'S DASHBOARD UNDERCOVER REMOVAL/INSTALLATION**).
2. Disconnect the 7P connector (A) from the driver's mode control motor (B). Remove the self-tapping screws and the driver's mode control motor from the heater unit.

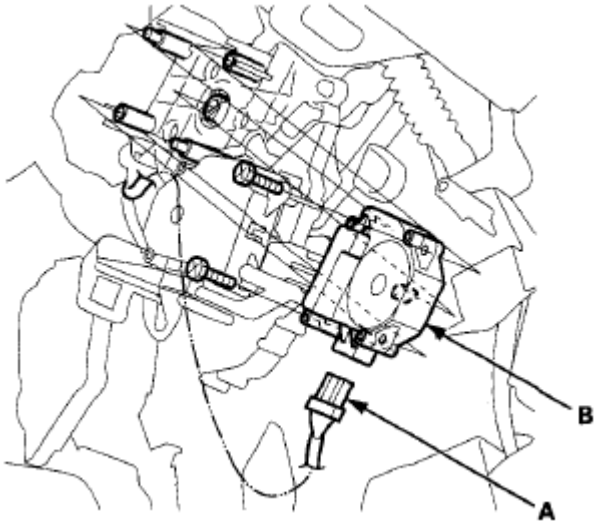


Fig. 208: Identifying Connector And Driver's Mode Control Motor
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Install the motor in the reverse order of removal. Make sure the pin on the motor is properly engaged with the linkage. After installation, make sure the motor runs smoothly.

PASSENGER'S MODE CONTROL MOTOR REPLACEMENT

REMOVAL

NOTE: Set the passenger's side climate control to the VENT position before removing the motor.

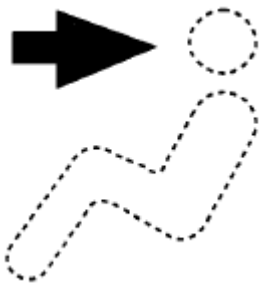


Fig. 209: Setting Passenger's Side Climate Control To Vent Position Before Removing Motor
Courtesy of AMERICAN HONDA MOTOR CO., INC.

1. Remove the passenger's dashboard undercover (see **GLOVE BOX DAMPER REPLACEMENT**).
2. Remove the glove box (see **GLOVE BOX REMOVAL/INSTALLATION**).
3. Remove the glove box frame (see step 4).
4. Release the harness clip (A), then remove the self-tapping screws and the passenger's heater duct (B).

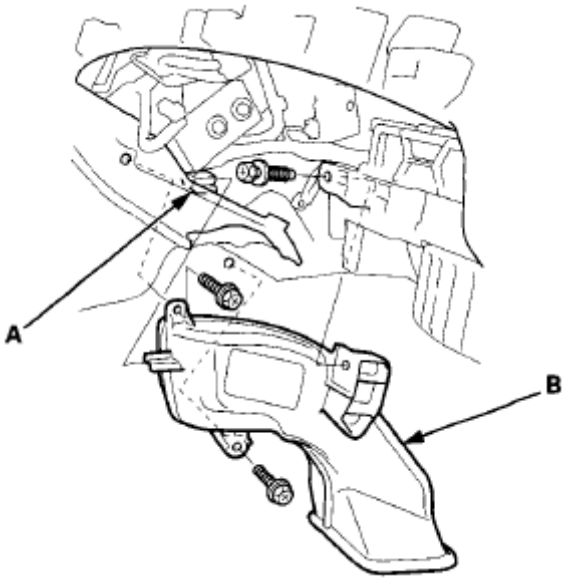


Fig. 210: Identifying Harness Clip And Passenger's Heater Duct
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Disconnect the 7P connector (A) from the passenger's mode control motor (B). Release the wire from its harness clip (C), then remove the self-tapping screws and the passenger's mode control motor from the heater unit.

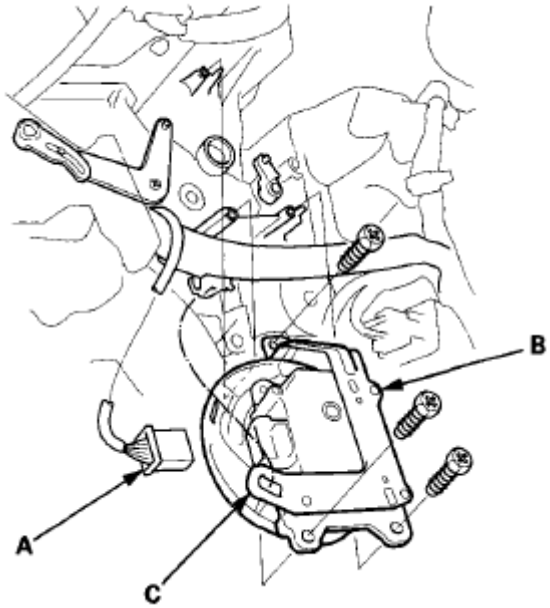


Fig. 211: Identifying Passenger's Mode Control Motor, Connector And Harness Clip
Courtesy of AMERICAN HONDA MOTOR CO., INC.

INSTALLATION

1. Release the lock (A), then remove the motor lever (B) from the mode control motor (C).

NOTE: Before installing the mode control motor, plug in the 7P connector, and set the passenger's side climate control mode to VENT. Check that the motor output shaft is lined up as indicated (D).

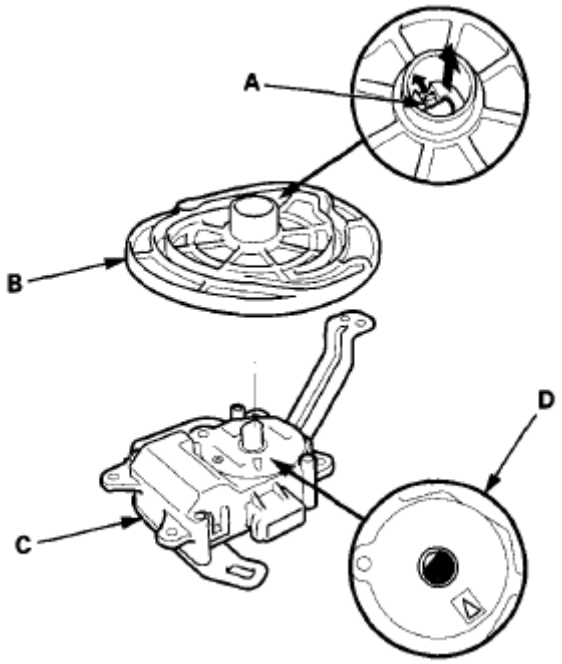


Fig. 212: Identifying Lock, Motor Lever And Mode Control Motor
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Align the position of the damper lever pins (A), then install the motor lever (B).

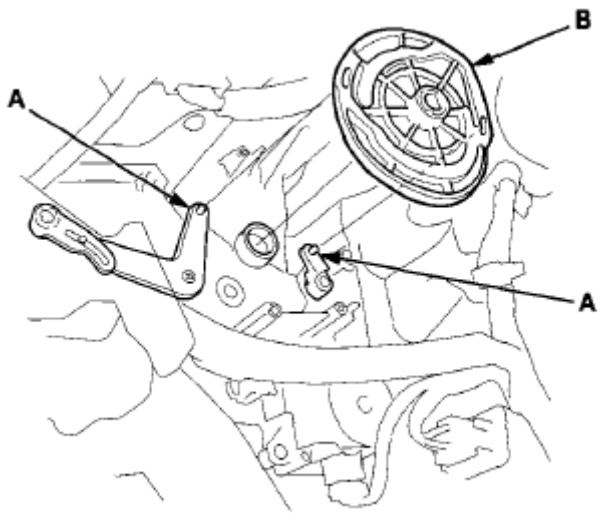


Fig. 213: Identifying Damper Lever Pins And Motor Lever
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Make sure the damper lever pins in the motor lever are visible through the holes.

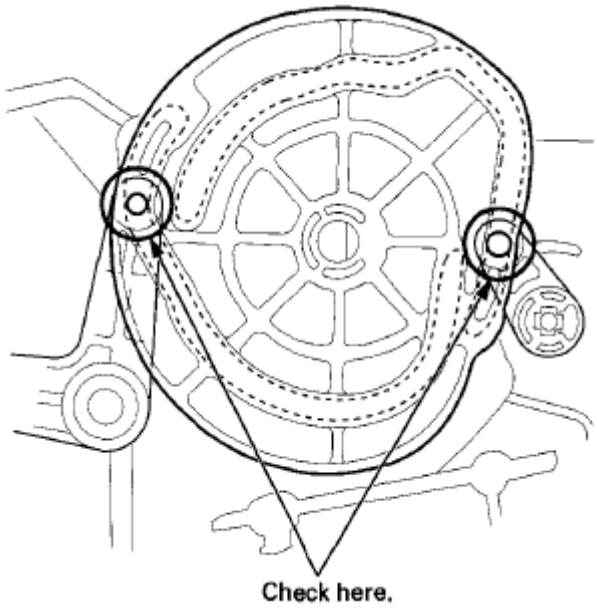


Fig. 214: Checking Damper Level Pins In Motor Lever Through Holes
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Install the mode control motor (A) while holding the motor lever (B).

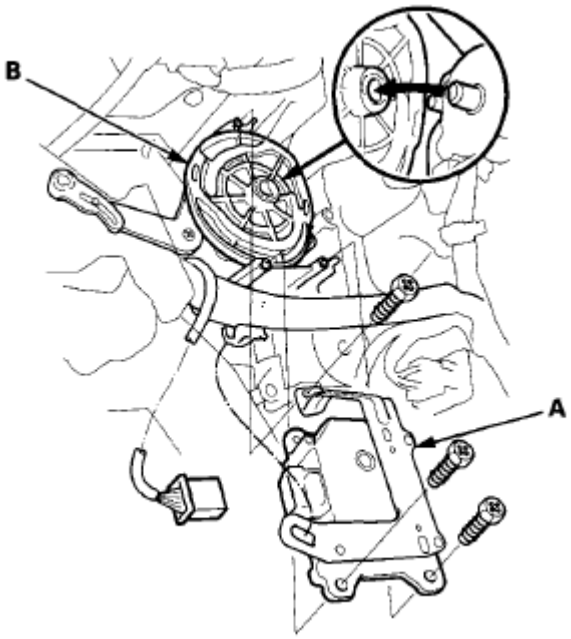


Fig. 215: Identifying Mode Control Motor And Motor Lever
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. After installation, make sure the motor runs smoothly.

RECIRCULATION CONTROL MOTOR REPLACEMENT

REMOVAL

1. Remove the passenger's dashboard undercover (see **GLOVE BOX DAMPER REPLACEMENT**).
2. Remove the glove box (see **GLOVE BOX REMOVAL/INSTALLATION**).
3. Remove the climate control unit (see **CLIMATE CONTROL UNIT REMOVAL/INSTALLATION**).
4. Disconnect the 7P connector (A) from the recirculation control motor (B). Remove the self-tapping screws and the recirculation control motor from the blower unit.

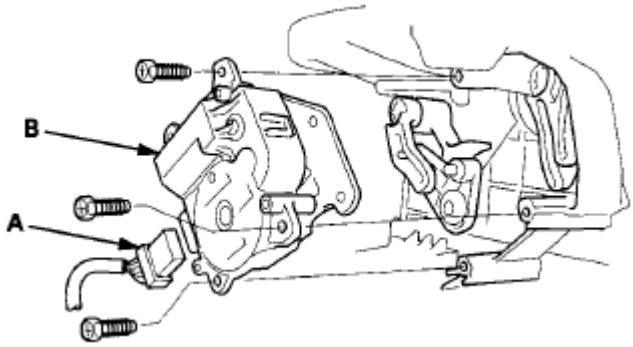


Fig. 216: Identifying 7P Connector And Recirculation Control Motor
Courtesy of AMERICAN HONDA MOTOR CO., INC.

INSTALLATION

1. Make sure the damper lever pins in the motor lever are visible through the holes.

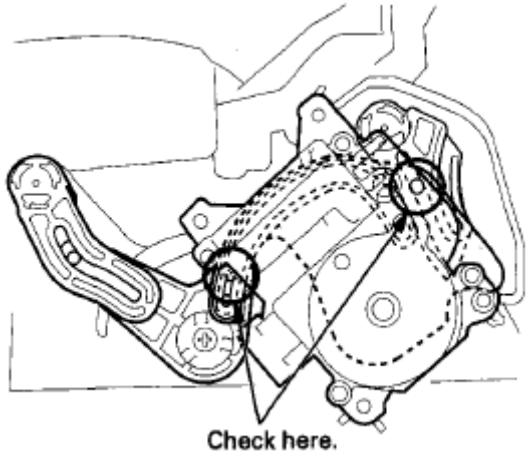


Fig. 217: Checking Damper Lever Pins In Motor Lever Through Holes
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. While holding the recirculation control motor (A), install the self-tapping screws and connect the 7P connector (B).

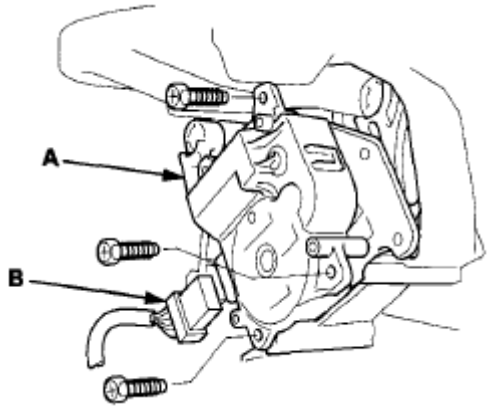


Fig. 218: Identifying Recirculation Control Motor And 7P Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Reinstall the climate control unit.
4. After installation, make sure the motor runs smoothly.

HUMIDITY/IN-CAR TEMPERATURE SENSOR REPLACEMENT

1. Remove these items:
   - Driver's dashboard undercover (see **DRIVER'S DASHBOARD UNDERCOVER REMOVAL/INSTALLATION**)
   - Remote slot (with keyless access system) (see **REMOTE SLOT TEST/REPLACEMENT**)
2. Disconnect the air hose from the heater unit (see step 2). Keep grip on air hose while doing following procedures to assist in removal of sensor.
3. Disconnect the connector (A) from the humidity/in-car temperature sensor (B).

View from top

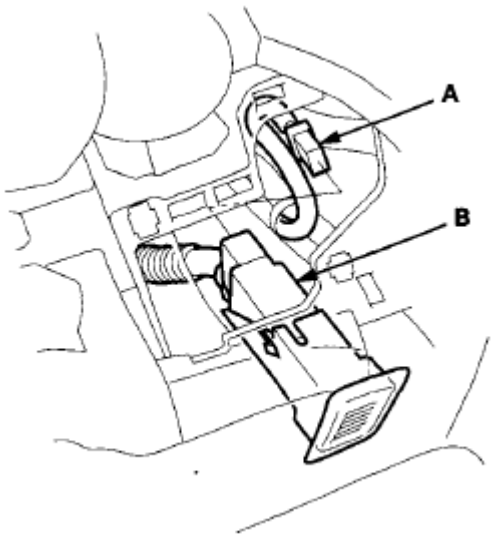


Fig. 219: Identifying Connector And Temperature Sensor
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Unhook the left lock tab (A) of the humidity/in-car temperature sensor by pushing your thumb (B) between the sensor and tab (C).

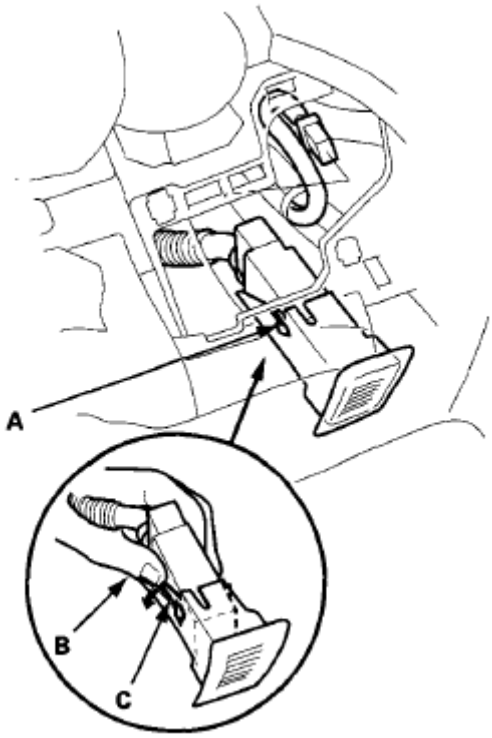


Fig. 220: Identifying Lock Tab, Temperature Sensor Thumb And Tab
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Pull sensor toward steering column to unlock right lock tab (A). Maintain the pressure with thumb to keep left tab unlocked while unhooking right lock tab then pull out the sensor.

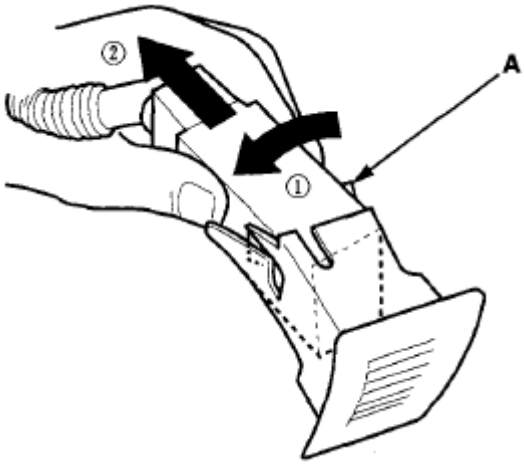


Fig. 221: Pulling Sensor Toward Steering Column To Unlock Right Lock Tab
Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Install the sensor in the reverse order of removal.

OUTSIDE AIR TEMPERATURE SENSOR REPLACEMENT

1. From behind the bumper, disconnect the 2P connector (A). Detach the clip and remove the outside air temperature sensor (B).

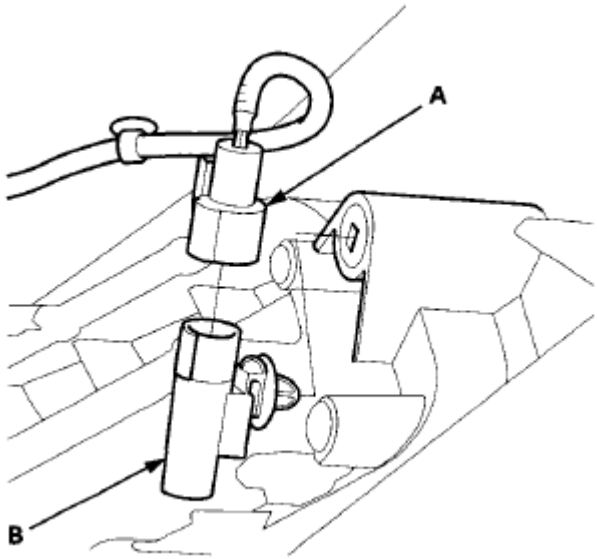


Fig. 222: Identifying 2P Connector And Outside Air Temperature Sensor
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Install the sensor in the reverse order of removal.

SUNLIGHT SENSOR REPLACEMENT

1. Remove the center speaker lid (see **FRONT CENTER SPEAKER**).
2. Push out the sunlight sensor (A) from the speaker lid, then disconnect the connector (B). Be careful not to damage the sensor or the dashboard.

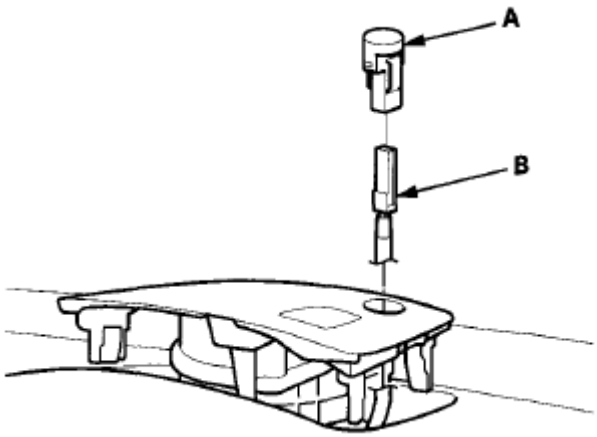


Fig. 223: Identifying Sunlight Sensor And Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Install the sensor in the reverse order of removal.

EVAPORATOR TEMPERATURE SENSOR REPLACEMENT

1. Remove the driver's dashboard undercover (see **GLOVE BOX DAMPER REPLACEMENT**).
2. Disconnect the 2P connector (A) from the evaporator temperature sensor (B) by pressing the lock tab toward the evaporator housing, and remove the connector clip (C). Remove the self-tapping screw and the evaporator temperature sensor.

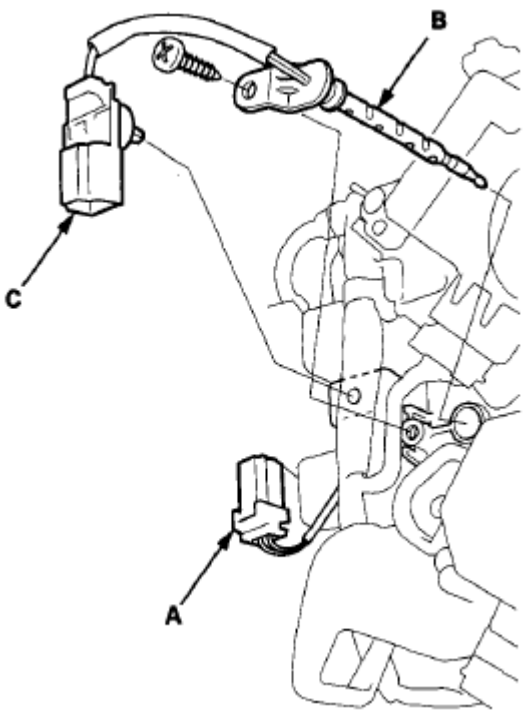


Fig. 224: Identifying 2P Connector, Evaporator Temperature Sensor And Connector Clip

Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Install the sensor in the reverse order of removal.

CLIMATE CONTROL UNIT REMOVAL/INSTALLATION

1. Remove the passenger's dashboard undercover (see **GLOVE BOX DAMPER REPLACEMENT**).
2. Disconnect the connectors (A). Remove the bolts (B) and the climate control unit (C).

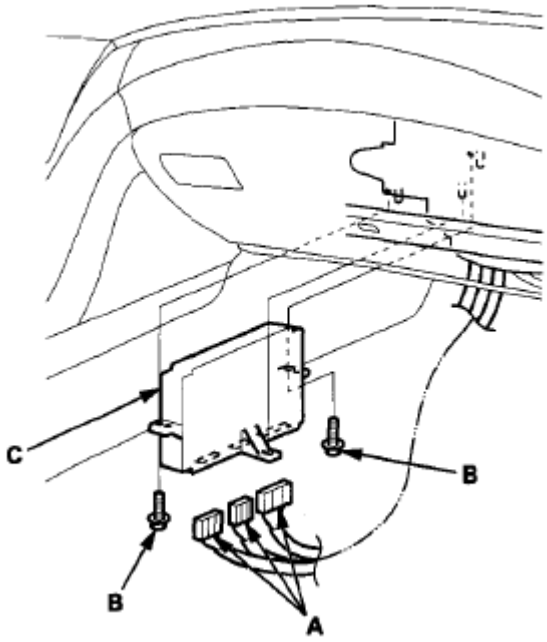


Fig. 225: Identifying Connectors, Bolts And Climate Control Unit
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Install the climate control unit in the reverse order of removal. After installation, operate the various functions to make sure they work properly.
4. Run the self-diagnostic function to confirm that there are no problems in the system (see **HOW TO USE THE SELF-DIAGNOSTIC FUNCTION WITH THE HDS**).

CLIMATE CONTROL SWITCH REMOVAL/INSTALLATION

1. Remove the audio-navigation unit (with navigation) (see **AUDIO-NAVIGATION UNIT REMOVAL/INSTALLATION**), or the audio unit (without navigation) (see **AUDIO UNIT REMOVAL/INSTALLATION**).
2. Remove the self-tapping screws and the climate control switches (A).

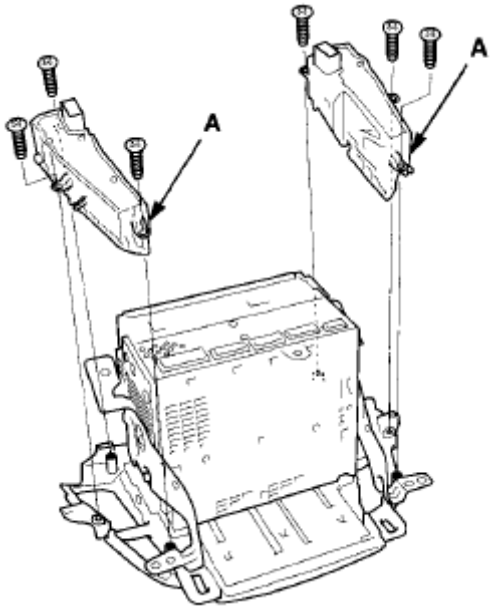


Fig. 226: Identifying Climate Control Switches
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Install the control switches in the reverse order of removal. After installation, operate the various functions to make sure they work properly.

REFRIGERANT RECOVERY

CAUTION:

- **Air conditioning refrigerant or lubricant vapor can irritate your eyes, nose, or throat.**
- **Be careful when connecting service equipment.**
- **Do not breathe refrigerant or vapor.**

NOTE:

- **If accidental system discharge occurs, ventilate the work area before resuming service.**
- **Additional health and safety information may be obtained from the refrigerant and lubricant manufacturers.**

1. Connect an R-134a refrigerant recovery/recycling/charging station (A) to the high-pressure service port (B) and the low-pressure service port (C), as shown, following the equipment manufacturer's instructions.

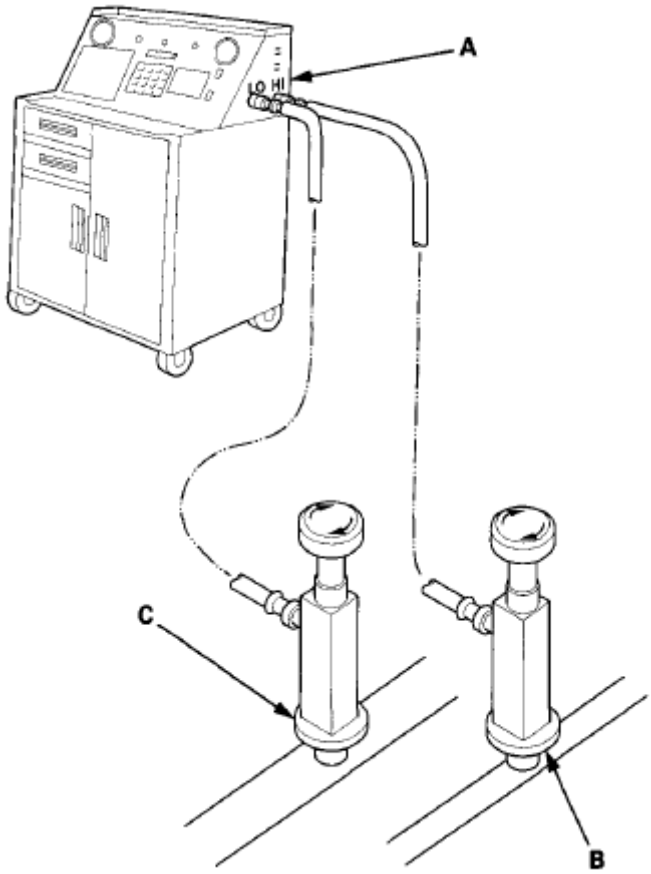


Fig. 227: Identifying R-134A Refrigerant Recovery/Recycling/Charging Station, High-Pressure Service Port And Low-Pressure Service Port
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Measure the amount of refrigerant oil removed from the A/C system after the recovery process is completed. Be sure to put the same amount of new refrigerant oil back into the A/C system before charging.

SYSTEM EVACUATION

Special Tools Required

Compact Electronic Vacuum Gauge Robinair ROB14777*, commercially available

*Available through the Acura Tool and Equipment Program; call 888-424-6857

CAUTION:
- **Air conditioning refrigerant or lubricant vapor can irritate your eyes, nose, or throat.**
- **Be careful when connecting service equipment.**
- **Do not breathe refrigerant or vapor.**

NOTE:

- **If accidental system discharge occurs, ventilate the work area before resuming service.**
- **Additional health and safety information may be obtained from the refrigerant and lubricant manufacturers.**
- **Do not allow moisture to contaminate the A/C system oil. Moisture in the oil is difficult to remove, and it can damage the A/C compressor.**
- **Using a compact electronic vacuum gauge may decrease the required evacuation time because you can measure actual moisture level with this tool.**

A more efficient way to measure moisture removal is with a special tool called a compact electronic vacuum gauge, measuring vacuum levels in microns.

Connect the tool according to the manufacturers instructions and allow the vacuum pump to run until the gauge reads 500 microns.

Shut off and isolate the vacuum pump, then observe the gauge reading:

- If the vacuum level remains stable for at least three minutes, all moisture in the system has been removed.
- A slow increase in the micron reading means there is still moisture boiling out of the system. Restart the vacuum pump and continue evacuating.
- A quick increase of micron levels indicates a leak is present in the system or your service equipment. Determine the cause and correct the leak before continuing.

1. When an A/C System has been opened to the atmosphere, such as during installation or repair, it must be evacuated using an R-134a refrigerant recovery/recycling/charging station. If the system has been open for several days, replace the receiver/dryer, drain the refrigerant oil, and add fresh oil (see **A/C SYSTEM INSPECTION**). then evacuate the system for several hours before charging it.
2. Connect an R-134a refrigerant recovery/recycling/charging station (A) to the high-pressure service port (B) and the low-pressure service port (C), as shown, following the equipment manufacturer's instructions.

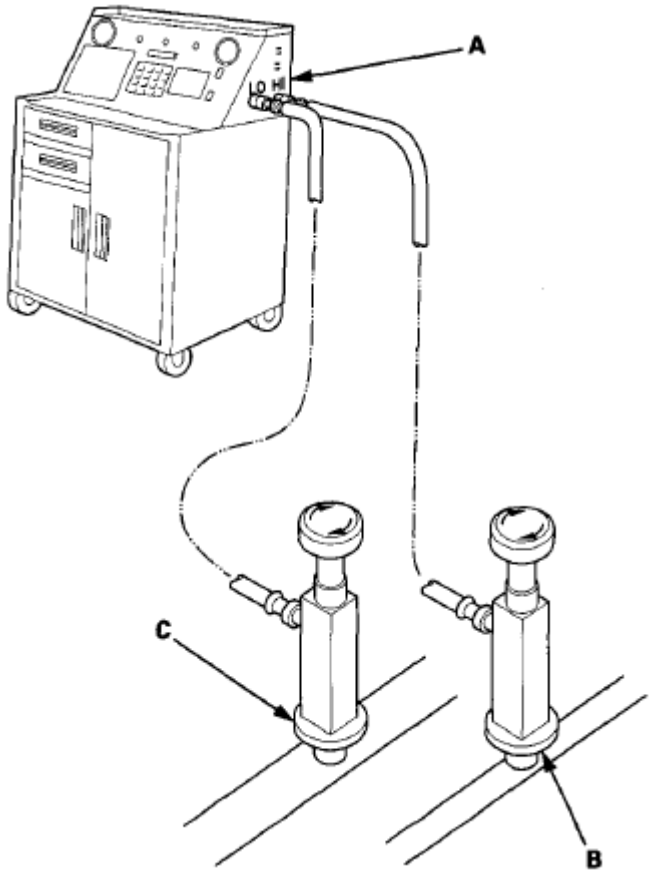


Fig. 228: Identifying R-134A Refrigerant Recovery/Recycling/Charging Station, High-Pressure Service Port And Low-Pressure Service Port
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Evacuate the system. The vacuum pump should run for a minimum of 30 minutes to eliminate all moisture from the system. When the suction gauge reads -93.3 kPa (-700 mmHg, -27.6 inHg) for at least 30 minutes, close all valves, and turn off the vacuum pump.
4. If the suction gauge does not reach approximately -93.3 kPa (-700 mmHg, -27.6 inHg) in 15 minutes, there is probably a large leak in the system. Partially charge the system, and check for leaks (see **REFRIGERANT LEAK CHECK**).

SYSTEM CHARGING

CAUTION:
- **Air conditioning refrigerant or lubricant vapor can irritate your eyes, nose, or throat.**
- **Be careful when connecting service equipment.**
- **Do not breathe refrigerant or vapor.**

NOTE:
- **If accidental system discharge occurs, ventilate the work area before resuming service.**

- **Additional health and safety information may be obtained from the refrigerant and lubricant manufacturers.**

1. Connect an R-134a refrigerant recovery/recycling/charging station (A) to the high-pressure service port (B) and the low-pressure service port (C), as shown, following the equipment manufacturer's instructions.

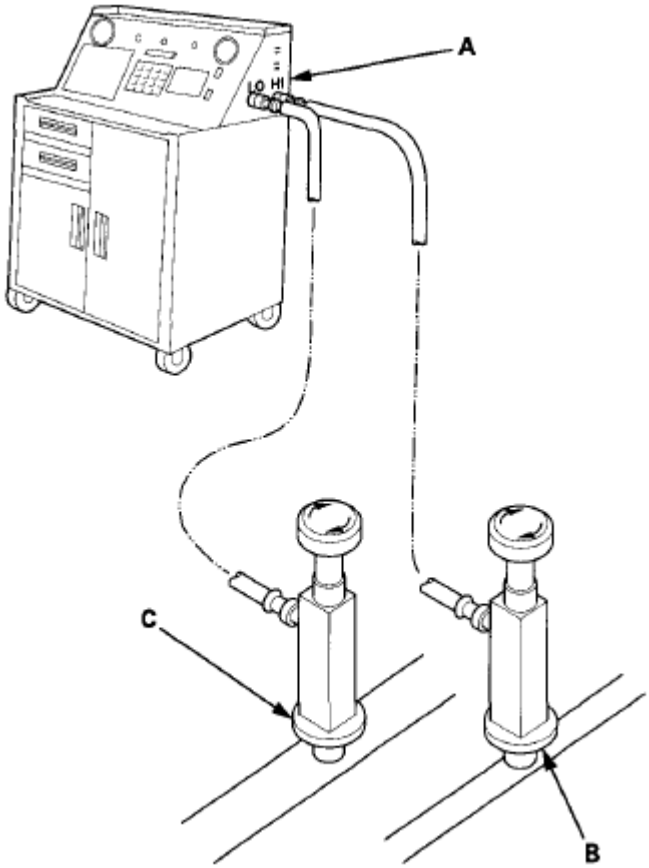


Fig. 229: Identifying R-134A Refrigerant Recovery/Recycling/Charging Station, High-Pressure Service Port And Low-Pressure Service Port
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Recover the refrigerant in the A/C system (see **REFRIGERANT RECOVERY**).
3. Evacuate the system (see **SYSTEM EVACUATION**). If the system cannot reach a vacuum of -93.3 kPa (-700 mmHg, -27.6 inHg) in 15 minutes, or cannot hold a vacuum for at least 15 minutes, there is probably a large leak. Do the refrigerant leak check (see **REFRIGERANT LEAK CHECK**), and repair any leaks before charging the system.
4. Add the same amount of new refrigerant oil to the system that was removed during recovery. Use only DENSO ND-OIL 8 refrigerant oil.
5. Charge the system with the specified amount of R-134a refrigerant. Do not overcharge the system; the A/C compressor will be damaged.

   Select the appropriate units of measure for your refrigerant charging station.

Refrigerant Capacity:

505 to 555 g

17.8 to 19.6 oz

0.505 to 0.555 kg

1.11 to 1.22 lbs

6. Check for refrigerant leaks (see **REFRIGERANT LEAK CHECK**).
7. Check the system performance (see **PERFORMANCE TEST**).

SUPPLEMENTAL RESTRAINT SYSTEM (SRS) (If body electrical maintenance is required)

The Acura TL SRS includes a driver's airbag in the steering wheel hub, a front passenger's airbag in the dashboard above the glove box, front seat belt tensioners in the front seat belt retractors, side curtain airbags in the sides of the roof, and side airbags in the front seat-backs. Information necessary to safely service the SRS is included in this Service Information. Servicing, disassembling, or replacing SRS items requires special precautions and tools, and should be done by an authorized Acura dealer.

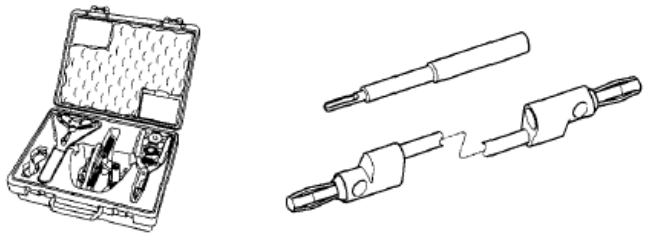
- To avoid rendering the SRS inoperative, which could lead to personal injury or death in the event of a severe frontal or side collision, all SRS service work should be done by an authorized Acura dealer.
- Improper service procedures, including incorrect removal and installation of the SRS, could lead to personal injury caused by unintentional deployment of the front airbags, side airbags, side curtain airbags, and/or front seat belt tensioners.
- Do not bump or impact the SRS unit, front impact sensors, side impact sensors, or rear safing sensor, especially when the ignition switch is in ON (II), or the engine start/stop button is in the ON mode, for at least 3 minutes after the ignition switch is turned to LOCK (0), or after the engine start/stop button is pressed to select the OFF mode; otherwise, the system may fail in a collision, or the airbags or the tensioners may deploy.
- SRS electrical connectors are identified by yellow color coding. Related components are located in the steering column, center console, dashboard, dashboard undercover, in the dashboard above the glove box, in the front seats, in the roof side, and around the floor. Do not use electrical test equipment on these circuits.

2012 HVAC

HVAC (Special Tools) - TL

SPECIAL TOOLS

Ref.No.	Tool Number	Description	Qty
①	07AAF-000A150	A/C Compressor Kit	1
②	07SAZ-001000A	Backprobe Set	2



① ②

Fig. 1: Identifying HVAC (Heating, Ventilation And Air Conditioning) Special Tools
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2012 ACCESSORIES & EQUIPMENT

Entry Lights Control System - TL

COMPONENT LOCATION INDEX

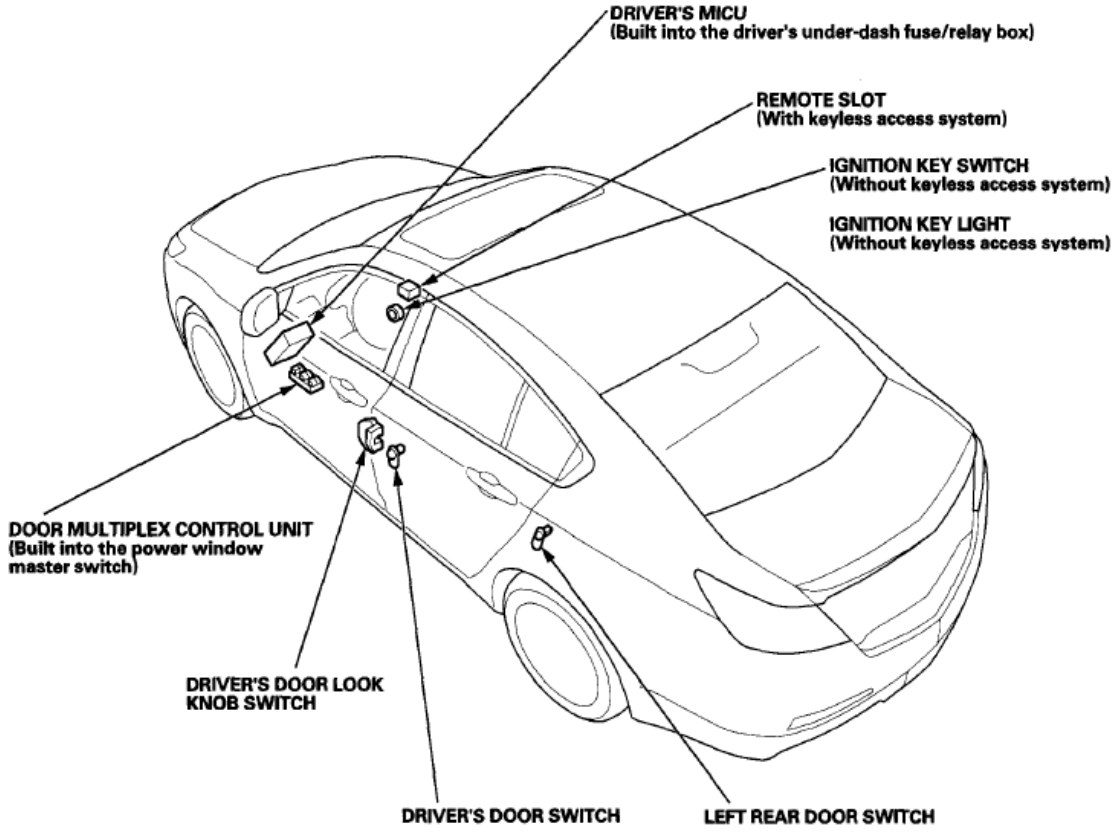


Fig. 1: Entry Lights Control System Components Location (1 Of 2)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

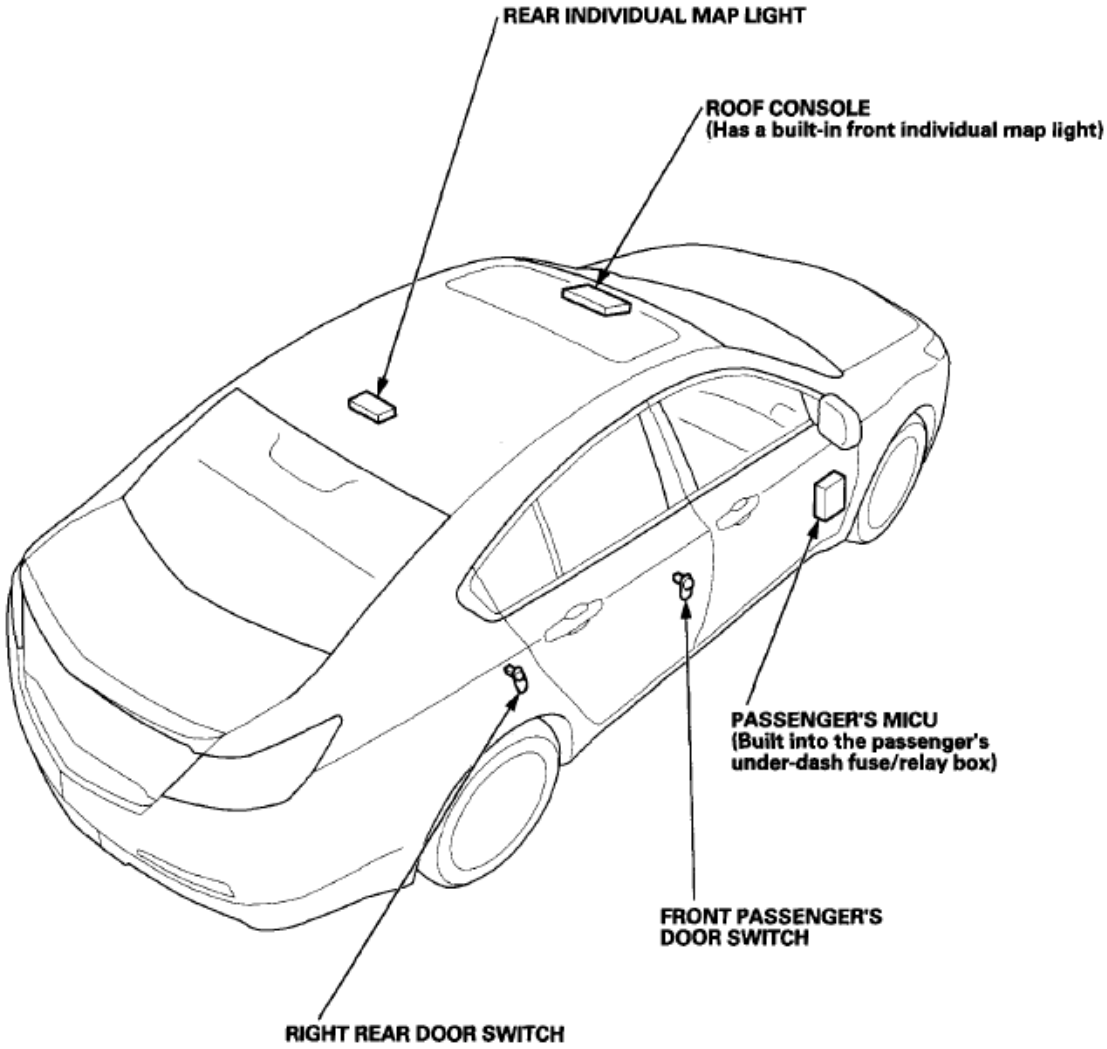


Fig. 2: Entry Lights Control System Components Location (2 Of 2)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

CIRCUIT DIAGRAM

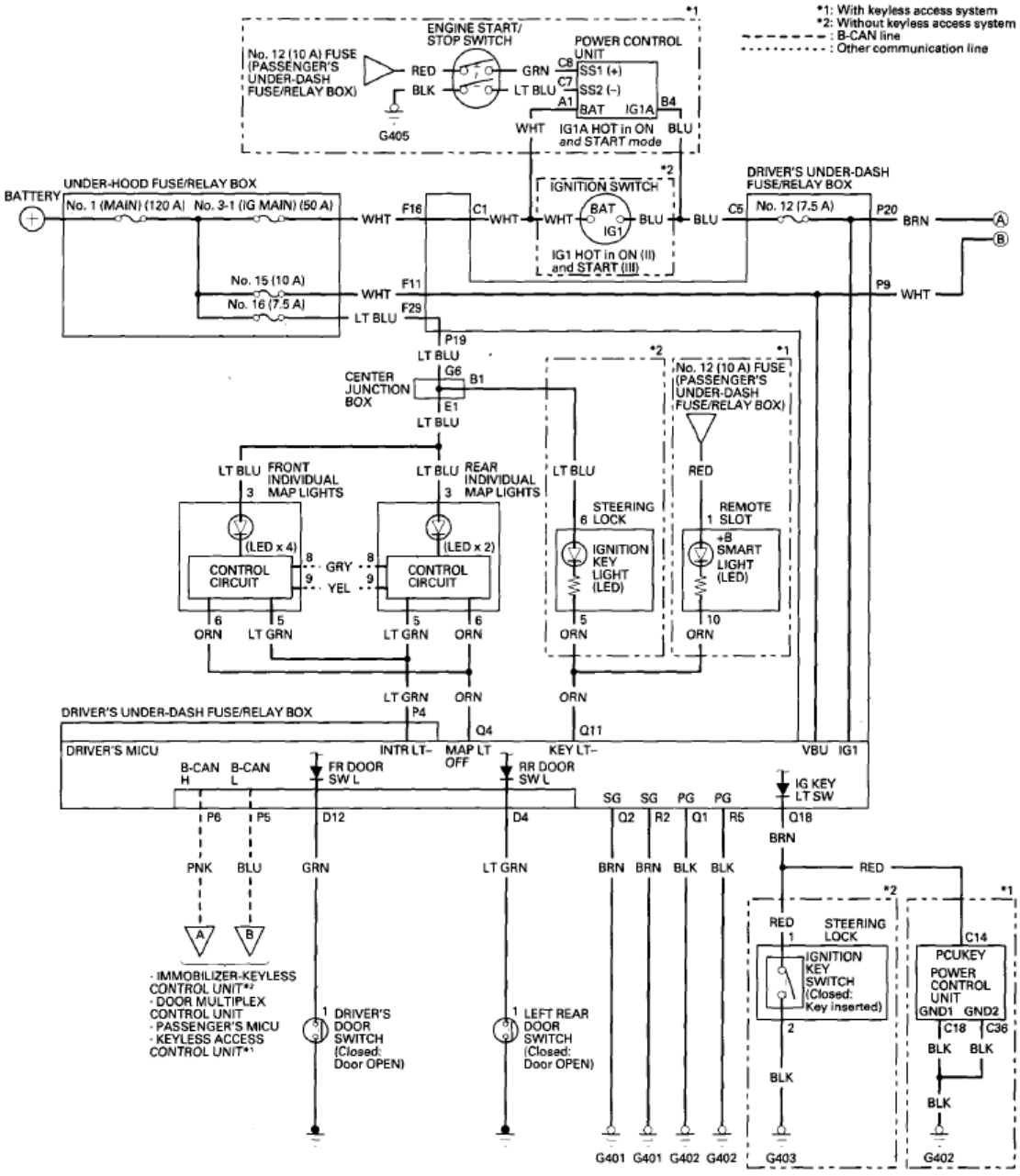


Fig. 3: Entry Lights Control System Circuit Diagram (1 Of 2)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

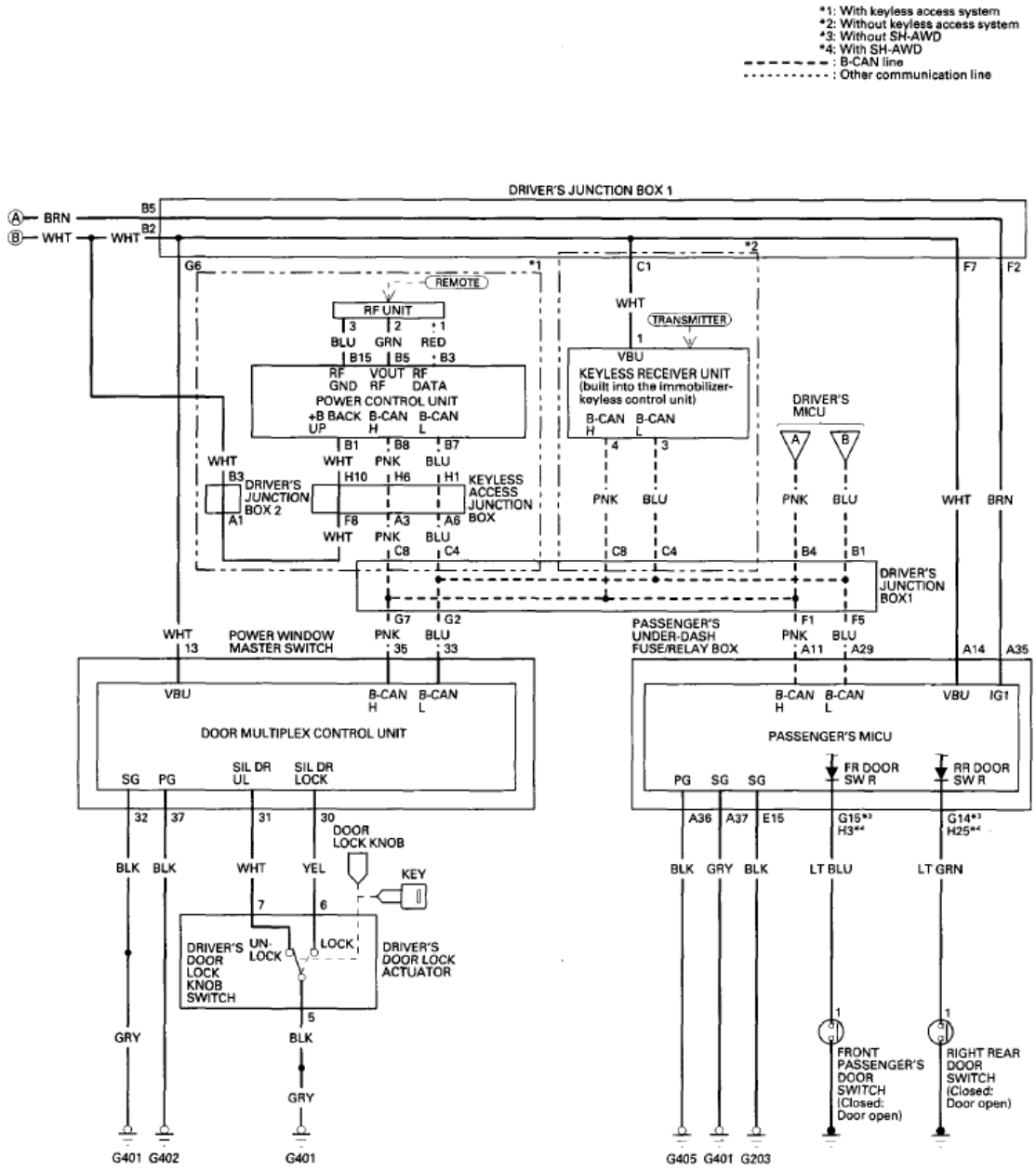


Fig. 4: Entry Lights Control System Circuit Diagram (2 Of 2)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

CONTROL UNIT INPUT TEST

NOTE: Before testing, troubleshoot the multiplex integrated control system first, using B-CAN System Diagnosis Test Mode A (see TROUBLESHOOTING - B-CAN SYSTEM DIAGNOSIS TEST MODE A).

Driver's MICU

1. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
2. Remove the driver's dashboard undercover (see **DRIVER'S DASHBOARD UNDERCOVER REMOVAL/INSTALLATION**).
3. Disconnect driver's under-dash fuse/relay box connectors D, P, Q, and R.

NOTE: All connector views are wire side of female terminals.

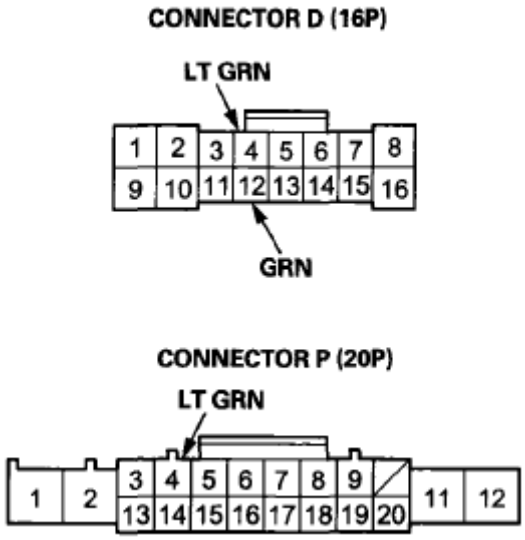


Fig. 5: Under-Dash Fuse/Relay Box D (16P) & P (20P) Connector End Views
Courtesy of AMERICAN HONDA MOTOR CO., INC.

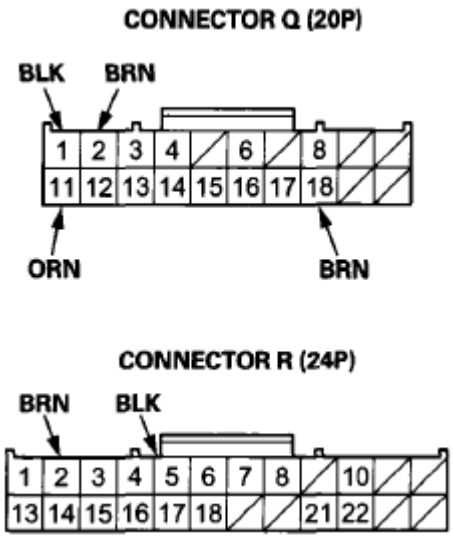


Fig. 6: Under-Dash Fuse/Relay Box Q (20P) & R (24P) Connector End Views
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Inspect the connector and socket terminals to be sure they are all making good contact.

- If the terminals are bent, loose or corroded, repair them as necessary, and recheck the system.
- If the terminals look OK, go to step 5.

5. Reconnect the connectors to the driver's under-dash fuse/relay box, and do the following input tests:
   - If any test indicates a problem, find and correct the cause, then recheck the system.
   - If all the input tests prove OK, go to step 6.

Cavity	Wire	Test condition	Test: Desired result	Possible cause if desired result is not obtained
Q1	BLK	In all ignition switch positions or all power modes	Measure the voltage to ground: There should be less than 0.2 V.	• Poor ground (G402) • An open or high resistance in the ground wire
Q2	BRN	In all ignition switch positions or all power modes	Measure the voltage to ground: There should be less than 0.2 V.	• Poor ground (G401) • An open or high resistance in the ground wire
R2	BRN	In all ignition switch positions or all power modes	Measure the voltage to ground: There should be less than 0.2 V.	• Poor ground (G401) • An open or high resistance in the ground wire
R5	BLK	In all ignition switch positions or all power modes	Measure the voltage to ground: There should be less than 0.2 V.	• Poor ground (G402) • An open or high resistance in the ground wire
D4	LT GRN	Left rear door open	Measure the voltage to ground: There should be less than 0.2 V.	• Faulty left rear door switch • Faulty left rear door switch ground • An open or high resistance in the wire
		Left rear door closed	Measure the voltage to ground: There should be about 5 V.	• Faulty left rear door switch • A short to ground in the wire
D12	GRN	Driver's door open	Measure the voltage to ground: There should be less than 0.2 V.	• Faulty driver's door switch • Faulty driver's door switch ground • An open or high resistance in the wire

		Driver's door closed	Measure the voltage to ground: There should be about 5 V.	• Faulty driver's door switch • A short to ground in the wire
P4	LT GRN	Interior light switch in the DOOR position	Connect to ground with a jumper wire: The individual map lights should come on.	• Blown No. 16 (7.5 A) fuse in the under-hood fuse/relay box • Faulty front and/or rear individual map lights • An open or high resistance in the wire
Q11(1)	ORN	Under all conditions	Connect to ground with a jumper wire: The remote slot light should come on.	• Blown No. 12 (10 A) fuse in the passenger's under-dash fuse/relay box • Faulty remote slot light • An open or high resistance in the wire
Q11(2)	ORN	Under all conditions	Connect to ground with a jumper wire: The ignition key light should come on.	• Blown No. 16 (7.5 A) fuse in the under-hood fuse/relay box • Faulty ignition key light • An open or high resistance in the wire
Q18(1)	BRN	Remote key inserted into the remote slot	Measure the voltage to ground: There should be less than 0.2 V.	• Faulty remote slot • Faulty power control unit • Poor ground (G402) or an open in the ground wire • An open or high resistance in the wire
		Remote key removed from the remote slot	Measure the voltage to ground: There should be about 5 V.	• Faulty remote slot • Faulty power control unit • A short to ground in the wire
Q18(2)	BRN	Ignition key inserted into the ignition switch	Measure the voltage to ground: There should be less than 0.2 V.	• Faulty ignition key switch • Poor ground (G403) or an open in the ground wire • An open or high resistance in the wire
		Ignition switch. LOCK (0), and the ignition key removed from the ignition	Measure the voltage to ground: There should be	• Faulty ignition key switch • A short to ground in the

		switch	about 5 V.	wire

(1) With keyless access system

(2) With keyless access system

Passenger's MICU

6. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
7. Remove the right kick panel (see **TRIM REMOVAL/INSTALLATION - DOOR AREAS**).
8. Disconnect passenger's under-dash fuse/relay box connectors A, E, and G*1 (or H*2).

*1: Without SH-AWD

*2: With SH-AWD

NOTE: All connector views are wire side of female terminals.

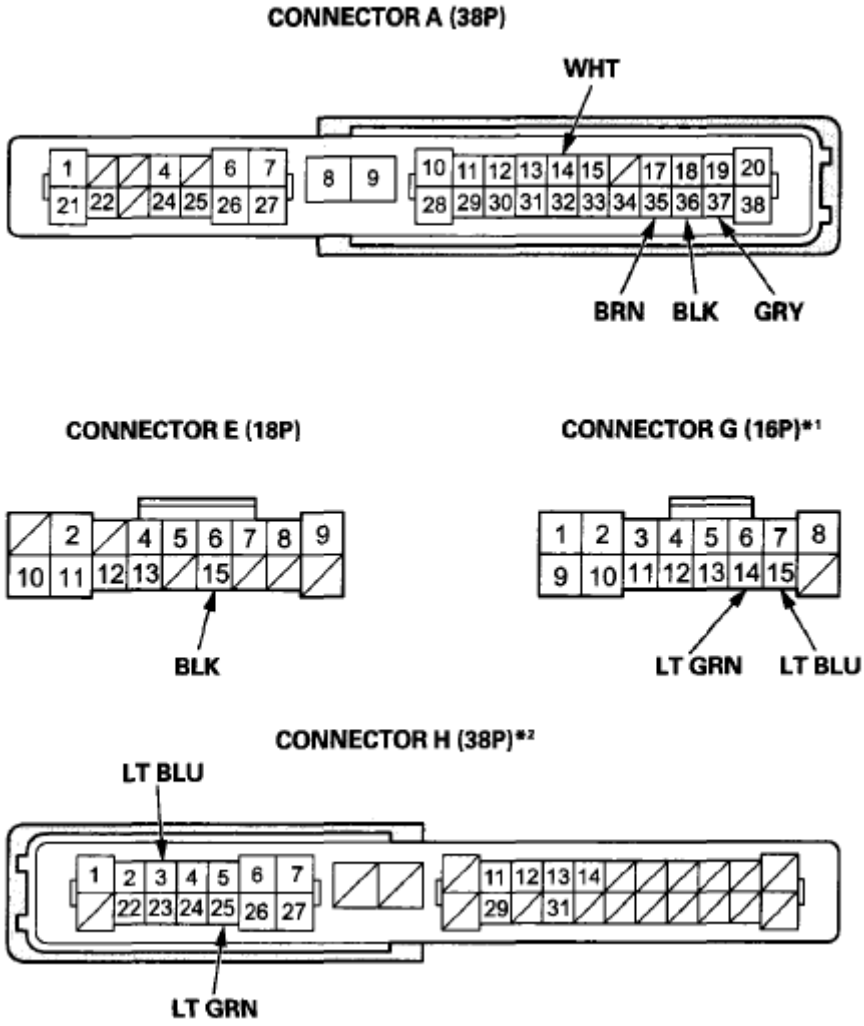


Fig. 7: A (38P), E (18P), G (16P) & H (38P) Connector End Views
Courtesy of AMERICAN HONDA MOTOR CO., INC.

***1: Without SH-AWD**

***2: With SH-AWD**

9. Inspect the connector and socket terminals to be sure they are all making good contact.
   - If the terminals are bent, loose or corroded, repair them as necessary, and recheck the system.
   - If the terminals look OK, go to step 10.
10. Reconnect the connectors to the passenger's under-dash fuse/relay box, and do the following input tests:
    - If any test indicates a problem, find and correct the cause, then recheck the system.
    - If all the input tests prove OK, go to step 11.

Cavity	Wire	Test condition	Test: Desired result	Possible cause if desired result is not obtained
A14	WHT	Under all conditions	Measure the voltage to ground: There should be battery voltage.	• Blown No. 15(10 A) fuse in the under-hood fuse/relay box • Faulty driver's under-dash fuse/relay box • An open or high resistance in the wire
A35	BRN	Ignition switch ON (II), or power mode ON	Measure the voltage to ground: There should be battery voltage.	• Blown No. 12 (7.5 A) fuse in the driver's under-dash fuse/relay box • Faulty driver's under-dash fuse/relay box • An open or high resistance in the wire
A36	BLK	In all ignition switch positions or all power modes	Measure the voltage to ground: There should be less than 0.2 V.	• Poor ground(G405) • An open or high resistance in the ground wire
A37	GRY	In all ignition switch positions or all power modes	Measure the voltage to ground: There should be less than 0.2 V.	• Poor ground (G401) • An open or high resistance in the ground wire
E15	BLK	In all ignition switch positions or all power modes	Measure the voltage to ground: There should be less than 0.2 V.	• Poor ground(G203) • An open or high resistance in the ground wire
			Measure the voltage to	• Faulty right rear door switch • Faulty right rear door switch

G14(1) or H25(2)	LT GRN	Right rear door open	ground: There should be less than 0.2 V.	ground • An open or high resistance in the wire
		Right rear door closed	Measure the voltage to ground: There should be about 5 V.	• Faulty right rear door switch • A short to ground in the wire
G15(1) or H3(2)	LT BLU	Front passenger's door open	Measure the voltage to ground: There should be less than 0.2 V.	• Faulty front passenger's door switch • Faulty front passenger's door switch ground • An open or high resistance in the wire
		Front passenger's door closed	Measure the voltage to ground: There should be about 5 V.	• Faulty front passenger's door switch • A short to ground in the wire
(1) Without SH-AWD (2) With SH-AWD				

Door Multiplex Control Unit

11. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
12. Remove the driver's door panel (see **FRONT DOOR PANEL REMOVAL/INSTALLATION**).
13. Disconnect the 37P connector from the power window master switch.

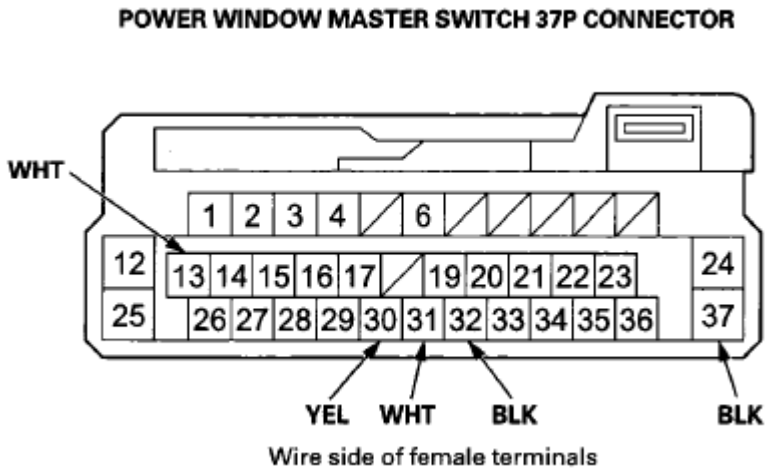


Fig. 8: Power Window Master Switch 37P Connector End View
Courtesy of AMERICAN HONDA MOTOR CO., INC.

14. Inspect the connector and socket terminals to be sure they are all making good contact.
    - If the terminals are bent, loose or corroded, repair them as necessary, and recheck the system.

- If the terminals look OK, go to step 16.

15. Reconnect the driver's door harness to driver's door subharness.
16. Reconnect the 37P connector to the power window master switch, and do the following input tests:
    - If any test indicates a problem, find and correct the cause, then recheck the system.
    - If all the input tests prove OK, go to step 17.

Cavity	Wire	Test condition	Test: Desired result	Possible cause if desired result is not obtained
13	WHT	Under all conditions	Measure the voltage to ground: There should be battery voltage.	• Blown No. 15 (10 A) fuse in the under-hood fuse/relay box • Faulty driver's under-dash fuse/relay box • An open or high resistance in the wire
32	BLK	In all ignition switch positions or all power modes	Measure the voltage to ground: There should be less than 0.2 V.	• Poor ground (G401) • An open or high resistance in the ground wire
37	BLK	In all ignition switch positions or all power modes	Measure the voltage to ground: There should be less than 0.2 V.	• Poor ground (G402) • An open or high resistance in the ground wire
30	YEL	Driver's door lock knob switch in LOCK	Measure the voltage to ground: There should be less than 0.2 V.	• Faulty driver's door lock knob switch • Poor ground (G401) or an open in the ground wire • An open or high resistance in the wire
		Driver's door lock knob switch in UNLOCK	Measure the voltage to ground: There should be battery voltage.	• Faulty driver's door lock knob switch • A short to ground in the wire
31	WHT	Driver's door lock knob switch in UNLOCK	Measure the voltage to ground: There should be less than 0.2 V.	• Faulty driver's door lock knob switch • Poor ground (G401) or an open in the ground wire • An open or high resistance in the wire
		Driver's door lock knob switch in LOCK	Measure the voltage to ground: There should be battery voltage.	• Faulty driver's door lock knob switch • A short to ground in the

				wire

17. If multiple failures are found on more than one control unit, replace the driver's under-dash fuse/relay box (includes the driver's MICU) (see **DRIVER'S UNDER-DASH FUSE/RELAY BOX (MICU) REMOVAL AND INSTALLATION**). If input failures are related to a particular control unit, replace the control unit.

IGNITION KEY SWITCH TEST

NOTE: SRS components are located in this area. Review the SRS component locations (see COMPONENT LOCATION INDEX), and precautions and procedures (see PRECAUTIONS AND PROCEDURES) before doing repairs or servicing.

1. Remove the steering column upper and lower covers (see **SIDE DEFOGGER VENT TRIM REMOVAL/INSTALLATION**).
2. Disconnect the 6P connector (A).

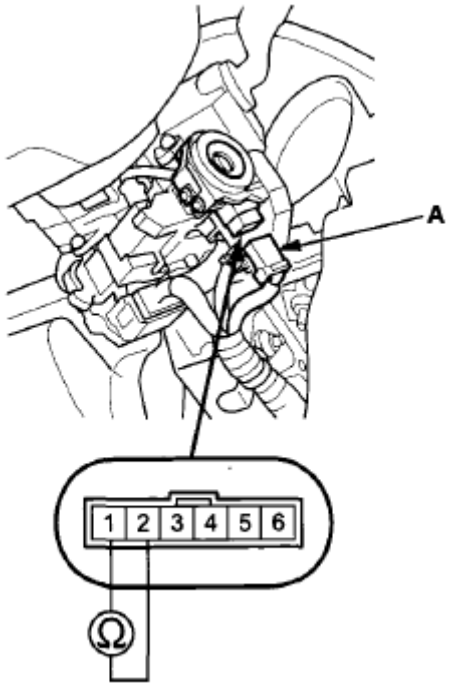


Fig. 9: Checking Continuity Between Terminals No. 1 And No. 2.
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Check for continuity between terminals No. 1 and No. 2.
   - There should be continuity with the key in the ignition switch.
   - There should be no continuity with the key removed.
4. If the continuity is not as specified, the ignition key switch is faulty; replace the steering lock (see **STEERING LOCK REPLACEMENT**).

IGNITION KEY LIGHT TEST

NOTE: SRS components are located in this area. Review the SRS component locations (see COMPONENT LOCATION INDEX), and precautions and procedures (see PRECAUTIONS AND PROCEDURES) before doing repairs or servicing.

1. Remove the steering column upper and lower covers (see **SIDE DEFOGGER VENT TRIM REMOVAL/INSTALLATION**).
2. Disconnect the 6P connector (A).

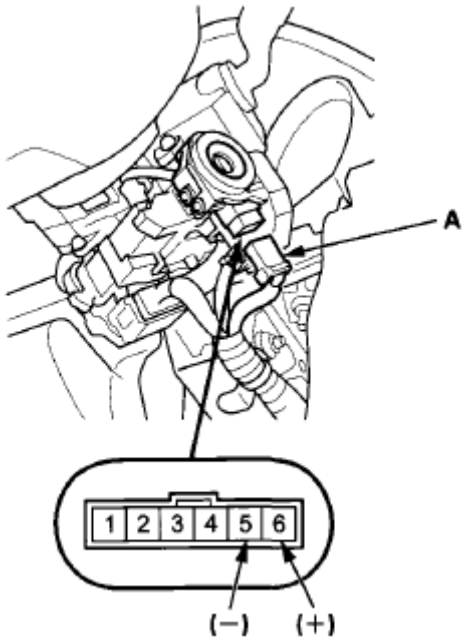


Fig. 10: Checking Ignition Key Light
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. The LED should come on when power is connected to terminal No. 6 and ground is connected to terminal No. 5.
4. If the LED does not come on, the ignition key light is faulty; replace the steering lock (see **STEERING LOCK REPLACEMENT**).

REMOTE SLOT LIGHT TEST

1. Remove the column covers (see **SIDE DEFOGGER VENT TRIM REMOVAL/INSTALLATION**).
2. Remove the driver's center trim (see **DASHBOARD CENTER TRIM REMOVAL/INSTALLATION**).
3. Remove the two screws, then pull out the remote slot (A).

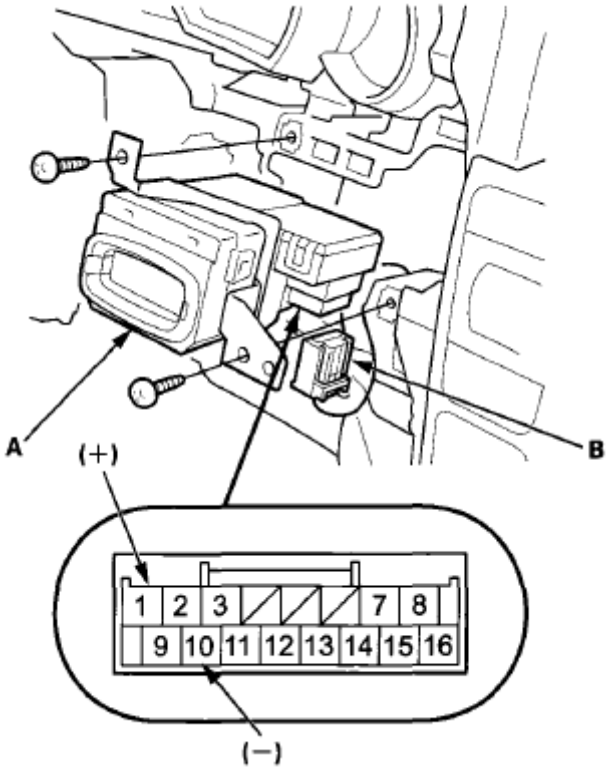


Fig. 11: Checking Remote Slot Light
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Disconnect the 16P connector (B) from the remote slot.
5. The LED should come on when power is connected to terminal No. 1 and ground is connected to terminal No. 10.
6. The LED does not come on, the remote slot light is faulty; replace the remote slot control unit.

2012 ACCESSORIES & EQUIPMENT

Exterior Lights - TL

COMPONENT LOCATION INDEX

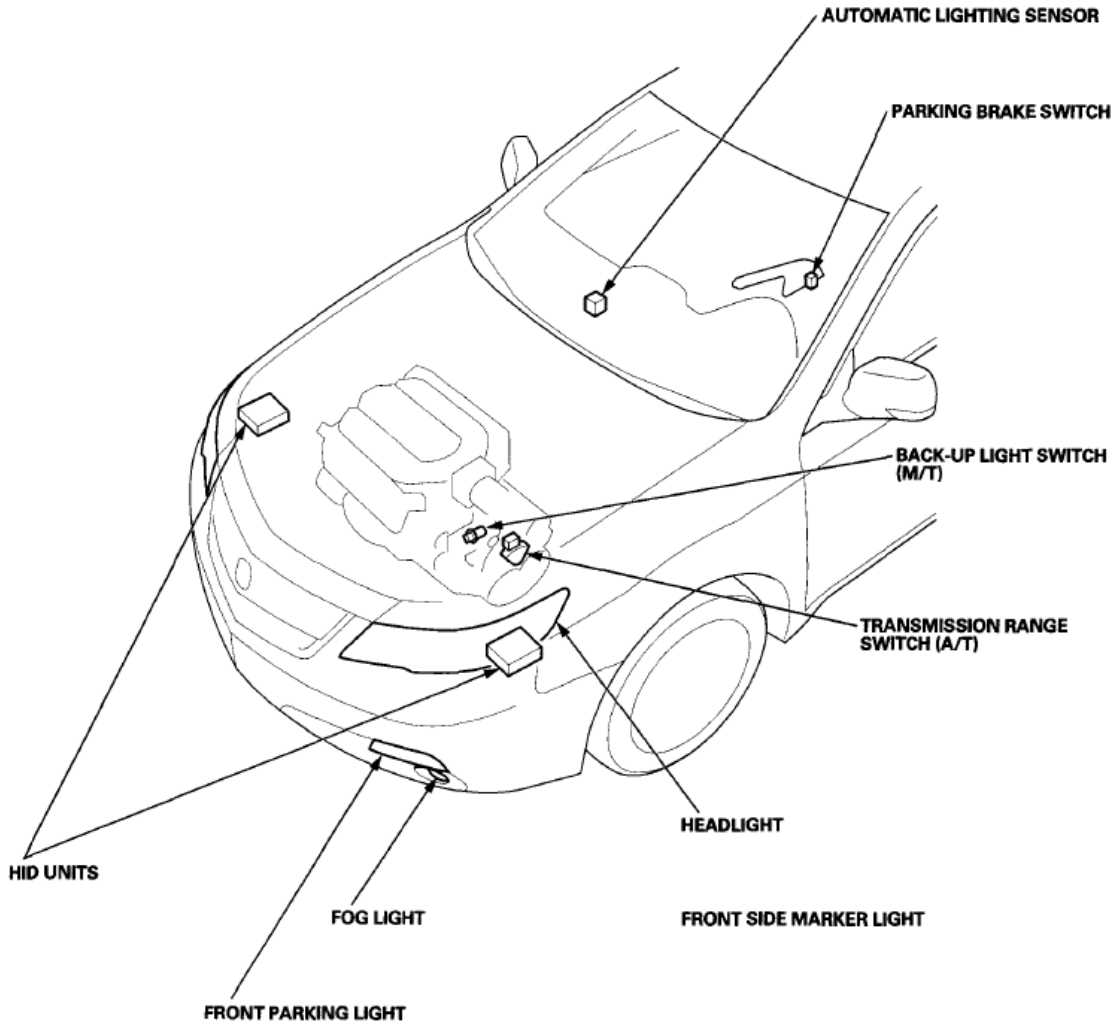


Fig. 1: Exterior Lights Components Location (1 Of 3)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

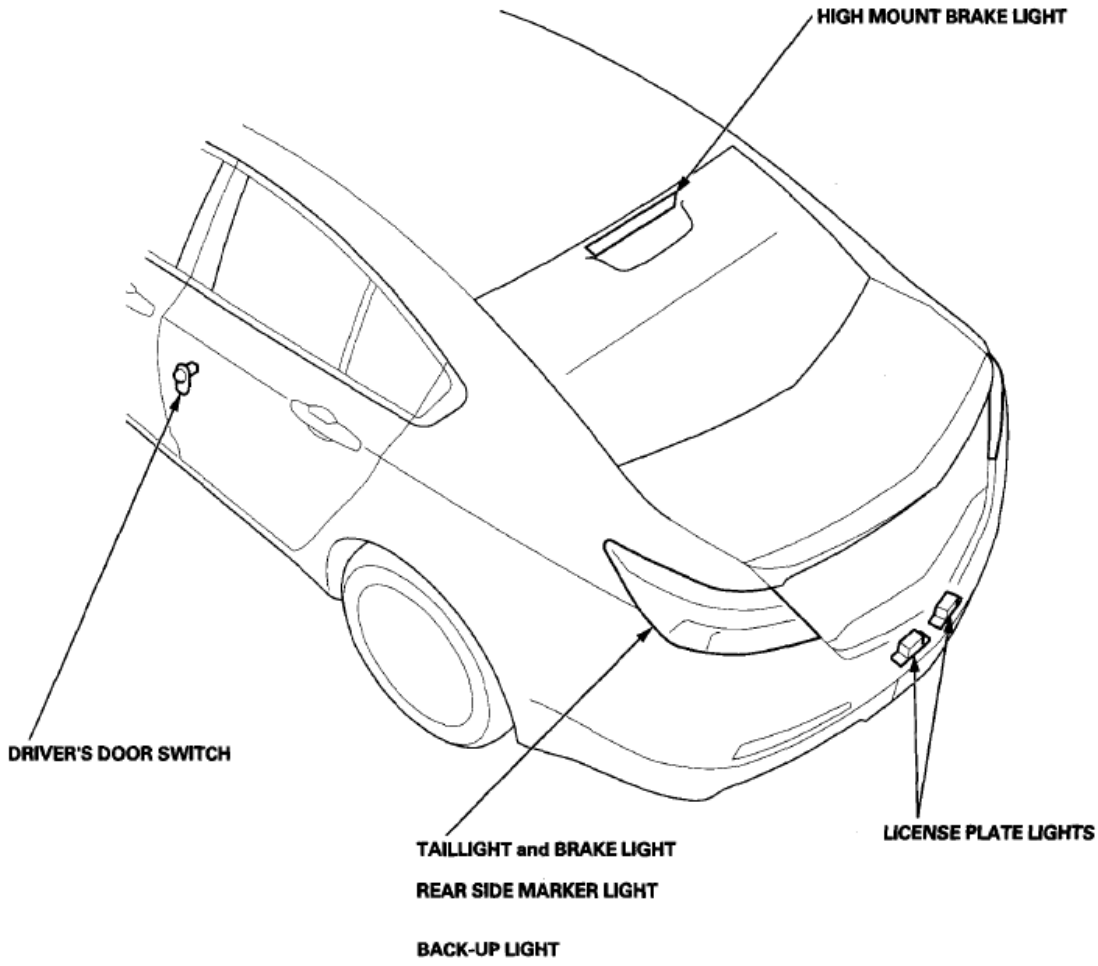


Fig. 2: Exterior Lights Components Location (2 Of 3)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

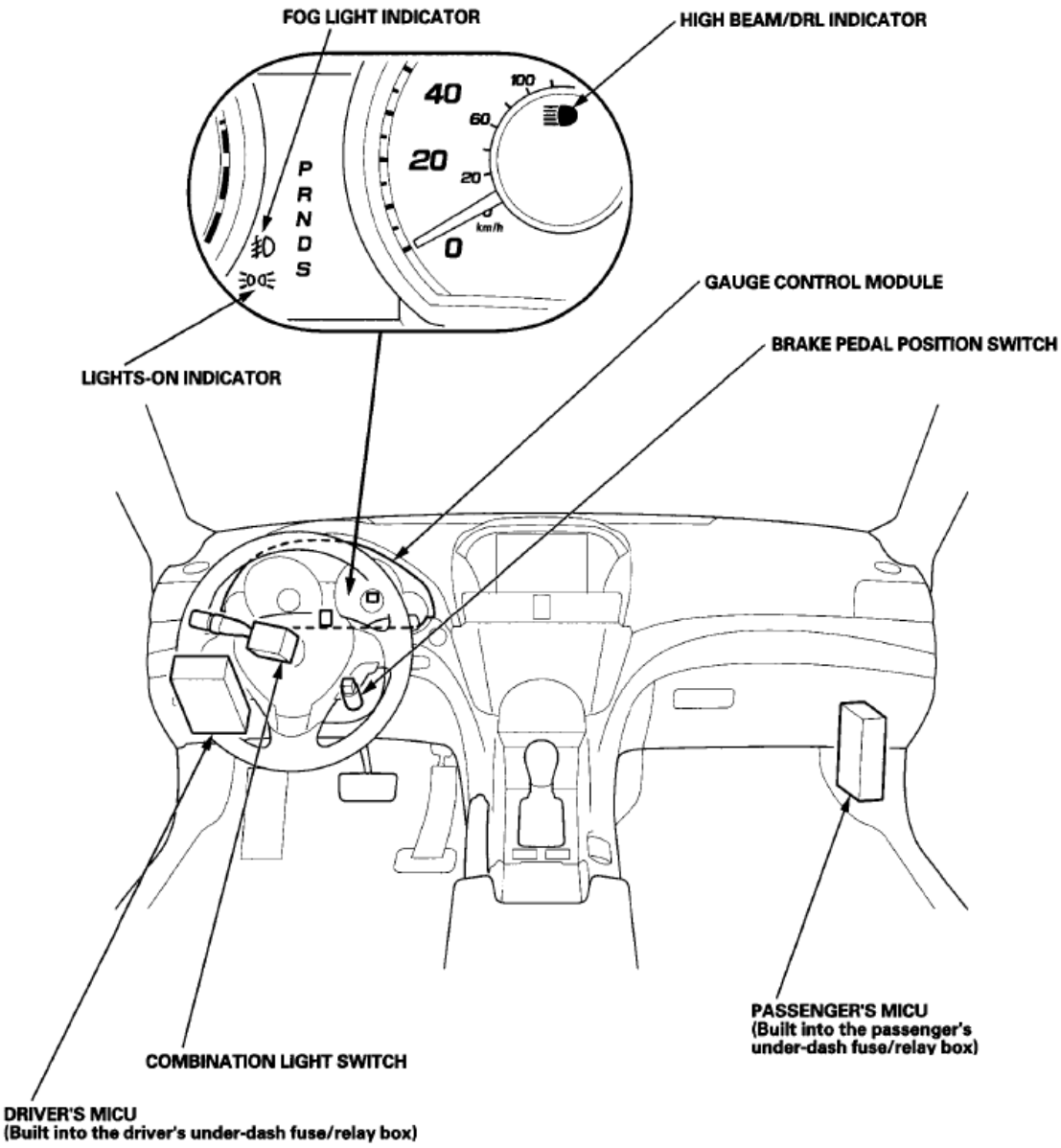


Fig. 3: Exterior Lights Components Location (3 Of 3)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

SYSTEM DESCRIPTION

HEADLIGHTS SYSTEM DESCRIPTION

The headlight system is composed of the driver's MICU, the passenger's MICU, the headlight and dimmer/flash-to-pass switches (inside the combination light switch), the left and right headlights, and the high beam indicator.

Each MICU controls each side of the front parking/side marker light and headlights. The taillights, rear side

marker lights, and license plate lights, the back-up lights and the turn signal/hazard lights are controlled by the driver's MICU.

Low Beams

When you move the headlight switch to the ON position and the dimmer/flash-to-pass switch to the low position, a ground signal is supplied to terminal No. 8 of driver's under-dash fuse/relay box connector R (24P). The driver's MICU then energizes the low beam control circuit, supplying battery voltage to the low beam of the left headlight, turning it on. Also the driver's MICU sends the message to the passenger's MICU via the B-CAN communication lines. The passenger's MICU then energizes the low beam control circuit, supplying battery voltage to the low beam of the right headlight, turning it on.

NOTE: If there is a B-CAN communication failure, the headlight back-up circuit commands the right low beam to come on when the ignition is on and the headlight switch is in the ON position. The right high beam does not come on if there is a B-CAN system failure.

High Beams

When you turn the headlight switch to the ON position and the dimmer/flash-to-pass switch to the high position, ground signals are supplied to terminals No. 8 and No. 22 of driver's under-dash fuse/relay box (driver's MICU) connector R (24P). The driver's and passenger's MICUs then energize the each side of the high beam headlight control circuits, supplying battery voltage to the high beam headlights, turning them on.

Flash-to-Pass

When you pull the dimmer/flash-to-pass switch to the passing position, a ground signal is supplied to terminal No. 21 of driver's under-dash fuse/relay box (MICU) connector R (24P). The driver's and passenger's MICUs then energize the high beam control circuits for as long as the switch is held, supplying battery voltage to the high beam headlights, turning them on.

DAYTIME RUNNING LIGHTS SYSTEM DESCRIPTION

The daytime running lights system includes the driver's and passenger's MICUs, the left and right high beam headlights, the parking brake switch, and the DRL indication on the multi-information display (MID). The daytime running lights operate with the ignition switch turned to ON (II), or the engine start/stop button is pressed to select the ON mode, the headlights off (headlight switch OFF or in the parking position), and the parking brake released.

When the daytime running lights are on, the driver's and passenger's MICUs turn each relative daytime running light circuit on and off (duty cycle), which provides a reduced voltage (approximately 6-8 volts) to the high beam headlights (via the No. 1 and No. 28 fuses in the driver's under-dash fuse/relay box and No. 1 fuse in the passenger's under-dash fuse/relay box); the high beam headlights come on with reduced brightness. The MICUs also send signals to the gauge control module, and the DRL indication is indicated by the high beam indicator glowing dimly.

NOTE:

- **The daytime running lights are disabled when the ignition switch is turned**

to LOCK (0), or the engine start/stop button is pressed to select the OFF mode. To keep the daytime running lights from coming on, apply the parking brake switch while the ignition switch is in LOCK (0) position, or the vehicle is in OFF mode. When you then turn the ignition switch back to ON (II), or press the engine start/stop button to select the ON mode, the daytime running lights will not come on until the parking brake is released.

- **The headlights revert to normal operation when you turn them on with the headlight switch.**

CIRCUIT DIAGRAM - HEADLIGHTS/PARKING/SIDE MARKER LIGHTS/TAILLIGHTS/LICENSE PLATE LIGHTS

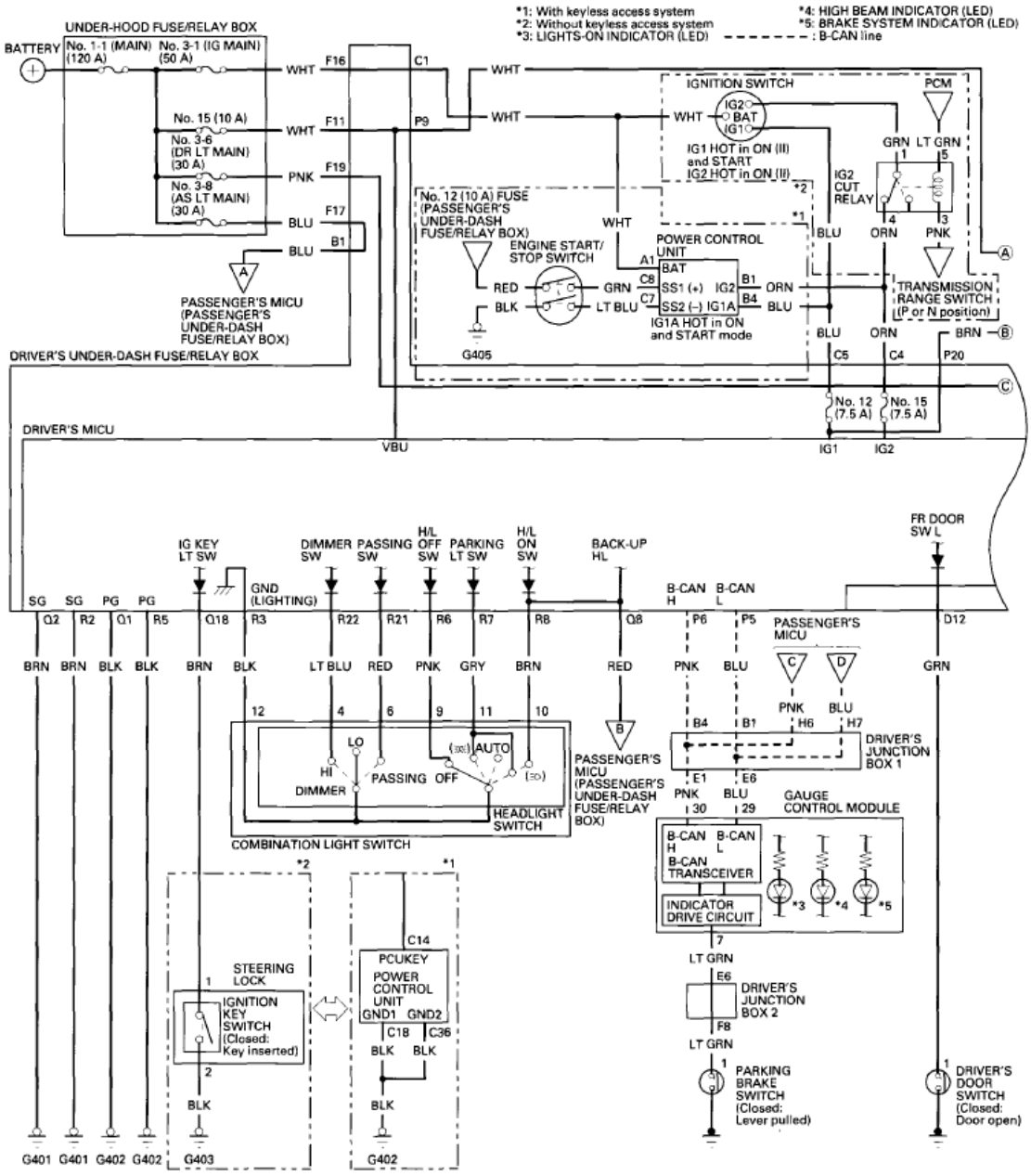


Fig. 4: Headlights/Parking/Side Marker Lights/Taillights/License Plate Lights Circuit Diagram (1 Of 2)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

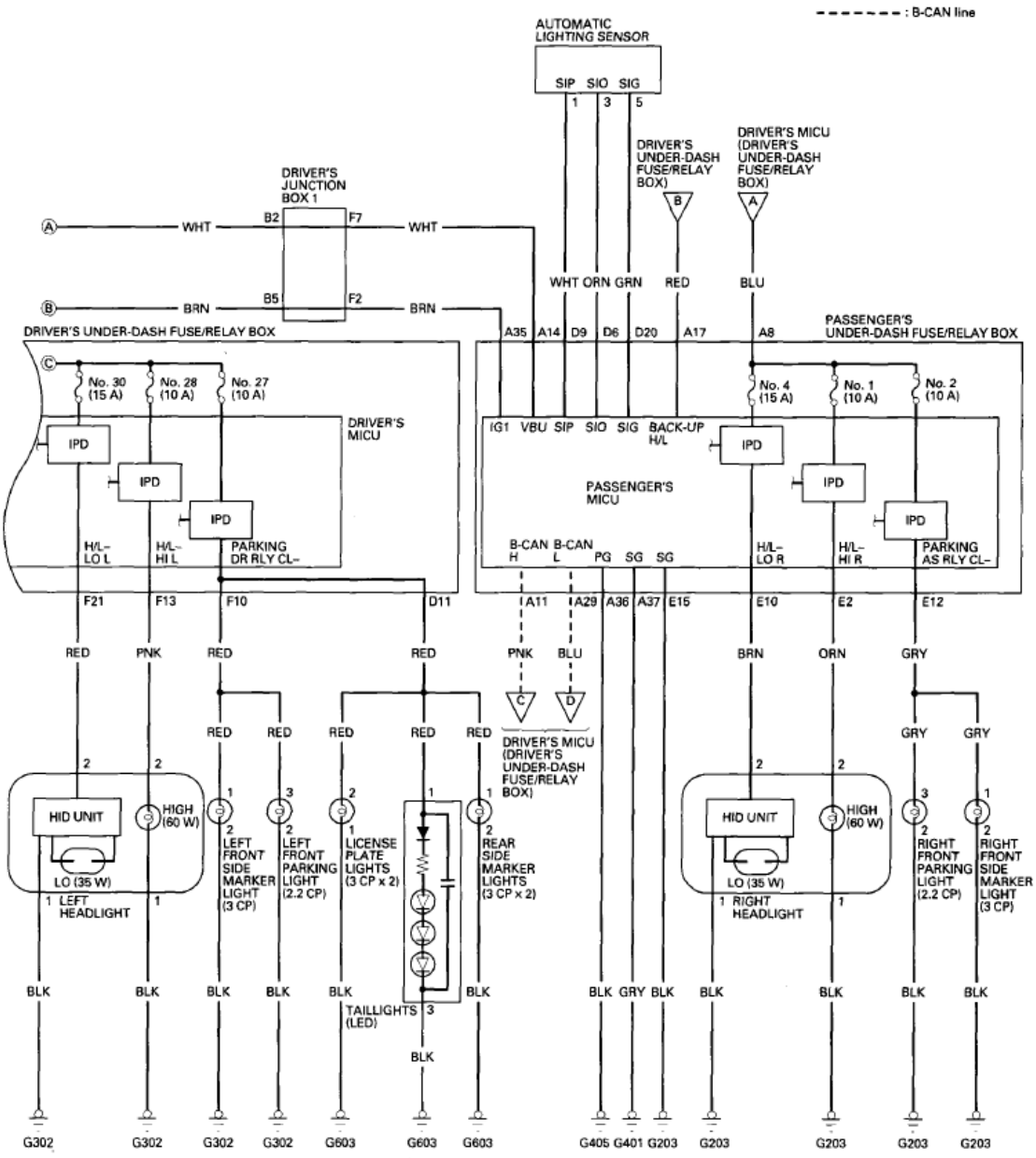


Fig. 5: Headlights/Parking/Side Marker Lights/Taillights/License Plate Lights Circuit Diagram (2 Of 2)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

CIRCUIT DIAGRAM - BACK-UP LIGHTS

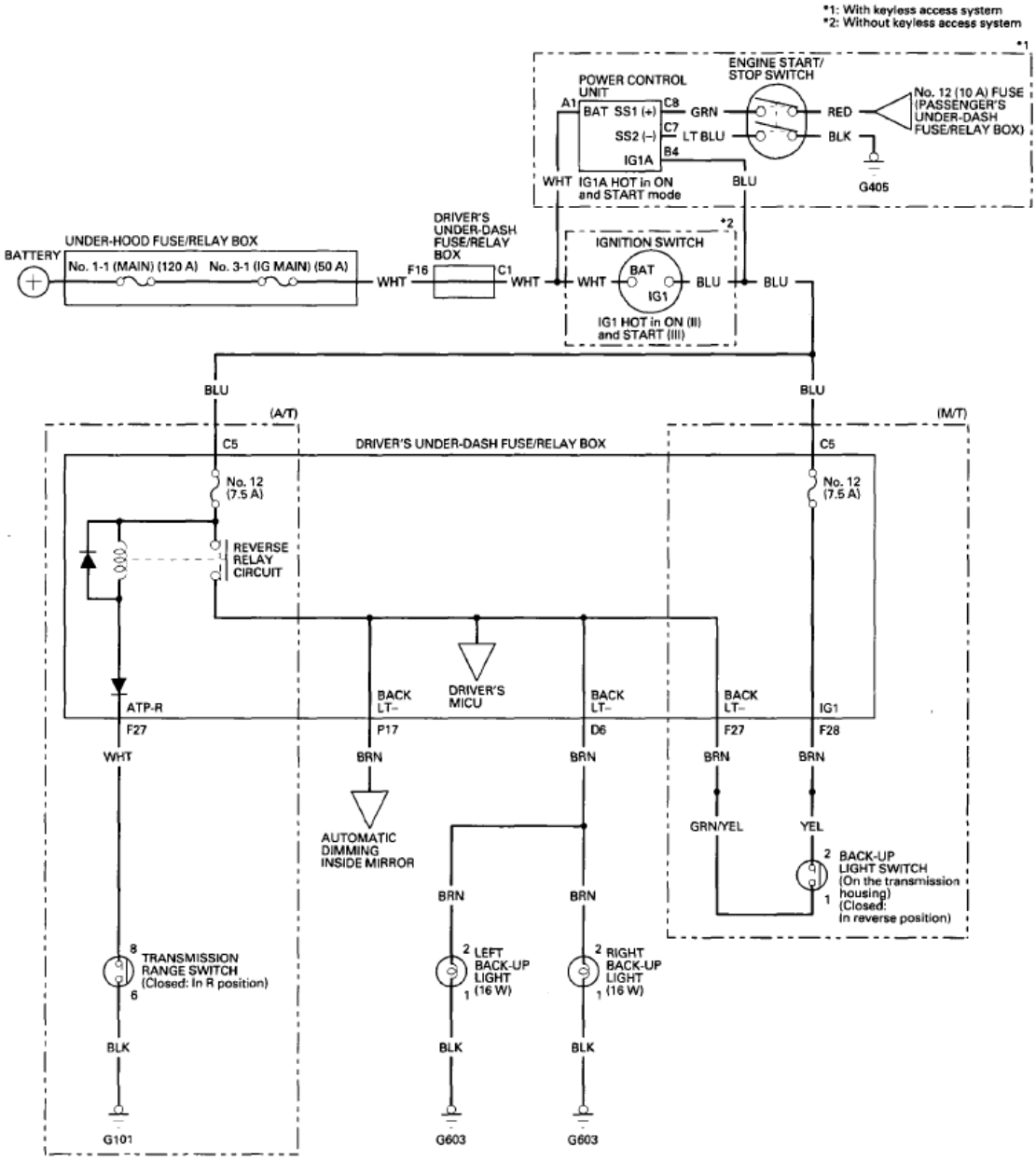


Fig. 6: Back-up Lights Circuit Diagram
Courtesy of AMERICAN HONDA MOTOR CO., INC.

CIRCUIT DIAGRAM - BRAKE LIGHTS

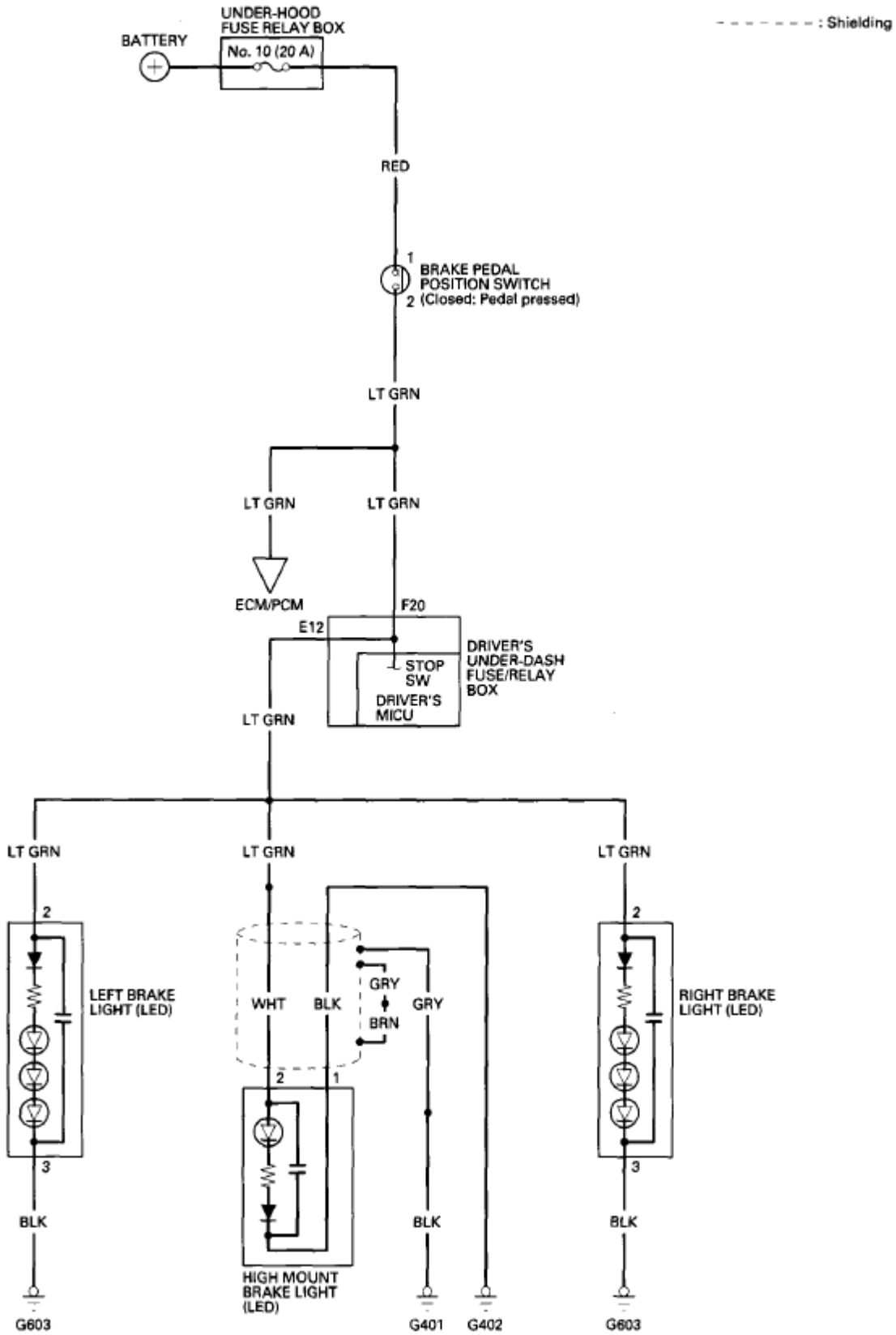


Fig. 7: Brake Lights Circuit Diagram

Courtesy of AMERICAN HONDA MOTOR CO., INC.

CIRCUIT DIAGRAM - FOG LIGHTS

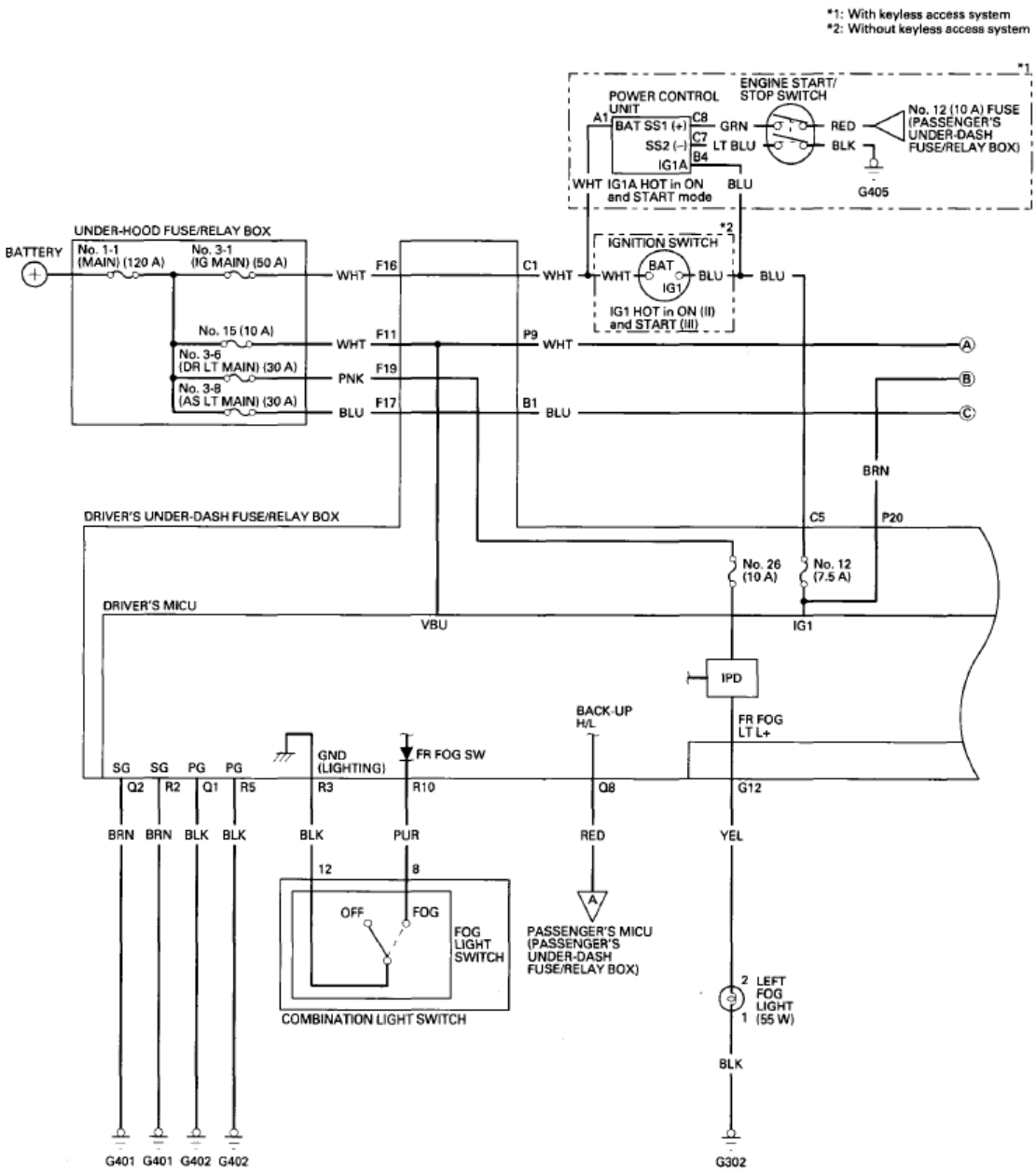


Fig. 8: Fog Lights - Circuit Diagram (1 Of 2)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

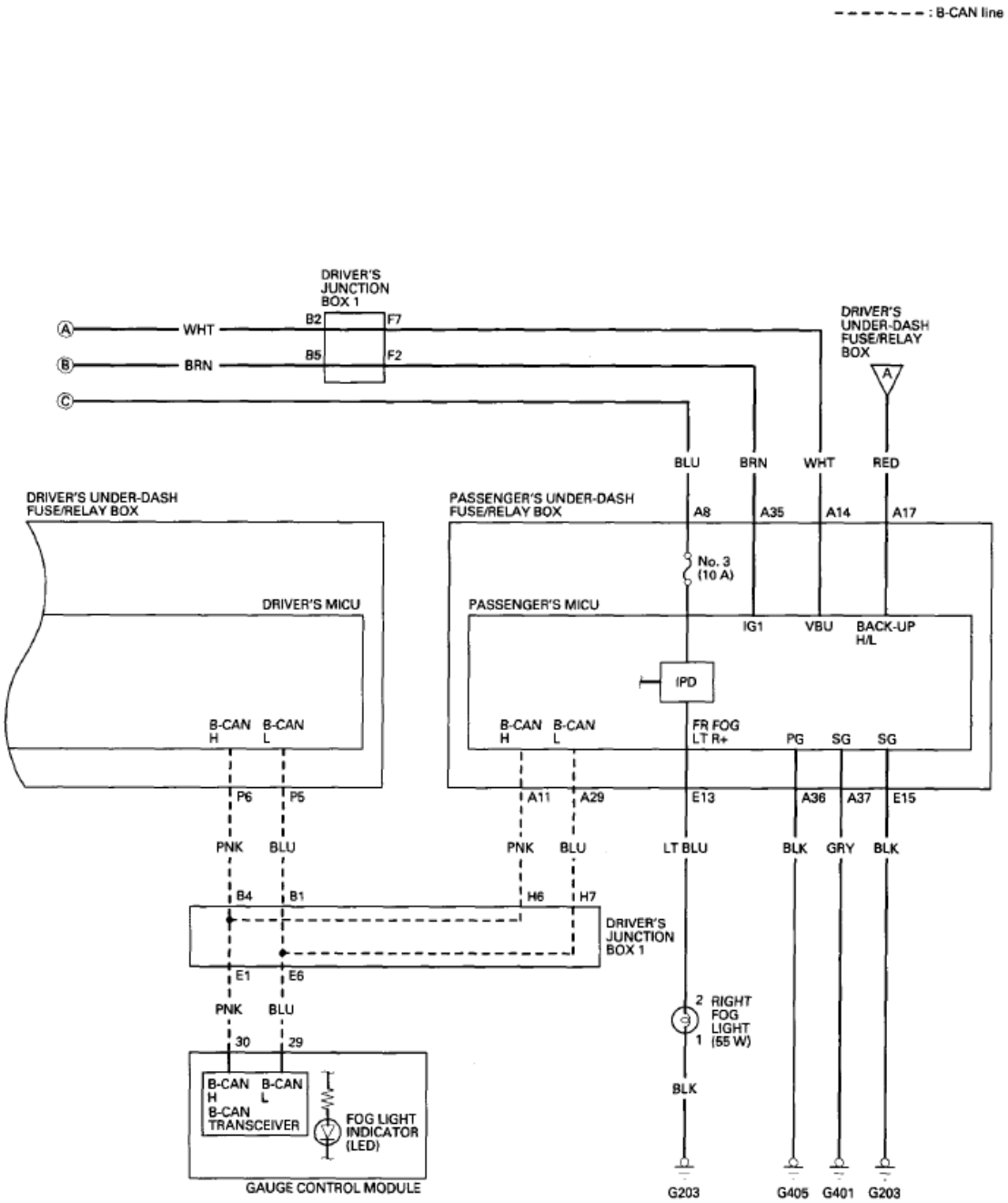


Fig. 9: Fog Lights Circuit Diagram (2 Of 2)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

DTC TROUBLESHOOTING

DTC B10CF: LEFT DAYTIME RUNNING LIGHTS CIRCUIT MALFUNCTION

NOTE:

- **If you are troubleshooting multiple DTCs, be sure to follow the instructions in B-CAN System Diagnosis Test Mode A (see TROUBLESHOOTING - B-**

CAN SYSTEM DIAGNOSIS TEST MODE A).

- **Make sure the No. 15 (7.5 A) fuse in the driver's under-dash fuse/relay box is OK.**

1. Clear the DTCs with the HDS.
2. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
3. Release the parking brake lever.
4. Turn the headlight switch OFF.
5. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.

   Is DTC B10CF indicated?

   YES -Go to step 6.

   NO -Intermittent failure, the system is OK at this time. Check for loose or poor connections.

6. Turn the headlight high beam ON.

   Does the left headlight (high beam) come on?

   YES -Go to step 7.

   NO -Go to step 9.

7. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
8. Measure the voltage between body ground and driver's under-dash fuse/relay box connector Q (20P) terminals No. 1 and No. 2, and between body ground and connector R (24P) terminals No. 2 and No. 5 individually.

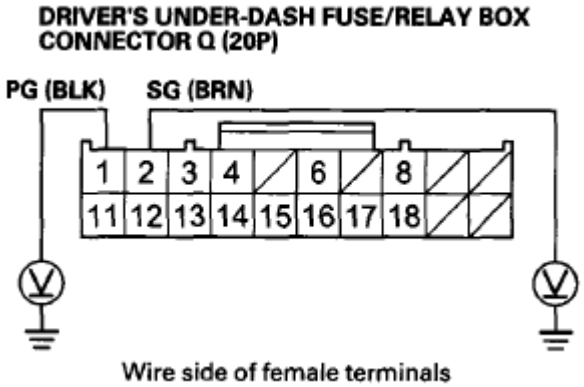


Fig. 10: Measuring Voltage Between Body Ground And Driver's Under-Dash Fuse/Relay Box Connector Q (20P) Terminals No. 1 And No. 2 Individually
Courtesy of AMERICAN HONDA MOTOR CO., INC.

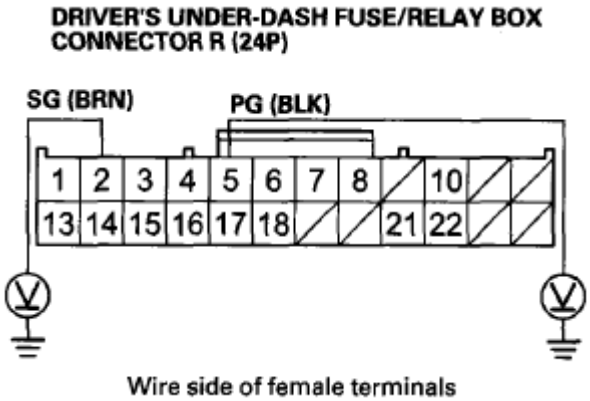


Fig. 11: Measuring Voltage Between Body Ground And Driver's Under-Dash Fuse/Relay Box Connector R (24P) Terminals No. 2 And No. 5 Individually
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there less than 0.2 V?

YES -Faulty driver's MICU; replace the driver's under-dash fuse/relay box (see **DRIVER'S UNDER-DASH FUSE/RELAY BOX (MICU) REMOVAL AND INSTALLATION**).

NO -Repair an open or high resistance in the wire or poor ground (G401, G402).

9. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
10. Turn the headlight switch OFF.
11. Check the No. 28 (10 A) fuse in the driver's under-dash fuse/relay box.

    Is the fuse OK?

    YES -Go to step 12.

    NO -Replace the fuse. If the fuse blows again, repair the short to ground on the No. 28 (10 A) fuse circuit.

12. Check the left headlight bulb.

    Is the bulb OK?

    YES -Go to step 13.

    NO -Replace the bulb and recheck.

13. Disconnect driver's under-dash fuse/relay box connector F (33P).
14. Disconnect the left headlight (high beam) 2P connector.
15. Check for continuity between driver's under-dash fuse/relay box connector F (33P) terminal No. 13 and left headlight (high beam) 2P connector terminal No. 2.

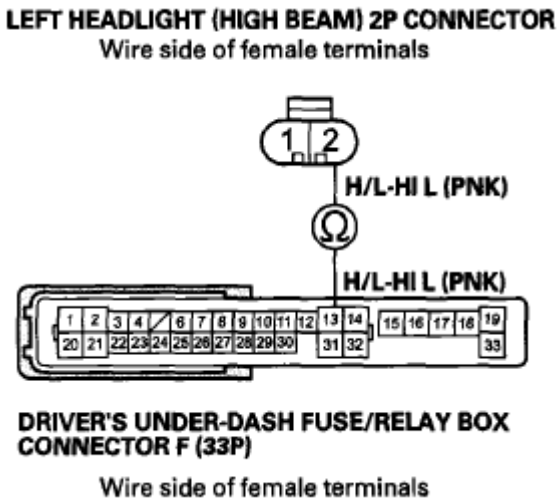


Fig. 12: Checking Continuity Between Driver's Under-Dash Fuse/Relay Box Connector F (33P) Terminal No. 13 And Left Headlight (High Beam) 2P Connector Terminal No. 2
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES -Go to step 16.

NO -Repair an open or high resistance in the wire.

16. Check for continuity between left headlight (high beam) 2P connector terminal No. 1 and body ground.

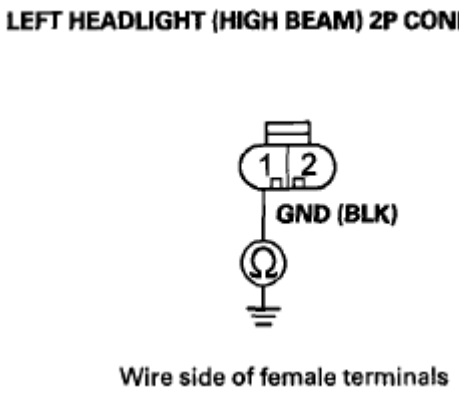


Fig. 13: Checking Continuity Between Left Headlight (High Beam) 2P Connector Terminal No. 1 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES -Faulty driver's MICU; replace the driver's under-dash fuse/relay box (see **DRIVER'S UNDER-DASH FUSE/RELAY BOX (MICU) REMOVAL AND INSTALLATION**).

NO -Repair an open or high resistance in the wire or poor ground (G302).

DTC B11CF: RIGHT DAYTIME RUNNING LIGHTS CIRCUIT MALFUNCTION

NOTE:

- **If you are troubleshooting multiple DTCs, be sure to follow the instructions in B-CAN System Diagnosis Test Mode A (see TROUBLESHOOTING - B-CAN SYSTEM DIAGNOSIS TEST MODE A).**
- **Make sure the No. 12 (7.5 A) fuse in the driver's under-dash fuse/relay box is OK.**

1. Clear the DTCs with the HDS.
2. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
3. Release the parking brake lever.
4. Turn the headlight switch OFF.
5. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.

   Is DTC B11CF indicated?

   YES -Go to step 6.

   NO -Intermittent failure, the system is OK at this time. Check for loose or poor connections.

6. Turn the headlight high beam ON.

   Does the right headlight (high beam) come on?

   YES -Go to step 7.

   NO -Go to step 9.

7. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
8. Measure the voltage between body ground and passenger's under-dash fuse/relay box connector A (38P) terminals No. 36 and No. 37, and between body ground and passenger's under-dash fuse/relay box connector E (18P) terminals No. 15 individually.

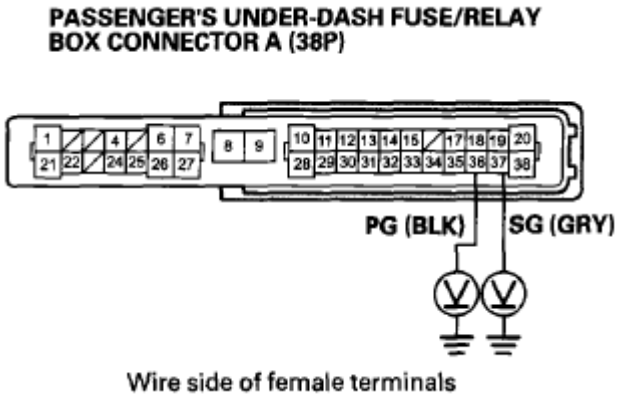


Fig. 14: Measuring Voltage Between Body Ground And Passenger's Under-Dash Fuse/Relay Box Connector A (38P) Terminals No. 36 And No. 37
Courtesy of AMERICAN HONDA MOTOR CO., INC.

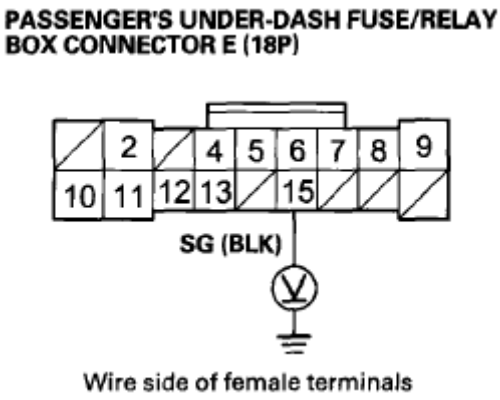


Fig. 15: Measuring Voltage Between Body Ground And Passenger's Under-Dash Fuse/Relay Box Connector E (18P) Terminals No. 15
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there less than 0.2 V?

YES -Faulty passenger's MICU; replace the passenger's under-dash fuse/relay box (see **PASSENGER'S UNDER-DASH FUSE/RELAY BOX (MICU) REMOVAL AND INSTALLATION**).

NO -Repair an open or high resistance in the wire or poor ground (G203, G401, G405).

9. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
10. Turn the headlight switch OFF.
11. Check the No. 1 (10 A) fuse in the passenger's under-dash fuse/relay box.

Is the fuse OK?

YES -Go to step 12.

NO -Replace the fuse. If the fuse blows again, repair the short to ground on the No. 1 (10 A) fuse circuit.

12. Check the right headlight bulb.

    Is the bulb OK?

    YES -Go to step 13.

    NO -Replace the bulb and recheck.

13. Disconnect passenger's under-dash fuse/relay box connector E (18P).
14. Disconnect the right headlight (high beam) 2P connector.
15. Check for continuity between passenger's under-dash fuse/relay box connector E (18P) terminal No. 2 and right headlight (high beam) 2P connector terminal No. 2.

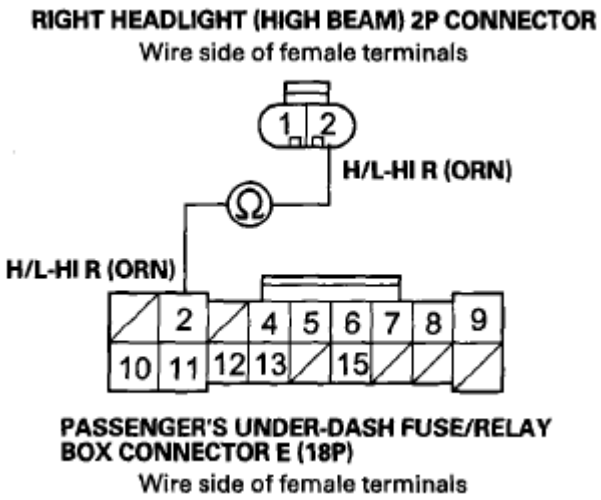


Fig. 16: Checking Continuity Between Passenger's Under-Dash Fuse/Relay Box Connector E (18P) Terminal No. 2 And Right Headlight (High Beam) 2P Connector Terminal No. 2
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES -Go to step 16.

NO -Repair an open or high resistance in the wire.

16. Check for continuity between right headlight (high beam) 2P connector terminal No. 1 and body ground.

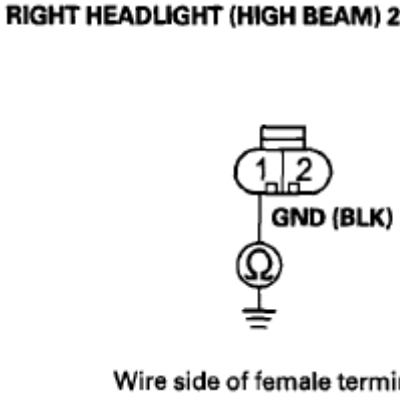


Fig. 17: Checking Continuity Between Right Headlight (High Beam) 2P Connector Terminal No. 1 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES -Faulty passenger's MICU; replace the passenger's under-dash fuse/relay box (see **PASSENGER'S UNDER-DASH FUSE/RELAY BOX (MICU) REMOVAL AND INSTALLATION**).

NO -Repair an open or high resistance in the wire or poor ground (G203).

DTC B1275: HEADLIGHT SWITCH OFF POSITION CIRCUIT MALFUNCTION; DTC B1276: HEADLIGHT SWITCH PARKING POSITION CIRCUIT MALFUNCTION; DTC B1277: HEADLIGHT AUTO POSITION CIRCUIT MALFUNCTION; DTC B1278: HEADLIGHT ON POSITION CIRCUIT MALFUNCTION

NOTE: If you are troubleshooting multiple DTCs, be sure to follow the instructions in B-CAN System Diagnosis Test Mode A (see TROUBLESHOOTING - B-CAN SYSTEM DIAGNOSIS TEST MODE A).

1. Clear the DTCs with the HDS.
2. Turn the ignition switch to LOCK (0) and then back to ON (II), or press the engine start/stop button to select the OFF mode and then ON mode.
3. Turn the combination light switch to the PARKING, AUTO, and ON (low beam) positions for 6 seconds in each position, and then to the OFF position.
4. Check for DTCs with the HDS.

   Are DTCs B1275, B1276, B1277, and/or B1278 indicated?

   YES -Go to step 5.

   NO -Intermittent failure, the system is OK at this time. Check for loose or poor connections.

5. Select LIGHTING from the BODY ELECTRICAL SYSTEM SELECT menu, and enter DATA LIST.

6. Check each combination light switch position value with the DATA LIST menu.

WHEN COMBINATION LIGHT SWITCH IS TURNED OFF

Data List	Value
Headlight Switch (OFF)	ON
Headlight Switch (PARKING)	OFF
Headlight Switch (AUTO)	OFF
Headlight Switch (HEADLIGHT)	OFF

WHEN COMBINATION LIGHT SWITCH IS TURNED TO PARKING LIGHT

Data List	Value
Headlight Switch (OFF)	OFF
Headlight Switch (PARKING)	ON
Headlight Switch (AUTO)	OFF
Headlight Switch (HEADLIGHT)	OFF

WHEN COMBINATION LIGHT SWITCH IS TURNED TO AUTO

Data List	Value
Headlight Switch (OFF)	OFF
Headlight Switch (PARKING)	OFF
Headlight Switch (AUTO)	ON
Headlight Switch (HEADLIGHT)	OFF

WHEN COMBINATION LIGHT SWITCH IS TURNED ON (HEADLIGHT)

Data List	Value
Headlight Switch (OFF)	OFF
Headlight Switch (PARKING)	ON
Headlight Switch (AUTO)	OFF
Headlight Switch (HEADLIGHT)	ON

Are all data list values correct?

YES -Faulty driver's MICU; replace the driver's under-dash fuse/relay box (see **DRIVER'S UNDER-DASH FUSE/RELAY BOX (MICU) REMOVAL AND INSTALLATION**).

NO -Go to step 7.

7. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
8. Disconnect the combination light switch 12P connector.
9. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
10. Select LIGHTING from the BODY ELECTRICAL SYSTEM SELECT menu, and enter DATA LIST.
11. Check each combination light switch position value with the DATA LIST menu.

Data List	Value
Headlight Switch (OFF)	OFF
Headlight Switch (PARKING)	OFF
Headlight Switch (AUTO)	OFF
Headlight Switch (HEADLIGHT)	OFF

Are all data list values indicated OFF?

YES -Go to step 15.

NO -Go to step 12.

12. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
13. Disconnect driver's under-dash fuse/relay box connector R (24P).
14. Check for continuity between body ground and driver's under-dash fuse/relay box connector R (24P) terminals No. 6, No. 7, and No. 8 individually.

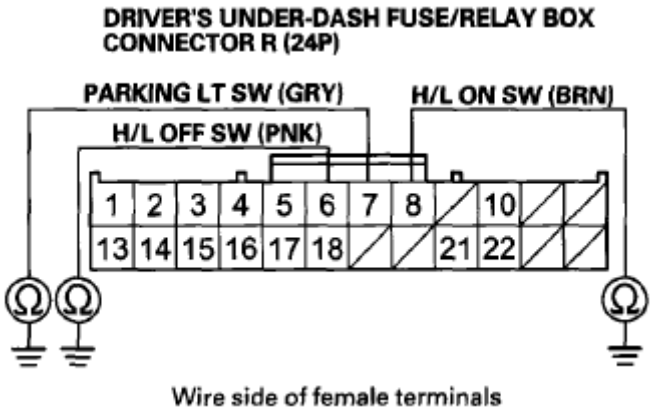


Fig. 18: Checking Continuity Between Body Ground And Driver's Under-Dash Fuse/Relay Box Connector R (24P) Terminals Individually
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES -Repair a short to ground in the wire.

NO -Faulty driver's MICU; replace the driver's under-dash fuse/relay box (see **DRIVER'S UNDER-DASH FUSE/RELAY BOX (MICU) REMOVAL AND INSTALLATION**).

15. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
16. Do the combination light switch test (see **COMBINATION LIGHT SWITCH TEST/REPLACEMENT**).

Is the combination light switch OK?

YES -Go to step 17.

NO -Replace the combination light switch (see **COMBINATION LIGHT SWITCH TEST/REPLACEMENT**).

17. Disconnect driver's under-dash fuse/relay box connector R (24P).
18. Check for continuity between driver's under-dash fuse/relay box connector R (24P) terminals and the combination light switch 12P connector terminals as shown:

Driver's under-dash fuse/relay box connector R (24P)	Combination light switch 12P connector
6 (PNK)	9 (PNK)
8 (BRN)	10 (BRN)
7 (GRY)	11 (GRY)
3 (BLK)	12 (BLK)

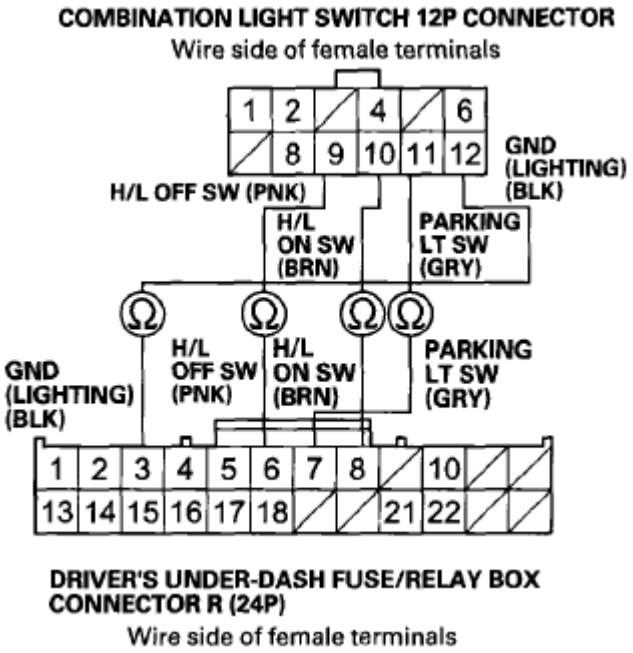


Fig. 19: Checking Continuity Between Driver's Under-Dash Fuse/Relay Box Connector R (24P) Terminals And Combination Light Switch 12P Connector Terminals
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES -Go to step 19.

NO -Repair an open or high resistance in the wire.

19. Check for continuity between driver's under-dash fuse/relay box connector R (24P) terminals as shown:

From terminal	To terminal
6 (PNK)	7 (GRY) 8 (BRN) 21 (RED) 22(LT BLU)
7 (GRY)	8 (BRN) 21 (RED) 22 (LT BLU)

Is there continuity?

YES -Repair a short between the wires.

NO -Faulty driver's MICU; replace the driver's under-dash fuse/relay box (see **DRIVER'S UNDER-DASH FUSE/RELAY BOX (MICU) REMOVAL AND INSTALLATION**).

DTC B1279: DIMMER SWITCH CIRCUIT MALFUNCTION

NOTE: If you are troubleshooting multiple DTCs, be sure to follow the instructions in B-CAN System Diagnosis Test Mode A (see TROUBLESHOOTING - B-CAN SYSTEM DIAGNOSIS TEST MODE A).

1. Clear the DTCs with the HDS.
2. Turn the ignition switch to LOCK (0) and then back to ON (II), or press the engine start/stop button to select the OFF mode and then the ON mode.
3. Turn the combination light (headlight) switch ON.
4. Change the dimmer switch from low beam to high beam.
5. Turn the combination light switch OFF, and then to the passing position, and wait for at least 6 seconds.
6. Check for DTCs with the HDS.

Is DTC B1279 indicated?

YES -Go to step 7.

NO -Intermittent failure, the system is OK at this time. Check for loose or poor connections.

7. Select LIGHTING from the BODY ELECTRICAL SYSTEM SELECT menu, then enter DATA LIST.
8. Check each combination light switch position value with the DATA LIST menu.

WHEN PASSING SWITCH IS OPERATED

Data List	Value
Headlight Switch (PASSING)	ON
Headlight Switch (High beam)	OFF

WHEN HEADLIGHT SWITCH IS TURNED ON, AND DIMMER SWITCH CHANGED FROM LOW BEAM TO HIGH BEAM

Data List	Value
Headlight Switch (PASSING)	OFF
Headlight Switch (High beam)	ON
Headlight Switch (HEADLIGHT)	ON

Are all data list values correct?

YES -Faulty driver's MICU; replace the driver's under-dash fuse/relay box (see **DRIVER'S UNDER-DASH FUSE/RELAY BOX (MICU) REMOVAL AND INSTALLATION**).

NO -Go to step 9.

9. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
10. Disconnect the combination light switch 12P connector.
11. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
12. Select LIGHTING from the BODY ELECTRICAL SYSTEM SELECT menu, then enter DATA LIST.
13. Check each combination light switch position value with the DATA LIST menu.

Data List	Value
Headlight Switch (PASSING)	OFF
Headlight Switch (High beam)	OFF
Headlight Switch (HEADLIGHT)	OFF

Are all data list values Indicated OFF?

YES -Go to step 17.

NO -Go to step 14.

14. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
15. Disconnect under-dash fuse/relay box connector R (24P).
16. Check for continuity between body ground and driver's under-dash fuse/relay box connector R (24P) terminals No. 8, No. 21, and No. 22 individually.

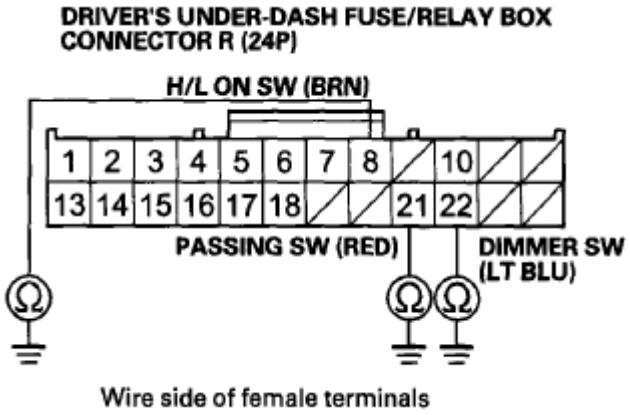


Fig. 20: Checking Continuity Between Body Ground And Driver's Under-Dash Fuse/Relay Box Connector R (24P) Terminals Individually
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES -Repair a short to ground in the wire.

NO -Faulty driver's MICU; replace the driver's under-dash fuse/relay box (see **DRIVER'S UNDER-DASH FUSE/RELAY BOX (MICU) REMOVAL AND INSTALLATION**).

17. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
18. Do the combination light switch test (see **COMBINATION LIGHT SWITCH TEST/REPLACEMENT**).

    Is the combination light switch OK?

    YES -Go to step 19.

    NO -Replace the combination light switch (see **COMBINATION LIGHT SWITCH TEST/REPLACEMENT**).

19. Disconnect driver's under-dash fuse/relay box connector R (24P).
20. Check for continuity between driver's under-dash fuse/relay box connector R (24P) terminals and the combination light switch 12P connector terminals as shown:

Driver's under-dash fuse/relay box connector R (24P)	Combination light switch 12P connector
3 (BLK)	12 (BLK)
8 (BRN)	10 (BRN)
21 (RED)	6 (RED)
22 (LT BLU)	4 (LT BLU)

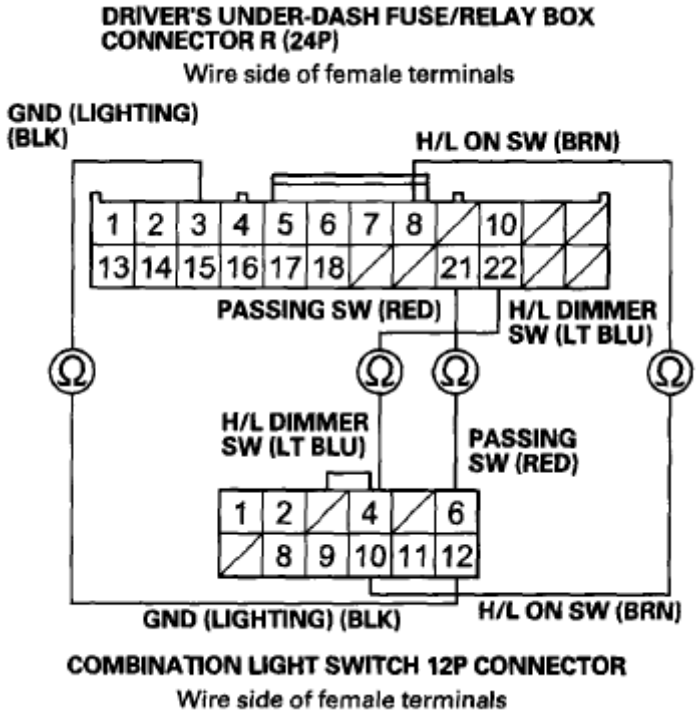


Fig. 21: Checking Continuity Between Driver's Under-Dash Fuse/Relay Box Connector R (24P) Terminals And Combination Light Switch 12P Connector Terminals
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES -Go to step 21.

NO -Repair an open or high resistance in the wire.

21. Check for continuity between driver's under-dash fuse/relay box connector R (24P) terminals as shown:

From terminal	To terminal
21 (RED)	6 (PNK) 7 (GRY) 8(BRN) 22(LT BLU)
22 (LT BLU)	6 (PNK) 7 (GRY) 8(BRN)

Is there continuity?

YES -Repair a short between the wires.

NO -Faulty driver's MICU; replace the driver's under-dash fuse/relay box (see **DRIVER'S UNDER-**

DASH FUSE/RELAY BOX (MICU) REMOVAL AND INSTALLATION).

DTC B1575: AUTO LIGHTING SENSOR MALFUNCTION

NOTE: If you are troubleshooting multiple DTCs, be sure to follow the instructions in B-CAN System Diagnosis Test Mode A (see TROUBLESHOOTING - B-CAN SYSTEM DIAGNOSIS TEST MODE A).

1. Clear the DTCs with the HDS.
2. Turn the ignition switch to LOCK (0) and then back to ON (II), or press the engine start/stop button to select the OFF mode and then the ON mode.
3. Wait for one second.
4. Check for DTCs with the HDS.

Is DTC B1575 indicated?

YES -Go to step 5.

NO -Intermittent failure, the system is OK at this time. Check for loose or poor connections.

5. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
6. Disconnect the automatic lighting sensor 5P connector.
7. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
8. Measure the voltage between body ground and automatic lighting sensor 5P connector terminal No. 1.

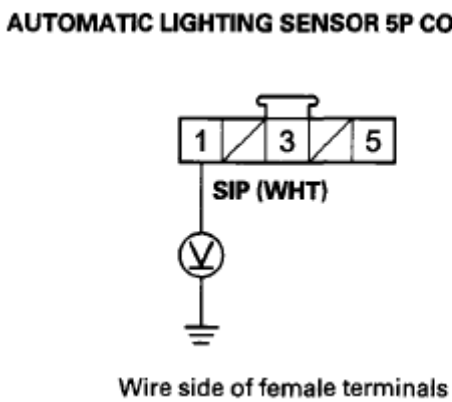


Fig. 22: Measuring Voltage Between Body Ground And Automatic Lighting Sensor 5P Connector Terminal No. 1
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there about 5 V?

YES -Replace the automatic lighting sensor (see **AUTOMATIC LIGHTING SENSOR TEST/REPLACEMENT**).

NO -Go to step 9.

9. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
10. Disconnect passenger's under-dash fuse/relay box connector D (28P).
11. Check for continuity between passenger's under-dash fuse/relay box connector D (28P) terminal No. 9 and automatic lighting sensor 5P connector terminal No. 1.

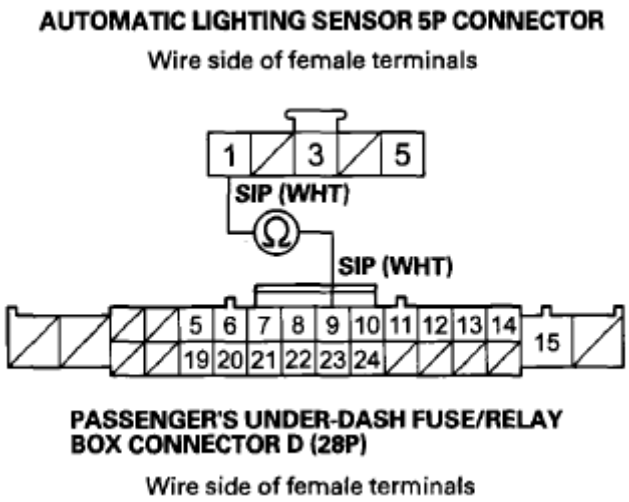


Fig. 23: Checking Continuity Between Passenger's Under-Dash Fuse/Relay Box Connector D (28P) Terminal No. 9 And Automatic Lighting Sensor 5P Connector Terminal No. 1
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES -Faulty passenger's MICU; replace the passenger's under-dash fuse/relay box (see **PASSENGER'S UNDER-DASH FUSE/RELAY BOX (MICU) REMOVAL AND INSTALLATION**).

NO -Repair an open or high resistance in the wire.

HID LAMP SYSTEM TROUBLESHOOTING

WARNING: A transient high tension (25, 000 V) occurs at the bulb sockets of the high intensity discharge (HID) lamps when the combination light switch is turned ON, that may cause serious electrical shock or electrocution if you do not observe the cautions.

CAUTION:

- **Never turn on the combination light switch before fitting the HID bulbs to their bulb sockets and completing the reassembly of the headlight assembly.**
- **Do not service the headlights assembly in wet conditions, such as rain or snow, near a sprinkler system, or when your hands are wet to prevent electrocution.**

- **Do not touch the surface of the HID bulbs with your bare hands and do not stain it with any oils and fats.**
- **Do not disassemble the inverter unit and the igniter unit.**
- **Do not turn on the HID bulb by using a power source other than the battery mounted on the vehicle.**

Special Tools Required

HID Bulb Test Light 07AAJ-S3MA100

NOTE: Before troubleshooting the HID Lamp System, perform the multiplex integrated control system troubleshooting using B-CAN System Diagnosis Test Mode A (see TROUBLESHOOTING - B-CAN SYSTEM DIAGNOSIS TEST MODE A).

1. Check the No. 30 (15 A) fuse in the driver's under-dash fuse/relay box and No. 4 (15 A) fuses in the passenger's under-dash fuse/relay box.

   Are the fuses OK?

   YES -Go to step 2.

   NO -Replace the fuse(s). If the fuse blows again, repair a short to ground on the No. 30 (15 A) and No. 4 (15 A) fuse circuit(s).

2. Turn the combination light switch to OFF.
3. Do the battery terminal disconnection procedure (see **BATTERY TERMINAL DISCONNECTION AND RECONNECTION**).
4. Remove the bulb socket from the HID bulb (see **HID BULB REPLACEMENT**).
5. Check for corrosion and traces of electrical arcing on the contacts of the socket (A).

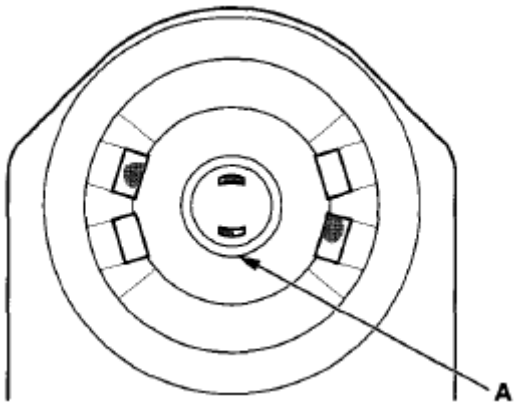


Fig. 24: Identifying Socket
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is the socket corroded or burnt?

YES -Replace the socket, and recheck.

NO -Go to step 6.

6. Connect the HID bulb test light assembly (A) to the bulb socket (B).

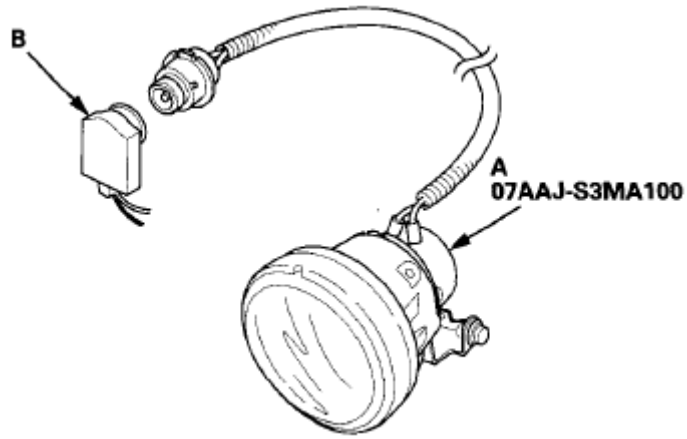


Fig. 25: Connecting HID Bulb Test Light Assembly To Bulb Socket
Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Do the battery terminal reconnection procedure (see **BATTERY TERMINAL DISCONNECTION AND RECONNECTION**).
8. Turn the combination light (headlight) switch to ON.

   Does the HID bulb test light come on?

   YES -Replace the original HID bulb (see **HID BULB REPLACEMENT**).

   NO -Go to step 9.

9. Measure the voltage between HID unit 2P connector terminal No. 2 and body ground.

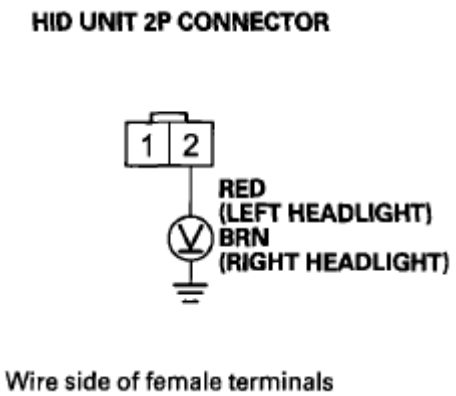


Fig. 26: Measuring Voltage Between HID Unit 2P Connector Terminal No. 2 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there battery voltage?

YES -Go to step 10.

NO -Repair an open or high resistance in the RED or BRN wire.

10. Turn the combination light (headlight) switch to OFF.
11. Do the battery terminal disconnection procedure (see **BATTERY TERMINAL DISCONNECTION AND RECONNECTION**).
12. Remove the HID bulb test light assembly from the bulb socket.
13. Disconnect the HID unit 2P connector.
14. Do the battery terminal reconnection procedure (see **BATTERY TERMINAL DISCONNECTION AND RECONNECTION**).
15. Check for continuity between HID unit 2P connector terminal No. 1 and body ground.

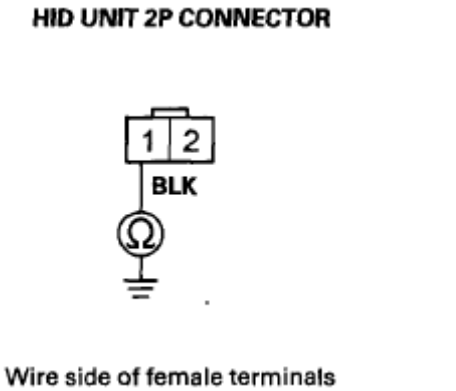


Fig. 27: Checking Continuity Between HID Unit 2P Connector Terminal No. 1 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES -Replace the HID unit (see **HID UNIT REPLACEMENT**).

NO -Repair an open or high resistance in the wire between the HID unit and body ground. If the wire is OK, check for poor ground (G203, G302).

MICU INPUT TEST

NOTE:

- **Before testing, troubleshoot the multiplex integrated control system first, using B-CAN System Diagnosis Test Mode A (see TROUBLESHOOTING - B-CAN SYSTEM DIAGNOSIS TEST MODE A).**
- **Before testing, make sure the No. 12 (7.5 A), No. 15 (7.5 A), No. 26 (10 A), No. 27 (10 A), No. 28 (10 A), and No. 30 (15 A) fuse in the driver's under-dash fuse/relay box, and the No. 1 (10 A), No. 2 (10 A), No. 3 (10 A), and No. 4(15 A) fuse in the passenger's under-dash fuse/relay box are OK.**

Driver's MICU

1. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
2. Remove the driver's dashboard undercover (see **DRIVER'S DASHBOARD UNDERCOVER REMOVAL/INSTALLATION**).
3. Disconnect driver's under-dash fuse/relay box connectors B, D, E, F, G, Q, and R.

NOTE: All connector views are wire side of female terminals.

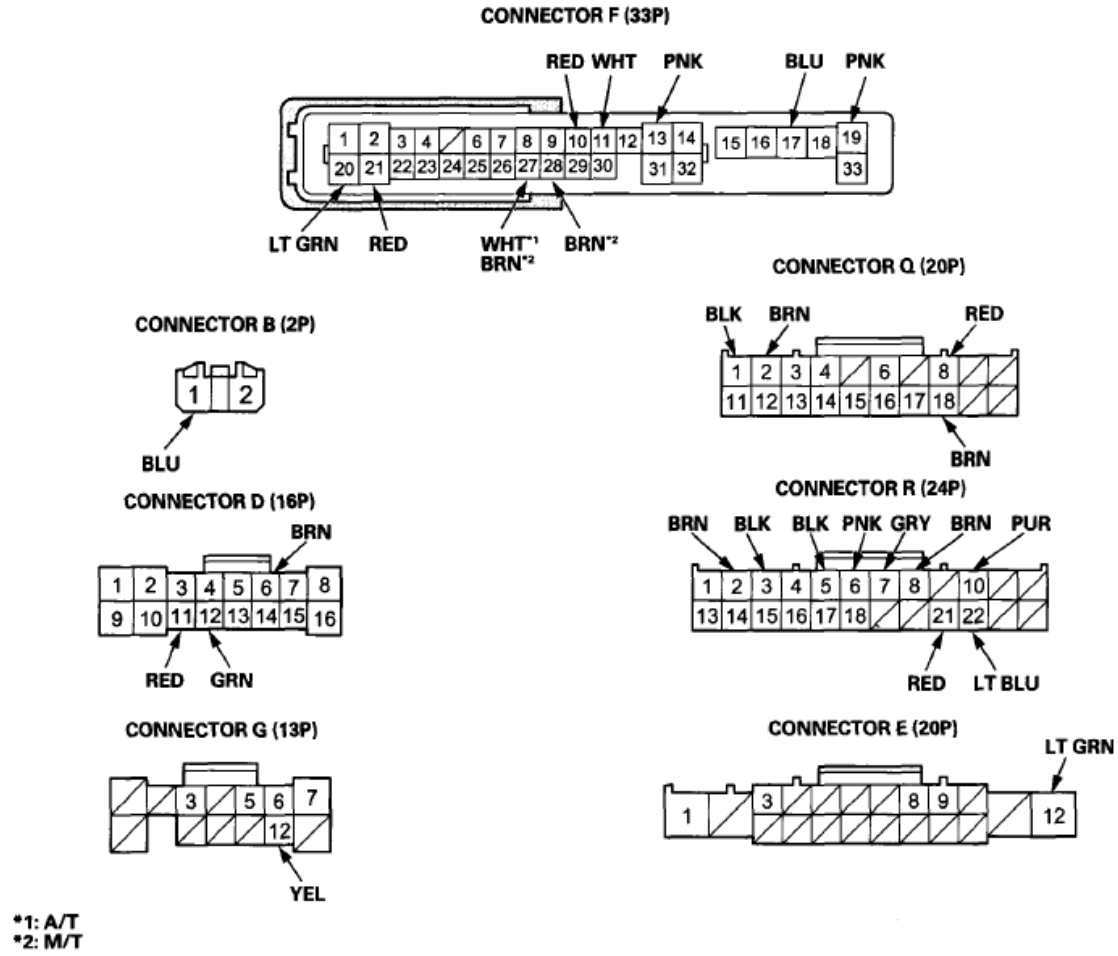


Fig. 28: Identifying Driver's MICU Connectors
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Inspect the connector and socket terminals to be sure they are all making good contact.
   - If the terminals are bent, loose or corroded, repair them as necessary, and recheck the system.
   - If the terminals look OK, go to step 5.
5. With the connectors still disconnected, do the following input tests:
   - If any test indicates a problem, find and correct the cause, then recheck the system.
   - If all the input tests prove OK, go to step 6.

Cavity	Wire	Test condition	Test: Desired result	Possible cause if desired result is not obtained
D6	BRN	Ignition switch ON (II), or power mode ON	Connect terminals C5 and D6 with a jumper wire: The back-up lights should come on.	• Blown bulb • Poor ground (G603) or an open in the ground wire • An open or high resistance in the wire

D11	RED	Under all conditions	Connect terminals F19 and D11 with a jumper wire: The taillights, license plate lights, and the rear side marker lights should come on.	• Blown bulb • Poor ground (G603) or an open in the ground wire • An open or high resistance in the wire
E12	LT GRN	Brake pedal pressed	Connect terminals F20 and E12 with a jumper wire: The brake lights should come on.	• Faulty LED • Poor ground (G402, G603) or an open in the ground wire • An open or high resistance in the wire
F20		Brake pedal released	Measure the voltage to ground: There should be no voltage.	• Faulty brake pedal position switch • A short to ground in the wire
F10	RED	Under all conditions	Connect terminals F19 and F10 with a jumper wire: The left front parking light and the left front side marker light should come on.	• Blown left front parking and side marker bulb • Poor ground (G302) or an open in the ground wire • An open or high resistance in the wire
F13	PNK	Under all conditions	Connect terminals F19 and F13 with a jumper wire: The left headlight (high beam) should come on.	• Blown left high beam bulb • Poor ground (G302) or an open in the ground wire • An open or high resistance in the wire
F21	RED	Under all conditions	Connect terminals F19 and F21 with a jumper wire: The left headlight (low beam) should come on.	• Blown left low beam (HID) bulb • Faulty HID unit • Poor ground (G302) or an open in the ground wire • An open or high resistance in the wire
			Connect terminals F19 and G12 with a	• Blown left fog bulb • Poor ground (G302)

G12	YEL	Under all conditions	jumper wire: The left fog light should come on.	or an open in the ground wire • An open or high resistance in the wire

6. Reconnect the connectors to the driver's under-dash fuse/relay box, and do the following input tests:
   - If any test indicates a problem, find and correct the cause, then recheck the system.
   - If all the input tests prove OK, go to step 7.

Cavity	Wire	Test condition	Test: Desired result	Possible cause if desired result is not obtained
B1	BLU	Under all conditions	Measure the voltage to ground: There should be battery voltage.	• Blown No. 3-8 (AS LT MAIN) (30 A) fuse in the under-hood fuse/relay box • Faulty driver's under-dash fuse/relay box • An open or high resistance in the wire
Q1	BLK	In all ignition switch positions or all power modes	Measure the voltage to ground: There should be less than 0.2 V.	• Poor ground(G402) • An open or high resistance in the ground wire
Q2	BRN	In all ignition switch positions or all power modes	Measure the voltage to ground: There should be less than 0.2 V.	• Poor ground (G401) • An open or high resistance in the ground wire
R2	BRN	In all ignition switch positions or all power modes	Measure the voltage to ground: There should be less than 0.2 V.	• Poor ground(G401) • An open or high resistance in the ground wire
R5	BLK	In all ignition switch positions or all power modes	Measure the voltage to ground: There should be less than 0.2 V.	• Poor ground (G402) • An open or high resistance in the ground wire
D12	GRN	Driver's door open	Measure the voltage to ground: There should be less than 0.2 V.	• Faulty driver's door switch • Faulty driver's door switch ground • An open or high resistance in the wire

		Driver's door closed	Measure the voltage to ground: There should be about 5 V.	• Faulty driver's door switch • A short to ground in the wire
F11	WHT	Under all conditions	Measure the voltage to ground: There should be battery voltage.	• Blown No. 15 (10 A) fuse in the under-hood fuse/relay box • An open or high resistance in the wire
F17	BLU	Under all conditions	Measure the voltage to ground: There should be battery voltage.	• Blown No. 3-8 (AS LT MAIN) (30 A) fuse in the under-hood fuse/relay box • An open or high resistance in the wire
F19	PNK	Under all conditions	Measure the voltage to ground: There should be battery voltage.	• Blown No. 3-6 (DR LT MAIN) (30 A) fuse in the under-hood fuse/relay box • An open or high resistance in the wire
F27 (A/T)	WHT	Ignition switch ON (II), or power mode ON. Lever in R position.	Measure the voltage to ground: There should be less than 0.2 V.	• Faulty transmission range switch • Poor ground (G101) or an open in the ground wire • An open or high resistance in the wire
		Ignition switch ON (II), or power mode ON. Transmission range switch in any other position than R.	Measure the voltage to ground: There should be battery voltage.	• Blown No. 12 (7.5 A) fuse in the driver's under-dash fuse/relay box • Faulty driver's under-dash fuse/relay box
F27 (M/T)	BRN	Power mode ON	Connect terminals F28 and F27 with a jumper wire: The back-up lights should come on.	• Blown No. 12 (7.5 A) fuse in the driver's under-dash fuse/relay box • Faulty driver's under-dash fuse/relay box • Blown bulb(s) • Poor ground (G603) or an open in the ground wire

				• A short to ground in the wire • An open or high resistance in the wire
Q18(1)	BRN	Ignition key inserted into the ignition switch	Measure the voltage to ground: There should be less than 0.2 V.	• Faulty ignition key switch • Poor ground (G403) or an open in the ground wire • An open or high resistance in the wire
		Ignition key removed from the ignition switch	Measure the voltage to ground: There should be about 5 V.	• Faulty ignition key switch • A short to ground in the wire
Q18(2)	BRN	Keyless access remote inserted into the remote slot	Measure the voltage to ground: There should be less than 0.2 V.	• Faulty power control unit • Poor ground (G402) or an open in the ground wire • An open or high resistance in the wire
		Keyless access remote removed from the remote slot	Measure the voltage to ground: There should be about 5 V.	• Faulty power control unit • A short to ground in the wire
R6 . R3	PNK . BLK	Combination light switch OFF	Measure the voltage between terminals R6 and R3: There should be less than 0.2 V.	• Faulty combination light switch • An open or high resistance in the wire
		Combination light switch in any other position than OFF	Measure the voltage between terminals R6 and R3: There should be about 5 V.	• Faulty combination light switch • A short to ground in the wire
R7 . R3	GRY . BLK	Combination light switch (PARKING LIGHT position) ON	Measure the voltage between terminals R7 and R3: There should be less than 0.2 V.	• Faulty combination light switch • An open or high resistance in the wire
		Combination light switch OFF	Measure the voltage between terminals R7 and R3: There should be about 5 V.	• Faulty combination light switch • A short to ground in the wire

R8 . R3	BRN . BLK	Combination light switch (headlight) ON	Measure the voltage between terminals R8 and R3: There should be less than 0.2 V.	• Faulty combination light switch • An open or high resistance in the wire
		Combination light switch OFF	Measure the voltage between terminals R8 and R3: There should be about 5 V.	• Faulty combination light switch • A short to ground in the wire
R21 . R3	RED . BLK	Combination light switch lever pulled (Passing)	Measure the voltage between terminals R21 and R3: There should be less than 0.2 V.	• Faulty combination light switch • An open or high resistance in the wire
		Combination light switch lever released (OFF)	Measure the voltage between terminals R21 and R3: There should be about 5 V.	• Faulty combination light switch • A short to ground in the wire
R22 . R3	LT BLU . BLK	Combination light switch (Dimmer) in high beam position	Measure the voltage between terminals R22 and R3: There should be less than 0.2 V.	• Faulty combination light switch • An open or high resistance in the wire
		Combination light switch (Dimmer) in low beam position	Measure the voltage between terminals R22 and R3: There should be about 5 V.	• Faulty combination light switch • A short to ground in the wire
R10 . R3	PUR . BLK	Fog light switch ON	Measure the voltage between terminals R10 and R3: There should be less than 0.2 V.	• Faulty combination light switch • An open or high resistance in the wire
		Fog light switch OFF	Measure the voltage between terminals R10 and R3: There should be about 5 V.	• Faulty combination light switch • A short to ground in the wire
(1) Without keyless access system (2) With keyless access system				

Passenger's MICU

7. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
8. Remove the passenger's side kick panel (see **TRIM REMOVAL/INSTALLATION - DOOR AREAS**).
9. Disconnect passenger's under-dash fuse/relay box connectors A and E.

NOTE: All connector views are wire side of female terminals.

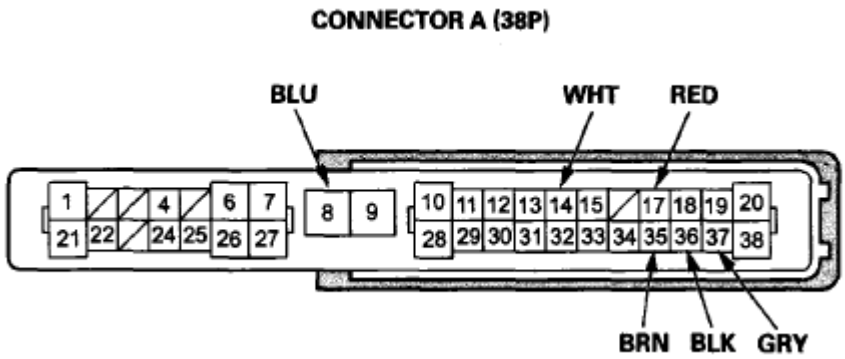


Fig. 29: Identifying Passenger's MICU Connector A (38P)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

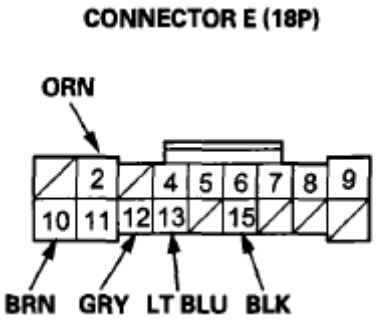


Fig. 30: Identifying Passenger's MICU Connector E (18P)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

10. Inspect the connector and socket terminals to be sure they are all making good contact.
    - If the terminals are bent, loose or corroded, repair them as necessary, and recheck the system.
    - If the terminals look OK, go to step 11.
11. With the connectors still disconnected, do the following input tests:
    - If any test indicates a problem, find and correct the cause, then recheck the system.
    - If all the input tests prove OK, go to step 12.

Cavity	Wire	Test condition	Test: Desired result	Possible cause if desired result is not obtained
A8	BLU	Under all conditions	Measure the voltage to ground: There should be battery voltage.	• Blown No. 3-8 (AS LT MAIN) (30 A) fuse in the under-hood fuse/relay box • Faulty driver's under-dash fuse/relay box • An open or high

				resistance in the wire
A17	RED	Under all conditions	Check for continuity between passenger's under-dash fuse/relay box connector A (38P) terminal No. 17 and driver's under-dash fuse/relay box connector Q (20P) terminal No. 8: There should be continuity.	An open or high resistance in the wire
E2	ORN	Under all conditions	Connect terminals A8 and E2 with a jumper wire: The right headlight (high beam) should come on.	• Blown right high beam bulb • Poor ground (G203) or an open in the ground wire • An open or high resistance in the wire
E10	BRN	Under all conditions	Connect terminals A8 and E10 with a jumper wire: The right headlight (low beam) should come on.	• Blown right low beam (HID) bulb • Faulty HID unit • Poor ground (G203) or an open in the ground wire • An open or high resistance in the wire
E12	GRY	Under all conditions	Connect terminals A8 and E12 with a jumper wire: The right front parking light and the right front side marker light should come on.	• Blown right front parking or side marker bulb • Poor ground (G203) or an open in the ground wire • An open or high resistance in the wire
E13	LT BLU	Under all conditions	Connect terminals A8 and E13 with a jumper wire: The right fog light should come on.	• Blown right fog bulb • Poor ground (G203) or an open in the ground wire • An open or high resistance in the wire

12. Reconnect the connectors to the passenger's under-dash fuse/relay box, turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode, and do the following input tests:
    - If any test indicates a problem, find and correct the cause, then recheck the system.
    - If all the input tests prove OK, go to step 13.

Cavity	Wire	Test condition	Test: Desired result	Possible cause if desired result is

				not obtained
A14	WHT	Under all conditions	Measure the voltage to ground: There should be battery voltage.	• Blown No. 15 (10 A) fuse in the under-hood fuse/relay box • Faulty driver's under-dash fuse/relay box • An open or high resistance in the wire
A35	BRN	Ignition switch ON (II), or power mode ON	Measure the voltage to ground: There should be battery voltage.	• Blown No. 12 (7.5 A) fuse in the driver's under-dash fuse/relay box • Faulty driver's under-dash fuse/relay box • An open or high resistance in the wire
A36	BLK	In all ignition switch positions or all power modes	Measure the voltage to ground: There should be less than 0.2 V.	• Poor ground (G405) • An open or high resistance in the ground wire
A37	GRY	In all ignition switch positions or all power modes	Measure the voltage to ground: There should be less than 0.2 V.	• Poor ground (G401) • An open or high resistance in the ground wire
E15	BLK	In all ignition switch positions or all power modes	Measure the voltage to ground: There should be less than 0.2 V.	• Poor ground (G203) • An open or high resistance in the ground wire

13. If multiple failures are found on more than one control unit, replace the driver's under-dash fuse/relay box (includes the driver's MICU) (see **DRIVER'S UNDER-DASH FUSE/RELAY BOX (MICU) REMOVAL AND INSTALLATION**). If input failures are related to a particular control unit, replace the control unit.

COMBINATION LIGHT SWITCH TEST/REPLACEMENT

1. Remove the driver's dashboard undercover (see **DRIVER'S DASHBOARD UNDERCOVER REMOVAL/INSTALLATION**).
2. Remove the steering column covers (see **SIDE DEFOGGER VENT TRIM REMOVAL/INSTALLATION**).
3. Disconnect the dashboard wire harness 12P connector (A) from the combination light switch (B).

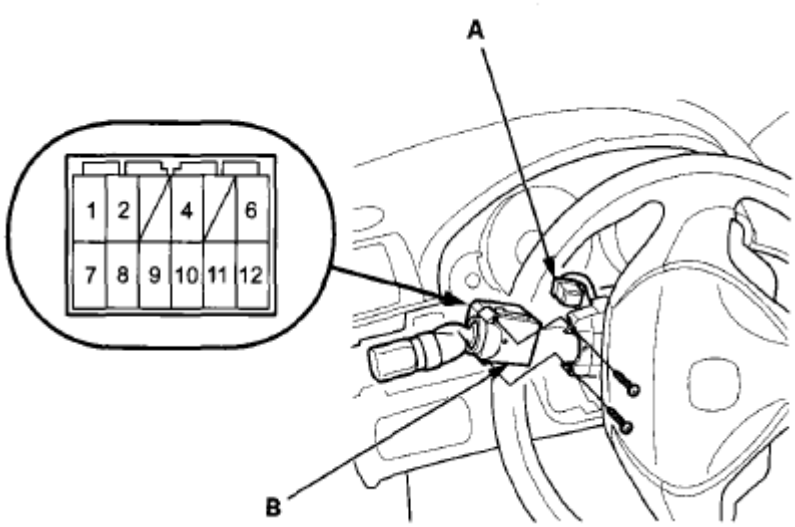


Fig. 31: Identifying Dashboard Wire Harness 12P Connector And Light Switch
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Remove the two screws, then slide out the combination light switch.
5. Inspect the connector terminals to be sure they are all making good contact.
   - If the terminals are bent, loose or corroded, repair them as necessary, and recheck the system.
   - If the terminals look OK, check for continuity between the terminals in each switch position according to the tables.

Light switch

Position \ Terminal			4	6	9	10	11	12
Headlight switch	OFF				○			○
	≡◯						○	○
	≡D	LOW				○	○	○
		HIGH	○			○	○	○
Passing switch	OFF							
	ON			○				○

Fig. 32: Continuity Reference Chart For Light Switch
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Turn signal switch

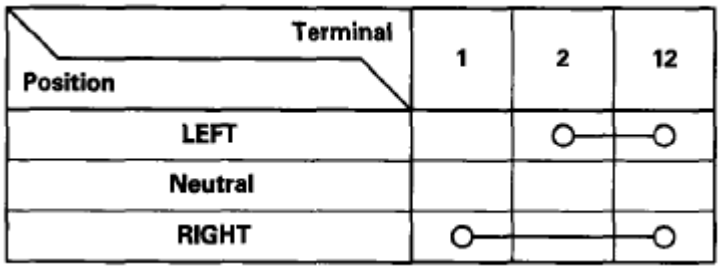


Fig. 33: Continuity Reference Chart For Turn Signal Switch
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Fog light switch

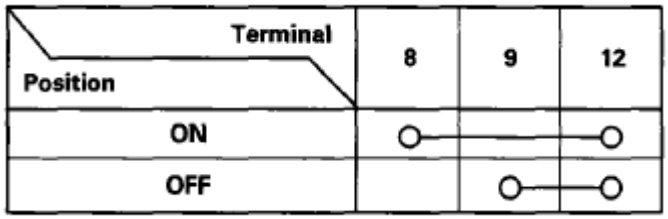


Fig. 34: Continuity Reference Chart For Fog Light Switch
Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. If all the continuity is not as specified, remove the two screws and replace the switch.
7. Install the parts in the reverse order of removal.

HEADLIGHT ADJUSTMENT

CAUTION: Headlights become very hot during use; do not touch them or any attaching hardware immediately after they have been turned off.

Before adjusting the headlights:

- Park the vehicle on a level surface.
- Make sure the tire pressures are correct.
- The driver or someone who weighs the same should sit in the driver's seat.

1. Clean the outer lens so that you can see the center mark (A) of the headlights.

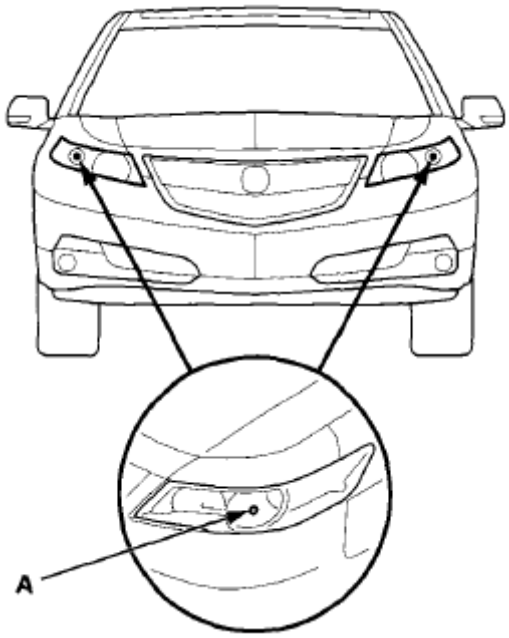


Fig. 35: Identifying Center Mark Of Headlights
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Park the vehicle so that the center mark of the headlight (A) is 7.5 m (25 ft) away from a wall or screen (B).

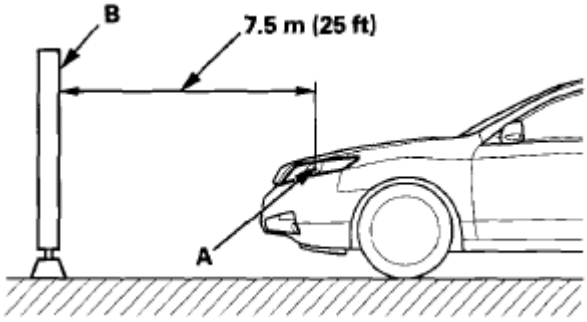


Fig. 36: Measuring Distance Between Center Mark Of Vehicle Headlight And Wall Or Screen
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Measure the height of the headlight's center mark (A), then mark the same height of the headlights on the wall or screen (B) with masking tape in a straight, horizontal line (C).

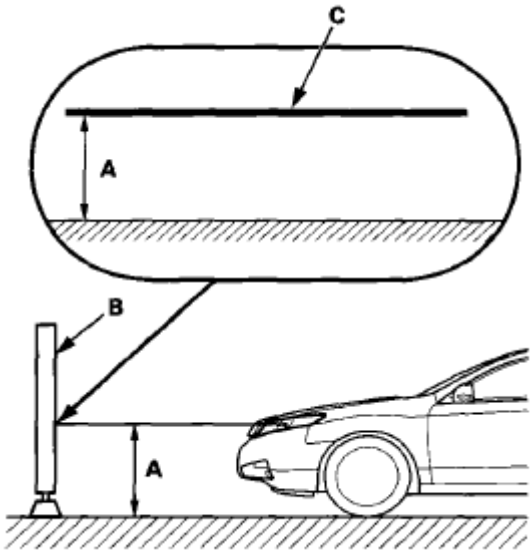


Fig. 37: Identifying Headlight's Center Mark, Wall Or Screen And Masking Tape
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Turn on the low beam headlights.
5. To see if the headlights are adjusted properly, observe the beams of light projected on the wall or screen. The highest edge or "cut line" (A) of the headlights should be at the same height as the masking tape (B).

NOTE: To help determine which headlight is out of adjustment, block one of the beams with a large piece of cardboard or equivalent, and observe the other beam on the wall or screen. Repeat this for the other headlight.

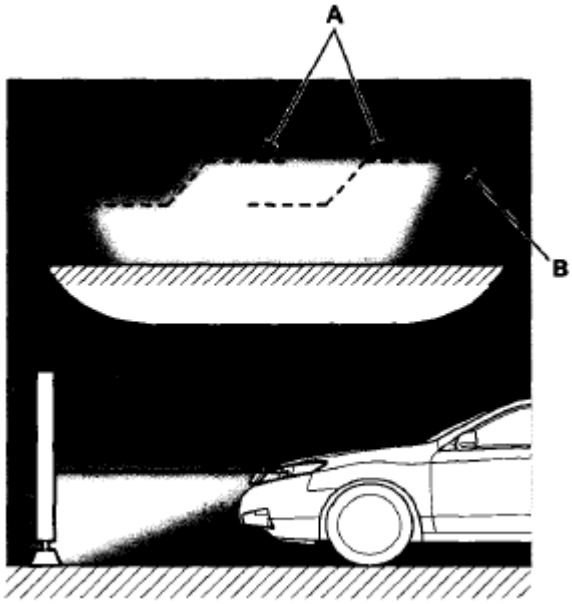


Fig. 38: Checking Adjustment Of Headlights
Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. If adjustment is necessary, open the hood and adjust the head lights by turning the vertical adjuster (A).

NOTE: The R and L adjusters are not applicable for USA models.

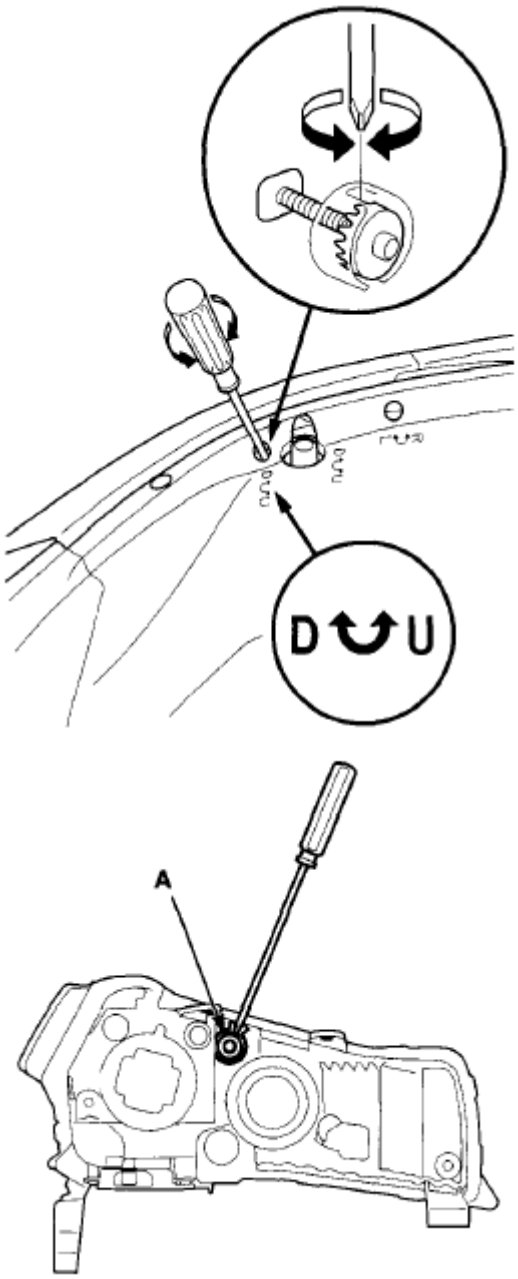


Fig. 39: Adjusting Head Lights By Turning Vertical Adjuster
Courtesy of AMERICAN HONDA MOTOR CO., INC.

HEADLIGHT REPLACEMENT

1. Turn the combination light switch OFF.

2. Remove these items:
   - Front bumper (see **FRONT BUMPER REMOVAL/INSTALLATION**)
   - Bulkhead cover (see **ENGINE COMPARTMENT COVER REPLACEMENT**)
3. Remove the three bolts (A), and pull the headlight (B) out slightly.

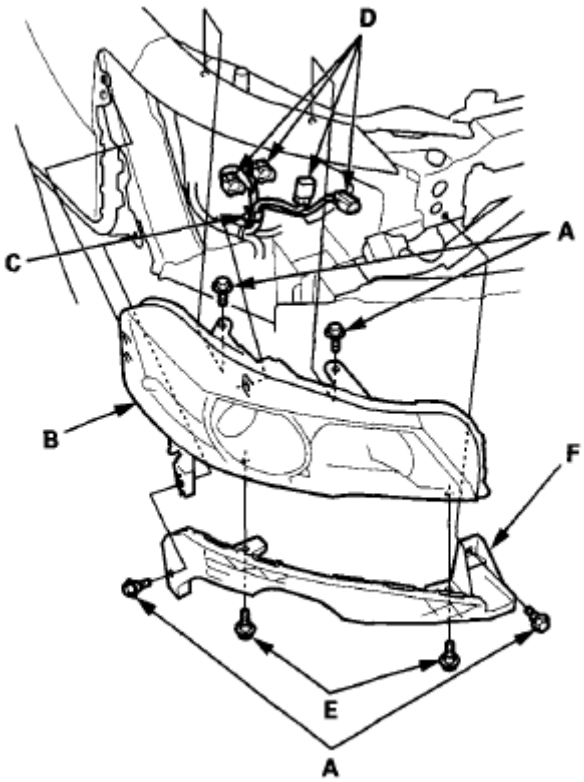


Fig. 40: Identifying Connectors, Headlight, Corner Upper Beam, Harness Clip And Bolts
Courtesy of AMERICAN HONDA MOTOR CO., INC.

The illustration shows the right side.

4. Remove the harness clip (C) from the headlight housing, and disconnect the connectors (D) from the bulb sockets. Remove the two bolts (E).
5. Remove the headlight with the corner upper beam (F).

NOTE: Be careful not to scratch the headlight lens and the fender.

6. Remove the bolt and the corner upper beam from the headlight.
7. Install the headlight in the reverse order of removal.
8. After replacement, adjust the headlights (see **HEADLIGHT ADJUSTMENT**).

HID UNIT REPLACEMENT

1. Turn the combination light switch OFF.
2. Make sure the ignition switch is in LOCK (0), or the vehicle ignition is in the OFF mode, then do the battery terminal disconnection procedure (see **BATTERY TERMINAL DISCONNECTION AND RECONNECTION**).
3. Remove the headlight assembly (see **HEADLIGHT REPLACEMENT**).
4. Remove the three mounting screws and the HID unit (A).

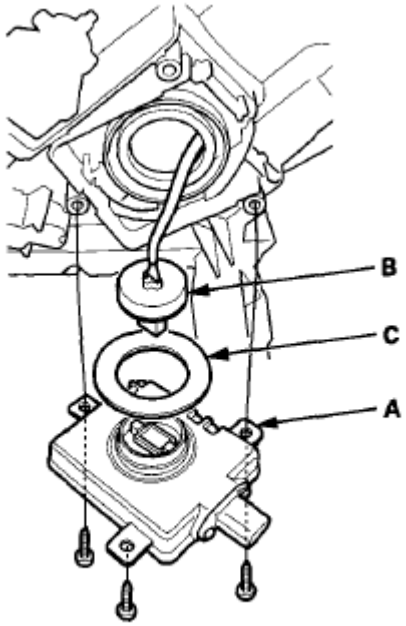


Fig. 41: Identifying HID Unit, 4P Connector And Gasket
Courtesy of AMERICAN HONDA MOTOR CO., INC.

The illustration shows the right side.

5. Disconnect the 4P connector (B) from the HID unit.
6. Inspect the gasket (C) for damage. If damaged, replace it.
7. Install the HID unit in the reverse order of removal.
8. Do the battery terminal reconnection procedure (see **BATTERY TERMINAL DISCONNECTION AND RECONNECTION**).
9. After replacement, adjust the headlights (see **HEADLIGHT ADJUSTMENT**).

HID BULB REPLACEMENT

HID BULB (HEADLIGHT LOW BEAM)

WARNING: A transient high tension (25, 000 V) occurs at the bulb sockets of the high intensity discharge (HID) lamps when the combination light switch is

turned ON, that may cause serious electrical shock or electrocution if you do not observe the cautions.

CAUTION:

- **Never turn on the combination light switch before fitting the HID bulbs to their bulb sockets and completing the reassembly of the headlight assembly.**
- **Do not service the headlights assembly in wet conditions, such as rain or snow, near a sprinkler system, or when your hands are wet to prevent electrocution.**
- **Do not touch the surface of the HID bulbs with your bare hands and do not stain it with any oils and fats.**
- **Do not disassemble the inverter unit and the igniter unit.**
- **Do not turn on the HID bulb by using a power source other than the battery mounted on the vehicle.**

1. Turn the combination light switch OFF.
2. Make sure the ignition switch is in the LOCK (0), or the vehicle ignition is in the OFF mode, then do the battery terminal disconnection procedure (see **BATTERY TERMINAL DISCONNECTION AND RECONNECTION**).
3. Remove the inner fender (see **FRONT INNER FENDER REPLACEMENT**).
4. Turn the cover (A) 45 ° counterclockwise to remove it from the headlight assembly.

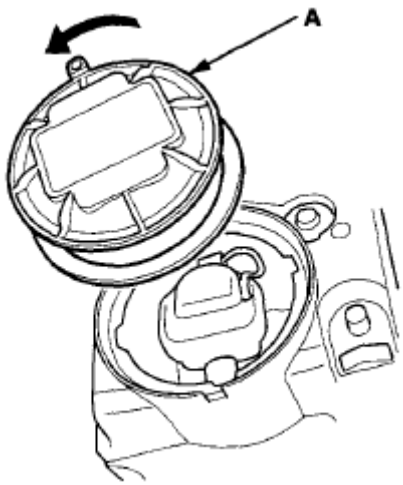


Fig. 42: Turning Cover Counterclockwise To Remove It From Headlight Assembly
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Turn the socket (A) 45 ° counterclockwise to remove it from the bulb (B).

Headlight: 35 W

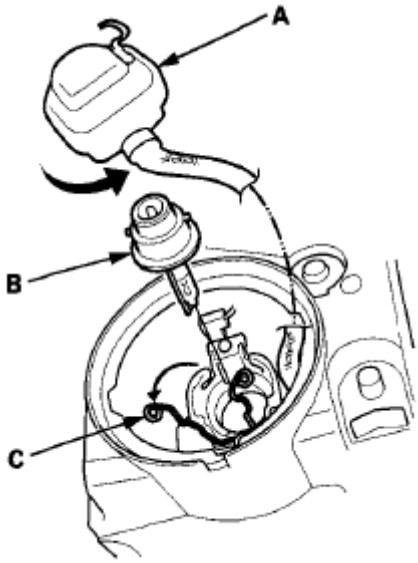


Fig. 43: Turning Socket Counterclockwise To Remove It From Bulb
Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Pull the retaining spring (C) away from the bulb then remove the bulb.
7. Install a new bulb in the reverse order of removal. Make sure the notches in the bulb align with the tabs in the headlight.
8. Install the parts in the reverse order of removal.
9. Do the battery terminal reconnection procedure (see **BATTERY TERMINAL DISCONNECTION AND RECONNECTION**).

BULB REPLACEMENT

HEADLIGHT (HIGH BEAM)

1. Left headlight: Remove the intake air duct cover and duct (see step 4 in **ENGINE REMOVAL**).
2. Right headlight: Remove the coolant reservoir from its mounting bracket, and set them aside.
3. Disconnect the 2P connector (A) from the headlight.

Headlight (High Beam): 60 W

Headlight (High Beam): 60 W

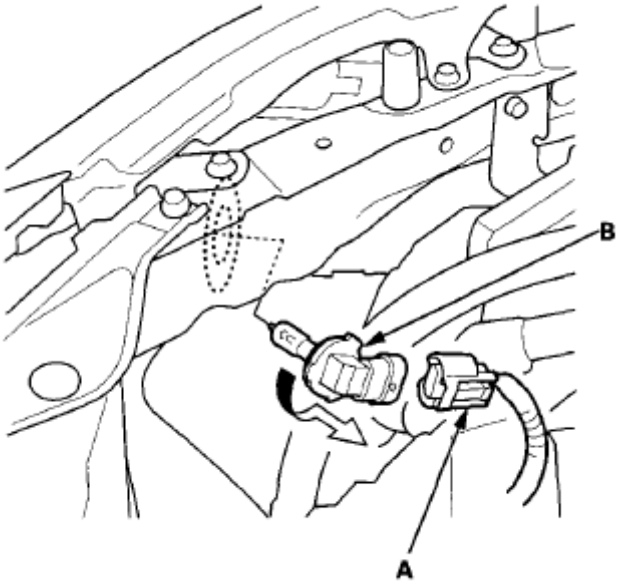


Fig. 44: Disconnecting 2P Connector From Headlight
Courtesy of AMERICAN HONDA MOTOR CO., INC.

The illustration shows the right side.

4. Turn the bulb socket (B) 45 ° counterclockwise to remove the bulb.
5. Install a new bulb in the reverse order of removal.

FRONT SIDE MARKER LIGHT

1. Remove the inner fender (see **FRONT INNER FENDER REPLACEMENT**).
2. Disconnect the 2P connector (A) from the front side marker light.

Front Side Marker Light: 3 CP

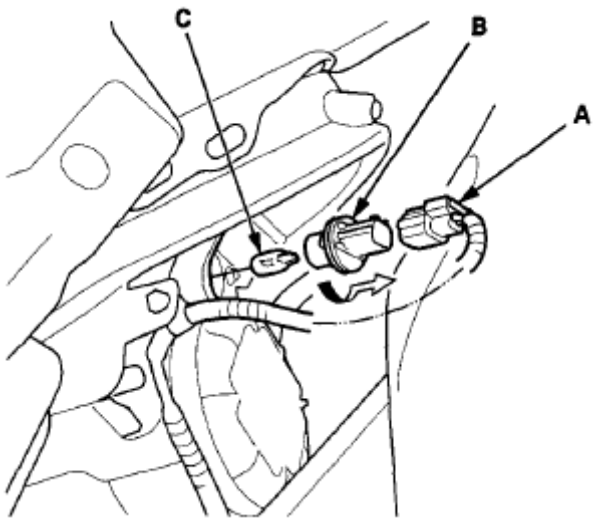


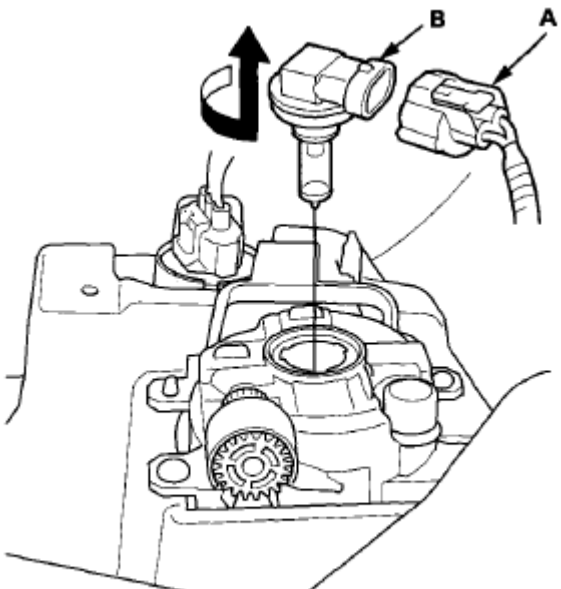
Fig. 45: Disconnecting 2P Connector From Front Side Marker Light
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Turn the bulb socket (B) 45 ° counterclockwise to remove the bulb (C).
4. Install a new bulb in the reverse order of removal.

FOG LIGHT

1. Remove the splash shield (see **FRONT SPLASH SHIELD REPLACEMENT**).
2. Disconnect the 2P connector (A) from the fog light (B).

Fog Light: 55 W



The illustration shows the right side.

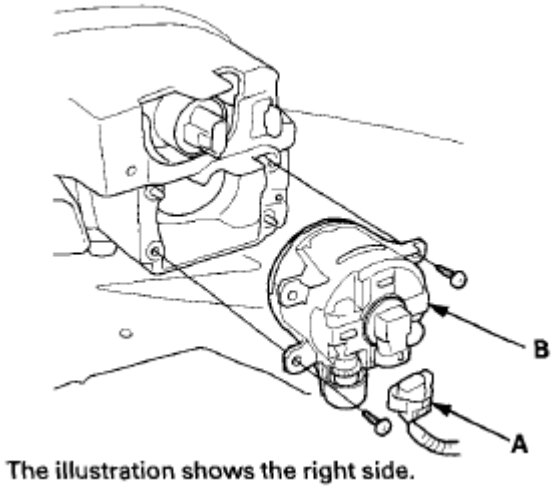
Fig. 46: Disconnecting 2P Connector From Fog Light
Courtesy of AMERICAN HONDA MOTOR CO., INC.

The illustration shows the right side.

3. Turn the bulb socket 45 ° counterclockwise to remove it from the housing.
4. Install a new bulb in the reverse order of removal.

FOG LIGHT REPLACEMENT

1. Remove the front bumper (see **FRONT BUMPER REMOVAL/INSTALLATION**).
2. Disconnect the 2P connector (A) from the fog light (B).



The illustration shows the right side.

Fig. 47: Disconnecting 2P Connector From Fog Light
Courtesy of AMERICAN HONDA MOTOR CO., INC.

The illustration shows the right side.

3. Remove the two screws, then remove the fog light from the front bumper.
4. Install the fog light in the reverse order of removal.
5. After replacement, adjust the fog lights (see **FOG LIGHT REPLACEMENT**).

FOG LIGHT ADJUSTMENT

Before adjusting the fog lights:

- Park the vehicle on a level surface.
- Make sure the tire pressures are correct.
- The driver or someone who weighs the same should sit in the driver's seat.
- Unload the vehicle.

The fog lights should aim down slightly. To check for proper adjustment:

1. Park the vehicle in front of a wall (A).

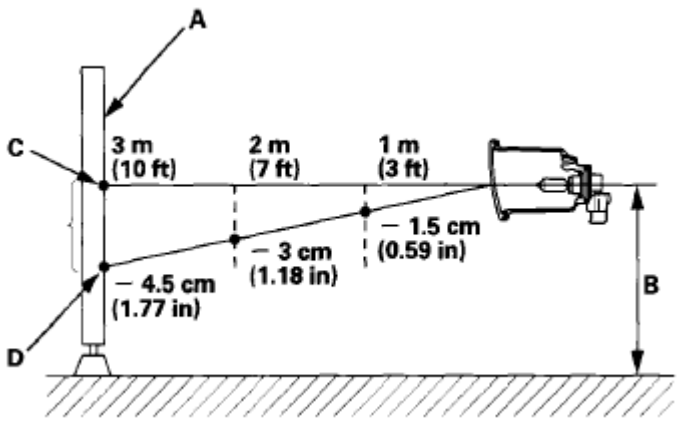


Fig. 48: Checking Aiming Of Fog Lights
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Turn the fog lights on.
3. Determine if the fog lights are aimed properly:
   - Measure the height of the fog lights (B).
   - On the wall, mark the height of the fog lights with a piece of tape (C).
   - Check each fog light beam's height. With the vehicle parked 3 m (9.6 ft) from the screen, the top of the fog light beam should be 4.5 cm (1.77 in) below the tape mark.
4. If necessary, adjust each fog light to the specified height by turning the adjuster (A).

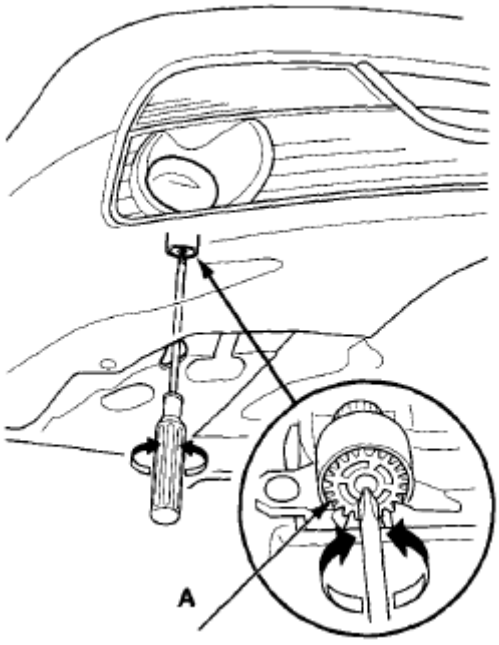


Fig. 49: Turning Adjuster To Adjust Each Fog Light To Specified Height
Courtesy of AMERICAN HONDA MOTOR CO., INC.

TAILLIGHT REPLACEMENT

1. Open the trunk lid, and remove the trunk side trim panel (see **TRIM REMOVAL/INSTALLATION - TRUNK AREA**).
2. Remove the three special nuts (A) from the taillight unit.

   Rear Turn Signal Light: 21 W

   Rear Side Marker Light: 3 CP

   Back-Up Light: 16 W

   Brake Light: (LED)

   Taillight: (LED)

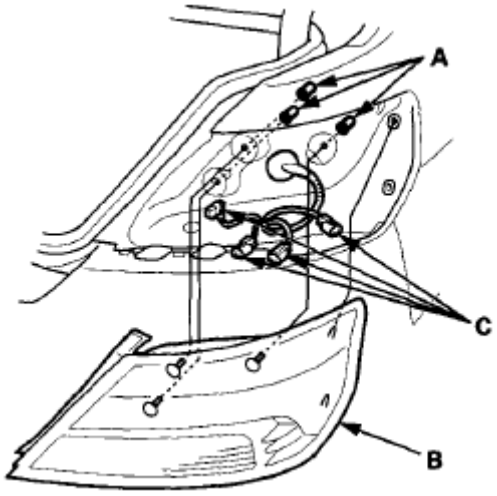


Fig. 50: Identifying Connectors, Taillight And Special Nuts
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Carefully pull out the taillight (B).
4. Disconnect the connectors (C) from the taillight.
5. Turn the bulb sockets (A) 45 ° counterclockwise to remove the bulbs (B).

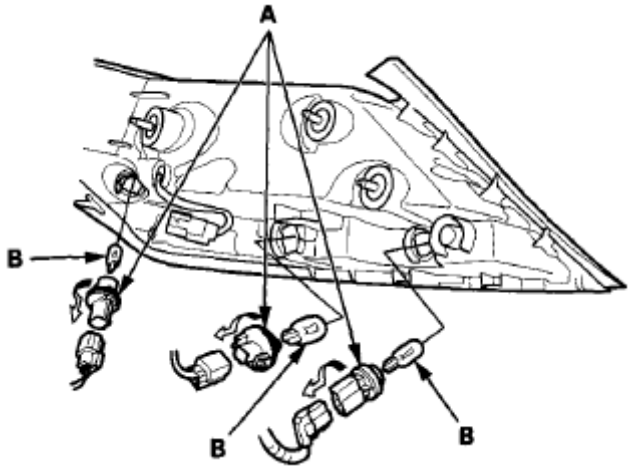


Fig. 51: Identifying Bulbs And Bulb Sockets
Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Install the light in the reverse order of removal.

LICENSE PLATE LIGHT REPLACEMENT

1. Remove the license plate light (A) by pushing it away from the bumper to release the clips (B) from the rear bumper.

   License Plate Light: 3 CP

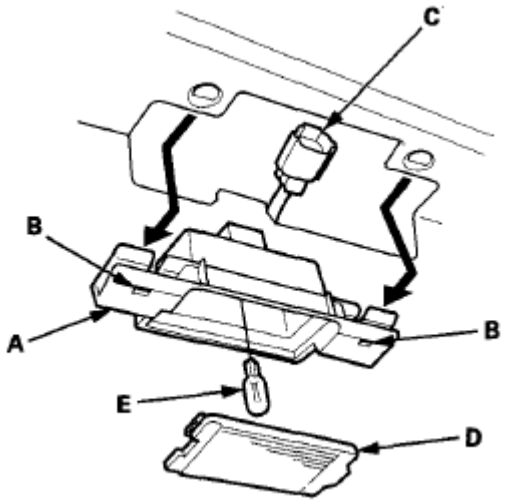


Fig. 52: Removing License Plate Light
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Disconnect the 2P connector (C) from the light.
3. Take the lens (D) off, then remove the bulb (E).
4. Install the light in the reverse order of removal.

HIGH MOUNT BRAKE LIGHT REPLACEMENT

1. Remove the high mount brake light cover (A) by pulling straight down on the cover to release the clips.

High Mount Brake Light: LED

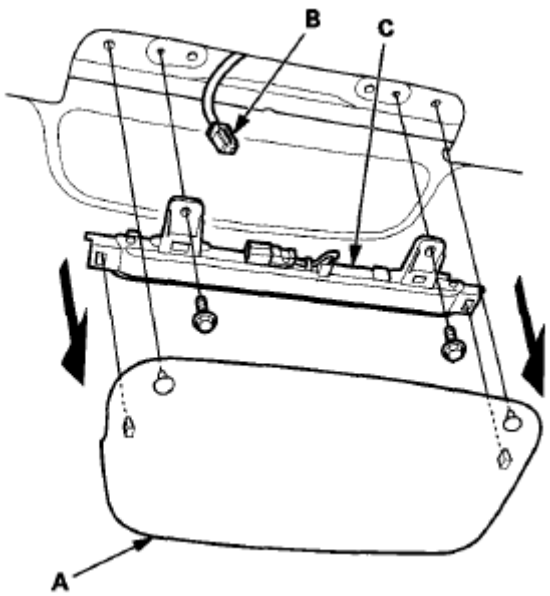


Fig. 53: Removing High Mount Brake Light
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Disconnect the 2P connector (B) from the high mount brake light (C).
3. Remove the two bolts and the high mount brake light.
4. Install the light in the reverse order of removal.
5. Clean the rear window, and install the high mount brake light cover in the reverse order of removal.

BRAKE PEDAL POSITION SWITCH TEST

1. Disconnect the 4P connector (A) from the brake pedal position switch (B).

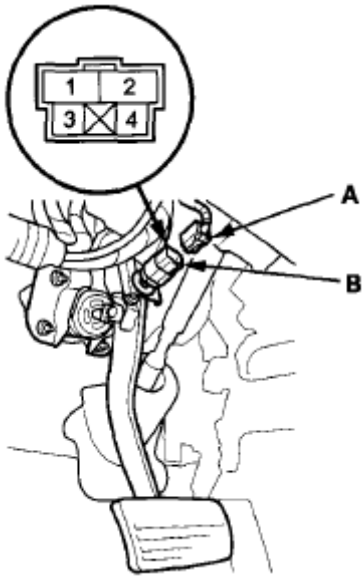


Fig. 54: Identifying 4P Connector And Brake Pedal Position Switch
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Check for continuity between terminals No. 1 and No. 2.
   - There should be no continuity when the brake pedal is released.
   - There should be continuity when the brake pedal is pressed.
3. Check for continuity between terminals No. 3 and No. 4.
   - There should be continuity when the brake pedal is released.
   - There should be no continuity when the brake pedal is pressed.
4. If the test results are not as specified, do the brake pedal and brake pedal position switch adjustment (see **BRAKE PEDAL AND BRAKE PEDAL POSITION SWITCH ADJUSTMENT**), then recheck. If the results are still not as specified, replace the switch (see **BRAKE PEDAL REPLACEMENT**).

AUTOMATIC LIGHTING SENSOR TEST/REPLACEMENT

NOTE: Take care not to scratch the dashboard.

1. Remove the center speaker lid (see **FRONT CENTER SPEAKER**).
2. Pop out the automatic lighting sensor (A).

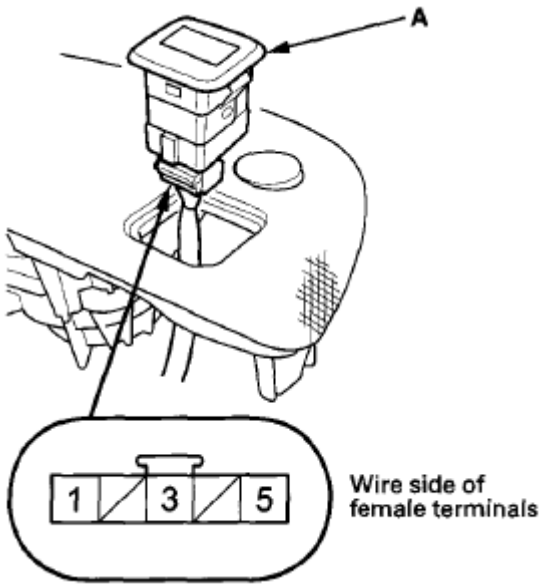


Fig. 55: Identifying Automatic Lighting Sensor
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
4. Measure the voltage between automatic lighting sensor 5P connector terminals No. 3 and No. 5.
   - About 3.6 V in direct sunlight.
   - About 0.2 V when the sensor is covered up.
5. If the voltage is not as specified, replace the automatic lighting sensor.

NOTE: In auto mode, the headlights should turn on at about 1.4 V or less, and turn off at about 2.2 V or more.

2012 ACCESSORIES & EQUIPMENT

Interior Lights - TL

COMPONENT LOCATION INDEX

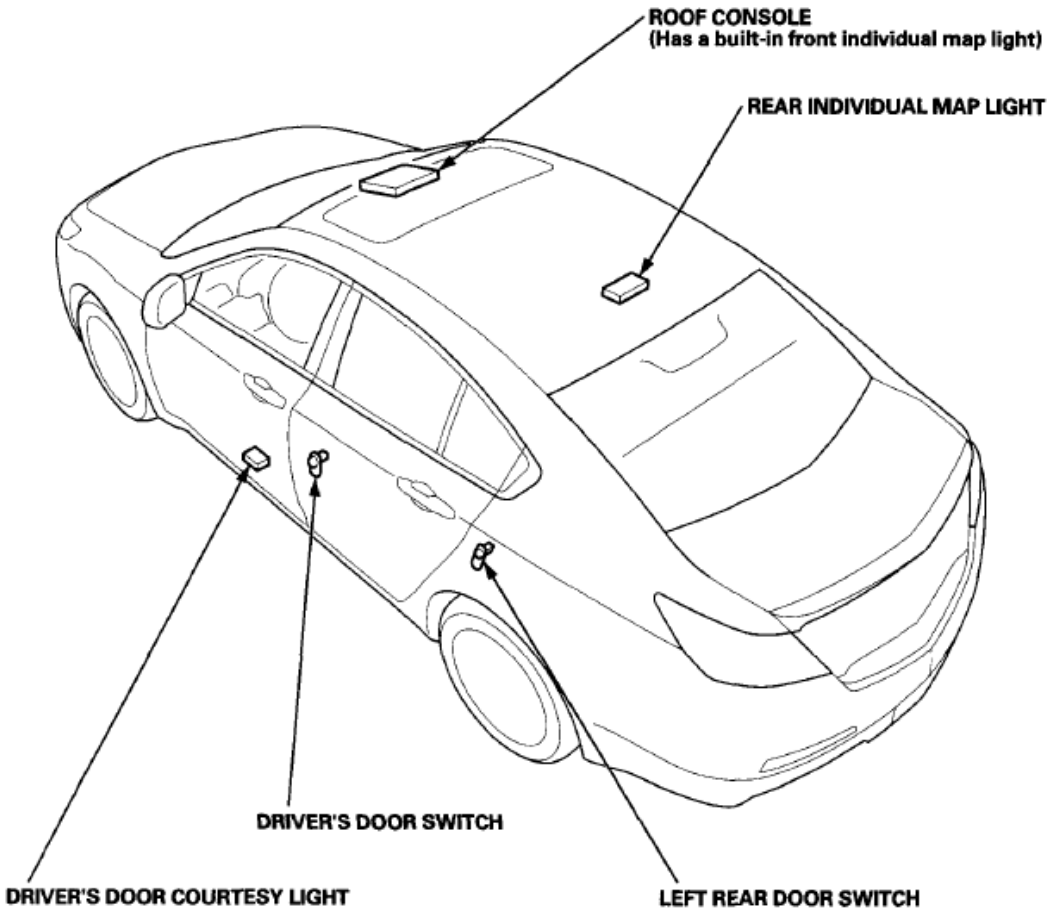


Fig. 1: Interior Lights Components Location (1 Of 3)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

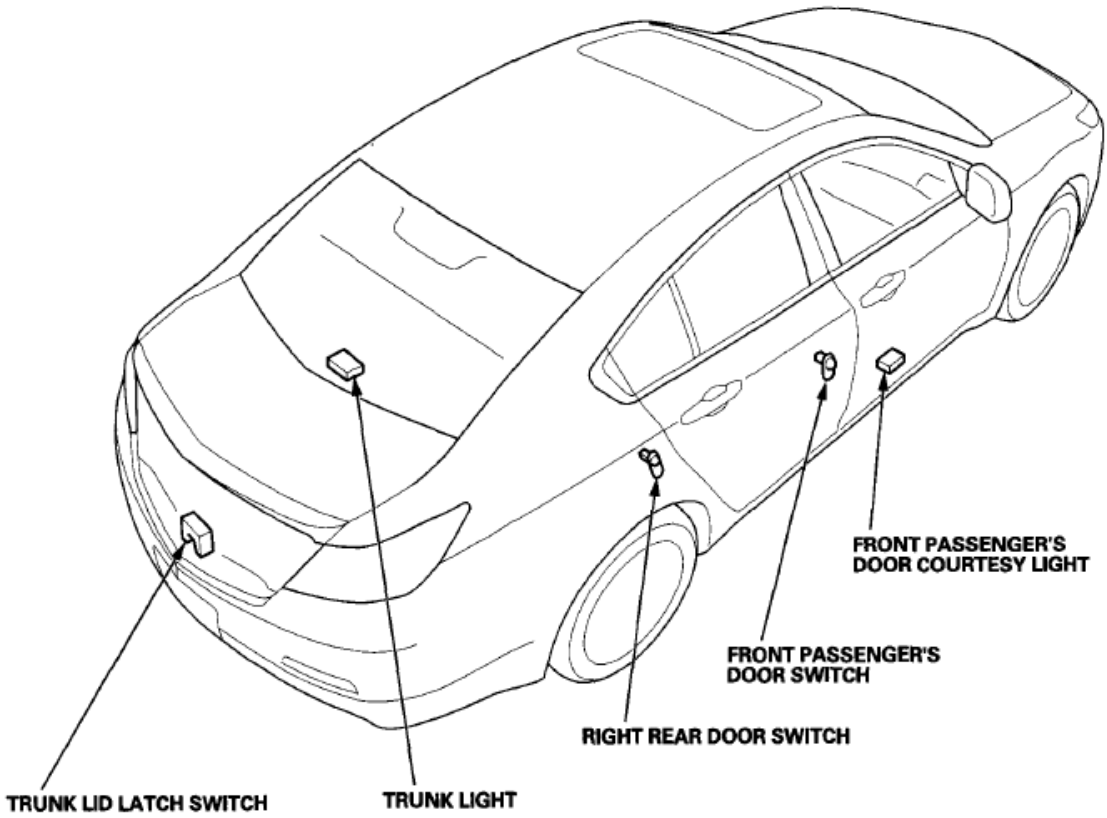


Fig. 2: Interior Lights Components Location (2 Of 3)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

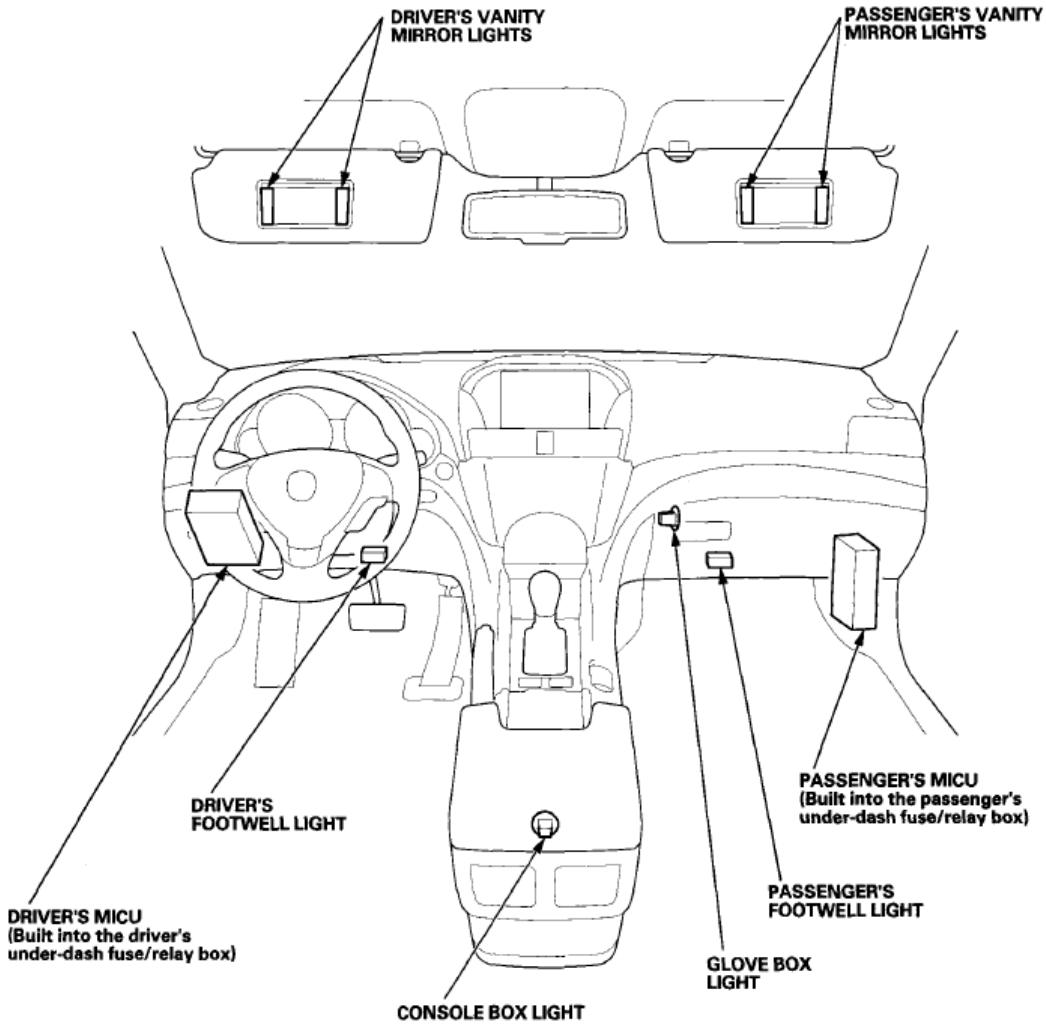


Fig. 3: Interior Lights Components Location (3 Of 3)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

CIRCUIT DIAGRAM

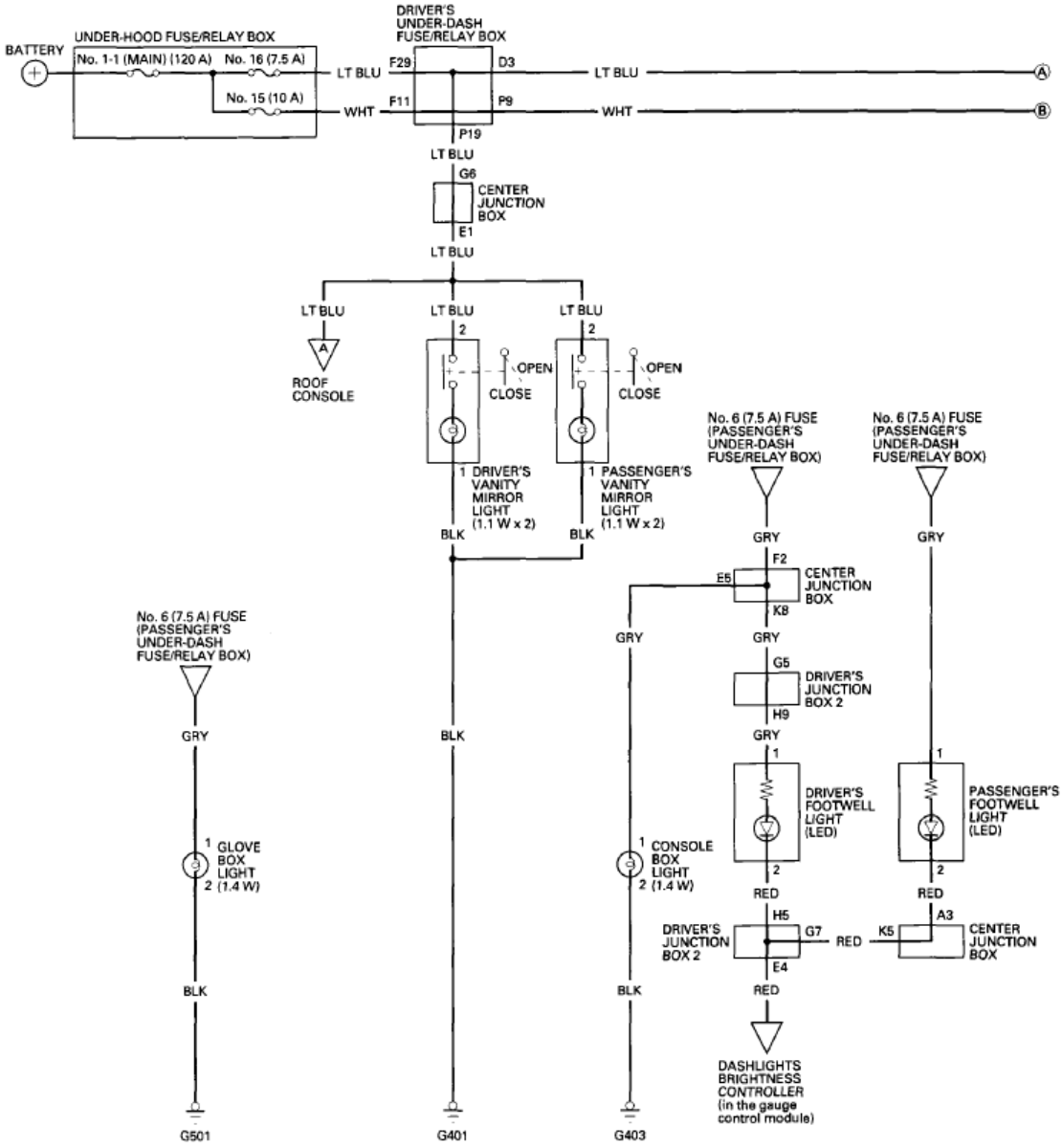


Fig. 4: Interior Lights Circuit Diagram (1 Of 4)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

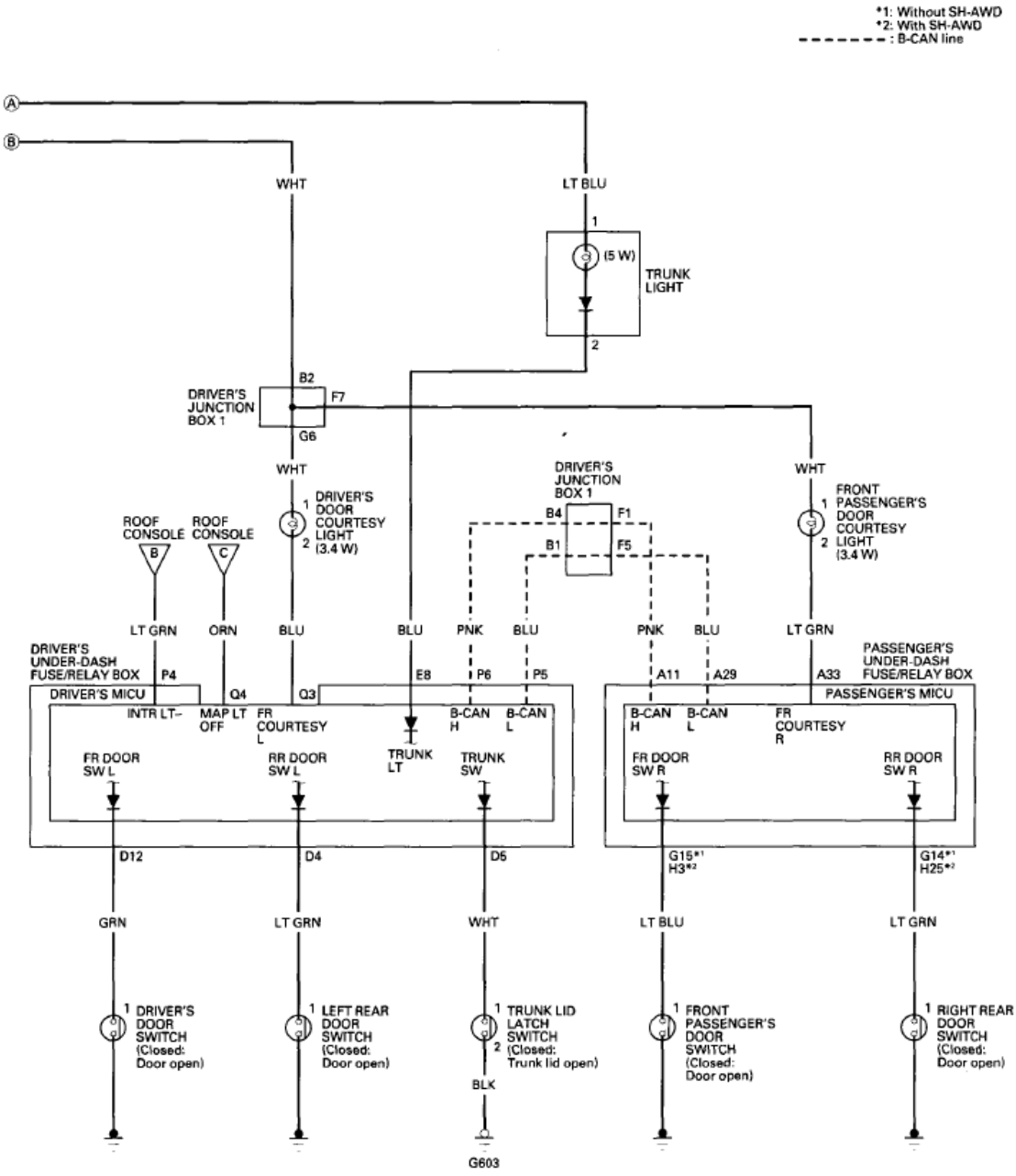


Fig. 5: Interior Lights Circuit Diagram (2 Of 4)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

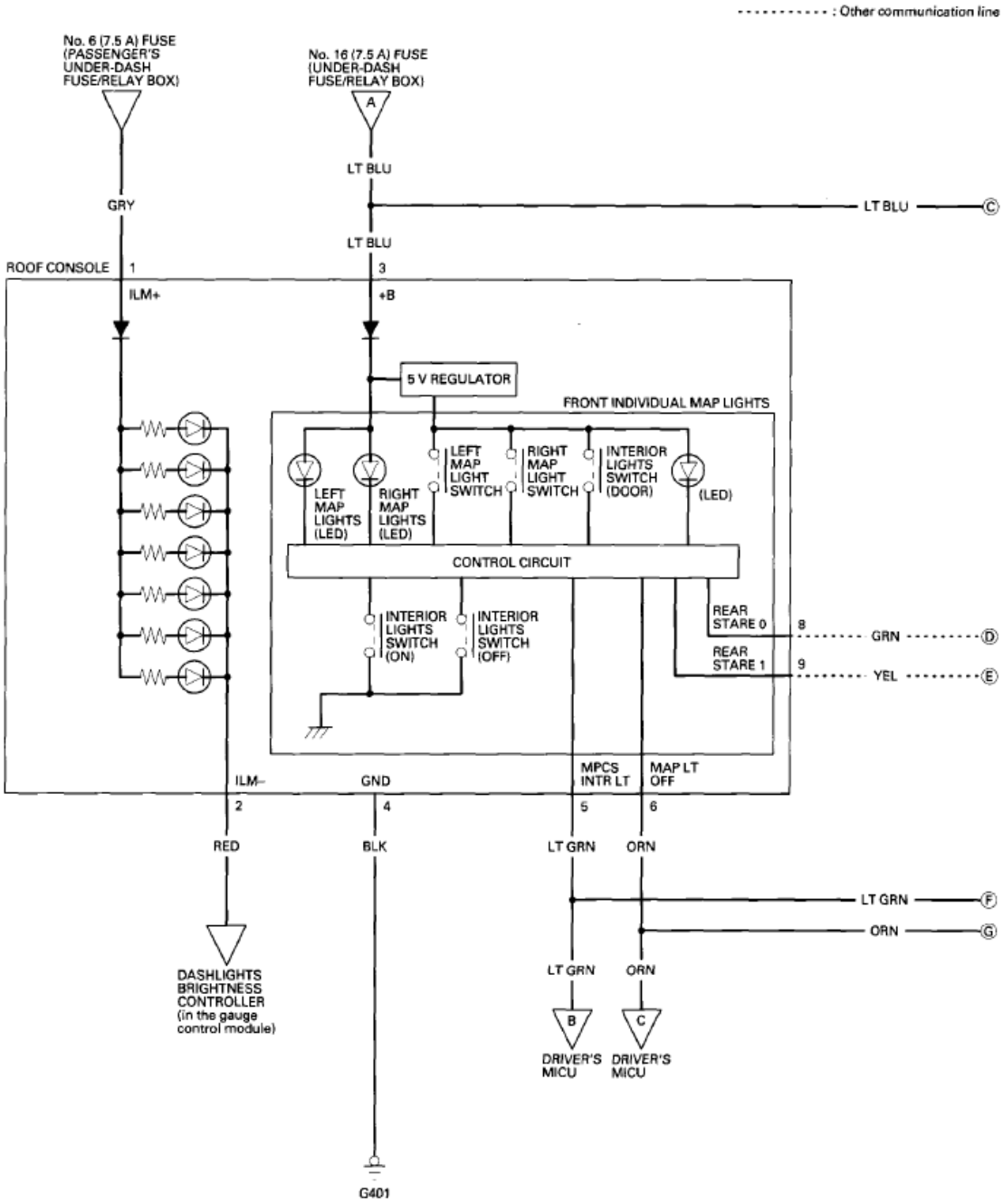


Fig. 6: Interior Lights Circuit Diagram (3 Of 4)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

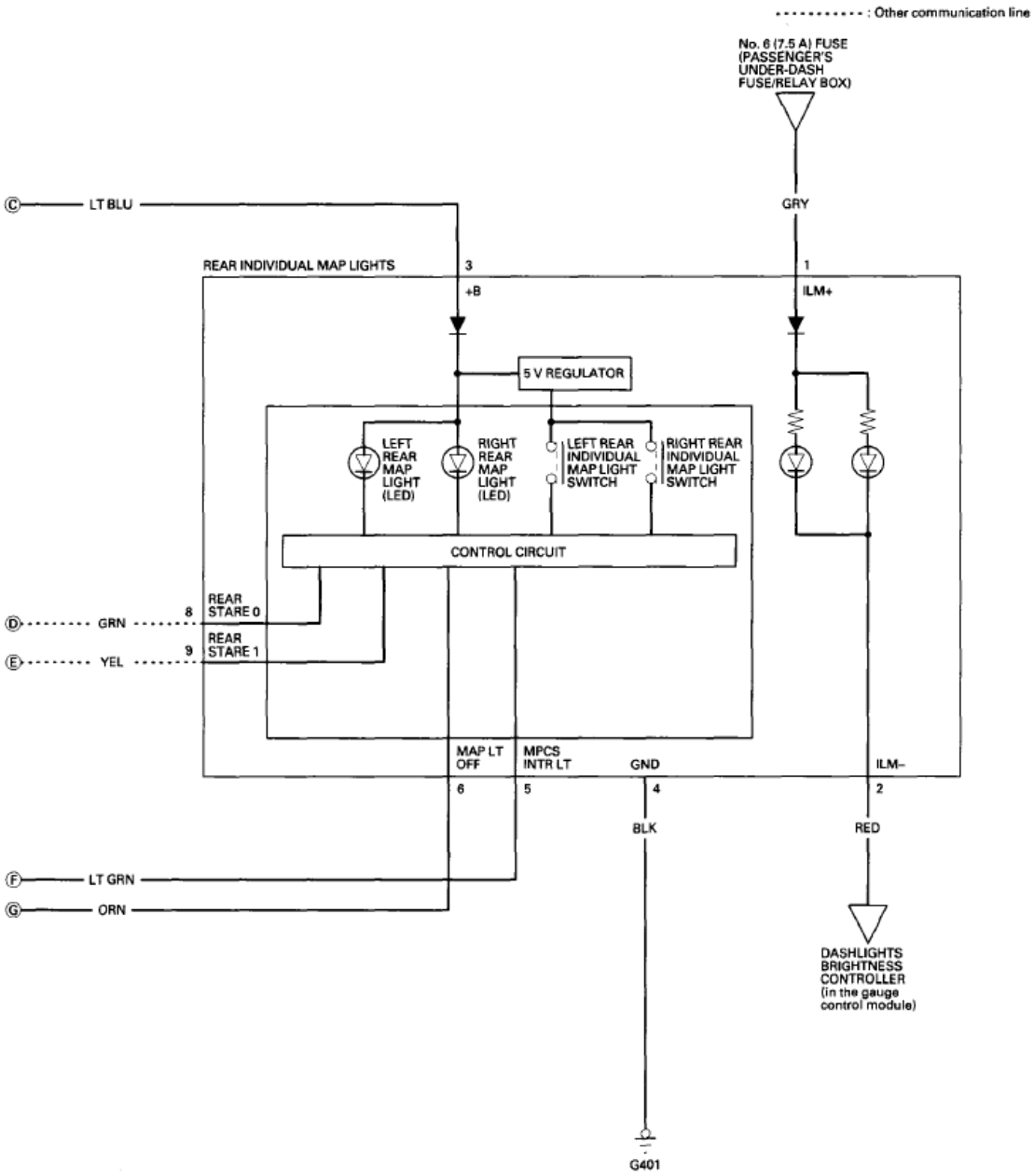


Fig. 7: Interior Lights Circuit Diagram (4 Of 4)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

ROOF CONSOLE INPUT TEST/REPLACEMENT

1. Turn the map light switch OFF.
2. Open the sunglass holder, then remove the two screws (A).

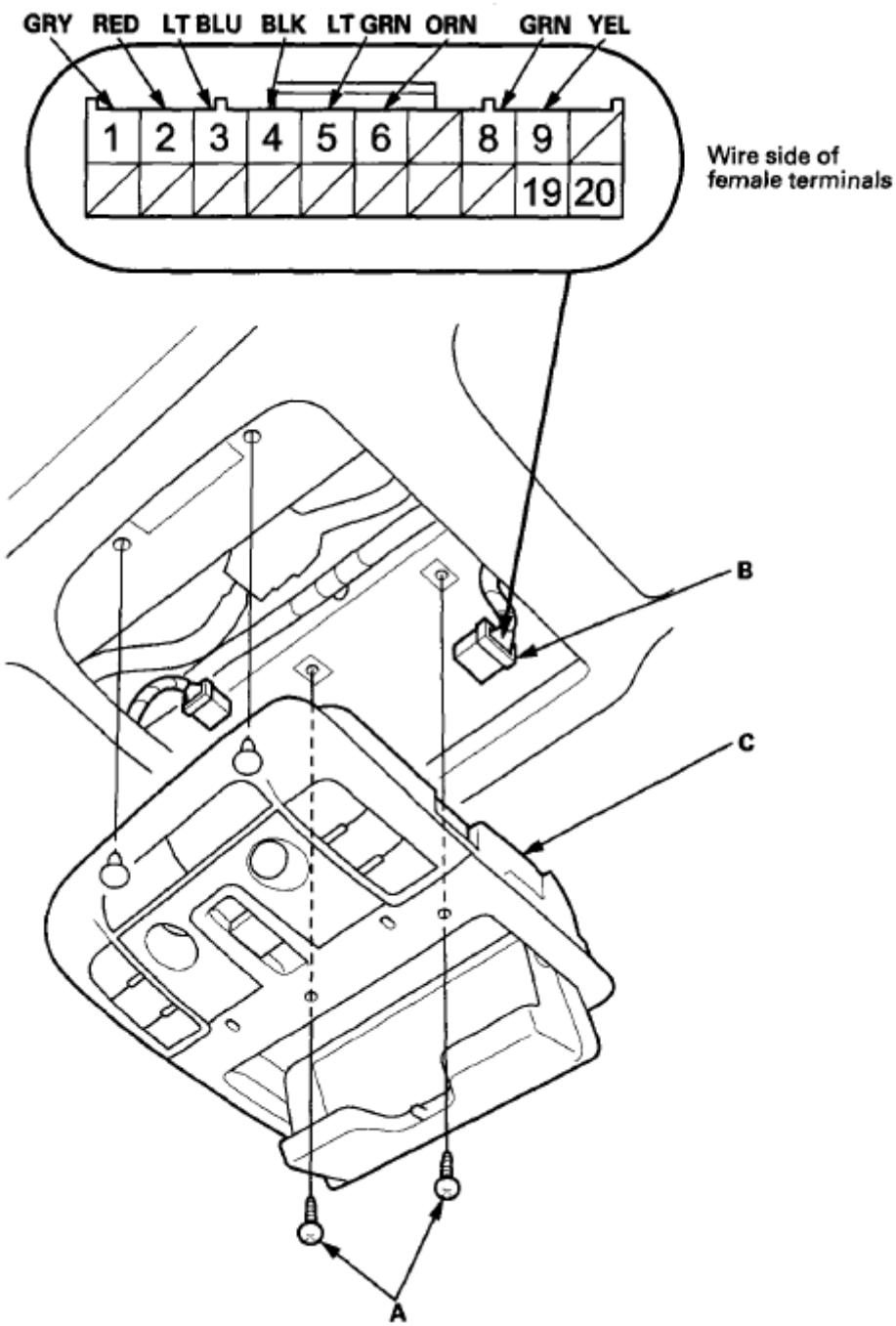


Fig. 8: Identifying 20P Connector End View, Roof Console And Screws
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Disconnect the 20P connector (B) from the roof console (C).
4. Inspect the connector and socket terminals to be sure they are all making good contact.
    - If the terminals are bent, loose or corroded, repair them as necessary, and recheck the system.
    - If the terminals look OK, go to step 5.
5. With the connector still disconnected, do the following input tests:

- If any test indicates a problem, find and correct the cause, then recheck the system.
- If all the input tests prove OK, go to step 6.

Cavity	Wire	Test condition	Test: Desired result	Possible cause if desired result is not obtained
5	LT GRN	Disconnect driver's under-dash fuse/relay box connector P (20P)	Check for continuity between terminal No. 5 and driver's under-dash fuse/relay box connector P (20P) terminal No. 4: There should be continuity.	An open or high resistance in the wire
6	ORN	Disconnect driver's under-dash fuse/relay box connector Q (20P)	Check for continuity between terminal No. 6 and driver's under-dash fuse/relay box connector Q (20P) terminal No. 4: There should be continuity.	An open or high resistance in the wire
8	GRN	Disconnect the rear individual map lights 10P connector	Check for continuity between terminal No. 8 and rear individual map lights 10P connector terminal No. 8: There should be continuity.	An open in the wire
9	YEL	Disconnect the rear individual map lights 10P connector	Check for continuity between terminal No. 9 and rear individual map lights 10P connector terminal No. 9: There should be continuity.	An open in the wire
2	RED	Disconnect the gauge control module 32P connector	Check for continuity between terminal No. 2 and gauge control module 32P connector terminal No. 8: There should be continuity.	An open or high resistance in the wire

6. Reconnect the connector to the roof console, and do the following input tests:
   - If any test indicates a problem, find and correct the cause, then recheck the system.
   - If all the input tests prove OK, the roof console must be faulty; replace it.

Cavity	Wire	Test condition	Test: Desired result	Possible cause if desired result is not obtained
3	LT BLU	Under all conditions	Measure the voltage to ground: There should be battery voltage.	• Blown No. 16 (7.5 A) fuse in the under-hood fuse/relay box • An open or high resistance in the wire
4	BLK	In all ignition switch positions or all power modes	Measure the voltage to ground: There should be less than 0.2 V.	• Poor ground (G401) • An open or high resistance in the ground wire
1	GRY	Combination light switch (PARKING position) ON	Measure the voltage to ground: There should be battery voltage.	• Blown No. 6 (7.5 A) fuse in the passenger's under-dash fuse/relay box • An open or high resistance in the wire

REAR INDIVIDUAL MAP LIGHT INPUT TEST/REPLACEMENT

1. Carefully pry off the lens (A) with a small screwdriver.

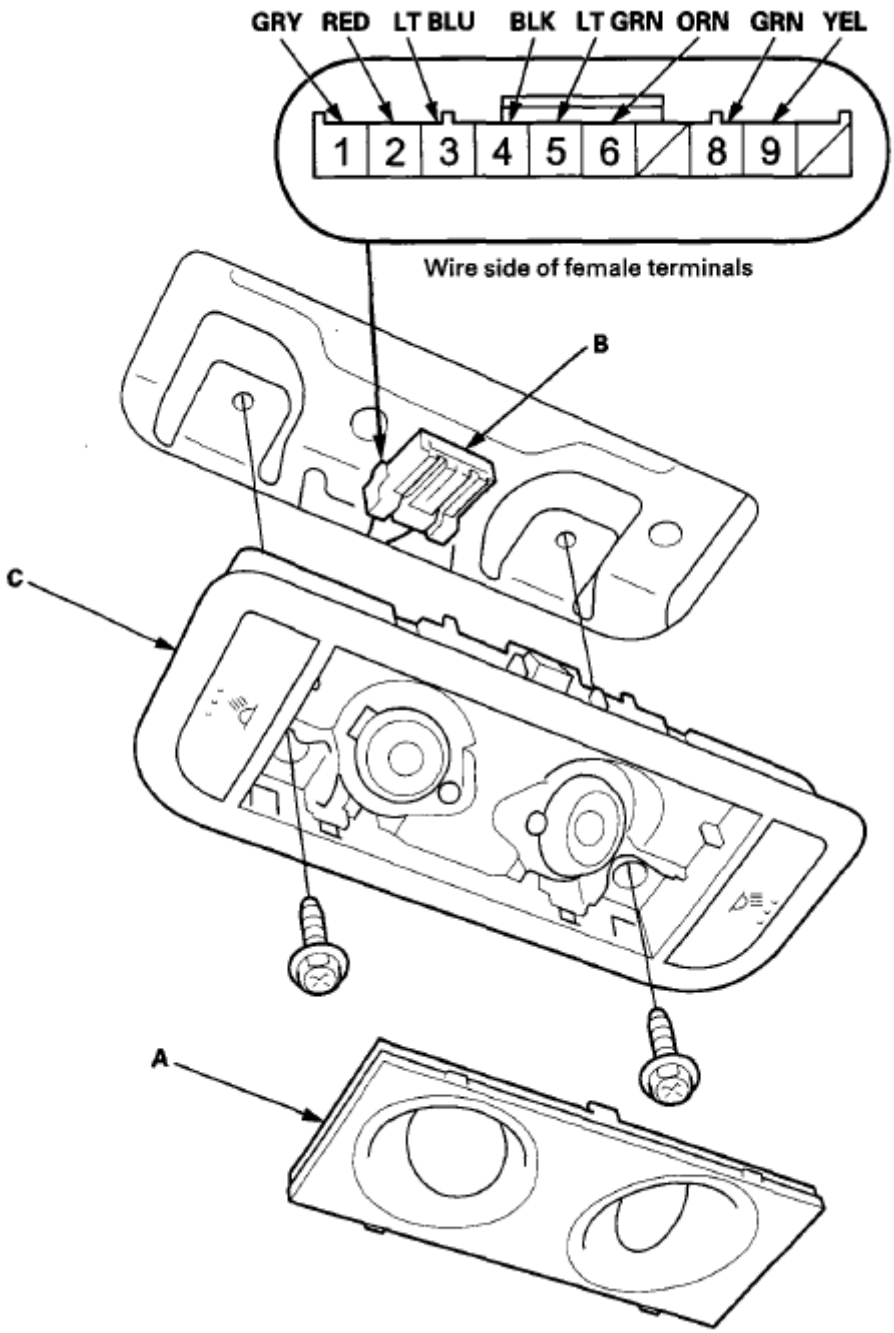


Fig. 9: Identifying 10P Connector End View, Rear Map Light And Lens
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Remove the two mounting bolts.
3. Disconnect the 10P connector (B) from the rear individual map light (C).

4. Inspect the connector and socket terminals to be sure they are all making good contact.
   - If the terminals are bent, loose or corroded, repair them as necessary, and recheck the system.
   - If the terminals look OK, go to step 5.
5. With the connector still disconnected, do the following input tests:
   - If any test indicates a problem, find and correct the cause, then recheck the system.
   - If all the input tests prove OK, go to step 6.

Cavity	Wire	Test condition	Test: Desired result	Possible cause if desired result is not obtained
5	LT GRN	Disconnect driver's under-dash fuse/relay box connector P (20P)	Check for continuity between terminal No. 5 and driver's under-dash fuse/relay box connector P (20P) connector terminal No. 4: There should be continuity.	An open or high resistance in the wire
6	ORN	Disconnect driver's under-dash fuse/relay box connector Q (20P)	Check for continuity between terminal No. 6 and driver's under-dash fuse/relay box connector Q (20P) connector terminal No. 4: There should be continuity.	An open or high resistance in the wire
8	GRN	Disconnect the roof console 20P connector	Check for continuity between terminal No. 8 and roof console 20P connector terminal No. 8: There should be continuity.	An open in the wire
9	YEL	Disconnect the roof console 20P connector	Check for continuity between terminal No. 9 and roof console 20P connector terminal No. 9: There should be continuity.	An open in the wire
2	RED	Disconnect the gauge control module 32P connector	Check for continuity between terminal No. 2 and gauge control module 32P connector terminal No. 8: There should be continuity.	An open or high resistance in the wire

6. Reconnect the connector to the rear individual map light, and do the following input tests:
   - If any test indicates a problem, find and correct the cause, then recheck the system.
   - If all the input tests prove OK, the rear individual map light must be faulty; replace it.

Cavity	Wire	Test condition	Test: Desired result	Possible cause if desired result is not obtained
3	LT BLU	Under all conditions	Measure the voltage to ground: There should be battery voltage.	• Blown No. 16 (7.5 A) fuse in the under-hood fuse/relay box • An open or high resistance in the wire
4	BLK	In all ignition switch positions or all power modes	Measure the voltage to ground: There should be less than 0.2 V.	• Poor ground(G401) • An open or high resistance in the ground wire
				• Blown No. 6 (7.5 A) fuse in

1	GRY	Combination light switch (PARKING position) ON	Measure the voltage to ground: There should be battery voltage.	the passenger's under-dash fuse/relay box • An open or high resistance in the wire

TRUNK LIGHT TEST/REPLACEMENT

1. Open the trunk lid.
2. Carefully pry out the trunk light (A).

Trunk Light: 5 W

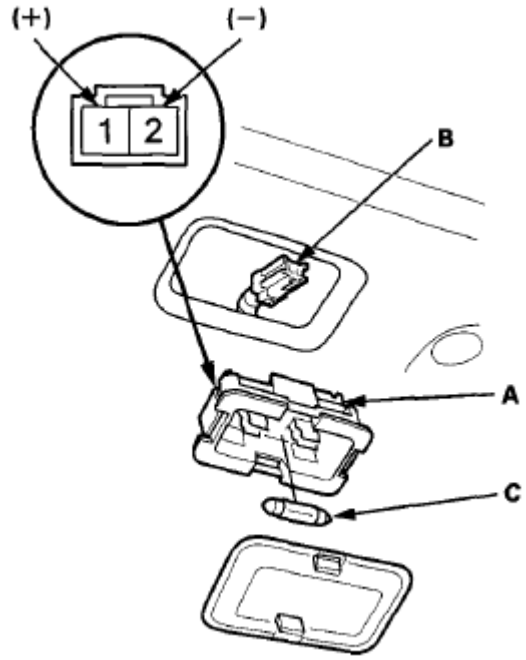


Fig. 10: Identifying 2P Connector End View, Bulb And Trunk Light
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Disconnect the 2P connector (B) from the light.
4. Check for continuity between terminals No. 1 (+) and No. 2 (-). There should be continuity. If there is no continuity, check the bulb (C). If the bulb is OK, replace the trunk light assembly.
5. Install the light in the reverse order of removal.

COURTESY LIGHT REPLACEMENT

1. Carefully pry off the lens (A) with a small screwdriver.

Courtesy Light: 3.4 W

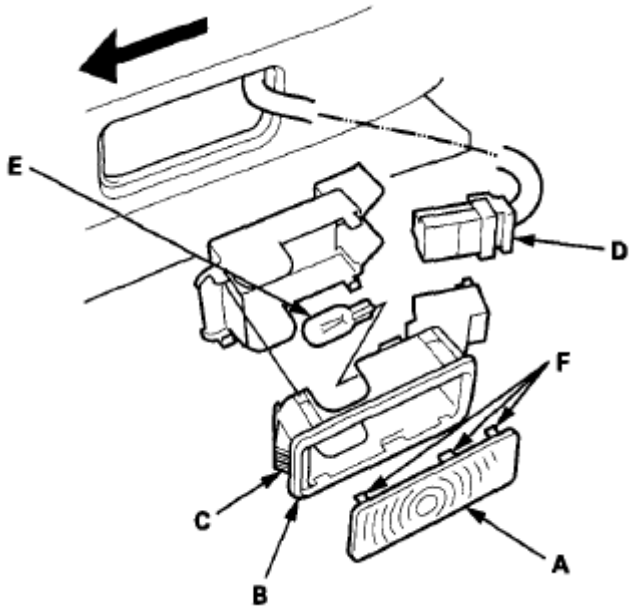


Fig. 11: Removing Housing From Door Panel By Prying At Lift Point And Disconnecting 2P Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Carefully remove the housing (B) from the door panel by prying at the lift point (C), then disconnect the 2P connector (D).
3. Remove the bulb (E) from the socket.
4. Install the parts in the reverse order of removal. Note the direction of the lens lock tabs (F).

GLOVE BOX LIGHT REPLACEMENT

1. Remove the glove box stops and damper (see **GLOVE BOX DAMPER REPLACEMENT**).
2. Carefully pry the glove box light out of the glove box housing.
3. Twist the socket (A) to remove it from the glove box light (B).

Glove Box Light: 1.4 W

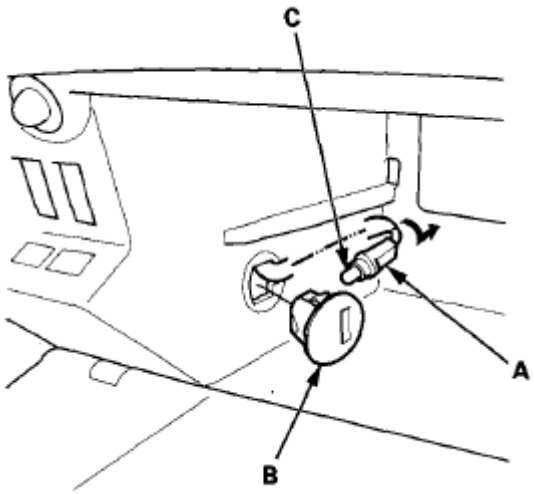


Fig. 12: Identifying Socket, Glove Box Light And Bulb
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Remove the bulb (C) from the socket.
5. Install the light in the reverse order of removal.

CONSOLE BOX LIGHT REPLACEMENT

1. Open the center console lid.
2. Carefully pry out the console box light out of the center console.
3. Twist the socket (A) to remove it from the console box light (B).

Console Box Light: 1.4 W

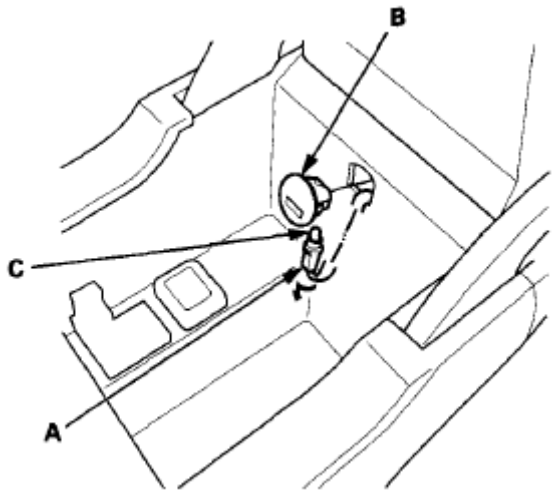


Fig. 13: Identifying Socket, Console Box Light And Bulb
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Remove the bulb (C) from the socket.
5. Install the light in the reverse order of removal.

VANITY MIRROR LIGHT TEST/REPLACEMENT

1. Remove the sunvisor (see **TRUNK LID HINGE TRIM**).
2. Disconnect the 2P connector (A) from the sunvisor (B).

Vanity Mirror Light: 1.1 W x 2

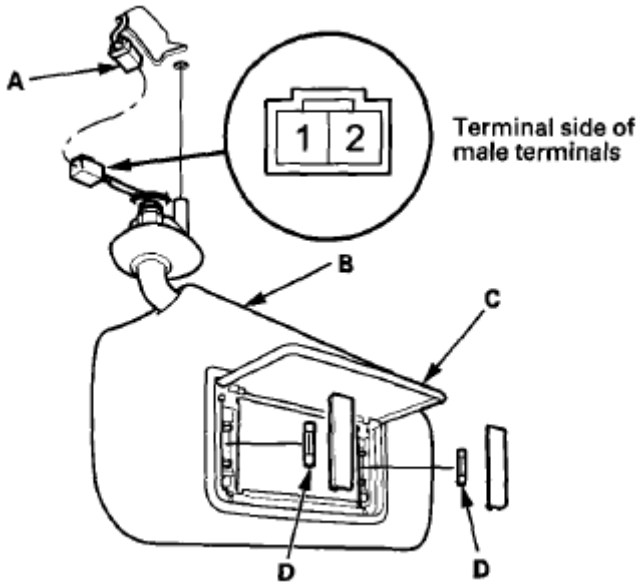


Fig. 14: Identifying 2P Connector, Sunvisor, Mirror Cover And Bulbs
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Check for continuity between the terminals in each vanity mirror cover (C) position according to the table.

Terminal / Position	1		2
Open	○	○	○
Closed			

Fig. 15: Continuity Reference Chart For Vanity Mirror Cover
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. If the continuity is not as specified, check the bulbs (D). If the bulbs are OK, replace the sunvisor (see **TRUNK LID HINGE TRIM**).
5. Install the parts in the reverse order of removal.

FOOTWELL LIGHT REPLACEMENT

DRIVER'S

1. Remove the driver's dashboard undercover (see **DRIVER'S DASHBOARD UNDERCOVER REMOVAL/INSTALLATION**).
2. Remove the footwell light (A) from the driver's dashboard undercover.

   Footwell Light: LED

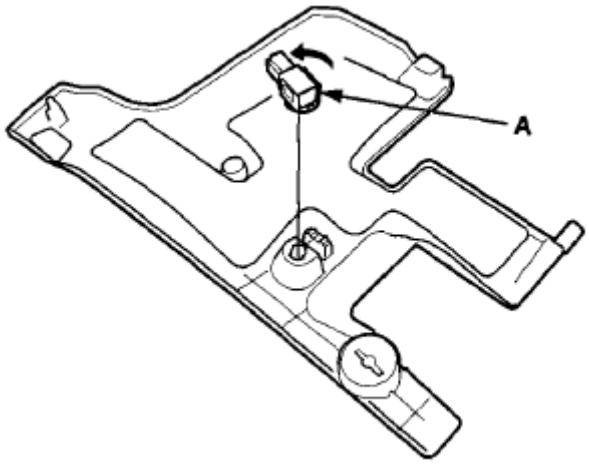


Fig. 16: Identifying Footwell Light On Driver's Dashboard Undercover
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Remove the light.
4. Install the light in the reverse order of removal.

PASSENGER'S

1. Remove the passenger's dashboard undercover (see **GLOVE BOX DAMPER REPLACEMENT**).
2. Remove the footwell light (A) from the passenger's dashboard undercover.

   Footwell Light: LED

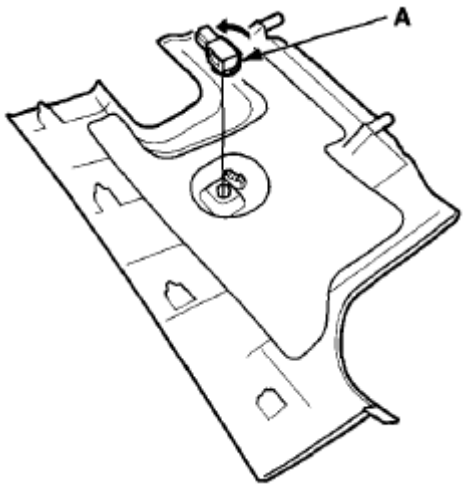


Fig. 17: Identifying Footwell Light On Passenger's Dashboard Undercover
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Remove the light.
4. Install the light in the reverse order of removal.

TRUNK LID LATCH SWITCH TEST

1. Open the trunk lid, and remove the trunk lid trim (see **TRIM REMOVAL/INSTALLATION - TRUNK LID**).
2. Disconnect the 3P connector (A) from the trunk lid latch (B).

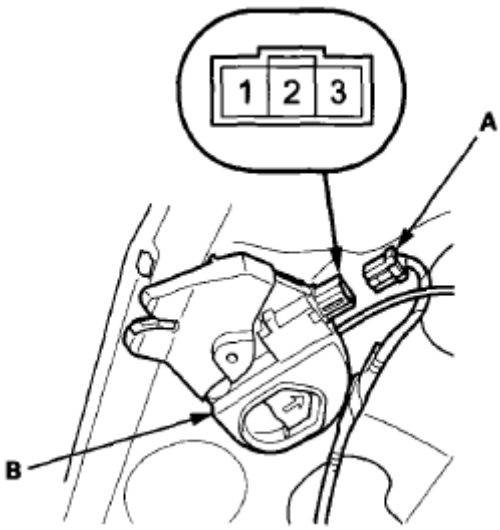


Fig. 18: Identifying 3P Connector End View, & Trunk Lid Latch
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Check for continuity between the terminals in each switch position according to the table.

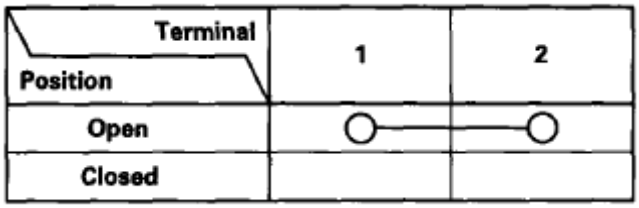


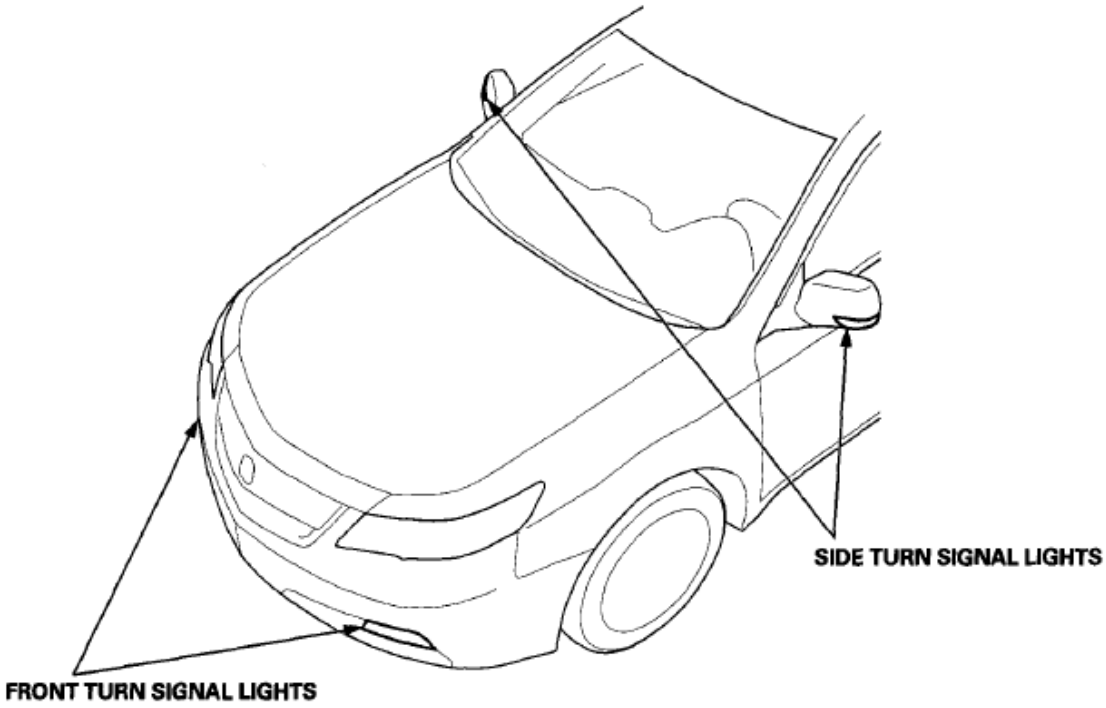
Fig. 19: Trunk Lid Latch Switch Continuity Reference Chart
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. If the continuity is not as specified, the trunk lid latch switch is faulty; replace the trunk lid latch (see **TRUNK LID LATCH REPLACEMENT**).

2012 ACCESSORIES & EQUIPMENT

Turn Signal/Hazard Warning Lights - TL

COMPONENT LOCATION INDEX



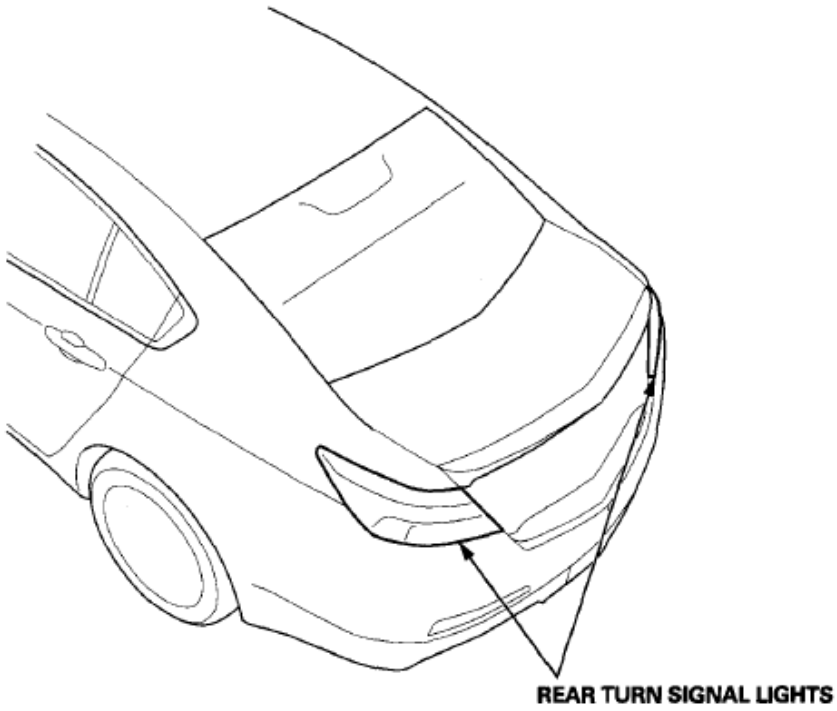


Fig. 1: Turn Signal/Hazard Warning Lights Components Location (1 Of 2)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

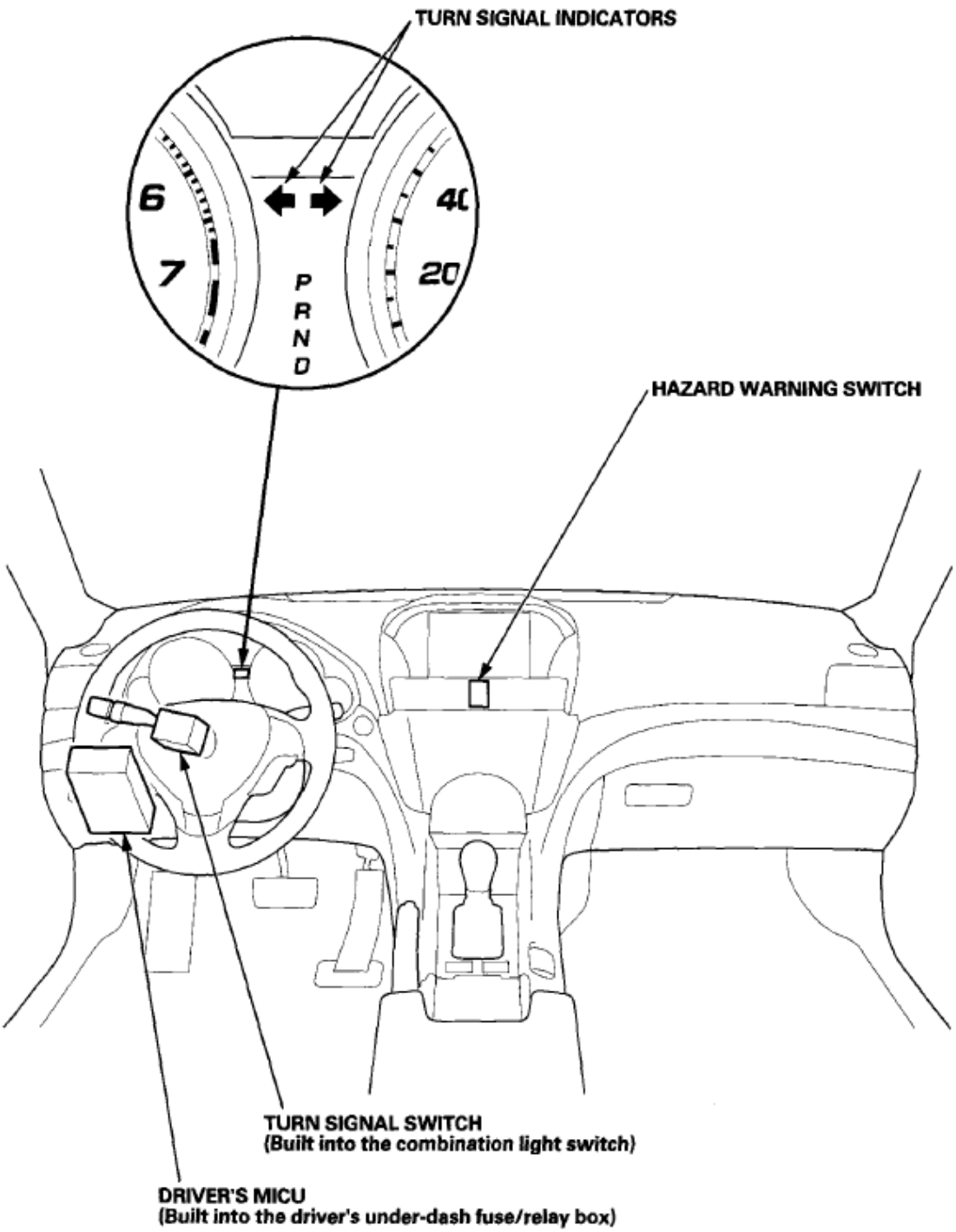


Fig. 2: Turn Signal/Hazard Warning Lights Components Location (2 Of 2)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

CIRCUIT DIAGRAM

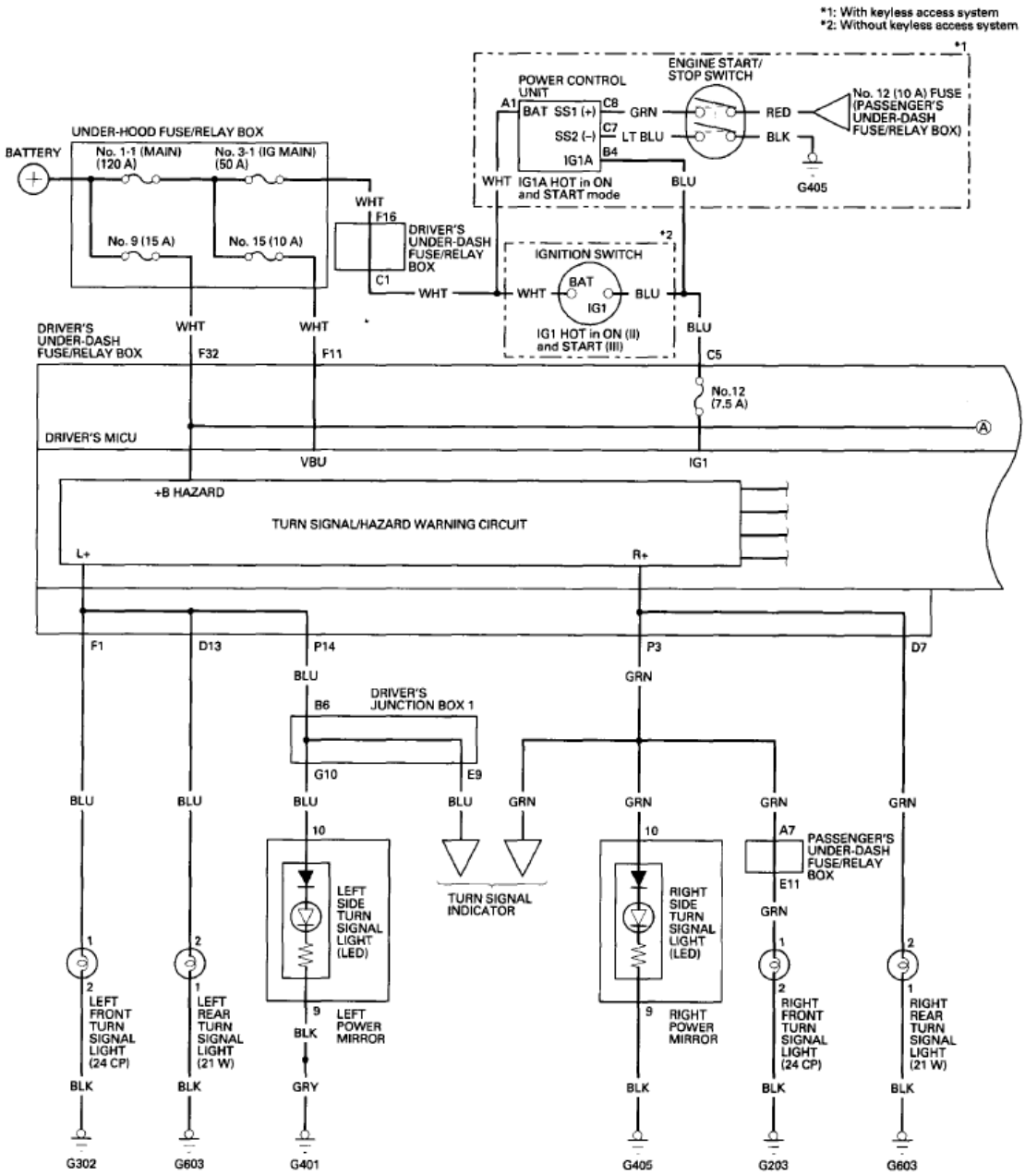


Fig. 3: Turn Signal/Hazard Warning Lights - Circuit Diagram (1 Of 2)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

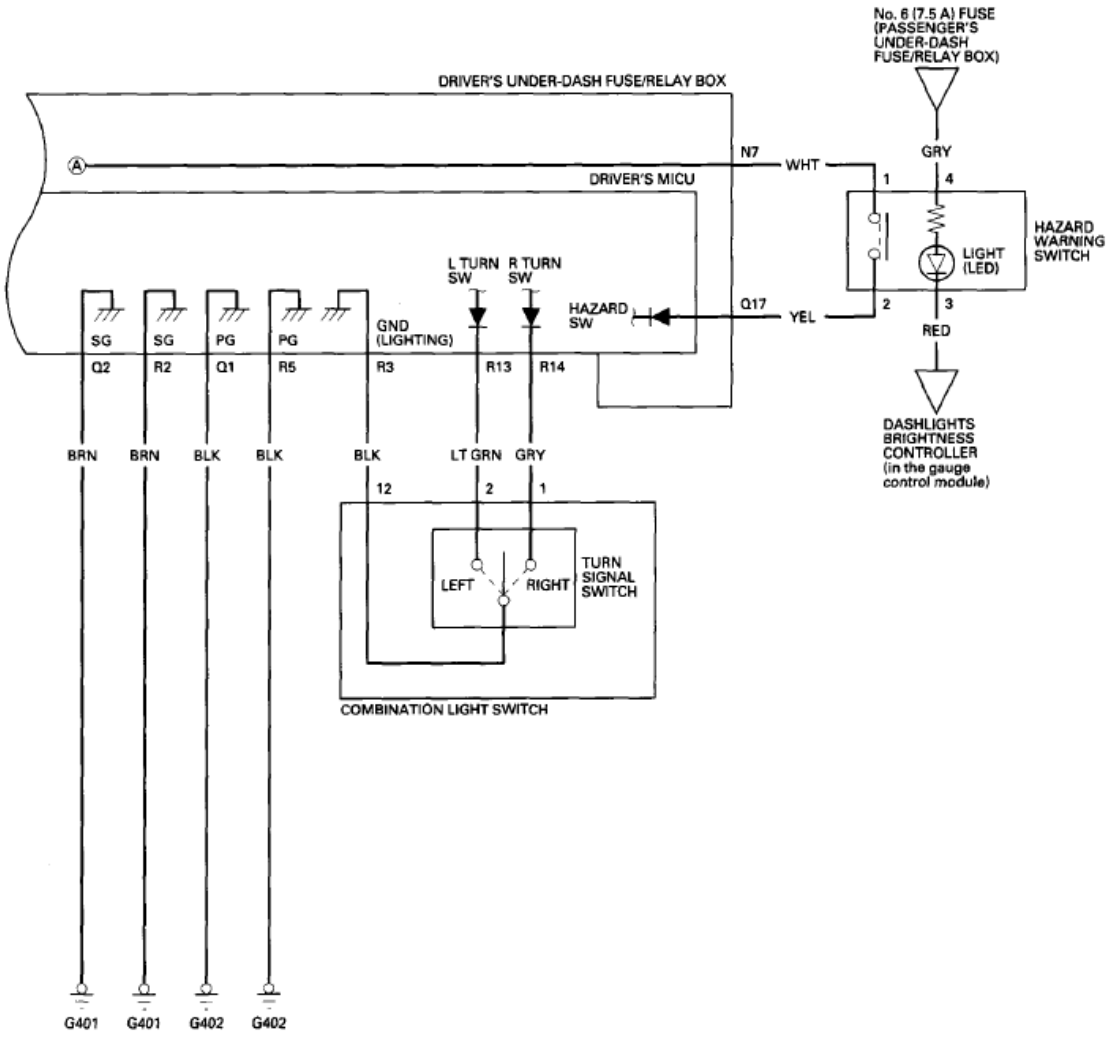


Fig. 4: Turn Signal/Hazard Warning Lights - Circuit Diagram (2 Of 2)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

DTC TROUBLESHOOTING

DTC B1280: TURN SIGNAL SWITCH CIRCUIT MALFUNCTION

NOTE: If you are troubleshooting multiple DTCs, be sure to follow the instructions in B-CAN System Diagnosis Test Mode A (see TROUBLESHOOTING - B- CAN SYSTEM DIAGNOSIS TEST MODE A).

1. Clear the DTCs with the HDS.
2. Turn the ignition switch to LOCK (0) and then back to ON (II), or press the engine start/stop button to select the OFF mode and then the ON mode.
3. Operate the turn signal switch in the left and the right positions, and wait for at least 6 seconds.
4. Check for DTCs with the HDS.

Is DTC B1280 indicated?

YES - Go to step 5.

NO - Intermittent failure, the system is OK at this time. Check for loose or poor connections.

5. Select LIGHTING from the BODY ELECTRICAL SYSTEM SELECT menu, then enter DATA LIST.
6. Check each turn signal switch position value with the DATA LIST menu.

WHEN TURN SIGNAL SWITCH IS IN LEFT POSITION

Data List	Value
Turn Signal Switch (LEFT)	ON
Turn Signal Switch (RIGHT)	OFF

WHEN TURN SIGNAL SWITCH IS IN RIGHT POSITION

Data List	Value
Turn Signal Switch (LEFT)	OFF
Turn Signal Switch (RIGHT)	ON

Are all data list values correct?

YES - Faulty driver's MICU; replace the driver's under- dash fuse/relay box (see **DRIVER'S UNDER-DASH FUSE/RELAY BOX (MICU) REMOVAL AND INSTALLATION**).

NO - Go to step 7.

7. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
8. Disconnect driver's under- dash fuse/relay box connector R (24P).
9. Check for continuity between body ground and driver's under- dash fuse/relay box connector R (24P) terminals No. 13 and No. 14 individually.

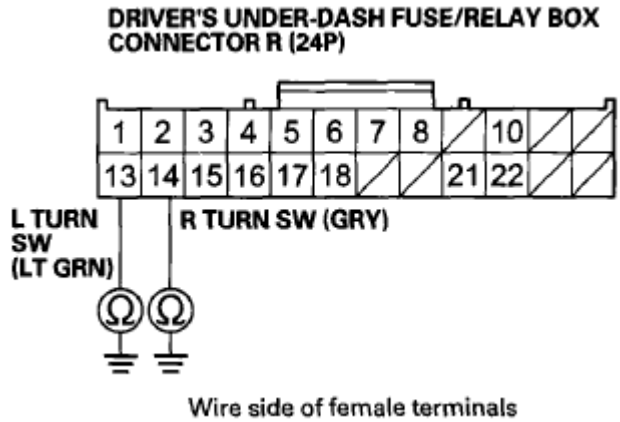


Fig. 5: Checking Continuity Between Body Ground And Driver's Under- Dash Fuse/Relay Box Connector R (24P) Terminals No. 13 And No. 14 Individually

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair a short to ground in the wire.

NO - Go to step 10.

10. Check for continuity between driver's under- dash fuse/relay box connector R (24P) terminals No. 13 and No. 14.

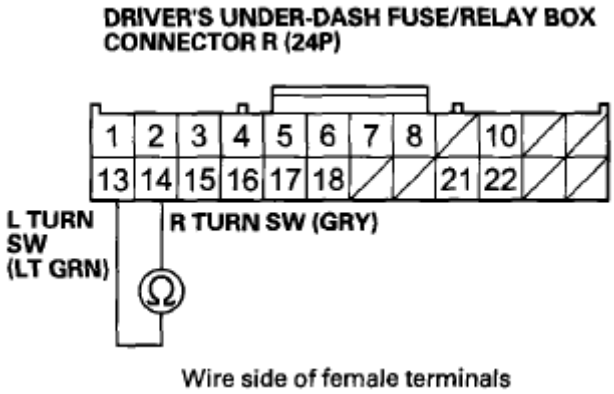


Fig. 6: Checking Continuity Between Driver's Under- Dash Fuse/Relay Box Connector R (24P) Terminals No. 13 And No. 14
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair a short between the wires.

NO - Replace the combination light switch (see **COMBINATION LIGHT SWITCH TEST/REPLACEMENT**).

MICU INPUT TEST

NOTE:

- **Before testing, troubleshoot the multiplex integrated control system first, using B- CAN System Diagnosis Test Mode A (see TROUBLESHOOTING - B- CAN SYSTEM DIAGNOSIS TEST MODE A).**
- **Before testing, make sure the No. 12 (7.5 A) fuse in the driver's under-dash fuse/relay box is OK.**

Driver's MICU

1. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
2. Remove the driver's dashboard undercover (see **DRIVER'S DASHBOARD UNDERCOVER**

REMOVAL/INSTALLATION).

3. Disconnect driver's under- dash fuse/relay box connectors D, F, N, P, Q, and R.

NOTE: All connector views are wire side of female terminals.

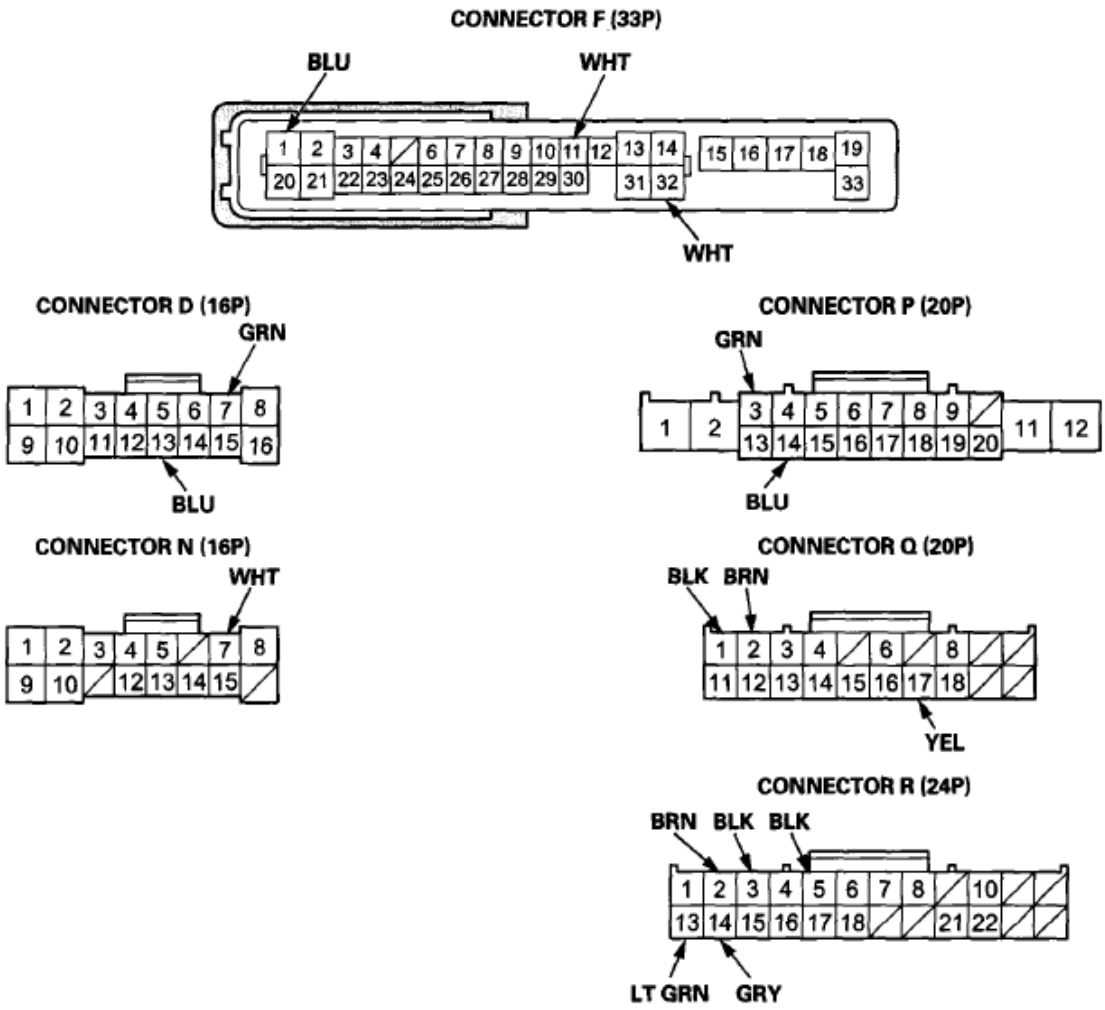


Fig. 7: Identifying Driver's MICU F (33P), D (16P), P (20P), N (16P), Q (20P) & R (24P) Connector End Views
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Inspect the connector and socket terminals to be sure they are all making good contact.
   - If the terminals are bent, loose or corroded, repair them as necessary, and recheck the system.
   - If the terminals look OK, go to step 5.
5. With the connectors still disconnected, do the following input tests:
   - If any test indicates a problem, find and correct the cause, then recheck the system.
   - If all the input tests prove OK, go to step 6.

		Test		Possible cause if desired

Cavity	Wire	condition	Test: Desired result	result is not obtained
F32	WHT	Under all conditions	Measure the voltage to ground: There should be battery voltage.	• Blown No. 9 (15 A) fuse in the under-hood fuse/relay box • An open or high resistance in the wire
D7	GRN	Under all conditions	Connect terminals F32 and D7 with a jumper wire: The right rear turn signal light should come on.	• Blown bulb • Poor ground(G603)or an open in the ground wire • An open or high resistance in the wire
D13	BLU	Under all conditions	Connect terminals F32 and D13 with a jumper wire: The left rear turn signal light should come on.	• Blown bulb • Poor ground(G603)or an open in the ground wire • An open or high resistance in the wire
F1	BLU	Under all conditions	Connect terminals F32 and F1 with a jumper wire: The left front turn signal light should come on.	• Blown bulb • Poor ground(G302) or an open in the ground wire • An open or high resistance in the wire
P3	GRN	Under all conditions	Connect terminals F32 and P3 with a jumper wire: The right front turn signal light, the right side turn signal light, and the right turn signal indicator should come on.	• Blown bulb • Faulty gauge control module • Faulty indicator • Poor ground(G203, G405) or an open in the ground wire • An open or high resistance in the wire
P14	BLU	Under all conditions	Connect terminals F32 and P14 with a jumper wire: The left side turn signal light and the left turn signal indicator should come on.	• Faulty gauge control module • Faulty indicator • Poor ground(G401)or an open in the ground wire • An open or high resistance in the wire

6. Reconnect the connectors to the driver's under- dash fuse/relay box, and do the following input tests:
   - If any test indicates a problem, find and correct the cause, then recheck the system.
   - If all the input tests prove OK, the driver's MICU must be faulty; replace the driver's under- dash fuse/relay box (see **DRIVER'S UNDER- DASH FUSE/RELAY BOX (MICU) REMOVAL AND INSTALLATION**).

Cavity	Wire	Test condition	Test: Desired result	Possible cause if desired result is not obtained
F11	WHT	Under all conditions	Measure the voltage to ground: There should be battery voltage.	• Blown No. 15(10 A) fuse in the under- hood fuse/relay box • An open or high resistance in the wire
Q1	BLK	In all ignition switch positions or all power modes	Measure the voltage to ground: There should be less than 0.2 V.	• Poor ground(G402) • An open or high resistance in the ground wire
Q2	BRN	In all ignition switch positions or all power modes	Measure the voltage to ground: There should be less than 0.2 V.	• Poor ground(G401) • An open or high resistance in the ground wire
R2	BRN	In all ignition switch positions or all power modes	Measure the voltage to ground: There should be less than 0.2 V.	• Poor ground(G401) • An open or high resistance in the ground wire
R5	BLK	In all ignition switch positions or all power modes	Measure the voltage to ground: There should be less than 0.2 V.	• Poor ground(G402) • An open or high resistance in the ground wire
N7	WHT	Under all conditions	Measure the voltage to ground: There should be battery voltage.	• Faulty driver's under-dash fuse/relay box • A short to ground in the wire
Q17	YEL	Hazard warning switch pressed	Measure the voltage to ground: There should be battery voltage.	• Faulty hazard warning switch • An open or high resistance in the wire
R13.	LT GRN	Ignition switch ON (II), or power mode ON, turn signal switch in left position	Measure the voltage between terminals R13 and R3: There should be less than 0.2 V.	• Faulty combination light switch • An open or high resistance in the wire

R3	. BLK	Ignition switch ON (II), or power mode ON, turn signal switch in right or neutral position	Measure the voltage between terminals R13 and R3: There should be about 5 V.	• Faulty combination light switch • A short to ground in the wire
R14 . R3	GRY . BLK	Ignition switch ON (II), or power mode ON, turn signal switch in right position	Measure the voltage between terminals R14 and R3: There should be less than 0.2 V.	• Faulty combination light switch • An open or high resistance in the wire
		Ignition switch ON (II), or power mode ON, turn signal switch in left or neutral position	Measure the voltage between terminals R14 and R3: There should be about 5 V.	• Faulty combination light switch • A short to ground in the wire

HAZARD WARNING SWITCH TEST/REPLACEMENT

1. Remove the dashboard center vent (see **DASHBOARD CENTER VENT REMOVAL/INSTALLATION**).
2. Push out the hazard warning switch (A) from behind the dashboard center vent.

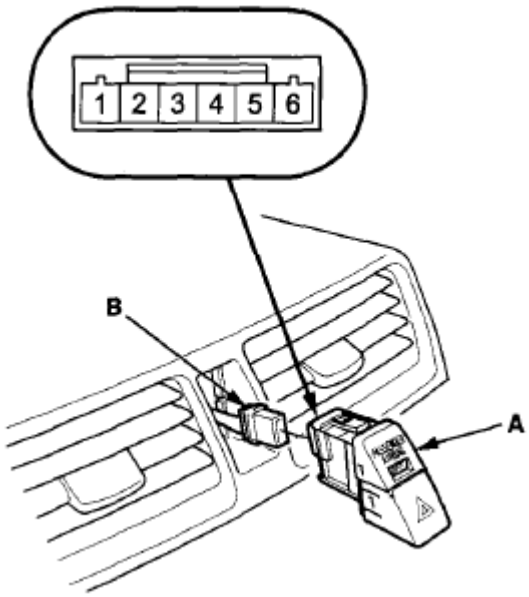


Fig. 8: Identifying Hazard Warning Switch & 6P Connector With Connector End View
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Disconnect the 6P connector (B) from the hazard warning switch.
4. Check for continuity between the terminals in each switch position according to the table.

NOTE:

- **Make sure the correct test lead (+ or -) is placed on the terminal.**

- **When checking for continuity across the diode, use the diode setting on the digital volt/ohm meter to check the diode bias.**
- **Be careful of this characteristic; a diode is one that conducts fully in one direction (forward) and not at all in the opposite direction (reverse).**

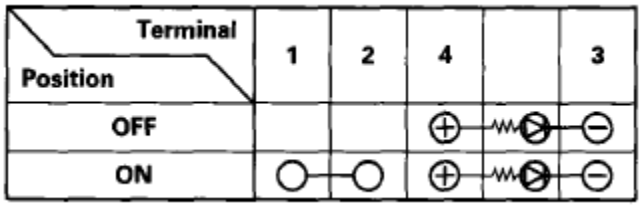


Fig. 9: Hazard Warning Switch Continuity Reference Chart
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. If the continuity is not as specified, replace the hazard warning switch.
6. Install the switch in the reverse order of removal.

FRONT TURN SIGNAL/PARKING LIGHT REPLACEMENT

REPLACEMENT

1. Remove the splash shield (see **FRONT SPLASH SHIELD REPLACEMENT**).
2. Remove the bolt (A), then pull the front turn signal light (B) from the front bumper.

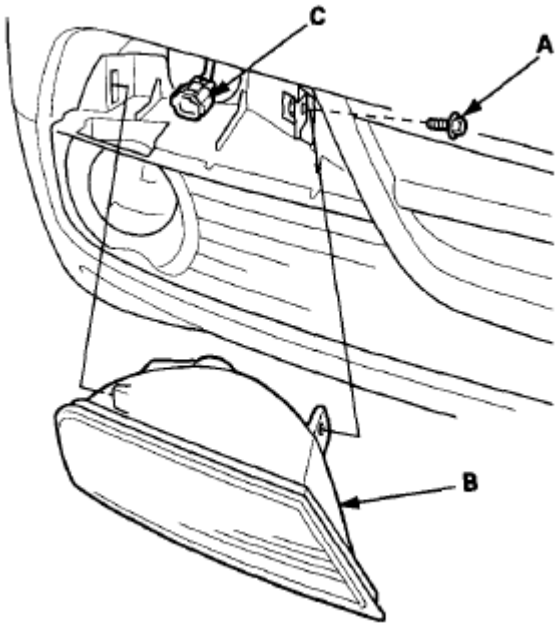


Fig. 10: Identifying Front Turn Signal Light, 3P Connector And Bolt
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Disconnect the 3P connector (C) from the front turn signal light.
4. Install in the reverse order of removal.

BULB REPLACEMENT

1. Remove the inner fender (see **FRONT INNER FENDER REPLACEMENT**).
2. Disconnect the 3P connector (A) from the front turn signal light (B).

   Front Turn Signal/Parking Light: 24/2.2 CP

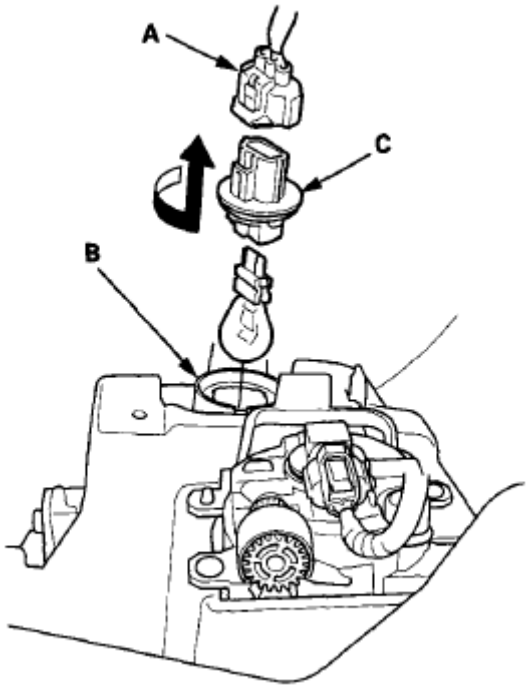


Fig. 11: Disconnecting 3P Connector From Front Turn Signal Light
Courtesy of AMERICAN HONDA MOTOR CO., INC.

   The illustration shows the right side.

3. Turn the bulb socket (C) 45 ° counter clockwise to remove it from the housing.
4. Install a new bulb in the reverse order of removal.

SIDE TURN SIGNAL LIGHT REPLACEMENT

1. Remove the mirror holder (see **POWER MIRROR REPLACEMENT**).
2. Remove the screw (A), then pull out side turn signal light (B), then disconnect the 2P connector (C) from it.

   Side Turn Signal Light: LED

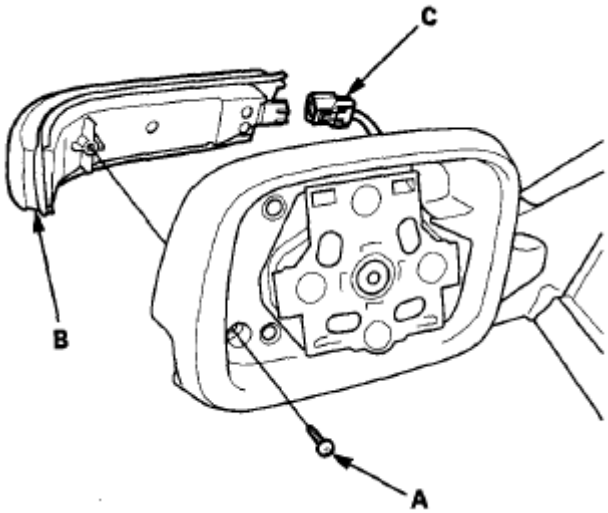


Fig. 12: Identifying 2P Connector, Side Turn Signal Light And Screw
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Install the light in the reverse order of removal.

GENERAL INFORMATION

Acura - 1987-13

ENGINE OIL LIFE/MAINTENANCE MINDER

NOTE: To determine the appropriate reset procedure, refer to ENGINE OIL LIFE/MAINTENANCE MINDER RESET INDEX. Only the vehicles listed in this index have an engine oil life or maintenance minder indicator.

ENGINE OIL LIFE/MAINTENANCE MINDER RESET INDEX

Model & Year	Reset Procedure
ILX	
2013	Engine Oil Life/Maintenance Minder - Procedure 6
MDX	
2007-13	Engine Oil Life/Maintenance Minder - Procedure 1
RDX	
2007-08	Engine Oil Life/Maintenance Minder - Procedure 3
2009-12	Engine Oil Life/Maintenance Minder - Procedure 1
2013	Engine Oil Life/Maintenance Minder - Procedure 6
RL	
2005	Engine Oil Life/Maintenance Minder - Procedure 5
2006	Engine Oil Life/Maintenance Minder - Procedure 2
2007-10	Engine Oil Life/Maintenance Minder - Procedure 4
2011-12	Engine Oil Life/Maintenance Minder - Procedure 1
TL	
2004-06	Engine Oil Life/Maintenance Minder - Procedure 2
2007-08	Engine Oil Life/Maintenance Minder - Procedure 1
2009-10	Engine Oil Life/Maintenance Minder - Procedure 4
2011-13	Engine Oil Life/Maintenance Minder - Procedure 1
TSX	
2006	Engine Oil Life/Maintenance Minder - Procedure 1
2007-10	Engine Oil Life/Maintenance Minder - Procedure 4
2011-13	Engine Oil Life/Maintenance Minder - Procedure 6
ZDX	
2010-13	Engine Oil Life/Maintenance Minder - Procedure 1

ENGINE OIL LIFE/MAINTENANCE MINDER - PROCEDURE 1

1. Turn ignition switch to ON (II) position.

NOTE: Models equipped with the keyless access system have an engine start/stop button instead of an ignition switch. ON Mode is the equivalent

of ON (II)

NOTE: On RDX: If the engine oil life is not displayed, press the SEL/RESET button on the steering wheel repeatedly until the multi-information display shows blank, SH-AWD and tire pressure.

2. Push and release the SEL/RESET button repeatedly until the engine oil life indicator is displayed.
3. Press and hold SEL/RESET button for more than 10 seconds. The remaining engine oil life reset mode will be shown on multi-information display.

NOTE: If you are resetting the display when the engine oil life is more than 15 %, make sure any maintenance item(s) requiring service are done before resetting the display.

4. Press UP or DOWN button repeatedly until the RESET indicator is displayed, then press the SEL/RESET button. The maintenance item code(s) will disappear, and the engine oil life will reset to 100.
5. If you want to cancel the oil life reset mode, select CANCEL.

ENGINE OIL LIFE/MAINTENANCE MINDER - PROCEDURE 2

Resetting Multi-Information Display

1. Turn the ignition switch to ON (II).
2. Press the SELECT/RESET button repeatedly until the oil life is displayed (if more than 15%) or the maintenance message is displayed (if oil life is less than 15%).

NOTE: If you are resetting the display when the oil life is more than 15%, the maintenance message "SERVICE DUE SOON" will be displayed. Make sure the maintenance items requiring service have been performed before resetting this display.

3. Press and hold the SELECT/RESET button for 10 seconds until you see the maintenance message or "MAINTENANCE RESET". If the maintenance message is displayed, press and hold the SELECT/RESET button again for 10 seconds until you see "MAINTENANCE RESET".
   - To reset the display, press the SELECT/RESET button to select "OK". The next time the ignition switch is turned to "ON", the display will show "OIL LIFE 100%".
   - If you do not want to reset the display, press the <or> side of the INFO button to select "Cancel".

NOTE:

- **If the required service is performed and the display is not reset or if the display is reset without performing the service, the system will not show the proper maintenance levels. This can lead to serious mechanical problems because there will be no record of when maintenance is needed.**
- **If the indicated maintenance service is not performed and the**

remaining engine oil life is less than 0 percent, "SERVICE PAST DUE" will display, have the service performed immediately and make sure to reset the display as previously described.

- **If the message "SERVICE DUE NOW" does not appear more than 12 months after the display is reset, change the engine oil every year.**

ENGINE OIL LIFE/MAINTENANCE MINDER - PROCEDURE 3

With Technology Package

1. Turn ignition switch to ON (II) position.
2. Press the SEL/RESET knob on steering wheel until engine oil life is displayed.
3. Press and hold SEL/RESET knob for about 10 seconds. The remaining engine oil life reset mode will be shown on multi-information display.
4. Select RESET by pressing INFO (up or down) button, then press the SEL/RESET button to reset the engine oil life display. The maintenance item code(s) will disappear, and engine oil life will reset to 100. To cancel the oil life reset mode, select CANCEL.

Without Technology Package

1. Turn ignition switch to ON (II) position.
2. Press the SELECT/RESET knob repeatedly until engine oil life is displayed.
3. Press and hold SELECT/RESET knob for about 10 seconds. The engine oil life and maintenance item code(s) will blink.
4. Press SELECT/RESET knob for another 5 seconds. The maintenance item code(s) will disappear, and engine oil life will reset to "100".

ENGINE OIL LIFE/MAINTENANCE MINDER - PROCEDURE 4

1. Turn ignition switch to ON (II) position.
2. If engine oil life minder is not displayed, press the SEL/RESET button on steering wheel repeatedly until oil life minder is displayed.
3. Press and hold the SEL/RESET button for more than 10 seconds. The remaining engine oil life reset mode will be shown on the multi-information display.
4. Press the UP or DOWN arrow buttons on steering wheel to select RESET, and press SEL/RESET button. The maintenance item code(s) will disappear, and the engine oil life will reset to 100.
5. To cancel resetting the oil life reset mode, press the UP or DOWN arrow buttons to select CANCEL, and press SEL/RESET button.

NOTE: If you do not complete the reset procedure within 30 seconds after selecting the reset mode, the mode will be canceled automatically.

ENGINE OIL LIFE/MAINTENANCE MINDER - PROCEDURE 5

1. Turn ignition switch to ON (II) position.
2. If the oil life minder is not displayed, press the SEL/RESET button on the steering wheel repeatedly until it is.
3. Press and hold the SEL/RESET button on the steering wheel for 10 seconds. The remaining engine oil life reset mode will be shown on the multi-information display.
4. To reset the engine oil life, press the UP or DOWN button on steering wheel to select RESET on the display, and press the SEL/RESET button.
5. To cancel resetting the oil life, press the UP or DOWN button on steering wheel to select CANCEL on the display, and press SEL/RESET button.

ENGINE OIL LIFE/MAINTENANCE MINDER - PROCEDURE 6

1. Turn power mode to ON.
2. Press the UP or DOWN buttons on the steering wheel (right side) to display CUSTOMIZE SETTINGS on the multi-information display (center of instrument cluster).
3. Press the SEL/RESET button to select CUSTOMIZE SETTINGS.
4. Press the UP or DOWN buttons on the steering wheel to display MAINTENANCE INFO. Press the SEL/RESET button to select.
5. To reset the engine oil life, press the UP or DOWN button on steering wheel to select RESET on the display, and press the SEL/RESET button.
6. To cancel resetting the oil life, press the UP or DOWN button on steering wheel to select CANCEL on the display, and press SEL/RESET button.

MAINTENANCE REQUIRED LIGHT

NOTE: To determine the appropriate reset procedure, refer to MAINTENANCE REQUIRED LIGHT RESET INDEX. Only the vehicles listed in this index have a MAINTENANCE REQUIRED light.

MAINTENANCE REQUIRED LIGHT RESET INDEX

Model & Year	Reset Procedure
Integra	
1994-95	Maintenance Required - Procedure 2
1996-2001	Maintenance Required - Procedure 1
Legend Coupe	
1987-95	Maintenance Required - Procedure 3
Legend	
1991-95	Maintenance Required - Procedure 3
MDX	
2001-04	Maintenance Required - Procedure 4
2005-06	Maintenance Required - Procedure 5
RSX	

2002-06	**Maintenance Required - Procedure 6**
TSX	
2004-06	**Maintenance Required - Procedure 6**
Vigor	
1992-94	**Maintenance Required - Procedure 3**
2.2CL	
1997	**Maintenance Required - Procedure 3**
2.3CL	
1999	**Maintenance Required - Procedure 3**
2.5TL	
1995-98	**Maintenance Required - Procedure 3**
3.0CL	
1998-99	**Maintenance Required - Procedure 3**
3.2CL	
2001-03	**Maintenance Required - Procedure 4**
3.2TL	
1996-98	**Maintenance Required - Procedure 3**
1999-2003	**Maintenance Required - Procedure 4**
3.5RL	
1996-2004	**Maintenance Required - Procedure 5**

MAINTENANCE REQUIRED - PROCEDURE 1

1. For the first 6000 miles after completion of scheduled maintenance and indicator light reset, the MAINT REQD reminder light will illuminate for 2 seconds when ignition is turned to ON position. Between 6000-7500 miles, the MAINT REQD reminder light will illuminate for 2 seconds, then flash for 8 seconds, and then go out. After exceeding 7500 miles without having scheduled maintenance performed, light will remain on until it is reset.
2. When service has been completed, reset MAINT REQD reminder light. To reset light, ensure ignition switch is in OFF position. Turn ignition switch to ON position, with engine off. Push RESET button on maintenance reminder unit located behind lower dash cover and hold for 3 seconds. See **Fig. 1**. Turn ignition switch to OFF position. Turn ignition switch to ON position and verify MAINT REQD light has been reset.

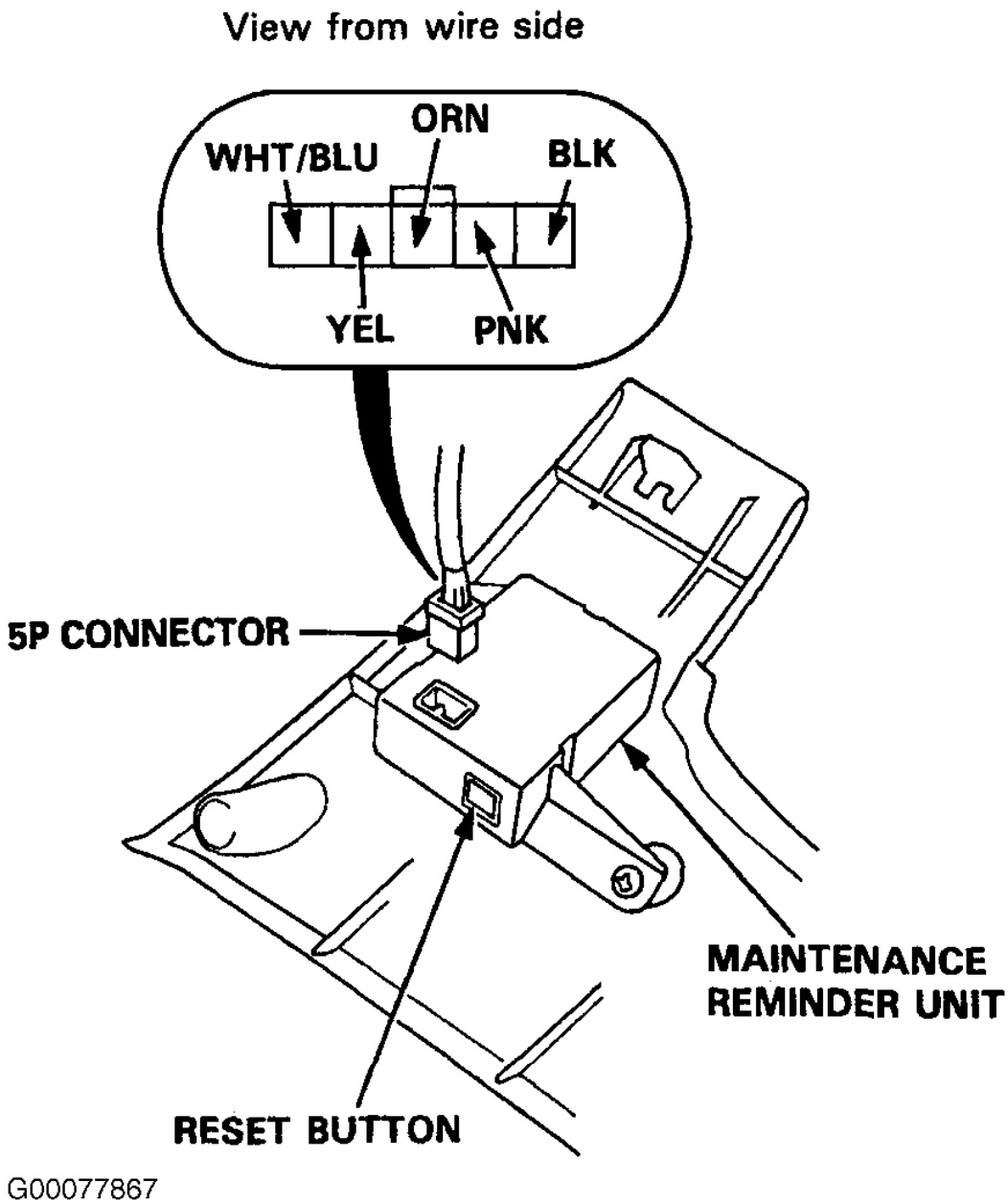


Fig. 1: Locating Maintenance Reminder Unit (Integra)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

MAINTENANCE REQUIRED - PROCEDURE 2

1. At each 7500 mile service interval, the MAINTENANCE REQUIRED light will change from Green to Yellow. If service is not performed (and light is not reset), the MAINTENANCE REQUIRED light will change from Yellow to Red.

2. When service has been completed, reset MAINTENANCE REQUIRED reminder light. To reset light, turn ignition ON. Push button located under dash to the right of steering column (above gas pedal) and hold for 3 seconds. Turn ignition OFF. Start engine and verify light has been reset.

MAINTENANCE REQUIRED - PROCEDURE 3

1. At each 7500 mile service interval, the MAINTENANCE REQUIRED light will change from Green to Yellow. If service is not performed (and light is not reset), the MAINTENANCE REQUIRED light will change from Yellow to Red.
2. When service has been completed, reset MAINTENANCE REQUIRED reminder light. To reset reminder light, turn ignition off. Insert ignition key in slot provided below tachometer. See **Fig. 2**.

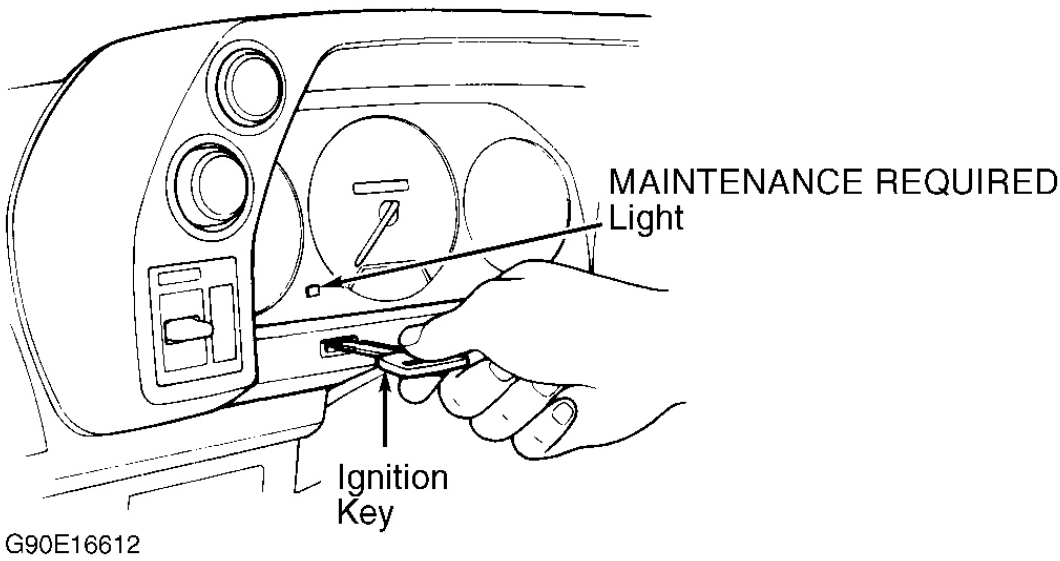


Fig. 2: Resetting Maintenance Required Light
Courtesy of AMERICAN HONDA MOTOR CO., INC.

MAINTENANCE REQUIRED - PROCEDURE 4

1. At 5900-6100 miles MAINT REQ'D light blinks for 10 seconds when the ignition switch is turned to ON (II) position. At 7400-7600 miles MAINT REQ'D light illuminates and stays on while ignition switch is in ON (II) position.
2. To reset MAINT REQ'D light, turn ignition switch to OFF position. Push and hold the Trip or Select and the reset buttons simultaneously. Turn ignition switch to ON (II) position, and continue to hold buttons for more than 10 seconds.

MAINTENANCE REQUIRED - PROCEDURE 5

1. For the first 6,000 miles after Maintenance Required Indicator is reset, will come on for 2 seconds when

you turn ignition switch to ON (II). Between 6,000 and 7,500 miles, this indicator will light for 2 seconds when you first turn ignition switch to ON (II) and then flash for 10 seconds. If you exceed 7,500 miles without having scheduled maintenance preformed, this indicator will remain on as a constant reminder.

2. To reset, turn engine OFF. Press and hold Select and Reset buttons on instrument panel, then turn ignition switch to ON (II). Hold buttons for approximately 10 seconds until indicator goes off.

MAINTENANCE REQUIRED - PROCEDURE 6

1. For the first 8000 miles after completion of scheduled maintenance and indicator light reset, the MAINT REQ'D reminder light will illuminate for 2 seconds when ignition is turned to ON (II) position. Between 8000-10,000 miles, the MAINT REQ'D reminder light will illuminate for 2 seconds and then flash for 10 seconds, when ignition is turned on. After exceeding 10,000 miles without having scheduled maintenance performed, light will remain on until it is reset.
2. When service has been completed, reset MAINT REQ'D reminder light. To reset light, turn ignition switch to OFF position. Press and hold SELECT/RESET button located on right side of instrument cluster. While still holding button, turn ignition switch to ON (II) position, with engine off. Hold button until reminder light resets, after about 10 seconds.
3. If MAINT REQ'D reminder light does not reset, ensure headlights, parking lights, or both are turned off when resetting reminder light. The MAINT REQ'D indicator cannot be reset if any of these lights are on. If vehicle is equipped with daytime running lights and lights come on when ignition switch is turned to ON (II) position, daytime running lights must be disabled before indicator light can be reset.

SCHEDULED SERVICE DUE LIGHT

NOTE: To determine the appropriate reset procedure, refer to SCHEDULED SERVICE DUE LIGHT RESET INDEX. Only the vehicles listed in this index have a SCHEDULED SERVICE DUE light.

SCHEDULED SERVICE DUE LIGHT RESET INDEX

Model & Year	Reset Procedure
Legend	
1988-90	Scheduled Service Due Light - Procedure 1

SCHEDULED SERVICE DUE LIGHT - PROCEDURE 1

1. Every 7500 miles, a SCHEDULED SERVICE DUE warning light will illuminate as a reminder to change oil and oil filter. After servicing is completed, reset warning light.
2. To reset warning light, locate SERVICE RESET button. See **Fig. 3**. With ignition switch in the ON position, press SERVICE RESET button for 3 seconds. To verify reset, turn ignition switch off and on. Light should not come on.

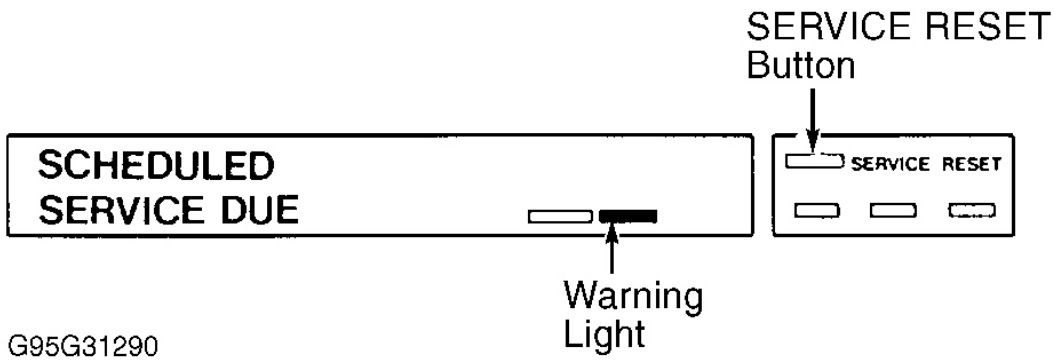


Fig. 3: Identifying Scheduled Service Light Reset Button
Courtesy of AMERICAN HONDA MOTOR CO., INC.

TIRE PRESSURE MONITOR SYSTEM (TPMS)

NOTE: **To determine the appropriate reset procedure, refer to TPMS RESET PROCEDURE INDEX. Only the vehicles listed in this index are equipped with tire pressure monitor system.**

TPMS RESET PROCEDURE INDEX

Model & Year	Reset Procedure
ILX	
2013	TPMS Reset - Procedure 2
MDX	
2004-12	TPMS Reset - Procedure 1
RDX	
2007-12	TPMS Reset - Procedure 1
RL	
2005-12	TPMS Reset - Procedure 1
TL	
2006-12	TPMS Reset - Procedure 1
TSX	
2007-12	TPMS Reset - Procedure 1
ZDX	
2010-12	TPMS Reset - Procedure 1

TPMS RESET - PROCEDURE 1

Tire Pressure Monitor System

NOTE: All four sensor IDs must be memorized to the TPMS control unit whenever you do any of these actions:

- **Replace the TPMS control unit.**
- **Replace the tire pressure sensor.**
- **Substitute a known-good wheel with tire pressure sensor.**

NOTE: When replacing the TPMS control unit, use the HDS to memorize IDs.

NOTE: On models equipped with PAX tire systems, if a tire is repaired or replaced, the warning indicator (and the mileage counter that supports it) must be reset, no matter how far the vehicle was driven in the run flat mode. See appropriate manufacturer service information.

If low tire pressure indicator and multi-information display indicator(s) are lit continuously due to low pressure in one or more tires, adjust tire inflation to proper pressure as indicated on the tire and loading information placard. The light will remain on until tire pressure is properly set. If warning light is still illuminated or the TPMS indicator is lit continuously, there is a problem in the TPM system. Refer to manufacturer service information.

Memorizing Sensors IDs Automatically

NOTE: To ensure the control unit memorizes the correct ID, the vehicle with the new sensor must be at least 10 ft (3 m) from any other TPMS pressure sensor not installed on that vehicle.

After rotating the tires or replacing a tire pressure sensor, drive the vehicle for at least 40 seconds at a speed of 15 mph (24 km/h) or more, and all the sensor IDs will be memorized automatically.

NOTE: When replacing the TPMS control unit, use the HDS to memorize IDs. After the IDs are memorized, reduce the pressure in all four tires to less than the appropriate specification, and check to see that the four tire indicators come on.

Memorizing Sensor IDs with the Scan Tool (HDS)

NOTE: When replacing the TPMS control unit, use the HDS to memorize IDs.

NOTE: The HDS can memorize the ID of a new tire pressure sensor or a previously memorized ID.

1. With the ignition switch in LOCK (0), connect the HDS to the data link connector (DLC) (A) located under the driver's side of the dashboard.
2. Turn the ignition switch to ON (II) (or press the engine start/stop button to select the ON mode).

3. Make sure the HDS communicates with the vehicle and the TPMS control unit.
4. Memorize the ID of the tire pressure sensor by following the screen prompts on the HDS. See the HDS Help menu for specific instructions.
5. Turn the ignition switch to LOCK (0) (or press the engine start/stop button to select the OFF mode).

NOTE: When replacing the TPMS control unit, use the HDS to memorize IDs. After the IDs are memorized, reduce the pressure in all four tires to less than the appropriate specification, and check to see that the four tire indicators come on.

TPMS RESET - PROCEDURE 2

Tire Pressure Monitor System

NOTE: All four sensor IDs must be memorized to the TPMS control unit whenever you do any of these actions:

- **Replace the TPMS control unit.**
- **Replace the tire pressure sensor.**
- **Substitute a known-good wheel with tire pressure sensor.**

NOTE:

- **A TPMS sensor activation tool is necessary to do this procedure.**
- **Let the vehicle sit for at least 5 minutes to allow the tire pressure sensors to switch to sleep mode.**
- **To ensure the TPMS control unit memorizes the correct sensor ID, the vehicle with the new tire pressure sensor must be at least 10 ft (3 m) away from other vehicles that have sensors.**
- **When doing a tire rotation, memorizing the sensors is not needed.**

Memorizing Sensor IDs with the Scan Tool (HDS)

1. Connect the HDS to the data link connector (DLC) (A) located under the driver's side of the dashboard.
2. Press the engine start/stop button to select the ON mode.
3. Make sure the HDS communicates with the vehicle and the TPMS control unit. If it does not communicate, troubleshoot the DLC circuit.
4. Select Sensor ID Learning from the Mode Menu on the HDS.
5. Follow the HDS screen prompts to turn on the TPMS sensor activation tool.
6. Hold the TPMS sensor activation tool near the valve stem of one wheel, and memorize the tire pressure sensor ID by following the screen prompts on the HDS.

NOTE:

- **If you press the engine start/stop button to select the OFF mode before memorizing all four sensor IDs, the memorizing sensor ID is**

canceled.

- **If more than one sensor ID is displayed on the HDS, verify that the vehicle has not been driven for 5 minutes, and there are no other vehicles or tire pressure sensors within 10 ft (3 m).**
- **See the HDS Help menu for specific instructions.**

7. Repeat procedure for each wheel until all four sensor IDs are memorized. When all four IDs are memorized, the low tire pressure/TPMS indicator blinks
8. Press the engine start/stop button to select the OFF mode.
9. Disconnect the HDS from the DLC.
10. Test-drive the vehicle at 28 mph (45 km/h) or more for at least 3 minutes.
11. Make sure the low tire pressure/TPMS indicator does not blink.
12. Make sure the tires are inflated to the specified tire pressure listed on the doorjamb label.

2012 MAINTENANCE

Maintenance - TL

MAINTENANCE

LUBRICANTS AND FLUIDS

Application	Lubricant or Fluid
Engine	Acura Motor Oil J35Z6 engine: 0W-20 J37A4 engine: 5W-20 Look for the API certification seal on the oil container. Make sure it says "For Gasoline Engines." SAE viscosity: See chart.
Manual transmission	Acura Manual Transmission Fluid (MTF): Always use Acura MTF. Using motor oil can cause stiffer shifting because it does not contain the proper additives.
Automatic transmission	Acura Automatic Transmission Fluid (ATF DW-1): Always use Acura ATF DW-1. Using a non-Acura ATF can affect shift quality.
Transfer assembly (SH-AWD models)	Hypoid gear oil GL4 or GL5: Use an SAE 90 viscosity hypoid gear oil, API classified GL4 or GL5 only. Viscosity SAE 90: above 0°F (-18°C)
Rear differential (SH-AWD models)	Acura All-Wheel Drive Fluid (DPSF)
Brake system (including VSA lines) Clutch system (manual transmission)	Acura DOT 3 Brake Fluid: Always use Acura DOT 3 Brake Fluid. Using a non-Acura brake fluid can cause corrosion and decrease the life of the system.
Cooling system	Acura Long Life Antifreeze/Coolant Type 2



Fig. 1: Identifying API Certification Seal

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Recommended Engine Oil

Engine oil viscosity for ambient temperature ranges

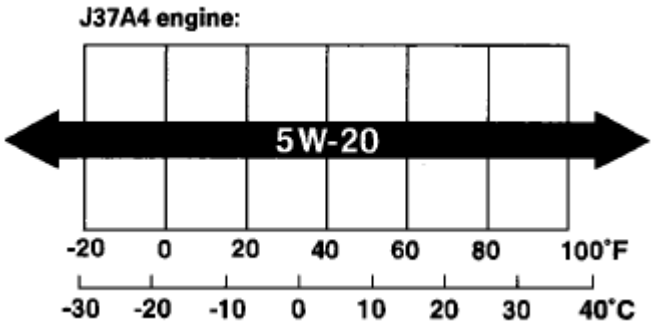


Fig. 2: Displaying - J37A4 Engine Oil Recommendation Graph
Courtesy of AMERICAN HONDA MOTOR CO., INC.

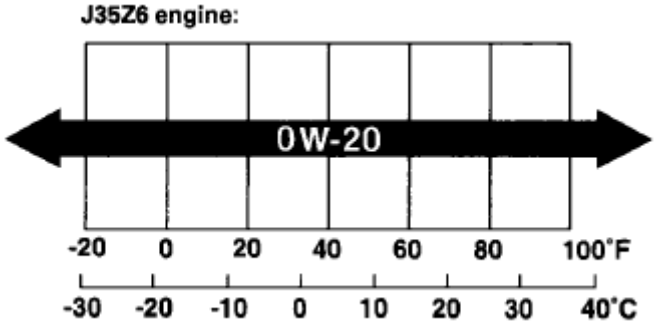


Fig. 3: Displaying - J35Z6 Engine Oil Recommendation Graph
Courtesy of AMERICAN HONDA MOTOR CO., INC.

For the details of the lubrication points and the type of lubricants to be applied, refer to the illustrated index and the various work procedures (such as Assembly/Reassembly, Replacement, Overhaul, Installation, etc.) contained in each article.

	Application	Lubricant or Fluid
A	Brake booster clevis pin	Multipurpose grease
B	Clutch master cylinder clevis pin (manual transmission)	
C	Battery terminals	
D	Fuel fill door (lock rod sliding area)	
E	Hood hinges and hood latch	
F	Trunk hinges	
G	Slave cylinder push rod (manual transmission)	Super High Temp Urea Grease: P/N 08798-9002
H	Shift cable ends (manual transmission)	Honda silicone grease: P/N 08C30-B0234M

I	Caliper piston boots, rear caliper piston seals, caliper pins, and caliper pin boots	
J	Front caliper piston seals	Acura DOT 3 Brake Fluid
K	Parking brake shoe linkage (drum in disc)	Molykote 44MA Grease
L	Air conditioning compressor	Compressor Oil: DENSO ND-OIL 8 (P/N 38897-PR7-A01 AH) for refrigerant HFC-134a (R-134a)

NOTE:

- **Lubricate the following areas using the recommended lubricants and fluids.**
- **In corrosive areas, more frequent lubrication is necessary.**

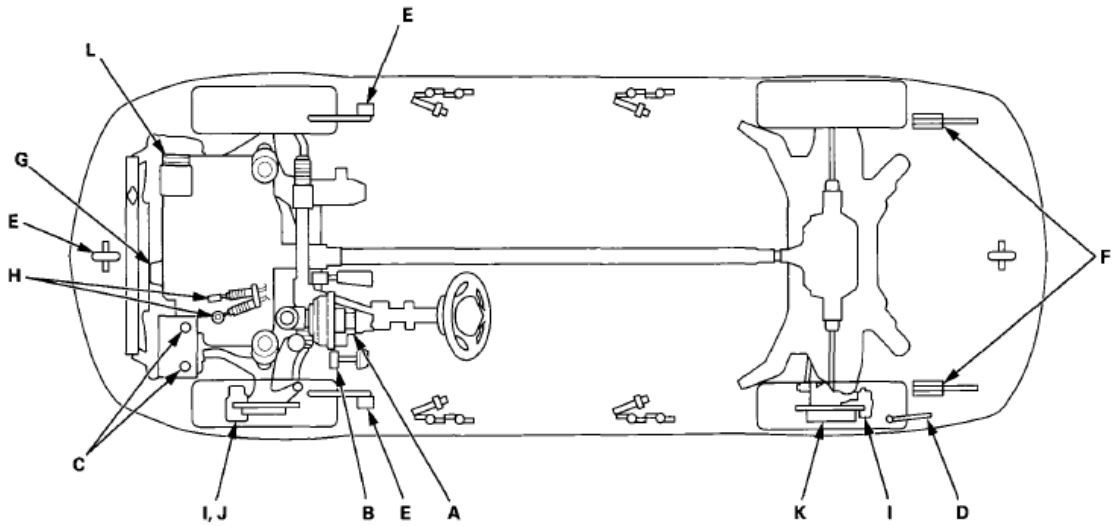


Fig. 4: Identifying Lubricants And Fluids Application Area
Courtesy of AMERICAN HONDA MOTOR CO., INC.

NOTE: SH-AWD model is shown.

MAINTENANCE MINDER™

GENERAL INFORMATION

Maintenance Minder

The Maintenance Minder is an important feature of the multi-information display. Based on engine and transmission operating conditions, and accumulated engine revolutions, the TL's onboard computer (ECM/PCM) calculates the remaining engine oil and the transmission fluid life. The system also displays the remaining engine oil life along with the code(s) for other scheduled maintenance items needing service.

Meter

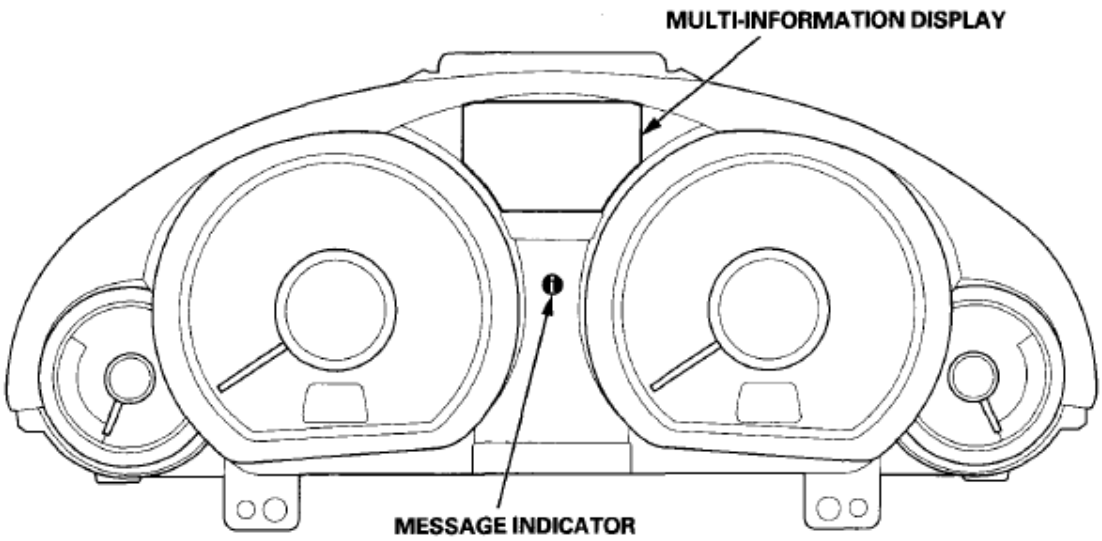


Fig. 5: Identifying Message Indicator And Multi-Information Display
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Steering Wheel

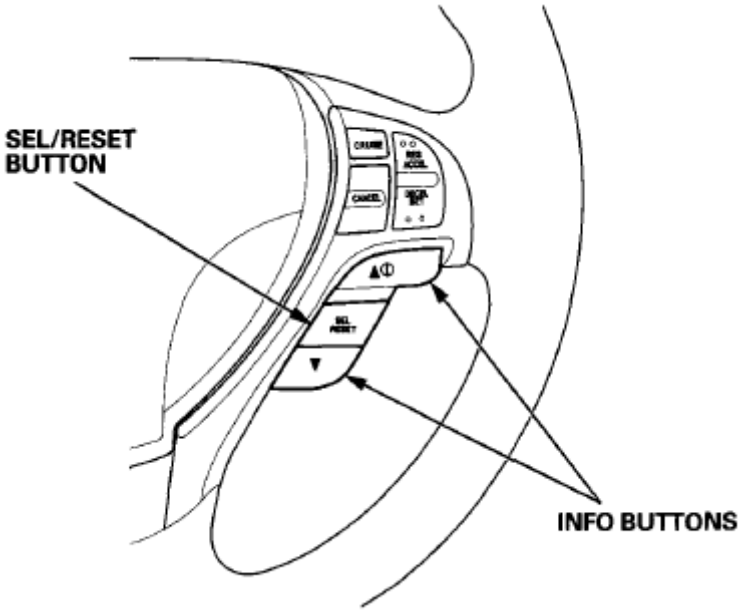


Fig. 6: Identifying Info Buttons On Steering Wheel
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Service Information

1. The remaining engine oil life (A) is shown as a percentage on the multi-information display. To see the current engine oil life, turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode then push and release the SEL/RESET button repeatedly until the engine oil life displays.



Fig. 7: Displaying - Oil Life
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. When the ignition switch is ON (II) or the vehicle ignition in the ON mode and the remaining engine oil life is 15 % to 6 %, the remaining engine oil life and other scheduled maintenance item(s) needing service are displayed.

   The Maintenance Minder message "SERVICE DUE SOON" (A) also comes on. To cancel the message, press the INFO button. The display continues to show the remaining engine oil life (B) and the message indicator (C) until it is reset.

   - Complete list of maintenance main items (D) (see **MAINTENANCE MAIN ITEMS**).
   - Complete list of maintenance sub items (E) (see **MAINTENANCE SUB ITEMS**).

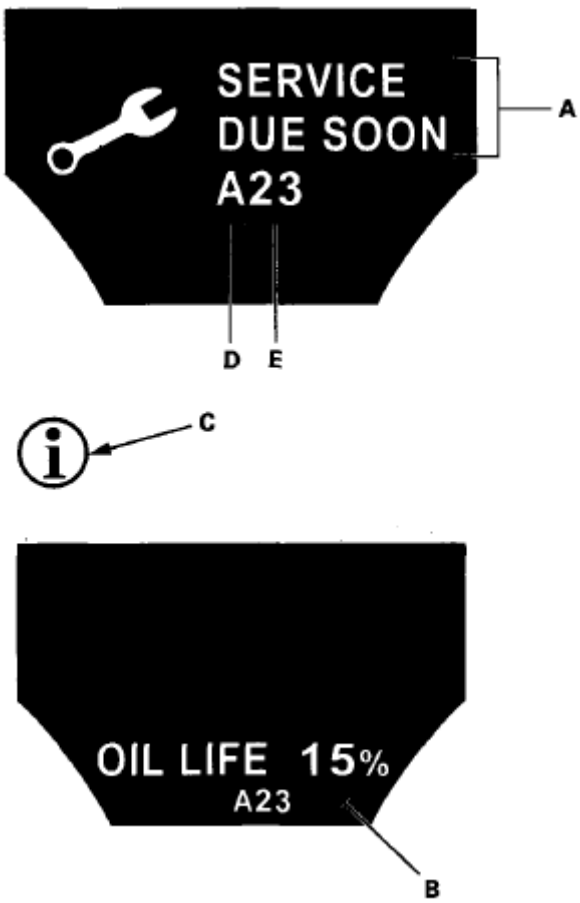


Fig. 8: Displaying - Service Due Soon
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. When the ignition switch is ON (II), or the vehicle ignition in the ON mode, and the remaining engine oil life is 5 % to 1 %, the Maintenance Minder message "SERVICE DUE NOW" is displayed along with the same maintenance item code(s). If the Maintenance Minder message display is canceled, a "SERVICE" message appears.



Fig. 9: Displaying - Service Due Now
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. When the ignition switch is ON (II), or the vehicle ignition in the ON mode, and the remaining engine oil

life is 0 %, the Maintenance Minder message "SERVICE PAST DUE" is displayed along with the same maintenance item code(s).



Fig. 10: Displaying - Service Past Due
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. If the indicated maintenance is not done, the "SERVICE PAST DUE" message shows a negative distance traveled, for example "10 miles," on the display. If the negative distance traveled is between 0 and 9, the message is displayed for only a few seconds when the ignition switch is turned to ON (II), or press the engine start/stop button to select the ON mode. The negative distance traveled (A) remains displayed after the vehicle is driven more than 10 miles (for USA models) or 10 km (for Canada models) after 0 % oil life is reached, and the display cannot be canceled. This means the indicated maintenance item (s) should have been done more than 10 miles (or 10 km) ago.



Fig. 11: Displaying - 10 Miles Service Past Due
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Resetting the Maintenance Minder

NOTE:

- **The vehicle must be stopped to reset the Maintenance Minder.**
- **If a required service is done and the Maintenance Minder is not reset, or if the Maintenance Minder is reset without doing the service, the system will not show the proper maintenance timing. This can lead to serious mechanical problems because there will be no accurate record of when the required maintenance is needed.**
- **The engine oil life and maintenance item(s) can be independently reset with the HDS.**

1. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
2. If system message(s) are displayed, press the INFO button to cancel the display.
3. Push and release the SEL/RESET button repeatedly until the engine oil life indicator is displayed.
4. Press and hold the SEL/RESET button for about 10 seconds, the "OIL LIFE RESET" mode display appears.

NOTE:

- **If you are resetting the Maintenance Minder when the engine oil life is more than 15 %, make sure any maintenance item(s) requiring service are done before resetting the display.**
- **To cancel the "OIL LIFE RESET" mode, press the INFO button repeatedly until the "CANCEL" indicator is displayed, then press the SEL/RESET button.**



Fig. 12: Displaying - Oil Life Reset Menu
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Press the INFO button to select "RESET," then press the SEL/RESET button. The maintenance item code (s) will disappear, and the engine oil life will reset to "100%."

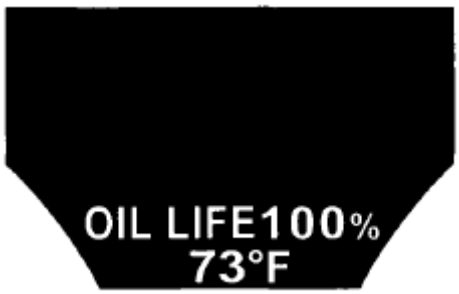


Fig. 13: Displaying - Oil Life And Temperature
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Resetting Individual Maintenance Items

1. Connect the Honda Diagnostic System (HDS) to the data link connector (DLC) (see **HOW TO USE THE HDS (HONDA DIAGNOSTIC SYSTEM)**).
2. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.

3. Make sure the HDS communicates with the vehicle and the engine control module/powertrain control module (ECM/PCM). If it doesn't communicate, troubleshoot the DLC circuit (see **DLC CIRCUIT TROUBLESHOOTING**).
4. Select GAUGES in the BODY ELECTRICAL with the HDS.
5. Select ADJUSTMENT in the GAUGES with the HDS.
6. Select MAINTENANCE MINDER in the ADJUSTMENT with the HDS.
7. Select RESET in the MAINTENANCE MINDER with the HDS.
8. Select the individual maintenance item you wish to reset with the HDS.

MAINTENANCE MAIN ITEMS

If the message "SERVICE DUE NOW" does not appear more than 12 months after the display is reset, change the engine oil every year.

NOTE:

- **Independent of the maintenance messages in the multi-information display, replace the brake fluid every 3 years.**
- **Inspect idle speed every 160, 000 miles (256, 000 km).**
- **Adjust the valves during services A, B, 1, 2, or 3 if they are noisy.**

Symbol	Maintenance Main Items
A	Replace engine oil (see **ENGINE OIL LEVEL CHECK**) o Engine oil capacity without oil filter: 4.0 L (4.2 US qt).
	Replace engine oil and oil filter (see **ENGINE OIL FILTER REPLACEMENT**) o Engine oil capacity with oil filter: 4.3 L (4.5 US qt).
	Check front and rear brakes (see **COMPONENT LOCATION INDEX**) • Check pads and discs for wear (thickness), damage, and cracks. • Check calipers for damage, leaks, and tightness of mounting bolts. • Check parking brake linings for cracking, glazing, wear, and for oil or grease contamination.
	Check parking brake adjustment (see **PEDAL FREE PLAY**) o Check the number of clicks (6 to 8) when parking brake lever is pulled with 196 N (20.0 kgf, 44.1 lbf) of force.
	Inspect tie-rod ends, steering gearbox, and gearbox boots (see **STEERING LINKAGE AND GEARBOX INSPECTION**) • Check steering linkage. • Check boots for damage and leaking grease.
	Inspect suspension components

	• Check bolts for tightness. • Check condition of ball joint boots for deterioration and damage. ○ Front (see **COMPONENT LOCATION INDEX - FRONT SUSPENSION**) ○ Rear (see **COMPONENT LOCATION INDEX - REAR SUSPENSION**)
	Inspect driveshaft boots (see **DRIVESHAFT INSPECTION**) ○ Check boots for cracks and boot bands for tightness.
	Inspect brake hoses and lines including VSA lines (see **BRAKE HOSE AND LINE INSPECTION**) ○ Check master cylinder and VSA modulator-control unit for damage and leakage.
B	Inspect all fluid levels and condition of fluids • Engine coolant (see **COOLANT CHECK**) • Manual transmission fluid (see **TRANSMISSION FLUID INSPECTION AND REPLACEMENT**) • Automatic transmission fluid (see **ATF LEVEL CHECK**) • Transfer assembly fluid (SH-AWD models) ○ M/T (see **TRANSFER ASSEMBLY FLUID INSPECTION AND REPLACEMENT**) ○ A/T (see **TRANSFER ASSEMBLY FLUID REPLACEMENT**) • Rear differential fluid (SH-AWD models) (see **REAR DIFFERENTIAL FLUID INSPECTION AND REPLACEMENT**) • Clutch fluid (see **CLUTCH HYDRAULIC SYSTEM BLEEDING**) • Brake fluid (see **BRAKE SYSTEM BLEEDING**) • Windshield washer fluid
	Inspect exhaust system* • Check catalytic converter heat shields, exhaust pipes, and muffler for damage, leaks, and tightness. ○ Without SH-AWD (see **EXHAUST PIPE AND MUFFLER REPLACEMENT**) ○ With SH-AWD (see **J37A4 ENGINE (WITH SH-AWD)**)
	Inspect fuel lines* • Without SH-AWD (see **FUEL LINE INSPECTION**) • With SH-AWD (see **WITH SH-AWD**) and connections* • Without SH-AWD (see **FUEL LINE/QUICK-CONNECT FITTING PRECAUTIONS**)

	• With SH-AWD (see **WITH SH-AWD**) ○ Check for loose connections, cracks, and deterioration; retighten loose connections and replace damaged parts.

NOTE: According to state and federal regulations, failure to do the maintenance items marked with an asterisk (*) will not void the client's emissions warranties. However, Acura recommends that all maintenance services be done at the recommended interval, to ensure long-term reliability.

MAINTENANCE SUB ITEMS

Number	Maintenance Sub Items
1	Rotate tires, and check tire inflation and condition ○ Follow the pattern shown in the Owner's Manual.
2	Replace air cleaner element (see **AIR CLEANER ELEMENT INSPECTION/REPLACEMENT**) ○ If the vehicle is driven primarily in dusty conditions, replace every 15, 000 miles (24, 000 km). Replace dust and pollen filter (see **DUST AND POLLEN FILTER REPLACEMENT**) • If the vehicle is driven mostly in areas that have high concentrations of dust, pollen, or soot in the air, replace every 15, 000 miles (24, 000 km). • Replace filter whenever airflow from the heating and air conditioning system is less than normal.
	Inspect drive belt (see **DRIVE BELT INSPECTION**) ○ Look for cracks and damage, and inspect auto-tensioner; no adjustment is needed.
3	Replace manual transmission fluid (see **TRANSMISSION FLUID INSPECTION AND REPLACEMENT**) • Capacity: 2.1 L (2.2 US qt) • Use Acura MTF.
	Replace automatic transmission fluid (see **ATF REPLACEMENT**) • Capacity: 3.1 L (3.3 US qt) • Use Acura Automatic Transmission Fluid (ATF DW-1).
	Replace transfer assembly fluid (SH-AWD models) • Capacity: 0.43 L (0.45 US qt) ○ M/T (see **TRANSFER ASSEMBLY FLUID INSPECTION AND**

	REPLACEMENT) ○ A/T (see **TRANSFER ASSEMBLY FLUID REPLACEMENT**) • Use hypoid gear oil GL4 or GL5.
4	Replace spark plugs (see **IGNITION COIL AND SPARK PLUG REMOVAL/INSTALLATION**) • J35Z6: Use DILZKR7A11G (NGK) • J37A4: Use ILZKR7B-11S (NGK), SXU22HCR11S (DENSO)
	Replace timing belt ○ J35Z6 (see **TIMING BELT REPLACEMENT**) ○ J37A4 (see **TIMING BELT REPLACEMENT**) and inspect water pump (see **WATER PUMP INSPECTION**) ○ If the vehicle is regularly driven in very high temperatures over 110°F (43°C), or in very low temperatures under - 20°F (- 29°C), replace every 60, 000 miles (USA)/100, 000 km (Canada).
	Inspect valve clearance (cold) • Intake: 0.20- 0.24 mm (0.008- 0.009in), Exhaust: 0.28- 0.32 mm (0.011- 0.012 in) ○ J35Z6 (see **VALVE CLEARANCE ADJUSTMENT**) ○ J37A7 (see **VALVE CLEARANCE ADJUSTMENT**)
5	Replace engine coolant (see **COOLANT CHECK**) • Capacity (including reservoir): 6.3 L (1.66 US gal) • Use Acura Long Life Antifreeze/Coolant Type 2
6	Replace rear differential fluid (SH-AWD models) (see **REAR DIFFERENTIAL FLUID INSPECTION AND REPLACEMENT**) • Capacity: 2.53 L (2.67 US qt) • Use Acura All-Wheel Drive Fluid (DPSF). • Driving in mountainous areas at very low vehicle speeds results in higher level of mechanical (shear) stress to fluid. This requires differential fluid changes more frequently than recommended by the Maintenance Minder. If the vehicle is regularly driven in these conditions, have the differential fluid changed at 7, 500 miles (12, 000 km), thereafter every 15, 000 miles (24, 000 km).

SUPPLEMENTAL RESTRAINT SYSTEM (SRS) (If engine electrical maintenance is required)

The Acura TL SRS includes a driver's airbag in the steering wheel hub, a front passenger's airbag in the, dashboard above the glove box, front seat belt tensioners in the front seat belt retractors, side curtain airbags in the sides of the roof, and side airbags in the front seat-backs. Information necessary to safely service the SRS is included in this Service Information. Servicing, disassembling, or replacing SRS items requires special precautions and tools, and should be done by an authorized Acura dealer.

- To avoid rendering the SRS inoperative, which could lead to personal injury or death in the event of a severe frontal or side collision, all SRS service work should be done by an authorized Acura dealer.
- Improper service procedures, including incorrect removal and installation of the SRS, could lead to personal injury caused by unintentional deployment of the front airbags, side airbags, side curtain airbags, and/or front seat belt tensioners.
- Do not bump or impact the SRS unit, front impact sensors, side impact sensors, or rear safing sensor, especially when the ignition switch is in ON (II), or the engine start/stop button is in the ON mode, for at least 3 minutes after the ignition switch is turned to LOCK (0), or after the engine start/stop button is pressed to select the OFF mode; otherwise, the system may fail in a collision, or the airbags or the tensioners may deploy.
- SRS electrical connectors are identified by yellow color coding. Related components are located in the steering column, center console, dashboard, dashboard undercover, in the dashboard above the glove box, in the front seats, in the roof side, and around the floor. Do not use electrical test equipment on these circuits.

2012 RESTRAINTS

Restraints (Special Tools) - TL

SPECIAL TOOLS

Ref.No.	Tool Number	Description	Qty
①	070AZ-SAA0100	SRS Short Canceller	1
②	070AZ-SNAA100	SRS Simulator Lead J	1
③	070AZ-SNAA200	SRS Simulator Lead K	1
④	070AZ-SNAA300	SRS Simulator Lead L	1
⑤	07AAZ-000A100	Deployment Tool	1
⑥	07SAZ-TB4011A	SRS Inflator Simulator	1
⑦	07TAZ-001020A	Back Probe Adapter, 17 mm	1

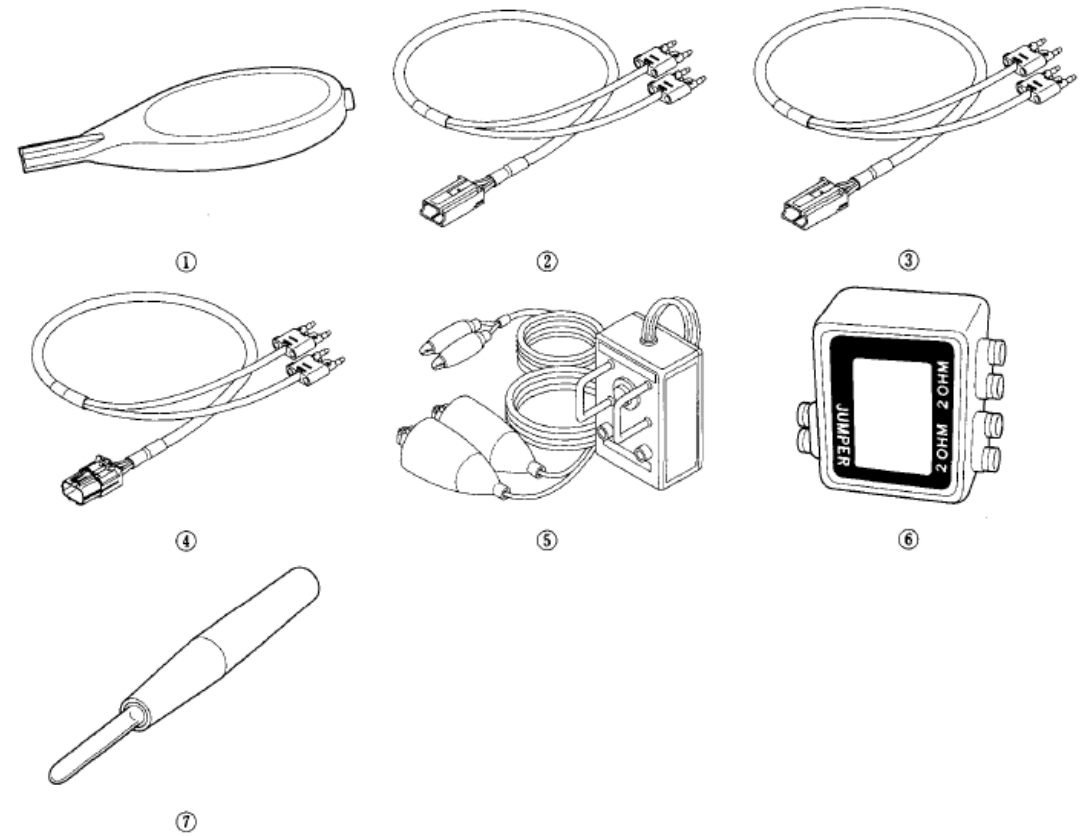


Fig. 1: Identifying Restraints (Special Tools)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2012 RESTRAINTS

Seat Belts - TL

COMPONENT LOCATION INDEX

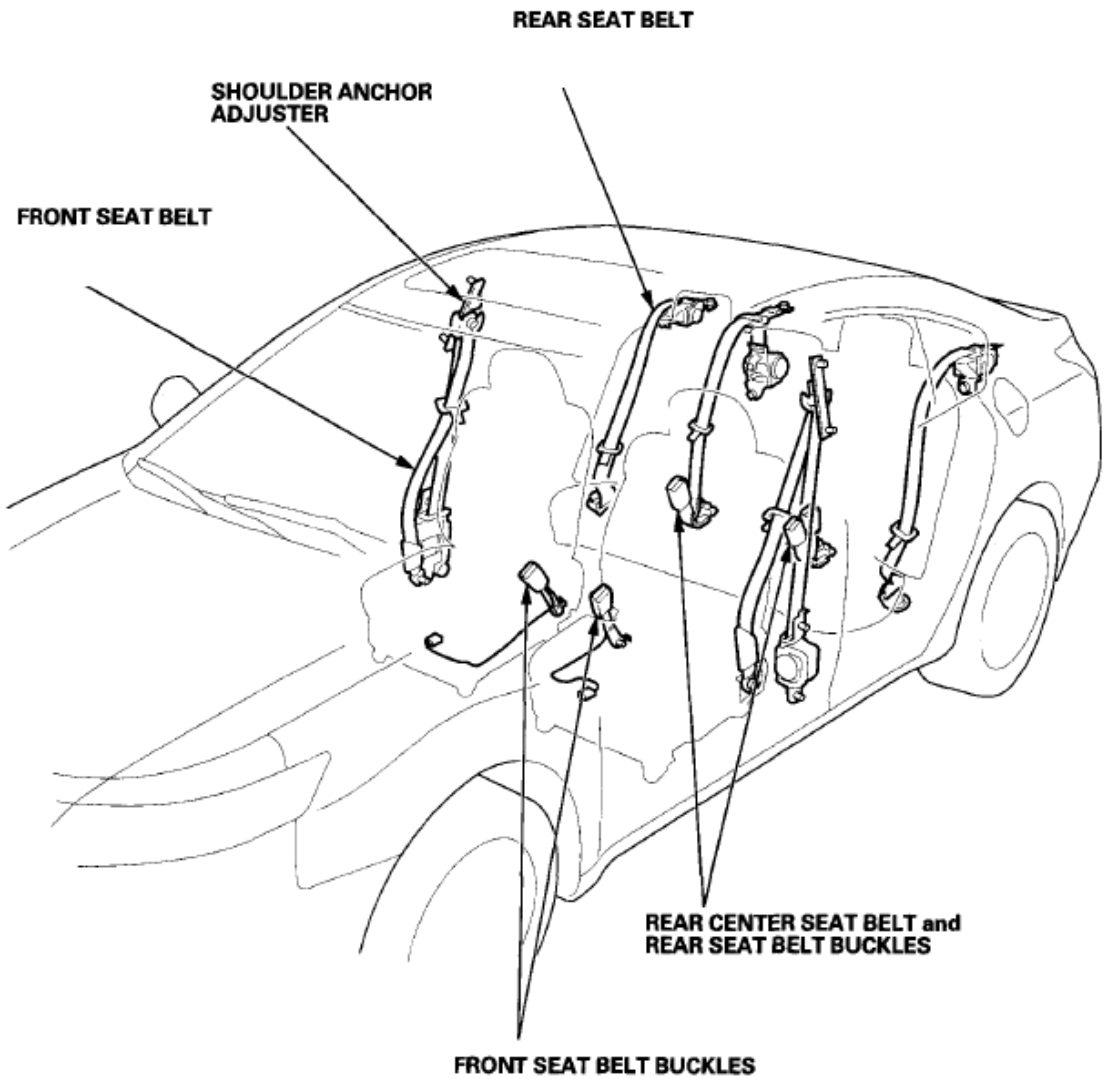


Fig. 1: Seat Belts Components Location
Courtesy of AMERICAN HONDA MOTOR CO., INC.

FRONT SEAT BELT REPLACEMENT

FRONT SEAT BELT

SRS components are located in this area. Review the SRS component locations (see **COMPONENT LOCATION INDEX**) and the precautions and procedures (see **PRECAUTIONS AND PROCEDURES**) before doing repairs or service.

NOTE:

- **If replacing the front seat belts after deployment, refer to Component Replacement/Inspection After Deployment (see COMPONENT REPLACEMENT/INSPECTION AFTER DEPLOYMENT) for a complete list of other parts that must also be replaced.**
- **Put on gloves to protect your hands.**
- **Take care no to scratch the body or tear the seat covers.**
- **Check the front seat belts for damage, and replace them if necessary. Be careful not to damage them during removal and installation.**
- **The driver's seat is shown; the passenger's seat is similar.**

1. Slide the front seat all the way forward. Carefully pry up on the bottom of the anchor cover (A) at the pry point (B) with the appropriate trim tool to release the hooks (C) and the tab (D), then remove the cover by pulling it upward.

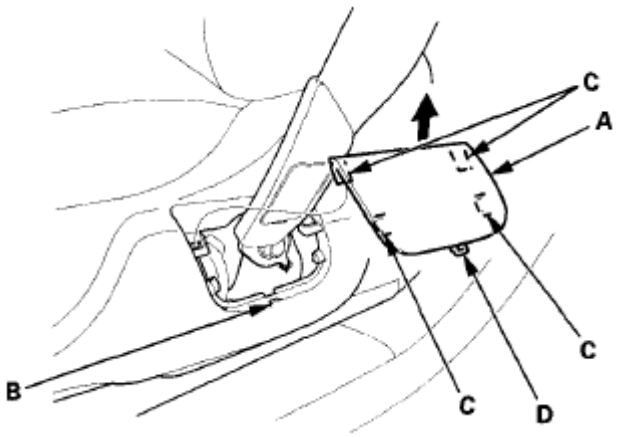


Fig. 2: Identifying Front Seat Anchor Cover, Pry Point, Hooks And Tab
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Remove the lower anchor bolt (A).

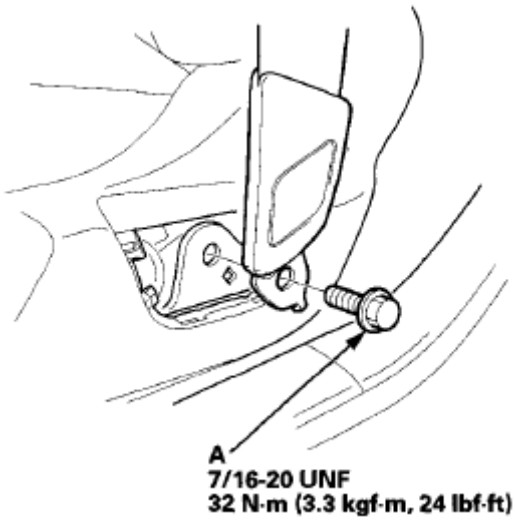


Fig. 3: Identifying Lower Anchor Bolt With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Do the battery terminal disconnection procedure (see **BATTERY TERMINAL DISCONNECTION AND RECONNECTION**), then wait at least 3 minutes before beginning work.
4. Remove the B-pillar upper/lower trim (see **B-PILLAR UPPER/LOWER TRIM**).
5. Remove the upper anchor bolt (A).

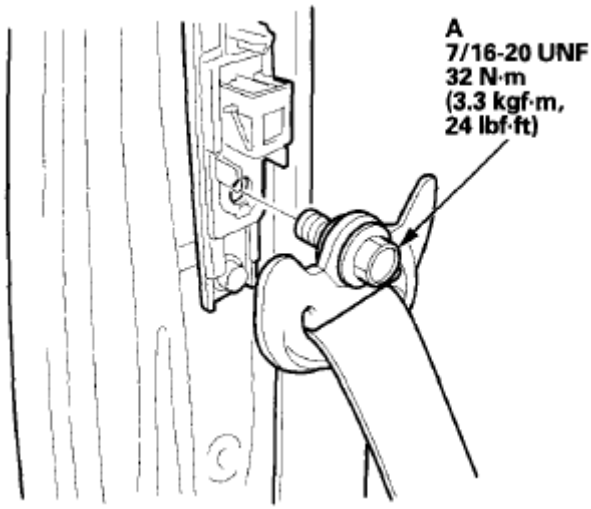


Fig. 4: Identifying Upper Anchor Bolt With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Disconnect the seat belt tensioner connector (A). Remove the upper retractor mounting bolt (B) and the lower retractor bolt (C), then remove the front seat belt assembly (D).

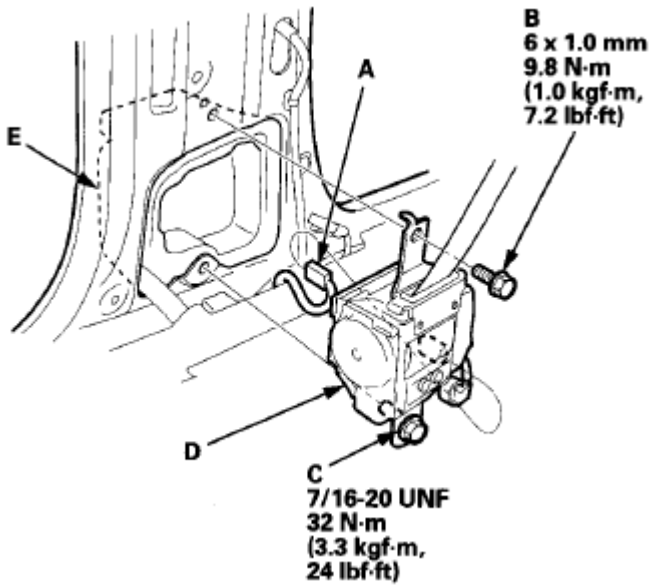


Fig. 5: Removing Upper Retractor Mounting Bolt And Lower Retractor Bolt, And Front Seat Belt Assembly With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. If necessary, remove the front seat belt protector (E).
8. Remove the shoulder anchor adjuster (A).

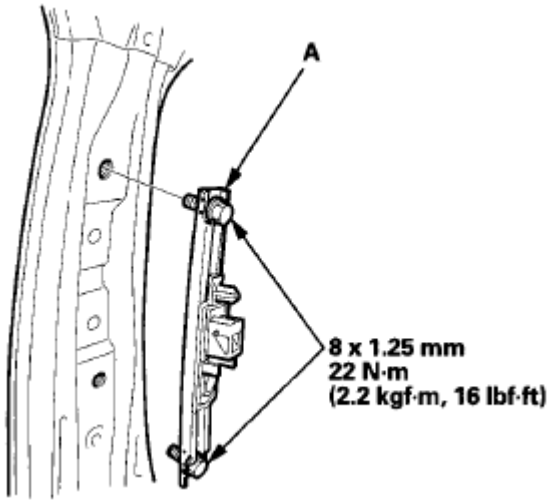


Fig. 6: Removing Shoulder Anchor Adjuster With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

9. Install the seat belt assembly in the reverse order of removal, and note these items:
   - Check that the **retractor** locking mechanism functions.
   - Assemble the washer, the collars, and the bushing on the upper anchor bolt and the retractor bolt as shown.

- Apply medium strength liquid thread lock to the upper anchor bolt before reinstallation.
- Tighten the bolts by hand first, then tighten to the specified torque.
- Before installing the anchor bolts, make sure there are no twists or kinks in the seat belt.
- Make sure the seat connector is plugged in properly.
- Do the battery terminal reconnection procedure (see **BATTERY TERMINAL DISCONNECTION AND RECONNECTION**).
- Check for any DTCs that may have been set during repairs, and clear them.

Upper anchor bolt installation

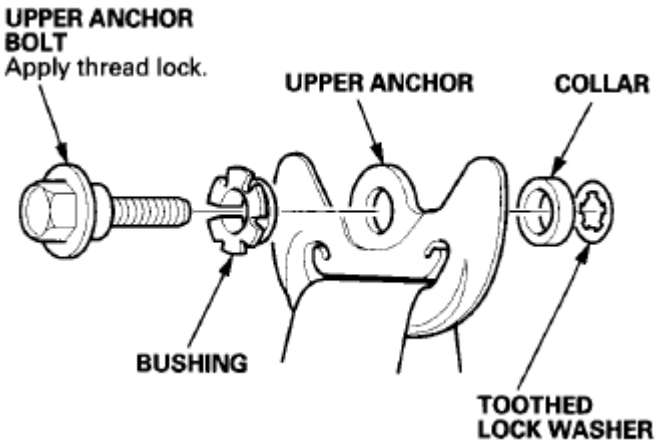


Fig. 7: Installing Upper Anchor Bolt
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Retractor bolt installation

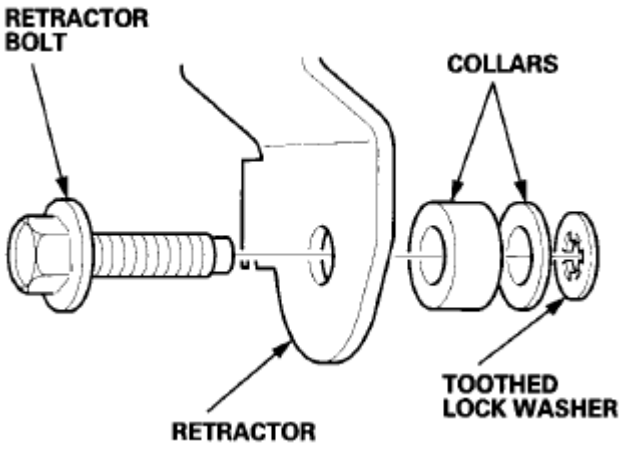


Fig. 8: Installing Retractor Bolt
Courtesy of AMERICAN HONDA MOTOR CO., INC.

FRONT SEAT BELT BUCKLE

SRS components are located in this area. Review the SRS component locations (see **COMPONENT LOCATION INDEX**) and the precautions and procedures (see **PRECAUTIONS AND PROCEDURES**) before doing repairs or service.

NOTE:

- **Put on gloves to protect your hands.**
- **Take care not to scratch the body or tear the seat covers.**

1. Do the battery terminal disconnection procedure (see **BATTERY TERMINAL DISCONNECTION AND RECONNECTION**), then wait at least 3 minutes before beginning work.
2. Remove the front seat (see **FRONT SEAT REMOVAL/INSTALLATION**).
3. Lift up the front seat, disconnect the seat belt buckle switch connector (A), then detach the connector clip (B) and the harness clip(s) (C).

Driver's seat (Without seat ventilation)

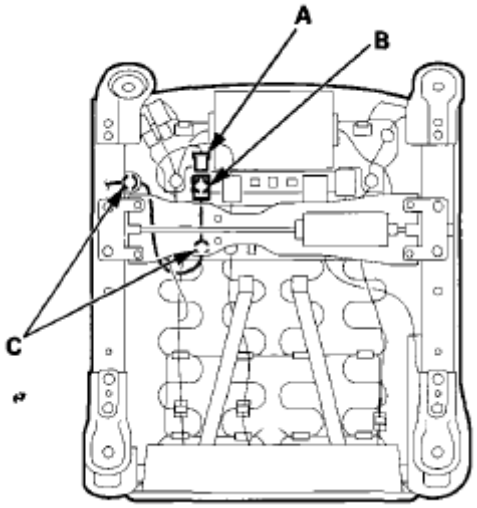


Fig. 9: View Of Driver's Seat (Without Seat Ventilation)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Driver's seat (With seat ventilation)

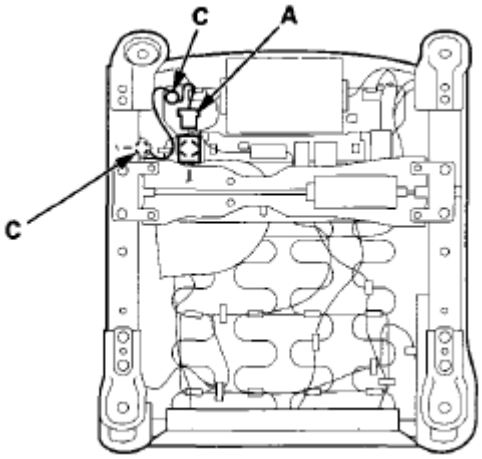


Fig. 10: View Of Driver's Seat (With Seat Ventilation)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Passenger's seat

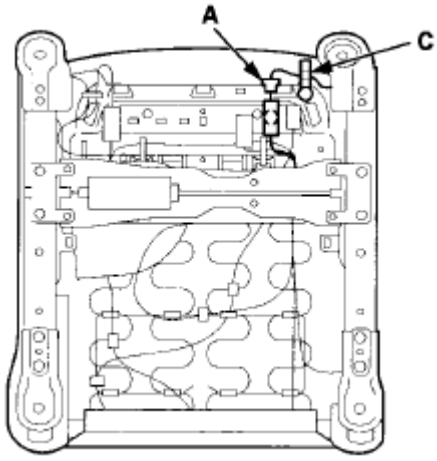


Fig. 11: View Of Passenger's Seat
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Remove the center anchor bolt (A), and detach the harness clips (B), then remove the seat belt buckle (C).

Driver's seat

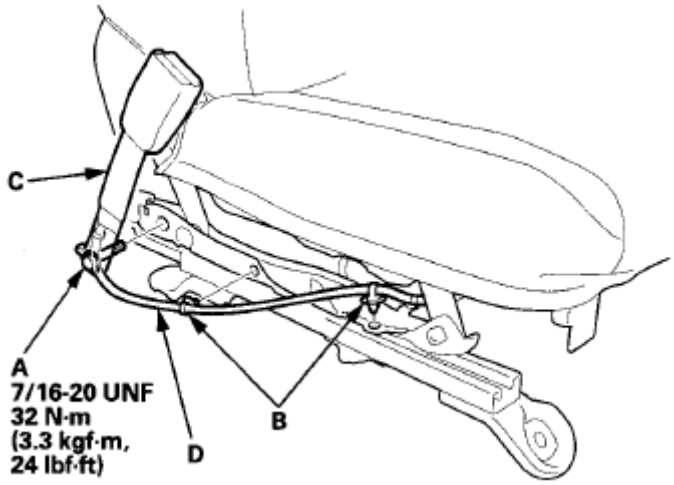


Fig. 12: Identifying Center Anchor Bolt, Harness Clips, And Seat Belt Buckle (Driver's Seat) With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Passenger's seat

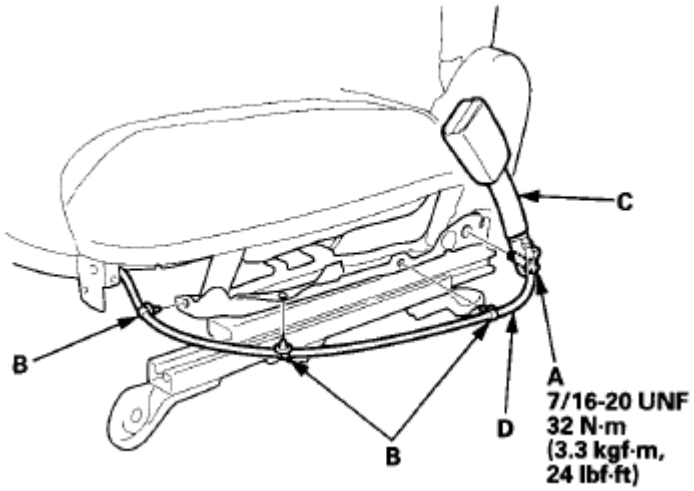


Fig. 13: Identifying Center Anchor Bolt, Harness Clips, And Seat Belt Buckle (Passenger's Seat) With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Pull out the seat belt buckle switch harness (D) through the space between the seat cushion and the seat track.
6. Install the buckle in the reverse order of removal, and note these items:
   - Assemble the washers and the collar on the center anchor bolt as shown.
   - Before installing the center anchor bolt, make sure there are no twists or kinks in the front seat belt.
   - Tighten the bolts by hand first, then tighten to the specified torque.
   - Make sure the connector is plugged in properly.

- Do the battery terminal reconnection procedure (see **BATTERY TERMINAL DISCONNECTION AND RECONNECTION**).
- Check for any DTCs that may have been set during repairs, and clear them.

Center anchor bolt installation

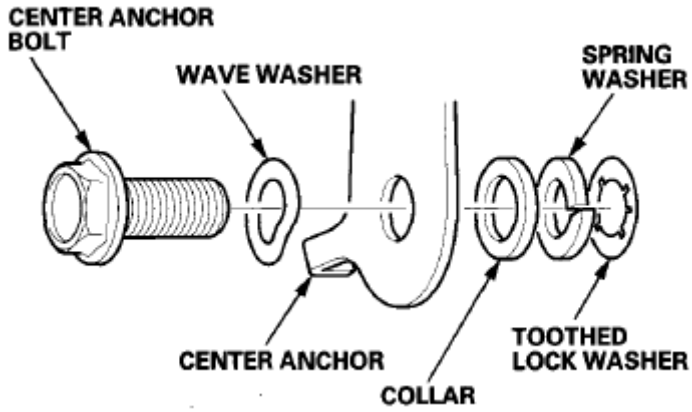


Fig. 14: Installing Center Anchor Bolt
Courtesy of AMERICAN HONDA MOTOR CO., INC.

REAR SEAT BELT REPLACEMENT

REAR SEAT BELT

NOTE:

- **Put on gloves to protect your hands.**
- **Take care not to scratch the body or tear the seat covers.**
- **Check the front seat belts for damage, and replace them if necessary. Be careful not to damage them during removal and installation.**

1. Remove the rear seat cushion and the rear seat-back (see **REAR SEAT REMOVAL/INSTALLATION**).
2. Remove the lower anchor bolt (A).

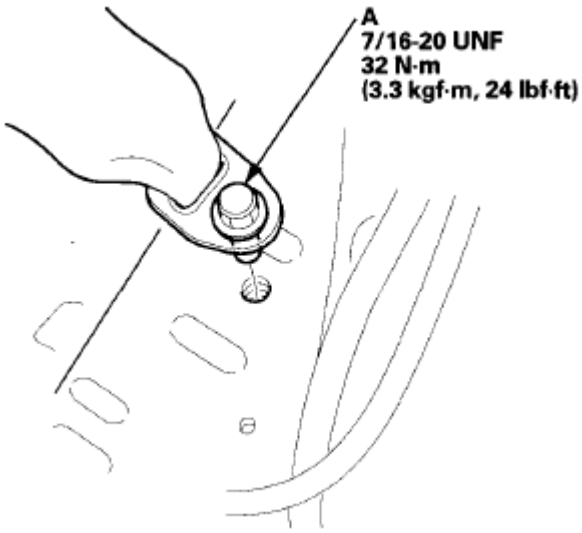


Fig. 15: Identifying Lower Anchor Bolt With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Remove these items:
   - C-pillar trims, both sides (see **TRIM REMOVAL/INSTALLATION - PILLAR AREAS**)
   - Rear shelf (see **TRIM REMOVAL/INSTALLATION - REAR SHELF AREA**)
4. Remove the retractor mounting bolt (A) and the retractor bolt (B), then remove the rear seat belt assembly (C).

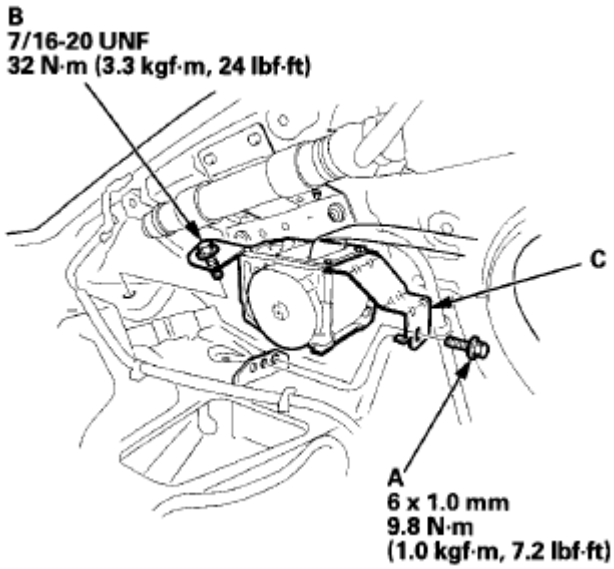


Fig. 16: Identifying Retractor Mounting Bolt And Retractor Bolt And Rear Seat Belt Assembly With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Install the rear seat belt assembly in the reverse order of removal, and note these items:

- Check that the **retractor** locking mechanism functions.
- Before installing the anchor bolt, make sure there are no twists or kinks in the rear seat belt.

REAR CENTER SEAT BELT AND REAR SEAT BELT BUCKLES

NOTE:

- **Put on gloves to protect your hands.**
- **Take care not to scratch the body or tear the seat covers.**
- **Check the center seat belt for damage, and replace it if necessary. Be careful not to damage it during removal and installation.**

1. Remove the rear seat cushion (see **REAR SEAT REMOVAL/INSTALLATION**).
2. Remove the center anchor bolts (A), then remove the right seat belt buckle (B), the center seat belt buckle (C), and the left seat belt buckle (D).

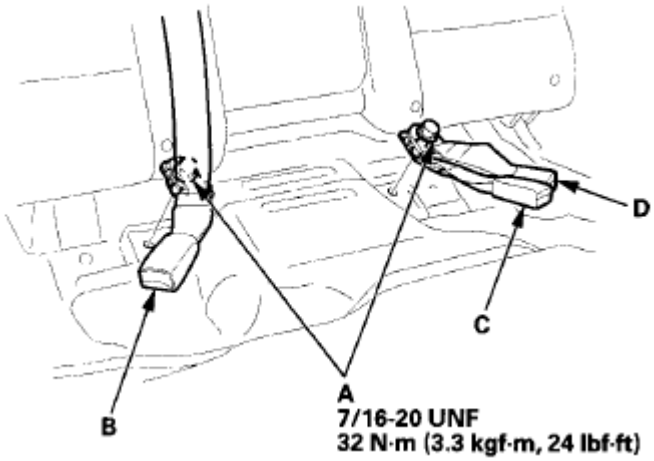


Fig. 17: Identifying Center Anchor Bolts, Right Seat Belt Buckle, Center Seat Belt Buckle And Left Seat Belt Buckle With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Remove the rear seat-back (see **REAR SEAT REMOVAL/INSTALLATION**).
4. Remove these items:
   - C-pillar trims, both sides (see **C-PILLAR TRIM**)
   - Rear shelf (see **TRIM REMOVAL/INSTALLATION - REAR SHELF AREA**)
5. Remove the upper anchor bolt (A).

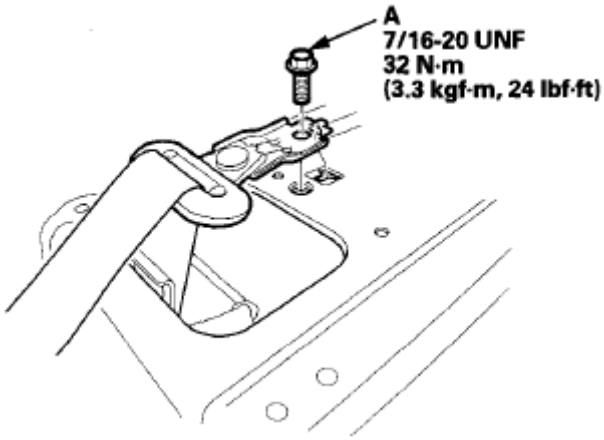


Fig. 18: Identifying Upper Anchor Bolt With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Loosen the retractor mounting bolt (A), and remove the retractor bolt (B), then remove the center seat belt assembly (C).

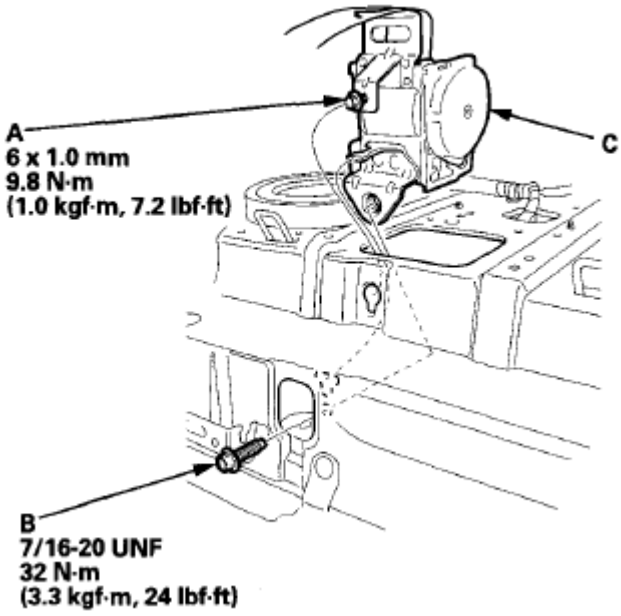


Fig. 19: Identifying Retractor Mounting Bolt, Retractor Bolt And Center Seat Belt Assembly With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Install the seat belt and buckles in the reverse order of removal, and note these items:
   - Check that the **retractor** locking mechanism functions.
   - Assemble the washer on the center anchor bolt as shown.
   - Before installing the center anchor bolt, make sure there are no twists or kinks in the center seat belt.

- Tighten the bolts by hand first, then tighten to the specified torque.

Center anchor bolt installation

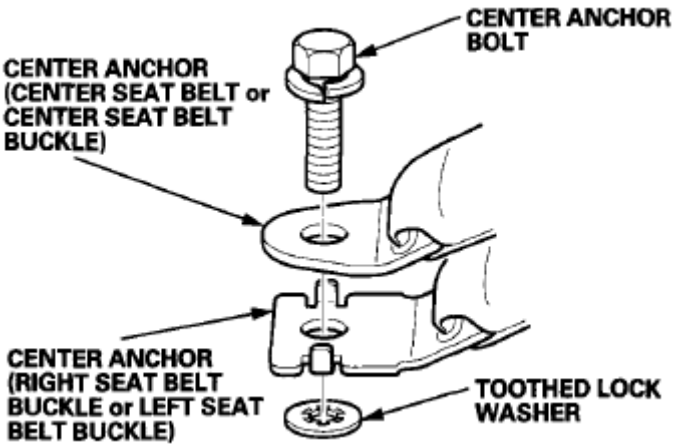


Fig. 20: Installing Center Anchor Bolt
Courtesy of AMERICAN HONDA MOTOR CO., INC.

INSPECTION

OUT OF VEHICLE

For front seat belt retractors with seat belt tensioners, review the SRS component locations (see **COMPONENT LOCATION INDEX**) and the precautions and procedures (see **PRECAUTIONS AND PROCEDURES**) before doing repairs or service.

RETRACTOR

1. Before installing the retractor, check that the seat belt can be pulled out freely.
2. Make sure that the seat belt does not lock when the retractor (A) is leaned slowly up to 15 ° from the mounted position. The seat belt should lock when the retractor is leaned over 40 °. Do not attempt to disassemble the retractor.

   Driver's side

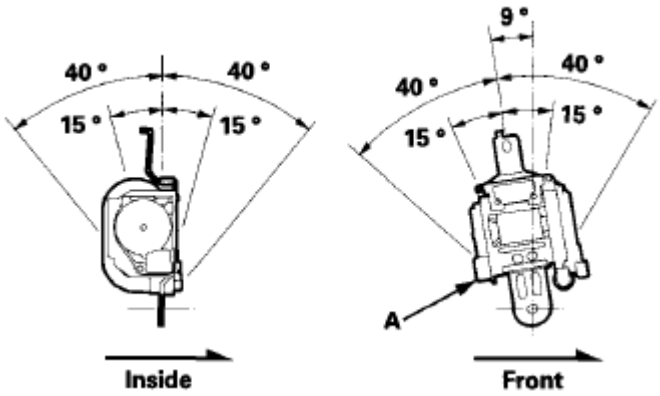


Fig. 21: Identifying Seat Belt Retractor Locking Angle (Driver's Side)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Passenger's side

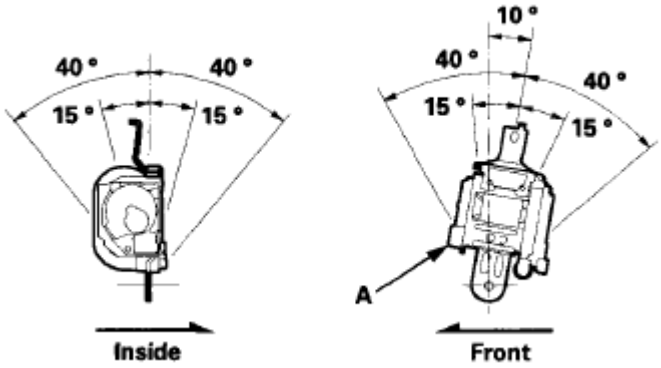


Fig. 22: Identifying Seat Belt Retractor Locking Angle (Passenger's Side)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Rear

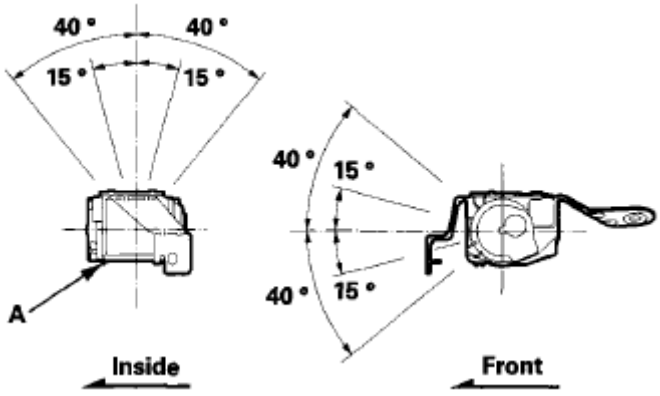


Fig. 23: Identifying Seat Belt Retractor Locking Angle (Rear)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Rear center

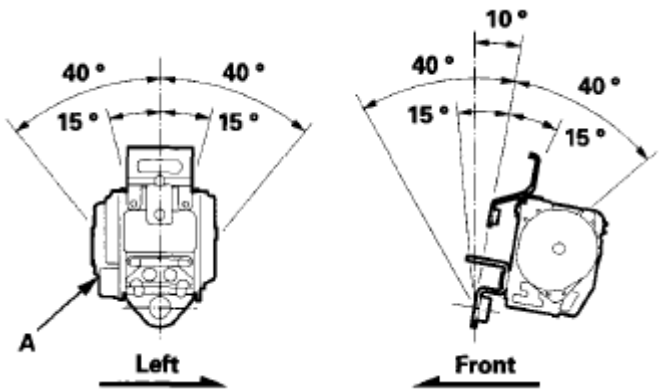


Fig. 24: Identifying Seat Belt Retractor Locking Angle (Rear Center)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Replace the seat belt with a new assembly if there is any abnormality. Do not disassemble any part of the seat belt for any reason.

IN-VEHICLE

1. Check that the seat belt is not twisted or caught on anything.
2. After installing the anchors, check for free movement on the anchor bolts. If necessary, remove the anchor bolts, and check that the washers and other parts are not damaged or improperly installed.
3. Check the seat belts for damage or discoloration. Clean with a shop towel if necessary. Use only soap and water to clean the seat belt.

NOTE: Dirt build-up in the loops of the upper anchors can cause the seat belts to retract slowly. Wipe the inside of the loops with a clean cloth dampened with isopropyl alcohol.

4. Check that the seat belt does not lock when pulled out slowly. The seat belt is designed to lock only during a sudden stop or impact.
5. Make sure that the seat belt will retract automatically when released.
6. For each passenger's seat belt, check the seat belt retractor locking mechanism automatic locking retractor (ALR). This function is for securing child seats.
    1. Pull the seat belt all the way out to engage the ALR. The seat belt should retract, but not extend. This is normal.
    2. To disengage the ALR, release the seat belt and allow it to fully retract, then pull the seat belt out part-way. The seat belt should retract and extend normally.
7. Replace the seat belt with a new assembly if there is any abnormality. Do not disassemble any part of the seat belt for any reason.

2012 RESTRAINTS

Supplemental Restraint System - TL

COMPONENT LOCATION INDEX

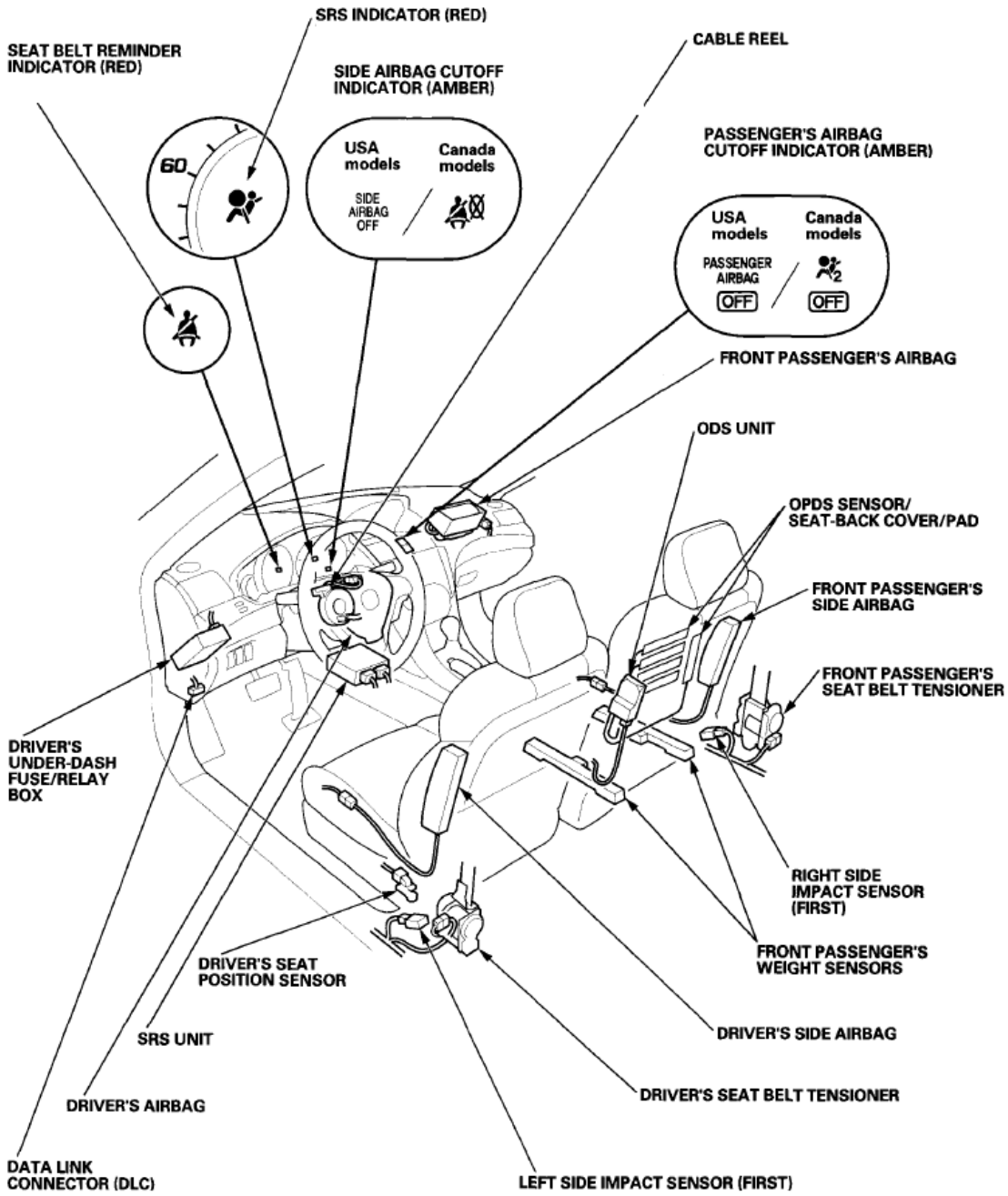


Fig. 1: Supplemental Restraint System Components Location (1 Of 2)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

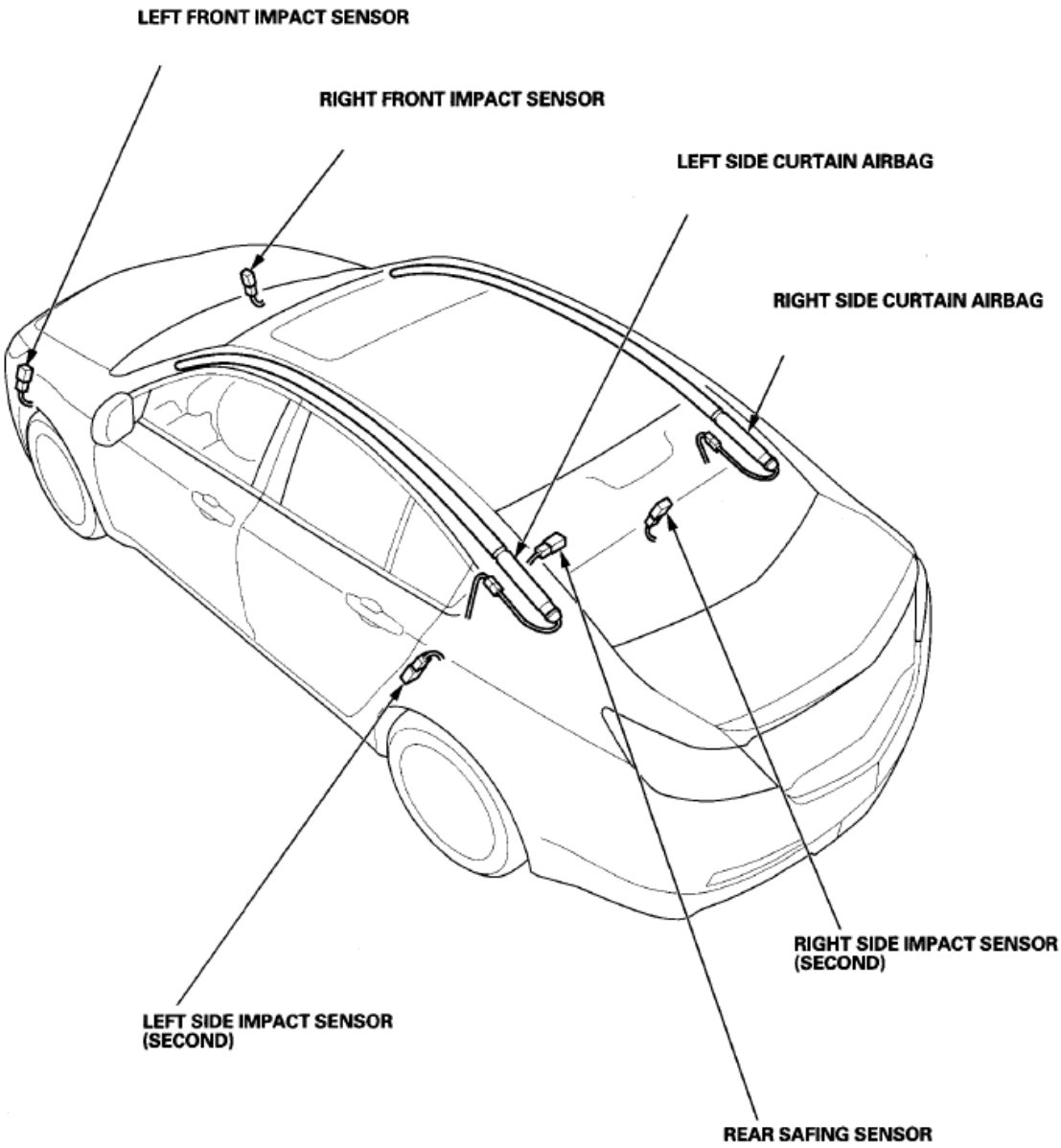


Fig. 2: Supplemental Restraint System Components Location (2 Of 2)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

PRECAUTIONS AND PROCEDURES

GENERAL PRECAUTIONS

NOTE: Some systems store data in memory that is lost when the battery is disconnected. Before disconnecting the battery, refer to Battery Terminal Disconnection and Reconnection (see BATTERY TERMINAL DISCONNECTION AND RECONNECTION).

Please read the following precautions carefully before servicing the SRS, or the airbags could accidentally deploy and cause damage or injuries.

- Except when doing electrical inspections that requires battery power, always turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode, disconnect the negative cable from the battery, then wait at least 3 minutes before starting work.

NOTE: The SRS memory is not erased even if the ignition switch is turned to LOCK (0), or the engine start/stop button is pressed to select the OFF mode, or if the battery cables are disconnected from the battery.

- Use replacement parts which are manufactured to the same standards and quality as the original parts. Do not install used SRS parts. Use only new parts when making SRS repairs.
- Carefully inspect any SRS part before you install it. Do not install any part that shows signs of being dropped or improperly handled, such as dents, cracks or deformation.

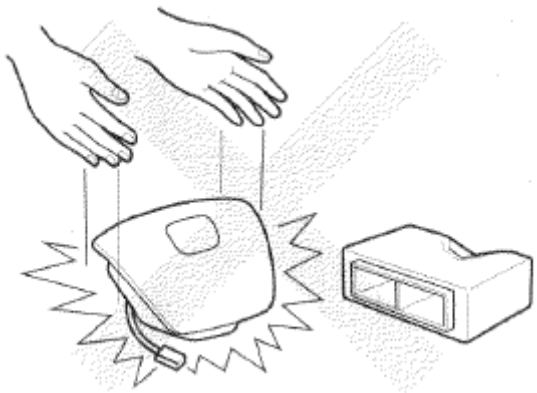


Fig. 3: Identifying Dropped Or Improperly Handled SRS Part
Courtesy of AMERICAN HONDA MOTOR CO., INC.

- Before disconnecting the SRS unit connectors, always disconnect the appropriate SRS parts connectors.
- Use only a digital multimeter to check the system. If it is not a Honda multimeter, make sure its output is 10 mA (0.01 A) or less when switched to the lowest value in the ohmmeter range. A tester with a higher output could cause accidental deployment and possible injury.
- Do not put objects on the front passenger's airbag.

STEERING-RELATED PRECAUTIONS

Cable Reel Alignment

- Misalignment of the cable reel could cause an open in the wiring, making the SRS, remote steering wheel controls, or the horn inoperative. Center the cable reel whenever you do the following (see step 5).
  - Installation of the steering wheel.
  - Installation of the cable reel.
  - Installation of the steering column.

- Other steering-related adjustment or installation.

- Do not disassemble the cable reel.
- Do not apply grease to the cable reel.
- If the cable reel shows any signs of damage, replace it with a new one. For example, if the cable reel does not rotate smoothly, replace it.

AIRBAG HANDLING AND STORAGE

Do not disassemble an airbag. It has no serviceable parts. Once an airbag has been deployed, it cannot be repaired or reused.

For temporary storage of an airbag during service, observe the following precautions.

- Store the removed airbag with the pad surface up. Never put anything on the airbag.

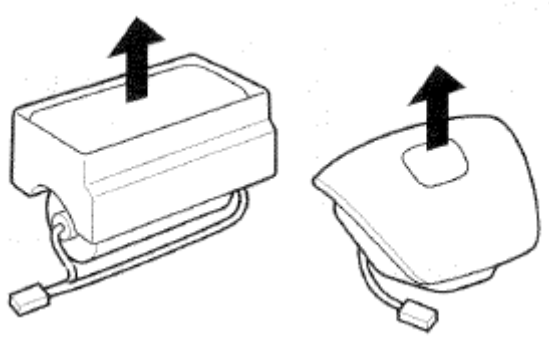


Fig. 4: Removing Airbag With Pad Surface Up
Courtesy of AMERICAN HONDA MOTOR CO., INC.

- To prevent damage to the airbag, keep it away from any oil, grease, detergent, or water.

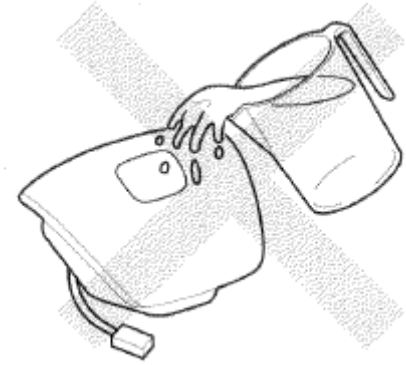


Fig. 5: Preventing Damage To Airbag, Keep It Away From Any Oil, Grease, Detergent, Or Water
Courtesy of AMERICAN HONDA MOTOR CO., INC.

- Store the removed airbag on a secure, flat surface away from any high heat source (exceeding 200°F (93° C)).

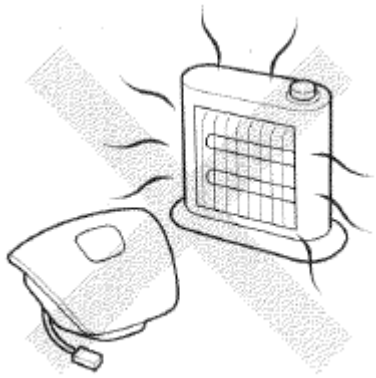


Fig. 6: Caution - Do Not Store Near High Heat Source
Courtesy of AMERICAN HONDA MOTOR CO., INC.

- Never do electrical tests on the airbags, such as measuring resistance.
- Do not position yourself in front of the airbag during removal, inspection, or replacement.

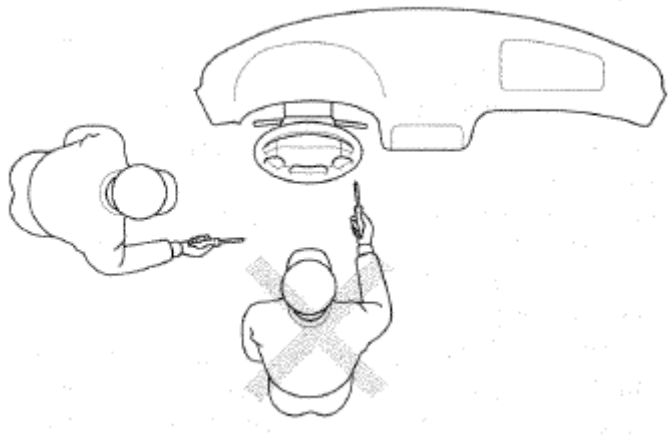


Fig. 7: Caution - Do Not Position Yourself In Front Of The Airbag During Removal, Inspection, Or Replacement
Courtesy of AMERICAN HONDA MOTOR CO., INC.

- For proper disposal of a damaged airbag or tensioner, refer to **AIRBAG AND TENSIONER DISPOSAL**.
- The side curtain airbag module assembly is a long, jointed part containing an inflator (A), a flexible bag (B), and brackets (C). When removing or installing the side curtain airbag assembly, never:
  - Handle the flexible bag.
  - Drop the airbag assembly.
  - Cut, tear, or unwrap the tape strips.

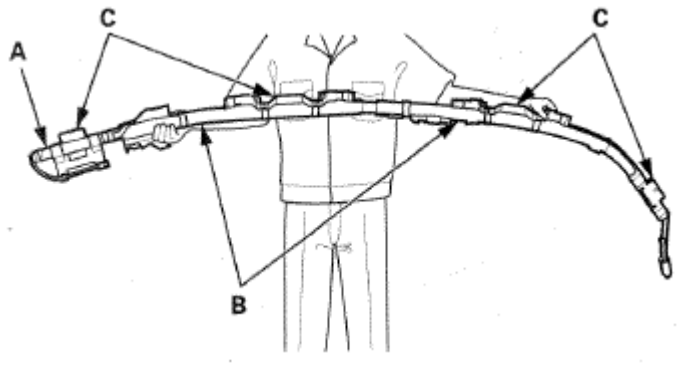


Fig. 8: Handling Flexible Bag
Courtesy of AMERICAN HONDA MOTOR CO., INC.

SRS UNIT, FRONT AND SIDE IMPACT SENSORS, REAR SAFING SENSOR, DRIVER'S SEAT POSITION SENSOR, AND FRONT PASSENGER'S WEIGHT SENSORS

NOTE: Some systems store data in memory that is lost when the battery is disconnected. Before disconnecting the battery, refer to Battery Terminal Disconnection and Reconnection (see BATTERY TERMINAL DISCONNECTION AND RECONNECTION).

- Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode. Disconnect the negative cable from the battery, then wait at least 3 minutes before starting installation or replacement of the SRS unit, or disconnecting the connectors from the SRS unit.
- Be careful not to bump or impact the SRS unit, the front impact sensors, the side impact sensors, or the rear safing sensor when the ignition switch is in ON (II), press the engine start/stop button to select the ON mode, for at least 3 minutes after the ignition switch is turned to LOCK (0), or the engine start/stop button is pressed to select the OFF mode.
- Do not reconnect any connectors to the SRS unit until it is fully installed, including torquing the TORX bolts.
- During installation or replacement, be careful not to bump (by impact wrench, hammer, etc.) the area around the SRS unit, the front impact sensors, the side impact sensors, or the rear safing sensor. The airbags could accidentally deploy and cause damage or injury.

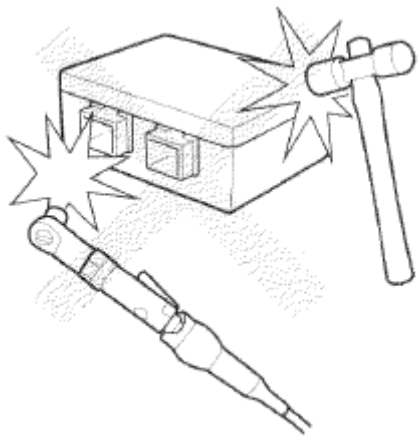


Fig. 9: Caution - Do Not Bump (By Impact Wrench, Hammer, Etc.) The Area Around The SRS Unit, The Front Impact Sensors, The Side Impact Sensors, Or The Rear Safing Sensor
Courtesy of AMERICAN HONDA MOTOR CO., INC.

- After a collision where the front airbags, the side airbags, the side curtain airbags, or the front seat belt tensioners deploy, go to **COMPONENT REPLACEMENT/INSPECTION AFTER DEPLOYMENT**. After a collision where the airbags or the side airbags do not deploy, inspect for any damage or any deformation on the SRS unit, the front impact sensors, the rear safing sensor, and the side impact sensors. If there is any damage, replace the SRS unit and/or the sensors. Also, do the front seat active head restraint inspection (see **FRONT SEAT ACTIVE HEAD RESTRAINT INSPECTION**). Replace all damaged parts.

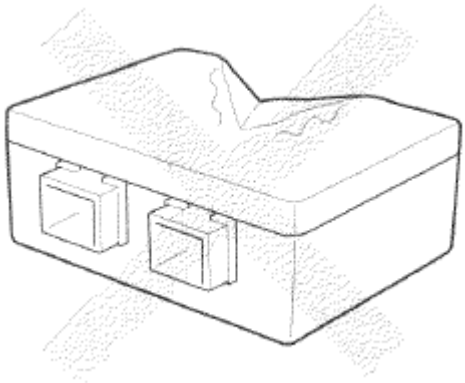


Fig. 10: Caution Of Component Replacement/Inspection After Deployment
Courtesy of AMERICAN HONDA MOTOR CO., INC.

- Do not disassemble the SRS unit, the front impact sensors, the side impact sensors, the rear safing sensor, the driver's seat position sensor, or the front passenger's weight sensors.
- Always install the SRS unit, driver's seat position sensor, all impact sensors, and the rear safing sensor with the new TORX bolts to the specified torque.
- Do not spill water or oil on the SRS unit or any of the sensors.

WIRING PRECAUTIONS

Some of the SRS wiring can be Identified by a special yellow outer covering, and the SRS connectors can be identified by their yellow color. Observe the following instructions.

- Never attempt to modify, splice, or repair SRS wiring.

  If there is an open or damage to the SRS wiring, replace the harness.

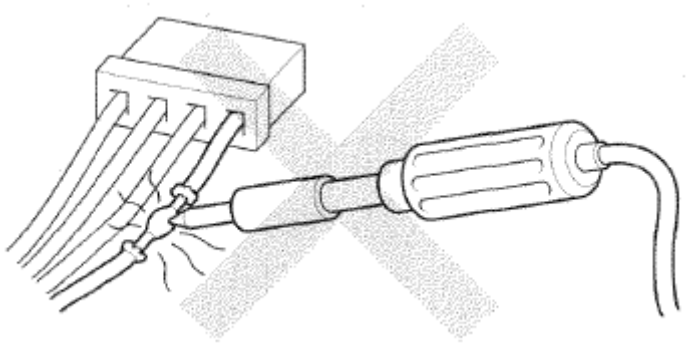


Fig. 11: Caution - Do Not Attempt To Modify, Splice, Or Repair SRS Wiring
Courtesy of AMERICAN HONDA MOTOR CO., INC.

- Be sure to install the harness wires so they do not get pinched or interfere with other parts.

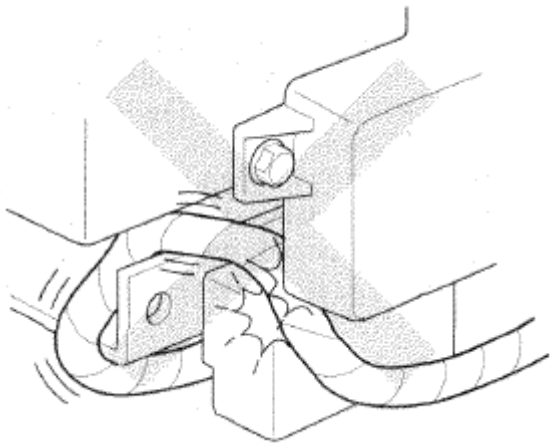


Fig. 12: Caution - Be Sure To Install The Harness Wires So They Do Not Get Pinched Or Interfere With Other Parts
Courtesy of AMERICAN HONDA MOTOR CO., INC.

- Make sure all SRS ground locations are clean, and the grounds are securely fastened for optimum metal-to-metal contact. Poor grounds can cause intermittent problems that are difficult to diagnose.
- Do not use any silicon based cleaners or lubricants on any SRS connectors or terminals.

PRECAUTIONS FOR ELECTRICAL INSPECTIONS

Special Tools Required

Back Probe Adapter, 17 mm 07TAZ-001020A

- Make sure the battery is fully charged when doing electrical test. If the battery is not fully charged, the results of the tests may not be accurate.
- When using electrical test equipment, insert the probe of the tester into the wire side of the connector (except SRS unit connectors and waterproof SRS connectors). Do not insert the probe of the tester into the terminal side of the connector, and do not tamper with the connector.

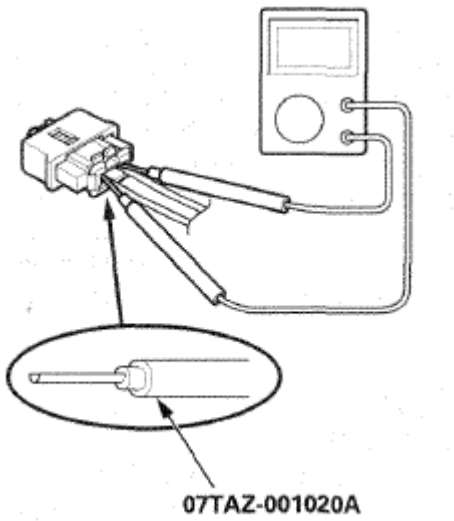


Fig. 13: Identifying Back Probe Adapter, 17 mm 07TAZ-001020A
Courtesy of AMERICAN HONDA MOTOR CO., INC.

- Use the back probe adapter, 17 mm. Do not insert the probe forcibly.

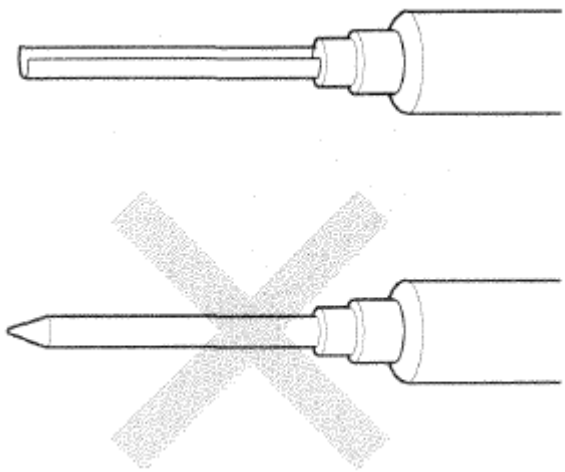


Fig. 14: Caution Of Inserting Probe
Courtesy of AMERICAN HONDA MOTOR CO., INC.

- Use specified service connectors in troubleshooting. Using improper tools could cause a diagnostic error due to poor metal-to-metal contact.

SRS UNIT CONNECTORS

When diagnosing or troubleshooting at an SRS unit connector (A), use the terminal test port below the terminal you need to check. Gently insert the pin probes of the tester or jumper wire at the terminal test port from the terminal side.

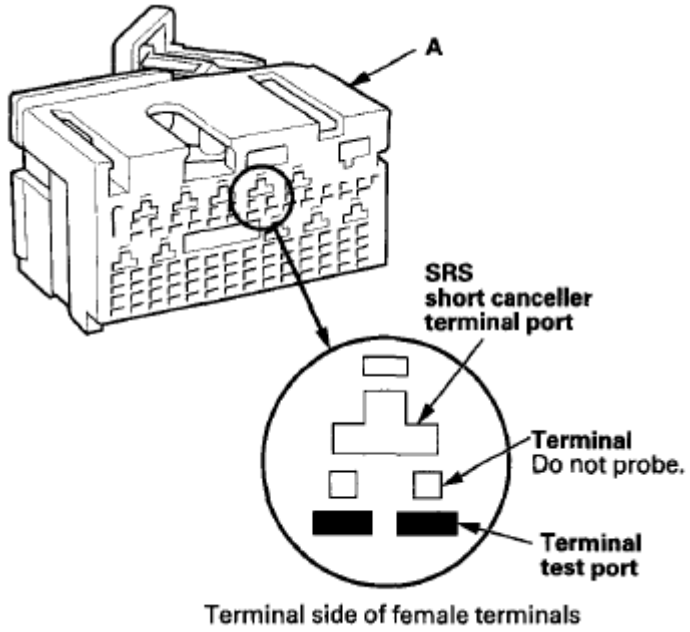


Fig. 15: Identifying SRS Unit Connectors
Courtesy of AMERICAN HONDA MOTOR CO., INC.

NOTE:

- **Do not insert the pin probes of the tester or a jumper wire at the terminal port or the SRS short canceller terminal port.**
- **To prevent damage to the connector terminals, do not insert the test equipment probes, paper clips, or other substitutes as they can damage the terminals. Damaged terminals cause a poor connection and an incorrect measurement.**

WATERPROOF SRS CONNECTORS

When diagnosis or troubleshooting is done at a waterproof SRS connector (A), use the terminal test port above the terminal you need to check. Gently insert the pin probe of the tester or jumper wire at the terminal test port from the terminal side.

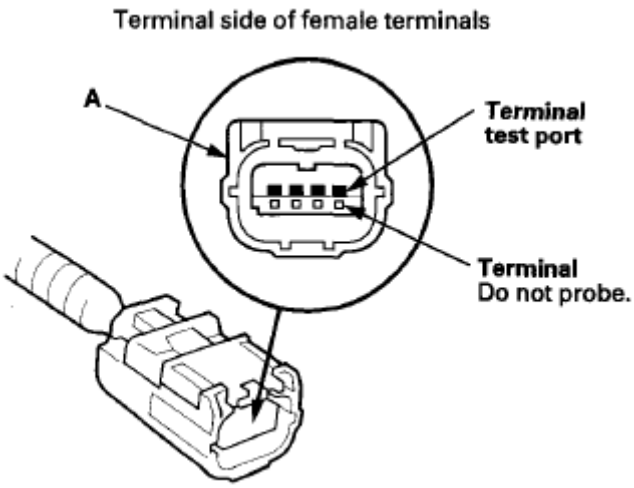


Fig. 16: Identifying Waterproof SRS Connectors
Courtesy of AMERICAN HONDA MOTOR CO., INC.

NOTE:

- **Do not insert the pin probes of the tester or a jumper wire into the terminal port.**
- **To prevent damage to the connector terminals, do not insert the test equipment probes, paper clips, or other substitutes as they can damage the terminals. Damaged terminals can cause a poor connection and an incorrect measurement.**

LEVER-LOCKED CONNECTOR

The SRS unit connectors have a lever lock.

SRS Unit Connectors

Disconnecting

To release the lock (A), pull the lever (B) while pushing the lock on the outside of the connector, then pull out the connector (C).

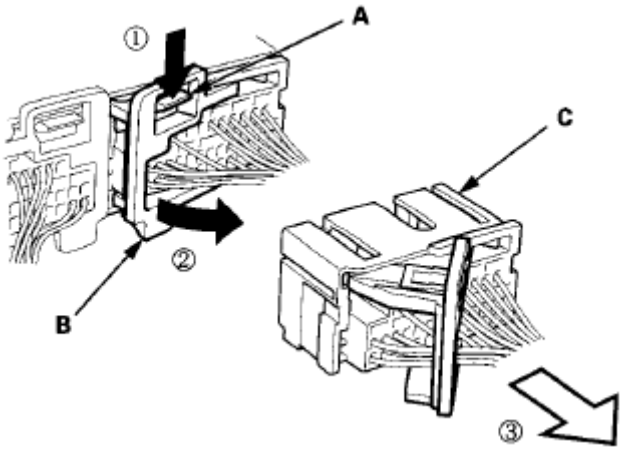


Fig. 17: Disconnecting Lever-Locked Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Connecting

To reconnect the connector (A), push in on the connector. As the connector is pressed in, the lever (B) moves to the locked position.

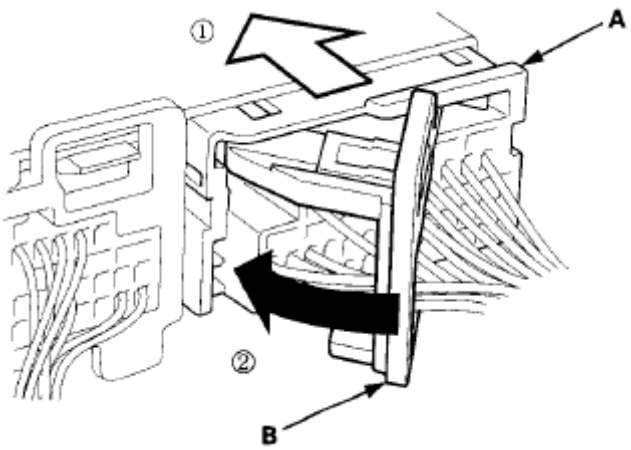


Fig. 18: Connecting Lever-Locked Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

SPRING-LOADED LOCK CONNECTOR

Some SRS connectors have a spring-loaded lock.

Front Airbag Connectors/Front Seat Belt Tensioner Connector

Disconnecting

To release the lock, pull the spring-loaded sleeve (A) toward the stop (B) while holding the opposite half of the connector, then pull the connector halves apart. Be sure to pull on the sleeve and not on the connector.

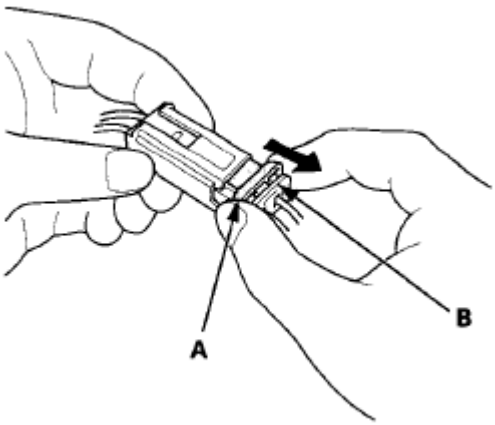


Fig. 19: Disconnecting Spring-Loaded Lock Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Connecting

To reconnect, hold the pawl-side connector, and press on the back of the sleeve-side connector in the direction shown. As the two connector halves are pressed together, the sleeve (A) is pushed back by the pawl (B). Do not touch the sleeve.

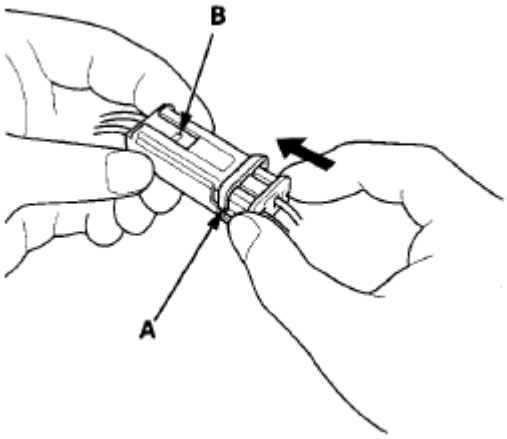


Fig. 20: Connecting Spring-Loaded Lock Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Side Airbag Connector/Side Curtain Airbag Connector

Disconnecting

To release the lock, pull the spring-loaded sleeve (A) toward the stop (6) while holding the opposite half of the connector, then pull the connector halves apart. Be sure to pull on the sleeve and not on the connector half.

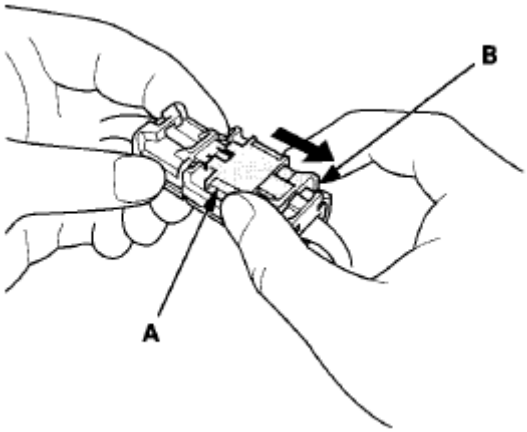


Fig. 21: Disconnecting Side Airbag Connector/Side Curtain Airbag Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Connecting

Hold both connector halves, and press them firmly together until the projection (A) of the sleeve-side connector clicks.

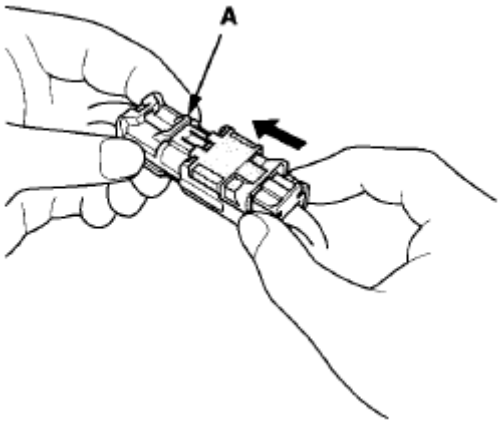


Fig. 22: Connecting Side Airbag Connector/Side Curtain Airbag Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

OPENING THE SRS UNIT SHORTING CONNECTORS FOR DIAGNOSIS

Special Tools Required

SRS Short Canceller 070AZ-SAA0100

NOTE:

- **To prevent damage to the connector cavity, insert an SRS short canceller straight into the cavity from the terminal side.**
- **Before installing an SRS short canceller, wash it with electrical contact cleaner, then dry it with compressed air.**

- **Do not use an SRS short canceller if it is damaged.**
- **Make sure to remove an SRS short canceller before reconnecting the SRS unit connector.**
- **Some systems store data in memory that is lost when the battery is disconnected. Before disconnecting the battery, refer to Battery Terminal Disconnection and Reconnection (see BATTERY TERMINAL DISCONNECTION AND RECONNECTION).**

When SRS unit connectors A (39P) and B (39P) are disconnected, short circuits are automatically created in the connector to prevent accidental deployment of an airbag or tensioner. The circuit may need to be opened sometimes when diagnosing the system. Insert an SRS short canceller in the specified cavities when necessary to keep the circuit open for diagnosis.

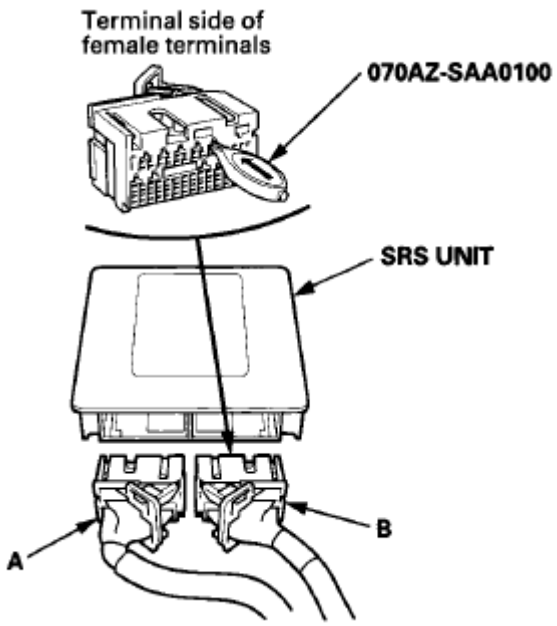


Fig. 23: Identifying SRS Unit Connectors (39P) And (39P)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Terminal numbers are shown on the wire side of the female terminals. Insert the SRS short canceller(s) into the cavities on the terminal side of the connector.

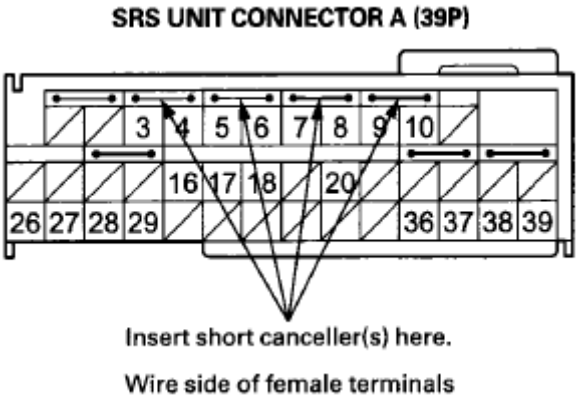


Fig. 24: Identifying SRS Short Canceller(s)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

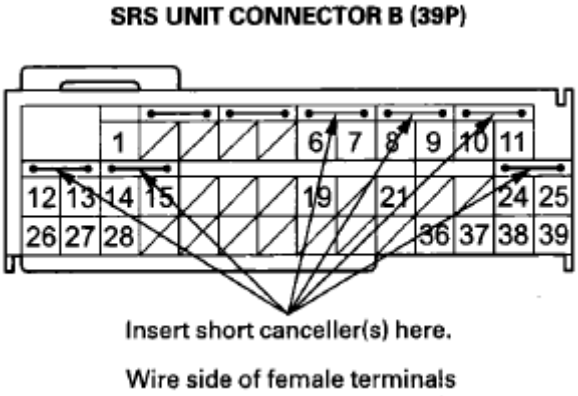


Fig. 25: Identifying SRS Short Canceller(s) With Terminal Side Of Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

FRONT SEATS WITH SIDE AIRBAGS

Front seats with side airbags have a "SIDE AIRBAG" label on the seat-back.

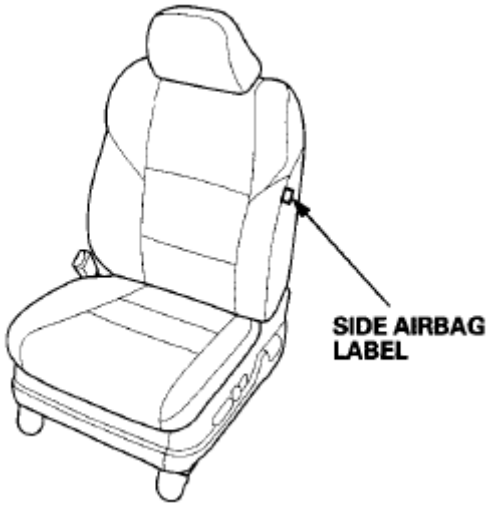


Fig. 26: Identifying Front Seats With Side Airbag Label
Courtesy of AMERICAN HONDA MOTOR CO., INC.

- Clean the seats with a damp cloth. Do not soak the seats with liquid. Do not spray steam on the seats.
- Do not repair a torn or frayed seat-back cover/pad. Replace the seat-back cover/pad if it is damaged.
- After a collision where the side airbag was deployed, replace the side airbag and the seat frame with the new parts. If the seat-back cover is split, it must be replaced. Refer to **COMPONENT REPLACEMENT/INSPECTION AFTER DEPLOYMENT**.
- Never put aftermarket accessories on the seats (covers, pads, seat heaters, lights, etc.).

DISCONNECTING SYSTEM CONNECTORS

1. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode. Do the battery terminal disconnection procedure (see **BATTERY TERMINAL DISCONNECTION AND RECONNECTION**), then wait at least 3 minutes before starting work.

   Driver's Airbag

2. Remove the access panel (A) from the steering wheel, then disconnect the cable reel 4P connector (B) from the driver's airbag 4P connector.

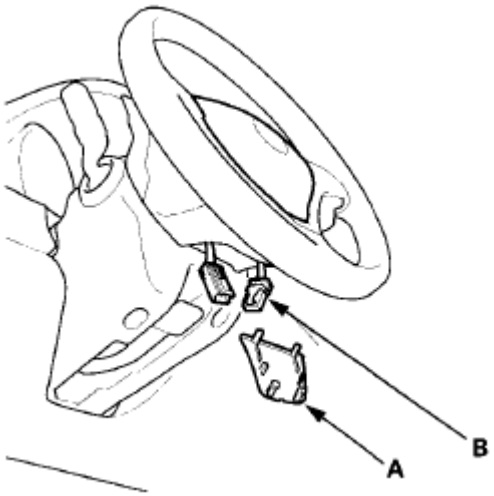


Fig. 27: Identifying Steering Wheel Access Panel And Driver's Airbag 4P Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Front Passenger's Airbag

3. Remove the glove box (see **GLOVE BOX REMOVAL/INSTALLATION**).
4. Disconnect the dashboard wire harness 4P connector (A) from the front passenger's airbag 4P connector.

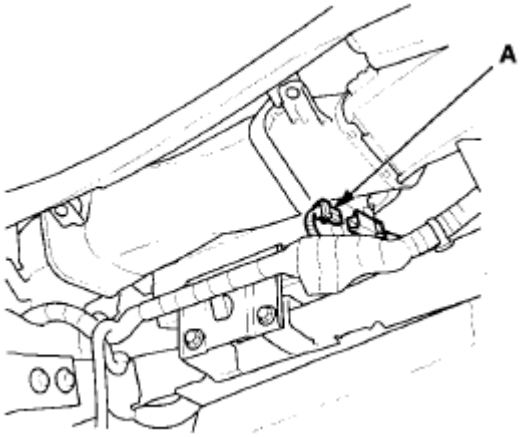


Fig. 28: Identifying Dashboard Wire Harness 4P Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Side Airbag

5. Disconnect the SRS floor wire harness 2P connectors (A) from the driver's and the front passenger's side airbag 2P connectors.

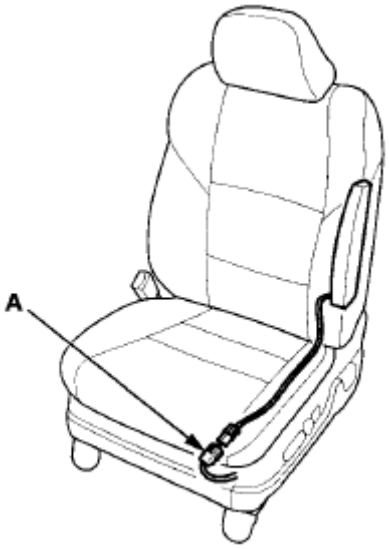


Fig. 29: Identifying SRS Floor Wire Harness 2P Connectors
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Side Curtain Airbag

6. Remove the C-pillar trim (see **C-PILLAR TRIM**).
7. Disconnect the SRS floor wire harness 2P connectors (A) from the left and right side curtain airbag 2P connectors.

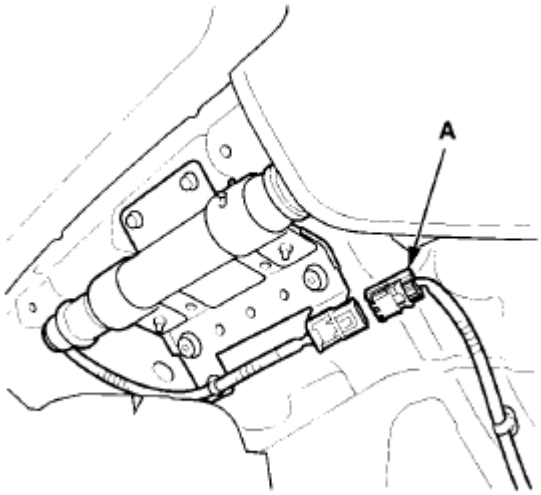


Fig. 30: Identifying SRS Floor Wire Harness 2P Connectors (Left And Right Side)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Front Seat Belt Tensioner

8. Remove the B-pillar lower trim (see **B-PILLAR UPPER/LOWER TRIM**).
9. Disconnect the SRS floor wire harness 4P connectors (A) from the driver's and the front passenger's seat

belt tensioner 4P connectors.

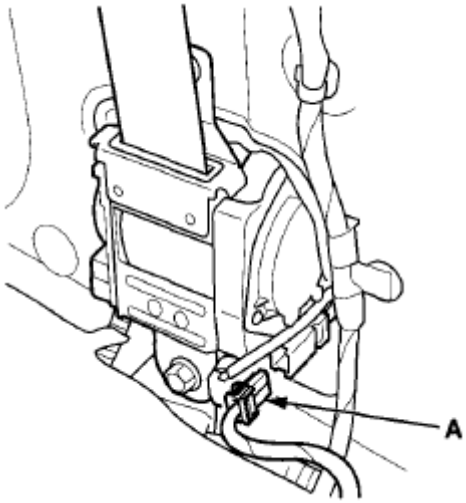


Fig. 31: Identifying SRS Floor Wire Harness 4P Connectors (Driver's And Front Passenger's Seat Belt Tensioner)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

SRS Unit

10. Remove the center console (see **CENTER CONSOLE REMOVAL/INSTALLATION**) and heater joint ducts (see step 3).
11. Disconnect SRS unit connectors A (39P) and B (39P) from the SRS unit.

NOTE: The SRS unit connectors have lever locks. Release the locks before disconnecting the connectors.

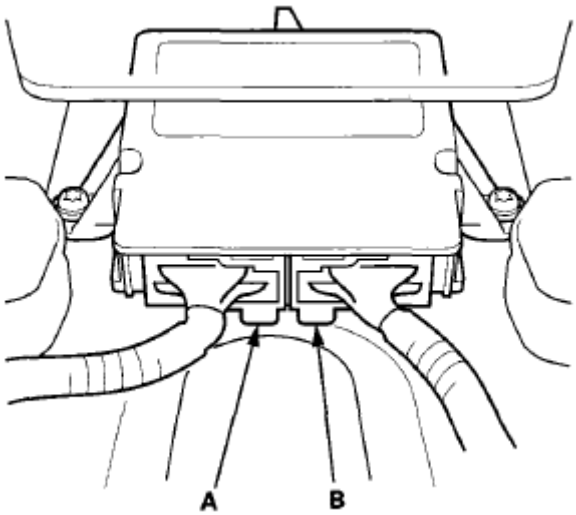


Fig. 32: Identifying SRS Unit Connectors (39P) And (39P)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

GENERAL TROUBLESHOOTING INFORMATION

DTC (DIAGNOSTIC TROUBLE CODES)

The self-diagnostic function of the SRS unit allows it to locate the causes of system problems and store this information in memory. For easier troubleshooting, this data can be retrieved with the HDS via the data link circuit.

- When you turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode, the SRS indicator should come on. If it goes off after 6 seconds, the system is normal, and is not currently detecting any problems.
- If there is a problem, the system locates and defines the problem, stores this information in memory, and turns on the SRS indicator. The data remains in memory even if the ignition switch is turned to LOCK (0), the engine start/stop button is pressed to select the OFF mode, or the battery is disconnected.
- The data is stored in memory as a diagnostic trouble code (DTC).
- DTCs are either latching or resetting depending on the malfunction. With resetting DTCs, the SRS indicator goes off the next time the ignition switch is turned to ON (II), or the engine start/stop button is pressed to select the ON mode, and the system is normal, but the DTC is still stored. With latching DTCs, the SRS indicator does not turn OFF until the malfunction is repaired and the DTC is cleared.
- When you connect the HDS to the data link connector (DLC), you can retrieve a more detailed DTC in the HDS "SRS" menu.

NOTE: Only read DTCs from the SRS menu, not from SWS menus unless instructed to check SWS DTCs. SWS (ODS unit) DTCs are subcodes of SRS unit DTCs. Only troubleshoot the corresponding SRS DTCs. These SWS DTCs are cleared when you turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.

- After reading and recording the DTC, go to the troubleshooting procedure for that code.

Precautions

- Make sure the battery is fully charged. If the battery is dead or low, electrical measurements values may not be correct.
- Use only a digital multimeter to check the system. Make sure its output is 10 mA (0.01 A) or less when switched to the smallest value in the ohmmeter range. A tester with a higher output could damage the airbag circuit or cause accidental airbag deployment and possible injury.
- Whenever the ignition switch is in ON (II), the engine start/stop button is pressed to select the ON mode, or has been turned to LOCK (0), or the engine start/stop button is pressed to select the OFF mode for less than 3 minutes, be careful not to bump the SRS unit; the airbags could accidentally deploy and cause damage or injuries.
- Before removing the dashboard wire harness or SRS floor wire harness, disconnect the driver's airbag connector, the front passenger's airbag connector, both side airbag connectors, both side curtain airbag connectors, and both front seat belt tensioner connectors.
- Do not touch a tester probe to the terminals in the SRS unit or harness connectors, and do not connect the

SRS unit terminals or the sensor terminals with a jumper wire. Use only the back probe set and the digital multimeter. Back probe spring-loaded lock type connectors correctly.

HOW TO READ DTCS

NOTE: Make sure the battery is fully charged before you begin.

1. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
2. Connect the HDS to the data link connector (DLC) (A).

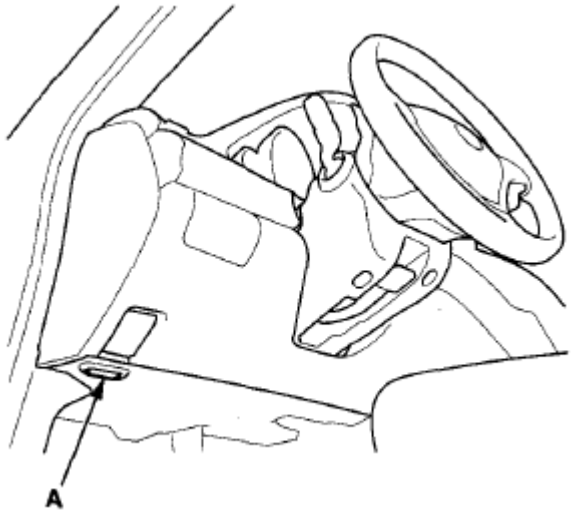


Fig. 33: Identifying Data Link Connector (DLC)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
4. Make sure the HDS communicates with the vehicle and the SRS unit. If it does not communicate, inspect the power line of SRS unit, fuses, and ground, and if there is not any abnormality found, then go to the DLC circuit troubleshooting (see **DLC CIRCUIT TROUBLESHOOTING**).
5. Use the HDS to check for SRS DTCs.
6. Read and record the DTCs.

NOTE:

- **Only read DTCs from the SRS menu, not from SWS menus unless instructed to check SWS DTCs. SWS (ODS unit) DTCs are subcodes of SRS unit DTCs. Only troubleshoot the corresponding SRS DTCs. These SWS DTCs are cleared when you turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.**
- **Do not clear the DTCs until instructed by the troubleshooting procedure.**

7. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode, then

wait for 10 seconds.

8. Disconnect the HDS from the DLC.
9. Do the troubleshooting procedure for the DTC.

HOW TO CLEAR DTCS

NOTE: Make sure the battery is fully charged before you begin.

1. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
2. Connect the HDS to the data link connector (DLC) (A).

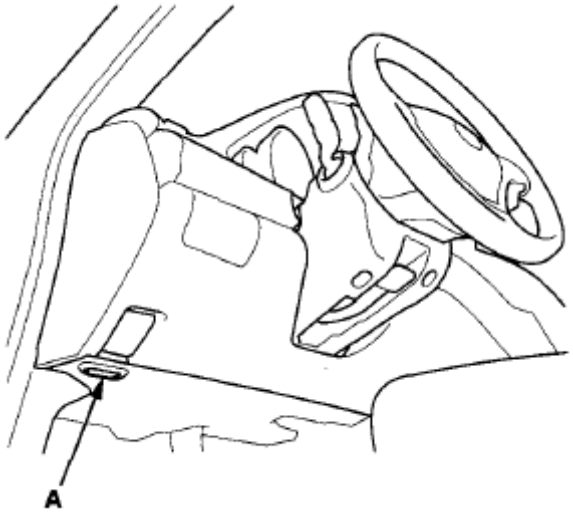


Fig. 34: Identifying Data Link Connector (DLC)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
4. Make sure the HDS communicates with the vehicle and the SRS unit. If it does not communicate, go to the DLC circuit troubleshooting (see **DLC CIRCUIT TROUBLESHOOTING**).
5. In the SRS MENU of the HDS, select SRS, then DTC to clear DTCs.
6. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode, then wait for 10 seconds.
7. Disconnect the HDS from the DLC.

TROUBLESHOOTING INTERMITTENT FAILURES

If there was a malfunction that sets a DTC, but it does not recur, a DTC will be stored in the memory, and the SRS indicator may come on depending on the malfunction detected.

NOTE:

- **Check the condition of the battery (see BATTERY TEST), and the charging system (see ALTERNATOR AND REGULATOR CIRCUIT**

TROUBLESHOOTING). Low battery voltage may cause some intermittent failures.

- **A faulty or damaged cable reel can cause intermittent problems related to the driver's airbag inflator DTCs.**

After checking the DTC, troubleshoot as follows:

1. Check for DTCs with the HDS (see How to Read DTCs).
2. Clear the DTCs with the HDS (see How to Clear DTCs).
3. Set the parking brake, then start the engine, and let it idle.
4. The SRS indicator comes on for about 6 seconds and then goes off.
5. Shake the related wire harnesses and the connectors, and look for loose connections, poor pin fits, and poor grounds.
6. Take a test-drive (quick acceleration, quick braking, and cornering), turn the steering wheel fully left and right, and hold it there for 5 to 10 seconds. If the problem recurs, the SRS indicator will come on.
7. If you cannot duplicate the concern, ask the client about the conditions when it occurred, or ask the client to demonstrate the concern.
8. If you cannot duplicate the intermittent failure, the system is OK at this time.

SRS UNIT UPDATE

Special Tools Required

- Honda Diagnostic System (HDS) tablet tester
- Honda Interface Module (HIM) and an iN workstation with the latest HDS software version
- HDS pocket tester
- GNA600 and an iN workstation with the latest HDS software version
- MVCI unit with the latest control module (CM) update software installed

Any one of the above updating tools can be used.

NOTE:

- **Make sure the HDS/iN workstation or the MVCI unit has latest HDS software version.**
- **Before you update the SRS unit, make sure the battery in the vehicle is fully charged.**
- **Never turn the ignition switch to LOCK (0) or ACC (I), or press the engine start/stop button to select the OFF or ACC mode during the update. If there is a problem with the update, leave the ignition switch in ON (II), or press the engine start/stop button to select the ON mode.**
- **To prevent SRS unit damage, do not operate anything electrical (headlights, audio system, brakes, A/C, power windows, moonroof (if equipped), door locks, etc.) during the update.**

- **To ensure the latest program is installed, do an SRS unit update whenever the SRS unit is substituted or replaced.**
- **You cannot update an SRS unit with the program it already has. It will only accept a new program.**
- **If you need to diagnose the HIM because the HIM's red (#3) light came on or was flashing during the update, leave the ignition switch in ON (II), or press the engine start/stop button to select the ON mode when you disconnect the HIM from the data link connector (DLC). This will prevent SRS unit damage.**

1. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
2. Connect the HDS to the data link connector (DLC) (A).

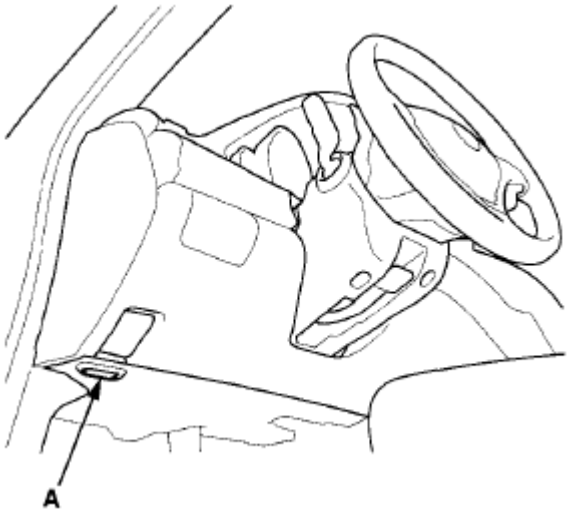


Fig. 35: Identifying Data Link Connector (DLC)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode, but do not start the engine.
4. Make sure the HDS communicates with the vehicle and the SRS unit. If it does not communicate, go to the DLC circuit troubleshooting (see **DLC CIRCUIT TROUBLESHOOTING**).
5. Select the update program, and follow the screen prompts to update the SRS unit.
6. If the software in the SRS unit is the latest, disconnect the updating tool from the DLC, and go back to the procedure that you were doing. If the software in the SRS unit is not the latest, follow the instructions on the screen.

NOTE: **If you run into a problem during the update procedure (programming takes over 15 minutes, status bar goes over 100%, D position or immobilizer indicator flashes, HDS tablet freezes, etc.), follow these steps to minimize the chance of damaging the SRS unit:**

- Leave the ignition switch in ON (II), or press the engine start/stop button to select the ON mode.
- Connect a jumper battery (do not connect a battery charger).
- Shut down the updating tool.
- Disconnect the updating tool from the DLC.
- Reboot the updating tool.
- Reconnect the updating tool to the DLC, and try the update procedure again.

7. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
8. Disconnect the HDS from the DLC.

ODS UNIT INITIALIZATION

NOTE:

- **After SRS unit or ODS unit is replaced, do this procedure to initialize the ODS unit.**
- **ODS unit initialization initializes both the OPDS sensor and the front passenger's seat weight sensor.**

OPDS SENSOR INITIALIZATION

When you replace a seat-back cover/pad, the SRS unit, and/or the ODS unit, initialize the OPDS sensor with the HDS.

NOTE:

- **Before initializing the ODS unit, make sure the battery is fully charged.**
- **A new (uninitialized) ODS unit installed with a faulty OPDS sensor (DTC 86-1x or 86-2x) can cause DTCs 85-71 and 85-78. If the SRS has a hard DTC 86-1x or 86-2x, troubleshoot the DTCs completely before replacing the ODS unit.**
- **Before initializing the ODS unit, clear the DTCs.**
- **Make sure nothing is on the front passenger's seat, including after market seat covers or mats.**
- **Make sure there is nothing in the front passenger's seat-back pocket.**
- **Keep the A/C and the heater off.**

1. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
2. Set the seat-back in a normal position.
3. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
4. Connect the HDS to the data link connector (DLC) (A).

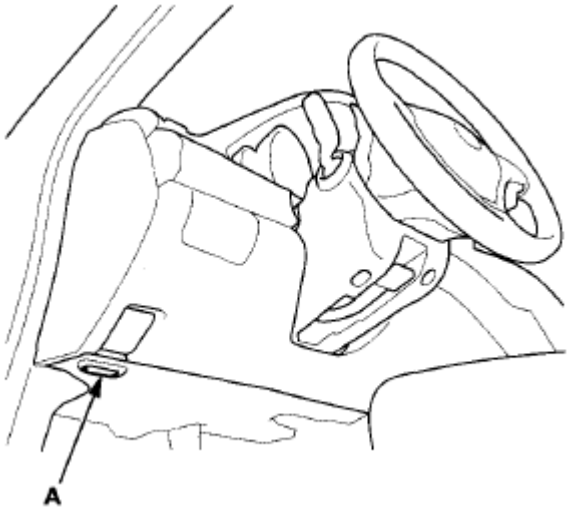


Fig. 36: Identifying Data Link Connector (DLC)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
6. Make sure the HDS communicates with the vehicle and the SRS unit. If it does not communicate, go to the DLC circuit troubleshooting (see **DLC CIRCUIT TROUBLESHOOTING**).
7. From the HDS Main Menu, select SRS, then INITIALIZATION. In the INITIALIZATION Menu, select ODS Initialization. Follow the prompts until the OPDS sensor initialization has been completed.
8. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode, then wait for 10 seconds.
9. Disconnect the HDS from the DLC.

NOTE: **If the ODS unit fails to initialize after several attempts, replace the seat-back cover/pad equipped with an OPDS sensor (see FRONT SEAT-BACK COVER REPLACEMENT), and retry. If the ODS unit continues to fail to initialize, replace the ODS unit (see ODS UNIT REPLACEMENT).**

FRONT PASSENGER'S WEIGHT SENSOR INITIALIZATION

When you replace the SRS unit, the front passenger's weight sensor, the front passenger's seat frame, or the ODS unit, initialize the front passenger's weight sensor with the HDS.

NOTE:

- **Before initializing the front passenger's weight sensor, make sure the battery is fully charged.**
- **Before initializing the ODS unit, clear the DTCs.**
- **Make sure all components of the front passenger's seat are correctly installed.**
- **Make sure nothing is on the front passenger's seat, including after market seat covers or mats.**

- **Make sure there is nothing in the front passenger's seat-back pocket.**
- **Keep the windows and the moonroof closed.**
- **Do all initialization procedures, except test-driving, in the service bay.**
- **Make sure the vehicle is on level ground.**
- **Keep the A/C and the heater off.**
- **Do not touch the front passenger's seat during the operation check.**
- **Do not expose the front passenger's seat to sudden temperature changes.**

1. Position the front passenger's seat all the way rearward, and adjust the seat-back to the forward most position. Do not move the seat from this position until the initialization is completed.
2. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
3. Connect the HDS to the data link connector (DLC) (A).

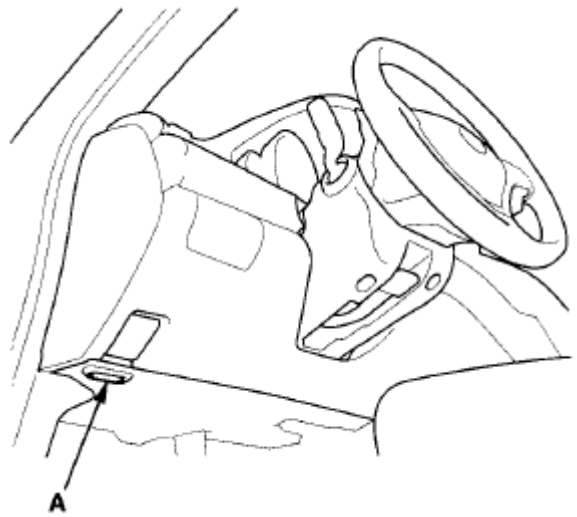


Fig. 37: Identifying Data Link Connector (DLC)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
5. Make sure the HDS communicates with the vehicle and the SRS unit. If it does not communicate, go to the DLC circuit troubleshooting (see **DLC CIRCUIT TROUBLESHOOTING**).
6. Drive the vehicle, and accelerate to 22 mph (36 km/h), then stop on level ground.
7. From the HDS Main Menu, select SRS, then INITIALIZATION. In the INITIALIZATION Menu, select SWS Initialization. Follow the prompts until the front passenger's weight sensor initialization has been completed.
8. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
9. Disconnect the HDS from the DLC.

ODS UNIT OPERATION CHECK

AFTER REPLACING FRONT PASSENGER'S SEAT COMPONENT(S)

NOTE: Check the ODS unit operation after any of these actions:

- Front passenger's seat component(s) replacement (except ODS unit and/or front passenger's weight sensor).
- SRS unit replacement.
- Remove the front passenger's weight sensor(s).
- After a vehicle collision (see **FRONT PASSENGER'S WEIGHT SENSOR OUTPUT CHECK AFTER A VEHICLE COLLISION**).

PRE-OPERATION CHECK SET-UP

- Make sure all the components of the front passenger's seat are correctly installed.
- Position the front passenger's seat all the way rearward, and adjust the seat-back to the forward most position. Do not move the seat from this position until the output check is completed.
- Make sure nothing is on the front passenger's seat, including after market seat covers or mats.
- Make sure there is nothing in the front passenger's seat-back pocket.
- Keep the windows and the moonroof closed.
- Do all initialization procedures, except test-driving, in the service bay.
- Make sure the vehicle is on level ground.
- Turn the heater and the A/C off.
- Do not touch the front passenger's seat during the operation check.
- Do not expose the front passenger's seat to sudden temperature changes.
- Make sure all aftermarket devices such as amplifiers, fluorescent light, air purifiers, CB or HAM radios, etc. are turned off.

1. Drive the vehicle, accelerate to 22 mph (36 km/h), then stop on level ground.
2. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
3. Connect the HDS to the data link connector (DLC) (A).

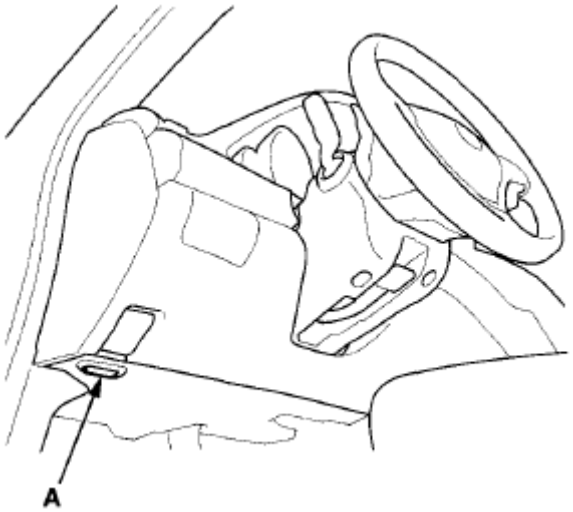


Fig. 38: Identifying Data Link Connector (DLC)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
5. Make sure the HDS communicates with the vehicle and the SRS unit. If it does not communicate, go to the DLC circuit troubleshooting (see **DLC CIRCUIT TROUBLESHOOTING**).
6. From the HDS Main Menu, select SRS, then Inspection. In the Inspection Menu, select AFTER REPLACING FRONT PASSENGER'S SEAT COMPONENT(S). Follow the prompts until the ODS unit operation check has been completed.
7. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
8. Disconnect the HDS from the DLC.

FRONT PASSENGER'S WEIGHT SENSOR OUTPUT CHECK AFTER A VEHICLE COLLISION

NOTE: Check the front passenger's weight sensor output after this action:

- After a vehicle collision

PRE-OPERATION CHECK SET-UP

- Make sure all the components of the front passenger's seat are correctly installed.
- Position the front passenger's seat all the way rearward, and adjust the seat-back to the forward most position. Do not move the seat from this position until the output check is completed.
- Make sure nothing is on the front passenger's seat, including after market seat covers or mats.
- Make sure there is nothing in the front passenger's seat-back pocket.
- Keep the windows and the moonroof closed.
- Do all initialization procedures, except test-driving, in the service bay.
- Make sure the vehicle is on level ground.

- Turn the heater and the A/C off.
- Do not touch the front passenger's seat during the operation check.
- Do not expose the front passenger's seat to sudden temperature changes.
- Make sure all aftermarket devices such as amplifiers, fluorescent light, air purifiers, CB or HAM radios, etc. are turned off.

1. Drive the vehicle, accelerate to 22 mph (36 km/h), then stop on level ground.
2. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
3. Connect the HDS to the data link connector (DLC) (A).

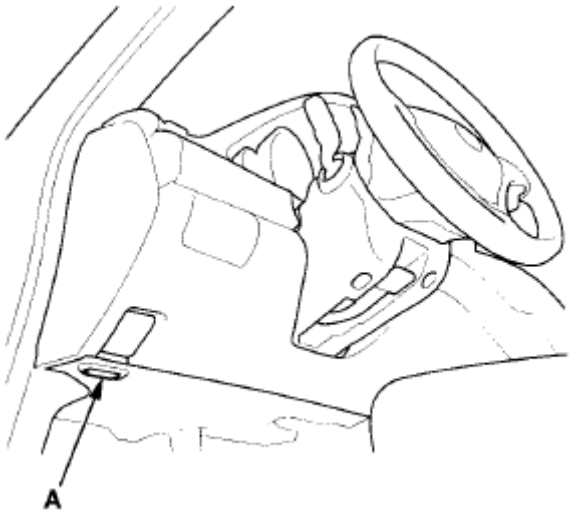


Fig. 39: Identifying Data Link Connector (DLC)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
5. Make sure the HDS communicates with the vehicle and the SRS unit. If it does not communicate, go to the DLC circuit troubleshooting (see **DLC CIRCUIT TROUBLESHOOTING**).
6. From the HDS Main Menu, select SRS, then Inspection. In the Inspection Menu, select AFTER A VEHICLE COLLISION. Follow the prompts until the front passenger's weight sensor output check has been completed.
7. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
8. Disconnect the HDS from the DLC.

DRIVER'S SEAT POSITION SENSOR OPERATION CHECK

Check the driver's seat position sensor after the driver's seat position sensor replacement.

1. Make sure the driver's seat is in the full forward position.
2. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
3. Connect the HDS to the data link connector (DLC) (A).

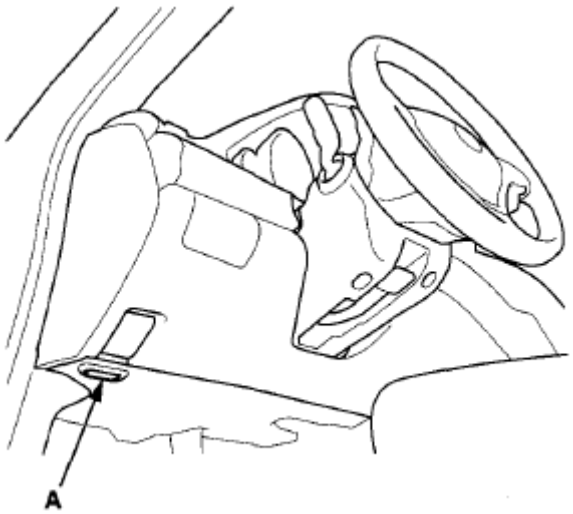


Fig. 40: Identifying Data Link Connector (DLC)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
5. Make sure the HDS communicates with the vehicle and the SRS unit. If it does not communicate, go to the DLC circuit troubleshooting (see **DLC CIRCUIT TROUBLESHOOTING**).
6. From the HDS Main Menu, select SRS, then Data List.
7. Using two pieces of tape (A), make alignment marks (B) on the upper rail outer cover (C) and the front door sill trim (D) as shown. The driver's seat position sensor should read NEAR on the HDS.

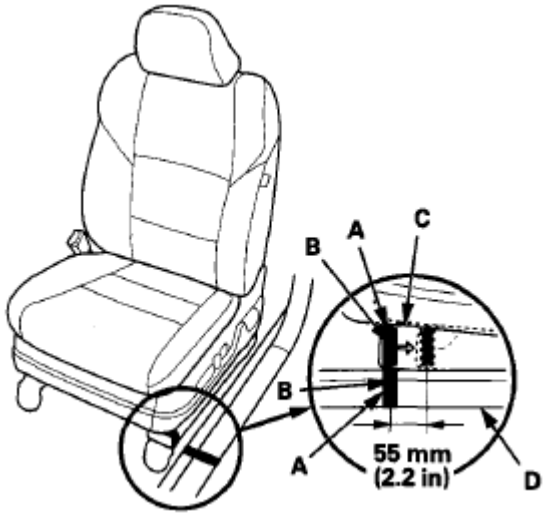


Fig. 41: Identifying Pieces Of Tape, Make Alignment Marks, Upper Rail Outer Cover And Front Door Sill Trim
Courtesy of AMERICAN HONDA MOTOR CO., INC.

8. Move the seat back in small increments (about 5 mm, 0.2 in) until the driver's seat position sensor reads NOT NEAR on the HDS. The seat should be about 55 mm (2.2 in) from the front.

NOTE: **It takes a few seconds for the HDS to display changes, so wait for about 5 seconds between each movement. If the driver's seat position sensor data does not work as described above, check the driver's seat position sensor for damage, and replace parts as needed.**

9. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
10. Disconnect the HDS from the DLC.

DTC TROUBLESHOOTING INDEX

SRS DTC	Detection Item	Notes
11-1X	Open in the driver's airbag first inflator	DTC Troubleshooting
11-2x	Increased resistance in the driver's airbag first inflator	
11-3X	Short to another wire or decreased resistance in the driver's airbag first inflator	DTC Troubleshooting
11-4X	Open in the driver's airbag second inflator	DTC Troubleshooting
11-5x	Increased resistance in the driver's airbag second inflator	
11-6X	Short to another wire or decreased resistance in the driver's airbag second inflator	DTC Troubleshooting
11-8X	Short to power in the driver's airbag first inflator	DTC Troubleshooting
11-9X	Short to ground in the driver's airbag first inflator	DTC Troubleshooting
11-AX	Short to power in the driver's airbag second inflator	DTC Troubleshooting
11-BX	Short to ground in the driver's airbag second inflator	DTC Troubleshooting
12-1X	Open in the front passenger's airbag first inflator	DTC Troubleshooting
12-2x	Increased resistance in the front passenger's airbag first inflator	
12-3X	Short to another wire or decreased resistance in the front passenger's airbag first inflator	DTC Troubleshooting
12-4X	Open in the front passenger's airbag second inflator	DTC Troubleshooting
12-5x	Increased resistance in the front passenger's airbag second inflator	
12-6X	Short to another wire or decreased resistance in the front passenger's airbag second inflator	DTC Troubleshooting
12-8X	Short to power in the front passenger's airbag first inflator	DTC Troubleshooting
12-9X	Short to ground in the front passenger's airbag first inflator	DTC Troubleshooting
12-AX	Short to power in the front passenger's airbag second inflator	DTC Troubleshooting
12-BX	Short to ground in the front passenger's airbag second inflator	DTC Troubleshooting
21-1X	Open in the driver's seat belt tensioner	DTC Troubleshooting
21-2x	Increased resistance in the driver's seat belt tensioner	
21-3X	Short to another wire or decreased resistance in the driver's seat belt tensioner	DTC Troubleshooting
21-8X	Short to power in the driver's seat belt tensioner	DTC Troubleshooting
21-9X	Short to ground in the driver's seat belt tensioner	DTC Troubleshooting
22-1X	Open in the front passenger's seat belt tensioner	DTC Troubleshooting

22-2x	Increased resistance in the front passenger's seat belt tensioner	
22-3X	Short to another wire or decreased resistance in the front passenger's seat belt tensioner	DTC Troubleshooting
22-8X	Short to power in the front passenger's seat belt tensioner	DTC Troubleshooting
22-9X	Short to ground in the front passenger's seat belt tensioner	DTC Troubleshooting
31-1X	Open in the driver's side airbag inflator	DTC Troubleshooting
31-2x	Increased resistance in the driver's side airbag inflator	
31-3X	Short to another wire or decreased resistance in the driver's side airbag inflator	DTC Troubleshooting
31-8X	Short to power in the driver's side airbag inflator	DTC Troubleshooting
31-9X	Short to ground in the driver's side airbag inflator	DTC Troubleshooting
32-1X	Open in the front passenger's side airbag inflator	DTC Troubleshooting
32-2x	Increased resistance in the front passenger's side airbag inflator	
32-3X	Short to another wire or decreased resistance in the front passenger's side airbag inflator	DTC Troubleshooting
32-8X	Short to power in the front passenger's side airbag inflator	DTC Troubleshooting
32-9X	Short to ground in the front passenger's side airbag inflator	DTC Troubleshooting
33-1X	Open in the left side curtain airbag inflator	DTC Troubleshooting
33-2x	Increased resistance in the left side curtain airbag inflator	
33-3X	Short to another wire or decreased resistance in the left side curtain airbag inflator	DTC Troubleshooting
33-8X	Short to power in the left side curtain airbag inflator	DTC Troubleshooting
33-9X	Short to ground in the left side curtain airbag inflator	DTC Troubleshooting
34-1X	Open in the right side curtain airbag inflator	DTC Troubleshooting
34-2x	Increased resistance in the right side curtain airbag inflator	
34-3X	Short to another wire or decreased resistance in the right side curtain airbag inflator	DTC Troubleshooting
34-8X	Short to power in the right side curtain airbag inflator	DTC Troubleshooting
34-9X	Short to ground in the right side curtain airbag inflator	DTC Troubleshooting
41-1X	No signal from the left front impact sensor	DTC Troubleshooting
41-2X	Internal failure of the left front impact sensor	DTC Troubleshooting
41-3x		
41-8x		
41-9x		
41-Ax		
41-Bx		
42-1X	No signal from the right front impact sensor	DTC Troubleshooting
42-2X	Internal failure of the right front impact sensor	DTC Troubleshooting
42-3x		
42-8x		
42-9x		
42-Ax		

42-Bx		
43-1X	No signal from the left side impact sensor (first)	DTC Troubleshooting
43-2X	Internal failure of the left side impact sensor (first)	DTC Troubleshooting
43-3x		
43-8x		
43-9x		
43-Ax		
43-Bx		
44-1X	No signal from the right side impact sensor (first)	DTC Troubleshooting
44-2X	Internal failure of the right side impact sensor (first)	DTC Troubleshooting
44-3x		
44-8x		
44-9x		
44-Ax		
44-Bx		
45-1X	No signal from the left side impact sensor (second)	DTC Troubleshooting
45-2X	Internal failure of the left side impact sensor (second)	DTC Troubleshooting
45-3x		
45-8x		
45-9x		
45-Ax		
45-Bx		
46-1X	No signal from the right side impact sensor (second)	DTC Troubleshooting
46-2X	Internal failure of the right side impact sensor (second)	DTC Troubleshooting
46-3x		
46-8x		
46-9x		
46-Ax		
46-Bx		
51-xX	Internal failure of the SRS unit	DTC Troubleshooting
52-xx		
53-xx		
53-FF	SRS unit programming error	DTC Troubleshooting
54-xX	Internal failure of the SRS unit	DTC Troubleshooting
55-xx		
56-11	Lost communication with the ECM/PCM (PGM-FI system)	DTC Troubleshooting
56-21		
56-12	Undefined data received from the ECM/PCM (PGM-FI system)	
56-13		
56-22		
56-23		

56-25	Lost communication with the gauge control module	DTC Troubleshooting
56-26	Undefined data received from the gauge control module	DTC Troubleshooting
56-27		
57-xX	Internal failure of the SRS unit	DTC Troubleshooting
58-xx		
61-1X	Open in the driver's seat belt buckle switch	DTC Troubleshooting
61-2X	Short in the driver's seat belt buckle switch	DTC Troubleshooting
62-1X	Open in the front passenger's seat belt buckle switch	DTC Troubleshooting
62-2X	Short in the front passenger's seat belt buckle switch	DTC Troubleshooting
71-1X	Open in the driver's seat position sensor	DTC Troubleshooting
71-2X	Short in the driver's seat position sensor	DTC Troubleshooting
81-4X	Internal failure of the ODS unit	DTC Troubleshooting
81-61	No signal from the ODS unit	DTC Troubleshooting
81-62	Incorrect data from the ODS unit	
81-63	Internal failure of the ODS unit	DTC Troubleshooting
81-64		
81-71	ODS unit not calibrated	DTC Troubleshooting
81-78		
81-79	Front passenger's weight sensors initial check failure	DTC Troubleshooting
82-11	No signal from the inner side front passenger's weight sensor	DTC Troubleshooting
82-12	No signal from the inner side front passenger's weight sensor	DTC Troubleshooting
82-13	No signal from the inner side front passenger's weight sensor	DTC Troubleshooting
83-21	No signal from the outer side front passenger's weight sensor	DTC Troubleshooting
83-22	No signal from the outer side front passenger's weight sensor	DTC Troubleshooting
83-23	No signal from the outer side front passenger's weight sensor	DTC Troubleshooting
85-4X	Internal failure of the ODS unit	DTC Troubleshooting
85-61	No signal from the ODS unit	DTC Troubleshooting
85-62	Incorrect data from the ODS unit	
85-63	Internal failure of the ODS unit	DTC Troubleshooting
85-64		
85-71	ODS unit not initialized	DTC Troubleshooting
85-78		
85-79	OPDS sensor initial check failure	DTC Troubleshooting
86-1X	Faulty OPDS seat-back sensor	DTC Troubleshooting
86-2x	Faulty OPDS seat support sensor	
92-1X	Short to power in the passenger's airbag cutoff indicator	DTC Troubleshooting
92-2X	Open or short to ground in the passenger's airbag cutoff indicator	DTC Troubleshooting
A1-1X	Faulty power supply (VA line)	DTC Troubleshooting
A2-1X	Faulty power supply (VB line)	DTC Troubleshooting
A3-1X	SRS unit connector A not properly installed	DTC Troubleshooting
A4-1X	SRS unit connector B not properly installed	DTC Troubleshooting

B2-1X	No signal from the rear safing sensor	DTC Troubleshooting
B2-2X	Internal failure of the rear safing sensor	DTC Troubleshooting
B2-3x		
B2-8x		
B2-9x		
B2-Ax		
B2-Bx		
EX-11	Control operation recorded	DTC Troubleshooting
FX-11	Airbags and/or tensioners deployment recorded	DTC Troubleshooting

NOTE:

The "x" at the end of each DTC denotes a numeric character (0 thru 9) or an alpha character (A thru F) that you may also see on the HDS display. The alphanumeric character is unrelated to your DTC troubleshooting; it is used by the SRS unit manufacturer.

Only read DTCs from the SRS menu, not from SWS menus unless instructed to check SWS DTCs. SWS (ODS unit) DTCs are subcodes of SRS unit DTCs. Only troubleshoot the corresponding SRS DTCs. These SWS DTCs are cleared when you turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.

SWS DTC INDEX

SRS DTC	SWS DTC	Detection Item
81-4X	41-xx	Internal failure of the ODS unit
	42-xx	
	43-xx	
81-71	71-xx	ODS unit not calibrated
82-11	11-1X	No signal from the inner side front passenger's weight sensor
82-12	12-2x	No signal from the inner side front passenger's weight sensor
82-13	13-3x	No signal from the inner side front passenger's weight sensor
83-21	21-1x	No signal from the outer side front passenger's weight sensor
83-22	22-2x	No signal from the outer side front passenger's weight sensor
83-23	23-3x	No signal from the outer side front passenger's weight sensor

NOTE:

The "x" at the end of each DTC denotes a numeric character (0 thru 9), or an alpha character (A thru F) that you may also see on the HDS display. The alphanumeric character is unrelated to your DTC troubleshooting; it is used by the SRS unit manufacturer.

SYMPTOM TROUBLESHOOTING INDEX

Symptom	Diagnostic procedure	Also check for
SRS indicator does not come on	Symptom Troubleshooting (see **SRS INDICATOR DOES NOT COME ON**)	-
SRS indicator stays on, but no DTCs are stored, or cannot be read	Symptom Troubleshooting (see **SRS INDICATOR STAYS ON, BUT NO DTCS ARE STORED, OR CANNOT BE READ**)	• Charging system for under or overcharging • Communication with the HDS
Side airbag cutoff indicator flashes	Check for DTCs. If any DTC is indicated, go to the **DTC TROUBLESHOOTING**	ODS unit initialization
Side airbag cutoff indicator stays on	Symptom Troubleshooting (see **SIDE AIRBAG CUTOFF INDICATOR STAYS ON**)	-
Side airbag cutoff indicator does not come on	Symptom Troubleshooting (see **SIDE AIRBAG CUTOFF INDICATOR DOES NOT COME ON**)	-
Passenger's airbag cutoff indicator flashes	Check for DTCs. If any DTC is indicated, go to the **DTC TROUBLESHOOTING**	ODS unit initialization
Passenger's airbag cutoff indicator stays on or comes on suddenly	Symptom Troubleshooting (see **PASSENGER'S AIRBAG CUTOFF INDICATOR STAYS ON OR COMES ON SUDDENLY**)	ODS unit initialization
Passenger's airbag cutoff indicator does not come on	Check for DTCs. If any DTC is indicated, go to the **DTC TROUBLESHOOTING**	-
Faulty seat belt reminder indicator	Symptom Troubleshooting (see **FAULTY SEAT BELT REMINDER INDICATOR**)	-
HDS does not communicate with the SRS unit or the vehicle	DLC Circuit Troubleshooting (see **DLC CIRCUIT TROUBLESHOOTING**)	Communication with the HDS

SYSTEM DESCRIPTION

SRS COMPONENTS

Airbags

The SRS is a safety device which, when used with the front seat belts, is designed to help protect the driver and front passenger in a frontal impact exceeding a certain set limit. The system consists of the SRS unit (A) including safing sensor and impact sensor, the cable reel (B), the driver's airbag (C), the front passenger's airbag (D), the side airbags (E), the side curtain airbags (F), the front seat belt tensioners (G), the side impact sensors (first) (H), the front impact sensors (I), the rear safing sensor (J), and the side impact sensors (second) (K).

Since the driver's and the front passenger's airbags use the same sensors, both normally inflate at the same time. However, it is possible for only one airbag to inflate. This can occur when collision severity is near the threshold for airbag deployment. In such case, the SRS will only deploy airbags when the protection provided by the front seat belt is insufficient.

Front Passenger's Weight Sensors

The front passenger's weight sensors (L) are part of the front passenger's seat base. The front passenger's weight sensors detect the weight on the seat, and send the information to the ODS unit (M). If the total weight is about 65 lbs (30 kg) or less, the ODS unit sends a signal to the SRS unit to prevent the front passenger's airbag from deploying. When the front passenger's airbag is disabled, the passenger airbag cutoff indicator (N) on the center panel comes on to alert the driver that the front passenger's airbag will not deploy in a front-end collision.

NOTE: The sensors only detect the weight on the seat. The sensors do not detect the weight of the passenger's legs or arms that may be resting on the floor or armrests.

Driver's Seat Position Sensor

The driver's seat position sensor (0) is under the driver's seat on the left side. When the driver's seat is moved to the most forward position, the deployment of the driver's airbag is moderated to decrease its force of impact during a front-end collision.

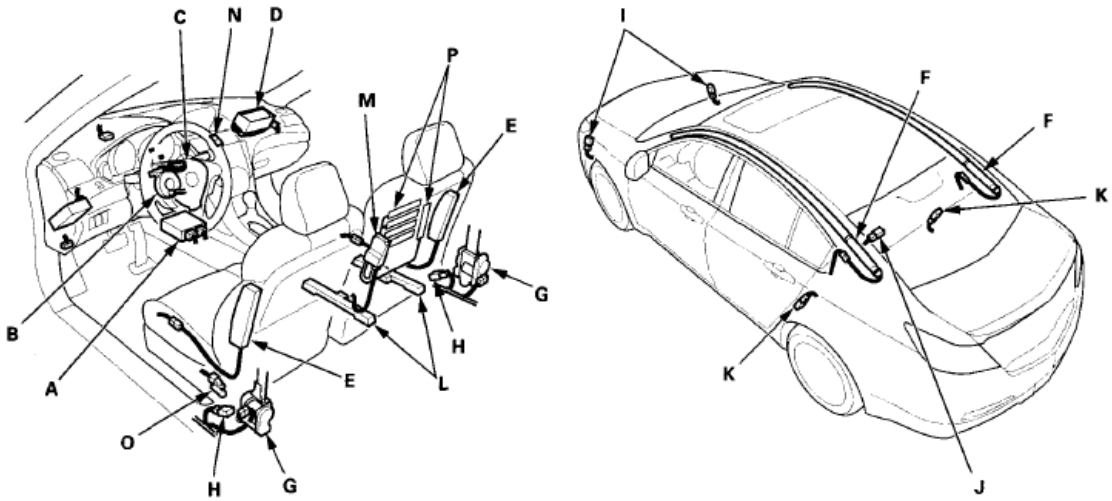


Fig. 42: Identifying SRS Components
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Rear Safing Sensor

The rear safing sensor is located under the rear seat cushion. The rear safing sensor performs the same basic function as the safing sensor in the SRS unit. It measures sideways G force, such as the force the vehicle would receive in a side collision in the rear, and sends that information to the SRS unit. The SRS unit uses that information, and the information from the side impact sensors to determine the side that is impacted and the force. If the threshold is met, the SRS unit deploys the side airbag, the side curtain airbag, and the front seat belt tensioner on that side.

SIDE AIRBAG CUTOFF INDICATOR/OPDS OPERATION

The OPDS sensors (P) are located on the front passenger's seat- back foam pad. The ODS unit detects front

passenger's position on the seat by using the OPDS sensors, then sends the signals to the SRS unit. The indicator comes on when the front passenger's seat is occupied by a small adult or child who is leaning into the deployment path, or when an object (grocery bag, briefcase, purse, etc.) is in the seat. This indicates the passenger's side airbag is off and will not deploy; there is no problem with the side airbag. If the passenger sits upright or moves to another seat, or you remove the object from the seat, the indicator should go off. There will be some delay between the occupant's repositioning, and when the indicator will turn on or off.

PASSENGER'S AIRBAG CUTOFF INDICATOR/FRONT PASSENGER'S WEIGHT SENSOR OPERATION

The indicator comes on if the weight on the front passenger's seat is about 65 lbs (30 kg) or less. This indicates the front passenger's airbag is off and will not deploy. The front airbag is shut off to reduce the chance of airbag-caused injuries.

SRS OPERATION

The main circuit in the SRS unit senses and analyzes the force of impact and, if necessary, ignites the inflator charges. If battery voltage is too low or power is disconnected due to the impact, the voltage regulator and the back-up power circuit will keep voltage at a constant level.

For the SRS to operate:

Front Seat Belt Tensioners

1. The front impact sensor, the side impact sensor, or the rear safing sensor must activate and send electric signals to the microprocessor.
2. The microprocessor must compute the signals and trigger the tensioners.
3. The charges must ignite and deploy the tensioners.

Driver's and Front Passenger's Airbag(s)

1. The front impact sensor must activate and send electric signals to the microprocessor.
2. The microprocessor must compute the signals and trigger the front airbag inflators.
3. The triggered inflators must ignite and deploy the front airbags.

Side Airbag(s)

1. The side impact sensor must activate and send electric signals to the microprocessor.
2. The microprocessor must compute the signals and trigger the side airbag inflators. However, the microprocessor does not trigger the front passenger's side airbag if the SRS unit determines that the front passenger's head is in the deployment path of the side airbag.
3. The triggered inflators must ignite and deploy the side airbags.

Side Curtain Airbag(s)

1. The side impact sensor or the rear safing sensor must activate and send electrical signals to the

microprocessor.

2. The microprocessor must compute the signals and trigger the side curtain airbag and the side airbag inflators.
3. The triggered inflators must ignite and deploy the side curtain airbag and the side airbag at the same time.

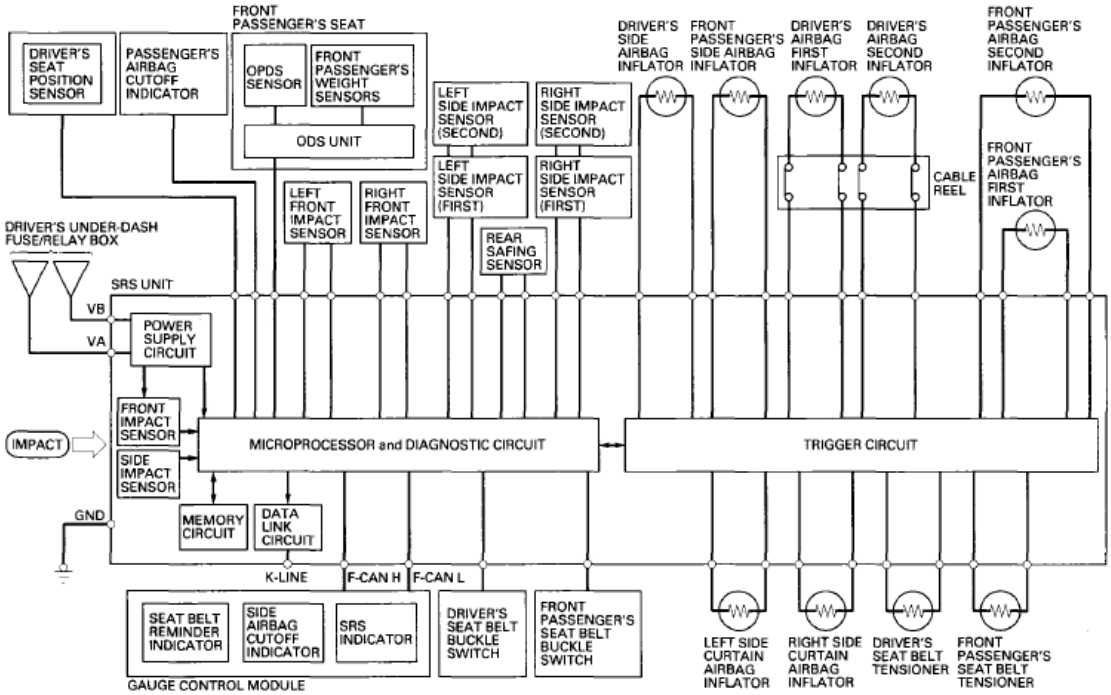


Fig. 43: Driver's And Front Passenger's Airbag(s) Block Diagram
Courtesy of AMERICAN HONDA MOTOR CO., INC.

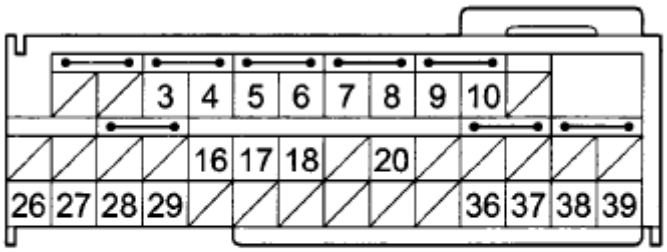
Self-Diagnostic System

A self-diagnostic circuit is built into the SRS unit; when the ignition switch is turned to ON (II), or the engine start/stop button is pressed to select the ON mode, the SRS indicator comes on and goes off after about 6 seconds if the system is operating normally. If the indicator does not come on, or does not go off after 6 seconds, or comes on while driving, it indicates a problem in the system. The system must be inspected and repaired as soon as possible.

For better serviceability, the SRS unit memory stores any DTCs related to the cause of the malfunction. The SRS unit is connected to the data link connector (DLC). This information can be read with the HDS when it is connected to the DLC (see **GENERAL TROUBLESHOOTING INFORMATION**).

NOTE: Before you disconnect the negative cable from the battery for troubleshooting, refer to Battery Terminal Disconnection and Reconnection (see BATTERY TERMINAL DISCONNECTION AND RECONNECTION).

SRS UNIT INPUTS AND OUTPUTS AT CONNECTOR A (39P)



Wire side of female terminals

Fig. 44: View Of SRS Unit Inputs And Outputs At Connector (39P)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Terminal Number	Wire Color	Terminal Name	Description
3	BRN(1)	LA1-	Ground for the driver's airbag first inflator
4	LT BLU(1)	LA1 +	Power source for the driver's airbag first inflator
5	BLU(1)	RA1-	Ground for the front passenger's airbag first inflator
6	YEL(1)	RA1 +	Power source for the front passenger's airbag first inflator
7	PUR(1)	LA2-	Ground for the driver's airbag second inflator
8	GRN(1)	LA2 +	Power source for the driver's airbag second inflator
9	BLU(1)	RA2-	Ground for the front passenger's airbag second inflator
10	LT BLU(1)	RA2 +	Power source for the front passenger's airbag second inflator
16	BLK(1)	F-CAN L	Sends and receives communication signal
17	WHT(1)	F-CAN H	Sends and receives communication signal
18	LT BLU(1)	K-LINE	Sends and receives scan tool signal (serial data)
20	BLU(1)	PTT	Passenger's airbag cutoff indicator output line
26	YEL(1)	VA	SRS sub power (common with ODS)
27	RED(1)	VB	SRS dedicated power (dedicated booster circuit)
28	BLK(1)	SRS GND1	Ground circuit for the SRS unit (G404)
29	BLK(1)	SRS GND2	Ground circuit for the SRS unit (G404)
36	BRN(1)	LFS-	Ground for the left front impact sensor
37	RED(1)	LFS+	Power source for the left front impact sensor
38	BRN(1)	RFS-	Ground for the right front impact sensor
39	GRN(1)	RFS+	Power source for the right front impact sensor

(1) Wire colors may be substituted in this table.

SRS UNIT INPUTS AND OUTPUTS AT CONNECTOR B (39P)

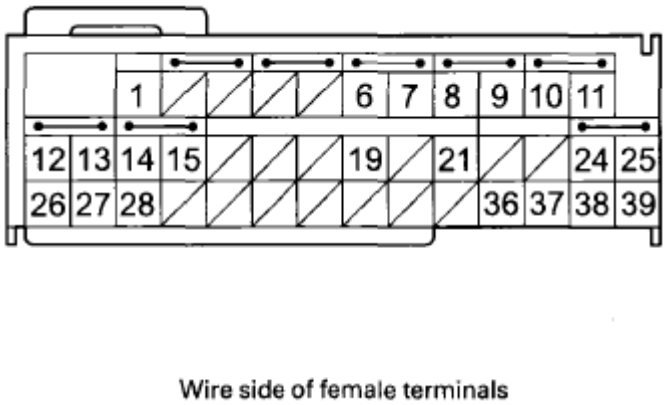


Fig. 45: View Of SRS Unit Inputs And Outputs At Connector (39P)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Terminal Number	Wire Color	Terminal Name	Description
1	LT GRN (1)	ODS	Sends and receives communication signal with the ODS unit
6	LT BLU (1)	LSA-	Ground for the driver's side airbag inflator
7	YEL(1)	LSA+	Power source for the driver's side airbag inflator
8	GRN(1)	RSA-	Ground for the front passenger's side airbag inflator
9	PUR(1)	RSA+	Power source for the front passenger's side airbag inflator
10	BLU(1)	LCA1-	Ground for the left side curtain airbag inflator
11	BRN(1)	LCA1 +	Power source for the left side curtain airbag inflator
12	WHT(1)	LRP-	Ground for the driver's seat belt tensioner
13	BLU(1)	LRP+	Power source for the driver's seat belt tensioner
14	GRY(1)	RRP-	Ground for the front passenger's seat belt tensioner
15	PNK(1)	RRP+	Power source for the front passenger's seat belt tensioner
19	PNK(1)	FLBC	Driver's seat belt buckle switch
21	RED(1)	FRBC	Front passenger's seat belt buckle switch
24	RED(1)	RCA1-	Ground for the right side curtain airbag inflator
25	GRY(1)	RCA1 +	Power source for the right side curtain airbag inflator
26	BRN(1)	SSS-	Ground for the rear safing sensor
27	RED(1)	SSS+	Power source for the rear safing sensor
28	LT GRN (1)	SS +	Driver's seat position sensor
			Ground for the left side impact sensor (first), left side impact

36	BRN(1)	LBS1-	sensor (second)
37	GRY(1)	LBS1 +	Power source for the left side impact sensor (first), left side impact sensor (second)
38	ORN(1)	RBS1-	Ground for the right side impact sensor (first), right side impact sensor (second)
39	BLU(1)	RBS1 +	Power source for the right side impact sensor (first), right side impact sensor (second)
(1) Wire colors may be substituted in this table.			

CIRCUIT DIAGRAM

WITH KEYLESS ACCESS SYSTEM

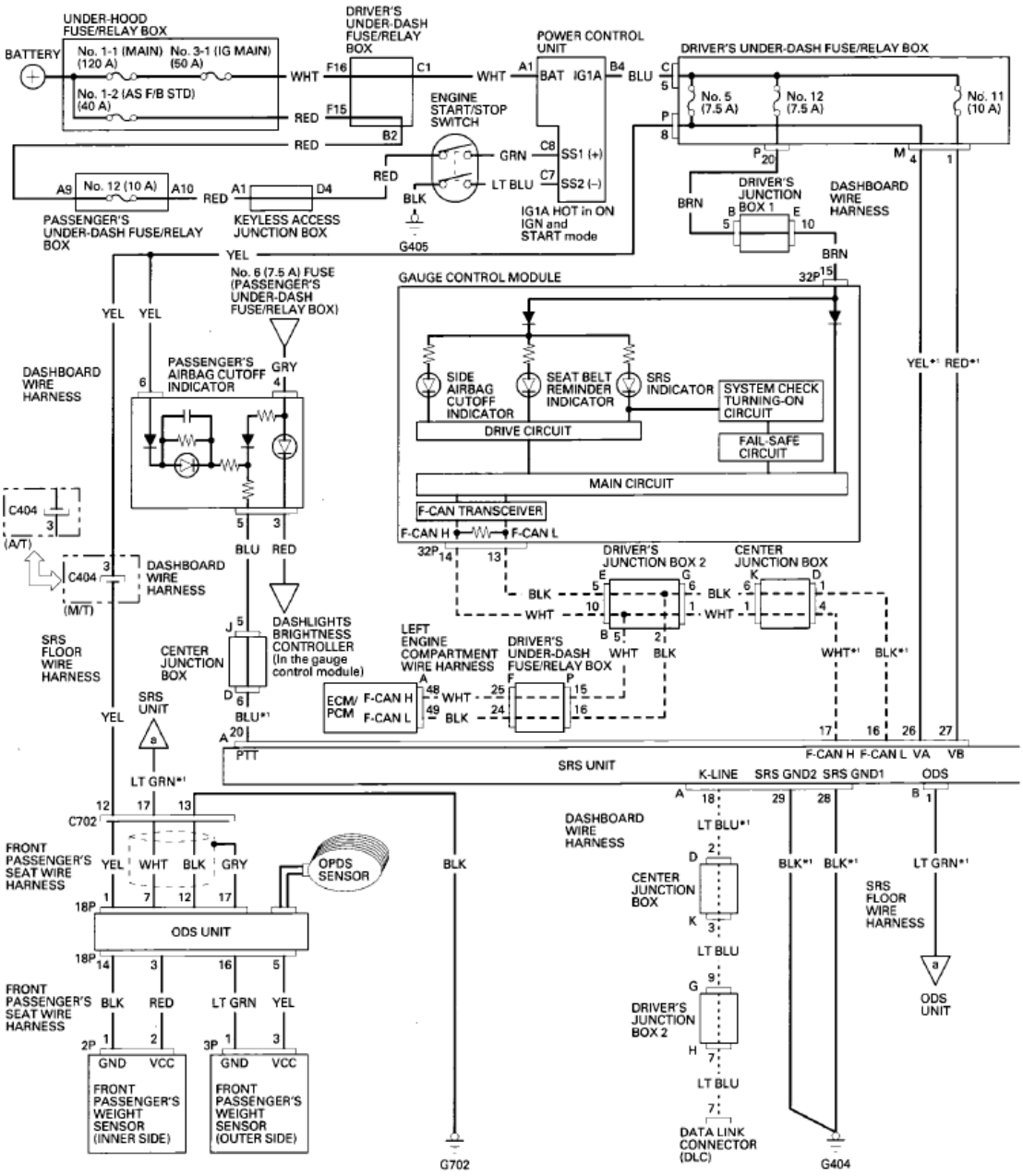


Fig. 46: SRS Circuit Diagram With Keyless Access System (1 Of 4)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

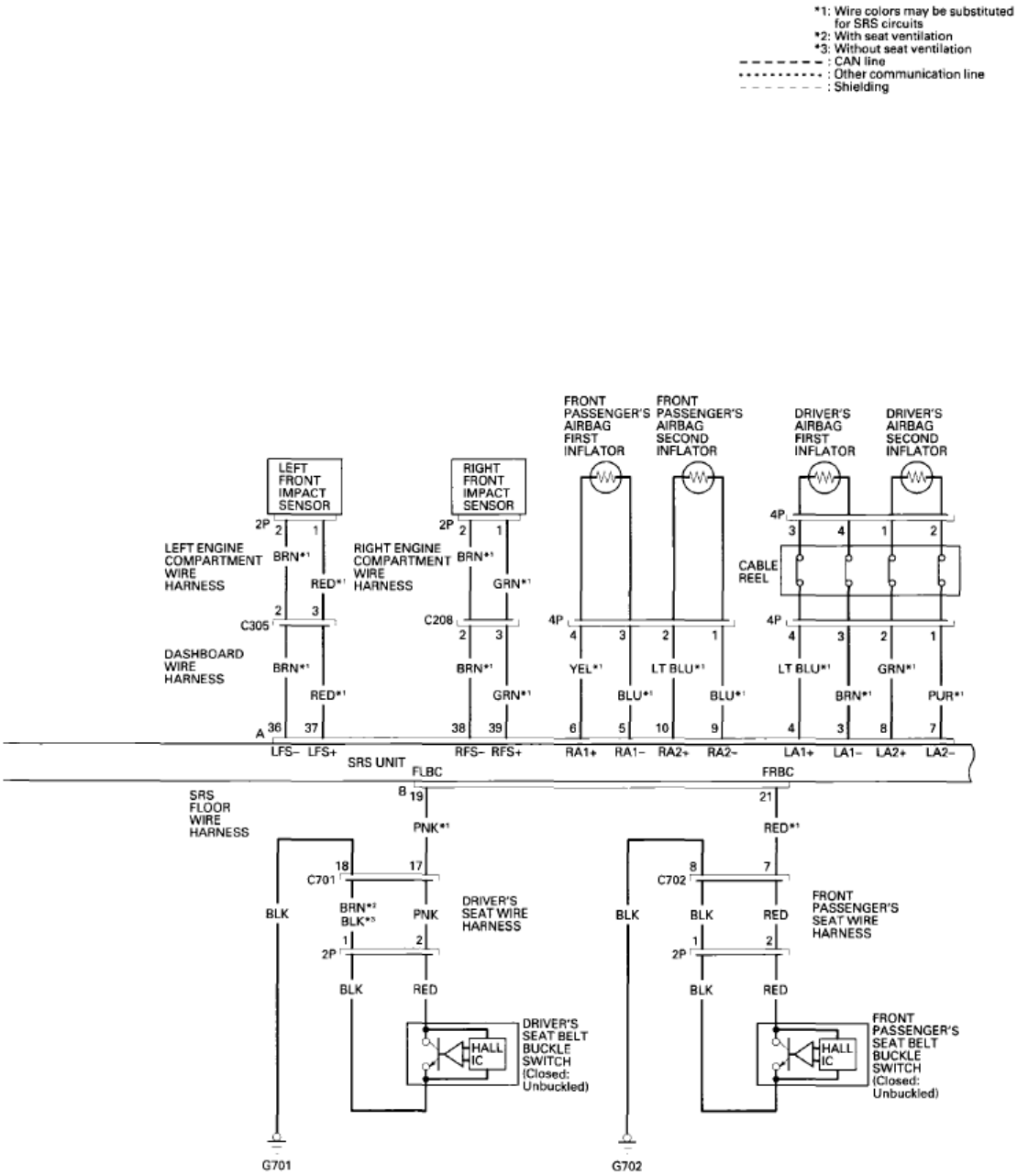


Fig. 47: SRS Circuit Diagram With Keyless Access System (2 Of 4)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

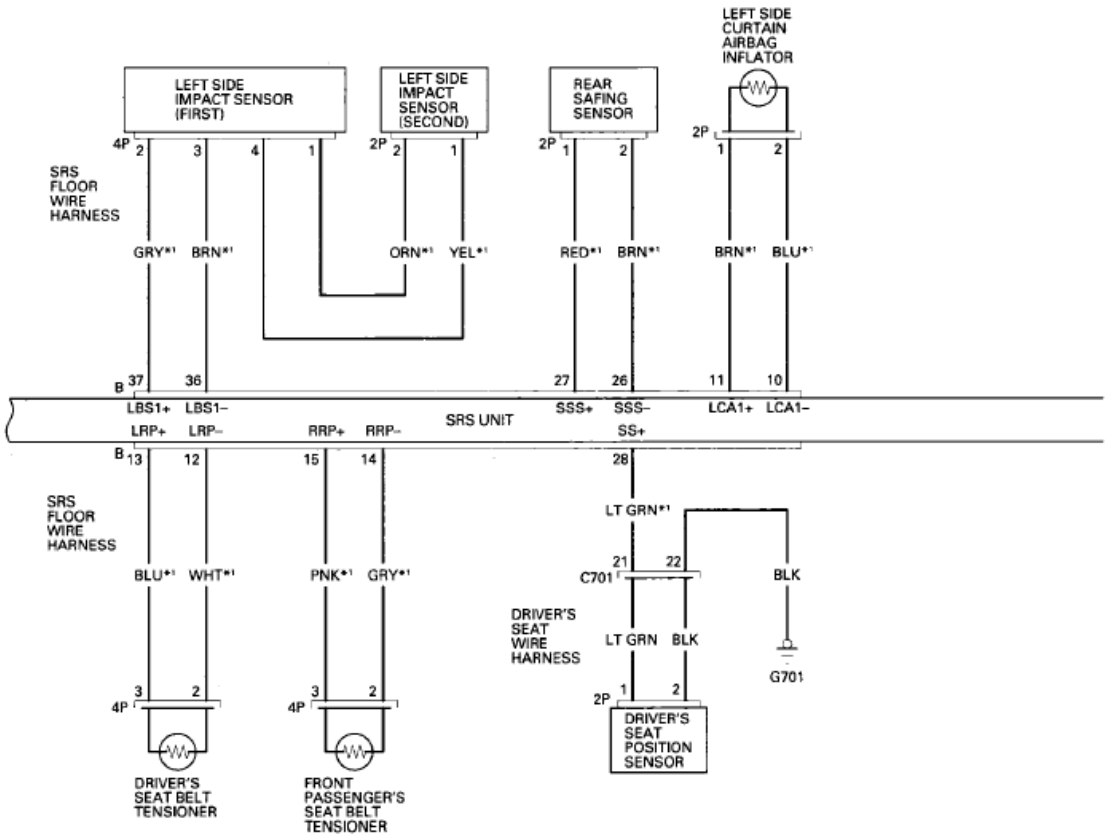


Fig. 48: SRS Circuit Diagram With Keyless Access System (3 Of 4)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

*1: Wire colors may be substituted for SRS circuits

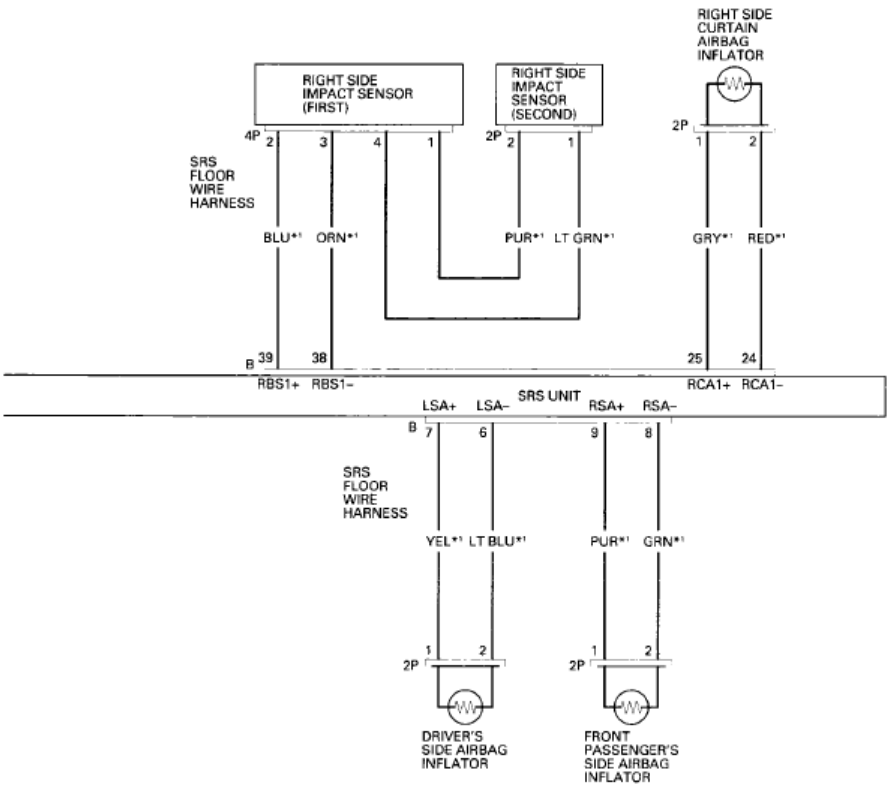


Fig. 49: SRS Circuit Diagram With Keyless Access System (4 Of 4)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

WITHOUT KEYLESS ACCESS SYSTEM

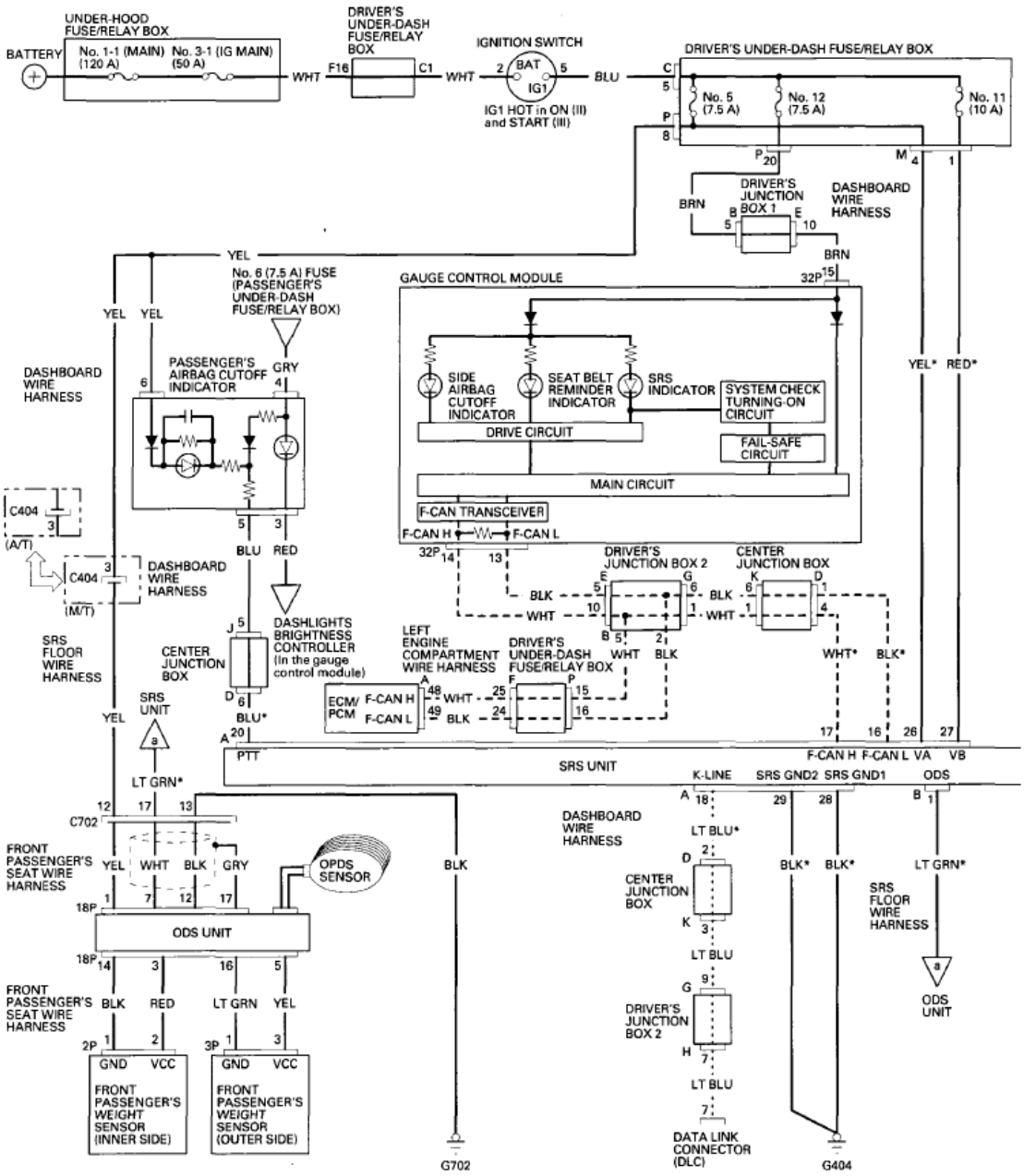


Fig. 50: SRS Circuit Diagram Without Keyless Access System (1 Of 4)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

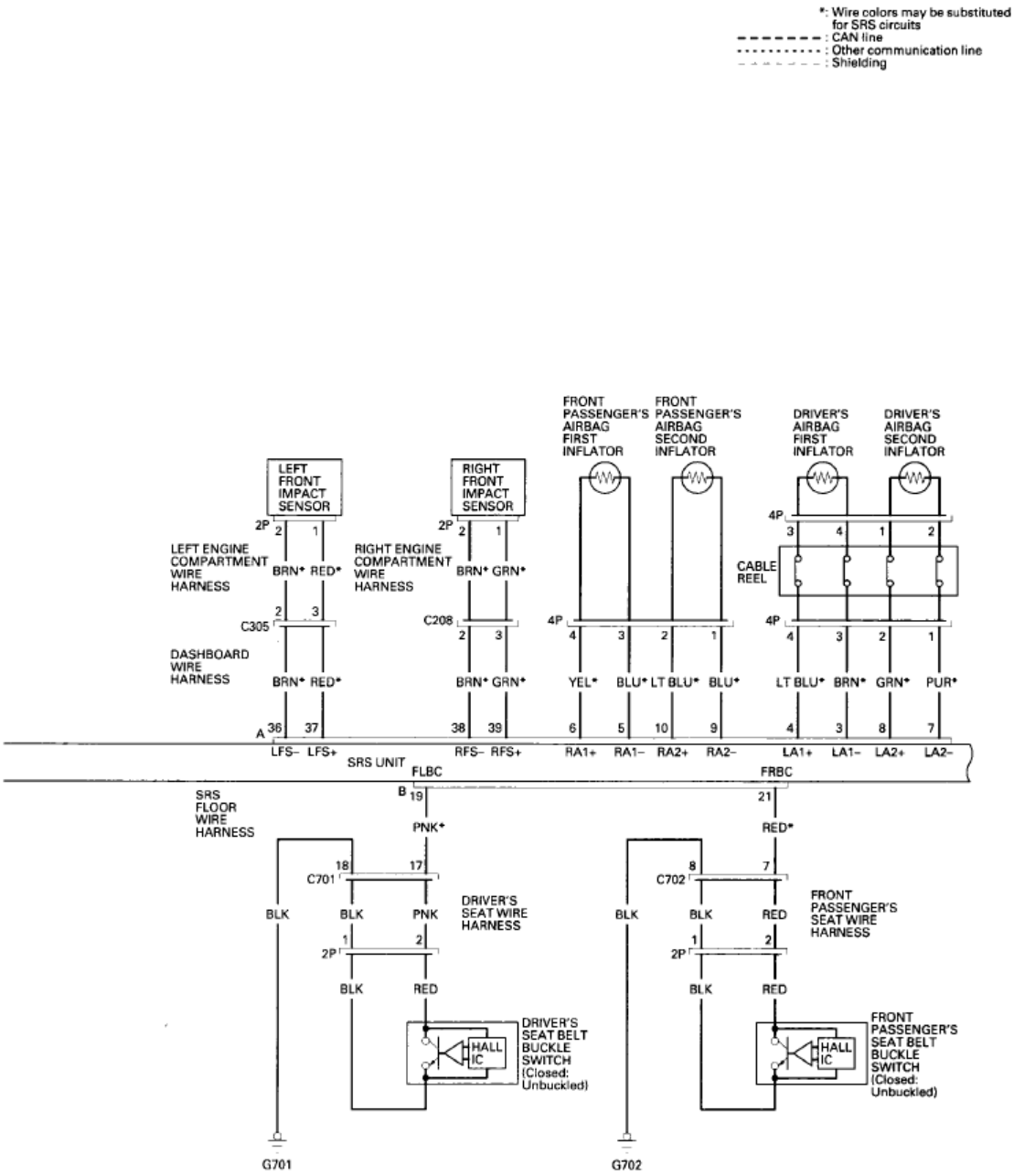


Fig. 51: SRS Circuit Diagram Without Keyless Access System (2 Of 4)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

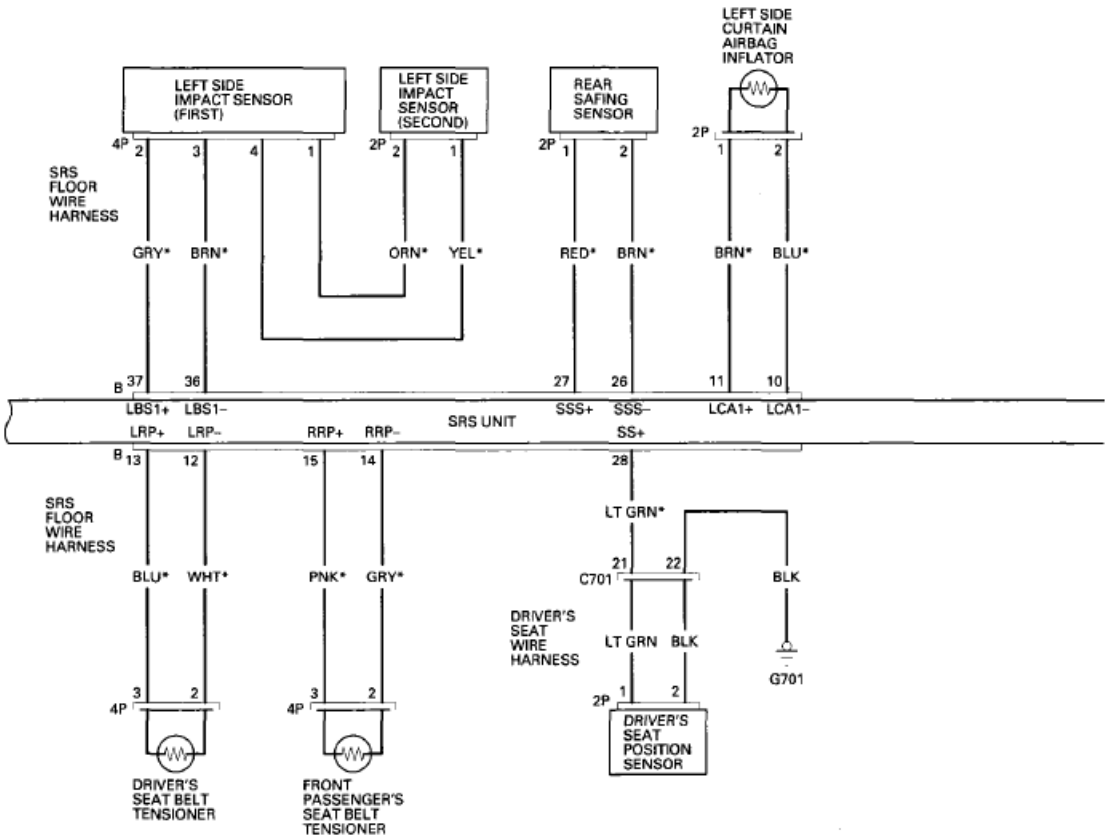


Fig. 52: SRS Circuit Diagram Without Keyless Access System (3 Of 4)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

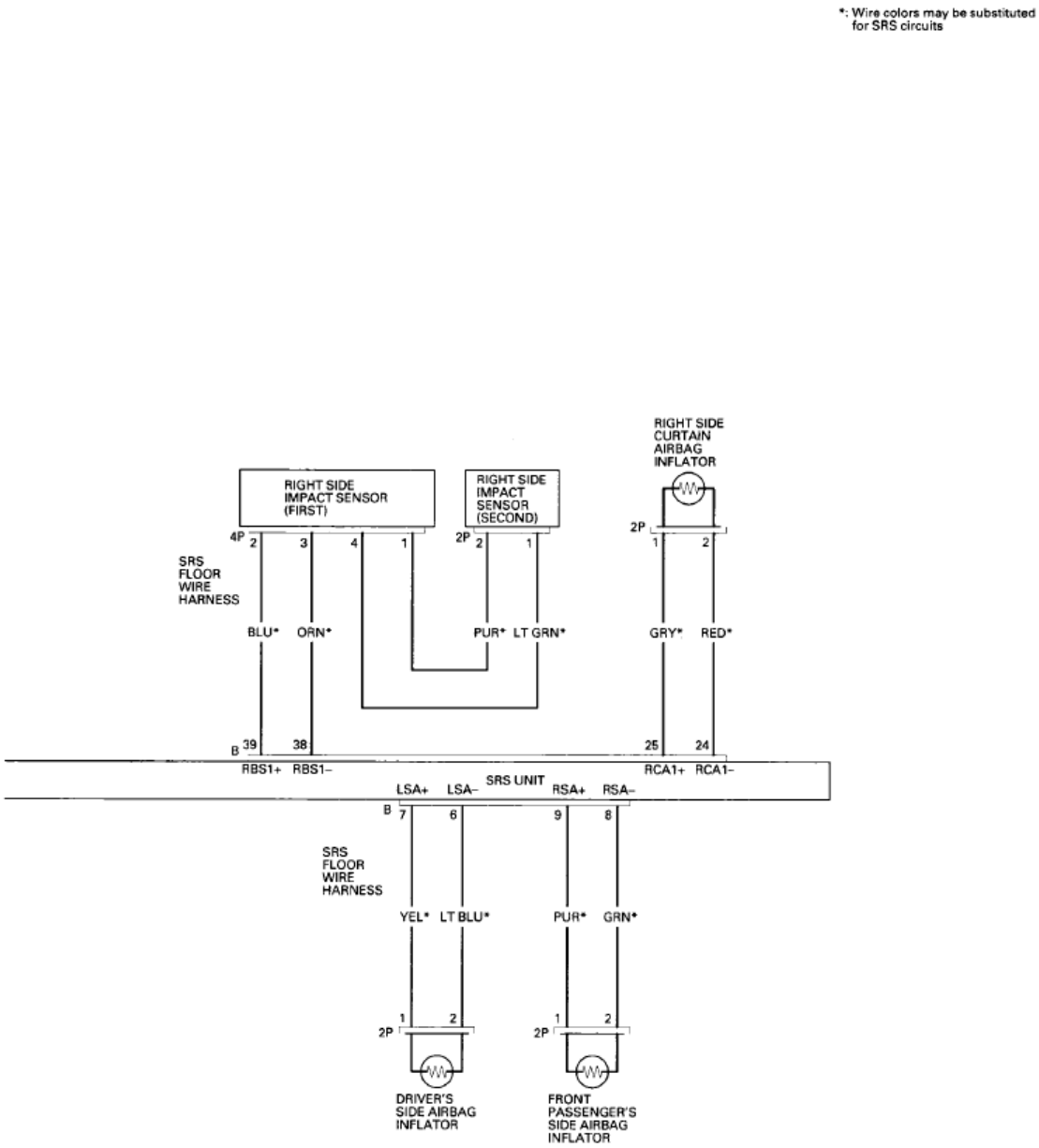


Fig. 53: SRS Circuit Diagram Without Keyless Access System (4 Of 4)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

DTC TROUBLESHOOTING

DTC 11-1X ("X" CAN BE 0 THRU 9 OR A THRU F): OPEN IN THE DRIVER'S AIRBAG FIRST INFLATOR; DTC 11-2X ("X" CAN BE 0 THRU 9 OR A THRU F): INCREASED RESISTANCE IN THE DRIVER'S AIRBAG FIRST INFLATOR; DTC 11-4X ("X" CAN BE 0 THRU 9 OR A THRU F): OPEN IN THE DRIVER'S AIRBAG SECOND INFLATOR; DTC 11-5X ("X" CAN BE 0 THRU 9 OR A THRU F): INCREASED RESISTANCE IN THE DRIVER'S AIRBAG SECOND INFLATOR

Special Tools Required

- SRS Inflator Simulator 07SAZ-TB4011A
- SRS Simulator Lead J 070AZ-SNAA100

NOTE:

- **Before doing this troubleshooting procedure, find out if the vehicle was in a collision. If so, verify that all the required components were replaced with new components, of the correct part number, and that they were properly installed (see COMPONENT REPLACEMENT/INSPECTION AFTER DEPLOYMENT).**
- **Before doing this troubleshooting procedure, review SRS Precautions and Procedures (see PRECAUTIONS AND PROCEDURES), General Troubleshooting Information (see GENERAL TROUBLESHOOTING INFORMATION), and Battery Terminal Disconnection and Reconnection (see BATTERY TERMINAL DISCONNECTION AND RECONNECTION).**
- **Before replacing the SRS unit, check the SRS unit software version with the HDS. If the software version is not the latest, update the SRS unit software (see SRS UNIT UPDATE), and retest.**

1. Clear the DTCs with the HDS (see **HOW TO CLEAR DTCS**).
2. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode, then wait for 10 seconds.
3. Check for DTCs with the HDS (see **HOW TO CLEAR DTCS**).

   Is DTC 11-1x, 11-2x, 11-4x, or 11-5x indicated?

   YES - Go to step 4.

   NO - Intermittent failure, the system is OK at this time. Go to **TROUBLESHOOTING INTERMITTENT FAILURES**. If another DTC is indicated, troubleshoot the DTC.

4. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
5. Disconnect the negative cable from the battery, then wait at least 3 minutes.
6. Remove the access panel from the steering wheel (see step 2), then disconnect the cable reel 4P connector (A) from the driver's airbag 4P connector.

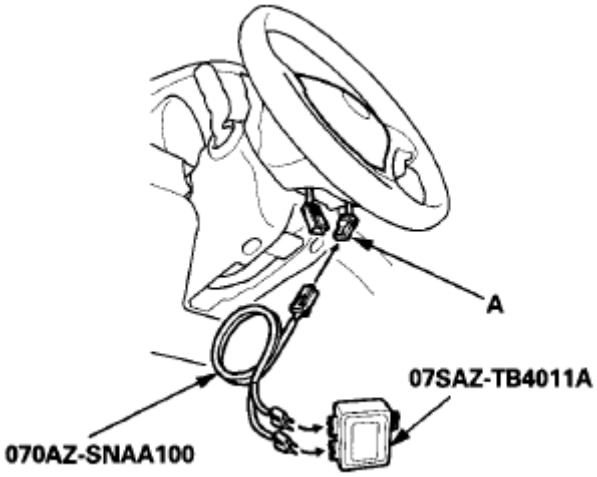


Fig. 54: Identifying Access Panel And Cable Reel 4P Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Connect the terminals of SRS simulator lead J to the SRS inflator simulator (2 ohms connectors), and then connect SRS simulator lead J to the cable reel 4P connector.
8. Reconnect the negative cable to the battery.
9. Clear the DTCs with the HDS (see **HOW TO CLEAR DTCS**).
10. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode, then wait for 10 seconds.
11. Check for DTCs with the HDS (see **HOW TO CLEAR DTCS**).

    Is DTC 11-1x, 11-2x, 11-4x, or 11-5x indicated?

    YES - Go to step 12.

    NO - Open or increased resistance in the driver's airbag first or second inflator; replace the driver's airbag (see **DRIVER'S AIRBAG REPLACEMENT**), then clear the DTC.

12. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
13. Disconnect the negative cable from the battery, then wait at least 3 minutes.
14. Remove the column covers (see **SIDE DEFOGGER VENT TRIM REMOVAL/INSTALLATION**).
15. Disconnect the dashboard wire harness 4P connector (A) from the cable reel 4P connector.

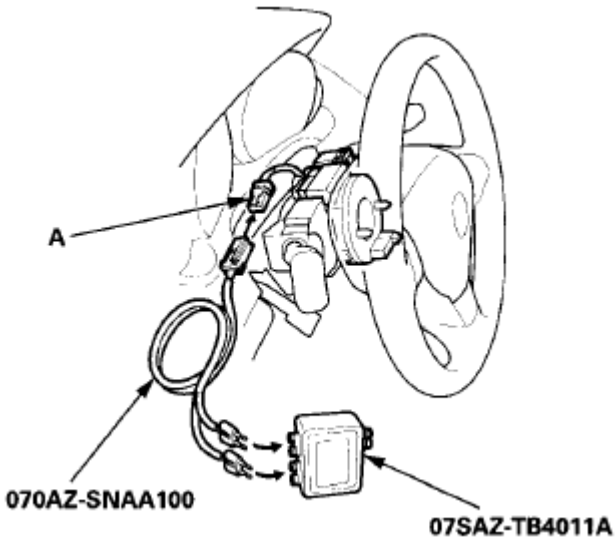


Fig. 55: Identifying Dashboard Wire Harness 4P Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

16. Connect the terminals of SRS simulator lead J to the SRS inflator simulator (2 ohms connectors), and then connect SRS simulator lead J to the dashboard wire harness 4P connector.
17. Reconnect the negative cable to the battery.
18. Clear the DTCs with the HDS (see **HOW TO CLEAR DTCS**).
19. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode, then wait for 10 seconds.
20. Clear the DTCs with the HDS (see **HOW TO CLEAR DTCS**).

    Is DTC 11-1x, 11-2x, 11-4x, or 11-5x indicated?

    YES - Go to step 21.

    NO - Open or increased resistance in the cable reel; replace the cable reel (see **CABLE REEL REPLACEMENT**), then clear the DTC.

21. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
22. Disconnect the negative cable from the battery, then wait at least 3 minutes.
23. Disconnect SRS unit connector A (39P) from the SRS unit (see **DISCONNECTING SYSTEM CONNECTORS**).
24. Disconnect the SRS inflator simulator from SRS simulator lead J. Do not disconnect SRS simulator lead J from the dashboard wire harness 4P connector.
25. Measure the resistance of the SRS simulator lead J black and red terminals respectively. There should be less than 1.0 ohms.

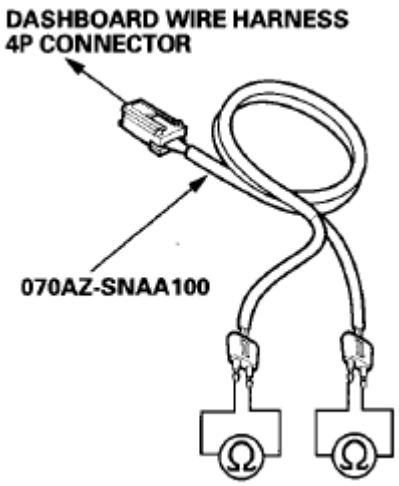


Fig. 56: Identifying Dashboard Wire Harness 4P Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is the resistance as specified?

YES - Faulty SRS unit or poor connection at SRS unit connector A (39P) and the SRS unit. Check the connection between the connector and the SRS unit. If the connection is OK, replace the SRS unit (see **SRS UNIT REPLACEMENT**). If the DTC does not clear, replace the dashboard wire harness.

NO - Open or increased resistance in the dashboard wire harness; replace the dashboard wire harness, then clear the DTC.

DTC 11-3X ("X" CAN BE 0 THRU 9 OR A THRU F): SHORT TO ANOTHER WIRE OR DECREASED RESISTANCE IN THE DRIVER'S AIRBAG FIRST INFLATOR; DTC 11-6X ("X" CAN BE 0 THRU 9 OR A THRU F): SHORT TO ANOTHER WIRE OR DECREASED RESISTANCE IN THE DRIVER'S AIRBAG SECOND INFLATOR

Special Tools Required

- SRS Inflator Simulator 07SAZ-TB4011A
- SRS Simulator Lead J 070AZ-SNAA100
- SRS Short Canceller 070AZ-SAA0100

NOTE:

- **Before doing this troubleshooting procedure, find out if the vehicle was in a collision. If so, verify that all the required components were replaced with new components, of the correct part number, and that they were properly installed (see COMPONENT REPLACEMENT/INSPECTION AFTER DEPLOYMENT).**
- **Before doing this troubleshooting procedure, review SRS Precautions and Procedures (see PRECAUTIONS AND PROCEDURES), General Troubleshooting Information (see GENERAL TROUBLESHOOTING INFORMATION), and Battery Terminal Disconnection and Reconnection**

(see BATTERY TERMINAL DISCONNECTION AND RECONNECTION).

- **Before replacing the SRS unit, check the SRS unit software version with the HDS. If the software version is not the latest, update the SRS unit software (see SRS UNIT UPDATE), and retest.**

1. Clear the DTCs with the HDS (see **HOW TO CLEAR DTCS**).
2. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode, then wait for 10 seconds.
3. Clear the DTCs with the HDS (see **HOW TO CLEAR DTCS**).

   Is DTC 11-3x or 11-6x indicated?

   YES - Go to step 4.

   NO - Intermittent failure, the system is OK at this time. Go to **TROUBLESHOOTING INTERMITTENT FAILURES**. If another DTC is indicated, troubleshoot the DTC.

4. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
5. Disconnect the negative cable from the battery, then wait at least 3 minutes.
6. Remove the access panel from the steering wheel (see step 2), then disconnect the cable reel 4P connector (A) from the driver's airbag 4P connector.

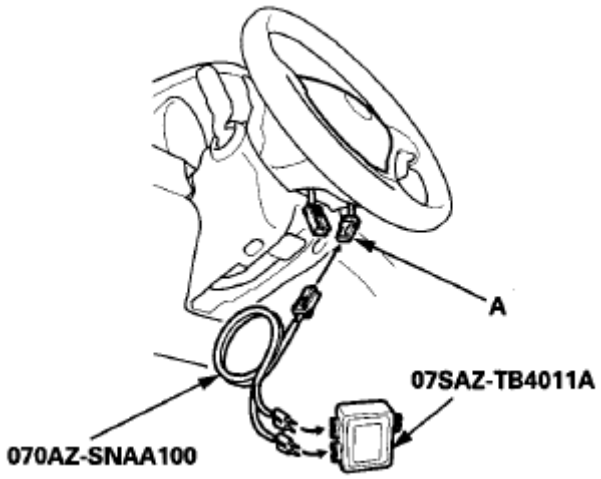


Fig. 57: Identifying Access Panel And Cable Reel 4P Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Connect the terminals of SRS simulator lead J to the SRS inflator simulator (2 ohms connectors), and then connect SRS simulator lead J to the cable reel 4P connector.
8. Reconnect the negative cable to the battery.
9. Clear the DTCs with the HDS (see **HOW TO CLEAR DTCS**).
10. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode, then wait for 10 seconds.

11. Clear the DTCs with the HDS (see **HOW TO CLEAR DTCS**).

    Is DTC 11-3x or 11-6x indicated?

    YES - Go to step 12.

    NO - Short to another wire in the driver's airbag first or second inflator; replace the driver's airbag (see **DRIVER'S AIRBAG REPLACEMENT**), then clear the DTC.

12. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
13. Disconnect the negative cable from the battery, then wait at least 3 minutes.
14. Remove the column covers (see **SIDE DEFOGGER VENT TRIM REMOVAL/INSTALLATION**).
15. Disconnect the dashboard wire harness 4P connector (A) from the cable reel 4P connector.

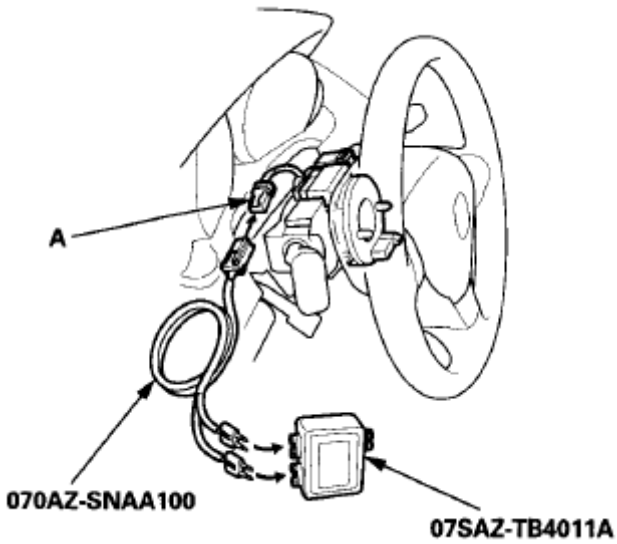


Fig. 58: Identifying Dashboard Wire Harness 4P Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

16. Connect the terminals of SRS simulator lead J to the SRS inflator simulator (2 ohms connectors), and then connect SRS simulator lead J to the dashboard wire harness 4P connector.
17. Reconnect the negative cable to the battery.
18. Clear the DTCs with the HDS (see **HOW TO CLEAR DTCS**).
19. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode, then wait for 10 seconds.
20. Clear the DTCs with the HDS (see **HOW TO CLEAR DTCS**).

    Is DTC 11-3x or 1 l-6x indicated?

    YES - Go to step 21.

NO - Short to another wire in the cable reel; replace the cable reel (see **CABLE REEL REPLACEMENT**), then clear the DTC.

21. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
22. Disconnect the negative cable from the battery, then wait at least 3 minutes.
23. Disconnect SRS unit connector A (39P) from the SRS unit (see **DISCONNECTING SYSTEM CONNECTORS**).
24. Disconnect the SRS inflator simulator from SRS simulator lead J. Do not disconnect SRS simulator lead J from the dashboard wire harness 4P connector.
25. Connect the SRS short cancellers (070AZ-SAA0100) to SRS unit connector A (39P) terminals No. 3 and No. 4, and terminals No. 7 and No. 8 (see **OPENING THE SRS UNIT SHORTING CONNECTORS FOR DIAGNOSIS**).
26. Measure the resistance of the SRS simulator lead J black and red terminals respectively. There should be an open circuit or at least 1 Mohms.

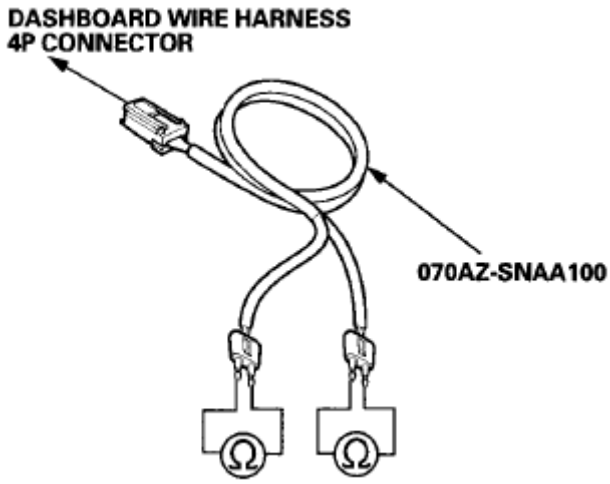


Fig. 59: Identifying Dashboard Wire Harness 4P Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is the resistance as specified?

YES - Faulty SRS unit or poor connection at SRS unit connector A (39P) and the SRS unit. Check the connection between the connector and the SRS unit. If the connection is OK, replace the SRS unit (see **SRS UNIT REPLACEMENT**). If the DTC does not clear, replace the dashboard wire harness.

NO - Short to another wire in the dashboard wire harness; replace the dashboard wire harness, then clear the DTC.

DTC 11-8X ("X" CAN BE 0 THRU 9 OR A THRU F): SHORT TO POWER IN THE DRIVER'S AIRBAG FIRST INFLATOR; DTC 11-AX ("X" CAN BE 0 THRU 9 OR A THRU F): SHORT TO POWER IN THE DRIVER'S AIRBAG SECOND INFLATOR

Special Tools Required

- SRS Inflator Simulator 07SAZ-TB4011A
- SRS Simulator Lead J 070AZ-SNAA100

NOTE:

- **Before doing this troubleshooting procedure, find out if the vehicle was in a collision. If so, verify that all the required components were replaced with new components, of the correct part number, and that they were properly installed (see COMPONENT REPLACEMENT/INSPECTION AFTER DEPLOYMENT).**
- **Before doing this troubleshooting procedure, review SRS Precautions and Procedures (see PRECAUTIONS AND PROCEDURES), General Troubleshooting Information (see GENERAL TROUBLESHOOTING INFORMATION), and Battery Terminal Disconnection and Reconnection (see BATTERY TERMINAL DISCONNECTION AND RECONNECTION).**
- **Before replacing the SRS unit, check the SRS unit software version with the HDS. If the software version is not the latest, update the SRS unit software (see SRS UNIT UPDATE), and retest.**

1. Clear the DTCs with the HDS (see **HOW TO CLEAR DTCS**).
2. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode, then wait for 10 seconds.
3. Clear the DTCs with the HDS (see **HOW TO CLEAR DTCS**).

   Is DTC 11-8x or 11-Ax indicated?

   YES - Go to step 4.

   NO - Intermittent failure, the system is OK at this time. Go to **TROUBLESHOOTING INTERMITTENT FAILURES**. If another DTC is indicated, troubleshoot the DTC.

4. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
5. Disconnect the negative cable from the battery, then wait at least 3 minutes.
6. Remove the access panel from the steering wheel (see step 2), then disconnect the cable reel 4P connector (A) from the driver's airbag 4P connector.

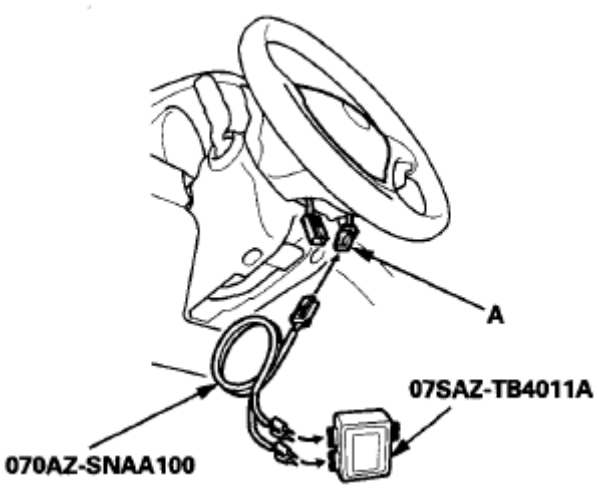


Fig. 60: Identifying Access Panel And Driver's Airbag 4P Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Connect the terminals of SRS simulator lead J to the SRS inflator simulator (2 ohms connectors), and then connect SRS simulator lead J to the cable reel 4P connector.
8. Reconnect the negative cable to the battery.
9. Clear the DTCs with the HDS (see **HOW TO CLEAR DTCS**).
10. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode, then wait for 10 seconds.
11. Clear the DTCs with the HDS (see **HOW TO CLEAR DTCS**).

    Is DTC 11-8x or 11-Ax indicated?

    YES - Go to step 12.

    NO - Short to power in the driver's airbag first or second inflator; replace the driver's airbag (see **DRIVER'S AIRBAG REPLACEMENT**), then clear the DTC.

12. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
13. Disconnect the negative cable from the battery, then wait at least 3 minutes.
14. Remove the column covers (see **SIDE DEFOGGER VENT TRIM REMOVAL/INSTALLATION**).
15. Disconnect the dashboard wire harness 4P connector (A) from the cable reel 4P connector.

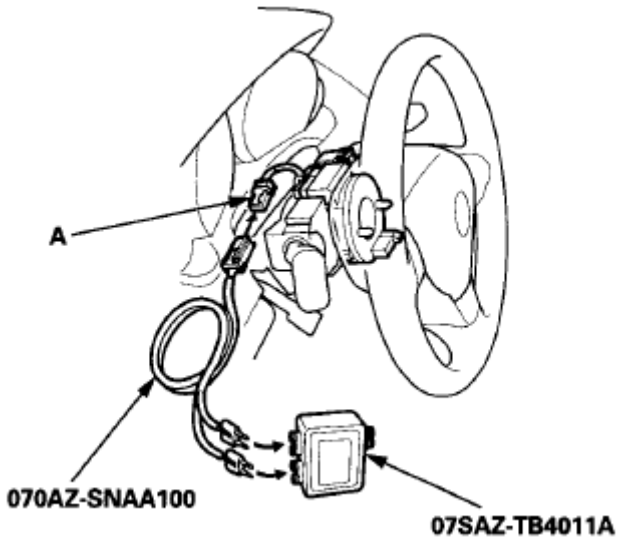


Fig. 61: Identifying Dashboard Wire Harness 4P Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

16. Connect the terminals of SRS simulator lead J to the SRS inflator simulator (2 ohms connectors), and then connect SRS simulator lead J to the dashboard wire harness 4P connector.
17. Reconnect the negative cable to the battery.
18. Clear the DTCs with the HDS (see **HOW TO CLEAR DTCS**).
19. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode, then wait for 10 seconds.
20. Clear the DTCs with the HDS (see **HOW TO CLEAR DTCS**).

    Is DTC 11-8x or 11-Ax indicated?

    YES - Go to step 21.

    NO - Short to power in the cable reel; replace the cable reel (see **CABLE REEL REPLACEMENT**), then clear the DTC.

21. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
22. Disconnect the negative cable from the battery, then wait at least 3 minutes.
23. Disconnect SRS unit connector A (39P) from the SRS unit (see **DISCONNECTING SYSTEM CONNECTORS**).
24. Disconnect the SRS inflator simulator from SRS simulator lead J. Do not disconnect SRS simulator lead J from the dashboard wire harness 4P connector.
25. Reconnect the negative cable to the battery.
26. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
27. Measure the voltage between each terminal of SRS simulator lead J and body ground individually. There should be less than 0.2 V.

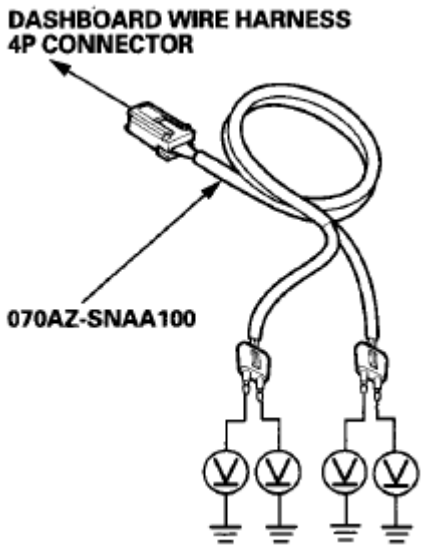


Fig. 62: Identifying Dashboard Wire Harness 4P Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is the voltage as specified?

YES - Faulty SRS unit or poor connection at SRS unit connector A (39P) and the SRS unit. Check the connection between the connector and the SRS unit. If the connection is OK, replace the SRS unit (see **SRS UNIT REPLACEMENT**). If the DTC does not clear, replace the dashboard wire harness.

NO - Short to power in the dashboard wire harness; replace the dashboard wire harness, then clear the DTC.

DTC 11-9X ("X" CAN BE 0 THRU 9 OR A THRU F): SHORT TO GROUND IN THE DRIVER'S AIRBAG FIRST INFLATOR; DTC 11-BX ("X" CAN BE 0 THRU 9 OR A THRU F): SHORT TO GROUND IN THE DRIVER'S AIRBAG SECOND INFLATOR

Special Tools Required

- SRS Inflator Simulator 07SAZ-TB4011A
- SRS Simulator Lead J 070AZ-SNAA100

NOTE:

- **Before doing this troubleshooting procedure, find out if the vehicle was in a collision. If so, verify that all the required components were replaced with new components, of the correct part number, and that they were properly installed (see COMPONENT REPLACEMENT/INSPECTION AFTER DEPLOYMENT).**
- **Before doing this troubleshooting procedure, review SRS Precautions and Procedures (see PRECAUTIONS AND PROCEDURES), General Troubleshooting Information (see GENERAL TROUBLESHOOTING INFORMATION), and Battery Terminal Disconnection and Reconnection**

(see BATTERY TERMINAL DISCONNECTION AND RECONNECTION).

- **Before replacing the SRS unit, check the SRS unit software version with the HDS. If the software version is not the latest, update the SRS unit software (see SRS UNIT UPDATE), and retest.**

1. Clear the DTCs with the HDS (see **HOW TO CLEAR DTCS**).
2. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode, then wait for 10 seconds.
3. Clear the DTCs with the HDS (see **HOW TO CLEAR DTCS**).

   Is DTC 11-9x or 11-Bx indicated?

   YES - Go to step 4.

   NO - Intermittent failure, the system is OK at this time. Go to **TROUBLESHOOTING INTERMITTENT FAILURES**. If another DTC is indicated, troubleshoot the DTC.

4. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
5. Disconnect the negative cable from the battery, then wait at least 3 minutes.
6. Remove the access panel from the steering wheel (see step 2), then disconnect the cable reel 4P connector (A) from the driver's airbag 4P connector.

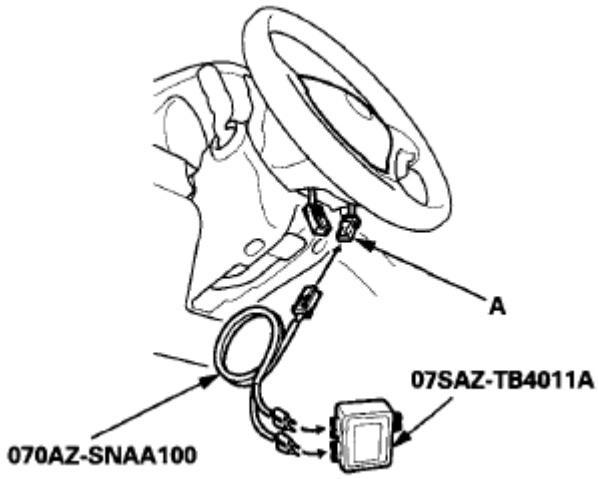


Fig. 63: Identifying Cable Reel 4P Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Connect the terminals of SRS simulator lead J to the SRS inflator simulator (2 ohms connectors), and then connect SRS simulator lead J to the cable reel 4P connector.
8. Reconnect the negative cable from the battery.
9. Clear the DTCs with the HDS (see **HOW TO CLEAR DTCS**).
10. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode, then wait for 10 seconds.

11. Clear the DTCs with the HDS (see **HOW TO CLEAR DTCS**).

    Is DTC 11-9x or 11-Bx indicated?

    YES - Go to step 12.

    NO - Short to ground in the driver's airbag first or second inflator; replace the driver's airbag (see **DRIVER'S AIRBAG REPLACEMENT**), then clear the DTC.

12. Turn the ignition switch to LOCK(0), or press the engine start/stop button to select the OFF mode.
13. Disconnect the negative cable from the battery, then wait at least 3 minutes.
14. Remove the column covers (see **SIDE DEFOGGER VENT TRIM REMOVAL/INSTALLATION**).
15. Disconnect the dashboard wire harness 4P connector (A) from the cable reel 4P connector.

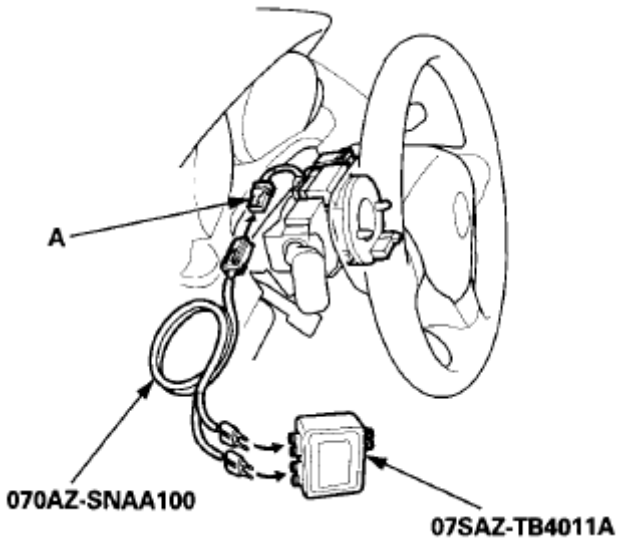


Fig. 64: Identifying Dashboard Wire Harness 4P Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

16. Connect the terminals of SRS simulator lead J to the SRS inflator simulator (2 ohms connectors), and then connect SRS simulator lead J to the dashboard wire harness 4P connector.
17. Reconnect the negative cable to the battery.
18. Clear the DTCs with the HDS (see **HOW TO CLEAR DTCS**).
19. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode, then wait for 10 seconds.
20. Clear the DTCs with the HDS (see **HOW TO CLEAR DTCS**).

    Is DTC 11-9x or 11-fix indicated?

    YES - Go to step 21.

NO - Short to ground in the cable reel; replace the cable reel (see **CABLE REEL REPLACEMENT**), then clear the DTC.

21. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
22. Disconnect the negative cable from the battery, then wait at least 3 minutes.
23. Disconnect SRS unit connector A (39P) from the SRS unit (see **DISCONNECTING SYSTEM CONNECTORS**).
24. Disconnect the SRS inflator simulator from SRS simulator lead J. Do not disconnect SRS simulator lead J from the dashboard wire harness 4P connector.
25. Measure the resistance between each terminal of SRS simulator lead J and body ground individually. There should be an open circuit or at least 1 Mohms.

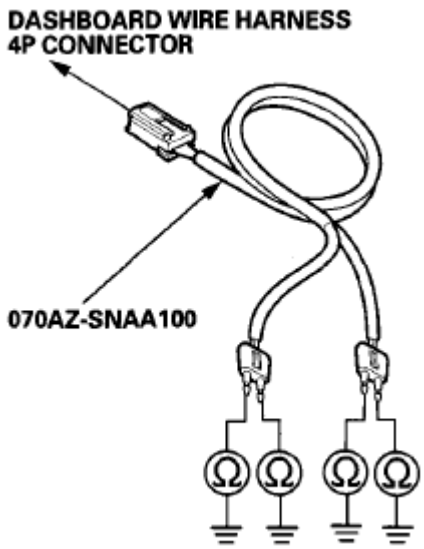


Fig. 65: Measuring Resistance Between Each Terminal Of SRS Simulator Lead J And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is the resistance as specified?

YES - Faulty SRS unit or poor connection at SRS unit connector A (39P) and the SRS unit. Check the connection between the connector and the SRS unit. If the connection is OK, replace the SRS unit (see **SRS UNIT REPLACEMENT**). If the DTC does not clear, replace the dashboard wire harness.

NO - Short to ground in the dashboard wire harness; replace the dashboard wire harness, then clear the DTC.

DTC 12-1X ("X" CAN BE 0 THRU 9 OR A THRU F): OPEN IN THE FRONT PASSENGER'S AIRBAG FIRST INFLATOR; DTC 12-2X ("X" CAN BE 0 THRU 9 OR A THRU F): INCREASED RESISTANCE IN THE FRONT PASSENGER'S AIRBAG FIRST INFLATOR; DTC 12-4X ("X" CAN BE 0 THRU 9 OR A THRU F): OPEN IN THE FRONT PASSENGER'S AIRBAG SECOND INFLATOR; DTC 12-5X ("X" CAN BE 0 THRU 9 OR A THRU F): INCREASED RESISTANCE IN THE FRONT PASSENGER'S AIRBAG SECOND INFLATOR

Special Tools Required

- SRS Inflator Simulator 07SAZ-TB4011A
- SRS Simulator Lead J 070AZ-SNAA100

NOTE:

- **Before doing this troubleshooting procedure, find out if the vehicle was in a collision. If so, verify that all the required components were replaced with new components, of the correct part number, and that they were properly installed (see COMPONENT REPLACEMENT/INSPECTION AFTER DEPLOYMENT).**
- **Before doing this troubleshooting procedure, review SRS Precautions and Procedures (see PRECAUTIONS AND PROCEDURES), General Troubleshooting Information (see GENERAL TROUBLESHOOTING INFORMATION), and Battery Terminal Disconnection and Reconnection (see BATTERY TERMINAL DISCONNECTION AND RECONNECTION).**
- **Before replacing the SRS unit, check the SRS unit software version with the HDS. If the software version is not the latest, update the SRS unit software (see SRS UNIT UPDATE), and retest.**

1. Clear the DTCs with the HDS (see **HOW TO CLEAR DTCS**).
2. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode, then wait for 10 seconds.
3. Clear the DTCs with the HDS (see **HOW TO CLEAR DTCS**).

   Is DTC 12-1x, 12-2x, 12-4x, or 12-5x indicated?

   YES - Go to step 4.

   NO - Intermittent failure, the system is OK at this time. Go to **TROUBLESHOOTING INTERMITTENT FAILURES**. If another DTC is indicated, troubleshoot the DTC.

4. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
5. Disconnect the negative cable from the battery, then wait at least 3 minutes.
6. Remove the glove box (see **GLOVE BOX REMOVAL/INSTALLATION**).
7. Disconnect the dashboard wire harness 4P connector (A) from the front passenger's airbag 4P connector.

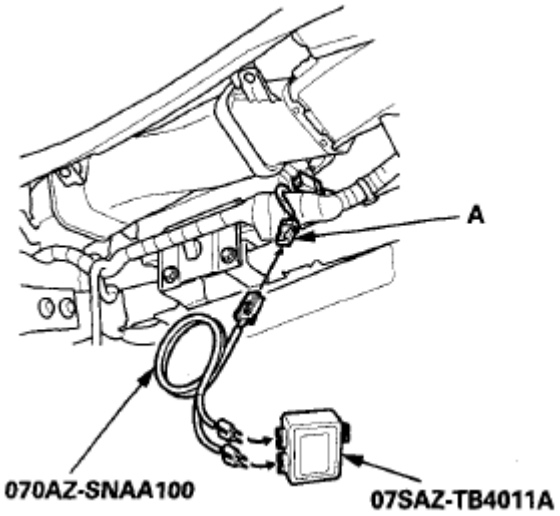


Fig. 66: Identifying Dashboard Wire Harness 4P Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

8. Connect the terminals of SRS simulator lead J to the SRS inflator simulator (2 ohms connectors), and then connect the SRS simulator lead J to the dashboard wire harness 4P connector.
9. Reconnect the negative cable to the battery.
10. Clear the DTCs with the HDS (see **HOW TO CLEAR DTCS**).
11. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode, then wait for 10 seconds.
12. Clear the DTCs with the HDS (see **HOW TO CLEAR DTCS**).

    Is DTC 12-1x, 12-2x, 12-4x, or 12-5x indicated?

    YES - Go to step 13.

    NO - Open or increased resistance in the front passenger's airbag first or second inflator; replace the front passenger's airbag (see **FRONT PASSENGER'S AIRBAG REPLACEMENT**), then clear the DTC.

13. Turn the ignition switch to LOCK(0), or press the engine start/stop button to select the OFF mode.
14. Disconnect the negative cable from the battery, then wait at least 3 minutes.
15. Disconnect SRS unit connector A (39P) from the SRS unit (see **DISCONNECTING SYSTEM CONNECTORS**).
16. Disconnect the SRS inflator simulator from SRS simulator lead J. Do not disconnect SRS simulator lead J from the dashboard wire harness 4P connector.
17. Measure the resistance of the SRS simulator lead J black and red terminals respectively. There should be less than 1.0 ohms.

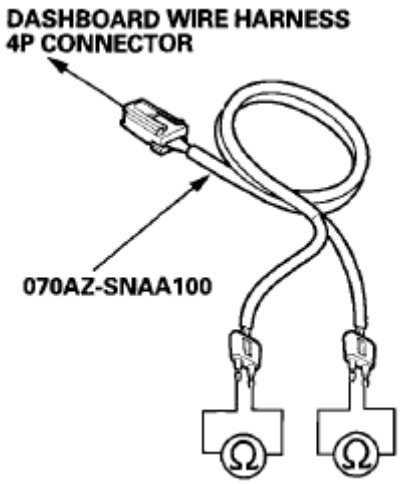


Fig. 67: Measuring Resistance Of SRS Simulator Lead J Black And Red Terminals
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is the resistance as specified?

YES - Faulty SRS unit or poor connection at SRS unit connector A (39P) and the SRS unit. Check the connection between the connector and the SRS unit. If the connection is OK, replace the SRS unit (see **SRS UNIT REPLACEMENT**). If the DTC does not clear, replace the dashboard wire harness.

NO - Open or increased resistance in the dashboard wire harness; replace the dashboard wire harness, then clear the DTC.

DTC 12-3X ("X" CAN BE 0 THRU 9 OR A THRU F): SHORT TO ANOTHER WIRE OR DECREASED RESISTANCE IN THE FRONT PASSENGER'S AIRBAG FIRST INFLATOR; DTC 12-6X ("X" CAN BE 0 THRU 9 OR A THRU F): SHORT TO ANOTHER WIRE OR DECREASED RESISTANCE IN THE FRONT PASSENGER'S AIRBAG SECOND INFLATOR

Special Tools Required

- SRS Inflator Simulator 07SAZ-TB4011A
- SRS Simulator Lead J 070AZ-SNAA100
- SRS Short Canceller 070AZ-SAA0100

NOTE:

- **Before doing this troubleshooting procedure, find out if the vehicle was in a collision. If so, verify that all the required components were replaced with new components, of the correct part number, and that they were properly installed (see COMPONENT REPLACEMENT/INSPECTION AFTER DEPLOYMENT).**
- **Before doing this troubleshooting procedure, review SRS Precautions and Procedures (see PRECAUTIONS AND PROCEDURES), General Troubleshooting Information (see GENERAL TROUBLESHOOTING INFORMATION), and Battery Terminal Disconnection and Reconnection**

(see BATTERY TERMINAL DISCONNECTION AND RECONNECTION).

- **Before replacing the SRS unit, check the SRS unit software version with the HDS. If the software version is not the latest, update the SRS unit software (see SRS UNIT UPDATE), and retest.**

1. Clear the DTCs with the HDS (see **HOW TO CLEAR DTCS**).
2. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode, then wait for 10 seconds.
3. Clear the DTCs with the HDS (see **HOW TO CLEAR DTCS**).

   Is DTC 12-3x or 12-6x indicated?

   YES - Go to step 4.

   NO - Intermittent failure, the system is OK at this time. Go to **TROUBLESHOOTING INTERMITTENT FAILURES**. If another DTC is indicated, troubleshoot the DTC.

4. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
5. Disconnect the negative cable from the battery, then wait at least 3 minutes.
6. Remove the glove box (see **GLOVE BOX REMOVAL/INSTALLATION**).
7. Disconnect the dashboard wire harness 4P connector (A) from the front passenger's airbag 4P connector.

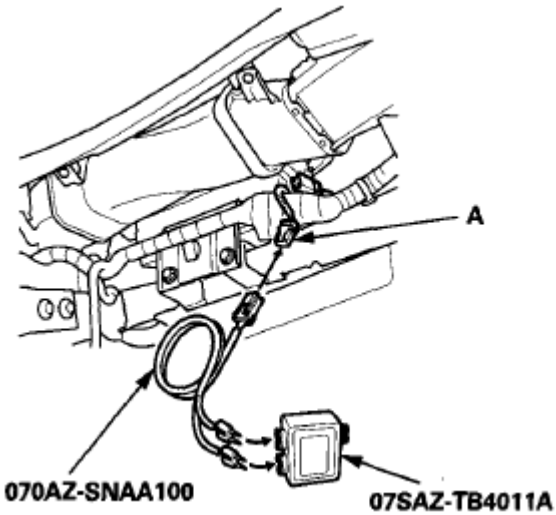


Fig. 68: Identifying Dashboard Wire Harness 4P Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

8. Connect the terminals of SRS simulator lead J to the SRS inflator simulator (2 ohms connectors), and then connect the SRS simulator lead J to the dashboard wire harness 4P connector.
9. Reconnect the negative cable to the battery.
10. Clear the DTCs with the HDS (see **HOW TO CLEAR DTCS**).
11. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode, then wait

for 10 seconds.

12. Clear the DTCs with the HDS (see **HOW TO CLEAR DTCS**).

    Is DTC 12-3x or 12-6x indicated?

    YES - Go to step 13.

    NO - Short to another wire in the front passenger's airbag first or second inflator; replace the front passenger's airbag (see **FRONT PASSENGER'S AIRBAG REPLACEMENT**), then clear the DTC.

13. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
14. Disconnect the negative cable from the battery, then wait at least 3 minutes.
15. Disconnect SRS unit connector A (39P) from the SRS unit (see **DISCONNECTING SYSTEM CONNECTORS**).
16. Disconnect the SRS inflator simulator from SRS simulator lead J. Do not disconnect SRS simulator lead J from the dashboard wire harness 4P connector.
17. Connect the SRS short cancellers (070AZ-SAA0100) to SRS unit connector A (39P) terminals No. 5 and No. 6, and terminals No. 9 and No. 10 (see **OPENING THE SRS UNIT SHORTING CONNECTORS FOR DIAGNOSIS**).
18. Measure the resistance of the SRS simulator lead J black and red terminals respectively. There should be an open circuit or at least 1 Mohms

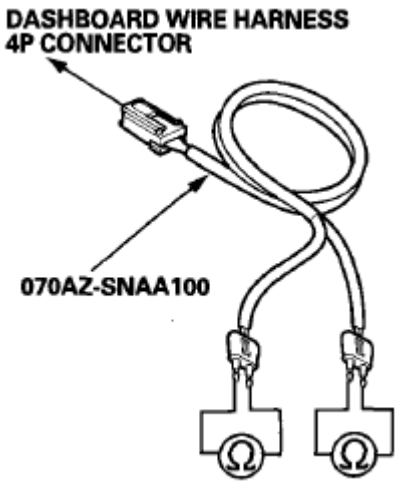


Fig. 69: Measuring Resistance Of SRS Simulator Lead J Black And Red Terminals
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is the resistance as specified?

YES - Faulty SRS unit or poor connection at SRS unit connector A (39P) and the SRS unit. Check the connection between the connector and the SRS unit. If the connection is OK, replace the SRS unit (see **SRS UNIT REPLACEMENT**). If the DTC does not clear, replace the dashboard wire harness.

NO - Short to another wire in the dashboard wire harness; replace the dashboard wire harness, then clear

the DTC.

DTC 12-8X ("X" CAN BE 0 THRU 9 OR A THRU F): SHORT TO POWER IN THE FRONT PASSENGER'S AIRBAG FIRST INFLATOR; DTC 12-AX ("X" CAN BE 0 THRU 9 OR A THRU F): SHORT TO POWER IN THE FRONT PASSENGER AIRBAG SECOND INFLATOR

Special Tools Required

- SRS Inflator Simulator 07SAZ-TB4011A
- SRS Simulator Lead J 070AZ-SNAA100

NOTE:

- **Before doing this troubleshooting procedure, find out if the vehicle was in a collision. If so, verify that all the required components were replaced with new components, of the correct part number, and that they were properly installed (see COMPONENT REPLACEMENT/INSPECTION AFTER DEPLOYMENT).**
- **Before doing this troubleshooting procedure, review SRS Precautions and Procedures (see PRECAUTIONS AND PROCEDURES), General Troubleshooting Information (see GENERAL TROUBLESHOOTING INFORMATION), and Battery Terminal Disconnection and Reconnection (see BATTERY TERMINAL DISCONNECTION AND RECONNECTION).**
- **Before replacing the SRS unit, check the SRS unit software version with the HDS. If the software version is not the latest, update the SRS unit software (see SRS UNIT UPDATE), and retest.**

1. Clear the DTCs with the HDS (see **HOW TO CLEAR DTCS**).
2. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode, then wait for 10 seconds.
3. Clear the DTCs with the HDS (see **HOW TO CLEAR DTCS**).

   Is DTC 12-8x or 12-Ax indicated?

   YES - Go to step 4.

   NO - Intermittent failure, the system is OK at this time. Go to **TROUBLESHOOTING INTERMITTENT FAILURES**. If another DTC is indicated, troubleshoot the DTC.

4. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
5. Disconnect the negative cable from the battery, then wait at least 3 minutes.
6. Remove the glove box (see **GLOVE BOX REMOVAL/INSTALLATION**).
7. Disconnect the dashboard wire harness 4P connector (A) from the front passenger's airbag 4P connector.

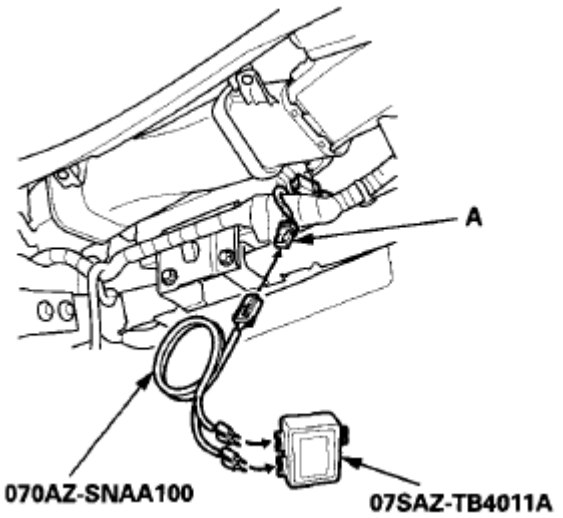


Fig. 70: Identifying Dashboard Wire Harness 4P Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

8. Connect the terminals of SRS simulator lead J to the SRS inflator simulator (2 ohms connectors), and then connect the SRS simulator lead J to the dashboard wire harness 4P connector.
9. Reconnect the negative cable to the battery.
10. Clear the DTCs with the HDS (see **HOW TO CLEAR DTCS**).
11. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode, then wait for 10 seconds.
12. Clear the DTCs with the HDS (see **HOW TO CLEAR DTCS**).

    Is DTC 12-8x or 12-Ax indicated?

    YES - Go to step 13.

    NO - Short to power in the front passenger's airbag first or second inflator; replace the front passenger's airbag (see **FRONT PASSENGER'S AIRBAG REPLACEMENT**), then clear the DTC.

13. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
14. Disconnect the negative cable from the battery, then wait at least 3 minutes.
15. Disconnect SRS unit connector A (39P) from the SRS unit (see **DISCONNECTING SYSTEM CONNECTORS**).
16. Disconnect the SRS inflator simulator from SRS simulator lead J. Do not disconnect SRS simulator lead J from the dashboard wire harness 4P connector.
17. Reconnect the negative cable to the battery.
18. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
19. Measure the voltage between each terminal of SRS simulator lead J and body ground individually. There should be less than 0.2 V.

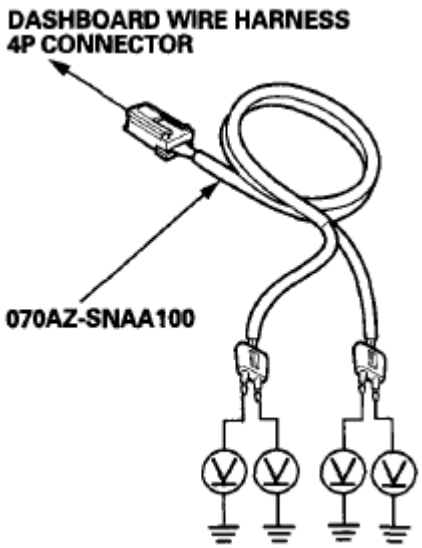


Fig. 71: Measuring Voltage Between Each Terminal Of SRS Simulator Lead J And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is the voltage as specified?

YES - Faulty SRS unit or poor connection at SRS unit connector A (39P) and the SRS unit. Check the connection between the connector and the SRS unit. If the connection is OK, replace the SRS unit (see **SRS UNIT REPLACEMENT**). If the DTC does not clear, replace the dashboard wire harness.

NO - Short to power in the dashboard wire harness; replace the dashboard wire harness, then clear the DTC.

DTC 12-9X ("X" CAN BE 0 THRU 9 OR A THRU F): SHORT TO GROUND IN THE FRONT PASSENGER'S AIRBAG FIRST INFLATOR; DTC 12-BX ("X" CAN BE 0 THRU 9 OR A THRU F): SHORT TO GROUND IN THE FRONT PASSENGER'S AIRBAG SECOND INFLATOR

Special Tools Required

- SRS Inflator Simulator 07SAZ-TB4011A
- SRS Simulator Lead J 070AZ-SNAA100

NOTE:

- **Before doing this troubleshooting procedure, find out if the vehicle was in a collision. If so, verify that all the required components were replaced with new components, of the correct part number, and that they were properly installed (see COMPONENT REPLACEMENT/INSPECTION AFTER DEPLOYMENT).**
- **Before doing this troubleshooting procedure, review SRS Precautions and Procedures (see PRECAUTIONS AND PROCEDURES), General Troubleshooting Information (see GENERAL TROUBLESHOOTING INFORMATION), and Battery Terminal Disconnection and Reconnection**

(see BATTERY TERMINAL DISCONNECTION AND RECONNECTION).

- **Before replacing the SRS unit, check the SRS unit software version with the HDS. If the software version is not the latest, update the SRS unit software (see SRS UNIT UPDATE), and retest.**

1. Clear the DTCs with the HDS (see **HOW TO CLEAR DTCS**).
2. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode, then wait for 10 seconds.
3. Clear the DTCs with the HDS (see **HOW TO CLEAR DTCS**).

   Is DTC 12-9x or 12-Bx indicated?

   YES - Go to step 4.

   NO - Intermittent failure, the system is OK at this time. Go to **TROUBLESHOOTING INTERMITTENT FAILURES**. If another DTC is indicated, troubleshoot the DTC.

4. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
5. Disconnect the negative cable from the battery, then wait at least 3 minutes.
6. Remove the glove box (see **GLOVE BOX REMOVAL/INSTALLATION**).
7. Disconnect the dashboard wire harness 4P connector (A) from the front passenger's airbag 4P connector.

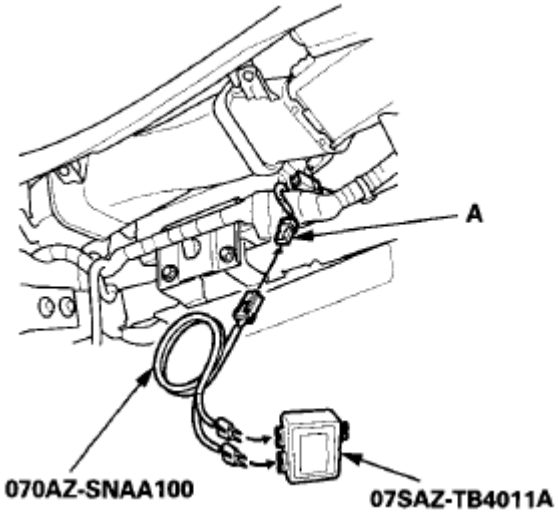


Fig. 72: Identifying Dashboard Wire Harness 4P Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

8. Connect the terminals of SRS simulator lead J to the SRS inflator simulator (2 ohms connectors), and then connect the SRS simulator lead J to the dashboard wire harness 4P connector.
9. Reconnect the negative cable to the battery.
10. Clear the DTCs with the HDS (see **HOW TO CLEAR DTCS**).
11. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode, then wait

for 10 seconds.

12. Clear the DTCs with the HDS (see **HOW TO CLEAR DTCS**).

    Is DTC 12-9x or 12-Bx indicated?

    YES - Go to step 13.

    NO - Short to ground in the front passenger's airbag first or second inflator; replace the front passenger's airbag (see **FRONT PASSENGER'S AIRBAG REPLACEMENT**), then clear the DTC.

13. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
14. Disconnect the negative cable from the battery, then wait at least 3 minutes.
15. Disconnect SRS unit connector A (39P) from the SRS unit (see **DISCONNECTING SYSTEM CONNECTORS**).
16. Disconnect the SRS inflator simulator from SRS simulator lead J. Do not disconnect SRS simulator lead J from the dashboard wire harness 4P connector.
17. Measure the resistance between each terminal of SRS simulator lead J and body ground individually. There should be an open circuit or at least 1 Mohms.

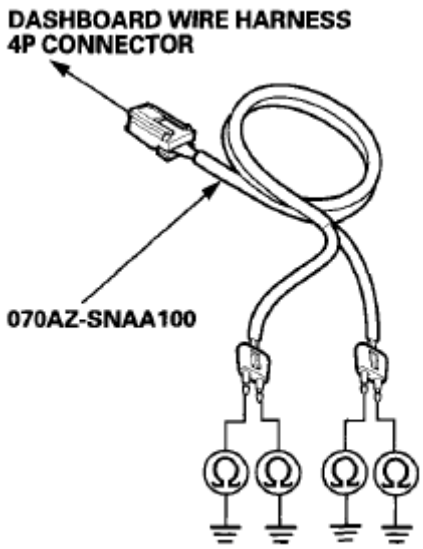


Fig. 73: Measuring Resistance Between Each Terminal Of SRS Simulator Lead J And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is the resistance as specified?

YES - Faulty SRS unit or poor connection at SRS unit connector A (39P) and the SRS unit. Check the connection between the connector and the SRS unit. If the connection is OK, replace the SRS unit (see **SRS UNIT REPLACEMENT**). If the DTC does not clear, replace the dashboard wire harness.

NO - Short to ground in the dashboard wire harness; replace the dashboard wire harness, then clear the

DTC.

DTC 21-1X ("X" CAN BE 0 THRU 9 OR A THRU F): OPEN IN THE DRIVER'S SEAT BELT TENSIONER; DTC 21-2X ("X" CAN BE 0 THRU 9 OR A THRU F): INCREASED RESISTANCE IN THE DRIVER'S SEAT BELT TENSIONER

Special Tools Required

- SRS Inflator Simulator 07SAZ-TB4011A
- SRS Simulator Lead K 070AZ-SNAA200
- SRS Short Canceller 070AZ-SAA0100

NOTE:

- **Before doing this troubleshooting procedure, find out if the vehicle was in a collision. If so, verify that all the required components were replaced with new components, of the correct part number, and that they were properly installed (see COMPONENT REPLACEMENT/INSPECTION AFTER DEPLOYMENT).**
- **Before doing this troubleshooting procedure, review SRS Precautions and Procedures (see PRECAUTIONS AND PROCEDURES), General Troubleshooting Information (see GENERAL TROUBLESHOOTING INFORMATION), and Battery Terminal Disconnection and Reconnection (see BATTERY TERMINAL DISCONNECTION AND RECONNECTION).**
- **Before replacing the SRS unit, check the SRS unit software version with the HDS. If the software version is not the latest, update the SRS unit software (see SRS UNIT UPDATE), and retest.**

1. Clear the DTCs with the HDS (see **HOW TO CLEAR DTCS**).
2. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode, then wait for 10 seconds.
3. Clear the DTCs with the HDS (see **HOW TO CLEAR DTCS**).

   Is DTC 21-1x or 21-2x indicated?

   YES - Go to step 4.

   NO - Intermittent failure, the system is OK at this time. Go to **TROUBLESHOOTING INTERMITTENT FAILURES**. If another DTC is indicated, troubleshoot the DTC.

4. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
5. Disconnect the negative cable from the battery, then wait at least 3 minutes.
6. Remove the left side B-pillar lower trim (see **B-PILLAR UPPER/LOWER TRIM**).
7. Disconnect the SRS floor wire harness 4P connector (A) from the driver's seat belt tensioner 4P connector.

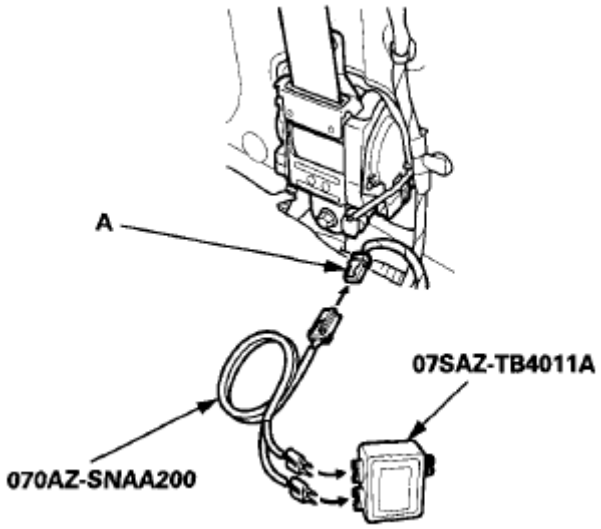


Fig. 74: Identifying SRS Floor Wire Harness 4P Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

8. Connect the terminals of SRS simulator lead K to the SRS inflator simulator (2 ohms connectors), and then connect SRS simulator lead K to the SRS floor wire harness 4P connector.
9. Reconnect the negative cable to the battery.
10. Clear the DTCs with the HDS (see **HOW TO CLEAR DTCS**).
11. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode, then wait for 10 seconds.
12. Clear the DTCs with the HDS (see **HOW TO CLEAR DTCS**).

    Is DTC 21-1x or 21-2x indicated?

    YES - Go to step 13.

    NO - Open or increased resistance in the driver's seat belt tensioner; replace the driver's seat belt (see **FRONT SEAT BELT REPLACEMENT**), then clear the DTC.

13. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
14. Disconnect the negative cable from the battery, then wait at least 3 minutes.
15. Disconnect SRS unit connector B (39P) from the SRS unit (see **DISCONNECTING SYSTEM CONNECTORS**).
16. Connect an SRS short canceller (070AZ-SAA0100) to SRS unit connector B (39P) terminals No. 12 and No. 13 (see **OPENING THE SRS UNIT SHORTING CONNECTORS FOR DIAGNOSIS**).
17. Measure the resistance between SRS unit connector B (39P) terminals No. 12 and No. 13. There should be 2.0- 3.0 ohms.

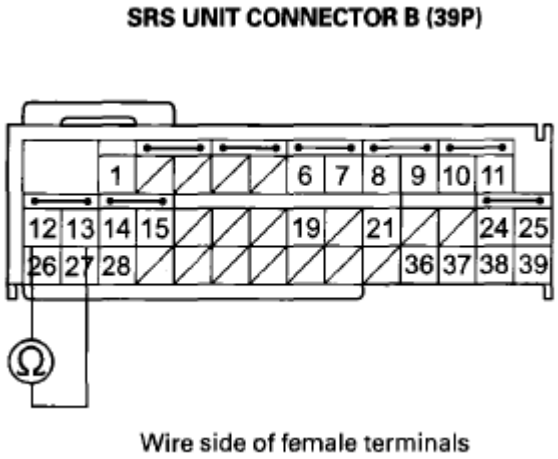


Fig. 75: Measuring Resistance Between SRS Unit Connector B (39P) Terminals No. 12 And No. 13
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is the resistance as specified?

YES - Faulty SRS unit or poor connection at SRS unit connector B (39P) and the SRS unit. Check the connection; if the connection is OK, replace the SRS unit (see **SRS UNIT REPLACEMENT**). If the DTC does not clear, replace the SRS floor wire harness.

NO - Open or increased resistance in the SRS floor wire harness; replace the SRS floor wire harness, then clear the DTC.

DTC 21-3X ("X" CAN BE 0 THRU 9 OR A THRU F): SHORT TO ANOTHER WIRE OR DECREASED RESISTANCE IN THE DRIVER'S SEAT BELT TENSIONER

Special Tools Required

- SRS Inflator Simulator 07SAZ-TB4011A
- SRS Simulator Lead K 070AZ-SNAA200
- SRS Short Canceller 070AZ-SAA0100

NOTE:

- **Before doing this troubleshooting procedure, find out if the vehicle was in a collision. If so, verify that all the required components were replaced with new components, of the correct part number, and that they were properly installed (see COMPONENT REPLACEMENT/INSPECTION AFTER DEPLOYMENT).**
- **Before doing this troubleshooting procedure, review SRS Precautions and Procedures (see PRECAUTIONS AND PROCEDURES), General Troubleshooting Information (see GENERAL TROUBLESHOOTING INFORMATION), and Battery Terminal Disconnection and Reconnection (see BATTERY TERMINAL DISCONNECTION AND RECONNECTION).**
- **Before replacing the SRS unit, check the SRS unit software version with**

the HDS. If the software version is not the latest, update the SRS unit software (see SRS UNIT UPDATE), and retest.

1. Clear the DTCs with the HDS (see **HOW TO CLEAR DTCS**).
2. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode, then wait for 10 seconds.
3. Clear the DTCs with the HDS (see **HOW TO CLEAR DTCS**).

   Is DTC 21-3x indicated?

   YES - Go to step 4.

   NO - Intermittent failure, the system is OK at this time. Go to **TROUBLESHOOTING INTERMITTENT FAILURES**. If another DTC is indicated, troubleshoot the DTC.

4. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
5. Disconnect the negative cable from the battery, then wait at least 3 minutes.
6. Remove the left side B-pillar lower trim (see **B-PILLAR UPPER/LOWER TRIM**).
7. Disconnect the SRS floor wire harness 4P connector (A) from the driver's seat belt tensioner 4P connector.

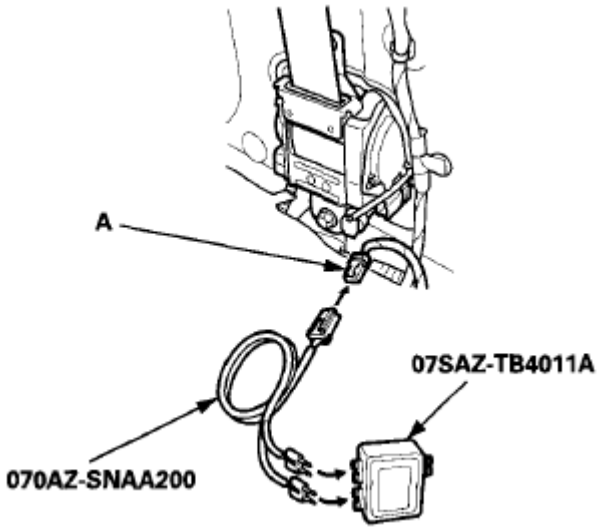


Fig. 76: Identifying SRS Floor Wire Harness 4P Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

8. Connect the terminals of SRS simulator lead K to the SRS inflator simulator (2 ohms connectors), and then connect SRS simulator lead K to the SRS floor wire harness 4P connector.
9. Reconnect the negative cable to the battery.
10. Clear the DTCs with the HDS (see **HOW TO CLEAR DTCS**).
11. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode, then wait

for 10 seconds.

12. Clear the DTCs with the HDS (see **HOW TO CLEAR DTCS**).

    Is DTC 21-3x indicated?

    YES - Go to step 13.

    NO - Short to another wire in the driver's seat belt tensioner; replace the driver's seat belt (see **FRONT SEAT BELT REPLACEMENT**), then clear the DTC.

13. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
14. Disconnect the negative cable from the battery, then wait at least 3 minutes.
15. Disconnect SRS unit connector B (39P) from the SRS unit (see **DISCONNECTING SYSTEM CONNECTORS**).
16. Disconnect SRS simulator lead K from the SRS floor wire harness 4P connector.
17. Connect an SRS short canceller (070AZ-SAA0100) to SRS unit connector B (39P) terminals No. 12 and No. 13 (see **OPENING THE SRS UNIT SHORTING CONNECTORS FOR DIAGNOSIS**).
18. Measure the resistance between SRS unit connector B (39P) terminals No. 12 and No. 13. There should be an open circuit or at least 1 Mohms.

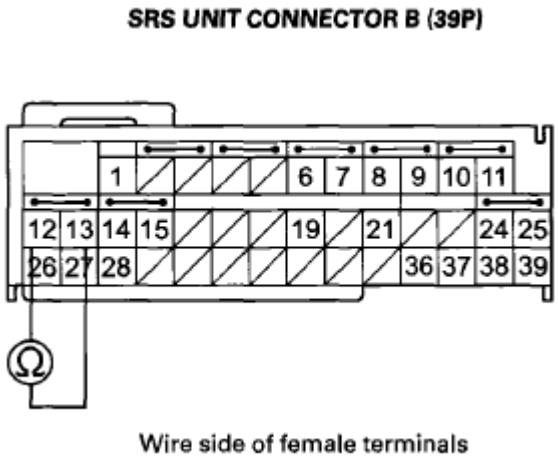


Fig. 77: Measuring Resistance Between SRS Unit Connector B (39P) Terminals No. 12 And No. 13
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is the resistance as specified?

YES - Faulty SRS unit or poor connection at SRS unit connector B (39P) and the SRS unit. Check the connection; if the connection is OK, replace the SRS unit (see **SRS UNIT REPLACEMENT**). If the DTC does not clear, replace the SRS floor wire harness.

NO - Short to another wire in the SRS floor wire harness; replace the SRS floor wire harness, then clear the DTC.

DTC 21-8X ("X" CAN BE 0 THRU 9 OR A THRU F): SHORT TO POWER IN THE DRIVER'S SEAT BELT TENSIONER

Special Tools Required

- SRS Inflator Simulator 07SAZ-TB4011A
- SRS Simulator Lead K 070AZ-SNAA200

NOTE:

- **Before doing this troubleshooting procedure, find out if the vehicle was in a collision. If so, verify that all the required components were replaced with new components, of the correct part number, and that they were properly installed (see COMPONENT REPLACEMENT/INSPECTION AFTER DEPLOYMENT).**
- **Before doing this troubleshooting procedure, review SRS Precautions and Procedures (see PRECAUTIONS AND PROCEDURES), General Troubleshooting Information (see GENERAL TROUBLESHOOTING INFORMATION), and Battery Terminal Disconnection and Reconnection (see BATTERY TERMINAL DISCONNECTION AND RECONNECTION).**
- **Before replacing the SRS unit, check the SRS unit software version with the HDS. If the software version is not the latest, update the SRS unit software (see SRS UNIT UPDATE), and retest.**

1. Clear the DTCs with the HDS (see **HOW TO CLEAR DTCS**).
2. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode, then wait for 10 seconds.
3. Clear the DTCs with the HDS (see **HOW TO CLEAR DTCS**).

   Is DTC 21-8x indicated?

   YES - Go to step 4.

   NO - Intermittent failure, the system is OK at this time. Go to **TROUBLESHOOTING INTERMITTENT FAILURES**. If another DTC is indicated, troubleshoot the DTC.

4. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
5. Disconnect the negative cable from the battery, then wait at least 3 minutes.
6. Remove the left side B-pillar lower trim (see **B-PILLAR UPPER/LOWER TRIM**).
7. Disconnect the SRS floor wire harness 4P connector (A) from the driver's seat belt tensioner 4P connector.

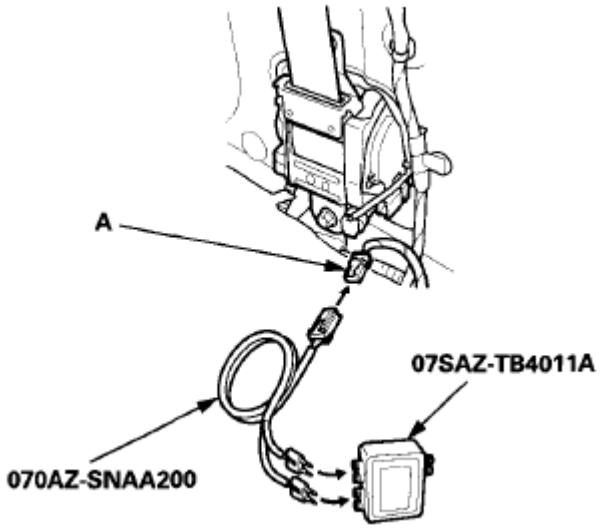


Fig. 78: Identifying SRS Floor Wire Harness 4P Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

8. Connect the terminals of SRS simulator lead K to the SRS inflator simulator (2 ohms connectors), and then connect SRS simulator lead K to the SRS floor wire harness 4P connector.
9. Reconnect the negative cable to the battery.
10. Clear the DTCs with the HDS (see **HOW TO CLEAR DTCS**).
11. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode, then wait for 10 seconds.
12. Clear the DTCs with the HDS (see **HOW TO CLEAR DTCS**).

    Is DTC 21-8x indicated?

    YES - Go to step 13.

    NO - Short to power in the driver's seat belt tensioner; replace the driver's seat belt (see **FRONT SEAT BELT REPLACEMENT**), then clear the DTC.

13. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
14. Disconnect the negative cable from the battery, then wait at least 3 minutes.
15. Disconnect SRS unit connector B (39P) from the SRS unit (see **DISCONNECTING SYSTEM CONNECTORS**).
16. Disconnect SRS simulator lead K from the SRS floor wire harness 4P connector.
17. Reconnect the negative cable to the battery.
18. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
19. Measure the voltage between body ground and SRS unit connector B (39P) terminals No. 12 and No. 13 individually. There should be less than 0.2 V.

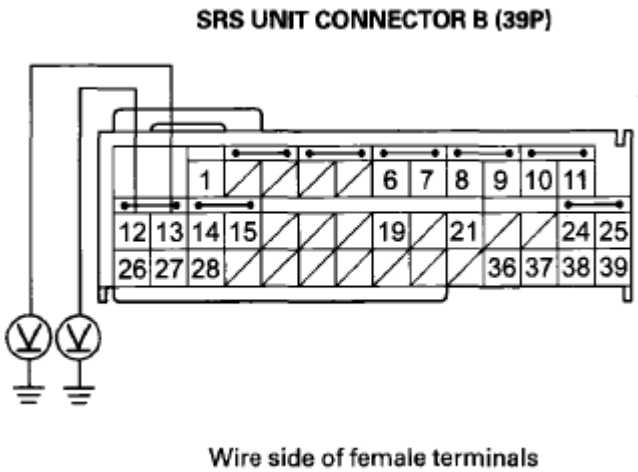


Fig. 79: Measuring Voltage Between Body Ground And SRS Unit Connector B (39P) Terminals No. 12 And No. 13
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is the voltage as specified?

YES - Faulty SRS unit or poor connection at SRS unit connector B (39P) and the SRS unit. Check the connection; if the connection is OK, replace the SRS unit (see **SRS UNIT REPLACEMENT**). If the DTC does not clear, replace the SRS floor wire harness.

NO - Short to power in the SRS floor wire harness; replace the SRS floor wire harness, then clear the DTC.

DTC 21-9X ("X" CAN BE 0 THRU 9 OR A THRU F): SHORT TO GROUND IN THE DRIVER'S SEAT BELT TENSIONER

Special Tools Required

- SRS Inflator Simulator 07SAZ-TB4011A
- SRS Simulator Lead K 070AZ-SNAA200

NOTE:

- **Before doing this troubleshooting procedure, find out if the vehicle was in a collision. If so, verify that all the required components were replaced with new components, of the correct part number, and that they were properly installed (see COMPONENT REPLACEMENT/INSPECTION AFTER DEPLOYMENT).**
- **Before doing this troubleshooting procedure, review SRS Precautions and Procedures (see PRECAUTIONS AND PROCEDURES), General Troubleshooting Information (see GENERAL TROUBLESHOOTING INFORMATION), and Battery Terminal Disconnection and Reconnection (see BATTERY TERMINAL DISCONNECTION AND RECONNECTION).**
- **Before replacing the SRS unit, check the SRS unit software version with**

the HDS. If the software version is not the latest, update the SRS unit software (see SRS UNIT UPDATE), and retest.

1. Clear the DTCs with the HDS (see **HOW TO CLEAR DTCS**).
2. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode, then wait for 10 seconds.
3. Clear the DTCs with the HDS (see **HOW TO CLEAR DTCS**).

   Is DTC 21-9x indicated?

   YES - Go to step 4.

   NO - Intermittent failure, the system is OK at this time. Go to **TROUBLESHOOTING INTERMITTENT FAILURES**. If another DTC is indicated, troubleshoot the DTC.

4. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
5. Disconnect the negative cable from the battery, then wait at least 3 minutes.
6. Remove the left side B-pillar lower trim (see **B-PILLAR UPPER/LOWER TRIM**).
7. Disconnect the SRS floor wire harness 4P connector (A) from the driver's seat belt tensioner 4P connector.

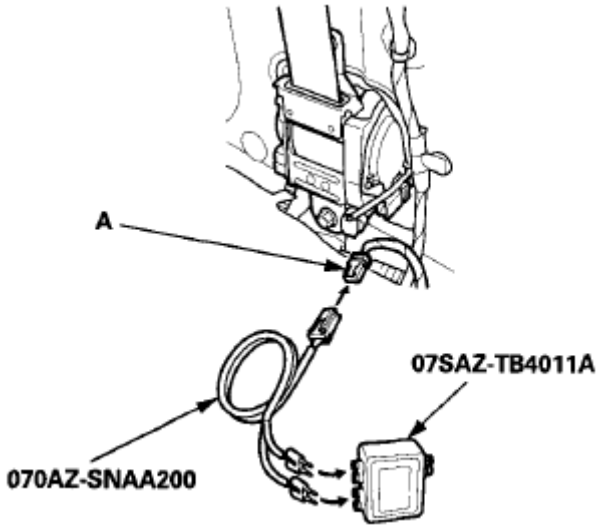


Fig. 80: Identifying SRS Floor Wire Harness 4P Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

8. Connect the terminals of SRS simulator lead K to the SRS inflator simulator (2 ohms connectors), and then connect SRS simulator lead K to the SRS floor wire harness 4P connector.
9. Reconnect the negative cable to the battery.
10. Clear the DTCs with the HDS (see **HOW TO CLEAR DTCS**).
11. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode, then wait

for 10 seconds.

12. Clear the DTCs with the HDS (see **HOW TO CLEAR DTCS**).

    Is DTC 21-9x indicated?

    YES - Go to step 13.

    NO - Short to ground in the driver's seat belt tensioner; replace the driver's seat belt (see **FRONT SEAT BELT REPLACEMENT**), then clear the DTC.

13. Turn the ignition switch to LOCK(0), or press the engine start/stop button to select the OFF mode.
14. Disconnect the negative cable from the battery, then wait at least 3 minutes.
15. Disconnect SRS unit connector B (39P) from the SRS unit (see **DISCONNECTING SYSTEM CONNECTORS**).
16. Disconnect SRS simulator lead K from the SRS floor wire harness 4P connector.
17. Measure the resistance between body ground and SRS unit connector B (39P) terminals No. 12 and No. 13 individually. There should bean open circuit or at least 1 Mohms.

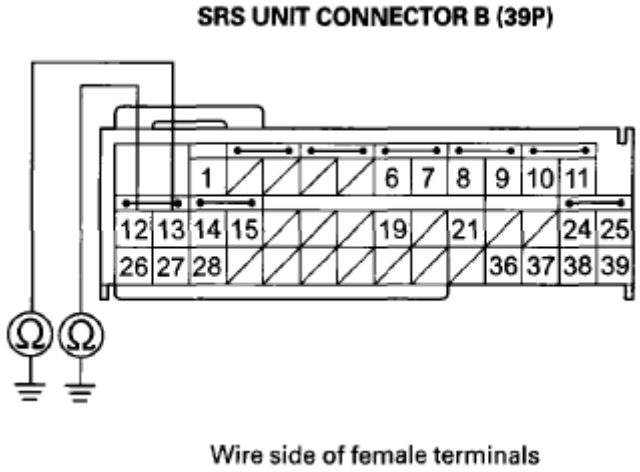


Fig. 81: Measuring Resistance Between Body Ground And SRS Unit Connector B (39P) Terminals No. 12 And No. 13
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is the resistance as specified?

YES - Faulty SRS unit or poor connection at SRS unit connector B (39P) and the SRS unit. Check the connection; if the connection is OK, replace the SRS unit (see **SRS UNIT REPLACEMENT**). If the DTC does not clear, replace the SRS floor wire harness.

NO - Short to ground in the SRS floor wire harness; replace the SRS floor wire harness, then clear the DTC.

DTC 22-1X ("X" CAN BE 0 THRU 9 OR A THRU F): OPEN IN THE FRONT PASSENGER'S SEAT

BELT TENSIONER; DTC 22-2X ("X" CAN BE 0 THRU 9 OR A THRU F): INCREASED RESISTANCE IN THE FRONT PASSENGER'S SEAT BELT TENSIONER

Special Tools Required

- SRS Inflator Simulator 07SAZ-TB4011A
- SRS Simulator Lead K 070AZ-SNAA200
- SRS Short Canceller 070AZ-SAA0100

NOTE:

- **Before doing this troubleshooting procedure, find out if the vehicle was in a collision. If so, verify that all the required components were replaced with new components, of the correct part number, and that they were properly installed (see COMPONENT REPLACEMENT/INSPECTION AFTER DEPLOYMENT).**
- **Before doing this troubleshooting procedure, review SRS Precautions and Procedures (see PRECAUTIONS AND PROCEDURES), General Troubleshooting Information (see GENERAL TROUBLESHOOTING INFORMATION), and Battery Terminal Disconnection and Reconnection (see BATTERY TERMINAL DISCONNECTION AND RECONNECTION).**
- **Before replacing the SRS unit, check the SRS unit software version with the HDS. If the software version is not the latest, update the SRS unit software (see SRS UNIT UPDATE), and retest.**

1. Clear the DTCs with the HDS (see **HOW TO CLEAR DTCS**).
2. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode, then wait for 10 seconds.
3. Clear the DTCs with the HDS (see **HOW TO CLEAR DTCS**).

   Is DTC 22-1x or 22-2x indicated?

   YES - Go to step 4.

   NO - Intermittent failure, the system is OK at this time. Go to **TROUBLESHOOTING INTERMITTENT FAILURES**. If another DTC is indicated, troubleshoot the DTC.

4. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
5. Disconnect the negative cable from the battery, then wait at least 3 minutes.
6. Remove the right side B-pillar lower trim (see **B-PILLAR UPPER/LOWER TRIM**).
7. Disconnect the SRS floor wire harness 4P connector (A) from the front passenger's seat belt tensioner 4P connector.

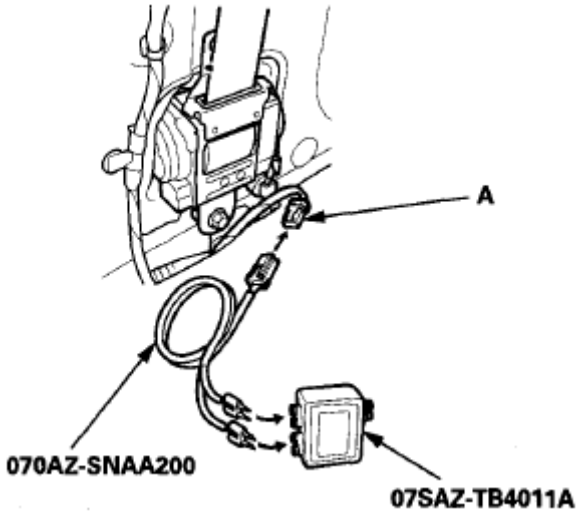


Fig. 82: Identifying SRS Floor Wire Harness 4P Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

8. Connect the terminals of SRS simulator lead K to the SRS inflator simulator (2 ohms connectors), and then connect SRS simulator lead K to the SRS floor wire harness 4P connector.
9. Reconnect the negative cable to the battery.
10. Clear the DTCs with the HDS (see **HOW TO CLEAR DTCS**).
11. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode, then wait for 10 seconds.
12. Clear the DTCs with the HDS (see **HOW TO CLEAR DTCS**).

    Is DTC 22-1x or 22-2x indicated?

    YES - Go to step 13.

    NO - Open or increased resistance in the front passenger's seat belt tensioner; replace the front passenger's seat belt (see **FRONT SEAT BELT REPLACEMENT**), then clear the DTC.

13. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
14. Disconnect the negative cable from the battery, then wait at least 3 minutes.
15. Disconnect SRS unit connector B (39P) from the SRS unit (see **DISCONNECTING SYSTEM CONNECTORS**).
16. Connect an SRS short canceller (070AZ-SAA0100) to SRS unit connector B (39P) terminals No. 14 and No. 15 (see **OPENING THE SRS UNIT SHORTING CONNECTORS FOR DIAGNOSIS**).
17. Measure the resistance between SRS unit connector B(39P) terminals No. 14 and No. 15. There should be 2.0- 3.0 ohms.

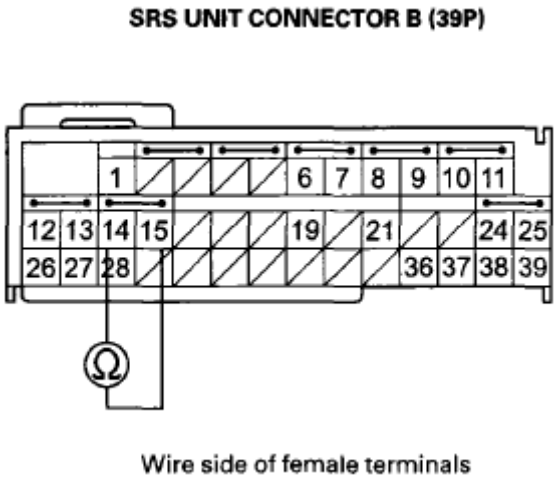


Fig. 83: Measuring Resistance Between SRS Unit Connector B (39P) Terminals No. 14 And No. 15
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is the resistance as specified?

YES - Faulty SRS unit or poor connection at SRS unit connector B (39P) and the SRS unit. Check the connection; if the connection is OK, replace the SRS unit (see **SRS UNIT REPLACEMENT**). If the DTC does not clear, replace the SRS floor wire harness.

NO - Open or increased resistance in the SRS floor wire harness; replace the SRS floor wire harness, then clear the DTC.

DTC 22-3X ("X" CAN BE 0 THRU 9 OR A THRU F): SHORT TO ANOTHER WIRE OR DECREASED RESISTANCE IN THE FRONT PASSENGER'S SEAT BELT TENSIONER

Special Tools Required

- SRS Inflator Simulator 07SAZ-TB4011A
- SRS Simulator Lead K 070AZ-SNAA200
- SRS Short Canceller 070AZ-SAA0100

NOTE:

- **Before doing this troubleshooting procedure, find out if the vehicle was in a collision. If so, verify that all the required components were replaced with new components, of the correct part number, and that they were properly installed (see COMPONENT REPLACEMENT/INSPECTION AFTER DEPLOYMENT).**
- **Before doing this troubleshooting procedure, review SRS Precautions and Procedures (see PRECAUTIONS AND PROCEDURES), General Troubleshooting Information (see GENERAL TROUBLESHOOTING INFORMATION), and Battery Terminal Disconnection and Reconnection (see BATTERY TERMINAL DISCONNECTION AND RECONNECTION).**
- **Before replacing the SRS unit, check the SRS unit software version with**

the HDS. If the software version is not the latest, update the SRS unit software (see SRS UNIT UPDATE), and retest.

1. Clear the DTCs with the HDS (see **HOW TO CLEAR DTCS**).
2. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode, then wait for 10 seconds.
3. Clear the DTCs with the HDS (see **HOW TO CLEAR DTCS**).

   Is DTC 22-3x indicated?

   YES - Go to step 4.

   NO - Intermittent failure, the system is OK at this time. Go to **TROUBLESHOOTING INTERMITTENT FAILURES**. If another DTC is indicated, troubleshoot the DTC.

4. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
5. Disconnect the negative cable from the battery, then wait at least 3 minutes.
6. Remove the right side B-pillar lower trim (see **B-PILLAR UPPER/LOWER TRIM**).
7. Disconnect the SRS floor wire harness 4P connector (A) from the front passenger's seat belt tensioner 4P connector.

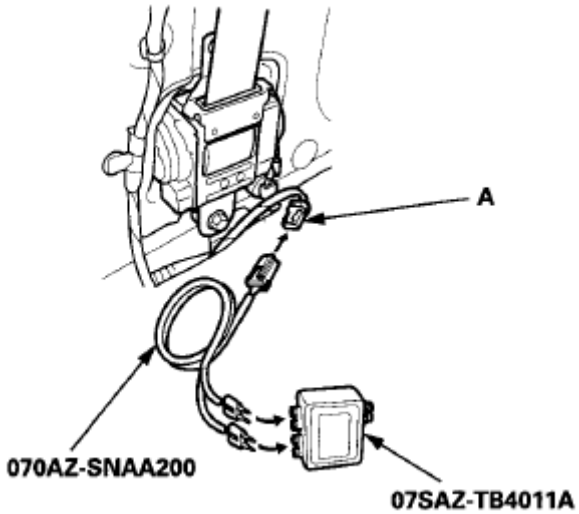


Fig. 84: Identifying SRS Floor Wire Harness 4P Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

8. Connect the terminals of SRS simulator lead K to the SRS inflator simulator (2 ohms connectors), and then connect SRS simulator lead K to the SRS floor wire harness 4P connector.
9. Reconnect the negative cable to the battery.
10. Clear the DTCs with the HDS (see **HOW TO CLEAR DTCS**).
11. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode, then wait for 10 seconds.

12. Clear the DTCs with the HDS (see **HOW TO CLEAR DTCS**).

    Is DTC 22-3x indicated?

    YES - Go to step 13.

    NO - Short to another wire in the front passenger's seat belt tensioner; replace the front passenger's seat belt (see **FRONT SEAT BELT REPLACEMENT**), then clear the DTC.

13. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
14. Disconnect the negative cable from the battery, then wait at least 3 minutes.
15. Disconnect SRS unit connector B (39P) from the SRS unit (see **DISCONNECTING SYSTEM CONNECTORS**).
16. Disconnect SRS simulator lead K from the SRS floor wire harness 4P connector.
17. Connect an SRS short canceller (070AZ-SAA0100) to SRS unit connector B (39P) terminals No. 14 and No. 15 (see **OPENING THE SRS UNIT SHORTING CONNECTORS FOR DIAGNOSIS**).
18. Measure the resistance between SRS unit connector B (39P) terminals No. 14 and No. 15. There should be an open circuit or at least 1 Mohms

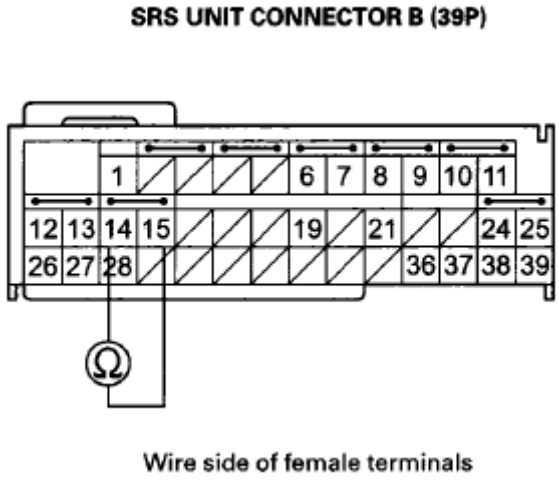


Fig. 85: Measuring Resistance Between SRS Unit Connector B (39P) Terminals No. 14 And No. 15
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is the resistance as specified?

YES - Faulty SRS unit or poor connection at SRS unit connector B (39P) and the SRS unit. Check the connection; if the connection is OK, replace the SRS unit (see **SRS UNIT REPLACEMENT**). If the DTC does not clear, replace the SRS floor wire harness.

NO - Short to another wire in the SRS floor wire harness; replace the SRS floor wire harness, then clear the DTC.

DTC 22-8X ("X" CAN BE 0 THRU 9 OR A THRU F): SHORT TO POWER IN THE FRONT

PASSENGER'S SEAT BELT TENSIONER

Special Tools Required

- SRS Inflator Simulator 07SAZ-TB4011A
- SRS Simulator Lead K 070AZ-SNAA200

NOTE:

- **Before doing this troubleshooting procedure, find out if the vehicle was in a collision. If so, verify that all the required components were replaced with new components, of the correct part number, and that they were properly installed (see COMPONENT REPLACEMENT/INSPECTION AFTER DEPLOYMENT).**
- **Before doing this troubleshooting procedure, review SRS Precautions and Procedures (see PRECAUTIONS AND PROCEDURES), General Troubleshooting Information (see GENERAL TROUBLESHOOTING INFORMATION), and Battery Terminal Disconnection and Reconnection (see BATTERY TERMINAL DISCONNECTION AND RECONNECTION).**
- **Before replacing the SRS unit, check the SRS unit software version with the HDS. If the software version is not the latest, update the SRS unit software (see SRS UNIT UPDATE), and retest.**

1. Clear the DTCs with the HDS (see **HOW TO CLEAR DTCS**).
2. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode, then wait for 10 seconds.
3. Clear the DTCs with the HDS (see **HOW TO CLEAR DTCS**).

   Is DTC 22-8x indicated?

   YES - Go to step 4.

   NO - Intermittent failure, the system is OK at this time. Go to **TROUBLESHOOTING INTERMITTENT FAILURES**. If another DTC is indicated, troubleshoot the DTC.

4. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
5. Disconnect the negative cable from the battery, then wait at least 3 minutes.
6. Remove the right side B-pillar lower trim (see **B-PILLAR UPPER/LOWER TRIM**).
7. Disconnect the SRS floor wire harness 4P connector (A) from the front passenger's seat belt tensioner 4P connector.

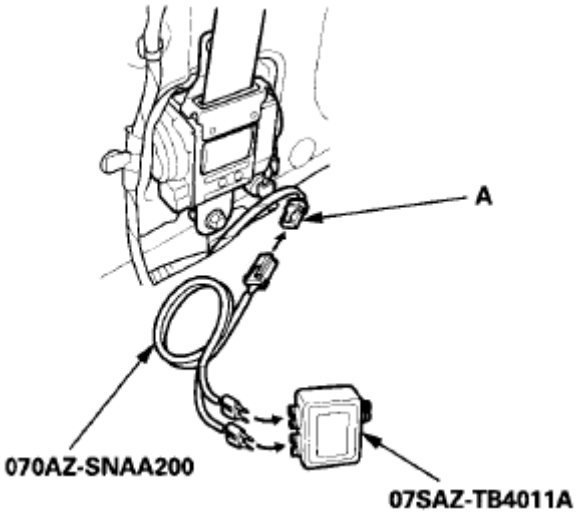


Fig. 86: Identifying SRS Floor Wire Harness 4P Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

8. Connect the terminals of SRS simulator lead K to the SRS inflator simulator (2 ohms connectors), and then connect SRS simulator lead K to the SRS floor wire harness 4P connector.
9. Reconnect the negative cable to the battery.
10. Clear the DTCs with the HDS (see **HOW TO CLEAR DTCS**).
11. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode, then wait for 10 seconds.
12. Clear the DTCs with the HDS (see **HOW TO CLEAR DTCS**).

    Is DTC 22-8x indicated?

    YES - Go to step 13.

    NO - Short to power in the front passenger's seat belt tensioner; replace the front passenger's seat belt (see **FRONT SEAT BELT REPLACEMENT**), then clear the DTC.

13. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
14. Disconnect the negative cable from the battery, then wait at least 3 minutes.
15. Disconnect SRS unit connector B (39P) from the SRS unit (see **DISCONNECTING SYSTEM CONNECTORS**).
16. Disconnect SRS simulator lead K from the SRS floor wire harness 4P connector.
17. Reconnect the negative cable to the battery.
18. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
19. Measure the voltage between body ground and SRS unit connector B (39P) terminals No. 14 and No. 15 individually. There should be less than 0.2 V.

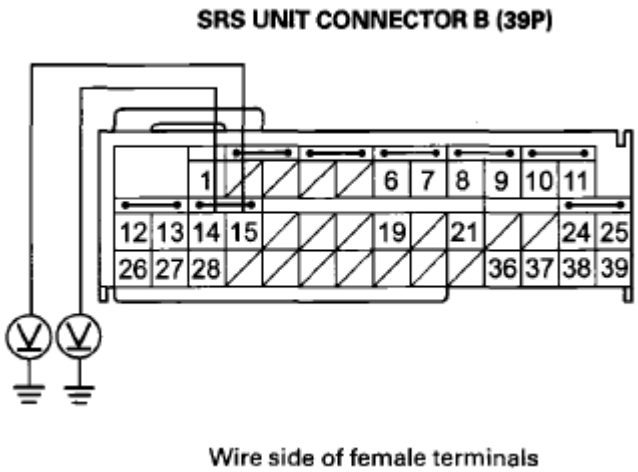


Fig. 87: Measuring Voltage Between Body Ground And SRS Unit Connector B (39P) Terminals No. 14 And No. 15
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is the voltage as specified?

YES - Faulty SRS unit or poor connection at SRS unit connector B (39P) and the SRS unit. Check the connection; if the connection is OK, replace the SRS unit (see **SRS UNIT REPLACEMENT**). If the DTC does not clear, replace the SRS floor wire harness.

NO - Short to power in the SRS floor wire harness; replace the SRS floor wire harness, then clear the DTC.

DTC 22-9X ("X" CAN BE 0 THRU 9 OR A THRU F): SHORT TO GROUND IN THE FRONT PASSENGER'S SEAT BELT TENSIONER

Special Tools Required

- SRS Inflator Simulator 07SAZ-TB4011A
- SRS Simulator Lead K 070AZ-SNAA200

NOTE:

- **Before doing this troubleshooting procedure, find out if the vehicle was in a collision. If so, verify that all the required components were replaced with new components, of the correct part number, and that they were properly installed (see COMPONENT REPLACEMENT/INSPECTION AFTER DEPLOYMENT).**
- **Before doing this troubleshooting procedure, review SRS Precautions and Procedures (see PRECAUTIONS AND PROCEDURES), General Troubleshooting Information (see GENERAL TROUBLESHOOTING INFORMATION), and Battery Terminal Disconnection and Reconnection (see BATTERY TERMINAL DISCONNECTION AND RECONNECTION).**
- **Before replacing the SRS unit, check the SRS unit software version with**

the HDS. If the software version is not the latest, update the SRS unit software (see SRS UNIT UPDATE), and retest.

1. Clear the DTCs with the HDS (see **HOW TO CLEAR DTCS**).
2. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode, then wait for 10 seconds.
3. Clear the DTCs with the HDS (see **HOW TO CLEAR DTCS**).

   Is DTC 22-9x indicated?

   YES - Go to step 4.

   NO - Intermittent failure, the system is OK at this time. Go to **TROUBLESHOOTING INTERMITTENT FAILURES**. If another DTC is indicated, troubleshoot the DTC.

4. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
5. Disconnect the negative cable from the battery, then wait at least 3 minutes.
6. Remove the right side B-pillar lower trim (see **B-PILLAR UPPER/LOWER TRIM**).
7. Disconnect the SRS floor wire harness 4P connector (A) from the front passenger's seat belt tensioner 4P connector.

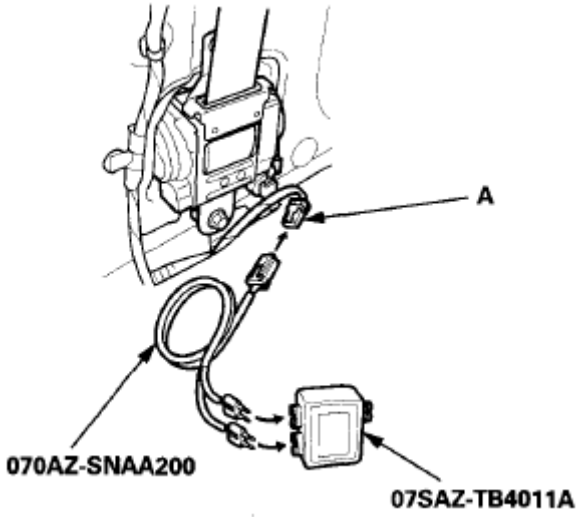


Fig. 88: Identifying SRS Floor Wire Harness 4P Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

8. Connect the terminals of SRS simulator lead K to the SRS inflator simulator (2 ohms connectors), and then connect SRS simulator lead K to the SRS floor wire harness 4P connector.
9. Reconnect the negative cable to the battery.
10. Clear the DTCs with the HDS (see **HOW TO CLEAR DTCS**).
11. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode, then wait for 10 seconds.

12. Clear the DTCs with the HDS (see **HOW TO CLEAR DTCS**).

    Is DTC 22-9x indicated?

    YES - Go to step 13.

    No - Short to ground in the front passenger's seat belt tensioner; replace the front passenger's seat belt (see **FRONT SEAT BELT REPLACEMENT**), then clear the DTC.

13. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
14. Disconnect the negative cable from the battery, then wait at least 3 minutes.
15. Disconnect SRS unit connector B (39P) from the SRS unit (see **DISCONNECTING SYSTEM CONNECTORS**).
16. Disconnect SRS simulator lead K from the SRS floor wire harness 4P connector.
17. Measure the resistance between body ground and SRS unit connector B (39P) terminals No. 14 and No. 15 individually. There should bean open circuit or at least 1 Mohms.

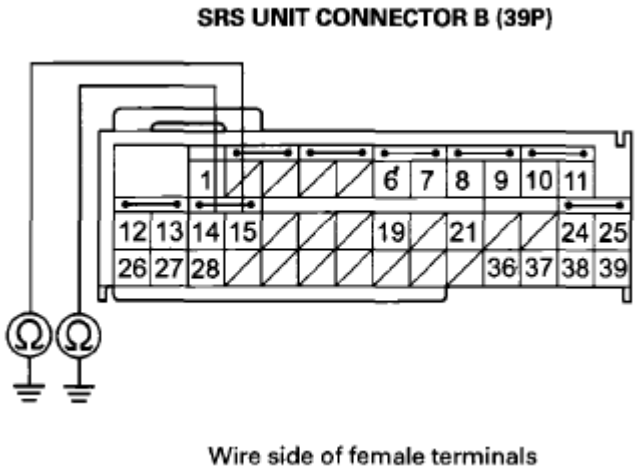


Fig. 89: Measuring Resistance Between Body Ground And SRS Unit Connector B (39P) Terminals No. 14 And No. 15
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is the resistance as specified?

YES - Faulty SRS unit or poor connection at SRS unit connector B (39P) and the SRS unit. Check the connection; if the connection is OK, replace the SRS unit (see **SRS UNIT REPLACEMENT**). If the DTC does not clear, replace the SRS floor wire harness.

NO - Short to ground in the SRS floor wire harness; replace the SRS floor wire harness, then clear the DTC.

DTC 31-1X ("X" CAN BE 0 THRU 9 OR A THRU F): OPEN IN THE DRIVER'S SIDE AIRBAG INFLATOR; DTC 31-2X ("X" CAN BE 0 THRU 9 OR A THRU F): INCREASED RESISTANCE IN

THE DRIVER'S SIDE AIRBAG INFLATOR

Special Tools Required

- SRS Inflator Simulator 07SAZ-TB4011A
- SRS Simulator Lead L 070AZ-SNAA300

NOTE:

- **Before doing this troubleshooting procedure, find out if the vehicle was in a collision. If so, verify that all the required components were replaced with new components, of the correct part number, and that they were properly installed (see COMPONENT REPLACEMENT/INSPECTION AFTER DEPLOYMENT).**
- **Before doing this troubleshooting procedure, review SRS Precautions and Procedures (see PRECAUTIONS AND PROCEDURES), General Troubleshooting Information (see GENERAL TROUBLESHOOTING INFORMATION), and Battery Terminal Disconnection and Reconnection (see BATTERY TERMINAL DISCONNECTION AND RECONNECTION).**
- **Before replacing the SRS unit, check the SRS unit software version with the HDS. If the software version is not the latest, update the SRS unit software (see SRS UNIT UPDATE), and retest.**

1. Clear the DTCs with the HDS (see **HOW TO CLEAR DTCS**).
2. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode, then wait for 10 seconds.
3. Clear the DTCs with the HDS (see **HOW TO CLEAR DTCS**).

   Is DTC 31-1x or 31-2x indicated?

   YES - Go to step 4.

   NO - Intermittent failure, the system is OK at this time. Go to **TROUBLESHOOTING INTERMITTENT FAILURES**. If another DTC is indicated, troubleshoot the DTC.

4. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
5. Disconnect the negative cable from the battery, then wait at least 3 minutes.
6. Disconnect the SRS floor wire harness connector (A) from the driver's side airbag 2P connector.

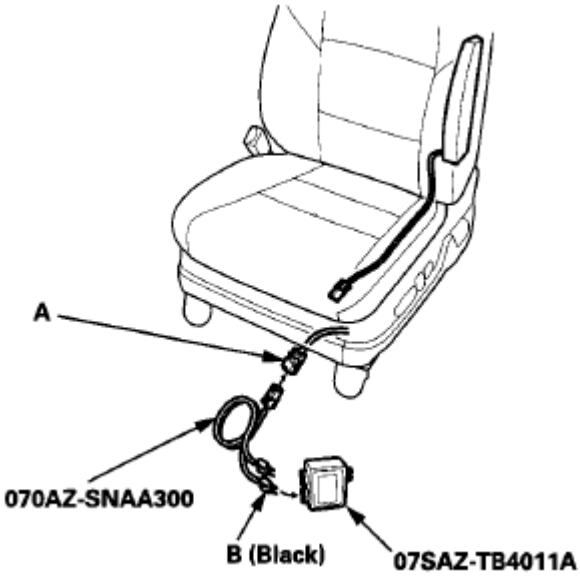


Fig. 90: Identifying SRS Floor Wire Harness Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Connect the black terminal (B) of SRS simulator lead L to the SRS inflator simulator (2 ohms connector), and then connect SRS simulator lead L to the SRS floor wire harness 2P connector.
8. Reconnect the negative cable to the battery.
9. Clear the DTCs with the HDS (see **HOW TO CLEAR DTCS**).
10. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode, then wait for 10 seconds.
11. Clear the DTCs with the HDS (see **HOW TO CLEAR DTCS**).

    Is DTC 31-1x or 31-2x indicated?

    YES - Go to step 12.

    NO - Open or increased resistance in the driver's side airbag inflator; replace the driver's side airbag (see **SIDE AIRBAG REPLACEMENT**), then clear the DTC.

12. Turn the ignition switch to LOCK(0), or press the engine start/stop button to select the OFF mode.
13. Disconnect the negative cable from the battery, then wait at least 3 minutes.
14. Disconnect SRS unit connector B (39P) from the SRS unit (see **DISCONNECTING SYSTEM CONNECTORS**).
15. Disconnect the SRS inflator simulator from SRS simulator lead L. Do not disconnect SRS simulator lead L from the SRS floor wire harness 2P connector.
16. Measure the resistance of the SRS simulator lead L black terminal (A). There should be less than 1.0 ohms.

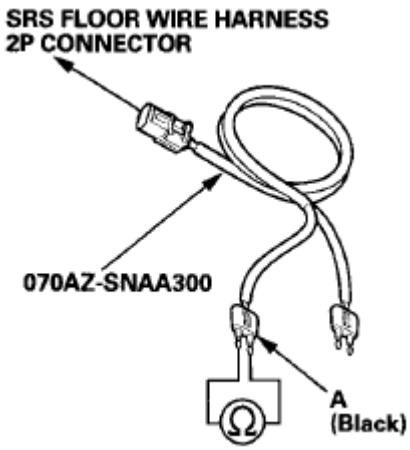


Fig. 91: Measuring Resistance Of SRS Simulator Lead L Black Terminal
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is the resistance as specified?

YES - Faulty SRS unit or poor connection at SRS unit connector B (39P) and the SRS unit. Check the connection; if the connection is OK, replace the SRS unit (see **SRS UNIT REPLACEMENT**). If the DTC does not clear, replace the SRS floor wire harness.

NO - Open or increased resistance in the SRS floor wire harness; replace the SRS floor wire harness, then clear the DTC.

DTC 31-3X ("X" CAN BE 0 THRU 9 OR A THRU F): SHORT TO ANOTHER WIRE OR DECREASED RESISTANCE IN THE DRIVER'S SIDE AIRBAG INFLATOR

Special Tools Required

- SRS Inflator Simulator 07SAZ-TB4011A
- SRS Simulator Lead L 070AZ-SNAA300
- SRS Short Canceller 070AZ-SAA0100

NOTE:

- **Before doing this troubleshooting procedure, find out if the vehicle was in a collision. If so, verify that all the required components were replaced with new components, of the correct part number, and that they were properly installed (see COMPONENT REPLACEMENT/INSPECTION AFTER DEPLOYMENT).**
- **Before doing this troubleshooting procedure, review SRS Precautions and Procedures (see PRECAUTIONS AND PROCEDURES), General Troubleshooting Information (see GENERAL TROUBLESHOOTING INFORMATION), and Battery Terminal Disconnection and Reconnection (see BATTERY TERMINAL DISCONNECTION AND RECONNECTION).**
- **Before replacing the SRS unit, check the SRS unit software version with**

the HDS. If the software version is not the latest, update the SRS unit software (see SRS UNIT UPDATE), and retest.

1. Clear the DTCs with the HDS (see **HOW TO CLEAR DTCS**).
2. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode, then wait for 10 seconds.
3. Clear the DTCs with the HDS (see **HOW TO CLEAR DTCS**).

   Is DTC 31-3x indicated?

   YES - Go to step 4.

   NO - Intermittent failure, the system is OK at this time. Go to **TROUBLESHOOTING INTERMITTENT FAILURES**. If another DTC is indicated, troubleshoot the DTC.

4. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
5. Disconnect the negative cable from the battery, then wait at least 3 minutes.
6. Disconnect the SRS floor wire harness 2P connector (A) from the driver's side airbag 2P connector.

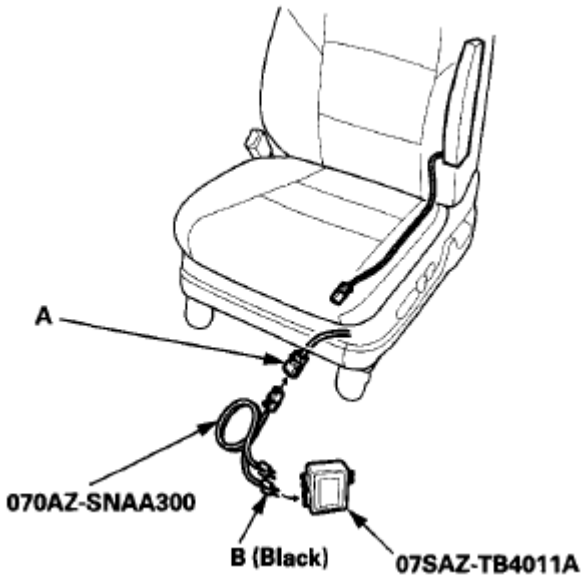


Fig. 92: Identifying SRS Floor Wire Harness 2P Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Connect the black terminal (B) of SRS simulator lead L to the SRS inflator simulator (2 ohms connector), and then connect SRS simulator lead L to the SRS floor wire harness 2P connector.
8. Reconnect the negative cable to the battery.
9. Clear the DTCs with the HDS (see **HOW TO CLEAR DTCS**).
10. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode, then wait for 10 seconds.

11. Clear the DTCs with the HDS (see **HOW TO CLEAR DTCS**).

    Is DTC 31-3x indicated?

    YES - Go to step 12.

    NO - Short to another wire in the driver's side airbag inflator; replace the driver's side airbag (see **SIDE AIRBAG REPLACEMENT**), then clear the DTC.

12. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
13. Disconnect the negative cable from the battery, then wait at least 3 minutes.
14. Disconnect SRS unit connector B (39P) from the SRS unit (see **DISCONNECTING SYSTEM CONNECTORS**).
15. Disconnect the SRS inflator simulator from SRS simulator lead L. Do not disconnect SRS simulator lead L from the SRS floor wire harness 2P connector.
16. Connect an SRS short canceller (070AZ-SAA0100) to SRS unit connector B (39P) terminals No. 6 and No. 7 (see **OPENING THE SRS UNIT SHORTING CONNECTORS FOR DIAGNOSIS**).
17. Measure the resistance of the SRS simulator lead L black terminal (A). There should be an open circuit or at least 1 Mohms

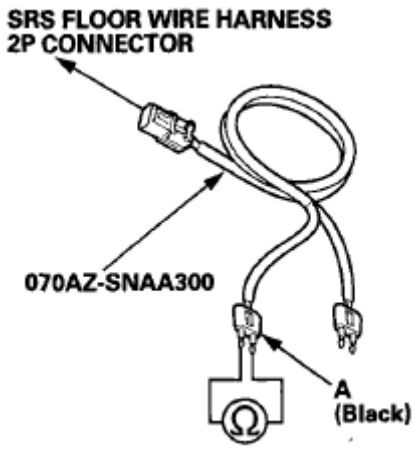


Fig. 93: Measuring Resistance Of SRS Simulator Lead L Black Terminal (A)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is the resistance as specified?

YES - Faulty SRS unit or poor connection at SRS unit connector B (39P) and the SRS unit. Check the connection; if the connection is OK, replace the SRS unit (see **SRS UNIT REPLACEMENT**). If the DTC does not clear, replace the SRS floor wire harness.

NO - Short to another wire in the SRS floor wire harness; replace the SRS floor wire harness, then clear the DTC.

DTC 31-8X ("X" CAN BE 0 THRU 9 OR A THRU F): SHORT TO POWER IN THE DRIVER'S SIDE

AIRBAG INFLATOR

Special Tools Required

- SRS Inflator Simulator 07SAZ-TB4011A
- SRS Simulator Lead L 070AZ-SNAA300

NOTE:

- **Before doing this troubleshooting procedure, find out if the vehicle was in a collision. If so, verify that all the required components were replaced with new components, of the correct part number, and that they were properly installed (see COMPONENT REPLACEMENT/INSPECTION AFTER DEPLOYMENT).**
- **Before doing this troubleshooting procedure, review SRS Precautions and Procedures (see PRECAUTIONS AND PROCEDURES), General Troubleshooting Information (see GENERAL TROUBLESHOOTING INFORMATION), and Battery Terminal Disconnection and Reconnection (see BATTERY TERMINAL DISCONNECTION AND RECONNECTION).**
- **Before replacing the SRS unit, check the SRS unit software version with the HDS. If the software version is not the latest, update the SRS unit software (see SRS UNIT UPDATE), and retest.**

1. Clear the DTCs with the HDS (see **HOW TO CLEAR DTCS**).
2. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode, then wait for 10 seconds.
3. Clear the DTCs with the HDS (see **HOW TO CLEAR DTCS**).

   Is DTC 31-8x indicated?

   YES - Go to step 4.

   NO - Intermittent failure, the system is OK at this time. Go to **TROUBLESHOOTING INTERMITTENT FAILURES**. If another DTC is indicated, troubleshoot the DTC.

4. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
5. Disconnect the negative cable from the battery, then wait at least 3 minutes.
6. Disconnect the SRS floor wire harness 2P connector (A) from the driver's side airbag 2P connector.

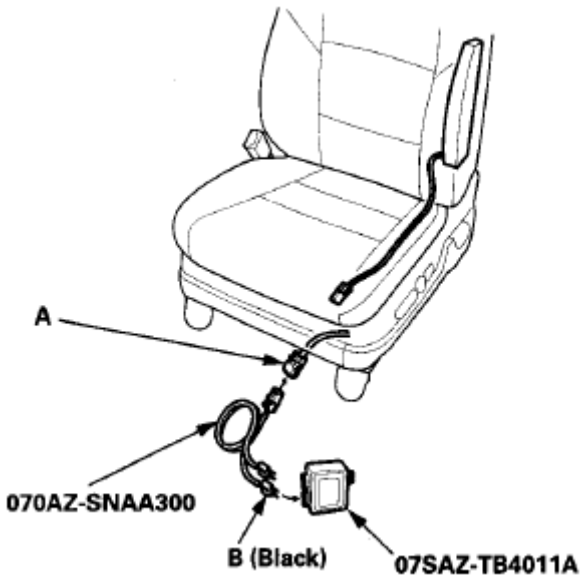


Fig. 94: Identifying SRS Floor Wire Harness 2P Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Connect the black terminal (B) of SRS simulator lead L to the SRS inflator simulator (2 ohms connector), and then connect SRS simulator lead L to the SRS floor wire harness 2P connector.
8. Reconnect the negative cable to the battery.
9. Clear the DTCs with the HDS (see **HOW TO CLEAR DTCS**).
10. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode, then wait for 10 seconds.
11. Clear the DTCs with the HDS (see **HOW TO CLEAR DTCS**).

    Is DTC 31-8x indicated?

    YES - Go to step 12.

    NO - Short to power in the driver's side airbag inflator; replace the driver's side airbag (see **SIDE AIRBAG REPLACEMENT**), then clear the DTC.

12. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
13. Disconnect the negative cable from the battery, then wait at least 3 minutes.
14. Disconnect SRS unit connector B (39P) from the SRS unit (see **DISCONNECTING SYSTEM CONNECTORS**).
15. Disconnect the SRS inflator simulator from SRS simulator lead L. Do not disconnect SRS simulator lead L from the SRS floor wire harness 2P connector.
16. Reconnect the negative cable to the battery.
17. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
18. Measure the voltage between black terminal (A) of SRS simulator lead L and body ground individually. There should be less than 0.2 V.

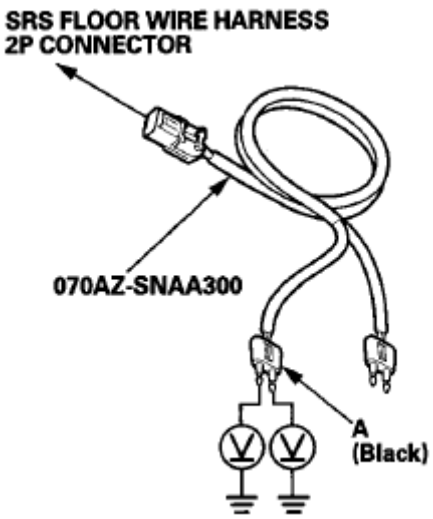


Fig. 95: Measuring Voltage Between Black Terminal (A) Of SRS Simulator Lead L And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is the voltage as specified?

YES - Faulty SRS unit or poor connection at SRS unit connector B (39P) and the SRS unit. Check the connection; if the connection is OK, replace the SRS unit (see **SRS UNIT REPLACEMENT**). If the DTC does not clear, replace the SRS floor wire harness.

NO - Short to power in the SRS floor wire harness; replace the SRS floor wire harness, then clear the DTC.

DTC 31-9X ("X" CAN BE 0 THRU 9 OR A THRU F): SHORT TO GROUND IN THE DRIVER'S SIDE AIRBAG INFLATOR

Special Tools Required

- SRS Inflator Simulator 07SAZ-TB4011A
- SRS Simulator Lead L 070AZ-SNAA300

NOTE:

- **Before doing this troubleshooting procedure, find out if the vehicle was in a collision. If so, verify that all the required components were replaced with new components, of the correct part number, and that they were properly installed (see COMPONENT REPLACEMENT/INSPECTION AFTER DEPLOYMENT).**
- **Before doing this troubleshooting procedure, review SRS Precautions and Procedures (see PRECAUTIONS AND PROCEDURES), General Troubleshooting Information (see GENERAL TROUBLESHOOTING INFORMATION), and Battery Terminal Disconnection and Reconnection (see BATTERY TERMINAL DISCONNECTION AND RECONNECTION).**

- **Before replacing the SRS unit, check the SRS unit software version with the HDS. If the software version is not the latest, update the SRS unit software (see SRS UNIT UPDATE), and retest.**

1. Clear the DTCs with the HDS (see **HOW TO CLEAR DTCS**).
2. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode, then wait for 10 seconds.
3. Clear the DTCs with the HDS (see **HOW TO CLEAR DTCS**).

   Is DTC 31-9x indicated?

   YES - Go to step 4.

   NO - Intermittent failure, the system is OK at this time. Go to **TROUBLESHOOTING INTERMITTENT FAILURES**. If another DTC is indicated, troubleshoot the DTC.

4. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
5. Disconnect the negative cable from the battery, then wait at least 3 minutes.
6. Disconnect the SRS floor wire harness 2P connector (A) from the driver's side airbag 2P connector.

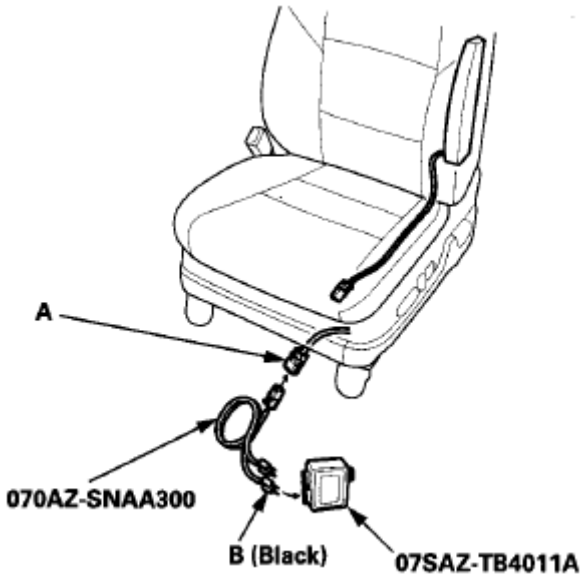


Fig. 96: Identifying SRS Floor Wire Harness 2P Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Connect the black terminal (B) of SRS simulator lead L to the SRS inflator simulator (2 ohms connector), and then connect SRS simulator lead L to the SRS floor wire harness 2P connector.
8. Reconnect the negative cable to the battery.
9. Clear the DTCs with the HDS (see **HOW TO CLEAR DTCS**).
10. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode, then wait

for 10 seconds.

11. Clear the DTCs with the HDS (see **HOW TO CLEAR DTCS**).

    Is DTC 31-9x indicated?

    YES - Go to step 12.

    NO - Short to ground in the driver's side airbag inflator; replace the driver's side airbag (see **SIDE AIRBAG REPLACEMENT**), then clear the DTC

12. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
13. Disconnect the negative cable from the battery, then wait at least 3 minutes.
14. Disconnect SRS unit connector B (39P) from the SRS unit (see **DISCONNECTING SYSTEM CONNECTORS**).
15. Disconnect the SRS inflator simulator from SRS simulator lead L. Do not disconnect SRS simulator lead L from the SRS floor wire harness 2P connector.
16. Measure the resistance between black terminal (A) of SRS simulator lead L and body ground individually. There should be an open circuit or at least 1 Mohms.

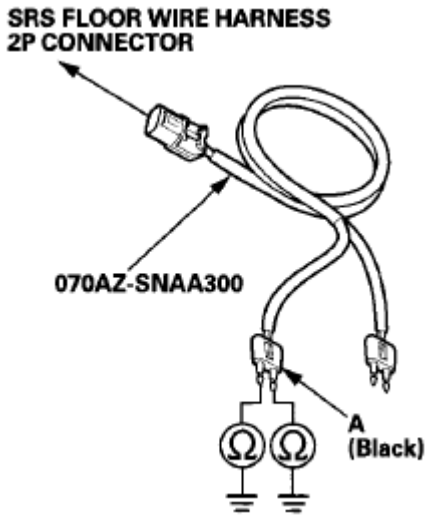


Fig. 97: Measuring Resistance Between Black Terminal (A) Of SRS Simulator Lead L And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is the resistance as specified?

YES - Faulty SRS unit or poor connection at SRS unit connector B (39P) and the SRS unit. Check the connection; if the connection is OK, replace the SRS unit (see **SRS UNIT REPLACEMENT**). If the DTC does not clear, replace the SRS floor wire harness.

NO - Short to ground in the SRS floor wire harness; replace the SRS floor wire harness, then clear the DTC.

DTC 32-1X ("X" CAN BE 0 THRU 9 OR A THRU F): OPEN IN THE FRONT PASSENGER'S SIDE AIRBAG INFLATOR; DTC 32-2X ("X" CAN BE 0 THRU 9 OR A THRU F): INCREASED RESISTANCE IN THE FRONT PASSENGER'S SIDE AIRBAG INFLATOR

Special Tools Required

- SRS Inflator Simulator 07SAZ-TB4011A
- SRS Simulator Lead L 070AZ-SNAA300

NOTE:

- **Before doing this troubleshooting procedure, find out if the vehicle was in a collision. If so, verify that all the required components were replaced with new components, of the correct part number, and that they were properly installed (see COMPONENT REPLACEMENT/INSPECTION AFTER DEPLOYMENT).**
- **Before doing this troubleshooting procedure, review SRS Precautions and Procedures (see PRECAUTIONS AND PROCEDURES), General Troubleshooting Information (see GENERAL TROUBLESHOOTING INFORMATION), and Battery Terminal Disconnection and Reconnection (see BATTERY TERMINAL DISCONNECTION AND RECONNECTION).**
- **Before replacing the SRS unit, check the SRS unit software version with the HDS. If the software version is not the latest, update the SRS unit software (see SRS UNIT UPDATE), and retest.**

1. Clear the DTCs with the HDS (see **HOW TO CLEAR DTCS**).
2. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode, then wait for 10 seconds.
3. Clear the DTCs with the HDS (see **HOW TO CLEAR DTCS**).

   Is DTC 32-1x or 32-2x indicated?

   YES - Go to step 4.

   NO - Intermittent failure, the system is OK at this time. Go to **TROUBLESHOOTING INTERMITTENT FAILURES**. If another DTC is indicated, troubleshoot the DTC.

4. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
5. Disconnect the negative cable from the battery, then wait at least 3 minutes.
6. Disconnect the SRS floor wire harness 2P connector (A) from the front passenger's side airbag 2P connector.

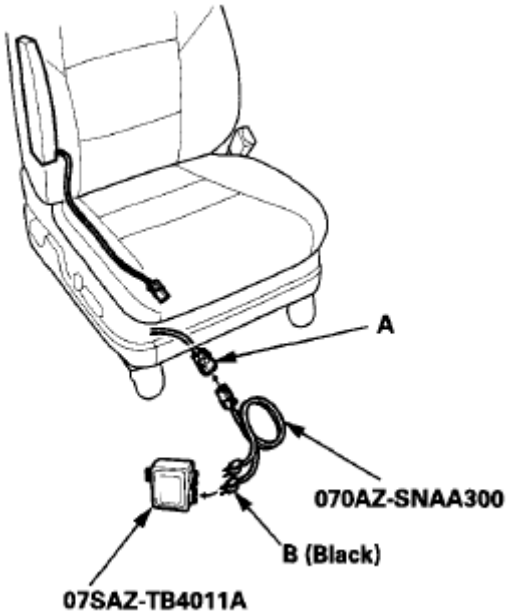


Fig. 98: Identifying SRS Floor Wire Harness 2P Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Connect the black terminal (B) of SRS simulator lead L to the SRS inflator simulator (2 ohms connector), and then connect SRS simulator lead L to the SRS floor wire harness 2P connector.
8. Reconnect the negative cable to the battery.
9. Clear the DTCs with the HDS (see **HOW TO CLEAR DTCS**).
10. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode, then wait for 10 seconds.
11. Clear the DTCs with the HDS (see **HOW TO CLEAR DTCS**).

    Is DTC 32-1x or 32-2x indicated?

    YES - Go to step 12.

    NO - Open or increased resistance in the front passenger's side airbag inflator; replace the front passenger's side airbag (see **SIDE AIRBAG REPLACEMENT**), then clear the DTC.

12. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
13. Disconnect the negative cable from the battery, then wait at least 3 minutes.
14. Disconnect SRS unit connector B (39P) from the SRS unit (see **DISCONNECTING SYSTEM CONNECTORS**).
15. Disconnect the SRS inflator simulator from SRS simulator lead L. Do not disconnect SRS simulator lead L from the SRS floor wire harness 2P connector.
16. Measure the resistance of the SRS simulator lead L black terminal (A). There should be less than 1.0 ohms.

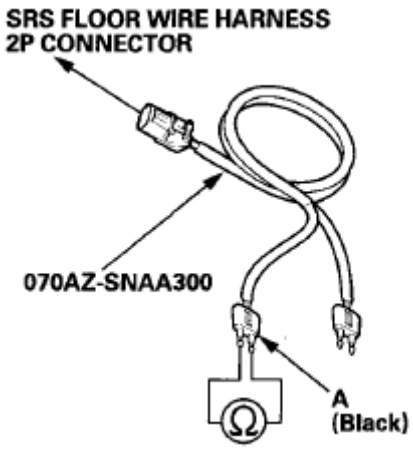


Fig. 99: Measuring Resistance Of SRS Simulator Lead L Black Terminal
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is the resistance as specified?

YES - Faulty SRS unit or poor connection at SRS unit connector B (39P) and the SRS unit. Check the connection; if the connection is OK, replace the SRS unit (see **SRS UNIT REPLACEMENT**). If the DTC does not clear, replace the SRS floor wire harness.

NO - Open or increased resistance in the SRS floor wire harness; replace the SRS floor wire harness, then clear the DTC.

DTC 32-3X ("X" CAN BE 0 THRU 9 OR A THRU F): SHORT TO ANOTHER WIRE OR DECREASED RESISTANCE IN THE FRONT PASSENGER'S SIDE AIRBAG INFLATOR

Special Tools Required

- SRS Inflator Simulator 07SAZ-TB4011A
- SRS Simulator Lead L 070AZ-SNAA300
- SRS Short Canceller 070AZ-SAA0100

NOTE:

- **Before doing this troubleshooting procedure, find out if the vehicle was in a collision. If so, verify that all the required components were replaced with new components, of the correct part number, and that they were properly installed (see COMPONENT REPLACEMENT/INSPECTION AFTER DEPLOYMENT).**
- **Before doing this troubleshooting procedure, review SRS Precautions and Procedures (see PRECAUTIONS AND PROCEDURES), General Troubleshooting Information (see GENERAL TROUBLESHOOTING INFORMATION), and Battery Terminal Disconnection and Reconnection (see BATTERY TERMINAL DISCONNECTION AND RECONNECTION).**
- **Before replacing the SRS unit, check the SRS unit software version with**

the HDS. If the software version is not the latest, update the SRS unit software (see SRS UNIT UPDATE), and retest.

1. Clear the DTCs with the HDS (see **HOW TO CLEAR DTCS**).
2. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode, then wait for 10 seconds.
3. Clear the DTCs with the HDS (see **HOW TO CLEAR DTCS**).

   Is DTC 32-3x indicated?

   YES - Go to step 4.

   NO - Intermittent failure, the system is OK at this time. Go to **TROUBLESHOOTING INTERMITTENT FAILURES**. If another DTC is indicated, troubleshoot the DTC.

4. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
5. Disconnect the negative cable from the battery, then wait at least 3 minutes.
6. Disconnect the SRS floor wire harness 2P connector (A) from the front passenger's side airbag 2P connector.

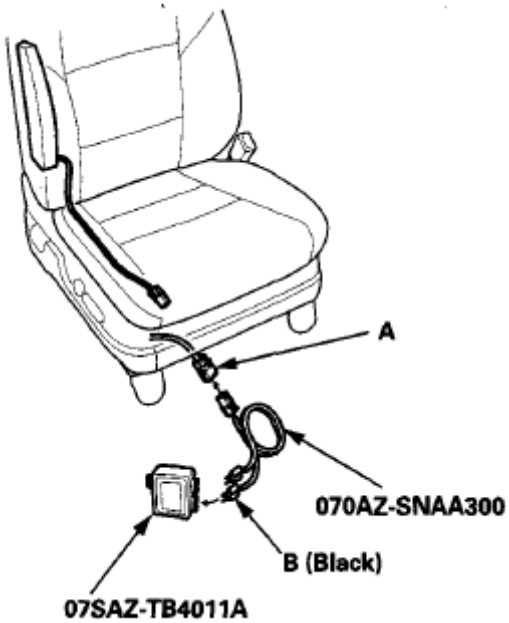


Fig. 100: Identifying SRS Floor Wire Harness 2P Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Connect the black terminal (B) of SRS simulator lead L to the SRS inflator simulator (2 ohms connector), and then connect SRS simulator lead L to the SRS floor wire harness 2P connector.
8. Reconnect the negative cable to the battery.
9. Clear the DTCs with the HDS (see **HOW TO CLEAR DTCS**).

10. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode, then wait for 10 seconds.
11. Clear the DTCs with the HDS (see **HOW TO CLEAR DTCS**).

    Is DTC 32-3x indicated?

    YES - Go to step 12.

    NO - Short to another wire in the front passenger's side airbag inflator; replace the front passenger's side airbag (see **SIDE AIRBAG REPLACEMENT**), then clear the DTC.

12. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
13. Disconnect the negative cable from the battery, then wait at least 3 minutes.
14. Disconnect SRS unit connector B (39P) from the SRS unit (see **DISCONNECTING SYSTEM CONNECTORS**).
15. Disconnect the SRS inflator simulator from SRS simulator lead L. Do not disconnect SRS simulator lead L from the SRS floor wire harness 2P connector.
16. Connect an SRS short canceller (070AZ-SAA0100) to SRS unit connector B (39P) terminals No. 8 and No. 9 (see **OPENING THE SRS UNIT SHORTING CONNECTORS FOR DIAGNOSIS**).
17. Measure the resistance of the SRS simulator lead L black terminal (A). There should be an open circuit or at least 1 Mohms

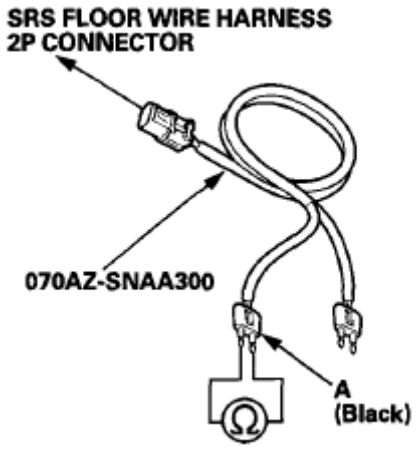


Fig. 101: Measuring Resistance Of SRS Simulator Lead L Black Terminal
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is the resistance as specified?

YES - Faulty SRS unit or poor connection at SRS unit connector B (39P) and the SRS unit. Check the connection; if the connection is OK, replace the SRS unit (see **SRS UNIT REPLACEMENT**). If the DTC does not clear, replace the SRS floor wire harness.

NO - Short to another wire in the SRS floor wire harness; replace the SRS floor wire harness, then clear

the DTC.

DTC 32-8X ("X" CAN BE 0 THRU 9 OR A THRU F): SHORT TO POWER IN THE FRONT PASSENGER'S SIDE AIRBAG INFLATOR

Special Tools Required

- SRS Inflator Simulator 07SAZ-TB4011A
- SRS Simulator Lead L 070AZ-SNAA300

NOTE:

- **Before doing this troubleshooting procedure, find out if the vehicle was in a collision. If so, verify that all the required components were replaced with new components, of the correct part number, and that they were properly installed (see COMPONENT REPLACEMENT/INSPECTION AFTER DEPLOYMENT).**
- **Before doing this troubleshooting procedure, review SRS Precautions and Procedures (see PRECAUTIONS AND PROCEDURES), General Troubleshooting Information (see GENERAL TROUBLESHOOTING INFORMATION), and Battery Terminal Disconnection and Reconnection (see BATTERY TERMINAL DISCONNECTION AND RECONNECTION).**
- **Before replacing the SRS unit, check the SRS unit software version with the HDS. If the software version is not the latest, update the SRS unit software (see SRS UNIT UPDATE), and retest.**

1. Clear the DTCs with the HDS (see **HOW TO CLEAR DTCS**).
2. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode, then wait for 10 seconds.
3. Clear the DTCs with the HDS (see **HOW TO CLEAR DTCS**).

   Is DTC 32-8x indicated?

   YES - Go to step 4.

   NO - Intermittent failure, the system is OK at this time. Go to **TROUBLESHOOTING INTERMITTENT FAILURES**. If another DTC is indicated, troubleshoot the DTC.

4. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
5. Disconnect the negative cable from the battery, then wait at least 3 minutes.
6. Disconnect the SRS floor wire harness 2P connector (A) from the front passenger's side airbag 2P connector.

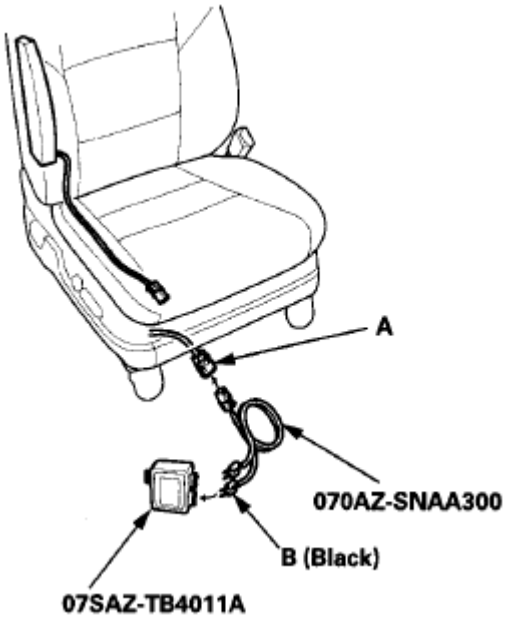


Fig. 102: Identifying SRS Floor Wire Harness 2P Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Connect the black terminal (B) of SRS simulator lead L to the SRS inflator simulator (2 ohms connector), and then connect SRS simulator lead L to the SRS floor wire harness 2P connector.
8. Reconnect the negative cable to the battery.
9. Clear the DTCs with the HDS (see **HOW TO CLEAR DTCS**).
10. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode, then wait for 10 seconds.
11. Clear the DTCs with the HDS (see **HOW TO CLEAR DTCS**).

    Is DTC 32-8x indicated?

    YES - Go to step 12.

    NO - Short to power in the front passenger's side airbag inflator; replace the front passenger's side airbag (see **SIDE AIRBAG REPLACEMENT**), then clear the DTC.

12. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
13. Disconnect the negative cable from the battery, then wait at least 3 minutes.
14. Disconnect SRS unit connector B (39P) from the SRS unit (see **DISCONNECTING SYSTEM CONNECTORS**).
15. Disconnect the SRS inflator simulator from SRS simulator lead L. Do not disconnect SRS simulator lead L from the SRS floor wire harness 2P connector.
16. Reconnect the negative cable to the battery.
17. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
18. Measure the voltage between black terminal (A) of SRS simulator lead L and body ground individually.

There should be less than 0.2 V.

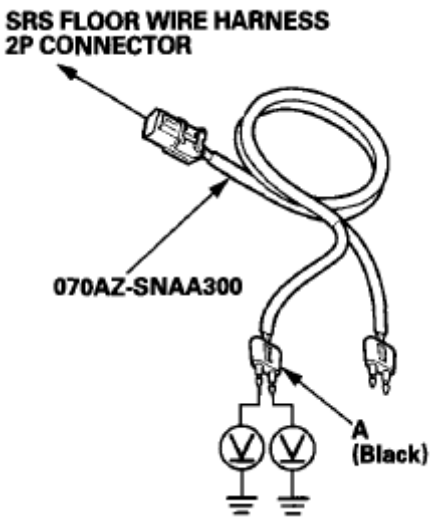


Fig. 103: Measuring Voltage Between Black Terminal (A) Of SRS Simulator Lead L And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is the voltage as specified?

YES - Faulty SRS unit or poor connection at SRS unit connector B (39P) and the SRS unit. Check the connection; if the connection is OK, replace the SRS unit (see **SRS UNIT REPLACEMENT**). If the DTC does not clear, replace the SRS floor wire harness.

NO - Short to power in the SRS floor wire harness; replace the SRS floor wire harness, then clear the DTC.

DTC 32-9X ("X" CAN BE 0 THRU 9 OR A THRU F): SHORT TO GROUND IN THE FRONT PASSENGER'S SIDE AIRBAG INFLATOR

Special Tools Required

- SRS Inflator Simulator 07SAZ-TB4011A
- SRS Simulator Lead L 070AZ-SNAA300

NOTE:

- **Before doing this troubleshooting procedure, find out if the vehicle was in a collision. If so, verify that all the required components were replaced with new components, of the correct part number, and that they were properly installed (see COMPONENT REPLACEMENT/INSPECTION AFTER DEPLOYMENT).**
- **Before doing this troubleshooting procedure, review SRS Precautions and Procedures (see PRECAUTIONS AND PROCEDURES), General Troubleshooting Information (see GENERAL TROUBLESHOOTING**

INFORMATION), and Battery Terminal Disconnection and Reconnection (see BATTERY TERMINAL DISCONNECTION AND RECONNECTION).

- **Before replacing the SRS unit, check the SRS unit software version with the HDS. If the software version is not the latest, update the SRS unit software (see SRS UNIT UPDATE), and retest.**

1. Clear the DTCs with the HDS (see **HOW TO CLEAR DTCS**).
2. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode, then wait for 10 seconds.
3. Clear the DTCs with the HDS (see **HOW TO CLEAR DTCS**).

   Is DTC 32-9x indicated?

   YES - Go to step 4.

   NO - Intermittent failure, the system is OK at this time. Go to **TROUBLESHOOTING INTERMITTENT FAILURES**. If another DTC is indicated, troubleshoot the DTC.

4. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
5. Disconnect the negative cable from the battery, then wait at least 3 minutes.
6. Disconnect the SRS floor wire harness 2P connector (A) from the front passenger's side airbag 2P connector.

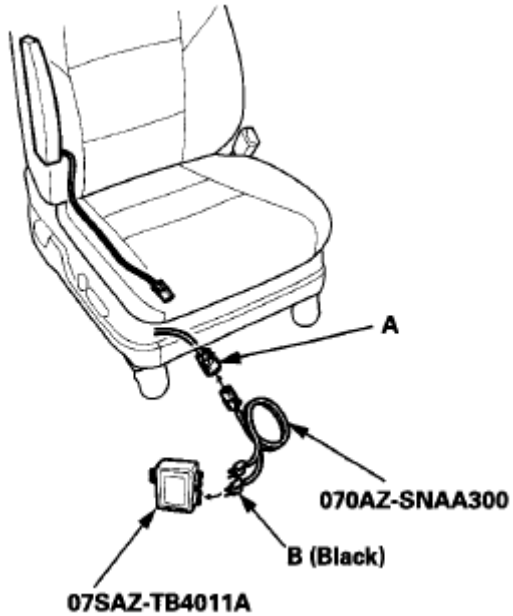


Fig. 104: Identifying SRS Floor Wire Harness 2P Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Connect the black terminal (B) of SRS simulator lead L to the SRS inflator simulator (2 ohms connector), and then connect SRS simulator lead L to the SRS floor wire harness 2P connector.

8. Reconnect the negative cable to the battery.
9. Clear the DTCs with the HDS (see **HOW TO CLEAR DTCS**).
10. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode, then wait for 10 seconds.
11. Clear the DTCs with the HDS (see **HOW TO CLEAR DTCS**).

    Is DTC 32-9x indicated?

    YES - Go to step 12.

    NO - Short to ground in the front passenger's side airbag inflator; replace the front passenger's side airbag (see **SIDE AIRBAG REPLACEMENT**), then clear the DTC.

12. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
13. Disconnect the negative cable from the battery, then wait at least 3 minutes.
14. Disconnect SRS unit connector B (39P) from the SRS unit (see **DISCONNECTING SYSTEM CONNECTORS**).
15. Disconnect the SRS inflator simulator from SRS simulator lead L. Do not disconnect SRS simulator lead L from the SRS floor wire harness 2P connector.
16. Measure the resistance between black terminal (A) of SRS simulator lead L and body ground individually. There should be an open circuit or at least 1 Mohms

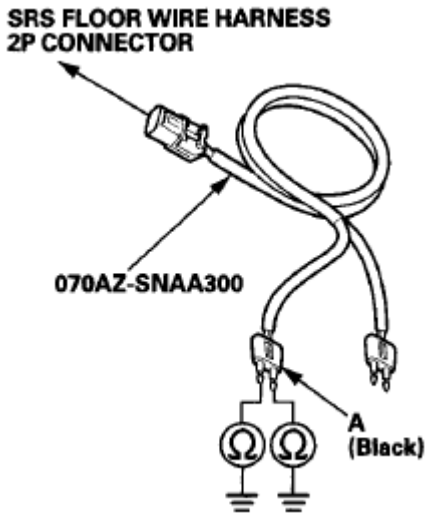


Fig. 105: Measuring Resistance Between Black Terminal (A) Of SRS Simulator Lead L And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is the resistance as specified?

YES - Faulty SRS unit or poor connection at SRS unit connector B (39P) and the SRS unit. Check the connection; if the connection is OK, replace the SRS unit (see **SRS UNIT REPLACEMENT**). If the

DTC does not clear, replace the SRS floor wire harness.

NO - Short to ground in the SRS floor wire harness; replace the SRS floor wire harness, then clear the DTC.

DTC 33-1X ("X" CAN BE 0 THRU 9 OR A THRU F): OPEN IN THE LEFT SIDE CURTAIN AIRBAG INFLATOR; DTC 33-2X ("X" CAN BE 0 THRU 9 OR A THRU F): INCREASED RESISTANCE IN THE LEFT SIDE CURTAIN AIRBAG INFLATOR

Special Tools Required

- SRS Inflator Simulator 07SAZ-TB4011A
- SRS Simulator Lead L 070AZ-SNAA300

NOTE:

- **Before doing this troubleshooting procedure, find out if the vehicle was in a collision. If so, verify that all the required components were replaced with new components, of the correct part number, and that they were properly installed (see COMPONENT REPLACEMENT/INSPECTION AFTER DEPLOYMENT).**
- **Before doing this troubleshooting procedure, review SRS Precautions and Procedures (see PRECAUTIONS AND PROCEDURES), General Troubleshooting Information (see GENERAL TROUBLESHOOTING INFORMATION), and Battery Terminal Disconnection and Reconnection (see BATTERY TERMINAL DISCONNECTION AND RECONNECTION).**
- **Before replacing the SRS unit, check the SRS unit software version with the HDS. If the software version is not the latest, update the SRS unit software (see SRS UNIT UPDATE), and retest.**

1. Clear the DTCs with the HDS (see **HOW TO CLEAR DTCS**).
2. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode, then wait for 10 seconds.
3. Clear the DTCs with the HDS (see **HOW TO CLEAR DTCS**).

   Is DTC 33-1x or 33-2x indicated?

   YES - Go to step 4.

   NO - Intermittent failure, the system is OK at this time. Go to **TROUBLESHOOTING INTERMITTENT FAILURES**. If another DTC is indicated, troubleshoot the DTC.

4. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
5. Disconnect the negative cable from the battery, then wait at least 3 minutes.
6. Remove the left side C-pillar trim (see **C-PILLAR TRIM**).
7. Disconnect the SRS floor wire harness 2P connector (A) from the left side curtain airbag 2P connector.

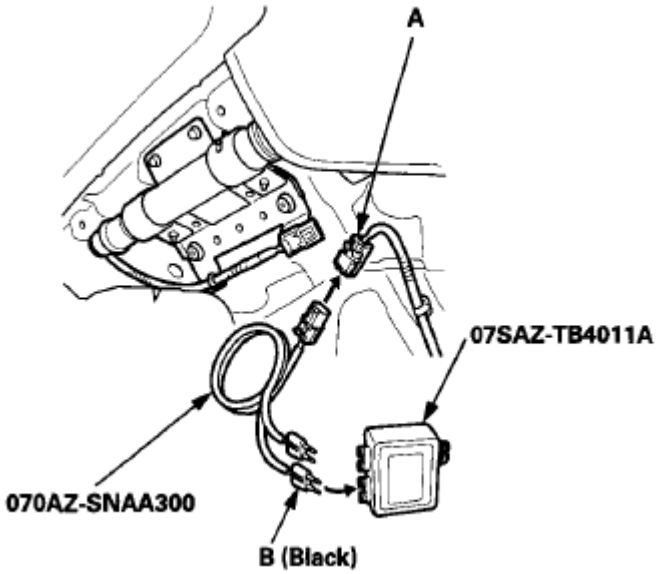


Fig. 106: Identifying SRS Floor Wire Harness 2P Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

8. Connect the black terminal (B) of SRS simulator lead L to the SRS inflator simulator (2 ohms connector), and then connect SRS simulator lead L to the SRS floor wire harness 2P connector.
9. Reconnect the negative cable to the battery.
10. Clear the DTCs with the HDS (see **HOW TO CLEAR DTCS**).
11. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode, then wait for 10 seconds.
12. Clear the DTCs with the HDS (see **HOW TO CLEAR DTCS**).

    Is DTC 33-1x or 33-2x indicated?

    YES - Go to step 13.

    NO - Open or increased resistance in the left side curtain airbag Inflator; replace the left side curtain airbag (see **SIDE CURTAIN AIRBAG REPLACEMENT**), then clear the DTC.

13. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
14. Disconnect the negative cable from the battery, then wait at least 3 minutes.
15. Disconnect SRS unit connector B (39P) from the SRS unit (see **DISCONNECTING SYSTEM CONNECTORS**).
16. Disconnect the SRS inflator simulator from SRS simulator lead L. Do not disconnect SRS simulator lead L from the SRS floor wire harness 2P connector.
17. Measure the resistance of the SRS simulator lead L black terminal (A). There should be less than 1.0 ohms.

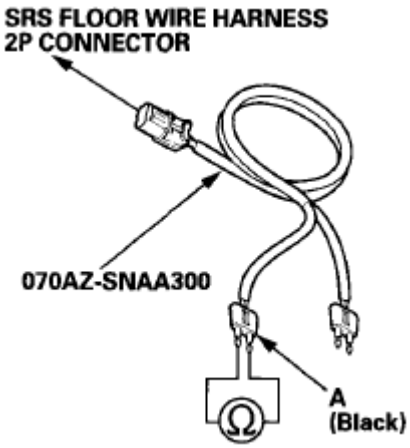


Fig. 107: Measuring Resistance Of SRS Simulator Lead L Black Terminal (A)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is the resistance as specified?

YES - Faulty SRS unit or poor connection at the SRS unit connector B (39P) and the SRS unit. Check the connection; if the connection is OK, replace the SRS unit (see **SRS UNIT REPLACEMENT**). If the DTC does not clear, replace the SRS floor wire harness.

NO - Open or increased resistance in the SRS floor wire harness; replace the SRS floor wire harness, then clear the DTC.

DTC 33-3X ("X" CAN BE 0 THRU 9 OR A THRU F): SHORT TO ANOTHER WIRE OR DECREASED RESISTANCE IN THE LEFT SIDE CURTAIN AIRBAG INFLATOR

Special Tools Required

- SRS Inflator Simulator 07SAZ-TB4011A
- SRS Simulator Lead L 070AZ-SNAA300
- SRS Short Canceller 070AZ-SAA0100

NOTE:

- **Before doing this troubleshooting procedure, find out if the vehicle was in a collision. If so, verify that all the required components were replaced with new components, of the correct part number, and that they were properly installed (see COMPONENT REPLACEMENT/INSPECTION AFTER DEPLOYMENT).**
- **Before doing this troubleshooting procedure, review SRS Precautions and Procedures (see PRECAUTIONS AND PROCEDURES), General Troubleshooting Information (see GENERAL TROUBLESHOOTING INFORMATION), and Battery Terminal Disconnection and Reconnection (see BATTERY TERMINAL DISCONNECTION AND RECONNECTION).**
- **Before replacing the SRS unit, check the SRS unit software version with**

the HDS. If the software version is not the latest, update the SRS unit software (see SRS UNIT UPDATE), and retest.

1. Clear the DTCs with the HDS (see **HOW TO CLEAR DTCS**).
2. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode, then wait for 10 seconds.
3. Clear the DTCs with the HDS (see **HOW TO CLEAR DTCS**).

   Is DTC 33-3x indicated?

   YES - Go to step 4.

   NO - Intermittent failure, the system is OK at this time. Go to **TROUBLESHOOTING INTERMITTENT FAILURES**. If another DTC is indicated, troubleshoot the DTC.

4. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
5. Disconnect the negative cable from the battery, then wait at least 3 minutes.
6. Remove the left side C-pillar trim (see **C-PILLAR TRIM**).
7. Disconnect the SRS floor wire harness 2P connector (A) from the left side curtain airbag 2P connector.

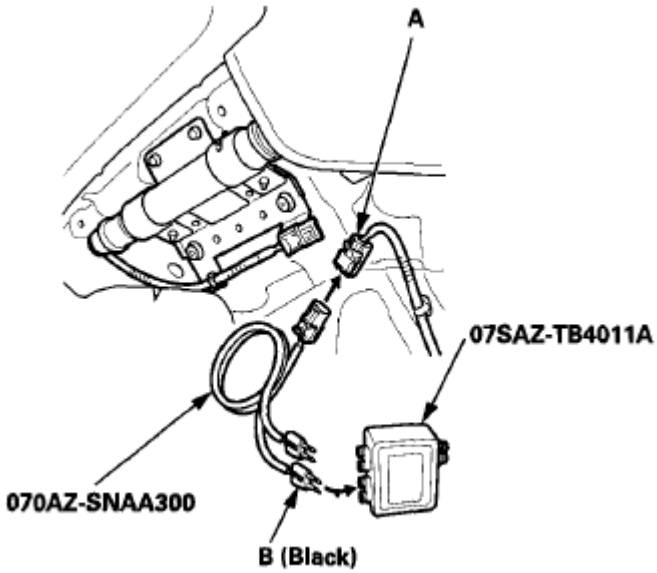


Fig. 108: Identifying SRS Floor Wire Harness 2P Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

8. Connect the black terminal (B) of SRS simulator lead L to the SRS inflator simulator (2 ohms connector), and then connect SRS simulator lead L to the SRS floor wire harness 2P connector.
9. Reconnect the negative cable to the battery.
10. Clear the DTCs with the HDS (see **HOW TO CLEAR DTCS**).
11. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode, then wait

for 10 seconds.

12. Clear the DTCs with the HDS (see **HOW TO CLEAR DTCS**).

    Is DTC 33-3x indicated?

    YES - Go to step 13.

    NO - Short to another wire in the left side curtain airbag inflator; replace the left side curtain airbag (see **SIDE CURTAIN AIRBAG REPLACEMENT**), then clear the DTC.

13. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
14. Disconnect the negative cable from the battery, then wait at least 3 minutes.
15. Disconnect SRS unit connector B (39P) from the SRS unit (see **DISCONNECTING SYSTEM CONNECTORS**).
16. Disconnect the SRS inflator simulator from SRS simulator lead L. Do not disconnect SRS simulator lead L from the SRS floor wire harness 2P connector.
17. Connect an SRS short canceller (070AZ-SAA0100) to SRS unit connector B (39P) terminals No. 10 and No. 11 (see **OPENING THE SRS UNIT SHORTING CONNECTORS FOR DIAGNOSIS**).
18. Measure the resistance of the SRS simulator lead L black terminal (A). There should be an open circuit or at least 1 Mohms

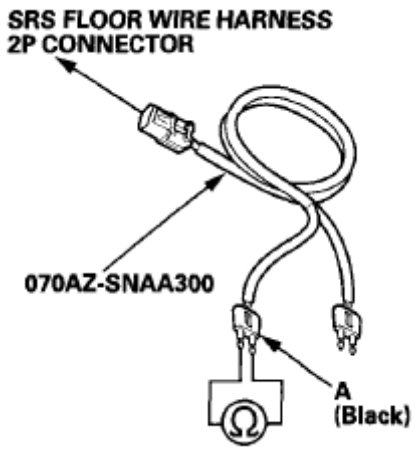


Fig. 109: Measuring Resistance Of SRS Simulator Lead L Black Terminal (A)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is the resistance as specified?

YES - Faulty SRS unit or poor connection at SRS unit connector B (39P) and the SRS unit. Check the connection; if the connection is OK, replace the SRS unit (see **SRS UNIT REPLACEMENT**). If the DTC does not clear, replace the SRS floor wire harness.

NO - Short to another wire in the SRS floor wire harness; replace the SRS floor wire harness, then clear the DTC.

DTC 33-8X ("X" CAN BE 0 THRU 9 OR A THRU F): SHORT TO POWER IN THE LEFT SIDE CURTAIN AIRBAG INFLATOR

Special Tools Required

- SRS Inflator Simulator 07SAZ-TB4011A
- SRS Simulator Lead L 070AZ-SNAA300

NOTE:

- **Before doing this troubleshooting procedure, find out if the vehicle was in a collision. If so, verify that all the required components were replaced with new components, of the correct part number, and that they were properly installed (see COMPONENT REPLACEMENT/INSPECTION AFTER DEPLOYMENT).**
- **Before doing this troubleshooting procedure, review SRS Precautions and Procedures (see PRECAUTIONS AND PROCEDURES), General Troubleshooting Information (see GENERAL TROUBLESHOOTING INFORMATION), and Battery Terminal Disconnection and Reconnection (see BATTERY TERMINAL DISCONNECTION AND RECONNECTION).**
- **Before replacing the SRS unit, check the SRS unit software version with the HDS. If the software version is not the latest, update the SRS unit software (see SRS UNIT UPDATE), and retest.**

1. Clear the DTCs with the HDS (see **HOW TO CLEAR DTCS**).
2. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode, then wait for 10 seconds.
3. Clear the DTCs with the HDS (see **HOW TO CLEAR DTCS**).

   Is DTC 33-8x indicated?

   YES - Go to step 4.

   NO - Intermittent failure, the system is OK at this time. Go to **TROUBLESHOOTING INTERMITTENT FAILURES**. If another DTC is indicated, troubleshoot the DTC.

4. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
5. Disconnect the negative cable from the battery, then wait at least 3 minutes.
6. Remove the left side C-pillar trim (see **C-PILLAR TRIM**).
7. Disconnect the SRS floor wire harness 2P connector (A) from the left side curtain airbag 2P connector.

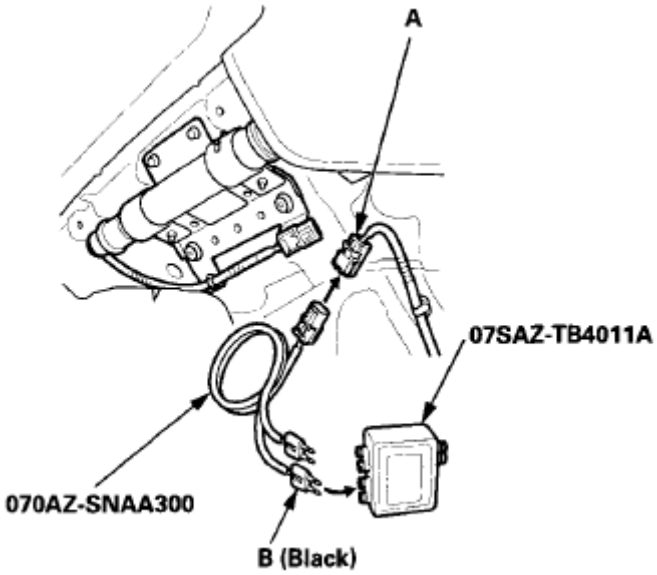


Fig. 110: Identifying SRS Floor Wire Harness 2P Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

8. Connect the black terminal (B) of SRS simulator lead L to the SRS inflator simulator (2 ohms connector), and then connect SRS simulator lead L to the SRS floor wire harness 2P connector.
9. Reconnect the negative cable to the battery.
10. Clear the DTCs with the HDS (see **HOW TO CLEAR DTCS**).
11. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode, then wait for 10 seconds.
12. Clear the DTCs with the HDS (see **HOW TO CLEAR DTCS**).

    Is DTC 33-8x indicated?

    YES - Go to step 13.

    NO - Short to power in the left side curtain airbag inflator; replace the left side curtain airbag (see **SIDE CURTAIN AIRBAG REPLACEMENT**), then clear the DTC.

13. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
14. Disconnect the negative cable from the battery, then wait at least 3 minutes.
15. Disconnect SRS unit connector B (39P) from the SRS unit (see **DISCONNECTING SYSTEM CONNECTORS**).
16. Disconnect the SRS inflator simulator from SRS simulator lead L. Do not disconnect SRS simulator lead L from the SRS floor wire harness 2P connector.
17. Reconnect the negative cable to the battery.
18. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
19. Measure the voltage between black terminal (A) of SRS simulator lead L and body ground individually. There should be less than 0.2 V.

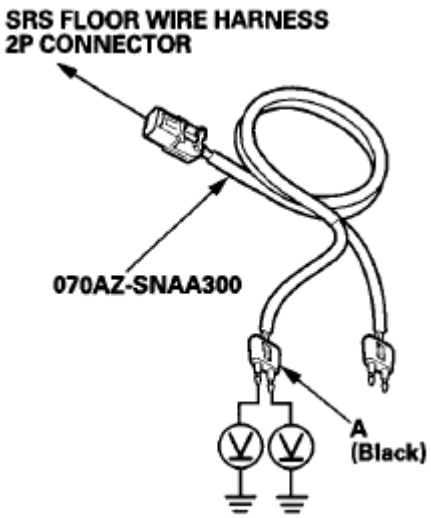


Fig. 111: Measuring Voltage Between Black Terminal (A) Of SRS Simulator Lead L And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is the voltage as specified?

YES - Faulty SRS unit or poor connection at SRS unit connector B (39P) and the SRS unit. Check the connection; if the connection is OK, replace the SRS unit (see **SRS UNIT REPLACEMENT**). If the DTC does not clear, replace the SRS floor wire harness.

NO - Short to power in the SRS floor wire harness; replace the SRS floor wire harness, then clear the DTC.

DTC 33-9X ("X" CAN BE 0 THRU 9 OR A THRU F): SHORT TO GROUND IN THE LEFT SIDE CURTAIN AIRBAG INFLATOR

Special Tools Required

- SRS Inflator Simulator 07SAZ-TB4011A
- SRS Simulator Lead L 070AZ-SNAA300

NOTE:

- **Before doing this troubleshooting procedure, find out if the vehicle was in a collision. If so, verify that all the required components were replaced with new components, of the correct part number, and that they were properly installed (see COMPONENT REPLACEMENT/INSPECTION AFTER DEPLOYMENT).**
- **Before doing this troubleshooting procedure, review SRS Precautions and Procedures (see PRECAUTIONS AND PROCEDURES), General Troubleshooting Information (see GENERAL TROUBLESHOOTING INFORMATION), and Battery Terminal Disconnection and Reconnection (see BATTERY TERMINAL DISCONNECTION AND RECONNECTION).**

- **Before replacing the SRS unit, check the SRS unit software version with the HDS. If the software version is not the latest, update the SRS unit software (see SRS UNIT UPDATE), and retest.**

1. Clear the DTCs with the HDS (see **HOW TO CLEAR DTCS**).
2. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode, then wait for 10 seconds.
3. Clear the DTCs with the HDS (see **HOW TO CLEAR DTCS**).

   Is DTC 33-9x indicated?

   YES - Go to step 4.

   NO - Intermittent failure, the system is OK at this time. Go to **TROUBLESHOOTING INTERMITTENT FAILURES**. If another DTC is indicated, troubleshoot the DTC.

4. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
5. Disconnect the negative cable from the battery, then wait at least 3 minutes.
6. Remove the left side C-pillar trim (see **C-PILLAR TRIM**).
7. Disconnect the SRS floor wire harness 2P connector (A) from the left side curtain airbag 2P connector.

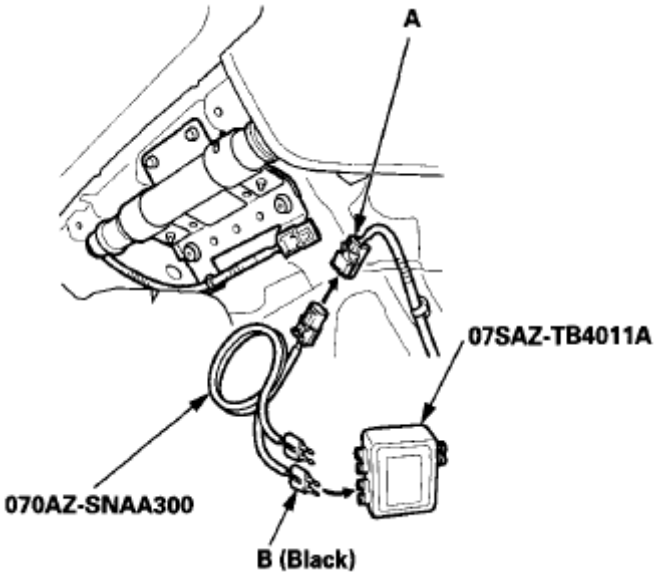


Fig. 112: Identifying SRS Floor Wire Harness 2P Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

8. Connect the black terminal (B) of SRS simulator lead L to the SRS inflator simulator (2 ohms connector), and then connect SRS simulator lead L to the SRS floor wire harness 2P connector.
9. Reconnect the negative cable to the battery.
10. Clear the DTCs with the HDS (see **HOW TO CLEAR DTCS**).

11. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode, then wait for 10 seconds.
12. Clear the DTCs with the HDS (see **HOW TO CLEAR DTCS**).

    Is DTC 33-9x indicated?

    YES - Go to step 13.

    NO - Short to ground in the left side curtain airbag inflator; replace the left side curtain airbag (see **SIDE CURTAIN AIRBAG REPLACEMENT**), then clear the DTC.

13. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
14. Disconnect the negative cable from the battery, then wait at least 3 minutes.
15. Disconnect SRS unit connector B (39P) from the SRS unit (see **DISCONNECTING SYSTEM CONNECTORS**).
16. Disconnect the SRS inflator simulator from SRS simulator lead L. Do not disconnect SRS simulator lead L from the SRS floor wire harness 2P connector.
17. Measure the resistance between black terminal (A) of SRS simulator lead L and body ground individually. There should be an open circuit or at least 1 Mohms.

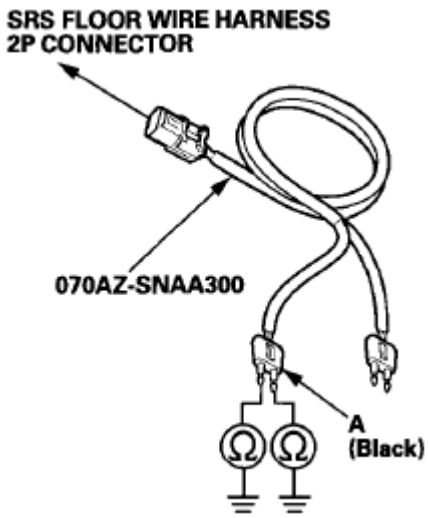


Fig. 113: Measuring Resistance Between Black Terminal (A) Of SRS Simulator Lead L And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is the resistance as specified?

YES - Faulty SRS unit or poor connection at SRS unit connector B (39P) and the SRS unit. Check the connection; if the connection is OK, replace the SRS unit (see **SRS UNIT REPLACEMENT**). If the DTC does not clear, replace the SRS floor wire harness.

NO - Short to ground in the SRS floor wire harness; replace the SRS floor wire harness, then clear the

DTC.

DTC 34-1X ("X" CAN BE 0 THRU 9 OR A THRU F): OPEN IN THE RIGHT SIDE CURTAIN AIRBAG INFLATOR; DTC 34-2X ("X" CAN BE 0 THRU 9 OR A THRU F): INCREASED RESISTANCE IN THE RIGHT SIDE CURTAIN AIRBAG INFLATOR

Special Tools Required

- SRS Inflator Simulator 07SAZ-TB4011A
- SRS Simulator Lead L 070AZ-SNAA300

NOTE:

- **Before doing this troubleshooting procedure, find out if the vehicle was in a collision. If so, verify that all the required components were replaced with new components, of the correct part number, and that they were properly installed (see COMPONENT REPLACEMENT/INSPECTION AFTER DEPLOYMENT).**
- **Before doing this troubleshooting procedure, review SRS Precautions and Procedures (see PRECAUTIONS AND PROCEDURES), General Troubleshooting Information (see GENERAL TROUBLESHOOTING INFORMATION), and Battery Terminal Disconnection and Reconnection (see BATTERY TERMINAL DISCONNECTION AND RECONNECTION).**
- **Before replacing the SRS unit, check the SRS unit software version with the HDS. If the software version is not the latest, update the SRS unit software (see SRS UNIT UPDATE), and retest.**

1. Clear the DTCs with the HDS (see **HOW TO CLEAR DTCS**).
2. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode, then wait for 10 seconds.
3. Clear the DTCs with the HDS (see **HOW TO CLEAR DTCS**).

   Is DTC 34-1x or 34-2x indicated?

   YES - Go to step 4.

   NO - Intermittent failure, the system is OK at this time. Go to **TROUBLESHOOTING INTERMITTENT FAILURES**. If another DTC is indicated, troubleshoot the DTC.

4. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
5. Disconnect the negative cable from the battery, then wait at least 3 minutes.
6. Remove the right side C-pillar trim (see **C-PILLAR TRIM**).
7. Disconnect the SRS floor wire harness 2P connector (A) from the right side curtain airbag 2P connector.

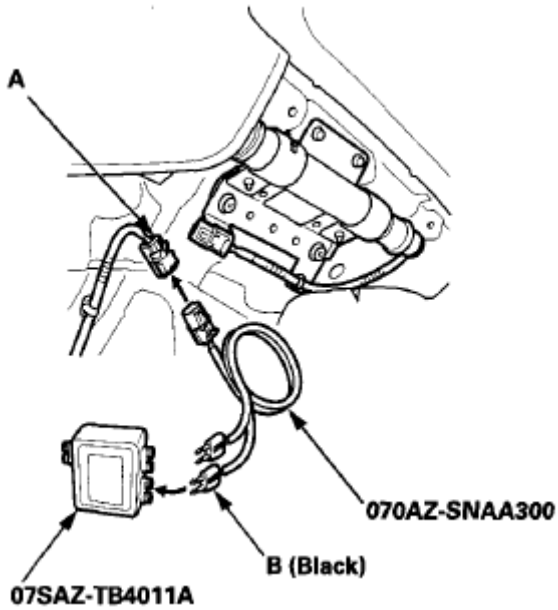


Fig. 114: Identifying SRS Floor Wire Harness 2P Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

8. Connect the black terminal (B) of SRS simulator lead L to the SRS inflator simulator (2 ohms connector), and then connect SRS simulator lead L to the SRS floor wire harness 2P connector.
9. Reconnect the negative cable to the battery.
10. Clear the DTCs with the HDS (see **HOW TO CLEAR DTCS**).
11. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode, then wait for 10 seconds.
12. Clear the DTCs with the HDS (see **HOW TO CLEAR DTCS**).

    Is DTC 34-1x or 34-2x indicated?

    YES - Go to step 13.

    NO - Open or increased resistance in the right side curtain airbag inflator; replace the right side curtain airbag (see **SIDE CURTAIN AIRBAG REPLACEMENT**), then clear the DTC.

13. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
14. Disconnect the negative cable from the battery, then wait at least 3 minutes.
15. Disconnect SRS unit connector B (39P) from the SRS unit (see **DISCONNECTING SYSTEM CONNECTORS**).
16. Disconnect the SRS inflator simulator from SRS simulator lead L. Do not disconnect SRS simulator lead L from the SRS floor wire harness 2P connector.
17. Measure the resistance of the SRS simulator lead L black terminal (A). There should be less than 1.0 ohms.

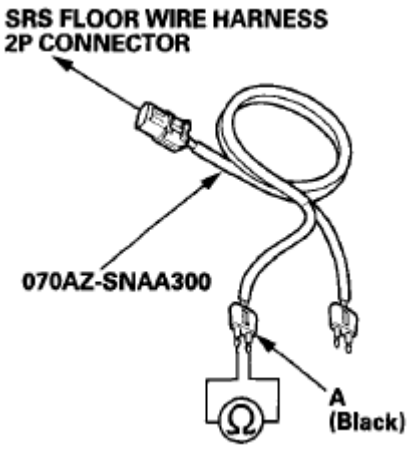


Fig. 115: Measuring Resistance Of SRS Simulator Lead L Black Terminal (A)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is the resistance as specified?

YES - Faulty SRS unit or poor connection at SRS unit connector B (39P) and the SRS unit. Check the connection; if the connection is OK, replace the SRS unit (see **SRS UNIT REPLACEMENT**). If the DTC does not clear, replace the SRS floor wire harness.

NO - Open or increased resistance in the SRS floor wire harness; replace the SRS floor wire harness, then clear the DTC.

DTC 34-3X ("X" CAN BE 0 THRU 9 OR A THRU F): SHORT TO ANOTHER WIRE OR DECREASED RESISTANCE IN THE RIGHT SIDE CURTAIN AIRBAG INFLATOR

Special Tools Required

- SRS Inflator Simulator 07SAZ-TB4011A
- SRS Simulator Lead L 070AZ-SNAA300
- SRS Short Canceller 070AZ-SAA0100

NOTE:

- **Before doing this troubleshooting procedure, find out if the vehicle was in a collision. If so, verify that all the required components were replaced with new components, of the correct part number, and that they were properly installed (see COMPONENT REPLACEMENT/INSPECTION AFTER DEPLOYMENT).**
- **Before doing this troubleshooting procedure, review SRS Precautions and Procedures (see PRECAUTIONS AND PROCEDURES), General Troubleshooting Information (see GENERAL TROUBLESHOOTING INFORMATION), and Battery Terminal Disconnection and Reconnection (see BATTERY TERMINAL DISCONNECTION AND RECONNECTION).**
- **Before replacing the SRS unit, check the SRS unit software version with**

the HDS. If the software version is not the latest, update the SRS unit software (see SRS UNIT UPDATE), and retest.

1. Clear the DTCs with the HDS (see **HOW TO CLEAR DTCS**).
2. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode, then wait for 10 seconds.
3. Clear the DTCs with the HDS (see **HOW TO CLEAR DTCS**).

   Is DTC 34-3x indicated?

   YES - Go to step 4.

   NO - Intermittent failure, the system is OK at this time. Go to **TROUBLESHOOTING INTERMITTENT FAILURES**. If another DTC is indicated, troubleshoot the DTC.

4. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
5. Disconnect the negative cable from the battery, then wait at least 3 minutes.
6. Remove the right side C-pillar trim (see **C-PILLAR TRIM**).
7. Disconnect the SRS floor wire harness 2P connector (A) from the right side curtain airbag 2P connector.

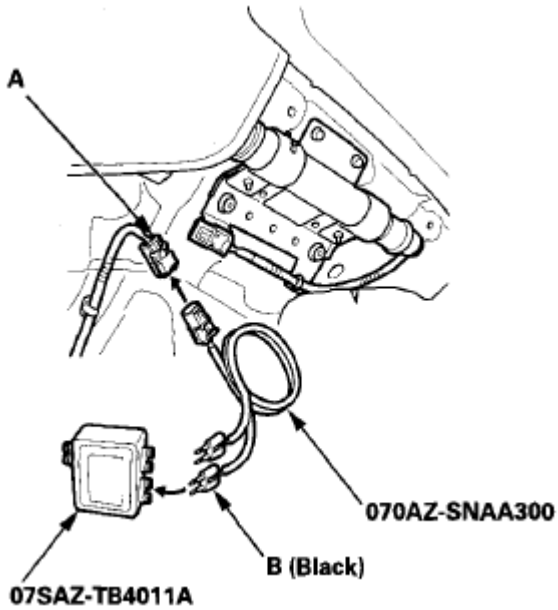


Fig. 116: Identifying SRS Floor Wire Harness 2P Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

8. Connect the black terminal (B) of SRS simulator lead L to the SRS inflator simulator (2 ohms connector), and then connect SRS simulator lead L to the SRS floor wire harness 2P connector.
9. Reconnect the negative cable to the battery.
10. Clear the DTCs with the HDS (see **HOW TO CLEAR DTCS**).

11. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode, then wait for 10 seconds.
12. Clear the DTCs with the HDS (see **HOW TO CLEAR DTCS**).

    Is DTC 34-3x indicated?

    YES - Go to step 13.

    NO - Short to another wire in the right side curtain airbag inflator; replace the right side curtain airbag (see **SIDE CURTAIN AIRBAG REPLACEMENT**), then clear the DTC.

13. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
14. Disconnect the negative cable from the battery, then wait at least 3 minutes.
15. Disconnect SRS unit connector B (39P) from the SRS unit (see **DISCONNECTING SYSTEM CONNECTORS**).
16. Disconnect the SRS inflator simulator from SRS simulator lead L. Do not disconnect SRS simulator lead L from the SRS floor wire harness 2P connector.
17. Connect an SRS short canceller (070AZ-SAA0100) to SRS unit connector B (39P) terminals No. 24 and No. 25 (see **OPENING THE SRS UNIT SHORTING CONNECTORS FOR DIAGNOSIS**).
18. Measure the resistance of the SRS simulator lead L black terminal (A). There should be an open circuit or at least 1 Mohms

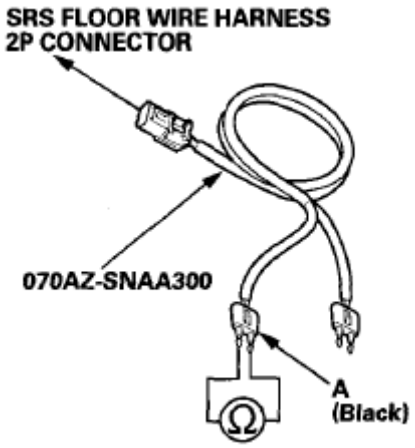


Fig. 117: Measuring Resistance Of SRS Simulator Lead L Black Terminal (A)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is the resistance as specified?

YES - Faulty SRS unit or poor connection at SRS unit connector B (39P) and the SRS unit. Check the connection; if the connection is OK, replace the SRS unit (see **SRS UNIT REPLACEMENT**). If the DTC does not clear, replace the SRS floor wire harness.

NO - Short to another wire in the SRS floor wire harness; replace the SRS floor wire harness, then clear

the DTC.

DTC 34-8X ("X" CAN BE 0 THRU 9 OR A THRU F): SHORT TO POWER IN THE RIGHT SIDE CURTAIN AIRBAG INFLATOR

Special Tools Required

- SRS Inflator Simulator 07SAZ-TB4011A
- SRS Simulator Lead L 070AZ-SNAA300

NOTE:

- **Before doing this troubleshooting procedure, find out if the vehicle was in a collision. If so, verify that all the required components were replaced with new components, of the correct part number, and that they were properly installed (see COMPONENT REPLACEMENT/INSPECTION AFTER DEPLOYMENT).**
- **Before doing this troubleshooting procedure, review SRS Precautions and Procedures (see PRECAUTIONS AND PROCEDURES), General Troubleshooting Information (see GENERAL TROUBLESHOOTING INFORMATION), and Battery Terminal Disconnection and Reconnection (see BATTERY TERMINAL DISCONNECTION AND RECONNECTION).**
- **Before replacing the SRS unit, check the SRS unit software version with the HDS. If the software version is not the latest, update the SRS unit software (see SRS UNIT UPDATE), and retest.**

1. Clear the DTCs with the HDS (see **HOW TO CLEAR DTCS**).
2. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode, then wait for 10 seconds.
3. Clear the DTCs with the HDS (see **HOW TO CLEAR DTCS**).

   Is DTC 34-8x indicated?

   YES - Go to step 4.

   NO - Intermittent failure, the system is OK at this time. Go to **TROUBLESHOOTING INTERMITTENT FAILURES**. If another DTC is indicated, troubleshoot the DTC.

4. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
5. Disconnect the negative cable from the battery, then wait at least 3 minutes.
6. Remove the right side C-pillar trim (see **C-PILLAR TRIM**).
7. Disconnect the SRS floor wire harness 2P connector (A) from the right side curtain airbag 2P connector.

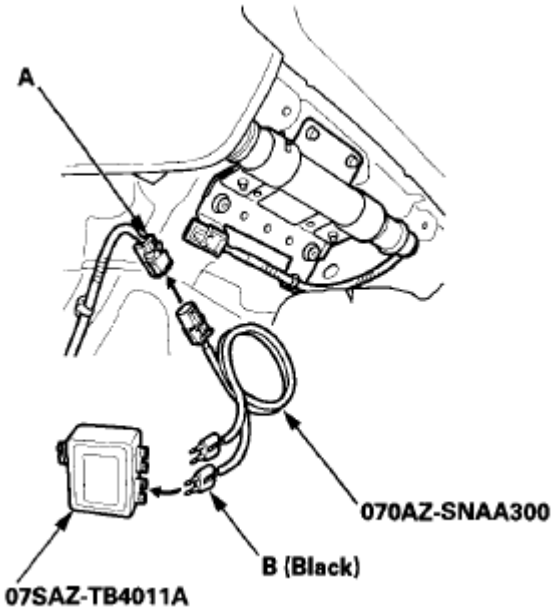


Fig. 118: Identifying SRS Floor Wire Harness 2P Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

8. Connect the black terminal (B) of SRS simulator lead L to the SRS inflator simulator (2 ohms connector), and then connect SRS simulator lead L to the SRS floor wire harness 2P connector.
9. Reconnect the negative cable to the battery.
10. Clear the DTCs with the HDS (see **HOW TO CLEAR DTCS**).
11. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode, then wait for 10 seconds.
12. Clear the DTCs with the HDS (see **HOW TO CLEAR DTCS**).

    Is DTC 34-8x indicated?

    YES - Go to step 13.

    NO - Short to power in the right side curtain airbag inflator; replace the right side curtain airbag (see **SIDE CURTAIN AIRBAG REPLACEMENT**), then clear the DTC.

13. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
14. Disconnect the negative cable from the battery, then wait at least 3 minutes.
15. Disconnect SRS unit connector B (39P) from the SRS unit (see **DISCONNECTING SYSTEM CONNECTORS**).
16. Disconnect the SRS inflator simulator from SRS simulator lead L. Do not disconnect SRS simulator lead L from the SRS floor wire harness 2P connector.
17. Reconnect the negative cable to the battery.
18. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
19. Measure the voltage between black terminal (A) of SRS simulator lead L and body ground individually.

There should be less than 0.2 V.

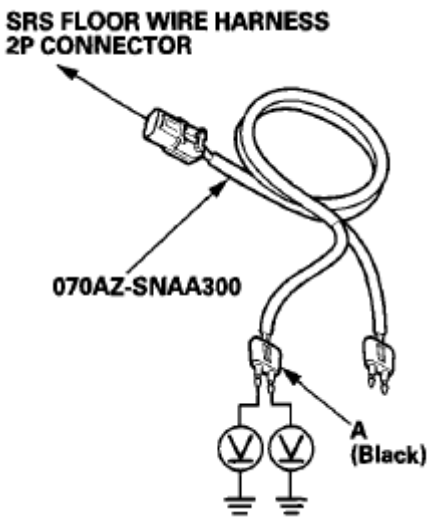


Fig. 119: Measuring Voltage Between Black Terminal (A) Of SRS Simulator Lead L And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is the voltage as specified?

YES - Faulty SRS unit or poor connection at SRS unit connector B (39P) and the SRS unit. Check the connection; if the connection is OK, replace the SRS unit (see **SRS UNIT REPLACEMENT**). If the DTC does not clear, replace the SRS floor wire harness.

NO - Short to power in the SRS floor wire harness; replace the SRS floor wire harness, then clear the DTC.

DTC 34-9X ("X" CAN BE 0 THRU 9 OR A THRU F): SHORT TO GROUND IN THE RIGHT SIDE CURTAIN AIRBAG INFLATOR

Special Tools Required

- SRS Inflator Simulator 07SAZ-TB4011A
- SRS Simulator Lead L 070AZ-SNAA300

NOTE:

- **Before doing this troubleshooting procedure, find out if the vehicle was in a collision. If so, verify that all the required components were replaced with new components, of the correct part number, and that they were properly installed (see COMPONENT REPLACEMENT/INSPECTION AFTER DEPLOYMENT).**
- **Before doing this troubleshooting procedure, review SRS Precautions and Procedures (see PRECAUTIONS AND PROCEDURES), General Troubleshooting Information (see GENERAL TROUBLESHOOTING**

INFORMATION), and Battery Terminal Disconnection and Reconnection (see BATTERY TERMINAL DISCONNECTION AND RECONNECTION).

- **Before replacing the SRS unit, check the SRS unit software version with the HDS. If the software version is not the latest, update the SRS unit software (see SRS UNIT UPDATE), and retest.**

1. Clear the DTCs with the HDS (see **HOW TO CLEAR DTCS**).
2. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode, then wait for 10 seconds.
3. Clear the DTCs with the HDS (see **HOW TO CLEAR DTCS**).

   Is DTC 34-9x indicated?

   YES - Go to step 4.

   NO - Intermittent failure, the system is OK at this time. Go to **TROUBLESHOOTING INTERMITTENT FAILURES**. If another DTC is indicated, troubleshoot the DTC.

4. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
5. Disconnect the negative cable from the battery, then wait at least 3 minutes.
6. Remove the right side C-pillar trim (see **C-PILLAR TRIM**).
7. Disconnect the SRS floor wire harness 2P connector (A) from the right side curtain airbag 2P connector.

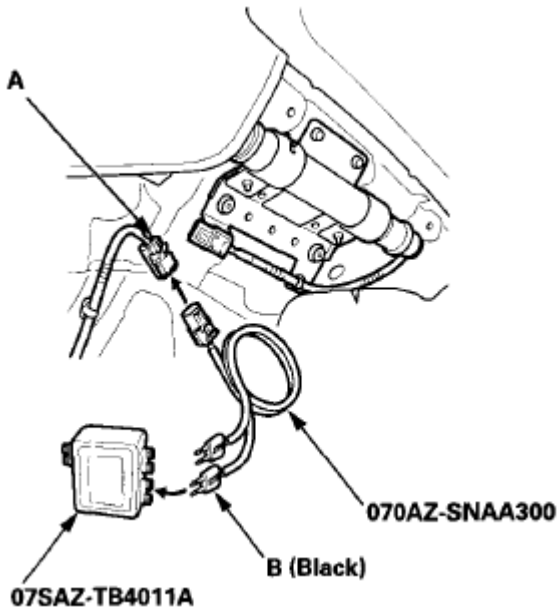


Fig. 120: Identifying SRS Floor Wire Harness 2P Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

8. Connect the black terminal (B) of SRS simulator lead L to the SRS inflator simulator (2 ohms connector), and then connect SRS simulator lead L to the SRS floor wire harness 2P connector.

9. Reconnect the negative cable to the battery.
10. Clear the DTCs with the HDS (see **HOW TO CLEAR DTCS**).
11. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode, then wait for 10 seconds.
12. Clear the DTCs with the HDS (see **HOW TO CLEAR DTCS**).

    Is DTC 34-9x indicated?

    YES - Go to step 13.

    NO - Short to ground in the right side curtain airbag inflator; replace the right side curtain airbag (see **SIDE CURTAIN AIRBAG REPLACEMENT**), then clear the DTC.

13. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
14. Disconnect the negative cable from the battery, then wait at least 3 minutes.
15. Disconnect SRS unit connector B (39P) from the SRS unit (see **DISCONNECTING SYSTEM CONNECTORS**).
16. Disconnect the SRS inflator simulator from SRS simulator lead L. Do not disconnect SRS simulator lead L from the SRS floor wire harness 2P connector.
17. Measure the resistance between black terminal (A) of SRS simulator lead L and body ground individually. There should be an open circuit or at least 1 Mohms.

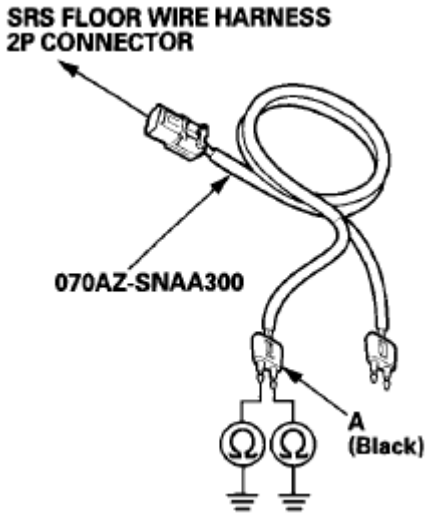


Fig. 121: Measuring Resistance Between Black Terminal (A) Of SRS Simulator Lead L And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is the resistance as specified?

YES - Faulty SRS unit or poor connection at SRS unit connector B (39P) and the SRS unit. Check the connection; if the connection is OK, replace the SRS unit (see **SRS UNIT REPLACEMENT**). If the

DTC does not clear, replace the SRS floor wire harness.

NO - Short to ground in the SRS floor wire harness; replace the SRS floor wire harness, then clear the DTC.

DTC 41-1X ("X" CAN BE 0 THRU 9 OR A THRU F): NO SIGNAL FROM THE LEFT FRONT IMPACT SENSOR

Special Tools Required

- SRS Inflator Simulator 07SAZ-TB4011A
- SRS Simulator Lead L 070AZ-SNAA300

NOTE:

- **Before doing this troubleshooting procedure, find out if the vehicle was in a collision. If so, verify that all the required components were replaced with new components, of the correct part number, and that they were properly installed (see COMPONENT REPLACEMENT/INSPECTION AFTER DEPLOYMENT).**
- **Before doing this troubleshooting procedure, review SRS Precautions and Procedures (see PRECAUTIONS AND PROCEDURES), General Troubleshooting Information (see GENERAL TROUBLESHOOTING INFORMATION), and Battery Terminal Disconnection and Reconnection (see BATTERY TERMINAL DISCONNECTION AND RECONNECTION).**
- **Before replacing the SRS unit, check the SRS unit software version with the HDS. If the software version is not the latest, update the SRS unit software (see SRS UNIT UPDATE), and retest.**

1. Clear the DTCs with the HDS (see **HOW TO CLEAR DTCS**).
2. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode, then wait for 10 seconds.
3. Clear the DTCs with the HDS (see **HOW TO CLEAR DTCS**).

   Is DTC 41-1x indicated?

   YES - Go to step 4.

   NO - Intermittent failure, the system is OK at this time. Go to **TROUBLESHOOTING INTERMITTENT FAILURES**. If another DTC is indicated, troubleshoot the DTC.

4. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
5. Disconnect the negative cable from the battery, then wait at least 3 minutes.
6. Check for these connector connections and harness.
   - SRS unit connector A (39P) and the SRS unit (see **DISCONNECTING SYSTEM CONNECTORS**).

- Left engine compartment wire harness 2P connector and the left front impact sensor (see **FRONT IMPACT SENSOR REPLACEMENT**).
- C305 (see **CONNECTOR TO FUSE/RELAY BOX INDEX**).

Are the connector connections and harness OK?

YES - Go to step 7.

NO - Repair the poor connector connections or replace the harness, then clear the DTC, and retest. If DTC 41-1x is still present, go to step 7.

7. Disconnect SRS unit connector A (39P) from the SRS unit (see **DISCONNECTING SYSTEM CONNECTORS**).
8. Disconnect the left engine compartment wire harness 2P connector from the left front impact sensor (see **FRONT IMPACT SENSOR REPLACEMENT**).
9. Measure the resistance between SRS unit connector A (39P) terminals No. 36 and No. 37. There should be an open circuit or at least 1 Mohms.

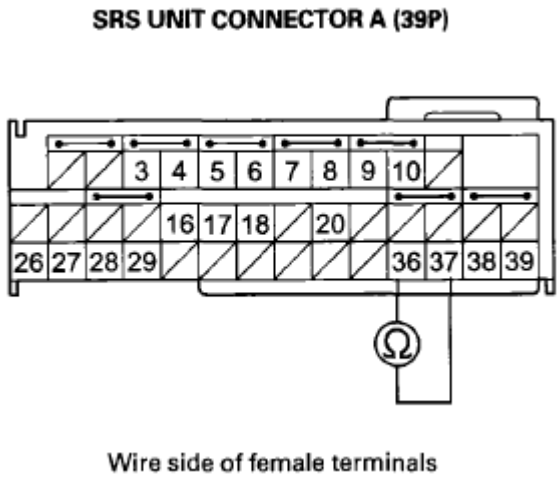


Fig. 122: Measuring Resistance Between SRS Unit Connector A (39P) Terminals No. 36 And No. 37
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is the resistance as specified?

YES - Go to step 10.

NO - Short to another wire in the left engine compartment wire harness or the dashboard wire harness; replace the faulty harness, then clear the DTC.

10. Measure the resistance between body ground and SRS unit connector A (39P) terminals No. 36 and No. 37 individually. There should be an open circuit or at least 1 Mohms.

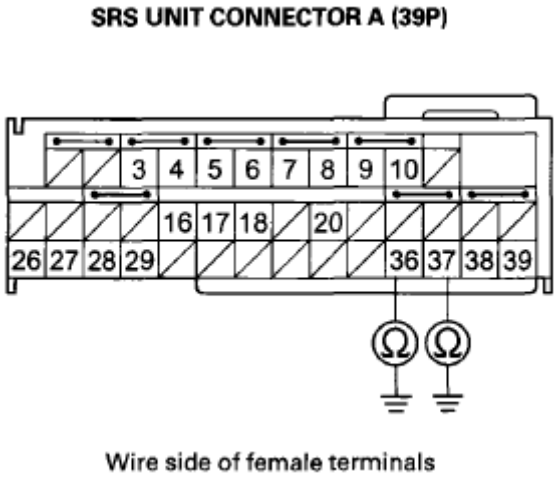


Fig. 123: Measuring Resistance Between Body Ground And SRS Unit Connector A (39P) Terminals No. 36 And No. 37
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is the resistance as specified?

YES - Go to step 11.

NO - Short to ground in the left engine compartment wire harness or the dashboard wire harness; replace the faulty harness, then clear the DTC.

11. Reconnect the negative cable to the battery.
12. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
13. Measure the voltage between body ground and SRS unit connector A (39P) terminals No. 36 and No. 37 individually. There should be less than 0.2 V.

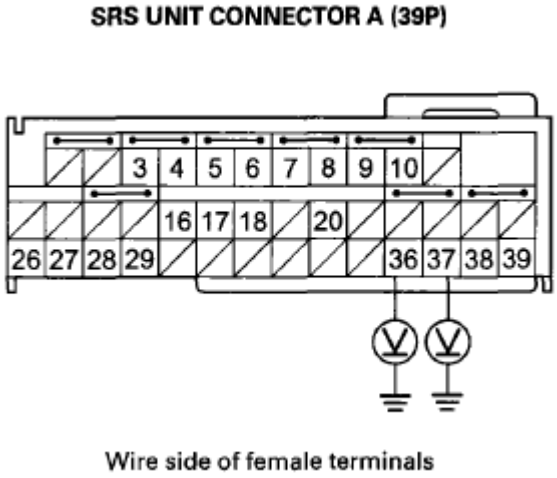


Fig. 124: Measuring Voltage Between Body Ground And SRS Unit Connector A (39P) Terminals No. 36 And No. 37
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is the voltage as specified?

YES - Go to step 14.

NO - Short to power in the left engine compartment wire harness or the dashboard wire harness; replace the faulty harness, then clear the DTC.

14. Turn the ignition switch to LOCK(0), or press the engine start/stop button to select the OFF mode.
15. Connect the black terminal (A) of SRS simulator lead L to the SRS inflator simulator (jumper connector), and then connect SRS simulator lead L to the left engine compartment wire harness 2P connector (B).

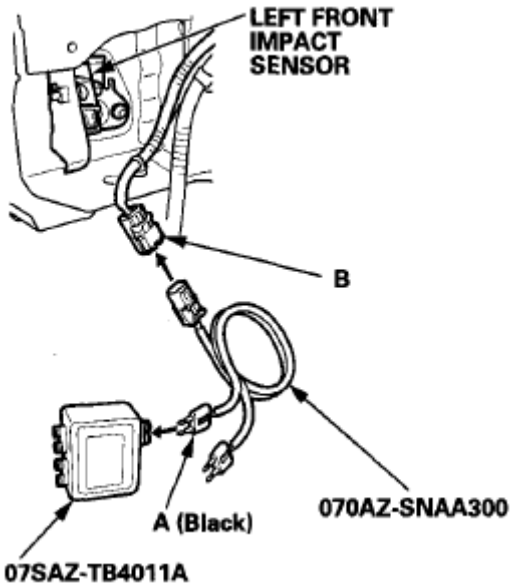


Fig. 125: Identifying SRS Simulator Lead L To Left Engine Compartment Wire Harness 2P Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

16. Measure the resistance between SRS unit connector A (39P) terminals No. 36 and No. 37. There should be less than 1.0 ohms.

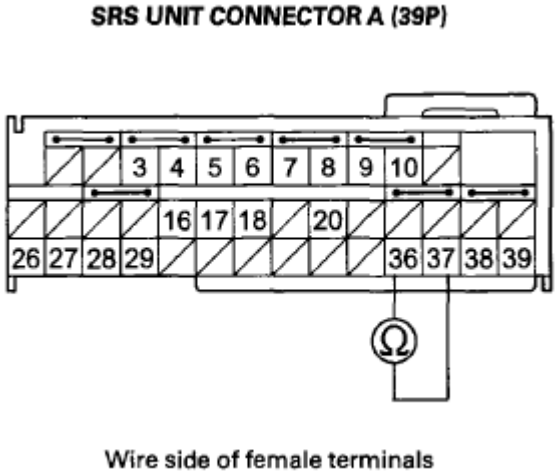


Fig. 126: Measuring Resistance Between SRS Unit Connector A (39P) Terminals No. 36 And No. 37
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is the resistance as specified?

YES - Faulty left front impact sensor or SRS unit; replace the left front impact sensor (see **FRONT IMPACT SENSOR REPLACEMENT**), then clear the DTC, and retest. If the DTC is still present, replace the SRS unit (see **SRS UNIT REPLACEMENT**).

NO - Open in the left engine compartment wire harness or the dashboard wire harness; replace the faulty harness, then clear the DTC.

DTC 42-1X ("X" CAN BE 0 THRU 9 OR A THRU F): NO SIGNAL FROM THE RIGHT FRONT IMPACT SENSOR

Special Tools Required

- SRS Inflator Simulator 07SAZ-TB4011A
- SRS Simulator Lead L 070AZ-SNAA300

NOTE:

- **Before doing this troubleshooting procedure, find out if the vehicle was in a collision. If so, verify that all the required components were replaced with new components, of the correct part number, and that they were properly installed (see COMPONENT REPLACEMENT/INSPECTION AFTER DEPLOYMENT).**
- **Before doing this troubleshooting procedure, review SRS Precautions and Procedures (see PRECAUTIONS AND PROCEDURES), General Troubleshooting Information (see GENERAL TROUBLESHOOTING INFORMATION), and Battery Terminal Disconnection and Reconnection (see BATTERY TERMINAL DISCONNECTION AND RECONNECTION).**
- **Before replacing the SRS unit, check the SRS unit software version with the HDS. If the software version is not the latest, update the SRS unit**

software (see SRS UNIT UPDATE), and retest.

1. Clear the DTCs with the HDS (see **HOW TO CLEAR DTCS**).
2. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode, then wait for 10 seconds.
3. Clear the DTCs with the HDS (see **HOW TO CLEAR DTCS**).

   Is DTC 42-1x indicated?

   YES - Go to step 4.

   NO - Intermittent failure, the system is OK at this time. Go to **TROUBLESHOOTING INTERMITTENT FAILURES**. If another DTC is indicated, troubleshoot the DTC.

4. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
5. Disconnect the negative cable from the battery, then wait at least 3 minutes.
6. Check for these connector connections and harness.
   - SRS unit connector A (39P) and the SRS unit (see **DISCONNECTING SYSTEM CONNECTORS**).
   - Right engine compartment wire harness 2P connector and the right front impact sensor (see **FRONT IMPACT SENSOR REPLACEMENT**).
   - C208 (see **CONNECTOR TO FUSE/RELAY BOX INDEX**).

   Are the connector connections and harness OK?

   YES - Go to step 7.

   NO - Repair the poor connector connections or replace the harness, then clear the DTC, and retest. If DTC 42-1x is still present, go to step 7.

7. Disconnect SRS unit connector A (39P) from the SRS unit (see **DISCONNECTING SYSTEM CONNECTORS**).
8. Disconnect the right engine compartment wire harness 2P connector from the right front impact sensor (see **FRONT IMPACT SENSOR REPLACEMENT**).
9. Measure the resistance between SRS unit connector A (39P) terminals No. 38 and No. 39. There should be an open circuit or at least 1 Mohms.

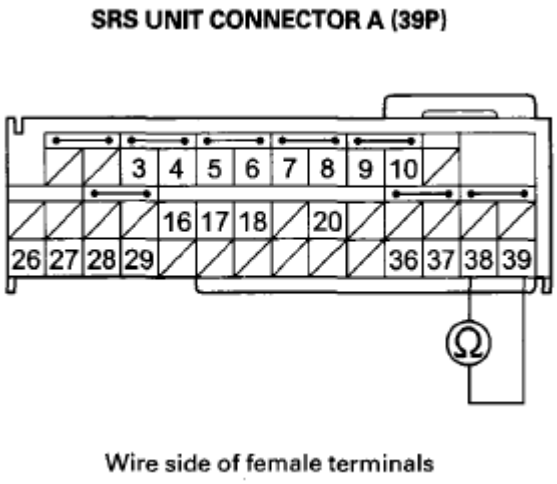


Fig. 127: Measuring Resistance Between SRS Unit Connector A (39P) Terminals No. 38 And No. 39
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is the resistance as specified?

YES - Go to step 10.

NO - Short to another wire in the right engine compartment wire harness or the dashboard wire harness; replace the faulty harness, then clear the DTC.

10. Measure the resistance between body ground and SRS unit connector A (39P) terminal No. 38 and No. 39 individually. There should be an open circuit or at least 1 Mohms.

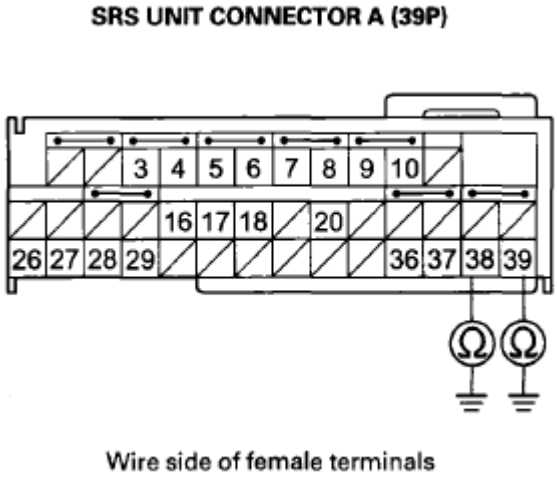


Fig. 128: Measuring Resistance Between Body Ground And SRS Unit Connector A (39P) Terminal No. 38 And No. 39
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is the resistance as specified?

YES - Go to step 11.

NO - Short to ground in the right engine compartment wire harness or the dashboard wire harness; replace the faulty harness, then clear the DTC.

11. Reconnect the negative cable to the battery.
12. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
13. Measure the voltage between body ground and SRS unit connector A (39P) terminal No. 38 and No. 39 individually. There should be less than 0.2 V.

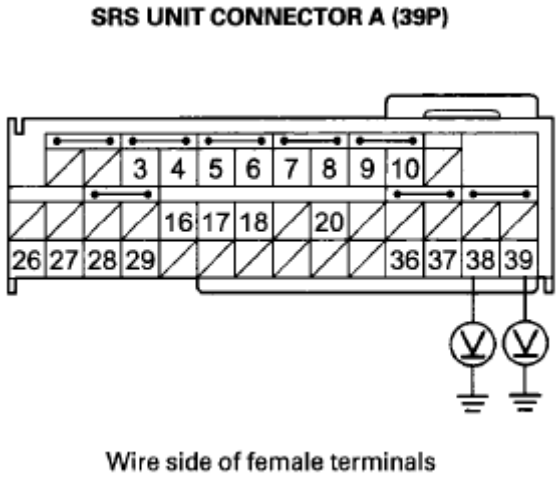


Fig. 129: Measuring Voltage Between Body Ground And SRS Unit Connector A (39P) Terminal No. 38 And No. 39
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is the voltage as specified?

YES - Go to step 14.

NO - Short to power in the right engine compartment wire harness or the dashboard wire harness; replace the faulty harness, then clear the DTC.

14. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
15. Connect the black terminal (A) of SRS simulator lead L to the SRS inflator simulator (jumper connector), and then connect SRS simulator lead L to the right engine compartment wire harness 2P connector (B).

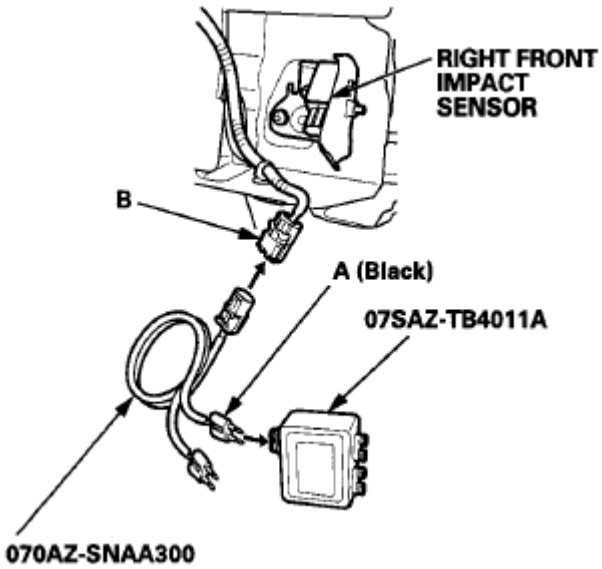


Fig. 130: Identifying SRS Simulator Lead L To Right Engine Compartment Wire Harness 2P Connector (B)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

16. Measure the resistance between SRS unit connector A (39P) terminals No. 38 and No. 39. There should be less than 1.0 ohms.

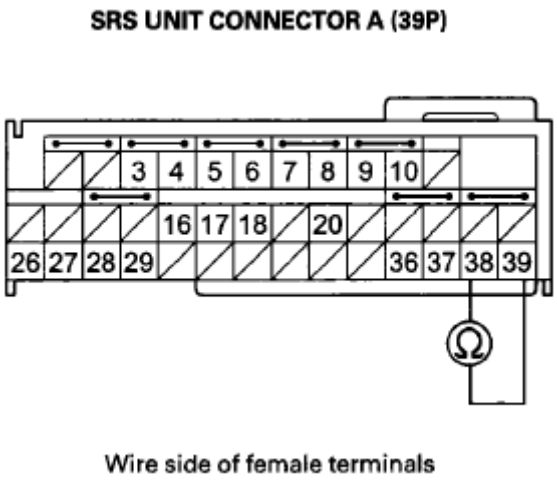


Fig. 131: Measuring Resistance Between SRS Unit Connector A (39P) Terminals No. 38 And No. 39
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is the resistance as specified?

YES - Faulty right front impact sensor or SRS unit; replace the right front impact sensor (see **FRONT IMPACT SENSOR REPLACEMENT**), then clear the DTC, and retest. If the DTC is still present, replace the SRS unit (see **SRS UNIT REPLACEMENT**).

NO - Open in the right engine compartment wire harness or the dashboard wire harness; replace the

faulty harness, then clear the DTC.

DTC 41-2X, 41-3X, 41-8X, 41-9X, 41-AX, 41-BX ("X" CAN BE 0 THRU 9 OR A THRU F): INTERNAL FAILURE OF THE LEFT FRONT IMPACT SENSOR

NOTE:

- **Before doing this troubleshooting procedure, find out if the vehicle was in a collision. If so, verify that all the required components were replaced with new components, of the correct part number, and that they were properly installed (see COMPONENT REPLACEMENT/INSPECTION AFTER DEPLOYMENT).**
- **Before doing this troubleshooting procedure, review SRS Precautions and Procedures (see PRECAUTIONS AND PROCEDURES) and General Troubleshooting Information (see GENERAL TROUBLESHOOTING INFORMATION).**
- **Before replacing the SRS unit, check the SRS unit software version with the HDS. If the software version is not the latest, update the SRS unit software (see SRS UNIT UPDATE), and retest.**

1. Clear the DTCs with the HDS (see **HOW TO CLEAR DTCS**).
2. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode, then wait for 10 seconds.
3. Clear the DTCs with the HDS (see **HOW TO CLEAR DTCS**).

Is DTC 41-2x, 41-3x, 41-8x, 41-9x, 41-Ax, or 41-Bx indicated?

YES - Faulty left front impact sensor or SRS unit; replace the left front impact sensor (see **FRONT IMPACT SENSOR REPLACEMENT**), then clear the DTC, and retest. If the DTC is still present, replace the SRS unit (see **SRS UNIT REPLACEMENT**).

NO - Intermittent failure, the system is OK at this time. Go to **TROUBLESHOOTING INTERMITTENT FAILURES**. If another DTC is indicated, troubleshoot the DTC.

DTC 42-2X, 42-3X, 42-8X, 42-9X, 42-AX, 42-BX ("X" CAN BE 0 THRU 9 OR A THRU F): INTERNAL FAILURE OF THE RIGHT FRONT IMPACT SENSOR

NOTE:

- **Before doing this troubleshooting procedure, find out if the vehicle was in a collision. If so, verify that all the required components were replaced with new components, of the correct part number, and that they were properly installed (see COMPONENT REPLACEMENT/INSPECTION AFTER DEPLOYMENT).**
- **Before doing this troubleshooting procedure, review SRS Precautions and Procedures (see PRECAUTIONS AND PROCEDURES) and General Troubleshooting Information (see GENERAL TROUBLESHOOTING INFORMATION).**
- **Before replacing the SRS unit, check the SRS unit software version with**

the HDS. If the software version is not the latest, update the SRS unit software (see SRS UNIT UPDATE), and retest.

1. Clear the DTCs with the HDS (see **HOW TO CLEAR DTCS**).
2. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode, then wait for 10 seconds.
3. Clear the DTCs with the HDS (see **HOW TO CLEAR DTCS**).

Is DTC 42-2x, 42-3x, 42-8x, 42-9x, 42-Ax, or 42-Bx indicated?

YES - Faulty right front impact sensor or SRS unit; replace the right front impact sensor (see **FRONT IMPACT SENSOR REPLACEMENT**), then clear the DTC, and retest. If the DTC is still present, replace the SRS unit (see **SRS UNIT REPLACEMENT**).

NO - Intermittent failure, the system is OK at this time. Go to **TROUBLESHOOTING INTERMITTENT FAILURES**. If another DTC is indicated, troubleshoot the DTC.

DTC 43-1X ("X" CAN BE 0 THRU 9 OR A THRU F): NO SIGNAL FROM THE LEFT SIDE IMPACT SENSOR (FIRST)

Special Tools Required

- SRS Inflator Simulator 07SAZ-TB4011A
- SRS Simulator Lead L 070AZ-SNAA300

NOTE:

- **Before doing this troubleshooting procedure, find out if the vehicle was in a collision. If so, verify that all the required components were replaced with new components, of the correct part number, and that they were properly installed (see COMPONENT REPLACEMENT/INSPECTION AFTER DEPLOYMENT).**
- **Before doing this troubleshooting procedure, review SRS Precautions and Procedures (see PRECAUTIONS AND PROCEDURES), General Troubleshooting Information (see GENERAL TROUBLESHOOTING INFORMATION), and Battery Terminal Disconnection and Reconnection (see BATTERY TERMINAL DISCONNECTION AND RECONNECTION).**
- **Before replacing the SRS unit, check the SRS unit software version with the HDS. If the software version is not the latest, update the SRS unit software (see SRS UNIT UPDATE), and retest.**

1. Clear the DTCs with the HDS (see **HOW TO CLEAR DTCS**).
2. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode, then wait for 10 seconds.
3. Clear the DTCs with the HDS (see **HOW TO CLEAR DTCS**).

Is DTC 43-1x indicated?

YES -

- If DTC 43-11 is indicated, go to step 4.
- If DTC 43-1x except 43-11 is indicated alone or DTC 43-11 and 45-11 are indicated, faulty left side impact sensor (first); replace the left side impact sensor (first) (see **SIDE IMPACT SENSOR (FIRST) REPLACEMENT**), then clear the DTC.

NO - Intermittent failure, the system is OK at this time. Go to **TROUBLESHOOTING INTERMITTENT FAILURES**. If another DTC is indicated, troubleshoot the DTC.

4. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
5. Disconnect the negative cable from the battery, then wait at least 3 minutes.
6. Disconnect the SRS floor wire harness 4P connector from the left side impact sensor (first) (see **SIDE IMPACT SENSOR (FIRST) REPLACEMENT**).
7. Disconnect SRS unit connector B (39P) from the SRS unit (see **DISCONNECTING SYSTEM CONNECTORS**).
8. Measure the resistance between SRS unit connector B (39P) terminals No. 36 and No. 37. There should be an open circuit or at least 1 Mohms.

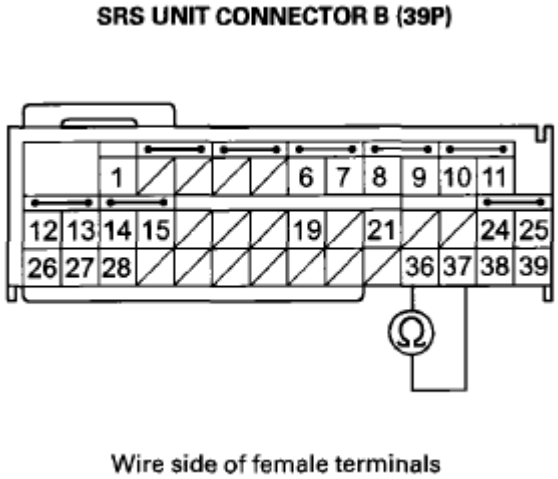


Fig. 132: Measuring Resistance Between SRS Unit Connector B (39P) Terminals No. 36 And No. 37
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is the resistance as specified?

YES - Go to step 9.

NO - Short to another wire in the SRS floor wire harness; replace the SRS floor wire harness, then clear the DTC.

9. Measure the resistance between body ground and SRS unit connector B (39P) terminals No. 36 and No. 37 individually. There should be an open circuit or at least 1 Mohms.

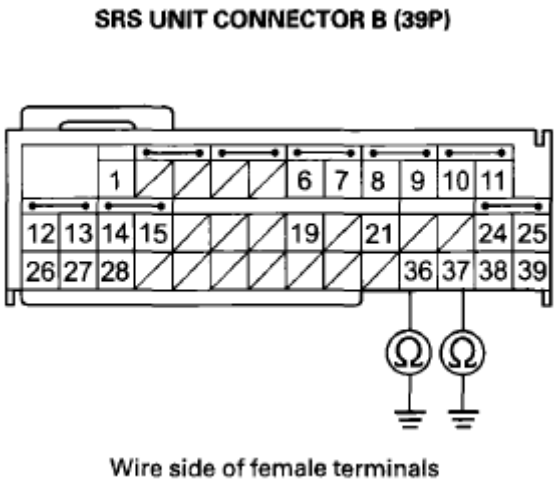


Fig. 133: Measuring Resistance Between Body Ground And SRS Unit Connector B (39P) Terminals No. 36 And No. 37
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is the resistance as specified?

YES - Go to step 10.

NO - Short to ground in the SRS floor wire harness; replace the SRS floor wire harness, then clear the DTC.

10. Reconnect the negative cable to the battery.
11. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
12. Measure the voltage between body ground and SRS unit connector B (39P) terminals No. 36 and No. 37 individually. There should be less than 0.2 V.

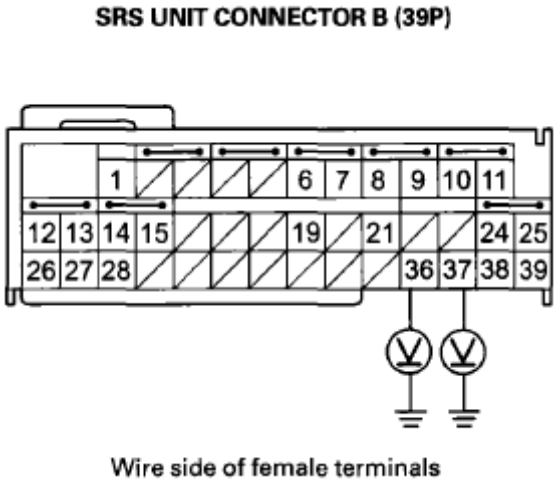


Fig. 134: Measuring Voltage Between Body Ground And SRS Unit Connector B (39P) Terminals No. 36 And No. 37

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is the voltage as specified?

YES - Go to step 13.

NO - Short to power in the SRS floor wire harness; replace the SRS floor wire harness, then clear the DTC.

13. Turn the ignition switch to LOCK(0), or press the engine start/stop button to select the OFF mode.
14. Connect the black terminal (A) of SRS simulator lead L to the SRS inflator simulator (jumper connector), and then connect SRS simulator lead L to the SRS floor wire harness 4P connector (B).

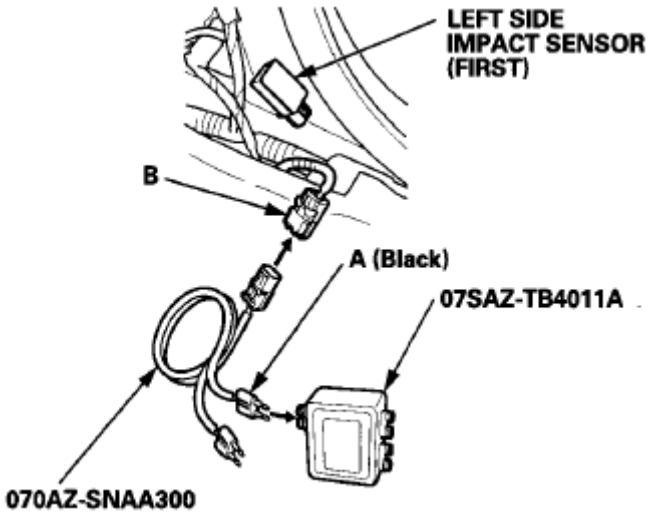


Fig. 135: Connecting Black Terminal (A) Of SRS Simulator Lead L To SRS Inflator Simulator (Jumper Connector)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

15. Measure the resistance between SRS unit connector B (39P) terminals No. 36 and No. 37. There should be less than 1.0 ohms.

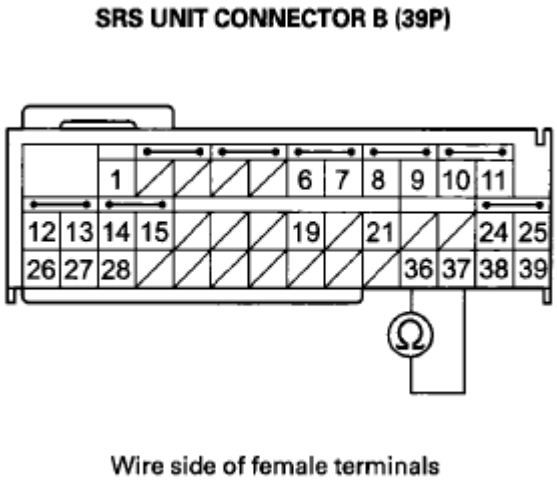


Fig. 136: Measuring Resistance Between SRS Unit Connector B (39P) Terminals No. 36 And No. 37
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is the resistance as specified?

YES - Faulty left side impact sensor (first) or SRS unit; replace the left side impact sensor (first) (see **SIDE IMPACT SENSOR (FIRST) REPLACEMENT**), then clear the DTC, and retest. If the DTC is still present, replace the SRS unit (see **SRS UNIT REPLACEMENT**).

NO - Open in the SRS floor wire harness; replace the SRS floor wire harness, then clear the DTC.

DTC 44-1X ("X" CAN BE 0 THRU 9 OR A THRU F): NO SIGNAL FROM THE RIGHT SIDE IMPACT SENSOR (FIRST)

Special Tools Required

- SRS Inflator Simulator 07SAZ-TB4011A
- SRS Simulator Lead L 070AZ-SNAA300

NOTE:

- **Before doing this troubleshooting procedure, find out if the vehicle was in a collision. If so, verify that all the required components were replaced with new components, of the correct part number, and that they were properly installed (see COMPONENT REPLACEMENT/INSPECTION AFTER DEPLOYMENT).**
- **Before doing this troubleshooting procedure, review SRS Precautions and Procedures (see PRECAUTIONS AND PROCEDURES), General Troubleshooting Information (see GENERAL TROUBLESHOOTING INFORMATION), and Battery Terminal Disconnection and Reconnection (see BATTERY TERMINAL DISCONNECTION AND RECONNECTION).**
- **Before replacing the SRS unit, check the SRS unit software version with the HDS. If the software version is not the latest, update the SRS unit software (see SRS UNIT UPDATE), and retest.**

1. Clear the DTCs with the HDS (see **HOW TO CLEAR DTCS**).
2. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode, then wait for 10 seconds.
3. Clear the DTCs with the HDS (see **HOW TO CLEAR DTCS**).

   Is DTC 44-1x indicated?

   YES -

   - If DTC 44-11 is indicated, go to step 4.
   - If DTC 44-1x except 44-11 is indicated alone, or DTC 44-11 and 46-11 are indicated, faulty right side impact sensor (first); replace the right side impact sensor (first) (see **SIDE IMPACT SENSOR (FIRST) REPLACEMENT**), then clear the DTC.

   NO - Intermittent failure, the system is OK at this time. Go to **TROUBLESHOOTING INTERMITTENT FAILURES**. If another DTC is indicated, troubleshoot the DTC.

4. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
5. Disconnect the negative cable from the battery, then wait at least 3 minutes.
6. Disconnect the SRS floor wire harness 4P connector from the right side impact sensor (first) (see **SIDE IMPACT SENSOR (FIRST) REPLACEMENT**).
7. Disconnect SRS unit connector B (39P) from the SRS unit (see **DISCONNECTING SYSTEM CONNECTORS**).
8. Measure the resistance between SRS unit connector B (39P) terminals No. 38 and No. 39. There should be an open circuit or at least 1 Mohms.

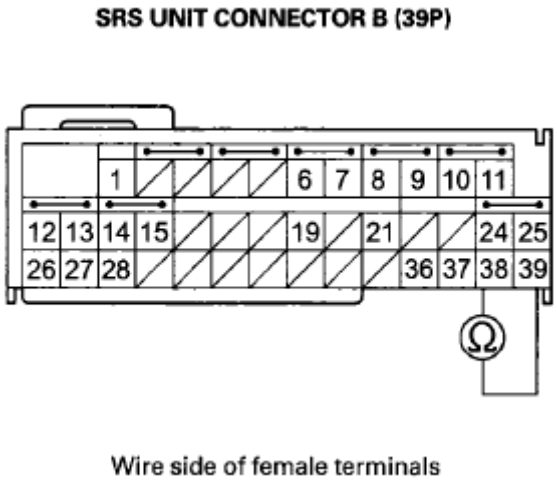


Fig. 137: Measuring Resistance Between SRS Unit Connector B (39P) Terminals No. 38 And No. 39
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is the resistance as specified?

YES - Go to step 9.

NO - Short to another wire in the SRS floor wire harness; replace the SRS floor wire harness, then clear the DTC.

9. Measure the resistance between body ground and SRS unit connector B (39P) terminals No. 38 and No. 39 individually. There should be an open circuit or at least 1 Mohms

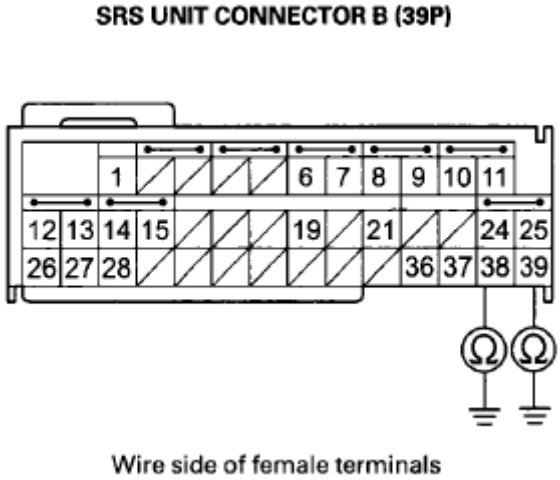


Fig. 138: Measuring Resistance Between Body Ground And SRS Unit Connector B (39P) Terminals No. 38 And No. 39
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is the resistance as specified?

YES - Go to step 10.

NO - Short to ground in the SRS floor wire harness; replace the SRS floor wire harness, then clear the DTC.

10. Reconnect the negative cable to the battery.
11. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
12. Measure the voltage between body ground and SRS unit connector B (39P) terminals No. 38 and No. 39 individually. There should be less than 0.2 V.

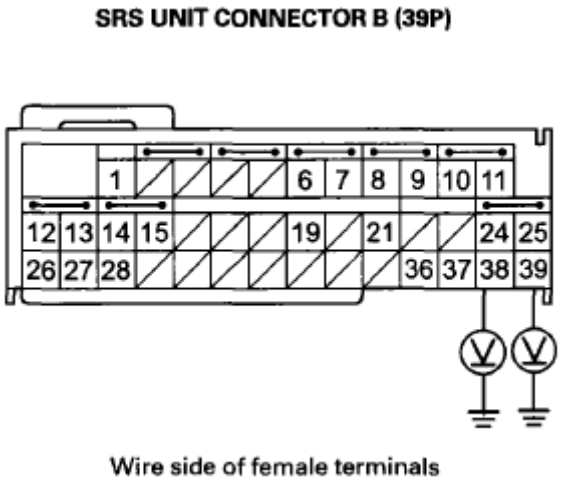


Fig. 139: Measuring Voltage Between Body Ground And SRS Unit Connector B (39P) Terminals No. 38 And No. 39
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is the voltage as specified?

YES - Go to step 13.

NO - Short to power in the SRS floor wire harness; replace the SRS floor wire harness, then clear the DTC.

13. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
14. Connect the black terminal (A) of SRS simulator lead L to the SRS inflator simulator (jumper connector), and then connect SRS simulator lead L to the SRS floor wire harness 4P connector (B).

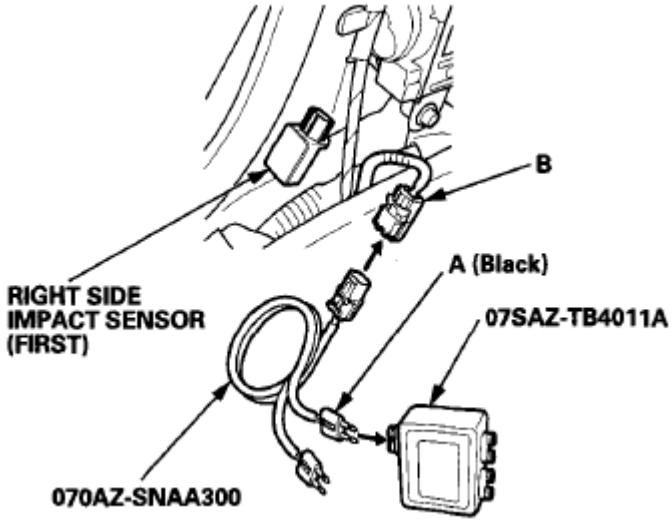


Fig. 140: Connecting Black Terminal (A) Of SRS Simulator Lead L To SRS Inflator Simulator (Jumper Connector)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

15. Measure the resistance between SRS unit connector B (39P) terminals No. 38 and No. 39. There should be less than 1.0 ohms.

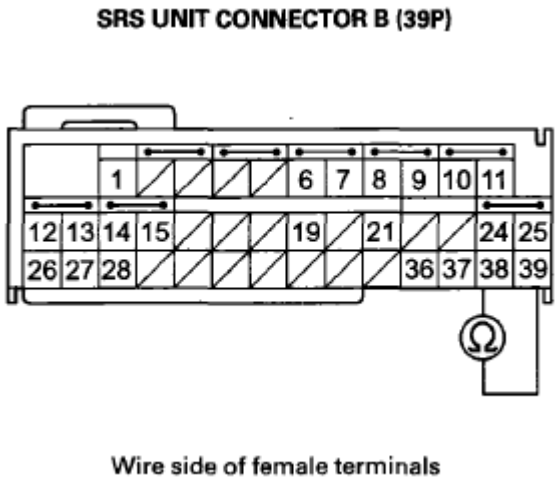


Fig. 141: Measuring Resistance Between SRS Unit Connector B (39P) Terminals No. 38 And No. 39
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is the resistance as specified?

YES - Faulty right side impact sensor (first) or SRS unit; replace the right side impact sensor (first) (see **SIDE IMPACT SENSOR (FIRST) REPLACEMENT**), then clear the DTC, and retest. If the DTC is still present, replace the SRS unit (see **SRS UNIT REPLACEMENT**).

NO - Open in the SRS floor wire harness; replace the SRS floor wire harness, then clear the DTC.

DTC 43-2X, 43-3X, 43-8X, 43-9X, 43-AX, 43-BX ("X" CAN BE 0 THRU 9 OR A THRU F): INTERNAL FAILURE OF THE LEFT SIDE IMPACT SENSOR (FIRST)

NOTE:

- **Before doing this troubleshooting procedure, find out if the vehicle was in a collision. If so, verify that all the required components were replaced with new components, of the correct part number, and that they were properly installed (see COMPONENT REPLACEMENT/INSPECTION AFTER DEPLOYMENT).**
- **Before doing this troubleshooting procedure, review SRS Precautions and Procedures (see PRECAUTIONS AND PROCEDURES) and General Troubleshooting Information (see GENERAL TROUBLESHOOTING INFORMATION).**
- **Before replacing the SRS unit, check the SRS unit software version with the HDS. If the software version is not the latest, update the SRS unit software (see SRS UNIT UPDATE), and retest.**

1. Clear the DTCs with the HDS (see **HOW TO CLEAR DTCS**).
2. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode, then wait

for 10 seconds.

3. Clear the DTCs with the HDS (see **HOW TO CLEAR DTCS**).

Is DTC 43-2x, 43-3x, 43-8x, 43-9x, 43-Ax, or 43-Bx indicated?

YES - Faulty left side impact sensor (first) or SRS unit; replace the left side impact sensor (first) (see **SIDE IMPACT SENSOR (FIRST) REPLACEMENT**), then clear the DTC, and retest. If the DTC is still present, replace the SRS unit (see **SRS UNIT REPLACEMENT**).

NO - Intermittent failure, the system is OK at this time. Go to **TROUBLESHOOTING INTERMITTENT FAILURES**. If another DTC is indicated, troubleshoot the DTC.

DTC 44-2X, 44-3X, 44-8X, 44-9X, 44-AX, 44-BX ("X" CAN BE 0 THRU 9 OR A THRU F): INTERNAL FAILURE OF THE RIGHT SIDE IMPACT SENSOR (FIRST)

NOTE:

- **Before doing this troubleshooting procedure, find out if the vehicle was in a collision. If so, verify that all the required components were replaced with new components, of the correct part number, and that they were properly installed (see COMPONENT REPLACEMENT/INSPECTION AFTER DEPLOYMENT).**
- **Before doing this troubleshooting procedure, review SRS Precautions and Procedures (see PRECAUTIONS AND PROCEDURES) and General Troubleshooting Information (see GENERAL TROUBLESHOOTING INFORMATION).**
- **Before replacing the SRS unit, check the SRS unit software version with the HDS. If the software version is not the latest, update the SRS unit software (see SRS UNIT UPDATE), and retest.**

1. Clear the DTCs with the HDS (see **HOW TO CLEAR DTCS**).
2. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode, then wait for 10 seconds.
3. Clear the DTCs with the HDS (see **HOW TO CLEAR DTCS**).

Is DTC 44-2x, 44-3x, 44-8x, 44-9x, 44-Ax, or 44-Bx indicated?

YES - Faulty right side impact sensor (first) or SRS unit; replace the right side impact sensor (first) (see **SIDE IMPACT SENSOR (FIRST) REPLACEMENT**), then clear the DTC, and retest. If the DTC is still present, replace the SRS unit (see **SRS UNIT REPLACEMENT**).

NO - Intermittent failure, the system is OK at this time. Go to **TROUBLESHOOTING INTERMITTENT FAILURES**. If another DTC is indicated, troubleshoot the DTC.

DTC 45-1X ("X" CAN BE 0 THRU 9 OR A THRU F): NO SIGNAL FROM THE LEFT SIDE IMPACT SENSOR (SECOND)

Special Tools Required

- SRS Inflator Simulator 07SAZ-TB4011A
- SRS Simulator Lead L 070AZ-SNAA300

NOTE:

- **Before doing this troubleshooting procedure, find out if the vehicle was in a collision. If so, verify that all the required components were replaced with new components, of the correct part number, and that they were properly installed (see COMPONENT REPLACEMENT/INSPECTION AFTER DEPLOYMENT).**
- **Before doing this troubleshooting procedure, review SRS Precautions and Procedures (see PRECAUTIONS AND PROCEDURES), General Troubleshooting Information (see GENERAL TROUBLESHOOTING INFORMATION), and Battery Terminal Disconnection and Reconnection (see BATTERY TERMINAL DISCONNECTION AND RECONNECTION).**
- **Before replacing the SRS unit, check the SRS unit software version with the HDS. If the software version is not the latest, update the SRS unit software (see SRS UNIT UPDATE), and retest.**

1. Clear the DTCs with the HDS (see **HOW TO CLEAR DTCS**).
2. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode, then wait for 10 seconds.
3. Clear the DTCs with the HDS (see **HOW TO CLEAR DTCS**).

   Is DTC 45-1x indicated?

   YES -

   - If DTC 45-11 is indicated, go to step 4.
   - If DTC 45-1x except 45-11 is indicated alone, faulty left side impact sensor (second); replace the left side impact sensor (second) (see **SIDE IMPACT SENSOR (SECOND) REPLACEMENT**), then clear the DTC.

   NO - Intermittent failure, the system is OK at this time. Go to **TROUBLESHOOTING INTERMITTENT FAILURES**. If another DTC is indicated, troubleshoot the DTC.

4. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
5. Disconnect the negative cable from the battery, then wait at least 3 minutes.
6. Disconnect the SRS floor wire harness 4P connector from the left side impact sensor (first) (see **SIDE IMPACT SENSOR (FIRST) REPLACEMENT**).
7. Disconnect the SRS floor wire harness 2P connector from the left side impact sensor (second) (see **SIDE IMPACT SENSOR (SECOND) REPLACEMENT**).
8. Measure the resistance between SRS floor wire harness 2P connector terminals No. 1 and No. 2. There should be an open circuit or at least 1 Mohms

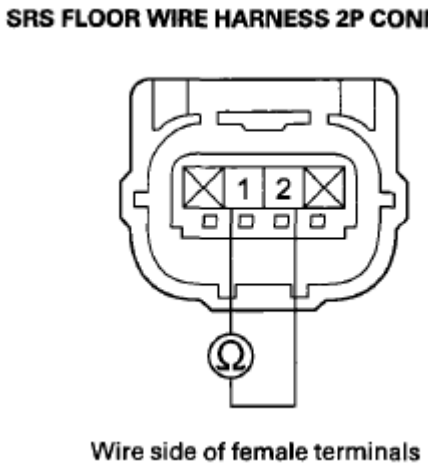


Fig. 142: Measuring Resistance Between SRS Floor Wire Harness 2P Connector Terminals No. 1 And No. 2
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is the resistance as specified?

YES - Go to step 9.

NO - Short to another wire in the SRS floor wire harness; replace the SRS floor wire harness, then clear the DTC.

9. Measure the resistance between body ground and SRS floor wire harness 2P connector terminals No. 1 and No. 2 individually. There should be an open circuit or at least 1 Mohms.

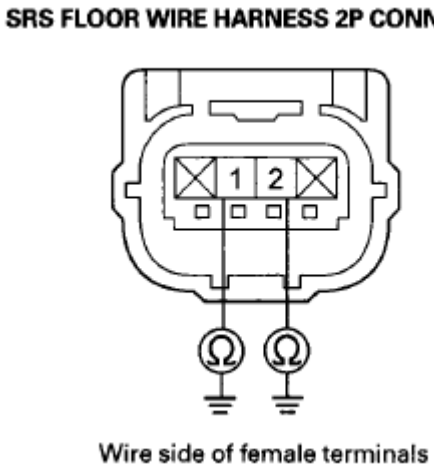


Fig. 143: Measuring Resistance Between Body Ground And SRS Floor Wire Harness 2P Connector Terminals No. 1 And No. 2
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is the resistance as specified?

YES - Go to step 10.

NO - Short to ground in the SRS floor wire harness; replace the SRS floor wire harness, then clear the DTC.

10. Reconnect the negative cable to the battery.
11. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode, then wait for 10 seconds.
12. Measure the voltage between body ground and SRS floor wire harness 2P connector terminals No. 1 and No. 2 individually. There should be less than 0.2 V.

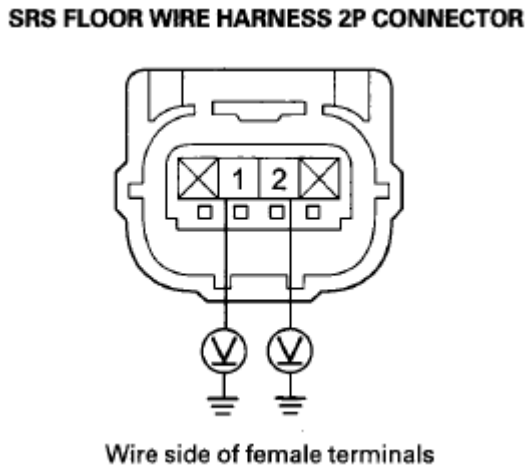


Fig. 144: Measuring Voltage Between Body Ground And SRS Floor Wire Harness 2P Connector Terminals No. 1 And No. 2
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is the voltage as specified?

YES - Go to step 13.

NO - Short to power in the SRS floor wire harness; replace the SRS floor wire harness, then clear the DTC.

13. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
14. Connect the red terminal (A) of SRS simulator lead L to the SRS inflator simulator (jumper connector), and then connect SRS simulator lead L to the SRS floor wire harness 4P connector (B).

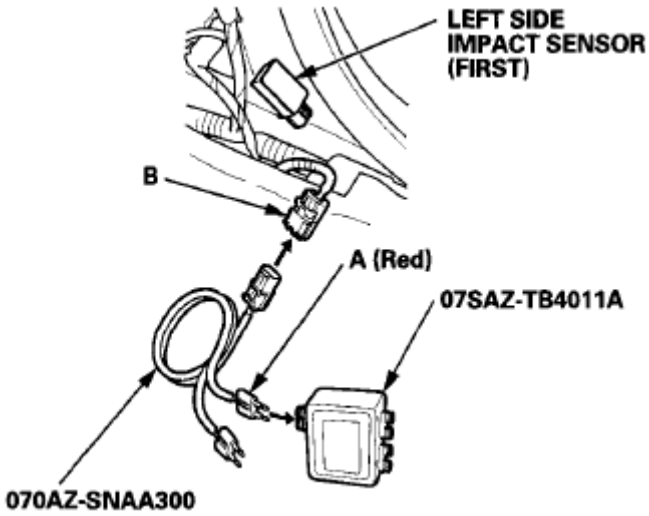


Fig. 145: Connecting Red Terminal Of SRS Simulator Lead L To SRS Inflator Simulator (Jumper Connector)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

15. Measure the resistance between SRS floor wire harness 2P connector terminals No. 1 and No. 2. There should be less than 1.0 ohms.

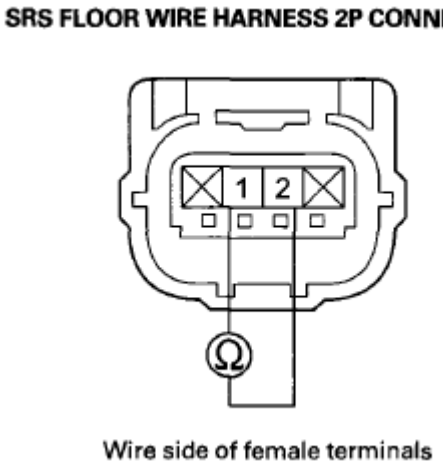


Fig. 146: Measuring Resistance Between SRS Floor Wire Harness 2P Connector Terminals No. 1 And No. 2
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is the resistance as specified?

YES - Faulty left side impact sensor (second) or SRS unit; replace the left side impact sensor (second) (see **SIDE IMPACT SENSOR (SECOND) REPLACEMENT**), then clear the DTC, and retest. If the DTC is still present, replace the SRS unit (see **SRS UNIT REPLACEMENT**).

NO - Open in the SRS floor wire harness; replace the SRS floor wire harness, then clear the DTC.

DTC 46-1X ("X" CAN BE 0 THRU 9 OR A THRU F): NO SIGNAL FROM THE RIGHT SIDE IMPACT SENSOR (SECOND)

Special Tools Required

- SRS Inflator Simulator 07SAZ-TB4011A
- SRS Simulator Lead L 070AZ-SNAA300

NOTE:

- **Before doing this troubleshooting procedure, find out if the vehicle was in a collision. If so, verify that all the required components were replaced with new components, of the correct part number, and that they were properly installed (see COMPONENT REPLACEMENT/INSPECTION AFTER DEPLOYMENT).**
- **Before doing this troubleshooting procedure, review SRS Precautions and Procedures (see PRECAUTIONS AND PROCEDURES), General Troubleshooting Information (see GENERAL TROUBLESHOOTING INFORMATION), and Battery Terminal Disconnection and Reconnection (see BATTERY TERMINAL DISCONNECTION AND RECONNECTION).**
- **Before replacing the SRS unit, check the SRS unit software version with the HDS. If the software version is not the latest, update the SRS unit software (see SRS UNIT UPDATE), and retest.**

1. Clear the DTCs with the HDS (see **HOW TO CLEAR DTCS**).
2. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode, then wait for 10 seconds.
3. Clear the DTCs with the HDS (see **HOW TO CLEAR DTCS**).

   Is DTC 46-1x indicated?

   YES -

   - If DTC 46-11 is indicated, go to step 4.
   - If DTC 46-1x except 46-11 is indicated alone, faulty right side impact sensor (second); replace the right side impact sensor (second) (see **SIDE IMPACT SENSOR (SECOND) REPLACEMENT**), then clear the DTC.

   NO - Intermittent failure, the system is OK at this time. Go to **TROUBLESHOOTING INTERMITTENT FAILURES**. If another DTC is indicated, troubleshoot the DTC.

4. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
5. Disconnect the negative cable from the battery, then wait at least 3 minutes.
6. Disconnect the SRS floor wire harness 4P connector from the right side impact sensor (first) (see **SIDE IMPACT SENSOR (FIRST) REPLACEMENT**).
7. Disconnect the SRS floor wire harness 2P connector from the right side impact sensor (second) (see **SIDE IMPACT SENSOR (SECOND) REPLACEMENT**).

8. Measure the resistance between SRS floor wire harness 2P connector terminals No. 1 and No. 2. There should be an open circuit or at least 1 Mohms.

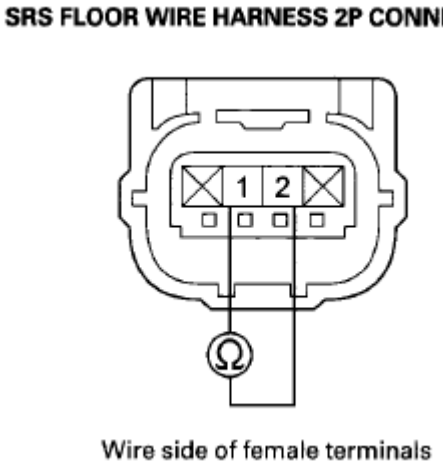


Fig. 147: Measuring Resistance Between SRS Floor Wire Harness 2P Connector Terminals No. 1 And No. 2
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is the resistance as specified?

YES - Go to step 9.

NO - Short to another wire in the SRS floor wire harness; replace the SRS floor wire harness, then clear the DTC.

9. Measure the resistance between body ground and SRS floor wire harness 2P connector terminals No. 1 and No. 2 individually. There should be an open circuit or at least 1 Mohms.

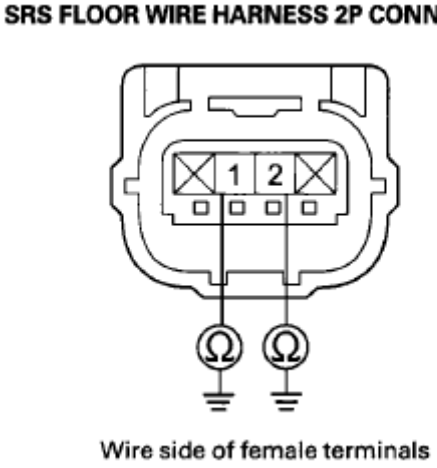


Fig. 148: Measuring Resistance Between Body Ground And SRS Floor Wire Harness 2P Connector Terminals No. 1 And No. 2
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is the resistance as specified?

YES - Go to step 10.

NO - Short to ground in the SRS floor wire harness; replace the SRS floor wire harness, then clear the DTC.

10. Reconnect the negative cable to the battery.
11. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode, then wait for 10 seconds.
12. Measure the voltage between body ground and SRS floor wire harness 2P connector terminal No. 1 and No. 2 individually. There should be less than 0.2 V.

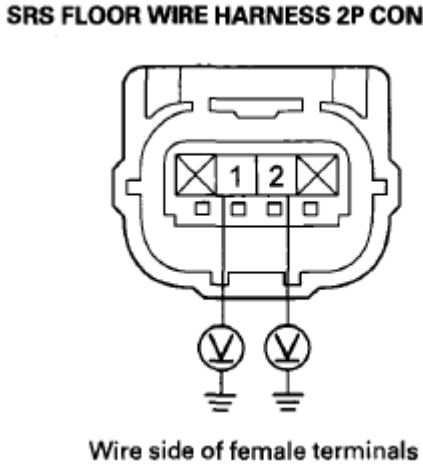


Fig. 149: Measuring Voltage Between Body Ground And SRS Floor Wire Harness 2P Connector Terminal No. 1 And No. 2
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is the voltage as specified?

YES - Go to step 13.

NO - Short to power in the SRS floor wire harness; replace the SRS floor wire harness, then clear the DTC.

13. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
14. Connect the red terminal (A) of SRS simulator lead L to the SRS inflator simulator (jumper connector), and then connect SRS simulator lead L to the SRS floor wire harness 4P connector (B).

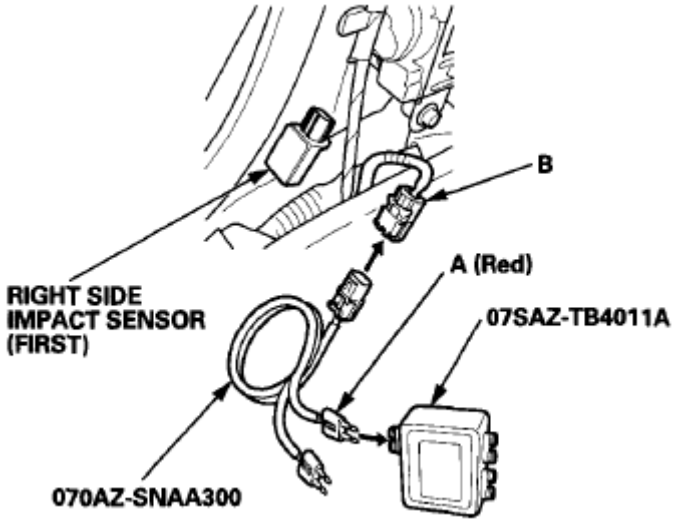


Fig. 150: Connecting Red Terminal Of SRS Simulator Lead L To SRS Inflator Simulator (Jumper Connector)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

15. Measure the resistance between SRS floor wire harness 2P connector the terminals No. 1 and No. 2. There should be less than 1.0 ohms.

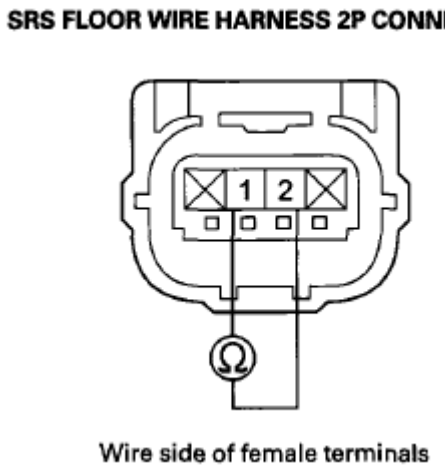


Fig. 151: Measuring Resistance Between SRS Floor Wire Harness 2P Connector Terminals No. 1 And No. 2
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is the resistance as specified?

YES - Faulty right side impact sensor (second) or SRS unit; replace the right side impact sensor (second) (see **SIDE IMPACT SENSOR (SECOND) REPLACEMENT**), then clear the DTC, and retest. If the DTC is still present, replace the SRS unit (see **SRS UNIT REPLACEMENT**).

NO - Open in the SRS floor wire harness; replace the SRS floor wire harness, then clear the DTC.

DTC 45-2X, 45-3X, 45-8X, 45-9X, 45-AX, 45-BX ("X" CAN BE 0 THRU 9 OR A THRU F): INTERNAL FAILURE OF THE LEFT SIDE IMPACT SENSOR (SECOND)

NOTE:

- **Before doing this troubleshooting procedure, find out if the vehicle was in a collision. If so, verify that all the required components were replaced with new components, of the correct part number, and that they were properly installed (see COMPONENT REPLACEMENT/INSPECTION AFTER DEPLOYMENT).**
- **Before doing this troubleshooting procedure, review SRS Precautions and Procedures (see PRECAUTIONS AND PROCEDURES) and General Troubleshooting Information (see GENERAL TROUBLESHOOTING INFORMATION).**
- **Before replacing the SRS unit, check the SRS unit software version with the HDS. If the software version is not the latest, update the SRS unit software (see SRS UNIT UPDATE), and retest.**

1. Clear the DTCs with the HDS (see **HOW TO CLEAR DTCS**).
2. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode, then wait for 10 seconds.
3. Clear the DTCs with the HDS (see **HOW TO CLEAR DTCS**).

Is DTC 45-2x, 45-3x, 45-8x, 45-9x, 45-Ax, or 45-Bx indicated?

YES - Faulty left side impact sensor (second) or SRS unit; replace the left side impact sensor (second) (see **SIDE IMPACT SENSOR (SECOND) REPLACEMENT**), then clear the DTC, and retest. If the DTC is still present, replace the SRS unit (see **SRS UNIT REPLACEMENT**).

NO - Intermittent failure, the system is OK at this time. Go to **TROUBLESHOOTING INTERMITTENT FAILURES**. If another DTC is indicated, troubleshoot the DTC.

DTC 46-2X, 46-3X, 46-8X, 46-9X, 46-AX, 46-BX ("X" CAN BE 0 THRU 9 OR A THRU F): INTERNAL FAILURE OF THE RIGHT SIDE IMPACT SENSOR (SECOND)

NOTE:

- **Before doing this troubleshooting procedure, find out if the vehicle was in a collision. If so, verify that all the required components were replaced with new components, of the correct part number, and that they were properly installed (see COMPONENT REPLACEMENT/INSPECTION AFTER DEPLOYMENT).**
- **Before doing this troubleshooting procedure, review SRS Precautions and Procedures (see PRECAUTIONS AND PROCEDURES) and General Troubleshooting Information (see GENERAL TROUBLESHOOTING INFORMATION).**
- **Before replacing the SRS unit, check the SRS unit software version with the HDS. If the software version is not the latest, update the SRS unit software (see SRS UNIT UPDATE), and retest.**

1. Clear the DTCs with the HDS (see **HOW TO CLEAR DTCS**).
2. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode, then wait for 10 seconds.
3. Clear the DTCs with the HDS (see **HOW TO CLEAR DTCS**).

Is DTC 46-2x, 46-3x, 46-8x, 46-9x, 46-Ax, or 46-Bx indicated?

YES - Faulty right side impact sensor (second) or SRS unit; replace the right side impact sensor (second) (see **SIDE IMPACT SENSOR (SECOND) REPLACEMENT**), then clear the DTC, and retest. If the DTC is still present, replace the SRS unit (see **SRS UNIT REPLACEMENT**).

NO - Intermittent failure, the system is OK at this time. Go to **TROUBLESHOOTING INTERMITTENT FAILURES**. If another DTC is indicated, troubleshoot the DTC.

DTC 51-XX, 52-XX, 53-XX, 54-XX, 55-XX, 57-XX, 58-XX ("X" CAN BE 0 THRU 9 OR A THRU F): INTERNAL FAILURE OF THE SRS UNIT

NOTE:

- **Before doing this troubleshooting procedure, find out if the vehicle was in a collision. If so, verify that all the required components were replaced with new components, of the correct part number, and that they were properly installed (see COMPONENT REPLACEMENT/INSPECTION AFTER DEPLOYMENT).**
- **Before troubleshooting any of these DTCs, check the battery/system voltage and battery cable connections (see BATTERY TEST). If the voltage is low, repair the charging system, test and charge the battery, or replace the battery before troubleshooting the SRS. If the battery/system voltage is now OK, ask the client if the battery ever went dead or if the engine was started and run with the battery in a low state of charge. A dead battery may trigger one or more of these DTCs.**
- **Before doing this troubleshooting procedure, review SRS Precautions and Procedures (see PRECAUTIONS AND PROCEDURES) and General Troubleshooting Information (see GENERAL TROUBLESHOOTING INFORMATION).**
- **Before replacing the SRS unit, check the SRS unit software version with the HDS. If the software version is not the latest, update the SRS unit software (see SRS UNIT UPDATE), and retest.**

1. Clear the DTCs with the HDS (see **HOW TO CLEAR DTCS**).
2. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode, then wait for 10 seconds.
3. Clear the DTCs with the HDS (see **HOW TO CLEAR DTCS**).

Is DTC 51-xx, 52-xx, 53-xx, 54-xx, 55-xx, 57-xx, or 58-xx indicated?

YES - Replace the SRS unit (see **SRS UNIT REPLACEMENT**).

NO - Intermittent failure, the system is OK at this time. Go to **TROUBLESHOOTING INTERMITTENT FAILURES**. If another DTC is indicated, troubleshoot the DTC.

DTC 53-FF: SRS UNIT PROGRAMMING ERROR

NOTE:

- **Before doing this troubleshooting procedure, find out if the vehicle was in a collision. If so, verify that all the required components were replaced with new components, of the correct part number, and that they were properly installed (see COMPONENT REPLACEMENT/INSPECTION AFTER DEPLOYMENT).**
- **This DTC is indicated when a SRS unit update is not completed properly.**
- **Do not turn the ignition switch to ACC (I) or LOCK (0), or press the engine start/stop button to select the ACC or OFF mode while updating the SRS unit. If you turn the ignition switch to ACC (I) or LOCK (0), or press the engine start/stop button to select the ACC or OFF mode before you complete the SRS unit update procedure, the SRS unit can be damaged.**
- **Before doing this troubleshooting procedure, review SRS Precautions and Procedures (see PRECAUTIONS AND PROCEDURES) and General Troubleshooting Information (see GENERAL TROUBLESHOOTING INFORMATION).**

1. Do the SRS unit update procedure (see **SRS UNIT UPDATE**).
2. Clear the DTCs with the HDS (see **HOW TO CLEAR DTCS**).
3. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode, then wait for 10 seconds.
4. Clear the DTCs with the HDS (see **HOW TO CLEAR DTCS**).

Is DTC 53-FF indicated?

YES - Replace the SRS unit (see **SRS UNIT REPLACEMENT**).

NO - Update is complete.

DTC 56-11, 56-21: LOST COMMUNICATION WITH THE ECM/PCM (PGM-FI SYSTEM); DTC 56-12, 56-13, 56-22, 56-23: UNDEFINED DATA RECEIVED FROM THE ECM/PCM (PGM-FI SYSTEM)

NOTE:

- **Before doing this troubleshooting procedure, find out if the vehicle was in a collision. If so, verify that all the required components were replaced with new components, of the correct part number, and that they were properly installed (see COMPONENT REPLACEMENT/INSPECTION AFTER DEPLOYMENT).**
- **Before doing this troubleshooting procedure, review SRS Precautions and Procedures (see PRECAUTIONS AND PROCEDURES), General Troubleshooting Information (see GENERAL TROUBLESHOOTING**

INFORMATION), and Battery Terminal Disconnection and Reconnection (see BATTERY TERMINAL DISCONNECTION AND RECONNECTION).

- **Before replacing the SRS unit, check the SRS unit software version with the HDS. If the software version is not the latest, update the SRS unit software (see SRS UNIT UPDATE), and retest.**

1. Check for any F-CAN and B-CAN communication DTCs with the HDS.

   Are there any communication DTCs?

   YES - Go to the appropriate **DTC TROUBLESHOOTING**.

   NO - Go to step 2.

2. Clear the DTCs with the HDS (see **HOW TO CLEAR DTCS**).
3. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode, then wait for 10 seconds.
4. Clear the DTCs with the HDS (see **HOW TO CLEAR DTCS**).

   Is DTC 56-11, 56-12, 56-13, 56-21, 56-22, or 56-23 indicated?

   YES - Go to step 5.

   NO - Intermittent failure, the system is OK at this time. Go to **TROUBLESHOOTING INTERMITTENT FAILURES**. If another DTC is indicated, troubleshoot the DTC.

5. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
6. Start the engine, and see if the malfunction indicator lamp (MIL) also stays on.

   Does the MIL stay on longer than 30 seconds?

   YES - Go to MIL Circuit Troubleshooting (see **MIL CIRCUIT TROUBLESHOOTING**).

   NO - Go to step 7.

7. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
8. Jump the SCS line with the HDS (see **GENERAL TROUBLESHOOTING INFORMATION**).

   NOTE: This step must be done to protect the ECM/PCM from damage.

9. Disconnect ECM/PCM connector A (49P) from the ECM/PCM (see **ECM/PCM REPLACEMENT**).
10. Disconnect the negative cable from the battery, then wait at least 3 minutes.
11. Disconnect SRS unit connector A (39P) from the SRS unit (see **DISCONNECTING SYSTEM CONNECTORS**).

12. Check for continuity between SRS unit connector A (39P) terminal No. 16 and ECM/PCM connector A (49P) terminal No. 49, and between SRS unit connector A (39P) terminal No. 17 and ECM/PCM connector A (49P) terminal No. 48.

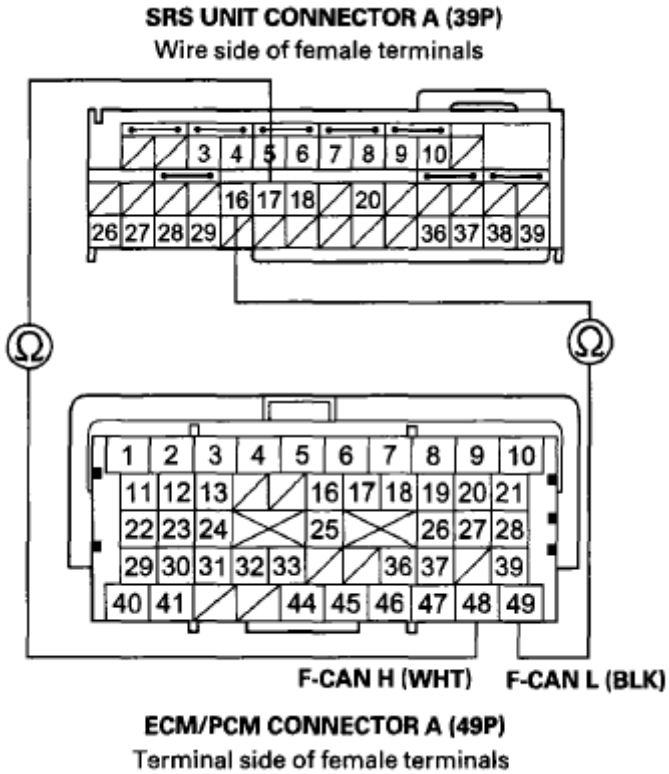


Fig. 152: Checking For Continuity Between SRS Unit Connector And ECM/PCM Connector, And Between SRS Unit Connector And ECM/PCM Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Faulty SRS unit or poor connection at SRS unit connector A (39P) and the SRS unit. Check the connection between the connector and the SRS unit. If the connection is OK, replace the SRS unit (see **SRS UNIT REPLACEMENT**). If the DTC does not clear, replace the left engine compartment wire harness or dashboard wire harness.

NO - Open in the harness between SRS unit connector A (39P) terminal No. 16 and ECM/PCM connector A (49P) terminal No. 49, or between SRS unit connector A (39P) terminal No. 17 and ECM/PCM connector A (49P) terminal No. 48 (left engine compartment wire harness or dashboard wire harness); replace the faulty harness, then clear the DTC.

DTC 56-25: LOST COMMUNICATION WITH THE GAUGE CONTROL MODULE

NOTE:

- **Before doing this troubleshooting procedure, find out if the vehicle was in a collision. If so, verify that all the required components were replaced**

with new components, of the correct part number, and that they were properly installed (see COMPONENT REPLACEMENT/INSPECTION AFTER DEPLOYMENT).

- **Before doing this troubleshooting procedure, review SRS Precautions and Procedures (see PRECAUTIONS AND PROCEDURES), General Troubleshooting Information (see GENERAL TROUBLESHOOTING INFORMATION), and Battery Terminal Disconnection and Reconnection (see BATTERY TERMINAL DISCONNECTION AND RECONNECTION).**
- **Before replacing the SRS unit, check the SRS unit software version with the HDS. If the software version is not the latest, update the SRS unit software (see SRS UNIT UPDATE), and retest.**

1. Check for any F-CAN and B-CAN communication DTCs with the HDS.

   Are there any communication DTCs?

   YES - Go to the appropriate **DTC TROUBLESHOOTING**.

   NO - Go to step 2.

2. Release the parking brake, turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode, and see if the brake system indicator comes on for 2 seconds and then goes off.

   Does the brake system indicator come on and then go off after 2 seconds?

   YES - Go to step 3.

   NO - Faulty gauge control module. Do the gauge control module self-diagnostic function (see **SELF-DIAGNOSTIC FUNCTION**), and retest. If the gauge control module fails the self-diagnosis, replace the gauge control module (see **GAUGE CONTROL MODULE REPLACEMENT**), then clear the DTC, and retest. If the DTC is still present, replace the SRS unit (see **SRS UNIT REPLACEMENT**).

3. Clear the DTCs with the HDS (see **HOW TO CLEAR DTCS**).
4. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode, then wait for 10 seconds.
5. Clear the DTCs with the HDS (see **HOW TO CLEAR DTCS**).

   Is DTC 56-25 indicated?

   YES - Go to step 6.

   NO - Intermittent failure, the system is OK at this time. Go to **TROUBLESHOOTING INTERMITTENT FAILURES**. If another DTC is indicated, troubleshoot the DTC.

6. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
7. Disconnect the negative cable from the battery, then wait at least 3 minutes.

8. Disconnect SRS unit connector A (39P) from the SRS unit (see **DISCONNECTING SYSTEM CONNECTORS**).
9. Disconnect the gauge control module 32P connector from the gauge control module (see **GAUGE CONTROL MODULE REPLACEMENT**).
10. Check for continuity between SRS unit connector A (39P) terminal No. 16 and gauge control module 32P connector terminal No. 13, and between SRS unit connector A (39P) terminal No. 17 and gauge control module 32P connector terminal No. 14.

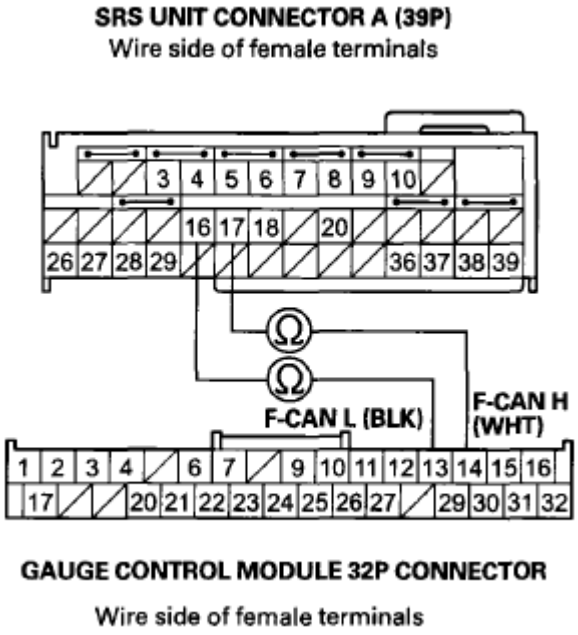


Fig. 153: Checking For Continuity Between SRS Unit Connector And Gauge Control Module 32P Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Faulty SRS unit or poor connection at SRS unit connector A (39P) and the SRS unit. Check the connection between the connector and the SRS unit. If the connection is OK, replace the SRS unit (see **SRS UNIT REPLACEMENT**). If the DTC does not clear, replace the dashboard wire harness.

NO - Open in the harness between the SRS unit connector A (39P) terminal No. 16 and gauge control module 32P connector terminal No. 13, or between the SRS unit connector A (39P) terminal No. 17 and gauge control module 32P connector terminal No. 14; replace the dashboard wire harness, then clear the DTC.

DTC 56-26, 56-27: UNDEFINED DATA RECEIVED FROM THE GAUGE CONTROL MODULE

NOTE:

- **Before doing this troubleshooting procedure, find out if the vehicle was in a collision. If so, verify that all the required components were replaced with new components, of the correct part number, and that they were**

properly installed (see COMPONENT REPLACEMENT/INSPECTION AFTER DEPLOYMENT).

- **Before doing this troubleshooting procedure, review SRS Precautions and Procedures (see PRECAUTIONS AND PROCEDURES) and General Troubleshooting Information (see GENERAL TROUBLESHOOTING INFORMATION).**
- **Before replacing the SRS unit, check the SRS unit software version with the HDS. If the software version is not the latest, update the SRS unit software (see SRS UNIT UPDATE), and retest.**

1. Check for any F-CAN and B-CAN communication DTCs with the HDS.

   Are there any communication DTCs?

   YES - Go to the appropriate **DTC TROUBLESHOOTING**.

   NO - Go to step 2.

2. Clear the DTCs with the HDS (see **HOW TO CLEAR DTCS**).
3. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode, then wait for 10 seconds.
4. Clear the DTCs with the HDS (see **HOW TO CLEAR DTCS**).

   Is DTC 56-26 or 56-27 indicated?

   YES - Faulty gauge control module. Do the gauge control module self-diagnostic function (see **SELF-DIAGNOSTIC FUNCTION**), and retest. If the gauge control module fails the self-diagnosis, replace the gauge control module (see **GAUGE CONTROL MODULE REPLACEMENT**), then clear the DTC, and retest. If the DTC is still present, replace the SRS unit (see **SRS UNIT REPLACEMENT**).

   NO - Intermittent failure, the system is OK at this time. Go to **TROUBLESHOOTING INTERMITTENT FAILURES**. If another DTC is indicated, troubleshoot the DTC.

DTC 61-1X ("X" CAN BE 0 THRU 9 OR A THRU F): OPEN IN THE DRIVER'S SEAT BELT BUCKLE SWITCH

NOTE:

- **Before doing this troubleshooting procedure, find out if the vehicle was in a collision. If so, verify that all the required components were replaced with new components, of the correct part number, and that they were properly installed (see COMPONENT REPLACEMENT/INSPECTION AFTER DEPLOYMENT).**
- **Before doing this troubleshooting procedure, review SRS Precautions and Procedures (see PRECAUTIONS AND PROCEDURES) and General Troubleshooting Information (see GENERAL TROUBLESHOOTING INFORMATION).**

- **Before replacing the SRS unit, check the SRS unit software version with the HDS. If the software version is not the latest, update the SRS unit software (see SRS UNIT UPDATE), and retest.**

1. Clear the DTCs with the HDS (see **HOW TO CLEAR DTCS**).
2. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode, then wait for 10 seconds. Buckle and unbuckle the driver's seat belt several times.
3. Clear the DTCs with the HDS (see **HOW TO CLEAR DTCS**).

   Is DTC 61-1x indicated?

   YES - Go to step 4.

   NO - Intermittent failure, the system is OK at this time. Go to **TROUBLESHOOTING INTERMITTENT FAILURES**. If another DTC is indicated, troubleshoot the DTC.

4. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
5. Install a jumper wire between SRS unit connector B (39P) terminal No. 19 and body ground.

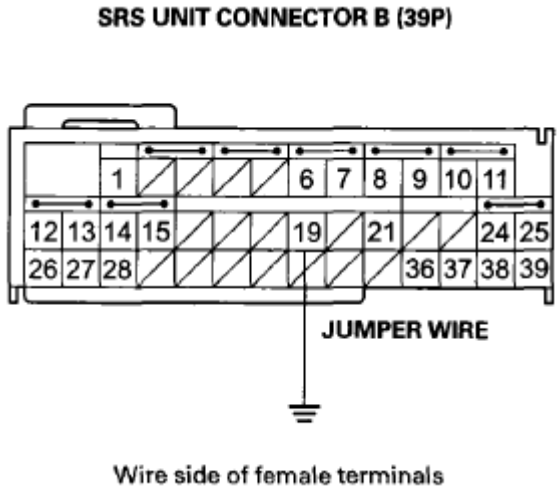


Fig. 154: Installing Jumper Wire Between SRS Unit Connector (39P) Terminal No. 19 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Clear the DTCs with the HDS (see **HOW TO CLEAR DTCS**).
7. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode, then wait for 10 seconds.
8. Clear the DTCs with the HDS (see **HOW TO CLEAR DTCS**).

   Is DTC 61-2x indicated?

   YES - Go to step 9.

NO - Faulty SRS unit or poor connection at SRS unit connector B (39P) and the SRS unit. Check the connection between the connector and the SRS unit. If the connection is OK, replace the SRS unit (see **SRS UNIT REPLACEMENT**). If the DTC does not clear, replace the SRS floor wire harness or the driver's seat wire harness.

9. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
10. Remove the jumper wire from SRS unit connector B (39P).
11. Disconnect the driver's seat wire harness 2P connector (A) from the driver's seat belt buckle switch 2P connector.

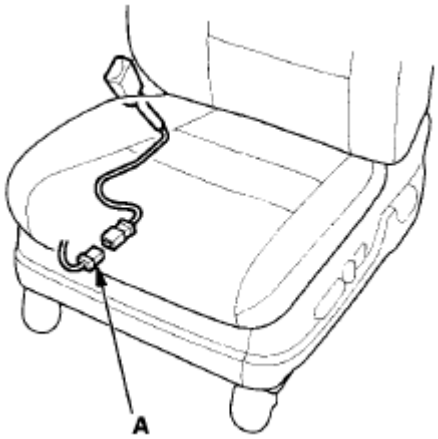


Fig. 155: Identifying Driver's Seat Wire Harness 2P Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

12. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode, then wait for 10 seconds.
13. Measure the voltage between driver's seat wire harness 2P connector terminal No. 2 and body ground. There should be more than 10 V.

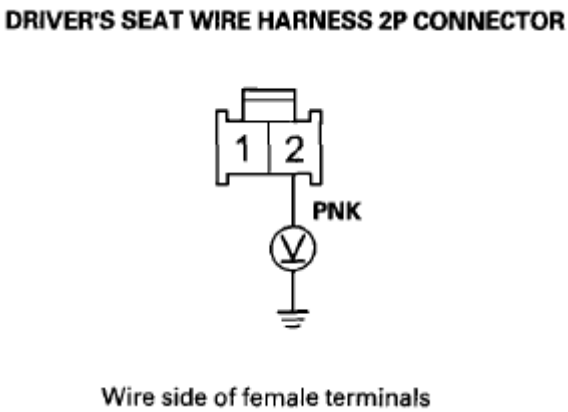


Fig. 156: Measuring Voltage Between Driver's Seat Wire Harness 2P Connector Terminal No. 2 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is the voltage as specified?

YES - Go to step 14.

NO - Open in the SRS floor wire harness or the driver's seat wire harness; replace the faulty harness, then clear the DTC.

14. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
15. Measure the resistance between driver's seat wire harness 2P connector terminal No. 1 and body ground. There should be less than 1.0 ohms.

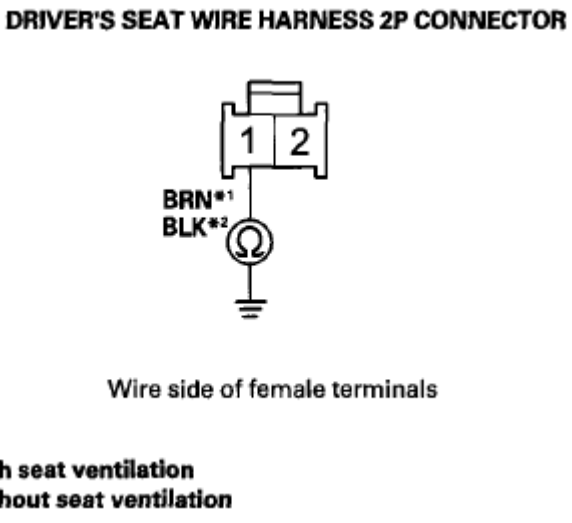


Fig. 157: Measuring Resistance Between Driver's Seat Wire Harness 2P Connector Terminal No. 1 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

***1 : With seat ventilation**

***2 : Without seat ventilation**

Is the resistance as specified?

YES - Faulty driver's seat belt buckle switch; replace the driver's seat belt buckle assembly (see **FRONT SEAT BELT BUCKLE**), then clear the DTC.

NO - Open in the SRS floor wire harness or the driver's seat wire harness; check for a poor ground at G701 (see **CONNECTOR TO FUSE/RELAY BOX INDEX**). If the ground is OK, replace the faulty harness, then clear the DTC.

DTC 61-2X ("X" CAN BE 0 THRU 9 OR A THRU F): SHORT IN THE DRIVER'S SEAT BELT BUCKLE SWITCH

NOTE:

- **Before doing this troubleshooting procedure, find out if the vehicle was in a collision. If so, verify that all the required components were replaced with new components, of the correct part number, and that they were properly installed (see COMPONENT REPLACEMENT/INSPECTION AFTER DEPLOYMENT).**
- **Before doing this troubleshooting procedure, review SRS Precautions and Procedures (see PRECAUTIONS AND PROCEDURES) and General Troubleshooting Information (see GENERAL TROUBLESHOOTING INFORMATION).**

1. Clear the DTCs with the HDS (see **HOW TO CLEAR DTCS**).
2. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode, then wait for 10 seconds. Buckle and unbuckle the driver's seat belt several times.
3. Clear the DTCs with the HDS (see **HOW TO CLEAR DTCS**).

   Is DTC 61-2x indicated?

   YES - Go to step 4.

   NO - Intermittent failure, the system is OK at this time. Go to **TROUBLESHOOTING INTERMITTENT FAILURES**. If another DTC is indicated, troubleshoot the DTC.

4. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
5. Disconnect the driver's seat wire harness 2P connector (A) from the driver's seat belt buckle switch 2P connector.

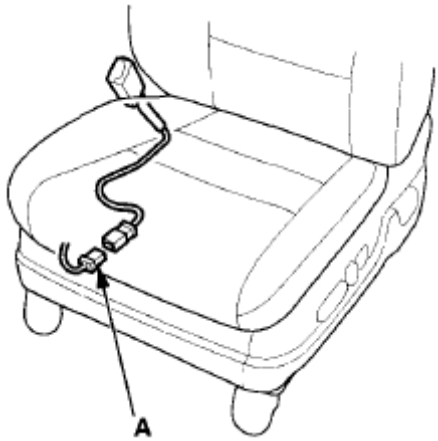


Fig. 158: Identifying Driver's Seat Wire Harness 2P Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Clear the DTCs with the HDS (see **HOW TO CLEAR DTCS**).
7. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode, then wait for 10 seconds.

8. Clear the DTCs with the HDS (see **HOW TO CLEAR DTCS**).

   Is DTC 61-2x indicated?

   YES - Short to ground in the SRS floor wire harness or the driver's seat wire harness; replace the faulty harness, then clear the DTC.

   NO - Faulty driver's seat belt buckle switch; replace the driver's seat belt buckle assembly (see **FRONT SEAT BELT BUCKLE**), then clear the DTC.

DTC 62-1X ("X" CAN BE 0 THRU 9 OR A THRU F): OPEN IN THE FRONT PASSENGER'S SEAT BELT BUCKLE SWITCH

NOTE:

- **Before doing this troubleshooting procedure, find out if the vehicle was in a collision. If so, verify that all the required components were replaced with new components, of the correct part number, and that they were properly installed (see COMPONENT REPLACEMENT/INSPECTION AFTER DEPLOYMENT).**
- **Before doing this troubleshooting procedure, review SRS Precautions and Procedures (see PRECAUTIONS AND PROCEDURES) and General Troubleshooting Information (see GENERAL TROUBLESHOOTING INFORMATION).**
- **Before replacing the SRS unit, check the SRS unit software version with the HDS. If the software version is not the latest, update the SRS unit software (see SRS UNIT UPDATE), and retest.**

1. Clear the DTCs with the HDS (see **HOW TO CLEAR DTCS**).
2. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode, then wait for 10 seconds. Buckle and unbuckle the front passenger's seat belt several times.
3. Clear the DTCs with the HDS (see **HOW TO CLEAR DTCS**).

   Is DTC 62-1x indicated?

   YES - Go to step 4.

   NO - Intermittent failure, the system is OK at this time. Go to **TROUBLESHOOTING INTERMITTENT FAILURES**. If another DTC is indicated, troubleshoot the DTC.

4. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
5. Install a jumper wire between SRS unit connector B (39P) terminal No. 21 and body ground.

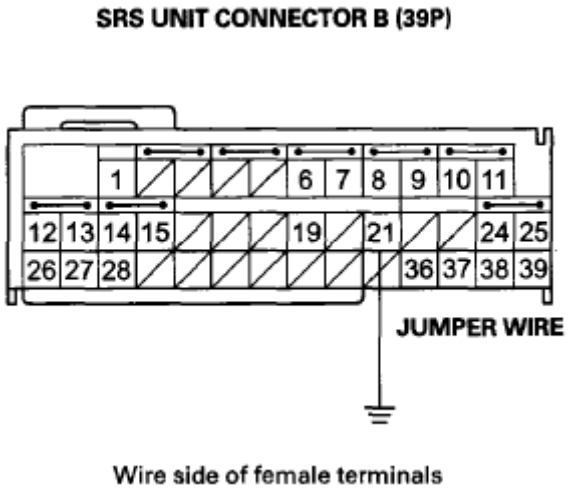


Fig. 159: Installing Jumper Wire Between SRS Unit Connector B (39P) Terminal No. 21 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Clear the DTCs with the HDS (see **HOW TO CLEAR DTCS**).
7. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode, then wait for 10 seconds.
8. Clear the DTCs with the HDS (see **HOW TO CLEAR DTCS**).

   Is DTC 62-2x indicated?

   YES - Go to step 9.

   NO - Faulty SRS unit or poor connection at SRS unit connector B (39P) and the SRS unit. Check the connection between the connector and the SRS unit. If the connection is OK, replace the SRS unit (see **SRS UNIT REPLACEMENT**). If the DTC does not clear, replace the SRS floor wire harness or the front passenger's seat wire harness.

9. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
10. Remove the jumper wire from SRS unit connector B (39P).
11. Disconnect the front passenger's seat wire harness 2P connector (A) from the front passenger's seat belt buckle switch 2P connector.

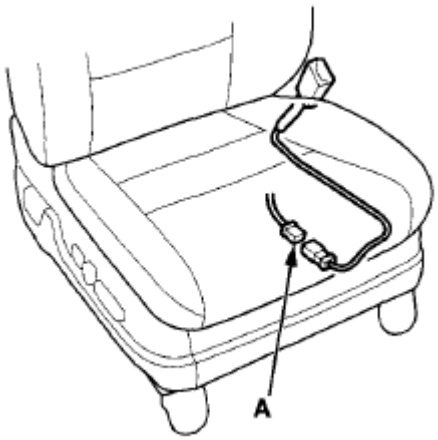


Fig. 160: Identifying Front Passenger's Seat Wire Harness 2P Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

12. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode, then wait for 10 seconds.
13. Measure the voltage between front passenger's seat wire harness 2P connector terminal No. 2 and body ground. There should be more than 10 V.

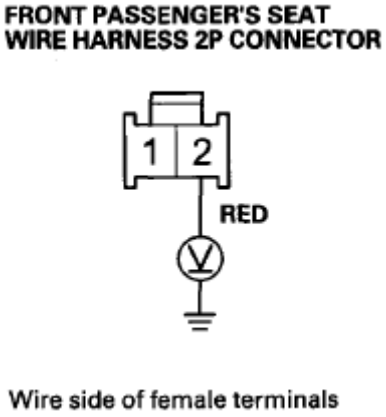


Fig. 161: Measuring Voltage Between Front Passenger's Seat Wire Harness 2P Connector Terminal No. 2 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is the voltage as specified?

YES - Go to step 14.

NO - Open in the SRS floor wire harness or the front passenger's seat wire harness; replace the faulty harness, then clear the DTC.

14. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
15. Measure the resistance between front passenger's seat wire harness 2P connector terminal No. 1 and body

ground. There should be less than 1.0 ohms.

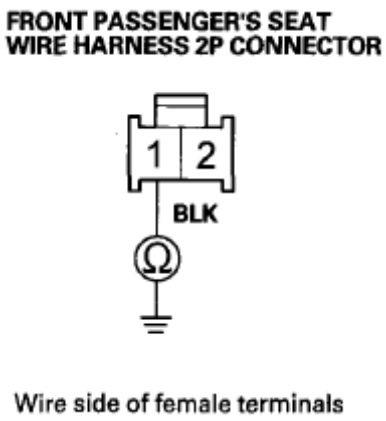


Fig. 162: Measuring Resistance Between Front Passenger's Seat Wire Harness 2P Connector Terminal No. 1 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is the resistance as specified?

YES - Faulty front passenger's seat belt buckle switch; replace the front passenger's seat belt buckle assembly (see **FRONT SEAT BELT BUCKLE**), then clear the DTC.

NO - Open in the SRS floor wire harness or the front passenger's seat wire harness; check for a poor ground at G702 (see **CONNECTOR TO FUSE/RELAY BOX INDEX**). If the ground is OK, replace the faulty harness, then clear the DTC.

DTC 62-2X ("X" CAN BE 0 THRU 9 OR A THRU F): SHORT IN THE FRONT PASSENGER'S SEAT BELT BUCKLE SWITCH

NOTE:

- **Before doing this troubleshooting procedure, find out if the vehicle was in a collision. If so, verify that all the required components were replaced with new components, of the correct part number, and that they were properly installed (see COMPONENT REPLACEMENT/INSPECTION AFTER DEPLOYMENT).**
- **Before doing this troubleshooting procedure, review SRS Precautions and Procedures (see PRECAUTIONS AND PROCEDURES) and General Troubleshooting Information (see GENERAL TROUBLESHOOTING INFORMATION).**

1. Clear the DTCs with the HDS (see **HOW TO CLEAR DTCS**).
2. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode, then wait for 10 seconds. Buckle and unbuckle the front passenger's seat belt several times.
3. Clear the DTCs with the HDS (see **HOW TO CLEAR DTCS**).

Is DTC 62-2x indicated?

YES - Go to step 4.

NO - Intermittent failure, the system is OK at this time. Go to **TROUBLESHOOTING INTERMITTENT FAILURES**. If another DTC is indicated, troubleshoot the DTC.

4. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
5. Disconnect the front passenger's seat wire harness 2P connector (A) from the front passenger's seat belt buckle switch 2P connector.

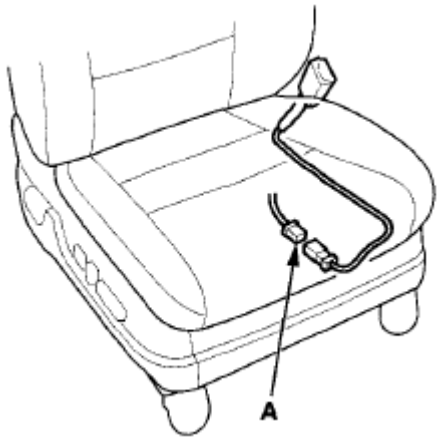


Fig. 163: Identifying Front Passenger's Seat Wire Harness 2P Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Clear the DTCs with the HDS (see **HOW TO CLEAR DTCS**).
7. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode, then wait for 10 seconds.
8. Clear the DTCs with the HDS (see **HOW TO CLEAR DTCS**).

Is DTC 62-2x indicated?

YES - Short to ground in the SRS floor wire harness or the front passenger's seat wire harness; replace the faulty harness, then clear the DTC.

NO - Faulty front passenger's seat belt buckle switch; replace the front passenger's seat belt buckle assembly (see **FRONT SEAT BELT BUCKLE**), then clear the DTC.

DTC 71-1X ("X" CAN BE 0 THRU 9 OR A THRU F): OPEN IN THE DRIVER'S SEAT POSITION SENSOR

NOTE:

- **Before doing this troubleshooting procedure, find out if the vehicle was in a collision. If so, verify that all the required components were replaced with new components, of the correct part number, and that they were properly installed (see COMPONENT REPLACEMENT/INSPECTION AFTER DEPLOYMENT).**

- **Before doing this troubleshooting procedure, review SRS Precautions and Procedures (see PRECAUTIONS AND PROCEDURES), General Troubleshooting Information (see GENERAL TROUBLESHOOTING INFORMATION), and Battery Terminal Disconnection and Reconnection (see BATTERY TERMINAL DISCONNECTION AND RECONNECTION).**
- **Before replacing the SRS unit, check the SRS unit software version with the HDS. If the software version is not the latest, update the SRS unit software (see SRS UNIT UPDATE), and retest.**

1. Raise the driver's seat all the way up.
2. Clear the DTCs with the HDS (see **HOW TO CLEAR DTCS**).
3. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode, then wait for 10 seconds.
4. Clear the DTCs with the HDS (see **HOW TO CLEAR DTCS**).

   Is DTC 71-1x indicated?

   YES - Go to step 5.

   NO - Intermittent failure, the system is OK at this time. Go to **TROUBLESHOOTING INTERMITTENT FAILURES**. If another DTC is indicated, troubleshoot the DTC.

5. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
6. Check for these connector connections and body ground.
   - SRS unit connector B (39P) and the SRS unit (see **DISCONNECTING SYSTEM CONNECTORS**).
   - Driver's seat wire harness and the driver's seat position sensor (see **DRIVER'S SEAT POSITION SENSOR REPLACEMENT**).
   - C701 (see **CONNECTOR TO FUSE/RELAY BOX INDEX**).
   - G701 (see **CONNECTOR TO FUSE/RELAY BOX INDEX**).

   Are the connector connections and body ground OK?

   YES - Go to step 7.

   NO - Repair the poor connections or body ground, then clear the DTC, and retest. If DTC 71-1x is still present, go to step 7.

7. Disconnect the driver's seat wire harness 2P connector (A) from the driver's seat position sensor (see **DRIVER'S SEAT POSITION SENSOR REPLACEMENT**).

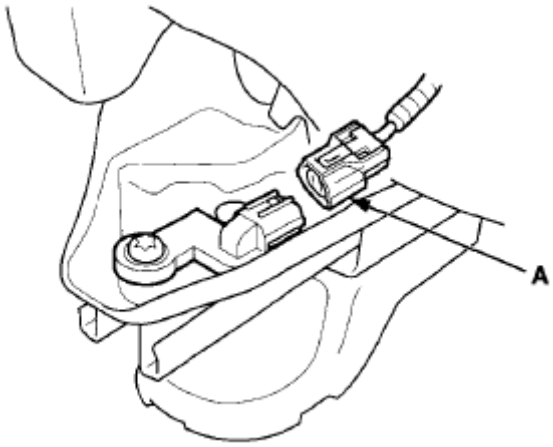


Fig. 164: Identifying Driver's Seat Wire Harness 2P Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

8. Install a jumper wire between driver's seat wire harness 2P connector terminals No. 1 and No. 2.

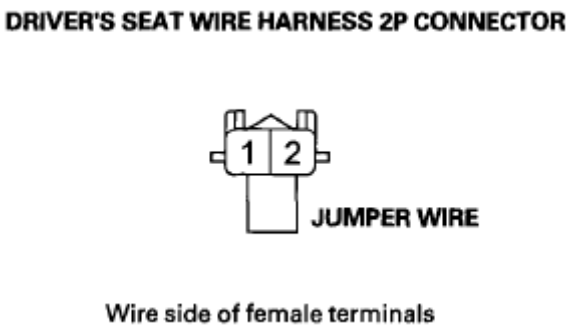


Fig. 165: Installing Jumper Wire Between Driver's Seat Wire Harness 2P Connector Terminals No. 1 And No. 2
Courtesy of AMERICAN HONDA MOTOR CO., INC.

9. Disconnect the negative cable from the battery, then wait at least 3 minutes.
10. Disconnect SRS unit connector B (39P) from the SRS unit (see **DISCONNECTING SYSTEM CONNECTORS**).
11. Measure the resistance between SRS unit connector B (39P) terminal No. 28 and body ground. There should be less than 1.0 ohms.

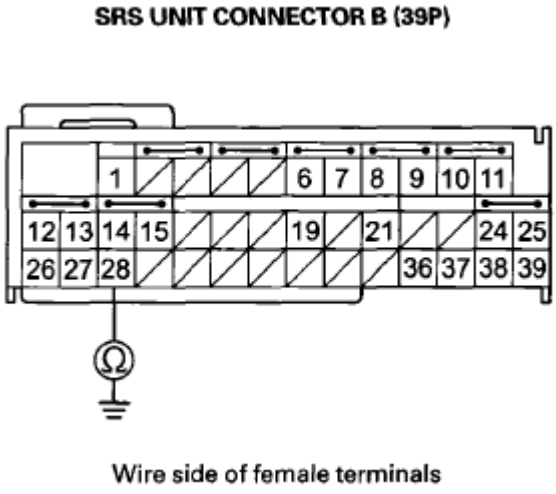


Fig. 166: Measuring Resistance Between SRS Unit Connector B (39P) Terminal No. 28 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is the resistance as specified?

YES - Faulty driver's seat position sensor or SRS unit; replace the driver's seat position sensor (see **DRIVER'S SEAT POSITION SENSOR REPLACEMENT**), then clear the DTC, and retest. If the DTC is still present, replace the SRS unit (see **SRS UNIT REPLACEMENT**).

NO - Open in the SRS floor wire harness or the driver's seat wire harness; replace the faulty harness, then clear the DTC.

DTC 71-2X ("X" CAN BE 0 THRU 9 OR A THRU F): SHORT IN THE DRIVER'S SEAT POSITION SENSOR

NOTE:

- **Before doing this troubleshooting procedure, find out if the vehicle was in a collision. If so, verify that all the required components were replaced with new components, of the correct part number, and that they were properly installed (see COMPONENT REPLACEMENT/INSPECTION AFTER DEPLOYMENT).**
- **Before doing this troubleshooting procedure, review SRS Precautions and Procedures (see PRECAUTIONS AND PROCEDURES), General Troubleshooting Information (see GENERAL TROUBLESHOOTING INFORMATION), and Battery Terminal Disconnection and Reconnection (see BATTERY TERMINAL DISCONNECTION AND RECONNECTION).**
- **Before replacing the SRS unit, check the SRS unit software version with the HDS. If the software version is not the latest, update the SRS unit software (see SRS UNIT UPDATE), and retest.**

1. Raise the driver's seat all the way up.
2. Clear the DTCs with the HDS (see **HOW TO CLEAR DTCS**).

3. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode, then wait for 10 seconds.
4. Clear the DTCs with the HDS (see **HOW TO CLEAR DTCS**).

   Is DTC 71-2x indicated?

   YES - Go to step 5.

   NO - Intermittent failure, the system is OK at this time. Go to **TROUBLESHOOTING INTERMITTENT FAILURES**. If another DTC is indicated, troubleshoot the DTC.

5. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
6. Disconnect the driver's seat wire harness 2P connector (A) from the driver's seat position sensor (see **DRIVER'S SEAT POSITION SENSOR REPLACEMENT**).

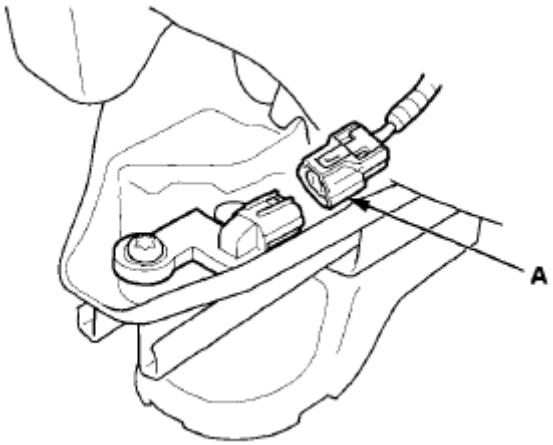


Fig. 167: Identifying Driver's Seat Wire Harness 2P Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Clear the DTCs with the HDS (see **HOW TO CLEAR DTCS**).
8. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode, then wait for 10 seconds.
9. Clear the DTCs with the HDS (see **HOW TO CLEAR DTCS**).

   Is DTC 71-2x indicated?

   YES - Go to step 10.

   NO - Faulty driver's seat position sensor; replace the driver's seat position sensor (see **DRIVER'S SEAT POSITION SENSOR REPLACEMENT**), then clear the DTC.

10. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
11. Disconnect the negative cable from the battery, then wait at least 3 minutes.

12. Disconnect SRS unit connector B (39P) from the SRS unit (see **DISCONNECTING SYSTEM CONNECTORS**).
13. Measure the resistance between SRS unit connector B (39P) terminal No. 28 and body ground. There should be an open circuit or at least 1 Mohms

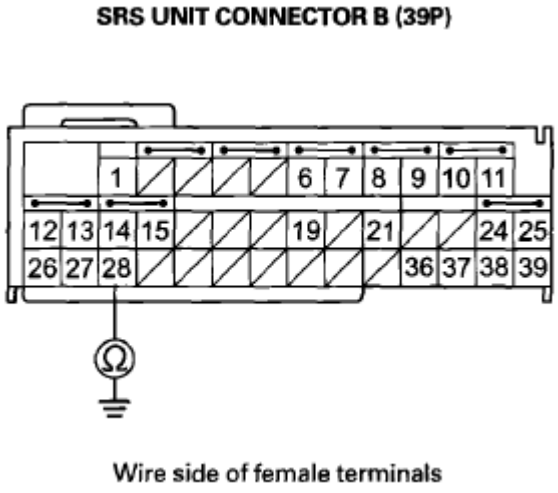


Fig. 168: Measuring Resistance Between SRS Unit Connector B (39P) Terminal No. 28 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is the resistance as specified?

YES - Faulty driver's seat position sensor or SRS unit; replace the driver's seat position sensor (see **DRIVER'S SEAT POSITION SENSOR REPLACEMENT**), then clear the DTC, and retest. If the DTC is still present, replace the SRS unit (see **SRS UNIT REPLACEMENT**).

NO - Short to ground in the SRS floor wire harness or the driver's seat wire harness; replace the faulty harness, then clear the DTC.

DTC 81-4X ("X" CAN BE 0 THRU 9 OR A THRU F), 81-63, 81-64: INTERNAL THE FAILURE OF THE ODS UNIT

NOTE:

- **Before doing this troubleshooting procedure, find out if the vehicle was in a collision. If so, verify that all the required components were replaced with new components, of the correct part number, and that they were properly installed (see COMPONENT REPLACEMENT/INSPECTION AFTER DEPLOYMENT).**
- **Before doing this troubleshooting procedure, review SRS Precautions and Procedures (see PRECAUTIONS AND PROCEDURES) and General Troubleshooting Information (see GENERAL TROUBLESHOOTING INFORMATION).**
- **Before replacing the SRS unit, check the SRS unit software version with**

the HDS. If the software version is not the latest, update the SRS unit software (see SRS UNIT UPDATE), and retest.

- **These DTCs are codes that relate to the front passenger's weight sensor operation.**

1. Clear the DTCs with the HDS (see **HOW TO CLEAR DTCS**).
2. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode, then wait for 10 seconds.
3. Clear the DTCs with the HDS (see **HOW TO CLEAR DTCS**).

   Is DTC 81-4x, 81-63, or 81-64 indicated?

   YES - Go to step 4.

   NO - Intermittent failure, the system is OK at this time. Go to **TROUBLESHOOTING INTERMITTENT FAILURES**. If another DTC is indicated, troubleshoot the DTC.

4. Clear the DTCs with the HDS (see **HOW TO CLEAR DTCS**).
5. Do the front passenger's weight sensor initialization (see **FRONT PASSENGER'S WEIGHT SENSOR INITIALIZATION**).
6. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode, then wait for 10 seconds.
7. Clear the DTCs with the HDS (see **HOW TO CLEAR DTCS**).

   Is DTC 81-4x, 81-63, or 81-64 indicated?

   YES - Go to step 8.

   NO - The system is OK at this time.

8. Replace the ODS unit (see **ODS UNIT REPLACEMENT**).
9. Clear the DTCs with the HDS (see **HOW TO CLEAR DTCS**).
10. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode, then wait for 10 seconds.
11. Clear the DTCs with the HDS (see **HOW TO CLEAR DTCS**).

    Is DTC 81-4x, 81-63, or 81-64 indicated?

    YES - Replace the SRS unit (see **SRS UNIT REPLACEMENT**).

    NO - The system is OK at this time.

DTC 81-61: NO SIGNAL FROM THE ODS UNIT; DTC 81-62: INCORRECT DATA FROM THE ODS UNIT

NOTE:

- **Before doing this troubleshooting procedure, find out if the vehicle was in a collision. If so, verify that all the required components were replaced with new components, of the correct part number, and that they were properly installed (see COMPONENT REPLACEMENT/INSPECTION AFTER DEPLOYMENT).**
- **Before doing this troubleshooting procedure, review SRS Precautions and Procedures (see PRECAUTIONS AND PROCEDURES), General Troubleshooting Information (see GENERAL TROUBLESHOOTING INFORMATION), and Battery Terminal Disconnection and Reconnection (see BATTERY TERMINAL DISCONNECTION AND RECONNECTION).**
- **Before replacing the SRS unit, check the SRS unit software version with the HDS. If the software version is not the latest, update the SRS unit software (see SRS UNIT UPDATE), and retest.**
- **These DTCs are codes that relate to the front passenger's weight sensor operation.**

1. Make sure nothing is on the front passenger's seat.
2. Clear the DTCs with the HDS (see **HOW TO CLEAR DTCS**).
3. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode, then wait for 10 seconds.
4. Clear the DTCs with the HDS (see **HOW TO CLEAR DTCS**).

   Is DTC 81-61 or 81-62 indicated?

   YES - Go to step 5.

   NO - Intermittent failure, the system is OK at this time. Go to **TROUBLESHOOTING INTERMITTENT FAILURES**. If another DTC is indicated, troubleshoot the DTC.

5. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
6. Check the No. 5 (7.5 A) fuse in the driver's under-dash fuse/relay box.

   Is the fuse OK?

   YES - Go to step 7.

   NO - Replace the fuse, then turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode. If the fuse blows again, check for a short to ground in the driver's under-dash fuse/relay box No. 5 (7.5 A) fuse circuit (dashboard wire harness, SRS floor wire harness, or front passenger's seat wire harness); replace the faulty harness, then clear the DTC, and retest. If the DTC is still present, replace the driver's under-dash fuse/relay box (see **DRIVER'S UNDER-DASH FUSE/RELAY BOX (MICU) REMOVAL AND INSTALLATION**), then clear the DTC.

7. Remove the front seat back panel (see **FRONT SEAT-BACK COVER REPLACEMENT**).
8. Turn over the seat-back cover/pad to gain access to the ODS unit (see **ODS Unit Replacement**).

9. Remove the cover from the ODS unit (see step 5).
10. Check the connector connection between the ODS unit 18P connector (A) and the ODS unit (B).

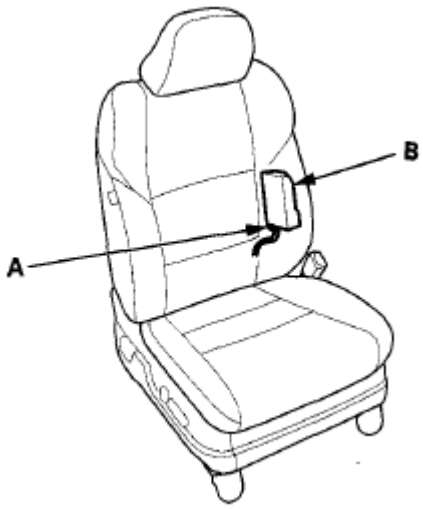


Fig. 169: Identifying ODS Unit 18P Connector And ODS Unit
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is the connector connection OK?

YES - Go to step 11.

NO - Repair the poor connector connection, then clear the DTC, and retest. If DTC 81-61 or 81-62 is still present, go to step 11.

11. Disconnect the ODS unit 18P connector (A) from the ODS unit (B).

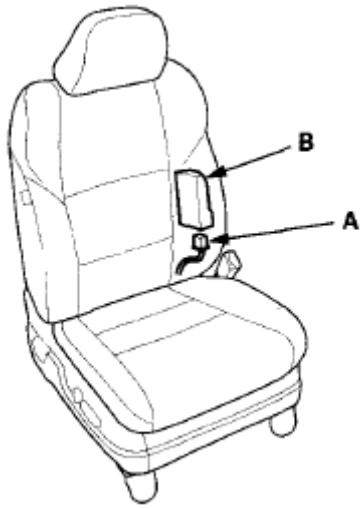


Fig. 170: Identifying ODS Unit 18P Connector From ODS Unit
Courtesy of AMERICAN HONDA MOTOR CO., INC.

12. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode, then wait for 10 seconds.
13. Measure the voltage between ODS unit 18P connector terminal No. 1 and body ground. There should be battery voltage.

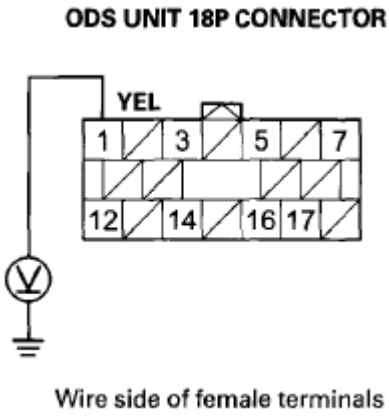


Fig. 171: Measuring Voltage Between ODS Unit 18P Connector Terminal No. 1 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there battery voltage?

YES - Go to step 14.

NO - Open in the dashboard wire harness, the SRS floor wire harness, or the front passenger's seat wire harness; replace the faulty harness, then clear the DTC.

14. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
15. Measure the resistance between ODS unit 18P connector terminals No. 12 and body ground. There should be less than 1.0 ohms.

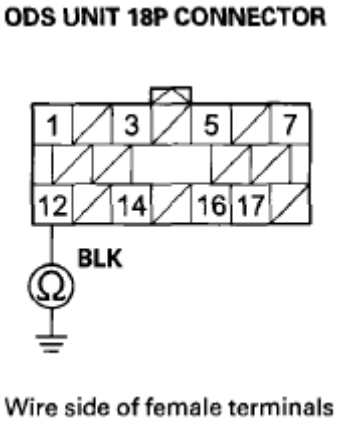


Fig. 172: Measuring Resistance Between ODS Unit 18P Connector Terminals No. 12 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is the resistance as specified?

YES - Go to step 16.

NO - Open in the SRS floor wire harness, the front passenger's seat wire harness, poor connection at the ground G702 (see **CONNECTOR TO FUSE/RELAY BOX INDEX**), or poor connection at the ODS unit 18P connector and the ODS unit. Check the connectors; if the connection is OK, replace the faulty harness, then clear the DTC.

16. Disconnect the negative cable from the battery, then wait at least 3 minutes.
17. Disconnect SRS unit connector B (39P) from the SRS unit (see step 10).
18. Measure the resistance between SRS unit connector B (39P) terminal No. 1 and body ground. There should be an open circuit or at least 1 Mohms.

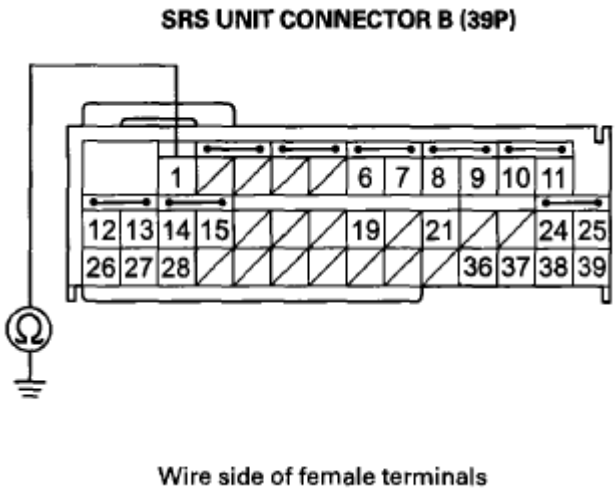


Fig. 173: Measuring Resistance Between SRS Unit Connector (39P) Terminal No. 1 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is the resistance as specified?

YES - Go to step 19.

NO - Short to ground in the SRS floor wire harness or the front passenger's seat wire harness; replace the faulty harness, then clear the DTC.

19. Reconnect the negative cable to the battery.
20. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
21. Measure the voltage between SRS unit connector B (39P) terminal No. 1 and body ground. There should be less than 0.2 V.

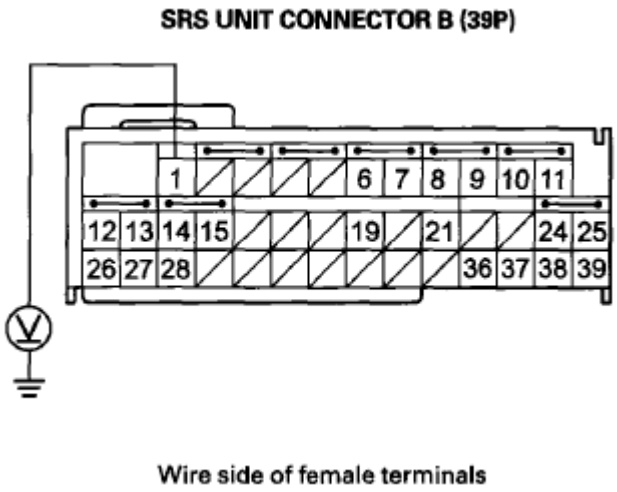


Fig. 174: Measuring Voltage Between SRS Unit Connector B (39P) Terminal No. 1 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is the voltage as specified?

YES - Go to step 22.

NO - Short to power in the SRS floor wire harness or the front seat passenger's seat wire harness; replace the faulty harness, then clear the DTC.

22. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
23. Measure the resistance between SRS unit connector B (39P) terminal No. 1 and ODS unit 18P connector terminal No. 7. There should be less than 1.0 ohms.

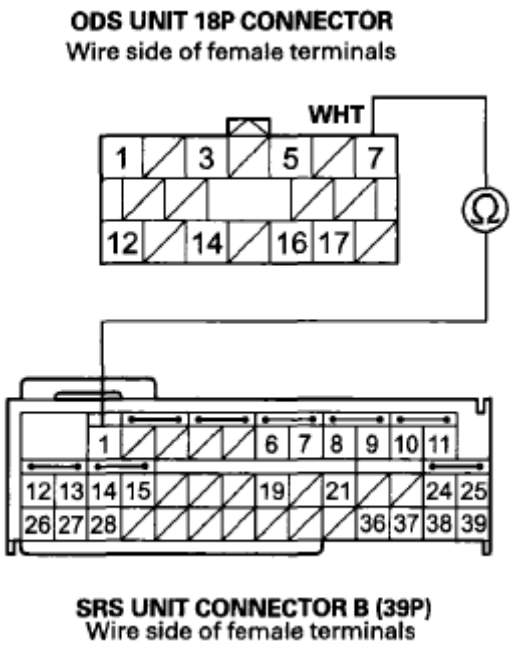


Fig. 175: Measuring Resistance Between SRS Unit Connector B (39P) Terminal No. 1 And ODS Unit 18P Connector Terminal No. 7
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is the resistance as specified?

YES - Faulty ODS unit or SRS unit; replace the ODS unit (see **ODS UNIT REPLACEMENT**), then clear the DTC, and retest. If the DTC is still present, replace the SRS unit (see **SRS UNIT REPLACEMENT**).

NO - Open in the harness between SRS unit connector B (39P) terminal No. 1 and ODS unit 18P connector terminal No. 7 (SRS floor wire harness or front passenger's seat wire harness); replace the faulty harness, then clear the DTC.

DTC 81-71, 81-78: ODS UNIT NOT CALIBRATED

NOTE:

- **Before doing this troubleshooting procedure, find out if the vehicle was in a collision. If so, verify that all the required components were replaced with new components, of the correct part number, and that they were properly installed (see COMPONENT REPLACEMENT/INSPECTION AFTER DEPLOYMENT).**
- **Before doing this troubleshooting procedure, review SRS Precautions and Procedures (see PRECAUTIONS AND PROCEDURES) and General Troubleshooting Information (see GENERAL TROUBLESHOOTING INFORMATION).**
- **Before replacing the SRS unit, check the SRS unit software version with the HDS. If the software version is not the latest, update the SRS unit software (see SRS UNIT UPDATE), and retest.**

- **These DTCs are codes that relate to the front passenger's weight sensor operation.**

1. Clear the DTCs with the HDS (see **HOW TO CLEAR DTCS**).
2. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode, then wait for 10 seconds.
3. Clear the DTCs with the HDS (see **HOW TO CLEAR DTCS**).

   Is DTC 81-71 or 81-78 indicated?

   YES - Go to step 4.

   NO - Intermittent failure, the system is OK at this time. Go to **TROUBLESHOOTING INTERMITTENT FAILURES**. If another DTC is indicated, troubleshoot the DTC.

4. Clear the DTCs with the HDS (see **HOW TO CLEAR DTCS**).
5. Do the front passenger's weight sensor initialization (see **FRONT PASSENGER'S WEIGHT SENSOR INITIALIZATION**).
6. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode, then wait for 10 seconds.
7. Clear the DTCs with the HDS (see **HOW TO CLEAR DTCS**).

   Is DTC 81-71 or 81-78 indicated?

   YES - Go to step 8.

   NO - The system is OK at this time.

8. Replace the ODS unit (see **ODS UNIT REPLACEMENT**).
9. Clear the DTCs with the HDS (see **HOW TO CLEAR DTCS**).
10. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode, then wait for 10 seconds.
11. Clear the DTCs with the HDS (see **HOW TO CLEAR DTCS**).

    Is DTC 81-71 or 81-78 indicated?

    YES - Replace the SRS unit (see **SRS UNIT REPLACEMENT**).

    NO - The system is OK at this time.

DTC 81-79: FRONT PASSENGER'S WEIGHT SENSORS INITIAL CHECK FAILURE

NOTE:

- **Before doing this troubleshooting procedure, find out if the vehicle was in a collision. If so, verify that all the required components were replaced**

with new components, of the correct part number, and that they were properly installed (see COMPONENT REPLACEMENT/INSPECTION AFTER DEPLOYMENT).

- **Before doing this troubleshooting procedure, review SRS Precautions and Procedures (see PRECAUTIONS AND PROCEDURES) and General Troubleshooting Information (see GENERAL TROUBLESHOOTING INFORMATION).**
- **Before replacing the SRS unit, check the SRS unit software version with the HDS. If the software version is not the latest, update the SRS unit software (see SRS UNIT UPDATE), and retest.**
- **These DTCs are codes that relate to the front passenger's weight sensor operation.**

1. Clear the DTCs with the HDS (see **HOW TO CLEAR DTCS**).
2. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode, then wait for 10 seconds.
3. Clear the DTCs with the HDS (see **HOW TO CLEAR DTCS**).

   Is DTC 81-79 indicated?

   YES - Go to step 4.

   NO - Intermittent failure, the system is OK at this time. Go to **TROUBLESHOOTING INTERMITTENT FAILURES**. If another DTC is indicated, troubleshoot the DTC.

4. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
5. Make sure nothing is on the front passenger's seat.
6. Clear the DTCs with the HDS (see **HOW TO CLEAR DTCS**).
7. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode, then wait for 10 seconds.
8. Clear the DTCs with the HDS (see **HOW TO CLEAR DTCS**).

   Is DTC 81-79 indicated?

   YES - Go to step 9.

   NO - The system is OK at this time.

9. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
10. Loosen the front passenger's seat mounting bolts (see **FRONT SEAT REMOVAL/INSTALLATION**), and shake the seat in all directions. Tighten the seat mounting bolts to the specified torque.
11. Clear the DTCs with the HDS (see **HOW TO CLEAR DTCS**).
12. Do the front passenger's weight sensor initialization (see **FRONT PASSENGER'S WEIGHT SENSOR INITIALIZATION**).

13. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode, then wait for 10 seconds.
14. Clear the DTCs with the HDS (see **HOW TO CLEAR DTCS**).

    Is DTC 81-79 indicated?

    YES - Go to step 15.

    NO - The system is OK at this time.

15. Replace the front passenger's weight sensor assembly (see **FRONT PASSENGER'S WEIGHT SENSOR REPLACEMENT**).
16. Clear the DTCs with the HDS (see **HOW TO CLEAR DTCS**).
17. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode, then wait for 10 seconds.
18. Clear the DTCs with the HDS (see **HOW TO CLEAR DTCS**).

    Is DTC 81-79 indicated?

    YES - Replace the ODS unit (see **ODS UNIT REPLACEMENT**), then clear the DTC, and retest. If the DTC is still present, replace the SRS unit (see **SRS UNIT REPLACEMENT**).

    NO - The system is OK at this time.

DTC 82-11: NO SIGNAL FROM THE INNER SIDE FRONT PASSENGER'S WEIGHT SENSOR

NOTE:

- **Before doing this troubleshooting procedure, find out if the vehicle was in a collision. If so, verify that all the required components were replaced with new components, of the correct part number, and that they were properly installed (see COMPONENT REPLACEMENT/INSPECTION AFTER DEPLOYMENT).**
- **Before doing this troubleshooting procedure, review SRS Precautions and Procedures (see PRECAUTIONS AND PROCEDURES) and General Troubleshooting Information (see GENERAL TROUBLESHOOTING INFORMATION).**
- **These SWS DTCs are cleared when you turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.**

1. Clear the DTCs with the HDS (see **HOW TO CLEAR DTCS**).
2. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode, then wait for 10 seconds.
3. Clear the DTCs with the HDS (see **HOW TO CLEAR DTCS**).

   Is DTC 82-11 indicated?

YES - Go to step 4.

NO - Intermittent failure, the system is OK at this time. Go to **TROUBLESHOOTING INTERMITTENT FAILURES**. If another DTC is indicated, troubleshoot the DTC.

4. From the HDS Main Menu, select SRS, then Inspection. In the Inspection Menu, select SWS DTC CHECK.

   Is an SWS DTC also indicated?

   YES -

   - DTC 11-11: Short to power in the front passenger's weight sensor (inner side) power circuit; go to step 5.
   - DTC 11-12: Short to ground in the front passenger's weight sensor (inner side) power circuit; go to step 11.

   NO - Intermittent failure, the system is OK at this time. Go to **TROUBLESHOOTING INTERMITTENT FAILURES**.

5. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
6. Disconnect the front passenger's seat wire harness 2P connector (A) from the front passenger's weight sensor (inner side).

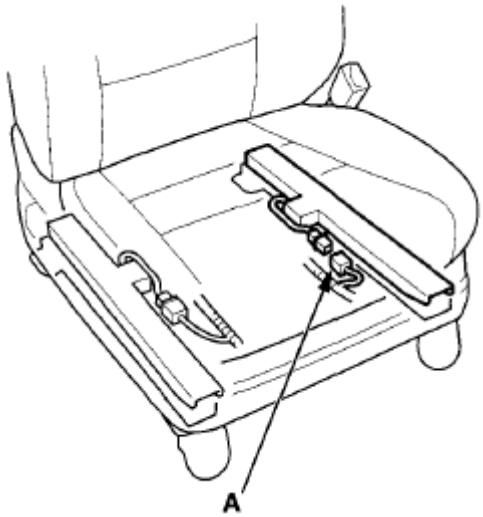


Fig. 176: Identifying Front Passenger's Seat Wire Harness 2P Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
8. Clear the DTCs with the HDS (see **HOW TO CLEAR DTCS**).
9. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode, then wait for 10 seconds.

10. From the HDS Main Menu, select SRS, then Inspection. In the Inspection Menu, select SWS DTC CHECK.

    Is SWS DTC 11-11 indicated?

    YES - Short to power in the front passenger's seat wire harness; replace the front passenger's seat wire harness, then clear the DTC, and retest If the DTC is still present, replace the ODS unit (see **ODS UNIT REPLACEMENT**).

    NO - Faulty front passenger's weight sensor (inner side); replace the front passenger's seat frame/front passenger's weight sensors as an assembly (see **FRONT PASSENGER'S WEIGHT SENSOR REPLACEMENT**), then clear the DTC.

11. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
12. Disconnect the front passenger's seat wire harness 2P connector (A) from the front passenger's weight sensor (inner side).

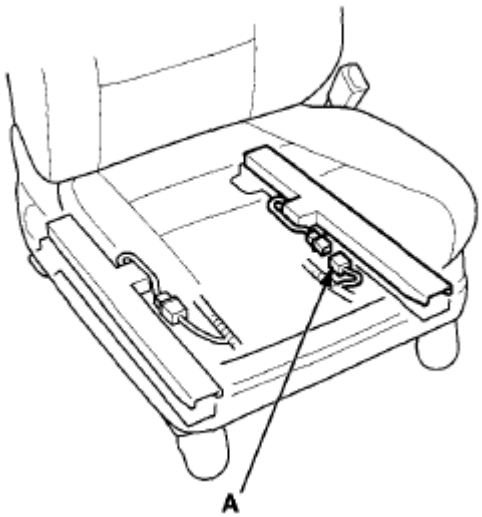


Fig. 177: Identifying Front Passenger's Seat Wire Harness 2P Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

13. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
14. Clear the DTCs with the HDS (see **HOW TO CLEAR DTCS**).
15. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode, then wait for 10 seconds.
16. From the HDS Main Menu, select SRS, then Inspection. In the Inspection Menu, select SWS DTC CHECK.

    Is SWS DTC 11-12 indicated?

    YES - Go to step 17.

NO - Faulty front passenger's weight sensor (inner side); replace the front passenger's seat frame/front passenger's weight sensors as an assembly (see **FRONT PASSENGER'S WEIGHT SENSOR REPLACEMENT**), then clear the DTC.

17. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
18. Measure the resistance between front passenger's seat wire harness 2P connector terminal No. 2 and body ground. There should be an open circuit or at least 1 Mohms

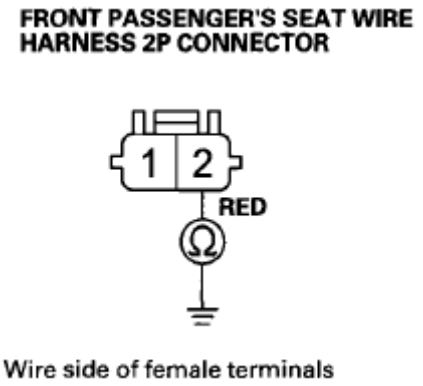


Fig. 178: Measuring Resistance Between Front Passenger's Seat Wire Harness 2P Connector Terminal No. 2 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is the resistance as specified?

YES - Faulty ODS unit; replace the ODS unit (see **ODS UNIT REPLACEMENT**), then clear the DTC.

NO - Short to ground in the front passenger's seat wire harness; replace the front passenger's seat wire harness, then clear the DTC.

DTC 82-12: NO SIGNAL FROM THE INNER SIDE FRONT PASSENGER'S WEIGHT SENSOR

NOTE:

- **Before doing this troubleshooting procedure, find out if the vehicle was in a collision. If so, verify that all the required components were replaced with new components, of the correct part number, and that they were properly installed (see COMPONENT REPLACEMENT/INSPECTION AFTER DEPLOYMENT).**
- **Before doing this troubleshooting procedure, review SRS Precautions and Procedures (see PRECAUTIONS AND PROCEDURES) and General Troubleshooting Information (see GENERAL TROUBLESHOOTING INFORMATION).**

1. Clear the DTCs with the HDS (see **HOW TO CLEAR DTCS**).
2. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode, then wait for 10 seconds.

3. Clear the DTCs with the HDS (see **HOW TO CLEAR DTCS**).

   Is DTC 82-12 indicated?

   YES - Go to step 4.

   NO - Intermittent failure, the system is OK at this time. Go to **TROUBLESHOOTING INTERMITTENT FAILURES**. If another DTC is indicated, troubleshoot the DTC.

4. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
5. Disconnect the front passenger's seat wire harness 2P connector (A) from the front passenger's weight sensor (inner side).

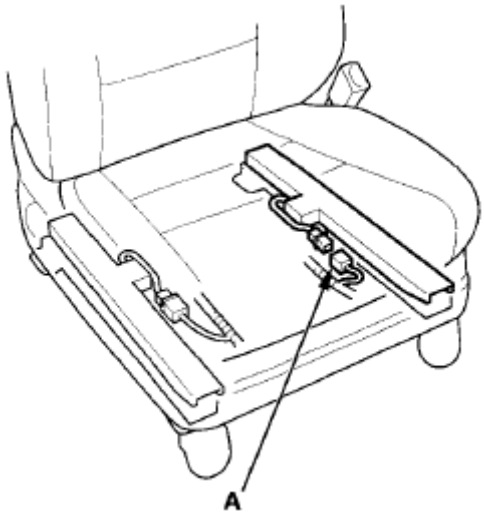


Fig. 179: Identifying Front Passenger's Seat Wire Harness 2P Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
7. Measure the voltage between front passenger's seat wire harness 2P connector terminals No. 1 and No. 2. There should be more than 6 V.

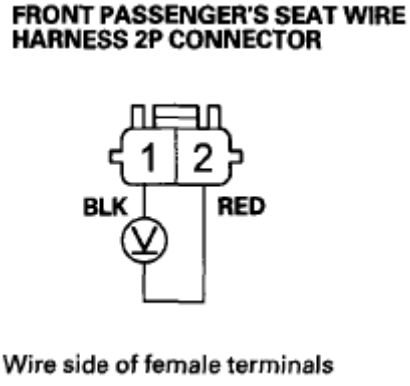


Fig. 180: Measuring Voltage Between Front Passenger's Seat Wire Harness 2P Connector Terminals No. 1 And No. 2
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is the voltage as specified?

YES - Faulty front passenger's weight sensor (inner side); replace the front passenger's seat frame/front passenger's weight sensors as an assembly (see **FRONT PASSENGER'S WEIGHT SENSOR REPLACEMENT**), then clear the DTC.

NO - Open in the front passenger's seat wire harness; replace the front passenger's seat wire harness, then clear the DTC, and retest. If the DTC is still present, replace the ODS unit (see **ODS UNIT REPLACEMENT**).

DTC 82-13: NO SIGNAL FROM THE INNER SIDE FRONT PASSENGER'S WEIGHT SENSOR

NOTE:

- **Before doing this troubleshooting procedure, find out if the vehicle was in a collision. If so, verify that all the required components were replaced with new components, of the correct part number, and that they were properly installed (see COMPONENT REPLACEMENT/INSPECTION AFTER DEPLOYMENT).**
- **Before doing this troubleshooting procedure, review SRS Precautions and Procedures (see PRECAUTIONS AND PROCEDURES) and General Troubleshooting Information (see GENERAL TROUBLESHOOTING INFORMATION).**

1. Clear the DTCs with the HDS (see **HOW TO CLEAR DTCS**).
2. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode, then wait for 10 seconds.
3. Clear the DTCs with the HDS (see **HOW TO CLEAR DTCS**).

Is DTC 82-13 indicated?

YES - Faulty front passenger's weight sensor (inner side); replace the front passenger's seat frame/front passenger's weight sensors as an assembly (see **FRONT PASSENGER'S WEIGHT SENSOR REPLACEMENT**), then clear the DTC.

NO - Intermittent failure, the system is OK at this time. Go to **TROUBLESHOOTING INTERMITTENT FAILURES**. If another DTC is indicated, troubleshoot the DTC.

DTC 83-21: NO SIGNAL FROM THE OUTER SIDE FRONT PASSENGER'S WEIGHT SENSOR

NOTE:

- **Before doing this troubleshooting procedure, find out if the vehicle was in a collision. If so, verify that all the required components were replaced with new components, of the correct part number, and that they were**

properly installed (see COMPONENT REPLACEMENT/INSPECTION AFTER DEPLOYMENT).

- **Before doing this troubleshooting procedure, review SRS Precautions and Procedures (see PRECAUTIONS AND PROCEDURES) and General Troubleshooting Information (see GENERAL TROUBLESHOOTING INFORMATION).**
- **These SWS DTCs are cleared when you turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.**

1. Clear the DTCs with the HDS (see **HOW TO CLEAR DTCS**).
2. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode, then wait for 10 seconds.
3. Clear the DTCs with the HDS (see **HOW TO CLEAR DTCS**).

   Is DTC 83-21 indicated?

   YES - Go to step 4.

   NO - Intermittent failure, the system is OK at this time. Go to **TROUBLESHOOTING INTERMITTENT FAILURES**. If another DTC is indicated, troubleshoot the DTC.

4. From the HDS Main Menu, select SRS, then Inspection. In the Inspection Menu, select SWS DTC CHECK.

   Is an SWS DTC also indicated?

   YES -

   - DTC 21-11: Short to power in the front passenger's weight sensor (outer side) power circuit; go to step 5.
   - DTC 21-12: Short to ground in the front passenger's weight sensor (outer side) power circuit; go to step 11.

   NO - Intermittent failure, the system is OK at this time. Go to **TROUBLESHOOTING INTERMITTENT FAILURES**.

5. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.

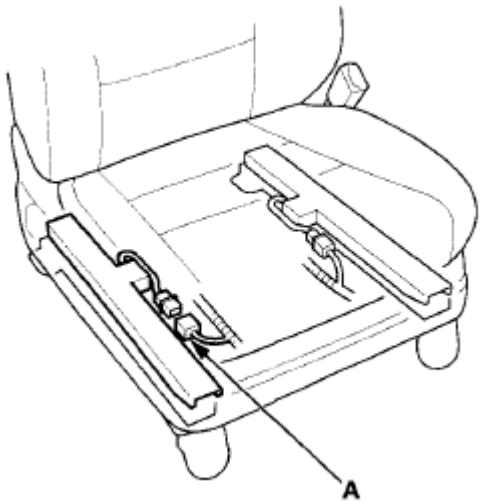


Fig. 181: Identifying Front Passenger's Seat Wire Harness 3P Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Disconnect the front passenger's seat wire harness 3P connector (A) from the front passenger's weight sensor (outer side).
7. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
8. Clear the DTCs with the HDS (see **HOW TO CLEAR DTCS**).
9. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode, then wait for 10 seconds.
10. From the HDS Main Menu, select SRS, then Inspection. In the Inspection Menu, select SWS DTC CHECK.

    Is SWS DTC 21-11 indicated?

    YES - Short to power in the front passenger's seat wire harness; replace the front passenger's seat wire harness, then clear the DTC, and retest. If the DTC is still present, replace the ODS unit (see **ODS UNIT REPLACEMENT**).

    NO - Faulty front passenger's weight sensor (outer side); replace the front passenger's seat frame/front passenger's weight sensors as an assembly (see **FRONT PASSENGER'S WEIGHT SENSOR REPLACEMENT**), then clear the DTC.

11. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
12. Disconnect the front passenger's seat wire harness 3P connector (A) from the front passenger's weight sensor (outer side).

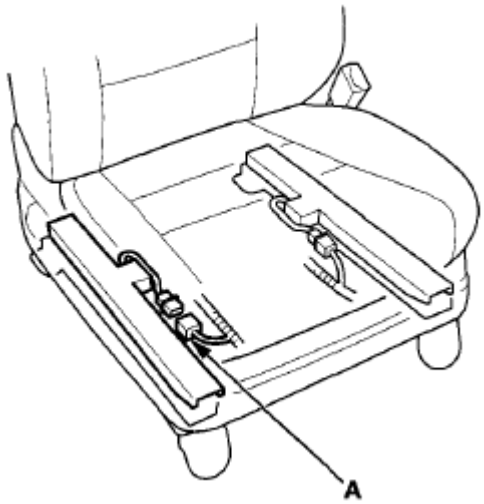


Fig. 182: Identifying Front Passenger's Seat Wire Harness 3P Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

13. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
14. Clear the DTCs with the HDS (see **HOW TO CLEAR DTCS**).
15. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode, then wait for 10 seconds.
16. From the HDS Main Menu, select SRS, then Inspection. In the Inspection Menu, select SWS DTC CHECK.

    Is SWS DTC 21-12 indicated?

    YES - Go to step 17.

    NO - Faulty front passenger's weight sensor (outer side); replace the front passenger's seat frame/front passenger's weight sensors as an assembly (see **FRONT PASSENGER'S WEIGHT SENSOR REPLACEMENT**), then clear the DTC.

17. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
18. Measure the resistance between front passenger's seat wire harness 3P connector terminal No. 3 and body ground. There should be an open circuit or at least 1 Mohms

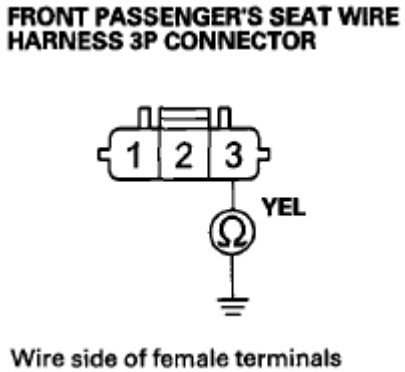


Fig. 183: Measuring Resistance Between Front Passenger's Seat Wire Harness 3P Connector Terminal No. 3 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is the resistance as specified?

YES - Faulty ODS unit; replace the ODS unit (see **ODS UNIT REPLACEMENT**), then clear the DTC.

NO - Short to ground in the front passenger's seat wire harness; replace the front passenger's seat wire harness, then clear the DTC.

DTC 83-22: NO SIGNAL FROM THE OUTER SIDE FRONT PASSENGER'S WEIGHT SENSOR

NOTE:

- **Before doing this troubleshooting procedure, find out if the vehicle was in a collision. If so, verify that all the required components were replaced with new components, of the correct part number, and that they were properly installed (see COMPONENT REPLACEMENT/INSPECTION AFTER DEPLOYMENT).**
- **Before doing this troubleshooting procedure, review SRS Precautions and Procedures (see PRECAUTIONS AND PROCEDURES) and General Troubleshooting Information (see GENERAL TROUBLESHOOTING INFORMATION).**

1. Clear the DTCs with the HDS (see **HOW TO CLEAR DTCS**).
2. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode, then wait for 10 seconds.
3. Clear the DTCs with the HDS (see **HOW TO CLEAR DTCS**).

Is DTC 83-22 indicated?

YES - Go to step 4.

NO - Intermittent failure, the system is OK at this time. Go to **TROUBLESHOOTING INTERMITTENT FAILURES**. If another DTC is indicated, troubleshoot the DTC.

4. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
5. Disconnect the front passenger's seat wire harness 3P connector (A) from the front passenger's weight sensor (outer side).

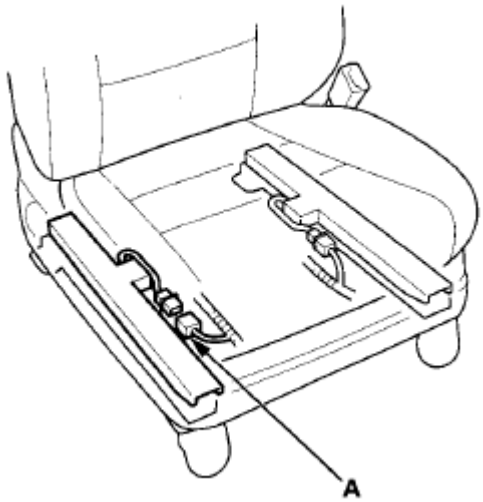


Fig. 184: Identifying Front Passenger's Seat Wire Harness 3P Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
7. Measure the voltage between front passenger's seat wire harness 3P connector terminals No. 1 and No. 3. There should be more than 6 V.

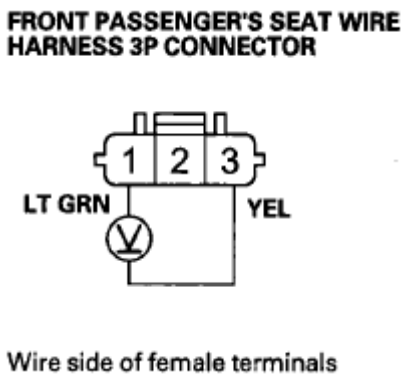


Fig. 185: Measuring Voltage Between Front Passenger's Seat Wire Harness 3P Connector Terminals No. 1 And No. 3
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is the voltage as specified?

YES - Faulty front passenger's weight sensor (outer side); replace the front passenger's seat frame/front passenger's weight sensors as an assembly (see **FRONT PASSENGER'S WEIGHT SENSOR REPLACEMENT**), then clear the DTC.

NO - Open in the front passenger's seat wire harness; replace the front passenger's seat wire harness, then clear the DTC, and retest. If the DTC is still present, replace the ODS unit (see **ODS UNIT REPLACEMENT**).

DTC 83-23: NO SIGNAL FROM THE OUTER SIDE FRONT PASSENGER'S WEIGHT SENSOR

NOTE:

- **Before doing this troubleshooting procedure, find out if the vehicle was in a collision. If so, verify that all the required components were replaced with new components, of the correct part number, and that they were properly installed (see COMPONENT REPLACEMENT/INSPECTION AFTER DEPLOYMENT).**
- **Before doing this troubleshooting procedure, review SRS Precautions and Procedures (see PRECAUTIONS AND PROCEDURES) and General Troubleshooting Information (see GENERAL TROUBLESHOOTING INFORMATION).**

1. Clear the DTCs with the HDS (see **HOW TO CLEAR DTCS**).
2. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode, then wait for 10 seconds.
3. Clear the DTCs with the HDS (see **HOW TO CLEAR DTCS**).

Is DTC 83-23 indicated?

YES - Faulty front passenger's weight sensor (outer side); replace the front passenger's seat frame/front passenger's weight sensors as an assembly (see **FRONT PASSENGER'S WEIGHT SENSOR REPLACEMENT**), then clear the DTC.

NO - Intermittent failure, the system is OK at this time. Go to **TROUBLESHOOTING INTERMITTENT FAILURES**. If another DTC is indicated, troubleshoot the DTC.

DTC 85-4X ("X" CAN BE 0 THRU 9 OR A THRU F), 85-63, 85-64: INTERNAL FAILURE OF THE ODS UNIT

NOTE:

- **Before doing this troubleshooting procedure, find out if the vehicle was in a collision. If so, verify that all the required components were replaced with new components, of the correct part number, and that they were properly installed (see COMPONENT REPLACEMENT/INSPECTION AFTER DEPLOYMENT).**
- **Before doing this troubleshooting procedure, review SRS Precautions and Procedures (see PRECAUTIONS AND PROCEDURES) and General Troubleshooting Information (see GENERAL TROUBLESHOOTING INFORMATION).**
- **Before replacing the SRS unit, check the SRS unit software version with the HDS. If the software version is not the latest, update the SRS unit software (see SRS UNIT UPDATE), and retest.**

- **These DTCs are codes that relate to the ODS unit operation.**

1. Clear the DTCs with the HDS (see **HOW TO CLEAR DTCS**).
2. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode, then wait for 10 seconds.
3. Clear the DTCs with the HDS (see **HOW TO CLEAR DTCS**).

   Is DTC 85-4x, 85-63, or 85-64 indicated?

   YES - Go to step 4.

   NO - Intermittent failure, the system is OK at this time. Go to **TROUBLESHOOTING INTERMITTENT FAILURES**. If another DTC is indicated, troubleshoot the DTC.

4. Clear the DTCs with the HDS (see **HOW TO CLEAR DTCS**).
5. Do the ODS unit initialization (see **ODS UNIT INITIALIZATION**).
6. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode, then wait for 10 seconds.
7. Clear the DTCs with the HDS (see **HOW TO CLEAR DTCS**).

   Is DTC 85-4x, 85-63, or 85-64 indicated?

   YES - Go to step 8.

   NO - The system is OK at this time.

8. Replace the ODS unit (see **ODS UNIT REPLACEMENT**).
9. Clear the DTCs with the HDS (see **HOW TO CLEAR DTCS**).
10. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode, then wait for 10 seconds.
11. Clear the DTCs with the HDS (see **HOW TO CLEAR DTCS**).

    Is DTC 85-4x, 85-63, or 85-64 indicated?

    YES - Replace the SRS unit (see **SRS UNIT REPLACEMENT**).

    NO - The system is OK at this time.

DTC 85-61: NO SIGNAL FROM THE ODS UNIT; DTC 85-62: INCORRECT DATA FROM THE ODS UNIT

NOTE:

- **Before doing this troubleshooting procedure, find out if the vehicle was in a collision. If so, verify that all the required components were replaced with new components, of the correct part number, and that they were**

properly installed (see COMPONENT REPLACEMENT/INSPECTION AFTER DEPLOYMENT).

- **Before doing this troubleshooting procedure, review SRS Precautions and Procedures (see PRECAUTIONS AND PROCEDURES), General Troubleshooting Information (see GENERAL TROUBLESHOOTING INFORMATION), and Battery Terminal Disconnection and Reconnection (see BATTERY TERMINAL DISCONNECTION AND RECONNECTION).**
- **Before replacing the SRS unit, check the SRS unit software version with the HDS. If the software version is not the latest, update the SRS unit software (see SRS UNIT UPDATE), and retest.**
- **These DTCs are codes that relate to the ODS unit operation.**

1. Make sure nothing is on the front passenger's seat.
2. Clear the DTCs with the HDS (see **HOW TO CLEAR DTCS**).
3. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode, then wait for 10 seconds.
4. Clear the DTCs with the HDS (see **HOW TO CLEAR DTCS**).

   Is DTC 85-61 or 85-62 indicated?

   YES - Go to step 5.

   NO - Intermittent failure, the system is OK at this time. Go to **TROUBLESHOOTING INTERMITTENT FAILURES**. If another DTC is indicated, troubleshoot the DTC.

5. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
6. Check the No. 5 (7.5 A) fuse in the driver's under-dash fuse/relay box.

   Is the fuse OK?

   YES - Go to step 7.

   NO - Replace the fuse, then turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode. If the fuse blows again, check for a short to ground in the driver's under-dash fuse/relay box No. 5 (7.5 A) fuse circuit (dashboard wire harness, SRS floor wire harness, or front passenger's seat wire harness); replace the faulty harness, then clear the DTC, and retest. If the DTC is still present, replace the driver's under-dash fuse/relay box (see **DRIVER'S UNDER-DASH FUSE/RELAY BOX (MICU) REMOVAL AND INSTALLATION**), then clear the DTC.

7. Remove the front seat back panel (see **FRONT SEAT-BACK COVER REPLACEMENT**).
8. Turn over the seat-back cover/pad to gain access to the ODS unit (see **ODS Unit Replacement**).
9. Remove the cover from the ODS unit (see step 5).
10. Check the connector connection between the ODS unit 18P connector (A) and the ODS unit (B).

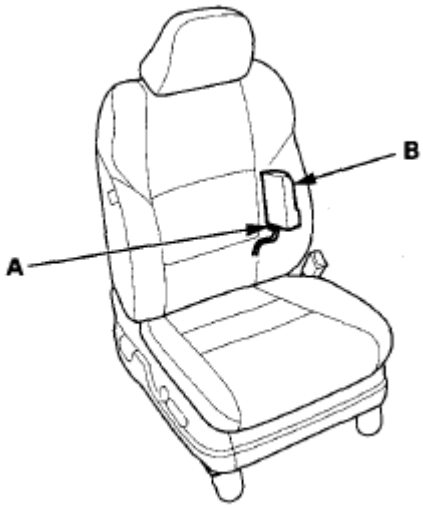


Fig. 186: Identifying ODS Unit 18P Connector And ODS Unit
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is the connector connection OK?

YES - Go to step 11.

NO - Repair the poor connector connection, then clear the DTC, and retest. If DTC 85-61 or 85-62 is still present, go to step 11.

11. Disconnect the ODS unit 18P connector (A) from the ODS unit (B).

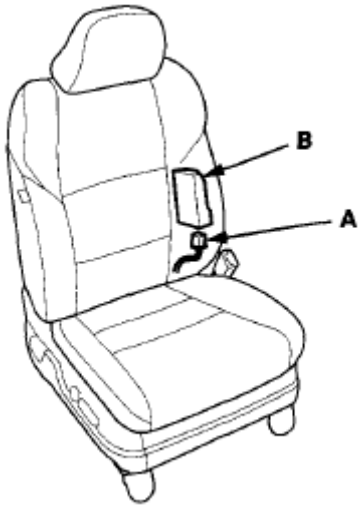


Fig. 187: Identifying ODS Unit 18P Connector From ODS Unit
Courtesy of AMERICAN HONDA MOTOR CO., INC.

12. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode, then wait for 10 seconds.

13. Measure the voltage between ODS unit 18P connector terminal No. 1 and body ground. There should be battery voltage.

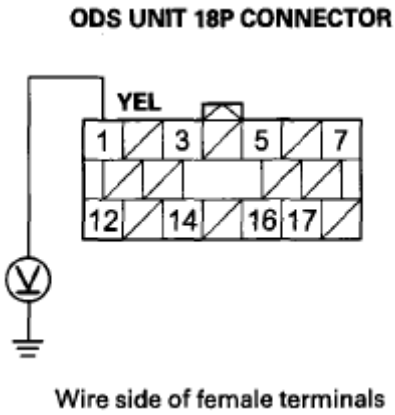


Fig. 188: Measuring Voltage Between ODS Unit 18P Connector Terminal No. 1 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there battery voltage?

YES - Go to step 14.

NO - Open in the dashboard wire harness, the SRS floor wire harness, or the front passenger's seat wire harness; replace the faulty harness, then clear the DTC.

14. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
15. Measure the resistance between ODS unit 18P connector terminals No. 12 and body ground. There should be less than 1.0 ohms.

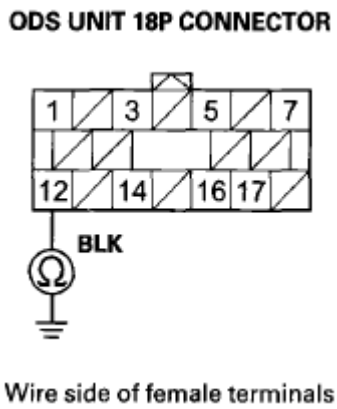


Fig. 189: Measuring Resistance Between ODS Unit 18P Connector Terminals No. 12 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is the resistance as specified?

YES - Go to step 16.

NO - Open in the SRS floor wire harness, the front passenger's seat wire harness, poor connection at the ground G702 (see **CONNECTOR TO FUSE/RELAY BOX INDEX**), or poor connection at the ODS unit 18P connector and the ODS unit. Check the connectors; if the connection is OK, replace the faulty harness, then clear the DTC.

16. Disconnect the negative cable from the battery, then wait at least 3 minutes.
17. Disconnect SRS unit connector B (39P) from the SRS unit (see **DISCONNECTING SYSTEM CONNECTORS**).
18. Measure the resistance between SRS unit connector B (39P) terminal No. 1 and body ground. There should be an open circuit or at least 1 Mohms.

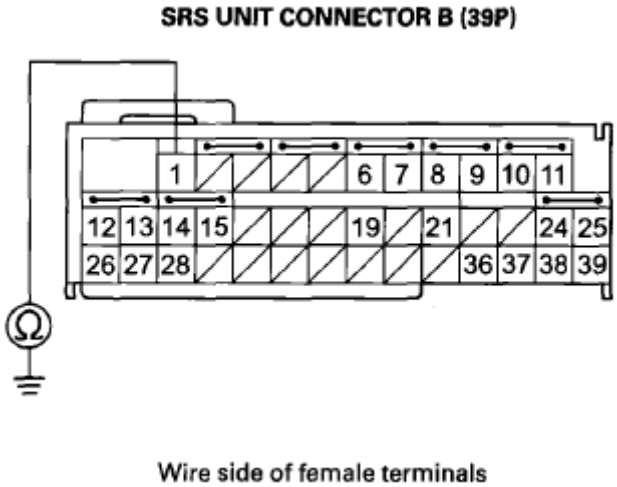


Fig. 190: Measuring Resistance Between SRS Unit Connector B (39P) Terminal No. 1 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is the resistance as specified?

YES - Go to step 19.

NO - Short to ground in the SRS floor wire harness or the front passenger's seat wire harness; replace the faulty harness, then clear the DTC.

19. Measure the resistance between SRS unit connector B (39P) terminal No. 1 and ODS unit 18P connector terminal No. 7. There should be less than 1.0 ohms.

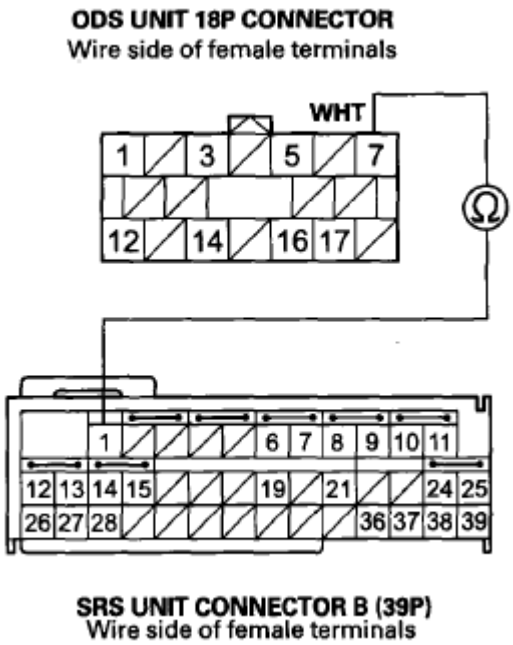


Fig. 191: Measuring Resistance Between SRS Unit Connector B (39P) Terminal No. 1 And ODS Unit 18P Connector Terminal No. 7
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is the resistance as specified?

YES - Go to step 20.

NO - Open in the harness between SRS unit connector B (39P) terminal No. 1 and ODS unit 18P connector terminal No. 7 (SRS floor wire harness or front passenger's seat wire harness); replace the faulty harness, then clear the DTC.

20. Reconnect the negative cable to the battery.
21. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
22. Measure the voltage between SRS unit connector B (39P) terminal No. 1 and body ground. There should be less than 0.2 V.

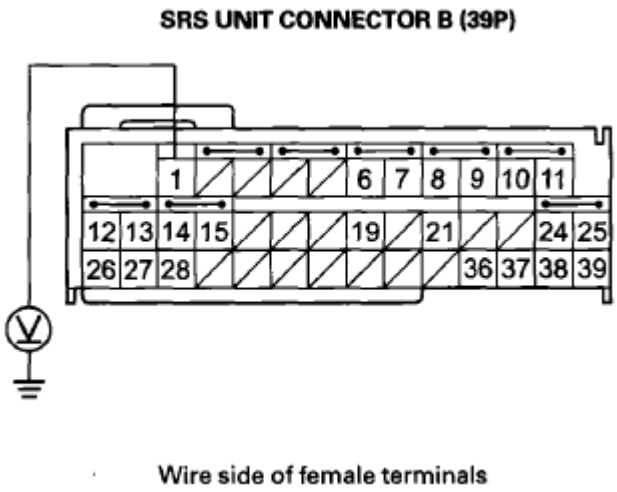


Fig. 192: Measuring Voltage Between SRS Unit Connector B (39P) Terminal No. 1 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is the voltage as specified?

YES - Go to step 23.

NO - Short to power in the SRS floor wire harness or the front seat passenger's seat wire harness; replace the faulty harness, then clear the DTC.

23. Replace the ODS unit (see **ODS UNIT REPLACEMENT**).
24. Clear the DTCs with the HDS (see **HOW TO CLEAR DTCS**).
25. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode, then wait for 10 seconds.
26. Clear the DTCs with the HDS (see **HOW TO CLEAR DTCS**).

Is DTC 85-61 or 85-62 indicated?

YES - Replace the SRS unit (see **SRS UNIT REPLACEMENT**).

NO - The system is OK at this time.

DTC 85-71, 85-78: ODS UNIT NOT INITIALIZED

NOTE:

- **Before doing this troubleshooting procedure, find out if the vehicle was in a collision. If so, verify that all the required components were replaced with new components, of the correct part number, and that they were properly installed (see COMPONENT REPLACEMENT/INSPECTION AFTER DEPLOYMENT).**
- **Before doing this troubleshooting procedure, review SRS Precautions and**

Procedures (see PRECAUTIONS AND PROCEDURES) and General Troubleshooting Information (see GENERAL TROUBLESHOOTING INFORMATION).

- **Before replacing the SRS unit, check the SRS unit software version with the HDS. If the software version is not the latest, update the SRS unit software (see SRS UNIT UPDATE), and retest.**
- **These DTCs are codes that relate to the ODS unit operation.**

1. Clear the DTCs with the HDS (see **HOW TO CLEAR DTCS**).
2. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode, then wait for 10 seconds.
3. Clear the DTCs with the HDS (see **HOW TO CLEAR DTCS**).

   Is DTC 85-71 or 85-78 indicated?

   YES - Go to step 4.

   NO - Intermittent failure, the system is OK at this time. Go to **TROUBLESHOOTING INTERMITTENT FAILURES**. If another DTC is indicated, troubleshoot the DTC.

4. Clear the DTCs with the HDS (see **HOW TO CLEAR DTCS**).
5. Do the ODS unit initialization (see **ODS UNIT INITIALIZATION**).
6. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode, then wait for 10 seconds.
7. Clear the DTCs with the HDS (see **HOW TO CLEAR DTCS**).

   Is DTC 85-71 or 85-78 indicated?

   YES - Go to step 8.

   NO - The system is OK at this time.

8. Replace the ODS unit (see **ODS UNIT REPLACEMENT**).
9. Clear the DTCs with the HDS (see **HOW TO CLEAR DTCS**).
10. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode, then wait for 10 seconds.
11. Clear the DTCs with the HDS (see **HOW TO CLEAR DTCS**).

    Is DTC 85-71 or 85-78 indicated?

    YES - Replace the SRS unit (see **SRS UNIT REPLACEMENT**).

    NO - The system is OK at this time.

DTC 85-79: OPDS SENSOR INITIAL CHECK FAILURE

NOTE:

- **Before doing this troubleshooting procedure, find out if the vehicle was in a collision. If so, verify that all the required components were replaced with new components, of the correct part number, and that they were properly installed (see COMPONENT REPLACEMENT/INSPECTION AFTER DEPLOYMENT).**
- **Before doing this troubleshooting procedure, review SRS Precautions and Procedures (see PRECAUTIONS AND PROCEDURES) and General Troubleshooting Information (see GENERAL TROUBLESHOOTING INFORMATION).**
- **Before replacing the SRS unit, check the SRS unit software version with the HDS. If the software version is not the latest, update the SRS unit software (see SRS UNIT UPDATE), and retest.**
- **These DTCs are codes that relate to the ODS unit operation.**

1. Clear the DTCs with the HDS (see **HOW TO CLEAR DTCS**).
2. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode, then wait for 10 seconds.
3. Clear the DTCs with the HDS (see **HOW TO CLEAR DTCS**).

   Is DTC 85-79 indicated?

   YES - Go to step 4.

   NO - Intermittent failure, the system is OK at this time. Go to **TROUBLESHOOTING INTERMITTENT FAILURES**. If another DTC is indicated, troubleshoot the DTC.

4. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
5. Make sure nothing is on the front passenger's seat.
6. Clear the DTCs with the HDS (see **HOW TO CLEAR DTCS**).
7. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode, then wait for 10 seconds.
8. Clear the DTCs with the HDS (see **HOW TO CLEAR DTCS**).

   Is DTC 85-79 indicated?

   YES - Go to step 9.

   NO - The system is OK at this time.

9. Clear the DTCs with the HDS (see **HOW TO CLEAR DTCS**).
10. Do the ODS unit initialization (see **ODS UNIT INITIALIZATION**).
11. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode, then wait

for 10 seconds.

12. Clear the DTCs with the HDS (see **HOW TO CLEAR DTCS**).

Is DTC 85-79 indicated?

YES - Replace the ODS unit (see **ODS UNIT REPLACEMENT**), then clear the DTC, and retest. If the DTC is still present, replace the seat-back cover/pad equipped with an OPDS sensor (see **FRONT SEAT-BACK COVER REPLACEMENT**), then clear the DTC, and retest. If the DTC is still present, replace the SRS unit (see **SRS UNIT REPLACEMENT**).

NO - The system is OK at this time.

DTC 86-1X ("X" CAN BE 0 THRU 9 OR A THRU F): FAULTY OPDS SEAT-BACK SENSOR; DTC 86-2X ("X" CAN BE 0 THRU 9 OR A THRU F): FAULTY OPDS SEAT SUPPORT SENSOR

NOTE:

- **Before doing this troubleshooting procedure, find out if the vehicle was in a collision. If so, verify that all the required components were replaced with new components, of the correct part number, and that they were properly installed (see COMPONENT REPLACEMENT/INSPECTION AFTER DEPLOYMENT).**
- **Before doing this troubleshooting procedure, review SRS Precautions and Procedures (see PRECAUTIONS AND PROCEDURES) and General Troubleshooting Information (see GENERAL TROUBLESHOOTING INFORMATION).**
- **Before replacing the SRS unit, check the SRS unit software version with the HDS. If the software version is not the latest, update the SRS unit software (see SRS UNIT UPDATE), and retest.**

1. Clear the DTCs with the HDS (see **HOW TO CLEAR DTCS**).
2. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode, then wait for 10 seconds.
3. Clear the DTCs with the HDS (see **HOW TO CLEAR DTCS**).

Is DTC 86-1x or 86-2x indicated?

YES - Go to step 4.

NO - Intermittent failure, the system is OK at this time. Go to **TROUBLESHOOTING INTERMITTENT FAILURES**. If another DTC is indicated, troubleshoot the DTC.

4. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
5. Remove the front seat back panel (see **FRONT SEAT-BACK COVER REPLACEMENT**).
6. Turn over the seat-back cover/pad to gain access to the ODS unit (see **ODS Unit Replacement**).
7. Remove the cover (A), then check the connector connection between the ODS unit 18P connector (B) and the OPDS sensor connectors (C), and the ODS unit.

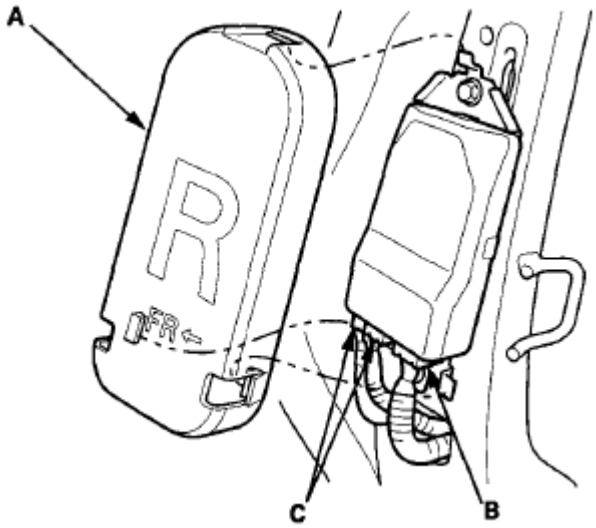


Fig. 193: Identifying Cover, ODS Unit 18P Connector And OPDS Sensor Connectors
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Are the connector connections OK?

YES - Go to step 8.

NO - Repair the poor connector connections, then clear the DTC, and retest. If DTC 86-1x or 86-2x is still present, go to step 8.

8. Replace the seat-back cover/pad equipped with an OPDS sensor (see **FRONT SEAT-BACK COVER REPLACEMENT**).
9. Clear the DTCs with the HDS (see **HOW TO CLEAR DTCS**).
10. Do the ODS unit initialization (see **ODS UNIT INITIALIZATION**).
11. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode, then wait for 10 seconds.
12. Clear the DTCs with the HDS (see **HOW TO CLEAR DTCS**).

Is DTC 86-1x or 86-2x indicated?

YES - Replace the ODS unit (see **ODS UNIT REPLACEMENT**), then clear the DTC, and retest. If the DTC is still present, replace the SRS unit (see **SRS UNIT REPLACEMENT**).

NO - The system is OK at this time.

DTC 92-1X ("X" CAN BE 0 THRU 9 OR A THRU F): SHORT TO POWER IN THE PASSENGER'S AIRBAG CUTOFF INDICATOR

NOTE:

- **Before doing this troubleshooting procedure, find out if the vehicle was in a collision. If so, verify that all the required components were replaced**

with new components, of the correct part number, and that they were properly installed (see COMPONENT REPLACEMENT/INSPECTION AFTER DEPLOYMENT).

- **Before doing this troubleshooting procedure, review SRS Precautions and Procedures (see PRECAUTIONS AND PROCEDURES), General Troubleshooting Information (see GENERAL TROUBLESHOOTING INFORMATION), and Battery Terminal Disconnection and Reconnection (see BATTERY TERMINAL DISCONNECTION AND RECONNECTION).**
- **Before replacing the SRS unit, check the SRS unit software version with the HDS. If the software version is not the latest, update the SRS unit software (see SRS UNIT UPDATE), and retest.**
- **If there are other SRS DTCs stored with 92-1 x; troubleshoot them first.**

1. Clear the DTCs with the HDS (see **HOW TO CLEAR DTCS**).
2. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode, then wait for 10 seconds.
3. Clear the DTCs with the HDS (see **HOW TO CLEAR DTCS**).

   Is DTC 92-1x indicated?

   YES - Go to step 4.

   NO - Intermittent failure, the system is OK at this time. Go to **TROUBLESHOOTING INTERMITTENT FAILURES**. If another DTC is indicated, troubleshoot the DTC.

4. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
5. Disconnect the negative cable from the battery, then wait at least 3 minutes.
6. Disconnect the passenger's airbag cutoff indicator 6P connector (see **PASSENGER'S AIRBAG CUTOFF INDICATOR REPLACEMENT**).
7. Disconnect SRS unit connector A (39P) from the SRS unit (see **DISCONNECTING SYSTEM CONNECTORS**).
8. Reconnect the negative cable to the battery.
9. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
10. Measure the voltage between SRS unit connector A (39P) terminal No. 20 and body ground. There should be less than 0.2 V.

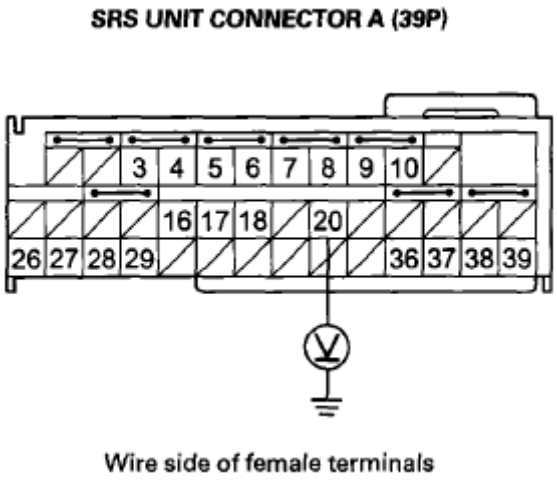


Fig. 194: Measuring Voltage Between SRS Unit Connector A (39P) Terminal No. 20 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is the voltage as specified?

YES - Faulty passenger's airbag cutoff indicator or SRS unit; replace the passenger's airbag cutoff indicator (see **PASSENGER'S AIRBAG CUTOFF INDICATOR REPLACEMENT**), then clear the DTC, and retest. If the DTC is still present, replace the SRS unit (see **SRS UNIT REPLACEMENT**).

NO - Short to power in the dashboard wire harness; replace the dashboard wire harness, then clear the DTC.

DTC 92-2X ("X" CAN BE 0 THRU 9 OR A THRU F): OPEN OR SHORT TO GROUND IN THE PASSENGER'S AIRBAG CUTOFF INDICATOR

NOTE:

- **Before doing this troubleshooting procedure, find out if the vehicle was in a collision. If so, verify that all the required components were replaced with new components, of the correct part number, and that they were properly installed (see COMPONENT REPLACEMENT/INSPECTION AFTER DEPLOYMENT).**
- **Before doing this troubleshooting procedure, review SRS Precautions and Procedures (see PRECAUTIONS AND PROCEDURES), General Troubleshooting Information (see GENERAL TROUBLESHOOTING INFORMATION), and Battery Terminal Disconnection and Reconnection (see BATTERY TERMINAL DISCONNECTION AND RECONNECTION).**
- **Before replacing the SRS unit, check the SRS unit software version with the HDS. If the software version is not the latest, update the SRS unit software (see SRS UNIT UPDATE), and retest.**
- **If there are other SRS DTCs stored with 92-2x; troubleshoot them first.**

1. Clear the DTCs with the HDS (see **HOW TO CLEAR DTCS**).

2. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode, then wait for 10 seconds.
3. Clear the DTCs with the HDS (see **HOW TO CLEAR DTCS**).

   Is DTC 92-2x indicated?

   YES - Go to step 4.

   NO - Intermittent failure, the system is OK at this time. Go to **TROUBLESHOOTING INTERMITTENT FAILURES**. If another DTC is indicated, troubleshoot the DTC.

4. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
5. Disconnect the negative cable from the battery, then wait at least 3 minutes.
6. Disconnect the passenger's airbag cutoff indicator 6P connector (see **PASSENGER'S AIRBAG CUTOFF INDICATOR REPLACEMENT**).
7. Disconnect SRS unit connector A (39P) from the SRS unit (see **DISCONNECTING SYSTEM CONNECTORS**).
8. Measure the resistance between SRS unit connector A (39P) terminal No. 20 and passenger's airbag cutoff indicator 6P connector terminal No. 5. There should be less than 1.0 ohms.

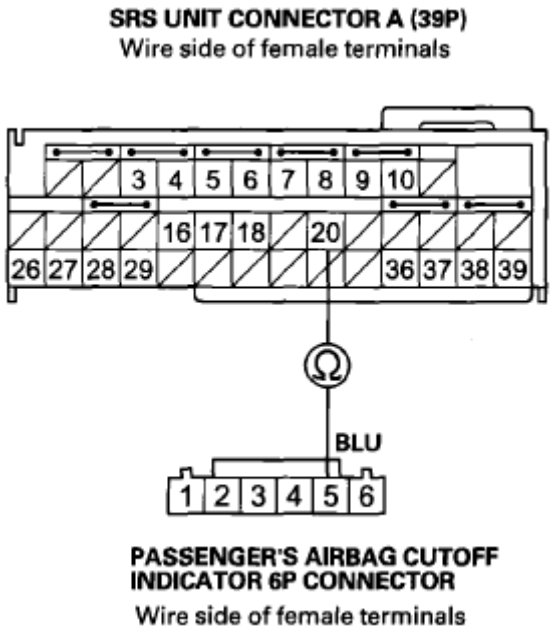


Fig. 195: Measuring Resistance Between SRS Unit Connector Terminal No. 20 And Passenger's Airbag Cutoff Indicator Connector Terminal No. 5
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is the resistance as specified?

YES - Go to step 9,

NO - Open in the dashboard wire harness; replace the dashboard wire harness, then clear the DTC.

9. Measure the resistance between SRS unit connector A (39P) terminal No. 20 and body ground. There should be an open circuit or more than 1 Mohms.

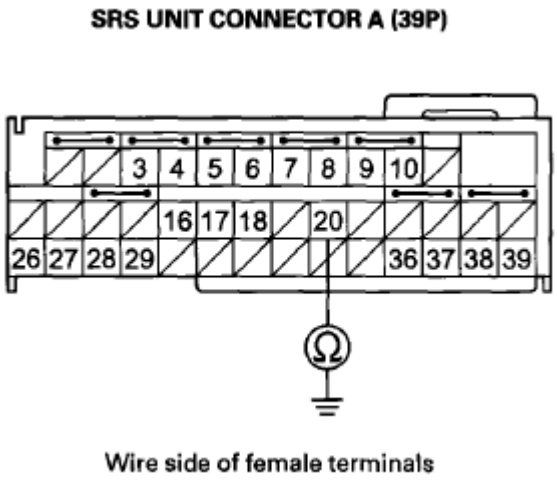


Fig. 196: Measuring Resistance Between SRS Unit Connector A (39P) Terminal No. 20 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is the resistance as specified?

YES - Faulty passenger's airbag cutoff indicator or SRS unit; replace the passenger's airbag cutoff indicator (see **PASSENGER'S AIRBAG CUTOFF INDICATOR REPLACEMENT**), then clear the DTC, and retest. If the DTC is still present, replace the SRS unit (see **SRS UNIT REPLACEMENT**).

NO - Short to ground in the dashboard wire harness; replace the dashboard wire harness, then clear the DTC.

DTC A1-1X ("X" CAN BE 0 THRU 9 OR A THRU F): FAULTY POWER SUPPLY (VA LINE)

NOTE:

- **Before doing this troubleshooting procedure, find out if the vehicle was in a collision. If so, verify that all the required components were replaced with new components, of the correct part number, and that they were properly installed (see COMPONENT REPLACEMENT/INSPECTION AFTER DEPLOYMENT).**
- **Before doing this troubleshooting procedure, review SRS Precautions and Procedures (see PRECAUTIONS AND PROCEDURES), General Troubleshooting Information (see GENERAL TROUBLESHOOTING INFORMATION), and Battery Terminal Disconnection and Reconnection (see BATTERY TERMINAL DISCONNECTION AND RECONNECTION).**
- **Before replacing the SRS unit, check the SRS unit software version with the HDS. If the software version is not the latest, update the SRS unit**

software (see SRS UNIT UPDATE), and retest.

1. Clear the DTCs with the HDS (see **HOW TO CLEAR DTCS**).
2. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode, then wait for 10 seconds.
3. Clear the DTCs with the HDS (see **HOW TO CLEAR DTCS**).

   Is DTC A1-1x indicated?

   YES - Go to step 4.

   NO - Intermittent failure, the system is OK at this time. Go to **TROUBLESHOOTING INTERMITTENT FAILURES**. If another DTC is indicated, troubleshoot the DTC.

4. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
5. Check the No. 5 (7.5 A) fuse in the driver's under-dash fuse/relay box.

   Is the fuse OK?

   YES - Go to step 6.

   NO - Replace the fuse, then turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode. If the fuse blows again, check for a short to ground in the driver's under-dash fuse/relay box No. 5 (7.5 A) fuse circuit (dashboard wire harness, SRS floor wire harness, or front passenger's seat wire harness); replace the faulty harness, then clear the DTC, and retest. If the DTC is still present, replace the driver's under-dash fuse/relay box (see **DRIVER'S UNDER-DASH FUSE/RELAY BOX (MICU) REMOVAL AND INSTALLATION**), then clear the DTC.

6. Disconnect the negative cable from the battery, then wait at least 3 minutes.
7. Disconnect SRS unit connector A (39P) from the SRS unit (see **DISCONNECTING SYSTEM CONNECTORS**).
8. Reconnect the negative cable to the battery.
9. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
10. Measure the voltage between SRS unit connector A (39P) terminal No. 26 and body ground. There should be battery voltage.

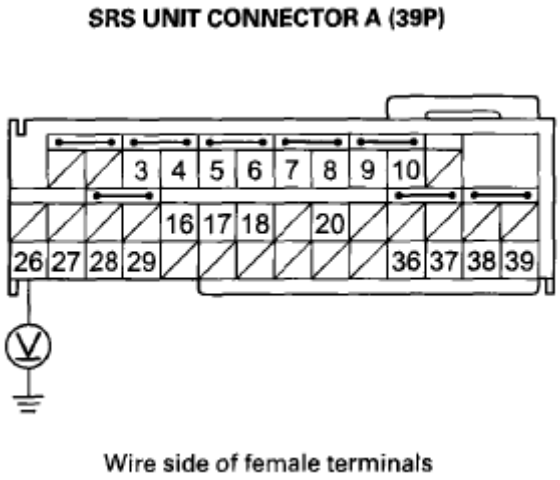


Fig. 197: Measuring Voltage Between SRS Unit Connector A (39P) Terminal No. 26 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is the battery voltage?

YES - Faulty SRS unit or poor connection at SRS unit connector A (39P) and the SRS unit; check the connection. If the connection is OK, replace the SRS unit (see **SRS UNIT REPLACEMENT**). If the DTC does not clear, replace the dashboard wire harness.

NO - Open in the dashboard wire harness; replace the dashboard wire harness, then clear the DTC.

DTC A2-1X ("X" CAN BE 0 THRU 9 OR A THRU F): FAULTY POWER SUPPLY (VB LINE)

NOTE:

- **Before doing this troubleshooting procedure, find out if the vehicle was in a collision. If so, verify that all the required components were replaced with new components, of the correct part number, and that they were properly installed (see COMPONENT REPLACEMENT/INSPECTION AFTER DEPLOYMENT).**
- **Before doing this troubleshooting procedure, review SRS Precautions and Procedures (see PRECAUTIONS AND PROCEDURES), General Troubleshooting Information (see GENERAL TROUBLESHOOTING INFORMATION), and Battery Terminal Disconnection and Reconnection (see BATTERY TERMINAL DISCONNECTION AND RECONNECTION).**
- **Before replacing the SRS unit, check the SRS unit software version with the HDS. If the software version is not the latest, update the SRS unit software (see SRS UNIT UPDATE), and retest.**

1. Clear the DTCs with the HDS (see **HOW TO CLEAR DTCS**).
2. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode, then wait for 10 seconds.
3. Clear the DTCs with the HDS (see **HOW TO CLEAR DTCS**).

Is DTC A2-1x indicated?

YES - Go to step 4.

NO - Intermittent failure, the system is OK at this time. Go to **TROUBLESHOOTING INTERMITTENT FAILURES**. If another DTC is indicated, troubleshoot the DTC.

4. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
5. Check the No. 11 (10 A) fuse in the driver's under-dash fuse/relay box.

Is the fuse OK?

YES - Go to step 6.

NO - Replace the fuse, then turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode. If the fuse blows again, check for a short to ground in the dashboard wire harness in the driver's under-dash fuse/relay box No. 11 (10 A) fuse circuit; replace the dashboard wire harness, then clear the DTC, and retest. If the DTC is still present, replace the driver's under-dash fuse/relay box (see **DRIVER'S UNDER-DASH FUSE/RELAY BOX (MICU) REMOVAL AND INSTALLATION**), then clear the DTC.

6. Disconnect the negative cable from the battery, then wait at least 3 minutes.
7. Disconnect SRS unit connector A (39P) from the SRS unit (see **DISCONNECTING SYSTEM CONNECTORS**).
8. Reconnect the negative cable to the battery.
9. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
10. Measure the voltage between SRS unit connector A (39P) terminal No. 27 and body ground. There should be battery voltage.

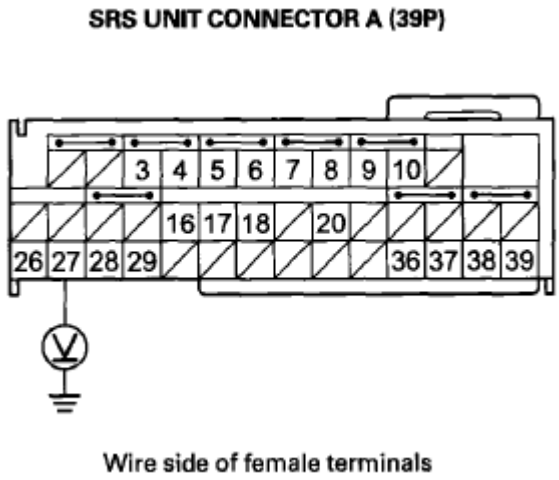


Fig. 198: Measuring Voltage Between SRS Unit Connector A (39P) Terminal No. 27 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is the battery voltage?

YES - Faulty SRS unit or poor connection at SRS unit connector A (39P) and the SRS unit; check the connection. If the connection is OK, replace the SRS unit (see **SRS UNIT REPLACEMENT**). If the DTC does not clear, replace the dashboard wire harness.

NO - Open in the dashboard wire harness; replace the dashboard wire harness, then clear the DTC.

DTC A3-1X ("X" CAN BE 0 THRU 9 OR A THRU F): SRS UNIT CONNECTOR A NOT PROPERLY INSTALLED

NOTE:

- **Before doing this troubleshooting procedure, find out if the vehicle was in a collision. If so, verify that all the required components were replaced with new components, of the correct part number, and that they were properly installed (see COMPONENT REPLACEMENT/INSPECTION AFTER DEPLOYMENT).**
- **Before doing this troubleshooting procedure, review SRS Precautions and Procedures (see PRECAUTIONS AND PROCEDURES), General Troubleshooting Information (see GENERAL TROUBLESHOOTING INFORMATION), and Battery Terminal Disconnection and Reconnection (see BATTERY TERMINAL DISCONNECTION AND RECONNECTION).**
- **Before replacing the SRS unit, check the SRS unit software version with the HDS. If the software version is not the latest, update the SRS unit software (see SRS UNIT UPDATE), and retest.**

1. Clear the DTCs with the HDS (see **HOW TO CLEAR DTCS**).
2. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode, then wait for 10 seconds.
3. Clear the DTCs with the HDS (see **HOW TO CLEAR DTCS**).

   Is DTC A3-1x indicated?

   YES - Go to step 4.

   NO - Intermittent failure, the system is OK at this time. Go to **TROUBLESHOOTING INTERMITTENT FAILURES**. If another DTC is indicated, troubleshoot the DTC.

4. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
5. Disconnect the negative cable from the battery, then wait at least 3 minutes.
6. Check the connector connection between SRS unit connector A (39P) and the SRS unit.

   Is the connector connection OK?

   YES - Go to step 7.

NO - Repair the poor connector connection, then clear the DTC, and retest. If DTC A3-1x is still present, go to step 7.

7. Disconnect SRS unit connector A (39P) from the SRS unit (see **DISCONNECTING SYSTEM CONNECTORS**).
8. Check for bent or damaged terminals on the SRS unit.

   Are any terminals bent or damaged?

   YES - Replace the SRS unit (see **SRS UNIT REPLACEMENT**).

   NO - Replace the dashboard wire harness, then clear the DTC.

DTC A4-1X ("X" CAN BE 0 THRU 9 OR A THRU F): SRS UNIT CONNECTOR B NOT PROPERLY INSTALLED

NOTE:

- **Before doing this troubleshooting procedure, find out if the vehicle was in a collision. If so, verify that all the required components were replaced with new components, of the correct part number, and that they were properly installed (see COMPONENT REPLACEMENT/INSPECTION AFTER DEPLOYMENT).**
- **Before doing this troubleshooting procedure, review SRS Precautions and Procedures (see PRECAUTIONS AND PROCEDURES), General Troubleshooting Information (see GENERAL TROUBLESHOOTING INFORMATION), and Battery Terminal Disconnection and Reconnection (see BATTERY TERMINAL DISCONNECTION AND RECONNECTION).**
- **Before replacing the SRS unit, check the SRS unit software version with the HDS. If the software version is not the latest, update the SRS unit software (see SRS UNIT UPDATE), and retest.**

1. Clear the DTCs with the HDS (see **HOW TO CLEAR DTCS**).
2. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode, then wait for 10 seconds.
3. Clear the DTCs with the HDS (see **HOW TO CLEAR DTCS**).

   Is DTC A4-1x indicated?

   YES - Go to step 4.

   NO - Intermittent failure, the system is OK at this time. Go to **TROUBLESHOOTING INTERMITTENT FAILURES**. If another DTC is indicated, troubleshoot the DTC.

4. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
5. Disconnect the negative cable from the battery, then wait at least 3 minutes.
6. Check the connector connection between SRS unit connector B (39P) and the SRS unit.

Is the connector connection OK?

YES - Go to step 7.

NO - Repair the poor connector connection, then clear the DTC, and retest. If DTC A4-1x is still present, go to step 7.

7. Disconnect SRS unit connector B (39P) from the SRS unit (see **DISCONNECTING SYSTEM CONNECTORS**).
8. Check for bent or damaged terminals on the SRS unit.

Are any terminals bent or damaged?

YES - Replace the SRS unit (see **SRS UNIT REPLACEMENT**).

NO - Replace the SRS floor wire harness, then clear the DTC.

DTC B2-1X ("X" CAN BE 0 THRU 9 OR A THRU F): NO SIGNAL FROM THE REAR SAFING SENSOR

Special Tools Required

- SRS Inflator Simulator 07SAZ-TB4011A
- SRS Simulator Lead L 070AZ-SNAA300

NOTE:

- **Before doing this troubleshooting procedure, find out if the vehicle was in a collision. If so, verify that all the required components were replaced with new components, of the correct part number, and that they were properly installed (see COMPONENT REPLACEMENT/INSPECTION AFTER DEPLOYMENT).**
- **Before doing this troubleshooting procedure, review SRS Precautions and Procedures (see PRECAUTIONS AND PROCEDURES), General Troubleshooting Information (see GENERAL TROUBLESHOOTING INFORMATION), and Battery Terminal Disconnection and Reconnection (see BATTERY TERMINAL DISCONNECTION AND RECONNECTION).**
- **Before replacing the SRS unit, check the SRS unit software version with the HDS. If the software version is not the latest, update the SRS unit software (see SRS UNIT UPDATE), and retest.**

1. Clear the DTCs with the HDS (see **HOW TO CLEAR DTCS**).
2. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode, then wait for 10 seconds.
3. Clear the DTCs with the HDS (see **HOW TO CLEAR DTCS**).

Is DTC B2-1x indicated?

YES - Go to step 4.

NO - Intermittent failure, the system is OK at this time. Go to **TROUBLESHOOTING INTERMITTENT FAILURES**. If another DTC is indicated, troubleshoot the DTC.

4. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
5. Disconnect the negative cable from the battery, then wait at least 3 minutes.
6. Check for these connector connections and harness.
   - SRS unit connector B (39P) (see **DISCONNECTING SYSTEM CONNECTORS**).
   - SRS floor wire harness 2P connector and the rear safing sensor (see **REAR SAFING SENSOR REPLACEMENT**).

Are the connector connections and harness OK?

YES - Go to step 7.

NO - Repair the poor connector connections or replace the harness, then clear the DTC, and retest. If DTC B2-1x is still present, go to step 7.

7. Disconnect SRS unit connector B (39P) from the SRS unit (see **DISCONNECTING SYSTEM CONNECTORS**).
8. Disconnect the SRS floor wire harness 2P connector from the rear safing sensor (see **REAR SAFING SENSOR REPLACEMENT**).
9. Measure the resistance between SRS unit connector B (39P) terminals No. 26 and No. 27. There should be an open circuit or at least 1 Mohms

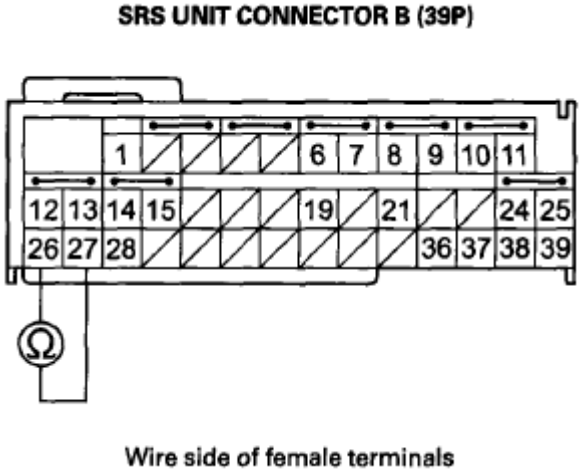


Fig. 199: Measuring Resistance Between SRS Unit Connector B (39P) Terminals No. 26 And No. 27
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is the resistance as specified?

YES - Go to step 10.

NO - Short to another wire in the SRS floor wire harness; replace the SRS floor wire harness, then clear the DTC.

10. Measure the resistance between body ground and SRS unit connector B (39P) terminals No. 26 and No. 27 individually. There should be an open circuit or at least 1 Mohms

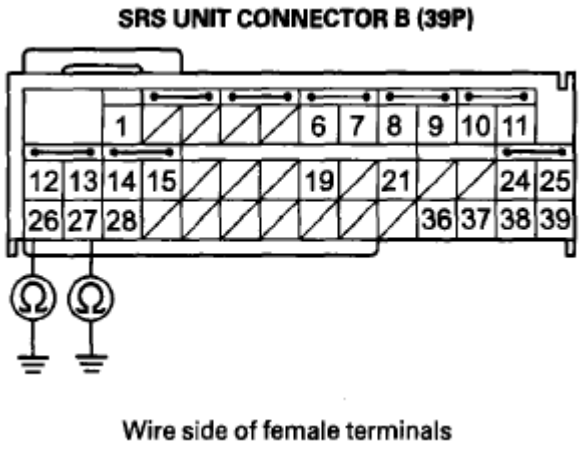


Fig. 200: Measuring Resistance Between Body Ground And SRS Unit Connector B (39P) Terminals No. 26 And No. 27
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is the resistance as specified?

YES - Go to step 11.

NO - Short to ground in the SRS floor wire harness; replace the SRS floor wire harness, then clear the DTC.

11. Reconnect the negative cable to the battery.
12. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
13. Measure the voltage between body ground and SRS unit connector B (39P) terminals No. 26 and No. 27 individually. There should be less than 0.2 V.

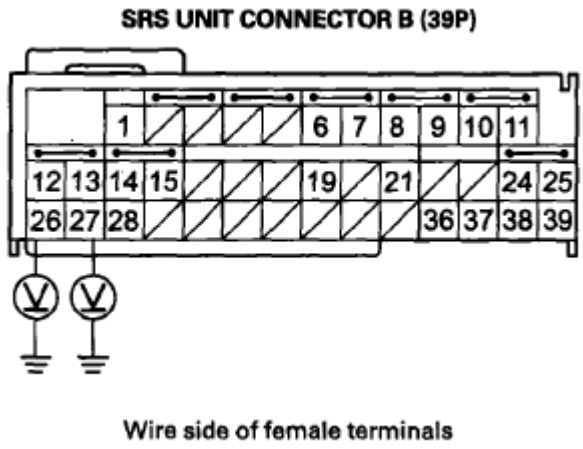


Fig. 201: Measuring Voltage Between Body Ground And SRS Unit Connector B (39P) Terminals No. 26 And No. 27
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is the voltage as specified?

YES - Go to step 14.

NO - Short to power in the SRS floor wire harness; replace the SRS floor wire harness, then clear the DTC.

14. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
15. Connect the black terminal (A) of SRS simulator lead L to the SRS inflator simulator (jumper connector), and then connect the SRS simulator lead L to the SRS floor wire harness 2P connector (B).

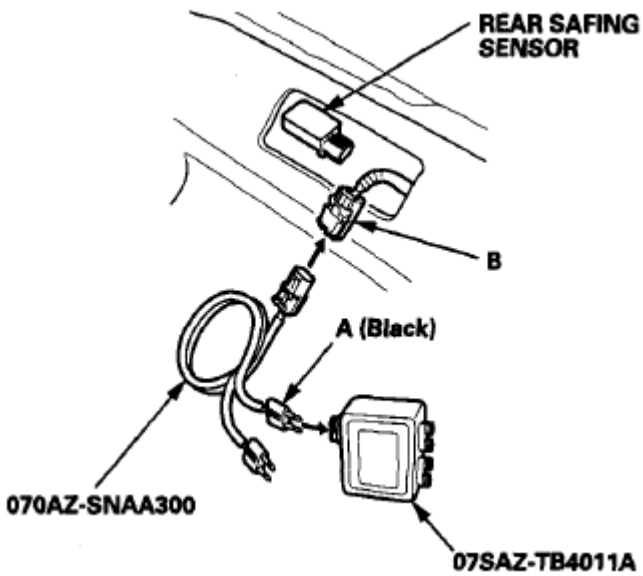


Fig. 202: Connecting Black Terminal Of SRS Simulator Lead L To SRS Inflator Simulator (Jumper Connector)

Courtesy of AMERICAN HONDA MOTOR CO., INC.

16. Measure the resistance between SRS unit connector B (39P) terminals No. 26 and No. 27. There should be less than 1.0 ohms.

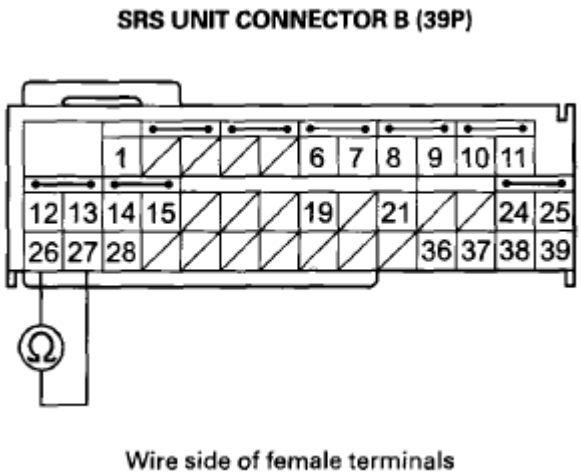


Fig. 203: Measuring Resistance Between SRS Unit Connector B (39P) Terminals No. 26 And No. 27
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is the resistance as specified?

YES - Faulty rear safing sensor or SRS unit; replace the rear safing sensor (see **REAR SAFING SENSOR REPLACEMENT**), then clear the DTC, and retest. If the DTC is still present, replace the SRS unit (see **SRS UNIT REPLACEMENT**).

NO - Open in the SRS floor wire harness; replace the SRS floor wire harness, then clear the DTC.

DTC B2-2X, B2-3X, B2-8X, B2-9X, B2-AX, B2-BX ("X" CAN BE 0 THRU 9 OR A THRU F): INTERNAL FAILURE OF THE REAR SAFING SENSOR

NOTE:

- **Before doing this troubleshooting procedure, find out if the vehicle was in a collision. If so, verify that all the required components were replaced with new components, of the correct part number, and that they were properly installed (see COMPONENT REPLACEMENT/INSPECTION AFTER DEPLOYMENT).**
- **Before doing this troubleshooting procedure, review SRS Precautions and Procedures (see PRECAUTIONS AND PROCEDURES) and General Troubleshooting Information (see GENERAL TROUBLESHOOTING INFORMATION).**
- **Before replacing the SRS unit, check the SRS unit software version with the HDS. If the software version is not the latest, update the SRS unit software (see SRS UNIT UPDATE), and retest.**

1. Clear the DTCs with the HDS (see **HOW TO CLEAR DTCS**).
2. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode, then wait for 10 seconds.
3. Clear the DTCs with the HDS (see **HOW TO CLEAR DTCS**).

Is DTC B2-2x, B2-3x, B2-8x, B2-9x, B2-Ax, or B2-BX indicated?

YES - Faulty rear safing sensor or SRS unit; replace the rear safing sensor (see **REAR SAFING SENSOR REPLACEMENT**), then clear the DTC, and retest. If the DTC is still present, replace the SRS unit (see **SRS UNIT REPLACEMENT**).

NO - Intermittent failure, the system is OK at this time. Go to **TROUBLESHOOTING INTERMITTENT FAILURES**. If another DTC is indicated, troubleshoot the DTC.

DTC EX-11 ("X" CAN BE 0 THRU 9 OR A THRU F): CONTROL OPERATION RECORDED

NOTE:

- **Before doing this troubleshooting procedure, find out if the vehicle was in a collision. If so, verify that all the required components were replaced with new components, of the correct part number, and that they were properly installed (see COMPONENT REPLACEMENT/INSPECTION AFTER DEPLOYMENT).**
- **Before doing this troubleshooting procedure, review SRS Precautions and Procedures (see PRECAUTIONS AND PROCEDURES) and General Troubleshooting Information (see GENERAL TROUBLESHOOTING INFORMATION).**
- **Before replacing the SRS unit, check the SRS unit software version with the HDS. If the software version is not the latest, update the SRS unit software (see SRS UNIT UPDATE), and retest.**

1. Clear the DTCs with the HDS (see **HOW TO CLEAR DTCS**).
2. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode, then wait for 10 seconds.
3. Clear the DTCs with the HDS (see **HOW TO CLEAR DTCS**).

Is DTC Ex-11 indicated?

YES - Faulty SRS unit; replace the SRS unit (see **SRS UNIT REPLACEMENT**).

NO - Intermittent failure, the system is OK at this time. Go to **TROUBLESHOOTING INTERMITTENT FAILURES**. If another DTC is indicated, troubleshoot the DTC.

DTC FX-11 ("X" CAN BE 0 THRU 9 OR A THRU F): AIRBAGS AND/OR TENSIONERS DEPLOYMENT RECORDED

NOTE:

- **Before doing this troubleshooting procedure, find out if the vehicle was in a collision. If so, verify that all the required components were replaced with new components, of the correct part number, and that they were properly installed (see COMPONENT REPLACEMENT/INSPECTION AFTER DEPLOYMENT).**
- **Before doing this troubleshooting procedure, review SRS Precautions and Procedures (see PRECAUTIONS AND PROCEDURES) and General Troubleshooting Information (see GENERAL TROUBLESHOOTING INFORMATION).**
- **Refer to the DTCs shown:**
  - **DTC F1-11: Driver's airbag and/or driver's seat belt tensioner deployed.**
  - **DTC F2-11: Front passenger's airbag and/or front passenger's seat belt tensioner deployed.**
  - **DTC F3-11: Driver's side airbag, left side curtain airbag, and/or driver's seat belt tensioner deployed.**
  - **DTC F4-11: Front passenger's side airbag, right side curtain airbag, and/or front passenger's seat belt tensioner deployed.**
  - **DTC F6-11: Left side curtain airbag or right side curtain airbag deployed.**

When any airbags or tensioners have deployed, go to **COMPONENT REPLACEMENT/INSPECTION AFTER DEPLOYMENT**.

DTC 41-XX, 42-XX, 43-XX ("X" CAN BE 0 THRU 9 OR A THRU F): INTERNAL FAILURE OF THE ODS UNIT

NOTE:

- **Before doing this troubleshooting procedure, find out if the vehicle was in a collision. If so, verify that all the required components were replaced with new components, of the correct part number, and that they were properly installed (see COMPONENT REPLACEMENT/INSPECTION AFTER DEPLOYMENT).**
- **Only read DTCs from the SRS menu, not from SWS menus unless instructed to check SWS DTCs. SWS (ODS unit) DTCs are subcodes of SRS unit DTCs. Only troubleshoot the corresponding SRS DTCs. These SWS DTCs are cleared when you turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.**

Do the troubleshooting for SRS DTC 81-4x (see **DTC 81-4X ("X" CAN BE 0 THRU 9 OR A THRU F), 81-63, 81-64: INTERNAL THE FAILURE OF THE ODS UNIT**).

DTC 71-XX ("X" CAN BE 0 THRU 9 OR A THRU F): ODS UNIT NOT CALIBRATED

NOTE:

- **Before doing this troubleshooting procedure, find out if the vehicle was in**

a collision. If so, verify that all the required components were replaced with new components, of the correct part number, and that they were properly installed (see COMPONENT REPLACEMENT/INSPECTION AFTER DEPLOYMENT).

- **Only read DTCs from the SRS menu, not from SWS menus unless instructed to check SWS DTCs. SWS (ODS unit) DTCs are subcodes of SRS unit DTCs. Only troubleshoot the corresponding SRS DTCs. These SWS DTCs are cleared when you turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.**

Do the troubleshooting for SRS DTC 81-71 (see **DTC 81-71, 81-78: ODS UNIT NOT CALIBRATED**).

DTC 11-1X ("X" CAN BE 0 THRU 9 OR A THRU F): NO SIGNAL FROM THE INNER SIDE FRONT PASSENGER'S WEIGHT SENSOR

NOTE:

- **Before doing this troubleshooting procedure, find out if the vehicle was in a collision. If so, verify that all the required components were replaced with new components, of the correct part number, and that they were properly installed (see COMPONENT REPLACEMENT/INSPECTION AFTER DEPLOYMENT).**
- **Only read DTCs from the SRS menu, not from SWS menus unless instructed to check SWS DTCs. SWS (ODS unit) DTCs are subcodes of SRS unit DTCs. Only troubleshoot the corresponding SRS DTCs. These SWS DTCs are cleared when you turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.**

Do the troubleshooting for SRS DTC 82-11 (see **DTC 82-11: NO SIGNAL FROM THE INNER SIDE FRONT PASSENGER'S WEIGHT SENSOR**).

DTC 12-2X ("X" CAN BE 0 THRU 9 OR A THRU F): NO SIGNAL FROM THE INNER SIDE FRONT PASSENGER'S WEIGHT SENSOR

NOTE:

- **Before doing this troubleshooting procedure, find out if the vehicle was in a collision. If so, verify that all the required components were replaced with new components, of the correct part number, and that they were properly installed (see COMPONENT REPLACEMENT/INSPECTION AFTER DEPLOYMENT).**
- **Only read DTCs from the SRS menu, not from SWS menus unless instructed to check SWS DTCs. SWS (ODS unit) DTCs are subcodes of SRS unit DTCs. Only troubleshoot the corresponding SRS DTCs. These SWS DTCs are cleared when you turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.**

Do the troubleshooting for SRS DTC 82-12 (see **DTC 82-12: NO SIGNAL FROM THE INNER SIDE FRONT PASSENGER'S WEIGHT SENSOR**).

DTC 13-3X ("X" CAN BE 0 THRU 9 OR A THRU F): NO SIGNAL FROM THE INNER SIDE FRONT PASSENGER'S WEIGHT SENSOR

NOTE:

- **Before doing this troubleshooting procedure, find out if the vehicle was in a collision. If so, verify that all the required components were replaced with new components, of the correct part number, and that they were properly installed (see COMPONENT REPLACEMENT/INSPECTION AFTER DEPLOYMENT).**
- **Only read DTCs from the SRS menu, not from SWS menus unless instructed to check SWS DTCs. SWS (ODS unit) DTCs are subcodes of SRS unit DTCs. Only troubleshoot the corresponding SRS DTCs. These SWS DTCs are cleared when you turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.**

Do the troubleshooting for SRS DTC 82-13 (see **DTC 82-13: NO SIGNAL FROM THE INNER SIDE FRONT PASSENGER'S WEIGHT SENSOR**).

DTC 21-1X ("X" CAN BE 0 THRU 9 OR A THRU F): NO SIGNAL FROM THE OUTER SIDE FRONT PASSENGER'S WEIGHT SENSOR

NOTE:

- **Before doing this troubleshooting procedure, find out if the vehicle was in a collision. If so, verify that all the required components were replaced with new components, of the correct part number, and that they were properly installed (see COMPONENT REPLACEMENT/INSPECTION AFTER DEPLOYMENT).**
- **Only read DTCs from the SRS menu, not from SWS menus unless instructed to check SWS DTCs. SWS (ODS unit) DTCs are subcodes of SRS unit DTCs. Only troubleshoot the corresponding SRS DTCs. These SWS DTCs are cleared when you turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.**

Do the troubleshooting for SRS DTC 83-21 (see **DTC 83-21: NO SIGNAL FROM THE OUTER SIDE FRONT PASSENGER'S WEIGHT SENSOR**).

DTC 22-2X ("X" CAN BE 0 THRU 9 OR A THRU F): NO SIGNAL FROM THE OUTER SIDE FRONT PASSENGER'S WEIGHT SENSOR

NOTE:

- **Before doing this troubleshooting procedure, find out if the vehicle was in a collision. If so, verify that all the required components were replaced with new components, of the correct part number, and that they were properly installed (see COMPONENT REPLACEMENT/INSPECTION AFTER DEPLOYMENT).**
- **Only read DTCs from the SRS menu, not from SWS menus unless instructed to check SWS DTCs. SWS (ODS unit) DTCs are subcodes of SRS unit DTCs. Only troubleshoot the corresponding SRS DTCs. These**

SWS DTCs are cleared when you turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.

Do the troubleshooting for SRS DTC 83-22 (see **DTC 83-22: NO SIGNAL FROM THE OUTER SIDE FRONT PASSENGER'S WEIGHT SENSOR**).

DTC 23-3X ("X" CAN BE 0 THRU 9 OR A THRU F): NO SIGNAL FROM THE OUTER SIDE FRONT PASSENGER'S WEIGHT SENSOR

NOTE:

- **Before doing this troubleshooting procedure, find out if the vehicle was in a collision. If so, verify that ail the required components were replaced with new components, of the correct part number, and that they were properly installed (see COMPONENT REPLACEMENT/INSPECTION AFTER DEPLOYMENT).**
- **Only read DTCs from the SRS menu, not from SWS menus unless instructed to check SWS DTCs. SWS (ODS unit) DTCs are subcodes of SRS unit DTCs. Only troubleshoot the corresponding SRS DTCs. These SWS DTCs are cleared when you turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.**

Do the troubleshooting for SRS DTC 83-23 (see **DTC 83-23: NO SIGNAL FROM THE OUTER SIDE FRONT PASSENGER'S WEIGHT SENSOR**).

SYMPTOM TROUBLESHOOTING

SRS INDICATOR DOES NOT COME ON

NOTE:

- **Before doing this troubleshooting procedure, find out if the vehicle was in a collision. If so, verify that all the required components were replaced with new components, of the correct part number, and that they were properly installed (see COMPONENT REPLACEMENT/INSPECTION AFTER DEPLOYMENT).**
- **Before replacing the SRS unit, check the SRS unit software version with the HDS. If the software version is not the latest, update the SRS unit software (see SRS UNIT UPDATE), and retest.**

1. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode, then wait for 10 seconds.
2. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode, and check that the SRS indicator comes on for about 6 seconds and then goes off.

   Does the SRS indicator come on?

   YES - Intermittent failure, the system is OK at this time.

NO - Go to step 3.

3. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode, then wait for 10 seconds.
4. Connect the HDS to the data link connector (DLC) (see step 2).
5. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
6. Make sure the HDS communicates with the vehicle and the SRS unit. If it does not communicate, go to the DLC circuit troubleshooting (see **DLC CIRCUIT TROUBLESHOOTING**).
7. Do the gauge control module self-diagnostic function (see **SELF-DIAGNOSTIC FUNCTION**).

   Does the SRS indicator blink?

   YES - Faulty SRS unit; replace the SRS unit (see **SRS UNIT REPLACEMENT**).

   NO - Faulty gauge control module; replace the gauge control module (see **GAUGE CONTROL MODULE REPLACEMENT**).

SRS INDICATOR STAYS ON, BUT NO DTCS ARE STORED, OR CANNOT BE READ

NOTE:

- **Before doing this troubleshooting procedure, find out if the vehicle was in a collision. If so, verify that all the required components were replaced with new components, of the correct part number, and that they were properly installed (see COMPONENT REPLACEMENT/INSPECTION AFTER DEPLOYMENT).**
- **Before doing this troubleshooting procedure, make sure the battery is fully charged. If the battery voltage is low, SRS indicator may stays on.**
- **Before replacing the SRS unit, check the SRS unit software version with the HDS. If the software version is not the latest, update the SRS unit software (see SRS UNIT UPDATE), and retest.**

1. Start the engine, and see if the malfunction indicator lamp (MIL) also stays on.

   Does the MIL stay on longer than 30 seconds?

   YES - Go to MIL Circuit Troubleshooting (see **MIL CIRCUIT TROUBLESHOOTING**).

   NO - Go to step 2.

2. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
3. Connect the HDS to the data link connector (DLC) (see step 2).
4. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
5. Make sure the HDS communicates with the vehicle and the SRS unit. If it does not communicate, go to the DLC circuit troubleshooting (see **DLC CIRCUIT TROUBLESHOOTING**).
6. Check for communication to the SRS with the HDS.

Does the HDS communicate with the SRS unit?

YES - Go to step 7.

NO - Go to step 10.

7. Clear the DTCs with the HDS (see **HOW TO CLEAR DTCS**).

   Are any SRS DTCs indicated?

   YES - Do the SRS DTC troubleshooting.

   NO - Go to step 8.

8. Check for body electrical DTCs with the HDS (see **WIRE COLOR CODES**).

   Is DTC U0151 indicated?

   YES - Troubleshoot DTC U0151 (see **DTC U0151: GAUGE CONTROL MODULE LOST COMMUNICATION WITH SRS UNIT (SRS MESSAGE)**).

   NO - Go to step 9.

9. Do the gauge control module self-diagnostic function (see **SELF-DIAGNOSTIC FUNCTION**).

   Does the SRS indicator blink?

   YES - Faulty SRS unit; replace the SRS unit (see **SRS UNIT REPLACEMENT**).

   NO - Faulty gauge control module; replace the gauge control module (see **GAUGE CONTROL MODULE REPLACEMENT**).

10. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
11. Check the No. 5 (7.5 A) and No. 11 (10 A) fuse in the driver's under-dash fuse/relay box.

    Is the fuse OK?

    YES - Go to step 12.

    NO - Replace the fuse, then turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode. If the fuse blows again, check for a short to ground in the driver's under-dash fuse/relay box No. 5 (7.5 A) and No. 11 (10 A) fuse circuits (dashboard wire harness, SRS floor wire harness, or front passenger's seat wire harness); replace the faulty harness, then clear the DTC, and retest. If the problem is still present, replace the driver's under-dash fuse/relay box (see **DRIVER'S UNDER-DASH FUSE/RELAY BOX (MICU) REMOVAL AND INSTALLATION**).

12. Check the connector connections between SRS unit connector A (39P) and driver's under-dash fuse/relay

box connector M (4P).

Are the connector connections OK?

YES - Go to step 13.

NO - Repair the poor connector connections, and retest. If the problem is still present, go to step 13.

13. Disconnect the negative cable from the battery, then wait at least 3 minutes.
14. Disconnect SRS unit connector A (39P) from the SRS unit (see **DISCONNECTING SYSTEM CONNECTORS**).
15. Reconnect the negative cable to the battery.
16. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
17. Measure the voltage between body ground and SRS unit connector A (39P) terminal No. 26 and No. 27 individually. There should be battery voltage.

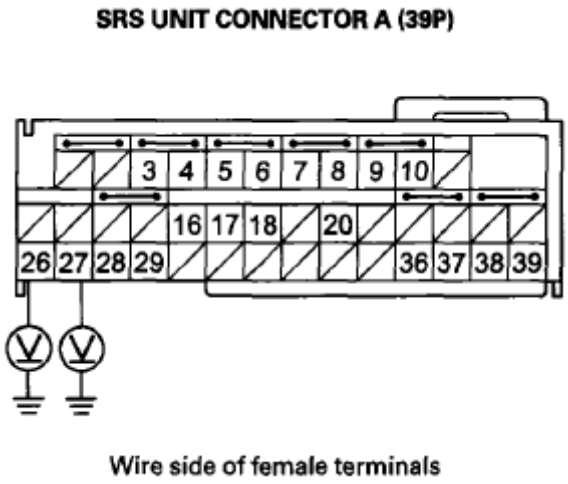


Fig. 204: Measuring Voltage Between Body Ground And SRS Unit Connector A (39P) Terminal No. 26 And No. 27
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there battery voltage?

YES - Go to step 18.

NO - Open in the dashboard wire harness; replace the dashboard wire harness.

18. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
19. Measure the resistance between body ground and SRS unit connector A (39P) terminals No. 28 and No. 29 individually. There should be less than 1.0 ohms.

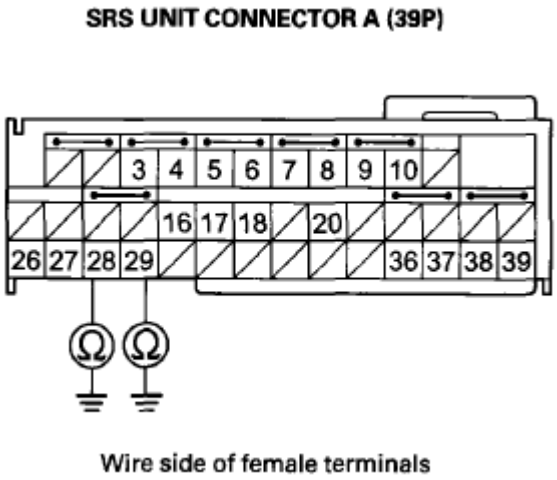


Fig. 205: Measuring Resistance Between Body Ground And SRS Unit Connector A (39P) Terminals No. 28 And No. 29
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is the resistance as specified?

YES - Faulty SRS unit; replace the SRS unit (see **SRS UNIT REPLACEMENT**).

NO - Open in the dashboard wire harness; check for a poor ground at G404 (see **CONNECTOR TO FUSE/RELAY BOX INDEX**). If the ground is OK, replace the dashboard wire harness.

SIDE AIRBAG CUTOFF INDICATOR STAYS ON

NOTE:

- **Before doing this troubleshooting procedure, find out if the vehicle was in a collision. If so, verify that all the required components were replaced with new components, of the correct part number, and that they were properly installed (see COMPONENT REPLACEMENT/INSPECTION AFTER DEPLOYMENT).**
- **Before replacing the SRS unit, check the SRS unit software version with the HDS. If the software version is not the latest, update the SRS unit software (see SRS UNIT UPDATE), and retest.**

1. Make sure nothing is on the front passenger's seat.
2. Make sure the seat-back is dry.
3. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode, and see if the SRS indicator comes on.

Does the SRS indicator come on and stay on?

YES - Go to the **SYMPTOM TROUBLESHOOTING** "SRS indicator stays on, but no DTCs are stored, or cannot be read".

NO - Go to step 4.

4. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
5. Check for body electrical DTCs with the HDS (see **WIRE COLOR CODES**).

   Is DTC U0151 indicated?

   YES - Troubleshoot DTC U0151 (see **DTC U0151: GAUGE CONTROL MODULE LOST COMMUNICATION WITH SRS UNIT (SRS MESSAGE)**).

   NO - Go to step 6.

6. Do the gauge control module self-diagnostic function (see **SELF-DIAGNOSTIC FUNCTION**).

   Does the side airbag cutoff indicator blink?

   YES - Do the ODS unit initialization (see **ODS UNIT INITIALIZATION**), and retest. If the problem is still present, replace the seat-back cover/pad equipped with an OPDS sensor (see **FRONT SEAT-BACK COVER REPLACEMENT**), and retest. If the problem is still present, replace the SRS unit (see **SRS UNIT REPLACEMENT**).

   NO - Faulty gauge control module; replace the gauge control module (see **GAUGE CONTROL MODULE REPLACEMENT**).

SIDE AIRBAG CUTOFF INDICATOR DOES NOT COME ON

NOTE:

- **Before doing this troubleshooting procedure, find out if the vehicle was in a collision. If so, verify that all the required components were replaced with new components, of the correct part number, and that they were properly installed (see COMPONENT REPLACEMENT/INSPECTION AFTER DEPLOYMENT).**
- **If the SRS indicator also stays on, go to SRS indicator stays on, but no DTCs are stored, or cannot be read (see SRS INDICATOR STAYS ON, BUT NO DTCS ARE STORED, OR CANNOT BE READ).**
- **Before replacing the SRS unit, check the SRS unit software version with the HDS. If the software version is not the latest, update the SRS unit software (see SRS UNIT UPDATE), and retest.**

1. Turn the ignition to switch LOCK (0), or press the engine start/stop button to select the OFF mode, then wait for 10 seconds.
2. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode, and check that the side airbag cutoff indicator comes on for about 6 seconds.

   Does the side airbag cutoff indicator come on?

   YES - Intermittent failure, the system is OK at this time.

NO - Go to step 3.

3. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
4. Connect the HDS to the data link connector (DLC) (see step 2).
5. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
6. Make sure the HDS communicates with the vehicle and the SRS unit. If it does not communicate, go to the DLC circuit troubleshooting (see **DLC CIRCUIT TROUBLESHOOTING**).
7. Do the gauge control module self-diagnostic function (see **SELF-DIAGNOSTIC FUNCTION**).

   Does the side airbag cutoff indicator blink?

   YES - Faulty SRS unit; replace the SRS unit (see **SRS UNIT REPLACEMENT**).

   NO - Faulty gauge control module; replace the gauge control module (see **GAUGE CONTROL MODULE REPLACEMENT**).

PASSENGER'S AIRBAG CUTOFF INDICATOR STAYS ON OR COMES ON SUDDENLY

NOTE: Under the following conditions, the passenger's airbag cutoff indicator stays on or comes on suddenly:

- Before doing this troubleshooting procedure, find out if the vehicle was in a collision. If so, verify that all the required components were replaced with new components, of the correct part number, and that they were properly installed (see **COMPONENT REPLACEMENT/INSPECTION AFTER DEPLOYMENT**).
- When no one is sitting on the front passenger's seat, but there is an object on the seat more than 11 lbs
- (5 kg).
- The front seat belt is buckled, but no one is sitting on the front passenger's seat.
- Someone who is less than about 65 lbs (30 kg) is sitting on the front passenger's seat.
- Before replacing the SRS unit, check the SRS unit software version with the HDS. If the software version is not the latest, update the SRS unit software (see **SRS UNIT UPDATE**), and retest.

1. Check for these items, then recheck the passenger's airbag cutoff indicator.
   - The front passenger's seat is installed correctly.
   - Nothing is/was on the front passenger's seat.
   - Nothing is/was under the front passenger's seat.
   - Nothing is/was in the front passenger's seat-back pocket.
   - Whoever was sitting on the front passenger's seat was sitting in the proper sitting position.
   - The seat weight sensors may not measure the correct weight of the front passenger. If the front passenger's weight is more than 65 lbs (30 kg) but is supporting some of their body weight with their feet on the floor, or with their hands and arms on an arm rest, the actual weight of the passenger is not measured.

Does the passenger's airbag cutoff indicator stay on?

YES - Go to step 2.

NO - The vehicle is OK at this time.

2. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
3. Connect the HDS to the data link connector (DLC) (see step 2).
4. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
5. Make sure the HDS communicates with the vehicle and the SRS unit. If it does not communicate, go to the DLC circuit troubleshooting (see **DLC CIRCUIT TROUBLESHOOTING**).
6. From the HDS Main Menu, select SRS, then Inspection. In the Inspection Menu, select AFTER REPLACING FRONT PASSENGER'S SEAT COMPONENT(S), and follows the prompts.

   Does the passenger's airbag cutoff indicator stay on?

   YES - Go to step 7.

   NO - The vehicle is OK at this time.

7. From the HDS Main Menu, select SRS, then Inspection. In the Inspection Menu, select AFTER A VEHICLE COLLISION, and follows the prompts.

   Does the passenger's airbag cutoff indicator stay on?

   YES - Faulty SRS unit; replace the SRS unit (see **SRS UNIT REPLACEMENT**), and retest. If the problem is still present, replace the ODS unit (see **ODS UNIT REPLACEMENT**), and retest. If the problem is still present, replace the front passenger's seat frame/front passenger's weight sensors as an assembly (see **FRONT PASSENGER'S WEIGHT SENSOR REPLACEMENT**).

   NO - The vehicle is OK at this time.

FAULTY SEAT BELT REMINDER INDICATOR

NOTE:

- **Before doing this troubleshooting procedure, find out if the vehicle was in a collision. If so, verify that all the required components were replaced with new components, of the correct part number, and that they were properly installed (see COMPONENT REPLACEMENT/INSPECTION AFTER DEPLOYMENT).**
- **Before doing this troubleshooting procedure, make sure the battery is fully charged (see BATTERY TEST). If the battery voltage is low, SRS indicator may stay on.**
- **Before replacing the SRS unit, check the SRS unit software version with the HDS. If the software version is not the latest, update the SRS unit software (see SRS UNIT UPDATE), and retest.**

1. Clear the DTCs with the HDS (see **HOW TO CLEAR DTCS**).

   Are any SRS DTCs indicated?

   YES - Do the SRS DTC troubleshooting.

   NO - Go to step 2.

2. Check for body electrical DTCs with the HDS (see **WIRE COLOR CODES**).

   Is DTC U0151 indicated?

   YES - Troubleshoot DTC U0151 (see **DTC U0151: GAUGE CONTROL MODULE LOST COMMUNICATION WITH SRS UNIT (SRS MESSAGE)**).

   NO - Go to step 3.

3. Do the gauge control module self-diagnostic function (see **SELF-DIAGNOSTIC FUNCTION**).

   Does the seat belt reminder indicator blink?

   YES - Faulty SRS unit; replace the SRS unit (see **SRS UNIT REPLACEMENT**).

   NO - Faulty gauge control module; replace the gauge control module (see **GAUGE CONTROL MODULE REPLACEMENT**).

COMPONENT REPLACEMENT/INSPECTION AFTER DEPLOYMENT

NOTE:

- **If the harness is broken or damaged in the areas relevant to the replacement parts shown below, replace the harness, do not repair it.**
- **Before doing any SRS repairs. Check for DTCs with the HDS (see DTC (DIAGNOSTIC TROUBLE CODES)) for the less obvious deployed components (front seat belt tensioners, front impact sensors, side impact sensors, rear safing sensor, etc.).**
- **Do not replace the ODS unit unless it is physically damaged or a specific fault was found during DTC troubleshooting because it could complicate troubleshooting other DTCs.**
- **After a vehicle collision, do the ODS unit operation check (see ODS UNIT OPERATION CHECK).**
- **After a vehicle collision, inspect the front seat active head restraints (see FRONT SEAT ACTIVE HEAD RESTRAINT INSPECTION).**

After a collision where the front seat belt tensioners deployed, replace these items:

- SRS unit

- Front seat belt(s)
- Front impact sensor(s)

After a collision where the front airbag(s) deployed, replace these items:

- SRS unit
- Deployed front airbag(s)
- Front seat belt(s)
- Front impact sensor(s)
- Dashboard

After a collision where a side airbag deployed, replace the items for the side(s) that deployed:

- SRS unit
- Deployed side airbag(s)
- Side impact sensor(s) (first)
- Side impact sensor(s) (second)
- Seat frame and related parts
- Front seat belt(s)

After a collision where a side curtain airbag has deployed, replace the items for the side(s) that deployed:

- SRS unit
- Deployed side curtain airbag(s)
- Front seat belt(s)
- Side impact sensor(s) (first)
- Side impact sensor(s) (second)
- Rear safing sensor
- A-pillar trim
- B-pillar upper trim
- C-pillar trim
- Front grab handle
- Rear grab handle
- All related trim clips
- Sunvisor

After a moderate to severe side or rear collision, inspect for any damage on the side curtain airbag or other related components. Replace the components as needed.

A-PILLAR TRIM

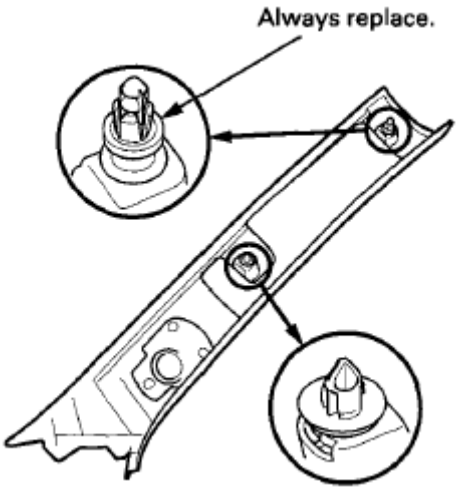


Fig. 206: Identifying A-Pillar Trim
Courtesy of AMERICAN HONDA MOTOR CO., INC.

B-PILLAR TRIM

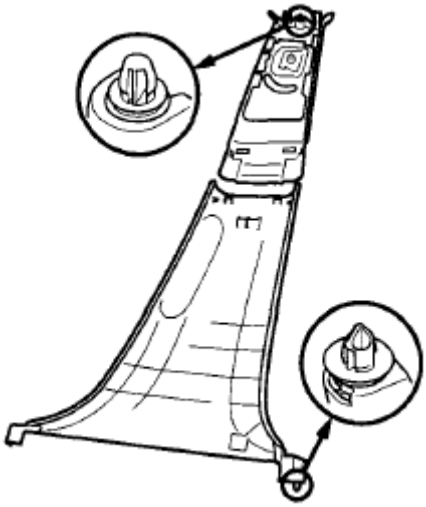


Fig. 207: Identifying B-Pillar Trim
Courtesy of AMERICAN HONDA MOTOR CO., INC.

C-PILLAR TRIM

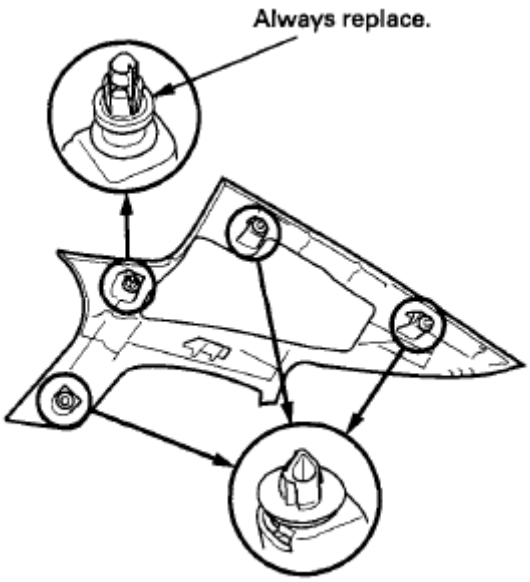


Fig. 208: Identifying C-Pillar Trim
Courtesy of AMERICAN HONDA MOTOR CO., INC.

During the repair process, inspect these areas:

- Inspect all the SRS wire harnesses. Replace, do not repair, any damaged harnesses.
- Inspect the cable reel for heat damage. If there is any damage, replace the cable reel (see **CABLE REEL REPLACEMENT**).

After the vehicle is completely repaired, turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode. If the SRS indicator comes on for about 6 seconds and then goes off, the SRS is OK. If the indicator does not function properly, use the HDS to check for DTCs (see **HOW TO READ DTCS**). If you cannot retrieve a code, do the SRS Symptom Troubleshooting.

CHECKING AND ADJUSTING THE HEADLINER/PILLAR TRIM OVERLAP

To prevent the side curtain airbag from deploying and damaging the pillar trim (A-pillar trim, B-pillar trim, C-pillar trim), the overlap between the headliner and pillar trim must be less then 8 mm (0.3 in) To check the overlap, do this:

1. Install the headliner (A) and the pillar trim (B).

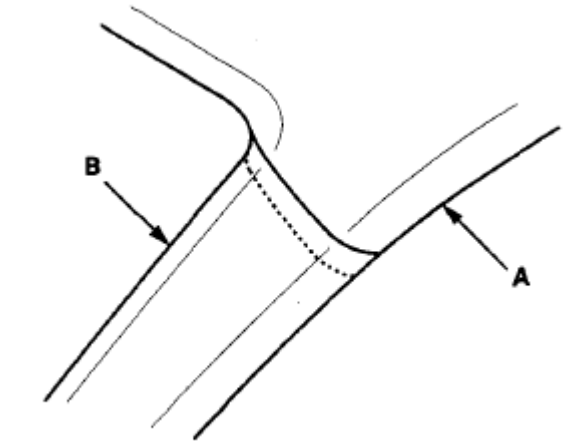


Fig. 209: Identifying Headliner And Pillar Trim
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Apply masking tape (A) to the headliner (B) to mark the upper edge of the pillar trim (C).

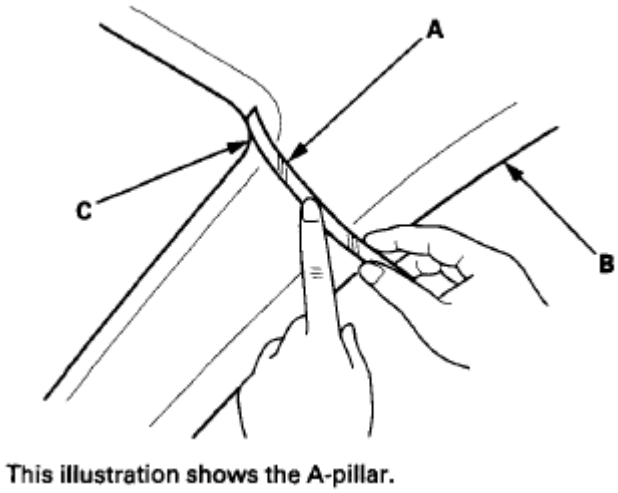


Fig. 210: Applying Masking Tape To Headliner
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Remove the pillar trim, and measure the headliner overlap.
   - If the overlap is less than 8 mm (0.3 in), remove the tape, and install the pillar trim.
   - If the overlap is more than 8 mm (0.3 in), go to step 4.

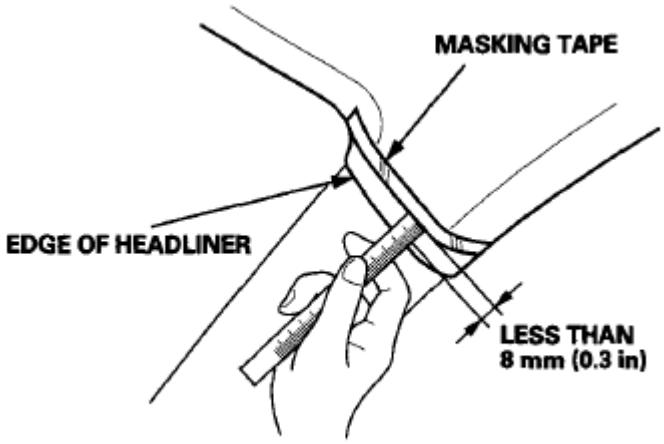


Fig. 211: Measuring Headliner Overlap
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Carefully trim the headliner with a utility knife, reducing the overlap to less than 8 mm (0.3 in).

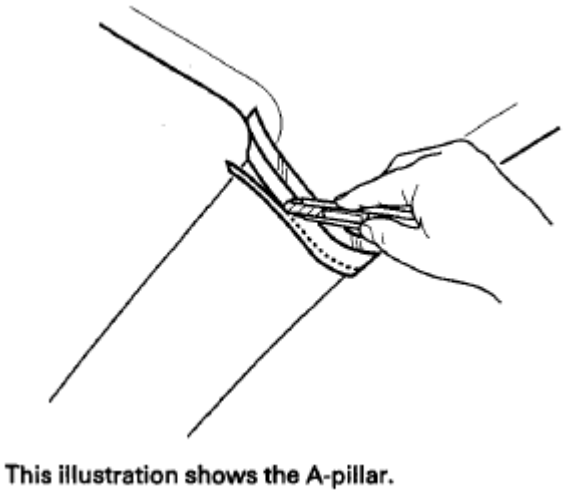


Fig. 212: Reducing Overlap With Utility Knife
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Remove the tape, and install the pillar trim.

DRIVER'S AIRBAG REPLACEMENT

NOTE: If replacing the driver's airbag after deployment, refer to COMPONENT REPLACEMENT/INSPECTION AFTER DEPLOYMENT for a complete list of other parts that must also be replaced.

REMOVAL

1. Do the battery terminal disconnection procedure (see **BATTERY TERMINAL DISCONNECTION AND RECONNECTION**), then wait at least 3 minutes before starting work.
2. Remove the access panel (A) from the steering wheel, then disconnect the cable reel 4P connector (B) from the driver's airbag 4P connector.

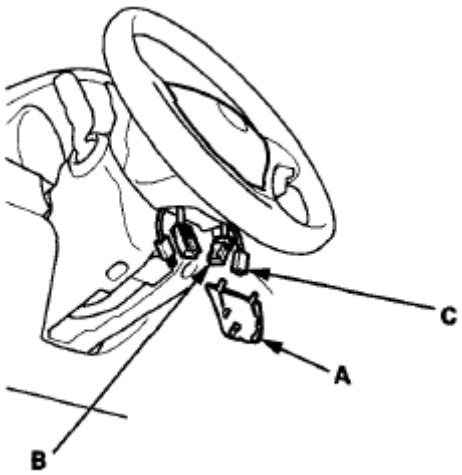


Fig. 213: Identifying Access Panel, Cable Reel 4P Connector And Driver's Airbag 4P Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Disconnect the horn switch 1P connector (C) from the driver's airbag 1P connector.
4. Remove the two TORX bolts (A) using a TORX T30 bit.

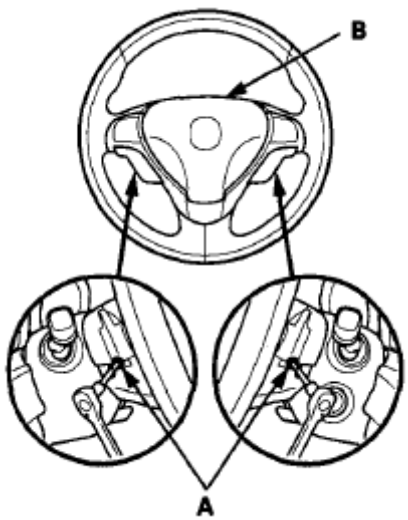


Fig. 214: Removing Two Torx Bolts Using Torx T30 Bit
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Remove the driver's airbag (B).

INSTALLATION

NOTE: If you are replacing a deployed driver's airbag, inspect the cable reel for heat damage. If there is any damage, replace the cable reel (see CABLE REEL REPLACEMENT).

1. Place the driver's airbag (A) in the steering wheel, and tighten the new TORX bolts (B) to the specified torque, using a TORX T30 bit.

NOTE: Make sure the clearance (C) between the steering wheel and horn pad is the specified value.

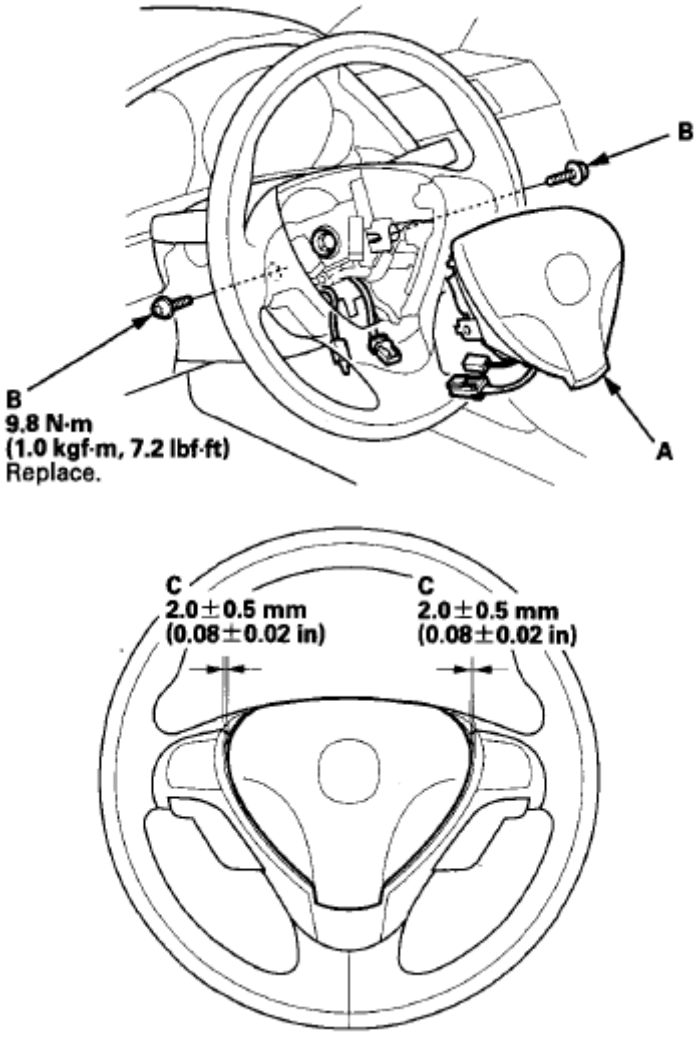


Fig. 215: Identifying Driver's Airbag, Torx Bolts And Clearance Between Steering Wheel And Horn Pad With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Connect the driver's airbag 4P connector (A) and horn switch 1P connector (B), then install the access panel (C) on the steering wheel.

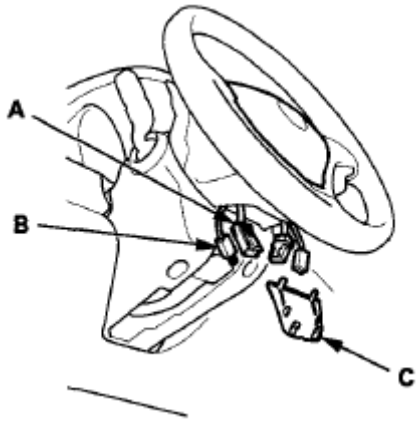


Fig. 216: Identifying Driver's Airbag 4P Connector, Horn Switch 1P Connector And Access Panel
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Do the battery terminal reconnection procedure (see **BATTERY TERMINAL DISCONNECTION AND RECONNECTION**).
4. Clear any DTCs with the HDS (see **HOW TO CLEAR DTCS**).
5. After installing the driver's airbag, confirm proper system operation:
   - Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode, and check that the SRS indicator comes on for about 6 seconds and then goes off.
   - Make sure the horn works properly.

FRONT PASSENGER'S AIRBAG REPLACEMENT

NOTE: If replacing the front passenger's airbag after deployment, refer to COMPONENT REPLACEMENT/INSPECTION AFTER DEPLOYMENT for a complete list of other parts that must also be replaced.

REMOVAL

1. Do the battery terminal disconnection procedure (see **BATTERY TERMINAL DISCONNECTION AND RECONNECTION**), then wait at least 3 minutes before starting work.
2. Remove the glove box (see **GLOVE BOX REMOVAL/INSTALLATION**).
3. Disconnect the dashboard wire harness 4P connector (A) from front passenger's airbag 4P connector.

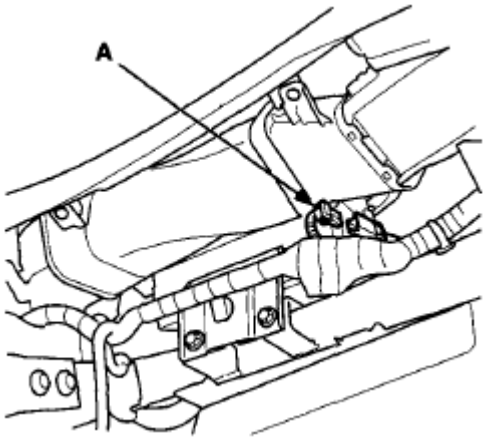


Fig. 217: Identifying Dashboard Wire Harness 4P Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Remove the two screws, then remove the passenger's dashboard ducts (A, B).

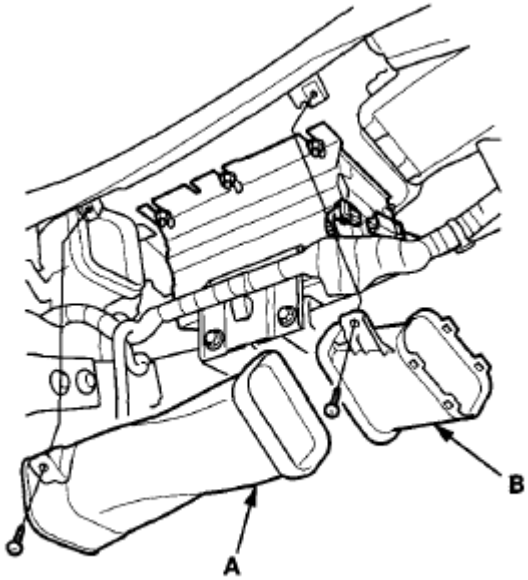


Fig. 218: Removing Passenger's Dashboard Ducts
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Detach the clip (A), then remove the mounting nuts (B) and the mounting bolts (C) from the bracket (D).

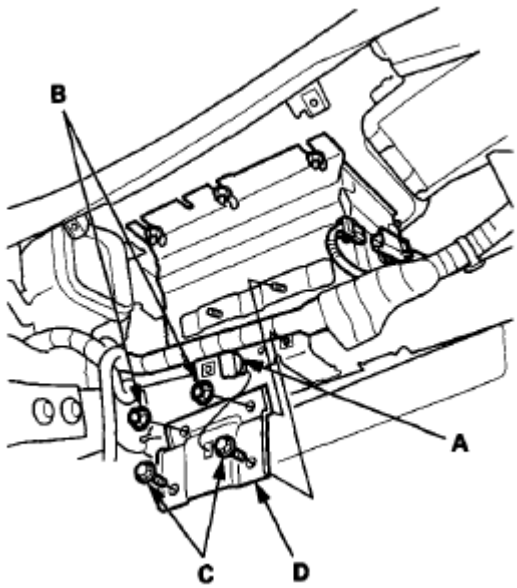


Fig. 219: Identifying Clip, Mounting Nuts And Mounting Bolts
Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Remove the mounting nuts (A) from the front passenger's airbag (B), then remove the front passenger's airbag.

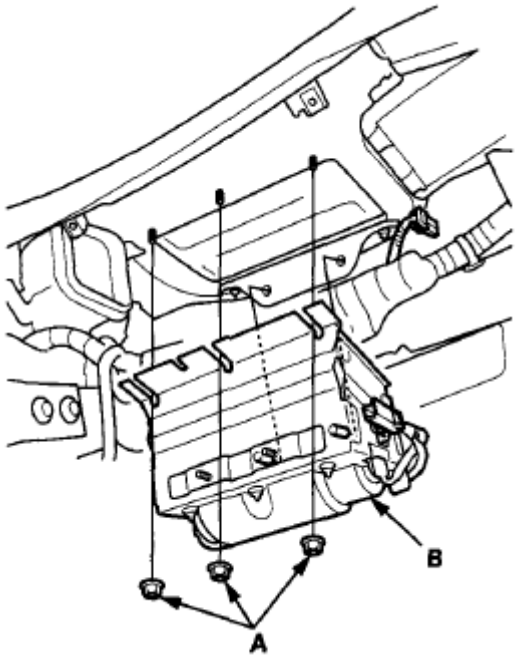


Fig. 220: Removing Mounting Nuts From Front Passenger's Airbag
Courtesy of AMERICAN HONDA MOTOR CO., INC.

INSTALLATION

1. Place the front passenger's airbag (A) into the bracket. Install the front passenger's airbag new mounting nuts (B) to the specified torque.

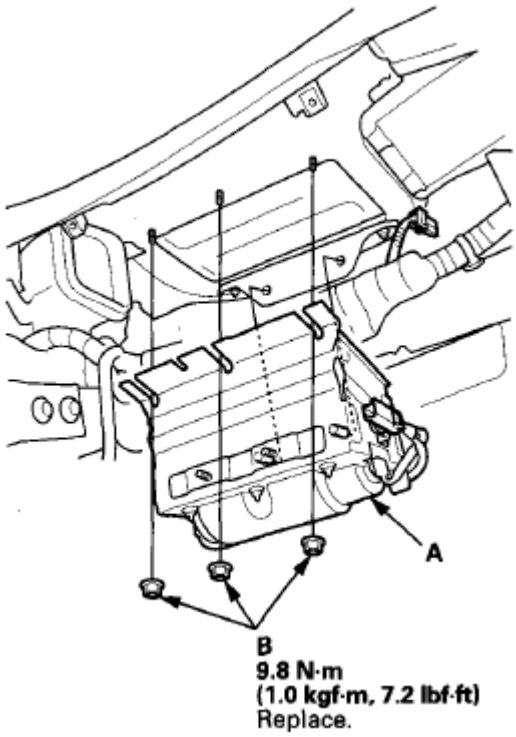


Fig. 221: Identifying Front Passenger's Airbag And Front Passenger's Airbag Mounting Nuts With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Install the bracket (A) with the new mounting bolts (B) and the new mounting nuts (C) to the specified torque, then install the clip (D).

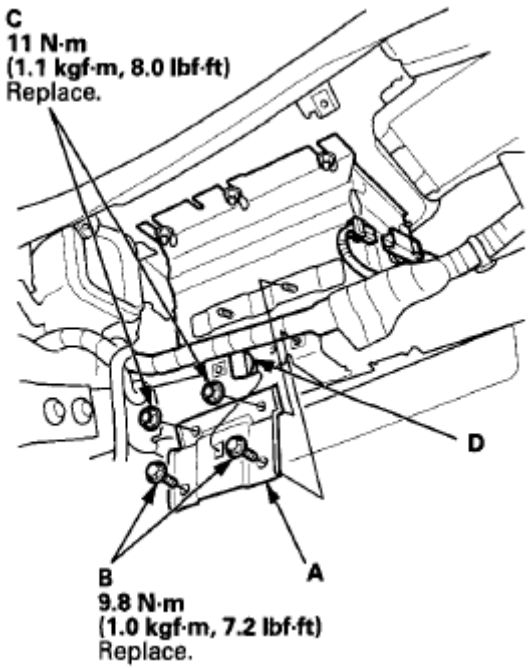


Fig. 222: Installing Bracket With Mounting Bolts And Mounting Nuts With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Install the passenger's dashboard ducts (A, B) with the two screws.

NOTE: Make sure the passenger's dashboard ducts are connected securely.

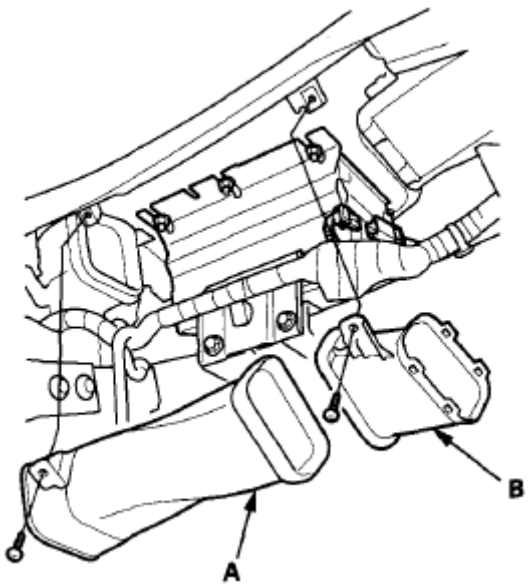


Fig. 223: Identifying Passenger's Dashboard Ducts
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Connect the dashboard wire harness 4P connector (A) to the front passenger's airbag 4P connector, then reinstall the glove box (see **GLOVE BOX REMOVAL/INSTALLATION**).

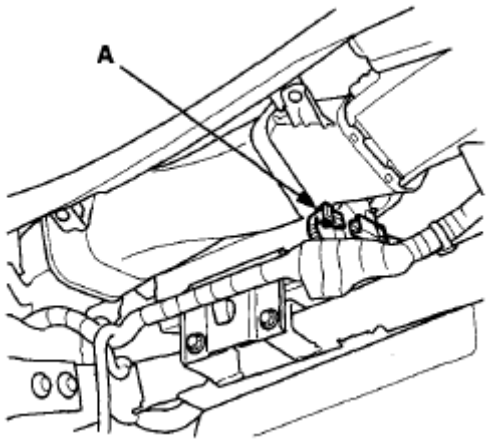


Fig. 224: Identifying Dashboard Wire Harness 4P Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Install the glove box (see **GLOVE BOX REMOVAL/INSTALLATION**).
6. Do the battery terminal reconnection procedure (see **BATTERY TERMINAL DISCONNECTION AND RECONNECTION**).
7. Clear any DTCs with the HDS (see **HOW TO CLEAR DTCS**).
8. After installing the front passenger's airbag, confirm proper system operation: Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode, and check that the SRS indicator comes on for about 6 seconds and then goes off.

SIDE AIRBAG REPLACEMENT

NOTE: If replacing the side airbag after deployment, refer to COMPONENT REPLACEMENT/INSPECTION AFTER DEPLOYMENT for a complete list of other parts that must also be replaced.

REMOVAL

1. Do the battery terminal disconnection procedure (see **BATTERY TERMINAL DISCONNECTION AND RECONNECTION**), then wait at least 3 minutes before starting work.
2. Remove the front seat (see **FRONT SEAT REMOVAL/INSTALLATION**).
3. Detach the clips (A) and harness holder (B) of side airbag harness from the seat cushion frame.

Driver's Seat With Seat Ventilation

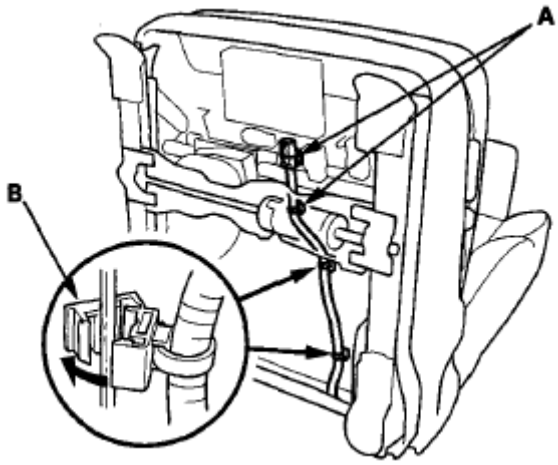


Fig. 225: Detaching Clips And Harness Holder Of Side Airbag Harness From Seat Cushion Frame (Driver's Seat With Seat Ventilation)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Driver's Seat Without Seat Ventilation

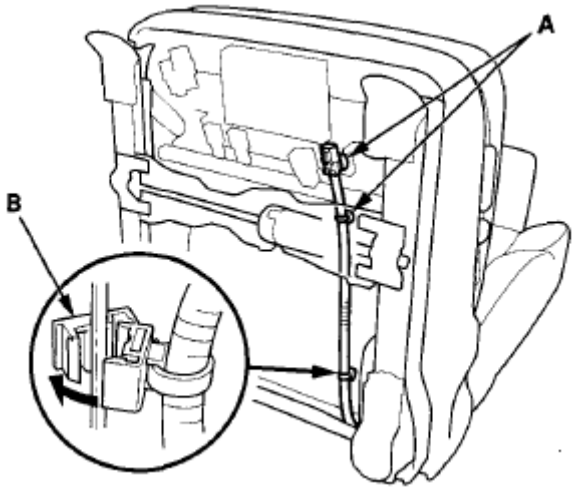


Fig. 226: Detaching Clips And Harness Holder Of Side Airbag Harness From Seat Cushion Frame (Driver's Seat Without Seat Ventilation)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Front Passenger's Seat A

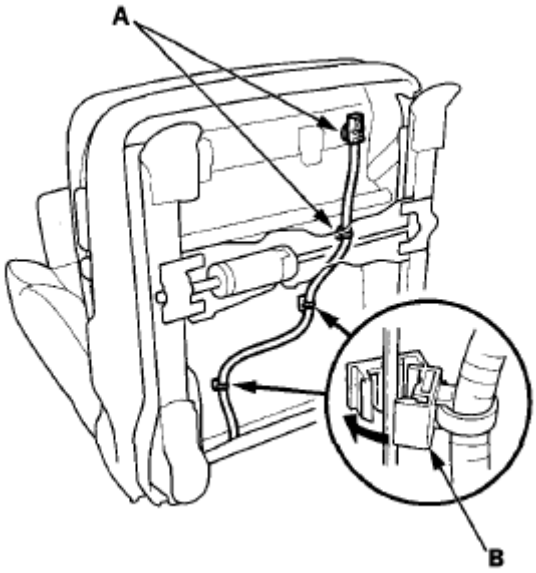


Fig. 227: Detaching Clips And Harness Holder Of Side Airbag Harness From Seat Cushion Frame (Front Passenger's Seat)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Remove the front seat back panel (see **FRONT SEAT-BACK COVER REPLACEMENT**).
5. Turn over the seat-back cover/pad to gain access to the side airbag (see **FRONT SEAT-BACK COVER REPLACEMENT**).
6. Release airbag attachment wire B from airbag attachment wire A and seat-back frame (C).

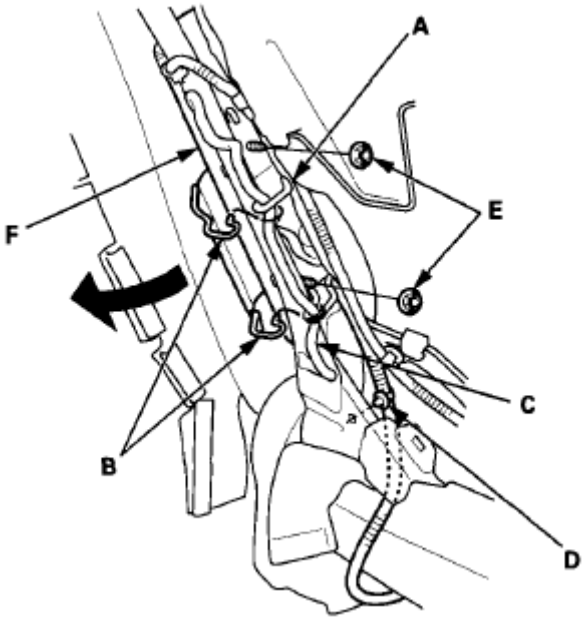


Fig. 228: Releasing Airbag Attachment Wire From Airbag Attachment Wire And Seat-Back Frame
Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Detach the clip (D). Pull out the side airbag harness in the seat-back cover, then remove the two mounting nuts (E) and the side airbag (F).

INSTALLATION

NOTE:

- **If the side airbag lid is secured with tape, remove the tape.**
- **Do not open the lid on the side airbag cover.**
- **If you are replacing a deployed airbag, replace the attachment wire A and B.**
- **Make sure that the seat-back cover/pad is installed properly. Improper installation may prevent proper deployment.**
- **Be sure to install the harness so that they are not pinched or interfering with other parts.**

1. Place the side airbag (C) on the seat-back frame. Install the two new side airbag mounting nuts (D) to the specified torque.

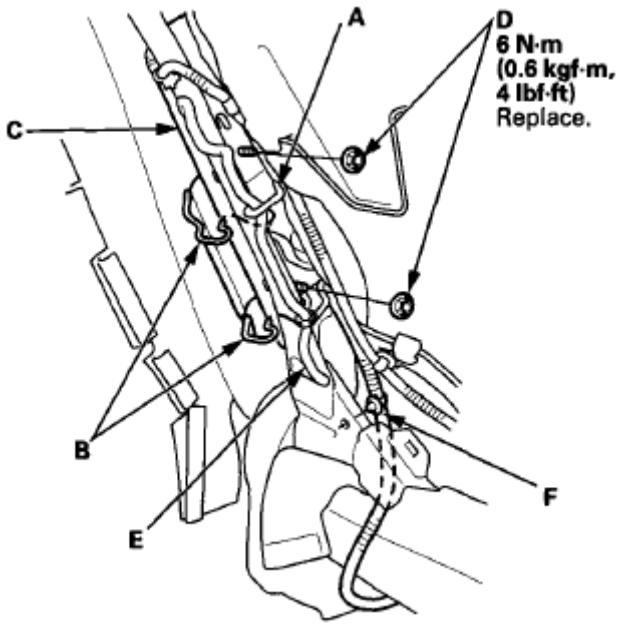


Fig. 229: Identifying Wire A And B, Side Airbag And Side Airbag Mounting Nuts With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Install airbag attachment wire B in airbag attachment wire A and the seat-back frame (E).

NOTE: **Make sure airbag attachment wires A, B are installed in the reinforcing cloths correctly (see FRONT SEAT-BACK COVER REPLACEMENT).**

3. Install the side airbag harness into the seat-back cover, then install the clip (F).

4. Reinstall the seat-back cover/pad in the reverse order of removal (see **FRONT SEAT-BACK COVER REPLACEMENT**).
5. Install the front seat back panel (see **FRONT SEAT-BACK COVER REPLACEMENT**).
6. Install the clips (A) and harness holder (B) of side airbag harness to seat cushion frame.

Driver's Seat With Seat Ventilation

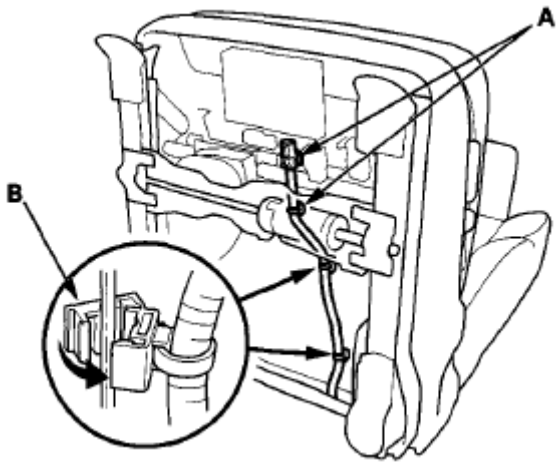


Fig. 230: Installing Clips And Harness Holder Of Side Airbag Harness To Seat Cushion Frame (Driver's Seat With Seat Ventilation)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Driver's Seat Without Seat Ventilation

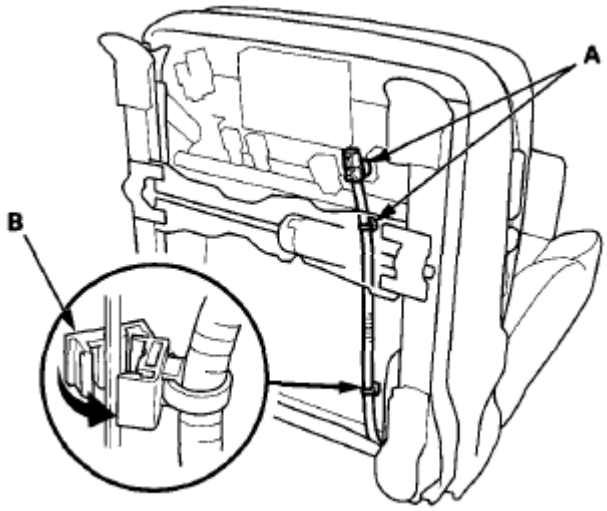


Fig. 231: Installing Clips And Harness Holder Of Side Airbag Harness To Seat Cushion Frame (Driver's Seat Without Seat Ventilation)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Front Passenger's Seat A

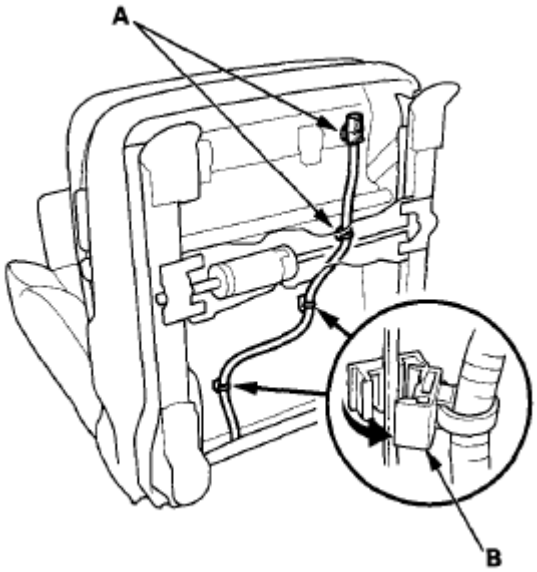


Fig. 232: Installing Clips And Harness Holder Of Side Airbag Harness To Seat Cushion Frame (Front Passenger's Seat)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Install the front seat (see **FRONT SEAT REMOVAL/INSTALLATION**).
8. Do the battery terminal reconnection procedure (see **BATTERY TERMINAL DISCONNECTION AND RECONNECTION**).
9. Move the front seat and the seat-back through their full ranges of movement, making sure the harness are not pinched or interfering with other parts.
10. Clear any DTCs with the HDS (see **HOW TO CLEAR DTCS**).
11. After installing the side airbag, confirm proper system operation: Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode, and check that the SRS indicator comes on for about 6 seconds and then goes off.

SIDE CURTAIN AIRBAG REPLACEMENT

REMOVAL

NOTE:

- **If replacing the side curtain airbag after deployment, refer to COMPONENT REPLACEMENT/INSPECTION AFTER DEPLOYMENT for a complete list of other parts that must also be replaced.**
- **Review the interior trim replacement procedure before doing repair or service (see COMPONENT LOCATION INDEX).**
- **Removal of the side curtain airbag must be done according to Precaution and Procedures (see PRECAUTIONS AND PROCEDURES).**

1. Do the battery terminal disconnection procedure (see **BATTERY TERMINAL DISCONNECTION AND RECONNECTION**), then wait at least 3 minutes before starting work.

2. Remove the headliner (see **HEADLINER REMOVAL/INSTALLATION**).
3. Disconnect the SRS floor wire harness 2P connector (A) from the side curtain airbag 2P connector.

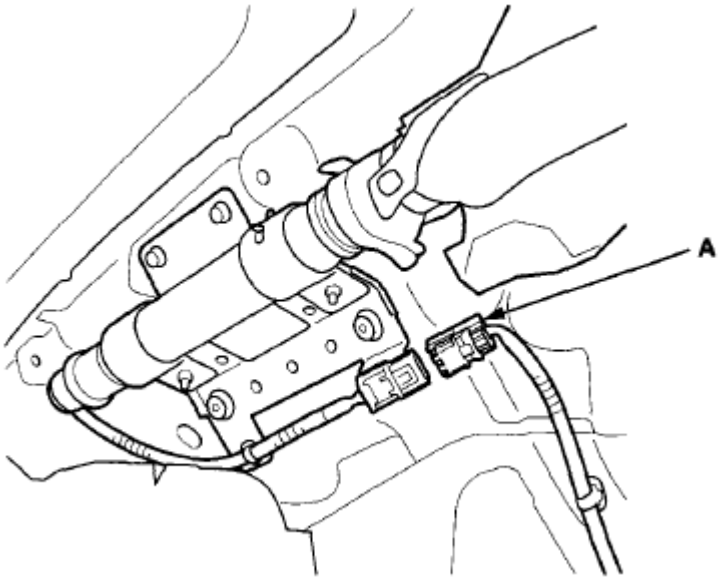
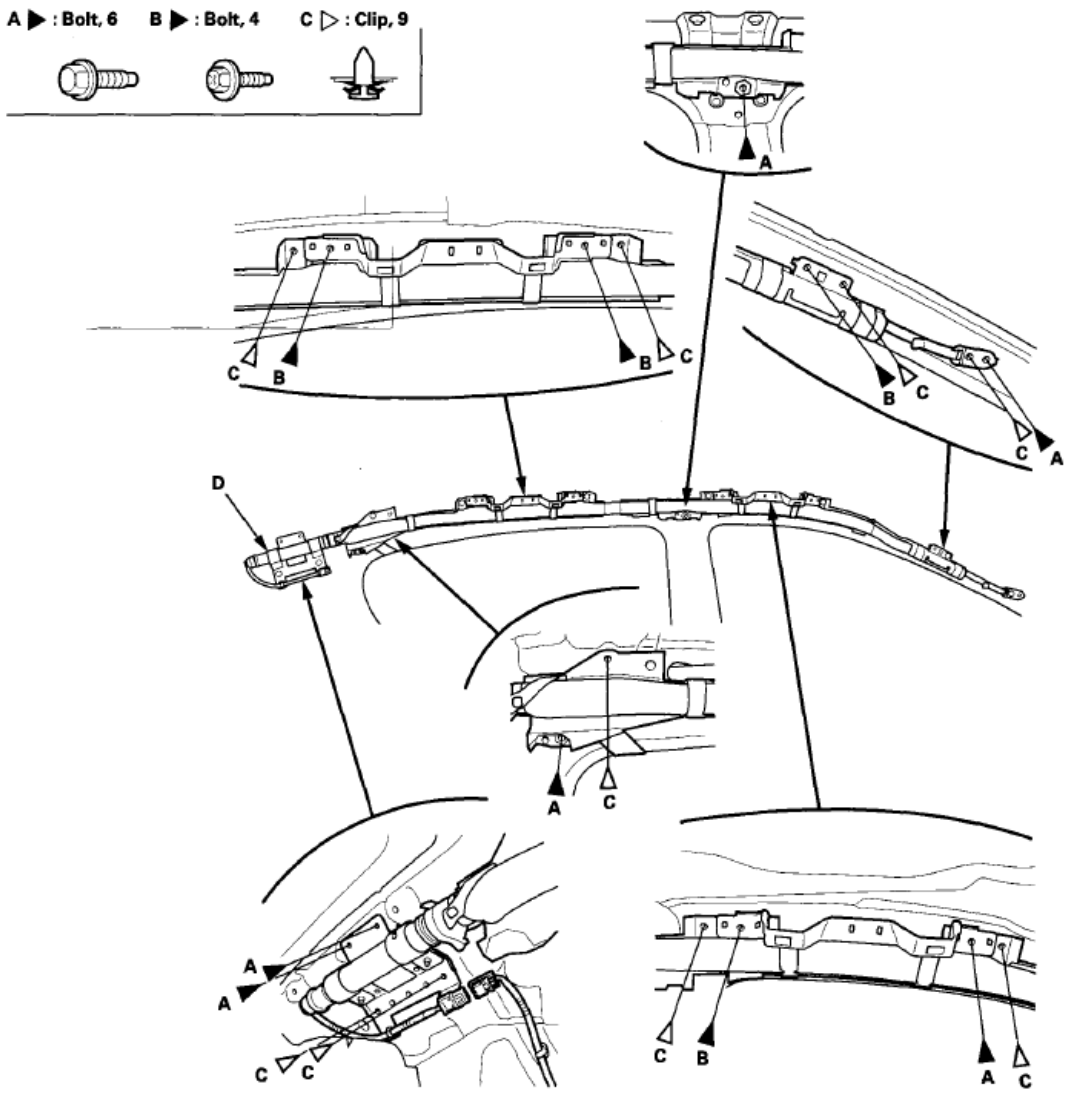


Fig. 233: Identifying SRS Floor Wire Harness 2P Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Left side shown; right side is similar.

4. Remove the side curtain mounting bolts (A) and mounting bolts (B) from the bracket. Detach the clips (C), then remove the side curtain airbag (D).



Left side shown; right side is similar.

Fig. 234: Removing Side Curtain Mounting Bolts And Mounting Bolts From Bracket
Courtesy of AMERICAN HONDA MOTOR CO., INC.

INSTALLATION

NOTE:

- **If replacing the side curtain airbag after deployment, refer to COMPONENT REPLACEMENT/INSPECTION AFTER DEPLOYMENT for a complete list of other parts that must also be replaced.**
- **Installation of the side curtain airbag must be done according to precautions and procedures (see PRECAUTIONS AND PROCEDURES).**
- **If the side curtain airbag is frayed, or has any other visible damage, replace it. Do not attempt to repair an airbag.**
- **When you install the airbag, make sure it is not twisted, and that it is not caught between the inflator bracket by the bracket bolts.**

- **Make sure that the side curtain airbag inflator retainer is installed properly. Otherwise the airbag could incorrectly deploy and cause damage or injuries.**
- **If there is any damage to the side curtain airbag, do not try to repair it. Replace any damaged side curtain airbag.**

1. Place the side curtain airbag assembly on the side of the roof, and fit its clips (A) into the holes in the body. Tighten the mounting bolts (B) and the new side curtain airbag mounting bolts (C) to the specified torque.

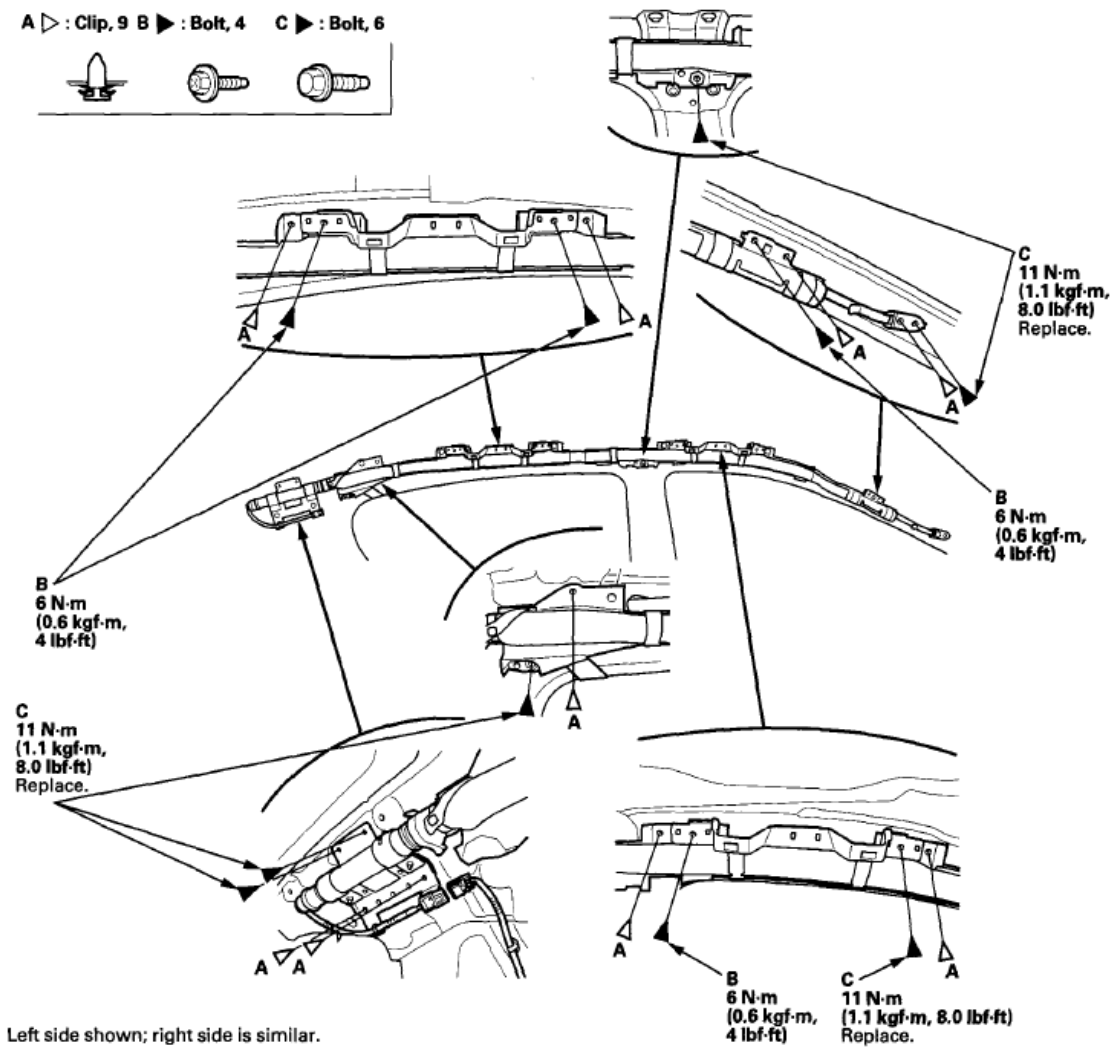


Fig. 235: Identifying Clips, Mounting Bolts And Side Curtain Airbag Mounting Bolts With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Connect the SRS floor wire harness 2P connector (A) to the side curtain airbag 2P connector.

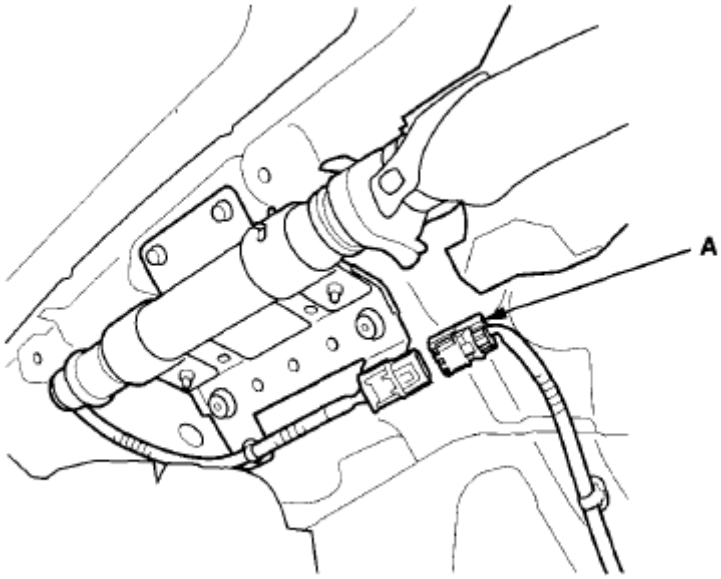


Fig. 236: Identifying SRS Floor Wire Harness 2P Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Do the battery terminal reconnection procedure (see **BATTERY TERMINAL DISCONNECTION AND RECONNECTION**).
4. Clear any DTCs with the HDS (see **HOW TO CLEAR DTCS**).
5. After installing the side curtain airbag, confirm proper system operation: Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode, and check that the SRS indicator comes on for about 6 seconds and then goes off.
6. Install all removed parts in reverse order of removal. If the clips are stress-whitened, replace them with new ones.
7. Confirm proper headliner/pillar trim overlap (see **CHECKING AND ADJUSTING THE HEADLINER/PILLAR TRIM OVERLAP**).

AIRBAG AND TENSIONER DISPOSAL

Special Tools Required

Deployment Tool 07AAZ-000A100

Before scrapping any front airbags, side airbags, side curtain airbags, and front seat belt tensioners (including those in a whole vehicle to be scrapped), the part(s) must be deployed. If the vehicle is still within the warranty period, the Acura District Parts and Service Manager must give approval and/or special instruction before deploying the part(s). Only after the part(s) have been deployed (as the result of vehicle collision, for example), can they be scrapped. If the parts appear intact (not deployed), treat them with extreme caution. Follow this procedure.

DEPLOYING AIRBAGS IN THE VEHICLE

If an SRS equipped vehicle is to be entirely scrapped, its front airbags, side airbags, side curtain airbags, and front seat belt tensioners should be deployed while still in the vehicle. These parts should not be considered as salvageable parts and should never be installed in another vehicle.

1. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode. Do the battery terminal disconnection procedure (see **BATTERY TERMINAL DISCONNECTION AND RECONNECTION**), then wait at least 3 minutes.
2. Confirm that each front airbag, side airbag, side curtain airbag, or front seat belt tensioner is securely mounted.
3. Confirm that the deployment tool is functioning properly by following the check procedure on the tool label.

Driver's Airbag

4. Remove the access panel (A) from the steering wheel, then disconnect the cable reel 4P connector (B) from the driver's airbag 4P connector.

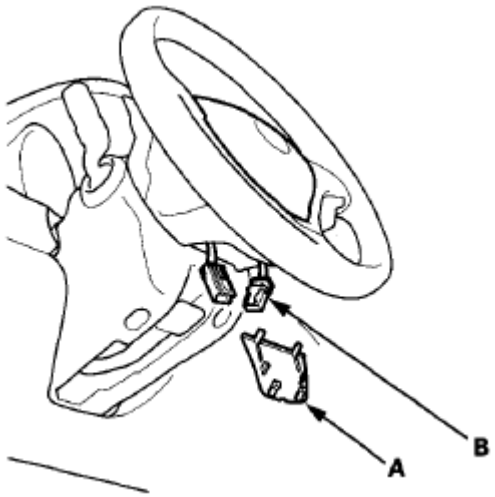


Fig. 237: Identifying Access Panel And Cable Reel 4P Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Front Passenger's Airbag

5. Remove the glove box (see **GLOVE BOX REMOVAL/INSTALLATION**).
6. Disconnect the dashboard wire harness 4P connector (A) from the front passenger's airbag 4P connector.

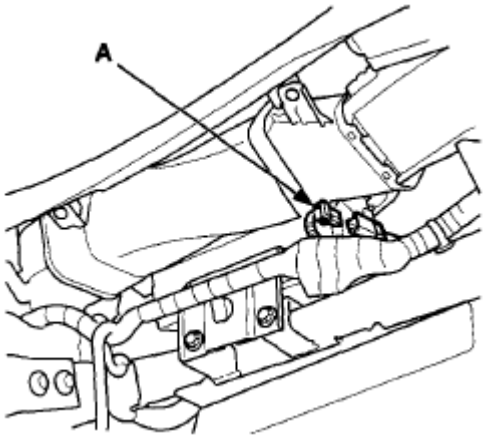


Fig. 238: Identifying Dashboard Wire Harness 4P Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Side Airbag

7. Disconnect the SRS floor wire harness 2P connectors (A) from the driver's and the front passenger's side airbag 2P connectors.



Fig. 239: Identifying SRS Floor Wire Harness 2P Connectors
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Side Curtain Airbag

8. Remove the C-pillar trim (see **C-PILLAR TRIM**).
9. Disconnect the SRS floor wire harness 2P connectors (A) from the left and right side curtain airbag 2P connectors.

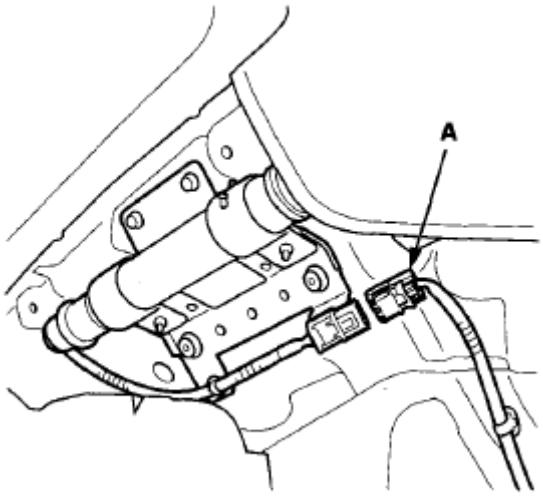


Fig. 240: Identifying SRS Floor Wire Harness 2P Connectors
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Front Seat Belt Tensioner

10. Remove the B-pillar lower trim (see **B-PILLAR UPPER/LOWER TRIM**).
11. Disconnect the SRS floor wire harness 4P connectors (A) from the driver's and the front passenger's seat belt tensioner 4P connectors. Pull the seat belt out all the way and cut it.

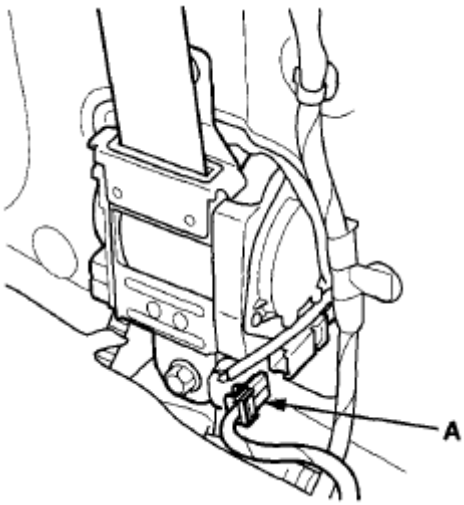


Fig. 241: Identifying SRS Floor Wire Harness 4P Connectors
Courtesy of AMERICAN HONDA MOTOR CO., INC.

12. Cut off each connector, and strip the ends of the wires. Twist each pair of unlike colored wires together, and clip an alligator clip (A) from the deployment tool to each pair.

NOTE:

- **Place the deployment tool at least 10 m (33 ft) away from the vehicle.**
- **The driver's and the front passenger's airbags have dual inflators.**

Twist each pair of unlike colored wires together, and clip an alligator clip to each pair.

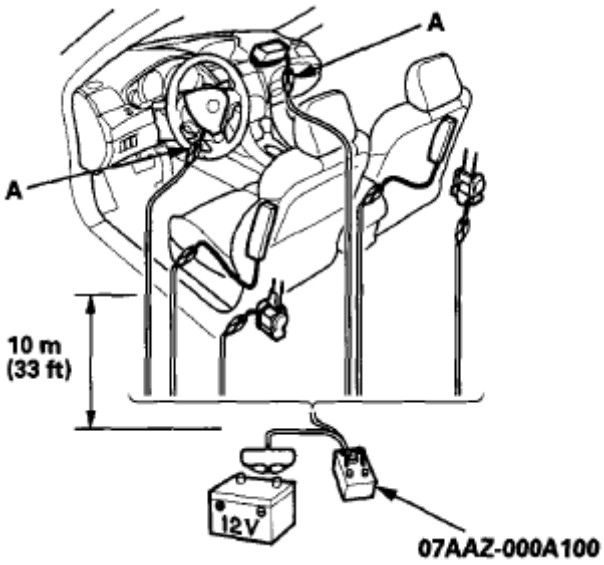


Fig. 242: Identifying Alligator Clip
Courtesy of AMERICAN HONDA MOTOR CO., INC.

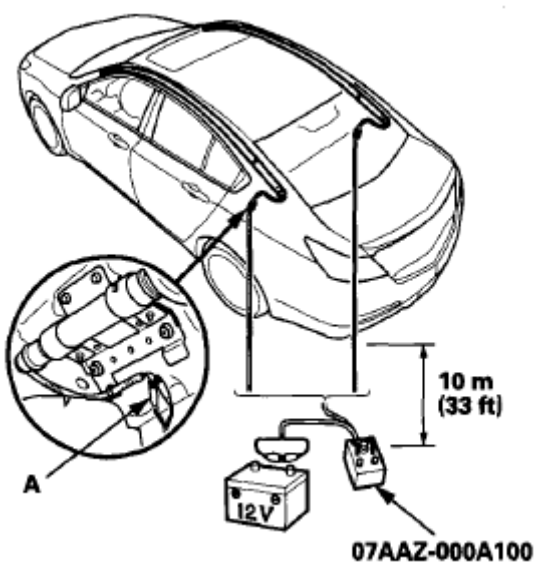


Fig. 243: Identifying Alligator Clip
Courtesy of AMERICAN HONDA MOTOR CO., INC.

13. Connect a 12 V battery to the tool.
    - If the green light on the tool comes on, the igniter circuit is defective and cannot deploy the component. Go to **DISPOSAL OF DAMAGED COMPONENTS**.
    - If the red light on the tool comes on, the component is ready to be deployed.

14. Push the tool's deployment switch. The airbags and tensioners should deploy (deployment is both highly audible and visible: A loud noise and rapid inflation of the bag, followed by slow deflation).
    - If the components deploy and the green light on the tool comes on, continue with this procedure.
    - If a component does not deploy, and the green light comes on, its igniter is defective. Go to **DISPOSAL OF DAMAGED COMPONENTS**.
    - During deployment, the airbags can become hot enough to burn you. Wait for 30 minutes after deployment before touching the airbags.
15. Dispose of the complete airbag or tensioner. No part of it can be reused. Place it in a sturdy plastic bag (A), and seal it securely. Dispose of the deployed airbag according to your local regulations.

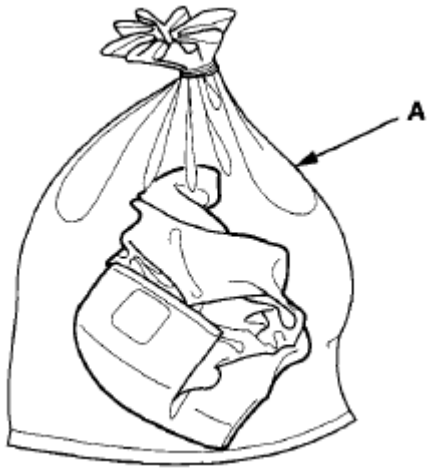


Fig. 244: Disposing Of Deployed Airbag
Courtesy of AMERICAN HONDA MOTOR CO., INC.

DEPLOYING COMPONENTS OUT OF THE VEHICLE

If an intact airbag or tensioner has been removed from a scrapped vehicle, or has been found defective or damaged during transit, storage, or service, it should be deployed as follows:

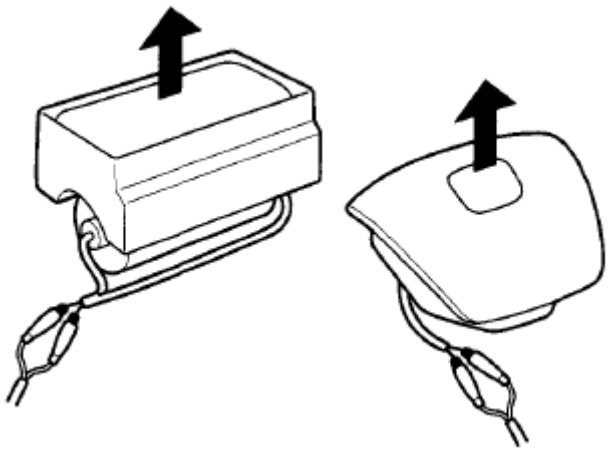


Fig. 245: Removing Airbag From Scrapped Vehicle

Courtesy of AMERICAN HONDA MOTOR CO., INC.

1. Confirm that the deployment tool is functioning properly by following the check procedure Deploying Airbags in the Vehicle on the tool label.
2. Position the airbag face up, outdoors, on flat ground, at least 10 m (33 ft) from any obstacles or people.
3. Follow steps 12 through 15 of the Deploying Airbag in the Vehicle.

NOTE: The driver's and the front passenger's airbags have dual inflators. Twist each pair of unlike colored wires together, and clip an alligator clip to each pair.

DISPOSAL OF DAMAGED COMPONENTS

1. If installed in a vehicle, follow the removal procedure for the driver's airbag (see **DRIVER'S AIRBAG REPLACEMENT**), the front passenger's airbag (see **FRONT PASSENGER'S AIRBAG REPLACEMENT**), the side airbag (see **SIDE AIRBAG REPLACEMENT**), the side curtain airbag (see **SIDE CURTAIN AIRBAG REPLACEMENT**), and the front seat belt tensioner (see **FRONT SEAT BELT REPLACEMENT**).
2. In all cases, make a short circuit by cutting, stripping, and twisting together the two inflator wires.

NOTE: The driver's and front passenger's airbags have dual inflators. The like color wires go to the individual inflators. Twist the like colored wires together.

3. Package the component in exactly the same packaging that the new replacement part came in.
4. Mark the outside of the box DAMAGED AIRBAG NOT DEPLOYED, DAMAGED SIDE AIRBAG NOT DEPLOYED, DAMAGED SIDE CURTAIN AIRBAG NOT DEPLOYED, or DAMAGED SEAT BELT TENSIONER NOT DEPLOYED so it does not get confused with your parts stock.
5. Contact your Acura District Parts and Service Manager for instructions on how and where to return it for disposal.

DEPLOYMENT TOOL CHECK

1. Connect the yellow clips to both switch protector handles on the tool.
2. Then connect the red lead to the positive battery post and the black lead to the negative battery post.
3. Push the operation switch: The green light should come on, indicating that the tool is operating properly and is ready for use. If the red light stays on, the tool is faulty, and another one must be used for the procedure.
4. Disconnect the tool clips and connectors from the protector handles and the battery.

CABLE REEL REPLACEMENT

REMOVAL

1. Set the front wheels in the straight ahead position.

2. Do the battery terminal disconnection procedure (see **BATTERY TERMINAL DISCONNECTION AND RECONNECTION**), then wait at least 3 minutes before starting work.
3. Remove the driver's airbag (see **DRIVER'S AIRBAG REPLACEMENT**).
4. Disconnect the cable reel subharness 20P connector (A) from the cable reel.

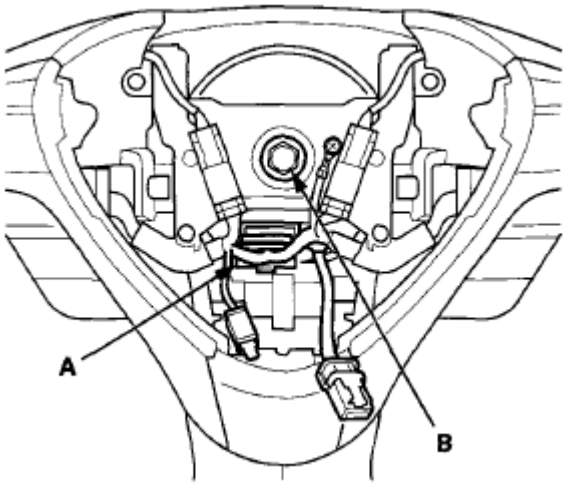


Fig. 246: Identifying Cable Reel Subharness 20P Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Loosen the steering wheel bolt (B) three turns.
6. Install a commercially available steering wheel puller on the steering wheel (see **STEERING WHEEL REMOVAL**).
7. Remove the steering wheel puller, then remove the steering wheel bolt and steering wheel from the steering column.
8. Remove the column covers (see **SIDE DEFOGGER VENT TRIM REMOVAL/INSTALLATION**).
9. Disconnect the dashboard wire harness 4P connector (A) from the cable reel 4P connector (B), then disconnect the dashboard wire harness 20P connector (C) from the cable reel (D).

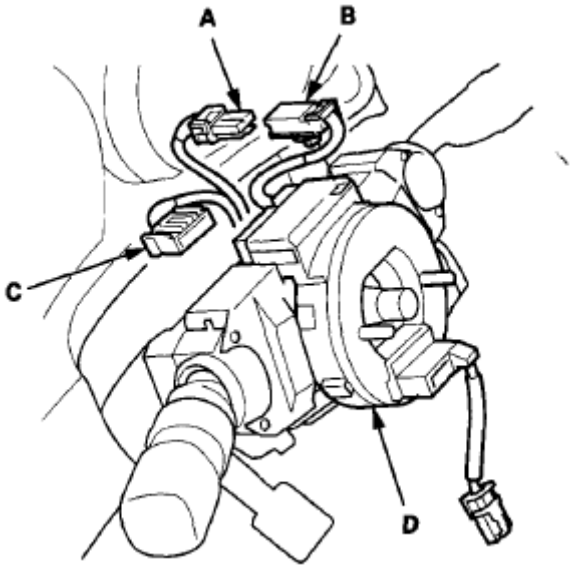


Fig. 247: Identifying Dashboard Wire Harness 4P Connector, Cable Reel 4P Connector And Dashboard Wire Harness 20P Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

10. Release the upper lock tab (A) under the cable reel connector with a 90 ° hook shaped tool (B). Slide the tool below the cable reel connector just above the lock tab. Release the lower lock tab (C), and slide the cable reel off the column.

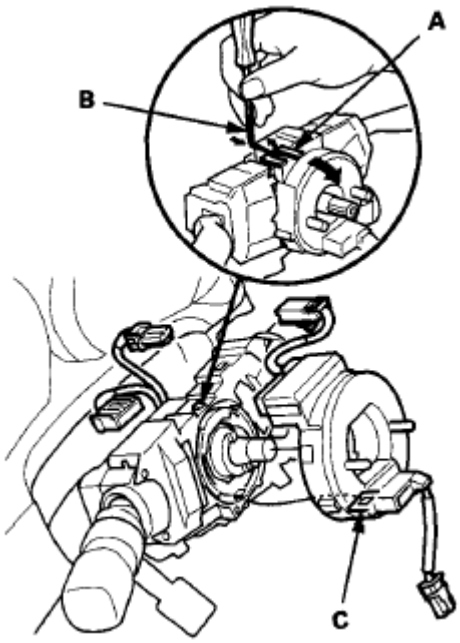


Fig. 248: Releasing Upper Lock Tab Under Cable Reel Connector With 90 ° Hook Shaped Tool
Courtesy of AMERICAN HONDA MOTOR CO., INC.

INSTALLATION

1. Before installing the steering wheel, make sure the front wheels are aligned straight ahead.
2. Set the turn signal canceling sleeve (A) so that the projections (B) are aligned vertically.

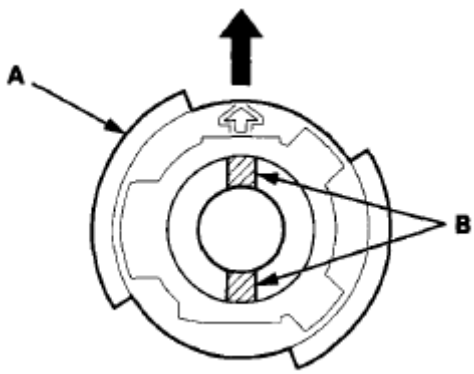


Fig. 249: Setting Turn Signal Canceling Sleeve
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Carefully install the cable reel (A) on the steering column shaft. Then connect the dashboard wire harness 20P connector (B) to the cable reel, and connect the cable reel 4P connector (C) to the dashboard wire harness 4P connector (D).

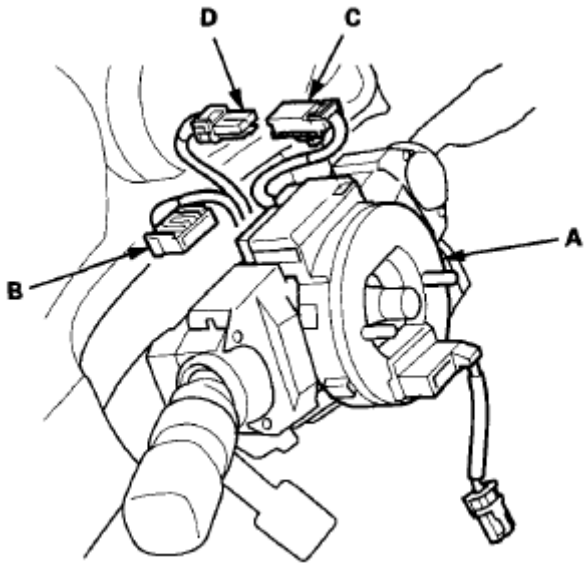


Fig. 250: Identifying Cable Reel, Dashboard Wire Harness 20P Connector And Cable Reel 4P Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Install the column covers (see **SIDE DEFOGGER VENT TRIM REMOVAL/INSTALLATION**).
5. Before installing the steering wheel, make sure the front wheels are pointing straight ahead, then center the cable reel (A). Do this by first rotating the cable reel clockwise until it stops. Then rotate it counterclockwise (about three turns) until the arrow mark (B) on the cable reel label points straight up.

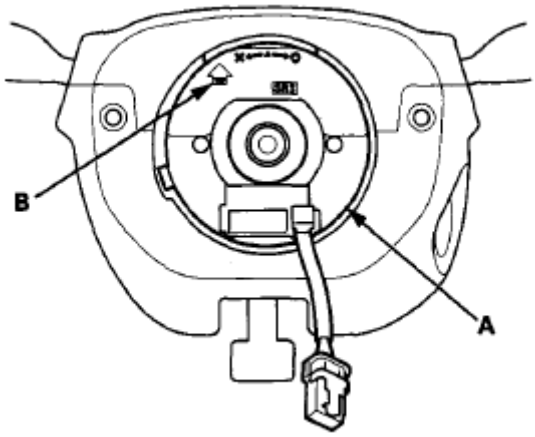


Fig. 251: Identifying Center Cable Reel And Arrow Mark
Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Position the two tabs (A) of the turn signal canceling sleeve (B) as shown. Install the steering wheel on to the steering column shaft, making sure the steering wheel hub (C) engages the pins (D) of the cable reel and tabs of the turn signal canceling sleeve. Do not tap on the steering wheel or steering column shaft when installing the steering wheel.

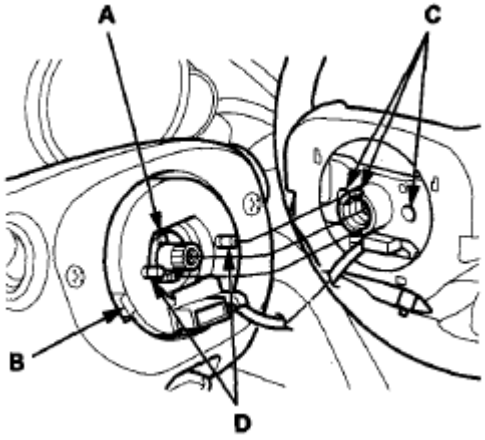


Fig. 252: Positioning Two Tabs Of Turn Signal Canceling Sleeve
Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Install the steering wheel bolt (A), and tighten it to the specified torque. Connect the cable reel subharness 20P connector (B). Make sure the wire harness is routed and fastened properly.

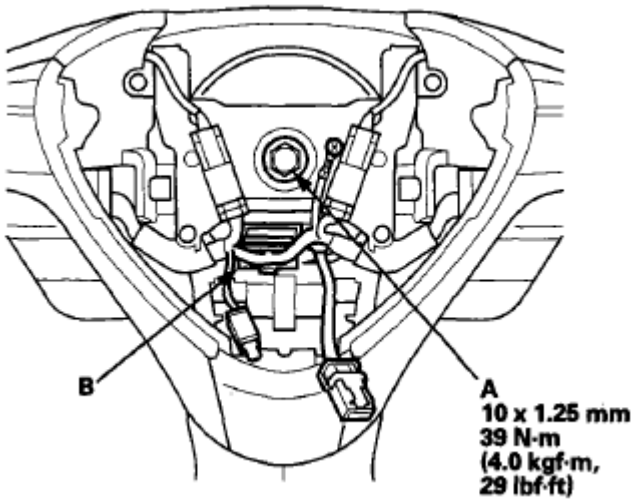


Fig. 253: Identifying Steering Wheel Bolt And Cable Reel Subharness 20P Connector With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

8. Install the driver's airbag (see **INSTALLATION**).
9. Do the battery terminal reconnection procedure (see **BATTERY TERMINAL DISCONNECTION AND RECONNECTION**).
10. Clear any DTCs with the HDS (see **HOW TO CLEAR DTCS**).
11. After installing the cable reel, confirm proper system operation:
    - Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode, and check that the SRS indicator comes on for about 6 seconds and then goes off.
    - Make sure the horn and turn signal switches works properly.
    - Make sure the steering wheel switches works properly.
    - Make sure the horn works properly.
12. After installation, check the steering wheel spoke angle. If the steering spoke angles to the right and left are not equal (steering wheel is not centered), correct the engagement of the wheel/column shaft splines.

SRS UNIT REPLACEMENT

REMOVAL

1. Do the battery terminal disconnection procedure (see **BATTERY TERMINAL DISCONNECTION AND RECONNECTION**), then wait at least 3 minutes before starting work.
2. Remove the center console (see **CENTER CONSOLE REMOVAL/INSTALLATION**).
3. Detach the clip (A), then pull down on the center heater joint duct (B) to remove it.

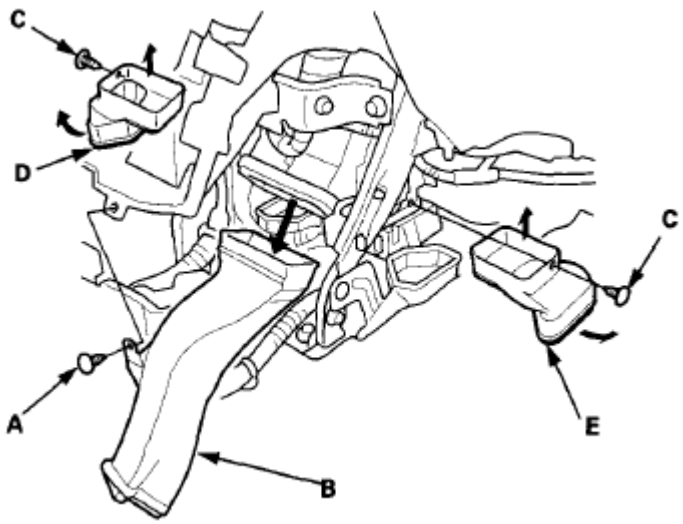


Fig. 254: Detaching Clip And Pull Down On Center Heater Joint Duct
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Remove the clips (C), then remove the left and right heater ducts (D, E).
5. Remove the two screws from the driver's side center console clip bracket (A), then remove the bracket.

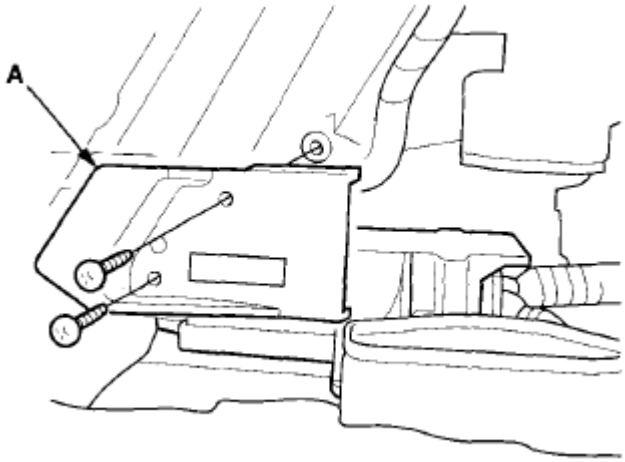


Fig. 255: Identifying Driver's Side Center Console Clip Bracket
Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Remove the TORX bolt (A) using a TORX T30 bit.

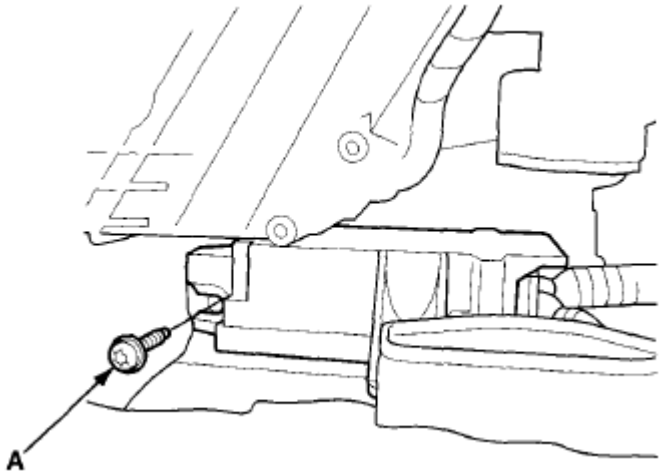


Fig. 256: Identifying Torx Bolt
Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Disconnect SRS unit connectors A (39P) and B (39P) from the SRS unit (C).

NOTE: The SRS unit connectors have lever locks. Release the locks before disconnecting the connectors (see SPRING-LOADED LOCK CONNECTOR).

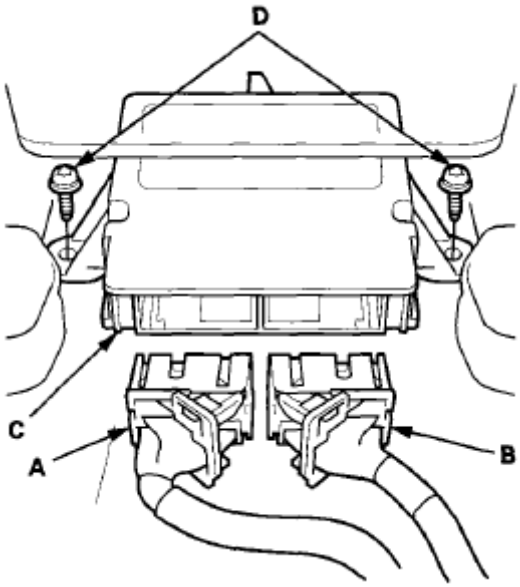


Fig. 257: Identifying SRS Unit Connectors (39P) And (39P) And SRS Unit
Courtesy of AMERICAN HONDA MOTOR CO., INC.

8. Remove the TORX bolts (D) using a TORX T30 bit, then remove the SRS unit from the driver's side.

INSTALLATION

1. Install the SRS unit (A) with the new TORX bolt (B) using a TORX T30 bit.

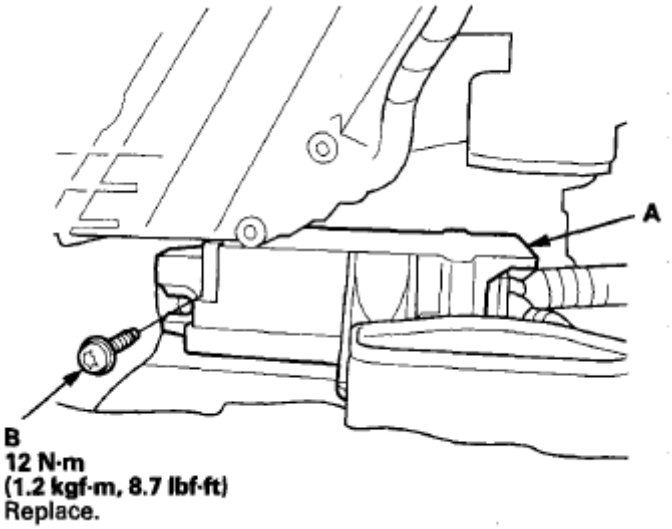


Fig. 258: Identifying SRS Unit And Torx Bolt With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Install the new TORX bolts (C) using a TORX T30 bit.

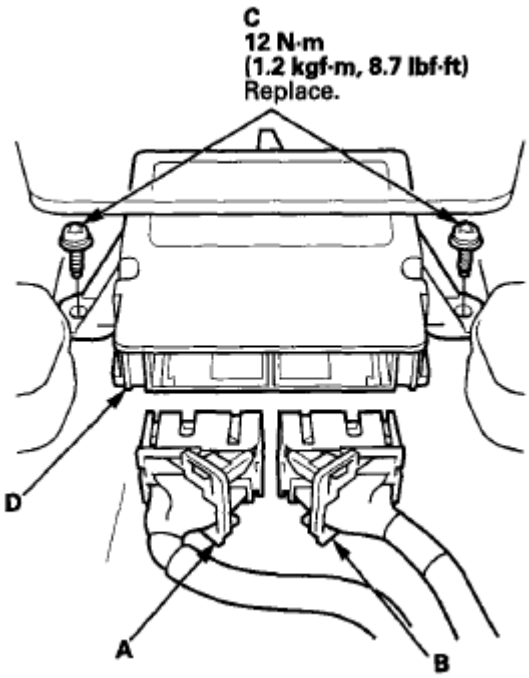


Fig. 259: Installing Torx Bolts Using Torx T30 Bit With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Connect the SRS connectors A (39P) and B (39P) to the SRS unit (D); push them into position until they click and the lever locks are fully secured (see **LEVER-LOCKED CONNECTOR**).

4. Tighten the three installed TORX bolt to the specified torque.
5. Install the driver's side center console clip bracket (A) with the two screws.

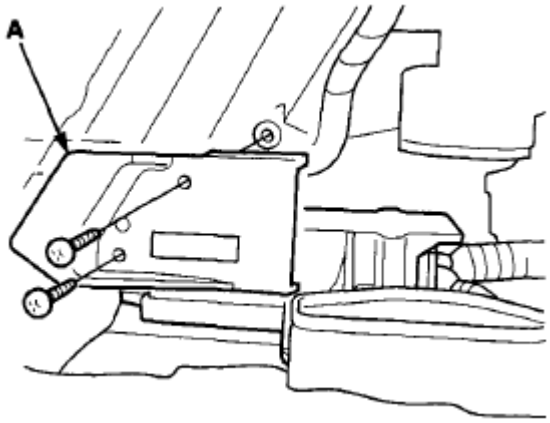


Fig. 260: Identifying Driver's Side Center Console Clip Bracket
Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Install the left and right heater joint ducts (A, B), then push the clips (C).

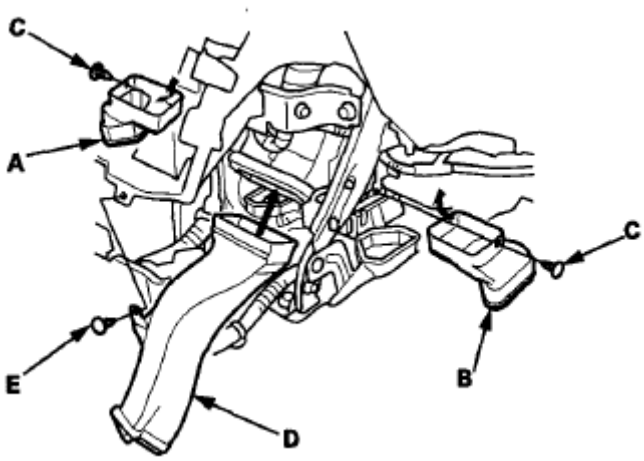


Fig. 261: Identifying Left And Right Heater Joint Ducts
Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Install the center heater joint duct (D), then push the clips (E).
8. Make sure the heater joint ducts are installed securely.
9. Install the center console (see **CENTER CONSOLE REMOVAL/INSTALLATION**).
10. Do the battery terminal reconnection procedure (see **BATTERY TERMINAL DISCONNECTION AND RECONNECTION**).
11. Make sure the SRS unit has the latest software. If it does not have the latest, update the software in the SRS unit (see **SRS UNIT UPDATE**).
12. Do the ODS unit initialization (see **ODS UNIT INITIALIZATION**).

13. Check the operation of the ODS unit with the HDS (see **ODS UNIT OPERATION CHECK**).
14. Confirm proper SRS operation: Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode, and check that the SRS indicator comes on for about 6 seconds and then goes off.

SIDE IMPACT SENSOR (FIRST) REPLACEMENT

REMOVAL

1. Do the battery terminal disconnection procedure (see **BATTERY TERMINAL DISCONNECTION AND RECONNECTION**), then wait at least 3 minutes before starting work.
2. Remove the B-pillar lower trim (see **B-PILLAR UPPER/LOWER TRIM**).
3. Disconnect the SRS floor wire harness 4P connector (A) from the side impact sensor (first) (B).

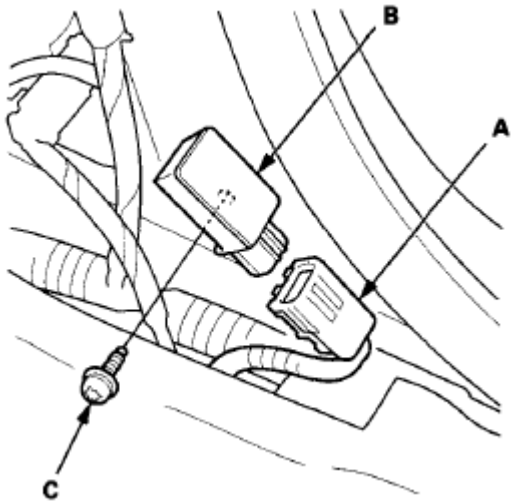


Fig. 262: Disconnecting SRS Floor Wire Harness 4P Connector From Side Impact Sensor
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Remove the TORX bolt (C) using a TORX T30 bit, then remove the side impact sensor (first).

INSTALLATION

1. Install the side impact sensor (first) (A) with the new TORX bolt (B) using a TORX T30 bit, and tighten the TORX bolt to the specified torque.

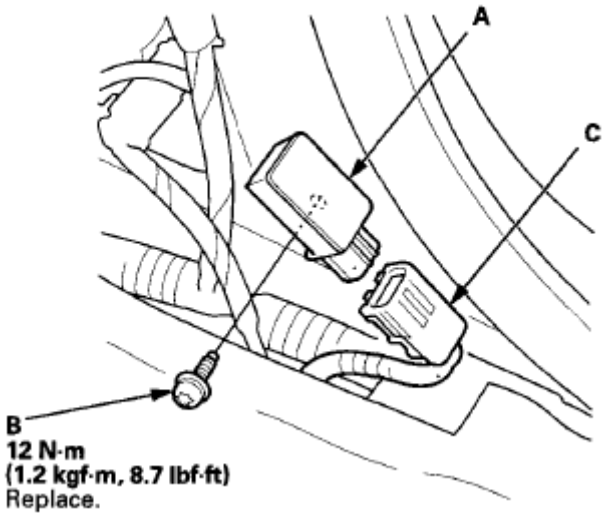


Fig. 263: Installing Side Impact Sensor With Torx Bolt With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Connect the SRS floor wire harness 4P connector (C) to the side impact sensor (first).
3. Do the battery terminal reconnection procedure (see **BATTERY TERMINAL DISCONNECTION AND RECONNECTION**).
4. Clear any DTCs with the HDS (see **HOW TO CLEAR DTCS**).
5. Confirm proper SRS operation: Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode, and check that the SRS indicator comes on for about 6 seconds and then goes off.
6. Install the B-pillar lower trim (see **B-PILLAR UPPER/LOWER TRIM**).

SIDE IMPACT SENSOR (SECOND) REPLACEMENT

REMOVAL

1. Do the battery terminal disconnection procedure (see **BATTERY TERMINAL DISCONNECTION AND RECONNECTION**), then wait at least 3 minutes before starting work.
2. Remove the rear seat (see **REAR SEAT REMOVAL/INSTALLATION**).
3. Disconnect the SRS floor wire harness 2P connector (A) from the side impact sensor (second) (B).

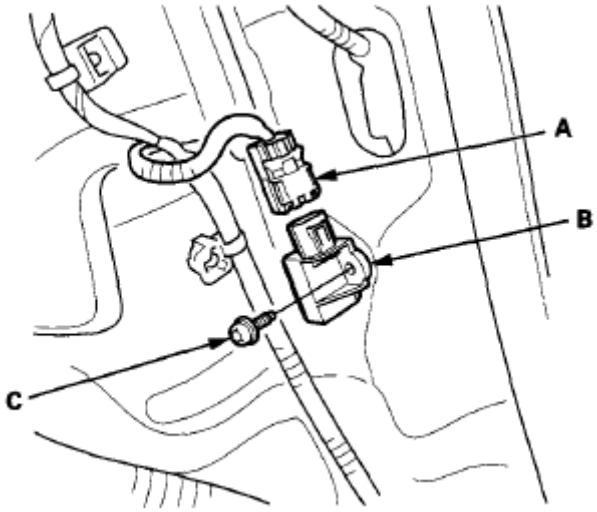


Fig. 264: Identifying SRS Floor Wire Harness 2P Connector And Side Impact Sensor
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Remove the TORX bolt (C) using a TORX T30 bit, then remove the side impact sensor (second).

INSTALLATION

1. Install the side impact sensor (second) (A) with the new TORX bolt (B) using a TORX T30 bit, and tighten the TORX bolt to the specified torque.

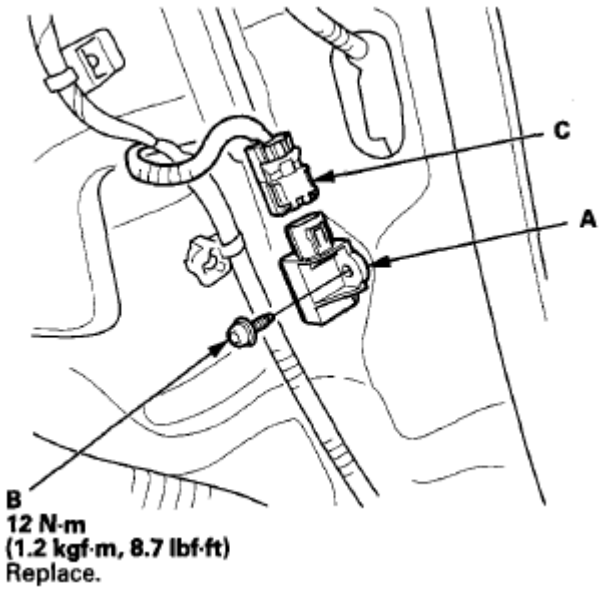


Fig. 265: Installing Side Impact Sensor With Torx Bolt With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Connect the SRS floor wire harness 2P connector (C) to the side impact sensor (second).
3. Do the battery terminal reconnection procedure (see **BATTERY TERMINAL DISCONNECTION**

AND RECONNECTION).

4. Clear any DTCs with the HDS (see **HOW TO CLEAR DTCS**).
5. Confirm proper SRS operation: Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode, and check that the SRS indicator comes on for about 6 seconds and then goes off.
6. Install the rear seat (see **REAR SEAT REMOVAL/INSTALLATION**).

REAR SAFING SENSOR REPLACEMENT

REMOVAL

1. Do the battery terminal disconnection procedure (see **BATTERY TERMINAL DISCONNECTION AND RECONNECTION**), then wait at least 3 minutes before starting work.
2. Remove the rear seat cushion (see **REAR SEAT CUSHION COVER REPLACEMENT**).
3. Disconnect the SRS floor wire harness 2P connector (A) from the rear safing sensor (B).

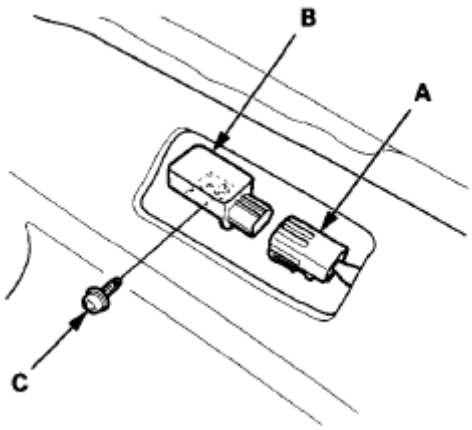


Fig. 266: Disconnecting SRS Floor Wire Harness 2P Connector From Rear Safing Sensor
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Remove the TORX bolt (C) using a TORX T30 bit, then remove the rear safing sensor.

INSTALLATION

1. Install the rear safing sensor (A) with the new TORX bolt (B) using a TORX T30 bit, and tighten the TORX bolt to the specified torque.

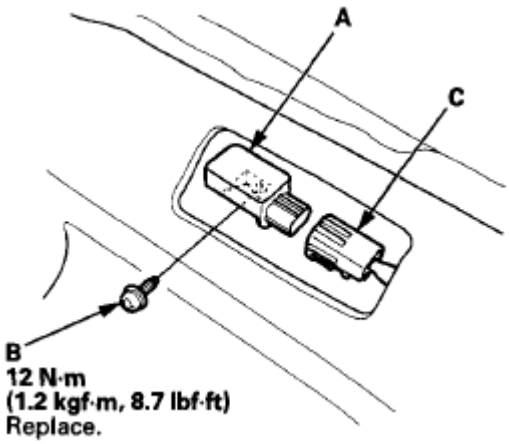


Fig. 267: Identifying Rear Safing Sensor And Torx Bolt With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Connect the SRS floor wire harness 2P connector (C) to the rear safing sensor.
3. Do the battery terminal reconnection procedure (see **BATTERY TERMINAL DISCONNECTION AND RECONNECTION**).
4. Clear any DTCs with the HDS (see **HOW TO CLEAR DTCS**).
5. Confirm proper SRS operation: Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode, and check that the SRS indicator comes on for about 6 seconds and then goes off.
6. Install the rear seat cushion (see **REAR SEAT CUSHION COVER REPLACEMENT**).

FRONT PASSENGER'S WEIGHT SENSOR REPLACEMENT

REMOVAL

NOTE:

- **Removal of the front passenger's weight sensors must be done according to Precautions and Procedures (see PRECAUTIONS AND PROCEDURES).**
- **The front passenger's weight sensors is part of the seat frame and must be replaced as assembly.**

1. Do the battery terminal disconnection procedure (see **BATTERY TERMINAL DISCONNECTION AND RECONNECTION**), then wait at least 3 minutes before starting work.
2. Remove the front passenger's seat frame/front passenger's weight sensors as an assembly (see **FRONT SEAT FRAME REPLACEMENT**).

INSTALLATION

NOTE:

- **Be sure to install the harness wires so they are not pinched or interfering with other parts.**
- **The front passenger's weight sensor are part of the seat frame and must be replaced as assembly.**

1. Install the removed parts to the new the front passenger's seat frame/front passenger's weight sensors as an assembly (see **FRONT SEAT FRAME REPLACEMENT**).
2. Do the battery terminal reconnection procedure (see **BATTERY TERMINAL DISCONNECTION AND RECONNECTION**).
3. Clear any DTCs with the HDS (see **HOW TO CLEAR DTCS**).
4. Do the front passenger's weight sensor initialization (see **FRONT PASSENGER'S WEIGHT SENSOR INITIALIZATION**).
5. Confirm proper SRS operation: Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode, and check that the SRS indicator comes on for about 6 seconds and then goes off.

ODS UNIT REPLACEMENT

REMOVAL

1. Do the battery terminal disconnection procedure (see **BATTERY TERMINAL DISCONNECTION AND RECONNECTION**), then wait at least 3 minutes before starting work.
2. Remove the front passenger's seat (see **FRONT SEAT REMOVAL/INSTALLATION**).
3. Remove the front seat back panel (see **FRONT SEAT-BACK COVER REPLACEMENT**).
4. Turn over the seat-back cover/pad to gain access to the ODS unit (see **FRONT SEAT-BACK COVER REPLACEMENT**).
5. Remove the cover (A), then disconnect the ODS unit 18P connector (B) and the OPDS sensor connectors (C) from the ODS unit (D).

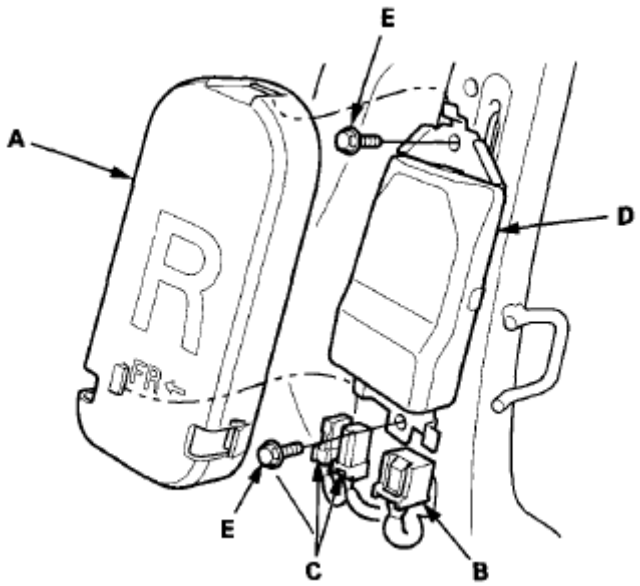


Fig. 268: Identifying Cover, ODS Unit 18P Connector And OPDS Sensor Connectors
Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Remove the two bolts (E) and the ODS unit.

INSTALLATION

NOTE:

- **Be sure to install the harness so that they are not pinched or interfering with other parts.**
- **Make sure that the seat-back cover/pad is installed properly. Improper installation may prevent proper deployment.**

1. Place the ODS unit (A) on the seat-back frame. Tighten the new two mounting bolts (B) to the specified torque.

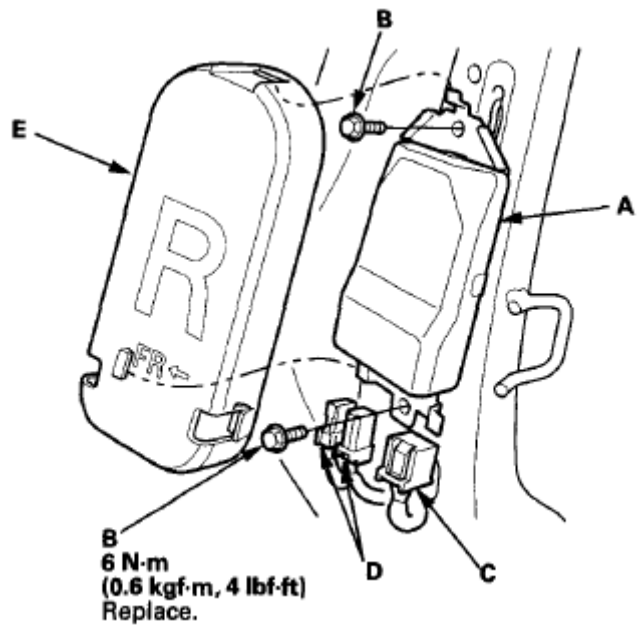


Fig. 269: Identifying ODS Unit And Two Mounting Bolts With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Connect the ODS unit 18P connector (C) and the OPDS sensor connectors (D) to the ODS unit. Reinstall the cover (E).
3. Install the seat-back cover/pad in the reverse order of removal (see **FRONT SEAT-BACK COVER REPLACEMENT**).
4. Install the front seat back panel (see **FRONT SEAT-BACK COVER REPLACEMENT**).
5. Install the front passenger's seat (see **FRONT SEAT REMOVAL/INSTALLATION**).
6. Do the battery terminal reconnection procedure (see **BATTERY TERMINAL DISCONNECTION AND RECONNECTION**).
7. Set the seat-back in the normal position, and make sure there is nothing on the front passenger's seat.
8. Clear any DTCs with the HDS (see **HOW TO CLEAR DTCS**).
9. Do the ODS unit initialization (see **ODS UNIT INITIALIZATION**).
10. Confirm proper SRS operation: Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode, and check that the SRS indicator comes on for about 6 seconds and then goes off.

FRONT IMPACT SENSOR REPLACEMENT

REMOVAL

1. Do the battery terminal disconnection procedure (see **BATTERY TERMINAL DISCONNECTION AND RECONNECTION**), then wait at least 3 minutes before starting work.
2. Remove the front bumper (see **FRONT BUMPER REMOVAL/INSTALLATION**).
3. Left side: Detach the clip (A), then remove the bolts (B), then release the intake air resonator (C).

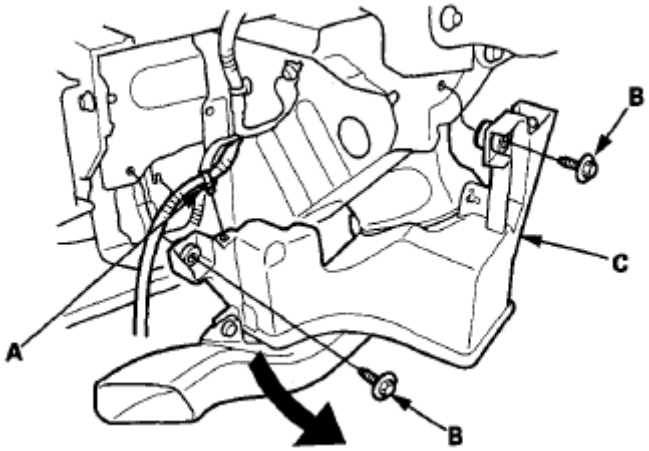


Fig. 270: Removing Bolts And Releasing Intake Air Resonator
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Disconnect the left or right engine compartment wire harness 2P connector (A) from the front impact sensor (B).

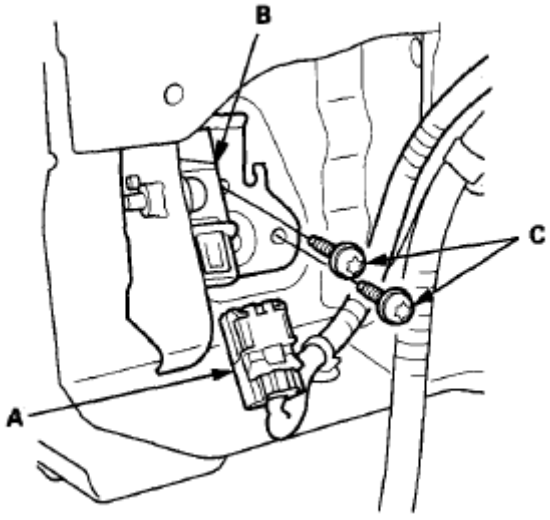


Fig. 271: Identifying Left Or Right Engine Compartment Wire Harness 2P Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Remove the TORX bolts (C) using a TORX T30 bit, then remove the front impact sensor.

INSTALLATION

1. Install the front impact sensor (A) with the new TORX bolt (B) using a TORX T30 bit, and tighten the TORX bolt to the specified torque.

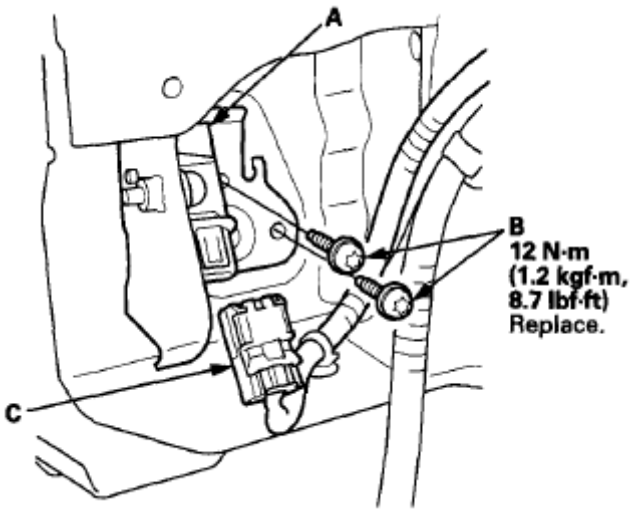


Fig. 272: Identifying Front Impact Sensor And Torx Bolt With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Connect the left or right engine compartment wire harness 2P connector (C) to the front impact sensor.
3. Do the battery terminal reconnection procedure (see **BATTERY TERMINAL DISCONNECTION AND RECONNECTION**).
4. Clear any DTCs with the HDS (see **HOW TO CLEAR DTCS**).
5. Confirm proper SRS operation: Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode, and check that the SRS indicator comes on for about 6 seconds and then goes off.
6. Left side: Install the intake air resonator (A) with the bolts (B), and tighten the bolts to the specified torque, then push the clip (C).

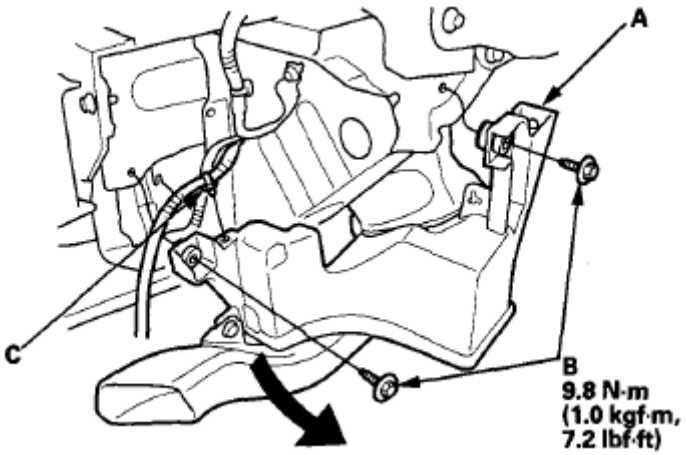


Fig. 273: Identifying Intake Air Resonator & Fasteners With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Install the front bumper (see **FRONT BUMPER REMOVAL/INSTALLATION**).

DRIVER'S SEAT POSITION SENSOR REPLACEMENT

REMOVAL

NOTE: Do not turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode, while removing the driver's seat position sensor.

1. Raise the driver's seat all the way up.
2. Remove the recline cover (see **FRONT SEAT RECLINE COVER REMOVAL/INSTALLATION**).
3. Disconnect the driver's seat wire harness 2P connector (A) from the driver's seat position sensor (B).

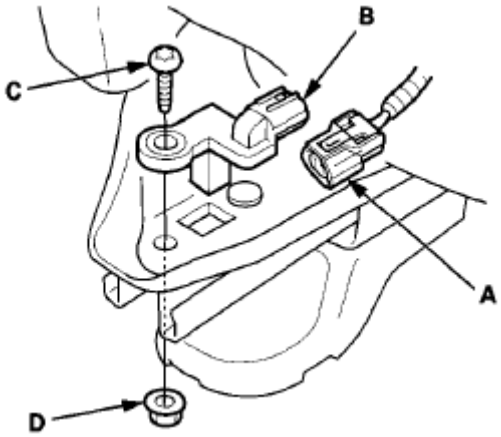


Fig. 274: Disconnecting Driver's Seat Wire Harness 2P Connector From Driver's Seat Position Sensor
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Remove the TORX bolt (C) and nut (D) using a TORX T30 bit, then remove the driver's seat position sensor.

INSTALLATION

NOTE:

- **Be sure to install the harness so it is not pinched or interferes with other parts.**
- **Do not turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode, while installing the driver's seat position sensor.**

1. Install the driver's seat position sensor (A) with the new TORX bolt (B) and the new nut (C) using a TORX T30 bit, and tighten the TORX bolt while holding the nut to the specified torque.

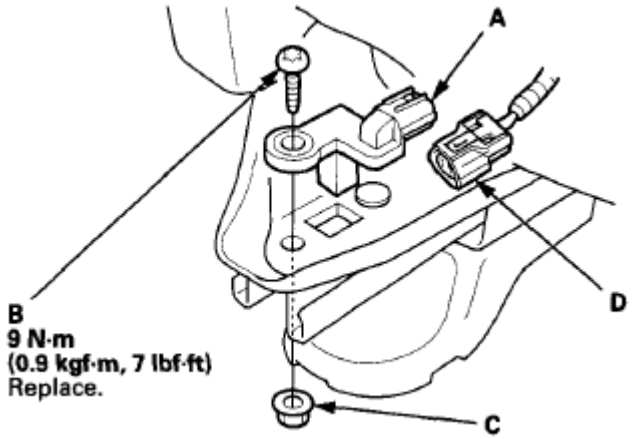


Fig. 275: Installing Driver's Seat Position Sensor With Torx Bolt And Nut With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Connect the driver's seat wire harness 2P connector (D) to the driver's seat position sensor.
3. Clear any DTCs with the HDS (see **HOW TO CLEAR DTCS**).
4. Check the operation of the driver's seat position sensor with the HDS (see **DRIVER'S SEAT POSITION SENSOR OPERATION CHECK**).
5. Confirm proper SRS operation: Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode, and check that the SRS indicator comes on for about 6 seconds and then goes off.
6. Install the recline cover (see **FRONT SEAT RECLINE COVER REMOVAL/INSTALLATION**).

PASSENGER'S AIRBAG CUTOFF INDICATOR REPLACEMENT

1. Remove the dashboard center vent (see **DASHBOARD CENTER VENT REMOVAL/INSTALLATION**).
2. Disconnect the 6P connector (A) from the passenger's airbag cutoff indicator (B).

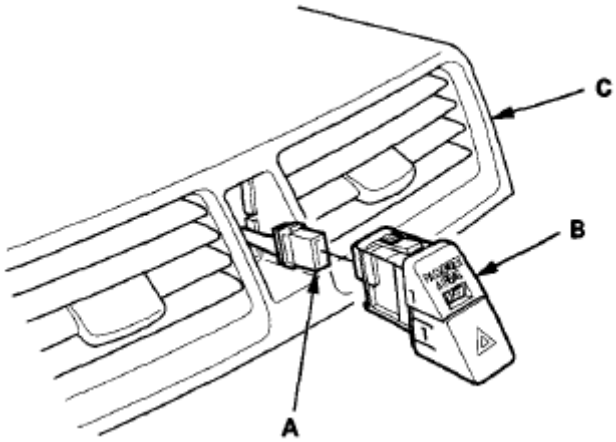


Fig. 276: Disconnecting 6P Connector From Passenger's Airbag Cutoff Indicator
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Push out the passenger's airbag cutoff indicator from behind the dashboard center vent (C).
4. Reinstall the parts in the reverse order of removal.
5. After installing the passenger's airbag cutoff indicator, confirm proper system operation:
   - Clear any DTCs with the HDS (see **HOW TO CLEAR DTCS**).
   - Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode, and check that the SRS indicator comes on for about 6 seconds and then goes off.

SUPPLEMENTAL RESTRAINT SYSTEM (SRS) (If driving support maintenance is required)

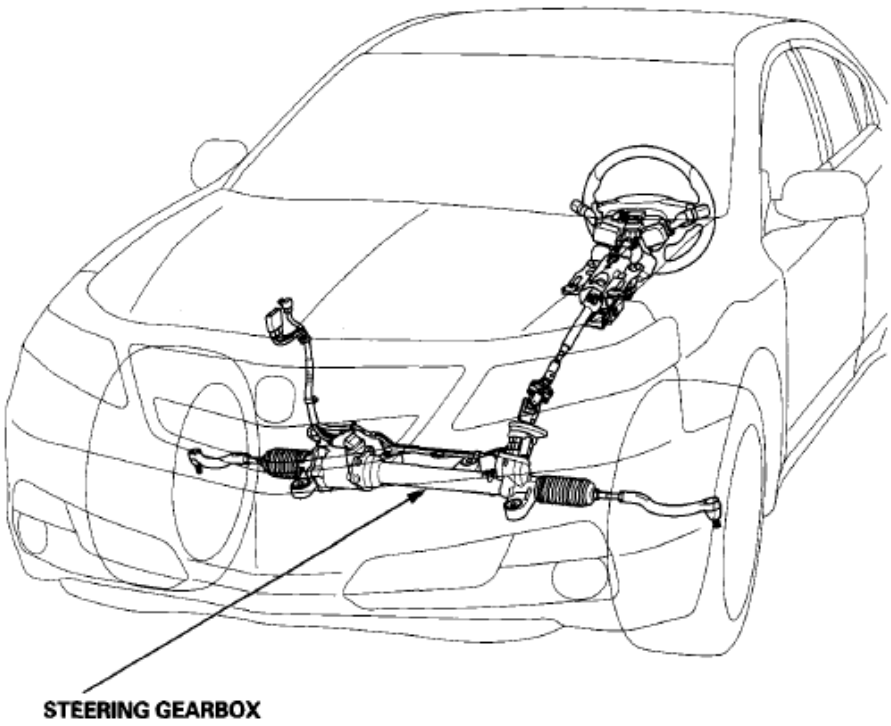
The Acura TL SRS includes a driver's airbag in the steering wheel hub, a front passenger's airbag in the dashboard above the glove box, front seat belt tensioners in the front seat belt retractors, side curtain airbags in the sides of the roof, and side airbags in the front seat-backs. Information necessary to safely service the SRS is included in this Service Information. Servicing, disassembling, or replacing SRS items requires special precautions and tools, and should be done by an authorized Acura dealer.

- To avoid rendering the SRS inoperative, which could lead to personal injury or death in the event of a severe frontal or side collision, all SRS service work should be done by an authorized Acura dealer.
- Improper service procedures, including incorrect removal and installation of the SRS, could lead to personal injury caused by unintentional deployment of the front airbags, side airbags, side curtain airbags, and/or front seat belt tensioners.
- Do not bump or impact the SRS unit, front impact sensors, side impact sensors, or rear safing sensor, especially when the ignition switch is in ON (II), or the engine start/stop button is in the ON mode, for at least 3 minutes after the ignition switch is turned to LOCK (0), or after the engine start/stop button is pressed to select the OFF mode; otherwise, the system may fail in a collision, or the airbags or the tensioners may deploy.
- SRS electrical connectors are identified by yellow color coding. Related components are located in the steering column, center console, dashboard, dashboard undercover, in the dashboard above the glove box, in the front seats, in the roof side, and around the floor. Do not use electrical test equipment on these circuits.

2012 STEERING

Electronic Power Steering (EPS) System - TL

COMPONENT LOCATION INDEX



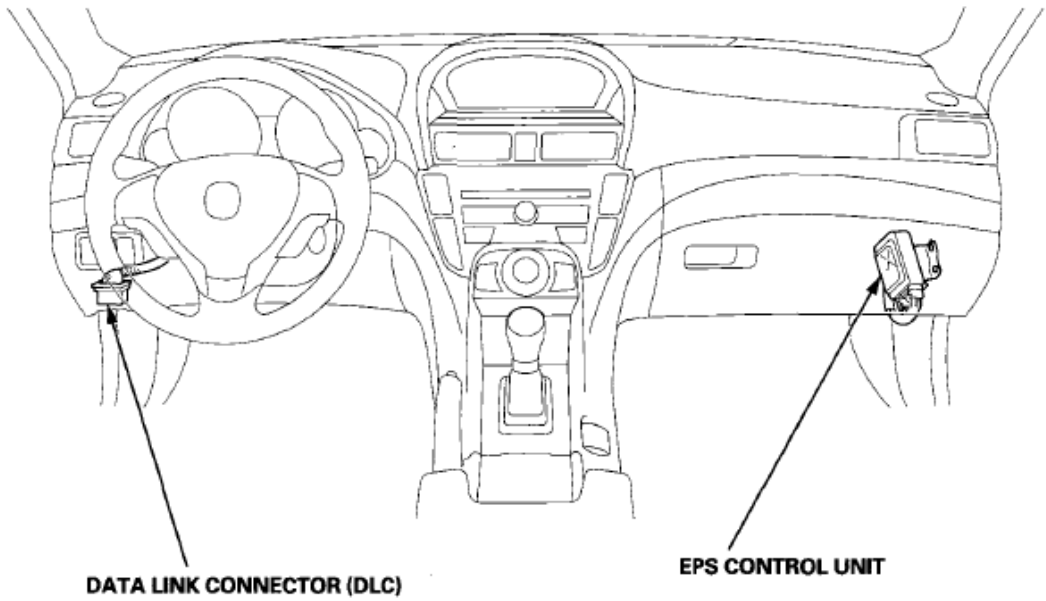


Fig. 1: Electronic Power Steering (EPS) System Components Location

Courtesy of AMERICAN HONDA MOTOR CO., INC.

GENERAL TROUBLESHOOTING INFORMATION

EPS INDICATOR

Under normal conditions, the EPS indicator (A) comes on when the ignition switch is turned to ON (II), or press the engine start/stop button to select the ON mode, then goes off after the engine is started. This indicates that the LED and its circuit are operating correctly. If there is a failure in the system after the engine is started, the EPS indicator will stay on, and the power assist is turned off or restricted.

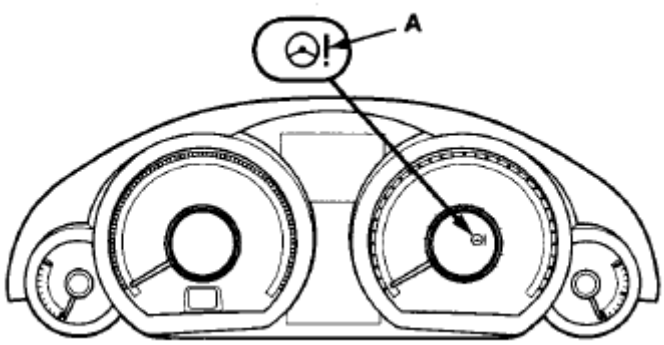


Fig. 2: Identifying EPS Indicator
Courtesy of AMERICAN HONDA MOTOR CO., INC.

When the EPS indicator comes on, the control unit stores the DTC. In this case, the control unit may activate the EPS system after the engine starts again, but it keeps the EPS indicator on.

When DTC 51-01, 51-02 or 51-06 is stored in the control unit, the EPS indicator will stay on until the DTC is erased. When a problem is detected and the EPS indicator comes on, there are cases when the indicator stays on until the ignition switch is turned to LOCK (0), or press the engine start/stop button to select the OFF mode, and cases when the indicator goes off automatically when the system returns to normal. Even though the system is operating normally, the EPS indicator will come on under some conditions with the vehicle stopped and the engine at high speed with constant input from the steering wheel.

To determine the actual cause of the problem, question the client about the conditions during which the problem occurred, taking the above conditions into consideration.

DIAGNOSTIC TROUBLE CODE (DTC)

- If the CPU cannot be activated, or it fails, the EPS indicator comes on, but no EPS DTC is stored.
- The memory can hold any number of DTCs. However, when the same DTC is detected more than once, the most recent DTC is written over the prior DTC, therefore only one occurrence is stored.
- The lowest DTC is indicated first. The DTCs are indicated in ascending order, not in the order that they occurred.
- The DTCs are stored in the EEPROM (non-volatile memory) therefore the stored DTCs cannot be erased by disconnecting the battery. Do the specified procedures to clear the DTCs.

SELF-DIAGNOSIS

Self-diagnosis can be classified into three categories:

- Initial diagnosis: Done right after the engine starts and until the EPS indicator goes off.
- Regular diagnosis: Done right after the initial diagnosis until the ignition switch is turned to LOCK (0), or press the engine start/stop button to select the OFF mode.
- Steering diagnosis: Done during regular diagnosis while turning the steering wheel.

The EPS control unit does the following functions when a problem is detected by self-diagnosis:

1. Turns on the EPS indicator.
2. Stores the DTC.
3. Stops or restricts power assist and manual steering operation resumes.

NOTE: For DTCs 11-01, 11-02, 12-01, 21-01, 21-02, 22-01, 35-04, 36-02, and 37-01 the EPS indicator will go off automatically, and the system returns to normal.

RESTRICTION ON POWER ASSIST OPERATION

Repeated extreme steering force, such as turning the steering wheel continuously back-and-forth with the vehicle stopped, causes an increase in electrical current draw by the EPS motor. The increase of electric current causes the EPS motor to heat up. Because this heat adversely affects the system, the control unit monitors the electric current draw of the EPS motor.

When the control unit detects heat build-up in the EPS motor, it reduces the electric current to the EPS motor gradually to protect the system, and it restricts the power assist operation. The EPS indicator does not come on during this function.

When steering torque is not applied to the steering wheel, or when the ignition is turned to LOCK (0), or press the engine start/stop button to select the OFF mode and the EPS motor cools, the control unit will restore the power assist gradually until it's fully restored (after about 8 minutes).

TORQUE SENSOR NEUTRAL POSITION

The EPS control unit stores the torque sensor neutral position in the EEPROM. The torque sensor neutral position must be memorized whenever the steering gearbox or the EPS control unit is replaced.

NOTE: The torque sensor neutral position is not affected when erasing the DTCs.

HOW TO TROUBLESHOOT DTCS

The troubleshooting procedures assume that the cause of the problem is still present and the EPS indicator is still on. Following the procedure when the EPS indicator does not come on can result in incorrect diagnosis.

1. Question the client about the conditions when the problem occurred, and try to reproduce the same conditions for troubleshooting. Find out when the EPS indicator came on, such as while turning, after turning, when the vehicle was at a certain speed, etc.
2. When the EPS indicator does not come on during the test-drive, but troubleshooting is done based on the DTC, check for loose connectors, poor terminal contact, etc., in the affected circuit before you start troubleshooting.
3. After troubleshooting, clear the DTC and test-drive the vehicle. Be sure the EPS indicator does not come on.

HOW TO USE THE HDS (HONDA DIAGNOSTIC SYSTEM)

NOTE: Make sure the battery is in good condition and fully charged.

1. If the system indicators stay on, connect the HDS to the data link connector (DLC) (A) located under the driver's side of the dashboard.

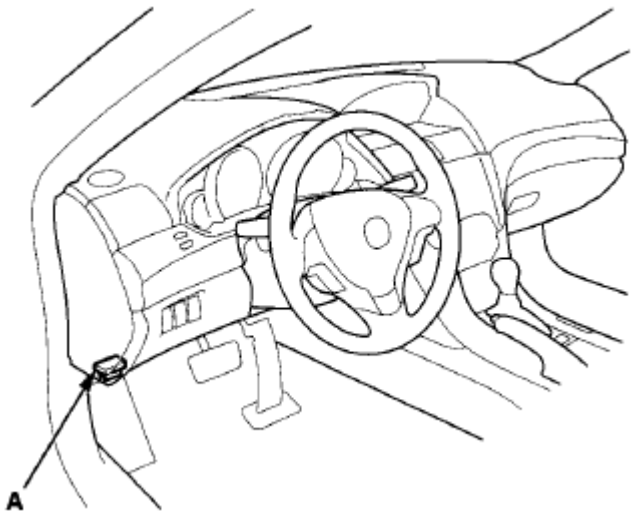


Fig. 3: Identifying Data Link Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
3. Make sure the HDS communicates with the vehicle and the EPS control unit. If it does not, troubleshoot the DLC circuit (see **DLC CIRCUIT TROUBLESHOOTING**).
4. Check the diagnostic trouble code (DTC) and note it. Then refer to the indicated DTC's troubleshooting, and do the appropriate troubleshooting procedure.

NOTE:
- **The HDS reads the DTC, the current data, and other system data.**
- **For specific operations, refer to the Help menu that came with the HDS.**

HOW TO RETRIEVE DTCS

1. With the ignition switch in LOCK (0), or the engine start/stop button in select the OFF mode, connect the HDS to the data link connector (DLC) located under the driver's side of the dashboard.
2. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
3. Make sure the HDS communicates with the vehicle and the EPS control unit. If it does not, troubleshoot the DLC circuit (see **DLC CIRCUIT TROUBLESHOOTING**).
4. Follow the prompts on the HDS to display the DTC(s) on the screen. After determining the DTC, refer to the **DTC TROUBLESHOOTING**. Do the all systems DTC check, and troubleshoot any powertrain DTCs first.
5. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.

HOW TO CLEAR DTCS

1. With the ignition switch in LOCK (0), or the engine start/stop button in select the OFF mode, connect the HDS to the data link connector (DLC) located under the driver's side of the dashboard.
2. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
3. Make sure the HDS communicates with the vehicle and the EPS control unit. If it does not, troubleshoot the DLC circuit (see **DLC CIRCUIT TROUBLESHOOTING**).
4. Clear the DTC(s) by following the screen prompts on the HDS.
5. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.

MEMORIZING THE TORQUE SENSOR NEUTRAL POSITION

The torque sensor neutral position must be memorized whenever the steering gearbox or the EPS control unit is replaced. Note that the torque sensor neutral position is not affected when erasing the DTC.

NOTE: The torque sensor is temperature sensitive. When memorizing the torque sensor neutral position, the ambient temperature must be above 68°F (20°C).

1. With the ignition switch in LOCK (0) or with the vehicle ignition in the OFF mode, connect the HDS to the data link connector (DLC) (A) located under the driver's side of the dashboard.

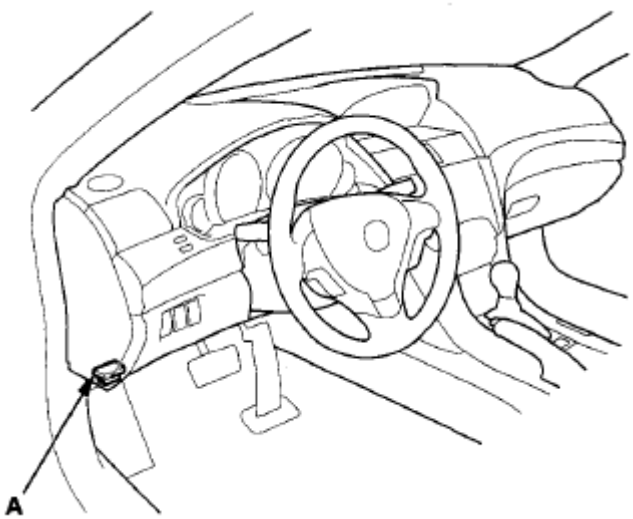


Fig. 4: Identifying Data Link Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
3. Make sure the HDS communicates with the vehicle and the EPS control unit. If it does not, troubleshoot the DLC circuit (see **DLC CIRCUIT TROUBLESHOOTING**).
4. From the EPS MENU, select MISCELLANEOUS TEST, then TORQUE SENSOR LEARN, and follow the screen prompts on the HDS.

NOTE: See the HDS Help menu for specific instructions.

5. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.

DTC TROUBLESHOOTING INDEX

DTC	Detection Item	Note
11-01	Low/High IG1-Terminal Voltage	DTC Troubleshooting
11-02	Battery Voltage	DTC Troubleshooting
12-01	Motor Power Supply Voltage	DTC Troubleshooting
21-01	Excessive Change of the Vehicle Speed Signal	DTC Troubleshooting
21-02	Comparison between the Vehicle Speed and the Engine Speed Signal	DTC Troubleshooting
22-01	Engine Speed Signal	DTC Troubleshooting
31-01	Torque Sensor Neutral Position Not Written	DTC Troubleshooting
32-01	EPS Control Unit Internal Circuit (Current Sensor)	DTC Troubleshooting
32-02	EPS Control Unit Internal Circuit (Current Sensor)	DTC Troubleshooting
32-07	EPS Control Unit Internal Circuit (Current Sensor)	DTC Troubleshooting
32-08	EPS Control Unit Internal Circuit (Current Sensor)	DTC Troubleshooting
32-09	Motor Current Correlation	DTC Troubleshooting
33-01	Lower FET Stuck ON	DTC Troubleshooting

33-02	Upper FET Stuck ON	DTC Troubleshooting
33-06	Lower FET Stuck ON	DTC Troubleshooting
33-07	Upper FET Stuck ON	DTC Troubleshooting
34-01	Power Relay	DTC Troubleshooting
34-02	Fail-Safe Relay	DTC Troubleshooting
35-01	EPS Control Unit Internal Circuit (CPU)	DTC Troubleshooting
35-02	EPS Control Unit Internal Circuit (EEPROM)	DTC Troubleshooting
35-04	EPS Control Unit Internal Circuit (CPU Communication)	DTC Troubleshooting
35-05	EPS Control Unit Internal Circuit (A/D Conversion)	DTC Troubleshooting
35-07	EPS Control Unit Internal Circuit (INHL/INHR Ports)	DTC Troubleshooting
36-02	EPS Control Unit Internal Circuit (INH Output Circuit)	DTC Troubleshooting
37-01	EPS Control Unit Internal Circuit (Step-Up Circuit)	DTC Troubleshooting
51-01	Torque Sensor (VT1, VT2 Low/High Voltage)	DTC Troubleshooting
51-02	Torque Sensor (VT3 Differential-Amplification Function)	DTC Troubleshooting
51-03	Torque Sensor (VT1, VT2 Rapid Change)	DTC Troubleshooting
51-06	Torque Sensor (VT1, VT2 Average)	DTC Troubleshooting
51-07	Torque Sensor (VT1, VT2 Check)	DTC Troubleshooting
61-04	Motor Harness Malfunction	DTC Troubleshooting
71-01	Motor Angle Sensor (SIN/COS Signals)	DTC Troubleshooting
71-02	Motor Angle Sensor (Neutral Position Learning of SIN/COS)	DTC Troubleshooting
71-03	Motor Angle Sensor (SIN/COS Signals)	DTC Troubleshooting
71-04	Motor Angle Sensor (Check Signals)	DTC Troubleshooting

SYMPTOM TROUBLESHOOTING INDEX

Symptom	Diagnostic procedure	Also check for
HDS does not communicate with the EPS control unit or the vehicle	Troubleshoot the DLC circuit (see **DLC CIRCUIT TROUBLESHOOTING**)	
EPS indicator does not come on	Symptom Troubleshooting (see **SYMPTOM TROUBLESHOOTING**)	
EPS indicator does not go off, and no DTCs are stored	Symptom Troubleshooting (see **EPS INDICATOR DOES NOT GO OFF, AND NO DTCS ARE STORED**)	
EPS indicator is not on, no DTCs are stored, but there is no power assist or power assist is reduced	1. Check the EPS motor power wires between the EPS control unit and the EPS motor for a short to body ground. Repair as needed. 2. If the EPS motor power wires are OK, replace the steering gearbox (short in the EPS motor) (see **STEERING GEARBOX REMOVAL AND INSTALLATION**).	

	3. Check the power and body ground connections at the EPS control unit.	

SYSTEM DESCRIPTION

EPS CONTROL UNIT INPUTS AND OUTPUTS FOR CONNECTOR A (2P) (CONNECTOR DISCONNECTED)

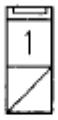


Wire side of female terminals

Fig. 5: Identifying EPS Control Unit A (2P) Connector End View
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Terminal number	Wire color	Terminal sign	Description	Signal
1	BLK	PG (Power ground)	Ground for the actuator EPS motor	Continuity to ground
2	WHT	+ B (Battery positive)	Power source for the actuator EPS motor	Battery voltage (about 12 V) at all times

EPS CONTROL UNIT INPUTS AND OUTPUTS FOR CONNECTOR B (2P) (CONNECTOR DISCONNECTED)

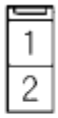


Wire side of female terminals

Fig. 6: Identifying EPS Control Unit B (2P) Connector End View
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Terminal number	Wire color	Terminal sign	Description	Signal
1	WHT	MW	Drives the actuator EPS motor	- -

EPS CONTROL UNIT INPUTS AND OUTPUTS FOR CONNECTOR C (2P) (CONNECTOR DISCONNECTED)

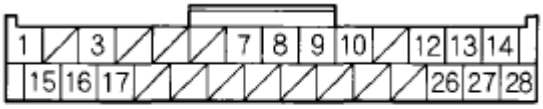


Wire side of female terminals

Fig. 7: Identifying EPS Control Unit C (2P) Connector End View
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Terminal number	Wire color	Terminal sign	Description	Signal
1	RED	MU	Drives the actuator EPS motor	- -
2	BLK	MV	Drives the actuator EPS motor	- -

EPS CONTROL UNIT INPUTS AND OUTPUTS FOR CONNECTOR D (28P) (CONNECTOR DISCONNECTED)



Wire side of female terminals

Fig. 8: Identifying EPS Control Unit D (28P) Connector End View
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Terminal number	Wire color	Terminal sign	Description	Signal
1	WHT	F-CAN H (F-CAN-HI)	F-CAN communication circuit	With ignition switch ON (II), or vehicle in ON mode: pulses (2.5-3.5 V)
3	BLU	NEP (Engine speed pulse)	Detects tachometer signal	With engine running: pulses (0-12 V)
7	ORN	SCS (Service check signal)	Detects service check connector signal	With service check signal shorted using the HDS: about 0 V
				With service check signal open: about 5 V
8	BLK	VS2 (Voltage sensor 2)	Detects torque sensor signal	With ignition switch ON (II), or vehicle in ON mode: pulses (0-5 V)
9	BLK	PVF (Voltage fade)	Drives the torque sensor	With ignition switch ON (II), or vehicle in ON mode: pulses (0-5 V)
10	WHT	VS1 (Voltage sensor 1)	Detects torque sensor signal	With ignition switch ON (II), or vehicle in ON mode: pulses (0-5 V)
12	PNK	S1 (Signal 1)	Detects EPS motor angle sensor signal	With engine running: pulses (0-5 V)

13	BLU	R1 (EPS Motor angle sensor 1)	Detects EPS motor angle sensor signal	With engine running: pulses (0-5 V)
14	BRN	S2 (Signal 2)	Detects EPS motor angle sensor signal	With engine running: pulses (0-5 V)
15	BLK	F-CAN L (F-CAN-LO)	F-CAN communication circuit	With ignition switch ON (II), or vehicle in ON mode: pulses (1.5-2.5 V)
16	PUR	IG1 (Ignition 1)	Power source for activating the system	With ignition switch ON (II), or vehicle in ON mode: battery voltage (about 12 V)
17	LT BLU	K-LINE (Data link connector)	Communicates with HDS	With ignition switch ON (II), or vehicle in ON mode and the HDS disconnected: pulses or battery voltage (about 12 V)
26	BRN	S3 (Signal 3)	Detects EPS motor angle sensor signal	With engine running: pulses (0-5 V)
27	PNK	R2 (EPS Motor angle sensor 2)	Detects EPS motor angle sensor signal	With engine running: pulses (0-5 V)
28	BLU	S4 (Signal 4)	Detects EPS motor angle sensor signal	With engine running: pulses (0-5 V)

SYSTEM OUTLINE

The Acura TL is equipped with electric power steering (EPS). The driver's steering force is assisted by an electric motor at the steering gearbox. Compared to a hydraulic assist power steering system, the EPS is more efficient because it does not use engine power to drive an oil pump to generate hydraulic pressure.

The system uses an EPS control unit to monitor and control the EPS motor's assisting force to match driving conditions:

- Low vehicle speeds: High power assist (for easy handling)
- High speed driving: Low power assist (for stable driving)
- Low speed to high speed driving: Change smoothly from high assist to low assist

System Operation

The steering force from the steering wheel is sent to the pinion shaft. The torque sensor measures the difference between the force applied to the pinion shaft and the resistance to turning the wheels due to road friction. The torque sensor converts steering torque input and its direction into voltage signals that are sent to the EPS control unit. The EPS control unit uses these signals along with the engine and the vehicle speed signals from the ECM/PCM to calculate the direction and the amount of assist needed. The EPS control unit then sends out the appropriate command to the EPS motor. The EPS motor transmits its power through a ball screw mechanism to push the steering rack right or left.

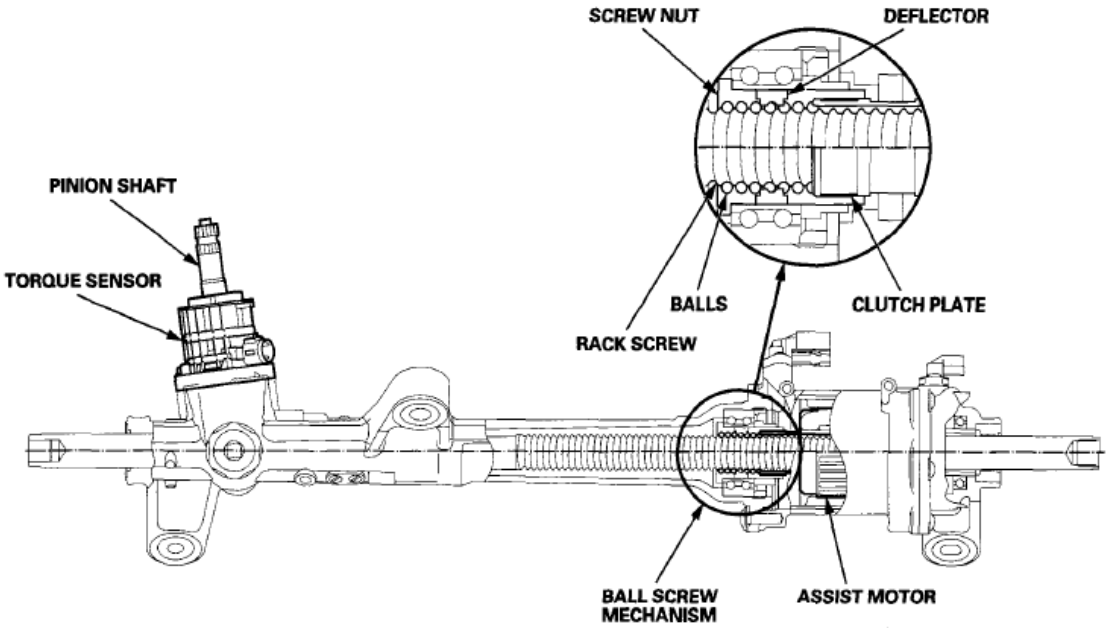


Fig. 9: Electric Power Steering System Operation Diagram
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Torque Sensor Operation

When the steering wheel is turned, inductance is changed by the movement of the core within the Torque Sensor. The amount this voltage changes varies with the amount of movement, and direction of the core, then it is amplified by the interface circuitry of the sensor coil and output to the EPS control unit as a steering signal.

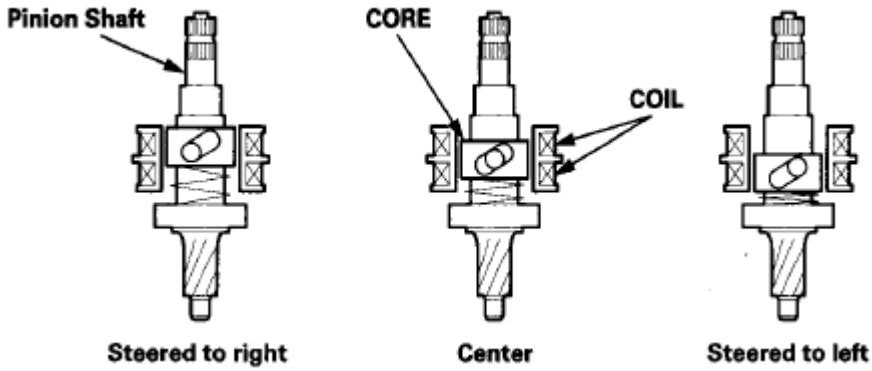


Fig. 10: Torque Sensor Operation Diagram
Courtesy of AMERICAN HONDA MOTOR CO., INC.

EPS CONTROL UNIT OPERATION

The EPS control unit controls the EPS motor by these signals:

- Vehicle speed signal (for ECM/PCM)
- Engine speed signal (for ECM/PCM)

- EPS motor angle sensor signal
- Torque sensor signal

At idle or low vehicle speeds, the EPS control unit sends a signal to the ECM/PCM to increase the engine idle speed to prevent the engine from stalling.

If the EPS control unit detects a failure in the system, it stores a DTC, and sends a signal to the gauge control.

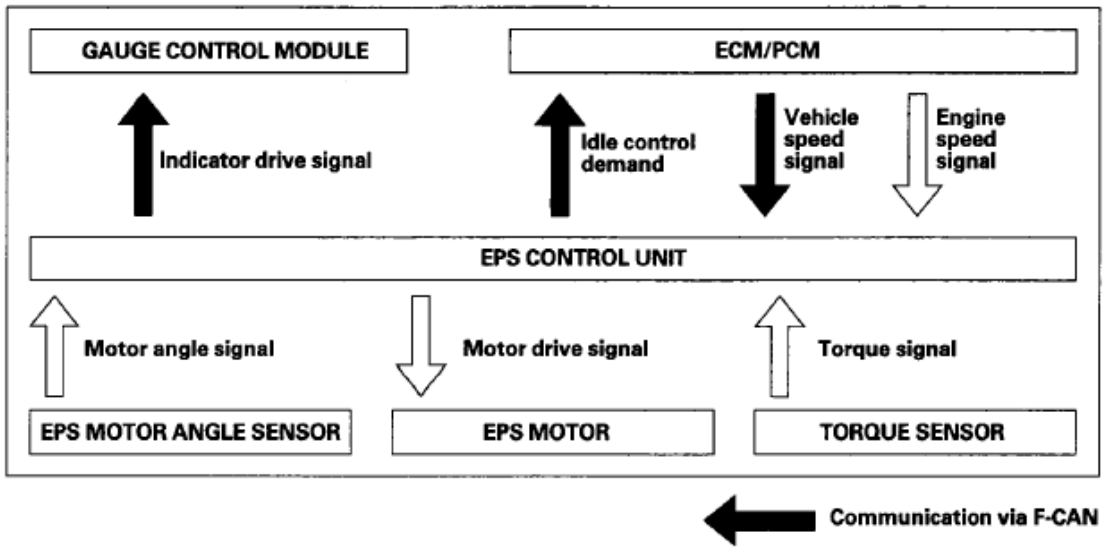


Fig. 11: EPS Control Unit Operation Diagram
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Power Relay (built into the EPS control unit)

When the system is operating normally, the CPU turns the power relay on, and the power is provided to the FET bridge. If the CPU detects a failure in the system which has the demand to shut down the system, the CPU turns the power relay off.

Fail-Safe Relay (built into the EPS control unit)

When the system is operating normally, the CPU turns the fail-safe relay on and the power is provided to the EPS motor. If the CPU detects a failure in the system, the CPU turns the fail-safe relay off at the same time it turns the power relay off.

Current Sensor

An electric current detection circuit monitors the current of each phase circuit to the motor, and sends a signal to the CPU.

EPS MOTOR OPERATION

The EPS uses an efficient brushless DC type motor. The EPS motor control circuit is composed of a system

control CPU, FET drive circuit, H type FET bridge, power relay, fail-safe relay, electric current sensor, and the EPS motor. From the input sensor signals, the CPU calculates and outputs the appropriate three-phase current for the FET drive circuit.

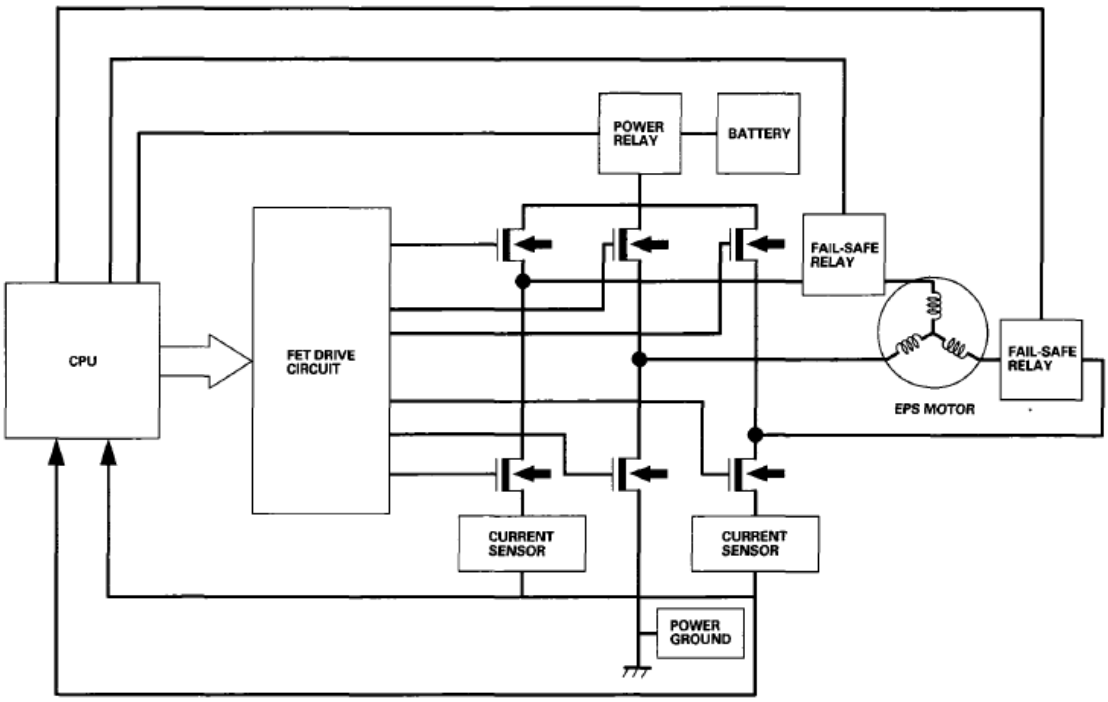


Fig. 12: EPS Motor Operation Diagram
Courtesy of AMERICAN HONDA MOTOR CO., INC.

CIRCUIT DIAGRAM

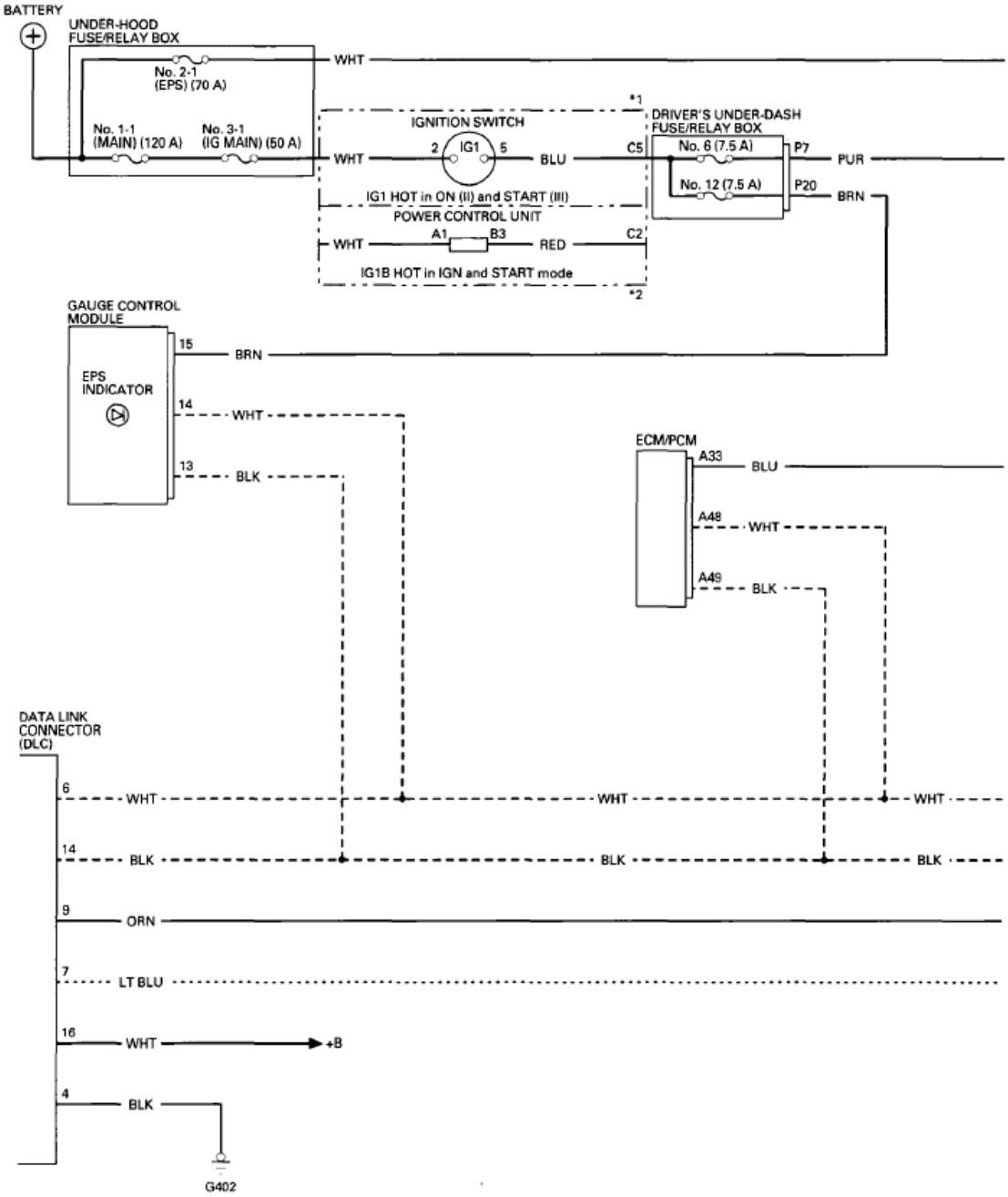


Fig. 13: EPS - Circuit Diagram (1 Of 3)

Courtesy of AMERICAN HONDA MOTOR CO., INC.

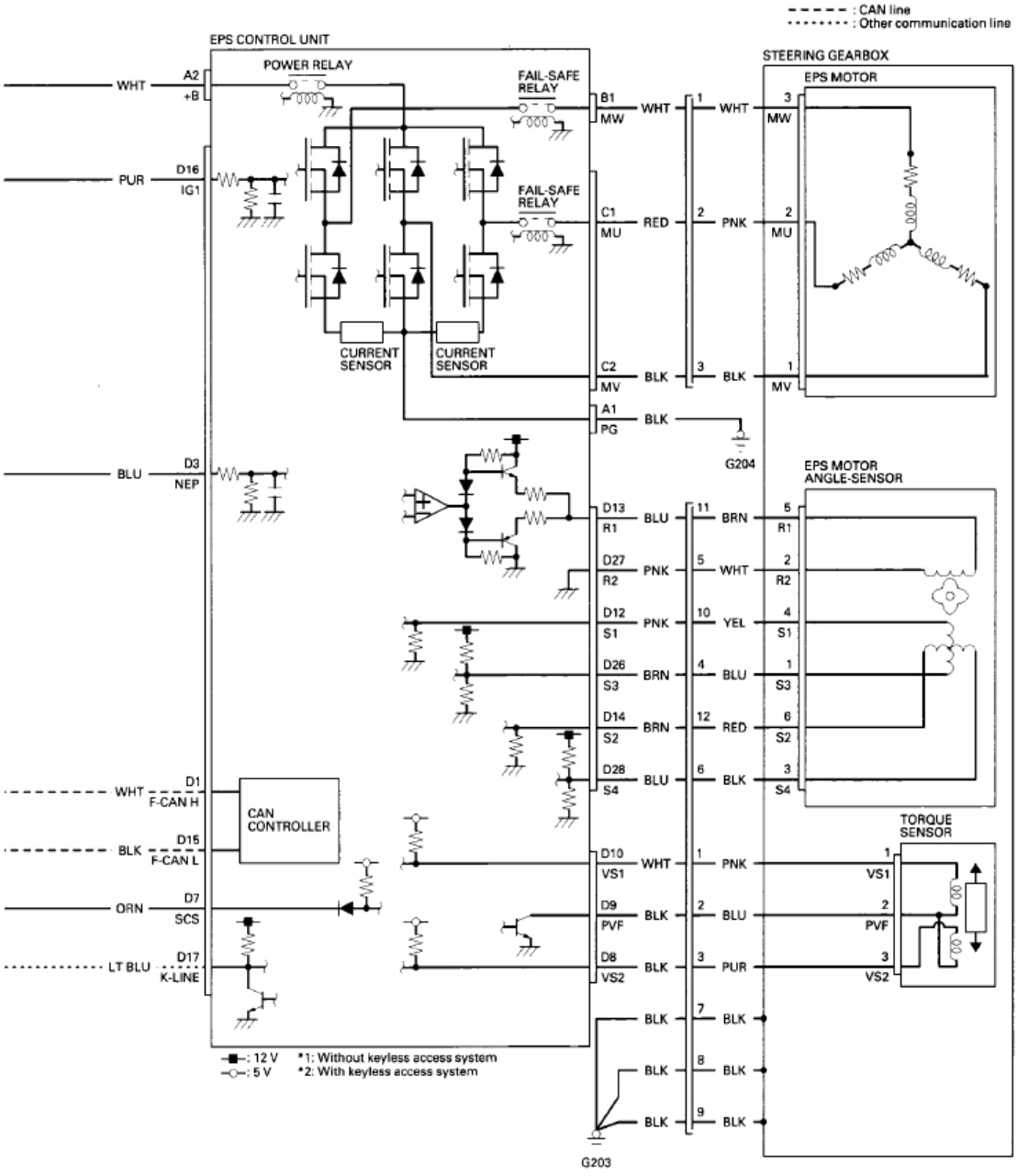


Fig. 14: EPS - Circuit Diagram (2 Of 3)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

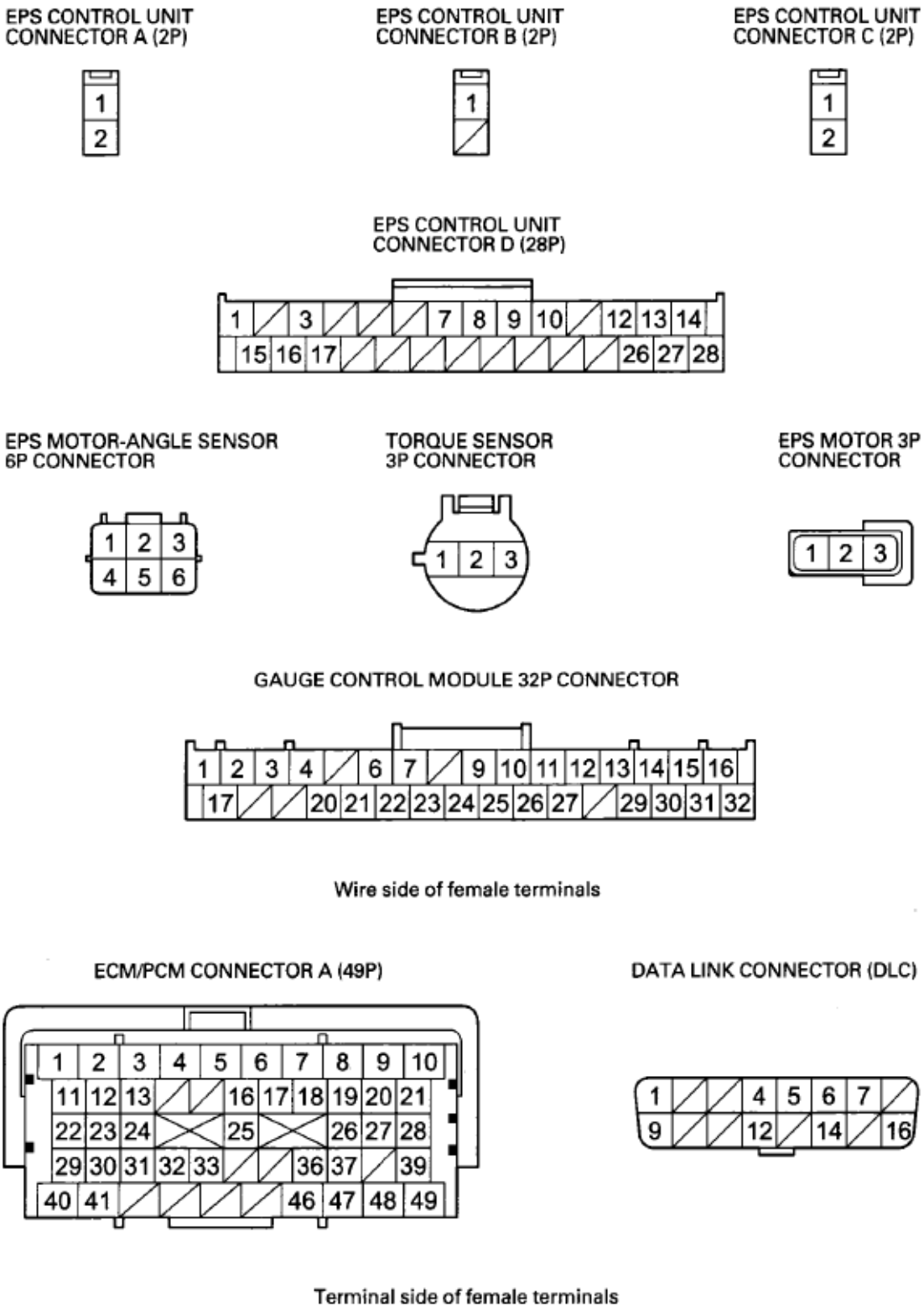


Fig. 15: EPS - Circuit Diagram (3 Of 3)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

DTC TROUBLESHOOTING

DTC 11-01: LOW/HIGH IG1-TERMINAL VOLTAGE; DTC 11-02: BATTERY VOLTAGE

1. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
2. Clear the DTC with the HDS.
3. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
4. Start the engine.
5. Wait at least 60 seconds.
6. Check for DTCs with the HDS.

   Is DTC 11-01 or 11-02 indicated?

   YES - Go to step 7.

   NO - Check for loose terminals or poor connections. If the connections are good, the system is OK at this time.

7. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
8. Disconnect EPS control unit connector D (28P).
9. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
10. Measure the voltage between EPS control unit connector D (28P) terminal No. 16 and body ground.

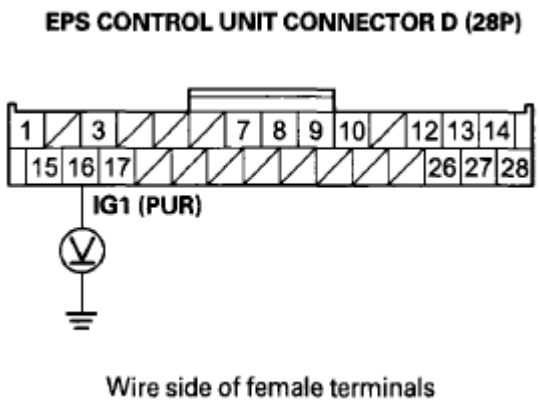


Fig. 16: Measuring Voltage Between EPS Control Unit Connector D (28P) Terminal No. 16 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there battery voltage?

YES - Check for loose terminals in the EPS control unit connectors and repair if necessary. If no poor connections are found, replace the EPS control unit (see **EPS CONTROL UNIT REMOVAL/INSTALLATION**).

NO - If there is no voltage, or the voltage is lower than specified, repair an open or high resistance in the wire between the No. 6 (7.5 A) fuse in the driver's under-dash fuse/relay box and EPS control unit. If the wire checks OK, check the battery (see **BATTERY TEST**), and troubleshoot the alternator regulator circuit (see **ALTERNATOR AND REGULATOR CIRCUIT TROUBLESHOOTING**).

DTC 12-01: MOTOR POWER SUPPLY VOLTAGE

1. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
2. Check the BATTERY in the EPS DATA LIST with the HDS.

   Is there battery voltage?

   YES - Intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at the EPS control unit.

   NO - Go to step 3.

3. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
4. Check the No. 2-1 (70 A) fuse in the under-hood fuse/relay box.

   Is the fuse blown?

   YES - Go to step 5.

   NO - Reinstall the checked fuse, then go to step 13.

5. Disconnect EPS control unit connector A (2P).
6. Check for continuity between EPS control unit connector A (2P) terminal No. 2 and body ground.

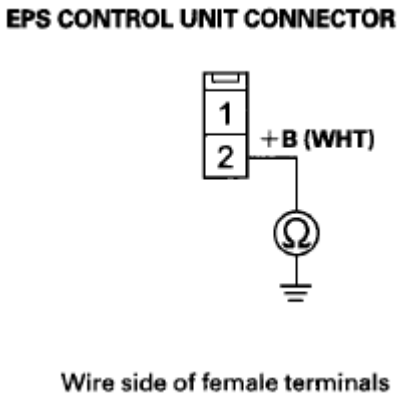


Fig. 17: Checking Continuity Between EPS Control Unit Connector A (2P) Terminal No. 2 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair a short to body ground in the wire between the EPS control unit and the No. 2-1 (70 A) fuse in the under-hood fuse/relay box.

NO - Install a new No. 2-1 (70 A) fuse in the under-hood fuse/relay box, then go to step 7.

7. Reconnect EPS control unit connector A (2P).
8. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
9. Clear the DTC with the HDS.
10. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
11. Start the engine.
12. Check for DTCs with the HDS.

Is DTC 12-01 indicated?

YES - Replace the EPS control unit (see **EPS CONTROL UNIT REMOVAL/INSTALLATION**).

NO - Troubleshooting is complete.

13. Disconnect EPS control unit connector A (2P).
14. Measure the voltage between EPS control unit connector A (2P) terminal No. 2 and body ground.

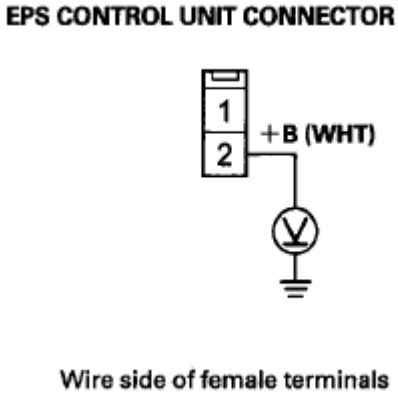


Fig. 18: Measuring Voltage Between EPS Control Unit Connector A (2P) Terminal No. 2 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there battery voltage?

YES - Check for loose terminals in the EPS control unit connectors, and repair if necessary. If no poor connections are found, replace the EPS control unit (see **EPS CONTROL UNIT REMOVAL/INSTALLATION**).

NO - Repair an open in the wire between the EPS control unit and the No. 2-1 (70 A) fuse in the under-hood fuse/relay box.

DTC 21-01: EXCESSIVE CHANGE OF THE VEHICLE SPEED SIGNAL; DTC 21-02: COMPARISON BETWEEN THE VEHICLE SPEED AND THE ENGINE SPEED SIGNAL

NOTE:

- **If the MIL indicator is on, troubleshoot the fuel and emissions systems first.**
- **Even though the system is operating normally, the EPS indicator will come on caused by the detecting condition of DTC 21-01 or DTC 21-02 when you raise the engine speed with the vehicle stopped.**
- **Clear the DTC related to the ABS or VSA system.**

1. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
2. Raise and support the vehicle (see **LIFT AND SUPPORT POINTS**), and allow all wheels to rotate freely.
3. Connect the HDS to the data link connector (DLC).
4. Turn off the VSA function by using the VSA OFF switch.
5. Start the engine, then run the vehicle in the 4th (M/T), or D position (A/T).
6. Check the VEHICLE SPEED in the EPS DATA LIST with the HDS.

   Is the vehicle speed indicated?

   YES - The system is OK at this time.

   NO - Go to step 7.

7. Check for DTCs in the fuel and emissions systems (M/T) or A/T system (ATT) with the HDS.

   Is DTC P0720 (M/T), P0721 (A/T), P0722 (A/T), or P0723 (A/T) indicated?

   YES - Troubleshoot the indicated DTC(s).

   NO - Go to step 8.

8. Start the engine, and check the tachometer.

   Is the tachometer working correctly?

   YES - Go to step 10.

   NO - Go to step 9.

9. Check for DTCs in the gauge control module with the HDS.

   Are any DTCs indicated?

   YES - Troubleshooting the indicated DTC(s).

NO - Update the ECM/PCM if it does not have the latest software (see **ECM/PCM UPDATE**), or substitute a known-good ECM/PCM (see **SUBSTITUTING THE ECM/PCM**), then go to step 1 and recheck. If the ECM/PCM was updated and DTCs are not indicated, troubleshooting is complete. If the ECM/PCM was substituted and DTCs are not indicated, replace the original ECM/PCM (see **ECM/PCM REPLACEMENT**).

10. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
11. Short the SCS line with the HDS.
12. Disconnect EPS control unit connector D (28P) and ECM/PCM connector A (49P).
13. Check for continuity between EPS control unit connector D (28P) terminal No. 1 and ECM/PCM connector A (49P) terminal No. 48.

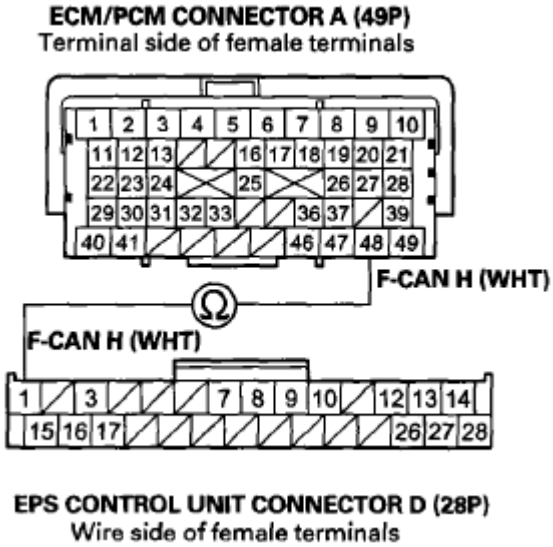


Fig. 19: Checking Continuity Between EPS Control Unit Connector D (28P) Terminal No. 1 And ECM/PCM Connector A (49P) Terminal No. 48
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 14.

NO - Repair an open in the wire between the EPS control unit and the ECM/PCM.

14. Check for continuity between EPS control unit connector D (28P) terminal No. 15 and ECM/PCM connector A (49P) terminal No. 49.

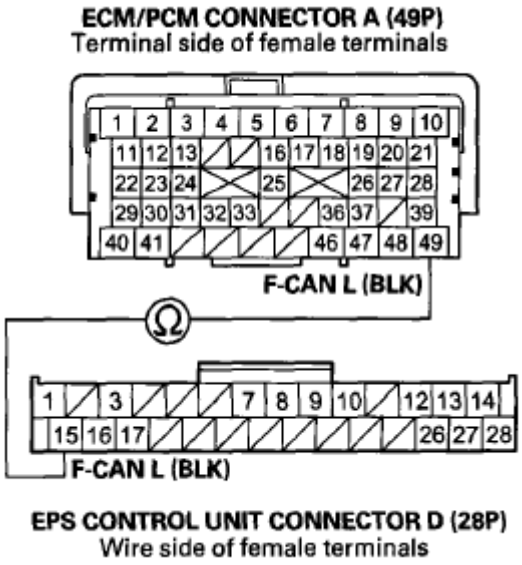


Fig. 20: Checking Continuity Between EPS Control Unit Connector D (28P) Terminal No. 15 And ECM/PCM Connector A (49P) Terminal No. 49
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Replace the EPS control unit (see **EPS CONTROL UNIT REMOVAL/INSTALLATION**).

NO - Repair an open in the wire between the EPS control unit and the ECM/PCM.

DTC 22-01: ENGINE SPEED SIGNAL

NOTE: If the MIL indicator is on, troubleshoot the fuel and emissions systems first.

1. Start the engine.
2. Check the ENGINE SPEED in the EPS DATA LIST with the HDS.

   Is there 0 RPM at idle?

   YES - Go to step 3.

   NO - The system is OK at this time.

3. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
4. Disconnect EPS control unit connector D (28P).
5. Start the engine.
6. Measure the voltage between EPS control unit connector D (28P) terminal No. 3 and body ground.

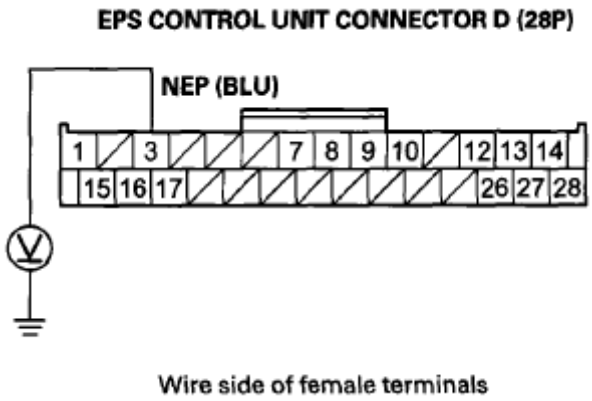


Fig. 21: Measuring Voltage Between EPS Control Unit Connector D (28P) Terminal No. 3 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there any voltage?

YES - Check for loose terminals in the EPS control unit connectors, and repair if necessary. If no poor connections are found, replace the EPS control unit (see **EPS CONTROL UNIT REMOVAL/INSTALLATION**).

NO - Go to step 7.

7. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
8. Short the SCS line with the HDS.
9. Disconnect ECM/PCM connector A (49P).
10. Check for continuity between EPS control unit connector D (28P) terminal No. 3 and body ground.

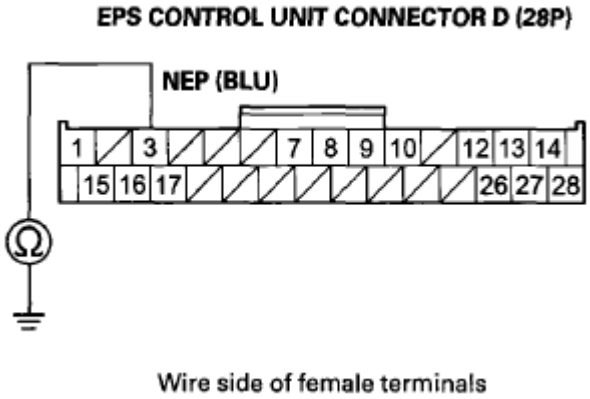


Fig. 22: Checking Continuity Between EPS Control Unit Connector D (28P) Terminal No. 3 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair a short to body ground in the wire between the EPS control unit and the ECM/PCM.

NO - Go to step 11.

11. Check for continuity between EPS control unit connector D (28P) terminal No. 3 and ECM/PCM connector A (49P) terminal No. 33.

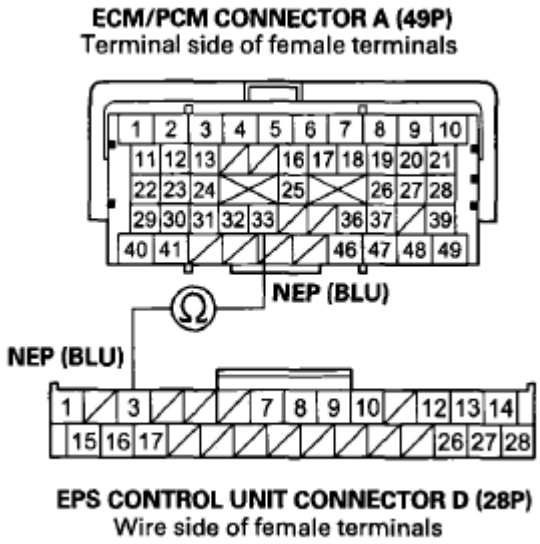


Fig. 23: Checking Continuity Between EPS Control Unit Connector D (28P) Terminal No. 3 And ECM/PCM Connector A (49P) Terminal No. 33
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Update the ECM/PCM if it does not have the latest software (see **ECM/PCM UPDATE**), or substitute a known-good ECM/PCM (see **SUBSTITUTING THE ECM/PCM**), then go to step 1 and recheck. If the ECM/PCM was updated and DTCs are not indicated, troubleshooting is complete. If the ECM/PCM was substituted and DTCs are not indicated, replace the original ECM/PCM (see **ECM/PCM REPLACEMENT**).

NO - Repair open in the wire between the EPS control unit and the ECM/PCM.

DTC 31-01: TORQUE SENSOR NEUTRAL POSITION NOT WRITTEN

1. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
2. Clear the DTC with the HDS.
3. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
4. Do the memorizing of the torque sensor neutral position (see **MEMORIZING THE TORQUE SENSOR NEUTRAL POSITION**).
5. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
6. Check for DTCs with the HDS.

Is DTC 31-01 indicated?

YES - Replace the EPS control unit (see **EPS CONTROL UNIT REMOVAL/INSTALLATION**).

NO - The system is OK at this time.

DTC 32-01: EPS CONTROL UNIT INTERNAL CIRCUIT (CURRENT SENSOR); DTC 32-02: EPS CONTROL UNIT INTERNAL CIRCUIT (CURRENT SENSOR); DTC 35-01: EPS CONTROL UNIT INTERNAL CIRCUIT (CPU); DTC 35-02: EPS CONTROL UNIT INTERNAL CIRCUIT (EEPROM); DTC 35-04: EPS CONTROL UNIT INTERNAL CIRCUIT (CPU COMMUNICATION); DTC 35-07: EPS CONTROL UNIT INTERNAL CIRCUIT (INHL/INHR PORTS); DTC 36-02: EPS CONTROL UNIT INTERNAL CIRCUIT (INH OUTPUT CIRCUIT); DTC 37-01: EPS CONTROL UNIT INTERNAL CIRCUIT (STEP-UP CIRCUIT)

1. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
2. Clear the DTC with the HDS.
3. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
4. Start the engine.
5. Check for DTCs with the HDS.

Is DTC 32-01, 32-02, 35-01, 35-02, 35-04, 35-07, 36-02, or 37-01 indicated?

YES - Check for loose terminals in the EPS control unit connectors, and repair if necessary. If no poor connections are found, replace the EPS control unit (see **EPS CONTROL UNIT REMOVAL/INSTALLATION**).

NO - Troubleshoot the indicated DTC. If there are no DTCs, the system is OK at this time.

DTC 32-07: EPS CONTROL UNIT INTERNAL CIRCUIT (CURRENT SENSOR)

1. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
2. Clear the DTC with the HDS.
3. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
4. Start the engine.
5. Turn the steering wheel to the right or left, and wait 10 seconds or more.
6. Check for DTCs with the HDS.

Is DTC 32-07 indicated?

YES - Check for loose terminals in the EPS control unit connectors, and repair if necessary. If no poor connections are found, replace the EPS control unit (see **EPS CONTROL UNIT REMOVAL/INSTALLATION**).

NO - Troubleshoot the indicated DTC. If there are no DTCs, the system is OK at this time.

DTC 32-08: EPS CONTROL UNIT INTERNAL CIRCUIT (CURRENT SENSOR); DTC 32-09: MOTOR CURRENT CORRELATION

1. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
2. Clear the DTC with the HDS.
3. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
4. Start the engine.
5. Turn the steering wheel to the right or left, and wait 10 seconds or more.
6. Check for DTCs with the HDS.

   Is DTC 32-08 or 32-09 indicated?

   YES - Go to step 7.

   NO - Troubleshoot the indicated DTC. If there are no DTCs, the system is OK at this time.

7. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
8. Disconnect EPS control unit connector B (2P) and connector C (2P).
9. Check for continuity between following terminals of EPS control unit connector B (2P) and connector C (2P).

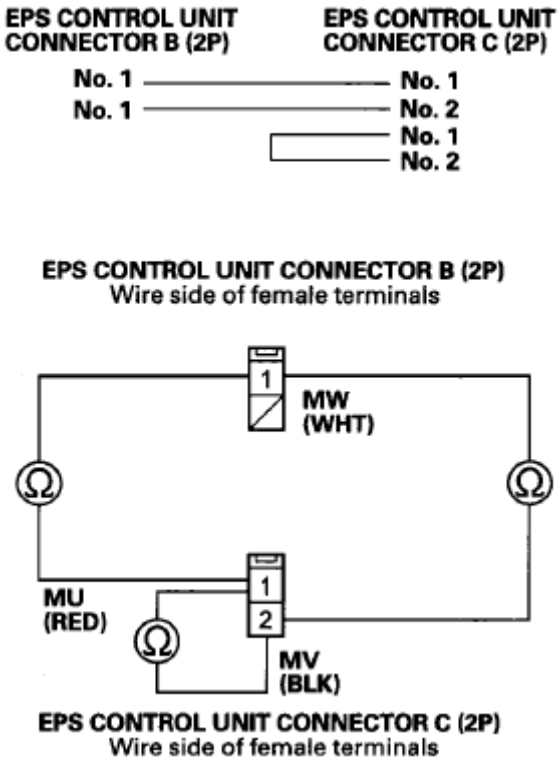


Fig. 24: Checking Continuity Between Terminals Of EPS Control Unit Connector B (2P) And Connector C (2P)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Check for loose terminals in the EPS control unit connectors and EPS motor connectors, and repair if necessary. If no poor connections are found, replace the EPS control unit (see **EPS CONTROL UNIT REMOVAL/INSTALLATION**).

NO - Go to step 10.

10. Disconnect the EPS motor 3P connector.
11. On the EPS motor side, check for continuity between EPS motor 3P connector terminals No. 1 and No. 2, No. 1 and No. 3, and No. 2 and No. 3 individually.

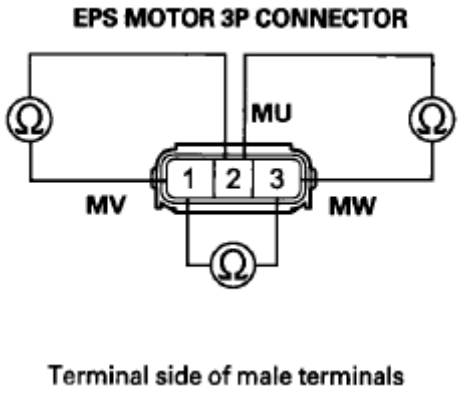


Fig. 25: Checking Continuity Between EPS Motor 3P Connector Terminals No. 1 And No. 2, No. 1 And No. 3, And No. 2 And No. 3 Individually
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair an open in the wire between the EPS control unit and the EPS motor.

NO - Replace the steering gearbox (see **STEERING GEARBOX REMOVAL AND INSTALLATION**).

DTC 33-01: LOWER FET STUCK ON; DTC 33-06: LOWER FET STUCK ON

1. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
2. Clear the DTC with the HDS.
3. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
4. Start the engine.
5. Check for DTCs with the HDS.

Is DTC 33-01 or 33-06 indicated?

YES - Go to step 6.

NO - Troubleshoot the indicated DTC. If there are no DTCs, the system is OK at this time.

6. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
7. Disconnect EPS control unit connector B (2P) and connector C (2P).
8. Check for continuity between body ground and EPS control unit connector B (2P) terminal No. 1, connector C (2P) terminal No. 1, and connector C (2P) terminal No. 2 individually.

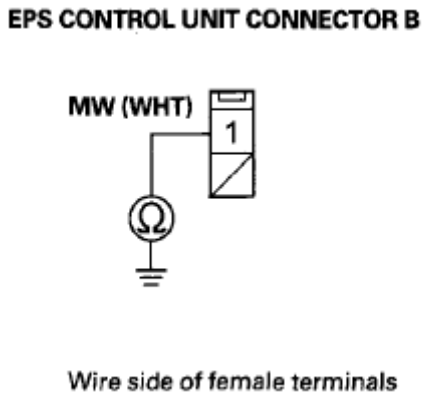


Fig. 26: Checking Continuity Between Body Ground And EPS Control Unit Connector B (2P) Terminal No. 1
Courtesy of AMERICAN HONDA MOTOR CO., INC.

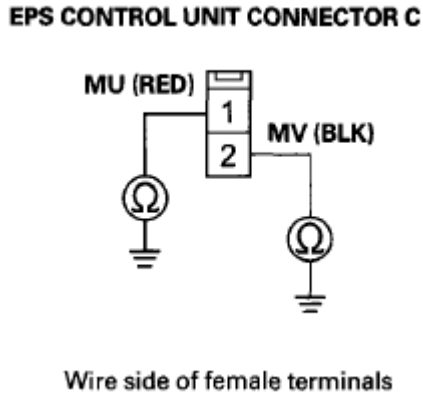


Fig. 27: Checking Continuity Between Body Ground And Connector C (2P) Terminal No. 1 And No. 2 Individually
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 9.

NO - Check for loose terminals in the EPS control unit connectors, and repair if necessary. If no poor connections are found, replace the EPS control unit (see **EPS CONTROL UNIT REMOVAL/INSTALLATION**).

9. Disconnect the EPS motor 3P connector.
10. Check for continuity between body ground and EPS control unit connector B (2P) terminal No. 1, connector C (2P) terminal No. 1, and connector C (2P) terminal No. 2 individually.

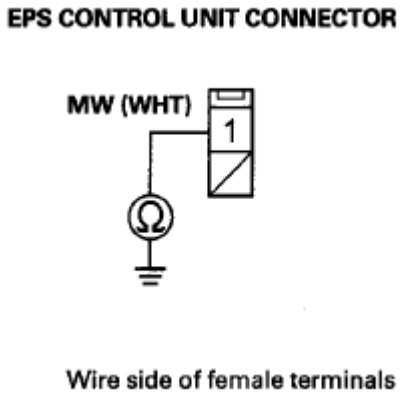


Fig. 28: Checking Continuity Between Body Ground And EPS Control Unit Connector B (2P) Terminal No. 1
Courtesy of AMERICAN HONDA MOTOR CO., INC.

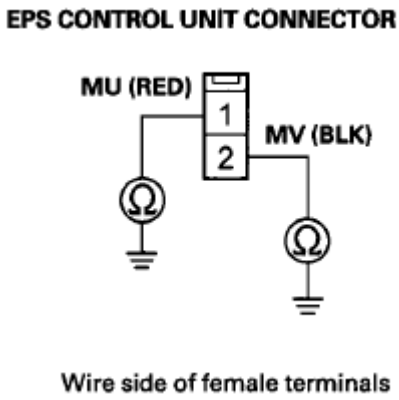


Fig. 29: Checking Continuity Between Body Ground And Connector C (2P) Terminal No. 1 And No. 2 Individually
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair a short to body ground in the wire between the EPS control unit and the EPS motor.

NO - Replace the steering gearbox (see **STEERING GEARBOX REMOVAL AND INSTALLATION**).

DTC 33-02: UPPER FET STUCK ON; DTC 33-07: UPPER FET STUCK ON

1. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
2. Clear the DTC with the HDS.

3. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
4. Start the engine.
5. Check for DTCs with the HDS.

   Is DTC 33-02 or 33-07 indicated?

   YES - Go to step 6.

   NO - Troubleshoot the indicated DTC. If there are no DTCs, the system is OK at this time.

6. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
7. Disconnect EPS control unit connector B (2P) and connector C (2P).
8. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
9. Measure the voltage between body ground and EPS control unit connector B (2P) terminal No. 1, connector C (2P) terminal No. 1, and connector C (2P) terminal No. 2 individually.

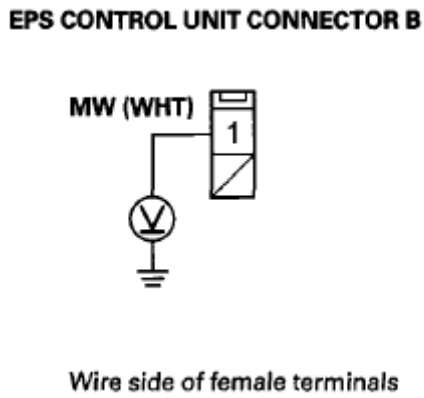


Fig. 30: Measuring Voltage Between Body Ground And EPS Control Unit Connector B (2P) Terminal No. 1
Courtesy of AMERICAN HONDA MOTOR CO., INC.

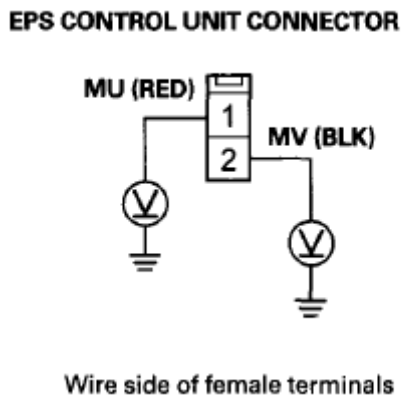


Fig. 31: Measuring Voltage Between Body Ground And Connector C (2P) Terminal No. 1 And No. 2 Individually

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there battery voltage?

YES - Go to step 10.

NO - Check for loose terminals in the EPS control unit connectors and the EPS motor connectors, and repair if necessary. If no poor connections are found, replace the EPS control unit (see **EPS CONTROL UNIT REMOVAL/INSTALLATION**).

10. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
11. Disconnect the EPS motor 3P connector.
12. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
13. Measure the voltage between body ground and EPS control unit connector B (2P) terminal No. 1, connector C (2P) terminal No. 1, and connector C (2P) terminal No. 2 individually.

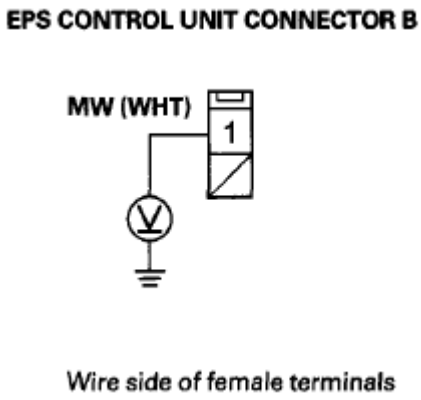


Fig. 32: Measuring Voltage Between Body Ground And EPS Control Unit Connector B (2P) Terminal No. 1
Courtesy of AMERICAN HONDA MOTOR CO., INC.

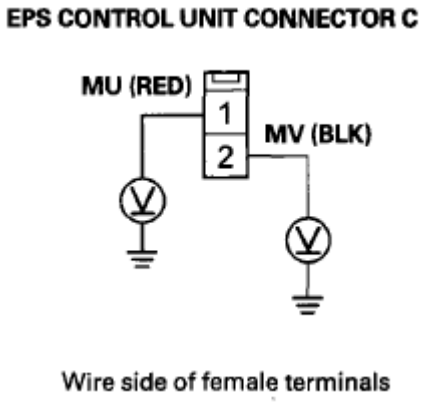


Fig. 33: Measuring Voltage Between Body Ground And Connector C (2P) Terminal No. 1 And No. 2 Individually
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there battery voltage?

YES - Repair a short to power in the wire between the EPS control unit and the EPS motor.

NO - Replace the steering gearbox (see **STEERING GEARBOX REMOVAL AND INSTALLATION**).

DTC 34-01: POWER RELAY

1. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
2. Clear the DTC with the HDS.
3. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
4. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
5. Check for DTCs with the HDS.

Is DTC 34-01 indicated?

YES - Check for loose terminals in the EPS control unit connectors, and repair if necessary. If no poor connections are found, replace the EPS control unit (see **EPS CONTROL UNIT REMOVAL/INSTALLATION**).

NO - Troubleshoot the indicated DTC. If there are no DTCs, the system is OK at this time.

DTC 34-02: FAIL-SAFE RELAY

1. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
2. Clear the DTC with the HDS.
3. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
4. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
5. Check for DTCs with the HDS.

Is DTC 34-02 indicated?

YES - Go to step 6.

NO - Troubleshoot the indicated DTC. If there are no DTCs, the system is OK at this time.

6. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
7. Disconnect EPS control unit connector B (2P) and connector C (2P).
8. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
9. Measure the voltage between body ground and EPS control unit connector B (2P) terminal No. 1, connector C (2P) terminal No. 1, and connector C (2P) terminal No. 2 individually.

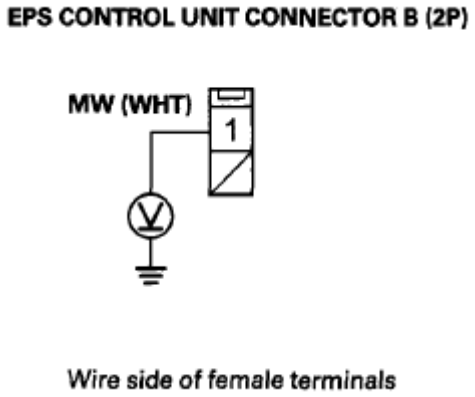


Fig. 34: Measuring Voltage Between Body Ground And EPS Control Unit Connector B (2P) Terminal No. 1
Courtesy of AMERICAN HONDA MOTOR CO., INC.

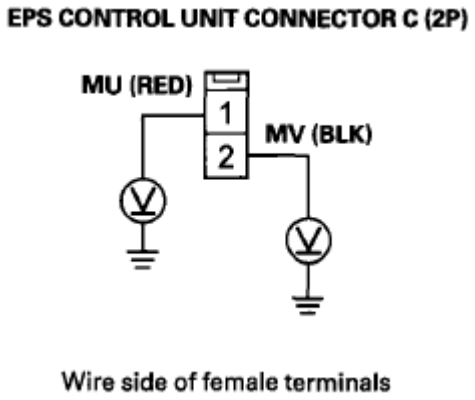


Fig. 35: Measuring Voltage Between Body Ground And Connector C (2P) Terminal No. 1 And No. 2 Individually
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there battery voltage?

YES - Repair a short to power in the wire between the EPS control unit and the EPS motor.

NO - Replace the EPS control unit (see **EPS CONTROL UNIT REMOVAL/INSTALLATION**).

DTC 35-05: EPS CONTROL UNIT INTERNAL CIRCUIT (A/D CONVERSION)

1. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
2. Clear the DTC with the HDS.
3. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
4. Start the engine.
5. Wait 10 seconds or more.
6. Check for DTCs with the HDS.

Is DTC 35-05 indicated?

YES - Check for loose terminals in the EPS control unit connectors, and repair if necessary. If no poor connections are found, replace the EPS control unit (see **EPS CONTROL UNIT REMOVAL/INSTALLATION**).

NO - Troubleshoot the indicated DTC. If there are no DTCs, the system is OK at this time.

DTC 51-01: TORQUE SENSOR (VT1, VT2 LOW/HIGH VOLTAGE)

1. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
2. Check the ADVT1 in the EPS DATA LIST with the HDS.

   Is the voltage at 1.45-4.10 V?

   YES - Go to step 3.

   NO - Go to step 4.

3. Check the ADVT2 in the EPS DATA LIST with the HDS.

   Is the voltage at 1.56-4.28 V?

   YES - Check for loose terminals or poor connections. If the connections are good, the system is OK at this time.

   NO - Go to step 4.

4. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
5. Disconnect EPS control unit connector D (28P).
6. Measure the resistance between EPS control unit connector D (28P) terminals No. 9 and No. 10.

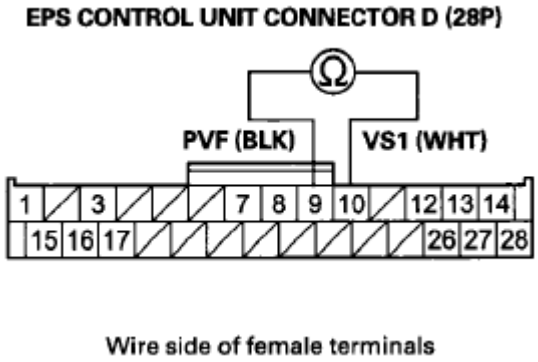


Fig. 36: Measuring Resistance Between EPS Control Unit Connector D (28P) Terminals No. 9 And No. 10
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is the resistance between 12- 15 ohms?

YES - Go to step 7.

NO - Go to step 11.

7. Measure the resistance between EPS control unit connector D (28P) terminals No. 8 and No. 9.

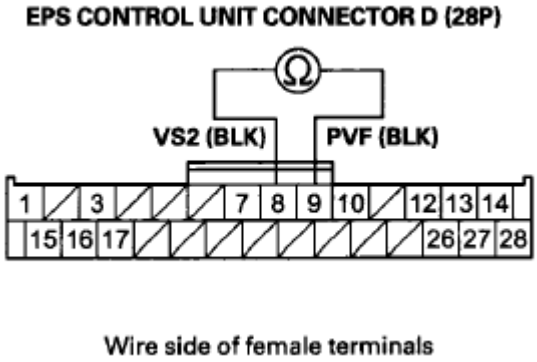


Fig. 37: Measuring Resistance Between EPS Control Unit Connector D (28P) Terminals No. 8 And No. 9
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is the resistance between 12- 15 ohms?

YES - Go to step 8.

NO - Go to step 13.

8. Check for continuity between EPS control unit connector D (28P) terminal No. 9 and body ground.

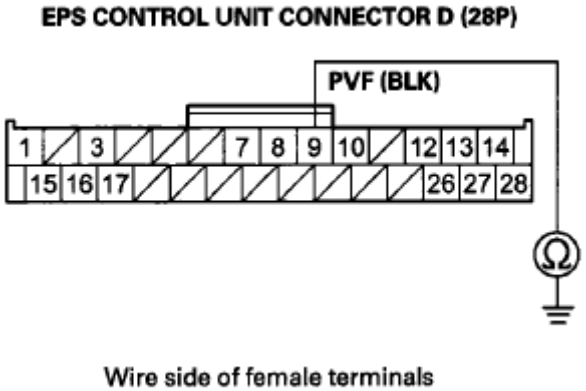


Fig. 38: Checking Continuity Between EPS Control Unit Connector D (28P) Terminal No. 9 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 9.

NO - Check for loose terminals in the EPS control unit connectors, and repair if necessary. If no poor connections are found, replace the EPS control unit (see **EPS CONTROL UNIT REMOVAL/INSTALLATION**).

9. Disconnect the torque sensor 3P connector from the steering gearbox.
10. Check for continuity between EPS control unit connector D (28P) terminal No. 9 and body ground.

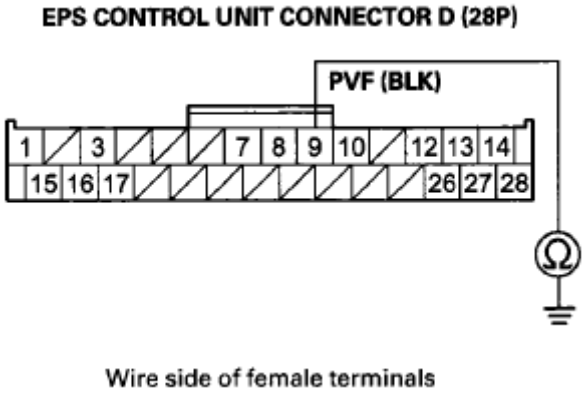


Fig. 39: Checking Continuity Between EPS Control Unit Connector D (28P) Terminal No. 9 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair a short to body ground in the wire between the torque sensor and the EPS control unit.

NO - Replace the steering gearbox (see **STEERING GEARBOX REMOVAL AND INSTALLATION**).

11. Disconnect the torque sensor 3P connector from the steering gearbox.
12. On the sensor side, measure the resistance between torque sensor 3P connector terminals No. 1 and No. 2.

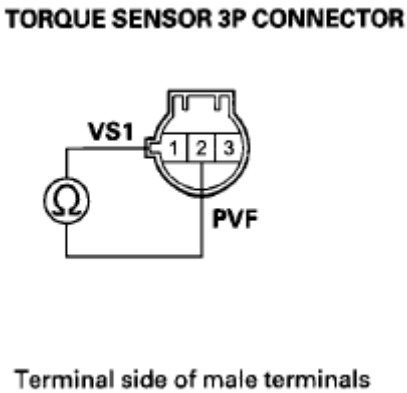


Fig. 40: Measuring Resistance Between Torque Sensor 3P Connector Terminals No. 1 And No. 2
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is the resistance between 12- 15 ohms?

YES - Repair an open or a short between the PNK and the BLU wires in the torque sensor circuit between the torque sensor and the EPS control unit.

NO - Replace the steering gearbox (see **STEERING GEARBOX REMOVAL AND INSTALLATION**).

13. Disconnect the torque sensor 3P connector from the steering gearbox.
14. On the sensor side, measure the resistance between torque sensor 3P connector terminals No. 2 and No. 3.

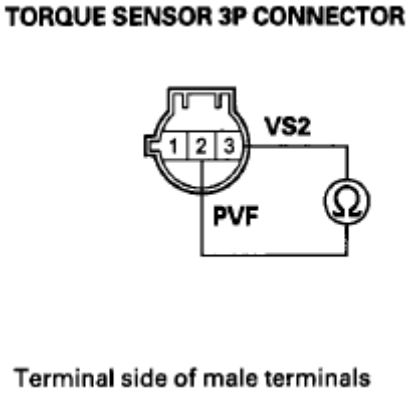


Fig. 41: Measuring Resistance Between Torque Sensor 3P Connector Terminals No. 2 And No. 3
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is the resistance between 12- 15 ohms?

YES - Repair an open or a short between the BLU and the PUR wires in the torque sensor circuit between the torque sensor and the EPS control unit.

NO - Replace the steering gearbox (see **STEERING GEARBOX REMOVAL AND INSTALLATION**).

DTC 51-02: TORQUE SENSOR (VT3 DIFFERENTIAL-AMPLIFICATION FUNCTION); DTC 51-03: TORQUE SENSOR (VT1, VT2 RAPID CHANGE); DTC 51-06: TORQUE SENSOR (VT1, VT2 AVERAGE); DTC 51-07: TORQUE SENSOR (VT1, VT2 CHECK)

1. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
2. Clear the DTC with the HDS
3. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
4. Start the engine.
5. Check for DTCs with the HDS.

Is DTC 51-02, 51-03, 51-06, or 51-07 indicated?

YES - Go to step 6.

NO - Troubleshoot the indicated DTC. If there are no DTCs, the system is OK at this time.

6. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
7. Disconnect EPS control unit connector D (28P).
8. Measure the resistance between EPS control unit connector D (28P) terminals No. 9 and No. 10.

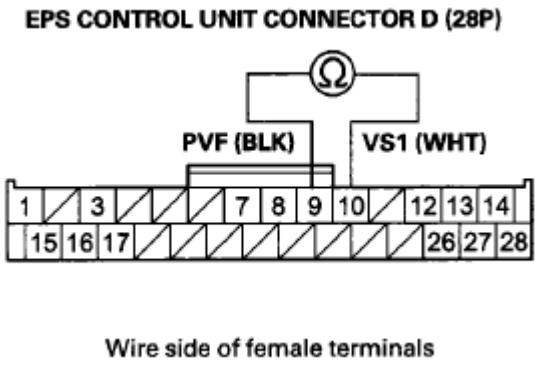


Fig. 42: Measuring Resistance Between EPS Control Unit Connector D (28P) Terminals No. 9 And No. 10
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is the resistance between 12- 15 ohms?

YES - Go to step 9.

NO - Go to step 13.

9. Measure the resistance between EPS control unit connector D (28P) terminals No. 8 and No. 9.

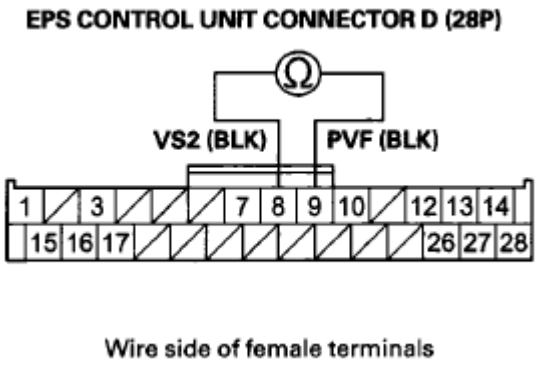


Fig. 43: Measuring Resistance Between EPS Control Unit Connector D (28P) Terminals No. 8 And No. 9
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is the resistance between 12- 15 ohms?

YES - Go to step 10.

NO - Go to step 15.

10. Check for continuity between EPS control unit connector D (28P) terminal No. 9 and body ground.

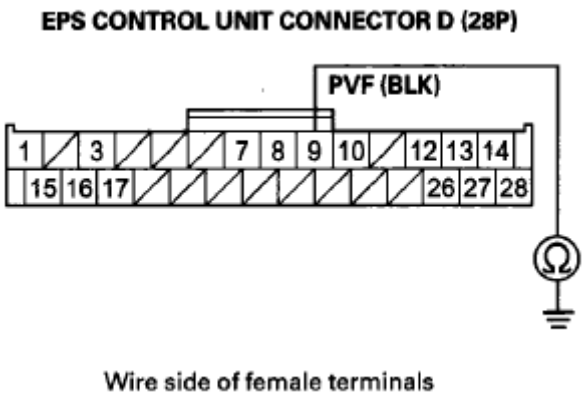


Fig. 44: Checking Continuity Between EPS Control Unit Connector D (28P) Terminal No. 9 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 11.

NO - Check for loose terminals in the EPS control unit connectors, and repair if necessary. If no poor connections are found, replace the EPS control unit (see **EPS CONTROL UNIT REMOVAL/INSTALLATION**).

11. Disconnect the torque sensor 3P connector from the steering gearbox.
12. Check for continuity between EPS control unit connector D (28P) terminal No. 9 and body ground.

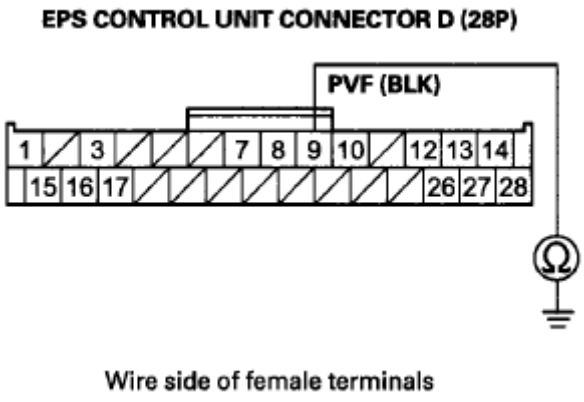


Fig. 45: Checking Continuity Between EPS Control Unit Connector D (28P) Terminal No. 9 And

Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair a short to body ground in the wire between the torque sensor and the EPS control unit.

NO - Replace the steering gearbox (see **STEERING GEARBOX REMOVAL AND INSTALLATION**).

13. Disconnect the torque sensor 3P connector from the steering gearbox.
14. On the sensor side, measure the resistance between torque sensor 3P connector terminals No. land No. 2.

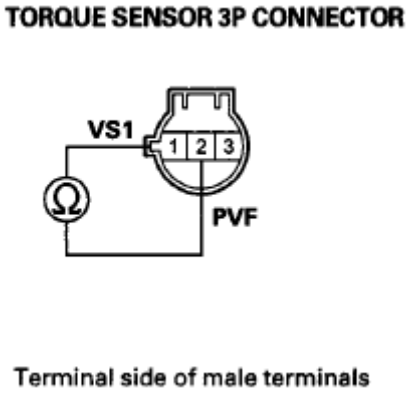


Fig. 46: Measuring Resistance Between Torque Sensor 3P Connector Terminals No. Land No. 2
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is the resistance between 12- 15 ohms?

YES - Repair an open or a short between the PNK and the BLU wires in the torque sensor circuit between the torque sensor and the EPS control unit.

NO - Replace the steering gearbox (see **STEERING GEARBOX REMOVAL AND INSTALLATION**).

15. Disconnect the torque sensor 3P connector from the steering gearbox.
16. On the sensor side, measure the resistance between torque sensor 3P connector terminals No. 2 and No. 3.

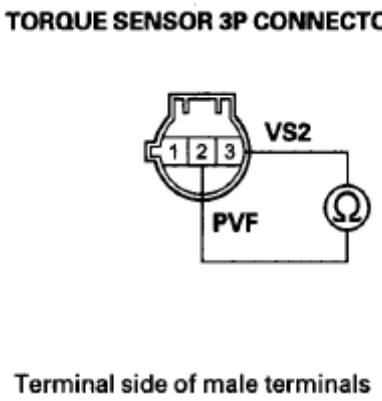


Fig. 47: Measuring Resistance Between Torque Sensor 3P Connector Terminals No. 2 And No. 3
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is the resistance between 12- 15 ohms?

YES - Repair an open or a short between the BLU and the PUR wires in the torque sensor circuit between the torque sensor and the EPS control unit.

NO - Replace the steering gearbox (see **STEERING GEARBOX REMOVAL AND INSTALLATION**).

DTC 61-04: MOTOR HARNESS MALFUNCTION

1. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
2. Clear the DTC with the HDS.
3. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
4. Start the engine.
5. Turn the steering wheel to the right or left, and wait 10 seconds or more.
6. Check for DTCs with the HDS.

   Is DTC 61-04 indicated?

   YES - Go to step 7.

   NO - Troubleshoot the indicated DTC. If there are no DTCs, the system is OK at this time.

7. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
8. Disconnect EPS control unit connector B (2P) and connector C (2P).
9. Check for continuity between the following terminals of EPS control unit connector B (2P) and connector C (2P).

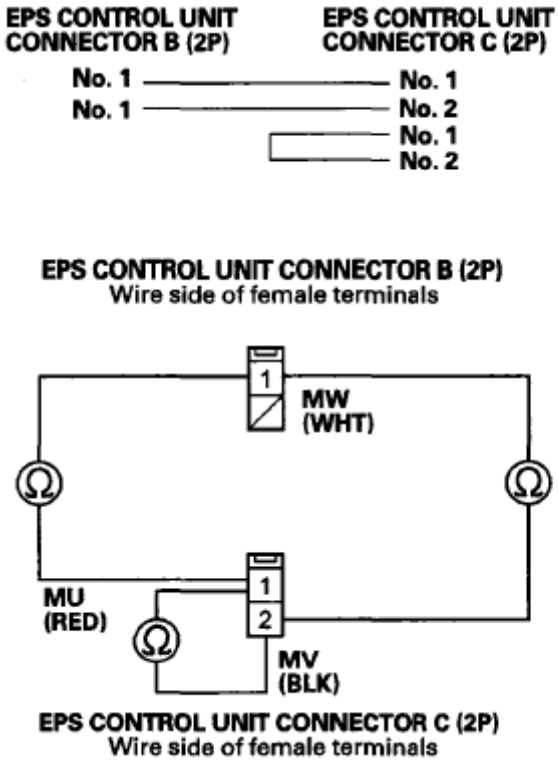


Fig. 48: Checking Continuity Between Terminals Of EPS Control Unit Connector B (2P) And Connector C (2P)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 10.

NO - Go to step 13.

10. Check for continuity between body ground and EPS control unit connector B (2P) terminal No. 1, connector C (2P) terminal No. 1, and connector C (2P) terminal No. 2 individually.

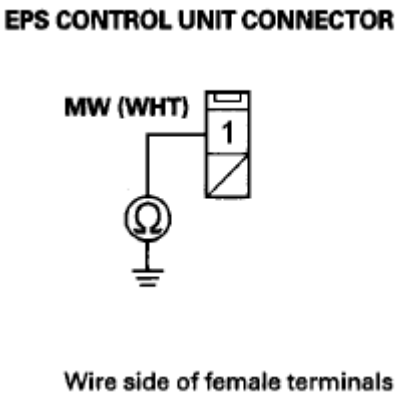


Fig. 49: Checking Continuity Between Body Ground And EPS Control Unit Connector B (2P)

Terminal No. 1
Courtesy of AMERICAN HONDA MOTOR CO., INC.

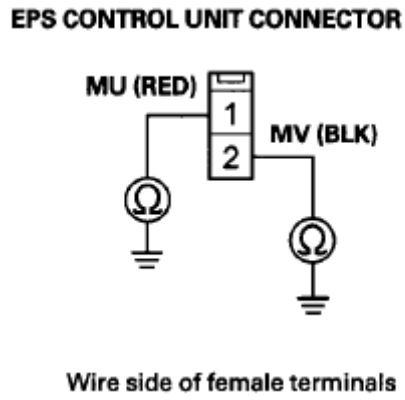


Fig. 50: Checking Continuity Between Body Ground And Connector C (2P) Terminal No. 1 And No. 2 Individually
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 11.

NO - Check for loose terminals in the EPS control unit connectors, and repair if necessary- If no poor connections are found, replace the EPS control unit (see **EPS CONTROL UNIT REMOVAL/INSTALLATION**).

11. Disconnect the EPS motor 3P connector.
12. Check for continuity between body ground and EPS control unit connector B (2P) terminal No. 1, connector C (2P) terminal No. 1, and connector C (2P) terminal No. 2 individually.

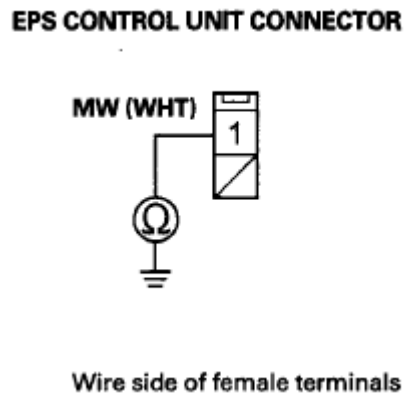


Fig. 51: Checking Continuity Between Body Ground And EPS Control Unit Connector B (2P) Terminal No. 1
Courtesy of AMERICAN HONDA MOTOR CO., INC.

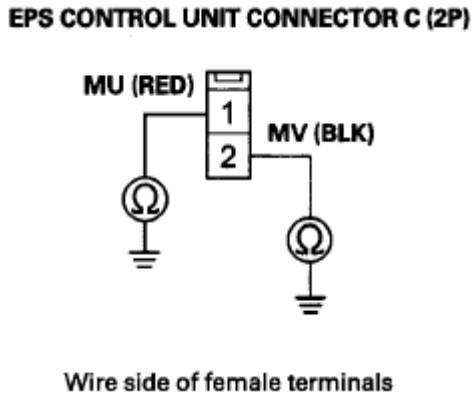


Fig. 52: Checking Continuity Between Body Ground And Connector C (2P) Terminal No. 1 And No. 2 Individually
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair a short to body ground in the wire between the EPS control unit and the EPS motor.

NO - Replace the steering gearbox (see **STEERING GEARBOX REMOVAL AND INSTALLATION**).

13. Disconnect the EPS motor 3P connector.
14. On the EPS motor side, check for continuity between EPS motor 3P connector terminals No. 1 and No. 2, No. 1 and No. 3, and No. 2 and No. 3 individually.

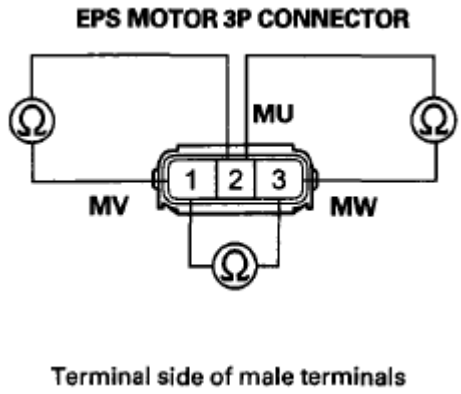


Fig. 53: Checking Continuity Between EPS Motor 3P Connector Terminals No. 1 And No. 2, No. 1 And No. 3, And No. 2 And No. 3 Individually
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair an open in the wire between the EPS control unit and the EPS motor.

NO - Replace the steering gearbox (see **STEERING GEARBOX REMOVAL AND**

INSTALLATION).

DTC 71-01: MOTOR ANGLE SENSOR (SIN/COS SIGNALS); DTC 71-02: MOTOR ANGLE SENSOR (NEUTRAL POSITION LEARNING OF SIN/COS); DTC 71-03: MOTOR ANGLE SENSOR (SIN/COS SIGNALS)

1. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
2. Clear the DTC with the HDS.
3. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
4. Start the engine.
5. Turn the steering wheel to the right or left, and wait 10 seconds or more.
6. Check for DTCs with the HDS.

   Is DTC 71-01, 71-02, or 71-03 indicated?

   YES - Go to step 7.

   NO - Troubleshoot the indicated DTC. If there are no DTCs, the system is OK at this time.

7. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
8. Disconnect EPS control unit connector D (28P).
9. Measure the resistance between the following terminals of EPS control unit connector D (28P).

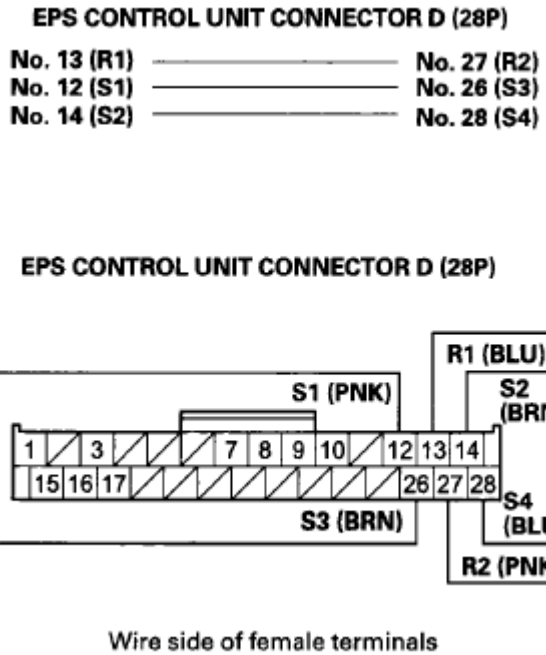


Fig. 54: Measuring Resistance Between Terminals Of EPS Control Unit Connector D (28P)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is the resistance between R1- R2 5- 50 ohms, S1- S3 10- 100 ohms, and S2- S4 10- 100 ohms?

YES - Go to step 10.

NO - Go to step 13.

10. Check for continuity between body ground and EPS control unit connector D (28P) terminal No. 12, terminal No. 13, terminal No. 14, terminal No. 26, terminal No. 27, and terminal No. 28 individually.

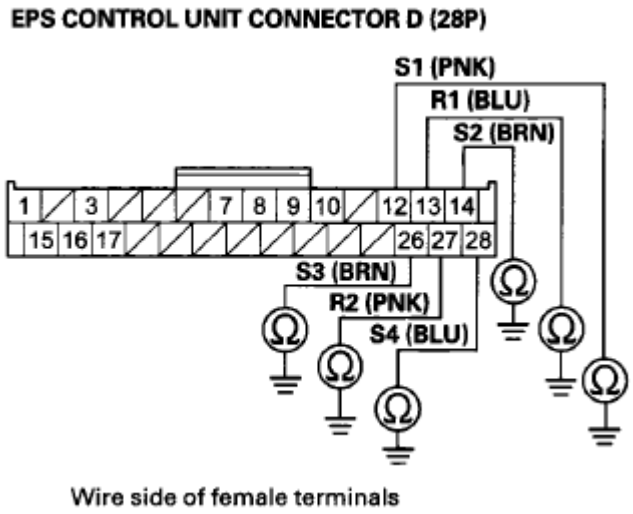


Fig. 55: Checking Continuity Between Body Ground And EPS Control Unit Connector D (28P) Terminals Individually
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 11.

NO - Check for loose terminals in the EPS control unit connectors, and repair if necessary. If no poor connections are found, replace the EPS control unit (see **EPS CONTROL UNIT REMOVAL/INSTALLATION**).

11. Disconnect the EPS motor angle sensor 6P connector.
12. On the sensor side, check for continuity between body ground and EPS motor angle sensor 6P connector terminal No. 1, terminal No. 2, terminal No. 3, terminal No. 4, terminal No. 5, and terminal No. 6 individually.

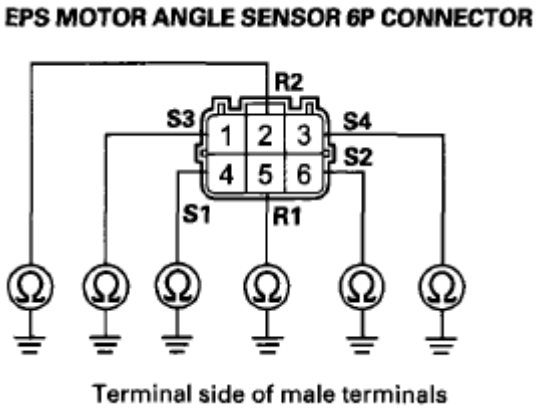


Fig. 56: Checking Continuity Between Body Ground And EPS Motor Angle Sensor 6P Connector Terminals Individually
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Replace the steering gearbox (see **STEERING GEARBOX REMOVAL AND INSTALLATION**).

NO - Repair a short to body ground in the wire between the EPS motor angle sensor 6P connector and the EPS control unit.

13. Disconnect the EPS motor angle sensor 6P connector.
14. On the sensor side, measure the resistance between the following terminals of the EPS motor angle sensor 6P connector.

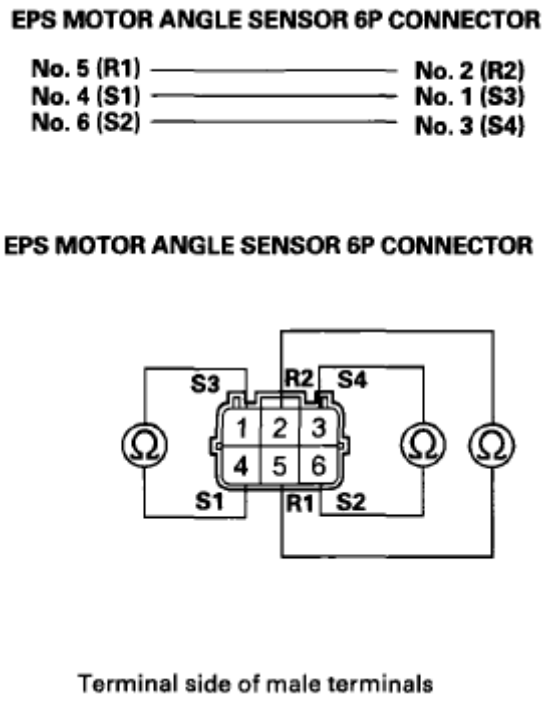


Fig. 57: Measuring Resistance Between Terminals Of EPS Motor Angle Sensor 6P Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is the resistance between R1- R2 5- 50 ohms, S1- S3 10- 100 ohms, and S2- S4 10- 100 ohms?

YES - Repair an open or a short to body ground in the wire between the EPS motor angle sensor 6P connector and the EPS control unit.

NO - Replace the steering gearbox (see **STEERING GEARBOX REMOVAL AND INSTALLATION**).

DTC 71-04: MOTOR ANGLE SENSOR (CHECK SIGNALS)

1. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
2. Clear the DTC with the HDS.
3. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
4. Start the engine.
5. Turn the steering wheel to the right or left, and wait 10 seconds or more.
6. Check for DTCs with the HDS.

Is DTC 71-04 indicated?

YES - Go to step 7.

NO - Troubleshoot the indicated DTC. If there are no DTCs, the system is OK at this time.

7. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
8. Disconnect EPS control unit connector D (28P).
9. Measure the resistance between the EPS control unit connector D (28P) terminal No. 13 and No. 27.

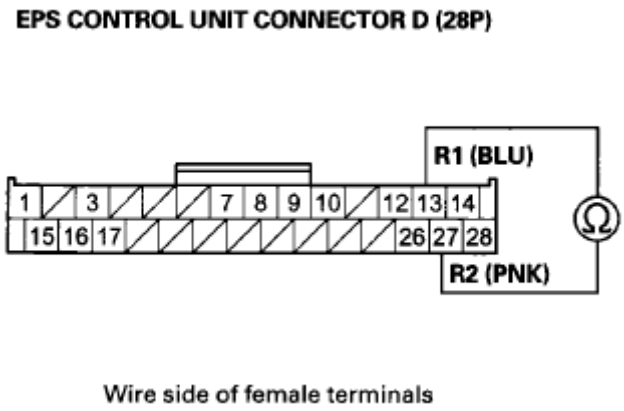


Fig. 58: Measuring Resistance Between EPS Control Unit Connector D (28P) Terminal No. 13 And No. 27
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is the resistance between 5- 50 ohms?

YES - Go to step 10.

NO - Go to step 13.

10. Check for continuity between body ground and EPS control unit connector D (28P) terminal No. 13 and terminal No. 27 individually.

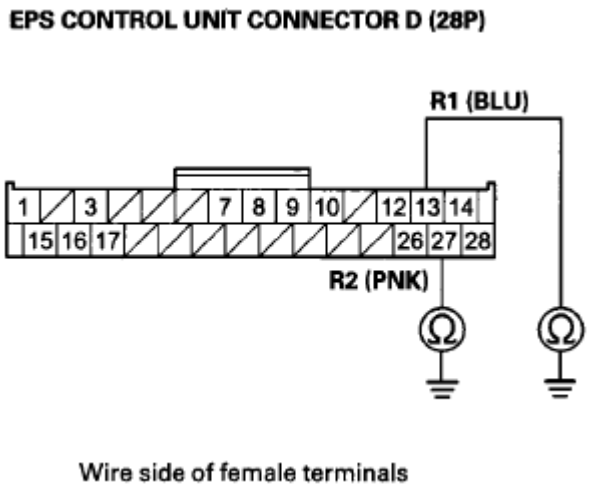


Fig. 59: Checking Continuity Between Body Ground And EPS Control Unit Connector D (28P) Terminal No. 13 And Terminal No. 27 Individually
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 11.

NO - Check for loose terminals in the EPS control unit connectors, and repair if necessary. If no poor connections are found, replace the EPS control unit (see **EPS CONTROL UNIT REMOVAL/INSTALLATION**).

11. Disconnect the EPS motor angle sensor 6P connector.
12. On the sensor side, check for continuity between body ground and EPS motor angle sensor 6P connector terminal No. 2 and terminal No. 5 individually.

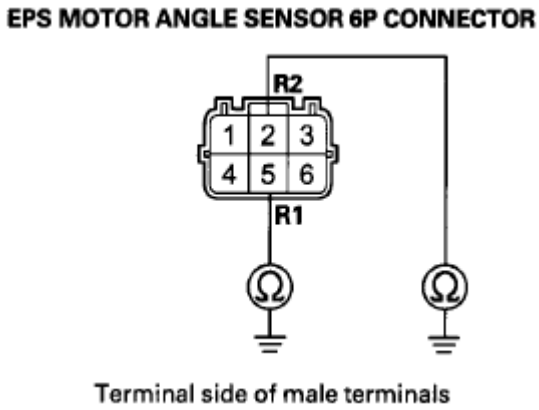


Fig. 60: Checking Continuity Between Body Ground And EPS Motor Angle Sensor 6P Connector Terminal No. 2 And Terminal No. 5 Individually
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Replace the steering gearbox (see **STEERING GEARBOX REMOVAL AND INSTALLATION**).

NO - Repair a short to body ground in the wire between the EPS motor angle sensor 6P connector and the EPS control unit.

13. Disconnect the EPS motor angle sensor 6P connector.
14. On the sensor side, measure the resistance between EPS motor angle sensor 6P connector terminals No. 2 and No. 5.

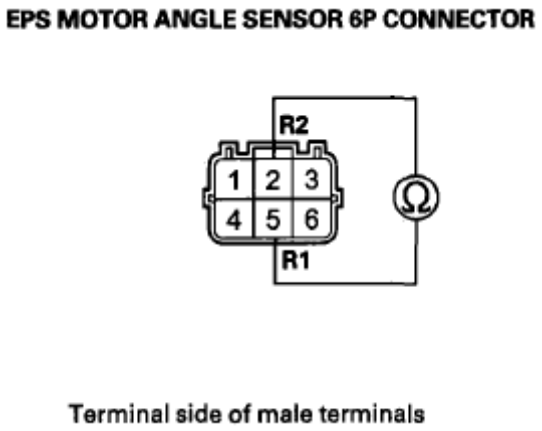


Fig. 61: Measuring Resistance Between EPS Motor Angle Sensor 6P Connector Terminals No. 2 And No. 5
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is the resistance between 5- 50 ohms?

YES - Repair an open or a short to body ground in the wire between the EPS motor angle sensor 6P connector and the EPS control unit.

NO - Replace the steering gearbox (see **STEERING GEARBOX REMOVAL AND INSTALLATION**).

SYMPTOM TROUBLESHOOTING

EPS INDICATOR DOES NOT COME ON

1. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode, and watch the EPS indicator.

   Does the EPS indicator come on?

   YES - The system is OK at this time.

   NO - Troubleshoot the gauge control module (see **SELF-DIAGNOSTIC FUNCTION**).

EPS INDICATOR DOES NOT GO OFF, AND NO DTCS ARE STORED

1. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
2. Check the No. 6 (7.5 A) fuse in the driver's under-dash fuse/relay box.

   Is the fuse blown?

   YES - Go to step 3.

NO - Reinstall the checked fuse, then go to step 7.

3. Disconnect EPS control unit connector D (28P).
4. Check for continuity between EPS control unit connector D (28P) terminal No. 16 and body ground.

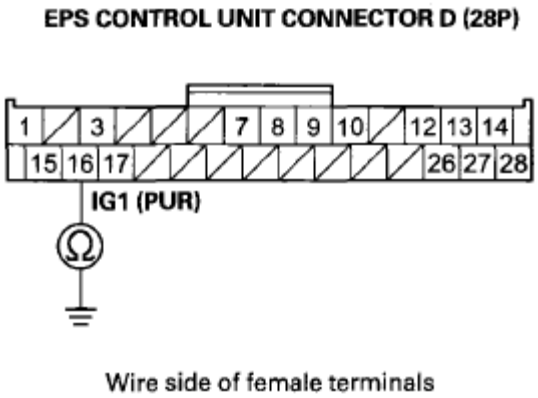


Fig. 62: Checking Continuity Between EPS Control Unit Connector D (28P) Terminal No. 16 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair a short to body ground in the wire between the EPS control unit and the No. 6 (7.5 A) fuse in the driver's under-dash fuse/relay box.

NO - Install a new No. 6 (7.5 A) fuse in the driver's under-dash fuse/relay box, then go to step 5.

5. Reconnect EPS control unit connector D (28P).
6. Start the engine, and watch the EPS indicator.

Does the EPS indicator come on, then go off?

YES - Troubleshooting is complete. The system is OK at this time.

NO - Replace the EPS control unit (see **EPS CONTROL UNIT REMOVAL/INSTALLATION**).

7. Disconnect EPS control unit connector D (28P).
8. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
9. Measure the voltage between EPS control unit connector D (28P) terminal No. 16 and body ground.

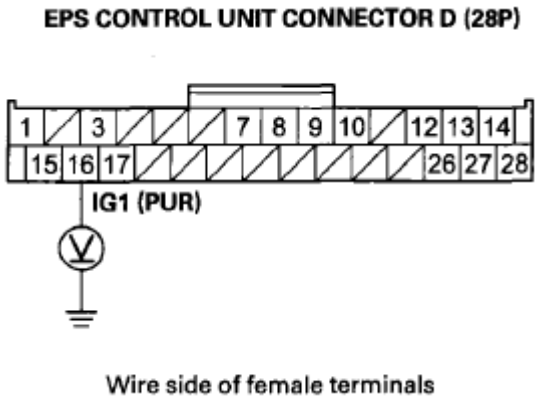


Fig. 63: Measuring Voltage Between EPS Control Unit Connector D (28P) Terminal No. 16 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there battery voltage?

YES - Go to step 10.

NO - Repair an open in the wire between the EPS control unit and driver's under-dash fuse/relay box.

10. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
11. Disconnect EPS control unit connector A (2P).
12. Check for continuity between EPS control unit connector A (2P) terminal No. 1 and body ground.

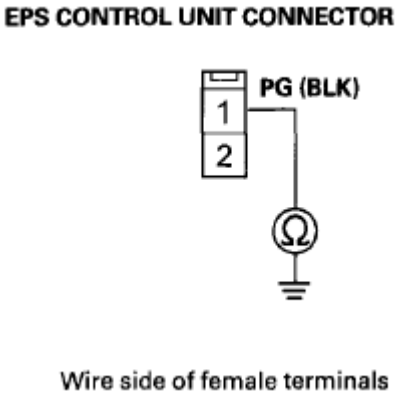


Fig. 64: Checking Continuity Between EPS Control Unit Connector A (2P) Terminal No. 1 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 13.

NO - Repair an open in the wire between the EPS control unit and body ground (G204).

13. Disconnect the gauge control module 32P connector.
14. Check for continuity between EPS control unit connector D (28P) terminal No. 1 and gauge control module 32P connector terminal No. 14.

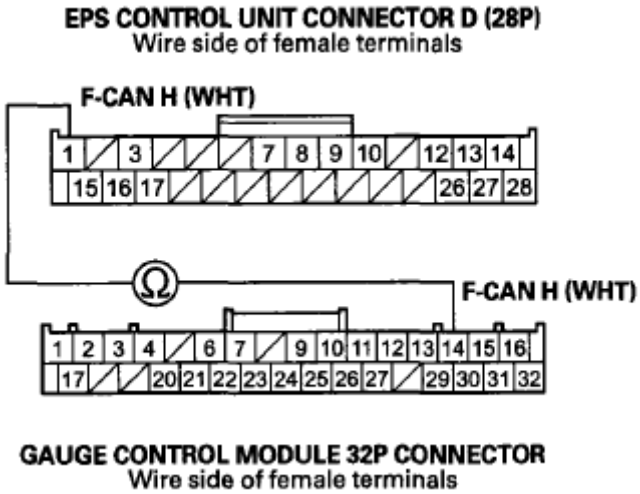


Fig. 65: Checking Continuity Between EPS Control Unit Connector D (28P) Terminal No. 1 And Gauge Control Module 32P Connector Terminal No. 14
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 15.

NO - Repair an open in the wire between the EPS control unit and the gauge control module.

15. Check for continuity between EPS control unit connector D (28P) terminal No. 15 and gauge control module 32P connector terminal No. 13.

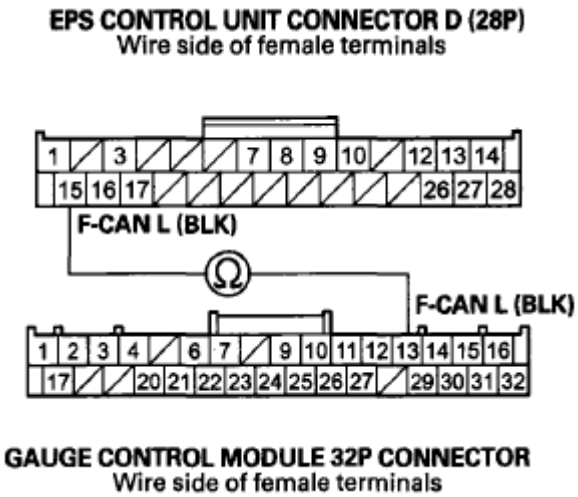


Fig. 66: Checking Continuity Between EPS Control Unit Connector D (28P) Terminal No. 15 And

Gauge Control Module 32P Connector Terminal No. 13
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Check for loose terminals in the EPS control unit connectors, and repair if necessary. If no poor connections are found, replace the EPS control unit (see **EPS CONTROL UNIT REMOVAL/INSTALLATION**).

NO - Repair an open in the wire between the EPS control unit and the gauge control module.

STEERING GEARBOX REMOVAL AND INSTALLATION

Special Tools Required

- Ball Joint Thread Protector, 12 mm 07AAF-SDAA100
- Ball Joint Remover, 28 mm 07MAC-SL0A202
- Engine Support Hanger, A and Reds AAR-T1256*
- Engine Hanger Balance Bar VSB02C000019*
- 2008 V6 Attachment Arm SIL02C000033*
- Ball Joint Thread Protector, 14 mm 07AAE-SJAA100
- Subframe Adapter VSB02C000016*
- Subframe Alignment Pin 070AG-SJAA10S

*Available through the Acura Tool and Equipment Program, 888-424-6857.

Note these items during removal and installation:

- Using clean solvent and a brush, wash any oil and dirt off the end of the steering gearbox. Avoid any electrical parts. Blow dry with compressed air.
- Lower the front subframe from the body, and remove the steering gearbox through the gap produced by lowering the front subframe.

REMOVAL

1. Disconnect the hood support struts from the pivot ball on both sides (bolted to the hood). Raise and secure the hood in a vertical position. Remove the passenger's side pivot ball and install it into the lower threaded hole, then reattach the support strut.

NOTE: Do not attempt to close the hood with the support strut in the vertical position, as it will damage the support strut and hood.

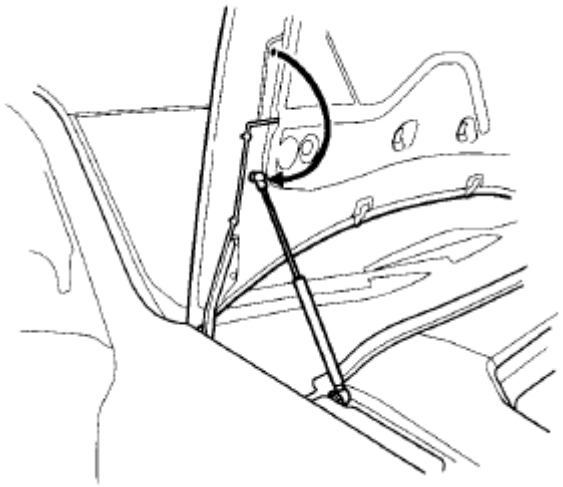


Fig. 67: Disconnecting Hood Support Struts From Pivot Ball On Both Sides
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Remove the engine compartment covers (see **ENGINE COMPARTMENT COVER REPLACEMENT**).
3. Do the battery terminal disconnection procedure (see **BATTERY TERMINAL DISCONNECTION AND RECONNECTION**).
4. Remove the front strut brace (see **FRAME BRACE REPLACEMENT**).
5. Raise and support the vehicle (see **LIFT AND SUPPORT POINTS**).
6. Remove the front wheels.
7. Remove the driver's dashboard undercover (see **DRIVER'S DASHBOARD UNDERCOVER REMOVAL/INSTALLATION**).
8. Remove the steering joint cover (A).

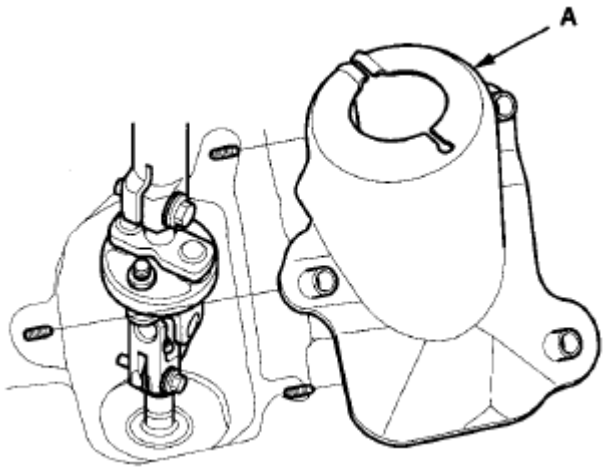


Fig. 68: Identifying Steering Joint Cover
Courtesy of AMERICAN HONDA MOTOR CO., INC.

9. Center the steering wheel spokes, and install a commercially available steering wheel holder tool (A).

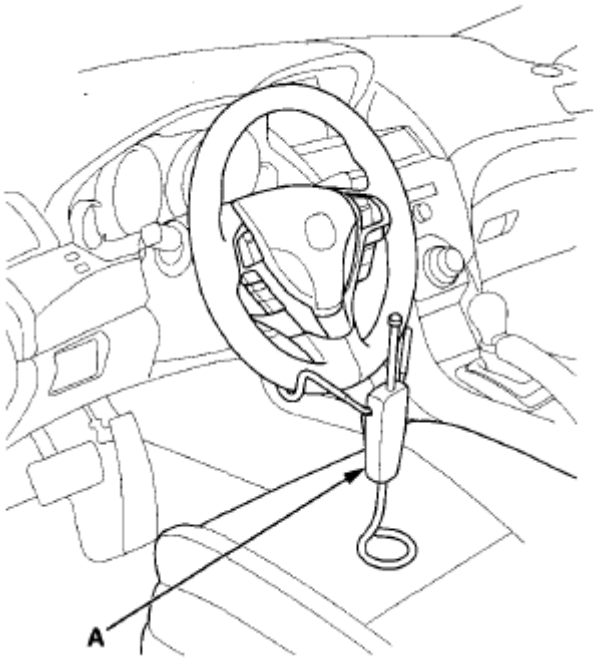


Fig. 69: Identifying Steering Wheel Holder Tool
Courtesy of AMERICAN HONDA MOTOR CO., INC.

10. Loosen the upper steering joint bolt (A), and remove the lower steering joint bolt (B). Disconnect the steering joint (C) by sliding the steering joint into the column shaft (D). Tighten the upper steering joint bolt to hold the steering joint in place.

NOTE: Do not disconnect the steering joint from the column shaft.

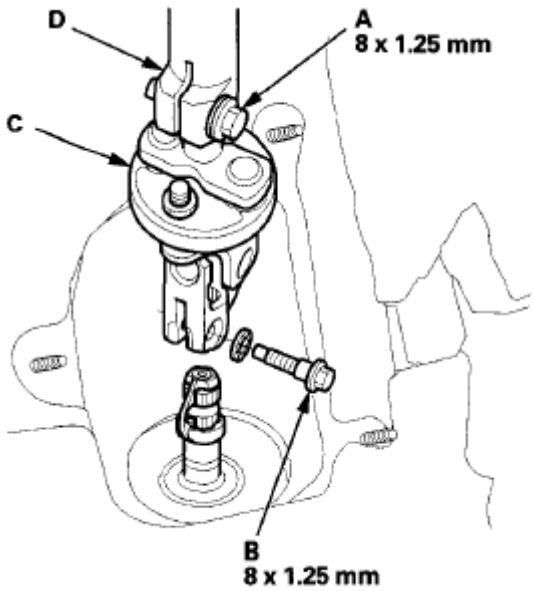


Fig. 70: Identifying Steering Joint, Column Shaft, Upper And Lower Steering Joint Bolt
Courtesy of AMERICAN HONDA MOTOR CO., INC.

11. Remove the center guide (A) (if equipped) from the top of the pinion shaft (B), and discard it.

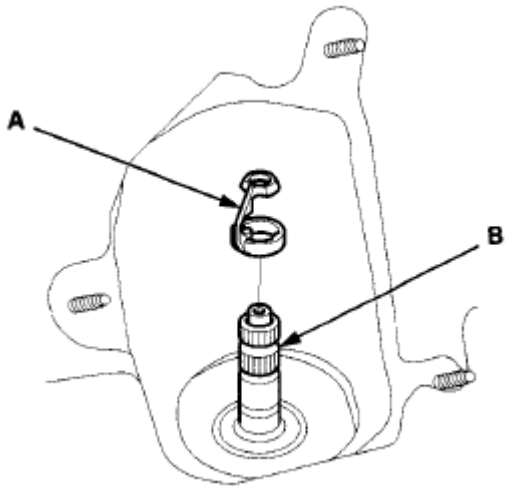


Fig. 71: Identifying Center Guide And Pinion Shaft
Courtesy of AMERICAN HONDA MOTOR CO., INC.

12. Wrap vinyl tape over the splines on the pinion shaft.
13. Remove the cotter pin (A) from the tie-rod end ball joint, then remove the nut (B) on both sides.

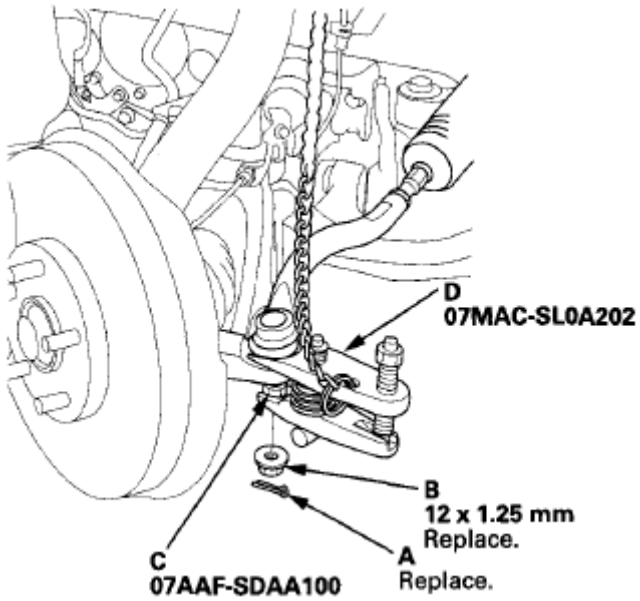


Fig. 72: Identifying Ball Joint Thread Protector, Remover, Cotter Pin And Nut
Courtesy of AMERICAN HONDA MOTOR CO., INC.

14. Disconnect the tie-rod end ball joint from the knuckle using the ball joint thread protector (C) and the ball joint remover (D) (see **BALL JOINT REMOVAL**).

NOTE: Be careful not to damage the ball joint boot when installing the remover.

15. Remove the power steering heat shield (A).

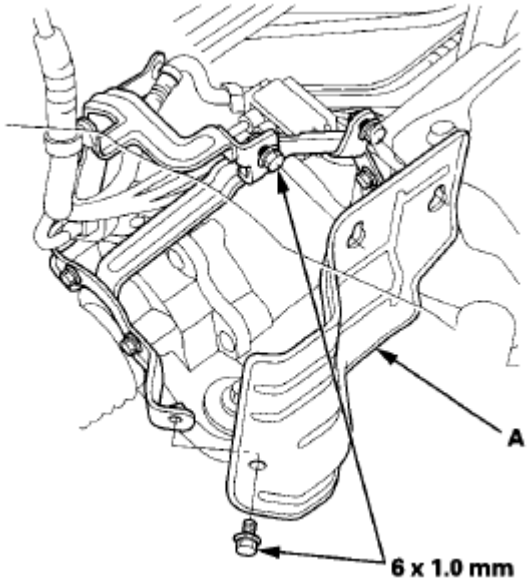


Fig. 73: Identifying Power Steering Heat Shield
Courtesy of AMERICAN HONDA MOTOR CO., INC.

16. Disconnect the EPS subharness 12P connector (A) and the EPS subharness 3P connector (B) by pushing the lock (C) and pulling up the lever (D).

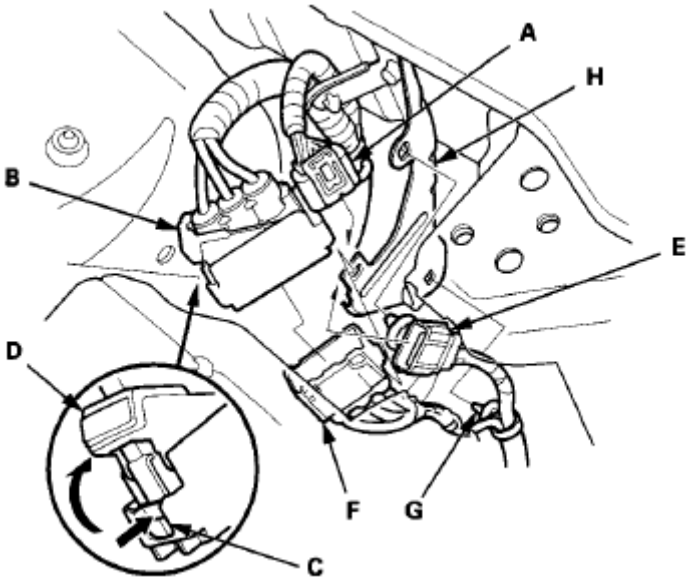


Fig. 74: Identifying EPS Subharness 12P Connector, 3P Connector, Lock, Lever, Harness Bracket And Clip
Courtesy of AMERICAN HONDA MOTOR CO., INC.

17. Remove the EPS subharness 12P connector (E), the EPS subharness 3P connector (F), and the harness clip (G) from the harness bracket (H).
18. Wrap the connectors with vinyl tape to avoid contamination from grease or water.
19. Remove the harness clips (A), then remove the heat shield bracket (B) from the steering gearbox.

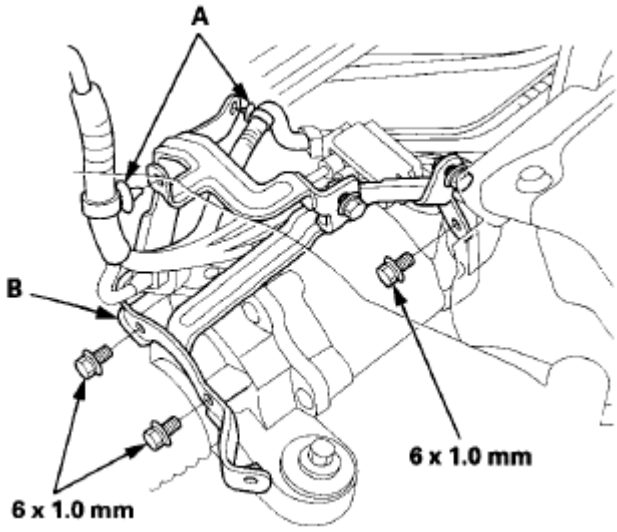


Fig. 75: Identifying Heat Shield Bracket And Harness Clips
Courtesy of AMERICAN HONDA MOTOR CO., INC.

20. Remove the steering gearbox mounting bolts (A) and washers (B) from the steering gearbox.

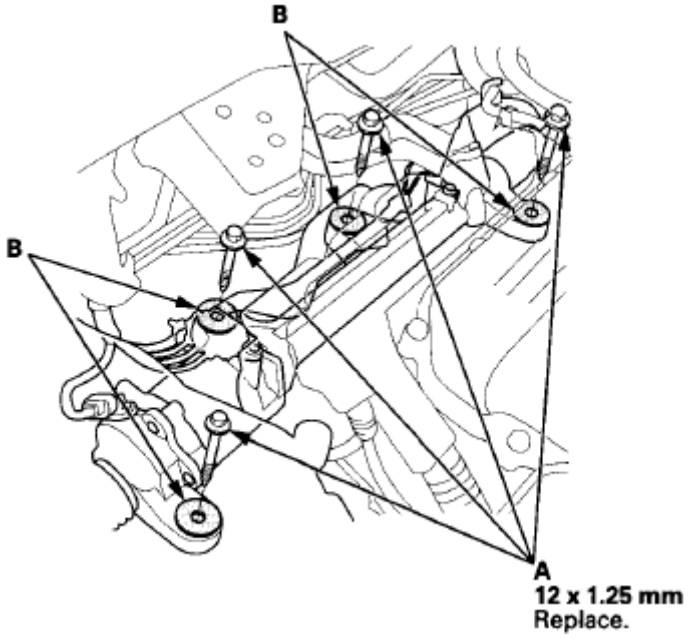


Fig. 76: Identifying Steering Gearbox Mounting Bolts And Washers
Courtesy of AMERICAN HONDA MOTOR CO., INC.

21. Remove the bolt (A) securing the connector bracket (B) from the front cylinder head; use the bracket bolt hole (C) to attach the engine hanger balance bar front arm.

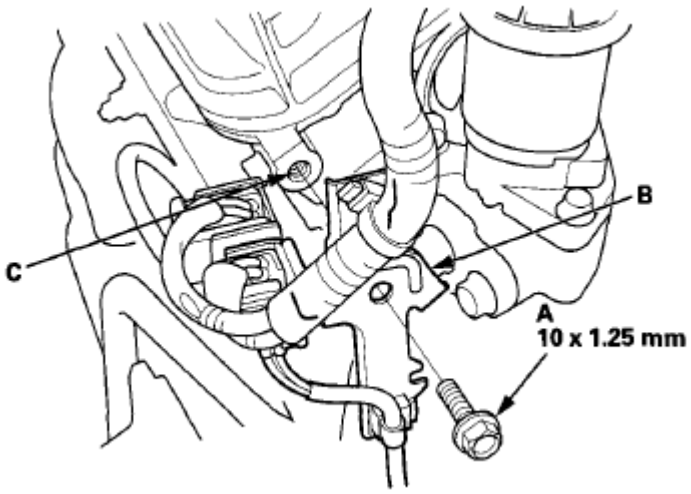


Fig. 77: Identifying Connector Bracket, Bracket Bolt Hole And Bolt
Courtesy of AMERICAN HONDA MOTOR CO., INC.

22. Remove the harness clamp (A), then remove the bolt (B) securing the engine mount control solenoid valve bracket (C) from the rear cylinder head; use the bracket bolt hole (D) to attach the 2008 V6 attachment arm.

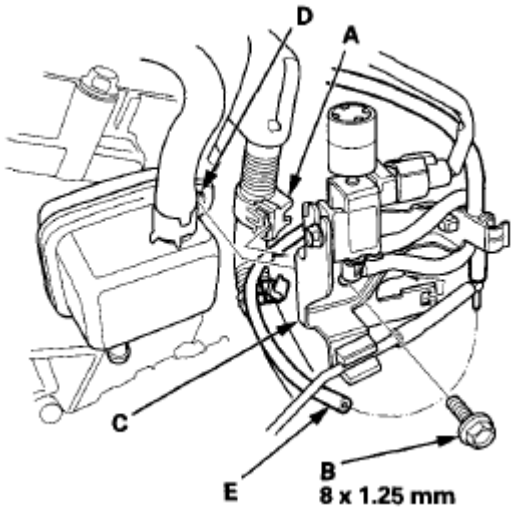


Fig. 78: Identifying Harness Clamp, Control Solenoid Valve Bracket, Bracket Bolt Hole, Vacuum Hose And Bolt
Courtesy of AMERICAN HONDA MOTOR CO., INC.

23. A/T: Disconnect the vacuum hose (E).
24. Install the engine hanger balance bar (VSB02C000019). Attach the front arm (A) to the front cylinder head with a 10 mm (0.39 in) spacer (B) and a 10 x 1.25 mm bolt (C). Remove the rear arm from the

engine hanger balance bar, then install the 2008 V6 attachment arm (SIL02C000033). Attach the 2008 V6 attachment arm to the rear cylinder head with a 10 mm (0.39 in) spacer (D) and an 8 x 1.25 mm bolt (E).

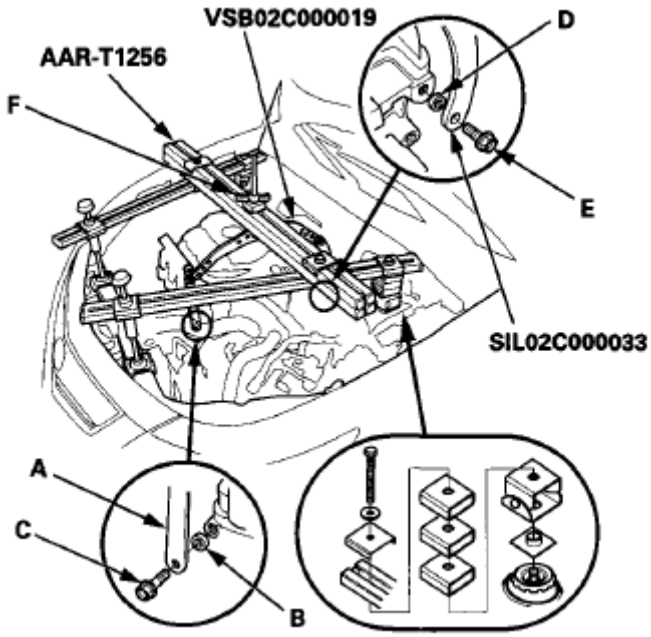


Fig. 79: Identifying Front Arm, Spacers, Bolts And Wing Nut
Courtesy of AMERICAN HONDA MOTOR CO., INC.

25. Install the engine support hanger (AAR-T1256) onto the vehicle as shown above, and attach the hook to the slotted hole in the engine hanger balance bar. Tighten the wing nut (F) by hand, and lift and support the engine/transmission.

NOTE:

- **Be careful when working around the windshield.**
- **AAR-T1256 two sets required for stacking two cross section bars.**

26. Remove the front engine mount stop (A) and the vacuum hose bracket (B), then remove the front engine mount bolt (C).

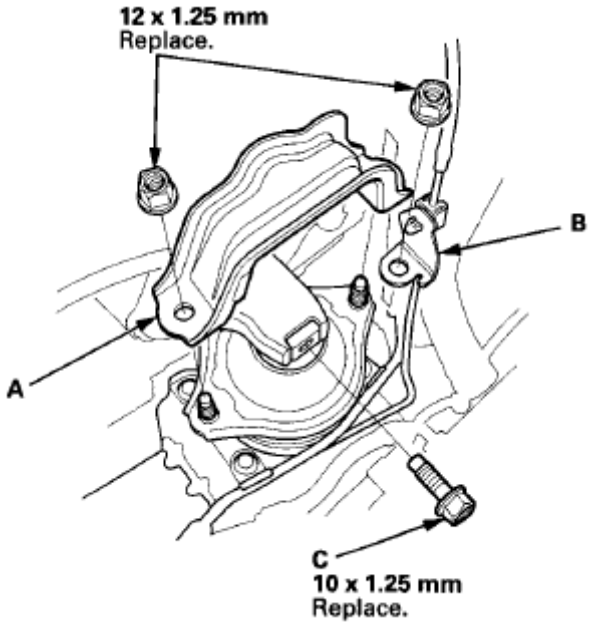


Fig. 80: Identifying Vacuum Hose Bracket, Front Engine Mount Stop And Bolt
Courtesy of AMERICAN HONDA MOTOR CO., INC.

27. M/T: Remove the front engine mount bolts (A), then remove the front engine mount (B), and disconnect the vacuum hose (C).

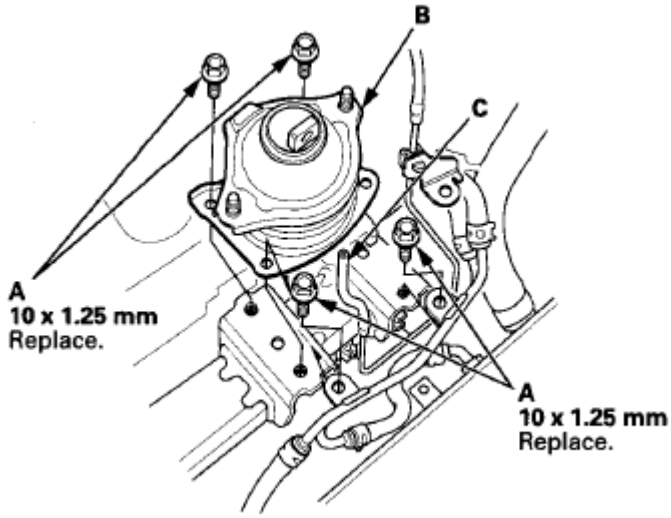


Fig. 81: Identifying Vacuum Hose, Front Engine Mount And Bolts
Courtesy of AMERICAN HONDA MOTOR CO., INC.

28. M/T: Remove the rear engine mount (A).

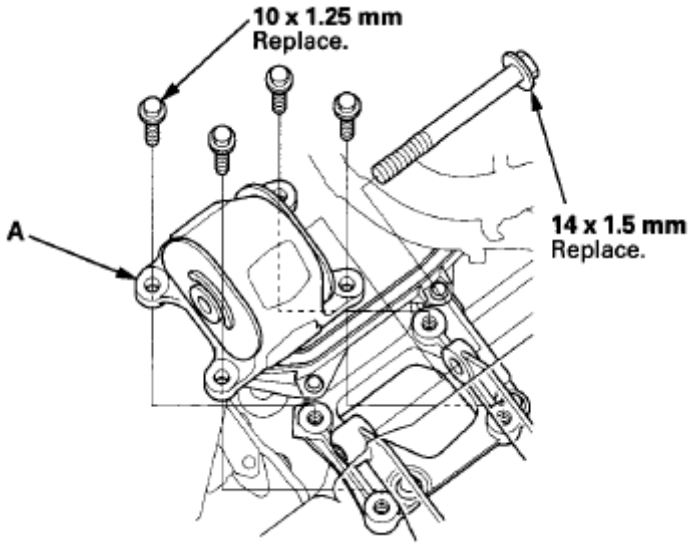


Fig. 82: Identifying Rear Engine Mount
Courtesy of AMERICAN HONDA MOTOR CO., INC.

29. A/T: Remove the rear engine mount stop (A) and the heat shield (B), then remove the rear engine mount (C).

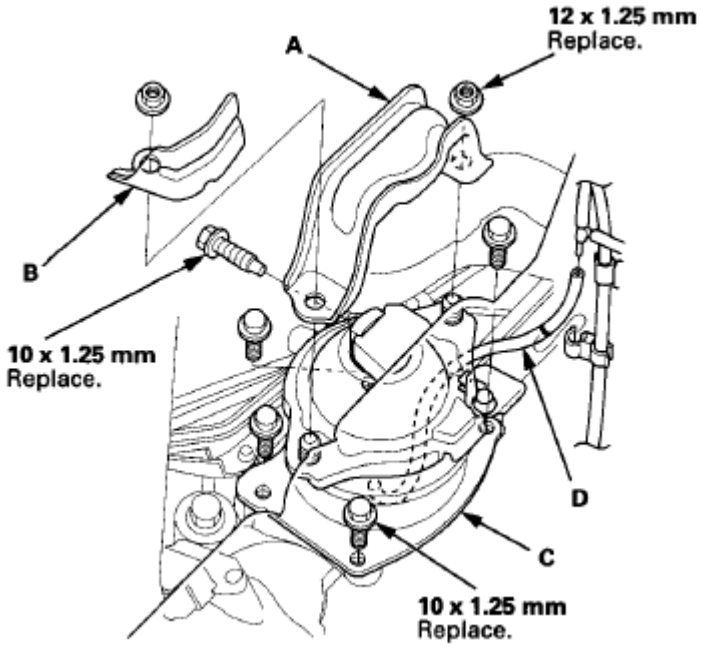


Fig. 83: Identifying Vacuum Hose, Heat Shield, Rear Engine Mount And Stop
Courtesy of AMERICAN HONDA MOTOR CO., INC.

30. A/T: Disconnect the vacuum hose (D).
31. Remove the EPS subharness holder (A), then remove the rear engine mount base (B).

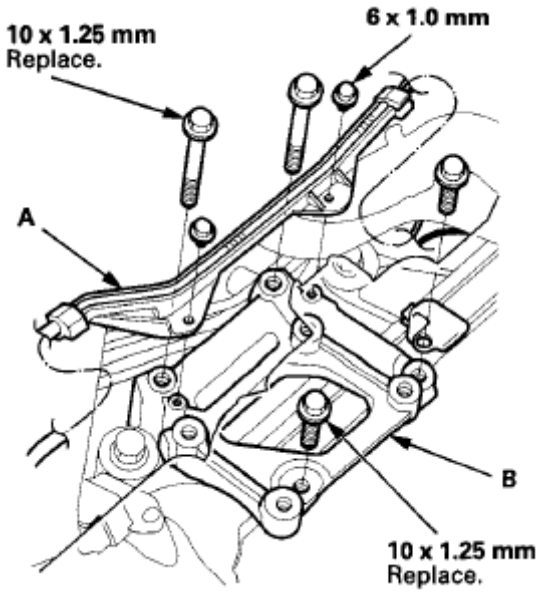


Fig. 84: Identifying EPS Subharness Holder And Rear Engine Mount Base
Courtesy of AMERICAN HONDA MOTOR CO., INC.

32. Raise the vehicle on a lift.
33. Remove the front splash shield (see **FRONT SPLASH SHIELD REPLACEMENT**).
34. Remove the front subframe stiffener (A).

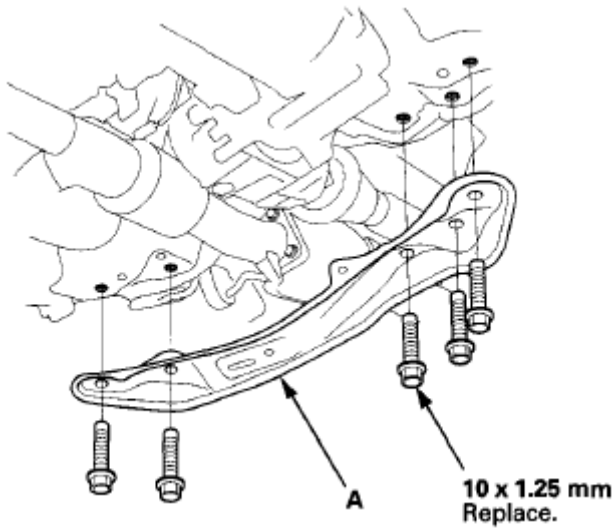


Fig. 85: Identifying Front Subframe Stiffener
Courtesy of AMERICAN HONDA MOTOR CO., INC.

35. Remove exhaust pipe A:
    - Without SH-AWD (see **EXHAUST PIPE AND MUFFLER REPLACEMENT**)
    - With SH-AWD (see **J37A4 ENGINE (WITH SH-AWD)**)

36. With SH-AWD: Remove the propeller shaft (see **PROPELLER SHAFT REMOVAL**).
37. M/T: Remove the transfer assembly (see **TRANSFER ASSEMBLY FLUID INSPECTION AND REPLACEMENT**).
38. Remove the cotter pin (A) from the knuckle ball joint, then remove the castle nut (B).

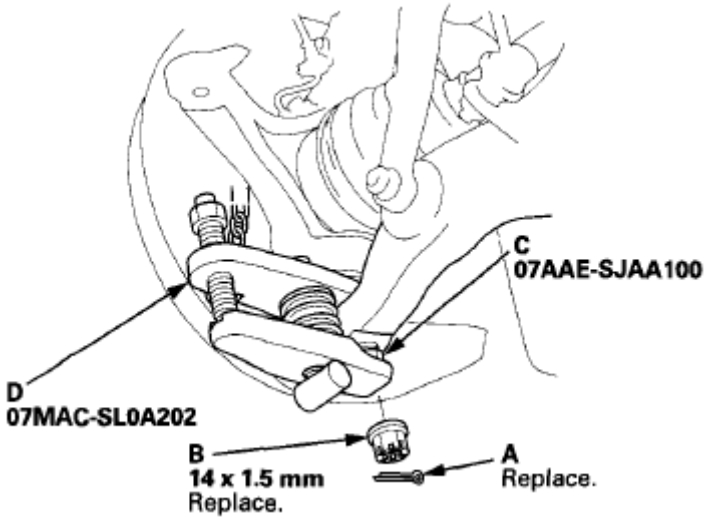


Fig. 86: Identifying Ball Joint Thread Protector, Remover, Cotter Pin And Nut
Courtesy of AMERICAN HONDA MOTOR CO., INC.

39. Disconnect the knuckle ball joint from the lower arm using the ball joint thread protector (C) and the ball joint remover (D) (see **BALL JOINT REMOVAL**).

NOTE:

- **Be careful not to damage the ball joint boot when installing the remover.**
- **Do not force or hammer on the lower arm, or pry between the lower arm and the knuckle. You could damage the ball joint.**

40. Remove the damper fork mounting nut (A) while holding the mounting bolt (B), then remove the mounting bolt.

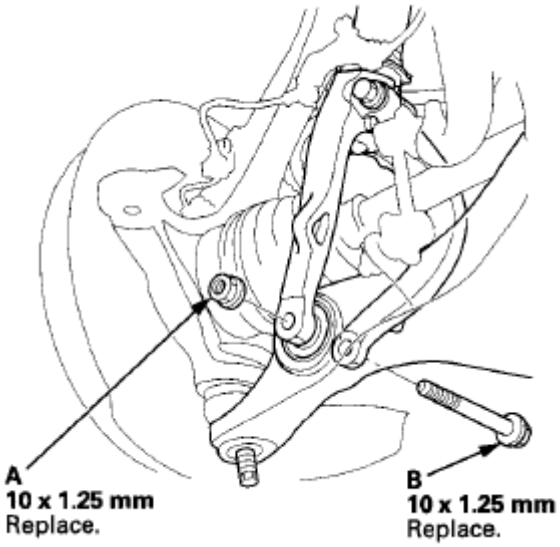


Fig. 87: Identifying Damper Fork Mounting Nut And Mounting Bolt
Courtesy of AMERICAN HONDA MOTOR CO., INC.

41. Remove the front subframe middle mount (A) on both sides.

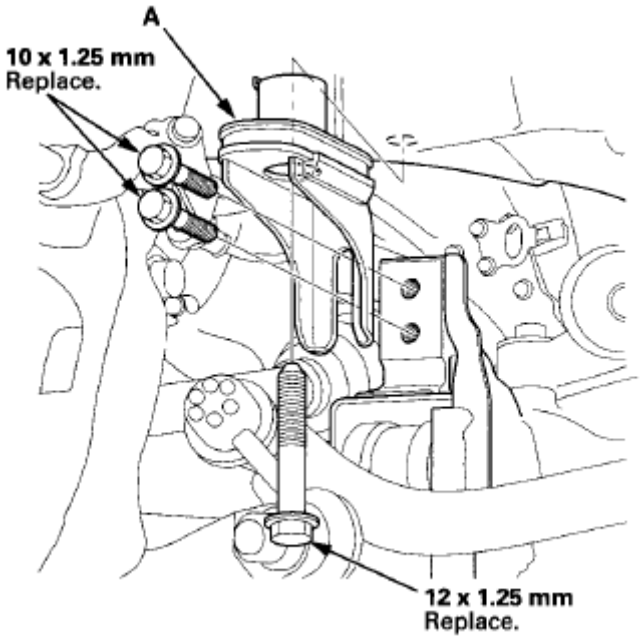


Fig. 88: Identifying Front Subframe Middle Mount
Courtesy of AMERICAN HONDA MOTOR CO., INC.

42. Remove the nuts (A) securing the lower transmission mount.

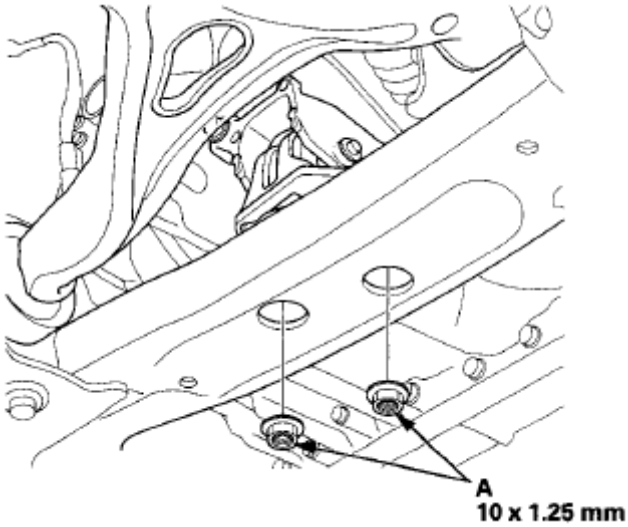


Fig. 89: Identifying Nuts
Courtesy of AMERICAN HONDA MOTOR CO., INC.

43. Attach the subframe adapter (A) to a transmission jack, then raise up the jack to the subframe. Hang the belt (B) over the front of the subframe, then secure the belt by inserting the stop (C) and then tighten the wing nut (D).

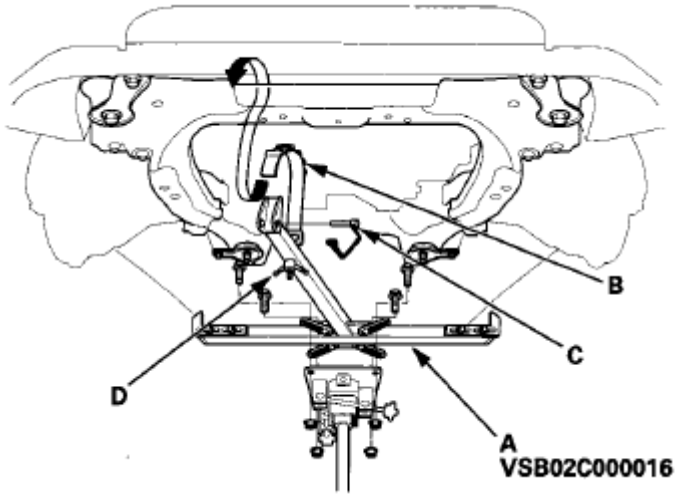


Fig. 90: Identifying Subframe Adapter, Belt, Stop And Wing Nut
Courtesy of AMERICAN HONDA MOTOR CO., INC.

44. Remove the stiffener mounting bolt (A) on both sides.

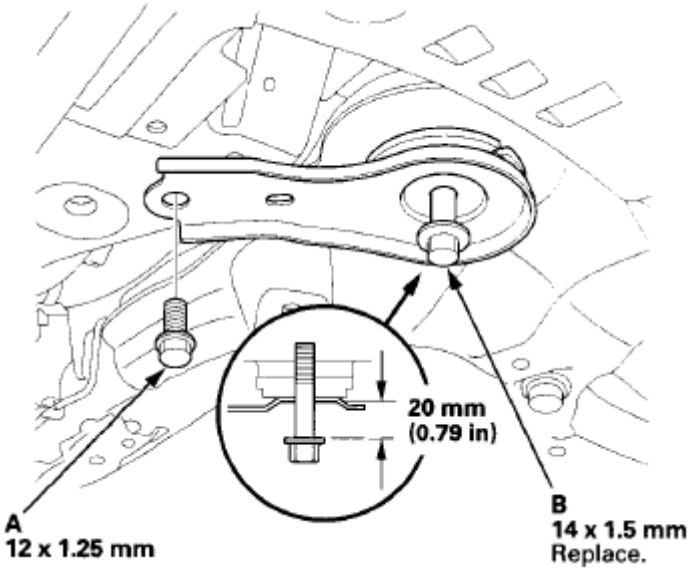


Fig. 91: Identifying Stiffener And Subframe Mounting Bolt
Courtesy of AMERICAN HONDA MOTOR CO., INC.

45. Loosen the subframe mounting bolt (B) on both sides so they are about 20 mm (0.79 in) from the mounting surface. Do not loosen the front subframe mounting bolts more than necessary.
46. Remove the stiffener mounting bolt (A) and subframe mounting bolt (B) from the rear stiffeners (C) on both sides.

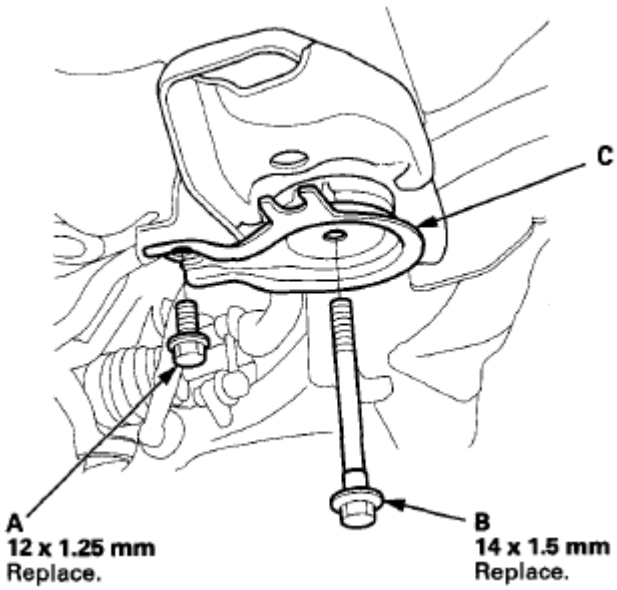


Fig. 92: Identifying Rear Stiffeners, Stiffener And Subframe Mounting Bolt
Courtesy of AMERICAN HONDA MOTOR CO., INC.

47. Lower the jack slowly until the front subframe has dropped about 70 mm (2.76 in).

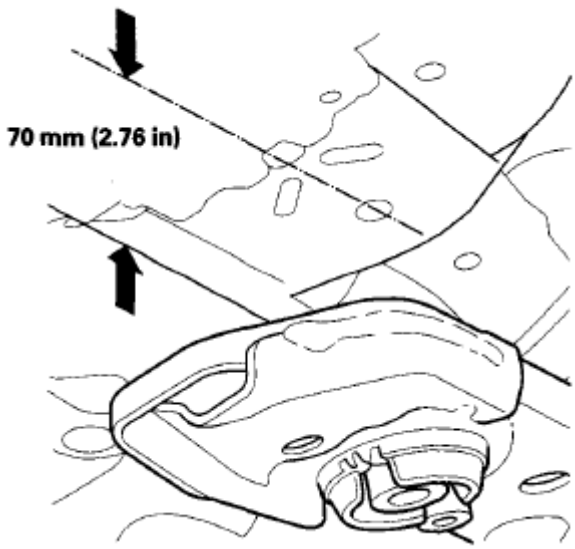


Fig. 93: Identifying Front Subframe Dropping Dimension
Courtesy of AMERICAN HONDA MOTOR CO., INC.

48. Remove the EPS subharness (A) from the steering gearbox (B).

NOTE: Disconnect the EPS subharness 3P connector (C) by pushing the lock (D) and pulling down the lever (E).

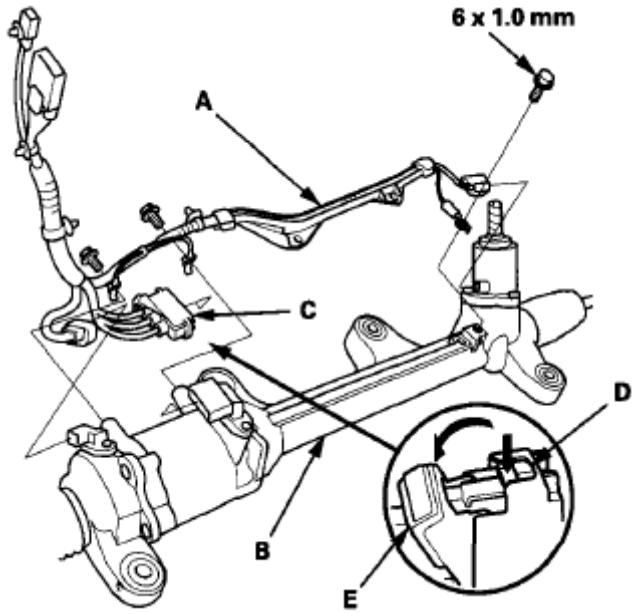


Fig. 94: Identifying EPS Subharness, 3P Connector, Steering Gearbox, Lock And Lever
Courtesy of AMERICAN HONDA MOTOR CO., INC.

49. Carefully move the steering gearbox (A) toward the driver's side until the pinion shaft clears the fenderwell opening on the body.

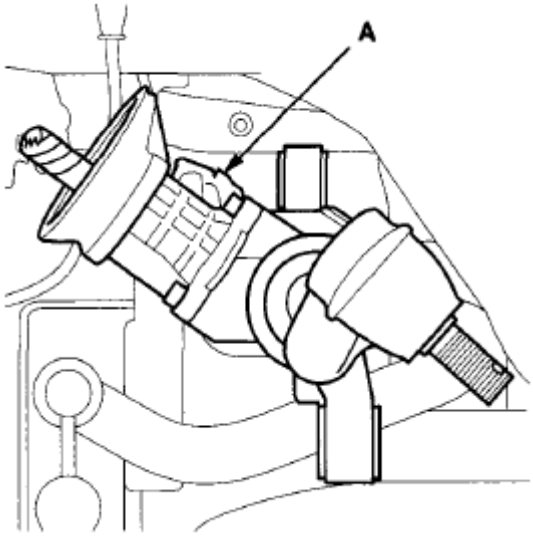


Fig. 95: Identifying Steering Gearbox
Courtesy of AMERICAN HONDA MOTOR CO., INC.

50. Remove the steering gearbox (A) through the fenderwell opening on the driver's side.

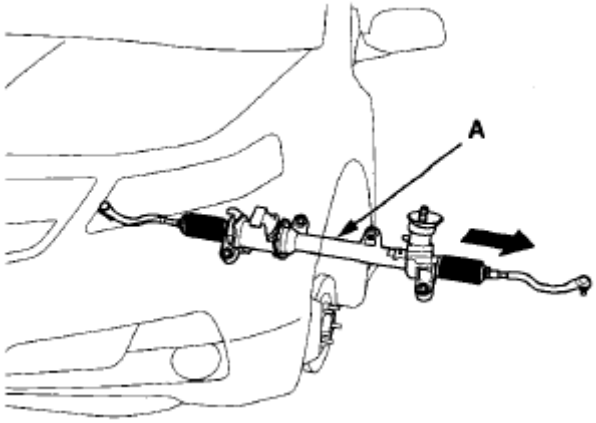


Fig. 96: Removing Steering Gearbox
Courtesy of AMERICAN HONDA MOTOR CO., INC.

51. Remove the pinion shaft grommet (A) from the top of the torque sensor (B).

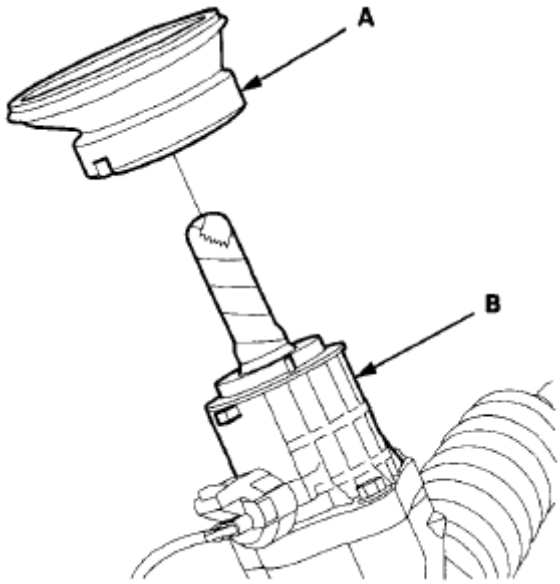


Fig. 97: Identifying Pinion Shaft Grommet And Torque Sensor
Courtesy of AMERICAN HONDA MOTOR CO., INC.

INSTALLATION

1. Before installing the steering gearbox, make sure that no grease is on the mating surface of the steering gearbox and the front subframe. To prevent the gearbox mounting bolts from loosening after the installation, remove any grease from the bolt holes.
2. Wrap vinyl tape around the splines on the pinion shaft (A).

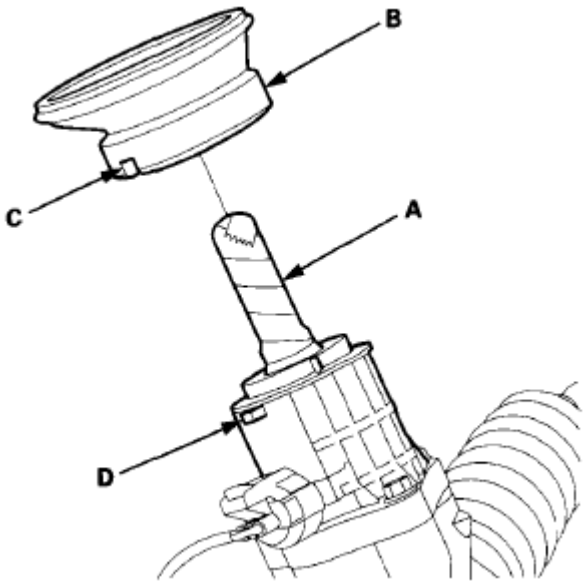


Fig. 98: Identifying Pinion Shaft, Grommet, Cutout And Lug Portion
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Install the pinion shaft grommet (B). Align the cutout (C) in the pinion shaft grommet with the lug portion (D) on the torque sensor. The grommet must not have a gap at the mating surface of the grommet and torque sensor.
4. Slide the steering gearbox (A) between the front subframe and the body from the driver's side.

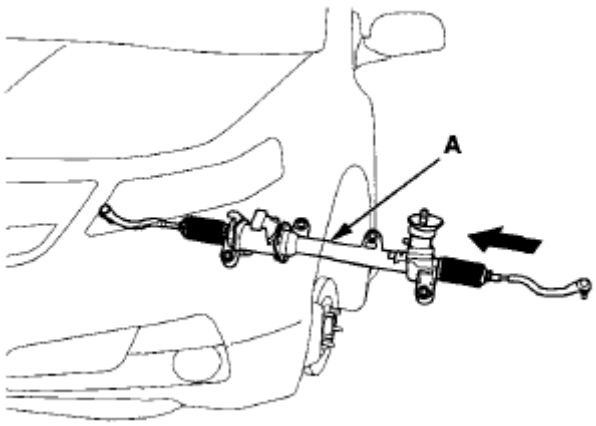


Fig. 99: Sliding Steering Gearbox Between Front Subframe And Body From Driver's Side
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Carefully move the steering gearbox (A) toward the passenger's side until the pinion shaft clears the wheelwell opening on the body.

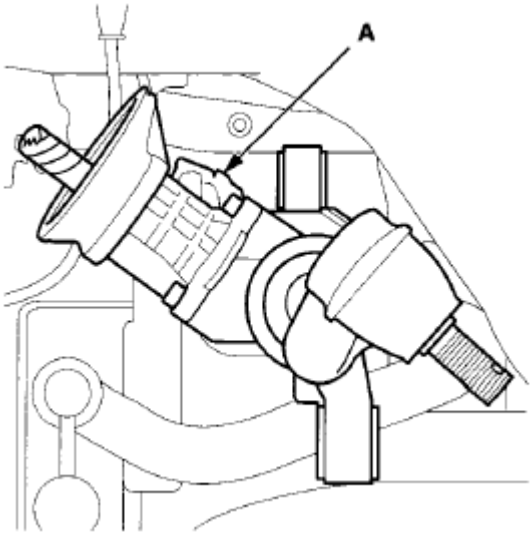


Fig. 100: Identifying Steering Gearbox
Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Continue moving the steering gearbox toward the passenger's side until the steering gearbox is in position.
7. Install the EPS subharness (A) to the steering gearbox (B).

NOTE: Pull up the lever (C) of the EPS subharness 3P connector (D), then confirm the connector is fully seated.

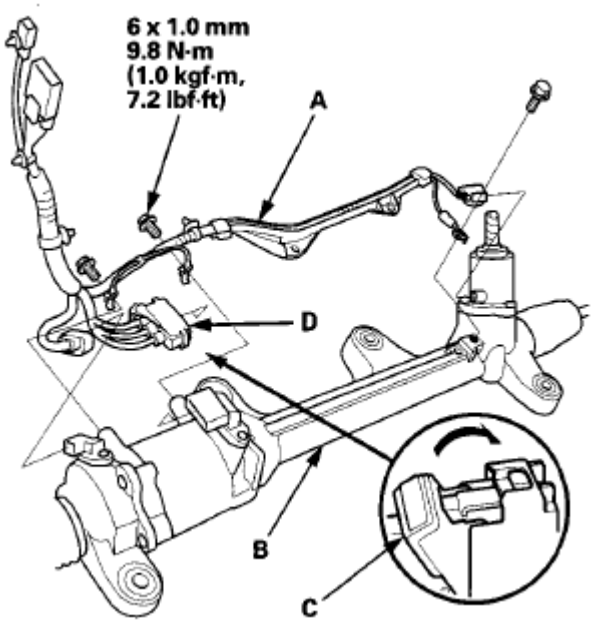


Fig. 101: Identifying EPS Subharness, 3P Connector, Steering Gearbox And Lever With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

8. Loosely install the new right rear subframe mounting bolt (A) and the new stiffener mounting bolt (B); insert the 15.7 mm side of the subframe alignment pin (C) through the positioning slot (D) on the rear stiffener, through the positioning hole (E) on the front subframe, and into the positioning hole (F) on the body.

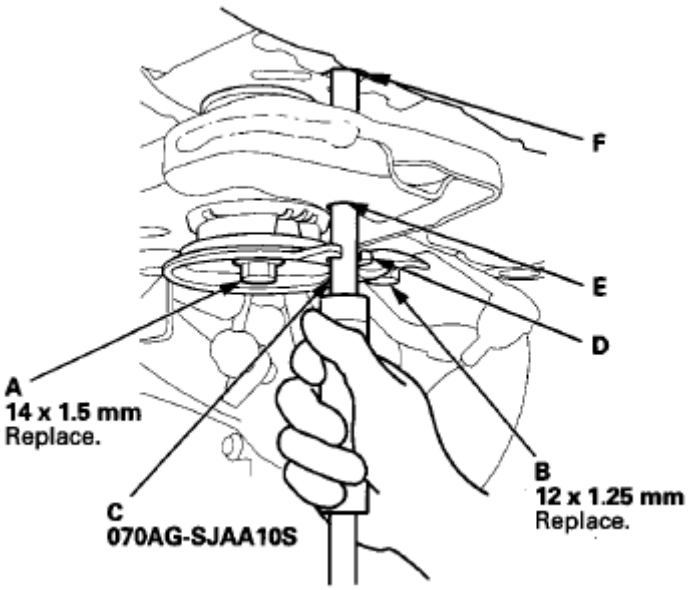


Fig. 102: Identifying Positioning Slot, Hole, Subframe Alignment Pin, Rear Subframe And Stiffener Mounting Bolt
Courtesy of AMERICAN HONDA MOTOR CO., INC.

9. Loosely install the new left rear subframe mounting bolt and the new stiffener mounting bolt with the same procedure as the right rear using the subframe alignment pin.
10. Loosely install the new front subframe mounting bolt (A) and the stiffener mounting bolt (B) on both sides.

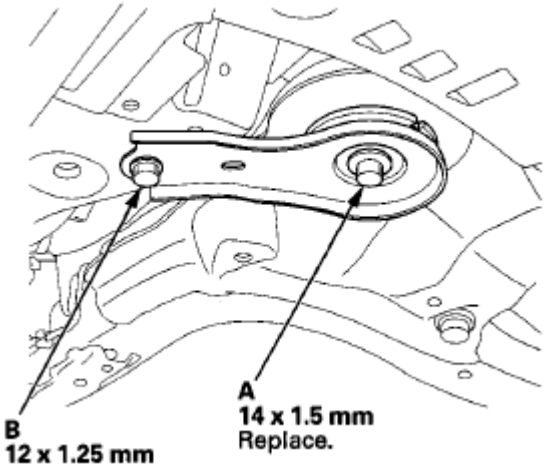


Fig. 103: Identifying Front Subframe And Stiffener Mounting Bolt
Courtesy of AMERICAN HONDA MOTOR CO., INC.

11. Tighten the right rear subframe mounting bolt (A) to the specified torque.

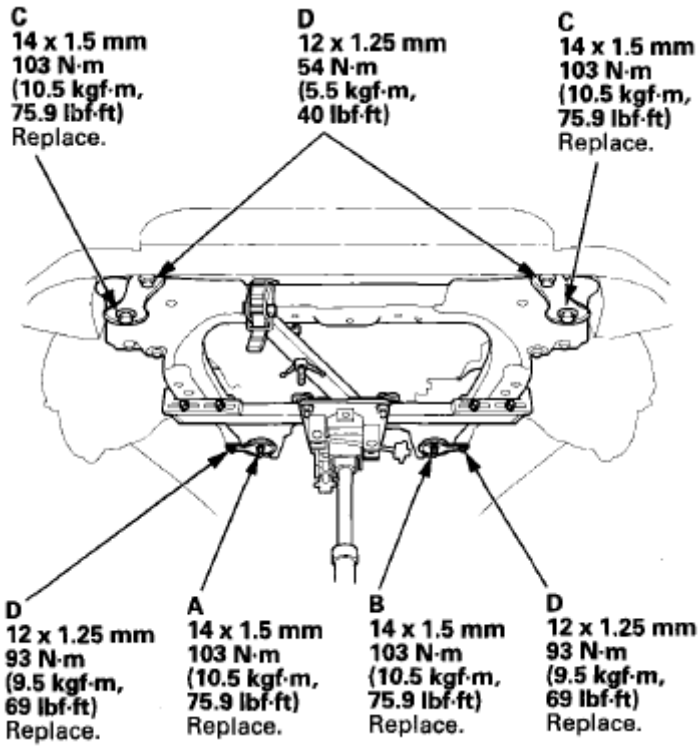


Fig. 104: Identifying Stiffener And Right, Left, Front Rear Subframe Mounting Bolts With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

12. Tighten the left rear subframe mounting bolt (B) to the specified torque.
13. Tighten the front subframe mounting bolts (C) to the specified torque.

NOTE: Check all of the subframe mounting bolts, and retighten if necessary.

14. Tighten the stiffener mounting bolts (D) to the specified torque.

NOTE: Before tightening the stiffener mounting bolts, check that the positioning holes and slot are aligned using the subframe alignment pin.

15. Tighten the nuts (A) securing the lower transmission mount.

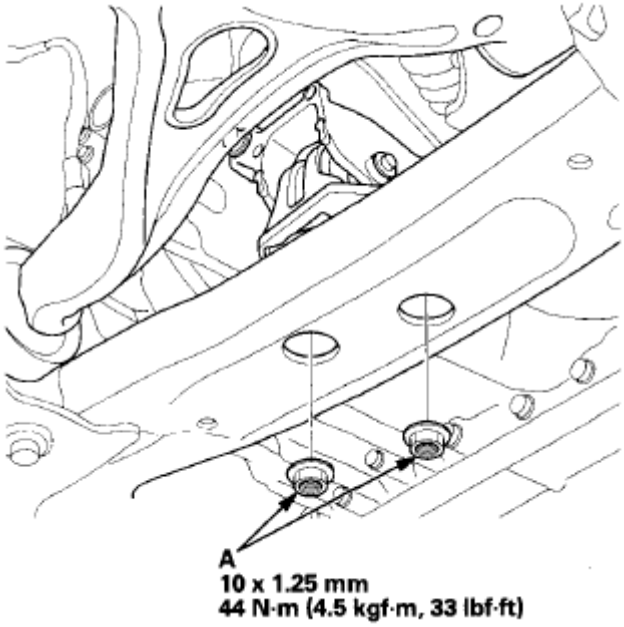


Fig. 105: Identifying Nuts With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

16. Install the front subframe middle mounts (A) on both sides with new mounting bolts, and tighten them to the specified torque.

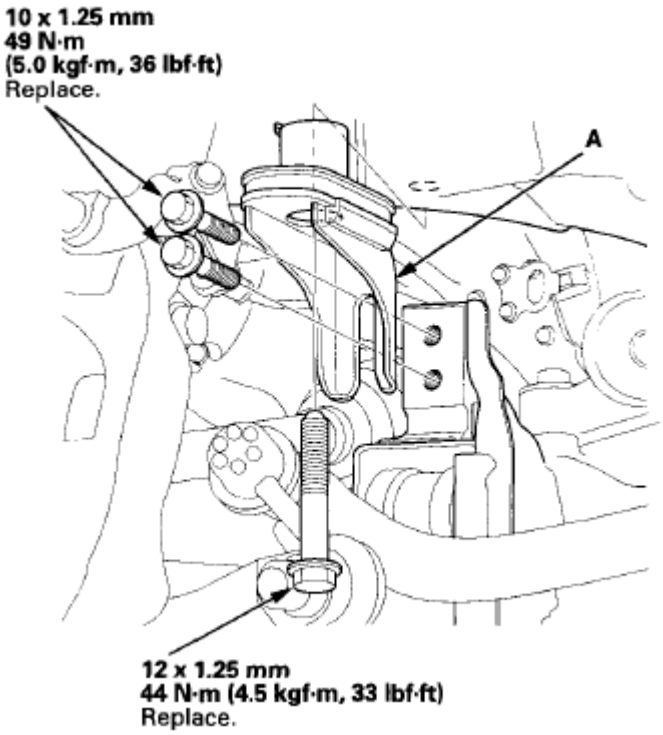


Fig. 106: Identifying Front Subframe Middle Mounts With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

17. Remove the transmission jack supporting the front subframe.
18. Install the new damper fork mounting bolt (A) and new mounting nut (B), and loosely tighten the nut while holding the mounting bolt.

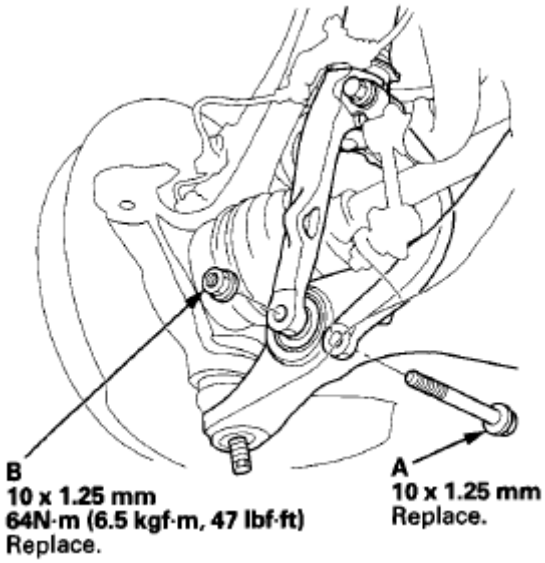


Fig. 107: Identifying Damper Fork Mounting Bolt And Nut With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

19. Tighten the new castle nut (A) to the lower torque specification, then tighten it only far enough to align the slot with the ball joint pin hole. Do not align the castle nut by loosening it.

NOTE: Insert the new cotter pin (B) into the ball joint pin hole from the front to the rear of the vehicle, and bend its end as shown in illustration below. Check the ball joint pin hole direction before connecting the ball joint.

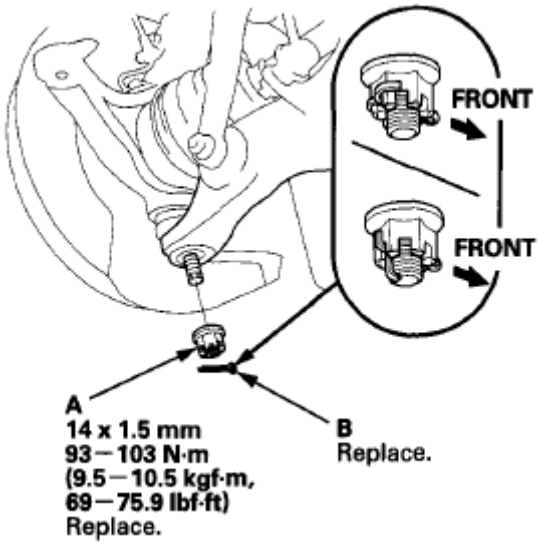


Fig. 108: Identifying Cotter Pin And Castle Nut With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

20. M/T: Install the transfer assembly (see **TRANSFER ASSEMBLY INSTALLATION**).
21. With SH-AWD: Install the propeller shaft (see **PROPELLER SHAFT INSTALLATION**).
22. Install exhaust pipe A:
    - Without SH-AWD (see **EXHAUST PIPE AND MUFFLER REPLACEMENT**)
    - With SH-AWD (see **J37A4 ENGINE (WITH SH-AWD)**)
23. Install the front subframe stiffener (A).

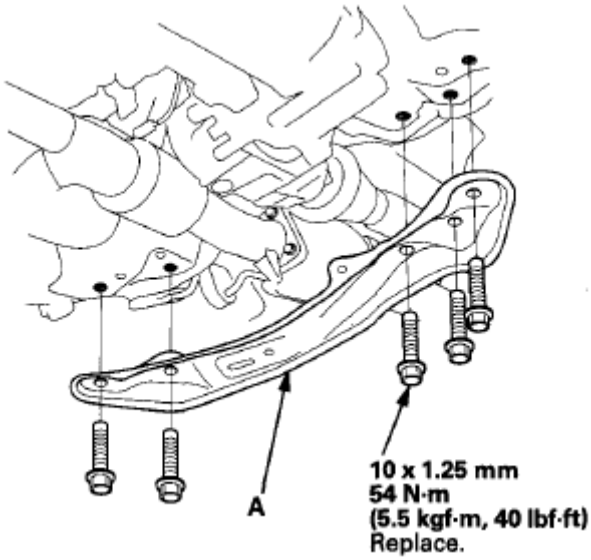


Fig. 109: Identifying Front Subframe Stiffener With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

24. Install the front splash shield (see **FRONT SPLASH SHIELD REPLACEMENT**).
25. Lower the vehicle.
26. Install the rear engine mount base (A), then install the EPS subharness (B).

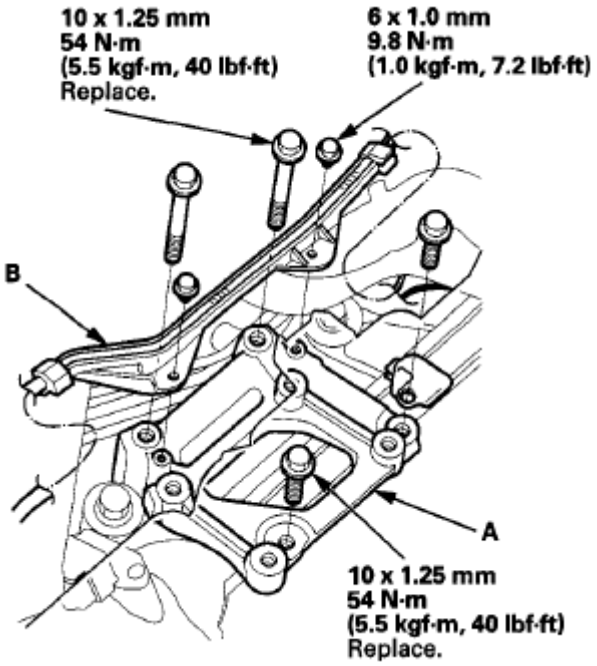


Fig. 110: Identifying Rear Engine Mount Base And EPS Subharness With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

27. M/T: Tighten the new rear engine mount bolts to the specified torque in the sequence shown below.

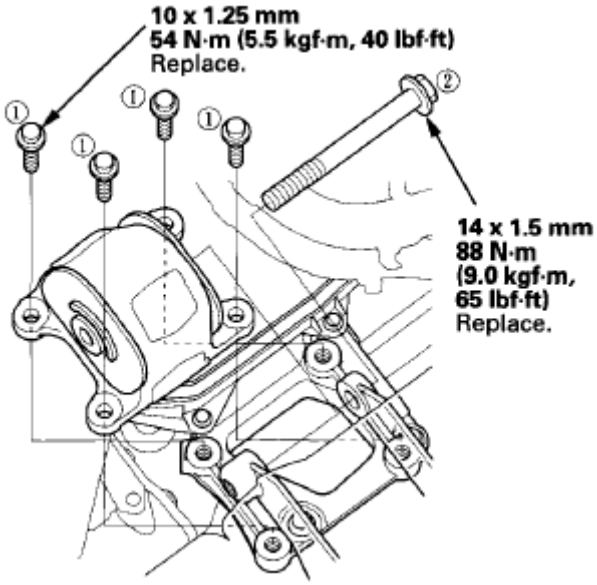


Fig. 111: Identifying Rear Engine Mount Bolts With Tightening Sequence With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

28. A/T: Tighten the new rear engine mount bolt (A) and (B), then install the rear engine mount stop (C) and the heat shield (D).

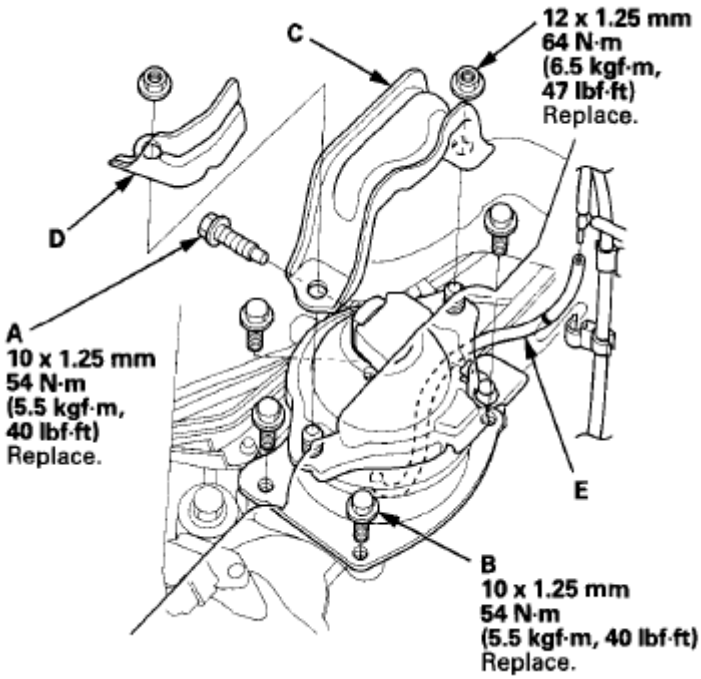


Fig. 112: Identifying Vacuum Hose, Heat Shield, Rear Engine Mount Stop And Bolt With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

29. A/T: Connect the vacuum hose (E).
30. M/T: Connect the vacuum hose (A), then align the front engine mount with its mounting holes, and install new front engine mount bolts (B).

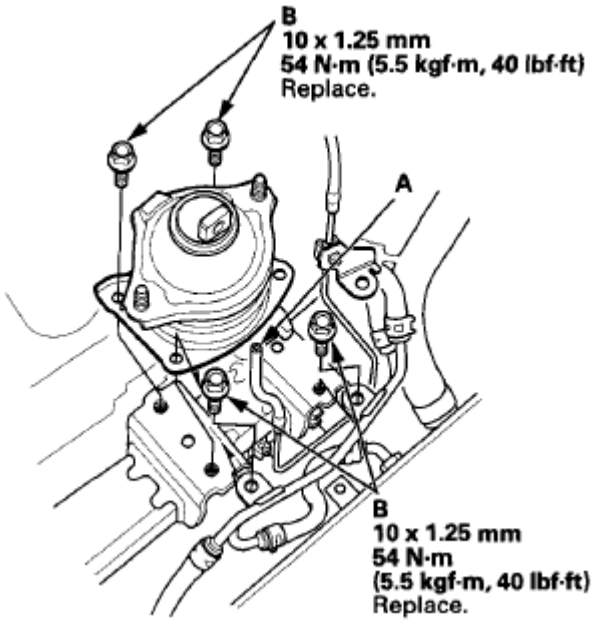


Fig. 113: Identifying Vacuum Hose And Front Engine Mount Bolts With Torque Specifications

Courtesy of AMERICAN HONDA MOTOR CO., INC.

31. Tighten the new front engine mount bolt (A), then install the front engine mount stop (B) and the vacuum hose bracket (C).

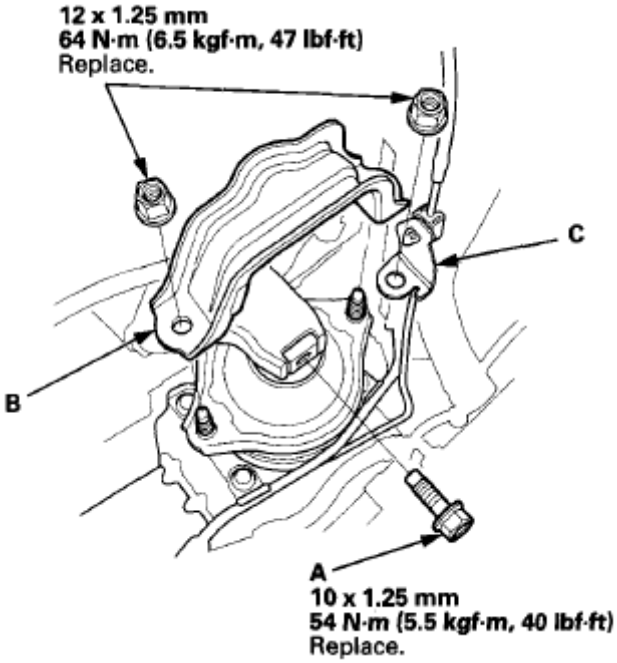


Fig. 114: Identifying Vacuum Hose Bracket, Front Engine Mount Stop And Bolt With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

32. Remove the engine support hanger and the engine hanger balance bar.
33. Install the connector bracket (A) to the front cylinder head.

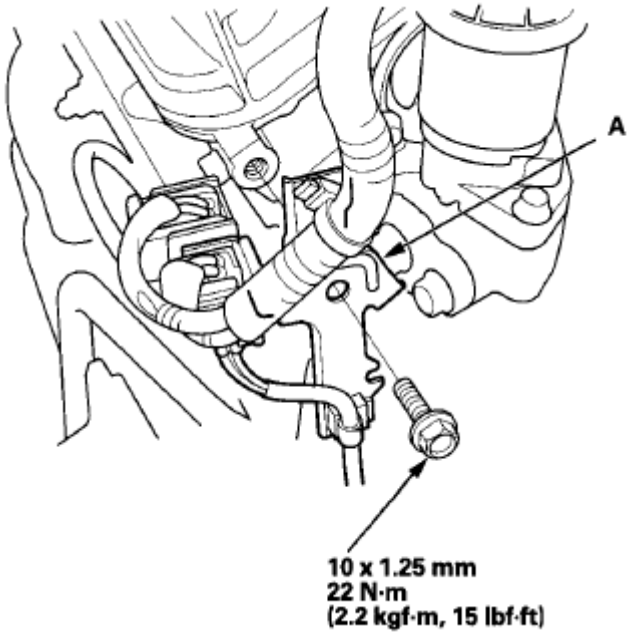


Fig. 115: Identifying Connector Bracket With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

34. Install the engine mount control solenoid valve bracket (A) to the rear cylinder head, then install the harness clamp (B).

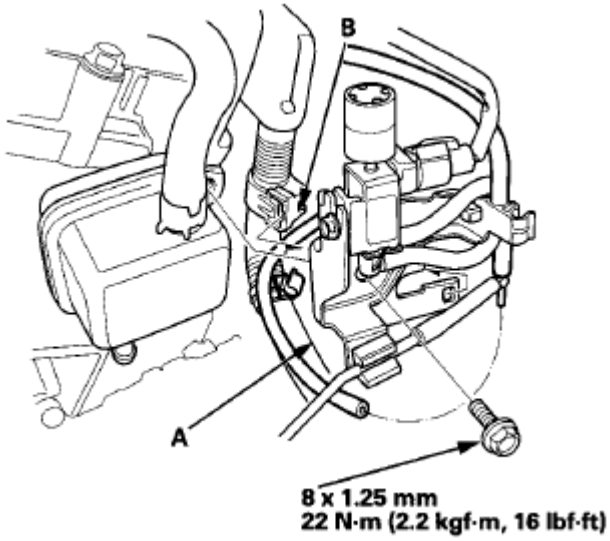


Fig. 116: Identifying Control Solenoid Valve Bracket And Harness Clamp With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

35. Install the washers (A) and new steering gearbox mounting bolts (B) to the steering gearbox, then loosely tighten them.

NOTE: Make sure that the washers are in the correct position.

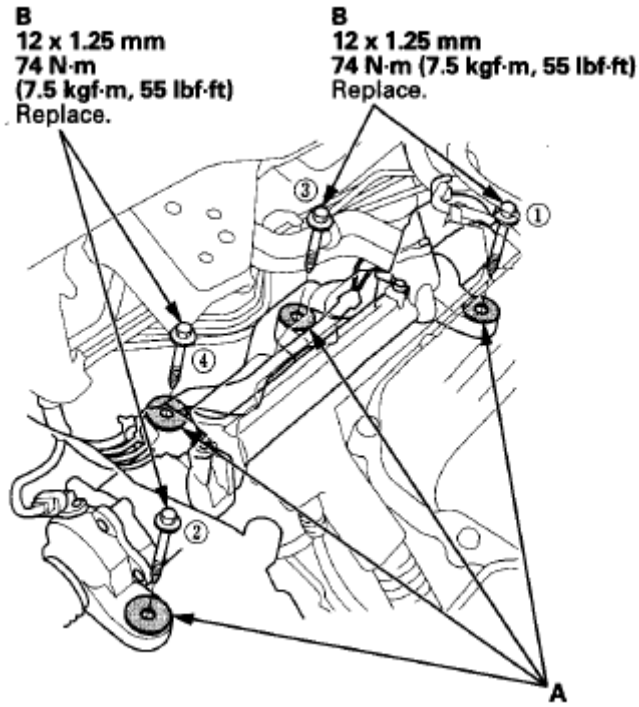


Fig. 117: Identifying Washers And Steering Gearbox Mounting Bolts With Tightening Sequence & With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

36. Tighten the steering gearbox mounting bolts to the specified torque in the sequence shown above.

NOTE: Check all of the steering gearbox mounting bolts, and retighten if necessary.

37. Install the heat shield bracket (A) to the steering gearbox, then install the harness clips (B).

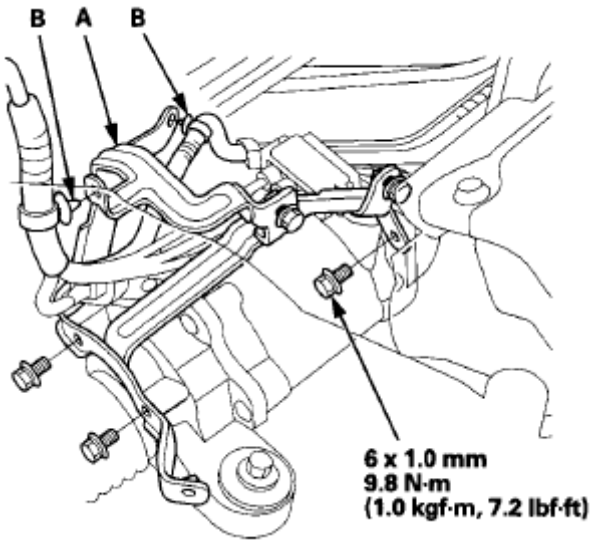


Fig. 118: Identifying Heat Shield Bracket And Harness Clips With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

38. Remove the vinyl tape from the connectors.
39. Install the EPS subharness 12P connector (A), the EPS subharness 3P connector (B), and the harness clip (C) to the harness bracket (D).

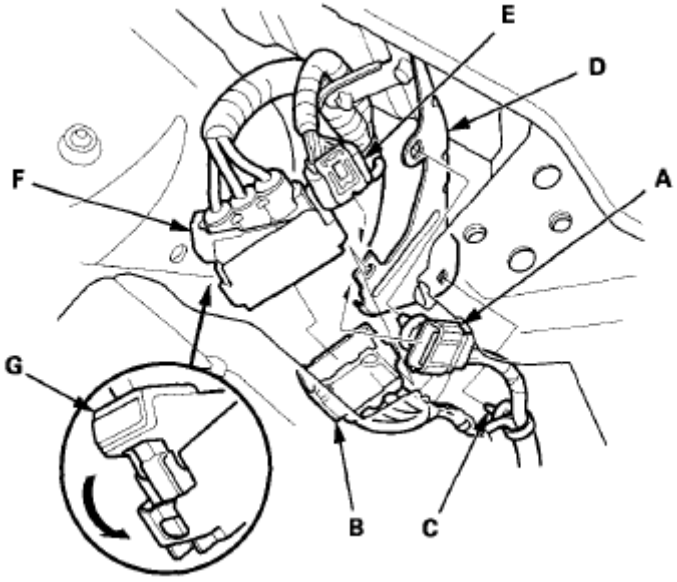


Fig. 119: Identifying EPS Subharness 12P Connector, 3P Connector, Lever, Harness Bracket And Clip
Courtesy of AMERICAN HONDA MOTOR CO., INC.

40. Connect the EPS subharness 12P connector (E) and EPS subharness 3P connector (F), and pull down the lever (G), then confirm the connector is fully seated.
41. Install the power steering heat shield (A) with the flange bolts, and tighten them to the specified torque.

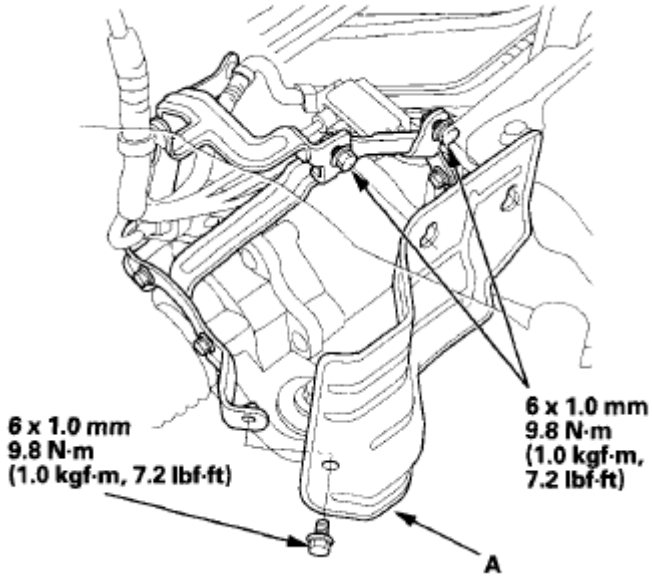


Fig. 120: Identifying Power Steering Heat Shield With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

42. Wipe off any grease contamination from the ball joint tapered section and threads. Connect the tie-rod end ball joint (A) to the knuckle. Install the new nut (B), and tighten it to the specified torque.

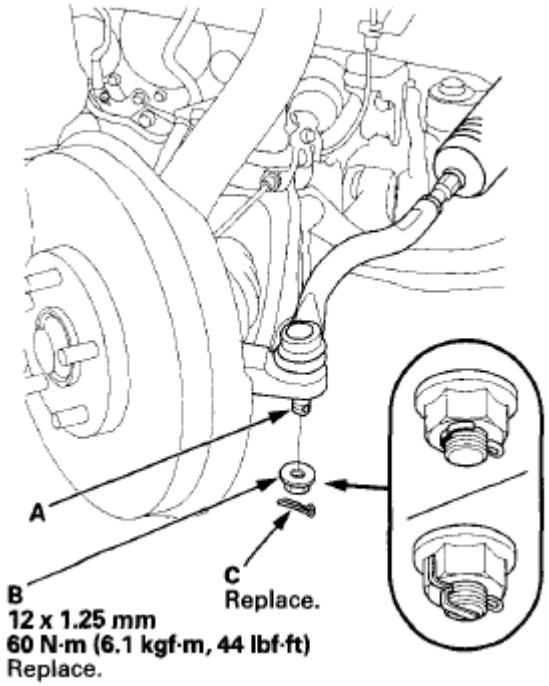


Fig. 121: Identifying Cotter Pin, Ball Joint And Nut With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

43. Install a new cotter pin (C), and bend it as shown above.

44. Place a floor jack under the lower arm, and raise the suspension to load it with the vehicle's weight. Do not place the jack against the ball joint pin of the knuckle.
45. Tighten the damper fork mounting nut while holding the mounting bolt to the specified torque.
46. Remove the vinyl tape around the splines on the pinion shaft.
47. Loosen the upper steering joint bolt (A), and slip the lower end of the steering joint (B) onto the pinion shaft (C) taking care to align the gap (D) within the angle.

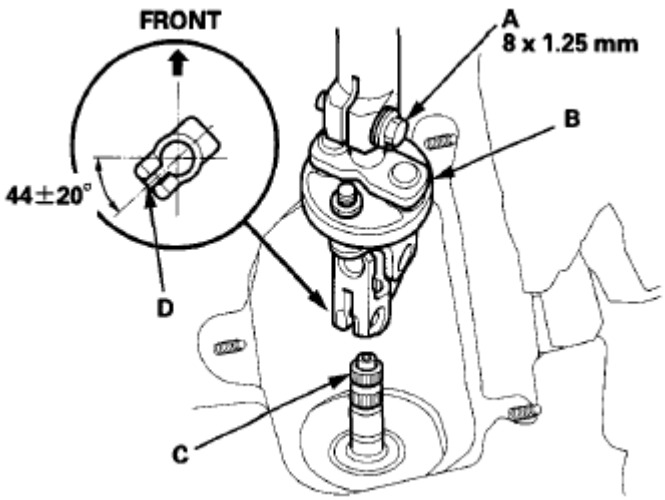


Fig. 122: Identifying Steering Joint, Pinion Shaft, Gap And Upper Steering Joint Bolt
Courtesy of AMERICAN HONDA MOTOR CO., INC.

48. Align the bolt hole (A) on the steering joint with the groove (B) around the pinion shaft, then loosely install the lower steering joint bolt (C). Be sure that the joint bolt is securely in the groove in the pinion shaft.

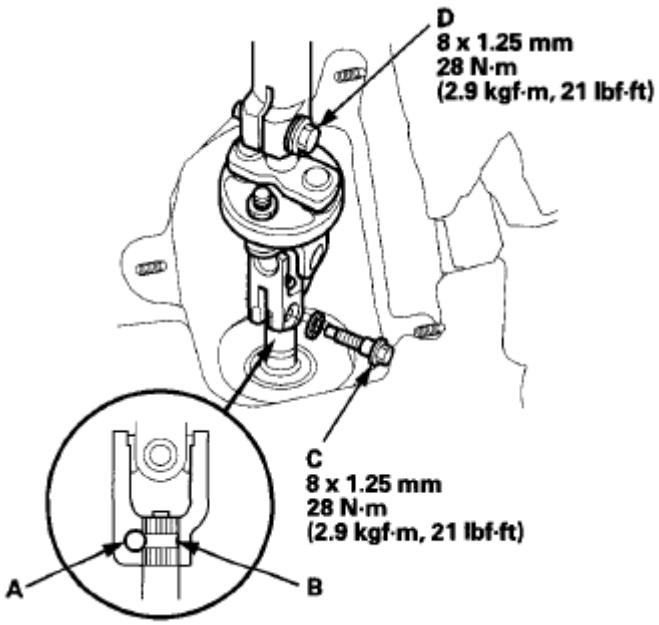


Fig. 123: Identifying Groove, Bolt Hole, Upper And Lower Steering Joint Bolt With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

49. Pull on the steering joint to make sure that the steering joint is fully seated, then tighten the lower joint bolt to the specified torque.
50. Tighten the upper steering joint bolt (D) to the specified torque.
51. Remove the steering wheel holder tool (A).

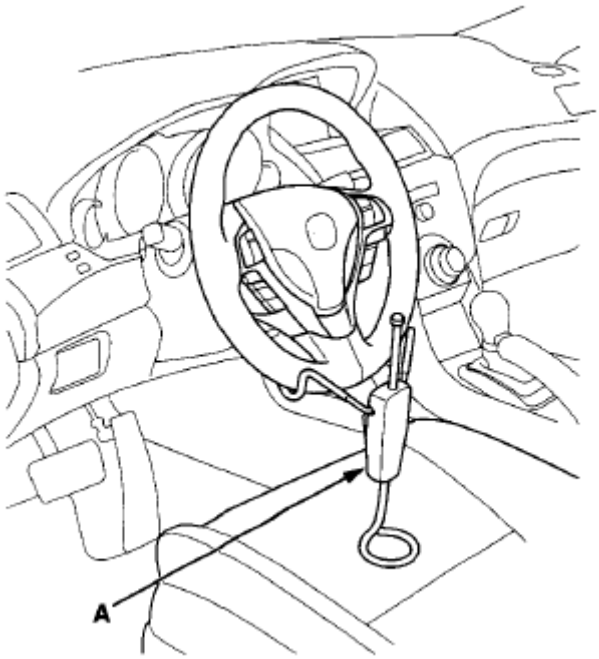


Fig. 124: Identifying Steering Wheel Holder Tool
Courtesy of AMERICAN HONDA MOTOR CO., INC.

52. Install the steering joint cover (A).

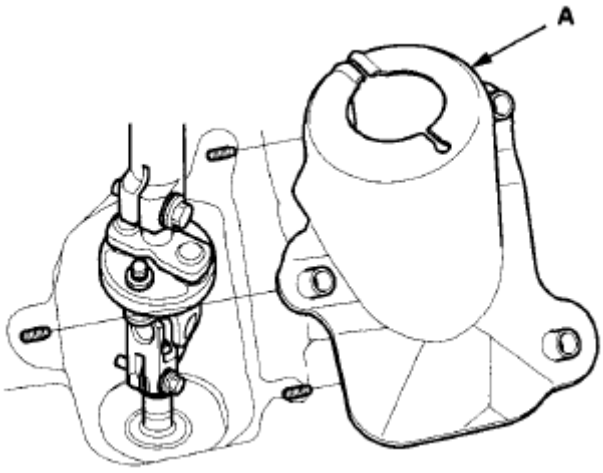


Fig. 125: Identifying Steering Joint Cover
Courtesy of AMERICAN HONDA MOTOR CO., INC.

53. Install the driver's dashboard undercover (see **DRIVER'S DASHBOARD UNDERCOVER REMOVAL/INSTALLATION**).
54. Install the front wheels, then set the wheels in the straight ahead position.

NOTE: Before installing the wheel, clean the mating surface between the brake disc and the inside of the wheel.

55. With the tires raised off the ground (vehicle on a lift), check for the following symptoms by turning the steering wheel fully to the right and left several times.

Symptom	Probable cause
Rubbing sound coming from the lower steering column area.	Steering column joint is contacting the cover.
Grating sound from the lower steering column area, or a rough feeling during steering.	Poor engagement of the pinion shaft splines.
Noise from around the steering wheel during steering.	Poor engagement of the SRS cable reel with the steering wheel, or a damaged cable reel.

56. Lower the vehicle.
57. Install the front strut brace (see **FRAME BRACE REPLACEMENT**).
58. Do the battery terminal reconnection procedure (see **BATTERY TERMINAL DISCONNECTION AND RECONNECTION**), and check these items:
    - Make sure the horn and turn signal switches work properly.
    - Make sure the steering wheel switches work properly.
59. Install the engine compartment covers (see **ENGINE COMPARTMENT COVER REPLACEMENT**).
60. Reinstall the hood support struts to the upper location on both sides of the hood.
61. After installation, check these items:
    - Start the engine, allow it to idle, and turn the steering wheel from lock to lock several times.
    - Check that the EPS indicator does not come on.
    - Check the steering wheel spoke angle. If steering spoke angles to the right and left are not equal (steering wheel and rack are not centered), correct the engagement of the joint/pinion shaft splines.
    - Do the torque sensor neutral position memorization (see **MEMORIZING THE TORQUE SENSOR NEUTRAL POSITION**).
    - With SH-AWD: Do the VSA sensor neutral position memorization (see **YAW RATE-ACCELERATION SENSOR REPLACEMENT**).
    - Check the wheel alignment, and adjust it if necessary (see **WHEEL ALIGNMENT**).

RACK END REMOVAL AND INSTALLATION

EXPLODED VIEW

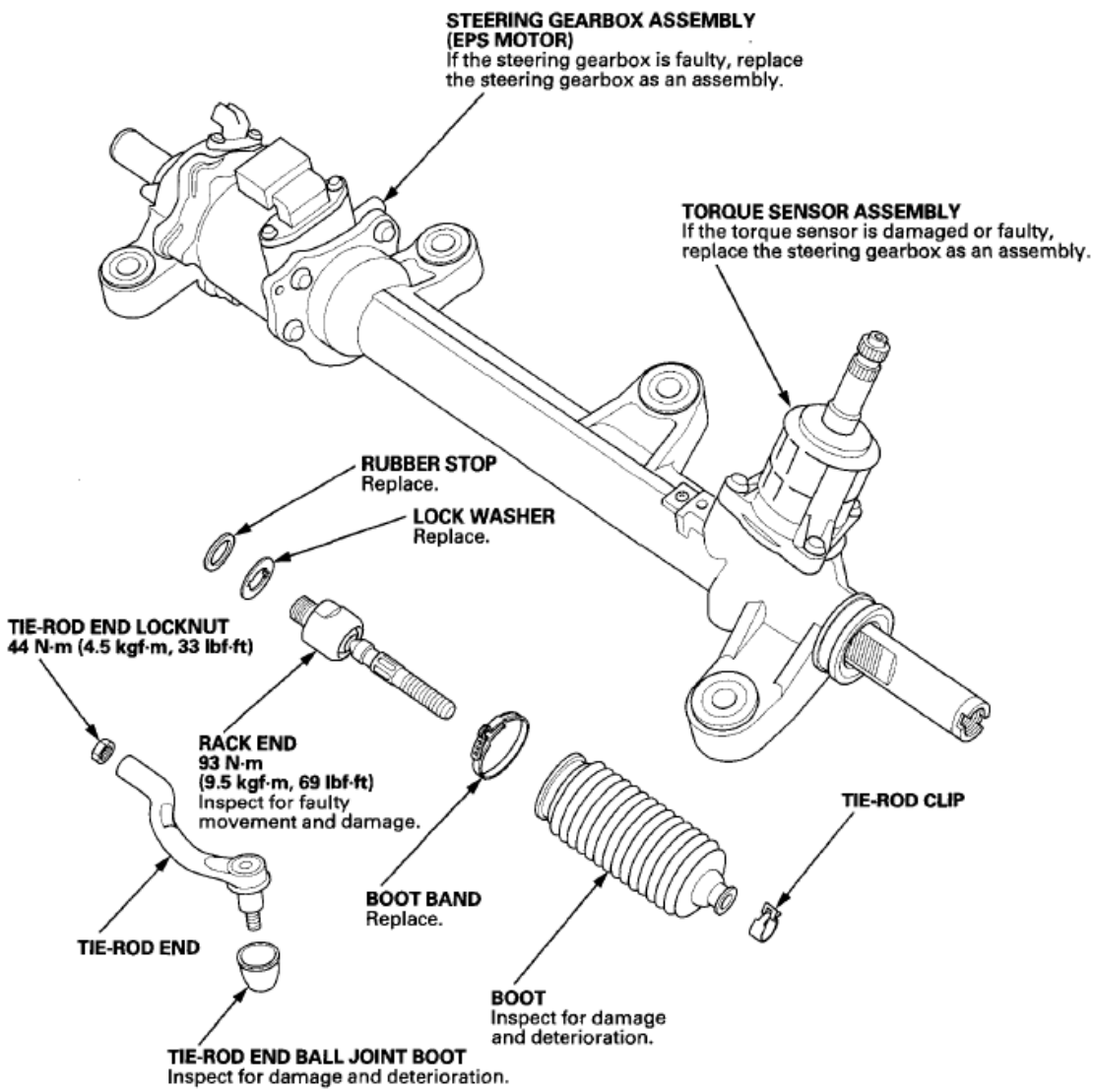


Fig. 126: Exploded View Of Rack End With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

REMOVAL

NOTE:

- **Do not allow dust, dirt, or other foreign materials to enter the steering gearbox.**
- **Refer to the EXPLODED VIEW as needed during the following procedure.**

1. Remove the steering gearbox (see **STEERING GEARBOX REMOVAL AND INSTALLATION**).
2. Remove the tie-rod ends from the rack end.
3. Remove the boot band (A). Remove the tie-rod clip (B), and pull the boots away from the end of the steering gearbox. Repeat this step for the other side.

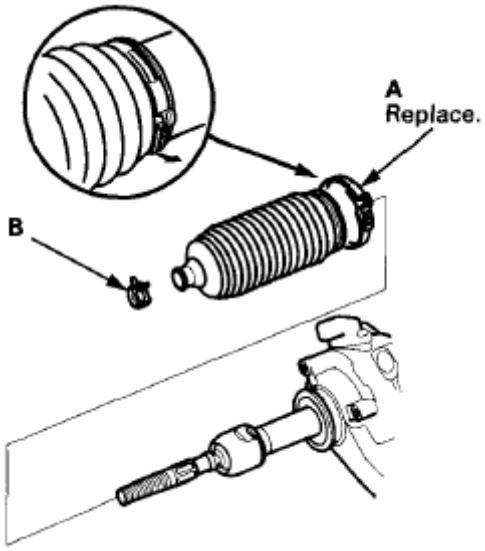


Fig. 127: Identifying Boot Band And Tie-Rod Clip
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Hold the gearbox housing using a C-clamp (A) and wooden blocks (B) to a work bench as shown below. Do not clamp the cylinder part of the gearbox housing in a vise.

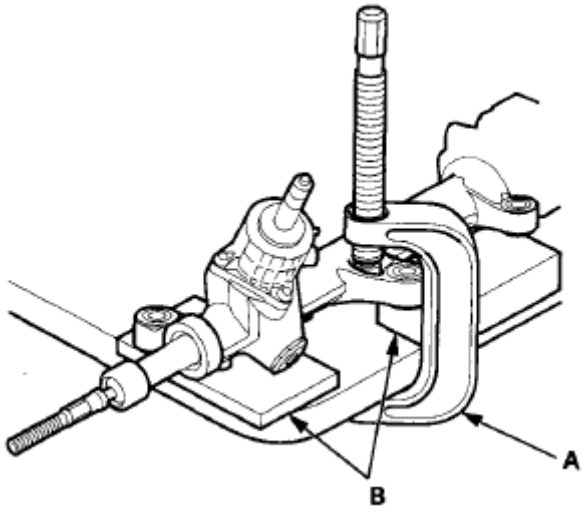


Fig. 128: Identifying C-Clamp And Wooden Blocks
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Unbend the lock washer (A).

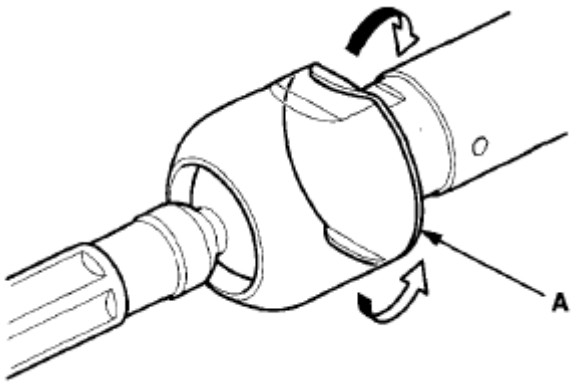


Fig. 129: Unbending Lock Washer
Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Hold the flat surface sections (A) of the steering rack (B) with one wrench, and unscrew rack end (C) with another wrench. Be careful not to damage the rack surface with the wrench.

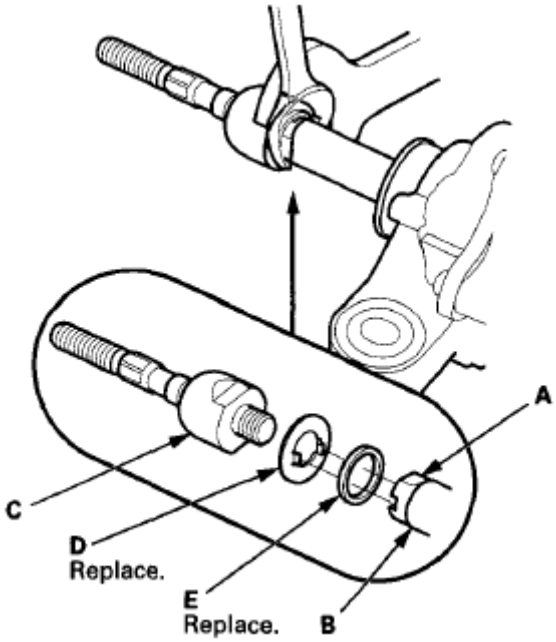


Fig. 130: Identifying Flat Surface Sections, Steering Rack, Unscrew Rack End, Lock Washer And Rubber Stop
Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Remove the lock washer (D) and the rubber stop (E). Repeat steps 5 thru 7 for the other side.

INSTALLATION

NOTE:

- **Do not allow dust, dirt, or other foreign materials to enter the steering gearbox.**

- **Refer to the EXPLODED VIEW as needed during the following procedure.**

1. Hold the gearbox housing using a C-clamp (A) and wooden blocks (B) to a work bench as shown below. Do not clamp the cylinder part of the gearbox housing in a vise.

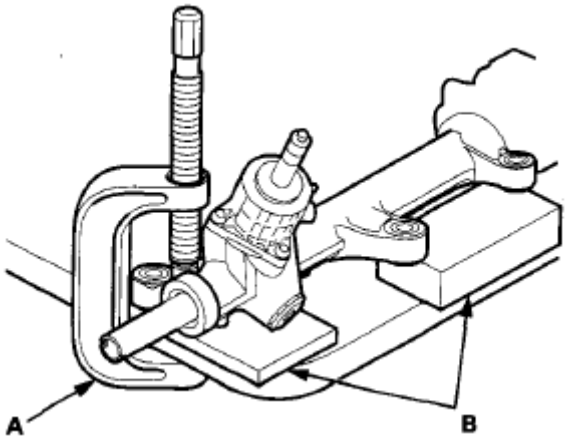


Fig. 131: Identifying C-Clamp And Wooden Blocks
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Install a new rubber stop (A) and a new lock washer (B). Align the lock washer tabs (C) with the slots (D) on the steering rack (E) while holding the lock washer in place.

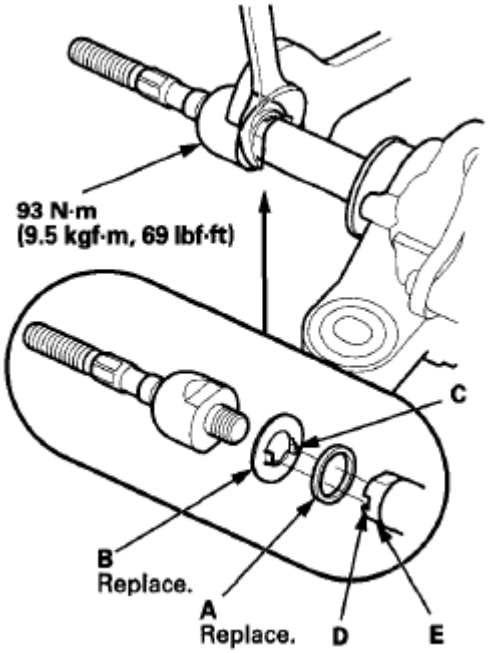


Fig. 132: Identifying Rubber Stop, Lock Washer, Lock Washer Tabs, Slots And Steering Rack With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Hold the flat surface sections of the steering rack with one wrench, and tighten both rack ends with another wrench. Be careful not to damage the rack surface with the wrench.
4. Bend the lock washer (A) back against the flat spots (B) on the rack end joint housing. Repeat steps 2 thru 4 for the other side.

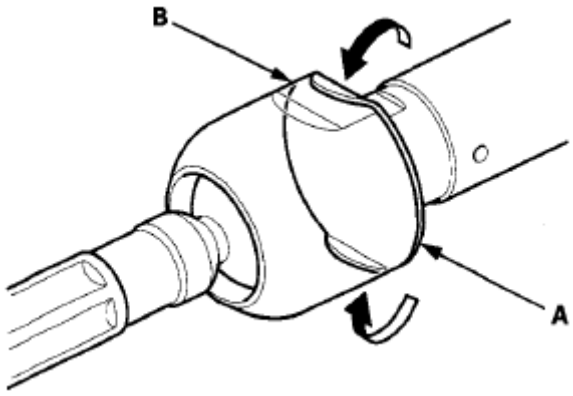


Fig. 133: Bending Lock Washer Back Against Flat Spots On Rack End Joint Housing
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Apply multipurpose grease to the circumference of the rack end joint housing (A).

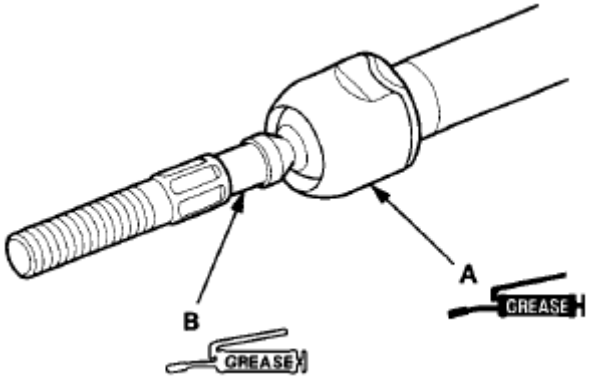


Fig. 134: Applying Multipurpose And Silicone Grease To Circumference Of Rack End Joint Housing And Boot Fitting Grooves On Rack End Respectively
Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Apply a light coat of silicone grease to the boot fitting grooves (B) on the rack end.

NOTE: Make sure not to get any silicone grease on the terminal part of the connectors and switches, especially if you have silicone grease on your hands or gloves.

7. Clean off any grease or contamination from the boot installation grooves (A) around the gearbox housing. Install the boot (B) on the rack end with the tie-rod clip (C), and fit the boot end in the installation grooves in the housing properly.

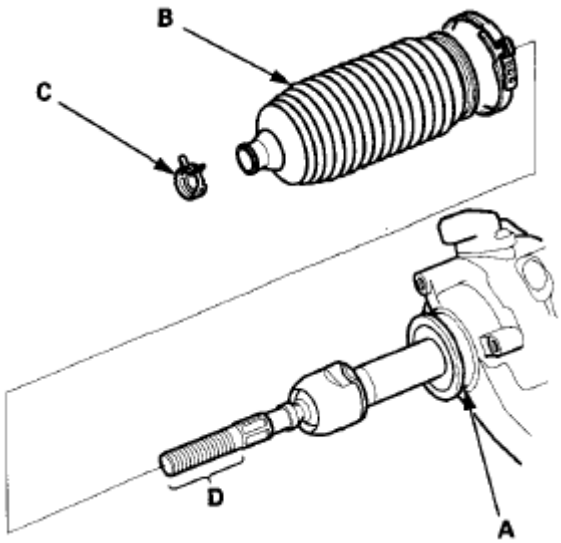


Fig. 135: Identifying Threaded Section, Tie-Rod Clip, Boot Installation Grooves And Boot
Courtesy of AMERICAN HONDA MOTOR CO., INC.

8. After installing the boot, wipe the grease off the threaded section (D) of the rack end.
9. Install the new boot band by aligning the tabs (A) with the holes (B) of the band.

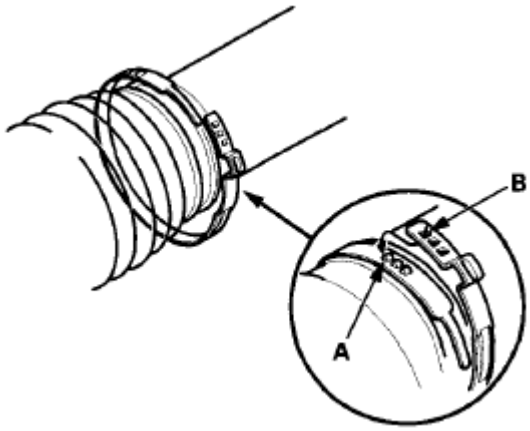


Fig. 136: Identifying Tabs And Holes Of Band
Courtesy of AMERICAN HONDA MOTOR CO., INC.

10. Close the ear position (A) of the boot band (B) with commercially available pincers Oetiker 1098 or equivalent (C). Repeat steps 7 thru 10 for the other side.

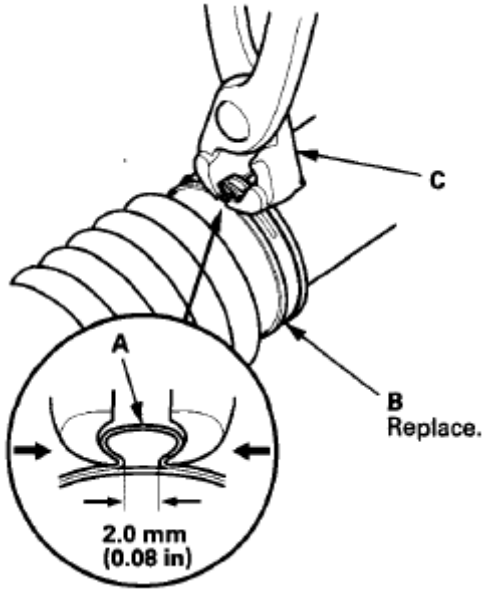


Fig. 137: Identifying Ear Position, Boot Band & SST
Courtesy of AMERICAN HONDA MOTOR CO., INC.

11. Slide the steering rack right and left to be certain that the boots are not deformed or twisted.
12. Install the tie-rod ends to the rack ends.
13. Install the steering gearbox (see **STEERING GEARBOX REMOVAL AND INSTALLATION**).

RACK GUIDE REMOVAL/INSTALLATION

NOTE: During removal/installation, do not allow dust, dirt, or other foreign materials to enter the steering gearbox.

1. Loosen the locknut (A), then remove the rack guide screw (B), the spring (C), and the rack guide (D).

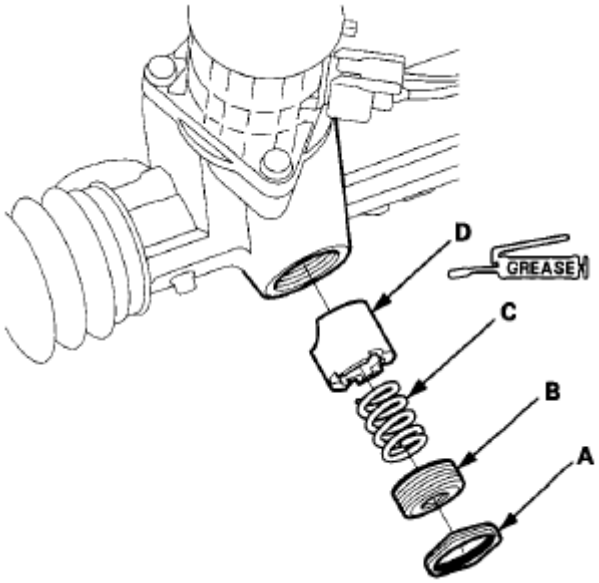


Fig. 138: Identifying Rack Guide, Locknut, Rack Guide Screw And Spring
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Apply steering grease to the sliding surface and the circumference of the rack guide, and install it onto the gearbox housing. Wipe the grease off the threaded section of the gearbox housing.
3. Install the spring onto the gearbox housing.
4. Remove the old sealant from the rack guide screw and apply new sealant (Three Bond 1215 or Loctite 5699) to the middle of the threads. Loosely install the rack guide screw on the steering gearbox.

NOTE: If more than 5 minutes have passed after applying the sealant, remove the old sealant and residue, and reapply new sealant.

5. Loosely install the locknut.
6. Adjust the rack guide screw (see **RACK GUIDE ADJUSTMENT**). After adjusting, check that the rack moves smoothly by sliding the rack right and left.

EPS CONTROL UNIT REMOVAL/INSTALLATION

1. Do the battery terminal disconnection procedure (see **BATTERY TERMINAL DISCONNECTION AND RECONNECTION**).
2. Remove these items:
   - Passenger's dashboard undercover (see **GLOVE BOX DAMPER REPLACEMENT**)
   - Passenger's front door sill trim (see **TRIM REMOVAL/INSTALLATION - DOOR AREAS**)
   - Passenger's kick panel (see **TRIM REMOVAL/INSTALLATION - DOOR AREAS**)
   - Passenger's under-dash fuse/relay box (see **PASSENGER'S UNDER-DASH FUSE/RELAY BOX (MICU) REMOVAL AND INSTALLATION**)
3. Disconnect EPS control unit connector A (2P), connector B (2P), connector C (2P), and connector D

(28P).

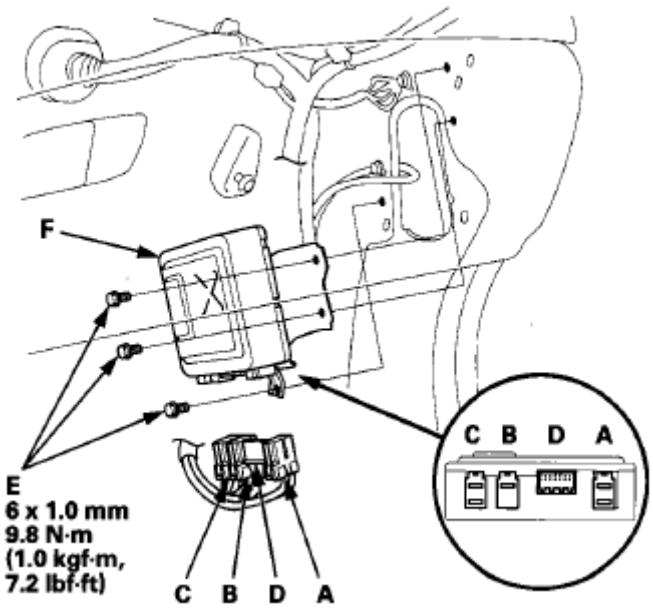


Fig. 139: Identifying EPS Control Unit & Bolts With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Remove the bolts (E) from the EPS control unit (F).
5. Remove the EPS control unit.
6. Install the EPS control unit in the reverse order of removal.
7. Do the battery terminal reconnection procedure (see **BATTERY TERMINAL DISCONNECTION AND RECONNECTION**).
8. Do the torque sensor neutral position memorization (see **MEMORIZING THE TORQUE SENSOR NEUTRAL POSITION**).
9. After installation, start the engine, allow it to idle, and turn the steering wheel from lock to lock several times. Check that the EPS indicator does not come on.

2012 STEERING

Power Steering System - TL

SPECIAL TOOLS

Ref.No.	Tool Number	Description	Qty
①	070AG-SJAA10S	Subframe Alignment Pin	1
②	07965-SA50500	Bearing Driver Attachment, 36 mm	1
③	07AAE-SJAA100	Ball Joint Thread Protector, 14 mm	1
④	07AAF-SDAA100	Ball Joint Thread Protector, 12 mm	1
⑤	07MAA-SL00100, 07916-SA50001, or 07AAA-TL2A100	Locknut Wrench, 40 mm	1
⑥	07MAC-SL0A202	Ball Joint Remover, 28 mm	1

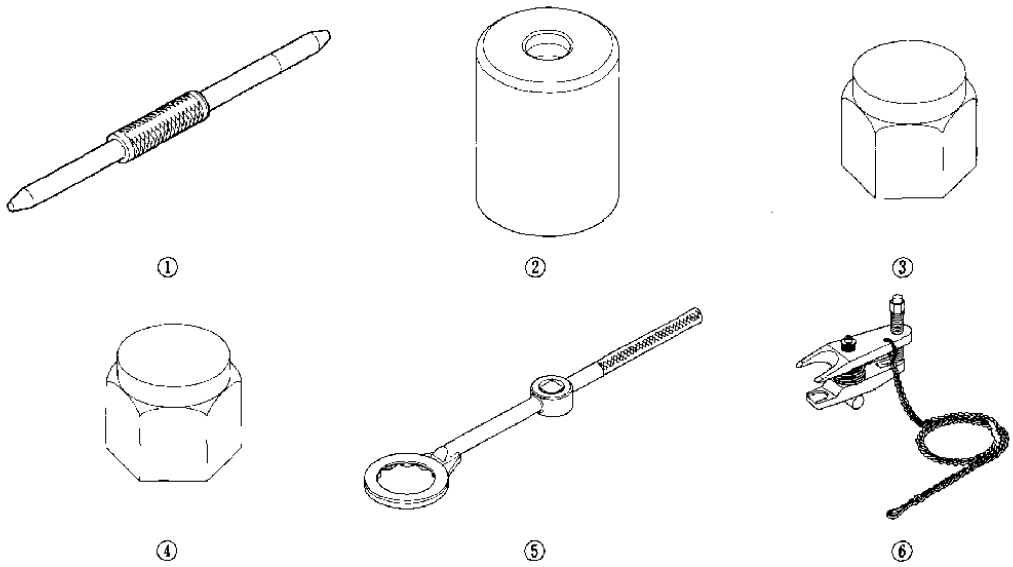


Fig. 1: Identifying Power Steering System Special Tools
Courtesy of AMERICAN HONDA MOTOR CO., INC.

COMPONENT LOCATION INDEX

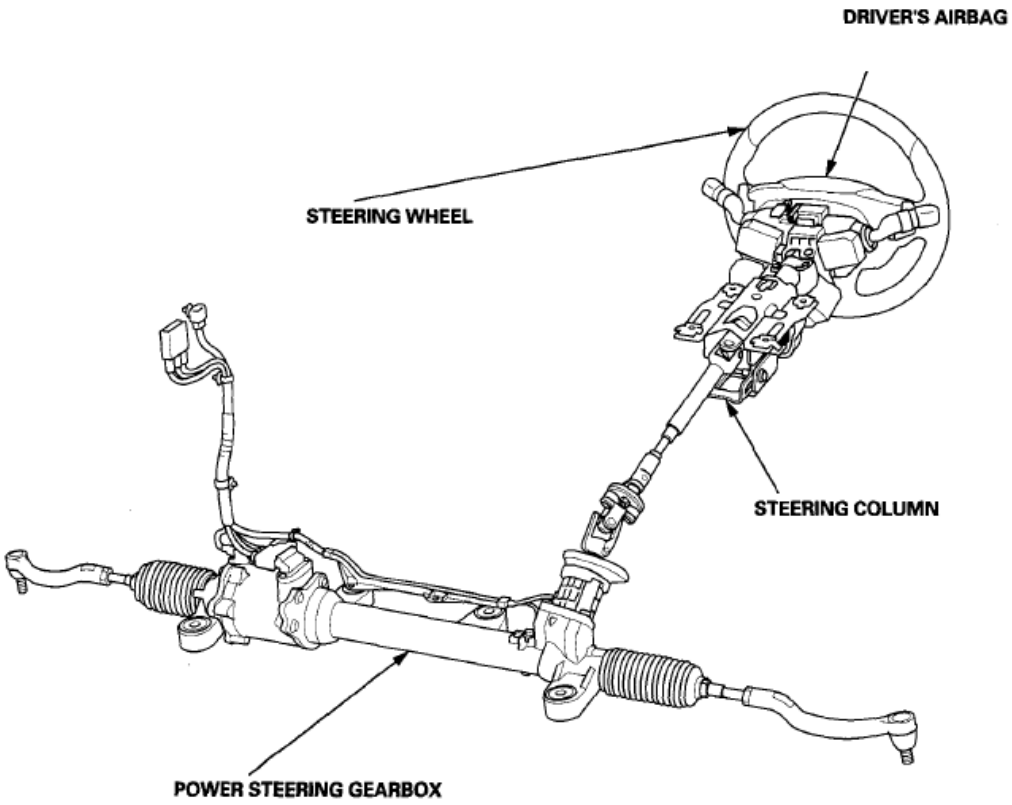


Fig. 2: Power Steering System Components Location
Courtesy of AMERICAN HONDA MOTOR CO., INC.

STEERING WHEEL ROTATIONAL PLAY CHECK

1. Set the front wheels in the straight ahead position.
2. Measure how far you can turn the steering wheel left and right without moving the front wheels.
   - If the play is within the limit, the steering gearbox and the steering linkages are OK.
   - If the play exceeds the limit, adjust the rack guide (see **RACK GUIDE ADJUSTMENT**). If the play is still excessive after rack guide adjustment, do the steering linkage and gearbox inspection (see **STEERING LINKAGE AND GEARBOX INSPECTION**).

Rotational play: 0-10 mm (0-0.39 in)

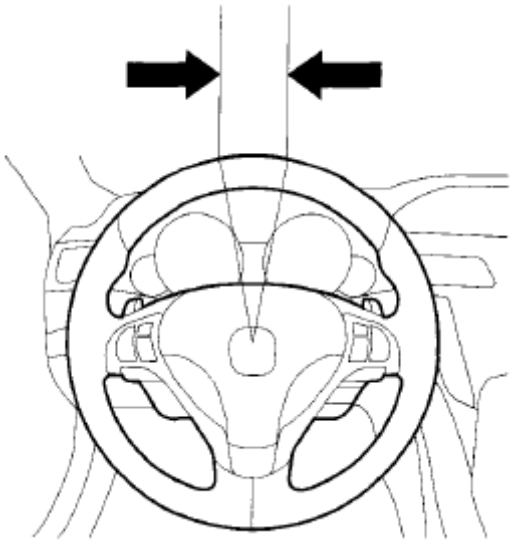


Fig. 3: Measuring Rotational Play Of Steering Wheel
Courtesy of AMERICAN HONDA MOTOR CO., INC.

POWER ASSIST CHECK

NOTE: This test should be done with original equipment tires and wheels at the correct tire pressure.

1. Start the engine, and let it idle.
2. Attach a commercially available spring scale (A) to the steering wheel. With the engine idling and the vehicle on a clean, dry floor, pull the scale as shown below, and read it as soon as the tires begin to turn.

   Initial turning load: 29 N (3.0 kgf, 6.6 lbf)

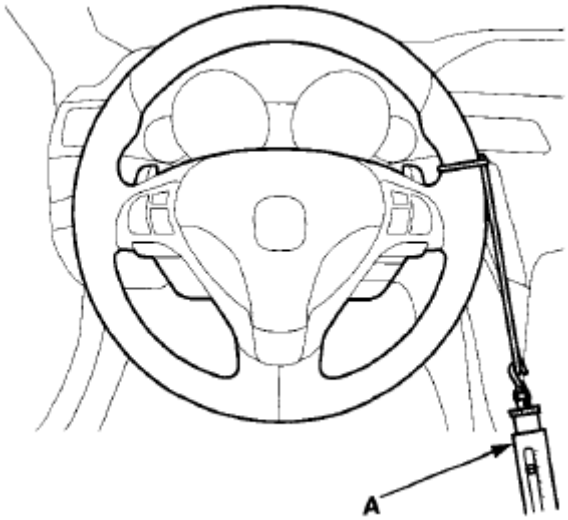


Fig. 4: Attaching Spring Scale To Steering Wheel

Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. If the scale reads no more than the specification, the power assist is OK. If it reads more, check these items:
   - Steering linkage (see **STEERING LINKAGE AND GEARBOX INSPECTION**)
   - Rack guide adjustment (see **RACK GUIDE ADJUSTMENT**)
   - EPS system (see **GENERAL TROUBLESHOOTING INFORMATION**)

STEERING LINKAGE AND GEARBOX INSPECTION

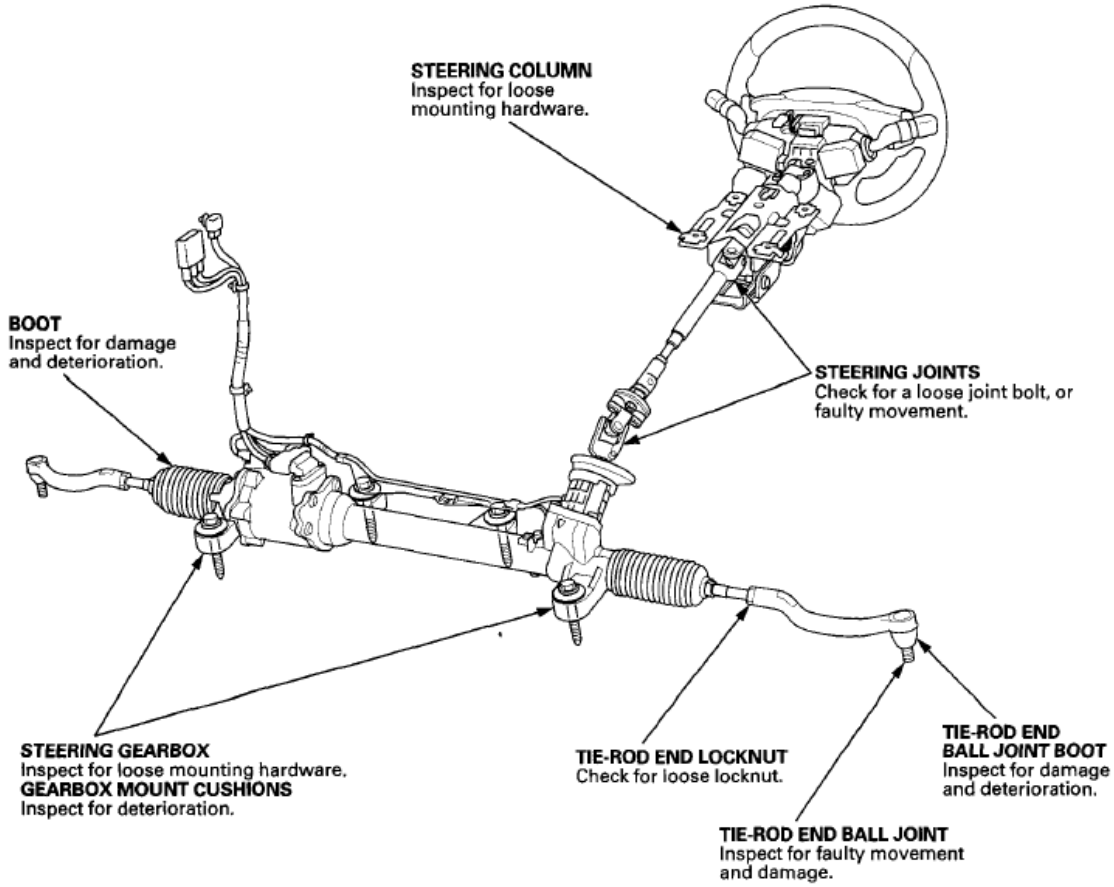


Fig. 5: Identifying Steering Linkage And Gearbox Components Location
Courtesy of AMERICAN HONDA MOTOR CO., INC.

STEERING WHEEL REMOVAL

SRS components are located in this area. Review the SRS component locations (see **COMPONENT LOCATION INDEX**), and the precautions and procedures (see **PRECAUTIONS AND PROCEDURES**) before doing repairs or service.

1. Do the battery terminal disconnection procedure (see **BATTERY TERMINAL DISCONNECTION AND RECONNECTION**).

2. Set the front wheels in the straight ahead position, then remove the driver's airbag from the steering wheel (see **DRIVER'S AIRBAG REPLACEMENT**).
3. Disconnect the cable reel subharness connector (A).

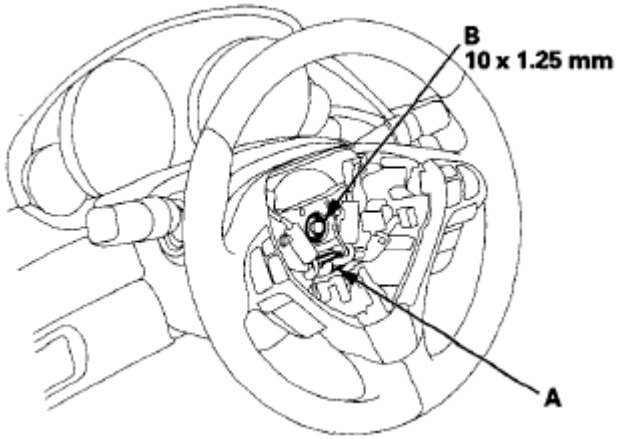


Fig. 6: Identifying Cable Reel Subharness Connector And Steering Wheel Bolt
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Loosen the steering wheel bolt (B) three turns.
5. Install a commercially available steering wheel puller (A) on the steering wheel (B). Free the steering wheel from the steering column shaft by turning the pressure bolt (C) of the puller.

   Note these items when removing the steering wheel:

   - Do not tap on the steering wheel or the steering column shaft when removing the steering wheel.
   - If you thread the puller bolts (D) into the wheel hub more than five threads, the bolts will hit the cable reel and damage it. To prevent this, install a pair of jam nuts five threads up on each puller bolt.

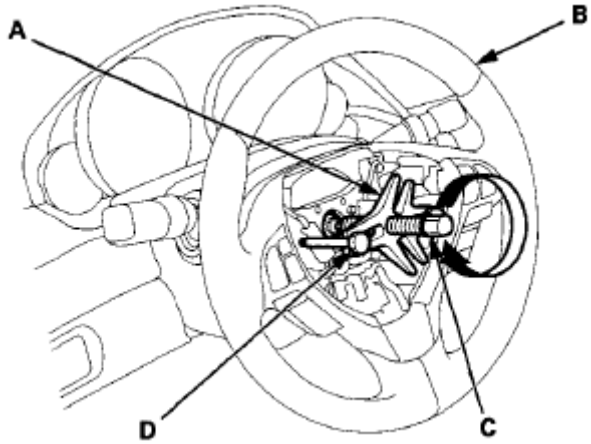


Fig. 7: Freeing Steering Wheel From Steering Column Shaft By Turning Pressure Bolt Of Puller

Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Remove the steering wheel puller, then remove the steering wheel bolt (A) and the steering wheel (B) from the steering column.

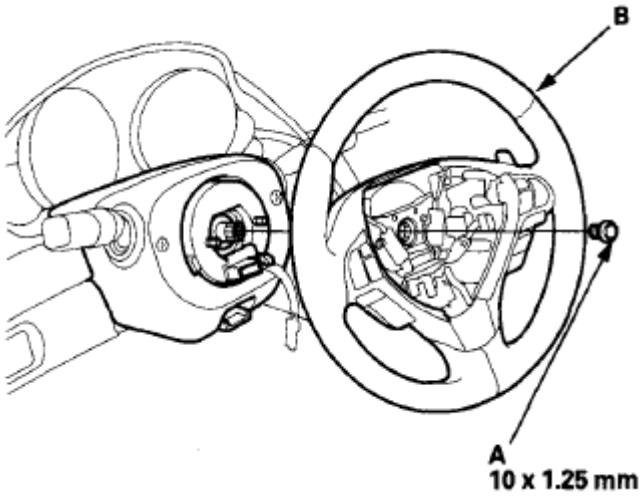


Fig. 8: Identifying Steering Wheel And Steering Wheel Bolt
Courtesy of AMERICAN HONDA MOTOR CO., INC.

STEERING WHEEL DISASSEMBLY/REASSEMBLY

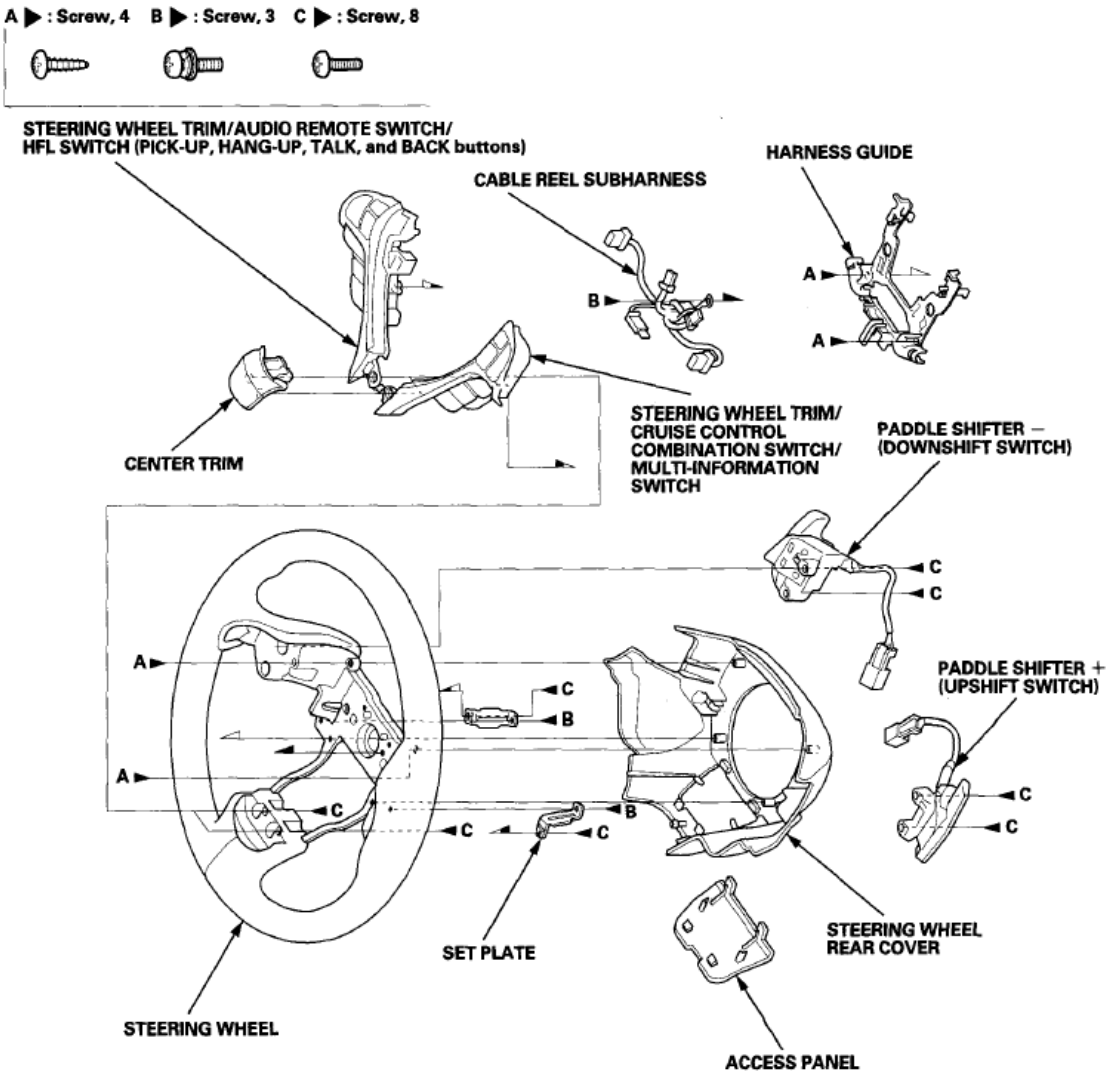


Fig. 9: Exploded View Of Steering Wheel
Courtesy of AMERICAN HONDA MOTOR CO., INC.

STEERING WHEEL INSTALLATION

SRS components are located in this area. Review the SRS component locations (see **COMPONENT LOCATION INDEX**), and the precautions and procedures (see **PRECAUTIONS AND PROCEDURES**) before doing repairs or service.

1. Before installing the steering wheel, make sure the front wheels are pointing straight ahead, then center the cable reel (A). Do this by first rotating the cable reel clockwise until it stops. Then rotate it counterclockwise about three full turns. The arrow mark (B) on the cable reel label should point straight up.

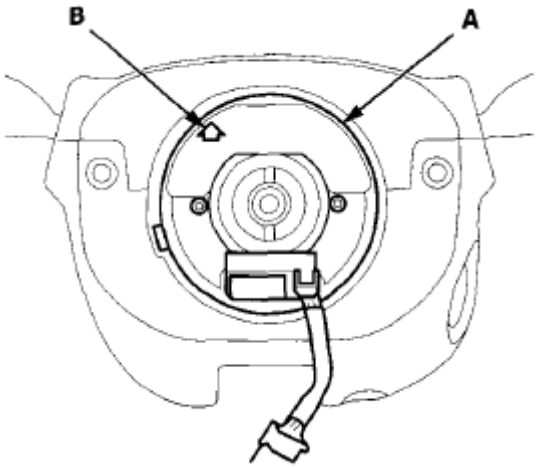


Fig. 10: Identifying Cable Reel And Arrow Mark
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Position the two tabs (A) of the turn signal canceling sleeve (B) as shown below. Install the steering wheel on to the steering column shaft, making sure the steering wheel hub (C) engages the pins (D) of the cable reel and the tabs of the turn signal canceling sleeve. Do not tap on the steering wheel or steering column shaft when installing the steering wheel.

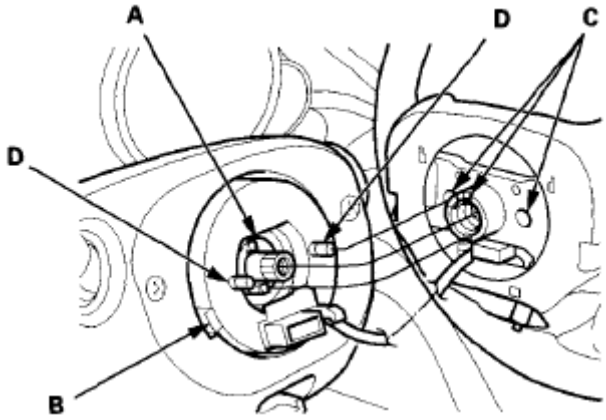


Fig. 11: Identifying Steering Wheel Hub, Sleeve, Tabs And Pins
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Install the steering wheel bolt (A), and tighten it to the specified torque. Connect the cable reel subharness connector (B). Make sure the wire harness is routed and fastened properly.

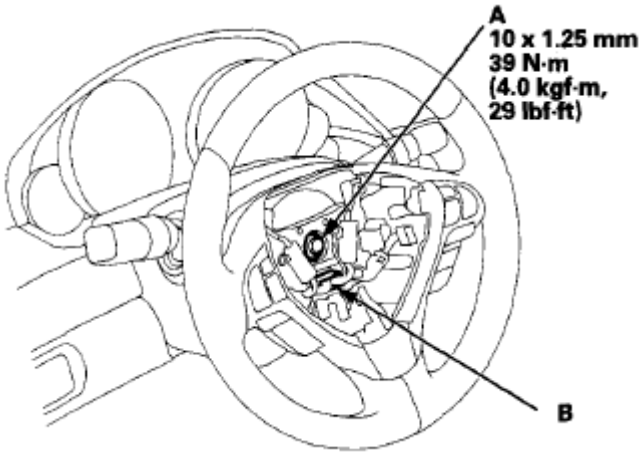


Fig. 12: Identifying Cable Reel Subharness Connector And Steering Wheel Bolt With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Install the driver's airbag (see **DRIVER'S AIRBAG REPLACEMENT**).
5. Do the battery terminal reconnection procedure (see **BATTERY TERMINAL DISCONNECTION AND RECONNECTION**), and check these items:
   - Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode, and check that the SRS indicator comes on for about 6 seconds, and then goes off.
   - Make sure the horn and turn signal switches work properly.
   - Make sure the steering wheel switches work properly.
6. After installation, check these items:
   - Check the steering wheel spoke angle. If the steering spoke angles to the right and left are not equal (steering wheel is not centered), correct the engagement of the wheel/column shaft splines.
   - With SH-AWD: Do the VSA sensor neutral position memorization (see **YAW RATE-ACCELERATION SENSOR REPLACEMENT**).

STEERING COLUMN REMOVAL AND INSTALLATION

SRS components are located in this area. Review the SRS component locations (see **COMPONENT LOCATION INDEX**), and the precautions and procedures (see **PRECAUTIONS AND PROCEDURES**) before doing repairs or service.

REMOVAL

1. Tilt the steering column at the way up, and move it all the way in.
2. Do the battery terminal disconnection procedure (see **BATTERY TERMINAL DISCONNECTION AND RECONNECTION**).
3. Remove the driver's airbag (see **DRIVER'S AIRBAG REPLACEMENT**), and the steering wheel (see **STEERING WHEEL REMOVAL**).
4. Remove the driver's dashboard undercover (see **DRIVER'S DASHBOARD UNDERCOVER**

REMOVAL/INSTALLATION).

5. Remove the column covers (see **SIDE DEFOGGER VENT TRIM REMOVAL/INSTALLATION**).
6. Remove the steering joint cover (A).

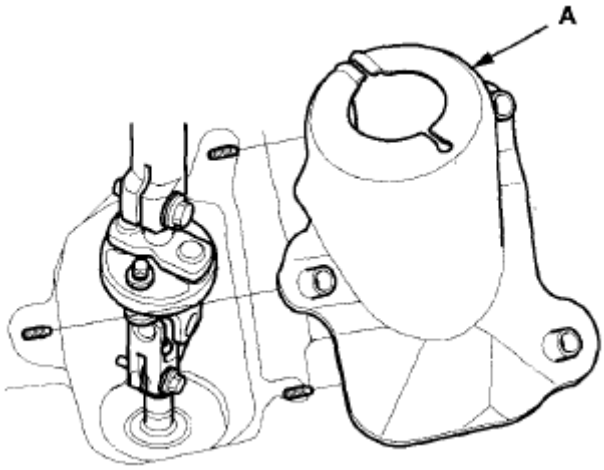


Fig. 13: Identifying Steering Joint Cover
Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Loosen the upper steering joint bolt (A), and remove the lower steering joint bolt (B). Disconnect the steering joint (C) by sliding the steering joint into the column shaft (D). Tighten the upper steering joint bolt to hold the steering joint in place.

NOTE:

- **Do not disconnect the steering joint from the column shaft.**
- **If the center guide (E) is in place and has not moved, leave it in place.**
- **If the center guide has come off, discard it.**

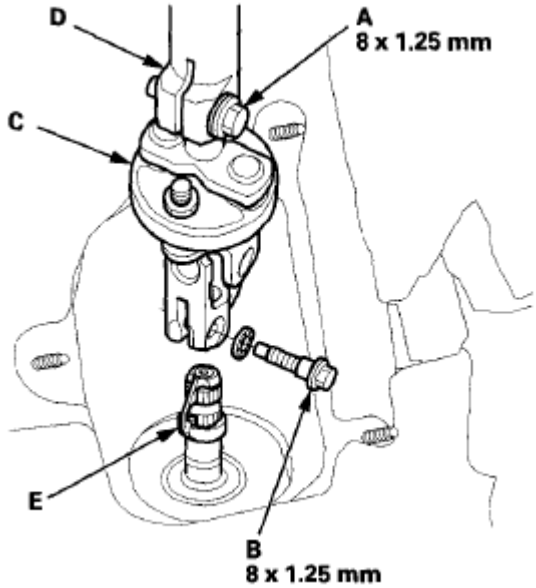


Fig. 14: Identifying Steering Joint, Column Shaft, Center Guide, Upper And Lower Steering Joint Bolt
Courtesy of AMERICAN HONDA MOTOR CO., INC.

8. Disconnect the wire harness connectors from the combination switch assembly/cable reel (A).

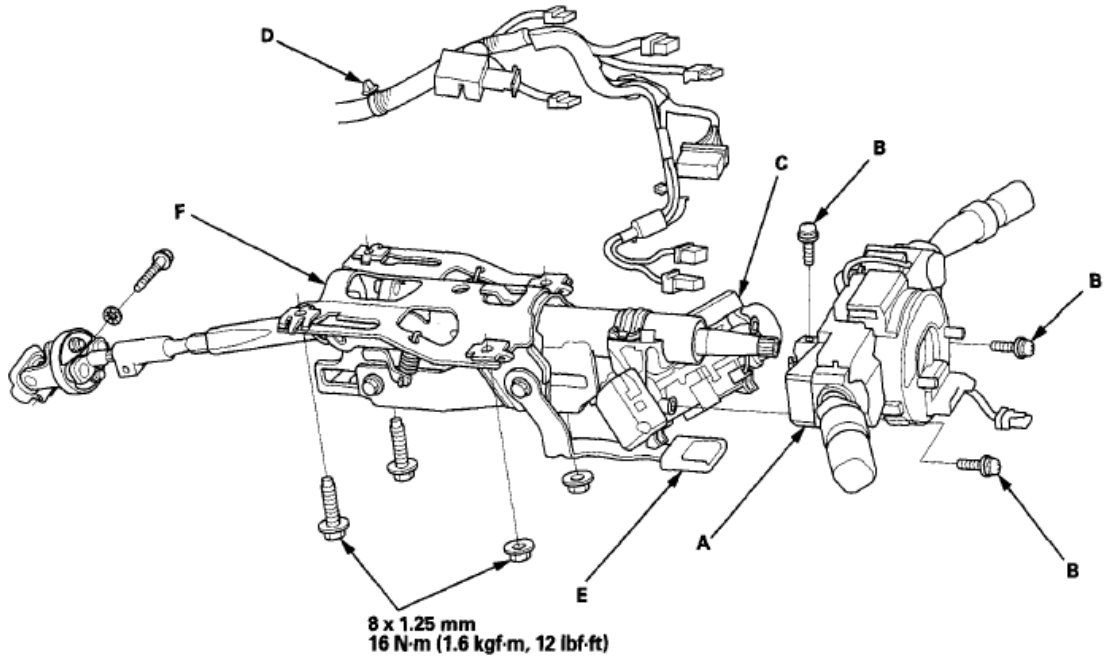


Fig. 15: Exploded View Of Steering Column With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

9. Remove the combination switch assembly/cable reel from the steering column shaft by removing the three screws (B).
10. Disconnect the connectors from the ignition switch (C), and release the wire harness clip (D) from the steering column.
11. Make sure that the lock lever (E) is in the locked position. Remove the steering column (F) by removing the attaching nuts and bolts, and carefully guide it out of the dashboard.

INSTALLATION

1. Install the steering column in the reverse order of removal, and note these items:
    - Make sure the wires are not caught or pinched by any parts.
    - Tighten the three screws (A) in the sequence shown below.

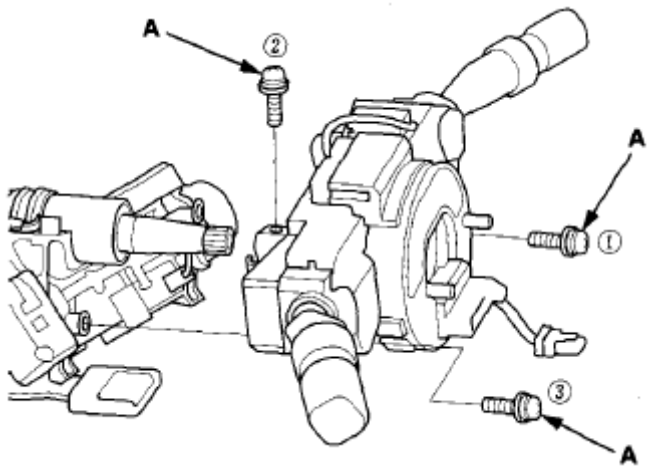


Fig. 16: Identifying Screws With Tightening Sequence
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Center the steering rack within its stroke.
3. Loosen the upper steering joint bolt (A) and slip the lower end of the steering joint (B) onto the pinion shaft (C).

NOTE:

- **Pinion shaft with center guide: Install the steering joint by aligning the center guide (D).**
- **Pinion shaft without center guide: Position the steering column by aligning the gap (E) with the angle.**

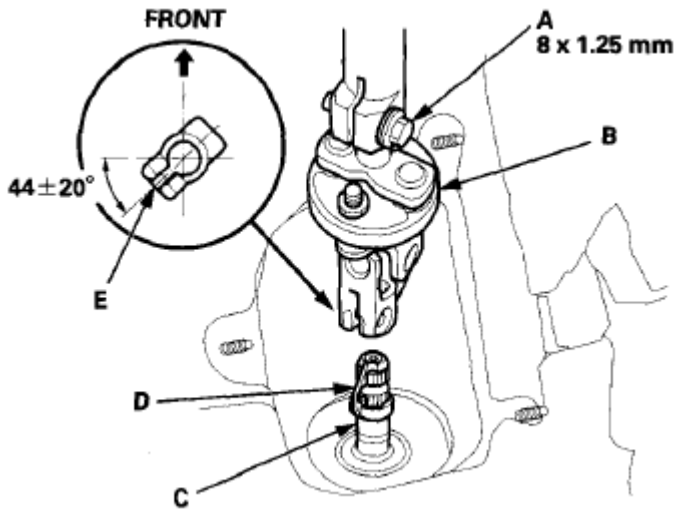


Fig. 17: Identifying Pinion Shaft, Center Guide, Gap, Upper And Lower Steering Joint Bolt
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Align the bolt hole (A) on the steering joint with the groove (B) around the pinion shaft, then loosely

install the lower steering joint bolt (C). Be sure that the joint bolt is securely in the groove in the pinion shaft.

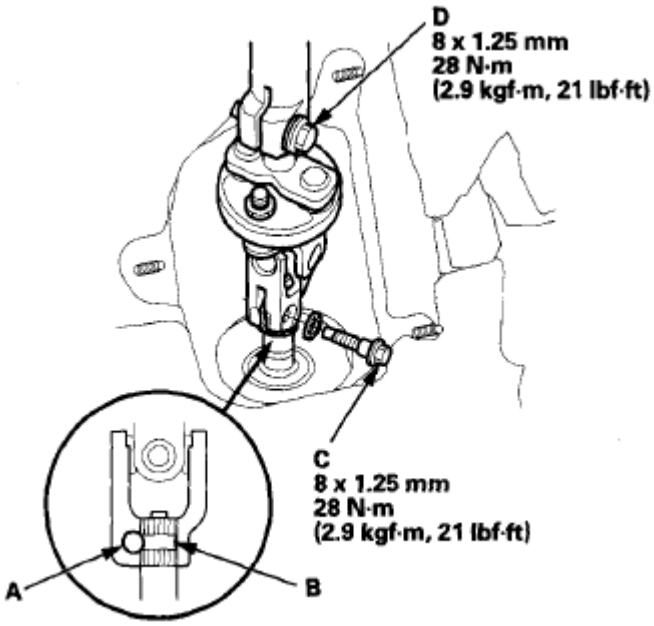


Fig. 18: Identifying Bolt Hole, Groove, Upper And Lower Steering Joint Bolt With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Pull on the steering joint to make sure that the steering joint is fully seated, then tighten the lower joint bolt to the specified torque.
6. Tighten the upper steering joint bolt (D) to the specified torque.
7. Install the steering joint cover (A).

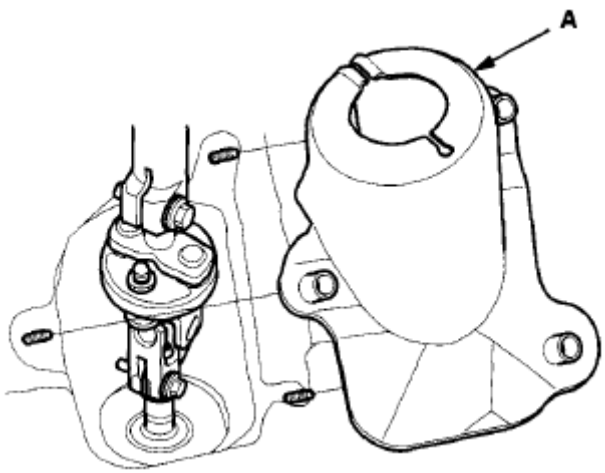


Fig. 19: Identifying Steering Joint Cover
Courtesy of AMERICAN HONDA MOTOR CO., INC.

8. Install the column covers (see **SIDE DEFOGGER VENT TRIM REMOVAL/INSTALLATION**).
9. Install the driver's dashboard undercover (see **DRIVER'S DASHBOARD UNDERCOVER REMOVAL/INSTALLATION**).
10. Install the steering wheel (see **STEERING WHEEL INSTALLATION**), and the driver's airbag (see **DRIVER'S AIRBAG REPLACEMENT**).
11. Do the battery terminal reconnection procedure (see **BATTERY TERMINAL DISCONNECTION AND RECONNECTION**), and check these items:
    - Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode, and check that the SRS indicator comes on for about 6 seconds, and then goes off.
    - Make sure the horn and turn signal switches work properly.
    - Make sure the steering wheel switches work properly.
12. After installation, check these items:
    - Check the steering wheel spoke angle. If the steering spoke angles to the right and left are not equal (steering wheel and rack are not centered), correct the engagement of the joint/pinion shaft splines.
    - With SH-AWD: Do the VSA sensor neutral position memorization (see **YAW RATE-ACCELERATION SENSOR REPLACEMENT**).
    - Set the steering column to the center tilt position, and to the center telescopic position, then do the front toe inspection (see **WHEEL ALIGNMENT**).

STEERING COLUMN INSPECTION

INSPECTION

1. Remove the steering column (see **STEERING COLUMN REMOVAL AND INSTALLATION**).
2. Check these items:
    - Check for loose bearing mounting nuts (A). If they are loose, replace the column as an assembly.
    - Check the steering column ball bearings (B) and the steering joints (C) for play and proper movement. If any bearing is noisy or has excessive play, replace the steering column as an assembly.
    - Check the sliding capsules (D) for distortion or breakage. If there is distortion or breakage, replace the steering column as an assembly.
    - Check the tilt mechanism and telescopic mechanism for movement and damage.

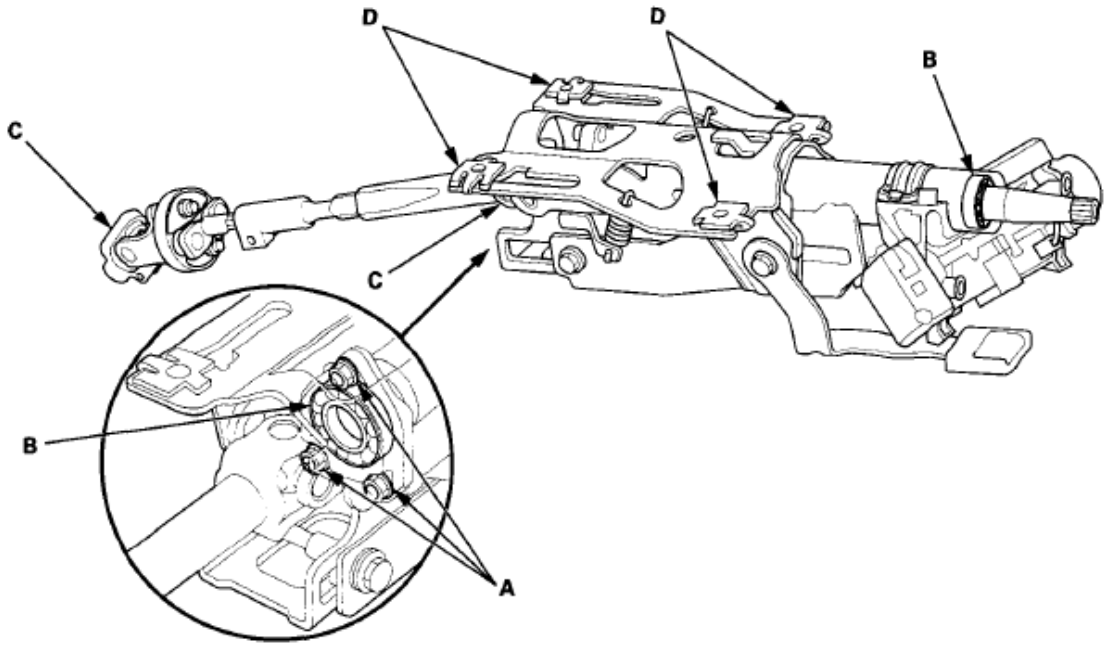


Fig. 20: Identifying Steering Column Ball Bearings, Steering Joints, Sliding Capsules And Mounting Nuts
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Install the steering column (see **INSTALLATION**).

CHECK OF TILTING FORCE

1. Set the steering wheel in the straight ahead driving position, and loosen the lock lever fully.
2. Attach a commercially available spring scale (A) to the highest point of the steering wheel, and tilt the steering column to the lowest position.

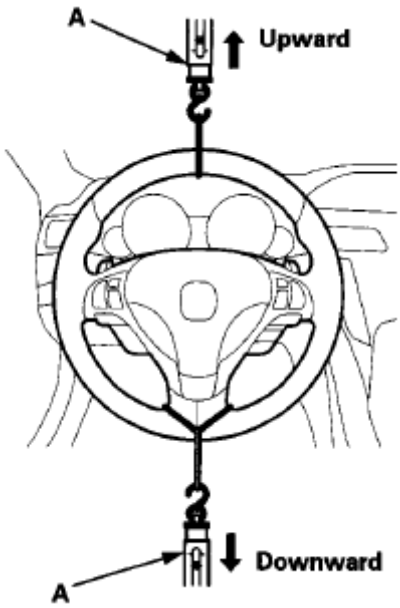


Fig. 21: Attaching Spring Scale To Steering Wheel
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Pull the spring scale straight up, and read the force required to move the steering column.
4. Attach the spring scale to the lowest point of the steering wheel.
5. Pull the spring scale straight down, and read the force required to move the steering column.

   Tilting force (upward/downward):

   Standard: 70 N (7.1 kgf, 15 lbf) max.

6. If the measurement is higher than specified, or if the tilt function feels rough, do the following:
   1. Loosen the steering column mounting nuts and bolts so they are finger-tight.
   2. Release the lock lever, and tilt and telescope the steering column several times.
   3. Tilt the column down, then tighten the lock lever.
   4. Tighten the mounting nuts, then tighten the mounting bolts.
7. Test the tilting force again. If the force is still higher than the specification, replace the steering column as an assembly (see **STEERING COLUMN REMOVAL AND INSTALLATION**).

CHECK OF TELESCOPING FORCE

1. Set the steering wheel in the straight ahead driving position, and loosen the lock lever fully, and push in the steering wheel to the fully telescoped in position.
2. Attach a commercially available spring scale (A) to the center point of the steering wheel as shown below.

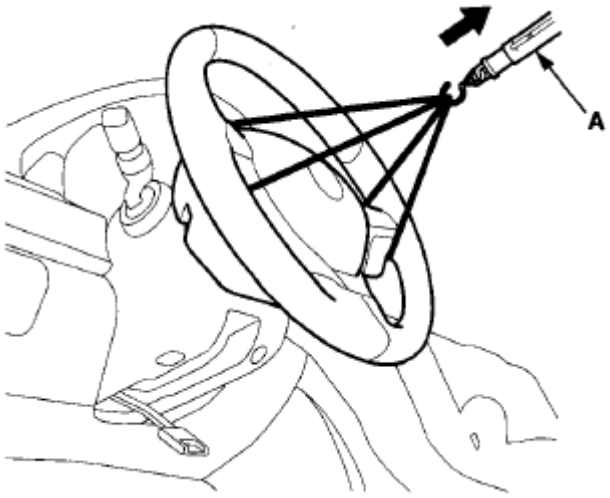


Fig. 22: Attaching Spring Scale To Center Point Of Steering Wheel
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Pull the spring scale, and read the force required to move the steering column during telescoping out.

   Telescoping force:

   Standard: 116 N (11.8 kgf, 26.1 lbf) max.

4. If the measurement is higher than specified, replace the steering column as an assembly, (see **STEERING COLUMN REMOVAL AND INSTALLATION**)

CHECK OF LOCK LEVER FORCE

1. Move the lock lever (A) from the loosened position to the locked position three to five times, then release the lock lever. Adjust the steering column to the center tilt position and also to the full telescopic out position, and hold the steering wheel.

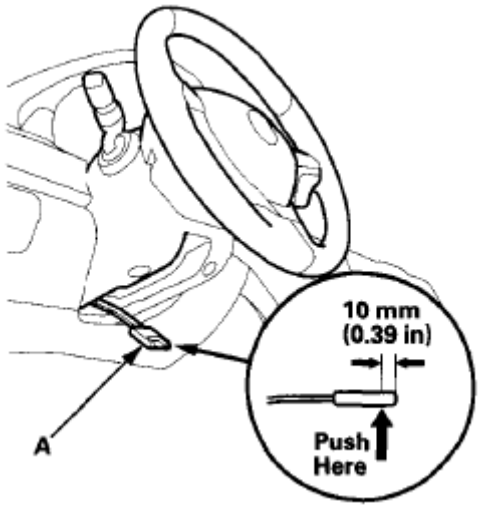


Fig. 23: Identifying Lock Lever
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Using a commercially available push-pull gauge, push the lock lever 10 mm (0.39 in) in from its end, and measure the force required to move the lock lever.

   Lock lever force:

   50-70 N (5.1-7.1 kgf, 11-16 lbf) min.

3. If the measurement is out of the specification, adjust the lock lever force using the following procedures:
   1. Remove the column covers (see **SIDE DEFOGGER VENT TRIM REMOVAL/INSTALLATION**).
   2. Adjust the lock lever force by turning the nut (A).
   3. Check the lock lever force again. If the measurement is still out of specification, replace the steering column as an assembly (see **STEERING COLUMN REMOVAL AND INSTALLATION**).
   4. Install the column covers (see **SIDE DEFOGGER VENT TRIM REMOVAL/INSTALLATION**).

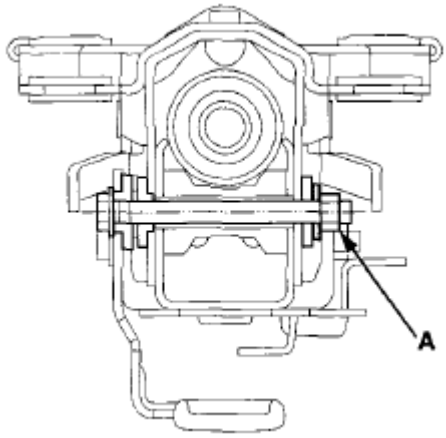


Fig. 24: Identifying Nut
Courtesy of AMERICAN HONDA MOTOR CO., INC.

STEERING LOCK REPLACEMENT

1. Remove the steering column (see **STEERING COLUMN REMOVAL AND INSTALLATION**).
2. Center-punch both of the shear bolts (A), and drill their heads off with a 5 mm (0.20 in) drill bit. Be careful not to damage the steering lock when removing the shear bolts.

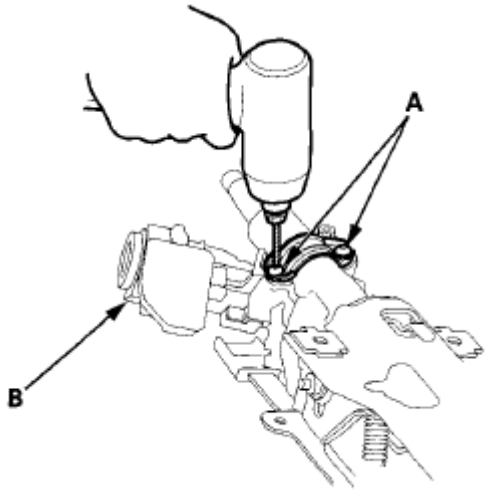


Fig. 25: Center-Punching Shear Bolts And Removing From Steering Lock
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Remove the shear bolts from the steering lock (B), then remove the steering lock.
4. Remove the immobilizer-keyless control unit from the steering lock, then install it on the new steering lock (see **IMMOBILIZER-KEYLESS CONTROL UNIT REGISTRATION**).
5. Install the steering lock without the key inserted.
6. Loosely tighten the new shear bolts.
7. Insert the ignition key, and check for proper operation of the steering wheel lock and that the ignition key turns freely.
8. Tighten the shear bolts (A) until the hex heads (B) twist off.

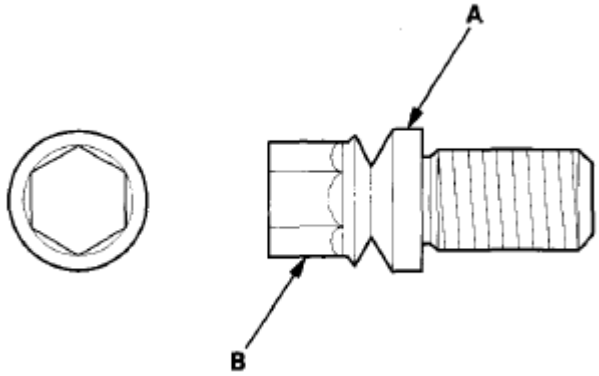


Fig. 26: Identifying Shear Bolts And Hex Heads
Courtesy of AMERICAN HONDA MOTOR CO., INC.

9. Install the steering column (see **INSTALLATION**).
10. Rewrite all new keys to the immobilizer-keyless control unit (see **IMMOBILIZER KEY REGISTRATION**), and make sure the immobilizer system works properly.

RACK GUIDE ADJUSTMENT

Special Tools Required

Locknut Wrench, 40 mm 07MAA-SL00100, 07916-SA50001, or 07AAA-TL2A100

1. Set the front wheels in the straight ahead position.
2. Loosen the rack guide screw locknut (A) with the locknut wrench, then remove the rack guide screw (B).

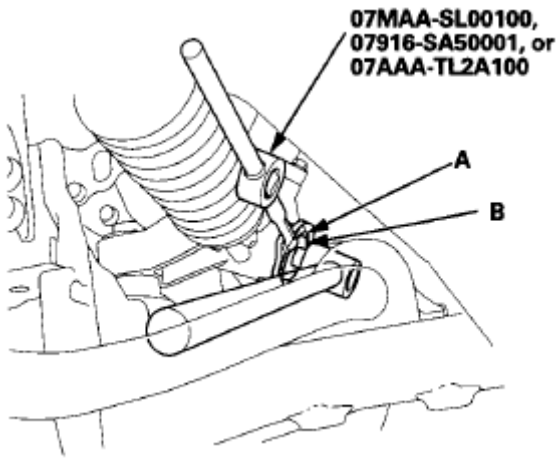


Fig. 27: Identifying Rack Guide Screw And Locknut
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Remove the old sealant from the rack guide screw (A), and apply new sealant (Three Bond 1215 or Loctite 5699) to the middle of the threads (B). Loosely install the rack guide screw on the steering gearbox.

NOTE: If more than 5 minutes have passed after applying the sealant, remove the old sealant and residue, and reapply new sealant.

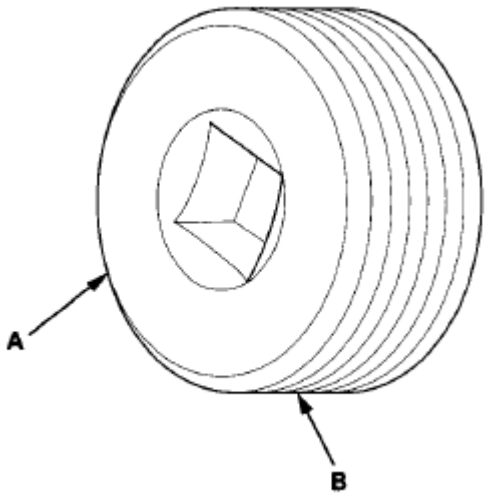


Fig. 28: Identifying Rack Guide Screw And Threads
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Tighten the rack guide screw (A) to 25 N.m (2.5 kgf.m, 18 lbf.ft), then loosen it.

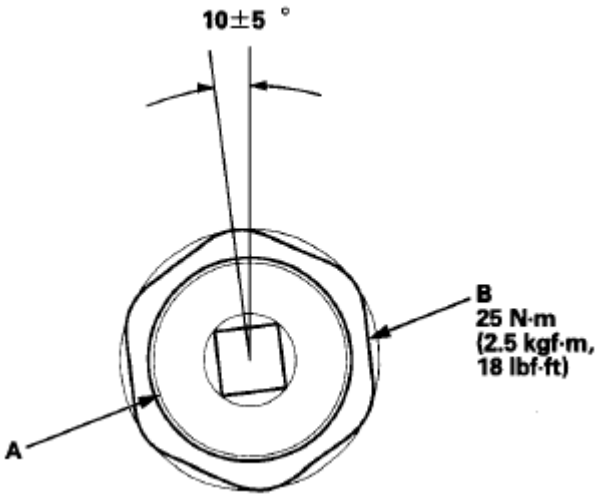


Fig. 29: Identifying Rack Guide Screw And Locknut With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Retighten the rack guide screw to 5.9 N.m (0.6 kgf.m, 4 lbf.ft), then back it off to the specified angle.

   Specified return angle: 10±5°

6. Hold the rack guide screw stationary with a wrench, and tighten the locknut (B) by hand until it's fully seated.
7. Install the locknut wrench on the locknut, and hold the rack guide screw stationary with a wrench. Tighten the locknut to the specified torque.
8. Check for unusual steering effort through the complete turning range.
9. Check the steering wheel rotational play (see **STEERING WHEEL ROTATIONAL PLAY CHECK**) and the power assist (see **POWER ASSIST CHECK**).

TIE-ROD END BALL JOINT BOOT REPLACEMENT

Special Tools Required

Bearing Driver Attachment, 36 mm 07965-SA50500

1. Disconnect the tie-rod end ball joint from the knuckle (see **STEERING GEARBOX REMOVAL AND INSTALLATION**).
2. Remove the tie-rod end from the rack end (see **RACK END REMOVAL AND INSTALLATION**).
3. Remove the ball joint boot from the tie-rod end, and wipe the old grease off the ball pin.
4. Pack the lower area of the ball pin (A) with fresh multipurpose grease.

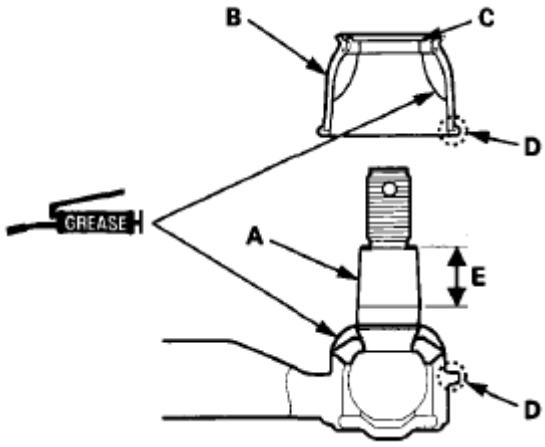


Fig. 30: Identifying Ball Pin, Ball Joint Boot, Boot Mounting Area, Tapered Section And Lip
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Pack the interior of the ball joint boot (6) and lip (C) with fresh multipurpose grease.

   Note these items when installing new grease:

   - Keep grease off the boot mounting area (D) and the tapered section (E) of the ball pin.
   - Do not allow dust, dirt, or other foreign materials to enter the boot.

6. Install the ball joint boot (A) using the bearing driver attachment. The boot must not have a gap at the boot installation sections (B). After installing the boot, check the ball pin tapered section for grease contamination, and wipe it if necessary.

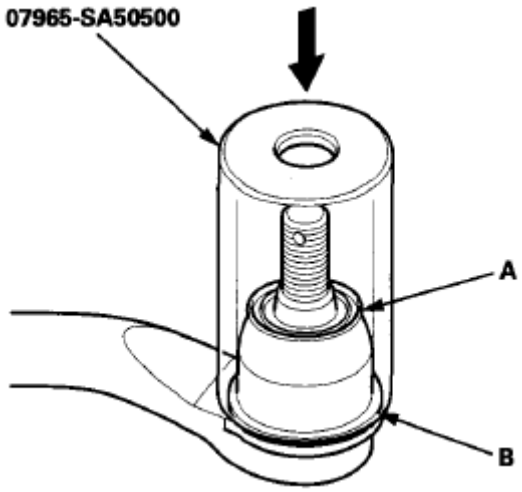


Fig. 31: Installing Ball Joint Boot Using Bearing Driver Attachment
Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Install the tie-rod end to the rack end.
8. Connect the tie-rod end ball joint to the knuckle (see **STEERING GEARBOX REMOVAL AND INSTALLATION**).

9. Check the wheel alignment, and adjust it if necessary (see **WHEEL ALIGNMENT**).

GEARBOX MOUNT CUSHION REPLACEMENT

1. Remove the steering gearbox (see **STEERING GEARBOX REMOVAL AND INSTALLATION**).
2. Position a 36 mm socket (A) on the flange part of the gearbox housing with a washer (B), a 10 x 150 mm flange bolt (C) and a 10 mm nut (D) as shown below.

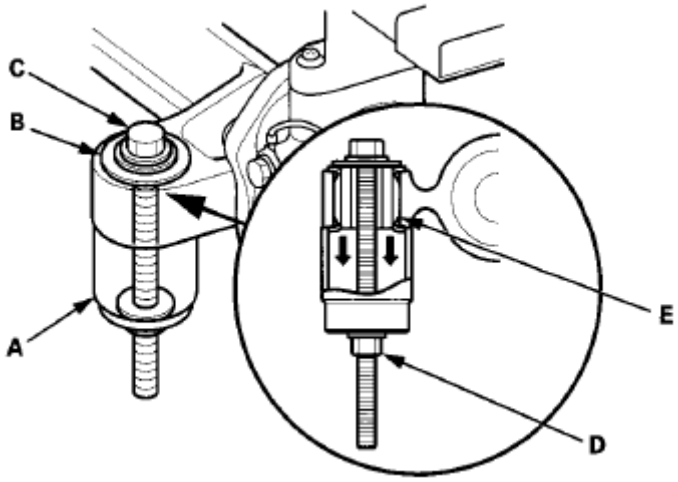


Fig. 32: Identifying Socket, Washer, Gearbox Mount Cushion, Flange Bolt And Nut
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Hold the flange bolt with a wrench, and tighten the nut with a wrench. Remove the gearbox mount cushion (E).
4. Apply a mild soap and water solution to the new gearbox mount cushion surface (A), then place the mount cushion on the gearbox mounting cushion hole.

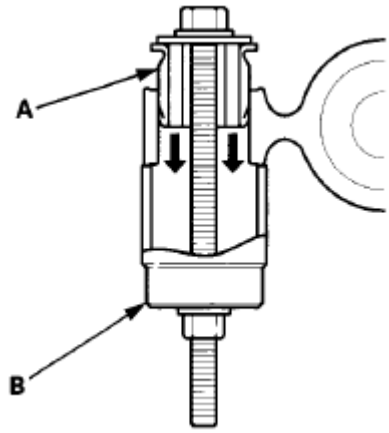


Fig. 33: Identifying Gearbox Mount Cushion Surface And Socket
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Position a 36 mm socket (B) on the flange part of the gearbox housing with a washer, a flange bolt, and the nut as shown above.
6. Install the gearbox mount cushion by tightening the nut until the mount cushion edge (A) properly fits on the gearbox flange surface (B).

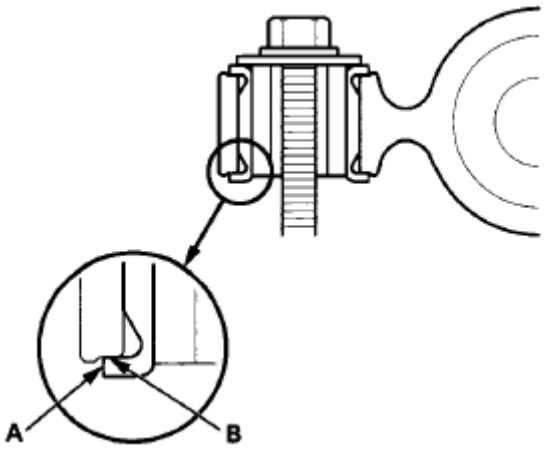


Fig. 34: Identifying Mount Cushion Edge And Gearbox Flange Surface
Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Install the steering gearbox (see **INSTALLATION**).

2012 SUSPENSION

ACURA WHEEL ALIGNMENT SPECIFICATIONS

WHEEL ALIGNMENT SPECIFICATIONS

MDX

MDX P255/50R19

Measurement	Minimum	Preferred	Maximum
Left Front Caster (°)	3.62	4.2	4.78
Right Front Caster (°)	3.62	4.2	4.78
Left Front Camber (°)	-1.5	-0.5	0.5
Right Front Camber (°)	-1.5	-0.5	0.5
Front Toe (°)	-0.17	0	0.17
Left SAI (°)	0	0	0
Right SAI (°)	0	0	0
Left Rear Camber (°)	-1.25	-0.5	0.25
Right Rear Camber (°)	-1.25	-0.5	0.25
Rear Toe (°)	0	0.17	0.32
Thrust Angle	0	0	0
Left Toe Out, Inward (°)	0	0	0
Right Toe Out, Inward (°)	0	0	0
Left Toe Out, Outward (°)	0	0	0
Right Toe Out, Outward (°)	0	36.2	38.2
Left Max Turn, Inward (°)	40.2	36.2	38.2
Right Max Turn, Inward (°)	40.2	31.73	31.73
Left Max Turn, Outward (°)	31.73	31.73	31.73
Right Max Turn, Outward (°)	31.73	-	-

MDX P255/55R18

Measurement	Minimum	Preferred	Maximum
Left Front Caster (°)	3.62	4.2	4.78
Right Front Caster (°)	3.62	4.2	4.78
Left Front Camber (°)	-1.5	-0.5	0.5
Right Front Camber (°)	-1.5	-0.5	0.5
Front Toe (°)	-0.17	0	0.17
Left SAI (°)	0	0	0
Right SAI (°)	0	0	0
Left Rear Camber (°)	-1.25	-0.5	0.25
Right Rear Camber (°)	-1.25	-0.5	0.25
Rear Toe (°)	0	0.17	0.32

Thrust Angle	0	0	0
Left Toe Out, Inward (°)	0	0	0
Right Toe Out, Inward (°)	0	0	0
Left Toe Out, Outward (°)	0	0	0
Right Toe Out, Outward (°)	0	36.2	38.2
Left Max Turn, Inward (°)	40.2	36.2	38.2
Right Max Turn, Inward (°)	40.2	31.73	31.73
Left Max Turn, Outward (°)	31.73	31.73	31.73
Right Max Turn, Outward (°)	31.73	-	-

RDX

RDX All Models

Measurement	Minimum	Preferred	Maximum
Left Front Caster (°)	1.95	2.95	3.95
Right Front Caster (°)	1.95	2.95	3.95
Left Front Camber (°)	-0.58	0.17	0.92
Right Front Camber (°)	-0.58	0.17	0.92
Front Toe (°)	-0.16	0	0.16
Left SAI (°)	0	0	0
Right SAI (°)	0	0	0
Left Rear Camber (°)	-1.75	-1	-0.25
Right Rear Camber (°)	-1.75	-1	-0.25
Rear Toe (°)	0.04	0.2	0.36
Thrust Angle	0	0	0
Left Toe Out, Inward (°)	0	0	0
Right Toe Out, Inward (°)	0	0	0
Left Toe Out, Outward (°)	0	0	0
Right Toe Out, Outward (°)	0	33.4	35.4
Left Max Turn, Inward (°)	37.4	33.4	35.4
Right Max Turn, Inward (°)	37.4	30.5	30.5
Left Max Turn, Outward (°)	30.5	30.5	30.5
Right Max Turn, Outward (°)	30.5	-	-

RL

RL All Models

Measurement	Minimum	Preferred	Maximum
Left Front Caster (°)	1.67	2.17	2.67
Right Front Caster (°)	1.67	2.17	2.67
Left Front Camber (°)	-0.63	-0.13	0.37
Right Front Camber (°)	-0.63	-0.13	0.37

Front Toe (°)	-0.16	0	0.16
Left SAI (°)	0	0	0
Right SAI (°)	0	0	0
Left Rear Camber (°)	-1.75	-1.25	-0.75
Right Rear Camber (°)	-1.75	-1.25	-0.75
Rear Toe (°)	0	0.16	0.32
Thrust Angle	0	0	0
Left Toe Out, Inward (°)	0	0	0
Right Toe Out, Inward (°)	0	0	0
Left Toe Out, Outward (°)	0	0	0
Right Toe Out, Outward (°)	0	35.32	37.32
Left Max Turn, Inward (°)	39.32	35.32	37.32
Right Max Turn, Inward (°)	39.32	30.65	30.65
Left Max Turn, Outward (°)	30.65	30.65	30.65
Right Max Turn, Outward (°)	30.65	-	-

TL

TL All Models With 17" Wheels

Measurement	Minimum	Preferred	Maximum
Left Front Caster (°)	3.05	3.8	4.55
Right Front Caster (°)	3.05	3.8	4.55
Left Front Camber (°)	-1.25	-0.5	0
Right Front Camber (°)	-1.25	-0.5	0
Front Toe (°)	-0.17	0	0.17
Left SAI (°)	0	0	0
Right SAI (°)	0	0	0
Left Rear Camber (°)	-1.75	-1	-0.5
Right Rear Camber (°)	-1.75	-1	-0.5
Rear Toe (°)	0	0.17	0.32
Thrust Angle	0	0	0
Left Toe Out, Inward (°)	0	0	0
Right Toe Out, Inward (°)	0	0	0
Left Toe Out, Outward (°)	0	0	0
Right Toe Out, Outward (°)	0	36.1	38.1
Left Max Turn, Inward (°)	40.1	36.1	38.1
Right Max Turn, Inward (°)	40.1	29.4	30.4
Left Max Turn, Outward (°)	31.4	29.4	30.4
Right Max Turn, Outward (°)	31.4	-	-

TL All Models With 18" Wheels

Measurement	Minimum	Preferred	Maximum

Left Front Caster (°)	3.05	3.8	4.55
Right Front Caster (°)	3.05	3.8	4.55
Left Front Camber (°)	-1.25	-0.5	0
Right Front Camber (°)	-1.25	-0.5	0
Front Toe (°)	-0.16	0	0.16
Left SAI (°)	0	0	0
Right SAI (°)	0	0	0
Left Rear Camber (°)	-1.75	-1	-0.5
Right Rear Camber (°)	-1.75	-1	-0.5
Rear Toe (°)	0	0.16	0.32
Thrust Angle	0	0	0
Left Toe Out, Inward (°)	0	0	0
Right Toe Out, Inward (°)	0	0	0
Left Toe Out, Outward (°)	0	0	0
Right Toe Out, Outward (°)	0	36.1	38.1
Left Max Turn, Inward (°)	40.1	36.1	38.1
Right Max Turn, Inward (°)	40.1	29.4	30.4
Left Max Turn, Outward (°)	31.4	29.4	30.4
Right Max Turn, Outward (°)	31.4	-	-

TSX

TSX L4 Engine

Measurement	Minimum	Preferred	Maximum
Left Front Caster (°)	2.95	3.78	3.95
Right Front Caster (°)	2.95	3.78	3.95
Left Front Camber (°)	-0.5	0	0.5
Right Front Camber (°)	-0.5	0	0.5
Front Toe (°)	-0.16	0	0.16
Left SAI (°)	0	0	0
Right SAI (°)	0	0	0
Left Rear Camber (°)	-1.5	-1	-0.5
Right Rear Camber (°)	-1.5	-1	-0.5
Rear Toe (°)	0	0.16	0.32
Thrust Angle	0	0	0
Left Toe Out, Inward (°)	0	0	0
Right Toe Out, Inward (°)	0	0	0
Left Toe Out, Outward (°)	0	0	0
Right Toe Out, Outward (°)	0	36.97	38.97
Left Max Turn, Inward (°)	40.97	36.97	38.97
Right Max Turn, Inward (°)	40.97	31.47	31.47

Left Max Turn, Outward (°)	31.47	31.47	31.47
Right Max Turn, Outward (°)	31.47	-	-

TSX V6 Engine

Measurement	Minimum	Preferred	Maximum
Left Front Caster (°)	3.03	3.87	4.03
Right Front Caster (°)	3.03	3.87	4.03
Left Front Camber (°)	-0.55	-0.05	0.45
Right Front Camber (°)	-0.55	-0.05	0.45
Front Toe (°)	-0.16	0	0.16
Left SAI (°)	0	0	0
Right SAI (°)	0	0	0
Left Rear Camber (°)	-1.7	-1.2	-0.7
Right Rear Camber (°)	-1.7	-1.2	-0.7
Rear Toe (°)	0	0.16	0.32
Thrust Angle	0	0	0
Left Toe Out, Inward (°)	0	0	0
Right Toe Out, Inward (°)	0	0	0
Left Toe Out, Outward (°)	0	0	0
Right Toe Out, Outward (°)	0	34.98	36.98
Left Max Turn, Inward (°)	38.98	34.98	36.98
Right Max Turn, Inward (°)	38.98	30.38	30.38
Left Max Turn, Outward (°)	30.38	30.38	30.38
Right Max Turn, Outward (°)	30.38	-	-

ZDX

ZDX All Models

Measurement	Minimum	Preferred	Maximum
Left Front Caster (°)	4.03	4.63	5.23
Right Front Caster (°)	4.03	4.63	5.23
Left Front Camber (°)	-1.25	-0.5	0.25
Right Front Camber (°)	-1.25	-0.5	0.25
Front Toe (°)	-0.16	0	0.16
Left SAI (°)	0	0	0
Right SAI (°)	0	0	0
Left Rear Camber (°)	-1.25	-0.5	0.25
Right Rear Camber (°)	-1.25	-0.5	0.25
Rear Toe (°)	0	0.16	0.32
Thrust Angle	0	0	0
Left Toe Out, Inward (°)	0	0	0
Right Toe Out, Inward (°)	0	0	0

Left Toe Out, Outward (°)	0	0	0
Right Toe Out, Outward (°)	0	36.2	38.2
Left Max Turn, Inward (°)	40.2	36.2	38.2
Right Max Turn, Inward (°)	40.2	31.73	31.73
Left Max Turn, Outward (°)	31.73	31.73	31.73
Right Max Turn, Outward (°)	31.73	-	-

2012 SUSPENSION

Front And Rear Suspension (Inspection) - TL

SPECIAL TOOLS

Ref.No.	Tool Number	Description	Qty
①	070AG-SJA0300	Clip Guide, 45 mm	1
②	070AG-SJAA10S	Subframe Alignment Pin	1
③	07746-0010600	Attachment, 72 x 75 mm	1
④	07749-0010000	Driver Handle, 15 x 135L	1
⑤	07965-SD90100	Support Base	1
⑥	07974-SA50700	Clip Guide, 41 mm	1
⑦	07AAE-SJAA100	Ball Joint Thread Protector, 14 mm	1
⑧	07AAF-SDAA100	Ball Joint Thread Protector, 12 mm	1
⑨	07AAF-SECA120	Ball Joint Thread Protector, 10 mm	1
⑩	07AAF-TL2A150	Ball Joint Tool Kit	1
⑪	07GAF-SD4A100	Hub Dis/Assembly Pin, 42mm	1
⑫	07MAC-SL0A102	Ball Joint Remover, 32 mm	1
⑬	07MAC-SL0A202	Ball Joint Remover, 28 mm	1
⑭	07XAF-001050A	Adapter G	1
⑮	07ZAD-PNAA100	Oil Seal Driver Attachment, 96 mm	1

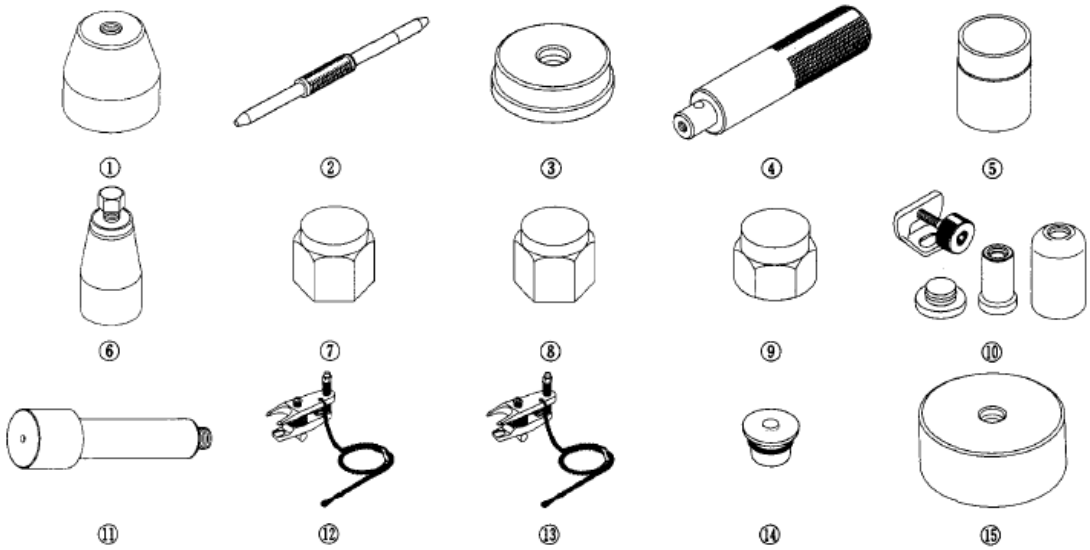


Fig. 1: Identifying Front And Rear Suspension Special Tools
Courtesy of AMERICAN HONDA MOTOR CO., INC.

COMPONENT LOCATION INDEX - FRONT SUSPENSION

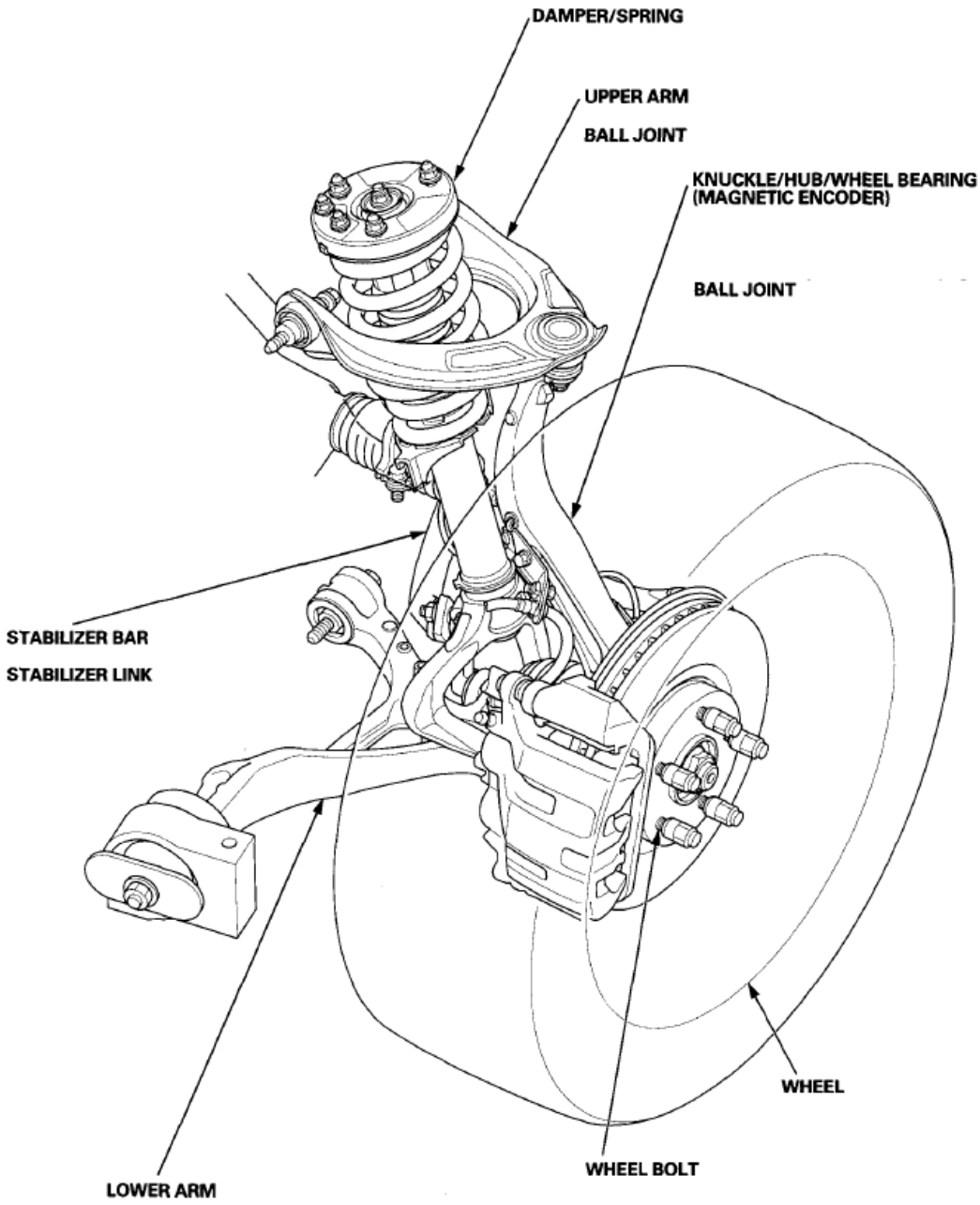


Fig. 2: Front Suspension Components Location
Courtesy of AMERICAN HONDA MOTOR CO., INC.

COMPONENT LOCATION INDEX - REAR SUSPENSION

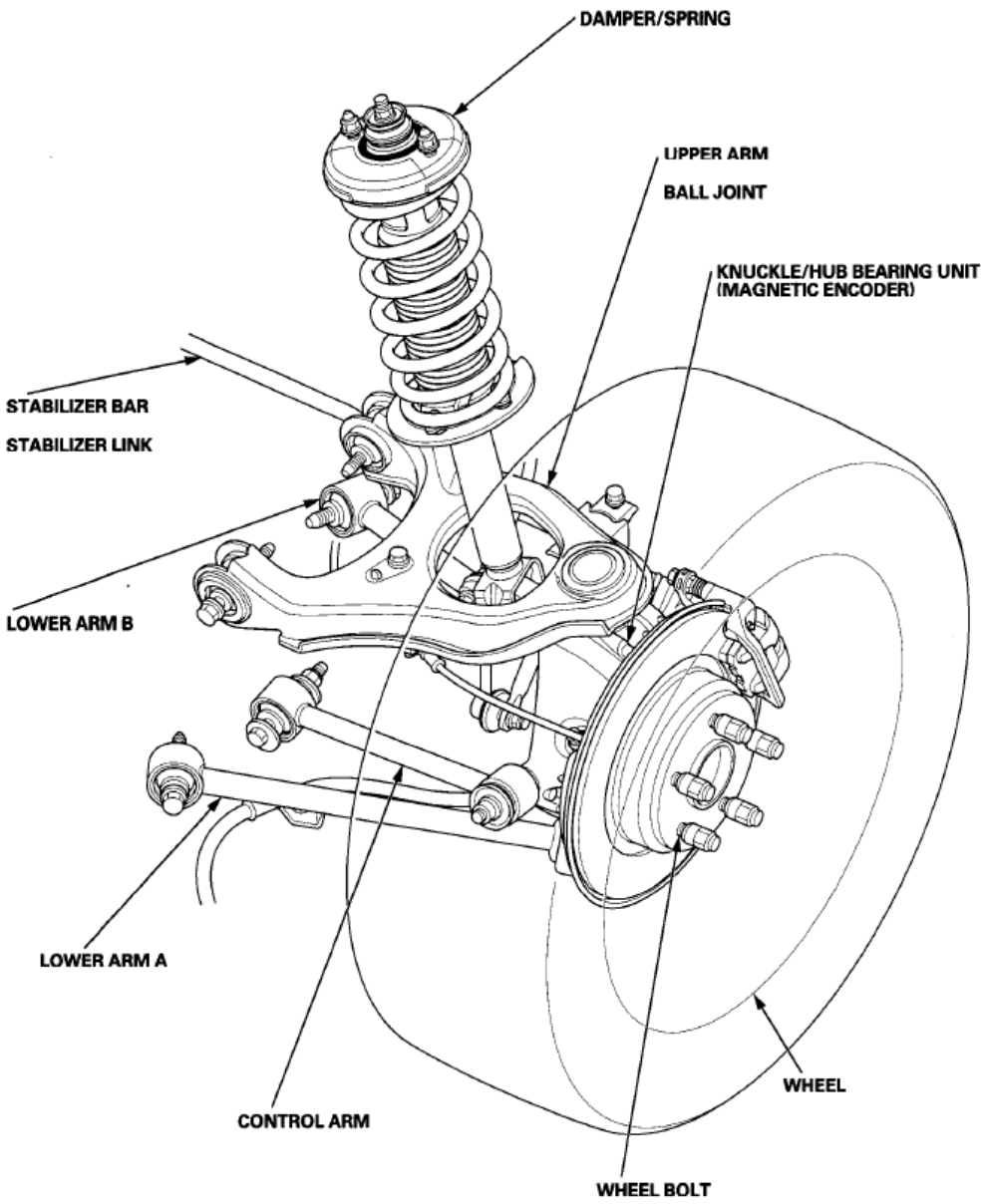


Fig. 3: Rear Suspension Components Location
Courtesy of AMERICAN HONDA MOTOR CO., INC.

WHEEL ALIGNMENT

NOTE: After adjusting the wheel alignment on a model with SH-AWD, do the VSA sensor neutral position memorization (see YAW RATE-ACCELERATION SENSOR REPLACEMENT).

The suspension can be adjusted for front and rear toe.

PRE-ALIGNMENT CHECKS

For proper inspection and adjustment of the wheel alignment, do these checks:

1. Release the parking brake to avoid an incorrect measurement.
2. Make sure the suspension is not modified.
3. Make sure the fuel tank is full, and that the spare tire, the jack, and the tools are in place on the vehicle.
4. Check the tire size and tire pressure.

   Tire size:

   Without SH-AWD:

   17 inch wheels:

   Front/Rear: P245/50R17 98V

   18 inch wheels:

   Front/Rear: P245/45R18 96V

   With SH-AWD:

   18 inch wheels:

   Front/Rear: P245/45R18 96V

   19 inch wheels:

   Front/Rear: P245/40R19 94V

   Tire pressure (at cold):

   Without SH-AWD:

   Front/Rear: 220 kPa (2.2 kgf/cm^2 , 32 psi)

   With SH-AWD (P245/45R18 96V tire):

   Front/Rear: 220 kPa (2.2 kgf/cm^2 , 32 psi)

   With SH-AWD (P245/40R19 94V tire):

   Front/Rear: 235 kPa (2.4 kgf/cm^2 , 34 psi)

5. Check the runout of the wheels and tires (see **WHEEL RUNOUT INSPECTION**).
6. Check the suspension ball joints (Raise and support the vehicle (see **LIFT AND SUPPORT POINTS**).

Hold a tire with your hands, and move it up and down and right and left to check for movement).

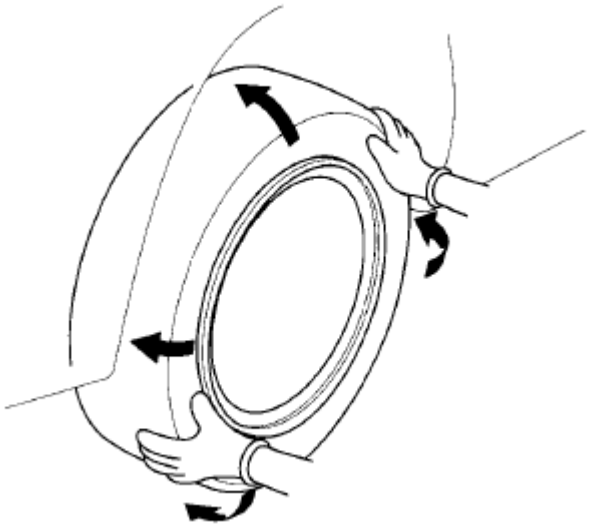


Fig. 4: Checking Suspension Ball Joints
Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Before doing alignment inspections, be sure to remove all extra weight from the vehicle, and no one should be inside the vehicle (driver or passengers).
8. Lower the vehicle to the ground. Bounce the vehicle up and down several times to stabilize the suspension.
9. Check that the steering column is set at the center tilt position and the center telescopic position.

CASTER INSPECTION

Use commercially available computerized four wheel alignment equipment to measure wheel alignment (caster, camber, toe, and turning angle). Follow the equipment manufacturer's instructions.

1. Check the caster angle.

   Caster angle: 3° 48 '±45'

   (Maximum difference between the right and left side: 0 ° 30')

   - If the measurement is within specifications, measure the camber angle.
   - If the measurement is not within specifications, check for bent or damaged suspension components.

CAMBER INSPECTION

Use commercially available computerized four wheel alignment equipment to measure wheel alignment (caster, camber, toe, and turning angle). Follow the equipment manufacturer's instructions.

1. Check the camber angle.

Camber angle:

Front: -0 ° 30'$^{+30'}_{-45'}$

Rear: -1 °00'$^{+30'}_{-45'}$

(Maximum difference between the right and left side: 0 ° 30')

- If the measurement is within specifications, measure the toe-in.
- If the measurement is not within specifications, check for bent or damaged suspension components.

REAR TOE INSPECTION/ADJUSTMENT

Use commercially available computerized four wheel alignment equipment to measure wheel alignment (caster, camber, toe, and turning angle). Follow the equipment manufacturer's instructions.

1. Release the parking brake to avoid an incorrect measurement.
2. Check the toe.

   Rear toe-in: 2±2 mm (0.08±0.08 in)

   - If adjustment is required, go to step 3.
   - If no adjustment is required, go to **FRONT TOE INSPECTION/ADJUSTMENT**.
3. Hold the adjusting bolt (A) on the rear control arm (B), and loosen the self-locking nut (C).

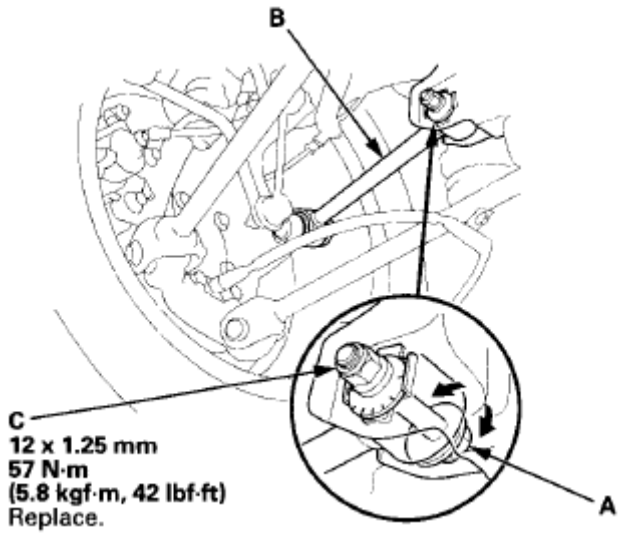


Fig. 5: Identifying Rear Control Arm, Self-Locking Nut And Adjusting Bolt With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Replace the self-locking nut with a new one, and lightly tighten it.

NOTE: Always use a new self-locking nut whenever it has been tightened to the specified torque.

5. Adjust the rear toe by turning the adjusting bolt until the toe is correct.
6. While holding the adjusting bolt, tighten the self-locking nut to the specified torque.

FRONT TOE INSPECTION/ADJUSTMENT

Use commercially available computerized four wheel alignment equipment to measure wheel alignment (caster, camber, toe, and turning angle). Follow the equipment manufacturer's instructions.

1. Set the steering column to the middle tilt position and telescopic positions. Center the steering wheel spokes, and install a steering wheel holder tool.
2. Check the toe with the wheels pointed straight ahead.

   Front toe-in: 0±2 mm (0±0.08 in)

   - If adjustment is required, go to step 3.
   - If no adjustment is required, remove the alignment equipment.
3. Loosen the tie-rod end locknuts (A) while holding the flat surface sections (B) of the tie-rod end with a wrench, and turn both tie-rods (C) until the front toe is within specifications.

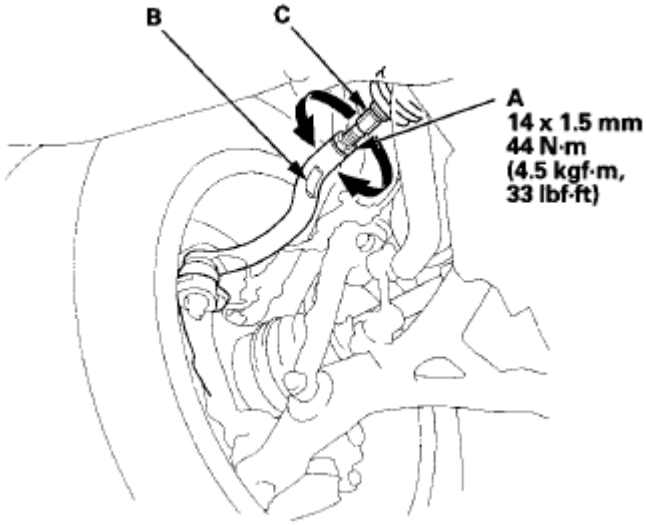


Fig. 6: Turning Both Tie-Rods Till Front Toe Comes Within Specifications With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. After adjusting, tighten the tie-rod end locknuts to the specified torque. Reposition the rack-end boot if it is twisted or displaced.

TURNING ANGLE INSPECTION

Use commercially available computerized four wheel alignment equipment to measure wheel alignment (caster, camber, toe, and turning angle). Follow the equipment manufacturer's instructions.

1. Turn the wheel right and left while applying the brake, and measure the turning angle of both wheels.

   Turning angle:

   Inward: 38 ° 06' ±2 °

   Outward (reference): 30° 24' ±1°

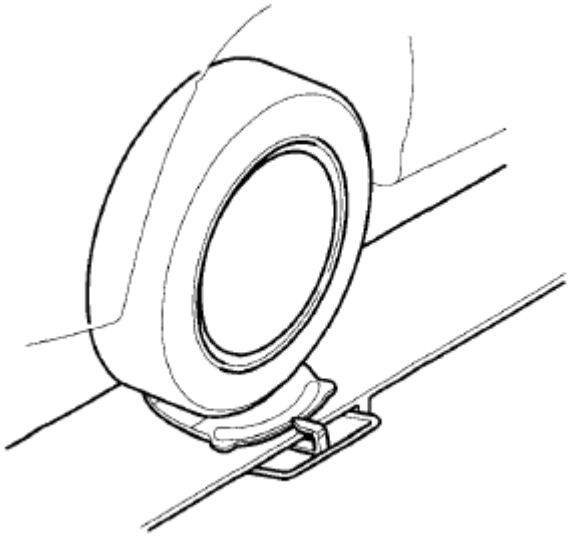


Fig. 7: Measuring Turning Angle Of Wheels
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. If the measurement is not within the specifications, even up both sides of the tie-rod threaded section length while adjusting the front toe. If it is correct, but the turning angle is not within the specifications, check for bent or damaged suspension components.

WHEEL BEARING END PLAY INSPECTION

1. Raise and support the vehicle (see **LIFT AND SUPPORT POINTS**).
2. Remove the wheels.
3. Install suitable flat washers (A) and the wheel nuts (B). Tighten the nuts to the specified torque to hold the brake disc or the brake disc/drum securely against the hub.

   Front

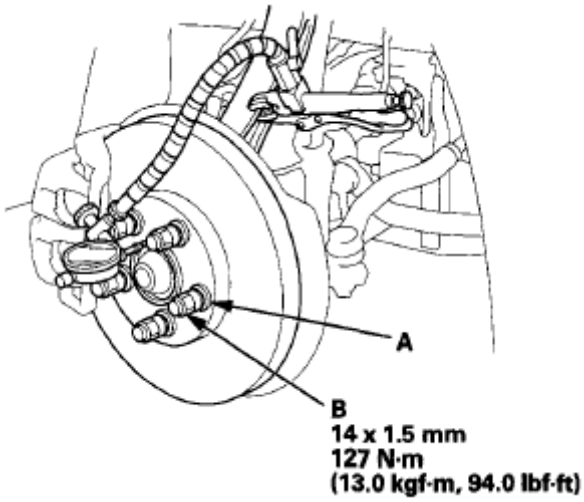


Fig. 8: Identifying Flat Washers And Wheel Nuts With Torque Specifications - Front
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Rear

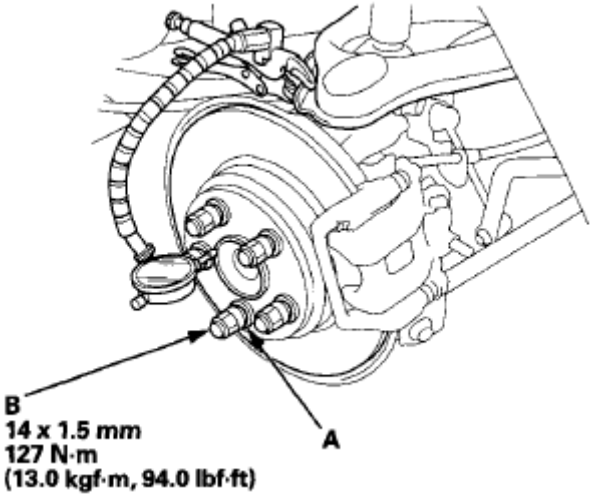


Fig. 9: Identifying Flat Washers And Wheel Nuts With Torque Specifications - Rear
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Attach the dial gauge. Place the dial gauge against the hub flange.
5. Measure the bearing end play while moving the brake disc or the brake disc/drum inward and outward.

   Wheel bearing end play:

   Front/Rear: 0- 0.05 mm (0- 0.0020 in)

6. If the bearing end play measurement is more than the standard, replace the wheel bearing or the hub bearing unit.

WHEEL RUNOUT INSPECTION

1. Raise and support the vehicle (see **LIFT AND SUPPORT POINTS**).
2. Check for bent or deformed wheels.
3. Set up the dial gauge as shown, and measure the axial runout by turning the wheel.

   Front and rear wheel axial runout:

   Standard: 0- 0.7 mm (0- 0.028 in)

   Service limit: 2.0 mm (0.079 in)

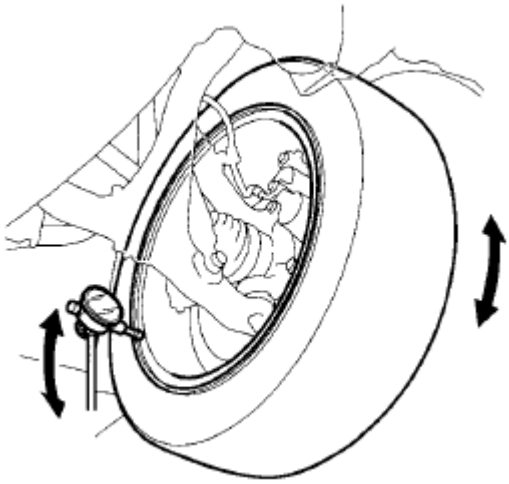


Fig. 10: Measuring Front And Rear Wheel Axial Runout Using Dial Gauge
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Reset the dial gauge to the position shown, and measure the radial runout.

   Front and rear wheel radial runout:

   Standard: 0- 0.7 mm (0- 0.028 in)

   Service limit: 1.5 mm (0.059 in)

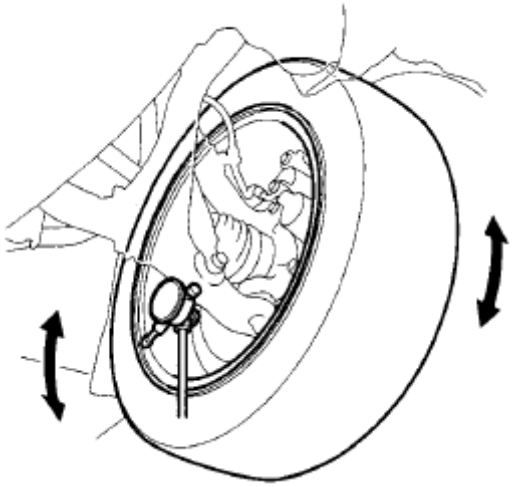


Fig. 11: Measuring Front And Rear Wheel Radial Runout Using Dial Gauge
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. If the wheel runout is not within the specification, check the wheel bearing end play (see **TURNING ANGLE INSPECTION**), and make sure the mating surfaces between the brake disc or the brake disc/drum and the inside of the wheel are clean.
6. If the bearing end play is within the specification but the wheel runout is more than the service limit, replace the wheel.

WHEEL BOLT REPLACEMENT

Special Tools Required

Ball Joint Remover, 28 mm 07MAC-SL0A202

NOTE:
- **Do not use a hammer or impact tools (pneumatic or electric) to remove and install the wheel bolts.**
- **Be careful not to damage the threads of the wheel bolts.**

FRONT

1. Remove the front hub (see **KNUCKLE/HUB REPLACEMENT**).
2. Separate the wheel bolt (A) from the hub (B) using a hydraulic press. Support the hub with hydraulic press attachments (C) or equivalent tools.

NOTE: Before installing the new wheel bolt, clean the mating surfaces on the bolt and the hub.

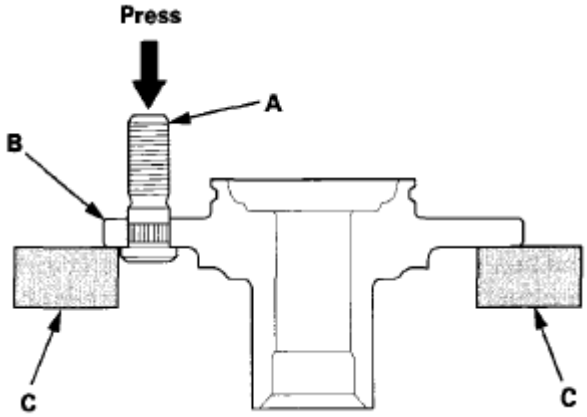


Fig. 12: Separating Wheel Bolt From Hub Using Hydraulic Press
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Insert the new wheel bolt into the hub while aligning the splined surfaces on the hub hole with the wheel bolt.

NOTE:
- **Degrease the area around the wheel bolt.**
- **Make sure the wheel bolt is installed vertically to the hub disc surface.**

4. Install the wheel bolt using a hydraulic press until the wheel bolt shoulder is fully seated.
5. Install the front hub (see **KNUCKLE/HUB REPLACEMENT**).

NOTE: If you cannot tighten the wheel nut to the specified torque value when installing the wheel, replace the front hub as an assembly.

REAR

1. Raise and support the vehicle (see **LIFT AND SUPPORT POINTS**).
2. Remove the rear brake disc/drum (see **REAR BRAKE DISC REPLACEMENT**).
3. Separate the wheel bolt (A) from the hub (B) using the ball joint remover (C), and keep the jaw (D) of the ball joint remover vertically against the wheel bolt (see **BALL JOINT REMOVAL**).

NOTE:
- **If the angle of the remover against the wheel bolt is not vertical, readjust the ball joint remover by turning the head (E) of the adjusting bolt (F).**
- **Before installing the new wheel bolt, clean the mating surfaces on the bolt and the hub.**

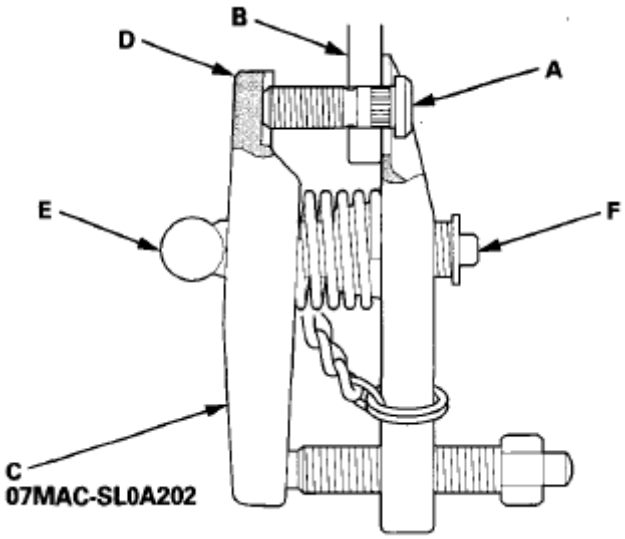


Fig. 13: Identifying Hub, Ball Joint Remover, Jaw, Head, Adjusting And Wheel Bolt
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Insert the new wheel bolt (A) into the hub (B) while aligning the splined surfaces (C) on the hub hole with the wheel bolt. Adjust the measurement (D) with the washers (P/N 94101-14800 or equivalent) (E), then install a nut (P/N 90304-SHJ-A91 or equivalent) (F) hand-tight.

NOTE:

- **Degrease the area around the wheel bolt and the threaded section of the nut.**
- **Make sure the wheel bolt is installed vertically to the hub disc surface.**
- **Do not install the nut and the washers that have been used as tools on a vehicle.**

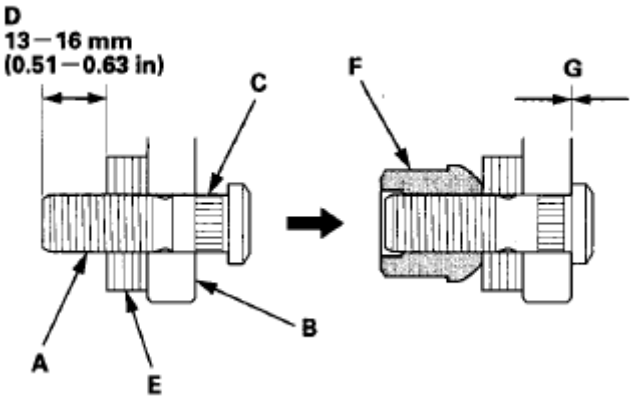


Fig. 14: Inserting Wheel Bolt Into Hub While Aligning Splined Surfaces On Hub Hole With Wheel Bolt
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Tighten the nut until the wheel bolt is drawn fully into the hub. Do not exceed the maximum torque limit.

Make sure there is no gap (G) between the bolt and the hub.

Limited torque:

127 N.m (13.0 kgf.m, 94.0 lbf.ft) max.

6. Install the rear brake disc/drum (see **REAR BRAKE DISC REPLACEMENT**).

NOTE:

- **If you cannot tighten the wheel nut to the specified torque when installing the wheel, replace the rear hub bearing unit as an assembly.**
- **Before installing the wheel, clean the mating surfaces between the brake disc/drum and the inside of the wheel.**

BALL JOINT REMOVAL

Special Tools Required

- Ball Joint Thread Protector, 14 mm 07AAE-SJAA100
- Ball Joint Thread Protector, 12 mm 07AAF-SDAA100
- Ball Joint Thread Protector, 10 mm 07AAF-SECA120
- Ball Joint Remover, 32 mm 07MAC-SL0A102
- Ball Joint Remover, 28 mm 07MAC-SL0A202

NOTE: Always use a ball joint remover to disconnect a ball joint. Do not strike the housing or any other part of the ball joint connection to disconnect it.

1. Install a hex nut (A) or the ball joint thread protector onto the threads of the ball joint (B).

NOTE: Using a hex nut, make sure the nut is flush with the ball joint pin end to prevent damage to the threaded end of the ball joint pin.

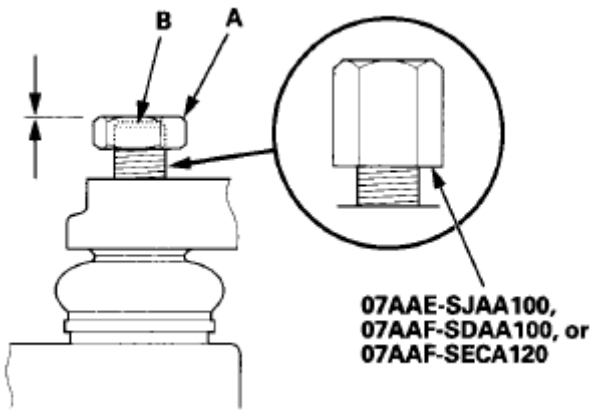


Fig. 15: Identifying Hex Nut And Threads Of Ball Joint
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Apply grease to the ball joint remover on the areas as shown (A). This will ease the installation of the tool, and prevent damage to the pressure bolt (B) threads.

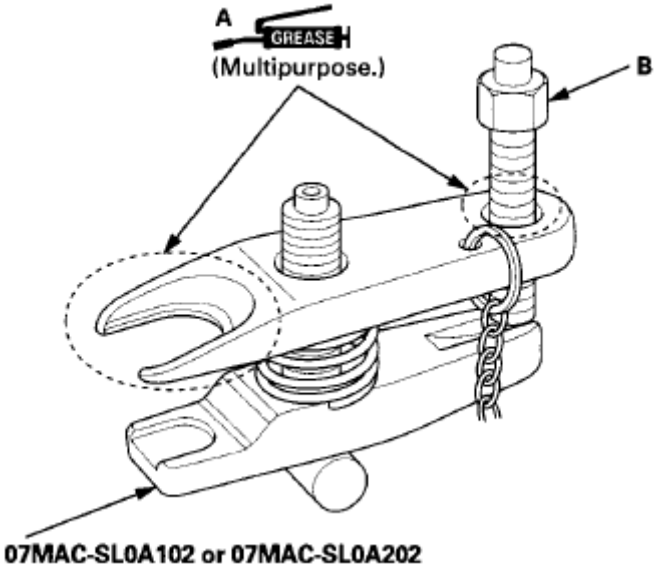


Fig. 16: Applying Grease To Ball Joint Remover On Specified Areas
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Loosen the pressure bolt (A), and install the ball joint remover as shown. Insert the jaws carefully, making sure not to damage the ball joint boot. Adjust the jaw spacing by turning the adjusting bolt (B).

NOTE: Fasten the safety chain (C) securely to a suspension arm or the subframe (D). Do not fasten it to a brake line or wire harness.

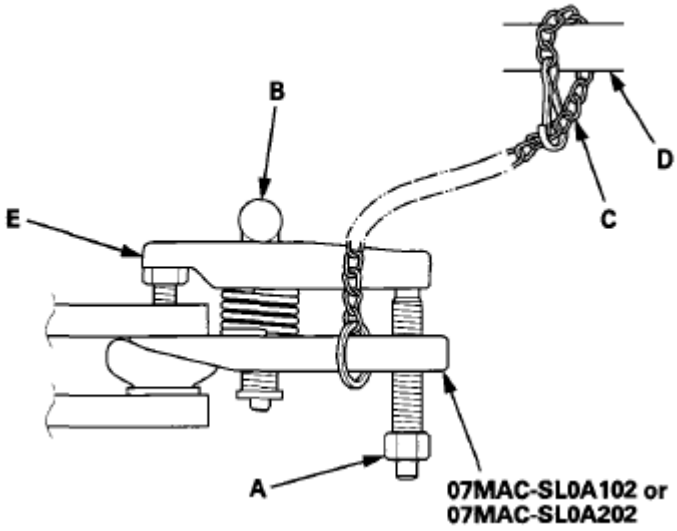


Fig. 17: Identifying Safety Chain, Subframe, Jaw, Pressure And Adjusting Bolt
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. After adjusting the adjusting bolt, make sure the head of the adjusting bolt is in the position shown to allow the jaw (E) to pivot.
5. With a wrench, tighten the pressure bolt until the ball joint pin pops loose from the ball joint connecting hole. If necessary, apply penetrating type lubricant to loosen the ball joint pin.

NOTE: Do not use pneumatic or electric tools on the pressure bolt.

6. Remove the ball joint remover, then remove the nut or the ball joint thread protector from the end of the ball joint pin, and pull the ball joint out of the ball joint connecting hole. Inspect the ball joint boot, and replace it if damaged.

BALL JOINT BOOT INSPECTION/REPLACEMENT

Special Tools Required

- Clip Guide, 45 mm 070AG-SJA0300
- Clip Guide, 41 mm 07974-SA50700

FRONT KNUCKLE/FRONT UPPER ARM/REAR UPPER ARM

1. Check the ball joint boot for weakness, damage, cracks, and grease leaks.

NOTE:
- **If the ball joint boot is damaged with grease leaks, replace the appropriate part as an assembly.**
- **If the ball joint boot is weak and crack, but does not leak grease, go to step 2. Replace the appropriate ball joint boot.**

2. Disconnect the appropriate ball joint connection, and remove the component including the ball joint:
   - The front knuckle (see **KNUCKLE/HUB REPLACEMENT**).
   - The front upper arm (see **UPPER ARM REPLACEMENT**).
   - The rear upper arm (see **UPPER ARM REPLACEMENT**).
3. Paint a alignment mark (A) in the center between the both boot clip end faces (B) on the appropriate part (C).

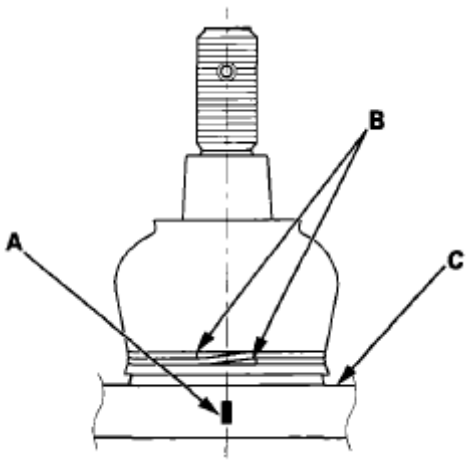


Fig. 18: Identifying Boot Clip End Faces And Alignment Mark
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Remove the boot clip and the boot.
5. Pack the interior and lip (A) of a new boot with grease. Keep the grease off of the boot-to-housing mating surfaces (B).

NOTE: Use the grease that comes with the ball joint kit, or multi-purpose grease.

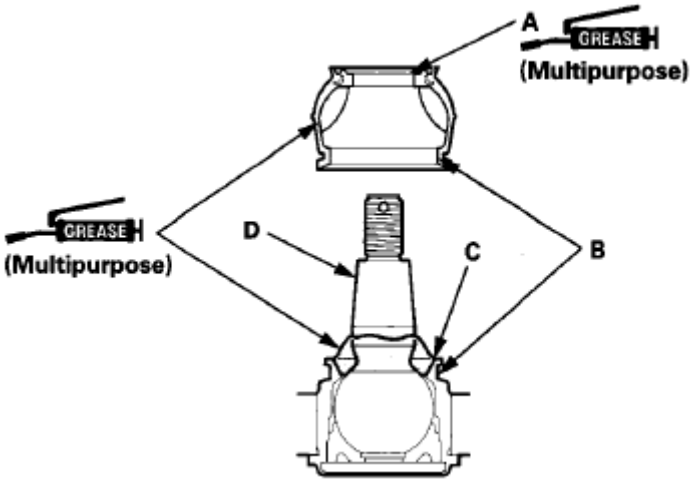


Fig. 19: Identifying Lip, Boot-To-Housing Mating Surfaces, Base And Ball Joint Pin
Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Pack fresh grease into the base (C). Do not let dirt or other foreign materials get into the boot.
7. Install the boot on the ball joint, then squeeze it gently to force out any air, then wipe the grease off the tapered portion of the ball joint pin (D).
8. The front knuckle ball joint or the rear upper arm ball joint: Adjust the depth by turning the clip guide until its base is just above the groove around (A) the bottom of the boot. Then slide the clip (B) over the tool and into position on the boot.

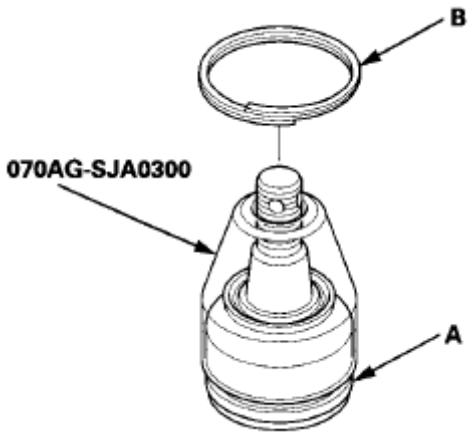


Fig. 20: Identifying Clip And Groove Around Bottom Of Boot
Courtesy of AMERICAN HONDA MOTOR CO., INC.

9. The front upper arm ball joint: Adjust the clip guide with the adjusting bolt (A) until its base is just above the groove around (B) the bottom of the boot. Then slide the clip (C) over the clip guide and into position on the boot.

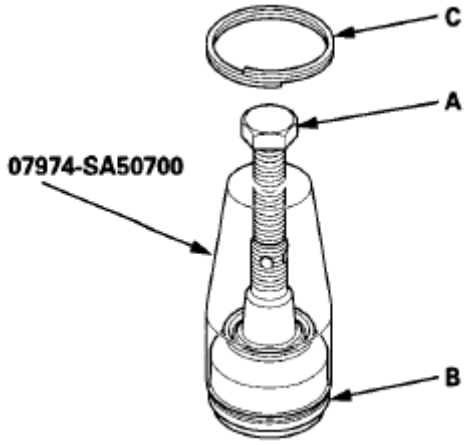


Fig. 21: Identifying Clip, Adjusting Bolt And Groove Around Bottom Of Boot
Courtesy of AMERICAN HONDA MOTOR CO., INC.

10. Align the center between the both end faces of the boot clip to alignment mark of the appropriate part.
11. After installing a boot, wipe any grease off the exposed portion of the ball joint pin.
12. Install all of the removed parts.

2012 SUSPENSION

Front Suspension - TL

KNUCKLE/HUB/WHEEL BEARING REPLACEMENT

EXPLODED VIEW

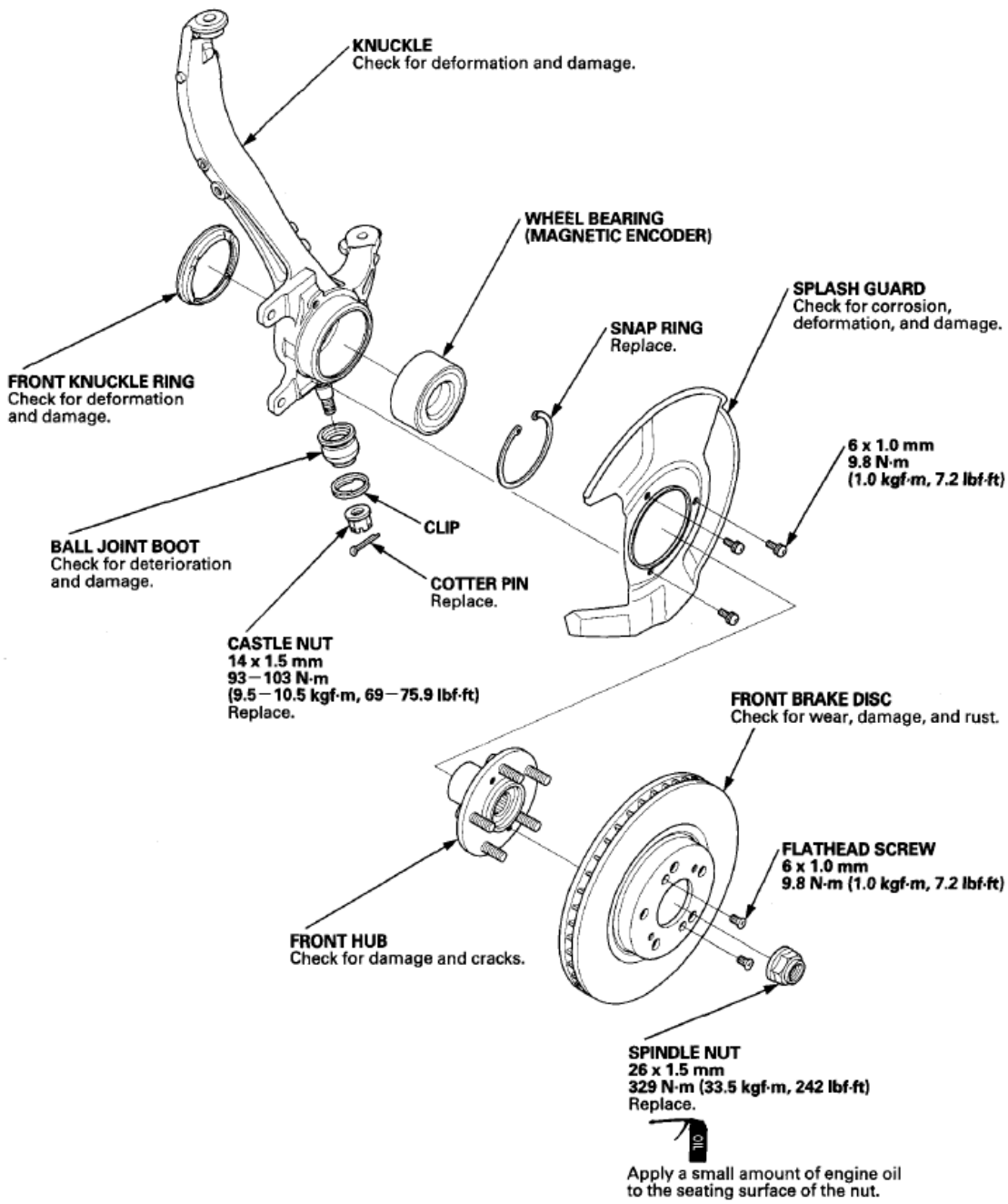


Fig. 1: Exploded View Of Knuckle/Hub/Wheel Bearing With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Special Tools Required

- Ball Joint Remover, 28 mm 07MAC-SL0A202
- Ball Joint Thread Protector, 14 mm 07AAE-SJAA100
- Ball Joint Thread Protector, 12 mm 07AAF-SDAA100
- Ball Joint Thread Protector, 10 mm 07AAF-SECA120
- Hub Dis/Assembly Pin, 42mm 07GAF-SD4A100
- Attachment, 72 x 75 mm 07746-0010600
- Driver Handle, 15 x 135L 07749-0010000
- Oil Seal Driver Attachment, 96 mm 07ZAD-PNAA100
- Support Base 07965-SD90100

NOTE: Refer to the EXPLODED VIEW as needed during the following procedure.

KNUCKLE/HUB REPLACEMENT

1. Raise and support the vehicle (see **LIFT AND SUPPORT POINTS**).
2. Remove the wheel nuts (A) and the front wheel.

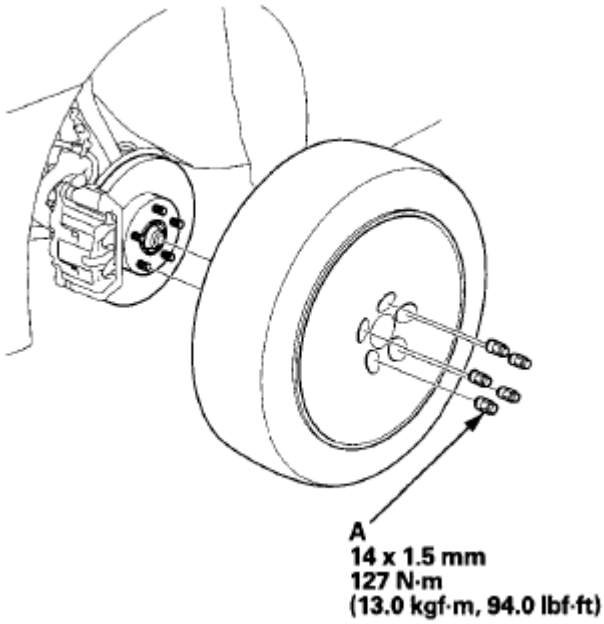


Fig. 2: Identifying Wheel Nuts With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Remove the brake hose bracket mounting bolt (A).

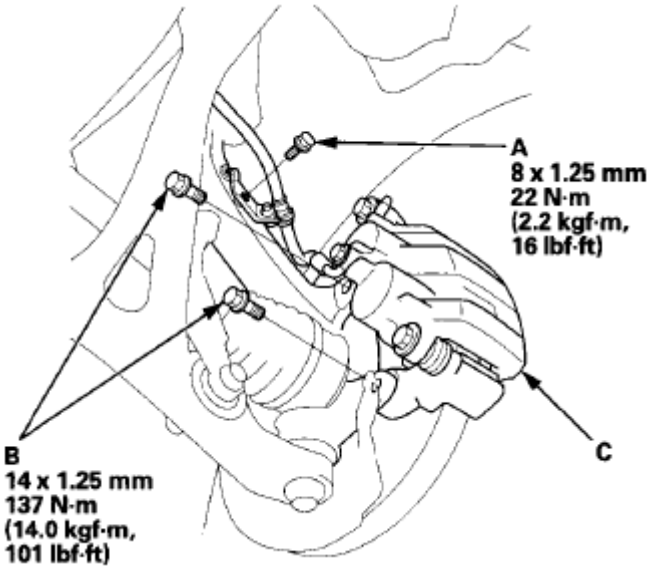


Fig. 3: Identifying Caliper Assembly, Brake Caliper Bracket And Brake Hose Bracket Mounting Bolts With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Remove the brake caliper bracket mounting bolts (B), then remove the caliper assembly (C) from the knuckle. To prevent damage to the caliper assembly or the brake hose, use a short piece of wire to hang the caliper assembly from the undercarriage. Do not twist the brake hose excessively.
5. Remove the wheel speed sensor harness bracket (A) and the wheel speed sensor (B) from the knuckle. Do not disconnect the wheel speed sensor connector.

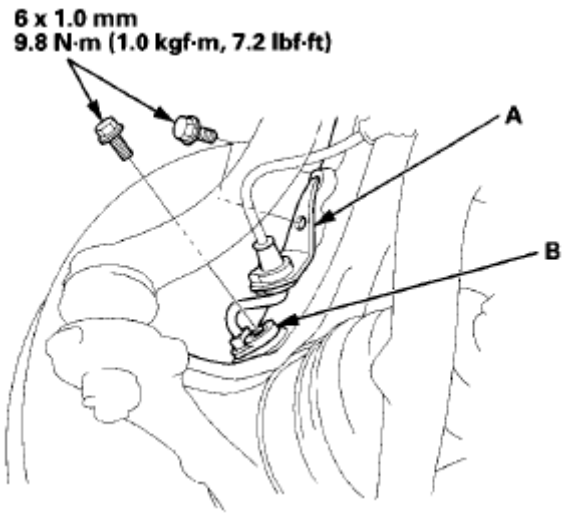


Fig. 4: Identifying Wheel Speed Sensor And Harness Bracket With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Pry up the stake (A) on the spindle nut (B), then remove the nut.

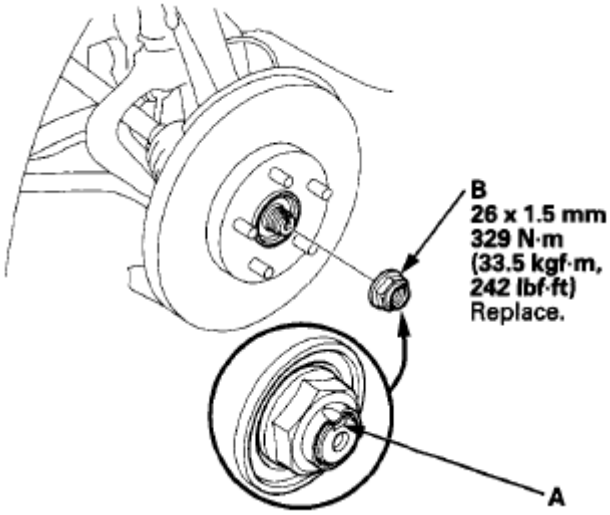


Fig. 5: Identifying Stake And Spindle Nut With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Remove the front brake disc (see **FRONT BRAKE DISC REPLACEMENT**).
8. Check the front hub for damage and cracks.
9. Remove the cotter pin (A) from the tie-rod end ball joint, then remove the nut (B).

NOTE:

- **Use the new nut during reassembly.**
- **During installation, install the new cotter pin after tightening the nut, and bend its end as shown.**

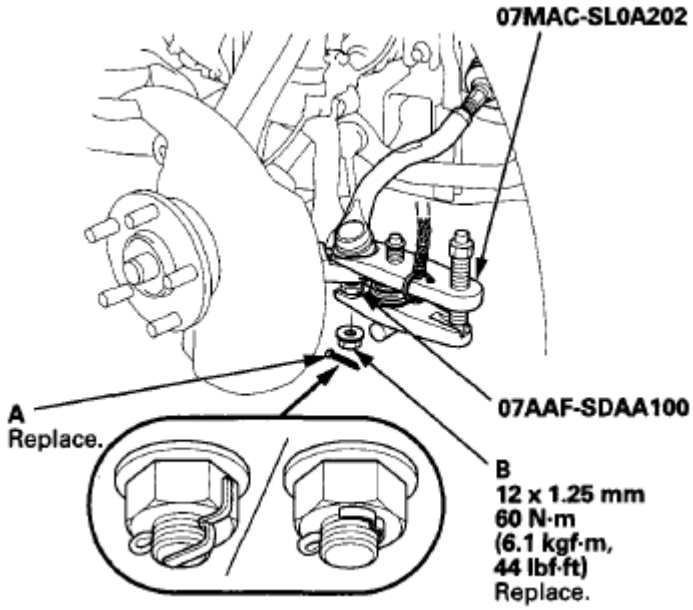


Fig. 6: Identifying Cotter Pin And Nut With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

10. Disconnect the tie-rod end ball joint from the knuckle using the ball joint thread protector and the ball joint remover (see **BALL JOINT REMOVAL**).
11. Remove the cotter pin (A) from the knuckle ball joint, then remove the castle nut (B).

NOTE:

- **Use the new castle nut during reassembly.**
- **During installation, insert the new cotter pin into the ball joint pin hole from the front to the rear of the vehicle, and bend its end as shown. Check the ball joint pin hole direction before connecting the ball joint.**

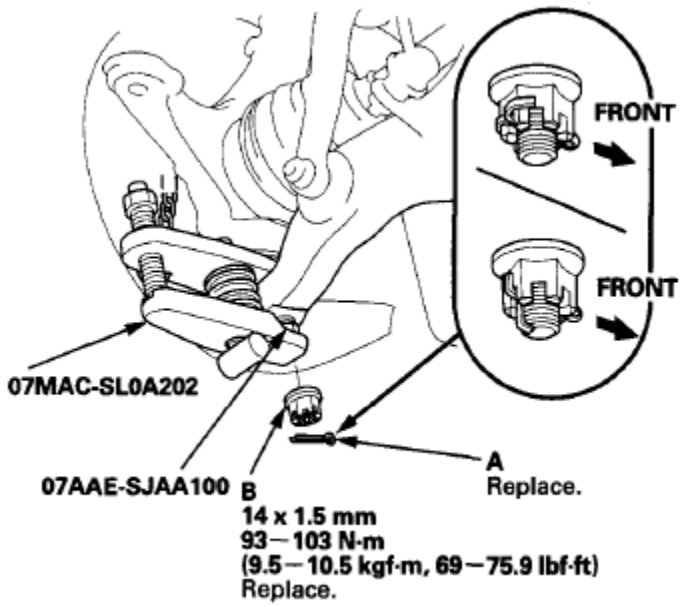


Fig. 7: Identifying Cotter Pin And Castle Nut With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

12. Disconnect the knuckle ball joint from the lower arm using the ball joint thread protector and the ball joint remover (see **BALL JOINT REMOVAL**).

NOTE:

- **Be careful not to damage the ball joint boot when installing the remover.**
- **Do not force or hammer on the lower arm, or pry between the lower arm and the knuckle. You could damage the ball joint.**

13. Remove the cotter pin (A) from the upper arm ball joint, then remove the castle nut (B).

NOTE: **During installation, insert the new cotter pin into the ball joint pin hole from the front to the rear of the vehicle, and bend its end as shown. Check the ball joint pin hole direction before connecting the ball joint.**

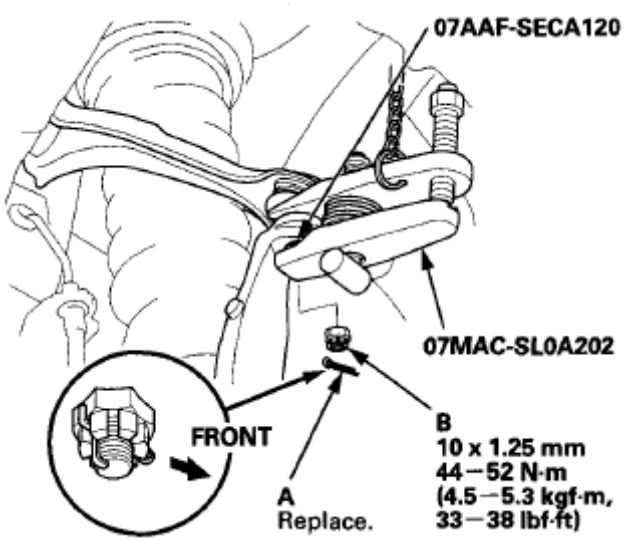


Fig. 8: Identifying Cotter Pin And Castle Nut With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

14. Disconnect the upper arm ball joint from the knuckle using the ball joint thread protector and the ball joint remover (see **BALL JOINT REMOVAL**).
15. Pull the knuckle (A) outward, and separate the outboard joint (B) from the front hub using a soft face hammer, then remove the knuckle/hub.

NOTE:

- **Do not pull the driveshaft end outward. The driveshaft inboard joint may come apart.**
- **During installation, apply grease to the mating surfaces of the wheel bearing and the driveshaft outboard joint (see FRONT DRIVESHAFT REASSEMBLY).**

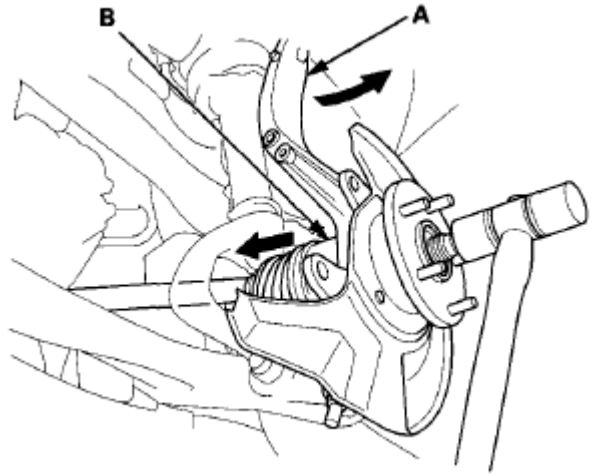


Fig. 9: Pulling Knuckle Outward And Separating Outboard Joint From Front Hub

Courtesy of AMERICAN HONDA MOTOR CO., INC.

16. Install the knuckle/hub in the reverse order of removal, and note these items:
    - Be careful not to damage the ball joint boot when connecting the knuckle.
    - Before connecting the ball joint, degrease the threaded section and the tapered portion of the ball joint pin, the ball joint connecting hole, the threaded section, and the mating surfaces of the castle nut.
    - Torque the castle nut to the lower torque specification, then tighten it only far enough to align the slot with the ball joint pin hole. Do not align the castle nut by loosening it.
    - Use a new spindle nut on reassembly.
    - Before installing the spindle nut, apply a small amount of engine oil to the seating surface of the nut. After tightening, use a drift to stake the spindle nut shoulder against the driveshaft.
    - Before installing the brake disc, clean the mating surfaces between the front hub and the inside of the brake disc.
    - Before installing the wheel, clean the mating surfaces between the brake disc and the inside of the wheel.
17. Check the wheel alignment, and adjust it if necessary (see **WHEEL ALIGNMENT**).

WHEEL BEARING REPLACEMENT

1. Remove the knuckle/hub.
2. Separate the hub (A) from the knuckle (B) using the hub dis/assembly pin and a hydraulic press. Hold the knuckle with the attachment (C) of the hydraulic press or equivalent tool. Be careful not to damage or deform the splash guard (D). Hold onto the hub to keep it from falling when pressed clear.

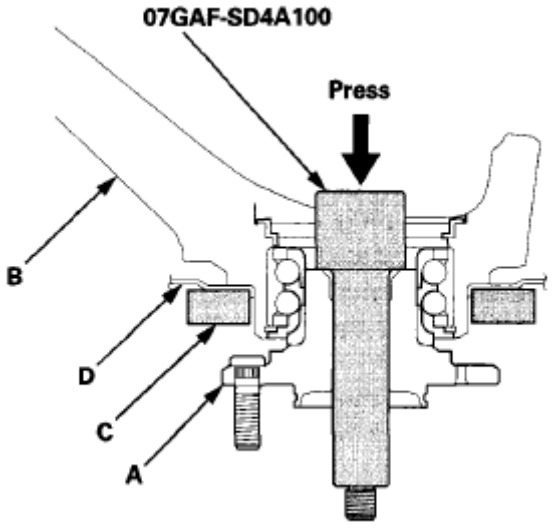


Fig. 10: Separating Hub From Knuckle Using Hub Dis/Assembly Pin And Hydraulic Press
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Press out the wheel bearing inner race (A) of the hub (B) using the hub dis/assembly pin, a commercially

available bearing separator (C), and a press.

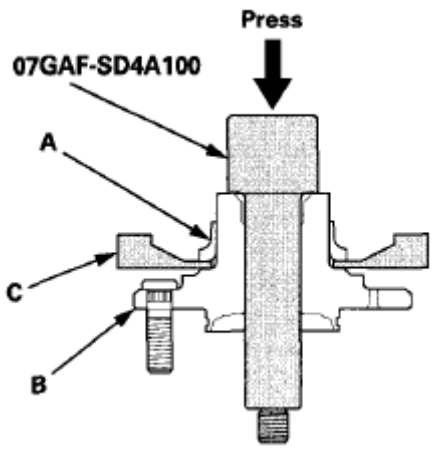


Fig. 11: Pressing Out Wheel Bearing Inner Race Of Hub Using Hub Dis/Assembly Pin, Bearing Separator And Press
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Remove the snap ring (A) and the splash guard (B) from the knuckle (C).

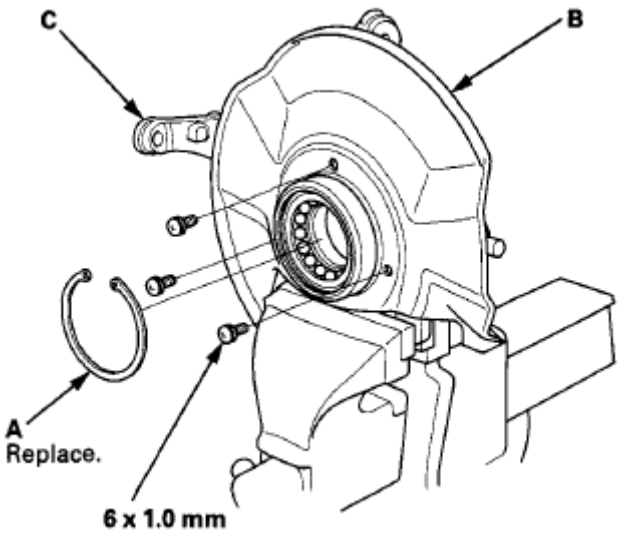


Fig. 12: Identifying Snap Ring, Splash Guard And Knuckle
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Press the wheel bearing (A) out of the knuckle (B) using the attachment, the driver handle, and a press.

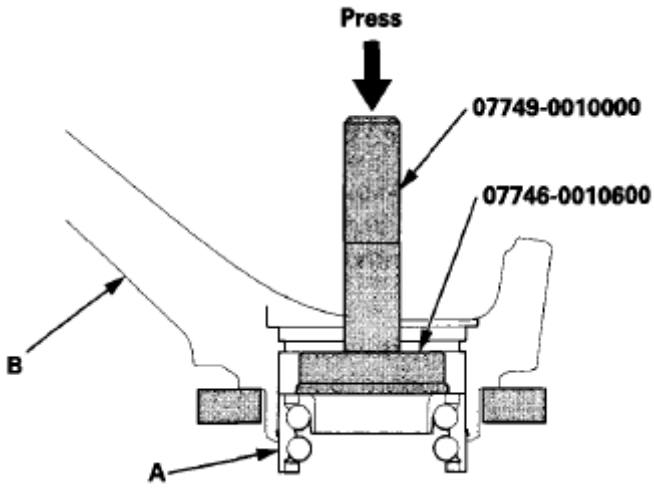


Fig. 13: Pressing Wheel Bearing Out Of Knuckle Using Attachment, Driver Handle And Press
Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Wash the knuckle and the hub thoroughly in high flash point solvent before reassembly.
7. Press a new wheel bearing (A) into the knuckle (B) using the old bearing (C), a steel plate (D), the attachment, the support base, and a press.

NOTE:

- **Install the wheel bearing with the wheel speed sensor magnetic encoder (E) (brown color), toward the inside of the knuckle.**
- **Remove any oil, grease, dust, metal debris, and other foreign material from the magnetic encoder surface.**
- **Keep any magnetic tools away from the magnetic encoder surface.**
- **Be careful not to damage the magnetic encoder surface when you insert the wheel bearing.**

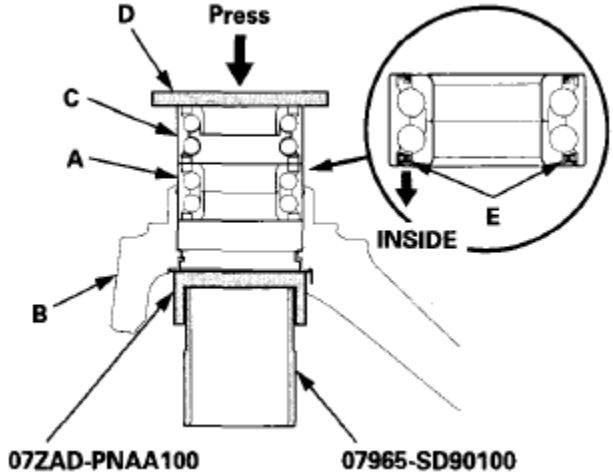


Fig. 14: Pressing Wheel Bearing Into Knuckle Using Old Bearing, Steel Plate, Attachment, Support Base And Press

Courtesy of AMERICAN HONDA MOTOR CO., INC.

8. Check the front knuckle ring (A) for damage or deformation, and replace it if necessary.

NOTE: When installing the new front knuckle ring, position the knuckle ring notch portion (B) toward the cut out (C) near the ball joint in the knuckle, and align the center of the knuckle ring ledge portion (D) with the center of the wheel speed sensor hole (E) on the knuckle as shown.

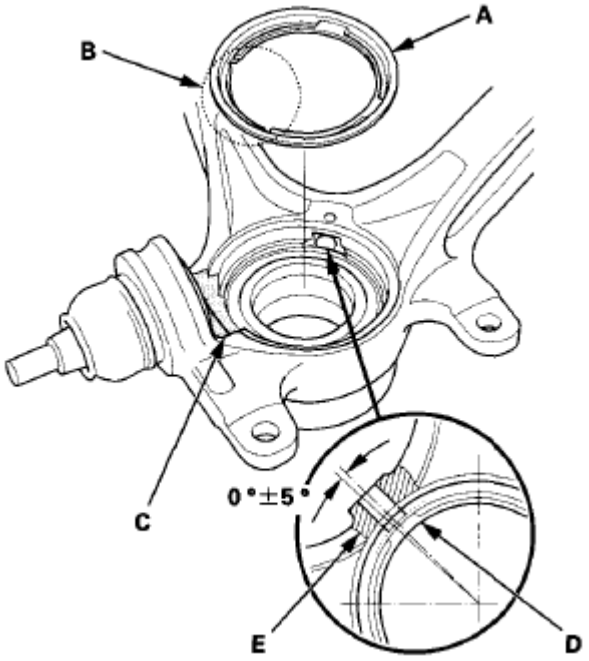


Fig. 15: Identifying Front Knuckle Ring, Notch And Ledge Portion, Wheel Speed Sensor Hole And Cut Out
Courtesy of AMERICAN HONDA MOTOR CO., INC.

9. Install the new snap ring (A) securely in the knuckle (B).

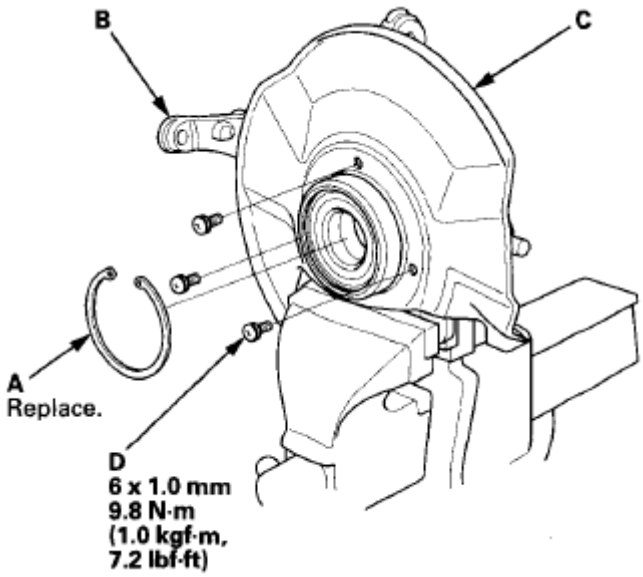


Fig. 16: Identifying Snap Ring, Knuckle, Splash Guard And Screws With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

10. Install the splash guard (C), and tighten the screws (D) to the specified torque.
11. Install the hub (A) onto the knuckle (B) using the attachment, the driver handle, the support base, and a hydraulic press. Be careful not to damage the splash guard (C).

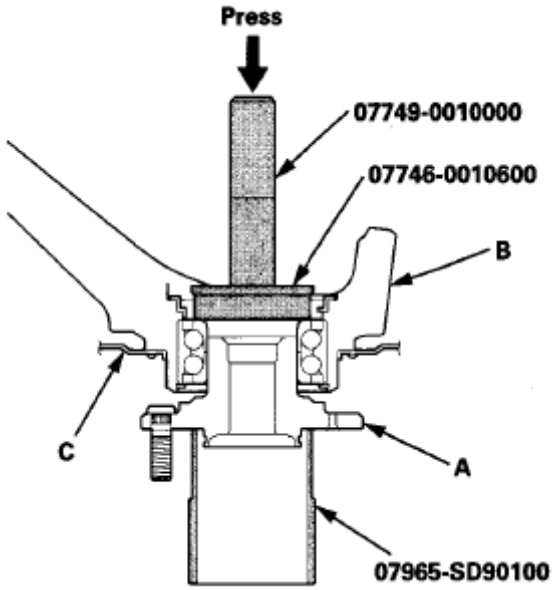


Fig. 17: Installing Hub Onto Knuckle Using Attachment, Driver Handle, Support Base And Hydraulic Press
Courtesy of AMERICAN HONDA MOTOR CO., INC.

12. Install the knuckle/hub.

KNUCKLE BALL JOINT INSPECTION

NOTE: When inspecting the ball joint, the vehicle will be shaken strongly. Make sure to support the front jacking bracket correctly with a suitable jack (see LIFT AND SUPPORT POINTS).

1. Raise and support the vehicle (see **LIFT AND SUPPORT POINTS**).
2. Check all bolts, nuts, and bushings on the suspension components, and make sure that there is no looseness, deterioration, or damage.
3. Measure the gap between the lower arm (A) and the knuckle (B) using the vernier caliper with a dial or digital gauge (C). Record the measured gap.

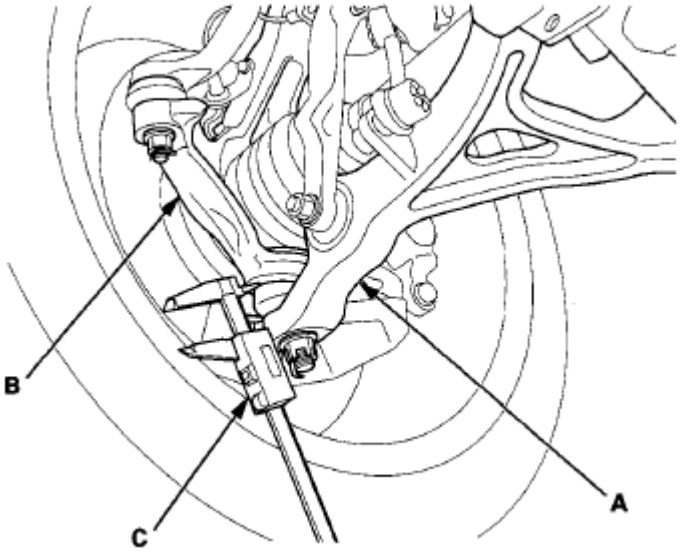


Fig. 18: Measuring Gap Between Lower Arm And Knuckle Using Vernier Caliper With Dial Or Digital Gauge
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Position a jack stand (A) about 305 mm (12.01 in) away from the front wheel.

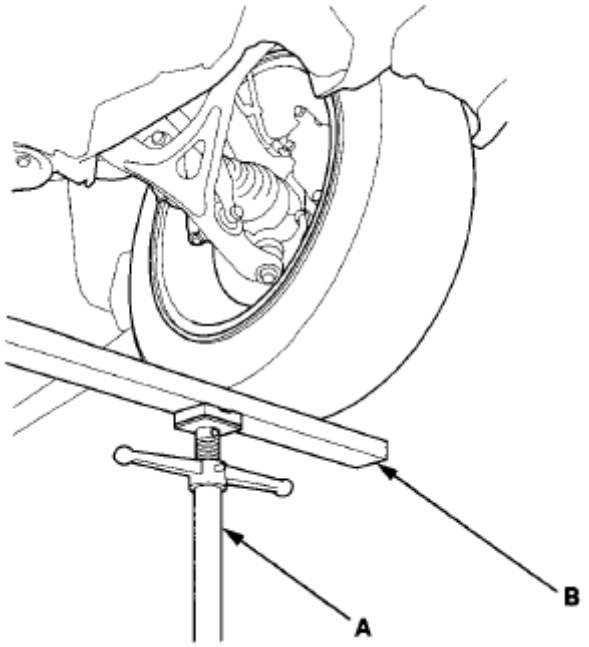


Fig. 19: Positioning Jack Stand Away From Front Wheel
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Place a wood block (B) on top of the jack stand and under the front wheel.
6. Have an assistant apply downward pressure on the wood block to raise the wheel (You only have to raise the weight of the wheel and knuckle assembly to fully extend the ball joint).
7. Measure the gap between the lower arm (A) and the knuckle (B) using the vernier caliper with a dial or digital gauge (C) while the ball joint is being extended. Record the measured gap.

NOTE: Measure the same point as step 3.

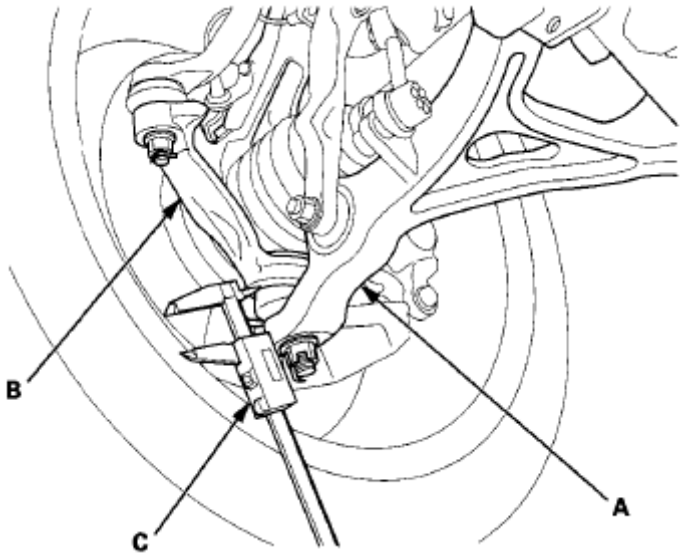


Fig. 20: Measuring Gap Between Lower Arm And Knuckle Using Vernier Caliper With Dial Or Digital Gauge
Courtesy of AMERICAN HONDA MOTOR CO., INC.

8. Compare gap measured in step 3 and step 7.

   Maximum difference: 0.2 mm (0.008 in)

   - If the difference is more than 0.2mm (0.008 in), replace the knuckle ball joint (see **KNUCKLE BALL JOINT REPLACEMENT**).
   - If the difference is less than 0.2mm (0.008 in), the knuckle ball joint is OK.

KNUCKLE BALL JOINT REPLACEMENT

Special Tools Required

- Ball Joint Thread Protector, 14 mm 07AAE-SJAA100
- Ball Joint Remover, 32 mm 07MAC-SL0A102
- Ball Joint Tool Kit 07AAF-TL2A150
- Adapter G 07XAF-001050A
- C-Frame OTC7248, commercially available

NOTE: Paint mark (A) indicates the knuckle ball joint has been replaced. Do not replace the ball joint with the paint mark; you must replace the knuckle as an assembly (see KNUCKLE/HUB/WHEEL BEARING REPLACEMENT).

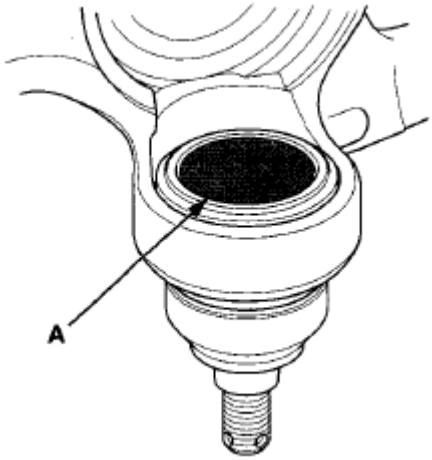


Fig. 21: Identifying Paint Mark
Courtesy of AMERICAN HONDA MOTOR CO., INC.

1. Raise and support the vehicle (see **LIFT AND SUPPORT POINTS**).
2. Remove the front wheel.

3. Remove the wheel speed sensor harness bracket mounting bolt (A).

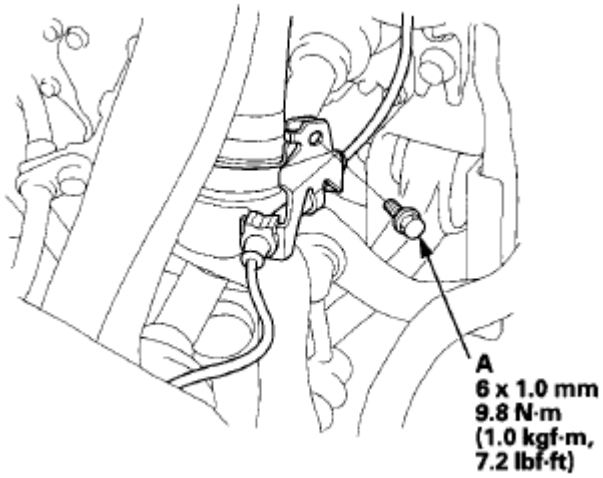


Fig. 22: Identifying Wheel Speed Sensor Harness Bracket Mounting Bolt With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Pry up the stake (A) on the spindle nut (B), then remove the nut.

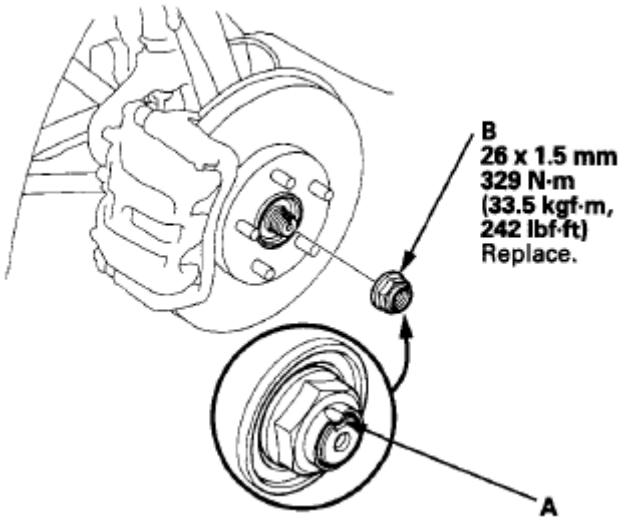


Fig. 23: Identifying Stake And Spindle Nut With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Remove the damper fork mounting nut (A) while holding the mounting bolt (B), then remove the mounting bolt.

NOTE: Use the new damper fork mounting bolt and the new mounting nut, and torque the nut while holding the bolt during reassembly.

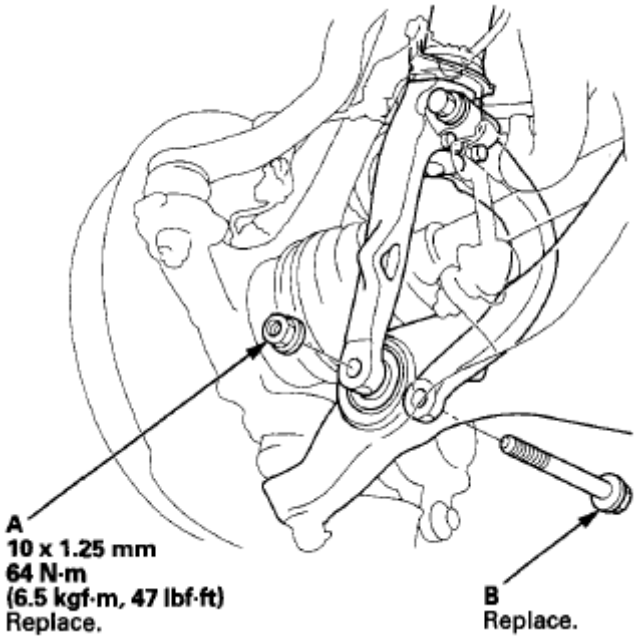


Fig. 24: Identifying Damper Fork Mounting Nut And Bolt With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Remove the cotter pin (A) from the knuckle ball joint, then remove the castle nut (B).

NOTE: During installation, insert the new cotter pin into the ball joint pin hole from the front to the rear of the vehicle, and bend its end as shown. Check the ball joint pin hole direction before connecting the ball joint.

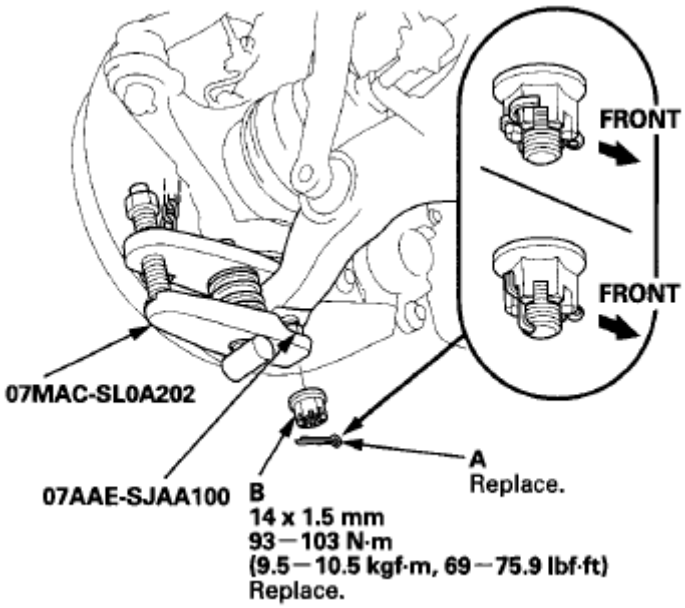


Fig. 25: Identifying Cotter Pin And Castle Nut With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Disconnect the knuckle ball joint from the lower arm using the ball joint thread protector and the ball joint remover (see **BALL JOINT REMOVAL**).

NOTE:

- **Be careful not to damage the ball joint boot when installing the remover.**
- **Do not force or hammer on the lower arm, or pry between the lower arm and the knuckle. You could damage the ball joint.**

8. Pull the knuckle (A) outward, and separate the outboard joint (B) from the front hub using a soft face hammer outward, then move aside the knuckle/hub.

NOTE:

- **Do not pull the driveshaft end outward. The driveshaft inboard joint may come apart.**
- **During installation, apply grease to the mating surfaces of the wheel bearing and the driveshaft outboard joint (see FRONT DRIVESHAFT REASSEMBLY).**

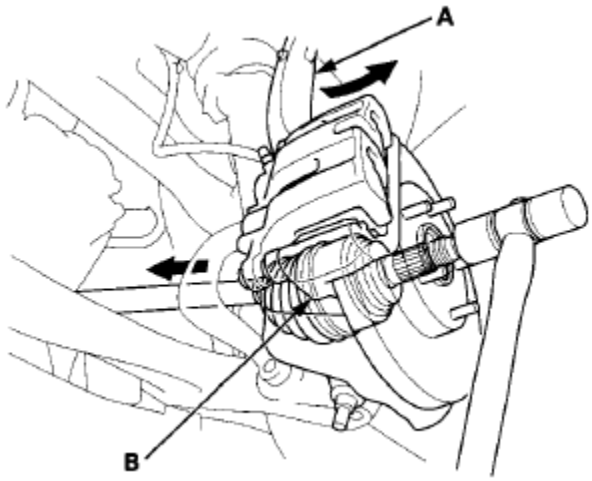


Fig. 26: Pulling Knuckle Outward And Separate Outboard Joint From Front Hub
Courtesy of AMERICAN HONDA MOTOR CO., INC.

9. Remove the front knuckle ring (A) from the knuckle.

NOTE: **When installing the new front knuckle ring, position the knuckle ring notch portion toward the cut out near the ball joint in the knuckle, and align the center of the knuckle ring ledge portion with the center of the wheel speed sensor hole on the knuckle as shown (see step 8).**

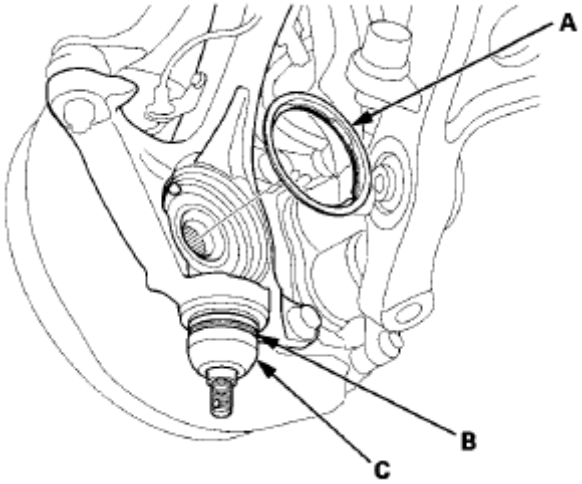


Fig. 27: Identifying Front Knuckle Ring, Boot Clip And Boot
Courtesy of AMERICAN HONDA MOTOR CO., INC.

10. Remove the boot clip (B) and the boot (C), then wipe grease off the exposed portion of the ball joint (see **BALL JOINT REMOVAL**).
11. Install the attachments (07AAF-TL2A300-A and B) of the ball joint tool kit through the hub center. Position the projection of the attachment (07AAF-TL2A300-B) toward the lower side of the knuckle (A). Tighten it into place by hand.

NOTE: Make sure that it is parallel between the top (B) of the knuckle ball joint and the flat aspect (C) of the attachment.

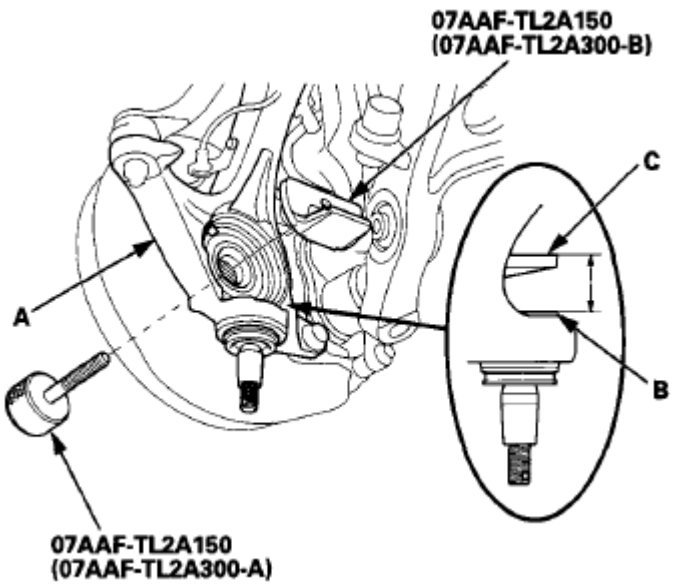


Fig. 28: Installing Attachments Of Ball Joint Tool Kit Through Hub Center
Courtesy of AMERICAN HONDA MOTOR CO., INC.

12. Position the ball joint tool kit, the adapter G, and the C-frame OTC7248, commercially available to knuckle ball joint (A) as shown.

NOTE: Make sure the attachments are installed securely.

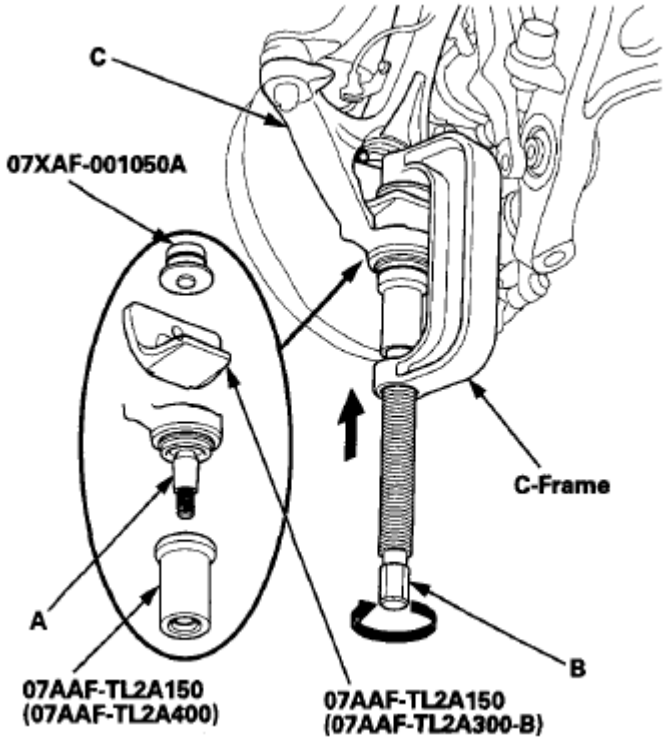


Fig. 29: Positioning Ball Joint Tool Kit, Adapter G And C-Frame OTC7248 To Knuckle Ball Joint
Courtesy of AMERICAN HONDA MOTOR CO., INC.

13. Tighten the pressure bolt (B) of the C-frame, and remove the knuckle ball joint.

NOTE: When tightening the pressure bolt, fix the knuckle (C) and outboard joint securely.

14. Remove the attachments (07AAF-TL2A300-A and B) of the ball joint tool kit from the hub.
15. Clean the mating surfaces of the new knuckle ball joint (A) and the knuckle (B). Position the ball joint tool kit and the C-frame OTC7248, commercially available to ball joint as shown.

NOTE:

- **Make sure the attachments are installed securely.**
- **Align the knuckle and the ball joint boot to the alignment mark of the appropriate part (see BALL JOINT REMOVAL).**

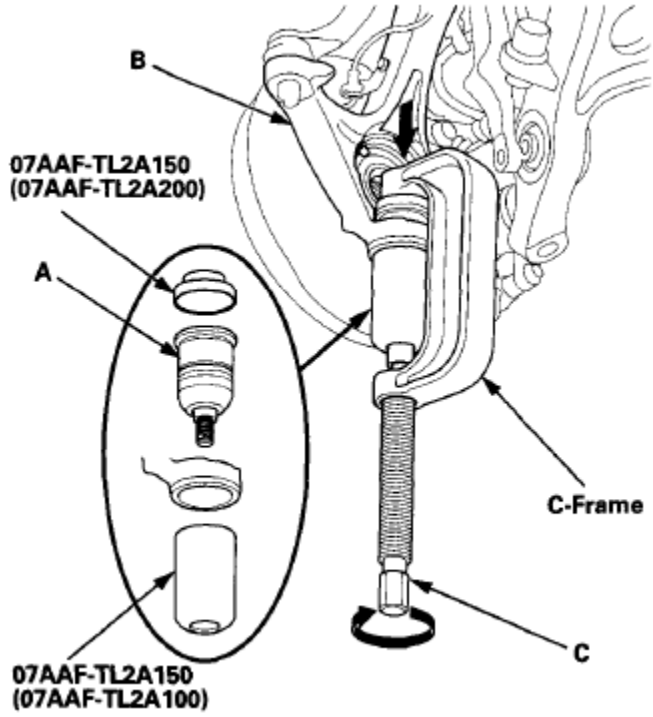


Fig. 30: Cleaning Mating Surfaces Of Knuckle Ball Joint And Knuckle And Positioning Ball Joint Tool Kit And C-Frame OTC7248 To Ball Joint
Courtesy of AMERICAN HONDA MOTOR CO., INC.

16. Tighten the pressure bolt (C) of the C-frame until the knuckle ball joint shoulder is fully seated in the knuckle.

NOTE: When tightening the pressure bolt, fix the knuckle and outboard joint securely.

17. Using a yellow oil-based paint marker, paint a mark (A) to the top of the knuckle ball joint as shown.

NOTE: The paint mark is used to identify a knuckle that has had the ball joint replaced. Replace the knuckle as an assembly if the knuckle ball joint has the paint mark.

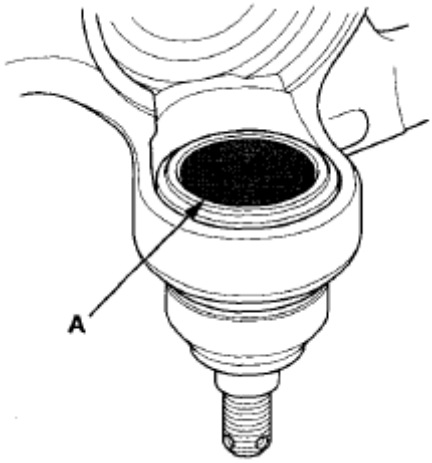


Fig. 31: Identifying Paint Mark
Courtesy of AMERICAN HONDA MOTOR CO., INC.

18. Install all of the removed parts in the reverse order of removal, and note these items:
    - First install all of the components, and lightly tighten the bolts and the nuts, then raise the suspension to load it with the vehicle's weight before fully tightening it to the specified torque. Do not place the jack against the ball joint pin of the knuckle.
    - Be careful not to damage the ball joint boot when connecting the knuckle.
    - Before connecting the ball joint, degrease the threaded section, the tapered portion of the ball joint pin, and the ball joint connecting hole, the threaded section, and the mating surfaces of the castle nut.
    - Torque the castle nut to the lower torque specification, then tighten it only far enough to align the slot with the ball joint pin hole. Do not align the castle nut by loosening it.
    - Use a new spindle nut on reassembly.
    - Before installing the spindle nut, apply a small amount of engine oil to the seating surface of the nut. After tightening, use a drift to stake the spindle nut shoulder against the driveshaft.
    - Before installing the wheel, clean the mating surfaces between the brake disc and the inside of the wheel.
19. Check the wheel alignment, and adjust it if necessary (see **WHEEL ALIGNMENT**).

UPPER ARM REPLACEMENT

Special Tools Required

- Ball Joint Thread Protector, 10 mm 07AAF-SECA120
- Ball Joint Remover, 28 mm 07MAC-SL0A202

1. Raise and support the vehicle (see **LIFT AND SUPPORT POINTS**).
2. Remove the front wheel.
3. Remove the front damper/spring (see **DAMPER/SPRING REMOVAL AND INSTALLATION**).

4. Remove the cotter pin (A) from the upper arm ball joint, then remove the castle nut (B).

NOTE: During installation, install the new cotter pin into the ball joint pin hole from the front to the rear of the vehicle, and bend its end as shown. Check the ball joint pin hole direction before connecting the ball joint.

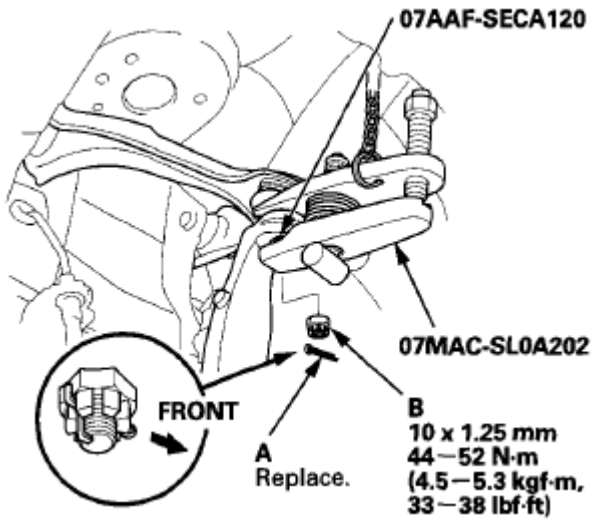


Fig. 32: Removing Cotter Pin From Upper Arm Ball Joint And Castle Nut With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Disconnect the upper arm ball joint from the knuckle using the ball joint thread protector and the ball joint remover (see **BALL JOINT REMOVAL**).
6. Remove the upper arm mounting bolts (A), then remove the upper arm (B).

NOTE: Use new upper arm mounting bolts during reassembly.

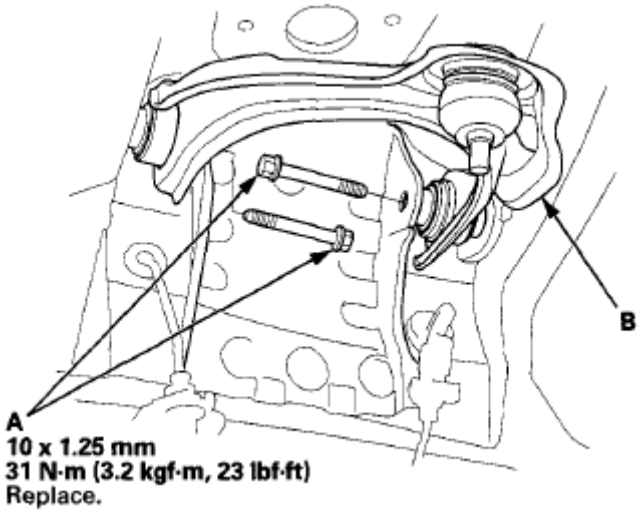


Fig. 33: Identifying Upper Arm And Upper Arm Mounting Bolts With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Install the upper arm in the reverse order of removal, and note these items:
   - First install all of the components, and lightly tighten the bolts and the nuts, then raise the suspension to load it with the vehicle's weight before fully tightening it to the specified torque. Do not place the jack against the ball joint pin of the knuckle.
   - Be careful not to damage the ball joint boot when connecting the knuckle.
   - Before connecting the ball joint, degrease the threaded section and the tapered portion of the ball joint pin, the ball joint connecting hole, the threaded section, and the mating surfaces of the castle nut.
   - Torque the castle nut to the lower torque specification, then tighten it only far enough to align the slot with the ball joint pin hole. Do not align the castle nut by loosening it.
   - Before installing the wheel, clean the mating surfaces between the brake disc and the inside of the wheel.
8. Check the wheel alignment, and adjust it if necessary (see **WHEEL ALIGNMENT**).

LOWER ARM REMOVAL/INSTALLATION

Special Tools Required

- Ball Joint Thread Protector, 14 mm 07AAE-SJAA100
- Ball Joint Remover, 28 mm 07MAC-SL0A202

REMOVAL/INSTALLATION

1. Raise and support the vehicle (see **LIFT AND SUPPORT POINTS**).
2. Remove the front wheel.
3. Remove the spindle nut (see step 6).
4. Remove the front splash shield (see **FRONT SPLASH SHIELD REPLACEMENT**).
5. Remove the damper fork mounting nut (A) while holding the mounting bolt (B), then remove the mounting bolt.

NOTE: Use the new damper fork mounting bolt and the new mounting nut, and torque the nut while holding the bolt during reassembly.

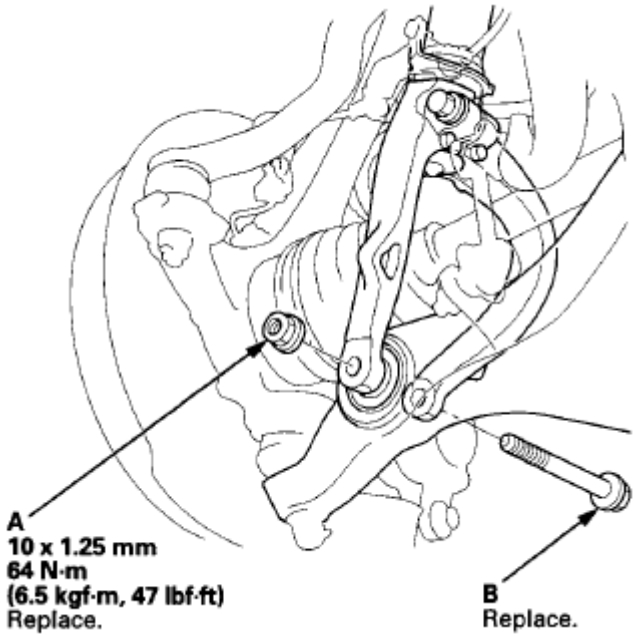


Fig. 34: Identifying Damper Fork Mounting Nut And Mounting Bolt With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Disconnect the stabilizer link from the lower arm (see **STABILIZER LINK REMOVAL/INSTALLATION**).
7. Remove the cotter pin (A) from the knuckle ball joint, then remove the castle nut (B).

NOTE:

- **Use the new castle nut during reassembly.**
- **During installation, insert the new cotter pin into the ball joint pin hole from the front to the rear of the vehicle, and bend its end as shown. Check the ball joint pin hole direction before connecting the ball joint.**

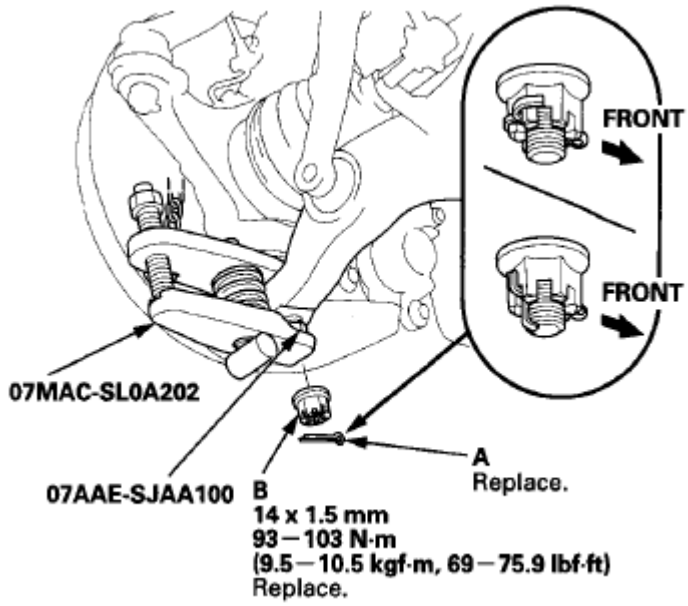


Fig. 35: Removing Cotter Pin From Knuckle Ball Joint And Castle Nut With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

8. Disconnect the knuckle ball joint from the lower arm using the ball joint thread protector and the ball joint remover (see **BALL JOINT REMOVAL**).

NOTE:
- **Be careful not to damage the ball joint boot when installing the remover.**
- **Do not force or hammer on the lower arm, or pry between the lower arm and the knuckle. You could damage the ball joint.**

9. Pull the knuckle (A) outward, and separate the outboard joint (B) from the front hub using a soft face hammer.

NOTE: **Do not pull the driveshaft end outward. The driveshaft inboard joint may come apart.**

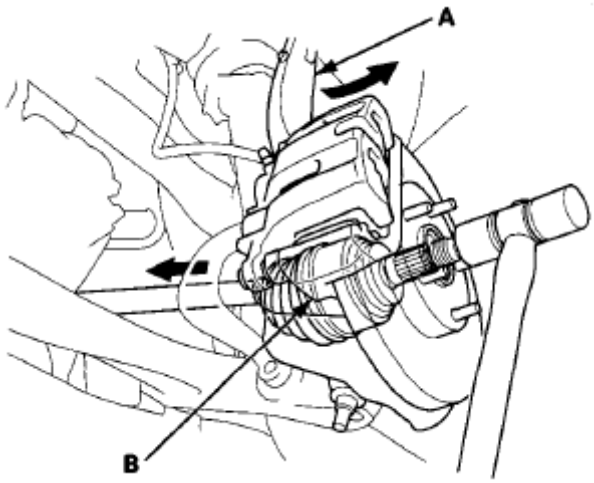


Fig. 36: Pulling Knuckle Outward And Separating Outboard Joint From Front Hub
Courtesy of AMERICAN HONDA MOTOR CO., INC.

10. Remove the lower arm mounting bolts, mounting nuts, and the washers, then remove the lower arm (A).

NOTE: Use new lower arm mounting bolts, new mounting nuts, and new washers during reassembly.

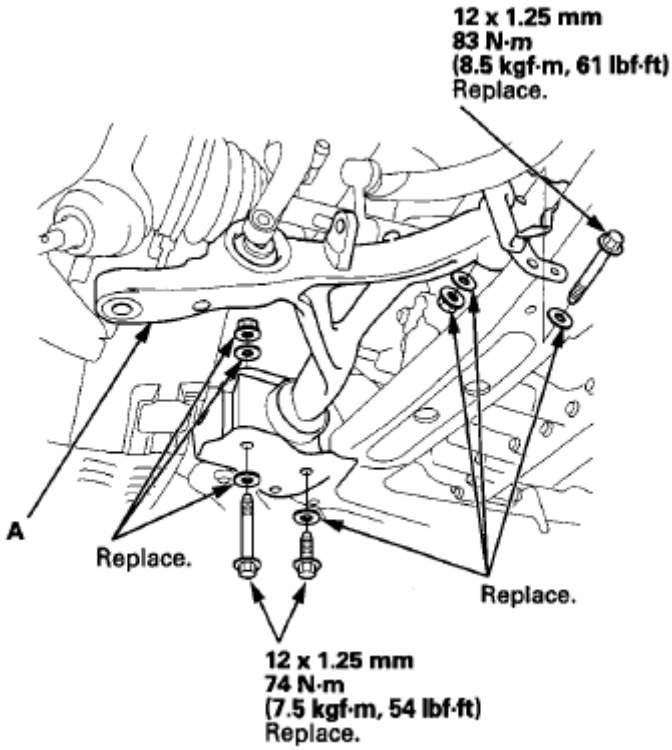


Fig. 37: Identifying Lower Arm With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

11. Install the lower arm in the reverse order of removal, and note these items:
    - First install all of the components, and lightly tighten the bolts and the nuts, then raise the suspension to load it with the vehicle's weight before fully tightening it to the specified torque. Do not place the jack against the ball joint pin of the knuckle.
    - Be careful not to damage the ball joint boot when connecting the knuckle.
    - Before connecting the ball joint, degrease the threaded section and the tapered portion of the ball joint pin, the ball joint connecting hole, the threaded section, and the mating surfaces of the castle nut.
    - Torque the castle nut to the lower torque specification, then tighten it only far enough to align the slot with the ball joint pin hole. Do not align the castle nut by loosening it.
    - Refer to **STABILIZER LINK REMOVAL/INSTALLATION** to connect the stabilizer bar to the lower arm (see).
    - Use a new spindle nut on reassembly.
    - Before installing the spindle nut, apply a small amount of engine oil to the seating surface of the nut. After tightening, use a drift to stake the spindle nut shoulder against the driveshaft.
    - Before installing the wheel, clean the mating surfaces between the brake disc and the inside of the wheel.
12. Check the wheel alignment, and adjust it if necessary (see **WHEEL ALIGNMENT**).

COMPLIANCE BUSHING BRACKET REPLACEMENT

1. Remove the self-locking nut (A), then remove the lower arm stopper (B) and the compliance bushing bracket (C).

NOTE: Do not remove the compliance bushing from the bracket.

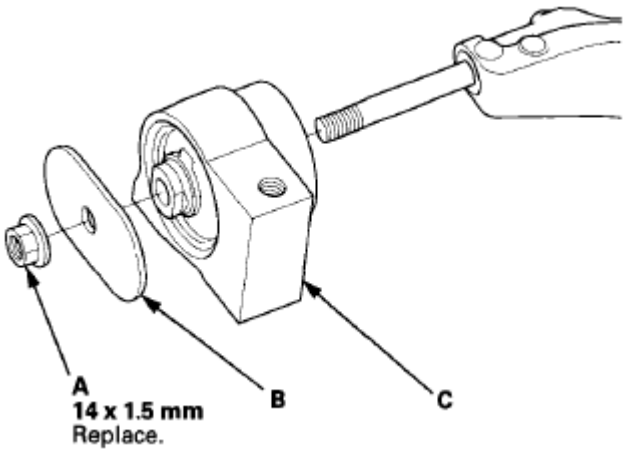


Fig. 38: Identifying Lower Arm Stopper, Compliance Bushing Bracket And Self-Locking Nut
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Position the lower arm center line (A) with the end (B) of the compliance bushing bracket to the angle as shown.

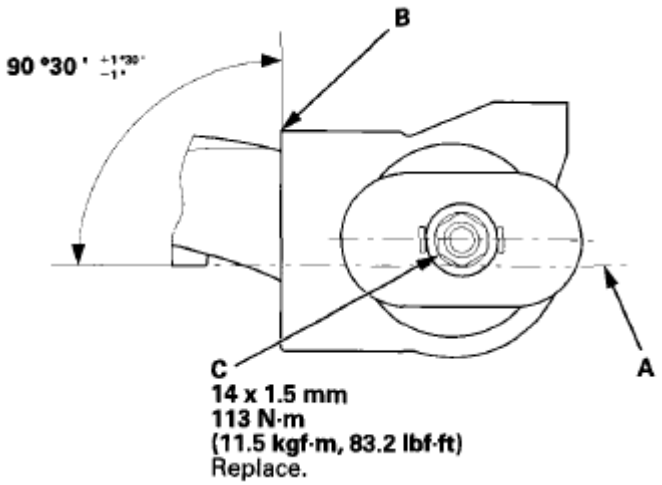


Fig. 39: Positioning Lower Arm Center Line With End Of Compliance Bushing Bracket To Specified Angle With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Install a new self-locking nut (C), then tighten the nut to the specified torque.

STABILIZER LINK REMOVAL/INSTALLATION

1. Raise and support the vehicle (see **LIFT AND SUPPORT POINTS**).
2. Remove the front wheel.
3. Remove the flange nuts (A) while holding the respective joint pin (B) with a hex wrench (C), then remove the stabilizer link (D).

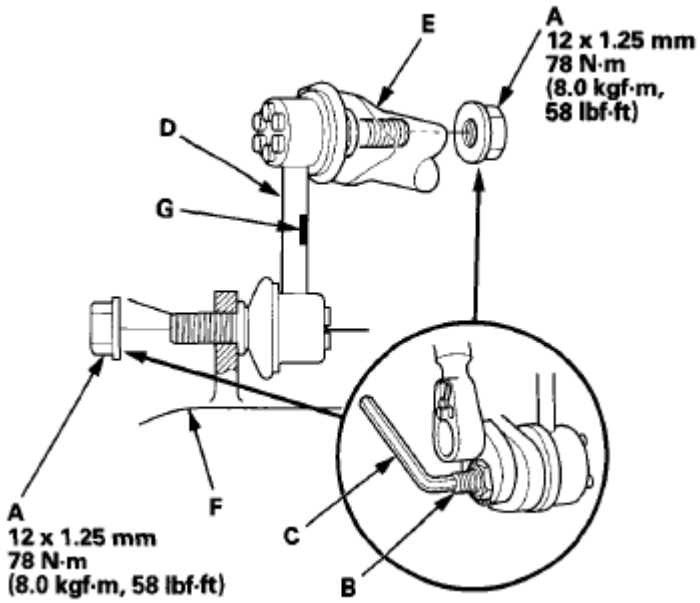


Fig. 40: Identifying Stabilizer Bar, Link, Hex Wrench, Lower Arm, Paint Mark And Flange Nuts With Torque Specifications

Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Install the stabilizer link on the stabilizer bar (E) and the lower arm (F) with the joint pins set at the center of their range of movement.

NOTE: The stabilizer link has a paint mark (G). The left stabilizer link is marked with yellow paint, and the right stabilizer link is marked with white paint.

5. Install the new flange nuts, and tighten them to the specified torque while holding the respective joint pin with a hex wrench.
6. Clean the mating surfaces between the brake disc and the inside of the wheel, then install the front wheel.

STABILIZER BAR REPLACEMENT

Special Tools Required

- 2008 V6 Attachment Arm SIL02C000033*
- Engine Support Hanger, A and Reds AAR-T1256*
- Engine Hanger Balance Bar VSB02C000019*
- Subframe Adapter VSB02C000016*
- Subframe Alignment Pin 070AG-SJAA10S

*: Available through the Acura Tool and Equipment Program, 888-424-6857

NOTE: When you replace the stabilizer bar, lower the front subframe from the body, and replace the stabilizer bar through the gap created by lowering the front subframe.

1. Disconnect the hood support struts from the pivot ball on both sides (bolted to the hood). Raise and secure the hood in a vertical position. Remove the passenger's side pivot ball and install it into the lower threaded hole, then reattach the support strut.

NOTE: Do not attempt to close the hood with the support strut in the vertical position, as it will damage the support strut and hood.

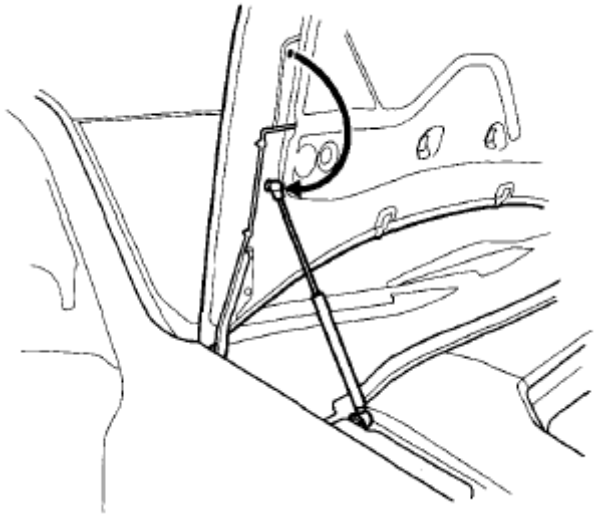


Fig. 41: Removing Passenger's Side Pivot Ball And Installing Into Lower Threaded Hole
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Remove the engine compartment covers (see **ENGINE COMPARTMENT COVER REPLACEMENT**).
3. Do the battery terminal disconnection procedure (see **BATTERY TERMINAL DISCONNECTION AND RECONNECTION**).
4. Remove the front strut brace (see **FRAME BRACE REPLACEMENT**).
5. Raise and support the vehicle (see **LIFT AND SUPPORT POINTS**).
6. Remove the front wheels.
7. Disconnect both sides of the stabilizer link from the stabilizer bar (see **STABILIZER LINK REMOVAL/INSTALLATION**).
8. Disconnect both sides of the tie-rod end ball joint from the knuckle (see step 9).
9. Remove the steering joint cover (A).

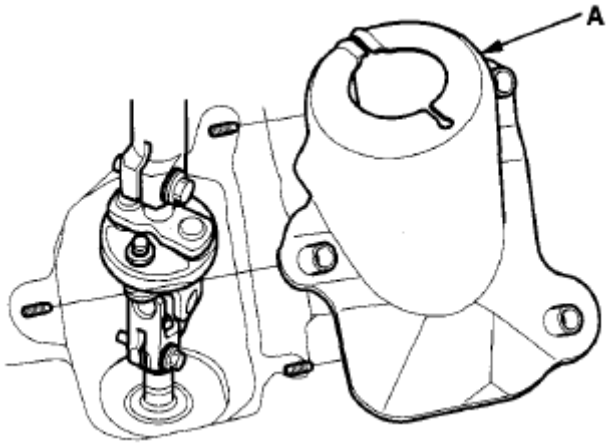


Fig. 42: Identifying Steering Joint Cover
Courtesy of AMERICAN HONDA MOTOR CO., INC.

10. Center the steering wheel spokes, and install a commercially available steering wheel holder tool (A).

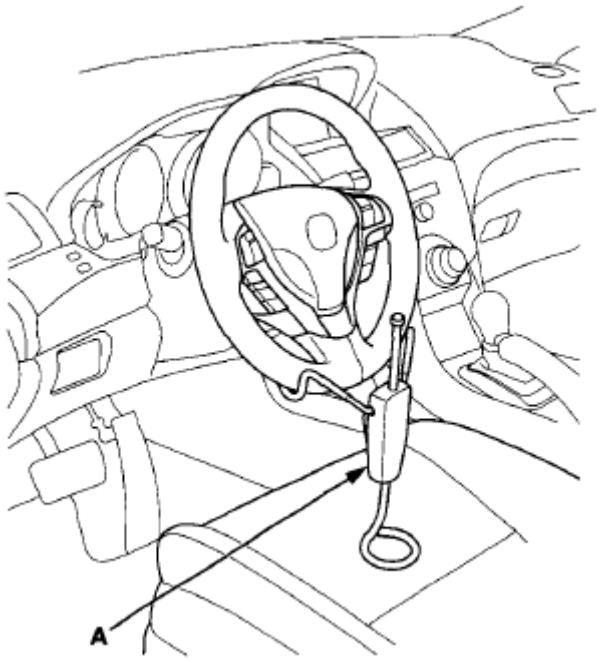


Fig. 43: Identifying Steering Wheel Holder Tool
Courtesy of AMERICAN HONDA MOTOR CO., INC.

11. Loosen the upper steering joint bolt (A), and remove the lower steering joint bolt (B). Disconnect the steering joint (C) by sliding the steering joint into the column shaft (D). Tighten the steering joint upper bolt to hold the column shaft.

NOTE:

- **If the center guide (E) is in place and has not moved, leave it in place.**
- **If the center guide has moved or been removed, discard it.**

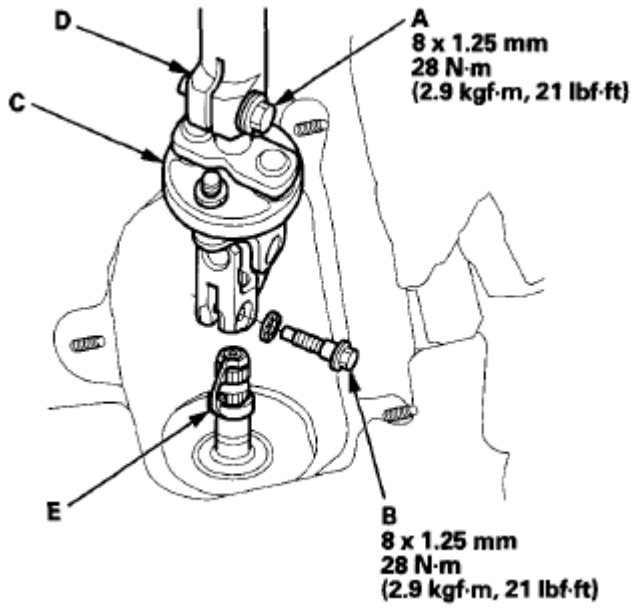


Fig. 44: Identifying Steering Joint, Column Shaft, Center Guide, Upper And Lower Steering Joint Bolt With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

12. Remove the power steering heat shield (A).

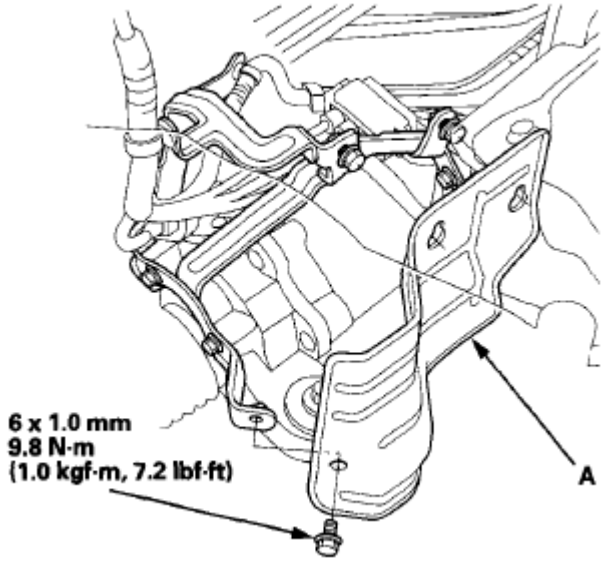


Fig. 45: Identifying Power Steering Heat Shield With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

13. Remove the bolt (A) securing the connector bracket (B) from the front cylinder head; use the bracket bolt hole (C) to attach the engine hanger balance bar front arm.

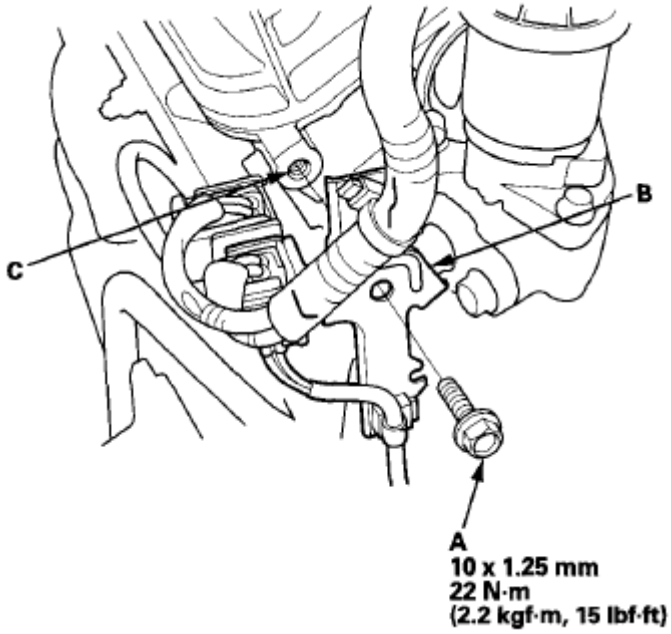


Fig. 46: Identifying Connector Bracket, Bracket Bolt Hole And Bolt With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

14. Remove the harness clamp (A), then remove the bolt (B) securing the engine mount control solenoid valve bracket (C) from the rear cylinder head; use the bracket bolt hole (D) to attach the 2008 V6 attachment arm.

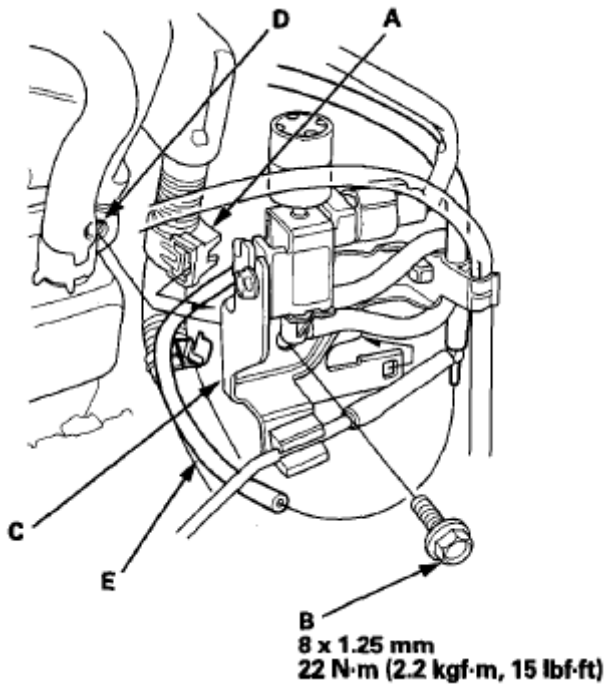


Fig. 47: Identifying Vacuum Hose, Control Solenoid Valve Bracket, Bracket Bolt Hole, Harness Clamp And Bolt With Torque Specifications

Courtesy of AMERICAN HONDA MOTOR CO., INC.

15. A/T: Disconnect the vacuum hose (E).
16. Install the engine hanger balance bar (VSB02C000019). Attach the front arm (A) to the front cylinder head with a 10 mm (0.39 in) spacer (B) and a 10 x 1.25 mm bolt (C). Remove the rear arm from the engine hanger balance bar, then install the 2008 V6 attachment arm (SIL02C000033). Attach the 2008 V6 attachment arm to the rear cylinder head with a 10 mm (0.39 in) spacer (D) and an 8 x 1.25 mm bolt (E).

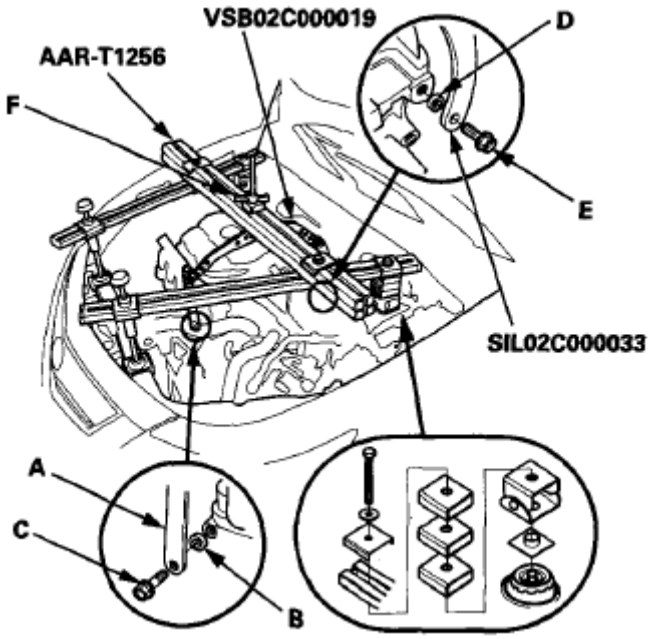


Fig. 48: Installing Engine Hanger Balance Bar
Courtesy of AMERICAN HONDA MOTOR CO., INC.

17. Install the engine support hanger (AAR-T1256) onto the vehicle as shown, and attach the hook to the slotted hole in the engine hanger balance bar. Tighten the wing nut (F) by hand, and lift and support the engine/transmission.

NOTE:
- **Be careful when working around the windshield.**
- **AAR-T1256 two sets required for stacking two cross section bars.**

18. Remove the front engine mount stop (A), then remove the front engine mount bolt (B).

NOTE: Use new nuts (C) and a front engine mount bolt during reassembly.

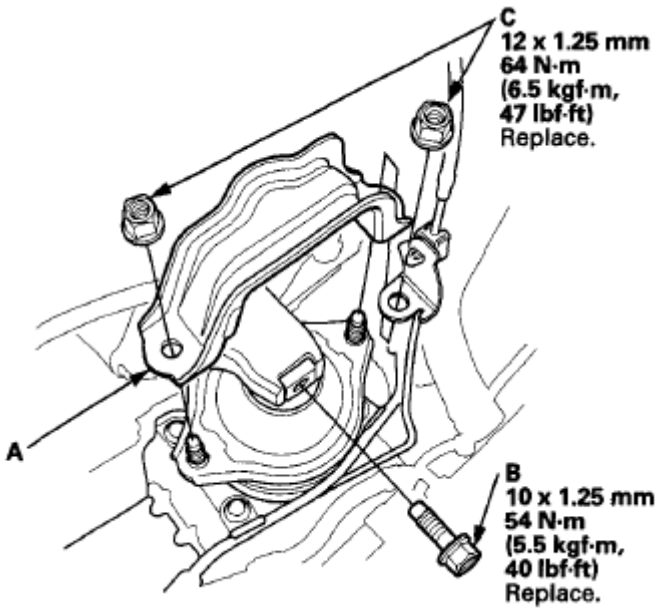


Fig. 49: Identifying Front Engine Mount Stop, Bolt And Nuts With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

19. M/T: Remove the rear engine mount bolts from the rear engine mount (A) and the rear engine mount bracket (B).

NOTE: Use new engine mount bolts during reassembly.

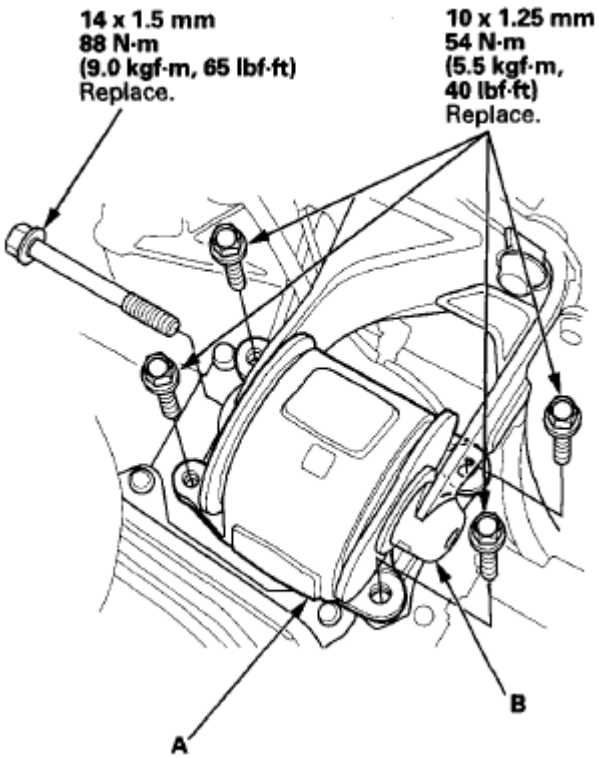


Fig. 50: Identifying Rear Engine Mount And Bracket With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

20. A/T: Remove the rear engine mount stop (A).

NOTE: Use new nuts (B) during reassembly.

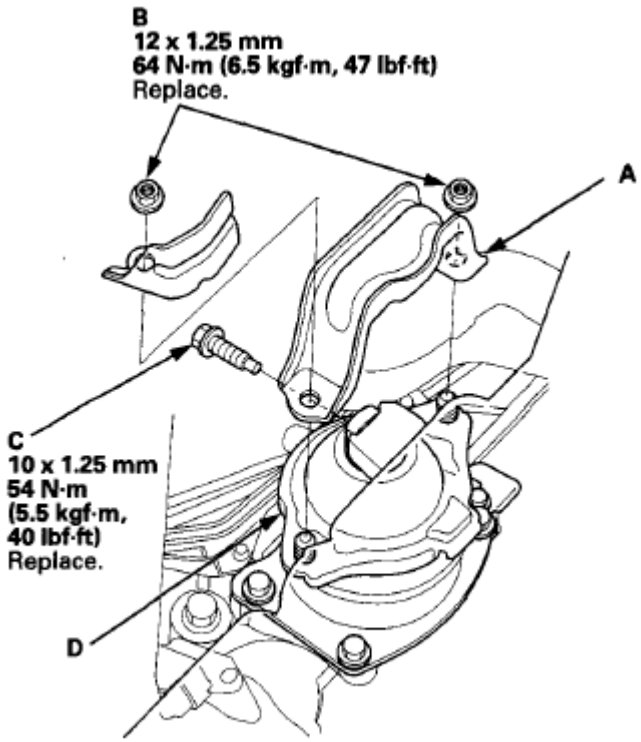


Fig. 51: Identifying Rear Engine Mount, Stop, Bolt And Nut With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

21. A/T: Remove the rear engine mount bolt (C) from the rear engine mount (D).

NOTE: Use a new rear engine mount bolt during reassembly.

22. Raise the vehicle on the lift.
23. Remove the front splash shield (see **FRONT SPLASH SHIELD REPLACEMENT**).
24. Remove the flange bolts, and remove the front subframe stiffener (A).

NOTE: Use new flange bolts during reassembly.

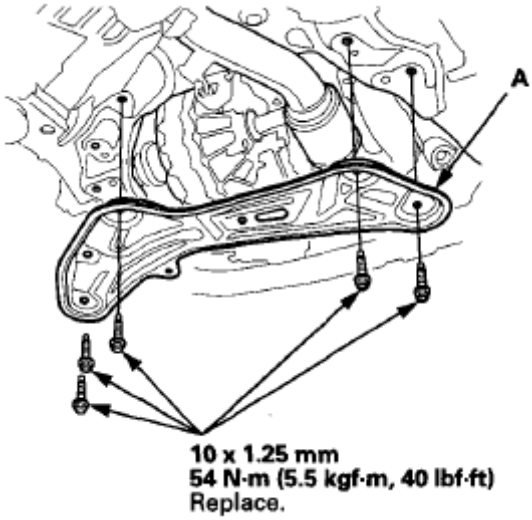


Fig. 52: Identifying Front Subframe Stiffener With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

25. Remove exhaust pipe A:
    - Without SH-AWD (see **EXHAUST PIPE AND MUFFLER REPLACEMENT**)
    - With SH-AWD (see **J37A4 ENGINE (WITH SH-AWD)**)
26. With SH-AWD: Remove the propeller shaft (see **PROPELLER SHAFT REMOVAL**).
27. Remove the front subframe mounting bolts, and the front subframe middle mounts (A).

NOTE: Use new mounting bolts during reassembly.

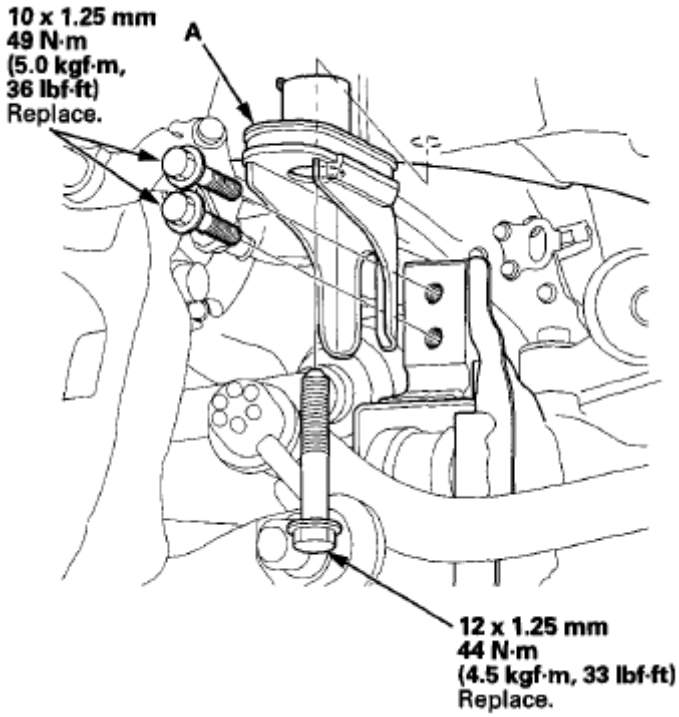


Fig. 53: Identifying Front Subframe Middle Mounts With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

28. Remove the nuts (A) securing the lower transmission mount.

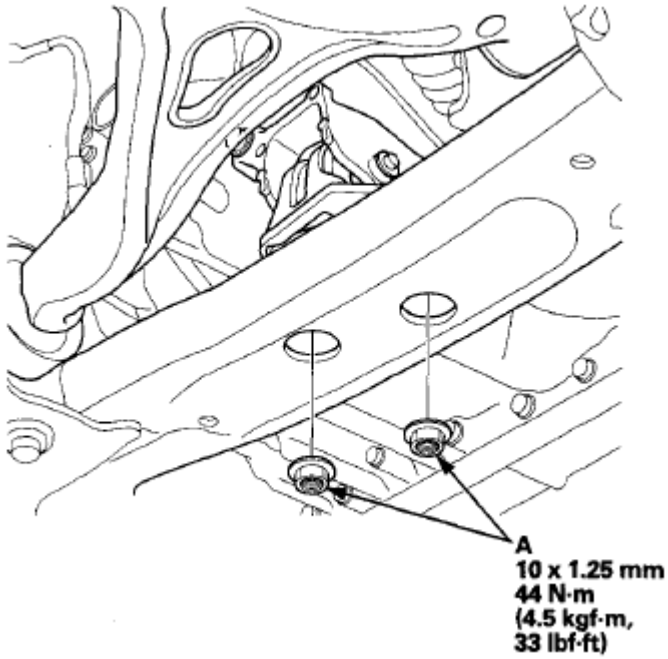


Fig. 54: Identifying Nuts With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

29. Attach the subframe adapter (VSB02C000016) to a transmission jack, then raise up the jack to the subframe. Hang the belt (A) over the front of the subframe, then secure the belt by inserting the stop (B) and then tighten the wing nut (C).

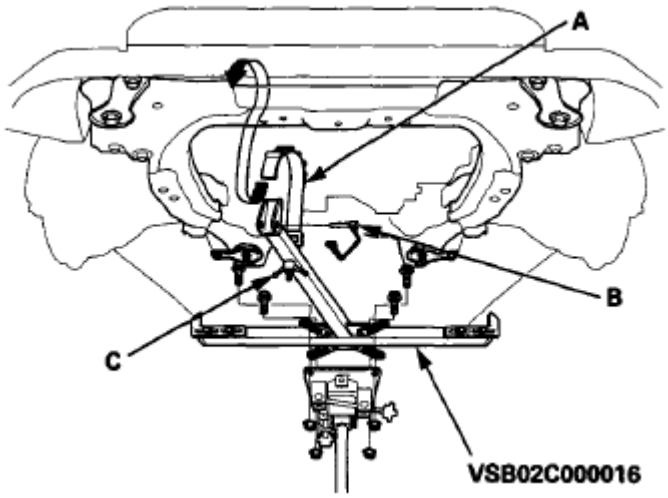


Fig. 55: Attaching Subframe Adapter To Transmission Jack And Raising Up Jack To Subframe
Courtesy of AMERICAN HONDA MOTOR CO., INC.

30. Remove the stiffener mounting bolt (A) on both sides of the front stiffener (B).

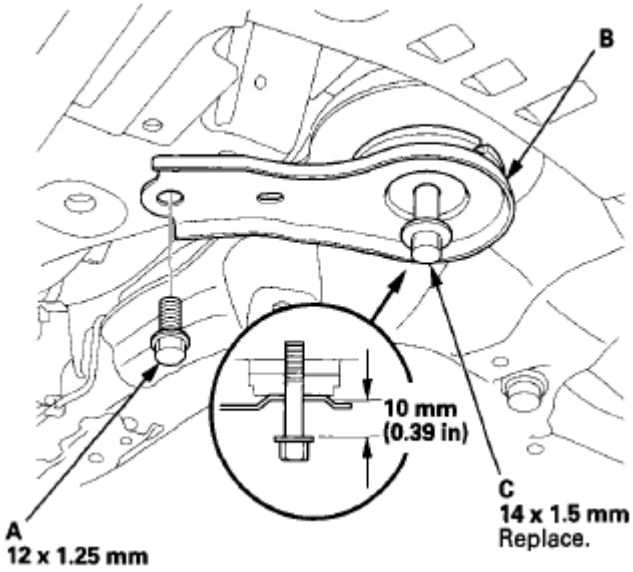


Fig. 56: Identifying Front Stiffener, Stiffener And Subframe Mounting Bolt
Courtesy of AMERICAN HONDA MOTOR CO., INC.

31. Loosen the subframe mounting bolts (C) to obtain a 10 mm (0.39 in) distance between the bolt seat and the mounting surface. Do not loosen the mounting bolts more than necessary.
32. Remove the stiffener mounting bolt (A) on both sides of the rear stiffener (B).

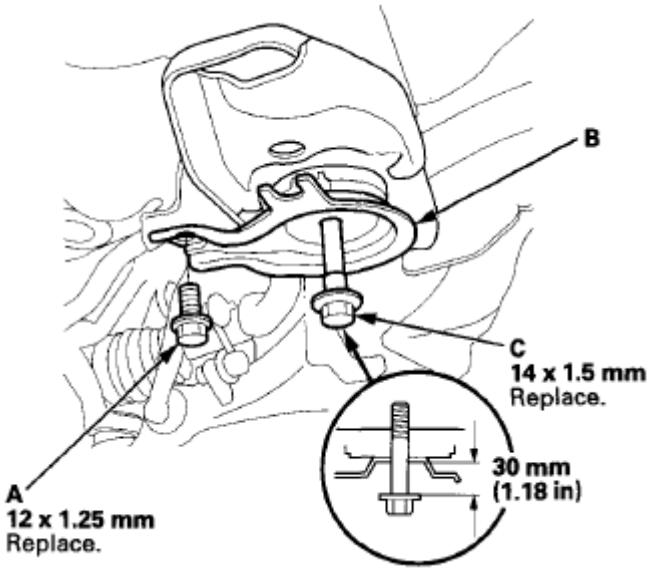


Fig. 57: Identifying Rear Stiffener, Stiffener And Subframe Mounting Bolt
Courtesy of AMERICAN HONDA MOTOR CO., INC.

33. Loosen the subframe mounting bolts (C) to obtain a 30 mm (1.18 in) distance between the bolt seat and the mounting surface. Do not loosen the mounting bolts more than necessary.
34. Lower the transmission jack slowly with the subframe adapter until the front subframe has dropped about 30 mm (1.18 in).

NOTE: Do not lower the front subframe beyond the loosened subframe mounting bolts clearance.

35. Remove the flange bolts (A) and the bushing holders (B), then remove the bushings (C).

NOTE: Use new flange bolts during reassembly.

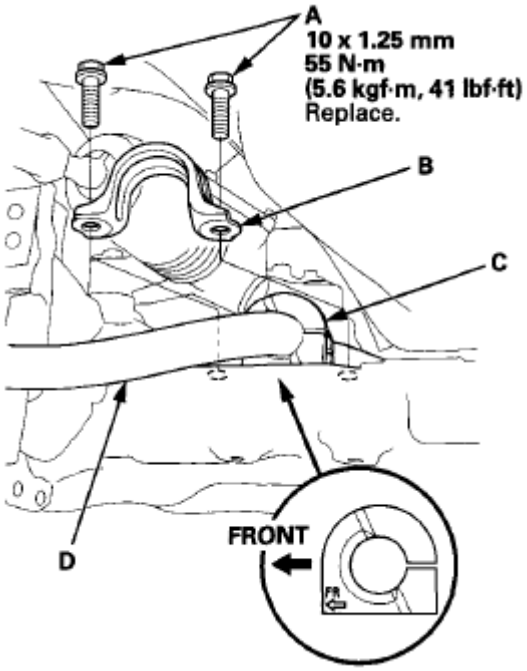


Fig. 58: Identifying Stabilizer Bar, Bushings, Bushing Holders And Flange Bolts With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

36. Move the stabilizer bar (D) toward the passenger's side, and remove the stabilizer bar.
37. Install the stabilizer bar.

NOTE:

- **Note the right and left direction of the stabilizer bar.**
- **Note the direction of installation for the bushings.**
- **Do not set the bushings on the bent or curved part of the stabilizer bar.**

38. Loosely install the new right rear subframe mounting bolt (A) and the new stiffener mounting bolt (B); insert the 15.7 mm side of the subframe alignment pin (070AG-SJAA10S) through the positioning slot (C) on the rear stiffener, through the positioning hole (D) on the front subframe, and into the positioning hole (E) on the body, then tighten the right rear subframe mounting bolt.

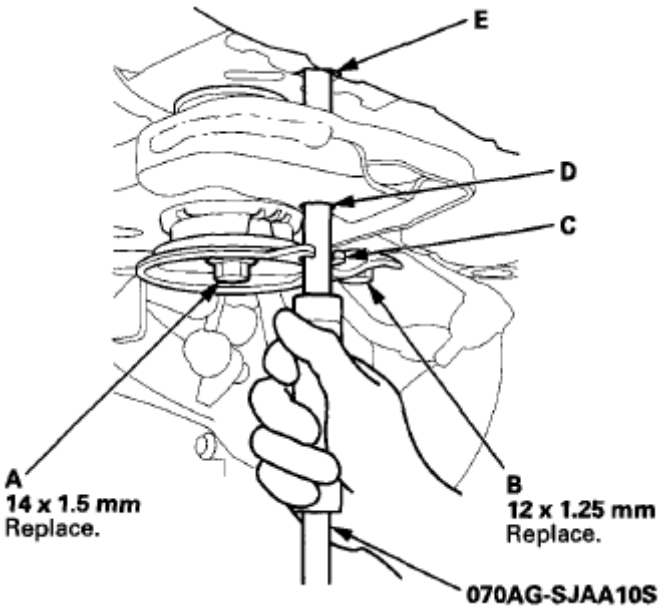


Fig. 59: Inserting Side Of Subframe Alignment Pin Through Positioning Slot On Rear Stiffener, Front Subframe And Into Positioning Hole On Body
Courtesy of AMERICAN HONDA MOTOR CO., INC.

39. Loosely install the new left rear subframe mounting bolt and the new stiffener mounting bolt with the same procedure as the right rear using the subframe alignment pin.
40. Loosely install the new subframe mounting bolt (A) and the stiffener mounting bolt (B) to both front stiffeners (C).

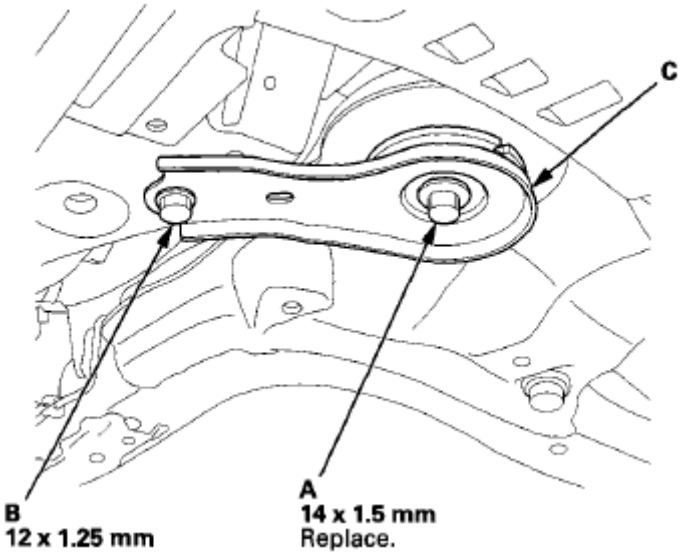


Fig. 60: Identifying Front Stiffeners, Subframe And Stiffener Mounting Bolts
Courtesy of AMERICAN HONDA MOTOR CO., INC.

41. Tighten the right rear subframe mounting bolt (A) to the specified torque.

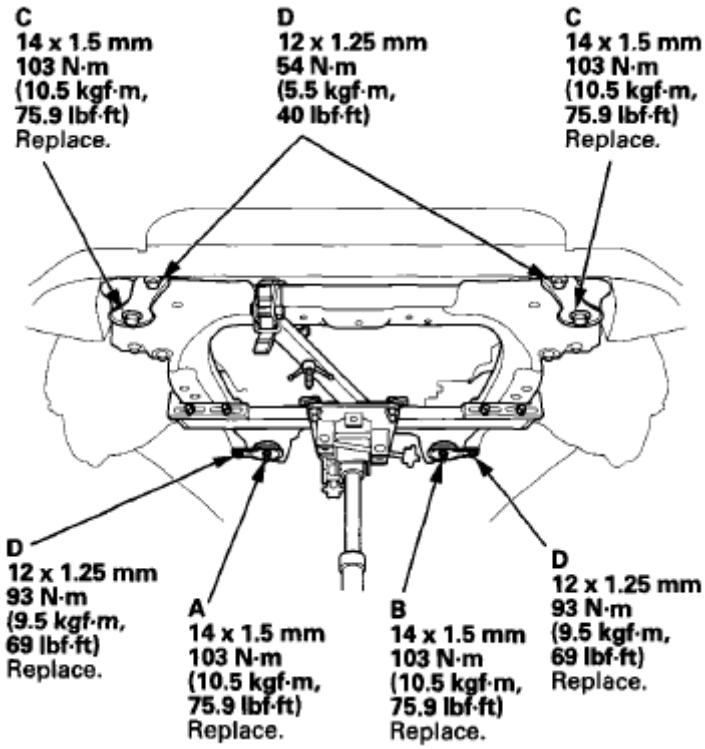


Fig. 61: Identifying Stiffener And Rear Subframe Mounting Bolts With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

42. Tighten the left rear subframe mounting bolt (B) to the specified torque.
43. Tighten the front side subframe mounting bolts (C) to the specified torque.

NOTE: Check all of the subframe mounting bolts, and retighten if necessary.

44. Tighten the stiffener mounting bolts (D) to the specified torque.

NOTE: Before tightening the stiffener mounting bolts, check that the positioning holes and slot are aligned using the subframe alignment pin.

45. Install all of the removed parts in the reverse order of removal, and note these items:
    - Refer to **STABILIZER LINK REMOVAL/INSTALLATION** to connect the stabilizer bar to the links.
    - If the center guide is in place, use it to determine the steering joint installation angle.
    - If the center guide is gone, check the steering joint installation angle (see **STEERING COLUMN REMOVAL AND INSTALLATION**).
    - When connecting the front and rear engine mount, first lightly tighten the mounting bolts, supporting the engine/transmission with a floor jack, then remove the jack, and tighten the bolts to the specified torque.
    - Before installing the wheel, clean the mating surfaces between the brake disc and inside of the wheel.

46. Do the battery terminal reconnection procedure (see **BATTERY TERMINAL DISCONNECTION AND RECONNECTION**).
47. Check the wheel alignment, and adjust it if necessary (see **WHEEL ALIGNMENT**).

DAMPER/SPRING REMOVAL AND INSTALLATION

REMOVAL

1. Raise and support the vehicle (see **LIFT AND SUPPORT POINTS**).
2. Remove the front wheel.
3. Remove the wheel speed sensor harness bracket (A).

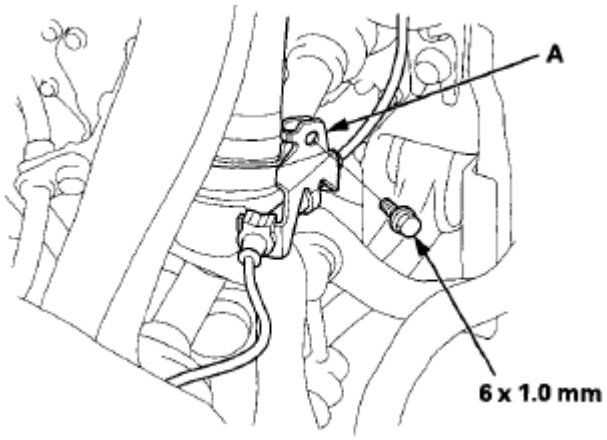


Fig. 62: Identifying Wheel Speed Sensor Harness Bracket
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Remove the damper pinch bolt (A) and the damper fork mounting nut (B) while holding the mounting bolt (C), then remove the damper fork (D) from the damper and the lower arm.

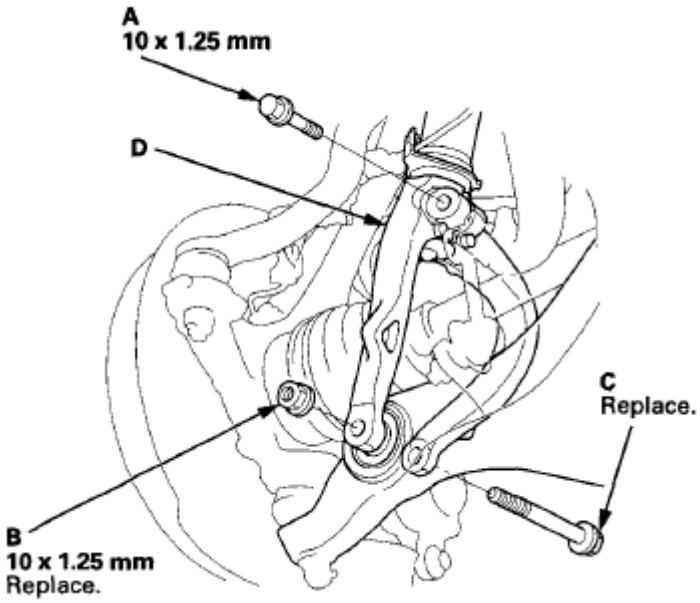


Fig. 63: Identifying Damper Fork, Mounting Nut And Damper Pinch Bolt
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Remove the front strut brace mounting nuts (A).

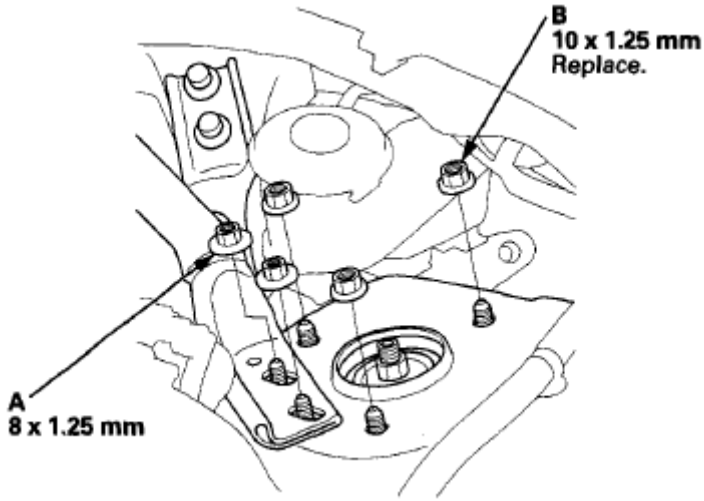


Fig. 64: Identifying Front Strut Brace And Damper Mounting Nuts
Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Remove the damper mounting nuts (B) from the top of the damper. Do not let the damper/spring drop down under its own weight.
7. Remove the damper/spring (A).

NOTE: Be careful not to damage the body.

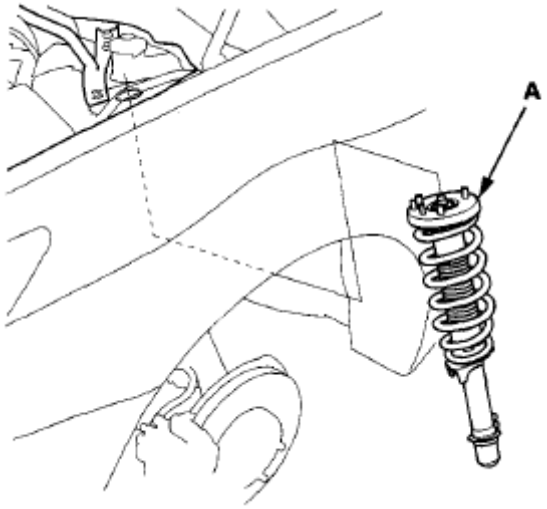


Fig. 65: Identifying Damper/Spring
Courtesy of AMERICAN HONDA MOTOR CO., INC.

INSTALLATION

1. Position the damper/spring (A) in the body with the aligning tab (B) facing inside.

NOTE: Be careful not to damage the body.

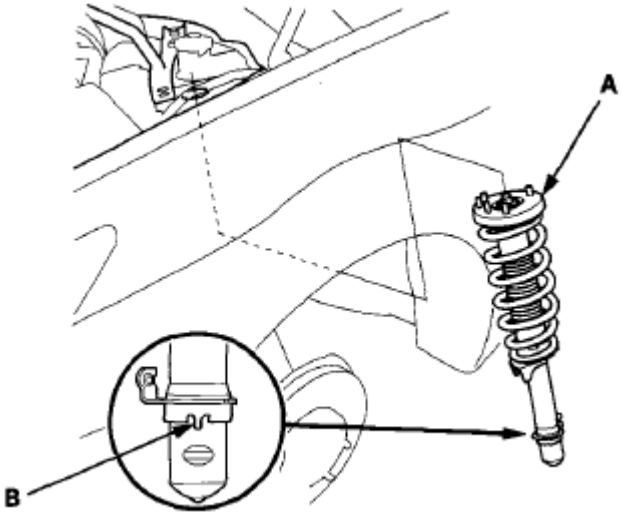


Fig. 66: Identifying Damper/Spring And Aligning Tab
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Loosely install the new damper mounting nuts (A) to the top of the damper.

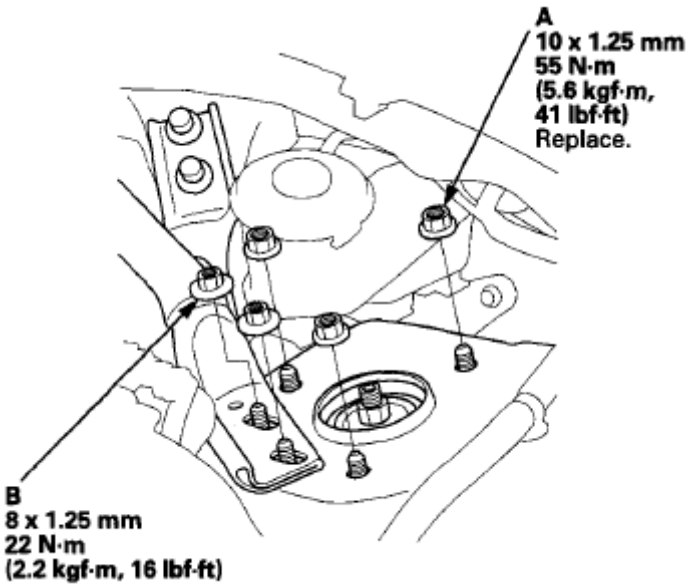


Fig. 67: Identifying Front Strut Brace And Damper Mounting Nuts With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Loosely install the front strut brace mounting nuts (B).
4. Install the damper fork (A) over the driveshaft and onto the lower arm (B). Install the aligning tab (C) on the damper unit into the slot (D) of the damper fork.

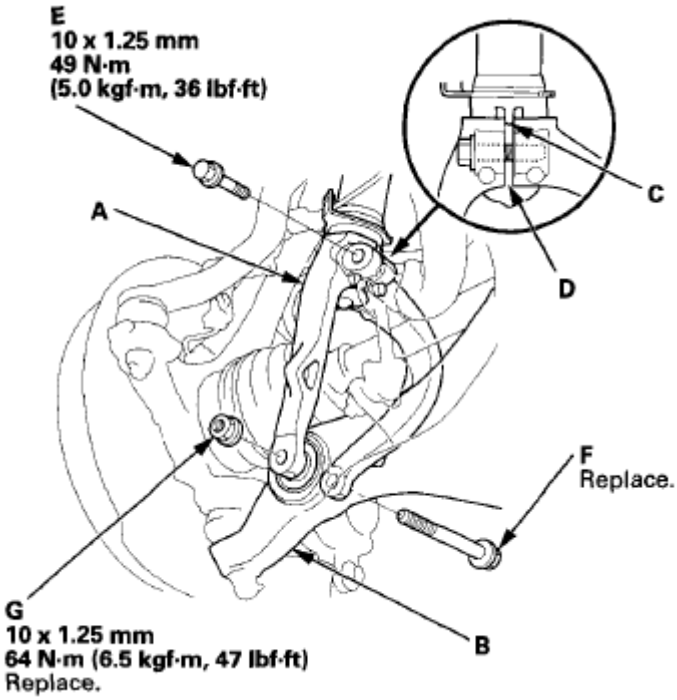


Fig. 68: Identifying Damper Fork, Lower Arm, Aligning Tab, Slot, Damper Pinch Bolt And Mounting Nut With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Loosely install the damper pinch bolt (E) into the damper fork.
6. Connect the damper fork and the lower arm with the new damper fork mounting bolt (F), then lightly tighten the new mounting nut (G).
7. Place a floor jack under the lower arm, and raise the suspension to load it with the vehicle's weight.

NOTE: Do not place the jack directly on the ball joint pin to load the suspension.

8. Tighten the damper pinch bolt and the damper fork mounting nut while holding the mounting bolt to the specified torque.
9. Tighten the damper mounting nuts and front strut brace mounting nuts on top of the damper to the specified torque.
10. Install the wheel speed sensor harness bracket (A).

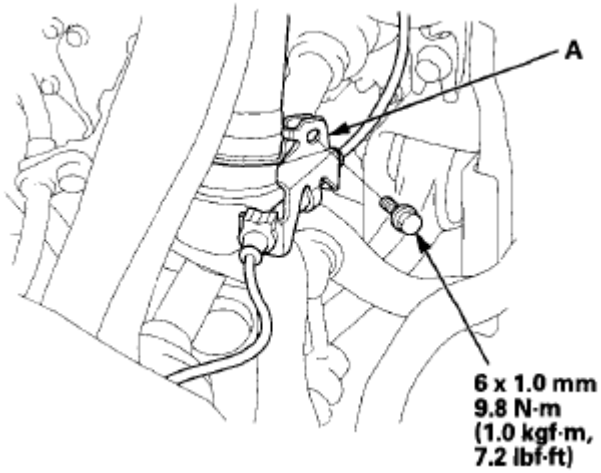


Fig. 69: Identifying Wheel Speed Sensor Harness Bracket With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

11. Clean the mating surfaces between the brake disc and the inside of the wheel, then install the front wheel.
12. Check the wheel alignment, and adjust it if necessary (see **WHEEL ALIGNMENT**).

DAMPER/SPRING DISASSEMBLY, INSPECTION, AND REASSEMBLY

EXPLODED VIEW

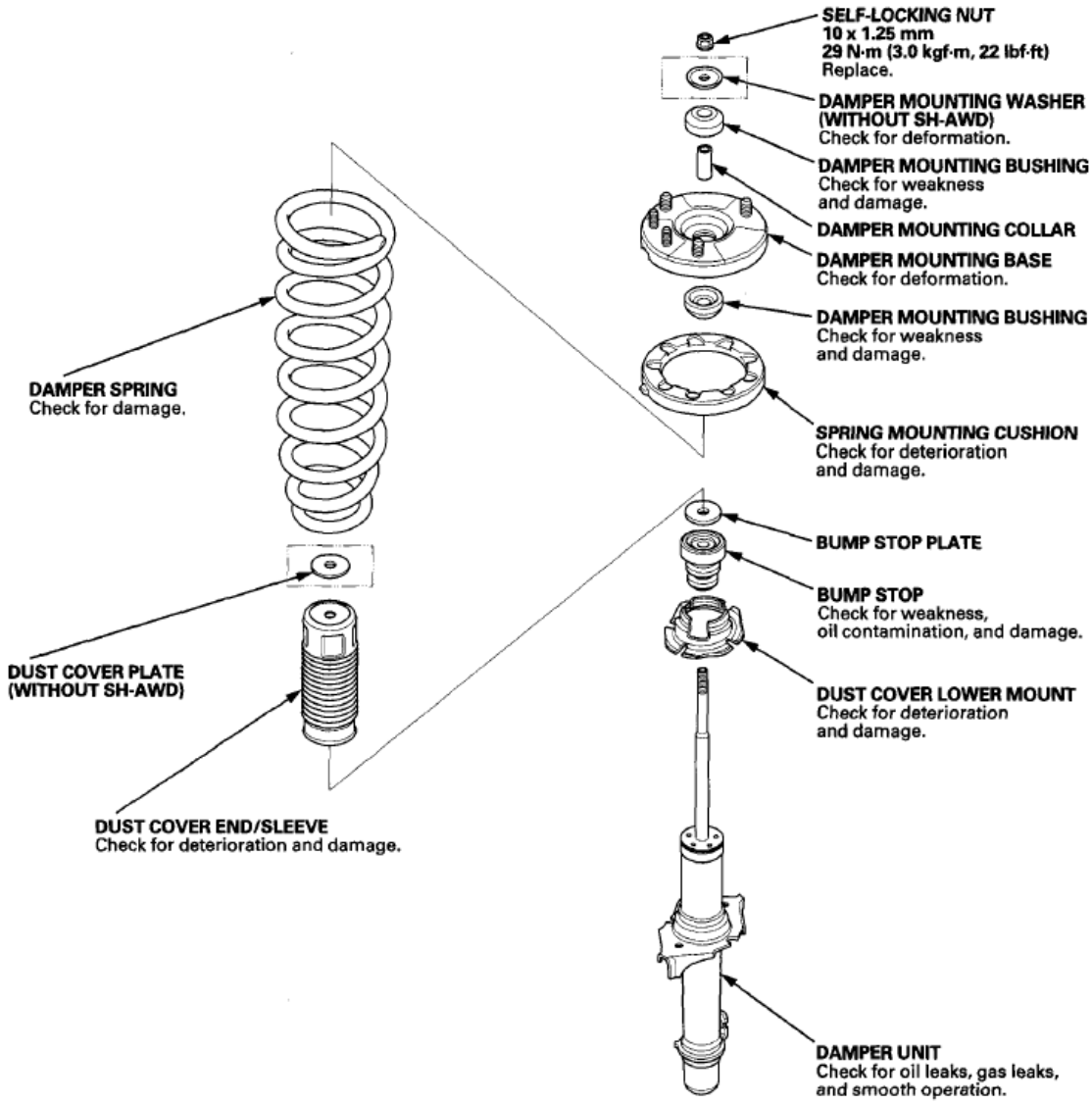


Fig. 70: Exploded View Of Damper/Spring With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

NOTE:

- **When compressing the damper spring, use a commercially available strut spring compressor (Branick MST-580A or Model 7200, or equivalent) according to the manufacturer's instructions.**
- **Refer to the EXPLODED VIEW as needed during the following procedure.**

DISASSEMBLY

1. Compress the damper spring, then remove the self-locking nut (A) while holding the damper shaft with a hex wrench (B). Do not compress the damper spring more than is necessary to remove the self-locking nut.

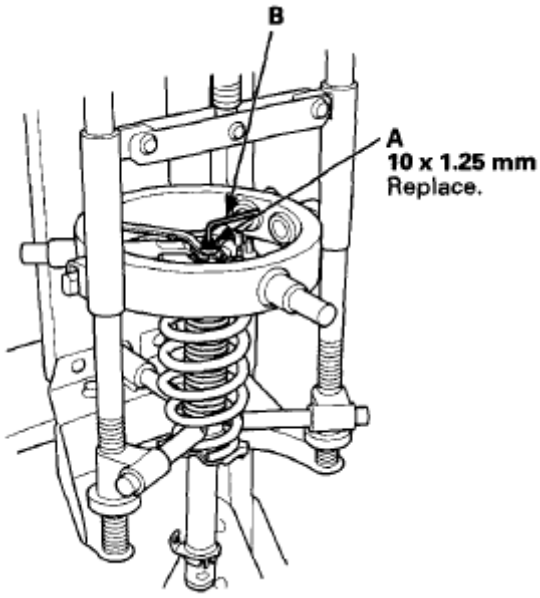


Fig. 71: Identifying Hex Wrench And Self-Locking Nut
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Release the pressure from the strut spring compressor, then disassemble the damper as shown in the Exploded View.

INSPECTION

1. Reassemble all the parts, except for the damper spring.
2. Compress the damper assembly by hand, and check for smooth operation through a full stroke, both compression and extension. The damper should extend smoothly and constantly when compression is released. If it does not, the gas is leaking and the damper should be replaced.

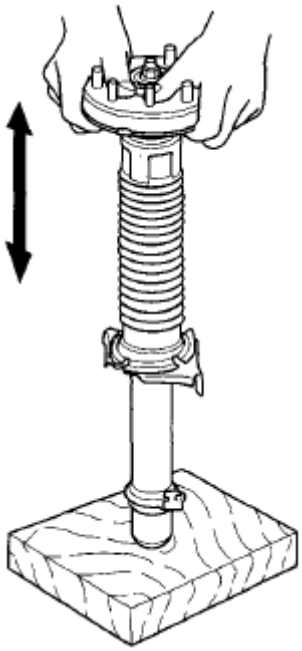


Fig. 72: Compressing Damper Assembly By Hand And Checking For Smooth Operation Through Full Stroke
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Check for oil leaks, abnormal noises, and binding during these tests.

REASSEMBLY

1. Install the spring mounting cushion (A) on the damper mounting base (B) by aligning the tab (C) and the notch (D).

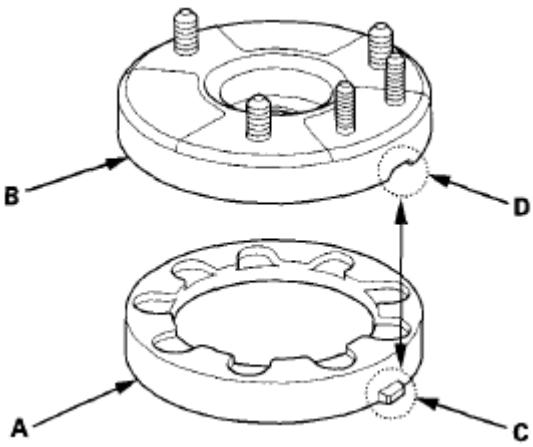


Fig. 73: Identifying Spring Mounting Cushion, Damper Mounting Base, Aligning Tab And Notch
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Install all the parts except the damper mounting washer (Without SH-AWD) and the self-locking nut onto

the damper unit by referring to the **EXPLODED VIEW**.

3. Compress the damper spring using a strut spring compressor. Do not compress the spring excessively.
4. Align the lower end (A) of the damper spring with the stepped part (B) of the dust cover lower mount and the lower spring seat on the damper unit.

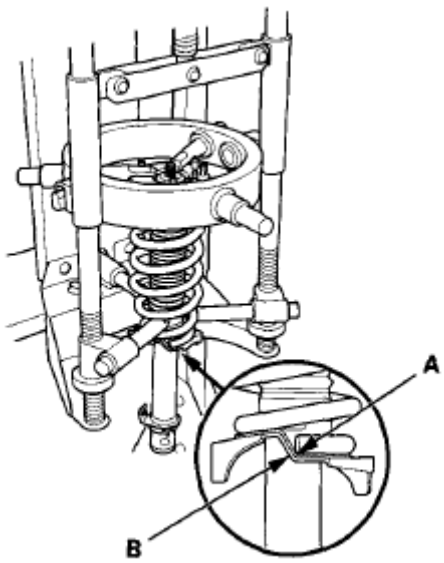


Fig. 74: Aligning Lower End Of Damper Spring With Stepped Part Of Dust Cover Lower Mount
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Position the tab (A) on the spring mounting cushion facing forward but toward the inside of the vehicle.

Left

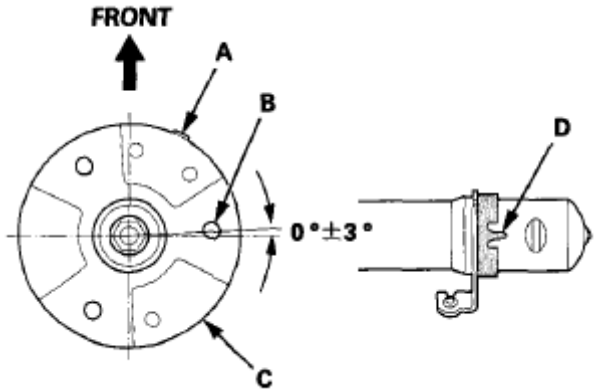


Fig. 75: Positioning Tab On Spring Mounting Cushion - Left
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Right

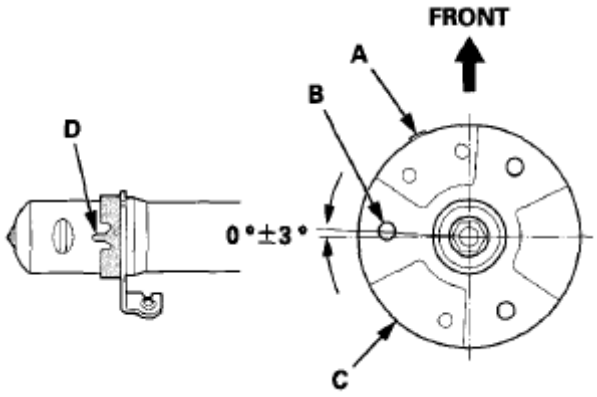


Fig. 76: Positioning Tab On Spring Mounting Cushion - Right
Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Align the angle of the stud (B) on the damper mounting base (C) with the aligning tab (D) on the bottom of the damper unit as shown.
7. Install the damper mounting washer (without SH-AWD) (A) and the new self-locking nut (B).

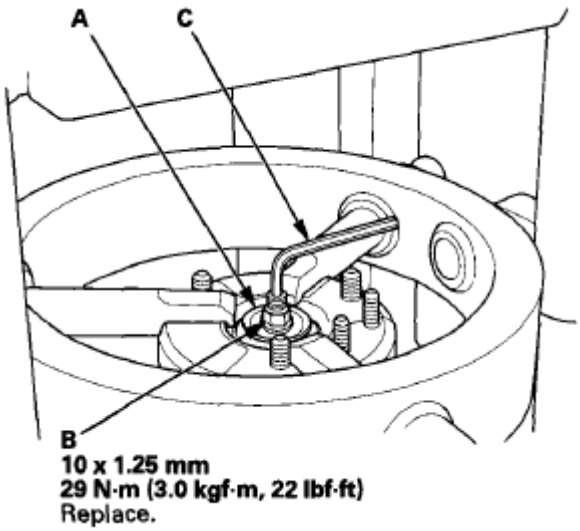


Fig. 77: Identifying Self-Locking Nut With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

8. Hold the damper shaft with a hex wrench (C), and tighten the self-locking nut to the specified torque.
9. Remove the damper/spring from the strut spring compressor.

2012 SUSPENSION

Rear Suspension - TL

KNUCKLE/HUB BEARING UNIT REPLACEMENT

EXPLODED VIEW

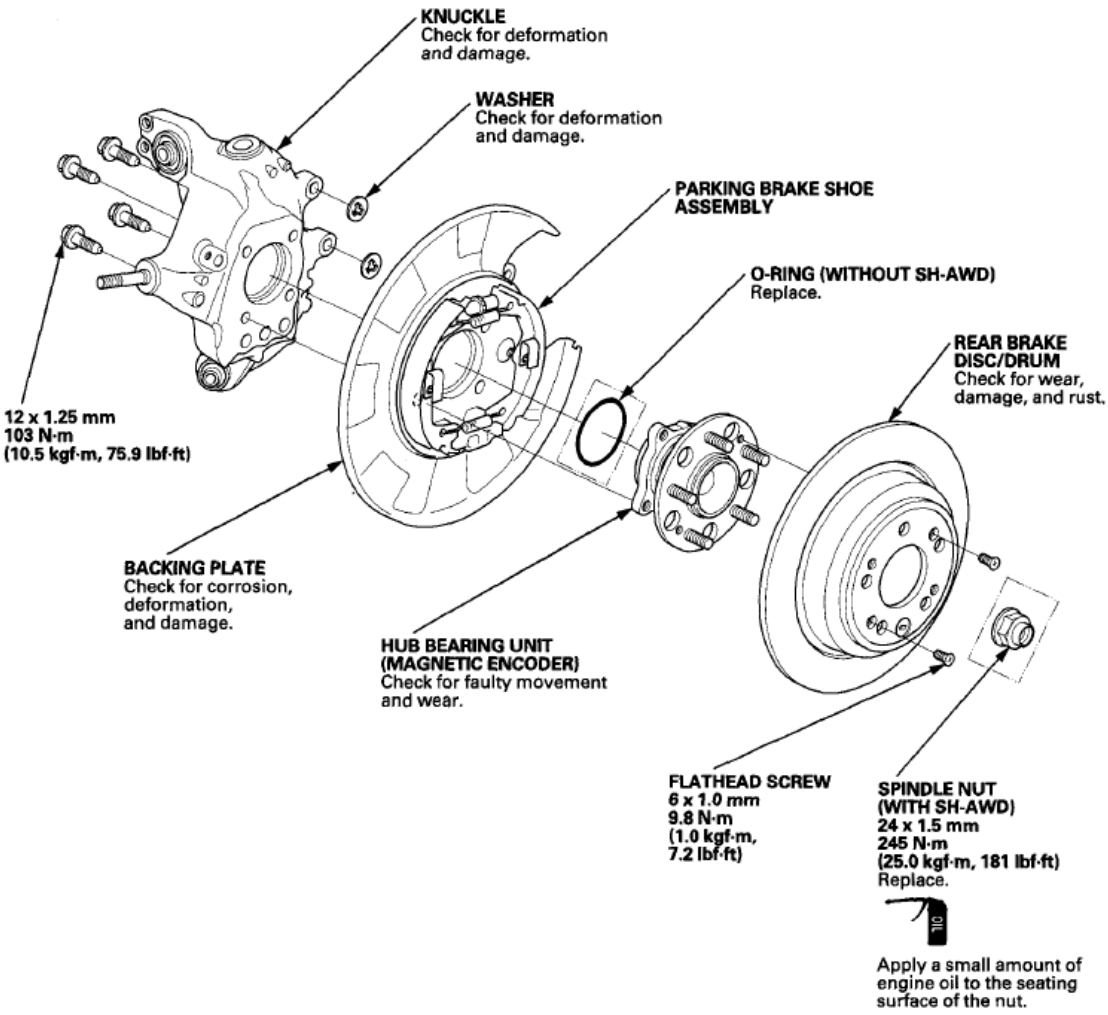


Fig. 1: Exploded View Of Knuckle/Hub Bearing Unit With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Special Tools Required

- Ball Joint Thread Protector, 14 mm 07AAE-SJAA100
- Ball Joint Remover, 32 mm 07MAC-SL0A102

NOTE: Refer to the EXPLODED VIEW as needed during the following procedure.

HUB BEARING UNIT REPLACEMENT

1. Raise and support the vehicle (see **LIFT AND SUPPORT POINTS**).
2. Remove the wheel nuts (A), and the rear wheel.

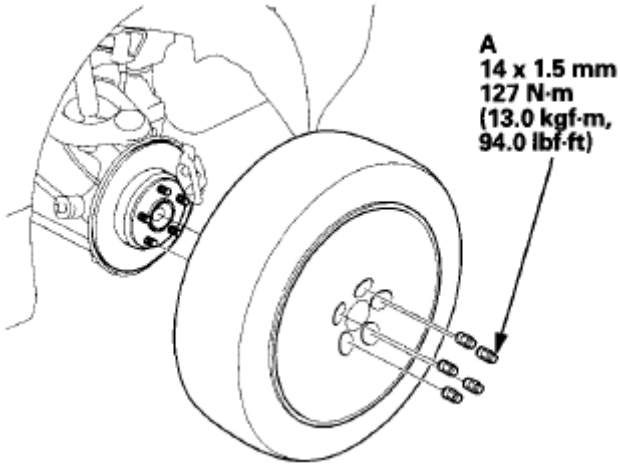


Fig. 2: Identifying Wheel Nuts With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Release the parking brake lever fully.
4. Remove the brake hose mounting bolt (A).

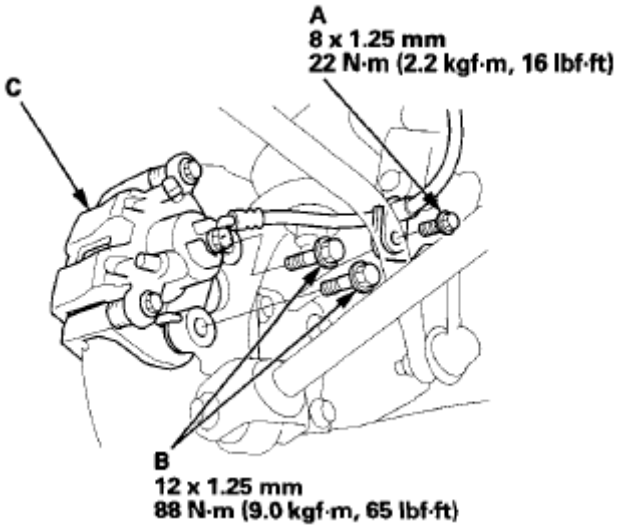


Fig. 3: Identifying Brake Hose Mounting Bolts, Bracket Mounting Bolts And Caliper Assembly With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Remove the brake caliper bracket mounting bolts (B), then remove the caliper assembly (C) from the knuckle. To prevent damage to the caliper assembly or the brake hose, use a short piece of wire to hang

the caliper assembly from the undercarriage. Do not twist the brake hose excessively.

6. Remove the two washers (A).

NOTE: During installation, make sure the washers are installed between the brake caliper bracket and the knuckle.

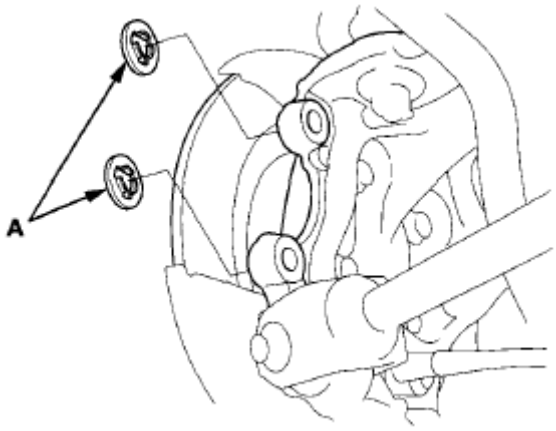


Fig. 4: Identifying Hub Bearing Washers
Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. With SH-AWD: Pry up the stake (A) on the spindle nut (B), then remove the nut.

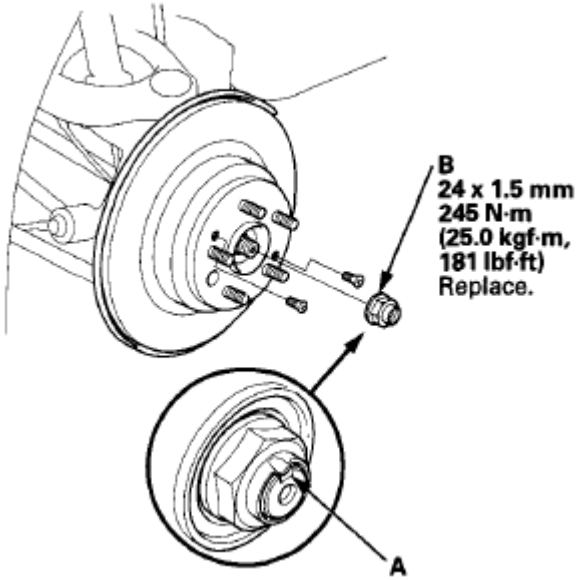


Fig. 5: Identifying Stake And Spindle Nut With Torque Specifications (With SH-AWD)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

8. Remove the rear brake disc/drum (see **REAR BRAKE DISC REPLACEMENT**).
9. Without SH-AWD: Remove the hub bearing unit (A) and the O-ring (B).

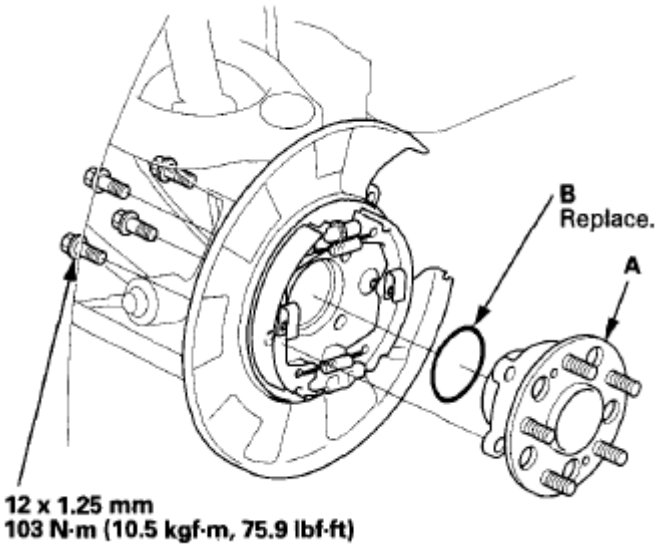


Fig. 6: Identifying Hub Bearing Unit And O-Ring With Torque Specifications (Without SH-AWD)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

10. With SH-AWD: Remove the flange bolts (A), and remove the hub bearing unit (B) by tapping the driveshaft end (C) with a soft face hammer while drawing the hub bearing unit outward.

NOTE: Do not pull the driveshaft end outward. The driveshaft inboard joint may come apart.

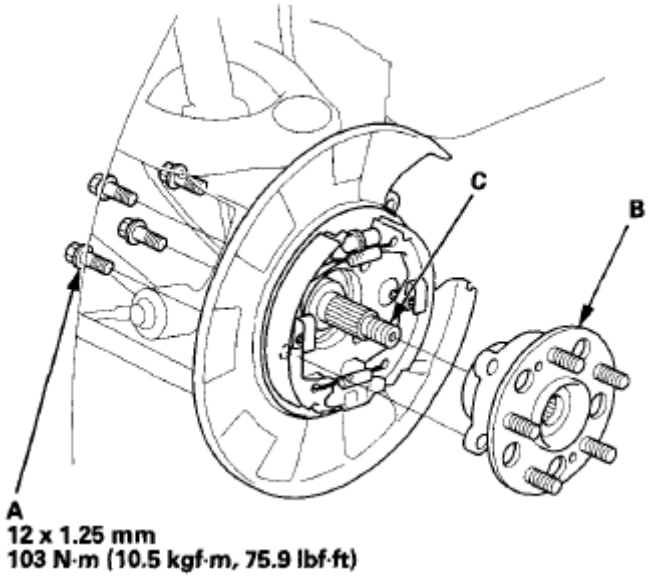


Fig. 7: Identifying Hub Bearing Unit With Torque Specifications (With SH-AWD)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

11. Check the hub bearing unit for damage and cracks.

12. Install the hub bearing unit in the reverse order of removal, and note these items:
    - Without SH-AWD: Use a new O-ring on reassembly.
    - With SH-AWD: Use a new spindle nut on reassembly.
    - With SH-AWD: Before installing the spindle nut, apply a small amount of engine oil to the seating surface of the nut. After tightening, use a drift to stake the spindle nut shoulder against the driveshaft.
    - Before installing the brake disc/drum, clean the mating surfaces between the hub bearing unit and the brake disc/drum.
    - Before installing the wheel, clean the mating surfaces between the brake disc/drum and the inside of the wheel.
13. Check the wheel alignment, and adjust it if necessary (see **WHEEL ALIGNMENT**).

KNUCKLE REPLACEMENT

NOTE: The illustrations show the model without SH-AWD; the model with SH-AWD is similar.

1. Remove the hub bearing unit.
2. Remove the parking brake shoes, and disconnect the parking brake cable from the parking brake lever (see **PARKING BRAKE SHOE REPLACEMENT**).
3. Remove the parking brake cable mounting nuts (A) from the backing plate (B), and remove the parking brake cable (C).

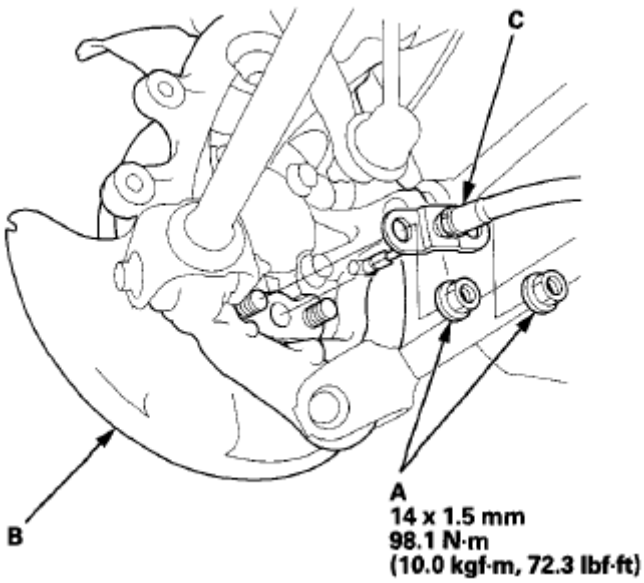


Fig. 8: Identifying Mounting Nuts, Backing Plate And Parking Brake Cable With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Remove the backing plate with the parking brake shoe assembly.

5. Remove the lock pin (A) from the upper arm ball joint, then remove the castle nut (B).

NOTE: During installation, install the lock pin as shown after tightening the new castle nut.

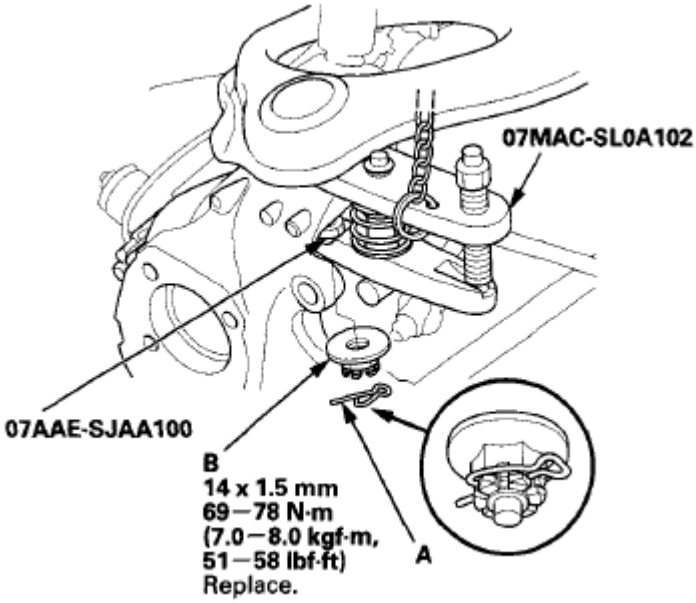


Fig. 9: Identifying Lock Pin And Castle Nut With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Disconnect the upper arm ball joint from the knuckle using the ball joint thread protector and the ball joint remover (see **BALL JOINT REMOVAL**).

NOTE:

- **Be careful not to damage the ball joint boot when installing the remover.**
- **During installation, to connect the ball joint, raise up the suspension with a jack (see step 7).**

7. Remove the wheel speed sensor (A) from the knuckle. Do not disconnect the wheel speed sensor connector.

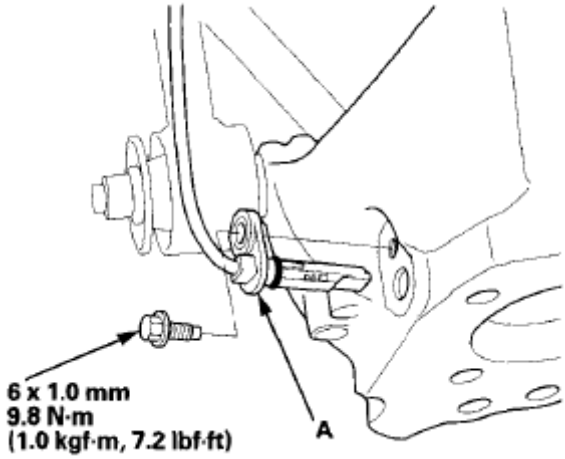


Fig. 10: Identifying Wheel Speed Sensor With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

8. Remove the brake hose bracket mounting nuts (A), then disconnect the brake hose bracket (B) from the knuckle.

NOTE: Use the new mounting nuts during reassembly.

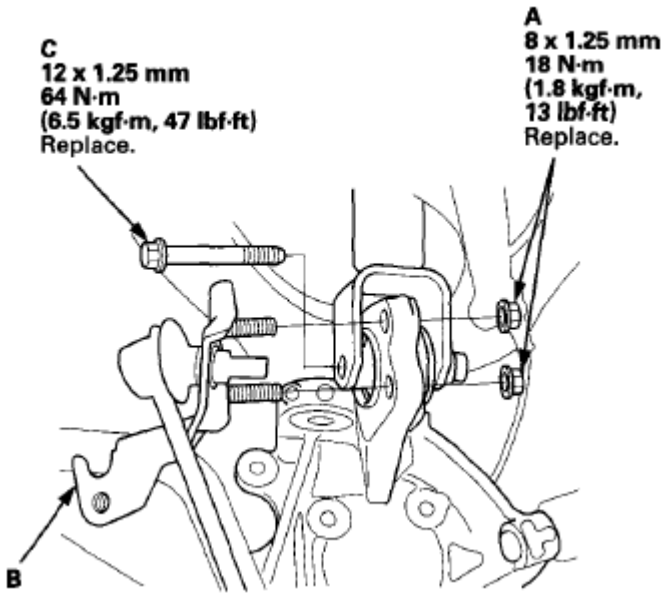


Fig. 11: Identifying Brake Hose Bracket, Mounting Nuts And Damper Lower Mounting Bolt With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

9. Remove the damper lower mounting bolt (C).

NOTE: Use a new mounting bolt during reassembly.

10. Remove the control arm mounting self-locking nut (A) and the washer (B).

NOTE: Use a new self-locking nut during reassembly.

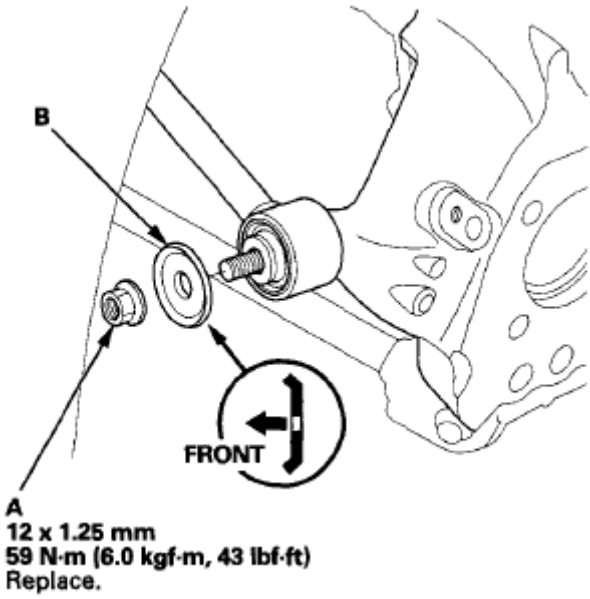


Fig. 12: Removing Control Arm Mounting Self-Locking Nut And Washer With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

11. Remove the lower arm A mounting bolt (A), and the lower arm B mounting bolt (B), then remove the knuckle (C).

NOTE: Use new mounting bolts during reassembly.

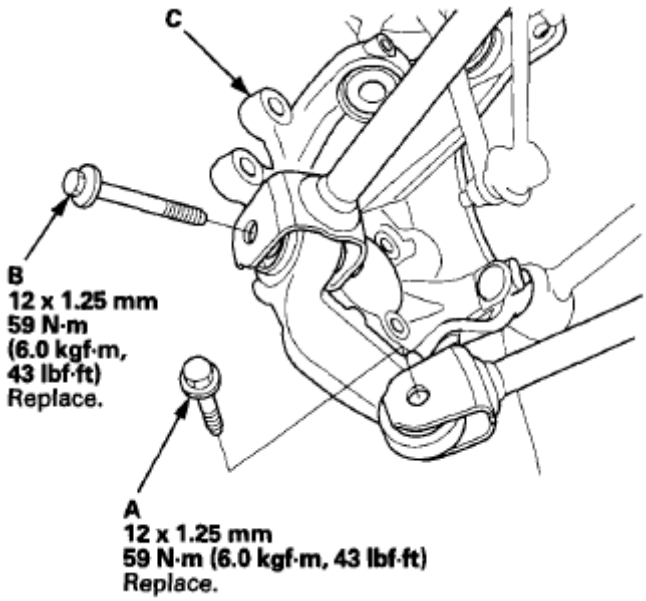


Fig. 13: Identifying Lower Arm Mounting Bolts And Knuckle With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

12. Install the knuckle in the reverse order of removal, and note these items:
    - First install all of the components, and lightly tighten the bolts and the nuts, then raise the suspension to load it with the vehicle's weight before fully tightening to the specified torque.
    - Be careful not to damage the ball joint boot when connecting the knuckle.
    - Before connecting the ball joint, degrease the threaded section and the tapered portion of the ball joint pin, the ball joint connecting hole, the threaded section, and the mating surfaces of the castle nut.
    - Torque the castle nut to the lower torque specification, then tighten it only far enough to align the slot with the ball joint pin hole. Do not align the castle nut by loosening it.
    - Before installing the wheel, clean the mating surfaces between the brake disc/drum and the inside of the wheel.
13. Check the wheel alignment, and adjust it if necessary (see **WHEEL ALIGNMENT**).

UPPER ARM REPLACEMENT

Special Tools Required

- Ball Joint Thread Protector, 14 mm 07AAE-SJAA100
- Ball Joint Remover, 32 mm 07MAC-SL0A102

1. Raise and support the vehicle (see **LIFT AND SUPPORT POINTS**).
2. Remove the rear wheel.
3. Remove the rear damper/spring (see **DAMPER/SPRING REMOVAL AND INSTALLATION**).
4. Release the parking brake lever fully.

5. Remove the brake caliper bracket mounting bolts (A), then remove the caliper assembly (B) from the knuckle. To prevent damage to the caliper assembly or the brake hose, use a short piece of wire to hang the caliper assembly from the undercarriage. Do not twist the brake hose excessively.

NOTE: Make sure the washers (C) are reinstalled between the brake caliper bracket and the knuckle, if they are removed (see step 6).

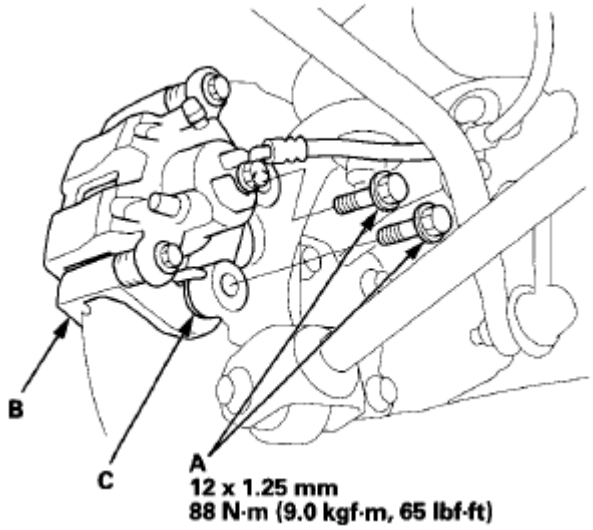


Fig. 14: Identifying Brake Caliper Bracket Mounting Bolts, Caliper Assembly And Washers With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Remove the lock pin (A) from the upper arm ball joint, then remove the castle nut (B).

NOTE: During installation, install the lock pin as shown after tightening the new castle nut.

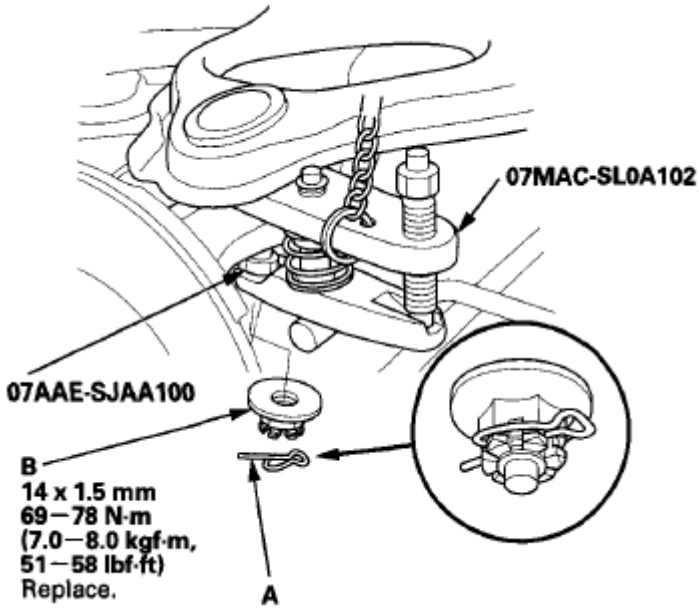


Fig. 15: Identifying Lock Pin And Castle Nut With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Disconnect the upper arm ball joint from the knuckle using the ball joint thread protector and the ball joint remover (see **BALL JOINT REMOVAL**).

NOTE:

- **Be careful not to damage the ball joint boot when installing the remover.**
- **During installation, to connect the ball joint, position a floor jack under the connecting point of the knuckle and lower arm A, and raise the suspension with the jack.**

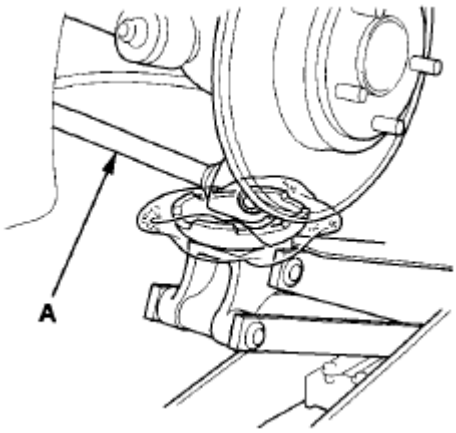


Fig. 16: Positioning Floor Jack Under Connecting Point Of Knuckle And Lower Arm
Courtesy of AMERICAN HONDA MOTOR CO., INC.

8. Remove the wheel speed sensor harness bracket (A).

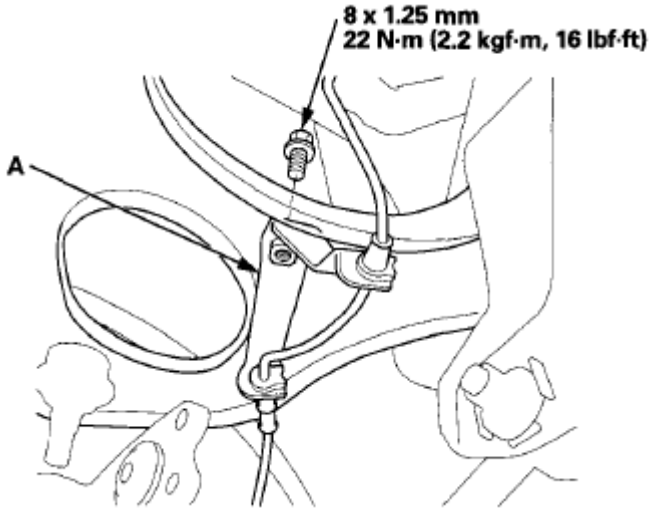


Fig. 17: Identifying Wheel Speed Sensor Harness Bracket With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

9. Remove the upper arm mounting bolts (A), then remove the upper arm (B).

NOTE: Use new mounting bolts during reassembly.

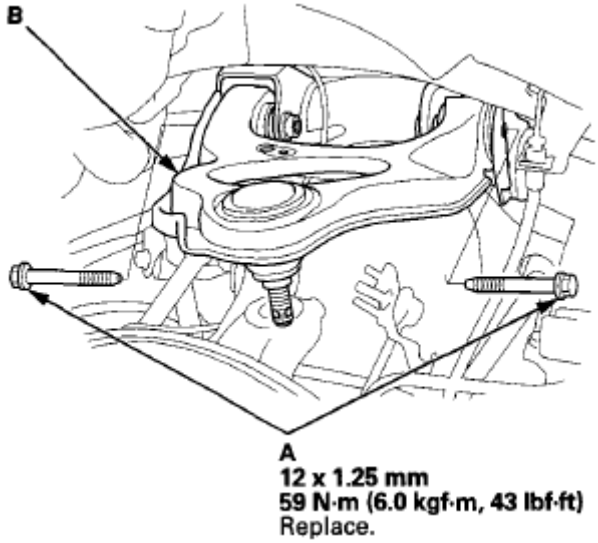


Fig. 18: Identifying Upper Arm And Mounting Bolts With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

10. Install the upper arm in the reverse order of removal, and note these items;
    - First install all of the components, and lightly tighten the bolts and the nuts, then raise the suspension to load it with the vehicle's weight before fully tightening to the specified torque.
    - Be careful not to damage the ball joint boot when connecting the knuckle.
    - Before connecting the ball joint, degrease the threaded section and the tapered portion of the ball

joint pin, the ball joint connecting hole, the threaded section, and the mating surfaces of the castle nut.

- Torque the castle nut to the lower torque specification, then tighten it only far enough to align the slot with the ball joint pin hole. Do not align the castle nut by loosening it.
- Before installing the wheel, clean the mating surfaces between the brake disc/drum and the inside of the wheel.

11. Check the wheel alignment, and adjust it if necessary (see **WHEEL ALIGNMENT**).

LOWER ARM A REPLACEMENT

1. Raise and support the vehicle (see **LIFT AND SUPPORT POINTS**).
2. Remove the rear wheel.
3. Remove the parking brake cable mounting bolt (B).

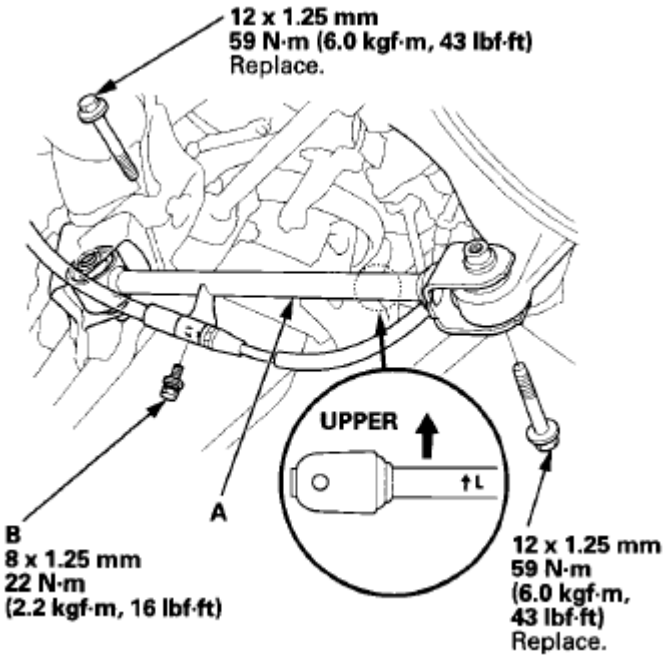


Fig. 19: Identifying Lower Arm And Parking Brake Cable Mounting Bolts With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Remove the lower arm A mounting bolts, then remove lower arm A.

NOTE: Use new mounting bolts during reassembly.

5. Install lower arm A in the reverse order of removal, and note these items:
   - First install all of the components, and lightly tighten the bolts, then raise the suspension to load it with the vehicle's weight before fully tightening to the specified torque.
   - Before installing the wheel, clean the mating surfaces between the brake disc/drum and the inside

of the wheel.

6. Check the wheel alignment, and adjust it if necessary (see **WHEEL ALIGNMENT**).

CONTROL ARM REPLACEMENT

1. Raise and support the vehicle (see **LIFT AND SUPPORT POINTS**).
2. Remove the rear wheel,
3. Remove the control arm mounting self-locking nut (A) and the washer (B) from the knuckle side.

NOTE: Use a new self-locking nut during reassembly.

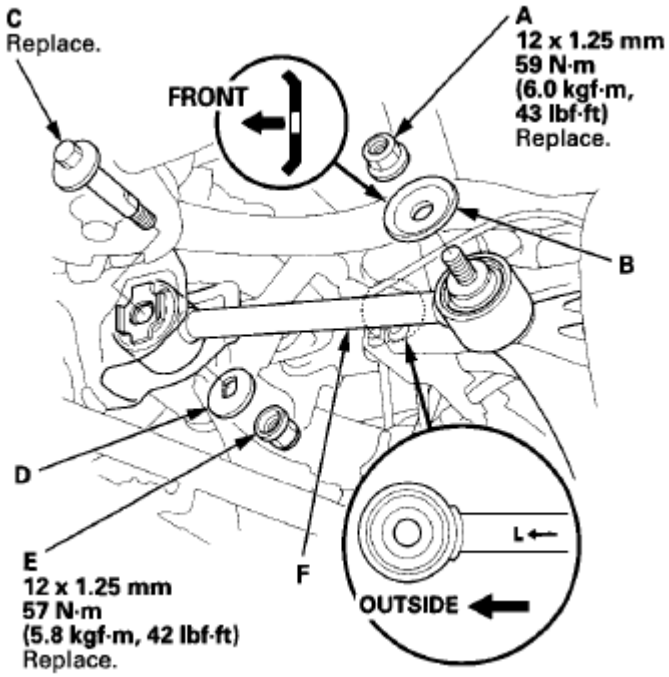


Fig. 20: Identifying Self-Locking Nuts, Washer, Adjusting Bolt, Cam Plate And Control Arm With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Mark the cam positions of the adjusting bolt (C) and the adjusting cam plate (D) with the frame.
5. Remove the self-locking nut (E) while holding the adjusting bolt, then remove the adjusting cam plate, the adjusting bolt, and the control arm (F).

NOTE: Use a new adjusting bolt and a new self-locking nut during reassembly.

6. Install the control arm in the reverse order of removal, and note these items:
   - First install all of the components, and lightly tighten the bolts and the nuts, then raise the suspension to load it with the vehicle's weight before fully tightening to the specified torque.
   - Position the extended surfaces of the cam on the adjusting bolt and the adjusting cam plate facing

down.

- Align the cam positions of the adjusting bolt and the adjusting cam plate with the marked positions on the frame when tightening the self-locking nut.
- Before installing the wheel, clean the mating surfaces between the brake disc/drum and the inside of the wheel.

7. Check the wheel alignment, and adjust it if necessary (see **WHEEL ALIGNMENT**).

LOWER ARM B REPLACEMENT

1. Raise and support the vehicle (see **LIFT AND SUPPORT POINTS**).
2. Remove the rear wheel.
3. Remove the lower arm B mounting bolts, then remove lower arm B.

NOTE: Use new mounting bolts during reassembly.

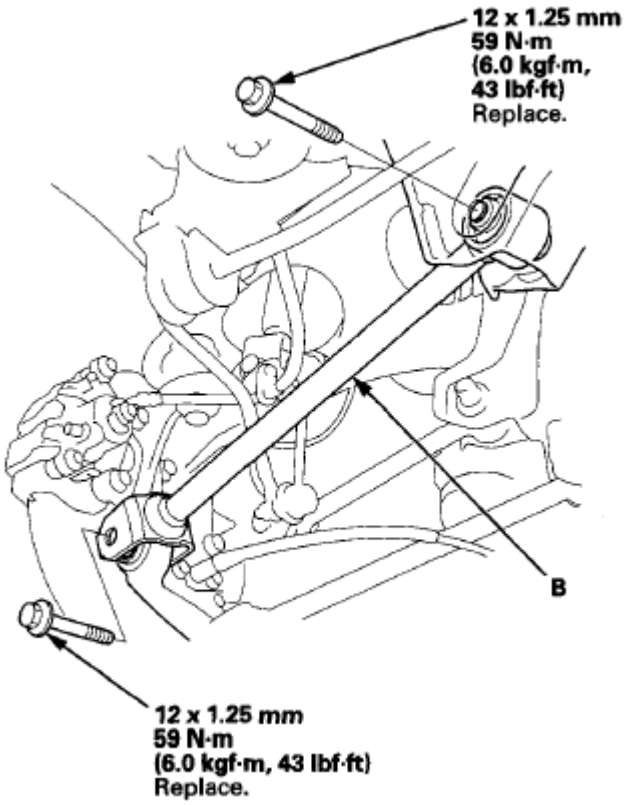


Fig. 21: Identifying Lower Arm B & Fasteners With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Install lower arm B in the reverse order of removal, and note these items:
   - First install all of the components, and lightly tighten the bolts, then raise the suspension to load it with the vehicle's weight before fully tightening to the specified torque.
   - Before installing the wheel, clean the mating surfaces between the brake disc/drum and the inside

of the wheel.

5. Check the wheel alignment, and adjust it if necessary (see **WHEEL ALIGNMENT**).

STABILIZER LINK REMOVAL/INSTALLATION

1. Raise and support the vehicle (see **LIFT AND SUPPORT POINTS**).
2. Remove the rear wheel.
3. Remove the self-locking nuts (A) while holding the respective joint pin (B) with a hex wrench (C), then remove the stabilizer link (D).

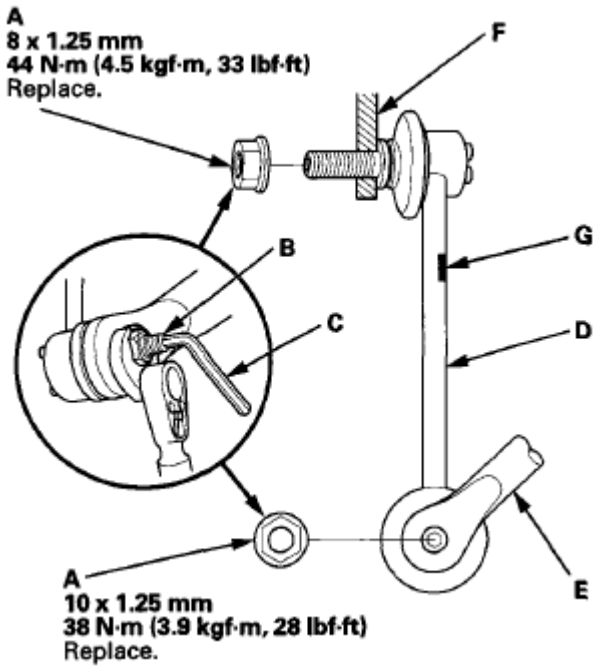


Fig. 22: Identifying Self-Locking Nut, Joint Pin, Hex Wrench, Stabilizer Link, Bar, Brake Hose Bracket And Paint Mark With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Install the stabilizer link on the stabilizer bar (E) and the brake hose bracket (F) with the joint pins set at the center of their range of movement.

NOTE:

- **The stabilizer link has a paint mark (G). The paint mark indicates the difference between the left and right stabilizer links.**
- **Install the end of the stabilizer link with the paint mark in the upper position.**

5. Install the new self-locking nuts, and tighten them to the specified torque while holding the respective joint pin with a hex wrench.
6. Clean the mating surfaces between the brake disc/drum and the inside of the wheel, then install the rear wheel.

7. Test-drive the vehicle.
8. After 5 minutes of driving, tighten the self-locking nuts again to the specified torque.

STABILIZER BAR REPLACEMENT

1. Raise and support the vehicle (see **LIFT AND SUPPORT POINTS**).
2. Remove the rear wheels.
3. Disconnect both stabilizer links from the stabilizer bar (see **STABILIZER LINK REMOVAL/INSTALLATION**).
4. Remove the flange bolts (A) and the bushing holders (B), then remove the bushings (C) and the stabilizer bar (D).

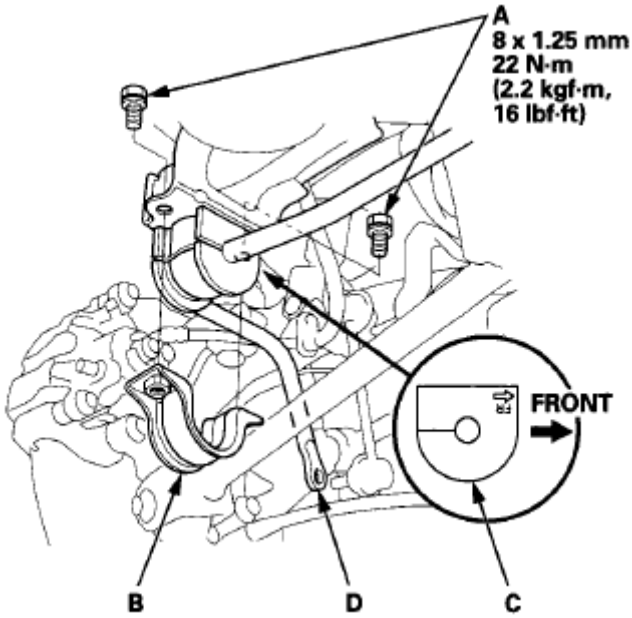


Fig. 23: Identifying Flange Bolts, Bushing Holder, Bushing And Stabilizer Bar With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Install the stabilizer bar in the reverse order of removal, and note these items:
   - Note the right and left direction of the stabilizer bar.
   - Note the direction of installation for the bushing.
   - Do not set the bushings on the bent or curved part of the stabilizer bar.
   - Refer to the **STABILIZER LINK REMOVAL/INSTALLATION** to connect the stabilizer bar to the links.
   - Before installing the wheel, clean the mating surfaces between the brake disc/drum and the inside of the wheel.

DAMPER/SPRING REMOVAL AND INSTALLATION

REMOVAL

1. Raise and support the vehicle (see **LIFT AND SUPPORT POINTS**).
2. Remove the rear wheel.
3. Remove the brake hose mounting bolt (A).

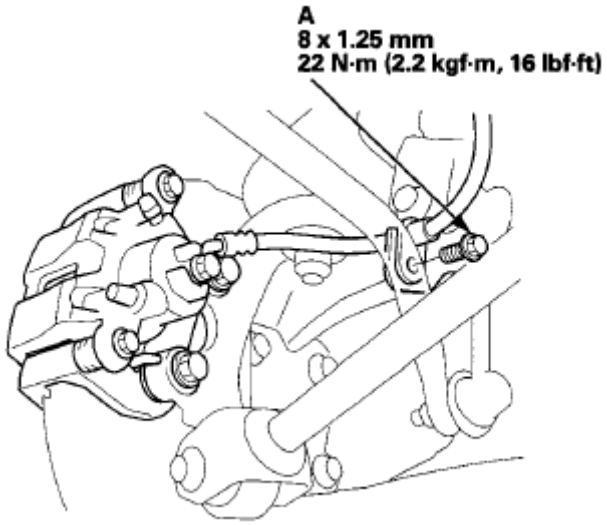


Fig. 24: Identifying Brake Hose Mounting Bolt With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Remove the rear seat (see **REAR SEAT REMOVAL/INSTALLATION**).
5. Remove the damper mounting nuts (A) from the top of the damper.

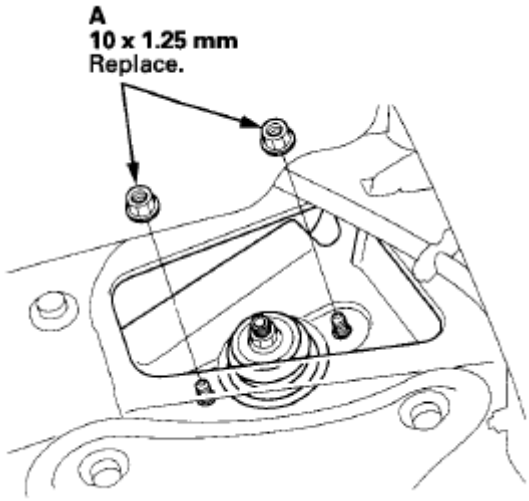


Fig. 25: Identifying Damper Mounting Nuts
Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Remove the brake hose bracket mounting nuts (A), then disconnect the brake hose bracket (B) from the

knuckle.

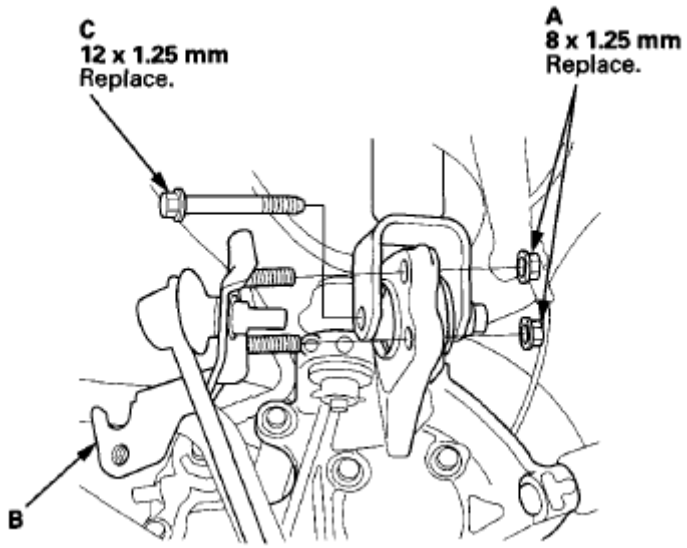


Fig. 26: Identifying Brake Hose Bracket, Mounting Nuts And Damper Lower Mounting Bolts
Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Remove the damper lower mounting bolt (C).
8. Remove the damper/spring (A) by lowering the rear suspension.

NOTE: Be careful not to damage the body.

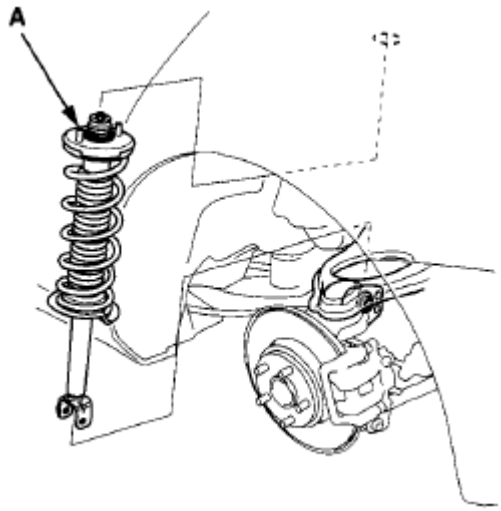


Fig. 27: Identifying Damper/Spring Of Rear Suspension
Courtesy of AMERICAN HONDA MOTOR CO., INC.

INSTALLATION

1. Lower the rear suspension, and position the damper/spring (A) in the body with the welded nut (B) on the

bottom of the damper facing forward.

NOTE:

- **Be careful not to damage the body.**
- **Make sure the damper is installed in the correct direction.**

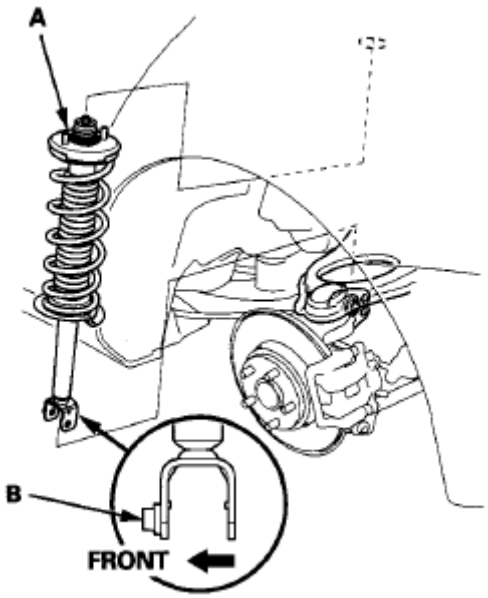


Fig. 28: Identifying Damper/Spring And Welded Nut
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Loosely install the new damper mounting nuts (A) to the top of the damper.

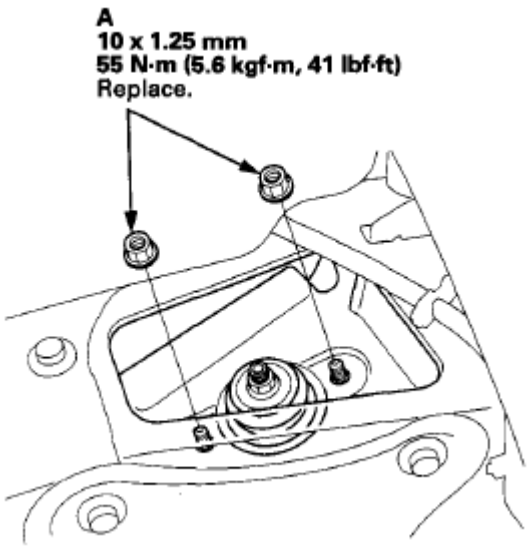


Fig. 29: Identifying Damper Mounting Nuts With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Loosely install the new damper lower mounting bolt (A) on the bottom of the damper. Connect the brake hose bracket (B) to the knuckle, and loosely install the new brake hose bracket mounting nuts (C).

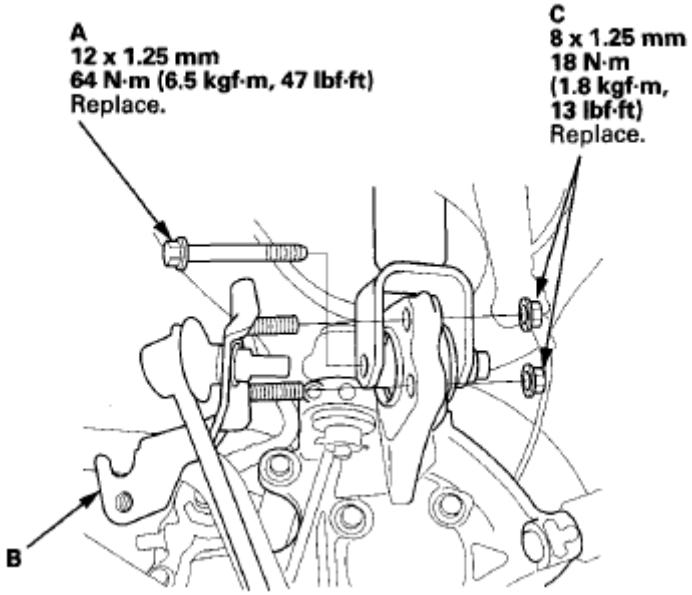


Fig. 30: Identifying Brake Hose Bracket, Lower Mounting Bolt And Nuts With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Place a floor jack under the connecting point of the knuckle and lower arm A, and raise the suspension to load it with the vehicle's weight.
5. Tighten the damper lower mounting bolt and the brake hose bracket mounting nuts to the specified torque.
6. Tighten the damper mounting nuts on top of the damper to the specified torque.
7. Install the brake hose mounting bolt (A), and tighten the mounting bolt to the specified torque.

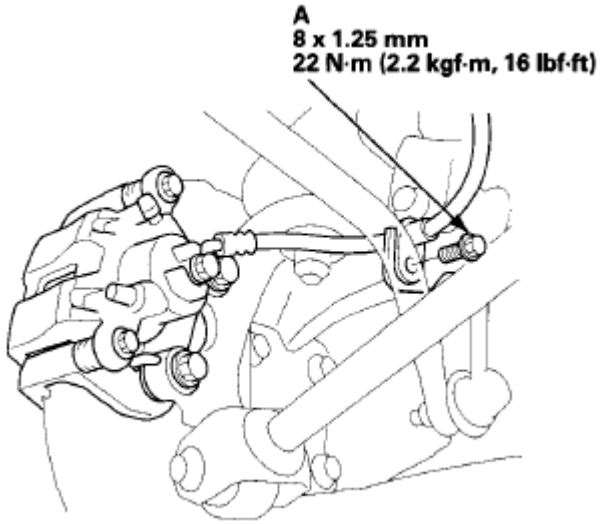


Fig. 31: Identifying Brake Hose Mounting Bolt With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

8. Install the rear seat (see **REAR SEAT REMOVAL/INSTALLATION**).
9. Clean the mating surfaces between the brake disc/drum and the inside of the wheel, then install the rear wheel.
10. Check the wheel alignment, and adjust it if necessary (see **WHEEL ALIGNMENT**).

DAMPER/SPRING DISASSEMBLY, INSPECTION, AND REASSEMBLY

EXPLODED VIEW

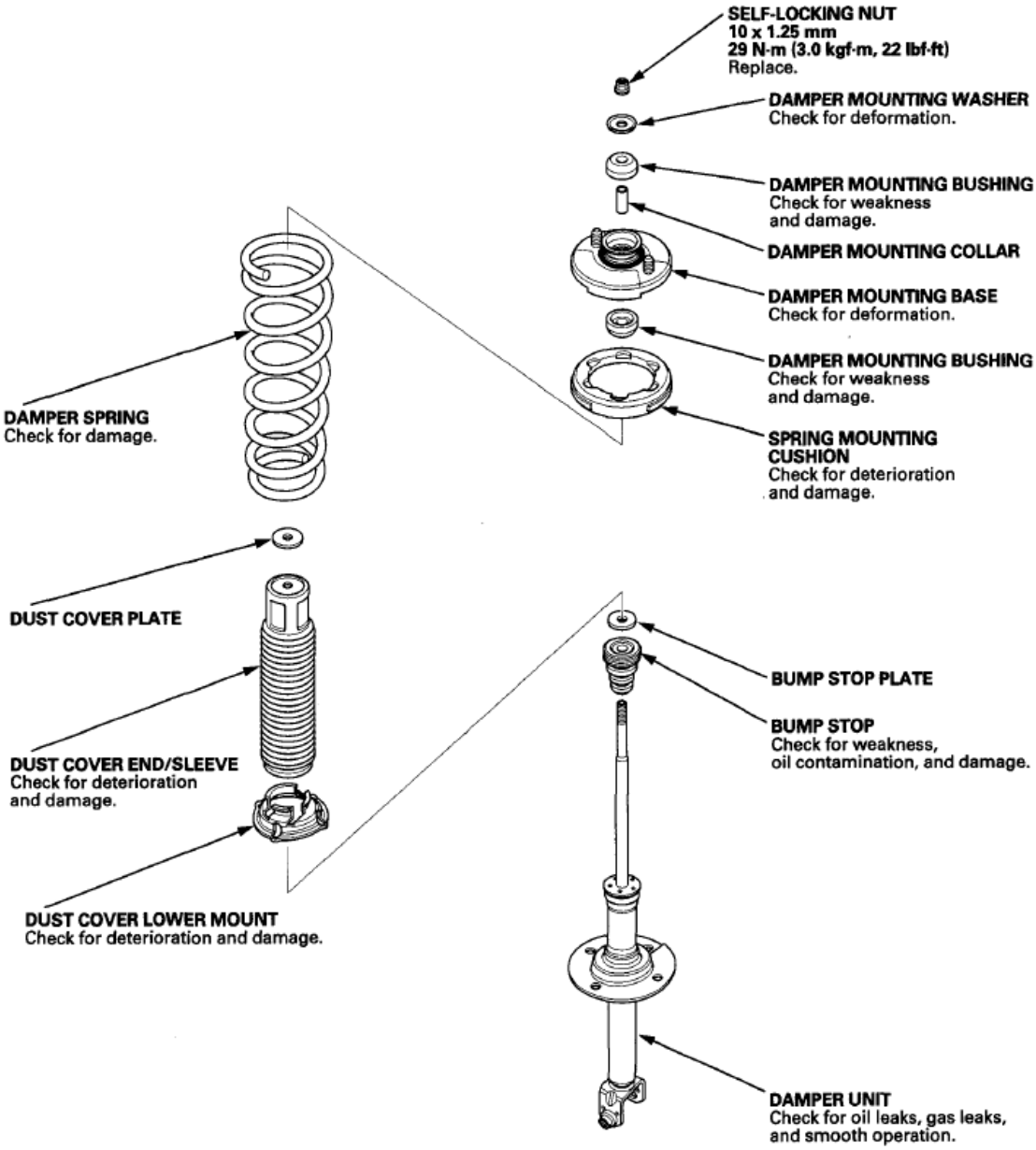


Fig. 32: Exploded View Of Damper/Spring With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

NOTE:

- **When compressing the damper spring, use a commercially available strut spring compressor (Branick MST-580A or Model 7200, or equivalent) according to the manufacturer's instructions.**
- **Refer to the EXPLODED VIEW as needed during the following procedure.**

DISASSEMBLY

1. Compress the damper spring, then remove the self-locking nut (A) while holding the damper shaft with a hex wrench (B). Do not compress the damper spring more than is necessary to remove the self-locking nut.

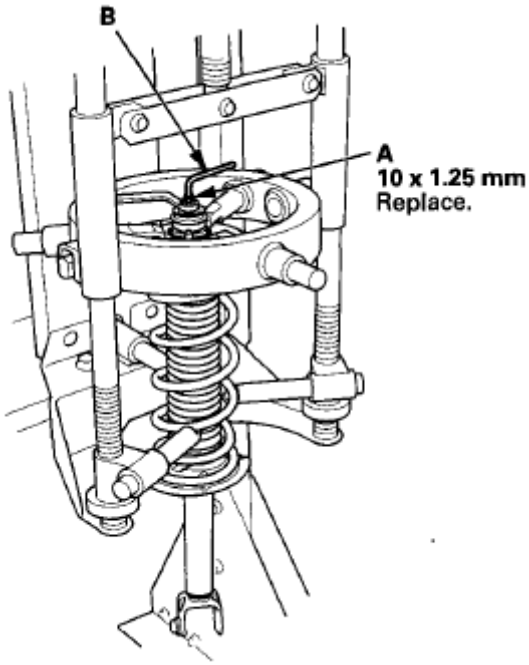


Fig. 33: Compressing Damper Spring Using Holding Tool
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Release the pressure from the strut spring compressor, then disassemble the damper as shown in the Exploded View.

INSPECTION

1. Reassemble all parts, except for the damper spring.
2. Compress the damper assembly by hand, and check for smooth operation through a full stroke, both compression and extension. The damper should extend smoothly and constantly when compression is released. If it does not, the gas is leaking and the damper should be replaced.

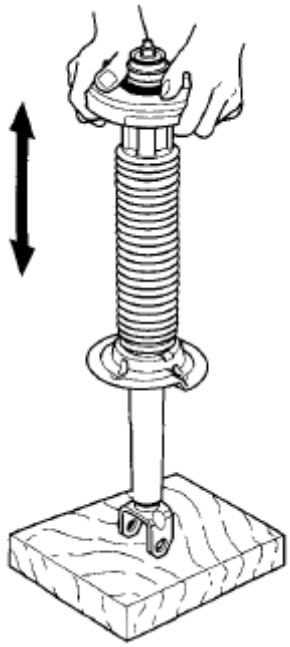


Fig. 34: Checking Smooth Operation Of Damper Assembly
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Check for oil leaks, abnormal noises, and binding during these tests.

REASSEMBLY

1. Install the spring mounting cushion (A) on the damper mounting base (B) by aligning the tabs (C) and the notches (D).

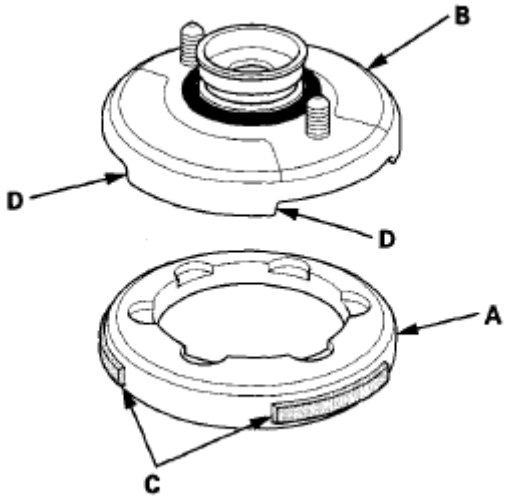


Fig. 35: Installing Spring Mounting Cushion With Aligning Tabs And Notches
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Install all the parts except the damper mounting washer and the self-locking nut onto the damper unit by

referring to the **EXPLODED VIEW**.

3. Compress the damper spring using a strut spring compressor. Do not compress the spring excessively.
4. Align the lower end (A) of the damper spring with the stepped part (B) of the dust cover lower mount and the lower spring seat on the damper unit.

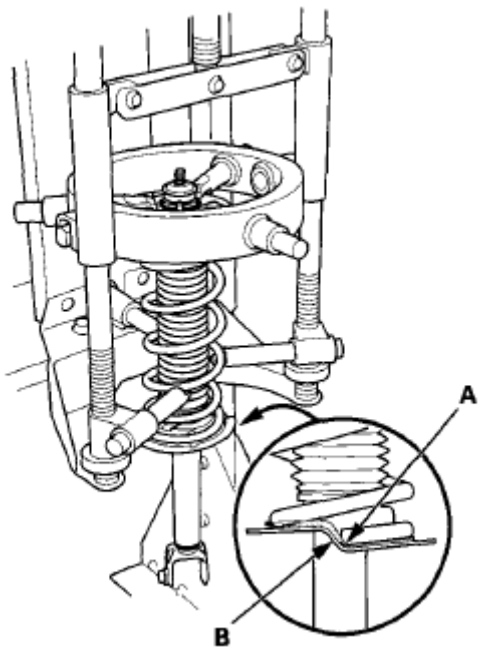


Fig. 36: Identifying Lower End And Stepped Part Of Spring
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Align the angle of the stud (A) on the damper mounting base (B) with the welded nut (C) on the bottom of the damper unit as shown.

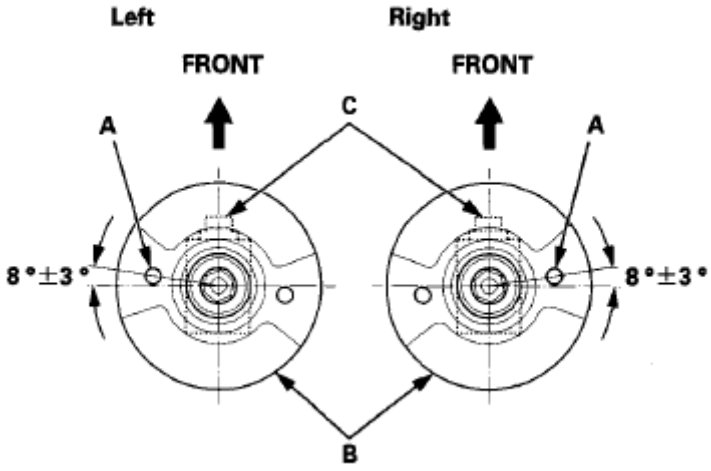


Fig. 37: Aligning Angle Of Stud On Damper Mounting Base With Welded Nut
Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Install the damper mounting washer (A), and loosely install the new self-locking nut (B).

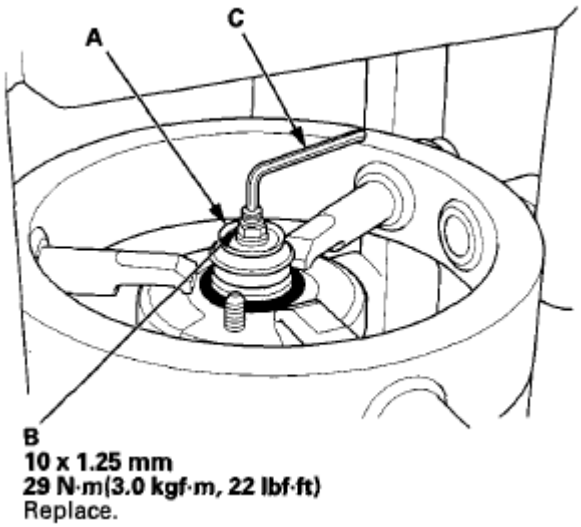


Fig. 38: Installing Damper Mounting Washer And Self-Locking Nut With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Hold the damper shaft with a hex wrench (C), and tighten the self-locking nut to the specified torque.
8. Remove the damper/spring from the strut spring compressor.

2012 SUSPENSION

Tire Pressure Monitoring System - TL

COMPONENT LOCATION INDEX

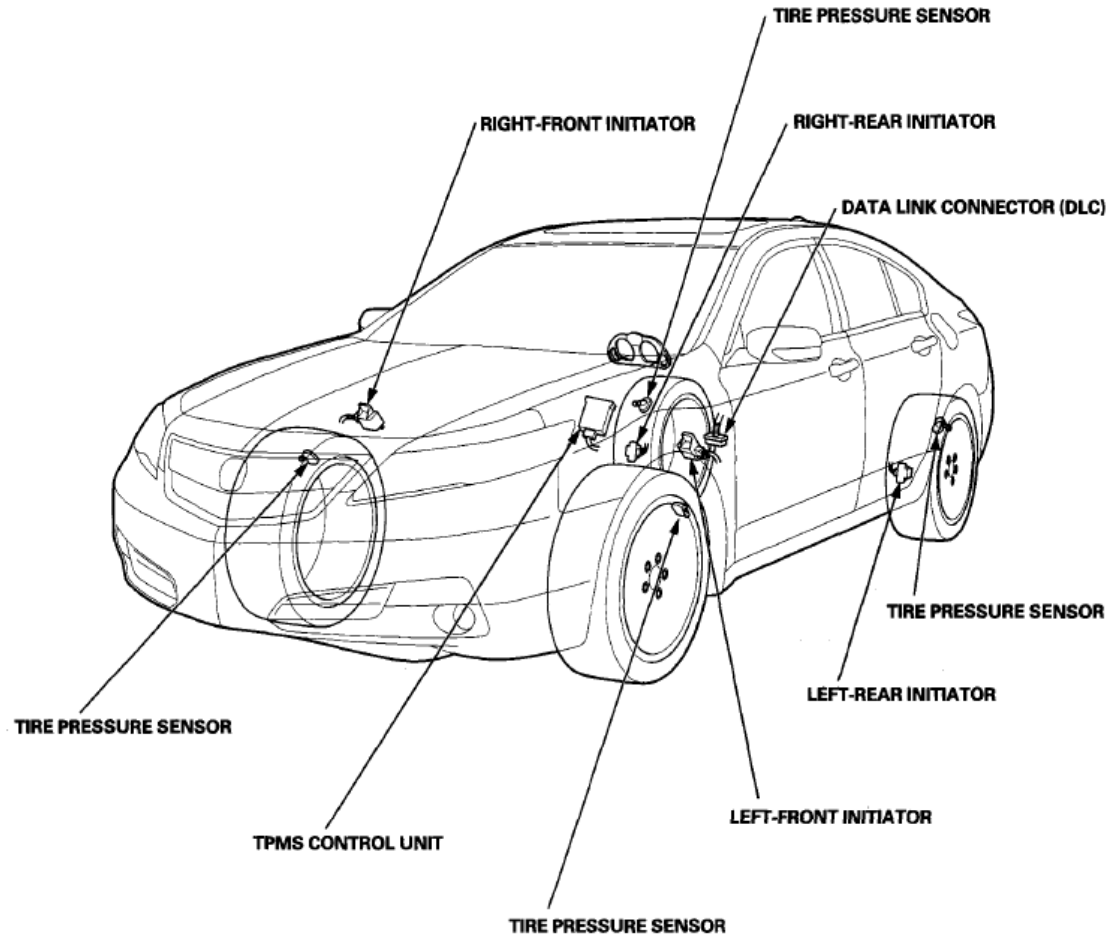


Fig. 1: TPMS Components Location
Courtesy of AMERICAN HONDA MOTOR CO., INC.

GENERAL TROUBLESHOOTING INFORMATION

SYSTEM INDICATOR

The system has seven indicators.

- The low tire pressure indicator (A)
- The message indicator (B)
- The TPMS indicator (C)
- The right-front (RF) tire indicator (D)

- The left-front (LF) tire indicator (E)
- The right-rear (RR) tire indicator (F)
- The left-rear (LR) tire indicator (G)

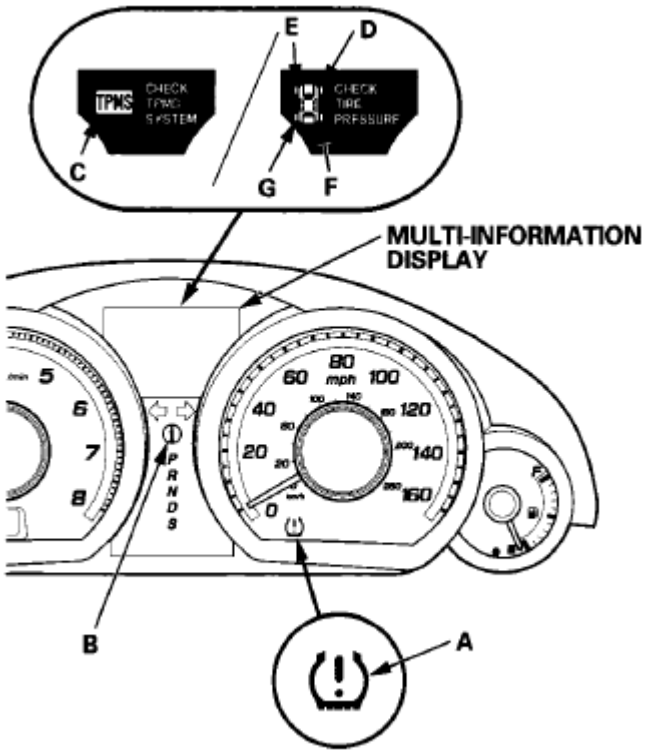


Fig. 2: Identifying TPMS Indicators
Courtesy of AMERICAN HONDA MOTOR CO., INC.

THE LOW TIRE PRESSURE INDICATOR

- If the system detects low tire pressure in any of the four tires, the low tire pressure indicator and the appropriate tire indicator(s) come on, as well as the message indicator.
- If the TPMS control unit detects a problem in the system during an indication of low tire pressure, it will turn off the tire indicator(s), store the DTC(s), and turn on the TPMS indicator and the low tire pressure indicator after blinking.

THE TPMS INDICATOR

- If a problem in the system is detected, the TPMS indicator comes on, as well as the message indicator, and the low tire pressure indicator comes on after blinking for about 75 seconds.
- If low tire pressure and a problem in the system are detected, the TPMS indicator comes on, as well as the message indicator, and the low tire pressure indicator comes on after blinking for about 75 seconds.

If the system is OK, the low tire pressure indicator should come on when you turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode, and then goes off 2 seconds later. If it does not,

there is a problem with the system.

DTC 11, 13, 15, 17

If the system detects low tire pressure in any of the four tires, the low tire pressure indicator and the appropriate tire indicator(s) with the message indicator come on, and the TPMS control unit sets one or more of these codes: DTC 11, 13, 15, 17. When the tire pressure returns to normal, and TPMS control unit receives the normal pressure signal from the tire pressure sensor, the TPMS control unit turns off the indicators.

TIRE PRESSURE CHANGING BY TEMPERATURE

Tire pressures increase slightly as the temperature in the tires rises during driving. Pressures can also increase or decrease slightly with changes in outside air temperature. A temperature change of about 18°F (10°C) changes tire pressure by about 10 kPa (0.1 kgf/cm^2 , 1.5 psi). If the temperature drops, tire pressure could decrease enough to turn on the low tire pressure indicator and tire indicator(s), but later, the tire temperature could increase enough to turn indicator off. To resolve a complaint of such intermittent indications, confirm and clear the stored DTC(s) and check the tire pressures. Then explain to the client how temperature changes can affect the system.

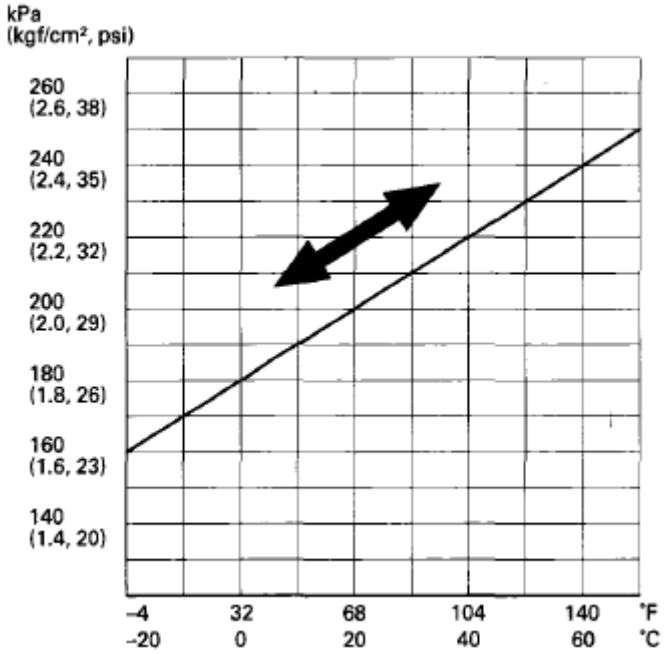


Fig. 3: Tire Pressure Versus Temperature Graph
Courtesy of AMERICAN HONDA MOTOR CO., INC.

PROBLEMS THAT ARE NOT SYSTEM FAULTS

- Tire Sealant

  Fluid sealant used to repair a punctured tire can damage the tire pressure sensor mounted on each wheel. It can prevent the system from detecting the correct tire pressure, which sets a DTC 11, 13, 15 or 17 even

though the system is normal.

- Cold Weather

  When the weather is extremely cold, about - 4°F (- 20°C) or colder, the output of the lithium battery in each tire pressure sensor may drop far enough that the TPMS control unit sets a DTC for low battery voltage (31, 33, 35, or 37) even though the system is normal.

- Non-TPMS Type Wheels (Including Spare Tire) Vehicles equipped with TPMS must use wheels made for the system. Every TPMS type wheel has an exclusive mark; do not use any other type of wheel (see **WHEELS**).

When a flat tire is replaced with the spare tire, the TPMS indicator comes on (DTC 32, 34, 36, or 38) because the system is no longer receiving the signal from the flat tire's transmitter. This is not a problem with the spare tire.

HOW A DIAGNOSTIC TROUBLE CODE (DTC) IS SET

- When the system detects a problem, the TPMS control unit sets a code, but shifts to fail-safe mode, and does not alert the driver to low tire pressures.
- If the TPMS control unit loses power, or fails, the TPMS indicator and the low tire pressure indicator (starts blinking) comes on, but no DTCs are set.
- The memory can hold all the DTCs that could possibly be set. However, when the same DTCs are detected more than once, the most recent one overwrites the previous one, so only the latest DTC of each type is stored.
- DTCs are indicated in ascending order, not in the order they occurred.
- Set DTCs are stored in the EEPROM (nonvolatile memory), and cannot be cleared by disconnecting the battery. To clear a DTC, connect the HDS (Honda Diagnostic System) to the data link connector (DLC), and follow the screen prompts.

HOW TO TROUBLESHOOT DTCS

DTC troubleshooting procedures assume that the cause of the problem is still present and the TPMS indicator and the low tire pressure indicator (starts blinking) are still on. Do not use a troubleshooting procedure unless the system has set the DTC listed for it.

1. Ask the client to describe the conditions when the indicators came on or blinked, and try to reproduce the same conditions for troubleshooting. Find out if the client checked and/or adjusted tire pressures since the indicator came on.
2. If an indicator does not come on during the test-drive, check for loose terminals, poor contact due to damaged terminals, etc. before you start troubleshooting.
3. After troubleshooting, repair and clear the DTCs, and test-drive the vehicle. Make sure no indicators come on.

HOW TO RETRIEVE DTCS

1. With the ignition switch in LOCK (0), or press the engine start/stop button to select the OFF mode, connect the HDS (Honda Diagnostic System) to the data link connector (DLC) (A) located under the driver's side of the dashboard.

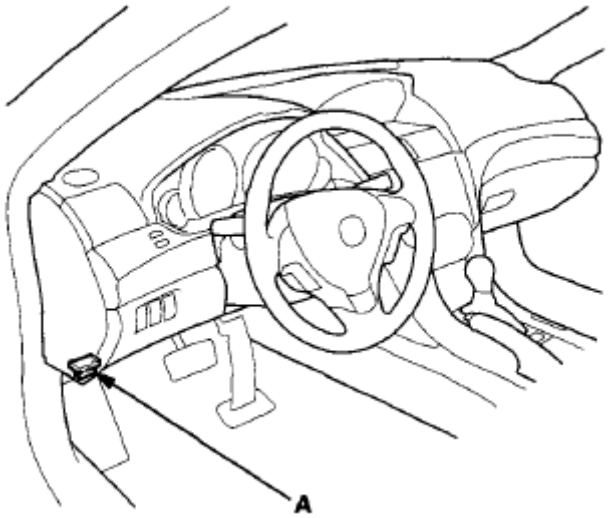


Fig. 4: Identifying Data Link Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
3. Make sure the HDS communicates with the vehicle and the TPMS control unit. If it does not, troubleshoot the DLC circuit (see **DLC CIRCUIT TROUBLESHOOTING**).
4. Follow the prompts on the HDS to display the DTC(s) on the screen. After determining the DTC, refer to the DTC troubleshooting.

NOTE: See the HDS Help menu for specific instructions.

5. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.

HOW TO CLEAR DTCS

1. With the ignition switch in LOCK (0), or press the engine start/stop button to select the OFF mode, connect the HDS to the data link connector (DLC) (A) located under the driver's side of the dashboard.

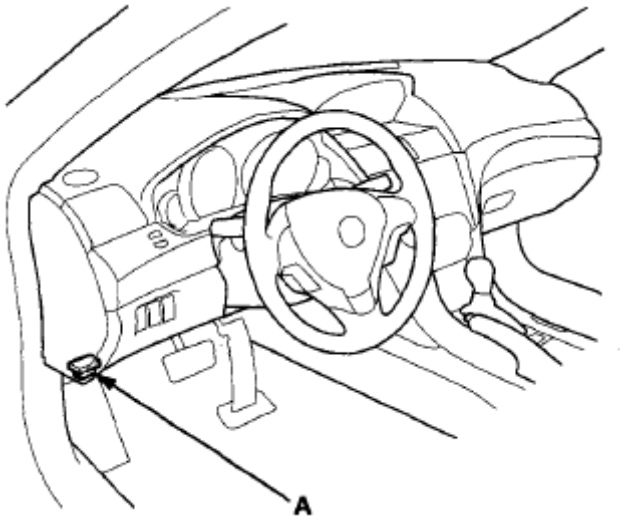


Fig. 5: Identifying Data Link Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
3. Make sure the HDS communicates with the vehicle and the TPMS control unit. If it does not, troubleshoot the DLC circuit (see **DLC CIRCUIT TROUBLESHOOTING**).
4. Clear the DTC(s) by following the screen prompts on the HDS.

NOTE: See the HDS Help menu for specific instructions.

5. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.

MEMORIZING THE TIRE PRESSURE SENSOR ID

MEMORIZING A TIRE PRESSURE SENSOR ID

All four sensor IDs must be memorized to the TPMS control unit whenever you do any of these actions:

- Replace the TPMS control unit.
- Replace the tire pressure sensor.
- Substitute a known-good wheel with tire pressure sensor.

NOTE:

- **To ensure the TPMS control unit memorizes the correct sensor ID, the vehicle with the new tire pressure sensor must be at least 10 ft (3 m) away from other vehicles that have sensors.**
- **When replacing the TPMS control unit, use the HDS to memorize sensor IDs.**

MEMORIZING A TIRE PRESSURE SENSOR ID AUTOMATICALLY

After rotating the tires or replacing a tire pressure sensor, drive the vehicle for at least 40 seconds at a speed of 15 mph (24 km/h) or more, and all the sensor IDs are memorized automatically.

NOTE: After the sensor IDs are memorized, reduce the pressure in all four tires to less than the appropriate specification, and check to see that the four tire indicators come on.

MEMORIZE A TIRE PRESSURE SENSOR ID WITH THE HDS

The HDS can memorize the sensor ID of a new tire pressure sensor or a previously memorized sensor ID.

1. With the ignition switch in LOCK (0), or press the engine start/stop button to select the OFF mode, connect the HDS to the data link connector (DLC) (A) located under the driver's side of the dashboard.

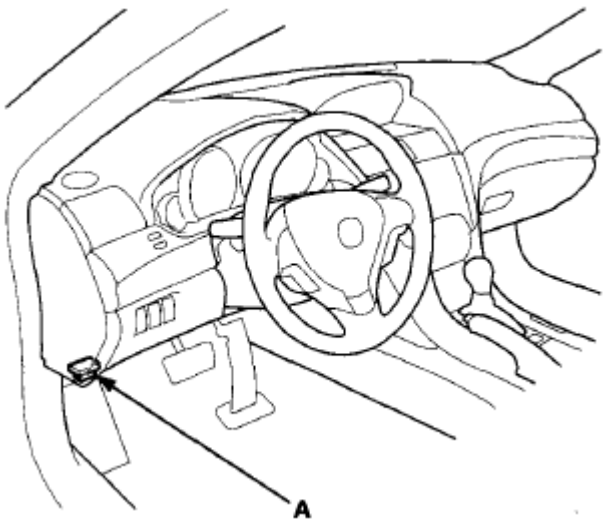


Fig. 6: Identifying Data Link Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
3. Make sure the HDS communicates with the vehicle and the TPMS control unit. If it does not, troubleshoot the DLC circuit (see **DLC CIRCUIT TROUBLESHOOTING**).
4. Memorize the tire pressure sensor ID by following the screen prompts on the HDS.

NOTE:

- **See the HDS Help menu for specific instructions.**
- **When replacing the TPMS control unit, use the HDS to memorize sensor IDs.**
- **After the sensor IDs are memorized, reduce the pressure in all four tires to less than the appropriate specification, and check to see that the four tire indicators come on.**

5. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.

DTC TROUBLESHOOTING INDEX

DTC	Detection Item	Troubleshooting
11	Right-Front Tire Low Air Pressure	DTC Troubleshooting (see **DTC 11, 13, 15, 17: TIRE LOW AIR PRESSURE**)
13	Left-Front Tire Low Air Pressure	DTC Troubleshooting (see **DTC 11, 13, 15, 17: TIRE LOW AIR PRESSURE**)
15	Right-Rear Tire Low Air Pressure	DTC Troubleshooting (see **DTC 11, 13, 15, 17: TIRE LOW AIR PRESSURE**)
17	Left-Rear Tire Low Air Pressure	DTC Troubleshooting (see **DTC 11, 13, 15, 17: TIRE LOW AIR PRESSURE**)
21	Right-Front Tire Pressure Sensor Abnormally High Temperature	DTC Troubleshooting (see **DTC 11, 13, 15, 17: TIRE LOW AIR PRESSURE**)
22	Left-Front Tire Pressure Sensor Abnormally High Temperature	DTC Troubleshooting (see **DTC 11, 13, 15, 17: TIRE LOW AIR PRESSURE**)
23	Right-Rear Tire Pressure Sensor Abnormally High Temperature	DTC Troubleshooting (see **DTC 11, 13, 15, 17: TIRE LOW AIR PRESSURE**)
24	Left-Rear Tire Pressure Sensor Abnormally High Temperature	DTC Troubleshooting (see **DTC 11, 13, 15, 17: TIRE LOW AIR PRESSURE**)
31	Right-Front Tire Pressure Sensor Low Battery Voltage	DTC Troubleshooting (see **DTC 31, 33, 35, 37: TIRE PRESSURE SENSOR LOW BATTERY VOLTAGE**)
32	Right-Front Tire Pressure Sensor Signal Failure	DTC Troubleshooting (see **DTC 31, 33, 35, 37: TIRE PRESSURE SENSOR LOW BATTERY VOLTAGE**)
33	Left-Front Tire Pressure Sensor Low Battery Voltage	DTC Troubleshooting (see **DTC 31, 33, 35, 37: TIRE PRESSURE SENSOR LOW BATTERY VOLTAGE**)
34	Left-Front Tire Pressure Sensor Signal Failure	DTC Troubleshooting (see **DTC 31, 33, 35, 37: TIRE PRESSURE SENSOR LOW BATTERY VOLTAGE**)
35	Right-Rear Tire Pressure Sensor Low Battery Voltage	DTC Troubleshooting (see **DTC 31, 33, 35, 37: TIRE PRESSURE SENSOR LOW BATTERY VOLTAGE**)
36	Right-Rear Tire Pressure Sensor Signal Failure	DTC Troubleshooting (see **DTC 31, 33, 35, 37: TIRE PRESSURE SENSOR LOW BATTERY VOLTAGE**)
37	Left-Rear Tire Pressure Sensor Low Battery Voltage	DTC Troubleshooting (see **DTC 31, 33, 35, 37: TIRE PRESSURE SENSOR LOW BATTERY VOLTAGE**)
38	Left-Rear Tire Pressure Sensor Signal Failure	DTC Troubleshooting (see **DTC 31, 33, 35, 37: TIRE PRESSURE SENSOR LOW BATTERY VOLTAGE**)
41	Abnormal Signal Reception Error	DTC Troubleshooting (see **DTC 41: ABNORMAL SIGNAL RECEPTION ERROR**)
45	Initiator Circuit Short Detection	DTC Troubleshooting (see **DTC 45: INITIATOR CIRCUIT SHORT DETECTION**)
51	Right-Front Tire Pressure Sensor Registration Error	DTC Troubleshooting (see **DTC 51, 53, 55, 57: TIRE PRESSURE SENSOR REGISTRATION ERROR**)
53	Left-Front Tire Pressure Sensor Registration Error	DTC Troubleshooting (see **DTC 51, 53, 55, 57: TIRE PRESSURE SENSOR REGISTRATION ERROR**)
55	Right-Rear Tire Pressure Sensor	DTC Troubleshooting (see **DTC 51, 53, 55, 57: TIRE**

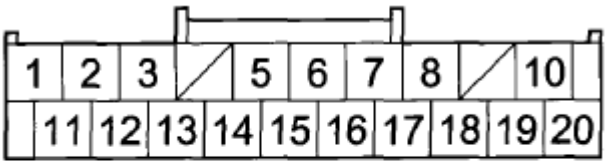
	Registration Error	**PRESSURE SENSOR REGISTRATION ERROR**)
57	Left-Rear Tire Pressure Sensor Registration Error	DTC Troubleshooting (see **DTC 51, 53, 55, 57: TIRE PRESSURE SENSOR REGISTRATION ERROR**)
61	Right-Front Initiator Circuit Open Detection	DTC Troubleshooting (see **DTC 61, 63, 65, 67: INITIATOR CIRCUIT OPEN DETECTION**)
63	Left-Front Initiator Circuit Open Detection	DTC Troubleshooting (see **DTC 61, 63, 65, 67: INITIATOR CIRCUIT OPEN DETECTION**)
65	Right-Rear Initiator Circuit Open Detection	DTC Troubleshooting (see **DTC 61, 63, 65, 67: INITIATOR CIRCUIT OPEN DETECTION**)
67	Left-Rear Initiator Circuit Open Detection	DTC Troubleshooting (see **DTC 61, 63, 65, 67: INITIATOR CIRCUIT OPEN DETECTION**)
81	TPMS Control Unit Failure	DTC Troubleshooting (see **DTC 81: TPMS CONTROL UNIT FAILURE**)
83	No VSP Signal	DTC Troubleshooting (see **DTC 83: NO VSP SIGNAL**)
85	F-CAN Communication Failure	DTC Troubleshooting (see **DTC 83: NO VSP SIGNAL**)
91	Right-Front Tire Pressure Sensor Internal Error	DTC Troubleshooting (see **DTC 91, 93, 95, 97: TIRE PRESSURE SENSOR INTERNAL ERROR**)
93	Left-Front Tire Pressure Sensor Internal Error	DTC Troubleshooting (see **DTC 91, 93, 95, 97: TIRE PRESSURE SENSOR INTERNAL ERROR**)
95	Right-Rear Tire Pressure Sensor Internal Error	DTC Troubleshooting (see **DTC 91, 93, 95, 97: TIRE PRESSURE SENSOR INTERNAL ERROR**)
97	Left-Rear Tire Pressure Sensor Internal Error	DTC Troubleshooting (see **DTC 91, 93, 95, 97: TIRE PRESSURE SENSOR INTERNAL ERROR**)

SYMPTOM TROUBLESHOOTING INDEX

Symptom	Diagnostic procedure	Also check for
HDS does not communicate with the TPMS control unit or the vehicle	Troubleshoot the DLC circuit (see **DLC CIRCUIT TROUBLESHOOTING**)	Faulty data link cable
Low tire pressure indicator does not come on, and no DTCs are stored	Symptom Troubleshooting (see **LOW TIRE PRESSURE INDICATOR DOES NOT COME ON, AND NO DTCS ARE STORED**)	
Low tire pressure indicator does not go off, and no DTCs are stored	Symptom Troubleshooting (see **LOW TIRE PRESSURE INDICATOR DOES NOT GO OFF, AND NO DTCS ARE STORED**)	
TPMS indicator does not come on, and no DTCs are stored	Symptom Troubleshooting (see **LOW TIRE PRESSURE INDICATOR DOES NOT GO OFF, AND NO DTCS ARE STORED**)	
TPMS indicator does not go off, and no DTCs are stored	Symptom Troubleshooting (see **TPMS INDICATOR DOES NOT GO OFF, AND NO DTCS ARE STORED**)	

SYSTEM DESCRIPTION

TPMS CONTROL UNIT INPUTS AND OUTPUTS FOR 20P CONNECTOR

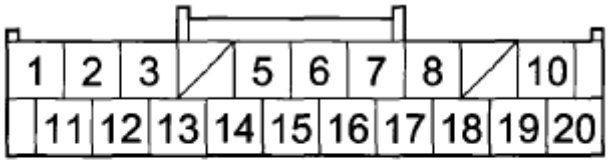


Wire side of female terminals

Fig. 7: Identifying TPMS Control Unit 20P Connector End View
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Terminal number	Wire color	Terminal sign	Description	Signal
1	PNK	RF LF PWR. (RF low frequency power)	Power source for the right-front initiator	For the first 5 seconds after turning the ignition switch ON (II), or vehicle in ON mode: About 7 V
2	WHT	F-CAN H (F-CAN communication signal high)	F-CAN communication circuit	With ignition switch ON (II), or vehicle in ON mode: pulses
3	BLK	GND (Ground)	Ground for the TPMS control unit	Less than 0.1 V at all times
5	PUR	LF LF SIG. (LF low frequency signal)	Detects the signal from the left-front initiator	For the first 5 seconds after turning the ignition switch ON (II), or vehicle in ON mode: pulses 0- 2V
				After 40 seconds with ignition switch ON (II), or vehicle in ON mode: less than 0.1 V
6	LT GRN	RF LF SIG. (RF low frequency signal)	Detects the signal from the right-front initiator	For the first 5 seconds after turning the ignition switch ON (II), or vehicle in ON mode: pulses 0- 2V
				After 40 seconds with ignition switch ON (II), or vehicle in ON mode: less than 0.1 V
7	LT BLU	K-LINE (Data link connector)	Communications with the HDS	- -
8	BRN	IG1 (Ignition switch 1)	Power source for activating the system	With ignition switch ON (II), or vehicle in ON mode: battery voltage (about 12 V)
				With ignition switch in LOCK

				(0), or vehicle in OFF mode: less than 0.1 V
10	WHT	+ B (Battery positive)	Power source for the TPMS control unit	Battery voltage (about 12 V) at all times
11	BLK	F-CAN L (F-CAN communication signal low)	F-CAN communication circuit	With ignition switch ON (II), or vehicle in ON mode: pulses
12	GRY	LR LF GND (LR low frequency ground)	Ground for the left-rear initiator	For the first 5 seconds after turning the ignition switch ON (II), or vehicle in ON mode: less than 0.1V
13	WHT	RR LF GND (RR low frequency ground)	Ground for the right-rear initiator	For the first 5 seconds after turning the ignition switch ON (II), or vehicle in ON mode: less than 0.1V
14	YEL	LF LF GND (LF low frequency ground)	Ground for the left-front initiator	For the first 5 seconds after turning the ignition switch ON (II), or vehicle in ON mode: less than 0.1V



Wire side of female terminals

Fig. 8: Identifying TPMS Control Unit 20P Connector Terminals
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Terminal number	Wire color	Terminal sign	Description	Signal
15	BLU	RF LF GND (RF low frequency ground)	Ground for the right-front initiator	For the first 5 seconds after turning the ignition switch ON (II), or vehicle in ON mode: less than 0.1V
16	PNK	LR LF SIG. (LR low frequency signal)	Detects the signal from the left-rear initiator	For the first 5 seconds after turning the ignition switch ON (II), or vehicle in ON mode: pulses 0- 2 V
				After 40 seconds with ignition switch ON (II), or vehicle in ON mode: less than 0.1 V
				For the first 5 seconds after turning the

17	ORN	RR LF SIG. (RR low frequency signal)	Detects the signal from the right-rear initiator	ignition switch ON (II), or vehicle in ON mode: pulses 0- 2 V After 40 seconds with ignition switch ON (II), or vehicle in ON mode: less than 0.1 V
18	LT GRN	LR LF PWR. (LR low frequency power)	Power source for the left-rear initiator	For the first 5 seconds after turning the ignition switch ON (II), or vehicle in ON mode: About 7 V
19	BLU	RR LF PWR. (RR low frequency power)	Power source for the right-rear initiator	For the first 5 seconds after turning the ignition switch ON (II), or vehicle in ON mode: About 7 V
20	BRN	LF LF PWR. (LF low frequency power)	Power source for the left-front initiator	For the first 5 seconds after turning the ignition switch ON (II), or vehicle in ON mode: About 7 V

System Structure

Whenever the ignition switch is turned ON (II), or the engine start/stop button is pressed to select the ON mode, the TPMS control unit continuously monitors all four tire pressure sensors and the system function. If it detects low pressure in a tire, it alerts the driver by turning on the low tire pressure indicator and the appropriate tire indicator. If it detects a problem in the system, it turns on the TPMS indicator and the low tire pressure indicator (starts blinking).

Initiators

Mounted on the top of each wheelwell, each initiator sends a start/stop signal to the tire pressure sensor in the tire below it.

TPMS Control Unit

Mounted on top of the brake pedal support member, the TPMS control unit sends signals to the initiators and receives signals from the tire pressure sensor to verify pressure sensor IDs every time the ignition switch is turned ON (II), or the engine start/stop button is pressed to select the ON mode. It also receives signals from the transmitters for tire pressure and the sensor condition, and it continuously monitors and controls the system.

Indicators

All indicators are in the gauge control module: The low tire pressure indicator (LED indicator), the four tire indicators (on the multi-information display) to show which tire is affected, and the TPMS indicator (on the multi-information display) that comes on only if there's a problem with the system. The message indicator (LED indicator) comes on when there is one or more indicators on in the multi-information display. When two or more tire pressures are low, the low tire pressure indicator comes on about 5 seconds before the appropriate tire indicator. Once low pressure is detected, the system scans all four tire pressure sensors to ensure that it turns on the correct tire indicator.

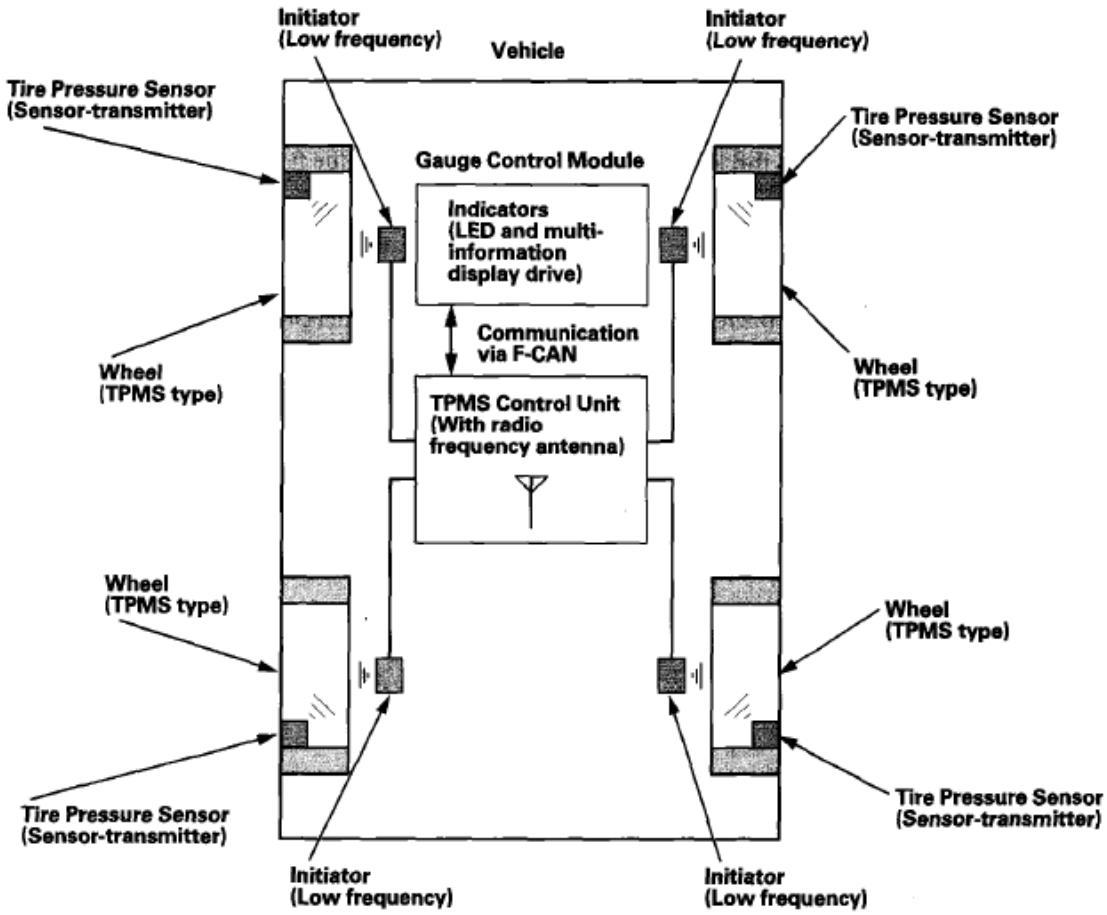


Fig. 9: TPMS Indicators System Diagram
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Tire Pressure Sensor

Each sensor is an integrated unit made up of the tire valve stem, a pressure sensor, and a transmitter. The unit is attached to the inside of the wheel, around the valve stem. The sensor transmits internal tire information onetime per 60 seconds to the TPMS control unit. When the TPMS control unit receives a tire pressure reading of less than: With 17 inch and 18 inch wheels 175 kPa (1.8 kgf/cm^2 , 25 psi), or with 19 inch wheels 186 kPa (1.9 kgf/cm^2 , 27 psi), the TPMS control unit then turns on the low tire pressure indicator and the appropriate tire(s) indicator. When that tire's pressure is increased to more than: With 17 inch and 18 inch wheels 200 kPa (2.0 kgf/cm^2 , 29 psi), or with 19 inch wheels 215 kPa (2.2 kgf/cm^2 , 31 psi), the transmitter sends the tire pressure reading to the TPMS control unit, and the TPMS control unit turns the indicators off.

Wheels

The TPMS will not work unless TPMS type wheels are installed on the vehicle. The original equipment wheels have a "TPMS" mark (A) on them, and are counterweighted by adding material to counterbalance the weight of the tire pressure sensor (B).

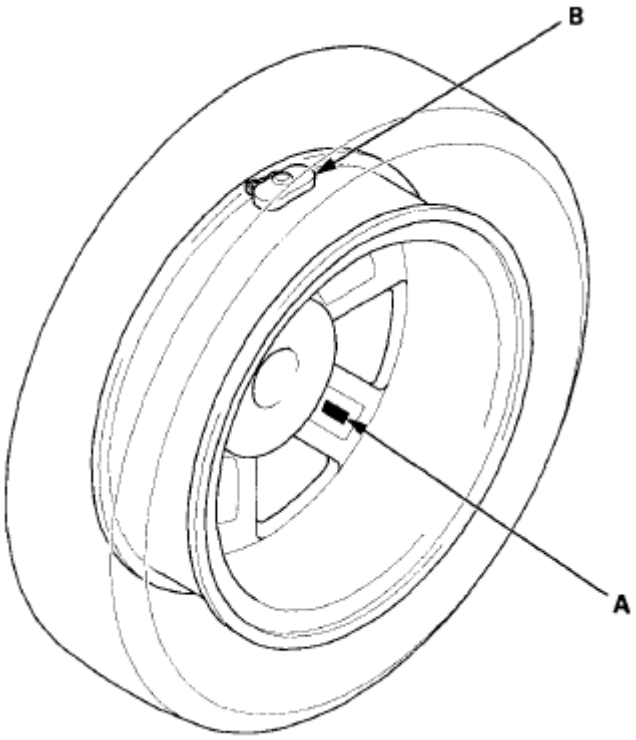


Fig. 10: Identifying TPMS Mark And Tire Pressure Sensor
Courtesy of AMERICAN HONDA MOTOR CO., INC.

System Communication

- When the ignition switch is turned ON (II), or the engine start/stop button is pressed to select the ON mode, an RF (radio frequency) band wave signal is transmitted from each tire pressure sensor to the TPMS control unit.
- When the ignition switch is turned ON (II), or the engine start/stop button is pressed to select the ON mode, the initiators send a LF (low frequency) band wave signal to the tire pressure sensors, switching them from sleep mode to normal function mode. When the ignition switch is turned to LOCK (0), or the engine start/stop button is pressed to select the OFF mode, the sensors switch from normal function mode back to sleep mode to extend their battery life.
- Each tire pressure sensor has its own tire pressure sensor ID to prevent jamming by similar systems on other vehicles. After memorizing all the sensor IDs, the TPMS control unit recognizes only those specific signals.
- An tire pressure sensor ID can be memorized manually or automatically. Each initiator is hardwired to the TPMS control unit. Every time the ignition is turned to ON (II), or the engine start/stop button is pressed to select the ON mode, the TPMS control unit asks each initiator to wake up the appropriate tire pressure sensor. The transmitters in the tire pressure sensors then transmit the sensor IDs, and the TPMS control unit receives, and memorizes them. The TPMS control unit then knows which sensor ID belongs to each tire location. This recurring sensor ID confirmation prevents any confusion in the system as a result of normal tire rotation.

NOTE: Be careful not to bend the brackets on the TPMS control unit and the front/rear

initiators. Misalignment of the TPMS control unit and initiators could interfere with sending and receiving signals.

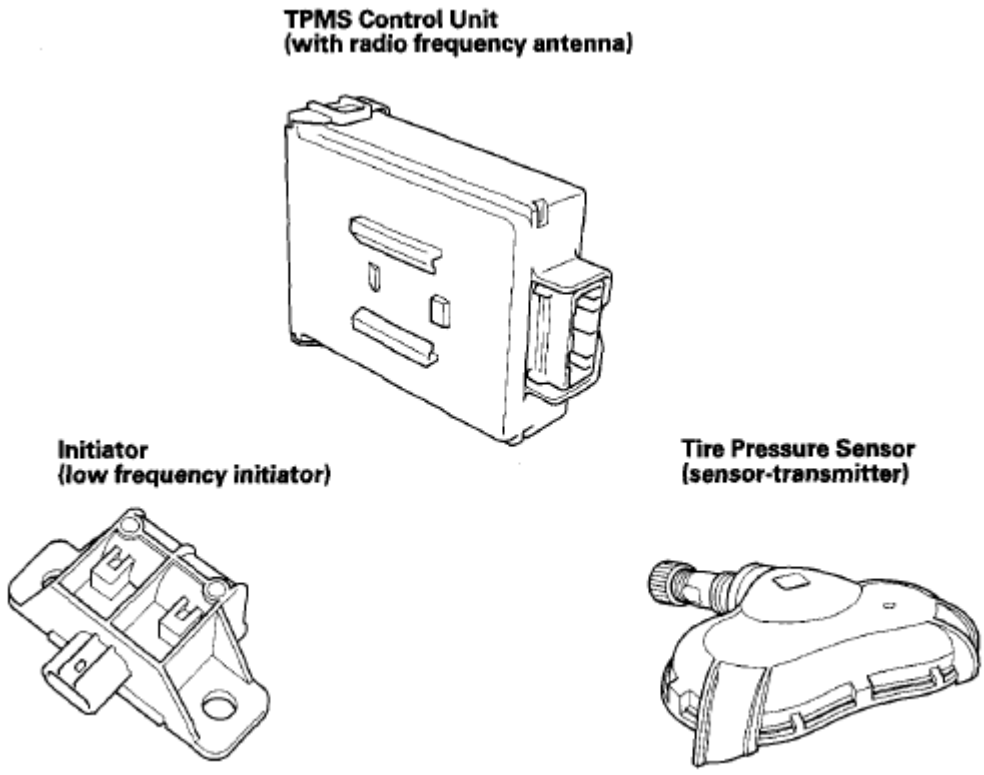


Fig. 11: Identifying TPMS Control Unit, Initiator And Tire Pressure Sensor
Courtesy of AMERICAN HONDA MOTOR CO., INC.

CIRCUIT DIAGRAM

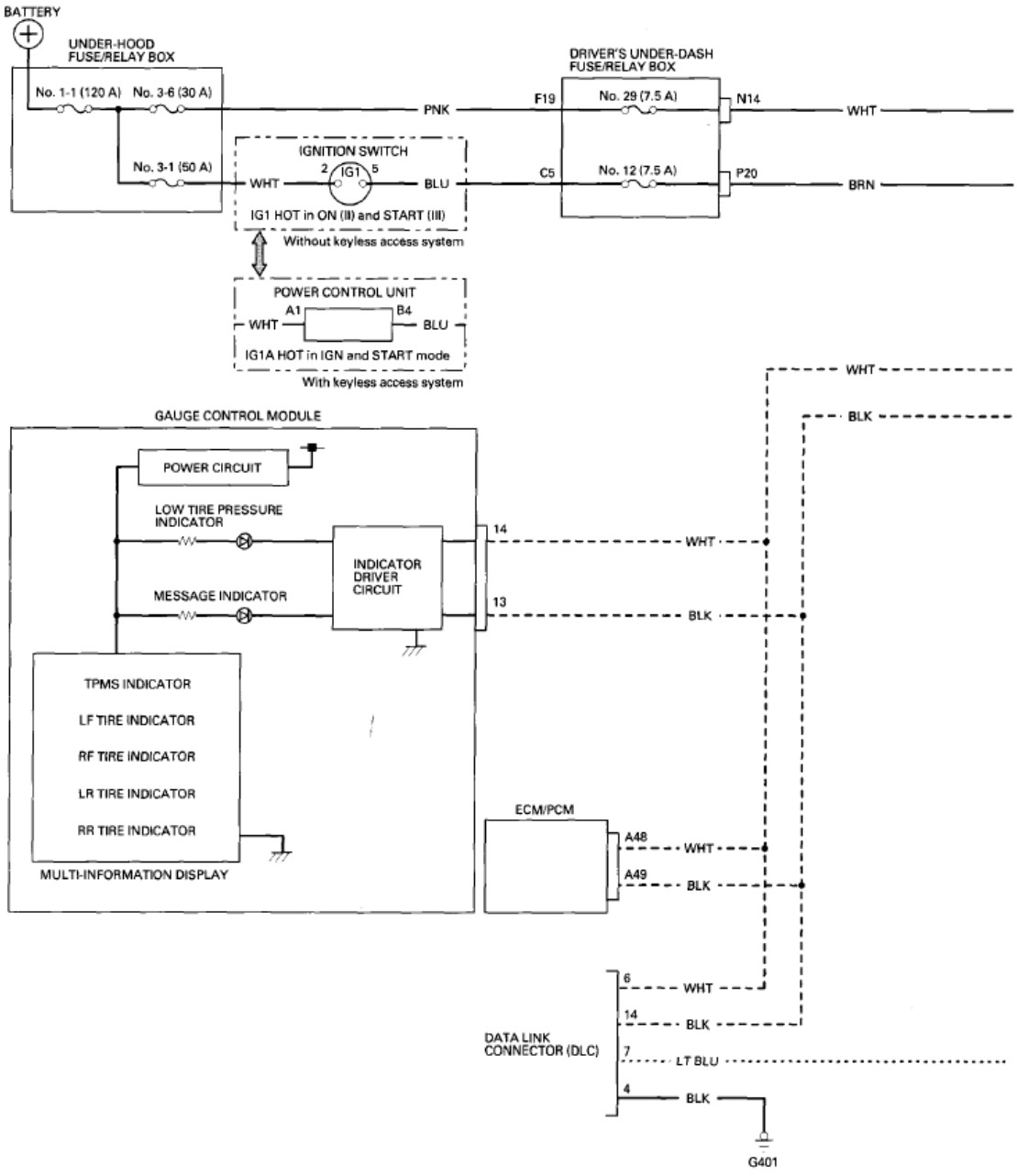


Fig. 12: TPMS - Circuit Diagram (1 Of 2)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

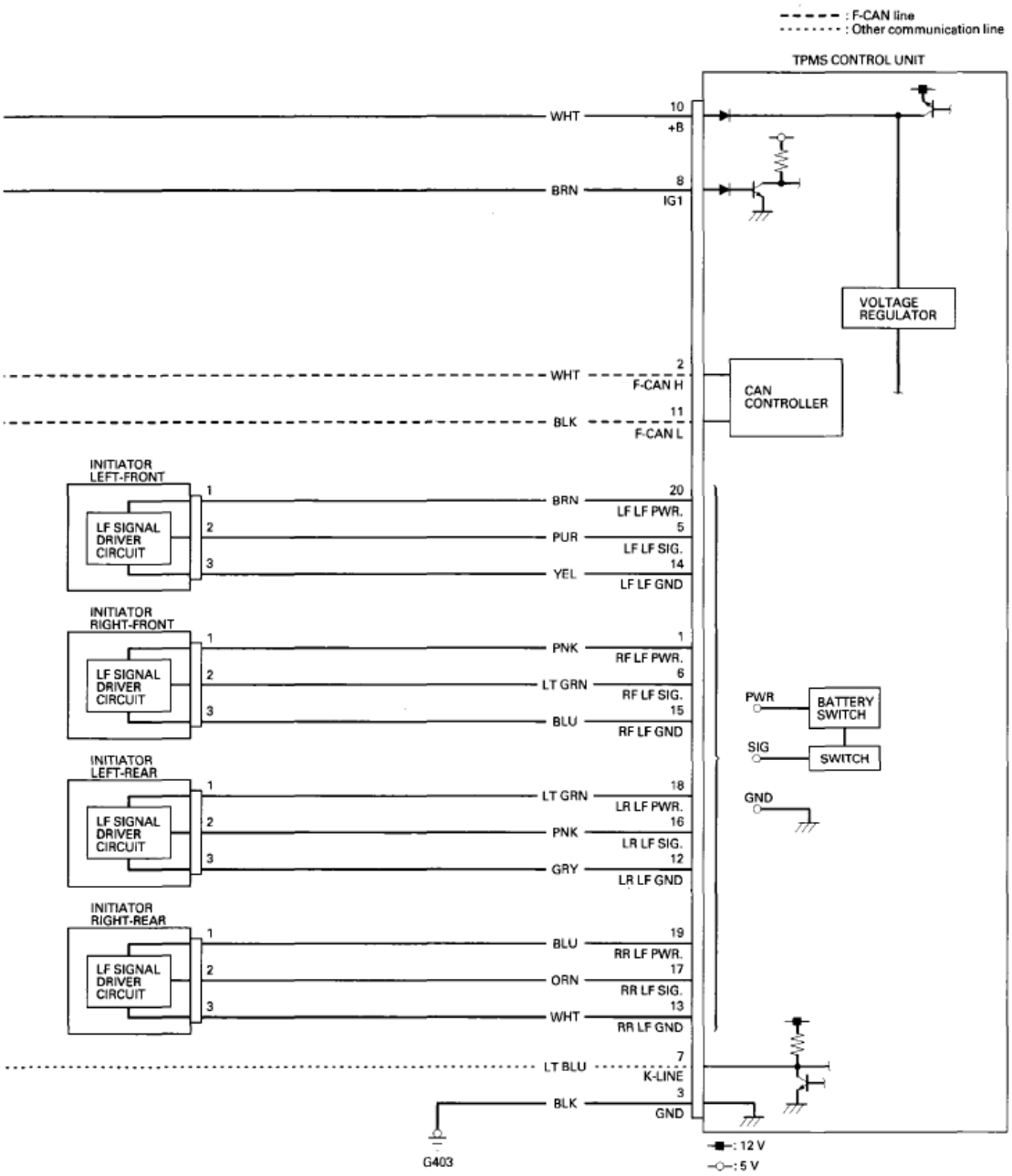


Fig. 13: TPMS - Circuit Diagram (2 Of 2)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

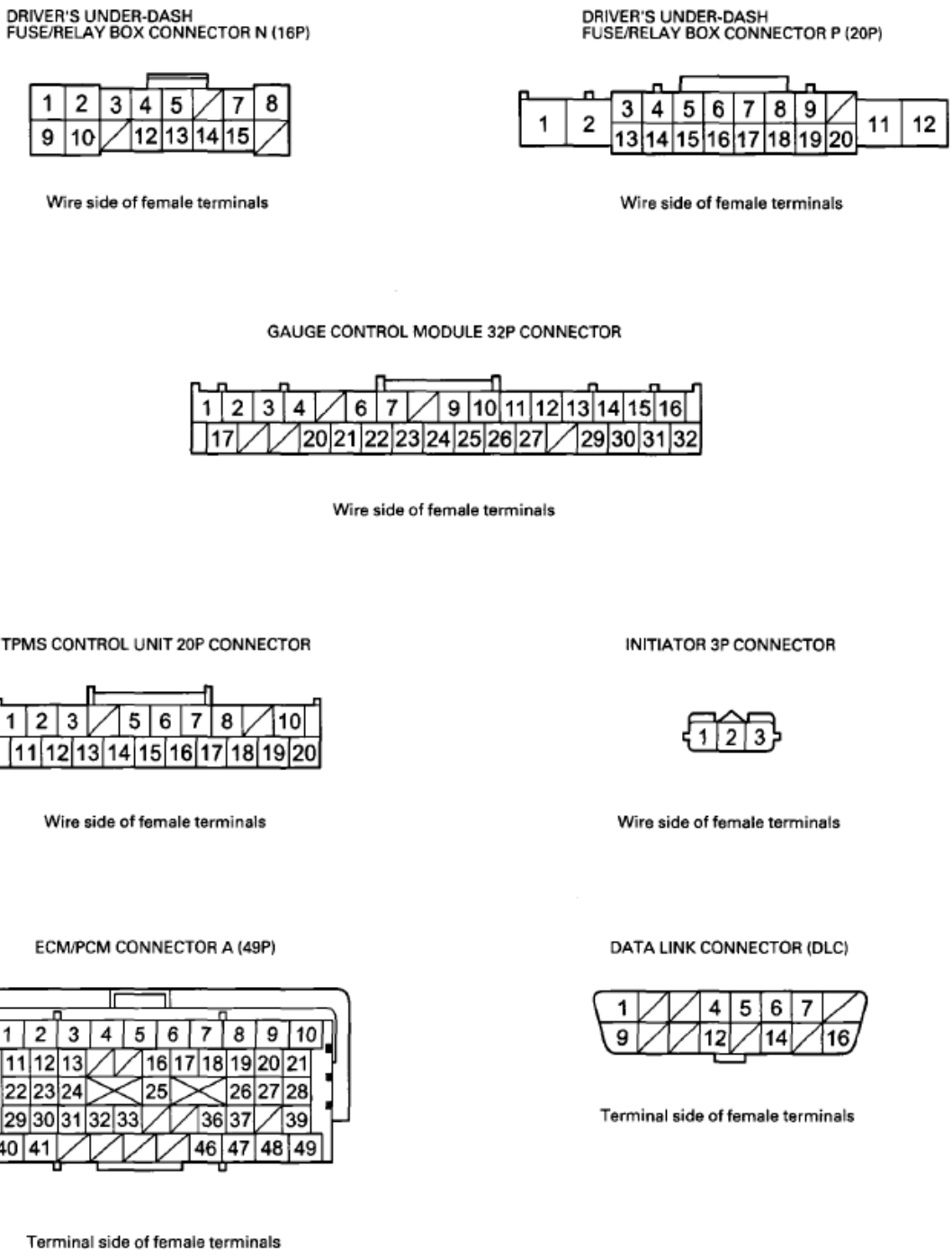


Fig. 14: Identifying TPMS Connector Terminals
Courtesy of AMERICAN HONDA MOTOR CO., INC.

DTC TROUBLESHOOTING

DTC 11, 13, 15, 17: TIRE LOW AIR PRESSURE

NOTE: If low tire pressure is detected, the TPMS control unit sets one or more of these DTCs, and turns on the low tire pressure indicator and the appropriate tire indicator(s). If the low tire pressure and tire indicators come on because of a low tire pressure, and the client corrects it before bringing the vehicle in, the DTCs will be stored, but all the indicators turns off.

1. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
2. Make sure the tires are inflated to the specified tire pressure listed on the doorjamb sticker.
3. Test-drive the vehicle.

   Does the low tire pressure indicator go off?

   YES - The system is OK at this time. Check for and repair the cause of air loss.

   NO - Go to step 4.

4. Check the RF, LF, RR, or LR TIRE PRESSURE in the TPMS DATA LIST with the HDS, and compare it with the measured actual tire pressure.

   NOTE: If UNDEFINED is shown on the sensor transmitter status, turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode, rotate the tire 1/4 turn, then turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode, and try again. If UNDEFINED is still displayed, repeat this procedure until NORMAL is shown.

   Is the indicated tire pressure on the HDS within 40 kPa (0.4 kgf/cm^2 , 6 psi) of the actual tire pressure?

   YES - Check for loose terminals and poor connections at the TPMS control unit. If necessary, substitute a known-good TPMS control unit (see **TPMS CONTROL UNIT REPLACEMENT**), and recheck.

   NO - Check that the tire pressure sensor is properly mounted. If the mounting is OK, then replace the appropriate tire pressure sensor (see **TIRE PRESSURE SENSOR REPLACEMENT**).

DTC 21, 22, 23, 24: TIRE PRESSURE SENSOR ABNORMALLY HIGH TEMPERATURE

1. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
2. Check the tire indicated by the DTCs you retrieved.

   NOTE: An abnormal rise in the internal temperature of the tires can be caused by:

   - Excessive braking
   - Failure to release the parking brake (rear tires only)
   - Leaving the vehicle running while parked
   - Improper assembly of a wheel and tire

DTC	Tire Location
21	Right-front
22	Left-front
23	Right-rear
24	Left-rear

3. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
4. Make sure the tires have cooled down.
5. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.

   Does the TPMS indicator go off within one minute?

   YES - The system is OK at this time. Clear the DTC with the HDS.

   NO - Go to step 6.

6. Check the RF, LF, RR, or LR TIRE PRESSURE SENSOR TEMPERATURE in the TPMS DATA LIST with the HDS.

   NOTE: If UNDEFINED is shown on the sensor transmitter status, turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode, rotate the tire 1/4 turn, then turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode, and try again. If UNDEFINED is still displayed, repeat this procedure until NORMAL is shown.

   Is 176°F (80°C) or more indicated?

   YES - Replace the appropriate tire pressure sensor (see **TIRE PRESSURE SENSOR REPLACEMENT**).

   NO - Check for loose terminals and poor connections at the TPMS control unit. If necessary, substitute a known-good TPMS control unit (see **TPMS CONTROL UNIT REPLACEMENT**), and recheck.

DTC 31, 33, 35, 37: TIRE PRESSURE SENSOR LOW BATTERY VOLTAGE

NOTE: This problem occurs when the temperature around the sensor is - 4°F (- 20°C) or less. Note that the diagnosis must be made in a place where ambient temperature is - 4°F (- 20°C) or more.

1. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.

   Does the TPMS indicator go off within one minute?

   YES - The system is OK at this time. Clear the DTC with the HDS.

NO - Go to step 2.

2. Check the RF, LF, RR, or LR TIRE PRESSURE SENSOR BATTERY STATUS in the TPMS DATA LIST with the HDS.

NOTE: **If UNDEFINED is shown on the sensor transmitter status, turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode, rotate the tire 1/4 turn, then turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode, and try again. If UNDEFINED is still displayed, repeat this procedure until NORMAL is shown.**

DTC	Tire Location
31	Right-front
33	Left-front
35	Right-rear
37	Left-rear

Is LOW indicated?

YES - Replace the appropriate tire pressure sensor (see **TIRE PRESSURE SENSOR REPLACEMENT**).

NO - Check for loose terminals and poor connections at the TPMS control unit. If necessary, substitute a known-good TPMS control unit (see **TPMS CONTROL UNIT REPLACEMENT**), and recheck.

DTC 32, 34, 36, 38: TIRE PRESSURE SENSOR SIGNAL FAILURE

NOTE:

- **Inspect for an aftermarket electrical device(s) (such as an inverter, battery charger, CB radio, etc) interfering with the RF signal from the tire pressure sensors when the ignition switch is ON (II), or press the engine start/stop button to select the ON mode.**
- **Vehicle must be driven for 3 minutes at 15 mph (24 km/h) or more for DTC 32, 34, 36, or 38 to set.**

1. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
2. Check the DTC indicated to the tire location to make sure the wheel is a TPMS type with the tire pressure sensor.

DTC	Tire Location
32	Right-front
34	Left-front
36	Right-rear
38	Left-rear

Is a TPMS type wheel with a tire pressure sensor mounted on the vehicle?

YES - Go to step 3.

NO - Install a TPMS type wheel, and memorize the tire pressure sensor ID. Drive the vehicle above 15 mph (24 km/h) continuously for 40 seconds, or memorize the sensor ID with the HDS (see **MEMORIZING THE TIRE PRESSURE SENSOR ID**).

3. Test-drive the vehicle.
4. Check the VEHICLE SPEED in the TPMS DATA LIST with the HDS.

Is the vehicle's speed indicated?

YES - Go to step 10.

NO - Go to step 5.

5. Clear the DTC with the HDS.
6. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
7. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
8. Wait about 5 seconds.
9. Check for DTCs with the HDS.

Is DTC 85 indicated?

YES - Go to the **DTC 85 TROUBLESHOOTING**.

NO - Check for loose terminals and poor connections at the TPMS control unit. If necessary, substitute a known-good TPMS control unit (see **TPMS CONTROL UNIT REPLACEMENT**), and recheck.

10. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
11. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
12. Check TPMS DATA LIST for RF, LF, RR, or LR TIRE PRESSURE SENSOR STATUS changes to NORMAL with the HDS.

NOTE: If UNDEFINED is shown on the sensor transmitter status, turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode, rotate the tire 1/4 turn, then turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode, and try again. If UNDEFINED is still displayed, repeat this procedure until NORMAL is shown.

DTC	Tire Location
32	Right-front
34	Left-front

36	Right-rear
38	Left-rear

Is NORMAL indicated within one full turn of the tire?

YES - The system is OK at this time. Clear the DTC with the HDS.

NO - Go to step 13.

13. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
14. Substitute a wheel with a known-good tire pressure sensor on the vehicle.
15. To memorize the tire pressure sensor ID, drive the vehicle above 15 mph (24 km/h) for 40 continuous seconds, or memorize the sensor ID with the HDS (see **MEMORIZING THE TIRE PRESSURE SENSOR ID**).
16. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
17. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
18. Check TPMS DATA LIST for RF, LF, RR, and LR TIRE PRESSURE SENSOR STATUS changes to NORMAL with the HDS.

NOTE: If UNDEFINED is shown on the sensor transmitter status, turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode, rotate the tire 1/4 turn, then turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode, and try again. If UNDEFINED is still displayed, repeat this procedure until NORMAL is shown.

DTC	Tire Location
32	Right-front
34	Left-front
36	Right-rear
38	Left-rear

Is NORMAL indicated within one full turn of the tire?

YES - Replace the tire pressure sensor on the original wheel (see **TIRE PRESSURE SENSOR REPLACEMENT**).

NO - Go to step 19.

19. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
20. Substitute an initiator from a known-good location on the current vehicle, or from another known-good vehicle (see **INITIATOR REPLACEMENT**).
21. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
22. Check TPMS DATA LIST for RF, LF, RR, and LR TIRE PRESSURE SENSOR STATUS changes to

NORMAL with the HDS.

NOTE: If UNDEFINED is shown on the sensor transmitter status, turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode, rotate the tire 1/4 turn, then turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode, and try again. If UNDEFINED is still displayed, repeat this procedure until NORMAL is shown.

DTC	Tire Location
32	Right-front
34	Left-front
36	Right-rear
38	Left-rear

Is NORMAL indicated within one full turn of the tire?

YES - Replace the appropriate initiator (see **INITIATOR REPLACEMENT**).

NO - Go to step 23.

23. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
24. Disconnect the appropriate initiator 3P connector.

DTC	Initiator Location
32	Right-front
34	Left-front
36	Right-rear
38	Left-rear

25. Disconnect the TPMS control unit 20P connector.
26. Check for continuity between the appropriate TPMS control unit 20P connector terminal and appropriate initiator 3P connector terminal No. 1.

DTC	TPMS Control Unit 20P Connector Terminal	Initiator Location
32	No. 1	Right-front
34	No. 20	Left-front
36	No. 19	Right-rear
38	No. 18	Left-rear

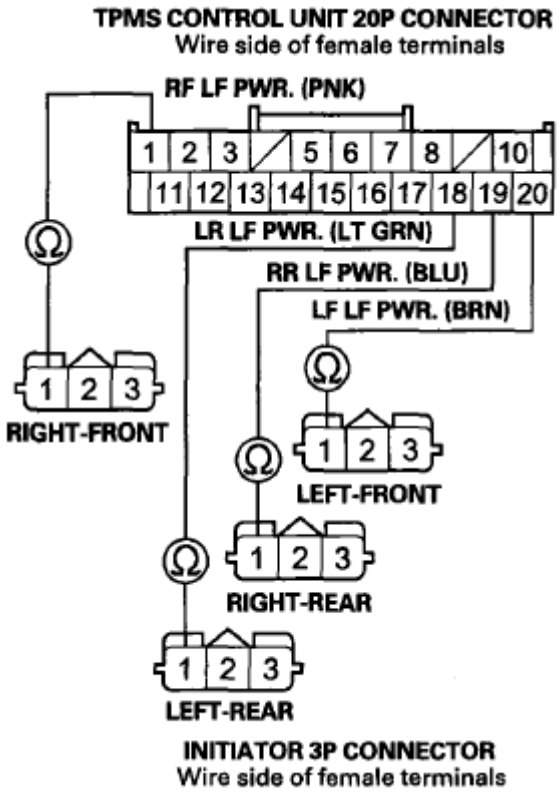


Fig. 15: Checking Continuity Between TPMS Control Unit 20P Connector Terminal And Initiator 3P Connector Terminal No. 1
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 27.

NO - Repair an open in the wire between the TPMS control unit and the appropriate initiator.

27. Check for continuity between the appropriate TPMS control unit 20P connector terminal and appropriate initiator 3P connector terminal No. 3.

DTC	TPMS Control Unit 20P Connector Terminal	Initiator Location
32	No. 15	Right-front
34	No. 14	Left-front
36	No. 13	Right-rear
38	No. 12	Left-rear

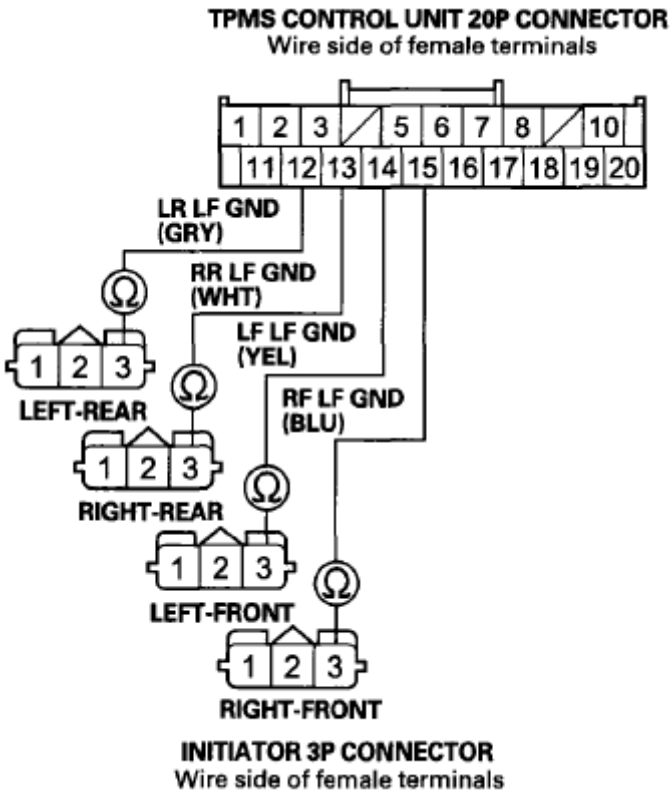


Fig. 16: Checking Continuity Between TPMS Control Unit 20P Connector Terminal And Initiator 3P Connector Terminal No. 3
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 28.

NO - Repair an open in the wire between the TPMS control unit and the appropriate initiator.

28. Check for continuity between the appropriate TPMS control unit 20P connector terminal and appropriate initiator 3P connector terminal No. 2.

DTC	TPMS Control Unit 20P Connector Terminal	Initiator Location
32	No. 6	Right-front
34	No. 5	Left-front
36	No. 17	Right-rear
38	No. 16	Left-rear

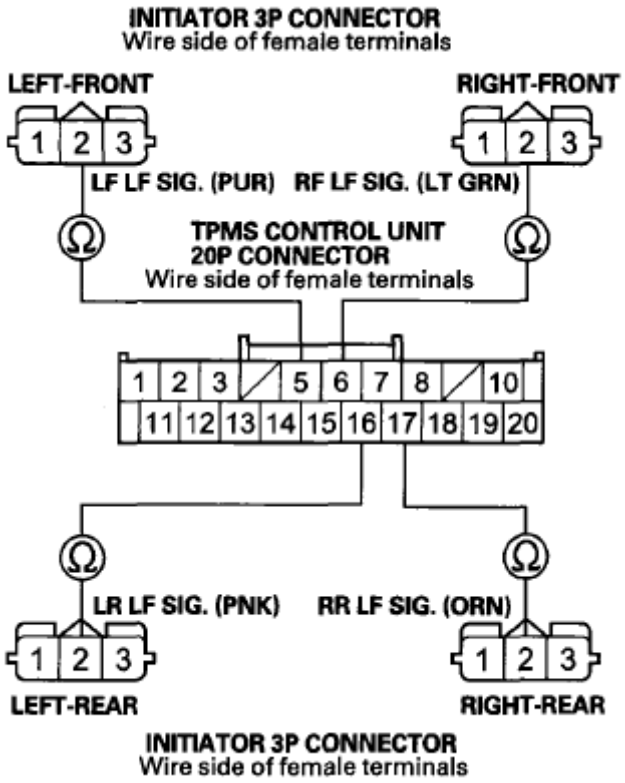


Fig. 17: Checking Continuity Between TPMS Control Unit 20P Connector Terminal And Initiator 3P Connector Terminal No. 2
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 29.

NO - Repair an open in the wire between the TPMS control unit and the appropriate initiator.

29. Check for continuity between body ground and the appropriate TPMS control unit 20P connector terminal.

DTC	TPMS Control Unit 20P Connector Terminal
32	No. 6
34	No. 5
36	No. 17
38	No. 16

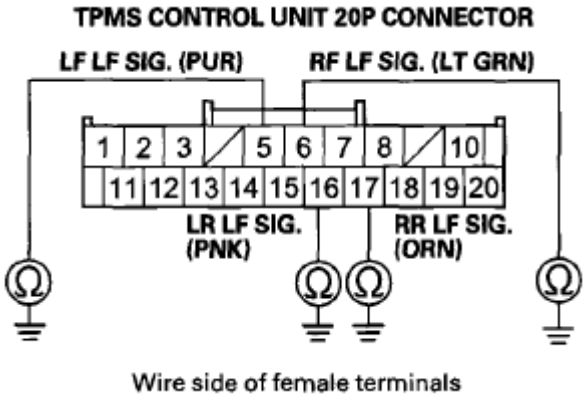


Fig. 18: Checking Continuity Between Body Ground And TPMS Control Unit 20P Connector Terminal
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair a short to body ground in the wire between the TPMS control unit and the appropriate initiator.

NO - Go to step 30.

30. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
31. Measure the voltage between body ground and the appropriate TPMS control unit 20P connector terminal.

DTC	TPMS Control Unit 20P Connector Terminal
32	No. 6
34	No. 5
36	No. 17
38	No. 16

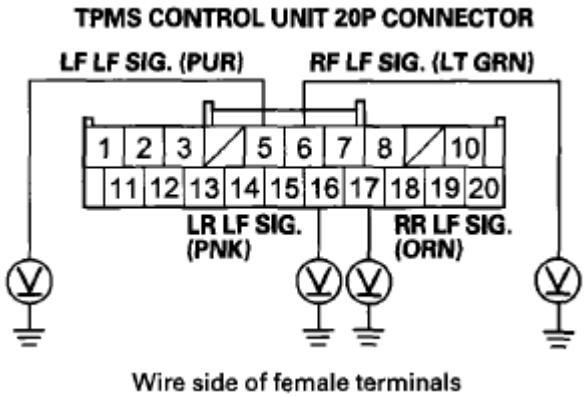


Fig. 19: Measuring Voltage Between Body Ground And TPMS Control Unit 20P Connector

Terminal
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there battery voltage?

YES - Repair a short to power in the wire between the TPMS control unit and the appropriate initiator.

NO - Replace the TPMS control unit (see **TPMS CONTROL UNIT REPLACEMENT**).

DTC 41: ABNORMAL SIGNAL RECEPTION ERROR

NOTE:

- **Inspect for an aftermarket electrical device(s) (such as an inverter, battery charger, CB radio, etc) interfering with the RF signal from the tire pressure sensors when the ignition switch is ON (II), or press the engine start/stop button to select the ON mode.**
- **If DTC 32, 34, 36, or 38 is also set, troubleshoot those DTCs first.**

1. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
2. Check all four wheels to make sure they are the TPMS type with the tire pressure sensor.

   Is each wheel a TPMS type with a tire pressure sensor mounted on the vehicle?

   YES - Go to step 3.

   NO - Install a TPMS type wheel, and memorize the tire pressure sensor ID. Drive the vehicle above 15 mph (24 km/h) continuously for 40 seconds, or memorize the sensor ID with the HDS (see **MEMORIZING THE TIRE PRESSURE SENSOR ID**).

3. Test-drive the vehicle.
4. Check the VEHICLE SPEED in the TPMS DATA LIST with the HDS.

   Is the vehicle speed indicated?

   YES - Go to step 10.

   NO - Go to step 5.

5. Clear the DTC with the HDS.
6. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
7. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
8. Wait about 5 seconds.
9. Check for DTCs with the HDS.

   Is DTC 85 indicated?

YES - Go to the **DTC 85 TROUBLESHOOTING**.

NO - Check for loose terminals and poor connections at the TPMS control unit. If necessary, substitute a known-good TPMS control unit (see **TPMS CONTROL UNIT REPLACEMENT**), and recheck.

10. Turn the ignition switch to LOCK(0), or press the engine start/stop button to select the OFF mode.
11. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
12. Check TPMS DATA LIST for LF, RF, LR, and RR TIRE PRESSURE SENSOR STATUS changes to NORMAL with the HDS.

NOTE: If UNDEFINED is shown on the sensor transmitter status, turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode, rotate the tire 1/4 turn, then turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode, and try again. If UNDEFINED is still displayed, repeat this procedure until NORMAL is shown.

Is NORMAL indicated within one full turn of the tire?

YES - The system is OK at this time. Clear the DTC with the HDS.

NO - Check for loose terminals and poor connections at the TPMS control unit. If necessary, substitute a known-good TPMS control unit (see **TPMS CONTROL UNIT REPLACEMENT**), and recheck.

DTC 45: INITIATOR CIRCUIT SHORT DETECTION

1. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
2. Clear the DTC with the HDS.
3. Turn the ignition switch to LOCK (0) and then back to ON (II), or press the engine start/stop button to select the OFF mode and then the ON mode.
4. Check for DTCs with the HDS.

Is DTC 45 indicated?

YES - Go to step 5.

NO - The system is OK at this time.

5. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
6. Disconnect the TPMS control unit 20P connector.
7. Check for continuity between body ground and the appropriate TPMS control unit 20P connector terminal.

Terminal Name	TPMS Control Unit 20P Connector Terminal
RF LF PWR.	No. 1

LF LF PWR.	No. 20
RR LF PWR.	No. 19
LR LF PWR.	No. 18

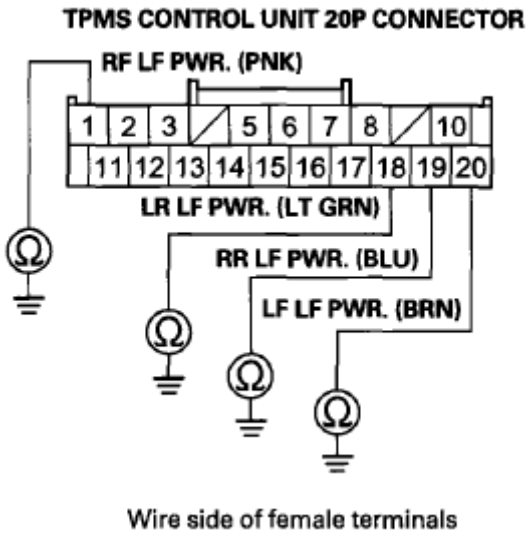


Fig. 20: Checking Continuity Between Body Ground And TPMS Control Unit 20P Connector Terminal
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 8.

NO - Go to step 10.

8. Disconnect the appropriate initiator 3P connector.
9. Check for continuity between body ground and the appropriate TPMS control unit 20P connector terminal.

Terminal Name	TPMS Control Unit 20P Connector Terminal
RF LF PWR.	No. 1
LF LF PWR.	No. 20
RR LF PWR.	No. 19
LR LF PWR.	No. 18

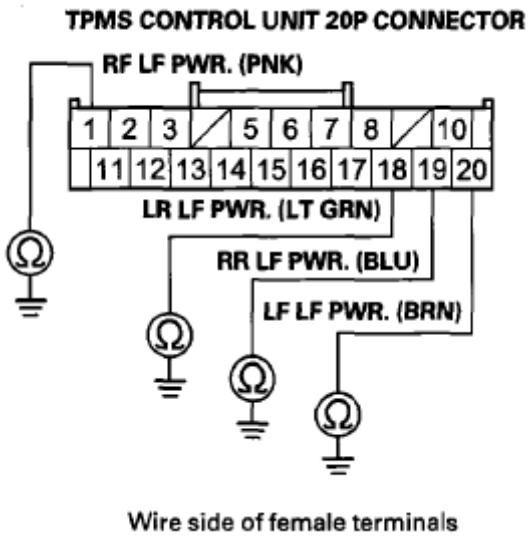


Fig. 21: Checking Continuity Between Body Ground And TPMS Control Unit 20P Connector Terminal
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair a short to body ground in the wire between the TPMS control unit and the appropriate initiator.

NO - Replace the appropriate initiator (see **INITIATOR REPLACEMENT**).

10. Check for continuity between the appropriate TPMS control unit 20P connector terminal.

Tire Location	TPMS Control Unit 20P Connector Terminal	
Right-front	RF LF PWR./No. 1	RF LF GND/No. 15
Left-front	LF LF PWR./No. 20	LF LF GND/No. 14
Right-rear	RR LF PWR./No. 19	RR LF GND/No. 13
Left-rear	LR LF PWR./No. 18	LR LF GND/No. 12

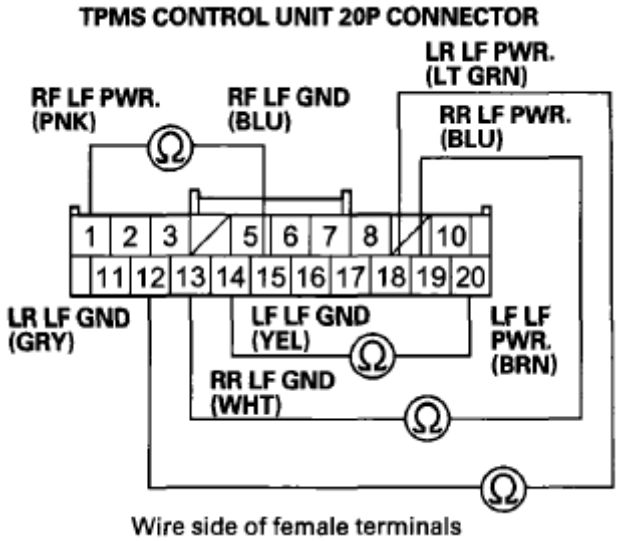


Fig. 22: Checking Continuity Between TPMS Control Unit 20P Connector Terminal
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 11.

NO - Go to step 13.

11. Disconnect the appropriate initiator 3P connector.
12. Check for continuity between the appropriate TPMS control unit 20P connector terminal.

Tire Location	TPMS Control Unit 20P Connector Terminal	
Right-front	RF LF PWR./No. 1	RF LF GND/No. 15
Left-front	LF LF PWR./No. 20	LF LF GND/No. 14
Right-rear	RR LF PWR./No. 19	RR LF GND/No. 13
Left-rear	LR LF PWR./No. 18	LR LF GND/No. 12

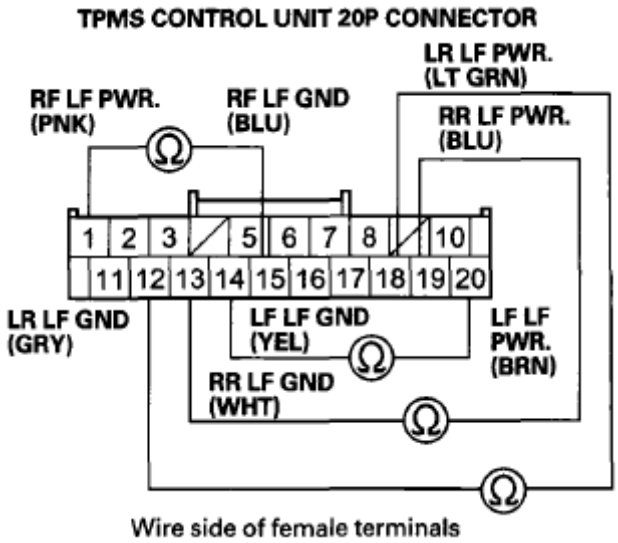


Fig. 23: Checking Continuity Between TPMS Control Unit 20P Connector Terminal
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair a short in the wire between the TPMS control unit and the appropriate initiator.

NO - Replace the appropriate initiator (see **INITIATOR REPLACEMENT**).

13. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
14. Measure the voltage between body ground and the appropriate TPMS control unit 20P connector terminal.

Terminal Name	TPMS Control Unit 20P Connector Terminal
RF LF GND	No. 15
LF LF GND	No. 14
RR LF GND	No. 13
LR LF GND	No. 12

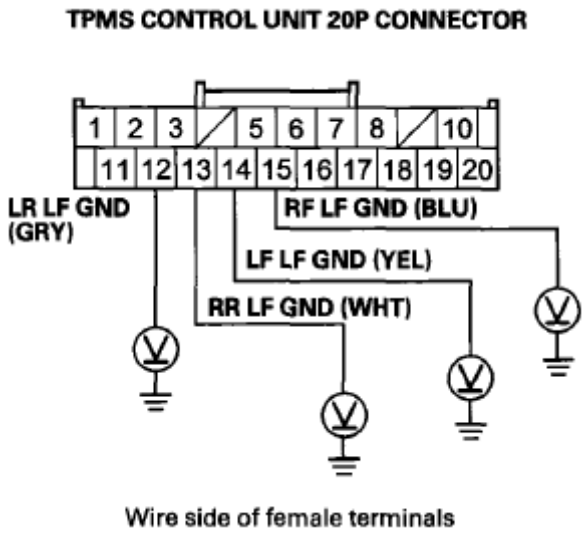


Fig. 24: Measuring Voltage Between Body Ground And TPMS Control Unit 20P Connector Terminal
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there battery voltage?

YES - Repair a short to power in the wire between the TPMS control unit and the appropriate initiator.

NO - Check for loose terminals and poor connections at the TPMS control unit. If necessary, substitute a known-good TPMS control unit (see **TPMS CONTROL UNIT REPLACEMENT**) and recheck.

DTC 51, 53, 55, 57: TIRE PRESSURE SENSOR REGISTRATION ERROR

NOTE: The following DTCs will only set during initialization with the HDS.

1. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
2. Check the DTC indicated to the tire location to make sure the wheel is a TPMS type with the tire pressure sensor.

DTC	Tire Location
51	Right-front
53	Left-front
55	Right-rear
57	Left-rear

Is a TPMS type wheel with a tire pressure sensor mounted on the vehicle?

YES - Go to step 3.

NO - Install a TPMS type wheel, and memorize the tire pressure sensor ID. Drive the vehicle above 15

mph (24 km/h) continuously for 40 seconds, or memorize the sensor ID with the HDS (see **MEMORIZING THE TIRE PRESSURE SENSOR ID**).

3. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
4. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
5. Check TPMS DATA LIST for RF, LF, RR, or LR TIRE PRESSURE SENSOR STATUS changes to NORMAL with the HDS.

NOTE: If UNDEFINED is shown on the sensor transmitter status, turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode, rotate the tire 1/4 turn, then turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode, and try again. If UNDEFINED is still displayed, repeat this procedure until NORMAL is shown.

DTC	Tire Location
51	Right-front
53	Left-front
55	Right-rear
57	Left-rear

Is NORMAL indicated within one full turn of the tire?

YES - The system is OK at this time. Clear the DTC with the HDS.

NO - Go to step 6.

6. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
7. Substitute a wheel with a known-good tire pressure sensor on the vehicle.
8. To memorize the tire pressure sensor ID, drive the vehicle above 15 mph (24 km/h) for 40 continuous seconds, or memorize the sensor ID with the HDS (see **MEMORIZING THE TIRE PRESSURE SENSOR ID**).
9. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
10. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
11. Check TPMS DATA LIST for RF, LF, RR, or LR TIRE PRESSURE SENSOR STATUS changes to NORMAL with the HDS.

NOTE: If UNDEFINED is shown on the sensor transmitter status, turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode, rotate the tire 1/4 turn, then turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode, and try again. If UNDEFINED is still displayed, repeat this procedure until NORMAL is shown.

DTC	Tire Location
51	Right-front
53	Left-front
55	Right-rear
57	Left-rear

Is NORMAL indicated within one full turn of the tire?

YES - Replace the tire pressure sensor on the original wheel (see **TIRE PRESSURE SENSOR REPLACEMENT**).

NO - Go to step 12.

12. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
13. Substitute an initiator from a known-good location on the current vehicle, or from another known-good vehicle (see **INITIATOR REPLACEMENT**).
14. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
15. Check TPMS DATA LIST for RF, LF, RR, and LR TIRE PRESSURE SENSOR STATUS changes to NORMAL with the HDS.

NOTE: If UNDEFINED is shown on the sensor transmitter status, turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode, rotate the tire 1/4 turn, then turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode, and try again. If UNDEFINED is still displayed, repeat this procedure until NORMAL is shown.

DTC	Tire Location
51	Right-front
53	Left-front
55	Right-rear
57	Left-rear

Is NORMAL indicated within one full turn of We tire?

YES - Replace the appropriate initiator (see **INITIATOR REPLACEMENT**).

NO - Go to step 16.

16. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
17. Disconnect the appropriate initiator 3P connector.

DTC	Initiator Location
51	Right-front

53	Left-front
55	Right-rear
57	Left-rear

18. Disconnect the TPMS control unit 20P connector.
19. Check for continuity between the appropriate TPMS control unit 20P connector terminal and appropriate initiator 3P connector terminal No. 1.

DTC	TPMS Control Unit 20P Connector Terminal	Initiator Location
51	No. 1	Right-front
53	No. 20	Left-front
55	No. 19	Right-rear
57	No. 18	Left-rear

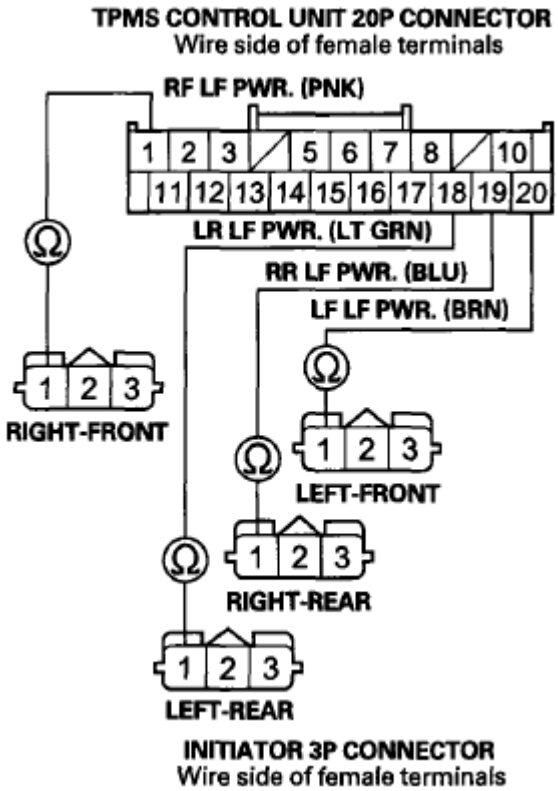


Fig. 25: Checking Continuity Between TPMS Control Unit 20P Connector Terminal And Initiator 3P Connector Terminal No. 1
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 20.

NO - Repair an open in the wire between the TPMS control unit and the appropriate initiator.

20. Check for continuity between the appropriate TPMS control unit 20P connector terminal and appropriate initiator 3P connector terminal No. 3.

DTC	TPMS Control Unit 20P Connector Terminal	Initiator Location
51	No. 15	Right-front
53	No. 14	Left-front
55	No. 13	Right-rear
57	No. 12	Left-rear

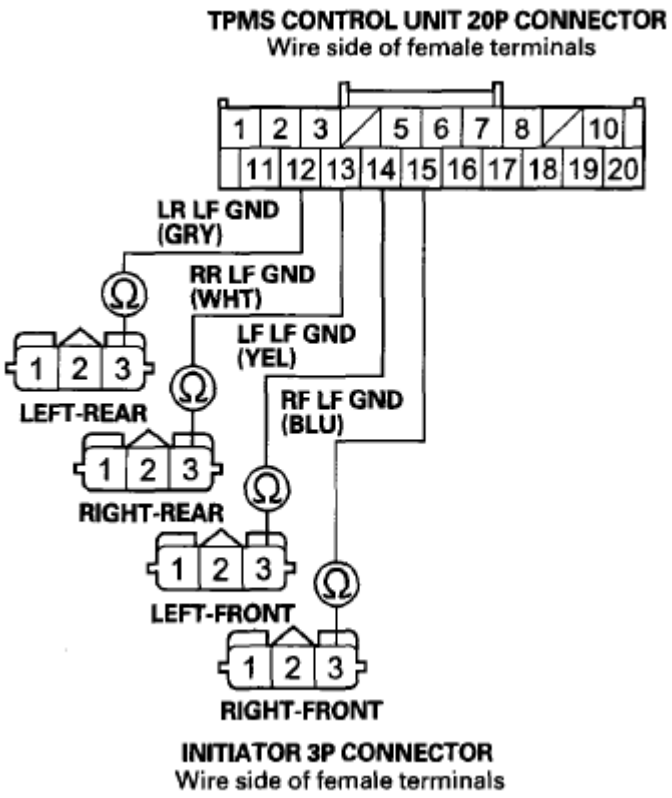


Fig. 26: Checking Continuity Between TPMS Control Unit 20P Connector Terminal And Initiator 3P Connector Terminal No. 3
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 21.

NO - Repair an open in the wire between the TPMS control unit and the appropriate initiator.

21. Check for continuity between the appropriate TPMS control unit 20P connector terminal and appropriate initiator 3P connector terminal No. 2.

DTC	TPMS Control Unit 20P Connector Terminal	Initiator Location

51	No. 6	Right-front
53	No. 5	Left-front
55	No. 17	Right-rear
57	No. 16	Left-rear

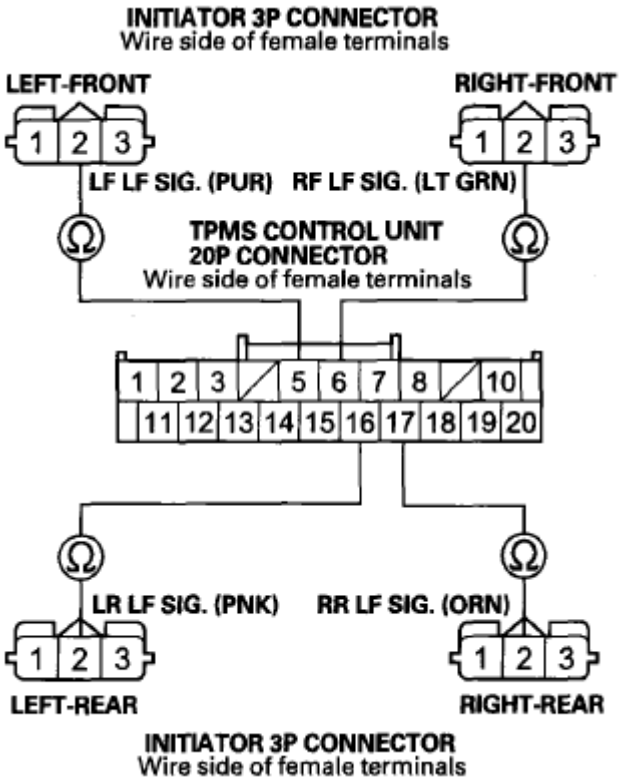


Fig. 27: Checking Continuity Between TPMS Control Unit 20P Connector Terminal And Initiator 3P Connector Terminal No. 2
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 22.

NO - Repair an open in the wire between the TPMS control unit and the appropriate initiator.

22. Check for continuity between body ground and the appropriate TPMS control unit 20P connector terminal.

DTC	TPMS Control Unit 20P Connector Terminal
51	No. 6
53	No. 5
55	No. 17
57	No. 16

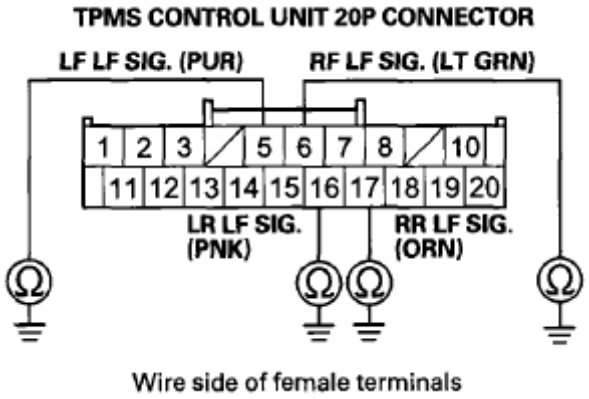


Fig. 28: Checking Continuity Between Body Ground And TPMS Control Unit 20P Connector Terminal
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair a short to body ground in the wire between the TPMS control unit and the appropriate initiator.

NO - Go to step 23.

23. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
24. Measure the voltage between body ground and the appropriate TPMS control unit 20P connector terminal.

DTC	TPMS Control Unit 20P Connector Terminal
51	No. 6
53	No. 5
55	No. 17
57	No. 16

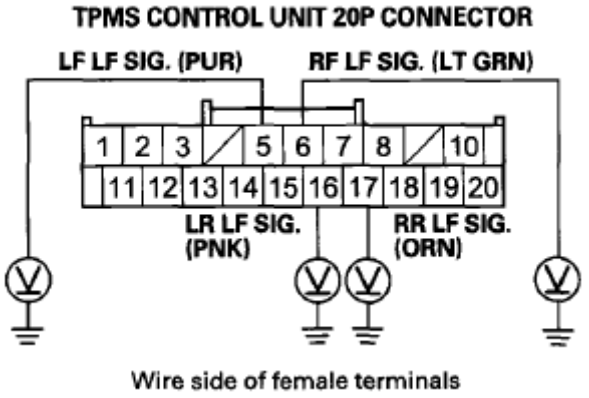


Fig. 29: Measuring Voltage Between Body Ground And TPMS Control Unit 20P Connector

Terminal
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there battery voltage?

YES - Repair a short to power in the wire between the TPMS control unit and the appropriate initiator.

NO - Replace the TPMS control unit (see **TPMS CONTROL UNIT REPLACEMENT**).

DTC 61, 63, 65, 67: INITIATOR CIRCUIT OPEN DETECTION

1. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
2. Clear the DTC with the HDS.
3. Turn the ignition switch to LOCK (0) and then back to ON (II), or press the engine start/stop button to select the OFF mode and then the ON mode.
4. Check for DTCs with the HDS, and note the indicated DTC(s).

   Is DTC 61, 63, 65, and/or 67 indicated?

   YES - Go to step 5.

   NO - The system is OK at this time.

5. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
6. Disconnect the appropriate initiator 3P connector.

DTC	Initiator Location
61	Right-front
63	Left-front
65	Right-rear
67	Left-rear

7. Disconnect the TPMS control unit 20P connector.
8. Check for continuity between the appropriate TPMS control unit 20P connector terminal and appropriate initiator 3P connector terminal No. 1.

DTC	TPMS Control Unit 20P Connector Terminal	Initiator Location
61	No. 1	Right-front
63	No. 20	Left-front
65	No. 19	Right-rear
67	No. 18	Left-rear

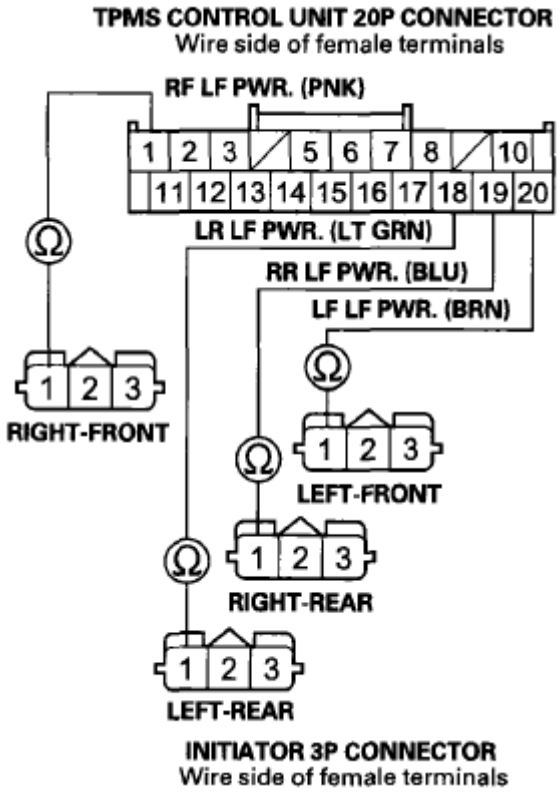


Fig. 30: Checking Continuity Between TPMS Control Unit 20P Connector Terminal And Initiator 3P Connector Terminal No. 1
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 9.

NO - Repair an open in the wire between the TPMS control unit and the appropriate initiator.

9. Check for continuity between the appropriate TPMS control unit 20P connector terminal and appropriate initiator 3P connector terminal No. 3.

DTC	TPMS Control Unit 20P Connector Terminal	Initiator Location
61	No. 15	Right-front
63	No. 14	Left-front
65	No. 13	Right-rear
67	No. 12	Left-rear

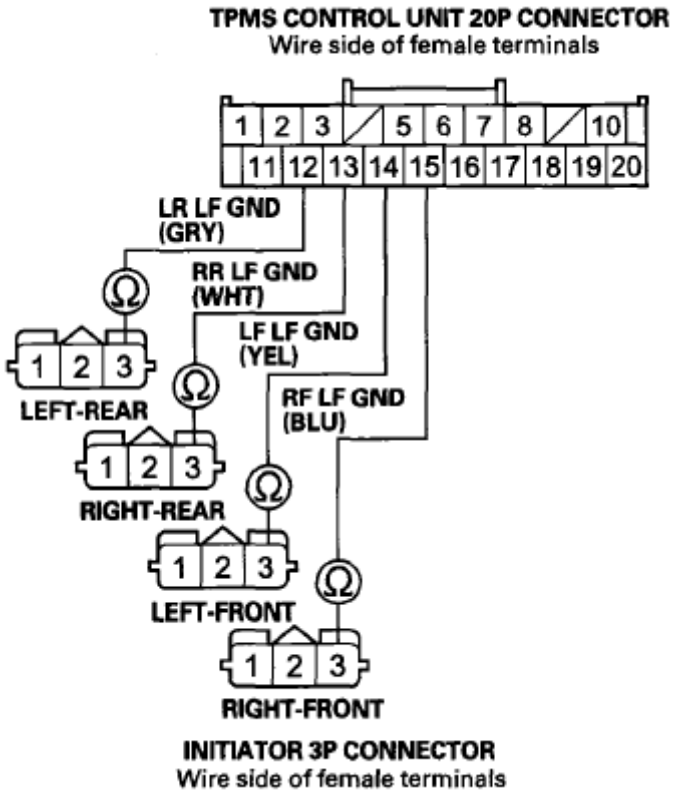


Fig. 31: Checking Continuity Between TPMS Control Unit 20P And Initiator 3P Connector Terminal No. 3
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 10.

NO - Repair an open in the wire between the TPMS control unit and the appropriate initiator.

10. Check for continuity between the appropriate TPMS control unit 20P connector terminal and appropriate initiator 3P connector terminal No. 2.

DTC	TPMS Control Unit 20P Connector Terminal	Initiator Location
61	No. 6	Right-front
63	No. 5	Left-front
65	No. 17	Right-rear
67	No. 16	Left-rear

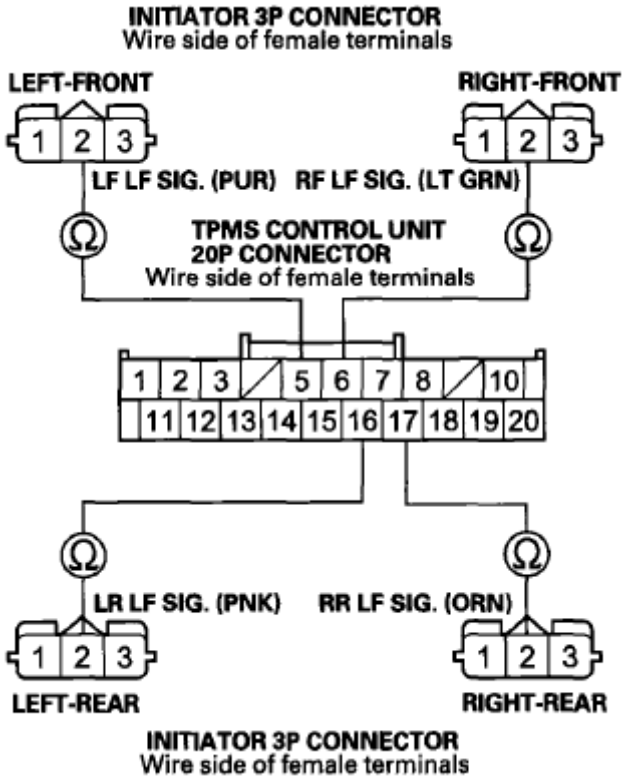


Fig. 32: Checking Continuity Between TPMS Control Unit 20P And Initiator 3P Connector Terminal No. 2
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 11.

NO - Repair an open in the wire between the TPMS control unit and the appropriate initiator.

11. Check for noted DTC(s) in step 4.

    Were DTC 61, 63, 65, and 67 indicated at the same time?

    YES - Check for loose terminals and poor connections at the TPMS control unit. If necessary, substitute a known-good TPMS control unit (see **TPMS CONTROL UNIT REPLACEMENT**), and recheck.

    NO - Go to step 12.

12. Swap a known-good initiator with the initiator indicated by the DTC (see **INITIATOR REPLACEMENT**).

DTC	Initiator Location
61	Right-front

63	Left-front
65	Right-rear
67	Left-rear

13. Reconnect all connectors.
14. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
15. Clear the DTC with the HDS.
16. Turn the ignition switch to LOCK (0) and then back to ON (II), or press the engine start/stop button to select the OFF mode and then the ON mode.
17. Check for DTCs with the HDS, and compare the indicated DTC with the noted DTC(s) in step 4.

DTC	Initiator Location
61	Right-front
63	Left-front
65	Right-rear
67	Left-rear

Does the indicated DTC change between the initiators that were replaced in step 12?

YES - Replace the appropriate initiator (see **INITIATOR REPLACEMENT**).

NO - Check for loose terminals and poor connections at the TPMS control unit. If necessary, substitute a known-good TPMS control unit (see **TPMS CONTROL UNIT REPLACEMENT**), and recheck.

DTC 81: TPMS CONTROL UNIT FAILURE

NOTE: Low battery voltage can cause this DTC. Make sure the battery is fully charged and in good condition (see BATTERY TEST).

1. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
2. Clear the DTC with the HDS.
3. Turn the ignition switch to LOCK (0) and then back to ON (II), or press the engine start/stop button to select the OFF mode and then the ON mode.
4. Check for DTCs with the HDS.

Is DTC 81 indicated?

YES - Replace the TPMS control unit (see **TPMS CONTROL UNIT REPLACEMENT**).

NO - The system is OK at this time. Check for loose terminals and poor connections at the TPMS control unit and G403.

DTC 83: NO VSP SIGNAL

NOTE: Check for fuel and emissions systems DTCs with the HDS, and troubleshoot the ECM/PCM and F-CAN communication errors first (see GENERAL TROUBLESHOOTING INFORMATION).

1. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
2. Clear the DTC with the HDS.
3. Test-drive the vehicle.
4. Check for DTCs with the HDS.

   Is DTC 83 indicated?

   YES - Go to step 5.

   NO - The system is OK at this time.

5. Check for DTCs with the HDS.

   Is DTC 85 indicated?

   YES - Go to **DTC 85 TROUBLESHOOTING**.

   NO - Go to step 6.

6. Test-drive the vehicle.
7. Check the VEHICLE SPEED in the TPMS DATA LIST with the HDS.

   Is the vehicle's speed indicated?

   YES - Check for loose terminals and poor connections at the TPMS control unit. If necessary, substitute a known-good TPMS control unit (see **TPMS CONTROL UNIT REPLACEMENT**), and recheck.

   NO - Go to step 8.

8. Check the speedometer.

   Does the speedometer register speed?

   YES - Replace the TPMS control unit (see **TPMS CONTROL UNIT REPLACEMENT**).

   NO - Update the ECM/PCM if it does not have the latest software (see **ECM/PCM UPDATE**), or substitute a known-good ECM/PCM (see **SUBSTITUTING THE ECM/PCM**), then go to step 1 and recheck. If the ECM/PCM was updated and DTCs are not indicated, troubleshooting is complete. If the ECM/PCM was substituted and DTCs and not indicated, replace the original ECM/PCM (see **ECM/PCM REPLACEMENT**).

DTC 85: F-CAN COMMUNICATION FAILURE

NOTE: Check for fuel and emissions systems DTCs with the HDS, and troubleshoot the ECM/PCM and F-CAN communication errors first (see GENERAL TROUBLESHOOTING INFORMATION).

1. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
2. Clear the DTC with the HDS.
3. Turn the ignition switch to LOCK (0) and then back to ON (II), or press the engine start/stop button to select the OFF mode and then the ON mode.
4. Wait about 5 seconds.
5. Check for DTCs with the HDS.

   Is DTC 85 indicated?

   YES - Go to step 6.

   NO - The system is OK at this time.

6. Test-drive the vehicle.

   Does the speedometer work?

   YES - Go to step 10.

   NO - Go to step 7.

7. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
8. Disconnect the TPMS control unit 20P connector.
9. Test-drive the vehicle.

   Does the speedometer work?

   YES - Check for loose terminals and poor connections at the TPMS control unit. If necessary, substitute a known-good TPMS control unit (see **TPMS CONTROL UNIT REPLACEMENT**), and recheck.

   NO - Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode, and reconnect all connectors, then check and troubleshoot the fuel and emissions systems (see **GENERAL TROUBLESHOOTING INFORMATION**).

10. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
11. Short the SCS line with the HDS.
12. Disconnect ECM/PCM connector A (49P).
13. Disconnect the TPMS control unit 20P connector.
14. Check for continuity between the TPMS control unit 20P connector terminals and the ECM/PCM connector A (49P) terminals according to the table.

Terminal Name	TPMS Control Unit 20P Connector Terminal	ECM/PCM Connector A (49P) Terminal
F-CAN L	No. 11	No. 49
F-CAN H	No. 2	No. 48

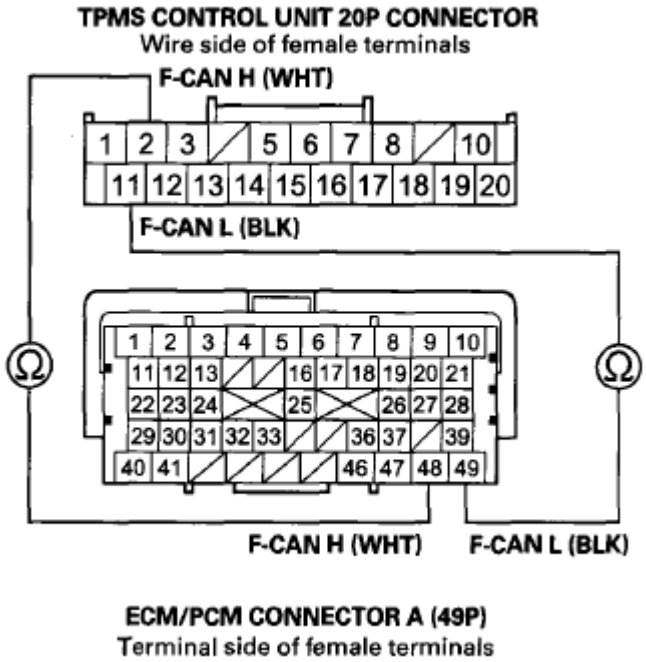


Fig. 33: Checking Continuity Between TPMS Control Unit 20P And ECM/PCM Connector A (49P) Terminals
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Check for loose terminals and poor connections at the TPMS control unit and G403. If necessary, substitute a known-good TPMS control unit (see **TPMS CONTROL UNIT REPLACEMENT**), and recheck.

NO - Repair an open in the appropriate wire between the TPMS control unit and the ECM/PCM.

DTC 91, 93, 95, 97: TIRE PRESSURE SENSOR INTERNAL ERROR

1. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
2. Clear the DTC with the HDS.
3. Turn the ignition switch to LOCK (0) and then back to ON (II), or press the engine start/stop button to select the OFF mode and then the ON mode.
4. Wait about 1 minute.
5. Check for DTCs with the HDS.

NOTE: The tire pressure sensor of the appropriate wheel is shown.

DTC	Tire Location
91	Right-front
93	Left-front
95	Right-rear
97	Left-rear

Is DTC 91, 93, 95, or 97 indicated?

YES - Replace the appropriate tire pressure sensor (see **TIRE PRESSURE SENSOR REPLACEMENT**).

NO - The system is OK at this time.

SYMPTOM TROUBLESHOOTING

LOW TIRE PRESSURE INDICATOR DOES NOT COME ON, AND NO DTCS ARE STORED

1. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
2. Check the low pressure indicator for several seconds when the ignition switch is turned ON (II), or the engine start/stop button is pressed to select the ON mode.

   Did the indicator come on, and then go off?

   YES - Go to step 3.

   NO - Do the troubleshooting for the gauge control module (see **SELF-DIAGNOSTIC FUNCTION**). If necessary, substitute a known-good gauge control module (see **GAUGE CONTROL MODULE REPLACEMENT**), and recheck.

3. Lower the pressure in each tire until the low tire pressure indicator comes on (see table).

NOTE:

- **If 5 minutes has passed since the ignition switch has been turned ON (II), or the engine start/stop button has been pressed to select the ON mode, turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode, and wait 2 minutes, then turn it back ON (II), or select the ON mode.**
- **Reinflate the tire before continuing to the next tire.**
- **After noting whether the low tire pressure indicator came on, make sure it goes off when you reinflate the tire before proceeding to the next tire.**

Model	Qualification	Specified Tire Pressure Lower Limit

17 inch or 18 inch wheels	Front and rear	175 kPa (1.8 kgf/cm^2 , 25 psi)
19 inch wheels	Front and rear	186 kPa (1.9 kgf/cm^2 , 27 psi)

Does the indicator come on when the pressure drops below the specified tire pressure lower limit?

YES - The system is OK at this time.

NO - Go to step 4.

4. Check the TIRE PRESSURE in the TPMS DATA LIST with the HDS, and compare it with the actual measured tire pressure.

NOTE: If UNDEFINED is shown on the sensor transmitter status, turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode, rotate the tire 1/4 turn, then turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode, and try again. If UNDEFINED is still displayed, repeat this procedure until NORMAL is shown.

Is the indicated tire pressure on the HDS within 40 kPa (0.4 kgf/cm^2 , 6 psi) of the actual tire pressure?

YES - Check for loose terminals and poor connections at the TPMS control unit. If necessary, substitute a known-good TPMS control unit (see **TPMS CONTROL UNIT REPLACEMENT**), and recheck.

NO - Replace the appropriate tire pressure sensor (see **TIRE PRESSURE SENSOR REPLACEMENT**).

LOW TIRE PRESSURE INDICATOR DOES NOT GO OFF, AND NO DTCS ARE STORED

NOTE: If the low tire pressure indicator is turned on at the same time as the TPMS indicator, go to the following TPMS symptom troubleshooting first: TPMS indicator does not go off, and no DTCs are stored (see TPMS INDICATOR DOES NOT GO OFF, AND NO DTCS ARE STORED).

1. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
2. Check the low tire pressure indicator for several seconds when the ignition switch is turned ON (II), or the engine start/stop button is pressed to select the ON mode.

Did the indicator come on, and then blink for about 75 seconds?

YES - Check for gauge DTCs with the HDS (see **WIRE COLOR CODES**) and go to the indicated gauge **DTC'S TROUBLESHOOTING**.

NO - Go to step 3.

3. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
4. Disconnect the TPMS control unit 20P connector.
5. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
6. Check the low tire pressure indicator for several seconds when the ignition switch is turned ON (II), or the engine start/stop button is pressed to select the ON mode.

   Did the indicator come on, and then blink for about 75 seconds?

   YES - Replace the TPMS control unit (see **TPMS CONTROL UNIT REPLACEMENT**).

   NO - Do the troubleshooting for the gauge control module (see **SELF-DIAGNOSTIC FUNCTION**). If necessary, substitute a known-good gauge control module (see **GAUGE CONTROL MODULE REPLACEMENT**), and recheck.

TPMS INDICATOR DOES NOT COME ON, AND NO DTCS ARE STORED

1. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
2. Disconnect the TPMS control unit 20P connector.
3. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
4. Check the TPMS indicator when the ignition switch is turned ON (II), or the engine start/stop button is pressed to select the ON mode.

   Did the indicator come on?

   YES - Check for loose terminals and poor connections at the TPMS control unit. If necessary, substitute a known-good TPMS control unit (see **TPMS CONTROL UNIT REPLACEMENT**), and recheck.

   NO - Do the troubleshooting for the gauge control module (see **SELF-DIAGNOSTIC FUNCTION**). If necessary, substitute a known-good gauge control module (see **GAUGE CONTROL MODULE REPLACEMENT**), and recheck.

TPMS INDICATOR DOES NOT GO OFF, AND NO DTCS ARE STORED

NOTE: If the TPMS control unit was replaced, the TPMS indicator will be on until all four tire pressure sensor ID codes are learned.

1. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
2. Check the No. 29 (7.5 A) fuse in the driver's under-dash fuse/relay box.

   Is the fuse blown?

   YES - Replace the fuse. Turn the ignition switch to ON (II) and then back to LOCK (0), or press the engine start/stop button to select the ON mode and then the OFF mode. If the fuse blows again, repair the short to ground on the No. 29 (7.5 A) fuse circuit.

NO - Reinstall the checked fuse, then go to step 3.

3. Check the No. 12 (7.5 A) fuse in the driver's under-dash fuse/relay box.

   Is the fuse blown?

   YES - Replace the fuse. Turn the ignition switch to ON (II) and then back to LOCK (0), or press the engine start/stop button to select the ON mode and then the OFF mode. If the fuse blows again, repair the short to ground on the No. 12 (7.5 A) fuse circuit.

   NO - Reinstall the checked fuse, then go to step 4.

4. Do the gauge control module self-diagnostic function (see **SELF-DIAGNOSTIC FUNCTION**).

   Is the gauge control module OK?

   YES - Go to step 5.

   NO - Replace the gauge control module (see **GAUGE CONTROL MODULE REPLACEMENT**).

5. Disconnect the TPMS control unit 20P connector.
6. Measure the voltage between body ground and TPMS control unit 20P connector terminal No. 10.

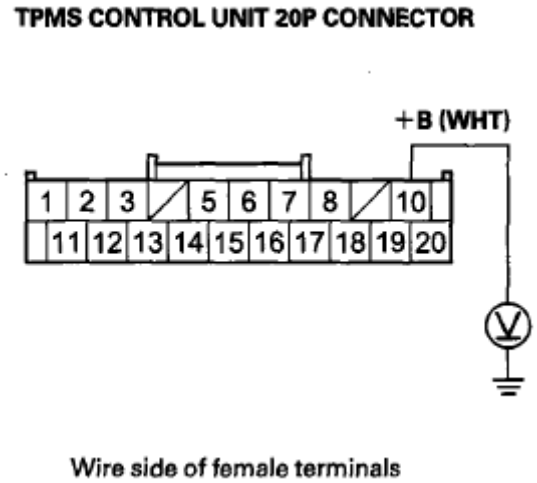


Fig. 34: Measuring Voltage Between Body Ground And TPMS Control Unit 20P Connector Terminal No. 10
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there battery voltage?

YES - Go to step 7.

NO - Repair an open in the wire between the TPMS control unit and the No. 29 (7.5 A) fuse in the driver's under-dash fuse/relay box.

7. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
8. Measure the voltage between body ground and TPMS control unit 20P connector terminal No. 8.

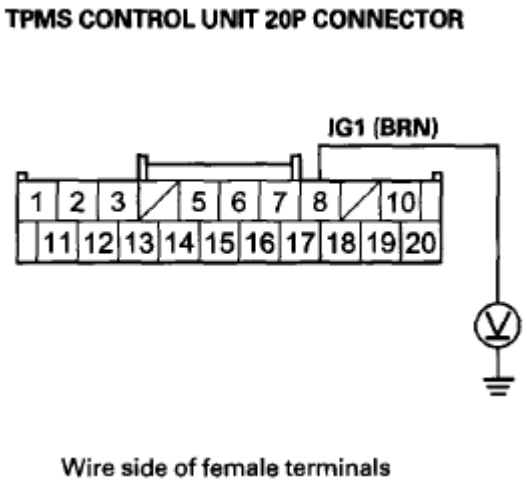


Fig. 35: Measuring Voltage Between Body Ground And TPMS Control Unit 20P Connector Terminal No. 8
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there battery voltage?

YES - Go to step 9.

NO - Repair an open in the wire between the TPMS control unit and the No. 12 (7.5 A) fuse in the driver's under-dash fuse/relay box.

9. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
10. Reconnect the TPMS control unit 20P connector.
11. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
12. Measure the voltage between body ground and TPMS control unit 20P connector terminal No. 3.

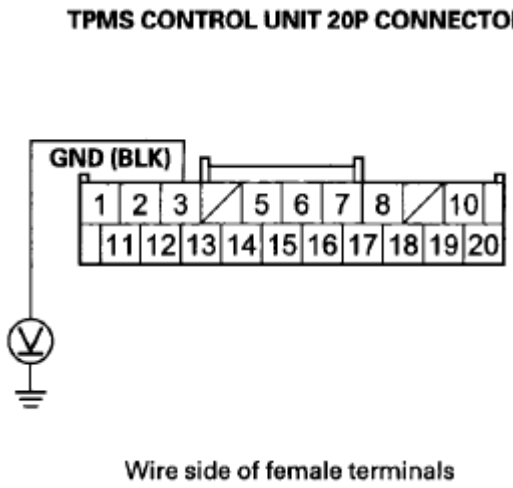


Fig. 36: Measuring Voltage Between Body Ground And TPMS Control Unit 20P Connector Terminal No. 3
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there 0.1 V or more?

YES - Repair an open or high resistance in the wire between the TPMS control unit and body ground (G403).

NO - Go to step 13.

13. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
14. Disconnect gauge control module 32P connector.
15. Disconnect the TPMS control unit 20P connector.
16. Check for continuity between the TPMS control unit 20P connector terminals and the gauge control module 32P connector terminals according to the table.

Terminal Name	TPMS Control Unit 20P Connector Terminal	Gauge Control Module 32P Connector
F-CAN L	No. 11	No. 13
F-CAN H	No. 2	No. 14

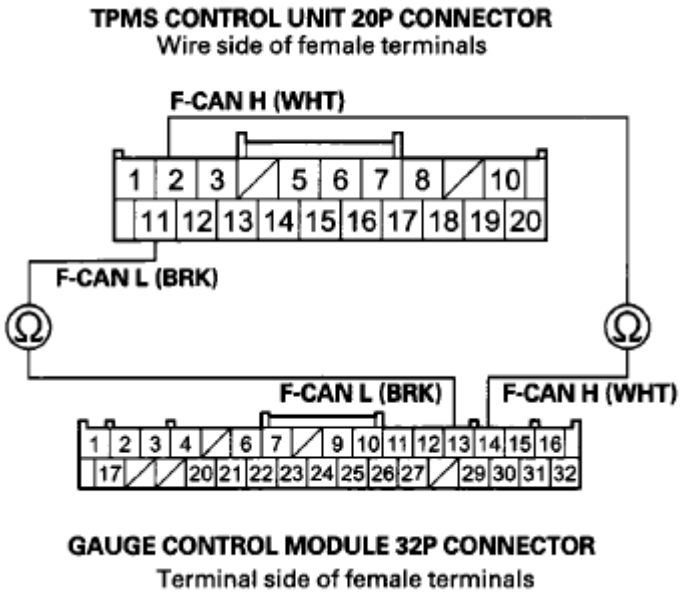


Fig. 37: Checking Continuity Between TPMS Control Unit 20P And Gauge Control Module 32P Connector Terminals
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Do the troubleshooting for the gauge control module (see **SELF-DIAGNOSTIC FUNCTION**). If the gauge control module is OK, check for loose terminals and poor connections at the TPMS control unit. If necessary, substitute a known-good TPMS control unit (see **GAUGE CONTROL MODULE REPLACEMENT**), and recheck.

NO - Repair an open in the wire between the TPMS control unit and the gauge control module.

TPMS CONTROL UNIT REPLACEMENT

NOTE: Make sure the TPMS control unit mounting bracket is not bent or twisted as this may affect its communication with the initiators and the tire pressure sensors.

1. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
2. Remove the driver's dashboard undercover (see **DRIVER'S DASHBOARD UNDERCOVER REMOVAL/INSTALLATION**).
3. Disconnect the TPMS control unit connector (A).

NOTE: The TPMS control unit is located on the brake pedal support member (B).

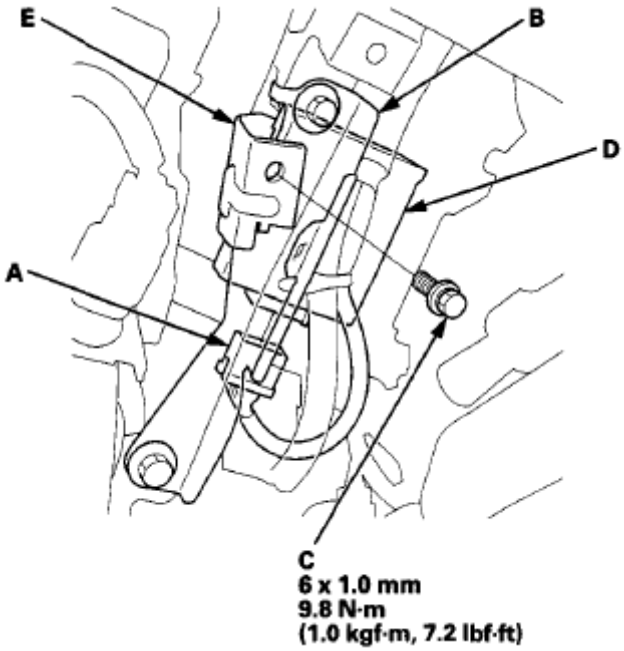


Fig. 38: Identifying TPMS Control Unit, Connector, Brake Pedal Support Member, Flange Bolt And Bracket With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Remove the flange bolt (C) from the brake pedal support member.
5. Remove the TPMS control unit (D) with the bracket (E).
6. Remove the TPMS control unit (A) from the bracket (B).

NOTE: To disconnect the TPMS control unit from its bracket, insert a small flat-tipped screwdriver (C) between the TPMS control unit and the bracket shown in (D) to release the hook, then slide out the TPMS control unit.

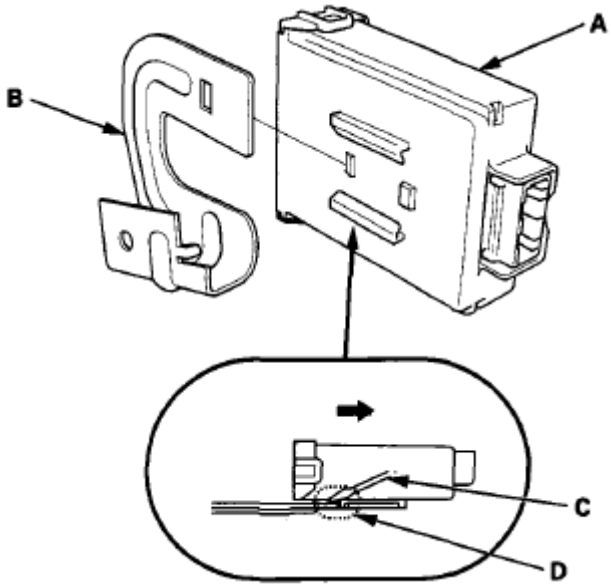


Fig. 39: Removing TPMS Control Unit With Bracket Using Small Flat-Tipped Screwdriver
Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Install the TPMS control unit in the reverse order of removal.

NOTE: Make sure the TPMS control unit is properly installed. You will hear a click when the TPMS control unit is securely mounted on the bracket.

8. Connect the HDS, and memorize the tire pressure sensor IDs (see **MEMORIZING THE TIRE PRESSURE SENSOR ID**). Do not memorize the IDs automatically.

INITIATOR REPLACEMENT

NOTE: Make sure the initiator mounting bracket is not bent or twisted as this may affect its communication with the TPMS control unit and the tire pressure sensor.

FRONT

1. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
2. Raise and support the vehicle (see **LIFT AND SUPPORT POINTS**).
3. Remove the front wheel.
4. Remove the front inner fender (see **FRONT INNER FENDER REPLACEMENT**).
5. Disconnect the initiator connector (A).

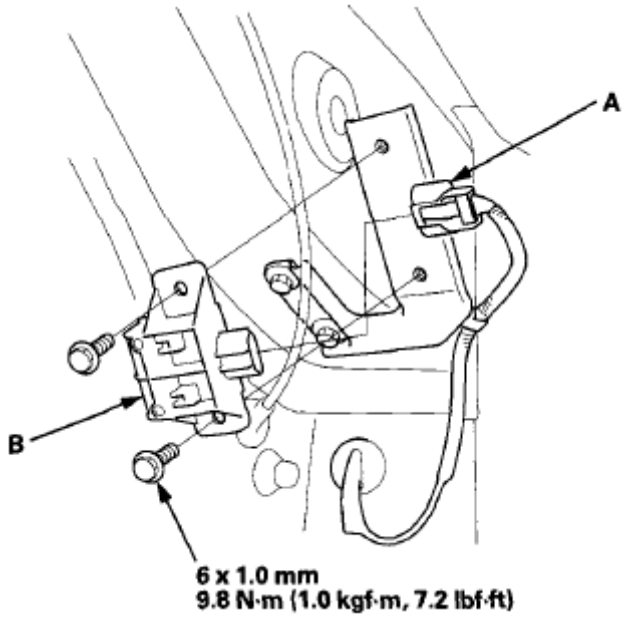


Fig. 40: Identifying Initiator Connector And Initiator From Bracket With Torque Specifications (Front)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Remove the initiator (B) from the bracket.
7. Install the initiator in the reverse order of removal.

REAR

1. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
2. Raise and support the vehicle (see **LIFT AND SUPPORT POINTS**).
3. Remove the rear wheel.
4. Remove the rear inner fender cover (see **REAR INNER FENDER REPLACEMENT**).
5. Disconnect the initiator connector (A).

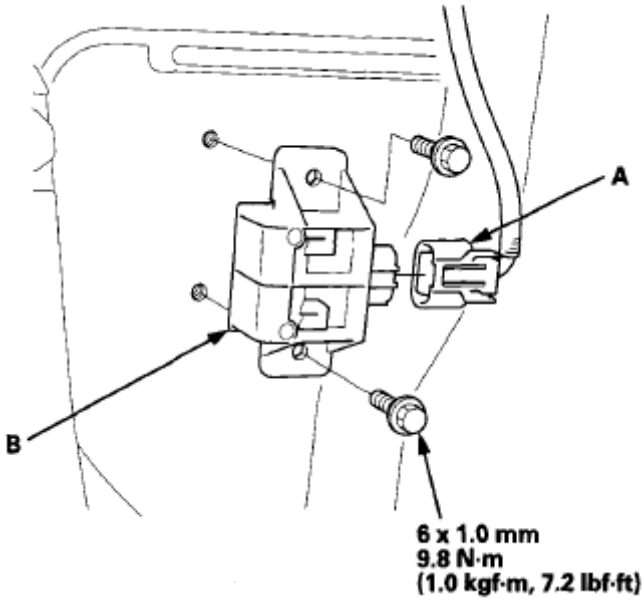


Fig. 41: Identifying Initiator Connector And Initiator From Bracket With Torque Specifications (Rear)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Remove the initiator (B) from the inner side of the wheelwell.
7. Install the initiator in the reverse order of removal.

TIRE PRESSURE SENSOR REPLACEMENT

REMOVAL

NOTE: Each tire pressure sensor contains a lithium anode battery that is not removable. The complete tire pressure sensor should be disposed of according to local battery disposal guidelines or requirements. An improperly disposed of battery can be harmful to the environment.

1. Raise and support the vehicle (see **LIFT AND SUPPORT POINTS**).
2. Remove the wheel with the faulty tire pressure sensor.
3. Remove the tire valve stem cap and the valve stem core to deflate the tire.
4. Remove any balance weights, and then break the bead loose from the wheel with a commercially available tire changer (A).

NOTE: Note these items to avoid damaging the tire pressure sensor:

- **Do the outside of the wheel first.**
- **Position the wheel as shown so the valve stem (B) is 90 degrees from the bead breaker (C) as shown.**

- **Do not position the bead breaker of the tire changer too close to the rim.**

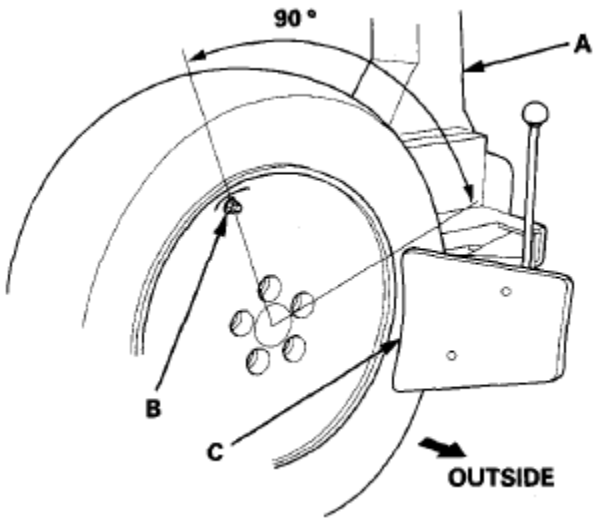


Fig. 42: Identifying Tire Changer, Valve Stem And Bead Breaker
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Position the wheel so that the tire machine (A) and the tire iron (B) are next to the valve stem (C), and will move away from it when the machine starts. Then remove the tire from the wheel.

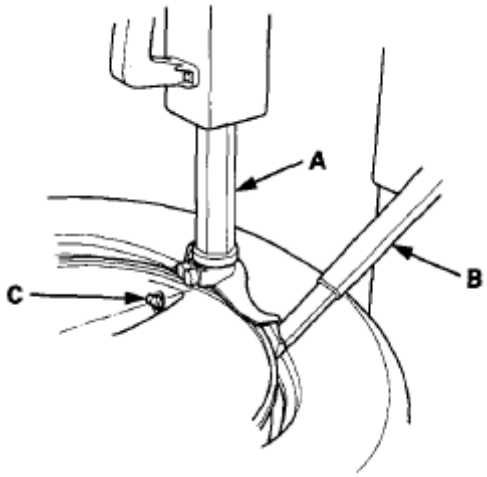


Fig. 43: Identifying Tire Machine, Tire Iron And Valve Stem
Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Remove the valve stem nut (A) and the washer (B), then remove the tire pressure sensor with the valve stem (C) from the wheel.

NOTE: Check the nut and the washer, if they have deterioration or damage, replace them with new ones during reassembly.

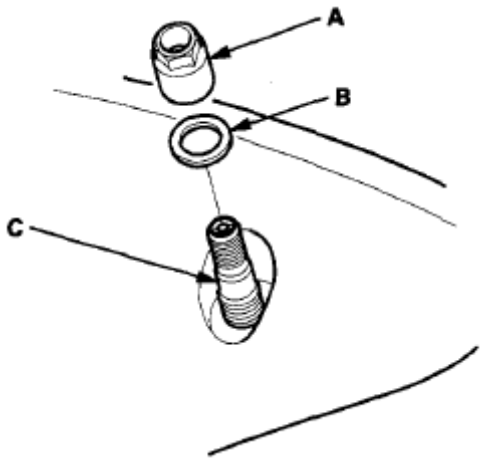


Fig. 44: Identifying Valve Stem, Washer And Valve Stem Nut
Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Remove and replace the valve stem grommet (A) from the tire pressure sensor (B).

NOTE:

- **The valve stem grommet might stay in the wheel; make sure you remove it.**
- **Always use a new valve stem grommet whenever the tire pressure sensor has been removed from the wheel, or when replacing the tire.**

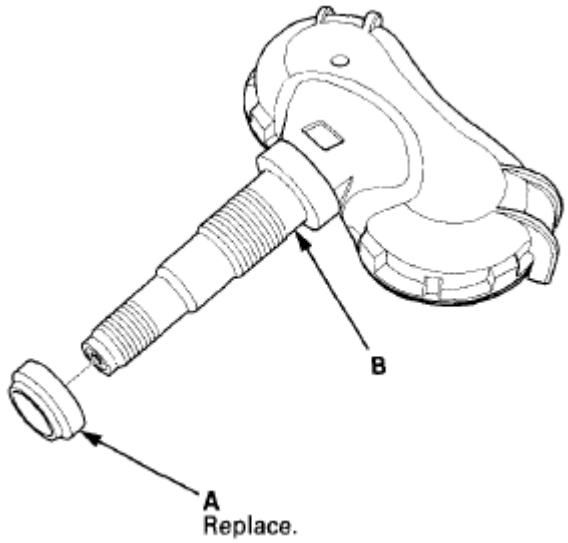


Fig. 45: Identifying Valve Stem Grommet And Tire Pressure Sensor
Courtesy of AMERICAN HONDA MOTOR CO., INC.

INSTALLATION

NOTE:

- **Use only wheels that have a "TPMS" mark (A) on them.**

- **The vehicle may be equipped with one of the these types of wheels.**

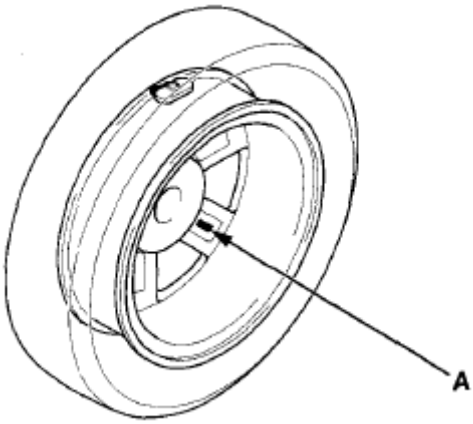


Fig. 46: Identifying TPMS Mark On Wheel
Courtesy of AMERICAN HONDA MOTOR CO., INC.

1. Before installing the tire pressure sensor, clean the mating surfaces on the sensor and the wheel.
2. Install the tire pressure sensor (A) and the washer (B) to the wheel (C), and tighten the valve stem nut (D) finger tight. Make sure the pressure sensor is resting on the wheel.

NOTE: Install the tire pressure sensor so that the sensor housing surface (E) should not exceed the protrusion (F) of the wheel to prevent the sensor housing from being caught on the bead of the tire when assembling the tire. Be sure to always mount the tire pressure sensor with the feet (G) in the downward position toward the wheel.

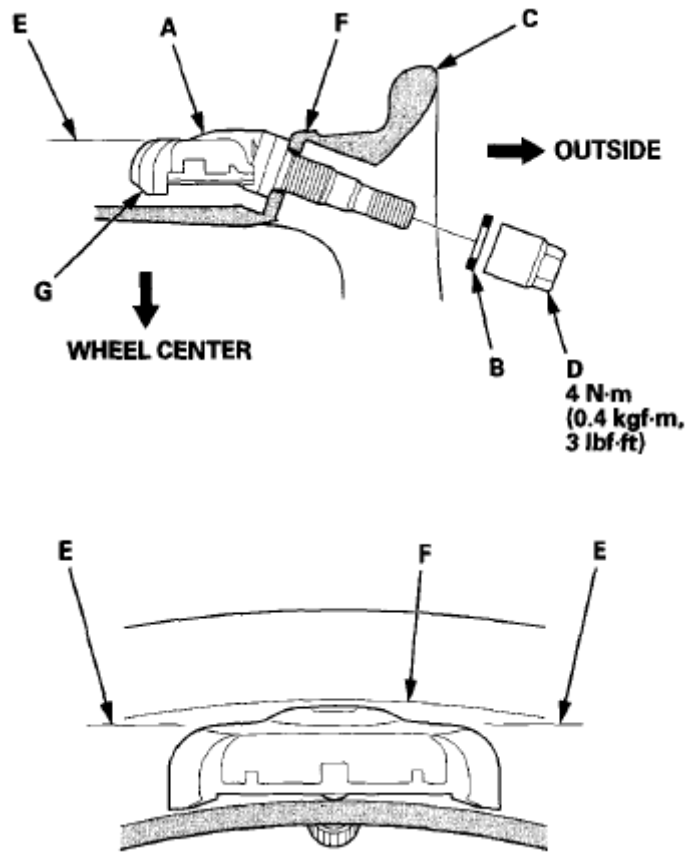


Fig. 47: Installing Tire Pressure Sensor And Washer To Wheel With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Tighten the valve stem nut to the specified torque while holding the tire pressure sensor.

NOTE:

- **Do not use air or electric impact tools to tighten a valve stem nut.**
- **Do not twist the tire pressure sensor to adjust its position with the wheel, as this will damage or deform the valve stem grommet.**

4. Lube the tire bead sparingly, with a paste-type tire mounting lubricant, and position the wheel so that the tire machine (A) is next to the valve stem (B) and will move away from it when the machine starts. Then install the tire onto the wheel.

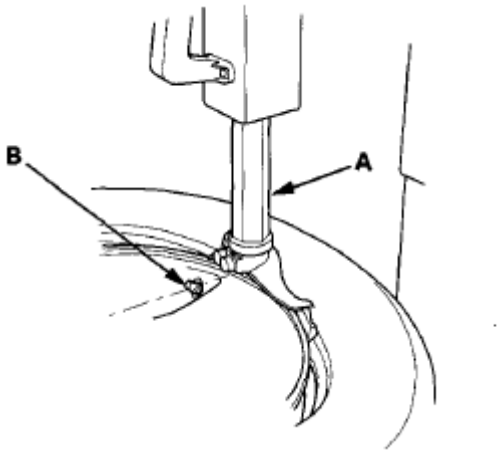


Fig. 48: Positioning Wheel So That Tire Machine Is Next To Valve Stem
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. With a dry air source, inflate the tire to 300 kPa (3.1 kgf/cm^2 , 44 psi) to seat the tire bead to the rim, then adjust the tire pressure (see **WHEEL ALIGNMENT**), then install the valve stem cap.

NOTE: Make sure the tire bead is seated on both sides of the rim evenly.

6. Check and adjust the wheel balance, then install the wheels on the vehicle.
7. Lower the vehicle. Torque the wheel nuts to specifications (see **KNUCKLE/HUB/WHEEL BEARING REPLACEMENT**).
8. Connect the HDS, and memorize the tire pressure sensor IDs (see **MEMORIZING THE TIRE PRESSURE SENSOR ID**).

SUPPLEMENTAL RESTRAINT SYSTEM (SRS) (If brakes maintenance is required)

The Acura TL SRS includes a driver's airbag in the steering wheel hub, a front passenger's airbag in the dashboard above the glove box, front seat belt tensioners in the front seat belt retractors, side curtain airbags in the sides of the roof, and side airbags in the front seat-backs. Information necessary to safely service the SRS is included in this Service Information. Servicing, disassembling, or replacing SRS items requires special precautions and tools, and should be done by an authorized Acura dealer.

- To avoid rendering the SRS inoperative, which could lead to personal injury or death in the event of a severe frontal or side collision, all SRS service work should be done by an authorized Acura dealer.
- Improper service procedures, including incorrect removal and installation of the SRS, could lead to personal injury caused by unintentional deployment of the front airbags, side airbags, side curtain airbags, and/or front seat belt tensioners.
- Do not bump or impact the SRS unit, front impact sensors, side impact sensors, or rear safing sensor, especially when the ignition switch is in ON (II), or the engine start/stop button is in the ON mode, for at least 3 minutes after the ignition switch is turned to LOCK (0), or after the engine start/stop button is pressed to select the OFF mode; otherwise, the system may fail in a collision, or the airbags or the tensioners may deploy.

- SRS electrical connectors are identified by yellow color coding. Related components are located in the steering column, center console, dashboard, dashboard undercover, in the dashboard above the glove box, in the front seats, in the roof side, and around the floor. Do not use electrical test equipment on these circuits.

2012 TRANSMISSION

Automatic Transmission - TL

SPECIAL TOOLS

Ref.No.	Tool Number	Description	Qty
①	070AJ-0020101	Preload Inspection Tool	1
②	070AJ-RT4A101	Pressure Gauge Adapter	1
③	070MC-MFR0100	Bearing Remover Shaft Set, 22 mm	1
④	07406-0020400 or 07406-0020401	A/T Oil Pressure Gauge Set	1
⑤	07736-A01000B	Adjustable Bearing Puller, 25—40 mm	1
⑥	07746-0010100	Bearing Driver Attachment, 32 x 35 mm	1
⑦	07746-0010200	Bearing Driver Attachment, 37 x 40 mm	1
⑧	07746-0010300	Bearing Driver Attachment, 42 x 47 mm	1
⑨	07746-0010400	Bearing Driver Attachment, 52 x 55 mm	1
⑩	07746-0010500	Bearing Driver Attachment, 62 x 68 mm	1
⑪	07746-0010600	Bearing Driver Attachment, 72 x 75 mm	1
⑫	07746-001A800	Attachment, 22 x 24 mm	1
⑬	07746-0030100	Driver Handle, 40 mm I.D.	1
⑭	07746-0030300	Bearing Driver Attachment, 30 mm I.D.	1
⑮	07746-0030400	Bearing Driver Attachment, 35 mm I.D.	1
⑯	07749-0010000	Driver Handle, 15 x 135L	1
⑰	07936-3710100	Remover Handle	1
⑱	07936-371020A	Slide Hammer	1
⑲	07936-KC10500	Bearing Remover Shaft Set, 15 mm	1
⑳	07946-1870100	Bearing Driver Attachment, 28 x 30 mm	1
㉑	07947-3710200	Oil Seal Driver, 66 mm	1
㉒	07AAJ-PY4A100	A/T Pressure Test Hose	1
㉓	07GAD-SE00100	Oil Seal Driver Attachment, 71.5mm	1
㉔	07HAD-SG00100	Attachment, 83 mm	1
㉕	07JAC-PH80200	Bearing Remover Shaft	1
㉖	07JAD-PH80101	Oil Seal Driver Attachment, 58 mm	1
㉗	07JAD-SH30100	Oil Seal Driver Attachment, 65 mm	1
㉘	07LAD-PW50601	Installer Attachment 40 mm	1
㉙	07LAD-SM40100	Oil Seal Driver Attachment, 60 mm	1
㉚	07MAD-PR90100	Installer Attachment, 45 x 55 mm	1
㉛	07MAF-SP0011A	Tapered Bearing Race Installer A	1
㉜	07MAF-SP0013A	Installer Shaft	1
㉝	07MAJ-PY40120	A/T Pressure Adapter	1
㉞	07NAD-PX40100	Bearing Driver Attachment, 78 x 80 mm	1
㉟	07PAB-0010001	Mainshaft Holder Set	1
㊱	07VAD-P8A010A	Seal Driver Attachment, 80 mm ID.	1
㊲	07XAB-0010101	Flange Holder	1
㊳	07YAC-0010100	Adjustable Bearing Puller, 45—75 mm	1
㊴	07ZAE-PRP0100	Clutch Compressor Attachment	1

Fig. 1: Automatic Transmission Special Tools Description Chart
Courtesy of AMERICAN HONDA MOTOR CO., INC.

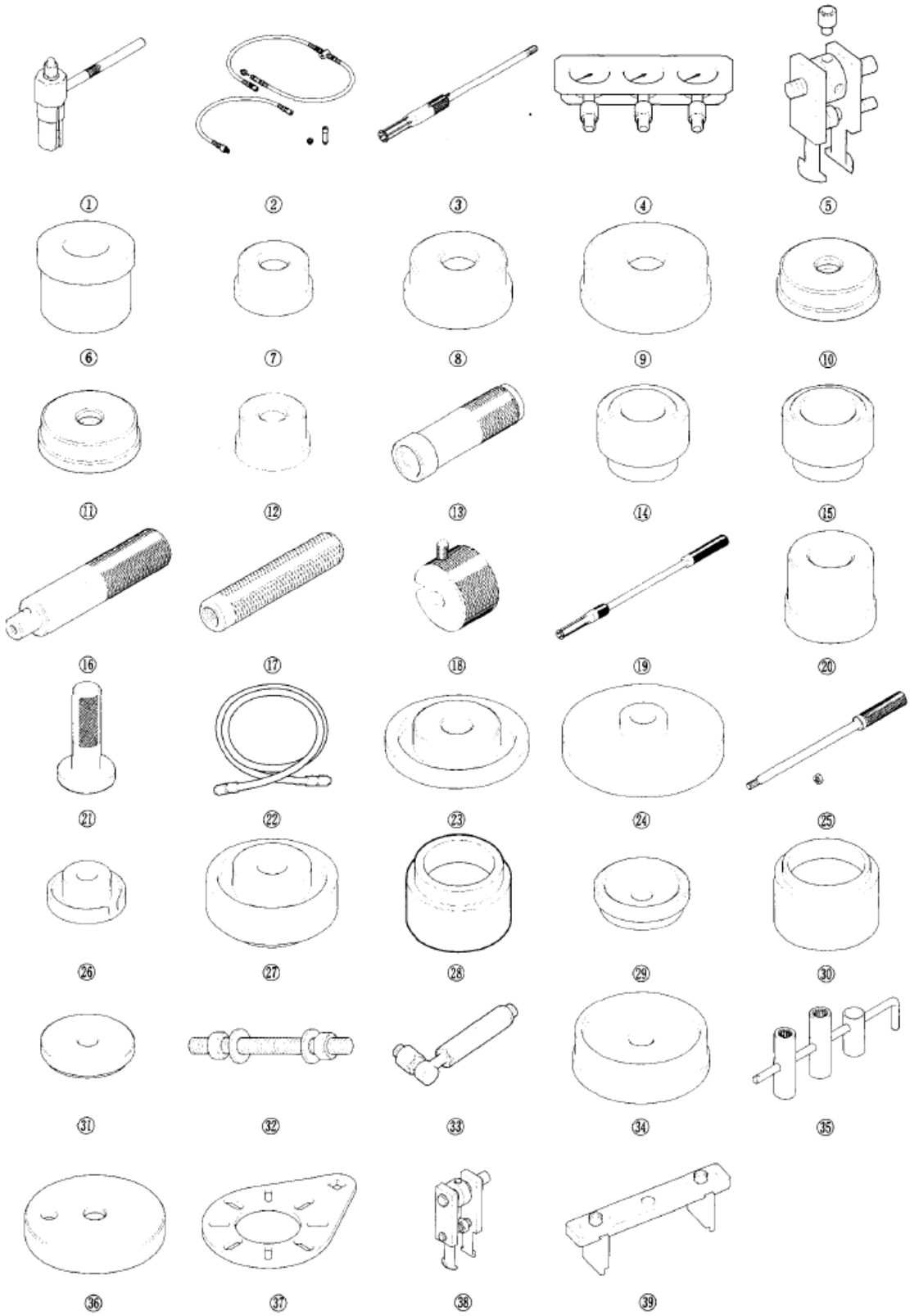


Fig. 2: Identifying Automatic Transmission Special Tools
Courtesy of AMERICAN HONDA MOTOR CO., INC.

GENERAL TROUBLESHOOTING INFORMATION

HOW TO CHECK FOR DTCS WITH THE HONDA DIAGNOSTIC SYSTEM (HDS)

When the powertrain control module (PCM) senses an abnormality in the input or output system, the D indicator (A) in the gauge control module (B) will usually blink.

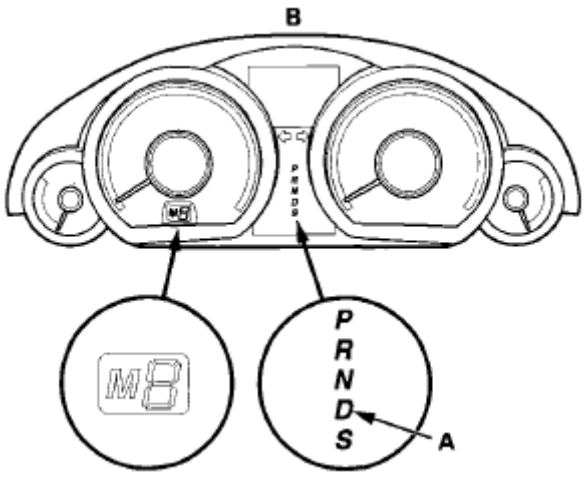


Fig. 3: Identifying D Indicator And Gauge Control Module
Courtesy of AMERICAN HONDA MOTOR CO., INC.

When the Honda Diagnostic System (HDS) is connected to the data link connector (DLC) (A) located under the driver's side of the dashboard, and when the ignition switch is turned to ON (II), or the engine start/stop button is pressed to select the ON mode and the appropriate menu is selected, it will indicate the diagnostic trouble code (DTC).

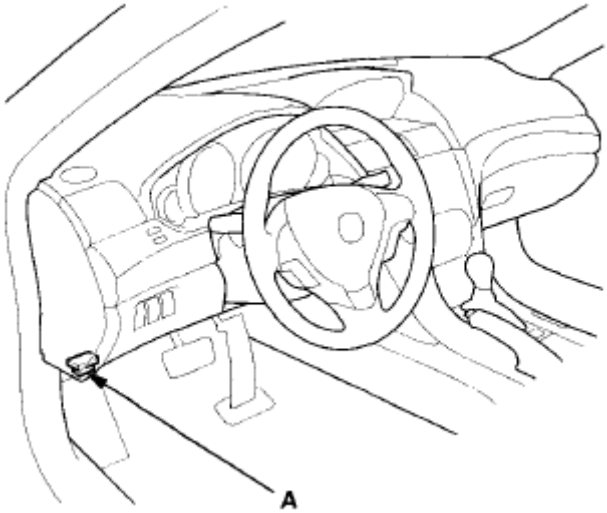


Fig. 4: Identifying Data Link Connector Location
Courtesy of AMERICAN HONDA MOTOR CO., INC.

If the D indicator or the malfunction indicator lamp (MIL) has been reported on, or if a driveability problem is suspected, follow this procedure:

1. Connect the HDS to the DLC. (See the HDS user's manual for specific instructions.)
2. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode. Make sure the HDS communicates with the PCM. If it does not, go to the DLC circuit troubleshooting (see **DLC CIRCUIT TROUBLESHOOTING**).
3. Check for Pending or Confirmed DTCs with the HDS.
4. Record the freeze data and the on-board snapshots for all fuel and emissions DTCs and A/T DTCs.
5. If there is a fuel and emissions DTC, first check the fuel and emissions system as indicated by the DTC.
6. Clear the DTC and the data.
7. Drive the vehicle for several minutes under the same conditions as those indicated by the freeze data, and then recheck for a DTC. If the A/T DTC returns, go to the indicated **DTC'S TROUBLESHOOTING**. If the DTC does not return, there was an intermittent problem within the circuit. Make sure all pins and terminals in the circuit are tight.

SYMPTOM TROUBLESHOOTING VERSUS DTC TROUBLESHOOTING

Some symptoms will not set DTCs or cause the D indicator to blink. If the MIL was reported ON or the D indicator has been blinking, check for DTCs. If the vehicle has an abnormal symptom, and there are no DTCs stored, do the symptom troubleshooting. Check the list of probable cause(s) for the symptom, in the sequence listed, until you find the problem.

HOW TO CHECK FOR DTCS WITH THE SCS MODE (RETRIEVING THE FLASH CODES)

NOTE: The preferred method is to use the HDS to retrieve the DTCs.

When the PCM senses an abnormality in the input or output system, the D indicator (A) in the gauge control module (B) will usually blink.

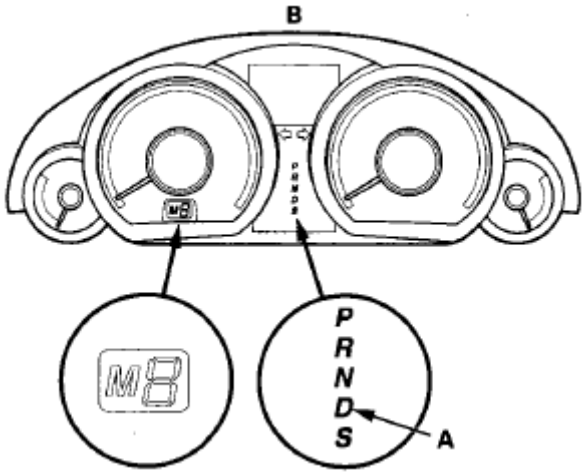


Fig. 5: Identifying D Indicator And Gauge Control Module
Courtesy of AMERICAN HONDA MOTOR CO., INC.

When the D indicator has been reported on, connect the HDS to the DLC (A) located under the driver's side of the dashboard. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode, select SCS mode, then the D indicator will indicate (blink) the DTC.

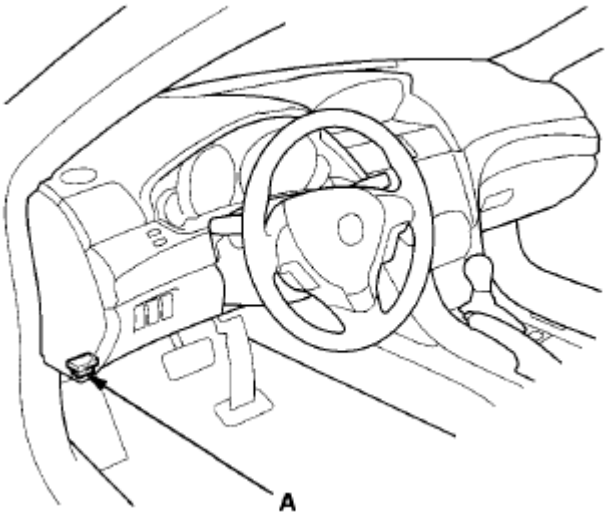


Fig. 6: Identifying Data Link Connector Location
Courtesy of AMERICAN HONDA MOTOR CO., INC.

If the D indicator and the MIL come on at the same time, or if a driveability problem is suspected, follow this procedure:

1. Connect the HDS to the DLC. (See the HDS user's manual for specific instructions.)
2. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode. Make sure the HDS communicates with the PCM. If it does not, go to the DLC circuit troubleshooting (see **DLC CIRCUIT TROUBLESHOOTING**).
3. Select SCS mode, then observe the D indicator in the gauge control module. Codes 1 through 9 are indicated by individual short blinks. Code 10 and above are indicated by a series of long and short blinks. One long blink equals 10 short blinks. Add the long and short blinks together to determine the code.

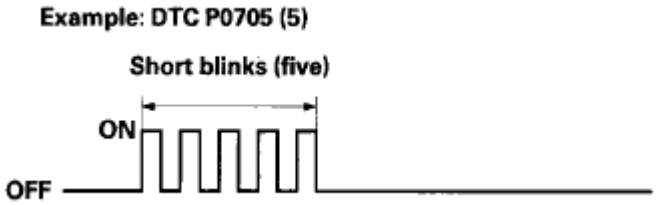


Fig. 7: Display - DTC P0705 (5) Graph
Courtesy of AMERICAN HONDA MOTOR CO., INC.

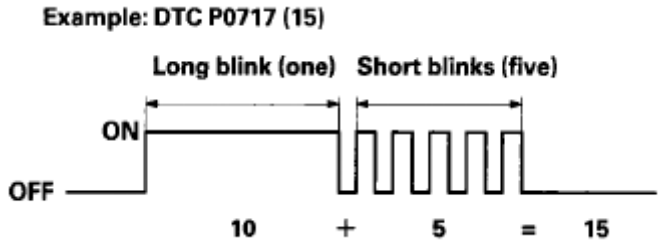


Fig. 8: Display - DTC P0717 (15) Graph
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Record all fuel and emissions DTCs and A/T DTCs.
5. If there is a fuel and emissions DTC, first check the fuel and emissions system as indicated by the DTC.
6. Clear the DTC and the data.
7. If the freeze data is available, drive the vehicle for several minutes with periods of wide open throttle, steady cruise, and stop and go, and then recheck for DTCs. If the A/T DTC returns, go to the indicated **DTC'S TROUBLESHOOTING**. If the DTC does not return, there was an intermittent problem within the circuit. Make sure all pins and terminals in the circuit are tight.

HOW TO TROUBLESHOOT CIRCUITS AT THE PCM CONNECTORS

NOTE: The PCM overwrites data and monitors the EVAP system for about 40 minutes after the ignition switch is turned to LOCK (0), or the engine start/stop button is pressed to select the OFF mode. Jumping the SCS line after turning the ignition switch to LOCK (0), or pressing the engine start/stop button to select the OFF mode cancels this function. Disconnecting the PCM during this function, without jumping the SCS line first, can damage the PCM.

1. Jump the SCS line with the HDS.
2. Canada model: If equipped, remove the PCM connector guard (A).

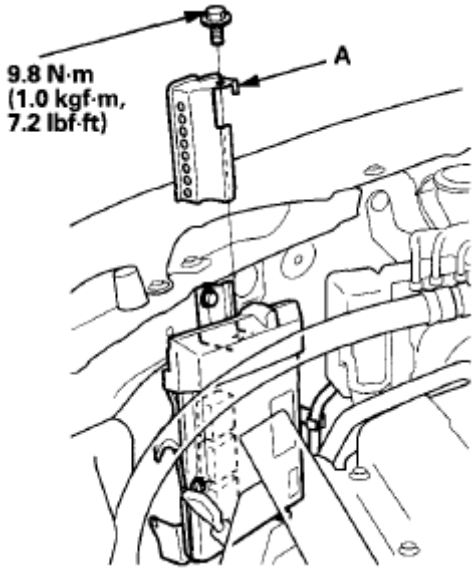


Fig. 9: Identifying PCM Connector Guard With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Disconnect PCM connectors A, B, and C.

NOTE: PCM connectors A, B, and C have symbols (A=[], B=delta, C=o) embossed on them for identification.

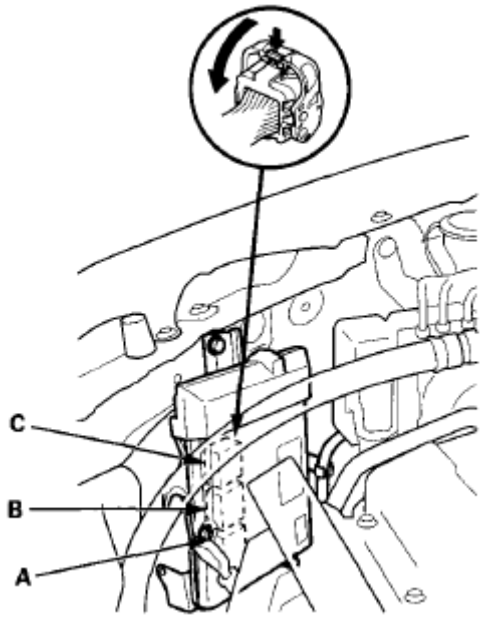


Fig. 10: Identifying PCM Connector A, B And C
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. When diagnosis/troubleshooting is done at the PCM connector, use the terminal test port (A) above the

terminal you need to check.

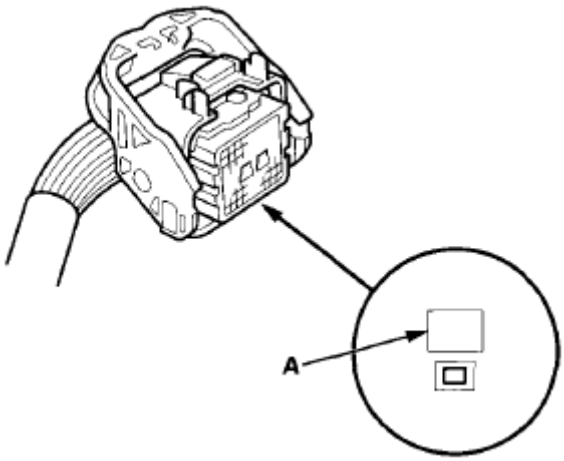


Fig. 11: Identifying Terminal Test Port Of PCM Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Connect one side of the patch cord's terminals (A) to a commercially available digital multimeter (B), and connect the other side of the terminals (C) to a commercially available banana jack (Pomona Electronics Tool No. 3563 or equivalent) (D).

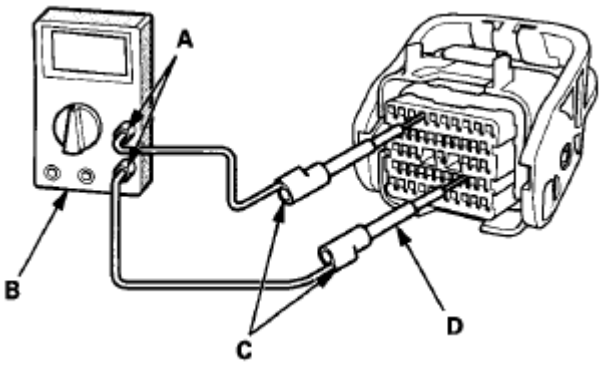


Fig. 12: Identifying Patch Cord's Terminals, Digital Multimeter And Banana Jack
Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Gently insert the pin probe (male) into the terminal test port from the terminal side. Do not force the tips into the terminals.

NOTE:

- **For accurate results, always use the pin probe (male).**
- **To prevent damage to the connector terminals, do not insert test equipment probes, paper clips, or other substitutes. Damaged terminals cause a poor connection and an incorrect measurement.**
- **Do not puncture the insulation on a wire. Punctures can cause poor or intermittent electrical connections.**

CLEAR A/T DTCS PROCEDURE

1. Connect the HDS to the DLC (A) located under the driver's side of the dashboard.

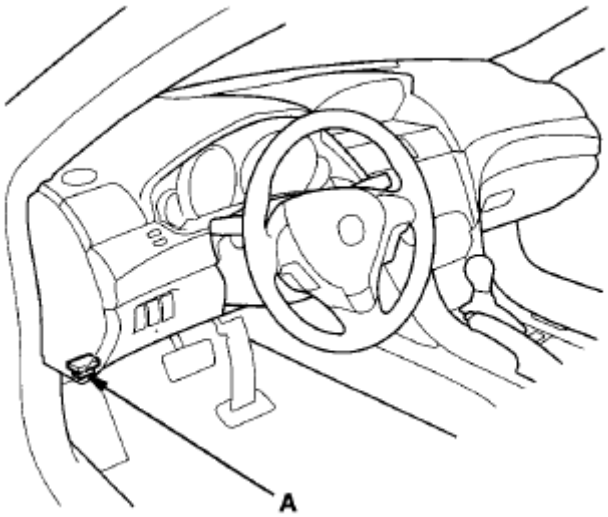


Fig. 13: Identifying Data Link Connector (DLC) Location
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
3. Make sure the HDS communicates with the PCM. If it does not, go to the DLC circuit troubleshooting (see **DLC CIRCUIT TROUBLESHOOTING**).
4. Clear the DTC(s) with the HDS.

OBD STATUS

The OBD status shows the current system status of each DTC and all of the parameters. This function is used to see if a repair was successfully completed. The results of diagnostic tests for the DTC are displayed as:

- PASSED: The on-board diagnosis is successfully completed.
- FAILED: The on-board diagnosis has finished but failed.
- NOT COMPLETED: The on-board diagnosis was running but is out of the enable conditions of the DTC.

HOW TO END A TROUBLESHOOTING SESSION (REQUIRED AFTER ANY TROUBLESHOOTING)

NOTE: Reset the PCM/TCM with the HDS while the engine is stopped.

1. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
2. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode, and wait for 30 seconds.
3. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode, and

disconnect the HDS from the DLC.

4. Start the engine with the shift lever in P or N, and warm it up to normal operating temperature (the radiator fan comes on).
5. To verify that the problem is repaired, test-drive the vehicle for several minutes at speeds over 31 mph (50 km/h) or under the same conditions as those indicated by the freeze data.

PCM/TCM RESET

NOTE: To reset the PCM/TCM, initialize only the automatic transmission memory stored in the PCM or the TCM.

1. Select the A/T system with the HDS.
2. Reset the PCM/TCM with the HDS while the engine is stopped.
3. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
4. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode, and wait for 30 seconds.
5. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode, and disconnect the HDS from the DLC.

FAILURE REPRODUCTION TECHNIQUE

NOTE: Make sure to follow these points while the vehicle is raised on a lift for the test-drive.

- Disable the VSA by pressing the VSA OFF button.
- VSA DTC(s) may come on when test-driving on a lift. If the VSA DTC(s) come on, clear the DTC(s) with the HDS.
- Use the sequential sportshift mode to manually select gears.

SELF-DIAGNOSIS

If the PCM detects the failure of a signal from a sensor, a switch, a solenoid valve, or from another control unit, it stores Pending or Confirmed DTCs. Depending on the failure, a Confirmed DTC is stored in either the first or the second drive cycle. When a Confirmed DTC is stored, the PCM blinks the D indicator and/or turns on the MIL by a signal sent to the gauge control module via F-CAN.

- **One Drive Cycle Detection Method**

  When an abnormality occurs in the signal from a sensor, a switch, a solenoid valve, or from another control unit, the PCM stores a Pending or Confirmed DTC for the failure and blinks the D indicator and/or turns on the MIL immediately.

- **Two Drive Cycle Detection Method**

  When an abnormality occurs in the signal from a sensor, a switch, a solenoid valve, or from another

control unit in the first drive cycle, the PCM stores a Pending DTC. The D indicator and the MIL do not turn on at this time. If the failure continues in the second drive cycle, the PCM stores a Confirmed DTC and blinks the D indicator and/or turns on the MIL.

FAIL-SAFE FUNCTION

When an abnormality occurs in the signal from a sensor, a switch, a solenoid valve, or from another control unit, the PCM ignores that signal and substitutes a pre-programmed value for that signal to allow the automatic transmission to continue operating. This causes a DTC to be stored and the D indicator blink and/or the MIL to come on. The transmission may not shift normally during fail-safe operation. Do not run the test driving diagnosis when the MIL is ON, or when the D indicator is blinking.

DTC TROUBLESHOOTING INDEX

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot with the HDS, and review the General Troubleshooting Information (see GENERAL TROUBLESHOOTING INFORMATION).

DTC(1)	Two Drive Cycle Detection	D Indicator	MIL	Detection Item
P0705 (5)(2)	- -	Blinks	ON	Short in Transmission Range Switch Circuit (Multiple Shift-Position Input)
P0706 (6)(2)	o	OFF	ON	Open in Transmission Range Switch Circuit
P0711 (28)(2)	o	Blinks	OFF	Problem in ATF Temperature Sensor Circuit
P0712 (28)(2)	o	Blinks	OFF	Short in ATF Temperature Sensor Circuit
P0713 (28)(2)	o	Blinks	OFF	Open in ATF Temperature Sensor Circuit
P0714 (28)(2)	o	Blinks	OFF	ATF Temperature Sensor Intermittent Failure
P0716 (15)(2)	- -	Blinks	ON	Problem in Input Shaft (Mainshaft) Speed Sensor Circuit
P0717 (15)(2)	- -	Blinks	ON	Problem in Input Shaft (Mainshaft) Speed Sensor Circuit (No Signal Input)
	o	Blinks	ON	Input Shaft (Mainshaft)

P0718 (15)[2]				Speed Sensor Intermittent Failure
P0721 (9)[2]	- -	Blinks	ON	Problem in Output Shaft (Countershaft) Speed Sensor Circuit
P0722 (9)[2]	- -	Blinks	ON	Problem in Output Shaft (Countershaft) Speed Sensor Circuit (No Signal Input)
P0723 (9)[2]	o	Blinks	ON	Output Shaft (Countershaft) Speed Sensor Intermittent Failure
P0729 (64)	o	Blinks	OFF	Problem in 6th Clutch and 6th Clutch Hydraulic Circuit
P0731 (64)	o	Blinks	OFF	Problem in 1st Clutch and 1st Clutch Hydraulic Circuit
P0732 (64)	o	Blinks	OFF	Problem in 2nd Clutch and 2nd Clutch Hydraulic Circuit
P0733 (64)	o	Blinks	OFF	Problem in 3rd Clutch and 3rd Clutch Hydraulic Circuit
P0734 (64)	o	Blinks	OFF	Problem in 4th Clutch and 4th Clutch Hydraulic Circuit
P0735 (64)	o	Blinks	OFF	Problem in 5th Clutch and 5th Clutch Hydraulic Circuit
P0741 (40)	o	Blinks	OFF	Torque Converter Clutch Hydraulic Circuit Stuck OFF
P0746 (76)	o	Blinks	ON	A/T Clutch Pressure Control Solenoid Valve A Stuck OFF
P0747 (76)	o	Blinks	ON	A/T Clutch Pressure Control Solenoid Valve A Stuck ON
P0751 (70)	o	Blinks	ON	Shift Solenoid Valve A Stuck OFF
P0752 (70)	o	Blinks	ON	Shift Solenoid Valve A Stuck ON
P0756 (71)	o	Blinks	ON	Shift Solenoid Valve B

				Stuck OFF
P0757 (71)	o	Blinks	ON	Shift Solenoid Valve B Stuck ON
P0761 (72)	o	Blinks	ON	Shift Solenoid Valve C Stuck OFF
P0762 (72)	o	Blinks	ON	Shift Solenoid Valve C Stuck ON
P0776 (77)	o	Blinks	ON	A/T Clutch Pressure Control Solenoid Valve B Stuck OFF
P0777 (77)	o	Blinks	ON	A/T Clutch Pressure Control Solenoid Valve B Stuck ON
P0796 (78)	o	Blinks	ON	A/T Clutch Pressure Control Solenoid Valve C Stuck OFF
P0797 (78)	o	Blinks	ON	A/T Clutch Pressure Control Solenoid Valve C Stuck ON
P0812 (65)(2)	o	Blinks	ON	Open in Transmission Range Switch ATPR Switch Circuit
P0842 (25)(2)	o	Blinks	ON	Short in Transmission Fluid Pressure Switch A (2nd Clutch) Circuit, or Transmission Fluid Pressure Switch A (2nd Clutch) Stuck ON
P0843 (25)	o	Blinks	ON	Open in Transmission Fluid Pressure Switch A (2nd Clutch) Circuit, or Transmission Fluid Pressure Switch A (2nd Clutch) Stuck OFF
P0847 (26)(2)	o	Blinks	ON	Short in Transmission Fluid Pressure Switch B (3rd Clutch) Circuit, or Transmission Fluid Pressure Switch B (3rd Clutch) Stuck ON
P0848 (26)	o	Blinks	ON	Open in Transmission Fluid Pressure Switch B (3rd Clutch) Circuit, or Transmission Fluid Pressure Switch B (3rd Clutch) Stuck OFF

P084C (179)	o	Blinks	ON	Short in Line Pressure Switch Circuit, or Line Pressure Switch Stuck ON
P0872 (27)(2)	o	Blinks	ON	Short in Transmission Fluid Pressure Switch C (4th Clutch) Circuit, or Transmission Fluid Pressure Switch C (4th Clutch) Stuck ON
P0873 (27)	o	Blinks	ON	Open in Transmission Fluid Pressure Switch C (4th Clutch) Circuit, or Transmission Fluid Pressure Switch C (4th Clutch) Stuck OFF
P0877 (175)(2)	o	Blinks	ON	Short in Transmission Fluid Pressure Switch D (5th Clutch) Circuit, or Transmission Fluid Pressure Switch D (5th Clutch) Stuck ON
P0878 (175)	o	Blinks	ON	Open in Transmission Fluid Pressure Switch D (5th Clutch) Circuit, or Transmission Fluid Pressure Switch D (5th Clutch) Stuck OFF
P0962 (16)(2)	- -	Blinks	ON	Problem in A/T Clutch Pressure Control Solenoid Valve A Circuit
P0963 (16)(2)	- -	Blinks	ON	Problem in A/T Clutch Pressure Control Solenoid Valve A
P0966 (23)(2)	- -	Blinks	ON	Problem in A/T Clutch Pressure Control Solenoid Valve B Circuit
P0967 (23)(2)	- -	Blinks	ON	Problem in A/T Clutch Pressure Control Solenoid Valve B
P0970 (29)(2)	- -	Blinks	ON	Problem in A/T Clutch Pressure Control Solenoid Valve C Circuit

P0971 (29)[2]	- -	Blinks	ON	Problem in A/T Clutch Pressure Control Solenoid Valve C
P0973 (7)[2]	- -	Blinks	ON	Short in Shift Solenoid Valve A Circuit
P0974 (7)[2]	- -	Blinks	ON	Open in Shift Solenoid Valve A Circuit
P0976 (8)[2]	- -	Blinks	ON	Short in Shift Solenoid Valve B Circuit
P0977 (8)[2]	- -	Blinks	ON	Open in Shift Solenoid Valve B Circuit
P0979 (22)[2]	- -	Blinks	ON	Short in Shift Solenoid Valve C Circuit
P0980 (22)[2]	- -	Blinks	ON	Open in Shift Solenoid Valve C Circuit
P0989 (176)[2]	o	Blinks	ON	Short in Transmission Fluid Pressure Switch E (6th Clutch) Circuit, or Transmission Fluid Pressure Switch E (6th Clutch) Stuck ON
P0990 (176)	o	Blinks	ON	Open in Transmission Fluid Pressure Switch E (6th Clutch) Circuit, or Transmission Fluid Pressure Switch E (6th Clutch) Stuck OFF
P1717 (62)[2]	o	Blinks	ON	Open in Transmission Range Switch ATPRVS Switch Circuit
P177A (190)	o	Blinks	OFF	Line Pressure Solenoid Valve A Stuck OFF, or Line Pressure Switch Stuck OFF
P2714 (79)	o	Blinks	ON	A/T Clutch Pressure Control Solenoid Valve D Stuck OFF
P2720 (66)[2]	- -	Blinks	ON	Problem in A/T Clutch Pressure Control Solenoid Valve D Circuit
P2721 (66)[2]	- -	Blinks	ON	Problem in A/T Clutch Pressure Control Solenoid Valve D
P2821 (69)	o	Blinks	ON	Line Pressure Solenoid

				Valve A Stuck ON
P2826 (67)(2)	o	Blinks	OFF	Short in Line Pressure Solenoid Valve A Circuit
P2827 (67)(2)	o	Blinks	OFF	Open in Line Pressure Solenoid Valve A Circuit

(1) The DTC in parentheses is the flash code the D indicator indicates when the data link connector (DLC) is connected to the HDS, and in the SCS mode.

(2) This code is caused by an electrical circuit problem and cannot be caused by a mechanical problem in the transmission.

SYMPTOM TROUBLESHOOTING INDEX

NOTE: Do an all DTC check with the HDS and troubleshoot those first before following the repair procedures listed in the index.

Symptom	Probable cause(s)	Notes
When you turn the ignition switch to ON (II), the D indicator comes on and stays on in all shift lever positions, or it never comes on at all	• F-CAN communication line error • Gauge control module defective • PCM defective	• Check the F-CAN communication line (see **F-CAN CIRCUIT TROUBLESHOOTING**). • Check the F-CAN communication line by using the gauge control module self-diagnostic function (see **THE COMMUNICATION LINE CHECK**). • Check the indicator drive circuit in the gauge control module by using the gauge control module self-diagnostic function (see **THE INDICATOR DRIVE CIRCUIT CHECK**).
A/T gear position indicator does not come on with the shift lever in that position	• F-CAN communication line error • Gauge control module defective • Transmission range switch defective • PCM defective	• Check the F-CAN communication line (see **F-CAN CIRCUIT TROUBLESHOOTING**). • Check the F-CAN communication line by using the gauge control module self-diagnostic function (see **THE COMMUNICATION LINE CHECK**). • Check the indicator drive circuit in the gauge control module by using the gauge control module self-diagnostic function (see **THE INDICATOR DRIVE CIRCUIT CHECK**). • Inspect the transmission range switch (see **TRANSMISSION RANGE SWITCH TEST**).
	• F-CAN communication line error • Gauge control	• Check the F-CAN communication line (see **F-CAN CIRCUIT TROUBLESHOOTING**). • Check the F-CAN communication line by using the gauge control module self-diagnostic function (see **THE COMMUNICATION LINE CHECK**).

Shift indicator does not work	module defective • Transmission range switch defective • PCM defective	• Check the indicator drive circuit in the gauge control module by using the gauge control module self-diagnostic function (see **THE INDICATOR DRIVE CIRCUIT CHECK**). • Inspect the transmission range switch (see **TRANSMISSION RANGE SWITCH TEST**).
When you press the paddle shifter + (upshift switch) in D and S, the transmission does not upshift	A problem in the paddle shifter + (upshift switch) circuit	Check the paddle shifter + (upshift switch) circuit (see **PADDLE SHIFTER + (UPSHIFT SWITCH) CIRCUIT TROUBLESHOOTING**).
When you press the paddle shifter - (downshift switch) in D and S, the transmission does not downshift	A problem in the paddle shifter - (downshift switch) circuit	Check the paddle shifter - (downshift switch) circuit (see **PADDLE SHIFTER - (DOWNSHIFT SWITCH) CIRCUIT TROUBLESHOOTING**).
Shift lever cannot be moved from P while pressing on the brake pedal	• Accelerator pedal position sensor circuit • Accelerator pedal position sensor defective • Brake pedal position switch circuit • Brake pedal position switch defective • Shift lock solenoid defective • Shift lock solenoid control circuit • Shift lock mechanism defective • Throttle body defective • Relative throttle position sensor value too high • Transmission range switch	• Inspect the APP sensor signal (see **APP SENSOR SIGNAL INSPECTION**). • Troubleshoot the shift lock system circuit (see **SHIFT LOCK SYSTEM CIRCUIT TROUBLESHOOTING**). • Test the shift lock solenoid (see **SHIFT LOCK SOLENOID TEST**). • Inspect the transmission range switch (see **TRANSMISSION RANGE SWITCH TEST**). • Reset the PCM (see **HDS CLEAR COMMAND**). • Test the throttle body (see **THROTTLE BODY TEST**). If it fails, replace the throttle body (see **THROTTLE BODY REMOVAL/INSTALLATION**).

	ATPP switch stuck OFF • Transmission range switch ATPP switch line opened	
Engine runs, but vehicle does not move in any gear	• Transmission range switch broken or out of adjustment • Shift cable broken or out of adjustment • Connection between shift cable and transmission or shift lever is worn • Drive plate defective or transmission incorrectly installed • Torque converter clutch piston defective • Torque converter defective • Low ATF level • ATF pump worn or binding • Main regulator valve stuck or spring worn • Foreign material in separator plate orifice • Manual valve defective • ATF strainer clogged	• Inspect the transmission range switch. If the transmission range switch fails the inspection, replace the switch. If the inspection is OK, check for proper transmission range switch installation, and adjust the shift cable. • Check for a loose shift cable at the shift lever and the selector control lever. • Check for an incorrectly installed transmission, and check the drive plate for wear and damage. Replace the drive plate if it is worn or damaged. • Replace the torque converter. • Check the ATF level, and check the ATF cooler lines for leaks and loose connections. If necessary, clean the ATF cooler lines. • Check the stall speed (see **STALL SPEED TEST**). • Check the line pressure (see **PRESSURE TEST**). • Improper alignment of the ATF pump and the torque converter housing may cause ATF pump seizure. The symptoms are mostly an RPM-related ticking noise or a high pitched squeak. • Check the main regulator valve in the regulator valve body for free movement, and check the valve springs for wear and damage. • Check for a clogged orifice in the separator plate. If the orifice is clogged, remove it and clean the separator plate orifice. • Check the manual valve in the manual valve body for wear and damage, and check the manual lever guide pin for wear and damage. • Check the ATF strainer for debris. If the strainer is clogged, find the damaged components that caused the debris. If no cause for contamination is found, replace the torque converter. • Check the torque converter regulator valve in the regulator valve body for free movement, and check the valve spring for wear and damage. • Inspect the differential pinion gears for wear. If the differential pinion gears are worn, replace the

	• Torque converter regulator valve defective • Mainshaft worn or damaged • Countershaft worn or damaged • Final gears worn or damaged • Park mechanism defective • Selector control shaft worn or damaged • Axle disengaged	differential assembly, replace the ATF strainer, thoroughly clean the transmission, and clean the ATF cooler lines. • Be careful not to damage the torque converter housing when replacing the main ball bearing. You may also damage the ATF pump when you torque down the main valve body. This will cause ATF pump seizure, use the proper tools. • Install the main seal flush with the torque converter housing. If you push it into the torque converter housing until it bottoms out, it will block the fluid return passage and result in damage. • Inspect the mainshaft and the countershaft for wear and damage. • Inspect the park mechanism at the park lever link and park gear. • Check the axles.
Vehicle moves in R, but not in D or S	• Transmission range switch broken or out of adjustment • Shift cable broken or out of adjustment • Connection between shift cable and transmission or shift lever is worn • Manual valve defective • 1st accumulator defective • Idler gears worn or damaged	• Inspect the transmission range switch. If the transmission range switch fails the inspection, replace the switch. If the inspection is OK, check for proper transmission range switch installation, and adjust the shift cable. • Check for a loose shift cable at the shift lever and the selector control lever. • Check the manual valve in the manual valve body for wear and damage, and check the manual lever guide pin for wear and damage. • Check the 1st accumulator piston, the O-ring, and the spring in the manual valve body for wear and damage. • Inspect the mainshaft, the countershaft, the secondary shaft, the third shaft, and idler gears for wear and damage.
	• Transmission range switch broken or out of adjustment • Shift cable broken or out of adjustment • Connection	• Inspect the transmission range switch. If the transmission range switch fails the inspection, replace the switch. If the inspection is OK, check for proper transmission range switch installation, and adjust the shift cable. • Check for a loose shift cable at the shift lever and the selector control lever. • Check for a missing shift fork bolt on the shift fork shaft.

Vehicle moves in D and S, but not in R (or moves forward in R)	between shift cable and transmission or shift lever is worn • Shift fork shaft stuck • Manual valve defective • 4th accumulator defective • 4th clutch defective • Reverse gears worn or damaged • Reverse idler gear shaft/holder worn or damaged • Reverse selector or reverse selector hub worn or damaged	• Check the shift fork shaft detent for wear and damage. • Check the manual valve in the manual valve body for wear and damage, and check the manual lever guide pin for wear and damage. • Check the 4th accumulator piston, the O-ring, and the spring in the regulator valve body for wear and damage. • Check the 4th clutch pressure (see **PRESSURE TEST**). • Inspect the clutch clearance for the 4th clutch. • Inspect the reverse idler gear shaft/holder for wear and damage. • Inspect the reverse selector gear teeth chamfers, and inspect the engagement teeth chamfers of the third shaft reverse gear and the reverse selector hub. Replace the reverse gears and the reverse selector if they are worn or damaged. If the transmission makes clicking, grinding, or whirring noises, also replace the third shaft 4th gear, the reverse idler gear, the mainshaft 3rd gear, and the countershaft 2nd gear.
Poor acceleration; engine RPM abnormally rises when starting off in D, S, and R	• A/T clutch pressure control solenoid valve D defective • Output shaft (countershaft) speed sensor defective • Torque converter one-way clutch defective • Low ATF level • ATF pump worn or binding • Main regulator valve stuck or spring worn • ATF strainer clogged • Stator shaft worn	• Inspect A/T clutch pressure control solenoid valve D with the HDS (see **A/T CLUTCH PRESSURE CONTROL SOLENOID VALVE A, B, C, AND D TEST**). • Check the output shaft (countershaft) speed sensor installation. • Inspect the output shaft (countershaft) speed sensor O-ring for wear and damage. • Check the stall speed (see **STALL SPEED TEST**). • Replace the torque converter. • Check the ATF level, and check the ATF cooler lines for leaks and loose connections. If necessary, clean the ATF cooler lines. • Check the line pressure (see **PRESSURE TEST**). • Improper alignment of the ATF pump and the torque converter housing may cause ATF pump seizure. The symptoms are mostly an RPM-related ticking noise or a high pitched squeak. • Check the main regulator valve in the regulator valve body for free movement, and check the valve springs for wear and damage. • Check the ATF strainer for debris. If the strainer is

	or damaged	clogged, find the damaged components that caused the debris. If no cause for contamination is found, replace the torque converter. • Check the stator shaft splines for wear and damage.
Poor acceleration; engine RPM abnormally rises when starting off in D, S, and R; stall speed high in D and S	• Drive plate defective or transmission incorrectly installed • Torque converter clutch piston defective • Torque converter defective • 1st accumulator defective • 1st clutch defective • 2nd clutch defective	• Check for an incorrectly installed transmission, and check the drive plate for wear and damage. Replace the drive plate if it is worn or damaged. • Check the stall speed in R (see **STALL SPEED TEST**). • Replace the torque converter. • Check the 1st and 2nd clutch pressures (see **PRESSURE TEST**). • Inspect the clutch clearance for the 1st and 2nd clutches. • Check the 1st accumulator piston, the O-ring, and the spring in the manual valve body for wear and damage.
Poor acceleration; engine RPM abnormally rises when starting off in D, S, and R; stall speed high in R	• Drive plate defective or transmission incorrectly installed • Torque converter clutch piston defective • Torque converter defective • 4th accumulator defective • 4th clutch defective	• Check for an incorrectly installed transmission, and check the drive plate for wear and damage. Replace the drive plate if it is worn or damaged. • Check the stall speed in R (see **STALL SPEED TEST**). • Replace the torque converter. • Check the 4th clutch pressure (see **PRESSURE TEST**). • Inspect the clutch clearance for the 4th clutch. • Check the 4th accumulator piston, the O-ring, and the spring in the regulator valve body for wear and damage.
Poor acceleration; engine RPM abnormally rises when starting off in D, S, and R; stall speed low	• Engine output low • Torque converter clutch piston defective	• Check the stall speed (see **STALL SPEED TEST**). • Replace the torque converter. • Check the engine control system.
	• Engine output low	• Check the stall speed (see **STALL SPEED TEST**). • Replace the torque converter. • Check the engine control system.

Engine idle vibration	• Torque converter clutch piston defective • Transmission or engine mount defective	• Check the line pressure (see **PRESSURE TEST**). • Improper alignment of the ATF pump and the torque converter housing may cause ATF pump seizure. The symptoms are mostly an rpm-related ticking noise or a high pitched squeak. • Inspect the transmission or engine mount. • Inspect the valve clearance.
Vehicle moves in N	• Shift solenoid valve C defective • Line pressure solenoid valve A defective • ATF temperature sensor defective • Low ATF level • Excessive ATF • Main regulator valve stuck or spring worn • Foreign material in separator plate orifice • Lubrication regulator valve defective • Lubrication shift valve defective • Lock-up shift valve defective • 1st clutch defective • 2nd clutch defective • 3rd clutch defective • 4th clutch defective • 5th clutch defective • 6th clutch defective • Clearance between	• Inspect the shift solenoid valve C function with the HDS (see **SHIFT SOLENOID VALVE C TEST AND REPLACEMENT**). • Check for a seized shift solenoid valve, and inspect the O-rings. • Inspect the line pressure solenoid valve A function with the HDS (see **LINE PRESSURE SOLENOID VALVE A TEST**). • Check for a seized line pressure solenoid valve A, and inspect the O-rings. • Check the ATF level, and check the ATF cooler lines for leaks and loose connections. If necessary, clean the ATF cooler lines. • Check the ATF level, and drain the ATF if it is over-filled. • Check the ATF temperature sensor O-ring for wear and damage. • Check the main regulator valve in the regulator valve body for free movement, and check the valve springs for wear and damage. • Check all clutch pressures. • Check for a clogged orifice in the separator plate. If the orifice is clogged, remove it and clean the separator plate orifice. • Check the lubrication regulator valve, the lubrication shift valve, and the lock-up shift valve in the main valve body for free movement, and check the valve springs for wear and damage. • Check the stall speed (see **STALL SPEED TEST**). • Inspect the clutch clearance for all clutches. • Check the needle bearings on all shafts for seizure,

	clutch end-plate and top disc incorrect • Needle bearings seized, worn, or damaged	wear, and damage.
Delayed engagement after shifting from N to D or S, or excessive shock when shifting	• Shift solenoid valve C defective • A/T clutch pressure control solenoid valve D defective • Shift cable broken or out of adjustment • Connection between shift cable and transmission or shift lever is worn • ATF temperature sensor defective • Low ATF level • Foreign material in separator plate orifice • 1st accumulator defective • ATF strainer clogged • Lock-up shift valve defective • 1st clutch defective • Clearance between clutch end-plate and top disc incorrect	• Inspect the shift solenoid valve C function with the HDS (see **SHIFT SOLENOID VALVE C TEST AND REPLACEMENT**). • Check for a seized shift solenoid valve, and inspect the O-rings. • Inspect A/T clutch pressure control solenoid valve D with the HDS (see **A/T CLUTCH PRESSURE CONTROL SOLENOID VALVE A, B, C, AND D TEST**). • Check for a loose shift cable at the shift lever and the selector control lever. • Inspect the ATF temperature sensor O-ring for wear and damage. • Check the ATF level, and check the ATF cooler lines for leaks and loose connections. If necessary, clean the ATF cooler lines. • Check for a clogged orifice in the separator plate. If the orifice is clogged, remove it and clean the separator plate orifice. • Check the stall speed (see **STALL SPEED TEST**). • Check the line pressure (see **PRESSURE TEST**). • Check the ATF strainer for debris. If the strainer is clogged, find the damaged components that caused the debris. If no cause for contamination is found, replace the torque converter. • Check the lock-up shift valve in the main valve body for free movement, and check the valve spring for wear and damage. • Check the 1st clutch pressure (see **PRESSURE TEST**). • Inspect the clutch clearance for the 1st clutch. • Check the 1st accumulator piston, the O-ring, and the spring in the manual valve body for wear and damage.
	• Shift solenoid valve C defective • A/T clutch	• Inspect the shift solenoid valve C function with the HDS (see **SHIFT SOLENOID VALVE C TEST**

Delayed engagement after shifting from N to R, or excessive shock when shifting	pressure control solenoid valve D defective • Shift cable broken or out of adjustment • Connection between shift cable and transmission or shift lever is worn • ATF temperature sensor defective • Foreign material in separator plate orifice • Shift valve C defective • Reverse inhibitor valve defective • 4th accumulator defective • 4th/reverse air check valve stuck • ATF strainer clogged • Lock-up shift valve defective • 4th clutch defective • Clearance between clutch end-plate and top disc incorrect	**AND REPLACEMENT**). • Check for a seized shift solenoid valve, and inspect the O-rings. • Inspect A/T clutch pressure control solenoid valve D with the HDS (see **A/T CLUTCH PRESSURE CONTROL SOLENOID VALVE A, B, C, AND D TEST**). • Check for a loose shift cable at the shift lever and the selector control lever. • Inspect the ATF temperature sensor O-ring for wear and damage. • Check for a clogged orifice in the separator plate. If the orifice is clogged, remove it and clean the separator plate orifice. • Check the stall speed (see **STALL SPEED TEST**). • Check the line pressure (see **PRESSURE TEST**). • Check the ATF strainer for debris. If the strainer is clogged, find the damaged components that caused the debris. If no cause for contamination is found, replace the torque converter. • Check the lock-up shift valve, shift valve C, and the reverse inhibitor valve in the main valve body for free movement, and check the valve spring for wear and damage. • Check the 4th clutch pressure (see **PRESSURE TEST**). • Inspect the clutch clearance for the 4th clutch. • Check the 4th accumulator piston, the O-ring, and the spring in the regulator valve body for wear and damage. • Check for a stuck 4th/reverse air check valve in the main valve body.
Transmission does not shift	• A/T clutch pressure control solenoid valve A defective • A/T clutch pressure control solenoid valve B defective • A/T clutch	• Inspect A/T clutch pressure control solenoid valve A with the HDS (see **A/T CLUTCH PRESSURE CONTROL SOLENOID VALVE A, B, C, AND D TEST**). • Inspect A/T clutch pressure control solenoid valve B with the HDS (see **A/T CLUTCH PRESSURE CONTROL SOLENOID VALVE A, B, C, AND D TEST**). • Inspect A/T clutch pressure control solenoid valve C with the HDS (see **A/T CLUTCH PRESSURE**

	pressure control solenoid valve C defective • Output shaft (countershaft) speed sensor defective	**CONTROL SOLENOID VALVE A, B, C, AND D TEST**). • Check the output shaft (countershaft) speed sensor installation. • Inspect the output shaft (countershaft) speed sensor O-ring for wear and damage.
Excessive shock or engine RPM abnormally rises on all upshifts and downshifts	• A/T clutch pressure control solenoid valve A defective • A/T clutch pressure control solenoid valve B defective • A/T clutch pressure control solenoid valve C defective • Input shaft (mainshaft) speed sensor defective • Output shaft (countershaft) speed sensor defective • ATF temperature sensor defective • Low ATF level • ATF pump worn or binding • Main regulator valve stuck or spring worn • Foreign material in separator plate orifice • 1st accumulator defective • ATF strainer clogged • Clearance between clutch end-plate	• Inspect A/T clutch pressure control solenoid valve A with the HDS (see **A/T CLUTCH PRESSURE CONTROL SOLENOID VALVE A, B, C, AND D TEST**). • Inspect A/T clutch pressure control solenoid valve B with the HDS (see **A/T CLUTCH PRESSURE CONTROL SOLENOID VALVE A, B, C, AND D TEST**). • Inspect A/T clutch pressure control solenoid valve C with the HDS (see **A/T CLUTCH PRESSURE CONTROL SOLENOID VALVE A, B, C, AND D TEST**). • Check the speed sensor installation. • Inspect the speed sensor O-ring for wear and damage. • Inspect the ATF temperature sensor O-ring for wear and damage. • Check the ATF level, and check the ATF cooler lines for leaks and loose connections. If necessary, clean the ATF cooler lines. • Check the stall speed (see **STALL SPEED TEST**). • Check the line pressure (see **PRESSURE TEST**). • Improper alignment of the ATF pump and the torque converter housing may cause ATF pump seizure. The symptoms are mostly an rpm-related ticking noise or a high pitched squeak. • Check the main regulator valve in the regulator valve body for free movement, and check the valve springs for wear and damage. • Check for a clogged orifice in the separator plate. If the orifice is clogged, remove it and clean the separator plate orifice. • Check the 1st accumulator piston, the O-ring, and the spring in the manual valve body for wear and damage. • Check the ATF strainer for debris. If the strainer is clogged, find the damaged components that caused the debris. If no cause for contamination is found,

	and top disc incorrect	replace the torque converter. • Inspect the clutch clearance for all clutches.
Excessive shock or engine RPM abnormally rises on 1-2 upshift or 2-1 downshift	• Shift solenoid valve A defective • A/T clutch pressure control solenoid valve A defective • A/T clutch pressure control solenoid valve B defective • A/T clutch pressure control solenoid valve C defective • Transmission fluid pressure switch A (2nd clutch) defective • Foreign material in separator plate orifice • A/T clutch pressure control solenoid valve A accumulator defective • 2nd air check valve stuck • 2nd clutch defective • Clearance between clutch end-plate and top disc incorrect	• Inspect the shift solenoid valve A function with the HDS (see **SHIFT SOLENOID VALVE A AND B TEST**). • Check for a seized shift solenoid valve, and inspect the O-rings. • Inspect A/T clutch pressure control solenoid valve A with the HDS (see **A/T CLUTCH PRESSURE CONTROL SOLENOID VALVE A, B, C, AND D TEST**). • Inspect A/T clutch pressure control solenoid valve B with the HDS (see **A/T CLUTCH PRESSURE CONTROL SOLENOID VALVE A, B, C, AND D TEST**). • Inspect A/T clutch pressure control solenoid valve C with the HDS (see **A/T CLUTCH PRESSURE CONTROL SOLENOID VALVE A, B, C, AND D TEST**). • Check for a clogged orifice in the separator plate. If the orifice is clogged, remove it and clean the separator plate orifice. • Check the 2nd clutch pressure (see **PRESSURE TEST**). • Inspect the clutch clearance for the 2nd clutch. • Check the A/T clutch pressure control solenoid valve A accumulator piston, the O-ring, and the springs in the secondary valve body for wear and damage. • Check for a stuck 2nd air check valve in the torque converter housing.
	• Shift solenoid valve A defective • Shift solenoid valve B defective • A/T clutch pressure control solenoid valve A defective	• Inspect the shift solenoid valves A and B function

Excessive shock or engine RPM abnormally rises on 2-3 upshift or 3-2 downshift	• A/T clutch pressure control solenoid valve B defective • A/T clutch pressure control solenoid valve C defective • Transmission fluid pressure switch B (3rd clutch) defective • Foreign material in separator plate orifice • A/T clutch pressure control solenoid valve A accumulator defective • A/T clutch pressure control solenoid valve B accumulator defective • 2nd air check valve stuck • 3rd air check valve stuck • 2nd clutch defective • 3rd clutch defective • Clearance between clutch end-plate and top disc incorrect	with the HDS (see **SHIFT SOLENOID VALVE A AND B TEST**). • Check for a seized shift solenoid valve, and inspect the O-rings. • Inspect A/T clutch pressure control solenoid valve A with the HDS (see **A/T CLUTCH PRESSURE CONTROL SOLENOID VALVE A, B, C, AND D TEST**). • Inspect A/T clutch pressure control solenoid valve B with the HDS (see **A/T CLUTCH PRESSURE CONTROL SOLENOID VALVE A, B, C, AND D TEST**). • Inspect A/T clutch pressure control solenoid valve C with the HDS (see **A/T CLUTCH PRESSURE CONTROL SOLENOID VALVE A, B, C, AND D TEST**). • Check for a clogged orifice in the separator plate. If the orifice is clogged, remove it and clean the separator plate orifice. • Check the 2nd and 3rd clutch pressures (see **PRESSURE TEST**). • Inspect the clutch clearance for the 2nd and 3rd clutches. • Check the A/T clutch pressure control solenoid valve A and B accumulator pistons, the O-rings, and the springs in the secondary valve body for wear and damage. • Check for a stuck 2nd air check valve in the torque converter housing. • Check for a stuck 3rd air check valve in the stator shaft support.
	• Shift solenoid valve B defective • A/T clutch pressure control solenoid valve A defective • A/T clutch	• Inspect the shift solenoid valve B function with the

Excessive shock or engine RPM abnormally rises on 3-4 upshift or 4-3 downshift	pressure control solenoid valve B defective • A/T clutch pressure control solenoid valve C defective • Transmission fluid pressure switch C (4th clutch) defective • Shift fork shaft stuck • Foreign material in separator plate orifice • Shift valve C defective • Reverse inhibitor valve defective • D inhibitor valve defective • A/T clutch pressure control solenoid valve B accumulator defective • A/T clutch pressure control solenoid valve C accumulator defective • 3rd air check valve stuck • 4th/reverse air check valve stuck • 3rd clutch defective • 4th clutch defective • Clearance between clutch end-plate and top disc incorrect	HDS (see **SHIFT SOLENOID VALVE A AND B TEST**). • Check for a seized shift solenoid valve, and inspect the O-rings. • Inspect A/T clutch pressure control solenoid valve A with the HDS (see **A/T CLUTCH PRESSURE CONTROL SOLENOID VALVE A, B, C, AND D TEST**). • Inspect A/T clutch pressure control solenoid valve B with the HDS (see **A/T CLUTCH PRESSURE CONTROL SOLENOID VALVE A, B, C, AND D TEST**). • Inspect A/T clutch pressure control solenoid valve C with the HDS (see **A/T CLUTCH PRESSURE CONTROL SOLENOID VALVE A, B, C, AND D TEST**). • Check for a missing shift fork bolt on the shift fork shaft. • Check the shift fork shaft detent for wear and damage. • Check for a clogged orifice in the separator plate. If the orifice is clogged, remove it and clean the separator plate orifice. • Check shift valve C, the reverse inhibitor valve, and the D inhibitor valve in the main valve body for free movement, and check the valve spring for wear and damage. • Check the 3rd and 4th clutch pressures (see **PRESSURE TEST**). • Inspect the clutch clearance for the 3rd and 4th clutches. • Check the A/T clutch pressure control solenoid valve B and C accumulator pistons, the O-rings, and the springs in the secondary valve body for wear and damage. • Check for a stuck 3rd air check valve in the stator shaft support. • Check for a stuck 4th/reverse air check valve in the main valve body.

Excessive shock or engine RPM abnormally rises on 4-5 upshift or 5-4 downshift	• Shift solenoid valve A defective • A/T clutch pressure control solenoid valve A defective • A/T clutch pressure control solenoid valve B defective • A/T clutch pressure control solenoid valve C defective • Transmission fluid pressure switch D (5th clutch) defective • Shift fork shaft stuck • Foreign material in separator plate orifice • Shift valve C defective • Reverse inhibitor valve defective • D inhibitor valve defective • A/T clutch pressure control solenoid valve A accumulator defective • A/T clutch pressure control solenoid valve C accumulator defective • 4th/reverse air check valve stuck • 5th air check valve stuck • 4th clutch	• Inspect the shift solenoid valve A function with the HDS (see **SHIFT SOLENOID VALVE A AND B TEST**). • Check for a seized shift solenoid valve, and inspect the O-rings. • Inspect A/T clutch pressure control solenoid valve A with the HDS (see **A/T CLUTCH PRESSURE CONTROL SOLENOID VALVE A, B, C, AND D TEST**). • Inspect A/T clutch pressure control solenoid valve B with the HDS (see **A/T CLUTCH PRESSURE CONTROL SOLENOID VALVE A, B, C, AND D TEST**). • Inspect A/T clutch pressure control solenoid valve C with the HDS (see **A/T CLUTCH PRESSURE CONTROL SOLENOID VALVE A, B, C, AND D TEST**). • Check for a missing shift fork bolt on the shift fork shaft. • Check the shift fork shaft detent for wear and damage. • Check for a clogged orifice in the separator plate. If the orifice is clogged, remove it and clean the separator plate orifice. • Check shift valve C, the reverse inhibitor valve, and the D inhibitor valve in the main valve body for free movement, and check the valve spring for wear and damage. • Check the 4th and 5th clutch pressures (see **PRESSURE TEST**). • Inspect the clutch clearance for the 4th and 5th clutches. • Check the A/T clutch pressure control solenoid valve A and C accumulator pistons, the O-rings, and the springs in the secondary valve body for wear and damage. • Check for a stuck 4th/reverse air check valve in the main valve body. • Check for a stuck 5th air check valve in the torque

	defective • 5th clutch defective • Clearance between clutch end-plate and top disc incorrect	converter housing.
Excessive shock or engine RPM abnormally rises on 5-6 upshift or 6-5 downshift	• Shift solenoid valve A defective • Shift solenoid valve B defective • A/T clutch pressure control solenoid valve A defective • A/T clutch pressure control solenoid valve B defective • A/T clutch pressure control solenoid valve C defective • Transmission fluid pressure switch E (6th clutch) defective • Foreign material in separator plate orifice • A/T clutch pressure control solenoid valve A accumulator defective • A/T clutch pressure control solenoid valve B accumulator defective • 5th air check valve stuck • 6th air check valve stuck	• Inspect the shift solenoid valves A and B function with the HDS (see **SHIFT SOLENOID VALVE A AND B TEST**). • Check for a seized shift solenoid valve, and inspect the O-rings. • Inspect A/T clutch pressure control solenoid valve A with the HDS (see **A/T CLUTCH PRESSURE CONTROL SOLENOID VALVE A, B, C, AND D TEST**). • Inspect A/T clutch pressure control solenoid valve B with the HDS (see **A/T CLUTCH PRESSURE CONTROL SOLENOID VALVE A, B, C, AND D TEST**). • Inspect A/T clutch pressure control solenoid valve C with the HDS (see **A/T CLUTCH PRESSURE CONTROL SOLENOID VALVE A, B, C, AND D TEST**). • Check for a clogged orifice in the separator plate. If the orifice is clogged, remove it and clean the separator plate orifice. • Check the 5th and 6th clutch pressures (see **PRESSURE TEST**). • Inspect the clutch clearance for the 5th and 6th clutches. • Check the A/T clutch pressure control solenoid valve A and B accumulator pistons, the O-rings, and the springs in the secondary valve body for wear and damage. • Check for a stuck 5th air check valve in the torque converter housing.

	• 5th clutch defective • 6th clutch defective Clearance between clutch end-plate and top disc incorrect	• Check for a stuck 6th air check valve in the stator shaft support.
Noise from transmission in all shift lever positions	• ATF pump worn or binding • Lubrication regulator valve defective • Lubrication shift valve defective • Final gears worn or damaged • Idler gears worn or damaged • Thrust washers seized, worn or damaged • Mainshaft, countershaft, secondary shaft, and third shaft bearings worn or damaged	• Check the line pressure (see **PRESSURE TEST**). • Improper alignment of the ATF pump and the torque converter housing may cause ATF pump seizure. The symptoms are mostly an rpm-related ticking noise or a high pitched squeak. • Inspect the differential pinion gears for wear. If the differential pinion gears are worn, replace the differential assembly, replace the ATF strainer, thoroughly clean the transmission, and clean the ATF cooler lines. • Check the ATF strainer for debris. If the strainer is clogged, find the damaged components that caused the debris. If no cause for contamination is found, replace the torque converter. • Be careful not to damage the torque converter housing when replacing the main ball bearing. You may also damage the ATF pump when you torque down the main valve body. This will cause ATF pump seizure, use the proper tools. • Install the main seal flush with the torque converter housing. If you push it into the torque converter housing until it bottoms out, it will block the fluid return passage and result in damage. • Check the ball bearing for the mainshaft, the countershaft, the secondary shaft, and the third shaft. • Inspect the mainshaft, the countershaft, the secondary shaft, the third shaft, and idler gears for wear and damage. • Check the thrust washers on all shafts for seizure, wear, and damage. • Check the lubrication regulator valve and the lubrication shift valve in the main valve body for free movement, and check the valve springs for wear and damage.
	• A/T clutch pressure control	• Inspect A/T clutch pressure control solenoid valve A with the HDS (see **A/T CLUTCH PRESSURE**

Noise from transmission in D and S	solenoid valve A defective • A/T clutch pressure control solenoid valve B defective • A/T clutch pressure control solenoid valve C defective	**CONTROL SOLENOID VALVE A, B, C, AND D TEST**). • Inspect A/T clutch pressure control solenoid valve B with the HDS (see **A/T CLUTCH PRESSURE CONTROL SOLENOID VALVE A, B, C, AND D TEST**). • Inspect A/T clutch pressure control solenoid valve C with the HDS (see **A/T CLUTCH PRESSURE CONTROL SOLENOID VALVE A, B, C, AND D TEST**).
Noise from transmission in R	Reverse gears worn or damaged	• Inspect the reverse idler gear shaft/holder for wear and damage. • Inspect the reverse selector gear teeth chamfers, and inspect the engagement teeth chamfers of the third shaft reverse gear and the reverse selector hub. Replace the reverse gears and the reverse selector if they are worn or damaged. If the transmission makes clicking, grinding, or whirring noises, also replace the third shaft 4th gear, the reverse idler gear, the mainshaft 3rd gear, and the countershaft 2nd gear.
Vehicle does not accelerate above 34 mph (55 km/h)	Torque converter one-way clutch defective	• Check the stall speed (see **STALL SPEED TEST**). • Replace the torque converter.
Vibration in all shift lever positions	• Drive plate defective or transmission incorrectly installed • Torque converter clutch piston defective • Torque converter defective • ATF pump worn or binding • Transmission or engine mount defective • Low engine output (horsepower)	• Check for an incorrectly installed transmission, and check the drive plate for wear and damage. Replace the drive plate if it is worn or damaged. • Check the stall speed (see **STALL SPEED TEST**). • Check the line pressure (see **PRESSURE TEST**). • Improper alignment of the ATF pump and the torque converter housing may cause ATF pump seizure. The symptoms are mostly an rpm-related ticking noise or a high pitched squeak. • Inspect the differential pinion gears for wear. If the differential pinion gears are worn, replace the differential assembly, replace the ATF strainer, thoroughly clean the transmission, and clean the ATF cooler lines. • Replace the torque converter. • Be careful not to damage the torque converter housing when replacing the main ball bearing. You may also damage the ATF pump when you torque down the main valve body. This will cause ATF pump seizure, use the proper tools. • Inspect the transmission or engine mount.

		• Check the valve adjustment. • Check the engine control system.
Shift lever does not operate smoothly	• Transmission range switch defective or out of adjustment • Shift cable broken, binding, or out of adjustment • Connection between shift cable and transmission or shift lever is worn • Manual valve defective • Selector control shaft worn or damaged	• Inspect the transmission range switch. If the transmission range switch fails the inspection, replace the switch. If the inspection is OK, check for proper transmission range switch installation, and adjust the shift cable. • Check for a loose shift cable at the shift lever and the selector control lever. • Check the manual valve in the main valve body for wear and damage, and check the manual lever guide pin for wear and damage.
Transmission does not shift into P	• Shift cable broken, binding, or out of adjustment • Connection between shift cable and transmission or shift lever is worn • Park mechanism defective	• Check for a loose shift cable at the shift lever and the selector control lever. • Inspect the countershaft and the secondary shaft for wear and damage. • Inspect the park mechanism at the parking holder and park gears.
Torque converter clutch does not disengage	• Shift solenoid valve C defective • Drive plate defective or transmission incorrectly installed • Torque converter clutch piston defective • Torque converter defective	• Inspect the shift solenoid valve C function with the HDS (see **SHIFT SOLENOID VALVE C TEST AND REPLACEMENT**). • Check for a seized shift solenoid valve, and inspect the O-rings. • Check for an incorrectly installed transmission, and check the drive plate for wear and damage. Replace the drive plate if it is worn or damaged. • Check the stall speed (see **STALL SPEED TEST**). • Check the line pressure (see **PRESSURE TEST**). • Replace the torque converter. • Be careful not to damage the torque converter housing when replacing the main ball bearing. You may also damage the ATF pump when you torque

	• Lock-up shift valve defective	down the main valve body. This will cause ATF pump seizure, use the proper tools. • Check the lock-up shift valve in the main valve body for free movement, and check the valve springs for wear and damage.
Torque converter clutch does not operate smoothly	• A/T clutch pressure control solenoid valve D defective • Drive plate defective or transmission incorrectly installed • Torque converter clutch piston defective • Torque converter defective • Torque converter regulator valve defective • Lock-up control valve defective	• Inspect A/T clutch pressure control solenoid valve D with the HDS (see **A/T CLUTCH PRESSURE CONTROL SOLENOID VALVE A, B, C, AND D TEST**). • Check the line pressure (see **PRESSURE TEST**). • Check for an incorrectly installed transmission, and check the drive plate for wear and damage. Replace the drive plate if it is worn or damaged. • Check the stall speed (see **STALL SPEED TEST**). • Replace the torque converter. • Be careful not to damage the torque converter housing when replacing the main ball bearing. You may also damage the ATF pump when you torque down the main valve body. This will cause ATF pump seizure, use the proper tools. • Check the torque converter regulator valve and the lock-up control valve in the regulator valve body for free movement, and check the valve springs for wear and damage.
Torque converter clutch does not engage	• Shift solenoid valve C defective • A/T clutch pressure control solenoid valve D defective • Drive plate defective or transmission incorrectly installed • Torque converter clutch piston defective • Torque converter defective • Torque converter	• Inspect the shift solenoid valve C function with the HDS (see **SHIFT SOLENOID VALVE C TEST AND REPLACEMENT**). • Check for a seized shift solenoid valve, and inspect the O-rings. • Inspect A/T clutch pressure control solenoid valve D with the HDS (see **A/T CLUTCH PRESSURE CONTROL SOLENOID VALVE A, B, C, AND D TEST**). • Check the line pressure (see **PRESSURE TEST**). • Check for an incorrectly installed transmission, and check the drive plate for wear and damage. Replace the drive plate if it is worn or damaged. • Check the stall speed (see **STALL SPEED TEST**). • Replace the torque converter. • Be careful not to damage the torque converter housing when replacing the main ball bearing. You may also damage the ATF pump when you torque down the main valve body. This will cause ATF

	regulator valve defective • Lock-upshift valve defective • Lock-up control valve defective	pump seizure, use the proper tools. • Check the torque converter regulator valve and the lock-up control valve in the regulator valve body for free movement, and check the valve springs for wear and damage. • Check the lock-up shift valve in the main valve body for free movement, and check the valve springs for wear and damage.
A/T gear position indicator does not indicate shift lever positions	• Transmission range switch defective or out of adjustment • Shift cable broken or out of adjustment • Connection between shift cable and transmission or shift lever is worn	• Inspect the transmission range switch. If the transmission range switch fails the inspection, replace the switch. If the inspection is OK, check for proper transmission range switch installation, and adjust the shift cable. • Check for a loose shift cable at the shift lever and the selector control lever.
Speedometer and odometer do not work	Output shaft (countershaft) speed sensor defective	• Check the output shaft (countershaft) speed sensor installation. • Inspect the output shaft (countershaft) speed sensor O-ring for wear and damage. • Check for a poor connection at the output shaft (countershaft) speed sensor.
Engine does not start	• Transmission range switch defective or out of adjustment • Shift cable broken or out of adjustment • Connection between shift cable and transmission or shift lever is worn • Drive plate defective or transmission incorrectly installed • Torque converter	• Inspect the transmission range switch. If the transmission range switch fails the inspection, replace the switch. If the inspection is OK, check for proper transmission range switch installation, and adjust the shift cable. • Check for a loose shift cable at the shift lever and the selector control lever. • Check for an incorrectly installed transmission, and check the drive plate for wear and damage. Replace the drive plate if it is worn or damaged. • Check the stall speed (see **STALL SPEED TEST**). • Check the line pressure (see **PRESSURE TEST**). • Improper alignment of the ATF pump and the torque converter housing may cause ATF pump seizure. The symptoms are mostly an rpm-related ticking noise or a high pitched squeak.

	clutch piston defective • Torque converter defective • ATF pump worn or binding • Mainshaft worn or damaged	• Be careful not to damage the torque converter housing when replacing the main ball bearing. You may also damage the ATF pump when you torque down the main valve body. This will cause ATF pump seizure, use the proper tools. • Replace the torque converter. • Inspect the mainshaft.
Engine stalls when shifted to D from N	• Shift solenoid valve C defective • Drive plate defective or transmission incorrectly installed • Torque converter clutch piston defective • Torque converter defective • Torque converter regulator valve defective • Lock-up shift valve defective • Lock-up control valve defective	• Inspect the shift solenoid valve C function with the HDS (see **SHIFT SOLENOID VALVE C TEST AND REPLACEMENT**). • Check for a seized shift solenoid valve, and inspect the O-rings. • Check for an incorrectly installed transmission, and check the drive plate for wear and damage. Replace the drive plate if it is worn or damaged. • Check the stall speed (see **STALL SPEED TEST**). • Check the line pressure (see **PRESSURE TEST**). • Improper alignment of the ATF pump and the torque converter housing may cause ATF pump seizure. The symptoms are mostly an rpm-related ticking noise or a high pitched squeak. • Be careful not to damage the torque converter housing when replacing the main ball bearing. You may also damage the ATF pump when you torque down the main valve body. This will cause ATF pump seizure, use the proper tools. • Replace the torque converter. • Check the torque converter regulator valve and the lock-up control valve in the regulator valve body for free movement, and check the valve springs for wear and damage. • Check the lock-up shift valve in the main valve body for free movement, and check the valve springs for wear and damage.
	• Drive plate defective or transmission incorrectly installed • Torque converter	• Check for an incorrectly installed transmission, and check the drive plate for wear and damage. Replace the drive plate if it is worn or damaged. • Check the stall speed (see **STALL SPEED TEST**). • Check the line pressure (see **PRESSURE TEST**). • Improper alignment of the ATF pump and the torque converter housing may cause ATF pump seizure. The symptoms are mostly an rpm-related ticking noise or

Engine stops when shifted to R from N	clutch piston defective • Torque converter defective • Torque converter regulator valve defective • Lock-up shift valve defective • Lock-up control valve defective	a high pitched squeak. • Be careful not to damage the torque converter housing when replacing the main ball bearing. You may also damage the ATF pump when you torque down the main valve body. This will cause ATF pump seizure, use the proper tools. • Replace the torque converter. • Check the torque converter regulator valve and the lock-up control valve in the regulator valve body for free movement, and check the valve springs for wear and damage. • Check the lock-up shift valve in the main valve body for free movement, and check the valve springs for wear and damage.
No engine braking	• Shift cable broken or out of adjustment • Connection between shift cable and transmission or shift lever is worn • Output shaft (countershaft) speed sensor defective	• Check for a loose shift cable at the shift lever and the selector control lever. • Check the output shaft (countershaft) speed sensor installation. • Inspect the output shaft (countershaft) speed sensor O-ring for wear and damage.
Engine does not rev to high RPM, and the transmission upshifts at low RPM (engine at normal operating temperature)	• VTEC rocker arms defective • Low engine output (horsepower)	• J35Z6 engine: Check the VTEC rocker arms (see **VTEC ROCKER ARM TEST**). • J37A4 engine: Check the VTEC rocker arms (see **VTEC ROCKER ARM TEST**). • Check the fuel pressure (see **FUEL PRESSURE TEST**).
HDS does not communicate with the PCM	DLC circuit	Troubleshoot the DLC circuit (see **DLC CIRCUIT TROUBLESHOOTING**).

COMPONENT LOCATION INDEX

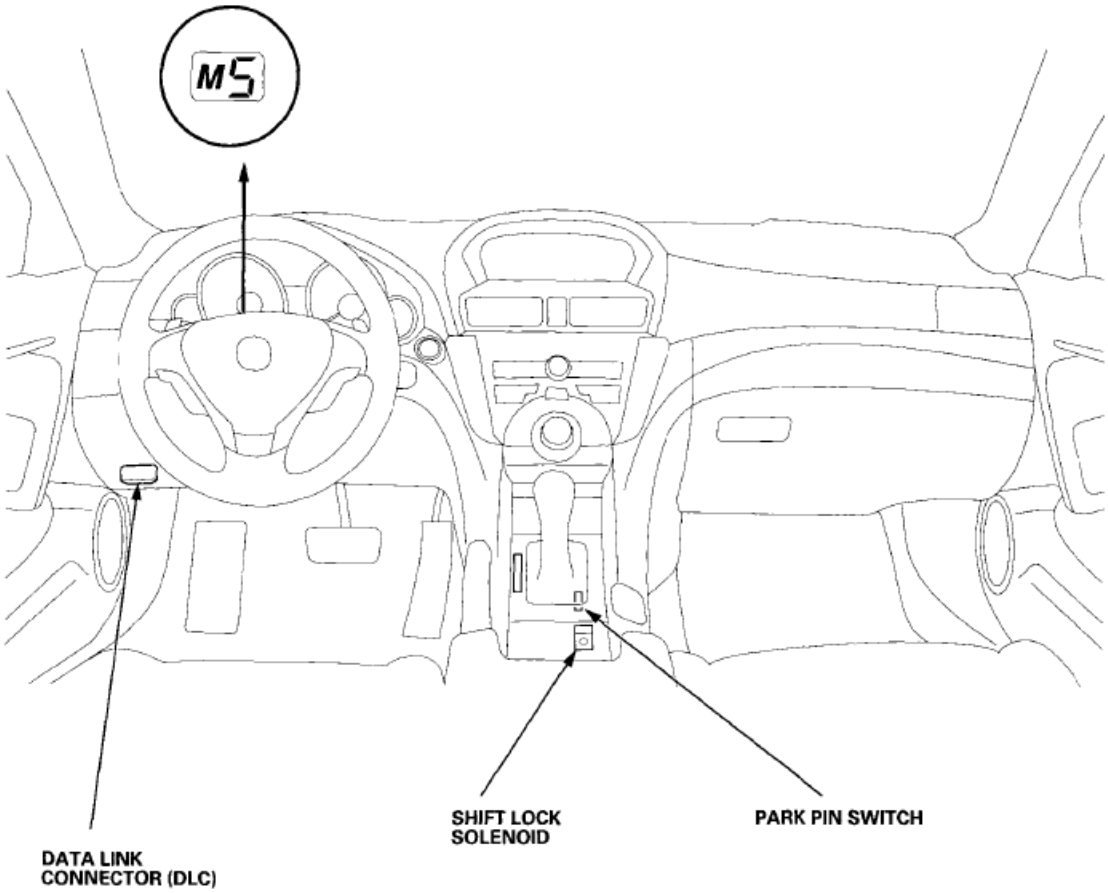


Fig. 14: Identifying Automatic Transmission Components Location (1 Of 2)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

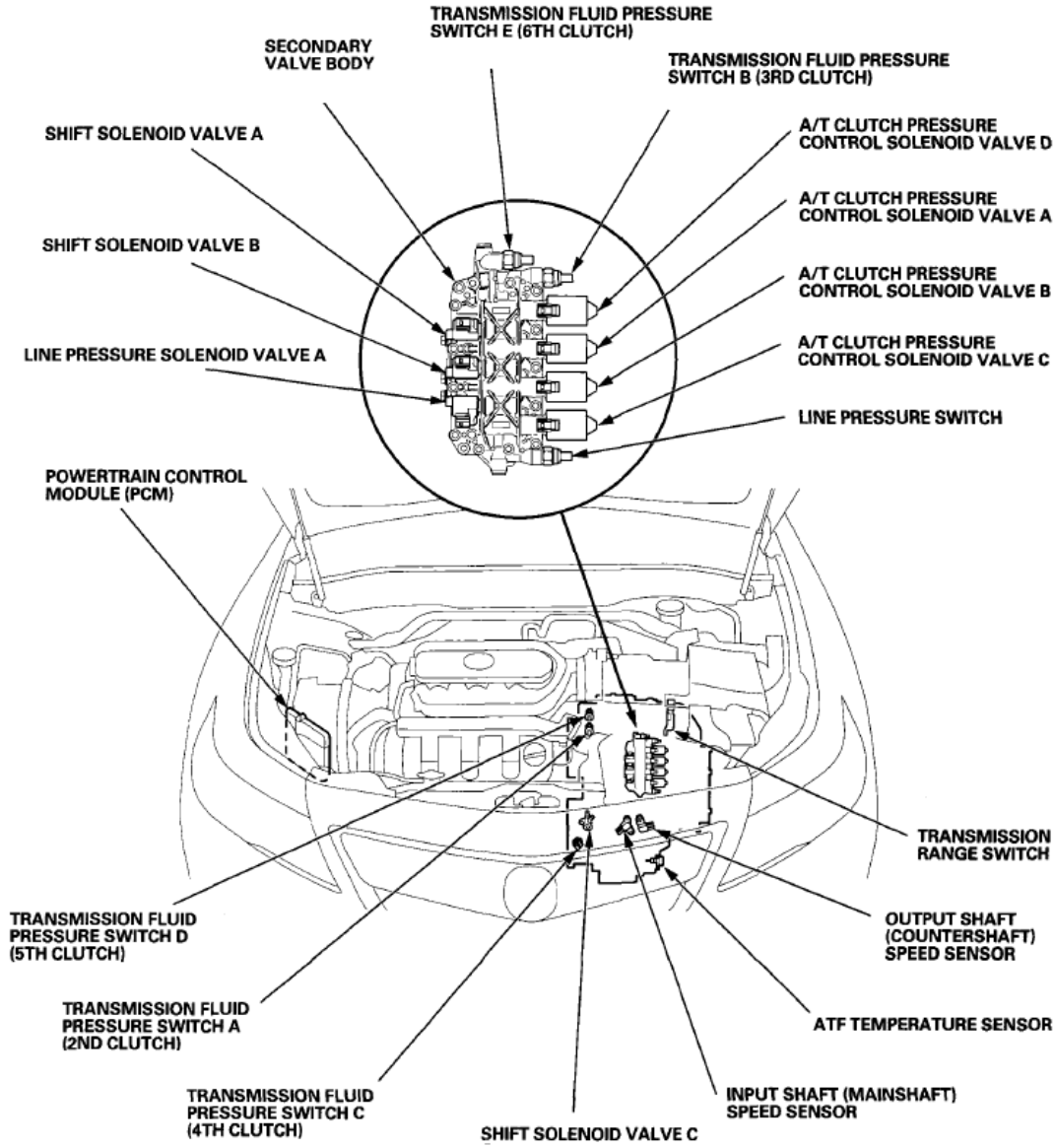


Fig. 15: Identifying Automatic Transmission Components Location (2 Of 2)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

SYSTEM DESCRIPTION

GENERAL DESCRIPTION

The automatic transmission is a transverse-mounted five-shaft design with an electronically controlled hydraulic circuit that provides six forward speeds and one in reverse. Engine output is transmitted through the torque converter, a combination of shafts which hold gears and clutches and a differential that transmits power to the driving wheels. SH-AWD equipped model also has a transfer assembly which transmits power to the SH-AWD differential.

Shaft, Gears, and Clutches

The clutches and gears are installed on the input shaft (mainshaft), the secondary shaft, the third shaft, and the idler gear shaft. These gears are in constant mesh with those on the output shaft (countershaft). When specific gears are engaged by the clutches, power is transmitted through the mainshaft, to the secondary shaft, the third shaft, the idler gear shaft, and/or the countershaft, then to the final driven gear of the differential to provide drive.

Shift Control Mechanism

To perform hydraulic control, shift control, and lock-up control of the automatic transmission, the PCM controls shift solenoid valves A, B, and C, line pressure solenoid valve A, and automatic transmission (A/T) clutch pressure control solenoid valves A, B, C, and D. The PCM switches each shift solenoid valve ON and OFF. This changes the positions of the shift valves in the valve bodies which open and close ports to send hydraulic pressure to the appropriate clutch. A/T clutch pressure control solenoid valves A, B, C, and D control the clutch pressure regulated by each of them, which allows smooth shifts and lock-up of the torque converter.

Electronic Control

Shifting and lock-up are achieved by a system of solenoid valves driven by the PCM, which controls ATF flow through various valves in the valve bodies to select the appropriate gears for all driving conditions.

Hydraulic Control

The valve bodies consist of the main valve body, the regulator valve body, the secondary valve body, the stator shaft support, and the manual valve body. They are installed to the torque converter housing. Fluid regulated by the regulator valve passes through the manual valve to the various control valves. All the clutches receive fluid from the shaft internal hydraulic circuit. Also, the hydraulic control body is adapted to the secondary valve body, which includes the main shift hydraulic circuit, the solenoid valve, the hydraulic switch, etc. to shorten the fluid passage and optimize the hydraulic pressure.

Torque Converter

The torque converter is connected to the flywheel. It consists of an impeller (pump), turbine, stator, and torque converter clutch piston, which uses ATF to transmit engine power to the input shaft (mainshaft). Around the outside of the torque converter housing, the starter ring gear is installed, which is used to start the engine.

Lock-Up Mechanism

The lock-up causes the input shaft (mainshaft) to rotate at the same speed as the engine crankshaft by engaging the torque converter cover with the turbine by the torque converter clutch. Together with the hydraulic control, the PCM optimizes the timing and degree of lock-up. The lock-up mechanism operates in D (during accelerating: 1st, 2nd, 3rd, 4th, 5th, and 6th gears/during decelerating: 2nd, 3rd, 4th, 5th, and 6th gears), S with automatic shift mode (during accelerating: 1st, 2nd, 3rd, 4th, and 5th gears/during decelerating: 2nd, 3rd, 4th, and 5th gears), and S with sequential sportshift mode (during accelerating: 1st, 2nd, 3rd, 4th, 5th, and 6th gears/during decelerating: 2nd, 3rd, 4th, 5th, and 6th gears). The torque converter clutch is in the torque converter. The multi-plate torque converter clutch increases the torque capacity and extends the lock-up area, improving fuel economy.

Gear Selection

The shift lever has five positions; P: PARK, R: REVERSE, N: NEUTRAL, D: DRIVE 1st through 6th gear ranges with automatic shift mode and D-paddle shift mode, and S: DRIVE 1st through 5th gear ranges with automatic shift mode and 1st through 6th gear ranges with sequential sportshift mode.

Position		Description
P: PARK		Front wheels locked; the park pawl engaged with the park gear on the countershaft. All clutches are released.
R: REVERSE		Reverse; the reverse selector engaged with the third shaft 4th gear and the 4th clutch engaged.
N: NEUTRAL		All clutches are released.
D: DRIVE (1st through 6th)		General driving; starts off in 1st gear, shifts to 2nd, 3rd, 4th, 5th, then 6th gear, depending on the vehicle speed and the throttle position. Downshifts through 5th, 4th, 3rd, 2nd, and 1st on deceleration to stop. The lock-up mechanism operates in 1st through 6th gears while accelerating, and in 2nd through 6th gears while decelerating.
S: DRIVE	Automatic shift mode (1st through 5th)	Used for rapid acceleration at highway speeds and general driving, up-hill and down-hill driving; starts off in 1st gear, shifts to 2nd, 3rd, 4th, then 5th gear, depending on the vehicle speed and the throttle position. Downshifts through 4th, 3rd, 2nd, and 1st on deceleration to stop. The lock-up mechanism operates in 1st through 5th gears while accelerating, and in 2nd through 5th gears while decelerating.
	Sequential sportshift mode (1st through 6th)	Manual gear shift driving; the vehicle can start off in 1st gear, and does not upshift automatically. The vehicle can also start off in 2nd gear, and does not upshift and downshift automatically. Downshifts automatically to 1st on deceleration to stop. The lock-up mechanism operates in 1st through 6th gears while accelerating, and in 2nd through 6th gears while decelerating.

Starting the engine is possible only in P and N because of a neutral-safety switch built into the transmission range switch.

Automatic Transmission (A/T) Gear Position Indicator

The A/T gear position indicator in the gauge control module shows which shift lever position that has been selected.

Shift Indicator

When you operate the paddle shift switch, the shift indicator in the gauge control module displays the gear selected. The shift indicator also displays the gear selected in the D-paddle shift mode and the sequential sportshift mode.

Transfer Assembly (With SH-AWD)

The transfer assembly consists of the transfer hypoid drive gear/shaft assembly, the transfer output shaft (hypoid gear), and the companion flange. The transfer assembly is on the rear side of the transmission, beside the differential. The transfer drive gear on the differential drives the transfer output shaft in the transmission. The transfer output shaft in the transmission is connected to the transfer hypoid drive gear/shaft assembly by splines.

Power is transmitted from the transfer drive gear on the differential to the rear differential via the transfer assembly and the propeller shaft.

CLUTCHES AND GEARS

The six speed automatic transmission applies hydraulic pressure to the clutches to engage or disengage the gears. When hydraulic pressure is introduced into the clutch drum, the clutch piston moves and presses the steel plates and the clutch discs. Power is then transmitted through the engaged clutch pack to its gear mounted on the shaft. Likewise, when the hydraulic pressure is bled from the clutch drum, the piston releases the steel plates and the clutch discs. Then the steel plates rotate with the clutch drum, and the clutch discs rotate with gear on the shaft. The clutch discs are released from the steel plates. This allows the clutch disc to spin independently, transmitting no power.

1st Clutch

The 1st clutch engages/disengages 1st gear, and is located at the right end of the secondary shaft. The 1st clutch is supplied hydraulic pressure through the secondary shaft by a circuit connected to the internal hydraulic circuit.

2nd Clutch

The 2nd clutch engages/disengages 2nd gear, and is located at the left end of the secondary shaft. The 2nd clutch is joined back-to-back to the 5th clutch. The 2nd clutch is supplied hydraulic pressure through the secondary shaft by a circuit connected to the internal hydraulic circuit.

3rd Clutch

The 3rd clutch engages/disengages 3rd gear, and is located at the left end of the mainshaft. The 3rd clutch is joined back-to-back to the 6th clutch. The 3rd clutch is supplied hydraulic pressure through the mainshaft by a circuit connected to the internal hydraulic circuit.

4th Clutch

The 4th clutch engages/disengages 4th gear, and is located at the right end of the third shaft. The 4th clutch is supplied hydraulic pressure through the third shaft by a circuit connected to the internal hydraulic circuit. The vehicle also moves backward when the 4th clutch is engaged while the reverse selector hub engages with the reverse gear.

5th Clutch

The 5th clutch engages/disengages 5th gear, and is located at the left end of the secondary shaft. The 5th clutch is joined back-to-back to the 2nd clutch. The 5th clutch is supplied hydraulic pressure through the secondary shaft by a circuit connected to the internal hydraulic circuit.

6th Clutch

The 6th clutch engages/disengages 6th gear, and is located at the left end of the mainshaft. The 6th clutch is joined back-to-back to the 3rd clutch. The 6th clutch is supplied hydraulic pressure through the mainshaft by a

circuit connected to the internal hydraulic circuit.

One-Way Clutch

The one-way clutch is located between the countershaft 1st gear and the park gear. The park gear is splined with the countershaft. The countershaft 1st gear engages the outer race surface of the one-way clutch, and the park gear engages the inner race surface of the one-way clutch. The one-way clutch locks when power is transmitted from the secondary shaft 1st gear to the countershaft 1st gear. The 1st clutch and 1st gear remain engaged in 1st, 2nd, 3rd, 4th, 5th, and 6th gear ranges in D or S. However, the one-way clutch disengages when the 2nd, 3rd, 4th, 5th, or 6th clutches and gears are applied in D or S. This is because the rotational speed of the countershaft exceeds that of 1st gear, which causes the one-way clutch to free-wheel with the 1st clutch still engaged.

Transmission Cutaway View

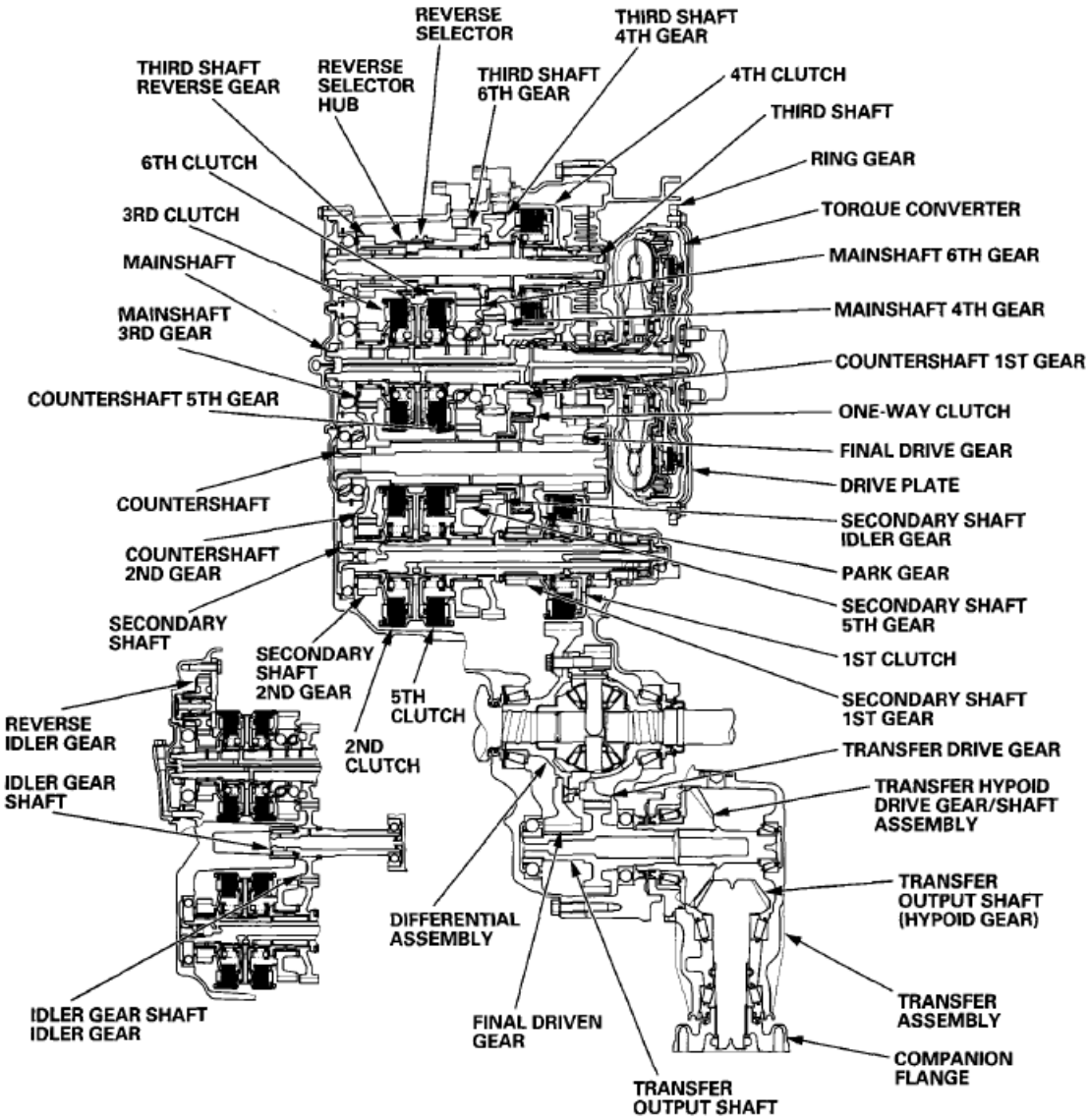


Fig. 16: Transmission Cutaway View

Courtesy of AMERICAN HONDA MOTOR CO., INC.

NOTE: This illustration shows the SH-AWD transfer assembly that is not available on all models.

Gear operation

Gears on the mainshaft:

- 3rd gear is engaged/disengaged with the mainshaft by the 3rd clutch.
- 6th gear is engaged/disengaged with the mainshaft by the 6th clutch.
- 4th gear is splined with the mainshaft and rotates with the mainshaft.

Gears on the secondary shaft:

- 1st gear is engaged/disengaged with the secondary shaft by the 1st clutch.
- 2nd gear is engaged/disengaged with the secondary shaft by the 2nd clutch.
- 5th gear is engaged/disengaged with the secondary shaft by the 5th clutch.
- Idler gear is splined with the secondary shaft, and rotates with the secondary shaft.

Gears on the third shaft:

- 4th gear is engaged/disengaged with the third shaft by the 4th clutch.
- Reverse selector hub is splined with the third shaft and rotates with the third shaft.
- Reverse selector on the reverse selector hub switches between the reverse gear and 6th gear.

Gears on the countershaft:

- Final drive gear is integral with the countershaft.
- 2nd gear, 5th gear, and park gear are splined with the countershaft, and rotate with the countershaft.
- 1st gear is engaged with the park gear splined with the countershaft by the one-way clutch when accelerating. It is disengaged from the park gear by the one-way clutch when decelerating.

Gears on the idler gear shaft:

- Idler gear is press-fitted with the idler gear shaft, and rotates with the idler gear shaft.
- Idler gear is engaged with the mainshaft 4th gear and the secondary shaft idler gear, and transmits the mainshaft rotation to the secondary shaft.

POWER FLOW

P Position

Hydraulic pressure is not applied to the clutches; power is not transmitted to the countershaft. The countershaft is locked by the park pawl interlocking the park gear on the countershaft.

N Position

Engine output transmitted from the mainshaft drives the mainshaft 4th gear, the third shaft 4th gear, the idler gear shaft idler gear, and the secondary shaft idler gear, but since hydraulic pressure is not applied to the clutches, output is not transmitted to the countershaft. In this position, the position of the reverse selector differs according to whether the shift lever shifted from D or R:

- When shifted from D, the reverse selector engages with the third shaft 6th gear and the reverse selector hub, and the 6th gear engages with the third shaft.
- When shifted from R, the reverse selector engages with the third shaft reverse gear and the reverse selector hub, and the reverse gear engages with the third shaft.

NOTE: This illustration shows the SH-AWD transfer assembly that is not available on all models.

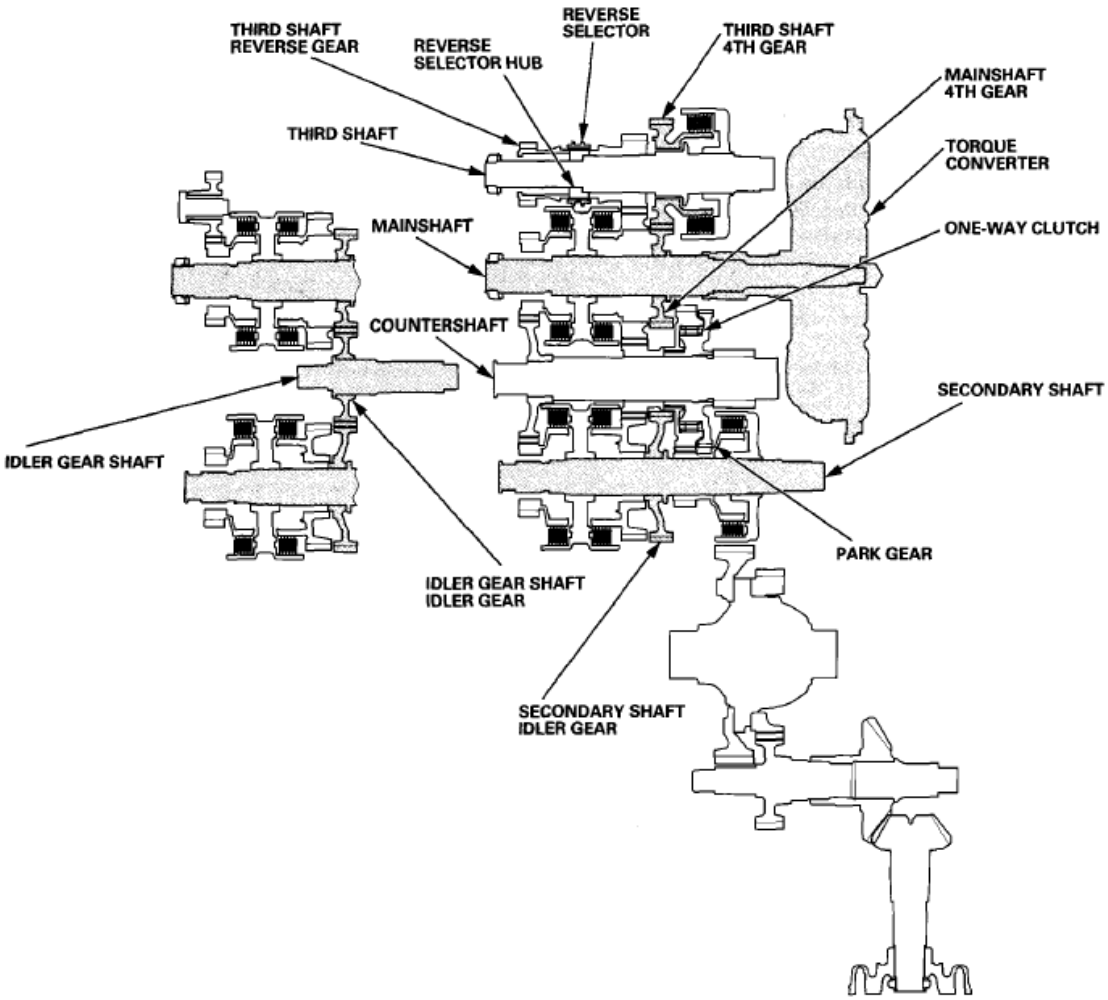


Fig. 17: Automatic Transmission Power Flow Diagram (N Position)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

D Position and S Position with Automatic Shift Mode

In D, the optimum gear is automatically selected from 1st, 2nd, 3rd, 4th, 5th, and 6th gears; and 1st, 2nd, 3rd, 4th, and 5th gears in S with automatic shift mode according to conditions between the accelerator pedal command or position (engine loading) and the vehicle speed.

In 1st gear

- Hydraulic pressure is applied to the 1st clutch, then the 1st clutch engages the secondary shaft 1st gear with the secondary shaft.
- Mainshaft rotation is transmitted to the mainshaft 4th gear splined with the mainshaft.
- The mainshaft 4th gear drives the secondary shaft idler gear splined with the secondary shaft and the secondary shaft via the idler gear shaft idler gear.
- The secondary shaft and the secondary shaft 1st gear engaged by the 1st clutch, and the secondary shaft 1st gear drives the countershaft 1st gear.
- The countershaft 1st gear drives the park gear splined with the countershaft via the one-way clutch.
- With SH-AWD: Power is transmitted from the countershaft to the final drive gear, which in turn drives the final driven gear and the transfer drive gear.
- Power is transmitted to the final drive gear, which in turn drives the final driven gear and the differential.
- With SH-AWD: As the final driven gear turns the differential assembly, power is transmitted through the transfer drive gear to the transfer output shaft that drives the transfer hypoid drive gear/shaft and the transfer output shaft (hypoid gear).

NOTE: This illustration shows the SH-AWD transfer assembly that is not available on all models.

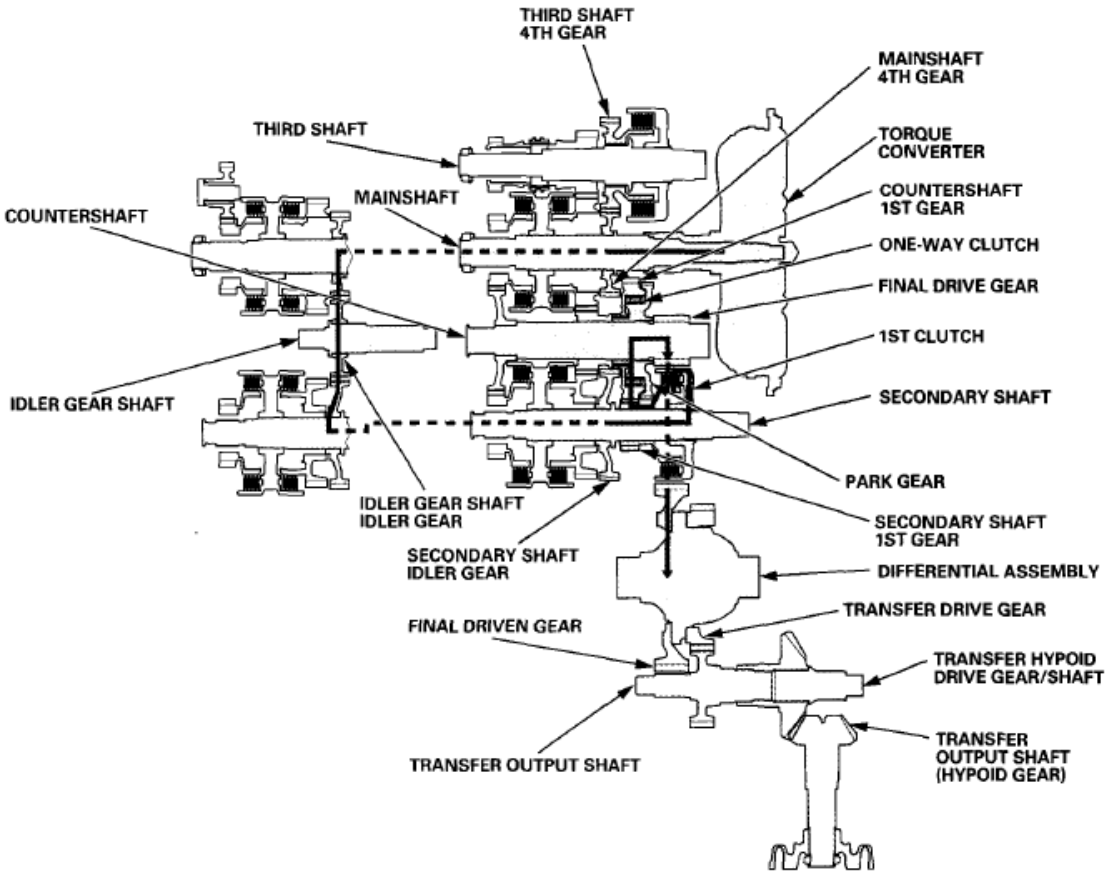


Fig. 18: Automatic Transmission Power Flow Diagram (In D And S Position And 1st Gear)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

In 2nd gear

- Hydraulic pressure is applied to the 2nd clutch, then the 2nd clutch engages the secondary shaft 2nd gear with the secondary shaft.
- Mainshaft rotation is transmitted to the mainshaft 4th gear splined with the mainshaft.
- The mainshaft 4th gear drives the secondary shaft idler gear splined to the secondary shaft and the secondary shaft via the idler gear shaft idler gear.
- The secondary shaft and the secondary shaft 2nd gear engaged by the 2nd clutch, and the secondary shaft 2nd gear drives the countershaft 2nd gear splined with the countershaft and the countershaft.
- With SH-AWD: Power is transmitted from the countershaft to the final drive gear, which in turn drives the final driven gear and the transfer drive gear.
- Power is transmitted to the final drive gear, which in turn drives the final driven gear and the differential.
- With SH-AWD: As the final driven gear turns the differential assembly, power is transmitted through the transfer drive gear to the transfer output shaft that drives the transfer hypoid drive gear/shaft and the transfer output shaft (hypoid gear).
- Hydraulic pressure is also applied to the 1st clutch, but since the rotation speed of the countershaft exceeds that of 1st gear, power output from 1st gear is cut off at the one-way clutch.

NOTE: This illustration shows the SH-AWD transfer assembly that is not available on all models.

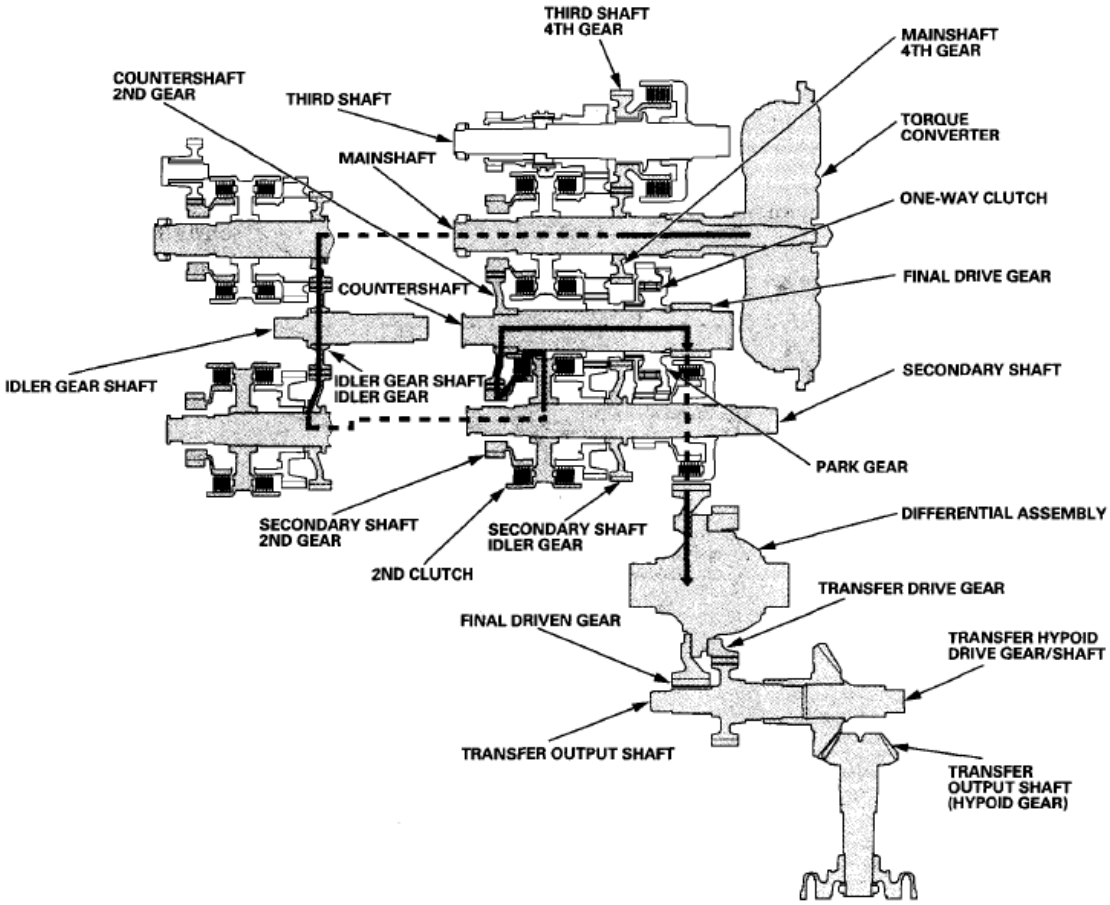


Fig. 19: Automatic Transmission Power Flow Diagram (In D And S Position And 2nd Gear)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

In 3rd gear

- Hydraulic pressure is applied to the 3rd clutch, then the 3rd clutch engages the mainshaft 3rd gear with the mainshaft.
- Mainshaft rotation is transmitted from the mainshaft 3rd gear engaged with the 3rd clutch to the countershaft 2nd gear splined with the countershaft.
- With SH-AWD: Power is transmitted from the countershaft to the final drive gear, which in turn drives the final driven gear and the transfer drive gear.
- Power is transmitted to the final drive gear, which in turn drives the final driven gear and the differential.
- With SH-AWD: As the final driven gear turns the differential assembly, power is transmitted through the transfer drive gear to the transfer output shaft that drives the transfer hypoid drive gear/shaft and the transfer output shaft (hypoid gear).
- Hydraulic pressure is also applied to the 1st clutch, but since the rotation speed of the countershaft exceeds that of 1st gear, power output from 1st gear is cut off at the one-way clutch.

NOTE: This illustration shows the SH-AWD transfer assembly that is not available on all models.

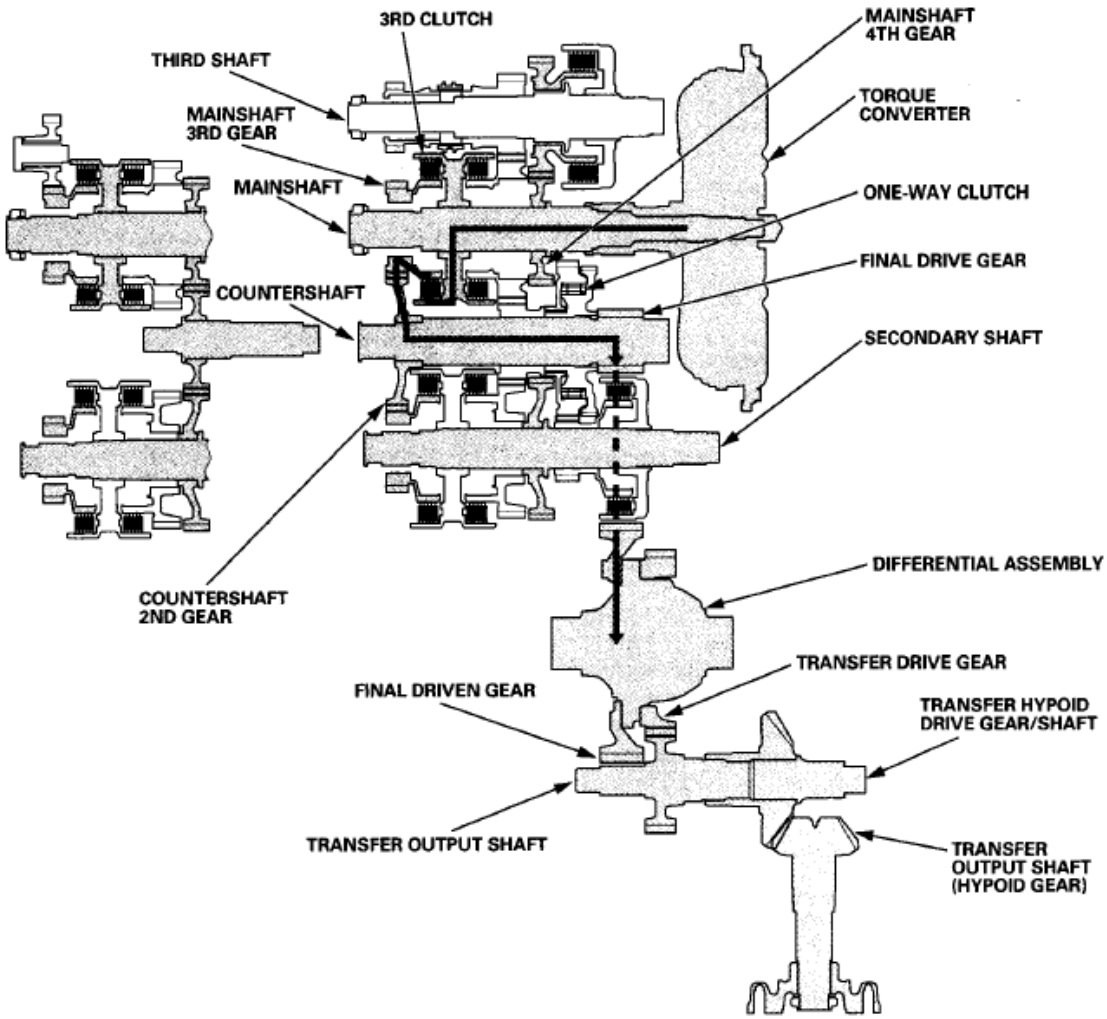


Fig. 20: Automatic Transmission Power Flow Diagram (In D And S Position And 3rd Gear)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

In 4th gear

- Hydraulic pressure is applied to the D inhibitor valve to engage the reverse selector with the third shaft 6th gear while the shift lever is in the forward range (D and S).
- Hydraulic pressure is applied to the 4th clutch, then the 4th clutch engages the third shaft 4th gear with the third shaft.
- Mainshaft rotation is transmitted to the third shaft 4th gear via the mainshaft 4th gear splined with the mainshaft.
- Rotation of the third shaft 4th gear is transmitted to the third shaft 6th gear from the reverse selector hub via the reverse selector.
- The third shaft 6th gear drives the countershaft 5th gear splined with the countershaft and the countershaft

via the mainshaft 6th gear.

- With SH-AWD: Power is transmitted from the countershaft to the final drive gear, which in turn drives the final driven gear and the transfer drive gear.
- Power is transmitted to the final drive gear, which in turn drives the final driven gear and the differential.
- With SH-AWD: As the final driven gear turns the differential assembly, power is transmitted through the transfer drive gear to the transfer output shaft that drives the transfer hypoid drive gear/shaft and the transfer output shaft (hypoid gear).
- Hydraulic pressure is also applied to the 1st clutch, but since the rotation speed of the countershaft exceeds that of 1st gear, power output from 1st gear is cut off at the one-way clutch.

NOTE: This illustration shows the SH-AWD transfer assembly that is not available on all models.

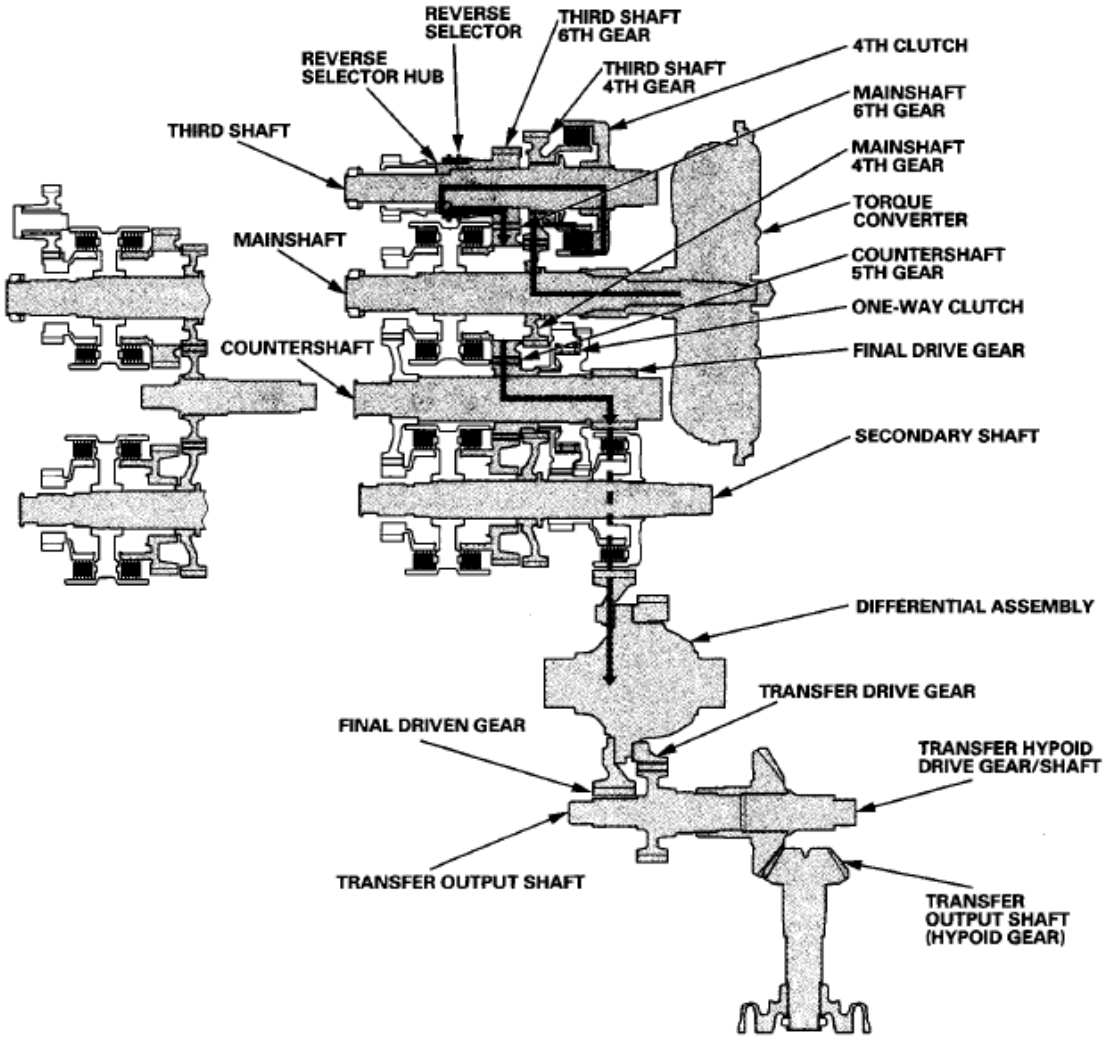


Fig. 21: Automatic Transmission Power Flow Diagram (In D And S Position And 4th Gear)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

In 5th gear

- Hydraulic pressure is applied to the 5th clutch, then the 5th clutch engages the secondary shaft 5th gear with the secondary shaft.
- Mainshaft rotation is transmitted to the mainshaft 4th gear splined with the mainshaft.
- The mainshaft 4th gear drives the secondary shaft idler gear splined with the secondary shaft and the secondary shaft via the idler gear shaft idler gear.
- The secondary shaft and the secondary shaft 5th gear engaged by the 5th clutch, and the secondary shaft 5th gear drives the countershaft 5th gear splined with the countershaft and the countershaft.
- With SH-AWD: Power is transmitted from the countershaft to the final drive gear, which in turn drives the final driven gear and the transfer drive gear.
- Power is transmitted to the final drive gear, which in turn drives the final driven gear and the differential.
- With SH-AWD: As the final driven gear turns the differential assembly, power is transmitted through the transfer drive gear to the transfer output shaft that drives the transfer hypoid drive gear/shaft and the transfer output shaft (hypoid gear).
- Hydraulic pressure is also applied to the 1st clutch, but since the rotation speed of the countershaft exceeds that of 1st gear, power output from 1st gear is cut off at the one-way clutch.

NOTE: This illustration shows the SH-AWD transfer assembly that is not available on all models.

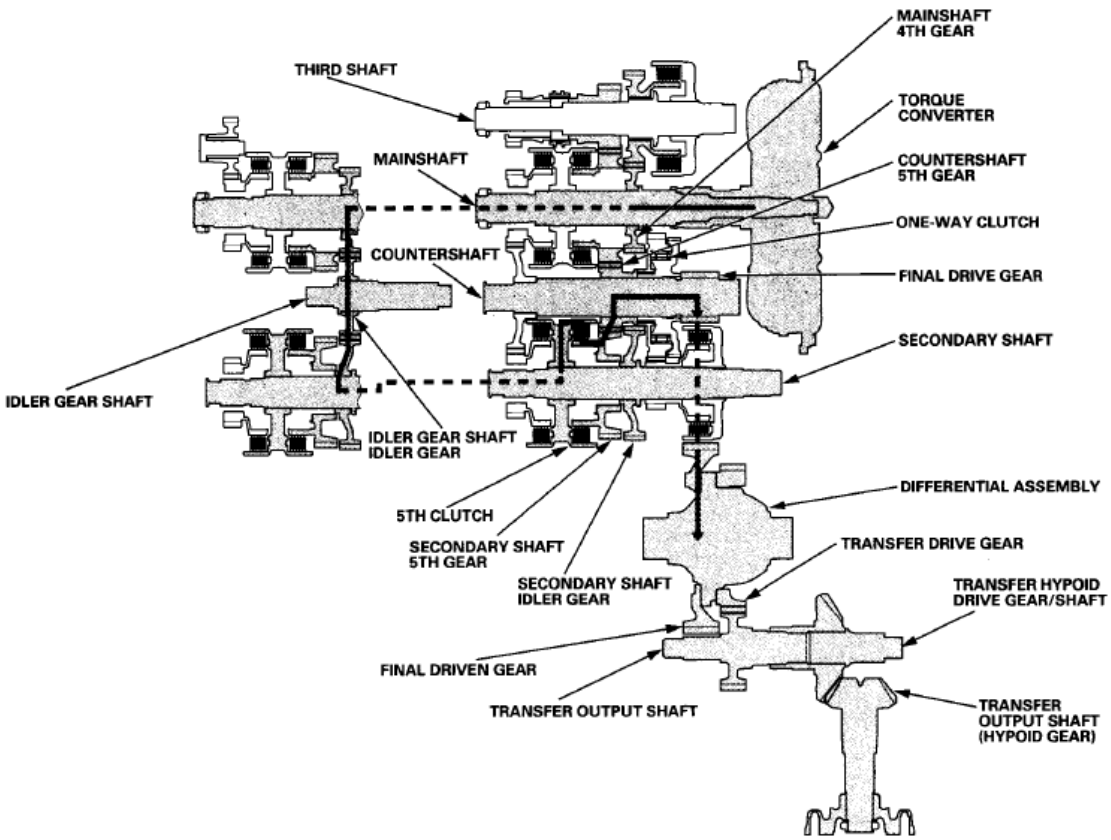


Fig. 22: Automatic Transmission Power Flow Diagram (In D And S Position And 5th Gear)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

In 6th gear

- Hydraulic pressure is applied to the 6th clutch, then the 6th clutch engages the mainshaft 6th gear with the mainshaft.
- Mainshaft rotation is transmitted from the mainshaft 6th gear engaged with the 6th clutch to the countershaft 5th gear splined with the countershaft.
- With SH-AWD: Power is transmitted from the countershaft to the final drive gear, which in turn drives the final driven gear and the transfer drive gear.
- Power is transmitted to the final drive gear, which in turn drives the final driven gear and the differential.
- With SH-AWD: As the final driven gear turns the differential assembly, power is transmitted through the transfer drive gear to the transfer output shaft that drives the transfer hypoid drive gear/shaft and the transfer output shaft (hypoid gear).
- Hydraulic pressure is also applied to the 1st clutch, but since the rotation speed of the countershaft exceeds that of 1st gear, power output from 1st gear is cut off at the one-way clutch.

NOTE: This illustration shows the SH-AWD transfer assembly that is not available on all models.

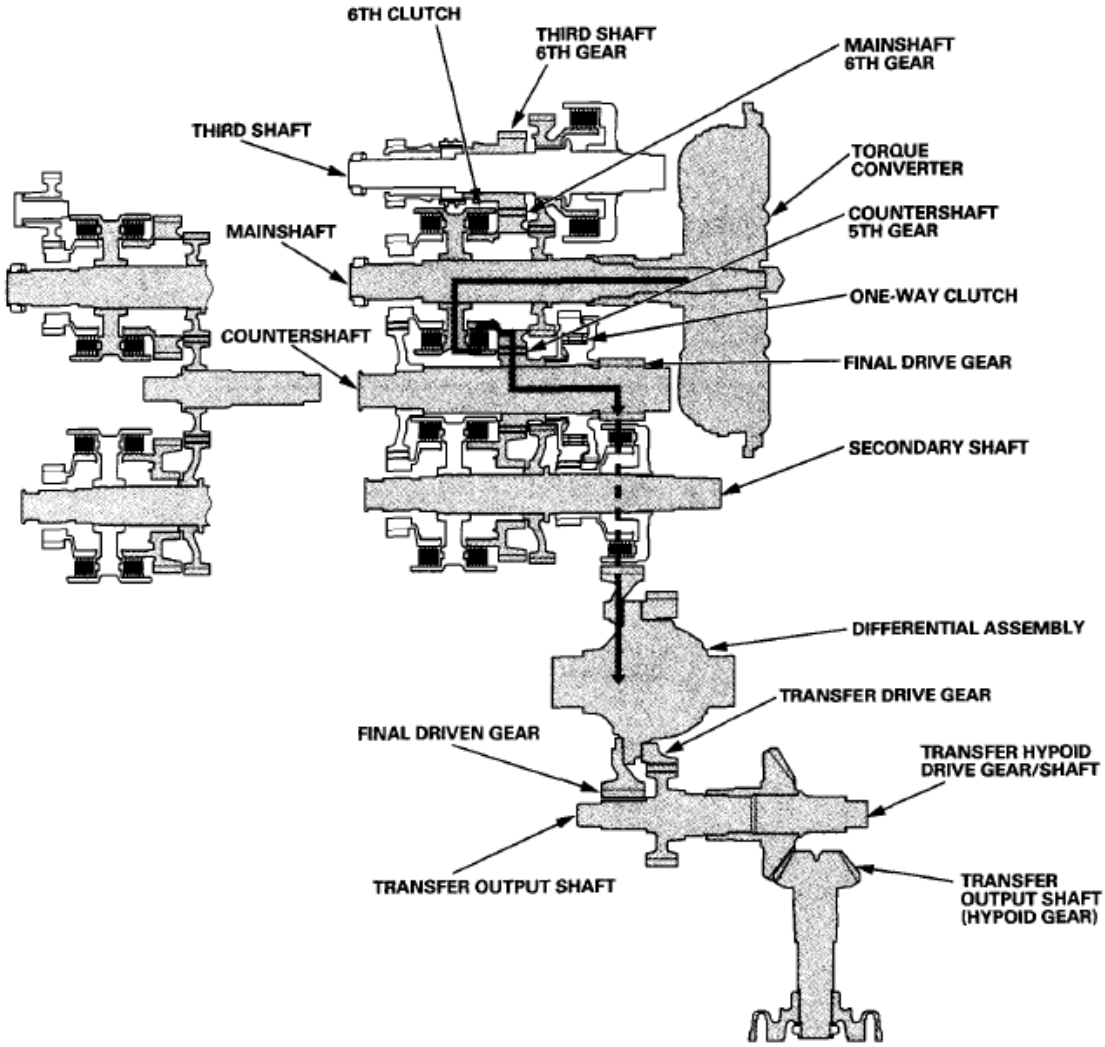


Fig. 23: Automatic Transmission Power Flow Diagram (In D And S Position And 6th Gear)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

R Position

- Hydraulic pressure is applied to the D inhibitor valve to engage the reverse selector with the third shaft reverse gear while the shift lever is in R.
- Hydraulic pressure is applied to the 4th clutch, then the 4th clutch engages the third shaft 4th gear with the third shaft.
- Mainshaft rotation is transmitted to the third shaft 4th gear via the mainshaft 4th gear splined with the mainshaft.
- Rotation of the third shaft 4th gear is transmitted from the reverse selector hub that rotates with the third shaft to the third shaft reverse gear, via the reverse selector.
- The third shaft reverse gear drives the mainshaft 3rd gear via the reverse idler gear.
- The mainshaft 3rd gear drives the countershaft 2nd gear splined with the countershaft and the countershaft.

- The rotation direction of the countershaft is changed by the reverse idler gear.
- With SH-AWD: Power is transmitted from the countershaft to the final drive gear, which in turn drives the final driven gear and the transfer drive gear.
- Power is transmitted to the final drive gear, which in turn drives the final driven gear and the differential.
- With SH-AWD: As the final driven gear turns the differential assembly, power is transmitted through the transfer drive gear to the transfer output shaft that drives the transfer hypoid drive gear/shaft and the transfer output shaft (hypoid gear).

NOTE: This illustration shows the SH-AWD transfer assembly that is not available on all models.

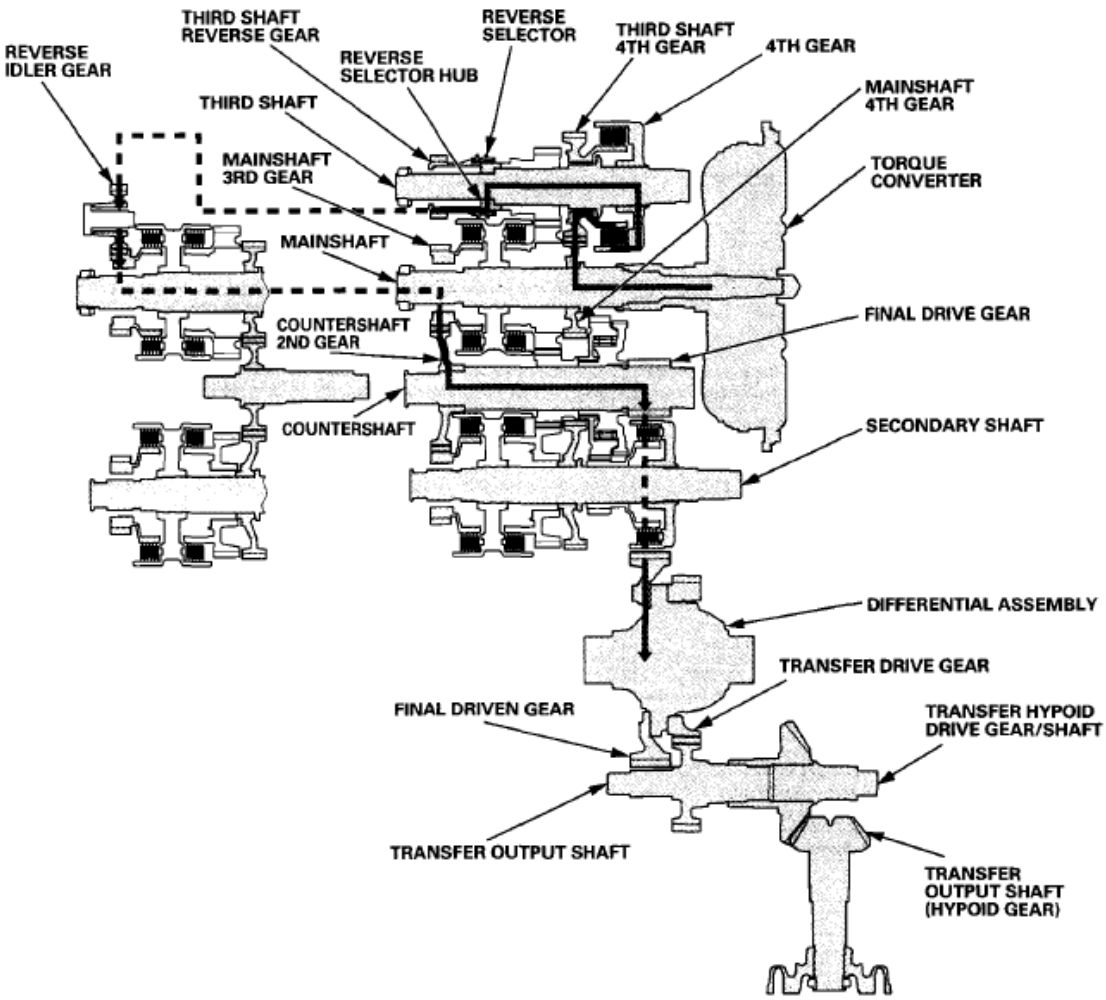


Fig. 24: Automatic Transmission Power Flow Diagram (In R Position)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

ELECTRONIC CONTROL SYSTEM

Electronic Control

The electronic control system consists of the PCM, sensors, and eight solenoid valves.

Functional Diagram

The PCM receives input signals from the sensors, switches, and other control units, processes data, and outputs signals for the engine control system and the A/T control system. The A/T control system includes shift control, clutch pressure control, lock-up control, and A/T system hydraulic control. The PCM switches the shift solenoid valves and the A/T clutch pressure control solenoid valves ON and OFF in a specific sequence to control gear selection and torque converter clutch lock-up. It also controls the appropriate operating hydraulic pressure to the automatic transmission.

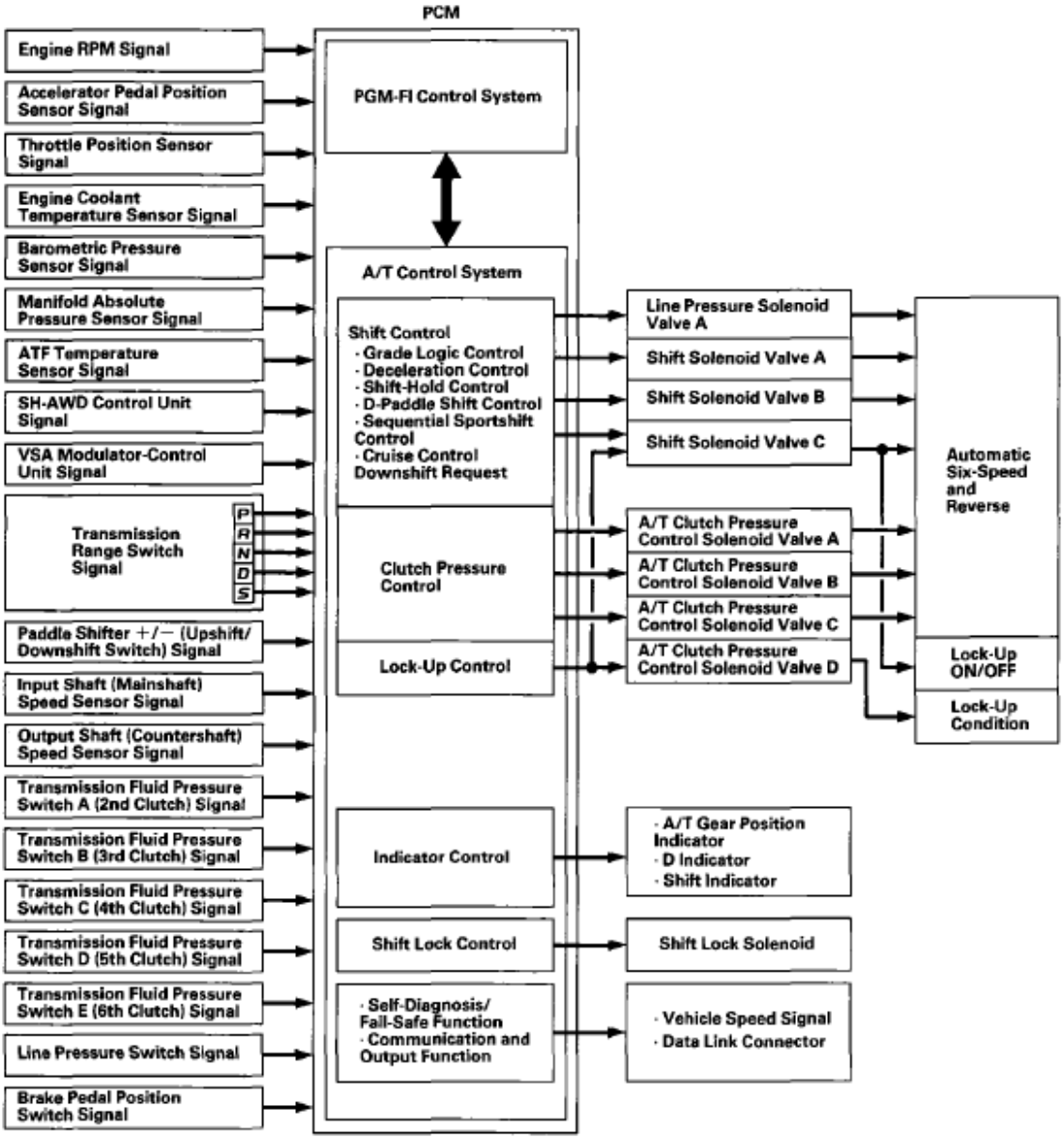


Fig. 25: Electronic Control System - Functional Diagram
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Shift Control

The PCM instantly determines which gear should be selected by various inputs from sensors and switches, and it actuates the solenoid valves to control gear selection.

Shift solenoid valve:

Shift solenoid valves A, B, and C switch to the hydraulic pressure supply circuit to the clutch. Shift solenoid valves A, B, and C are normally closed (ON-OPEN/OFF-CLOSE); the normally closed solenoid valve port opens to allow ATF to pass through when the PCM turns it ON, and the port closes, blocking fluid flow when turned OFF.

A/T clutch pressure control solenoid valve:

A/T clutch pressure control solenoid valves A, B, C, and D apply hydraulic pressure to each clutch via the hydraulic valve body circuit. A/T clutch pressure control solenoid valve D supplies hydraulic pressure to the torque converter clutch. A/T clutch pressure control solenoid valves A, B, C, and D are normally closed (ON-OPEN/OFF-CLOSE); the normally closed solenoid valve port opens to allow ATF to pass through when the PCM turns it ON, and the port closes, blocking fluid flow when turned OFF. These solenoid valves are controlled by current and are duty controlled depending on the vehicle speed and the throttle position.

Line pressure solenoid valve:

Line pressure solenoid valve A controls the hydraulic pressure in the hydraulic control system valve bodies of the automatic transmission. Line pressure solenoid valve A is normally closed (ON-OPEN/OFF-CLOSE); the normally closed solenoid valve port opens to allow ATF to pass through when the PCM turns it ON, and the port closes, blocking fluid flow when turned OFF.

The combination of driving signals to solenoid valves for each gear is in the following table.

Shift Lever Position	P	R	N	D, S					
				1st	2nd	3rd	4th	5th	6th
Shift solenoid valve A	ON	OFF	ON	ON	ON	OFF	OFF	OFF	OFF
Shift solenoid valve B	OFF	OFF	OFF	ON	ON	ON	ON or OFF	ON or OFF	OFF
Shift solenoid valve C	ON	ON	OFF	ON or OFF	ON or OFF	ON or OFF	ON or OFF	ON or OFF	ON or OFF
Line pressure solenoid valve A	ON or OFF	ON or OFF	ON or OFF	ON or OFF	ON or OFF	ON or OFF	ON or OFF	ON or OFF	ON or OFF
A/T clutch pressure control solenoid valve A	OFF	OFF	OFF	OFF	ON	OFF	OFF	ON	OFF
A/T clutch pressure control solenoid valve B	OFF	OFF	OFF	OFF	OFF	ON	OFF	OFF	ON
A/T clutch pressure control solenoid valve C	OFF	OFF	OFF	OFF	OFF	OFF	ON	OFF	OFF
A/T clutch pressure control	OFF	ON	OFF	ON or	ON or	ON or	ON or	ON or	ON or

solenoid valve D				OFF	OFF	OFF	OFF	OFF	OFF

Shift Control - Grade Logic Control

The grade logic control system is used to control shifting in D, and in S with automatic shift mode. The PCM compares actual driving conditions with programmed driving conditions, based on the input signal from the throttle position sensor, the engine coolant temperature sensor, the barometric pressure sensor, the brake pedal position switch, and the transmission range switch to switch shifting control from the normal control to the ascending or descending control when the PCM determines that the vehicle is ascending a slope or being driven down a slope.

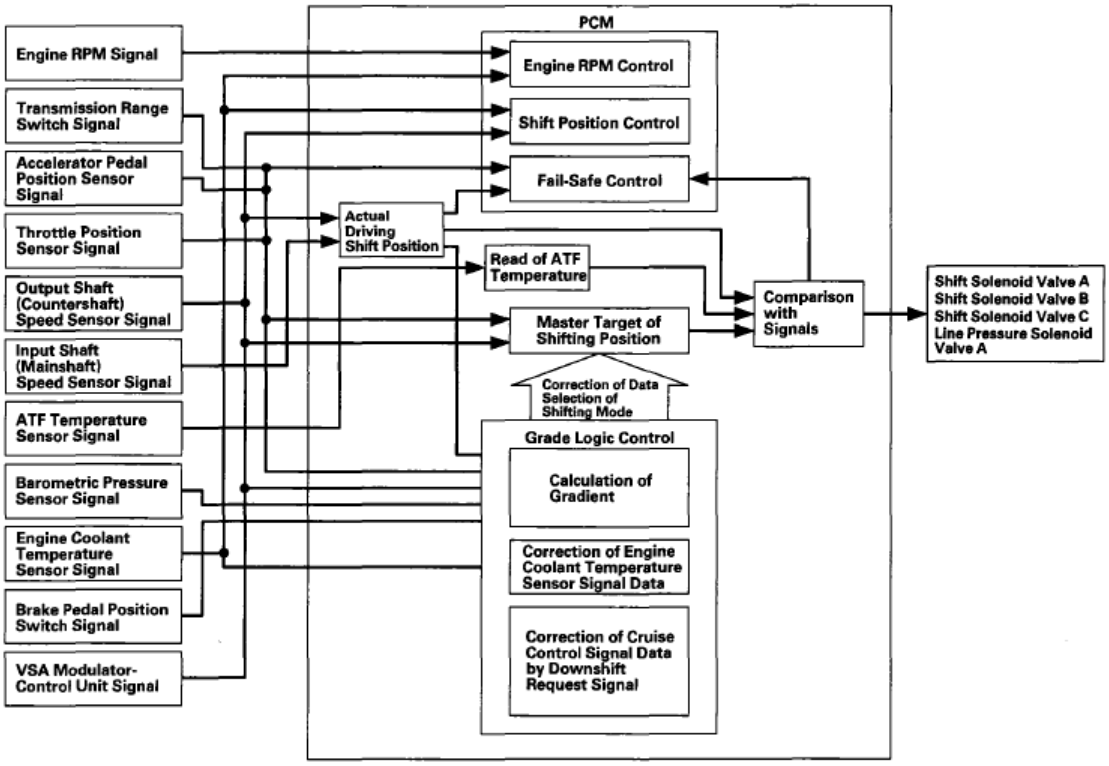


Fig. 26: Shift Control - Grade Logic Control Flow Diagram
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Grade Logic Control: Ascending Control

When the PCM determines that the vehicle is climbing a hill in D and in S with automatic shift mode, the system extends the engagement area of 2nd gear, 3rd gear, 4th gear, and 5th gear to prevent the transmission from frequently shifting between 2nd and 3rd gears, between 3rd and 4th gears, between 4th and 5th gears, and between 5th and 6th gears, so the vehicle can run smoothly and have more power when needed.

NOTE: Shift commands stored in the PCM between 2nd and 3rd gears, between 3rd and 4th gears, between 4th and 5th gears, and between 5th and 6th gears, enable the PCM to automatically select the most suitable gear based on the steepness of the grade.

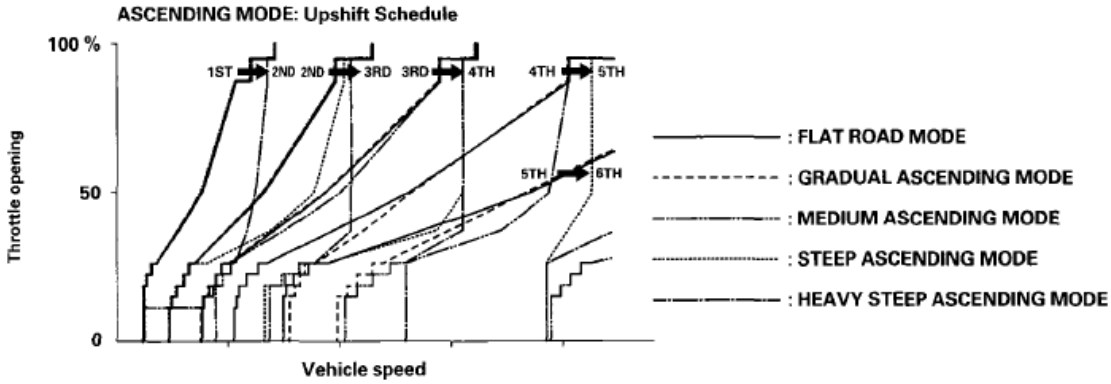


Fig. 27: Grade Logic Control Ascending Control Graph
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Grade Logic Control: Descending Control

When the PCM determines that the vehicle is going down a hill in D, and in S with automatic shift mode, the upshift speed from 5th to 6th gear, from 4th to 5th gear, from 3rd to 4th gear, and from 2nd to 3rd (when the throttle is closed) becomes higher than the set speed for flat road driving to extend the 5th gear, 4th gear, 3rd gear, and 2nd gear driving areas. This, in combination with engine braking from the deceleration lock-up, achieves smooth driving when the vehicle is descending. There are descending modes with different 5th gear, 4th gear, 3rd gear, and 2nd gear driving areas based on the steepness of the grade stored in the PCM. When the vehicle is in 6th, 5th, or 4th gear, and the vehicle is decelerating while applying the brakes on a steep hill, the transmission downshifts to a lower gear. When you accelerate, the transmission then returns to a higher gear from the current position.

Deceleration Control

When the vehicle goes around a corner and needs to decelerate first and then accelerate, the PCM goes into the deceleration control mode to reduce the number of times the transmission shifts. When the vehicle is decelerating from speeds above 27 mph (43 km/h), the PCM anticipates upcoming acceleration, and shifts the transmission from 4th to 3rd earlier than normal.

Shift-Hold Control

Shift-hold control maintains transmission gear position during cornering to avoid frequently shifting. When the vehicle is cornering, the PCM extends the engagement of 2nd, 3rd, 4th, and 5th to prevent the transmission from frequently shifting between 3rd, 4th, 5th, and 6th gears. When the PCM determines that the vehicle is cornering by the accelerator pedal position, the vehicle speed, and the lateral G-force estimate from the RPM difference between each wheel, it delays the upshift from 3rd to 4th, 4th to 5th, and 5th to 6th gears, which improves the engine output and the engine braking. The transmission resumes the normal upshift pattern after the PCM determines that normal driving has resumed.

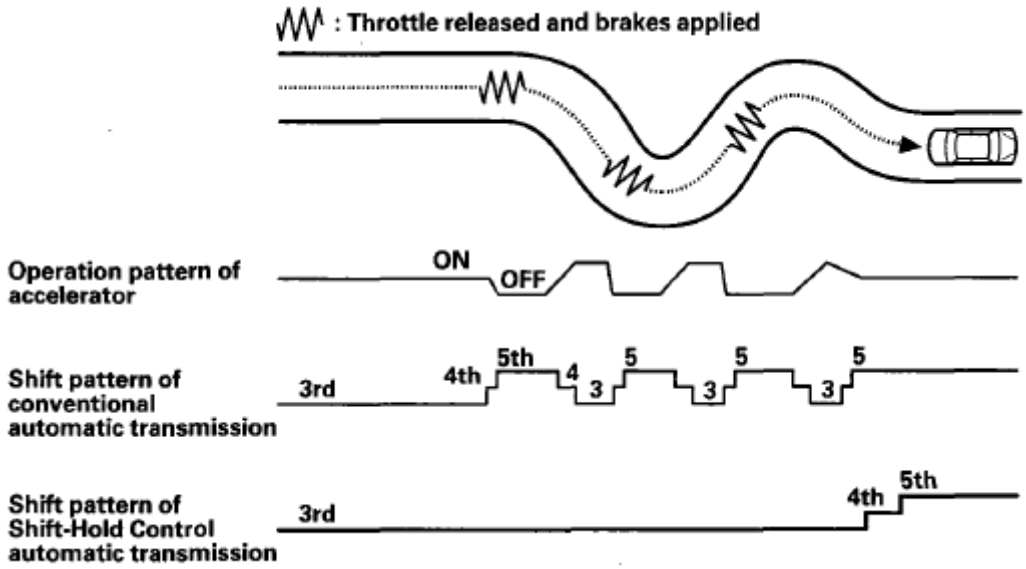


Fig. 28: Deceleration And Shift-Hold Control Pattern
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Shift Control - Manual Shift Mode

The transmission is equipped with a D-paddle shift mode in D, and with a sequential sportshift mode in S.

Either mode can be activated by pressing the paddle shifter + (upshift switch) or the paddle shifter - (downshift switch) while driving with the shift lever is in D and S.

D-Paddle Shift Mode

To engage the D-paddle shift mode, press either of the steering wheel mounted paddle shifters while driving in D. In this mode, the transmission can downshift by pressing the paddle shifter -, or upshift by pressing the paddle shifter +. Each time the transmission is shifted using the paddles, the shift indicator in the gauge control module displays the current position. The display turns off when the transmission upshifts or downshifts automatically while coasting. The transmission stays in 6th gear if the paddle shifter + is pressed when driving in 6th gear, and the shift indicator displays "6" for 2 seconds, then goes off. The transmission stays in 1st gear if the paddle shifter - is pressed when driving in 1st gear, and the shift indicator displays "1" for 2 seconds, then goes off. The transmission stays in the current gear and does not upshift to the next higher gear if the paddle shifter + is pressed while driving below the minimum allowable speed, and the shift indicator blinks the number of the next higher gear several times, then returns to the number of the current gear.

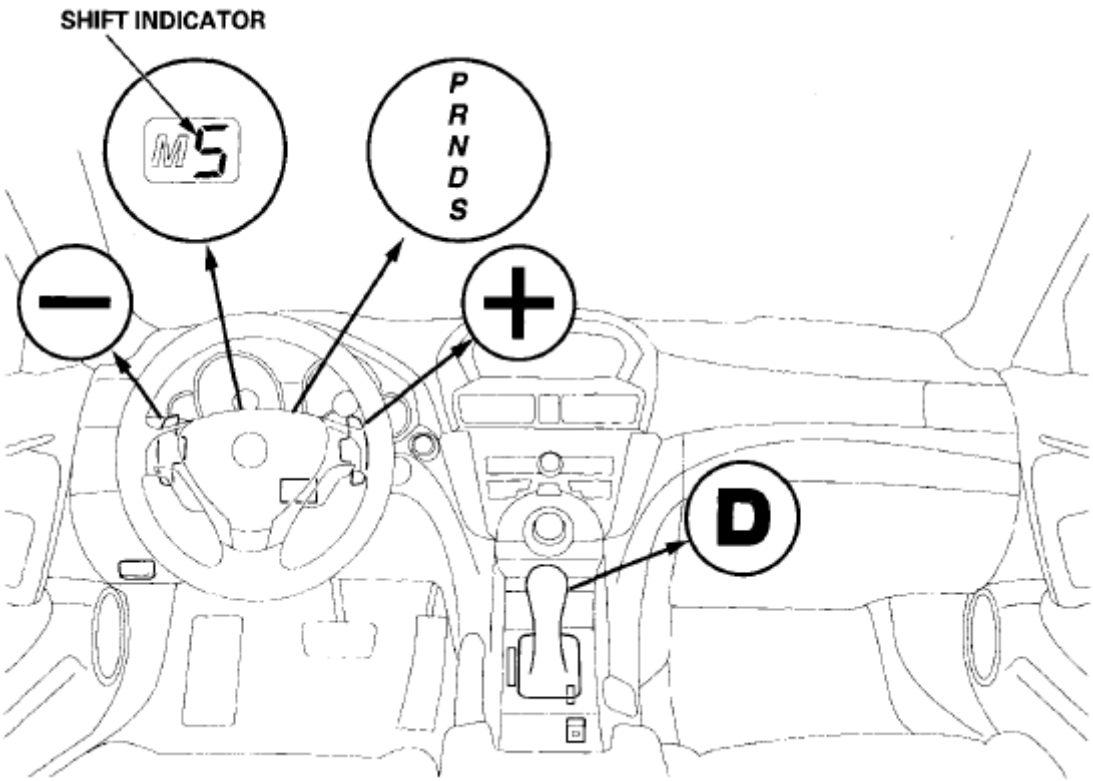


Fig. 29: Identifying Manual Shift Mode And D-Paddle Shift Mode
Courtesy of AMERICAN HONDA MOTOR CO., INC.

S Position Automatic Shift Mode and Sequential Sportshift Mode

The S position has two shifting modes; the automatic shift mode and the sequential sportshift mode. In the S position automatic shift mode, the transmission upshifts and downshifts automatically from 1st through 5th gear, if the paddle shifters are not pressed. When the paddle shifter + (upshift switch) or the paddle shifter - (downshift switch) is pressed, the automatic shift mode is canceled and the sequential sportshift mode comes into operation. The shift indicator displays the number of the selected gear. In the sequential sportshift mode, the driver can shift up and down manually from 1st through 6th gear by using the paddle shifters, much like a manual transmission. The paddle shifters are installed on the back of the steering wheel, and the driver can shift gears by pressing the paddle shifters without taking either hand off the steering wheel. In the sequential sportshift mode, the transmission must be shifted up and down by pressing the paddle shifters.

However, if the vehicle is coasting at a speed that would cause the engine to over-rev by downshifting, the transmission will not shift when the paddle shifter - is pressed. The shift indicator blinks the number of the selected gear position several times, then returns to the current gear. If the vehicle speed reaches an appropriate speed while the shift indicator is blinking, the transmission downshifts and the shift indicator displays the selected gear. Likewise, if the vehicle is driving below an appropriate speed to upshift when the paddle shifter + is pressed, the transmission will not shift. The shift indicator blinks the number of the selected gear several times, and then returns to the number of the current gear. If the vehicle speed reaches an appropriate upshift speed while the shift indicator is blinking, the transmission upshifts and the shift indicator displays the selected gear.

The sequential sportshift mode has automatic downshifting areas so the vehicle can run smoothly with more power to cope with upcoming acceleration. When coasting in 6th gear, 5th gear, or 4th gear, the transmission downshifts to the next lower gear if the vehicle slows down to the programmed speed, or by pressing the brake pedal. When the transmission decelerates to a stop, the transmission shifts to 1st gear automatically. The transmission can be shifted to 2nd gear by pressing the paddle shifter + while the vehicle is stopped, and the vehicle can start off in 2nd gear. The sequential sportshift mode is canceled when moving the shift lever to any position other than S.

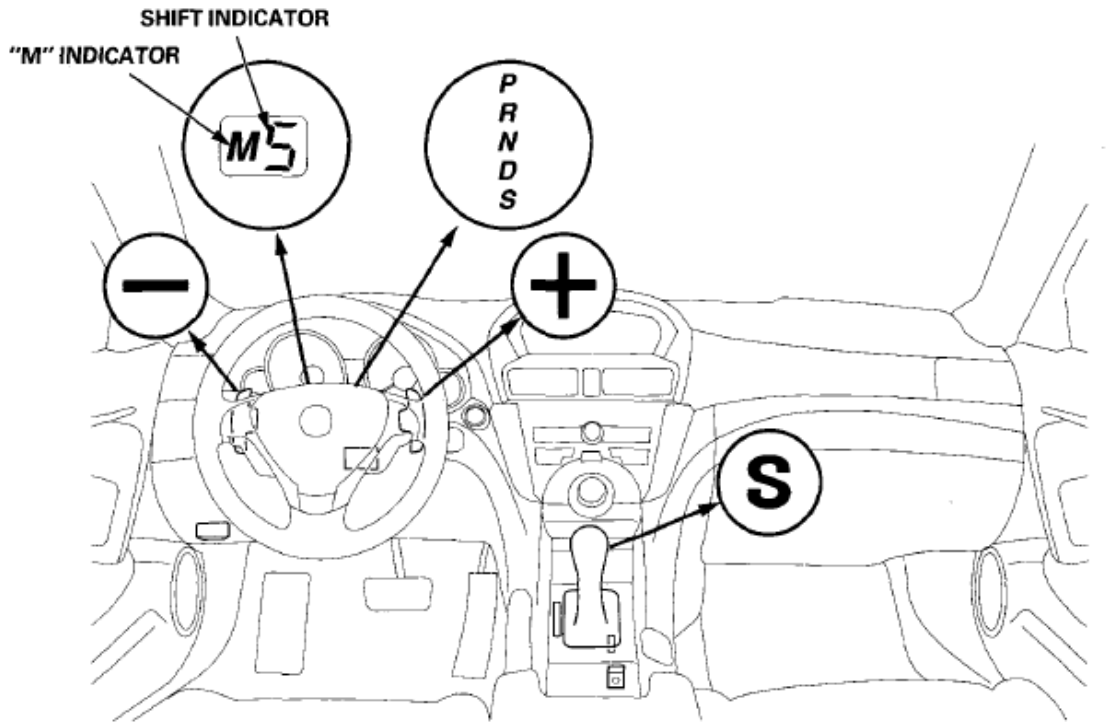


Fig. 30: Identifying S Position Automatic Shift Mode And Sequential Sport Shift Mode
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Clutch Pressure Control

The PCM actuates A/T clutch pressure control solenoid valves A, B, C, and D to control the clutch pressure. When shifting between gears or during lock-up, the clutch pressure is regulated by A/T clutch pressure control solenoid valves A, B, C, and D engages and disengages the clutch smoothly. The PCM receives input signals from the various sensors and switches, then processes the data, and outputs current to A/T clutch pressure control solenoid valves A, B, C, and D.

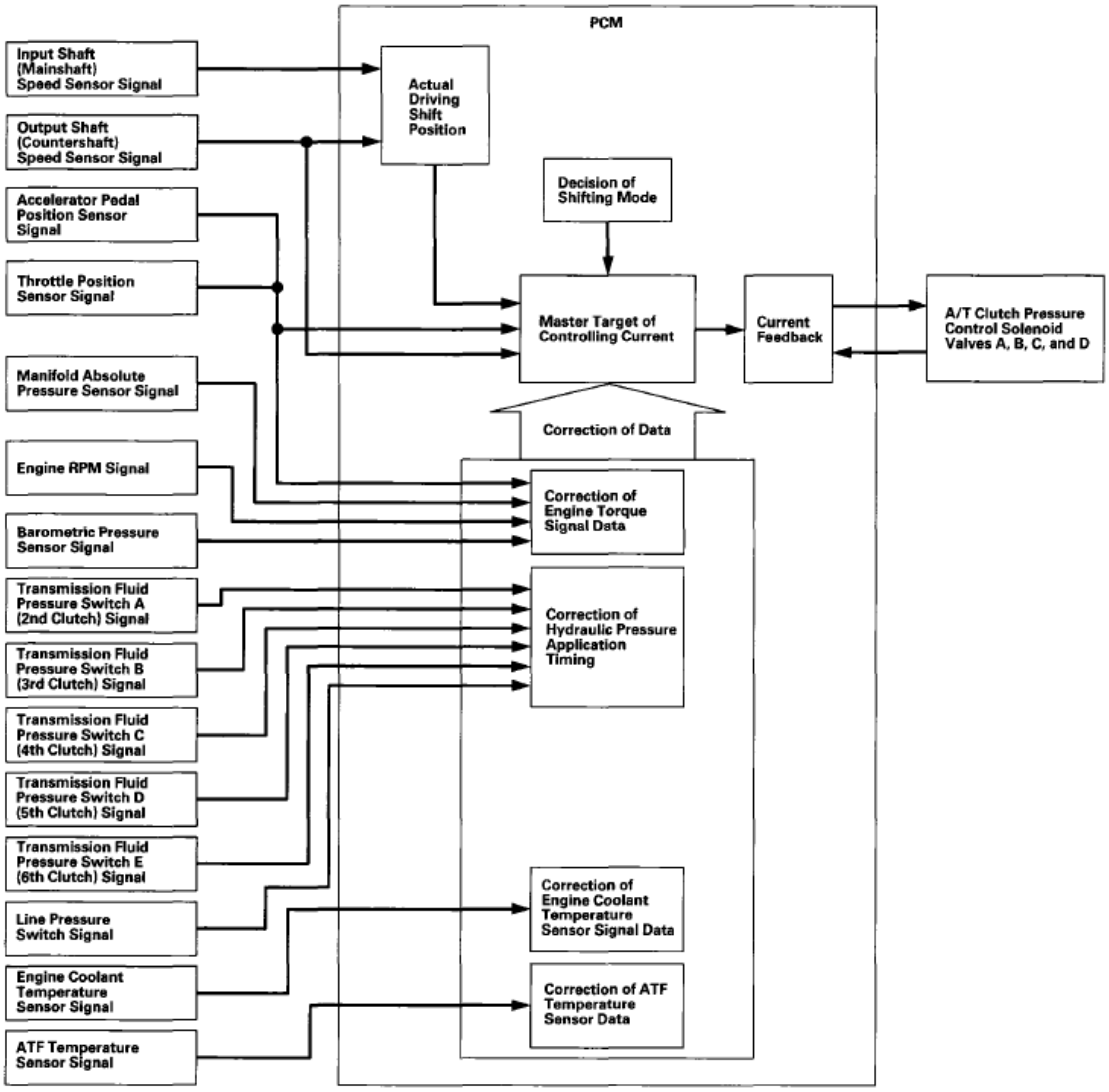


Fig. 31: Clutch Pressure Control Flow Diagram
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Lock-Up Control

Shift solenoid valve C and A/T clutch pressure control solenoid valve D control the hydraulic pressure to switch the lock-up shift valve and lock-up ON and OFF. When the PCM actuates shift solenoid valve C and A/T clutch pressure control solenoid valve D ON, lock-up starts. A/T clutch pressure control solenoid valve D applies and regulates hydraulic pressure to the lock-up control valve to control the amount of lock-up. The lock-up mechanism operates:

- D - accelerating in 1st, 2nd, 3rd, 4th, 5th, and 6th gears
- D - decelerating in 2nd, 3rd, 4th, 5th, and 6th gears
- S with automatic shift mode - accelerating in 1st, 2nd, 3rd, 4th, and 5th gears
- S with automatic shift mode - decelerating in 2nd, 3rd, 4th, and 5th gears
- S with sequential sportshift mode - accelerating in 1st, 2nd, 3rd, 4th, 5th, and 6th gears

- S with sequential sportshift mode - decelerating in 2nd, 3rd, 4th, 5th, and 6th gears

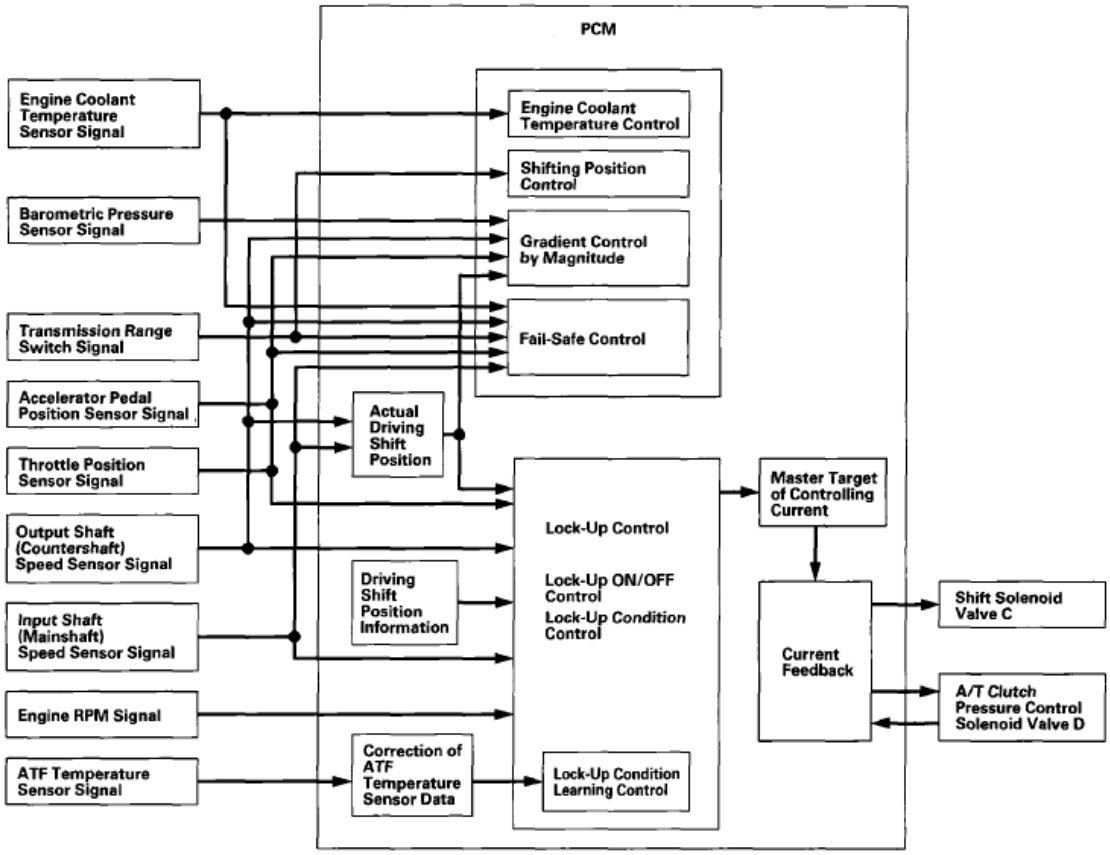


Fig. 32: Lock-Up Control Flow Diagram
Courtesy of AMERICAN HONDA MOTOR CO., INC.

PCM A/T Control System Electrical Connections

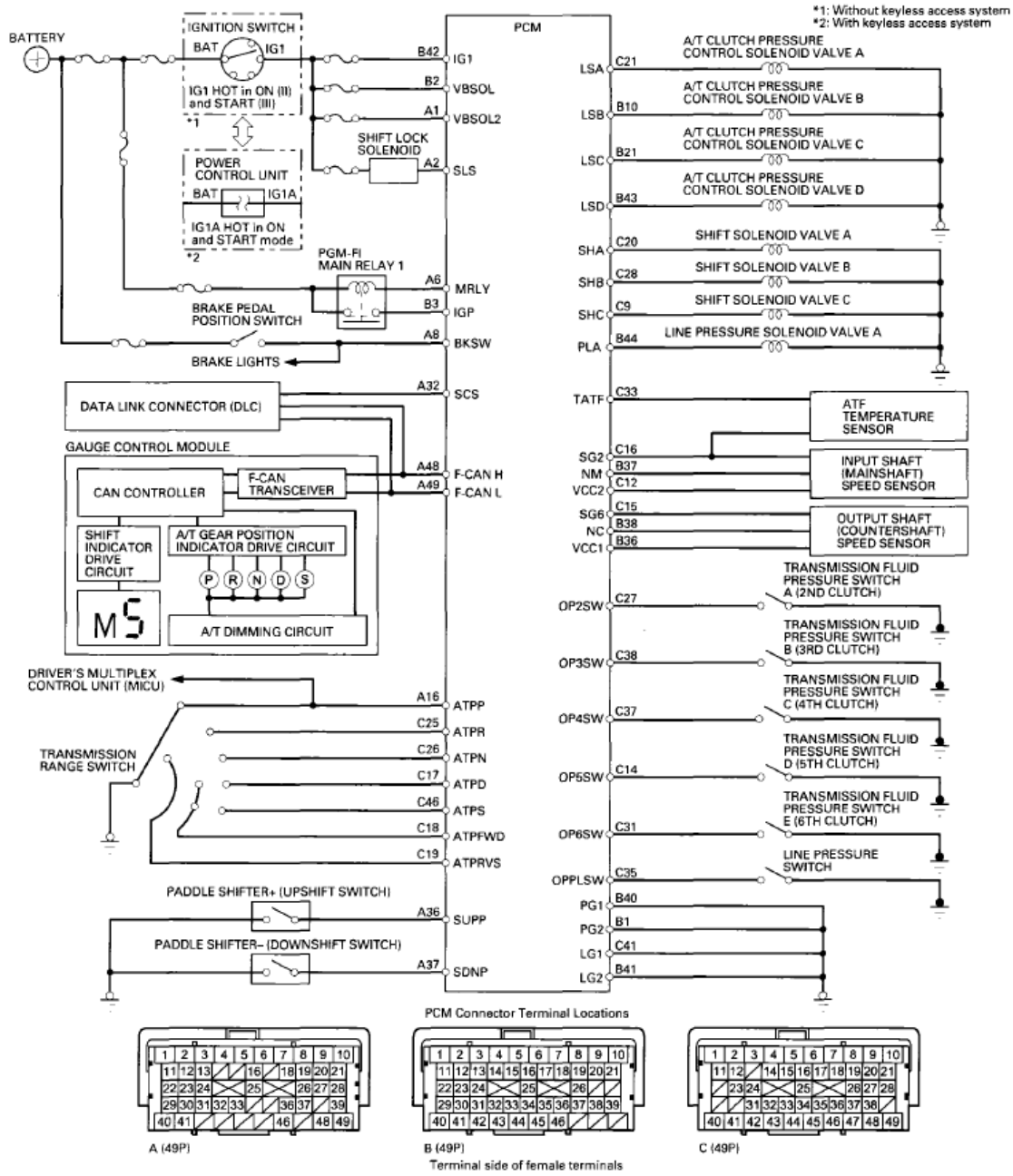


Fig. 33: PCM A/T Control System Electrical Connections Diagram
Courtesy of AMERICAN HONDA MOTOR CO., INC.

PCM A/T Control System Inputs and Outputs at PCM connector A ([]) (49P)

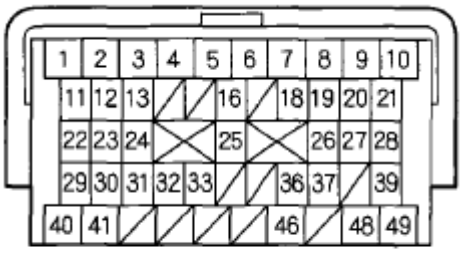


Fig. 34: Identifying PCM Connector A ([]) (49P) Connector End View
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Terminal number	Wire color	Terminal name	Description	Signal
A1	PUR	VBSOL2 (POWER SOURCE FOR SOLENOID VALVES)	Power source for solenoid valves	With ignition switch ON (II)/vehicle in ON mode: battery voltage
A2	PNK	SLS (SHIFT LOCK SOLENOID)	Drives shift lock solenoid	With ignition switch ON (II)/vehicle in ON mode, in P, brake pedal pressed, and accelerator pedal released: about 0 V
A6	RED	MRLY (PGM-FI MAIN RELAY 1)	Drives PGM-FI main relay 1	With ignition switch ON (II)/vehicle in ON mode: about 0 V With ignition switch LOCK (0)/vehicle in OFF mode: battery voltage
A8	LT GRN	BKSW (BRAKE PEDAL POSITION SWITCH)	Detects brake pedal position switch signal	With brake pedal released: about 0 V With brake pedal pressed: battery voltage
A16	RED	ATPP (TRANSMISSION RANGE SWITCH P POSITION)	Detects transmission range switch P position signal	In P: about 0 V In any position other than P: more than 5.0 V
A32	ORN	SCS (SERVICE CHECK SIGNAL)	Detects service check signal	With service check signal shorted with the HDS: about 0 V With service check signal opened: about 5.0 V
A36	BRN	SUPP (PADDLE SHIFTER + (UPSHIFT SWITCH))	Detects paddle shifter + (upshift switch) signal	With ignition switch ON (II)/vehicle in ON mode and paddle shifter + (upshift switch) pressed: about 0 V With ignition switch ON (II)/vehicle in ON mode and paddle shifter + (upshift switch) released: battery voltage
A37	PUR	SDNP (PADDLE SHIFTER - (DOWNSHIFT	Detects paddle shifter - (downshift	With ignition switch ON (II)/vehicle in ON mode and paddle shifter - (downshift switch) pressed: about 0 V With ignition switch ON (II)/vehicle in

		SWITCH))	switch) signal	ON mode and paddle shifter - (downshift switch) released: battery voltage
A48	WHT	F-CAN H (F-CAN COMMUNICATION SIGNAL HIGH)	Sends and receives communication signal	With ignition switch ON (II)/vehicle in ON mode: pulses
A49	BLK	F-CAN L (F-CAN COMMUNICATION SIGNAL LOW)	Sends and receives communication signal	With ignition switch ON (II)/vehicle in ON mode: pulses

PCM A/T Control System Inputs and Outputs at PCM connector B (delta) (49P)

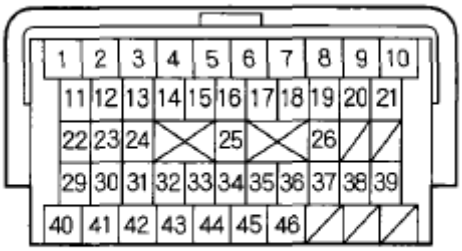
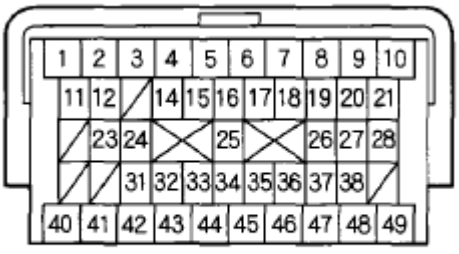


Fig. 35: Identifying PCM Connector B (delta) (49P) Connector End View
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Terminal number	Wire color	Terminal name	Description	Signal
B1	BLK	PG2 (POWER GROUND)	Ground circuit for PCM	Less than 0.2 V at all times
B2	BLK/YEL	VBSOL (POWER SOURCE FOR SOLENOID VALVES)	Power source for solenoid valves	With ignition switch ON (II)/vehicle in ON mode: battery voltage
B3	YEL/BLK	IGP (POWER SOURCE)	Power source for PCM	With ignition switch ON (II)/vehicle in ON mode: battery voltage
B10	BRN/WHT	LSB (A/T CLUTCH PRESSURE CONTROL SOLENOID VALVE B)	Drives A/T clutch pressure control solenoid valve B	With ignition switch ON (II)/vehicle in ON mode: current controlled
B21	GRN/RED	LSC (A/T CLUTCH PRESSURE CONTROL SOLENOID VALVE C)	Drives A/T clutch pressure control solenoid valve C	With ignition switch ON (II)/vehicle in ON mode: current controlled
B36	YEL/RED	VCC1 (SENSOR VOLTAGE)	Provides sensor reference voltage	With ignition switch ON (II)/vehicle in ON mode: about 5.0 V
		NM (INPUT SHAFT	Detects input shaft	With ignition switch ON (II)/vehicle in ON mode:

B37	RED	(MAINSHAFT) SPEED SENSOR)	(mainshaft) speed sensor signal	about 0 V or about 5.0 V With engine running in N: pulses
B38	BLU	NC (OUTPUT SHAFT (COUNTERSHAFT) SPEED SENSOR)	Detects output shaft (countershaft) speed sensor signal	With ignition switch ON (II)/vehicle in ON mode: about 0 V or about 5.0 V With driving: pulses
B40	BLK	PG1 (POWER GROUND)	Ground circuit for PCM	Less than 0.2 V at all times
B41	BRN/YEL	LG2 (LOGIC GROUND)	Ground circuit for PCM	Less than 0.2 V at all times
B42	BLK/YEL	IG1 (IGNITION SIGNAL)	Detects ignition signal	With ignition switch ON (II)/vehicle in ON mode: battery voltage
B43	BLK/WHT	LSD (A/T CLUTCH PRESSURE CONTROL SOLENOID VALVE D)	Drives A/T clutch pressure control solenoid valve D	With ignition switch ON (II)/vehicle in ON mode: current controlled
B44	YEL	PLA (LINE PRESSURE SOLENOID VALVE A)	Drives line pressure solenoid valve A	With engine running in 1st, or reverse gear: about 0 V With engine running in any gears other than 1st, or reverse: battery voltage

PCM A/T Control System Inputs and Outputs at PCM connector C (O) (49P)



Terminal side of female terminals

Fig. 36: Identifying PCM Connector C (O) (49P) Connector End View
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Terminal number	Wire color	Terminal name	Description	Signal
C9	GRN/WHT	SHC (SHIFT SOLENOID VALVE C)	Drives shift solenoid valve C	With engine running in N, D, and S during no lock-up condition: about 0 V With engine running in P, R, D, and S during lock-up condition: battery voltage
C12	YEL/BLU	VCC2 (SENSOR VOLTAGE)	Provides sensor reference voltage	With ignition switch ON (II)/vehicle in ON mode: about

				5.0 V
C14	WHT/GRN	OP5SW (TRANSMISSION FLUID PRESSURE SWITCH D (5TH CLUTCH))	Detects transmission fluid pressure switch D (5th clutch) signal	With engine running: • Without 5th clutch pressure: battery voltage • With 5th clutch pressure: about 0 V
C15	GRN/RED	SG6 (SENSOR GROUND)	Sensor ground	Less than 0.2 V at all times
C16	GRN/YEL	SG2 (SENSOR GROUND)	Sensor ground	Less than 0.2 V at all times
C17	YEL/GRN	ATPD (TRANSMISSION RANGE SWITCH D POSITION)	Detects transmission range switch D position signal	In D: about 0 V In any position other than D: about 5.0 V
C18	BLU/YEL	ATPFWD (TRANSMISSION RANGE SWITCH FWD POSITION)	Detects transmission range switch D and S position signals	In D and S: about 0 V In any position other than D and S: about 5.0 V
C19	RED/WHT	ATPRVS (TRANSMISSION RANGE SWITCH RVS POSITION)	Detects transmission range switch R position signal	In R: about 0 V In any position other than R: about 5.0 V
C20	BLU/YEL	SHA (SHIFT SOLENOID VALVE A)	Drives shift solenoid valve A	With engine running in 1st and 2nd gears: battery voltage With engine running in any gear other than 1st and 2nd: about 0 V
C21	RED	LSA (A/T CLUTCH PRESSURE CONTROL SOLENOID VALVE A)	Drives A/T clutch pressure control solenoid valve A	With ignition switch ON (II)/vehicle in ON mode: current controlled
C25	WHT	ATPR (TRANSMISSION RANGE SWITCH R POSITION)	Detects transmission range switch R position signal	In R: about 0 V In any position other than R: more than 5.0 V

PCM A/T Control System Inputs and Outputs at PCM connector C (o) (49P)

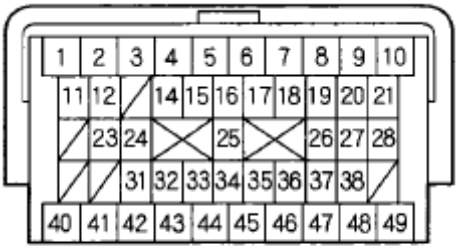


Fig. 37: Identifying PCM Connector C (o) (49P) Connector End View
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Terminal number	Wire color	Terminal name	Description	Signal
C26	RED/BLK	ATPN (TRANSMISSION RANGE SWITCH N POSITION)	Detects transmission range switch N position signal	In N: about 0 V In any position other than N: battery voltage
C27	BLU/BLK	OP2SW (TRANSMISSION FLUID PRESSURE SWITCH A (2ND CLUTCH))	Detects transmission fluid pressure switch A (2nd clutch) signal	With engine running: • Without 2nd clutch pressure: battery voltage • With 2nd clutch pressure: about 0 V
C28	BLU/RED	SHB (SHIFT SOLENOID VALVE B)	Drives shift solenoid valve B	With engine running in 1st, 2nd, and 3rd gears: battery voltage With engine running in any gear other than 1st, 2nd, and 3rd: about 0 V
C31	WHT/BLK	OP6SW (TRANSMISSION FLUID PRESSURE SWITCH E (6TH CLUTCH))	Detects transmission fluid pressure switch E (6th clutch) signal	With engine running: • Without 6th clutch pressure: battery voltage • With 6th clutch pressure: about 0 V
C33	BLU/YEL	TATF(ATF TEMPERATURE SENSOR)	Detects ATF temperature signal	With ignition switch ON (II)/vehicle in ON mode: about 0.2- 4.0 V (about 1.8 V at operating temperature, depending on ATF temperature)
C35	WHT/BLU	OPPLSW (LINE PRESSURE SWITCH)	Detects line pressure switch signal	With engine running: • Without line pressure: battery voltage • With line pressure: about

				0 V
C37	BLU/YEL	OP4SW (TRANSMISSION FLUID PRESSURE SWITCH C (4TH CLUTCH))	Detects transmission fluid pressure switch C (4th clutch) signal	With engine running: • Without 4th clutch pressure: battery voltage • With 4th clutch pressure: about 0 V
C38	BLU/WHT	OP3SW (TRANSMISSION FLUID PRESSURE SWITCH B (3RD CLUTCH))	Detects transmission fluid pressure switch B (3rd clutch) signal	With engine running: • Without 3rd clutch pressure: battery voltage • With 3rd clutch pressure: about 0 V
C41	BRN/YEL	LG1 (LOGIC GROUND)	Ground circuit for PCM	Less than 0.2 V at all times
C46	RED	ATPS (TRANSMISSION RANGE SWITCH S POSITION)	Detects transmission switch S position signal	In S: about 0 V In any position other than S: about 5.0 V

HYDRAULIC CONTROLS

The valve bodies include the main valve body, the regulator valve body, the secondary valve body, the stator shaft support, and the manual valve body. The ATF pump is driven by splines on the end of the torque converter which is attached to the engine. Fluid flows through the main regulator valve to maintain specified pressure through the manual valve body, directing pressure to each of the clutches. The hydraulic control body is attached to the secondary valve body, which includes the main shift hydraulic circuit, the solenoid valves, the hydraulic pressure switches, etc. to shorten the fluid passage and optimize the hydraulic pressure. The secondary valve body has shift solenoid valves A and B, line pressure solenoid valve A, the line pressure switch, transmission fluid pressure switch B (3rd clutch), transmission fluid pressure switch E (6th clutch), and automatic transmission (A/T) clutch pressure control solenoid valves A, B, C, and D, and is mounted to the transmission housing. Shift solenoid valve C is mounted to the torque converter housing.

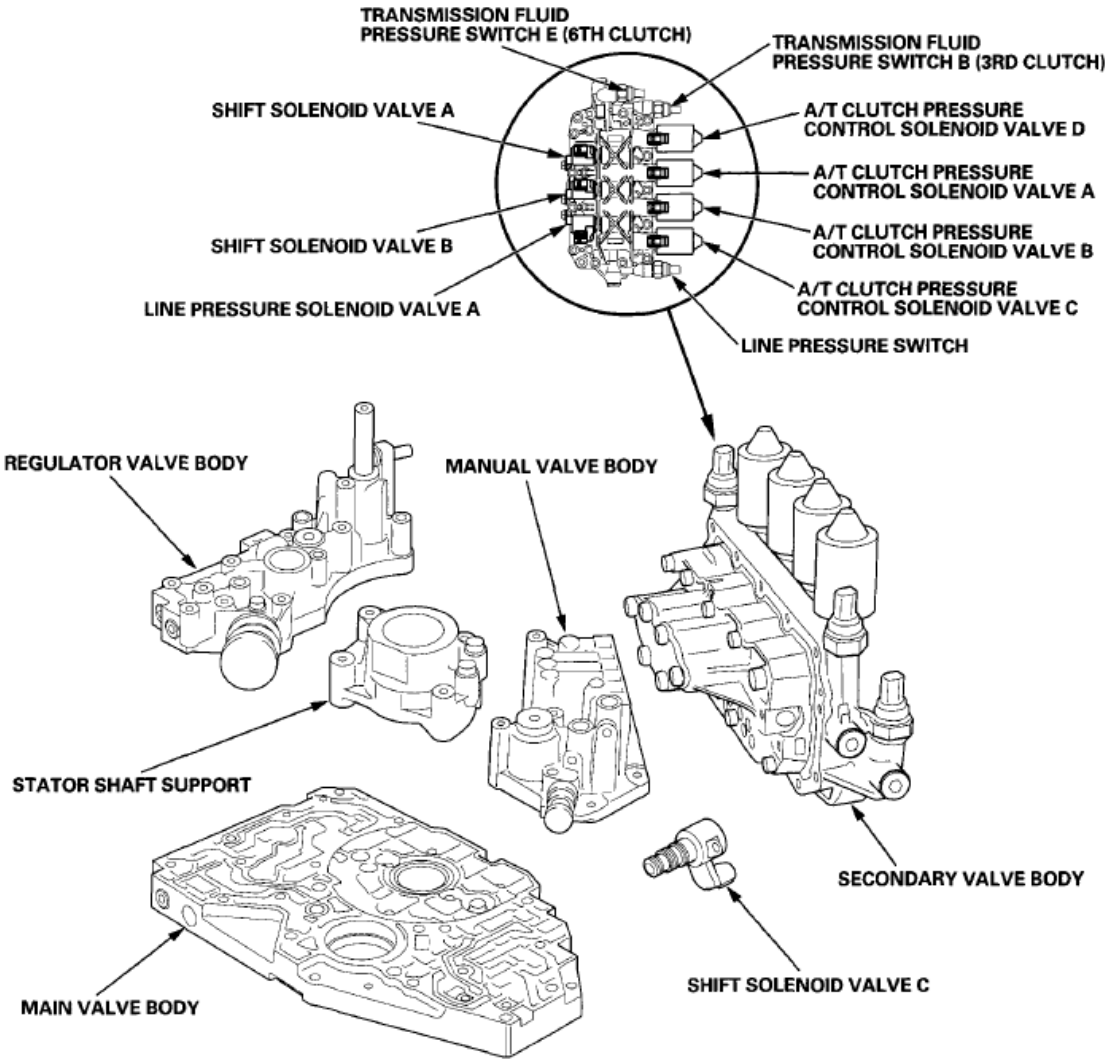


Fig. 38: Identifying Hydraulic Controls And Related Components Of Automatic Transmission
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Main Valve Body

The main valve body contains shift valve C, the D inhibitor valve, the reverse inhibitor valve, the lock-up shift valve, the lubrication regulator valve, the lubrication shift valve, the ATF pump drive gear, and the ATF pump driven gear. The primary function of the main valve body is to switch hydraulic pressure ON and OFF to control the hydraulic control system.

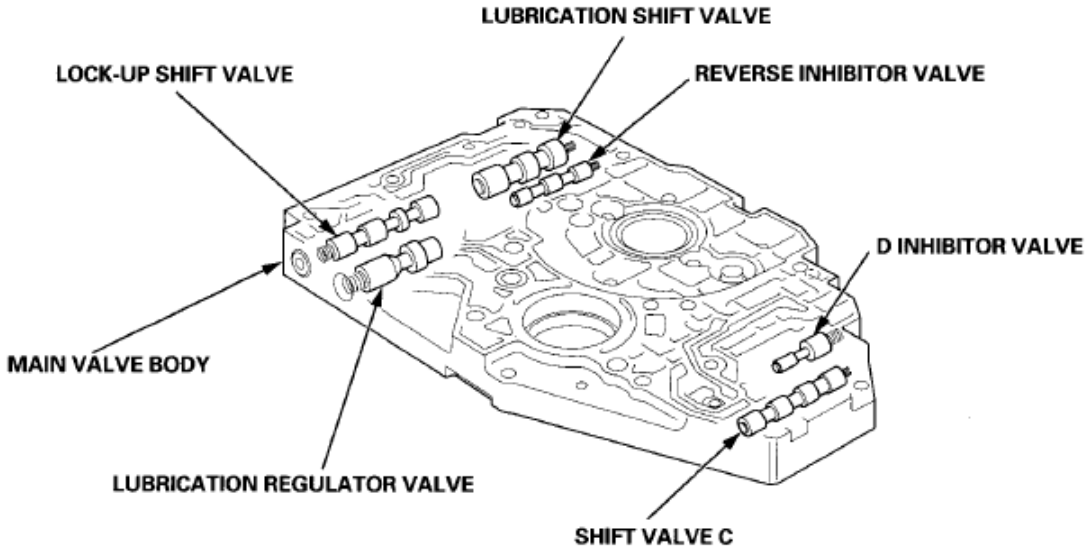


Fig. 39: Identifying Main Valve Body And Related Components
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Regulator Valve Body

The regulator valve body is located on the main valve body. The regulator valve body contains the main regulator valve, the cooler relief valve, the torque converter regulator valve, the lock-up control valve, the shift fork shaft, and the 4th accumulator.

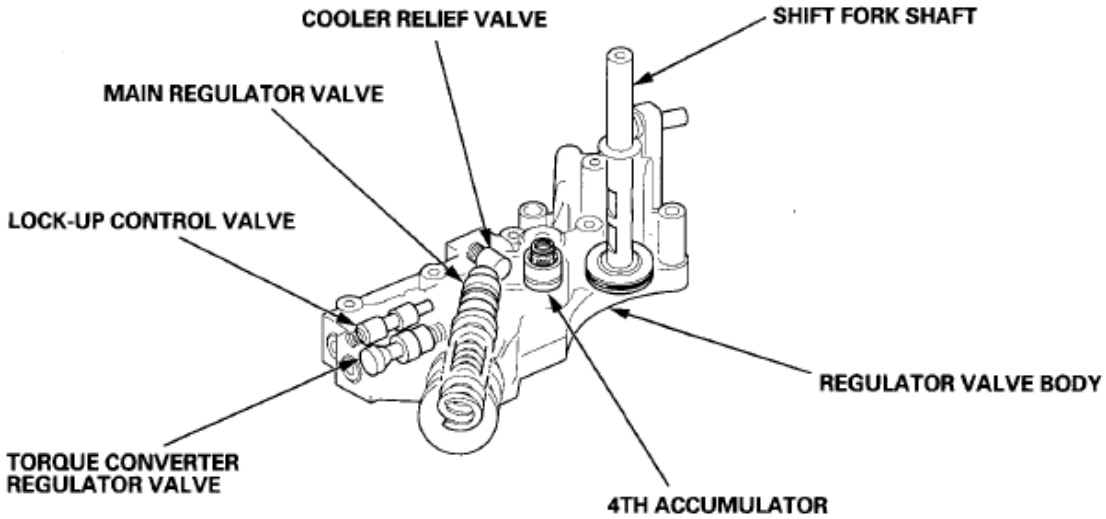


Fig. 40: Identifying Regulator Valve Body And Related Components
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Main Regulator Valve

The main regulator valve maintains constant hydraulic pressure from the ATF pump to the hydraulic control system, while also providing fluid to the torque converter and the lubrication system. Fluid from ATF pump flows through the 1 cavity and the 1' cavity of the main regulator valve. Then the fluid entered in the 1' cavity

pushes the main regulator valve to the spring side, this movement uncovers the fluid ports to the torque converter and the lubrication system on the main regulator valve. The fluid flows out to the torque converter and the lubrication system, then the main regulator valve returns under spring force when the pressure in the 1' cavity of the main regulator valve is lowered below that in the 1 cavity, which covers the fluid ports to the torque converter and the lubrication system. According to the level of the hydraulic pressure through the V cavity, the position of the main regulator valve changes, and the amount of fluid from the 1 cavity through the torque converter changes. This operation is continued maintaining the line pressure.

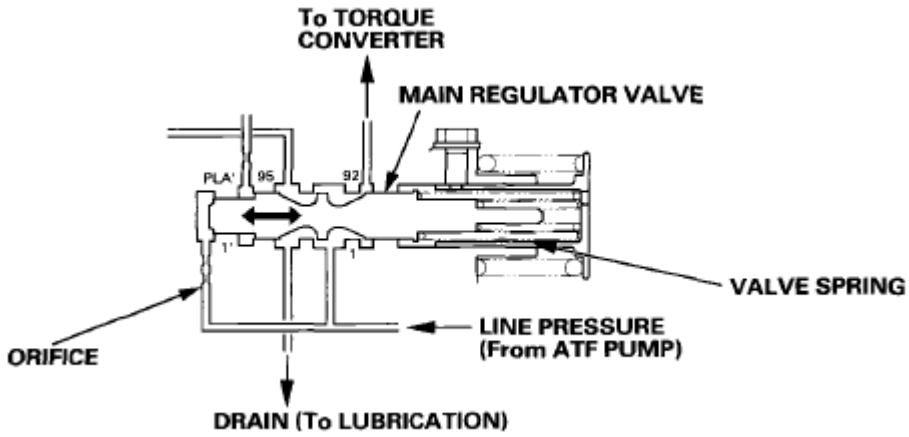


Fig. 41: Main Regulator Valve Operation Diagram
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Line Pressure Control during Low Loading

Both in D or S under low engine load condition after warming up the engine and in all ranges (P, R, N, D, or S) under the low ATF temperature condition, the PCM operates line pressure solenoid valve A, and switches the line pressure to a pressure that is lower than normal. This operation can reduce the friction in the transmission.

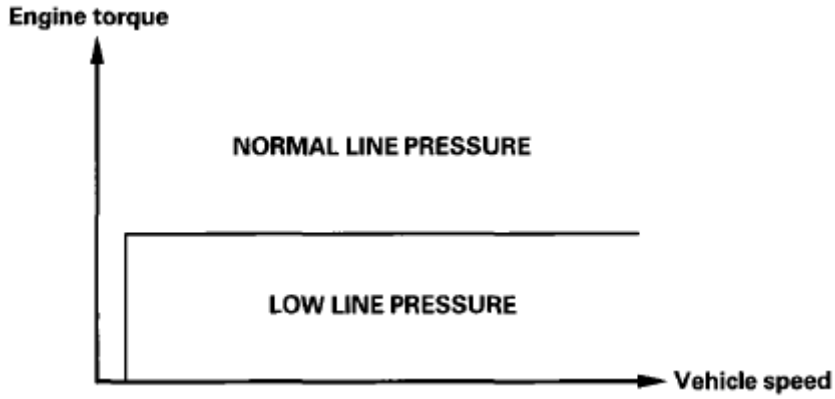


Fig. 42: Line Pressure Control Graph During Low Loading
Courtesy of AMERICAN HONDA MOTOR CO., INC.

The PCM turns line pressure solenoid valve A ON, and applies the hydraulic pressure to the PLA' cavity on the main regulator valve. When hydraulic pressure is applied to the PLA' cavity, the main regulator valve is pushed to the spring side. This operation reduces the drain port of the main regulator valve, and causes the line pressure

to be lower than normal.

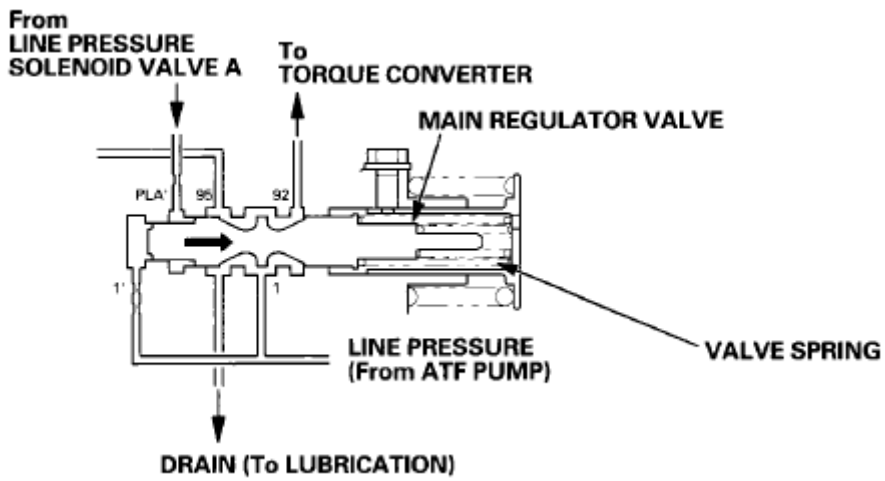


Fig. 43: Line Pressure Control During Low Loading Operation Diagram
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Line Pressure Control during High Loading

Increases in hydraulic pressure according to torque are regulated by the main regulator valve using stator torque reaction. The stator shaft is splined to the stator in the torque converter, and the stator shaft arm end contacts the regulator spring cap. When the vehicle is accelerating or climbing (torque converter range), stator torque reaction occurs on the stator shaft, and the stator shaft arm pushes the regulator spring cap in the direction of the arrow in proportion to the reaction. The stator reaction spring compresses, and the main regulator valve moves to increase the line pressure which is regulated by the main regulator valve. The line pressure reaches its maximum pressure when the stator torque reaction reaches its maximum position.

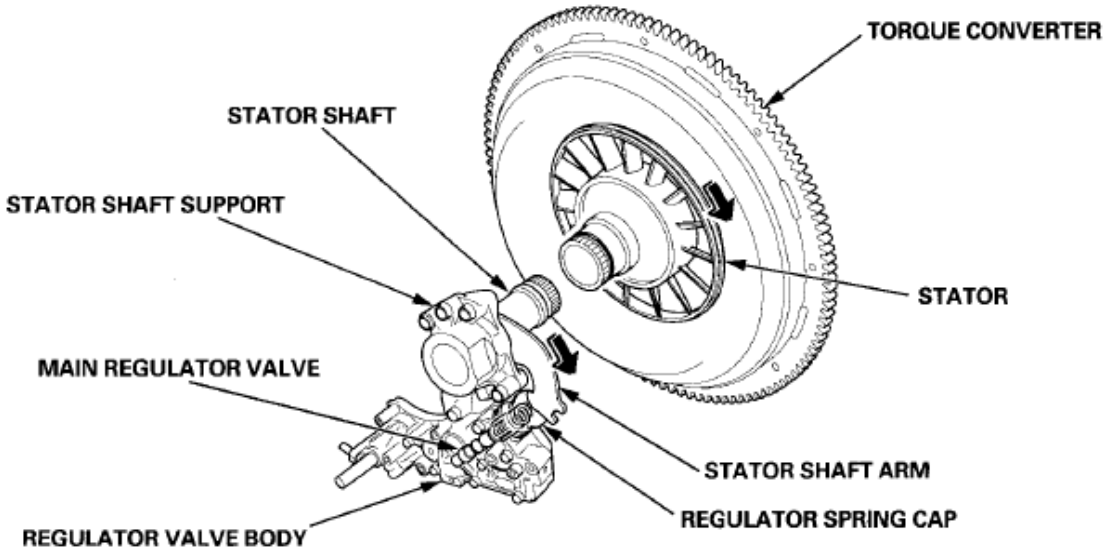


Fig. 44: Identifying Line Pressure Control During High Loading
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Secondary Valve Body

The secondary valve body contains the main shift hydraulic circuit, the solenoid valves, the hydraulic pressure switches, etc. The secondary valve body consists of shift solenoid valves A and B, line pressure solenoid valve A, A/T clutch pressure control solenoid valves A, B, C, and D, shift valves A and B, the A/T clutch pressure control solenoid valve A accumulator, the A/T clutch pressure control solenoid valve B accumulator, the A/T clutch pressure control solenoid valve C accumulator, the line pressure switch, transmission fluid pressure switch B (3rd clutch), and transmission fluid pressure switch E (6th clutch). The secondary valve body is mounted on the transmission housing.

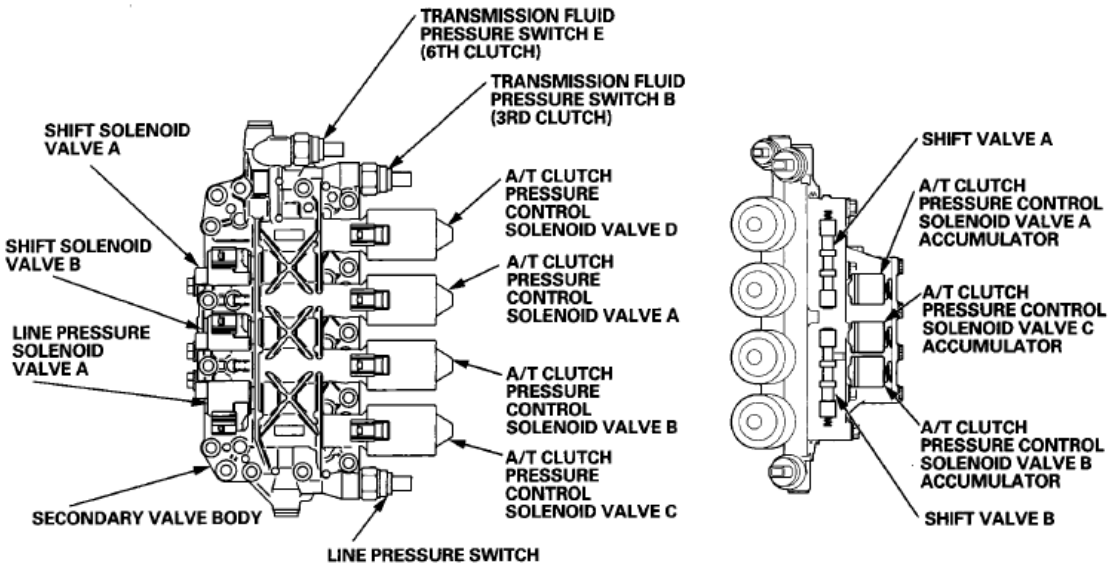


Fig. 45: Identifying Secondary Valve Body And Related Components
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Manual Valve Body

The manual valve body is located on the main valve body; it contains the 1st accumulator and the manual valve.

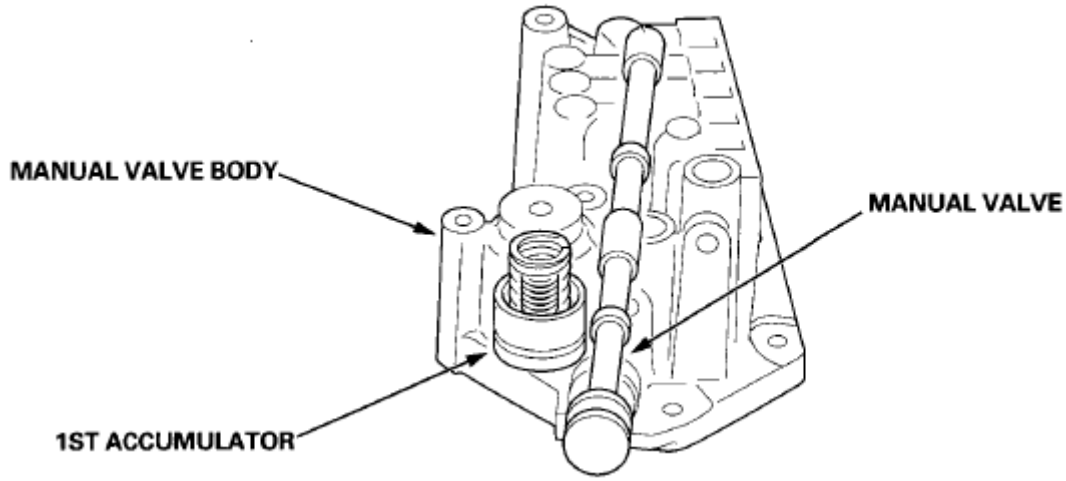


Fig. 46: Identifying Manual Valve Body And Related Components
Courtesy of AMERICAN HONDA MOTOR CO., INC.

HYDRAULIC FLOW

Distribution of Hydraulic Pressure

As the engine turns, the ATF pump starts to operate. Automatic transmission fluid (ATF) is drawn through the ATF strainer (filter) and discharged into the hydraulic circuit. Then, ATF flowing from the ATF pump becomes line pressure that is regulated by the main regulator valve. Torque converter pressure from the main regulator valve is regulated by the torque converter regulator valve and then flows to the torque converter. The torque converter regulator valve prevents torque converter pressure from rising. Line pressure also becomes torque converter clutch pressure that is regulated by the lock-up control valve, and flows to the torque converter clutch. The PCM switches shift solenoid valves ON and OFF, and it controls the shift solenoid pressure to the shift valves. Applying shift solenoid pressure to the shift valves moves the position of the shift valve, and switches the port of hydraulic pressure. The PCM also controls A/T clutch pressure control solenoid valves A, B, C, and D. The A/T clutch pressure control solenoid valves regulate hydraulic pressure, and applies the pressure to the clutch. When shifting between gears, the clutches are engaged by the A/T clutch pressure control solenoid valve pressures. The PCM actuates the shift solenoid valves to move the position of the shift valves. This movement switches the fluid flow to each clutch. Shifting is completed after the clutch is engaged by the A/T clutch pressure control solenoid valve pressures.

HYDRAULIC PRESSURE AT PORT FOR USE IN HYDRAULIC CIRCUIT

Port No.	Hydraulic Pressure
1	Line
1'	Line
3	Line
3'	Line
3A	A/T clutch pressure control solenoid valve D
3B	Line
3C	Line
4	Line
4'	Line
4"	Line
7	Line
4A	Line
4B	Line
5A	A/T clutch pressure control solenoid valve D
5B	A/T clutch pressure control solenoid valve C
SA	Shift solenoid valve A
SB	Shift solenoid valve B
SC	Shift solenoid valve C
PLA	Line pressure solenoid valve A
PLA'	Line pressure solenoid valve A

PLA"	Line pressure solenoid valve A
10	1st clutch
20	2nd clutch
30	3rd clutch
40	4th clutch
50	5th clutch
60	6th clutch
55	A/T clutch pressure control solenoid valve A
56	A/T clutch pressure control solenoid valve B
57	A/T clutch pressure control solenoid valve C
58	A/T clutch pressure control solenoid valve D
58'	A/T clutch pressure control solenoid valve D
58"	A/T clutch pressure control solenoid valve D
91	Torque converter
92	Torque converter
92'	Torque converter
92"	Torque converter
93	ATF cooler
93'	ATF cooler
93"	ATF cooler
94	Torque converter
95	Lubrication
95'	Lubrication
96	Torque converter
96'	Torque converter
96"	Torque converter
99	Suction
X	Drain
HX	High position drain
AX	Air drain

Shifting to N from R

Line pressure (1) regulated by the main regulator valve flows to the shift solenoid valves. The PCM switches the shift solenoid valves ON and OFF. The conditions of the shift solenoid valves and the positions of the shift valves are as follows:

- Shift solenoid valve A is ON, and opens shift solenoid valve A pressure port (SA); shift valve A is moved to the right side by hydraulic pressure (SA) from shift solenoid valve A.
- When shifting to N from R, shift solenoid valve B is OFF, and closes shift solenoid valve B pressure port (SB); shift valve B remains on the left side under a spring force, and shift valve C is moved to the left side by hydraulic pressure (4B) that is applied from shift valve A through shift valve B.

- When shifting to N from R, shift solenoid valve C is ON, and opens shift solenoid valve C pressure port (SC); the reverse inhibitor valve is moved to the left side by hydraulic pressure (SC) from shift solenoid valve C.
- The manual valve covers the ports leading pressure to the clutches in N, and hydraulic pressure is not applied to the clutches.

NOTE: When used, "left" or "right" indicates direction on the hydraulic circuit.

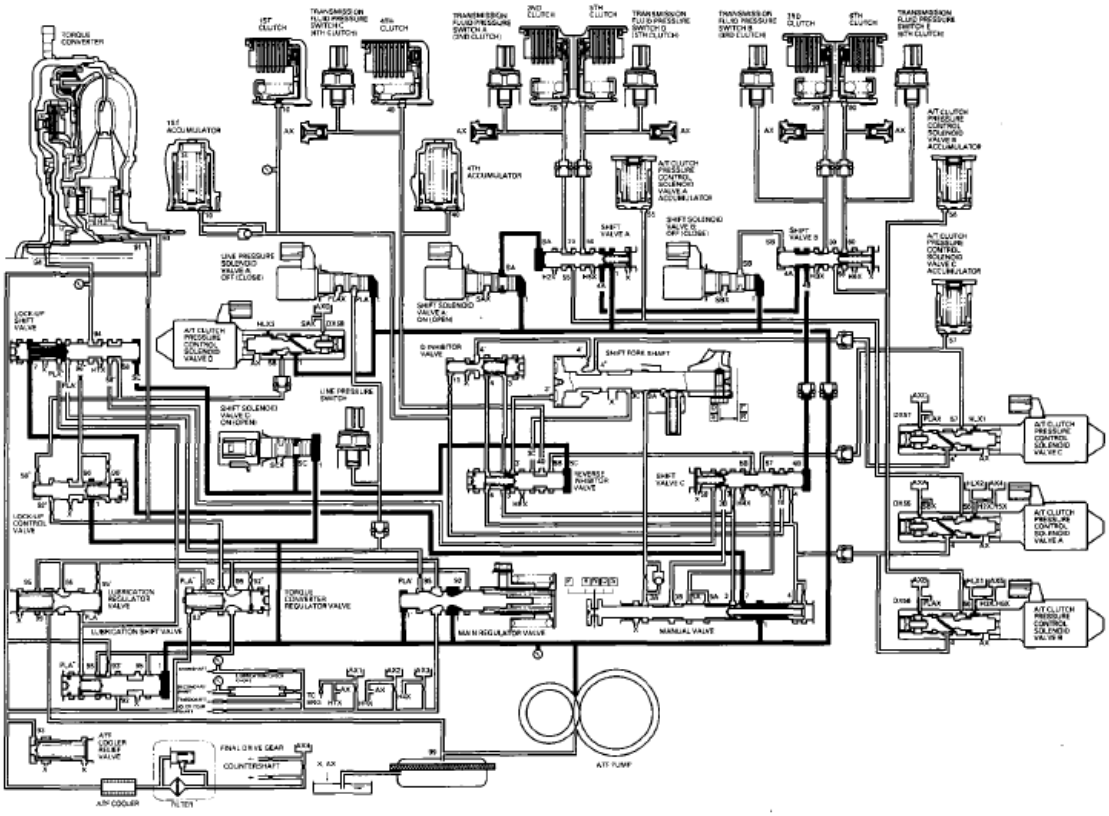


Fig. 47: Automatic Transmission Power Flow Diagram (Shifting To N From R)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Shifting to N from D

Line pressure (1) regulated by the main regulator valve flows to the shift solenoid valves. The PCM switches the shift solenoid valves ON and OFF. The conditions of the shift solenoid valves and the positions of the shift valves are as follows:

- Shift solenoid valve A is ON, and opens shift solenoid valve A pressure port (SA); shift valve A is moved to the right side by hydraulic pressure (SA) from shift solenoid valve A.
- When shifting to N from D, shift solenoid valve B is ON, and opens shift solenoid valve B pressure port (SB); shift valve B is moved to the right side by hydraulic pressure (SB) from shift solenoid valve B, and shift valve C is moved to the right side by a spring force.
- When shifting to N from D, shift solenoid valve C is OFF, and closes shift solenoid valve C pressure port

(SC); the reverse inhibitor valve is moved to the right side by a spring force.

- The manual valve covers the ports leading pressure to the clutches in N, and hydraulic pressure is not applied to the clutches.

NOTE: When used, "left" or "right" indicates direction on the hydraulic circuit.

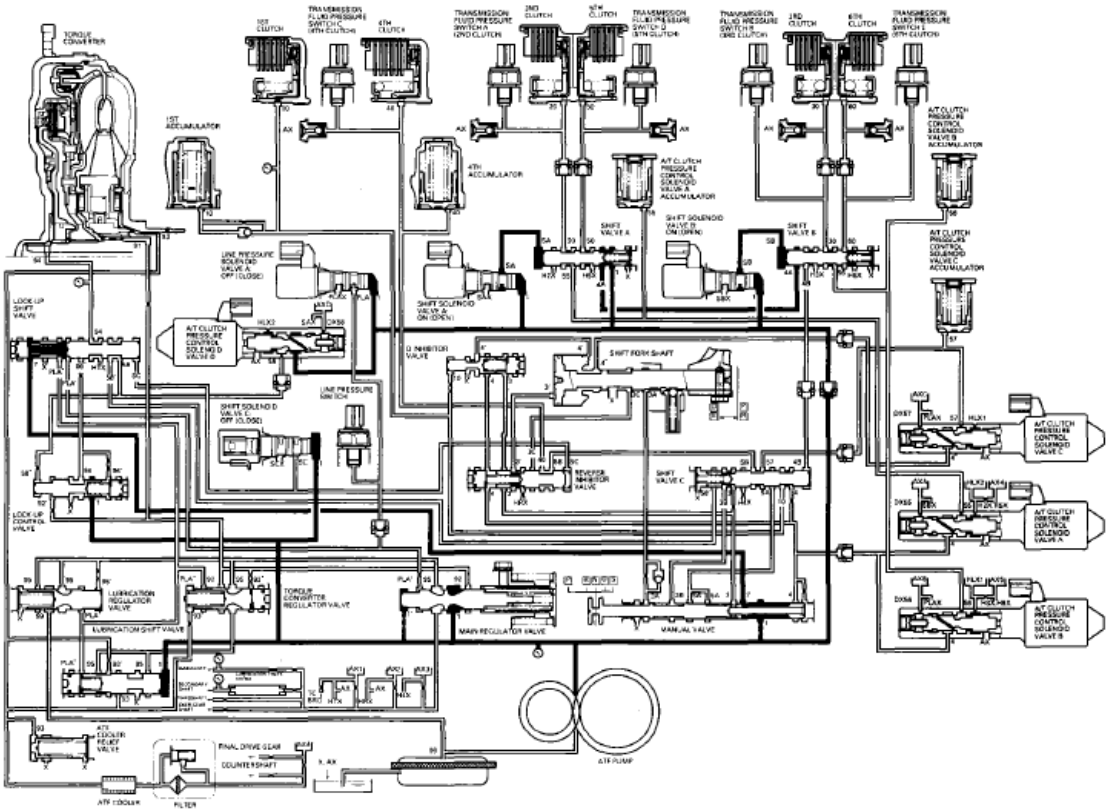


Fig. 48: Automatic Transmission Power Flow Diagram (Shifting To N From D)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Shifting to D and S from N

When shifting to D or S from N, the condition of shift solenoid valves A and B remains the same as in N, and the manual valve moves to the D position. Line pressure (4) from the manual valve is applied to the shift valve C line pressure port (4) and the A/T clutch pressure control solenoid valves A pressure port (4) and B pressure port (4). As shift solenoid valve A is ON and shift solenoid valve B is OFF, the line pressure (4A) from shift valve A applies to the shift valve C pressure port (4B) through shift valve B (4A, 4B). Shift valve C remains on the left side by the hydraulic pressure (4B) from shift valve B. Immediately after moving the shift lever to D or S from N, A/T clutch pressure control solenoid valve D operates to apply A/T clutch pressure control solenoid valve D pressure (58) to the 1st clutch through lock-up shift valve pressure ports (58, 58'), shift valve C pressure ports (58', 3B), manual valve pressure ports (3B, 5A), and shift valve C pressure ports (5A, 10). A/T clutch pressure control solenoid valve D gently applies hydraulic pressure to the 1st clutch, which avoids generating shock while in gear.

NOTE: When used, "left" or "right" indicates direction on the hydraulic circuit.

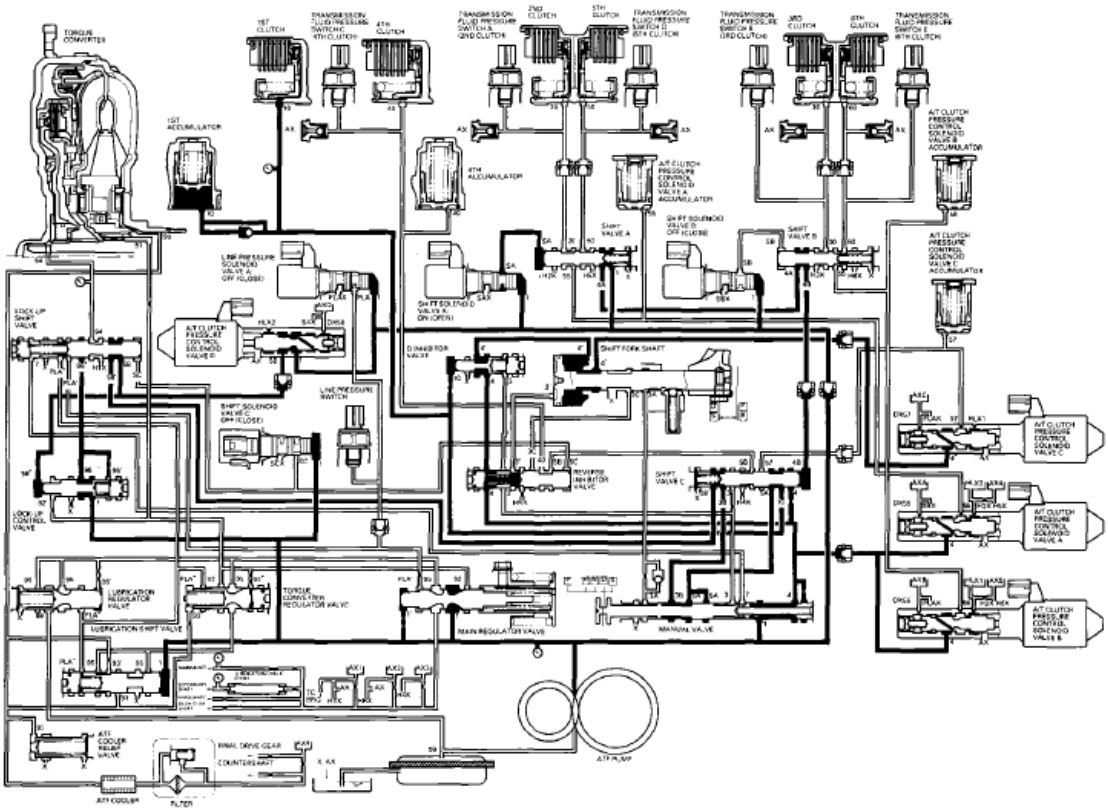


Fig. 49: Automatic Transmission Power Flow Diagram (Shifting To D And S From N)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Driving in 1st gear

The PCM turns shift solenoid valves A and B ON in 1st gear. Shift solenoid valve B is turned ON from OFF to apply the shift solenoid valve B pressure (SB) to shift valve B. Shift valve B is moved to the right side by the shift solenoid valve B pressure (SB) to close the line pressure port (4B) leading to shift valve C. As the line pressure (4B) from shift valve B is not applied to shift valve C, shift valve C is moved to the right side by a spring force to connect the line pressure port (4) on shift valve C and the 1st clutch pressure port (10). With this shift valve C movement, the line pressure (4) from the manual valve becomes 1st clutch pressure (10) at shift valve C, and flows to the 1st clutch. Then the 1st clutch is engaged by 1st clutch pressure (10).

NOTE: When used, "left" or "right" indicates direction on the hydraulic circuit.

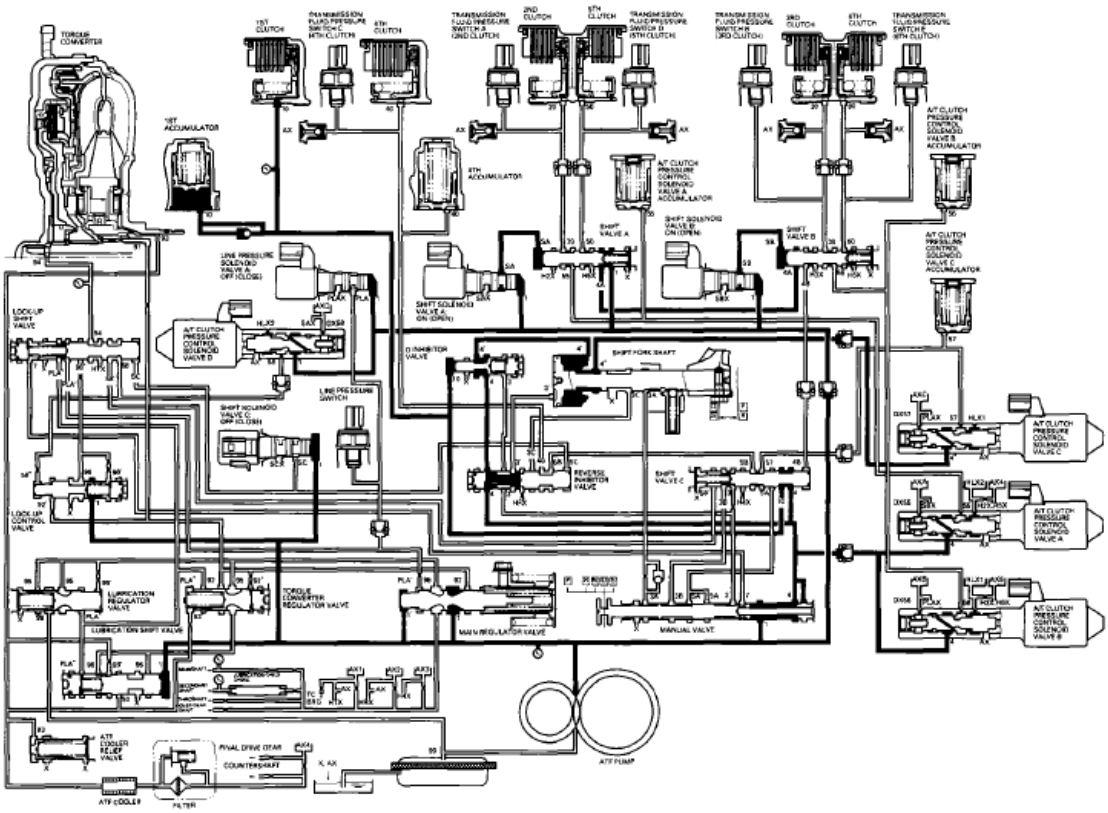


Fig. 50: Automatic Transmission Power Flow Diagram (Driving In 1st Gear)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Driving in 2nd gear

The condition of shift solenoid valves A and B in 2nd gear remains the same as in 1st gear, which turns shift solenoid valves A and B ON. As the speed of the vehicle reaches the programmed value, the PCM activates A/T clutch pressure control solenoid valve A, and applies CPC pressure (55) to shift valve A. Shift valve A remains on the right side as with the 1st gear. The CPC pressure (55) from A/T clutch pressure control solenoid valve A becomes 2nd clutch pressure (20) at shift valve A, and flows to the 2nd clutch. Then the 2nd clutch is engaged by 2nd clutch pressure (20). The 1st clutch is also engaged, but since the rotation speed of the countershaft exceeds that of 1st gear, no power is transmitted because the one-way clutch causes 1st gear to free-wheel.

NOTE: When used, "left" or "right" indicates direction on the hydraulic circuit.

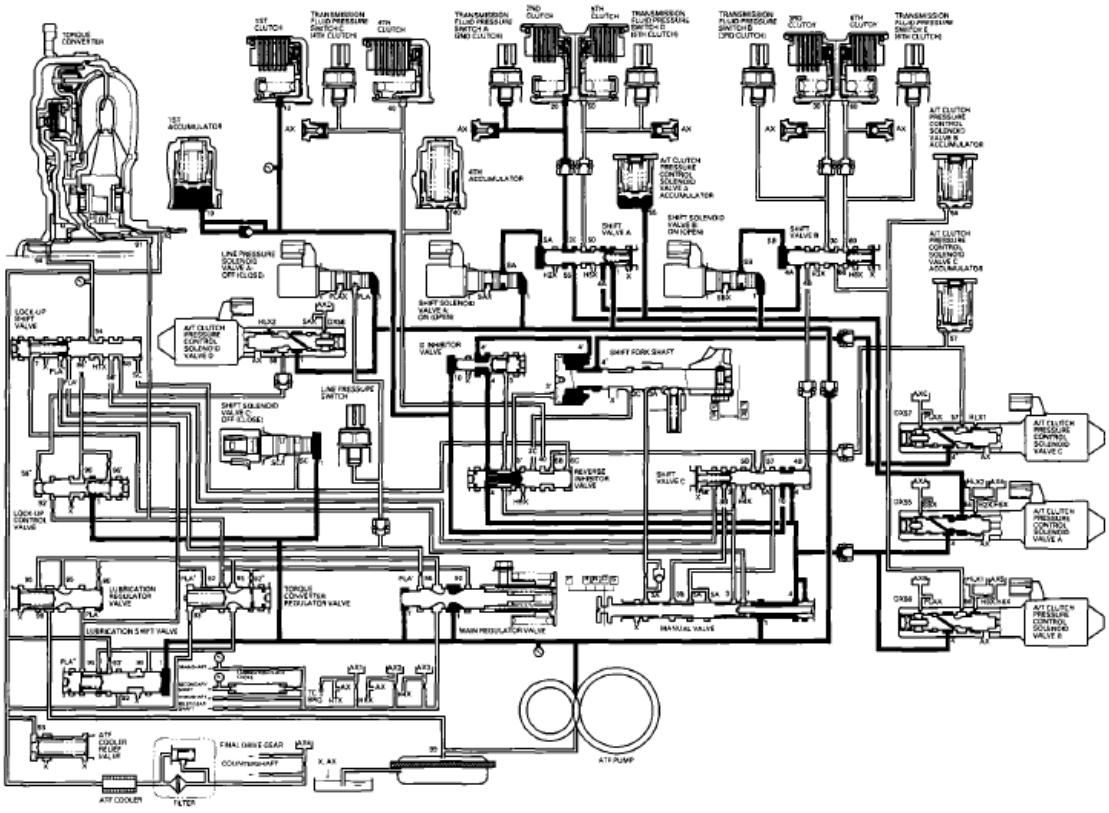


Fig. 51: Automatic Transmission Power Flow Diagram (Driving In 2nd Gear)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Driving in 3rd gear

The PCM turns shift solenoid valve A OFF and shift solenoid valve B ON in 3rd gear. As the speed of the vehicle reaches the programmed value, the PCM activates A/T clutch pressure control solenoid valve B, and applies CPC pressure (56) to the shift valve B pressure port (56). Shift valve B remains on the right side as with the 1st gear. The CPC pressure (56) from A/T clutch pressure control solenoid valve B becomes 3rd clutch pressure (30) at shift valve B, and flows to the 3rd clutch. Then the 3rd clutch is engaged by 3rd clutch pressure (30). 1st clutch is also engaged, but since the rotation speed of the countershaft exceeds that of 1st gear, no power is transmitted because the one-way clutch causes 1st gear to free-wheel.

NOTE: When used, "left" or "right" indicates direction on the hydraulic circuit.

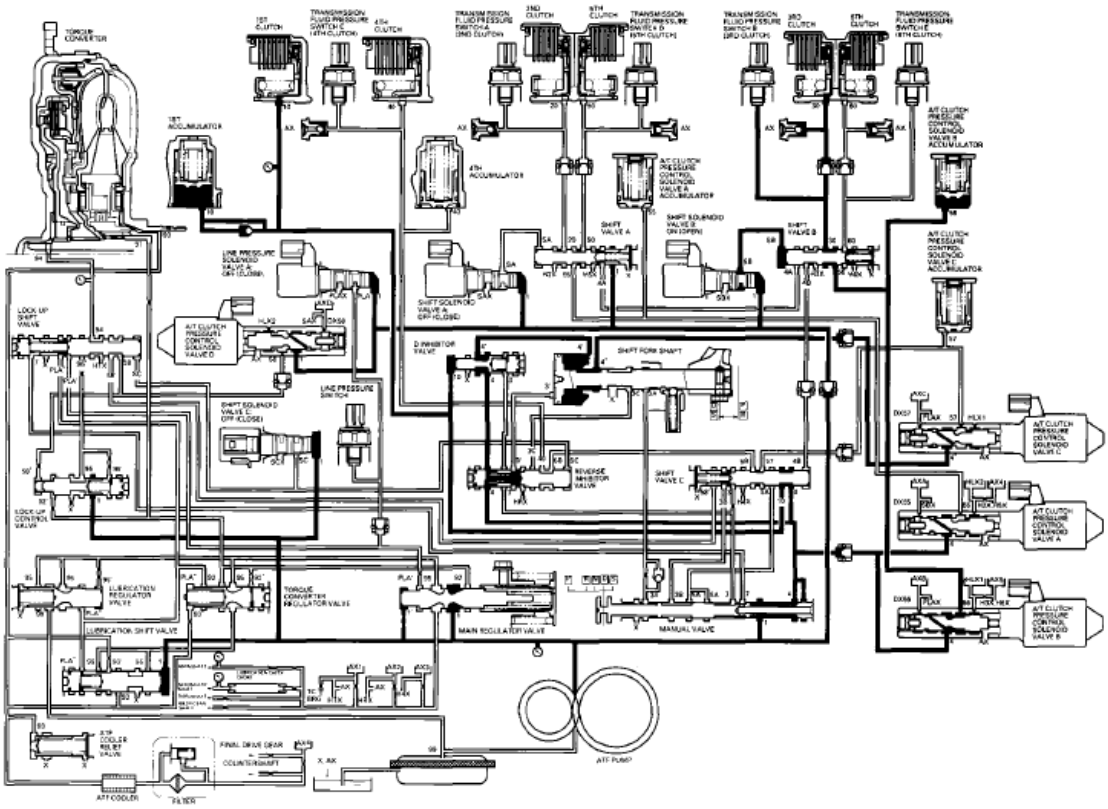


Fig. 52: Automatic Transmission Power Flow Diagram (Driving In 3rd Gear)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Driving in 4th gear

The PCM turns shift solenoid valves A OFF and shift solenoid valve B ON and OFF (depending on the shift map) in 4th gear. As the speed of the vehicle reaches the programmed value, the PCM activates A/T clutch pressure control solenoid valve C, and applies CPC pressure (57) to the shift valve C pressure port (57). As the line pressure (4B) from shift valve B is not applied to shift valve C, shift valve C is moved to the right side by a spring force to connect the CPC pressure port (57) on shift valve C and the line pressure port (5B) leading to the reverse inhibitor valve. Since reverse inhibitor valve also remains on the right side under a line pressure (4), it connects the CPC pressure port (5B) from shift valve C on the reverse inhibitor valve to the pressure port (40) leading to the 4th clutch. With this shift valve C and the reverse inhibitor valve operations, the CPC pressure (57) flows from the reverse inhibitor valve pressure port (5B, 40) to the 4th clutch through shift valve C pressure ports (57, 5B). Then the 4th clutch is engaged by 4th clutch pressure (40). 1st clutch is also engaged, but since the rotation speed of the countershaft exceeds that of 1st gear, no power is transmitted because the one-way clutch causes 1st gear to free-wheel.

NOTE: When used, "left" or "right" indicates direction on the hydraulic circuit.

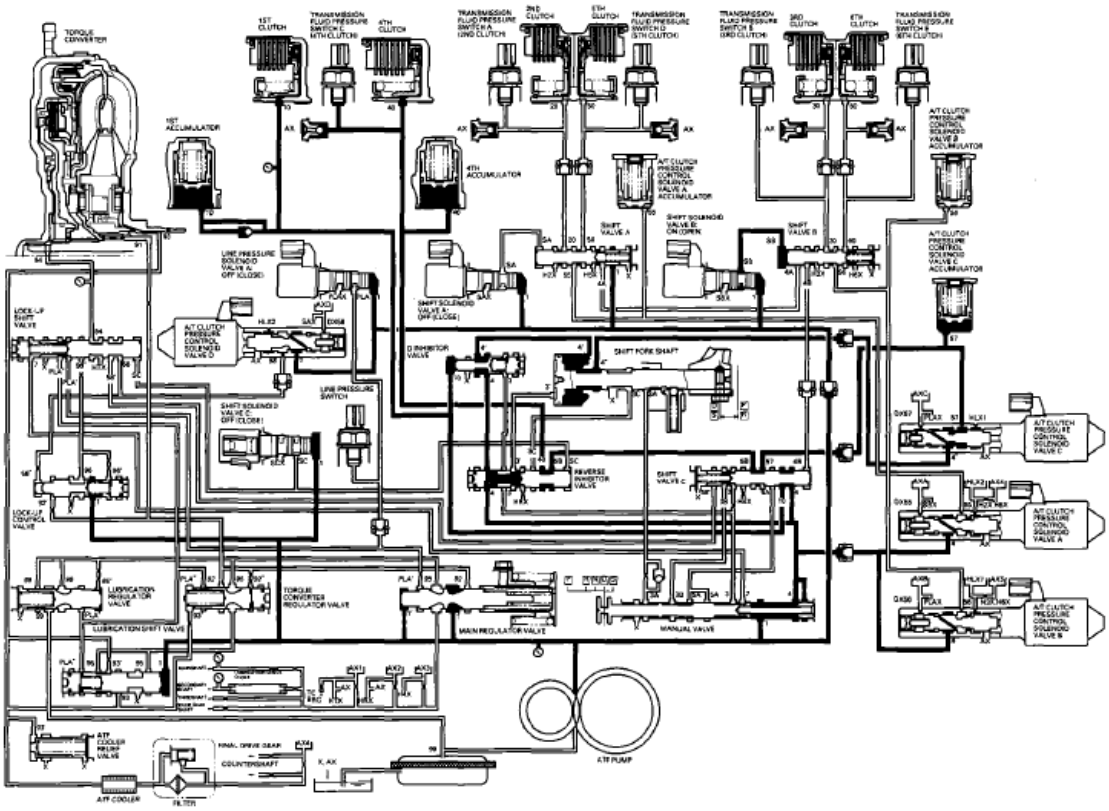


Fig. 53: Automatic Transmission Power Flow Diagram (Driving In 4th Gear)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Driving in 5th gear

The condition of shift solenoid valves A and B in 5th gear remains the same as in 4th gear, which turns shift solenoid valve A OFF and shift solenoid valve B ON and OFF (depending on the shift map). As the speed of the vehicle reaches the programmed value, the PCM activates A/T clutch pressure control solenoid valve A, and applies CPC pressure (55) to the shift valve A pressure port (55). As shift solenoid valve A remains OFF, shift valve A is moved to the left side by a spring force, to connect the CPC pressure port (55) on shift valve A and the 5th clutch pressure port (50). With this shift valve A movement, the CPC pressure (55) becomes 5th clutch pressure (50) at shift valve A, and flows to the 5th clutch. Then the 5th clutch is engaged by 5th clutch pressure (50). 1st clutch is also engaged, but since the rotation speed of the countershaft exceeds that of 1st gear, no power is transmitted because the one-way clutch causes 1st gear to free-wheel.

NOTE: When used, "left" or "right" indicates direction on the hydraulic circuit.

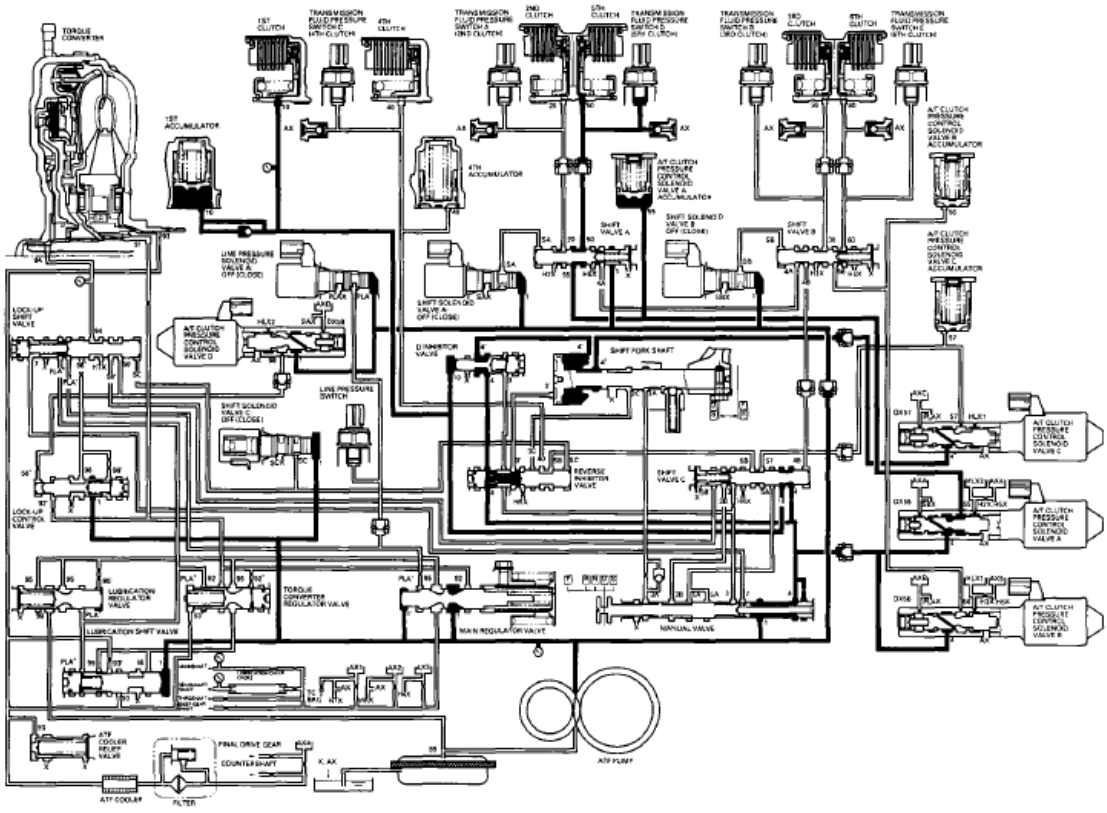


Fig. 54: Automatic Transmission Power Flow Diagram (Driving In 5th Gear)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Driving in 6th gear

The PCM turns shift solenoid valves A and B OFF in 6th gear. As the speed of the vehicle reaches the programmed value, the PCM activates A/T clutch pressure control solenoid valve B, and applies CPC pressure (56) to the shift valve B pressure port (56). As shift solenoid valve B remains OFF, shift valve B is moved to the left side by a spring force, to connect the CPC pressure port (56) on shift valve B and the 6th clutch pressure port (60). With this shift valve B movement, the CPC pressure (56) becomes 6th clutch pressure (60) at shift valve B, and flows to the 6th clutch. Then the 6th clutch is engaged by 6th clutch pressure (60). 1st clutch is also engaged, but since the rotation speed of the countershaft exceeds that of 1st gear, no power is transmitted because the one-way clutch causes 1st gear to free-wheel.

NOTE: When used, "left" or "right" indicates direction on the hydraulic circuit.

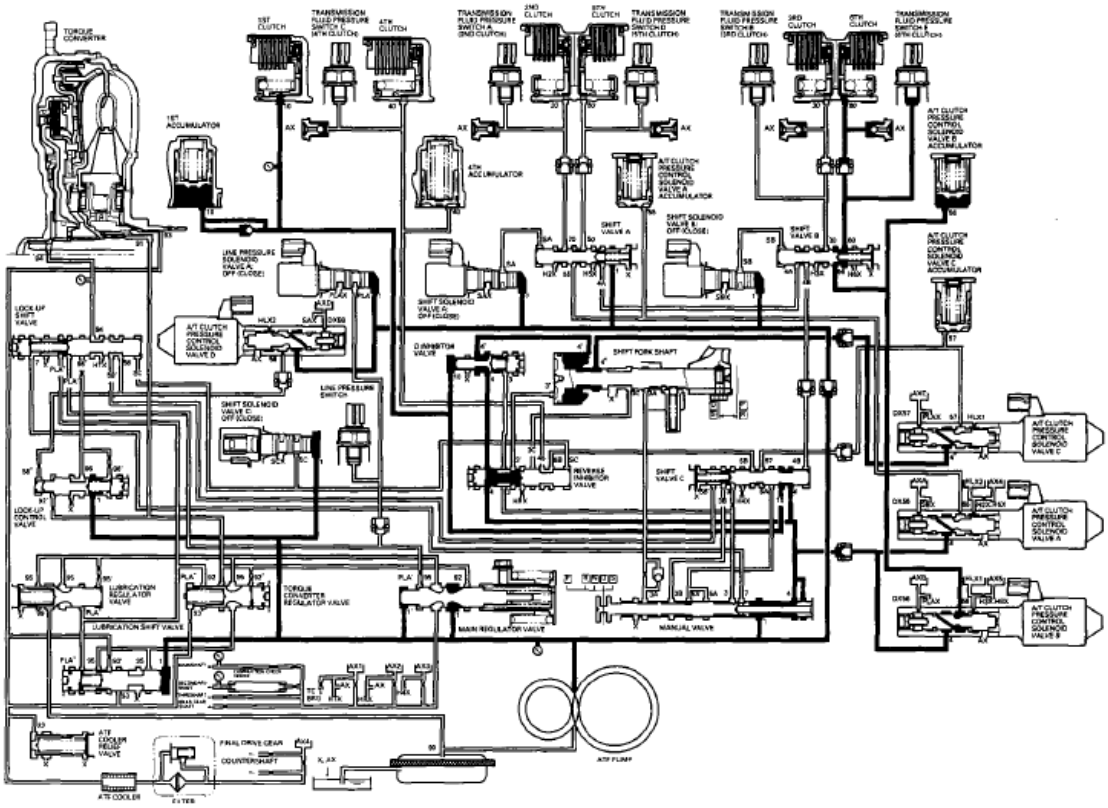


Fig. 55: Automatic Transmission Power Flow Diagram (Driving In 6th Gear)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Shifting to R from N

The vehicle is moved backward by engaging the 4th clutch. When shifting to R from N, shift solenoid valve A turns ON, shift solenoid valve B turns OFF, and shift solenoid valve C turns ON, and the manual valve moves to the R position. Line pressure (3) from the manual valve is applied to the shift valve C line pressure port (3) and the reverse inhibitor valve line pressure port (3). Reverse inhibitor valve is moved to the left side by the shift solenoid valve C pressure (SC) to connect the line pressure port (3C) from the shift fork shaft on the reverse inhibitor valve and the 4th clutch pressure port (40) leading to the 4th clutch. As the line pressure (1, 4A) flows from shift valve A to the shift valve C line pressure port (4B) through shift valve B (4A, 4B), shift valve C is moved to the left side. Immediately after moving the shift lever to R from N, A/T clutch pressure control solenoid valve D operates to apply the A/T clutch pressure control solenoid valve D pressure (58) to the 4th clutch through lock-up shift valve pressure ports (58, 58'), shift valve C pressure ports (58', 3B), manual valve pressure ports (3B, 3A), shift fork shaft pressure ports (3A, 3C), and reverse inhibitor valve pressure ports (3C, 40). Then, A/T clutch pressure control solenoid valve D gently applies hydraulic pressure to the 4th clutch, which avoids generating shock while in gear.

NOTE: When used, "left" or "right" indicates direction on the hydraulic circuit.

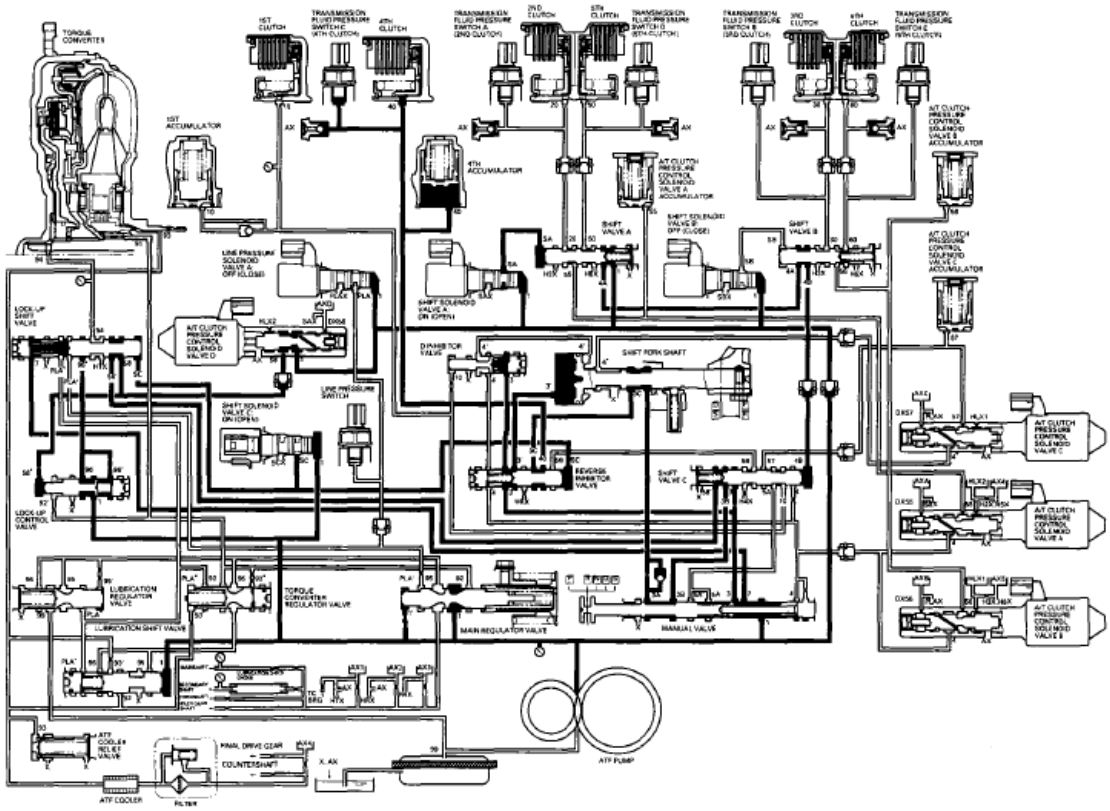


Fig. 56: Automatic Transmission Power Flow Diagram (Shifting To R From N)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Driving in R

The vehicle is moved backward by engaging the 4th clutch and reversing the mainshaft rotation with the reverse idler gear. Shift solenoid valves A and B remain OFF, and shift solenoid valve C turns ON when the vehicle moving backward. As shift solenoid valves A and B remain OFF, shift valve C is moved to the right side by a spring force to connect the line pressure port (3) on shift valve C and the line pressure port (3B) leading to the reverse inhibitor valve. The reverse inhibitor valve is moved to the left side by the shift solenoid valve C pressure (SC) to connect the line pressure port (3C) from the shift fork shaft on the reverse inhibitor valve and the 4th clutch pressure port (40) leading to the 4th clutch. The line pressure (3) from the manual valve is also applied to the shift fork shaft line pressure port (31) through the reverse inhibitor valve line pressure ports (3, 3'), which moves the shift fork shaft to the right side, and connects the port (3A) from the manual valve on the shift fork shaft to the line pressure port (3C) leading to the reverse inhibitor valve. With this shift valve C, reverse inhibitor valve, and shift fork shaft movement, the line pressure (3C) becomes 4th clutch pressure (40) at the reverse inhibitor valve, and flows to the 4th clutch. Then the 4th clutch is engaged by 4th clutch pressure (40).

Reverse Inhibitor Control

When R is selected while the vehicle is moving forward at speeds over 6 mph (10 km/h), the PCM commands shift solenoid valve C to remain OFF so that shift solenoid valve C pressure (SC) is not applied to the reverse inhibitor valve. Line pressure (3) stops at the reverse inhibitor valve, and is not applied to the shift fork shaft. This control does not switch to the hydraulic circuit leading to reverse while the vehicle is moving forward at

speeds over 6 mph (10 km/h).

NOTE: When used, "left" or "right" indicates direction on the hydraulic circuit.

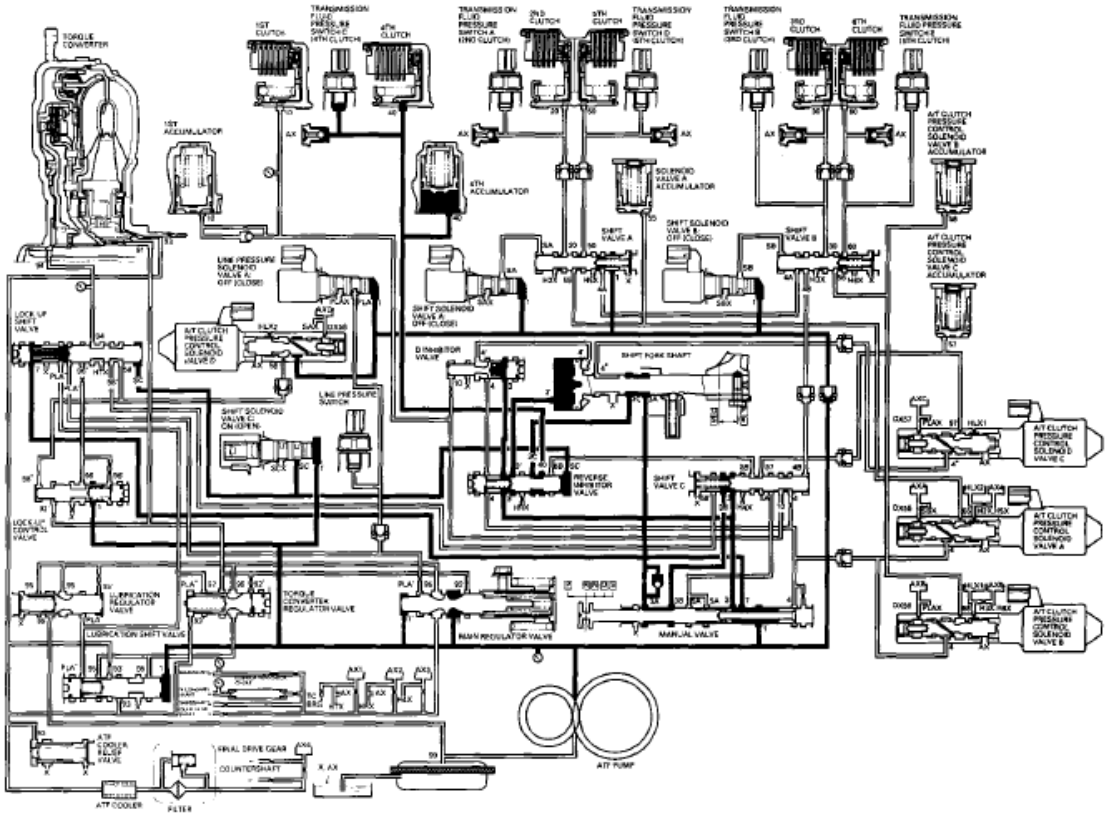


Fig. 57: Automatic Transmission Power Flow Diagram (Driving In R)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

LOCK-UP SYSTEM

The lock-up mechanism operates in D (during accelerating: 1st, 2nd, 3rd, 4th, 5th, and 6th gears/during decelerating: 2nd, 3rd, 4th, 5th, and 6th gears), S with automatic shift mode (during accelerating: 1st, 2nd, 3rd, 4th, and 5th gears/during decelerating: 2nd, 3rd, 4th, and 5th gears), and S with sequential sportshift mode (during accelerating: 1st, 2nd, 3rd, 4th, 5th, and 6th gears/during decelerating: 2nd, 3rd, 4th, 5th, and 6th gears). The pressurized fluid is supplied through a lock-up fluid passage in the torque converter, causing the torque converter clutch in the torque converter to be engaged. As this takes place, the mainshaft rotates at the same speed as the engine crankshaft. The PCM controls the shift solenoid valve C pressure and A/T clutch pressure control solenoid valve D pressure to optimize the lock-up timing and the amount of the lock-up. The shift solenoid C pressure operates the lock-up shift valve to switch the lock-up ON and OFF. The A/T clutch pressure control solenoid valve D pressure operates the lock-up control valve to control the degree of lock-up.

Torque Converter Clutch Lock-Up ON (Engaging Torque Converter Clutch)

The fluid pressure is applied to the lock-up fluid passage (94) in the torque converter, causing the torque converter clutch in the torque converter to be engaged and then the turbine and the torque converter cover to be

engaged. The mainshaft rotates at the same speed as the engine crankshaft when the torque converter clutch in the torque converter is engaged.

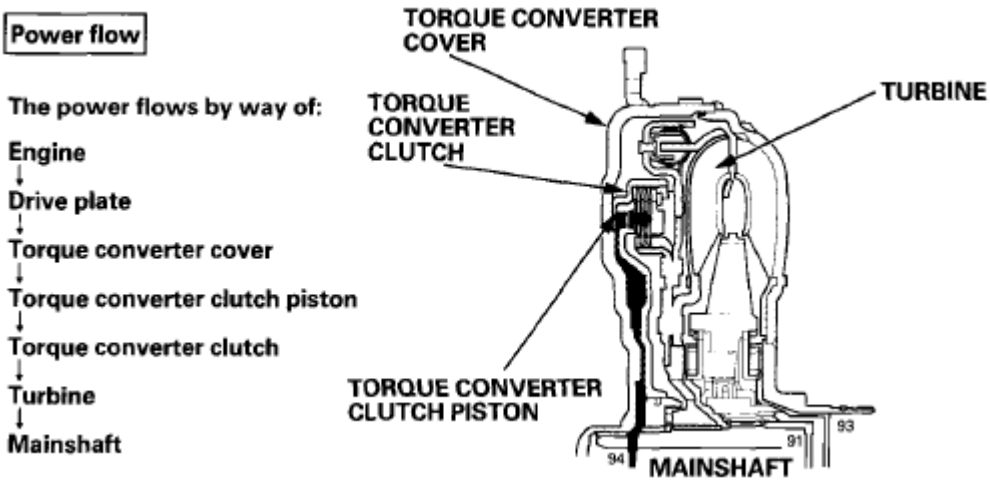


Fig. 58: Identifying Torque Converter Clutch Lock-Up ON
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Torque Converter Clutch Lock-Up OFF (Disengaging Torque Converter Clutch)

When the fluid pressure to the lock-up fluid passage (94) in the torque converter is blocked, the torque converter clutch in the torque converter is released. The turbine and the torque converter cover are also released at this time, causing the mainshaft and the engine crankshaft to rotate at a different speed.

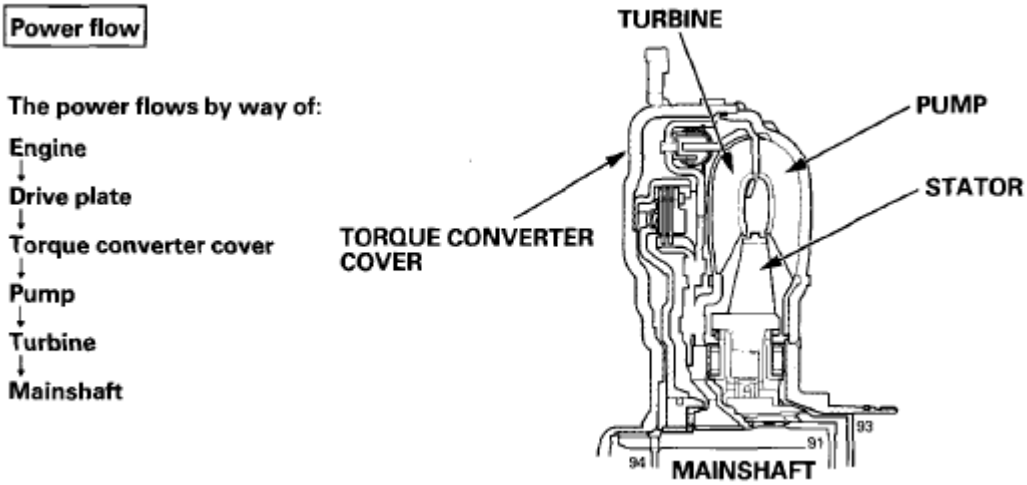


Fig. 59: Identifying Torque Converter Clutch Lock-Up OFF
Courtesy of AMERICAN HONDA MOTOR CO., INC.

SHIFT LOCK SYSTEM

The shift lock system prevents the shift lever from moving unless certain conditions are met. The shift lock solenoid is normally OFF. After starting the engine in P, the shift lever cannot move to any other position

because the shift lock stop stops the lock pin. When the brake pedal is pressed and the accelerator pedal is not pressed, the PCM commands the shift lock solenoid is ON; the shift lock solenoid plunger pulls the shift lock stop to release the lock pin. Pressing the shift lever button allows the shift lever to move to any other position. When the brake pedal and the accelerator pedal are pressed at the same time, the PCM does not command the solenoid ON and the shift lock system remains locked.

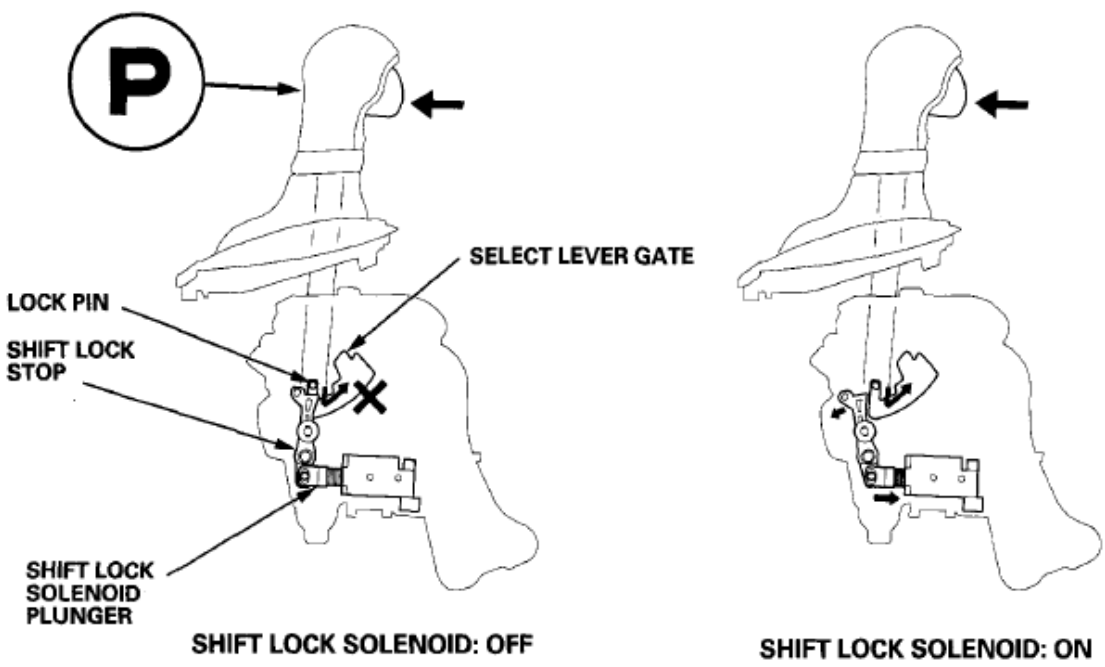


Fig. 60: Identifying Shift Lock Solenoid
Courtesy of AMERICAN HONDA MOTOR CO., INC.

When the shift lock system does not operate due to mechanical or electrical problem, you can unlock the shift lock temporarily by inserting the ignition key into the shift lock release hole and pressing the shift lock release. When the shift lock release is pressed, the shift lock stop releases the lock pin, and the shift lever can move to any other position.

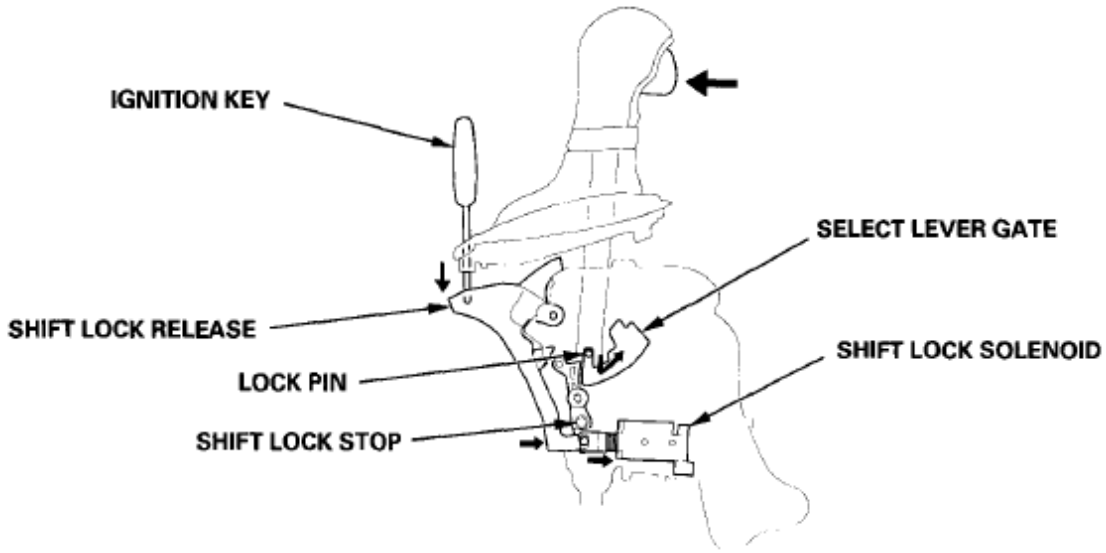


Fig. 61: Identifying Shift Lock System
Courtesy of AMERICAN HONDA MOTOR CO., INC.

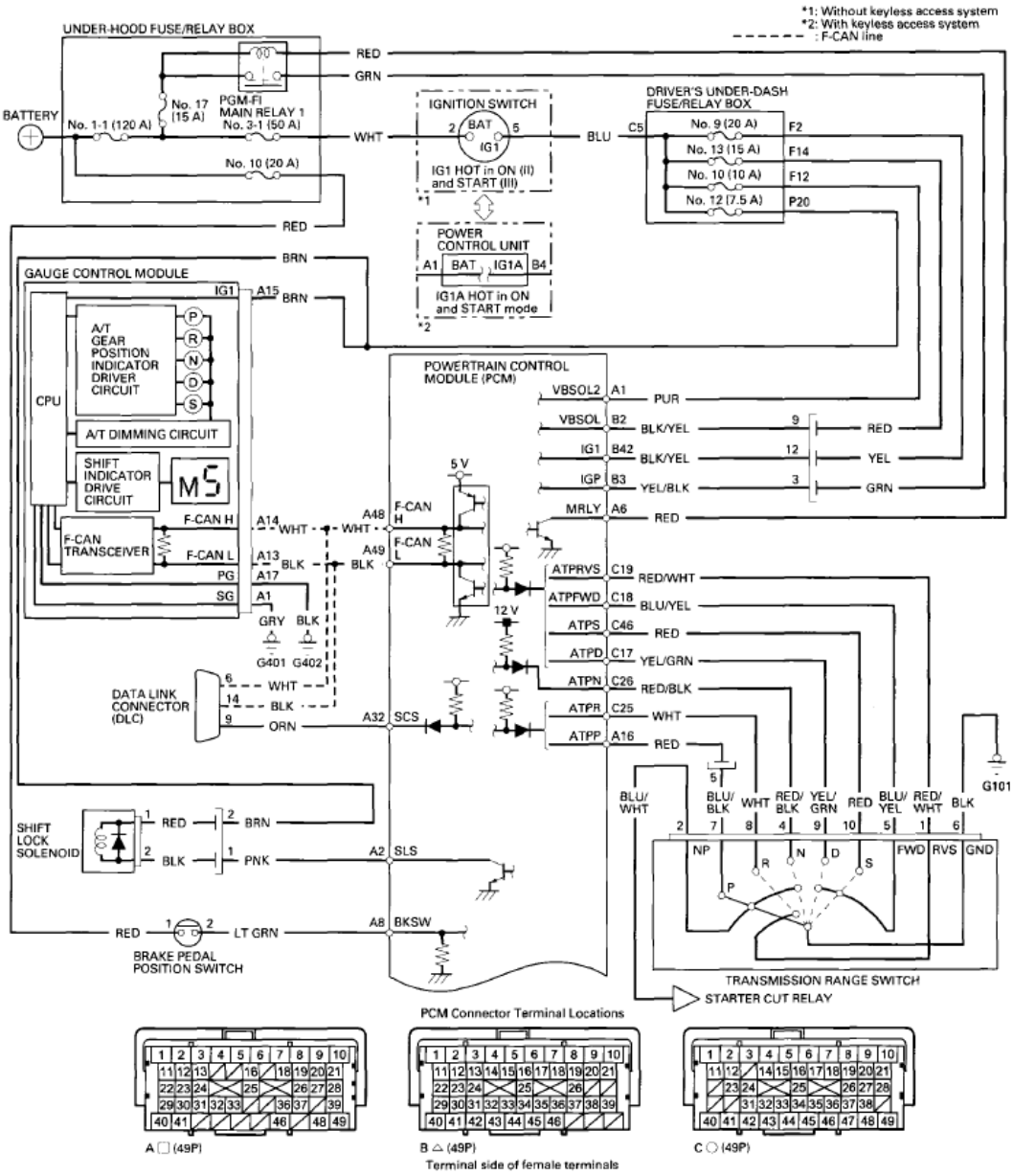


Fig. 62: Automatic Transmission System - Circuit Diagram (1 Of 2)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

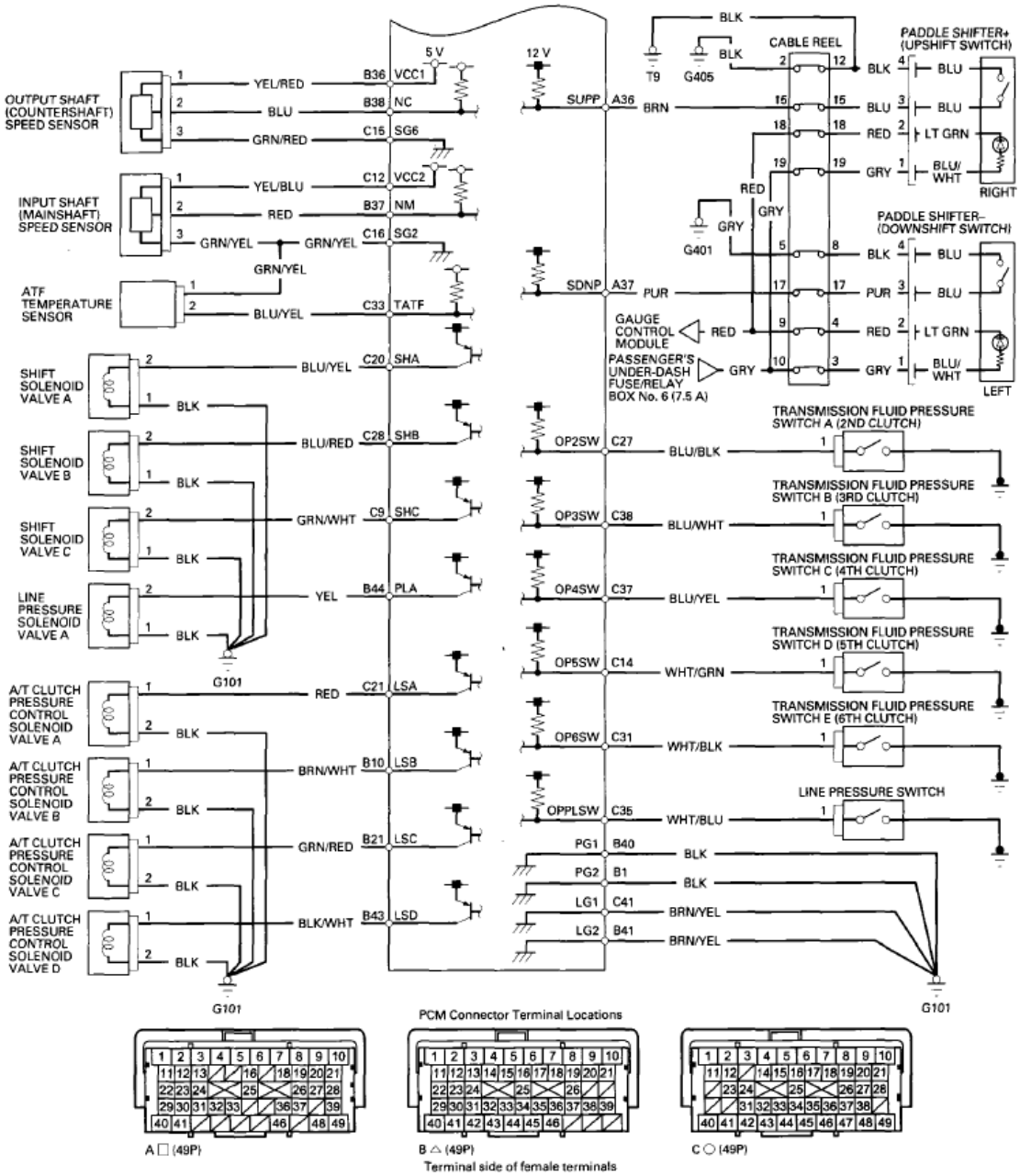


Fig. 63: Automatic Transmission System - Circuit Diagram (2 Of 2)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

DTC TROUBLESHOOTING

DTC P0705: SHORT IN TRANSMISSION RANGE SWITCH CIRCUIT (MULTIPLE SHIFT-POSITION INPUT)

NOTE:

- **Before you troubleshoot, record all freeze data and any on-board snapshot with the HDS, and review the General Troubleshooting Information (see**

GENERAL TROUBLESHOOTING INFORMATION).

- **This code is caused by an electrical circuit problem and cannot be caused by a mechanical problem in the transmission.**

1. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
2. Compare the ATPP, ATPR, ATPN, ATPD, ATPS, ATPFWD, and ATPRVS inputs with the HDS to the following table, in each shift lever position.

	ATP P	ATP R	ATP N	ATP D	ATP S	ATP FWD	ATP RVS
P	o	X	X	X	X	X	X
R	X	o	X	X	X	X	o
N	X	X	o	X	X	X	X
D	X	X	X	o	X	o	X
S	X	X	X	X	o	o	X
o: ON X: OFF							

Do the transmission range switch signals match?

YES - Intermittent failure, the system is OK at this time.

NO - Go to step 3.

3. Compare the ATPP, ATPR, ATPN, ATPD, ATPS, ATPFWD, and ATPRVS inputs with the HDS to the table in step 2, in each shift lever position.

Are any transmission range switch signals ON in all shift lever positions?

YES - Go to step 9.

NO - Record the input that did not indicate ON, then go to step 4.

4. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
5. Disconnect the transmission range switch connector.
6. Connect the transmission range switch connector terminal which incorrectly indicates ON in step 3 to body ground with a jumper wire.
7. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
8. Compare the ATPP, ATPR, ATPN, ATPD, ATPS, ATPFWD, and ATPRVS inputs with the HDS to the table in step 2.

Do multiple transmission range switch signals indicate ON?

YES - Repair a short in the wires between the transmission range switch and the PCM, refer to the following table.

NO - Replace the transmission range switch (see **TRANSMISSION RANGE SWITCH REPLACEMENT**).

	ATP P	ATP R	ATP N	ATP D	ATP S	ATP FWD	ATP RVS
PCM	A16	C25	C26	C17	C46	C18	C19
Transmission Range Switch	7	8	4	9	10	5	1

9. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
10. Disconnect the transmission range switch connector.
11. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
12. Check the transmission range switch signal that remained ON with the HDS.

    Does any transmission range switch signals remain ON?

    YES - Go to step 13.

    NO - Replace the transmission range switch (see **TRANSMISSION RANGE SWITCH REPLACEMENT**).

13. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
14. Check for continuity to body ground in the circuit that remained ON in step 2.

    Does the circuit that indicated ON have continuity to ground?

    YES - Repair a short to body ground in the wire between the corresponding transmission range switch connector terminal and the PCM.

    NO - Update the PCM if it does not have the latest software (see **ECM/PCM UPDATE**). If the PCM was updated, replace the PCM (see **ECM/PCM REPLACEMENT**).

DTC P0706: OPEN IN TRANSMISSION RANGE SWITCH CIRCUIT

NOTE:

- **Before you troubleshoot, record all freeze data and any on-board snapshot with the HDS, and review the General Troubleshooting Information (see GENERAL TROUBLESHOOTING INFORMATION).**
- **This code is caused by an electrical circuit problem and cannot be caused by a mechanical problem in the transmission.**

1. Make sure the shift cable is adjusted properly (see **SHIFT CABLE ADJUSTMENT**).
2. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
3. Compare the ATPP, ATPR, ATPN, ATPD, ATPS, ATPFWD, and ATPRVS inputs with the HDS to the following table, in each shift lever position.

	ATP P	ATP R	ATP N	ATP D	ATP S	ATP FWD	ATP RVS

p	o	X	X	X	X	X	X
R	X	o	X	X	X	X	o
N	X	X	o	X	X	X	X
D	X	X	X	o	X	o	X
S	X	X	X	X	o	o	X
o: ON X: OFF							

Do the transmission range switch signals match?

YES - Intermittent failure, the system is OK at this time.

NO - Go to step 4.

4. Compare the ATPP, ATPR, ATPN, ATPD, ATPS, ATPFWD, and ATPRVS inputs with the HDS to the table in step 3, in each shift lever position.

   Do all signals remain OFF?

   YES - Go to step 14.

   NO - Record the input that did not indicate ON, then go to step 5.

5. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
6. Disconnect the transmission range switch connector.
7. Connect the transmission range switch connector terminal which did not indicate ON in step 4 to body ground with a jumper wire.
8. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
9. Check the transmission range switch signal that did not indicate ON with the HDS.

   Does the transmission range switch signal indicate ON?

   YES - Replace the transmission range switch (see **TRANSMISSION RANGE SWITCH REPLACEMENT**).

   NO - Go to step 10.

10. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
11. Jump the SCS line with the HDS.
12. Disconnect PCM connector A (49P) or C (49P).
13. Check for continuity between the transmission range switch connector terminal and the PCM connector terminal of the input which indicated OFF. Refer to the following table.

	ATP P	ATP R	ATP N	ATP D	ATP S	ATP FWD	ATP RVS

PCM	A16	C25	C26	C17	C46	C18	C19
Transmission Range Switch	7	8	4	9	10	5	1

Is there continuity?

YES - Update the PCM if it does not have the latest software (see **ECM/PCM UPDATE**). If the PCM was updated, replace the PCM (see **ECM/PCM REPLACEMENT**).

NO - Repair an open in the wire between the corresponding transmission range switch connector terminal and the PCM.

14. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
15. Disconnect the transmission range switch connector.
16. Check for continuity between transmission range switch connector terminal No. 6 and body ground.

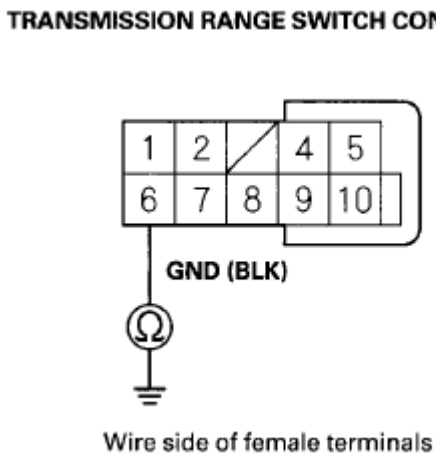


Fig. 64: Checking Continuity Between Transmission Range Switch Connector Terminal No. 6 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Replace the transmission range switch (see **TRANSMISSION RANGE SWITCH REPLACEMENT**).

NO - Repair an open in the wire between the transmission range switch and body ground (G101) (see **CONNECTOR TO FUSE/RELAY BOX INDEX**), or repair poor body ground (G101).

DTC P0711: PROBLEM IN ATF TEMPERATURE SENSOR CIRCUIT

NOTE:

- **Before you troubleshoot, record all freeze data and any on-board snapshot with the HDS, and review the General Troubleshooting Information (see GENERAL TROUBLESHOOTING INFORMATION).**

- **This code is caused by an electrical circuit problem and cannot be caused by a mechanical problem in the transmission.**

1. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
2. Check the ATF Temperature with the HDS in the A/T Data List.

   Does the ATF Temperature indicate - 4°F (- 20°C) or below?

   YES - Go to step 3.

   NO - Go to step 5.

3. Start the engine, and warm it up to normal operating temperature (the radiator fan comes on).
4. Check the ATF Temperature with the HDS in the A/T Data List.

   Does the ATF Temperature remain - 4°F (- 20°C) or below?

   YES - Replace the ATF temperature sensor (see **ATF TEMPERATURE SENSOR REPLACEMENT**), then go to step 8.

   NO - Intermittent failure, the system is OK at this time. If there is an abnormal temperature rise in the ATF temperature sensor, go to step 16.

5. Check the ATF Temperature with the HDS in the A/T Data List.

   Does the ATF Temperature exceed 230°F (110°C)?

   YES - Go to step 6.

   NO - Intermittent failure, the system is OK at this time.

6. Let the engine cool until the Engine Coolant Temperature reads 122°F (50°C) or below with the HDS in the A/T Data List.
7. Check the ATF Temperature with the HDS in the A/T Data List.

   Does the ATF Temperature remain 230°F (110°C) or higher?

   YES - Replace the ATF temperature sensor (see **ATF TEMPERATURE SENSOR REPLACEMENT**), then go to step 8.

   NO - Intermittent failure, the system is OK at this time. If there is an abnormal decrease in temperature of the ATF temperature sensor, go to step 16.

8. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
9. Clear the DTC with the HDS.

10. Start the engine, and warm it up to normal operating temperature (the radiator fan comes on).
11. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode, and allow the engine coolant to cool down to outside air temperature.
12. With SH-AWD: Raise the vehicle on a lift, make sure it is securely supported, and allow all four wheels to rotate freely.

    Without SH-AWD: Block the rear wheels, and raise the front of the vehicle, make sure it is securely supported, and allow the front wheels to rotate freely, or raise the vehicle on a lift.

13. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode, and wait for 20 seconds, then start the engine. Warm the engine up to normal operating temperature (the radiator fan comes on). Start off in D, accelerate with the throttle opened at least 4 degrees, and run the vehicle at speeds over 19 mph (30 km/h) for at least 5 minutes. Or test-drive the vehicle for at least 20 seconds while the ATF temperature reads - 4°F to 230°F (- 20°C to 110°C) by monitoring with the HDS. Slowdown, and stop the wheels.
14. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P0711 indicated?

    YES - Check for poor connections or loose terminals between the ATF temperature sensor and the PCM, then go to step 1.

    NO - Go to step 15.

15. Monitor the OBD STATUS for P0711 in the DTCs MENU with the HDS.

    Does the HDS indicate PASSED?

    YES - Troubleshooting is complete. If any other Pending or Confirmed DTCs were found in step 14, go to the indicated **DTC'S TROUBLESHOOTING**.

    NO - If the HDS indicates FAILED, check for poor connections and loose terminals at the ATF temperature sensor and the PCM, then go to step 1. If the HDS indicates NOT COMPLETED, go to step 10.

16. Update the PCM if it does not have the latest software (see **ECM/PCM UPDATE**), or substitute a known-good PCM (see **SUBSTITUTING THE ECM/PCM**).
17. Start the engine, and warm it up to normal operating temperature (the radiator fan comes on).
18. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode, and allow the engine coolant to cool down to outside air temperature.
19. With SH-AWD: Raise the vehicle on a lift, make sure it is securely supported, and allow all four wheels to rotate freely.

    Without SH-AWD: Block the rear wheels, and raise the front of the vehicle, make sure it is securely supported, and allow the front wheels to rotate freely, or raise the vehicle on a lift.

20. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode, and wait for 20 seconds, then start the engine. Warm the engine up to normal operating temperature (the radiator fan comes on). Start off in D, accelerate with the throttle opened at least 4 degrees, and run the vehicle at speeds over 19 mph (30 km/h) for at least 5 minutes. Or test-drive the vehicle for at least 20 seconds while the ATF temperature reads - 4°F to 230°F (- 20°C to 110°C) by monitoring with the HDS. Slow down, and stop the wheels.
21. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P0711 indicated?

    YES - Check for poor connections or loose terminals between the ATF temperature sensor and the PCM. If the PCM was updated, substitute a known-good PCM (see **SUBSTITUTING THE ECM/PCM**), then go to step 17. If the PCM was substituted, go to step 1.

    NO - Go to step 22.

22. Monitor the OBD STATUS for P0711 in the DTCs MENU with the HDS.

    Does the HDS indicate PASSED?

    YES - If the PCM was updated, troubleshooting is complete. If the PCM was substituted, replace the original PCM (see **ECM/PCM REPLACEMENT**). If any other Pending or Confirmed DTCs were indicated in step 21, go to the indicated **DTC'S TROUBLESHOOTING**.

    NO - If the HDS indicates FAILED, check for poor connections or loose terminals between the ATF temperature sensor and the PCM. If the PCM was updated, substitute a known-good PCM (see **SUBSTITUTING THE ECM/PCM**), then go to step 17. If the PCM was substituted, go to step 1. If the HDS indicates NOT COMPLETED, go to step 17.

DTC P0712: SHORT IN ATF TEMPERATURE SENSOR CIRCUIT

NOTE:

- **Before you troubleshoot, record all freeze data and any on-board snapshot with the HDS, and review the General Troubleshooting Information (see GENERAL TROUBLESHOOTING INFORMATION).**
- **This code is caused by an electrical circuit problem and cannot be caused by a mechanical problem in the transmission.**

1. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
2. Check the ATF Temp Sensor (V) with the HDS in the A/T Data List.

    Is the ATF Temp Sensor (V) 0.07 V or less?

    YES - Go to step 3.

    NO - Intermittent failure, the system is OK at this time. Check for an intermittent short to body ground in the wire between the ATF temperature sensor and the PCM.

3. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
4. Disconnect the ATF temperature sensor connector.
5. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
6. Check the ATF Temp Sensor (V) with the HDS in the A/T Data List.

   Is the ATF Temp Sensor (V) 0.07 V or less?

   YES - Go to step 7.

   NO - Replace the ATF temperature sensor (see **ATF TEMPERATURE SENSOR REPLACEMENT**), then go to step 11.

7. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
8. Jump the SCS line with the HDS.
9. Disconnect PCM connector C (49P).
10. Check for continuity between ATF temperature sensor connector terminal No. 2 and body ground.

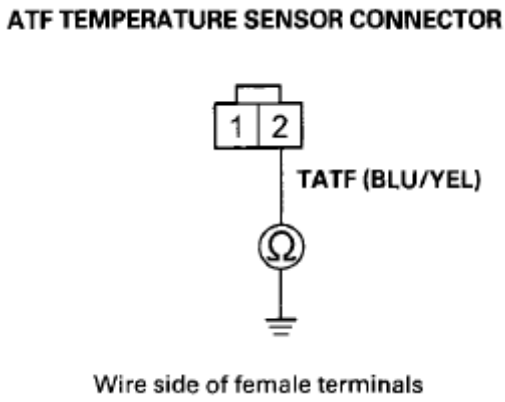


Fig. 65: Checking Continuity Between ATF Temperature Sensor Connector Terminal No. 2 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair a short to body ground in the wire between PCM connector terminal C33 and ATF temperature sensor connector terminal No. 2, then go to step 11.

NO - Go to step 17.

11. Reconnect all connectors.
12. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
13. Clear the DTC with the HDS.
14. Start the engine in P, and wait for at least 20 seconds.
15. Check for Pending or Confirmed DTCs with the HDS.

Is DTC P0712 indicated?

YES - Check for an intermittent short to body ground in the wire between the ATF temperature sensor and the PCM, then go to step 1.

NO - Go to step 16.

16. Monitor the OBD STATUS for P0712 in the DTCs MENU with the HDS.

    Does the HDS indicate PASSED?

    YES - Troubleshooting is complete. If any other Pending or Confirmed DTCs were indicated in step 15, go to the indicated **DTC'S TROUBLESHOOTING**.

    NO - If the HDS indicates FAILED, check for an intermittent short to body ground in the wire between the ATF temperature sensor and the PCM, then go to step 1. If the HDS indicates NOT COMPLETED, go to step 14.

17. Reconnect all connectors.
18. Update the PCM if it does not have the latest software (see **ECM/PCM UPDATE**), or substitute a known-good PCM (see **SUBSTITUTING THE ECM/PCM**).
19. Start the engine in P, and wait for at least 20 seconds.
20. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P0712 indicated?

    YES - Check for an intermittent short to body ground in the wire between the ATF temperature sensor and the PCM. If the PCM was updated, substitute a known-good PCM (see **SUBSTITUTING THE ECM/PCM**), then go to step 19. If the PCM was substituted, go to step 1.

    NO - Go to step 21.

21. Monitor the OBD STATUS for P0712 in the DTCs MENU with the HDS.

    Does the HDS indicate PASSED?

    YES - If the PCM was updated, troubleshooting is complete. If the PCM was substituted, replace the original PCM (see **ECM/PCM REPLACEMENT**). If any other Pending or Confirmed DTCs were indicated in step 20, go to the indicated **DTC'S TROUBLESHOOTING**.

    NO - If the HDS indicates FAILED, check for an intermittent short to body ground in the wire between the ATF temperature sensor and the PCM. If the PCM was updated, substitute a known-good PCM (see **SUBSTITUTING THE ECM/PCM**), then go to step 19. If the PCM was substituted, go to step 1. If the HDS indicates NOT COMPLETED, go to step 19.

DTC P0713: OPEN IN ATF TEMPERATURE SENSOR CIRCUIT

NOTE:

- **Before you troubleshoot, record all freeze data and any on-board snapshot with the HDS, and review the General Troubleshooting Information (see GENERAL TROUBLESHOOTING INFORMATION).**
- **This code is caused by an electrical circuit problem and cannot be caused by a mechanical problem in the transmission.**

1. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
2. Check the ATF Temp Sensor (V) with the HDS in the A/T Data List.

   Does the ATF Temp Sensor (V) exceed 4.93 V?

   YES - Go to step 3.

   NO - Intermittent failure, the system is OK at this time. Check for poor connections or loose terminals between the ATF temperature sensor and the PCM.

3. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
4. Disconnect the ATF temperature sensor connector.
5. Connect ATF temperature sensor connector terminal No. 2 to body ground with a jumper wire.

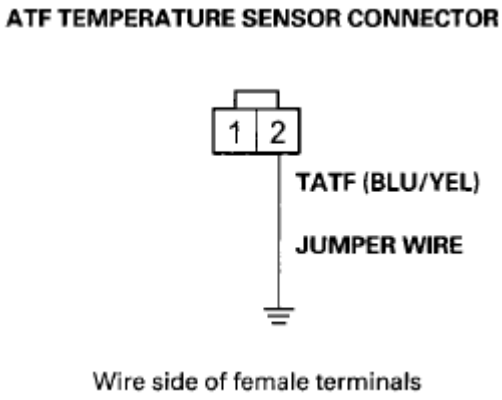


Fig. 66: Identifying ATF Temperature Sensor Connector Terminal No. 2 Connection With Body Ground Using Jumper Wire
Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
7. Check the ATF Temp Sensor (V) with the HDS in the A/T Data List.

   Does the ATF Temp Sensor (V) drop to 0.07 V or less?

   YES - Go to step 8.

   NO - Go to step 13.

8. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.

9. Remove the jumper wire.
10. Connect ATF temperature sensor connector terminals No. 1 and No. 2 with a jumper wire.

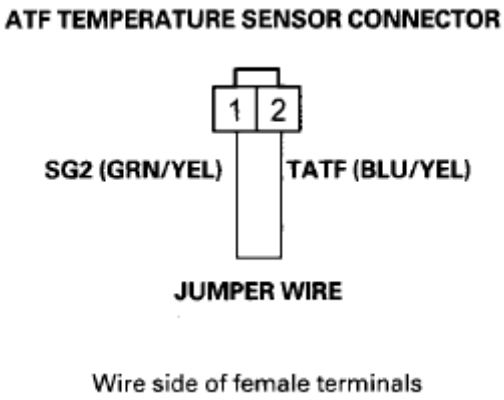


Fig. 67: Identifying ATF Temperature Sensor Connector Terminals No. 1 And No. 2 Connection Using Jumper Wire
Courtesy of AMERICAN HONDA MOTOR CO., INC.

11. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
12. Check the ATF Temp Sensor (V) with the HDS in the A/T Data List.

    Does the ATF Temp Sensor (V) remain 0.07 V or less?

    YES - Replace the ATF temperature sensor (see **ATF TEMPERATURE SENSOR REPLACEMENT**), then go to step 17.

    NO - Repair an open in the wire between PCM connector terminal C16 and the ATF temperature sensor connector terminal No. 1, then go to step 17.

13. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
14. Jump the SCS line with the HDS.
15. Disconnect PCM connector C (49P).
16. Check for continuity between PCM connector terminal C33 and ATF temperature sensor connector terminal No. 2.

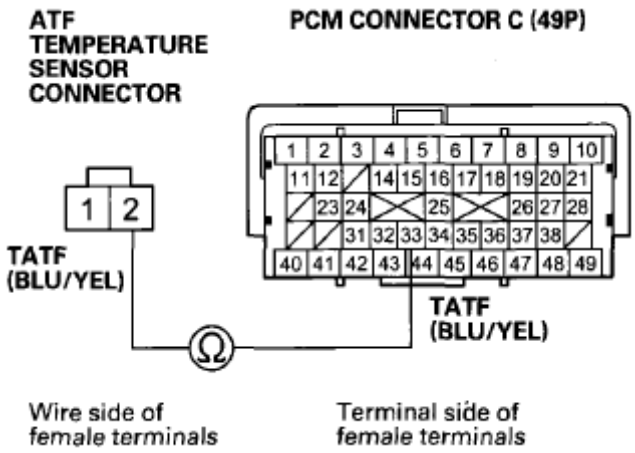


Fig. 68: Checking Continuity Between PCM Connector Terminal C33 And Atf Temperature Sensor Connector Terminal No. 2
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Check for poor connections or loose terminals between the ATF temperature sensor and the PCM. If the connections are OK, go to step 23.

NO - Repair an open in the wire between PCM connector terminal C33 and ATF temperature sensor connector terminal No. 2, then go to step 17.

17. Reconnect all connectors.
18. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
19. Clear the DTC with the HDS.
20. Start the engine in P, and wait for at least 20 seconds.
21. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P0713 indicated?

    YES - Check for poor connections or loose terminals between the ATF temperature sensor and the PCM, then go to step 1.

    NO - Go to step 22.

22. Monitor the OBD STATUS for P0713 in the DTCs MENU with the HDS.

    Does the HDS indicate PASSED?

    YES - Troubleshooting is complete. If any other Pending or Confirmed DTCs were indicated in step 21, go to the indicated **DTC'S TROUBLESHOOTING**.

    NO - If the HDS indicates FAILED, check for poor connections or loose terminals between the ATF

temperature sensor and the PCM, then go to step 1. If the HDS indicates NOT COMPLETED, go to step 20.

23. Reconnect all connectors.
24. Update the PCM if it does not have the latest software (see **ECM/PCM UPDATE**), or substitute a known-good PCM (see **SUBSTITUTING THE ECM/PCM**).
25. Start the engine in P, and wait for at least 20 seconds.
26. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P0713 indicated?

    YES - Check for poor connections or loose terminals between the ATF temperature sensor and the PCM. If the PCM was updated, substitute a known-good PCM (see **SUBSTITUTING THE ECM/PCM**), then go to step 25. If the PCM was substituted, go to step 1.

    NO - Go to step 27.

27. Monitor the OBD STATUS for P0713 in the DTCs MENU with the HDS.

    Does the HDS indicate PASSED?

    YES - If the PCM was updated, troubleshooting is complete. If the PCM was substituted, replace the original PCM (see **ECM/PCM REPLACEMENT**). If any other Pending or Confirmed DTCs were indicated in step 26, go to the indicated **DTC'S TROUBLESHOOTING**.

    NO - If the HDS indicates FAILED, check for poor connections or loose terminals between the ATF temperature sensor and the PCM. If the PCM was updated, substitute a known-good PCM (see **SUBSTITUTING THE ECM/PCM**) then go to step 25. If the PCM was substituted, go to step 1. If the HDS indicates NOT COMPLETED, go to step 25.

DTC P0714: ATF TEMPERATURE SENSOR INTERMITTENT FAILURE

NOTE:

- **Before you troubleshoot, record all freeze data and any on-board snapshot with the HDS, and review the General Troubleshooting Information (see GENERAL TROUBLESHOOTING INFORMATION).**
- **This code is caused by an electrical circuit problem and cannot be caused by a mechanical problem in the transmission.**
- **An engine block heater must not be used.**

1. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
2. Check the following parameters with the HDS:
   - ATF Temperature in the A/T Data List
   - ECT Sensor 2 in the PGM-FI Data List

   Do the ATF Temperature and ECT Sensor 2 read the same as the ambient air temperature?

YES - Go to step 6.

NO - Go to step 3.

3. Record the value of the ATF Temperature in the A/T Data List with the HDS.
4. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode, and wait for at least 30 minutes.
5. Compare the current ATF Temperature to the ATF Temperature recorded in step 3.

   Did the ATF Temperature change?

   YES - Leave the engine off for at least 6 hours, then go to step 6.

   NO - Replace the ATF temperature sensor (see **ATF TEMPERATURE SENSOR REPLACEMENT**).

6. Record the values of the ATF Temperature and ECT Sensor 2 with the HDS.
7. Compare the values of the ATF Temperature Sensor and ECT Sensor 2.

   Is the value of the ATF Temperature Sensor higher than the value of ECT Sensor 2 by 58°F (32°C), or is the value of the ATF Temperature Sensor lower than the value of ECT Sensor 2 by 43°F (24°C)?

   YES - Replace the ATF temperature sensor (see **ATF TEMPERATURE SENSOR REPLACEMENT**).

   NO - Intermittent failure, the system is OK at this time.

DTC P0716: PROBLEM IN INPUT SHAFT (MAINSHAFT) SPEED SENSOR CIRCUIT; DTC P0721: PROBLEM IN OUTPUT SHAFT (COUNTERSHAFT) SPEED SENSOR CIRCUIT

NOTE:

- **Before you troubleshoot, record all freeze data and any on-board snapshot with the HDS, and review the General Troubleshooting Information (see GENERAL TROUBLESHOOTING INFORMATION).**
- **This code is caused by an electrical circuit problem and cannot be caused by a mechanical problem in the transmission.**

1. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
2. Clear the DTC with the HDS.
3. With SH-AWD: Raise the vehicle on a lift, make sure it is securely supported, and allow all four wheels to rotate freely.

   Without SH-AWD: Block the rear wheels, and raise the front of the vehicle, make sure it is securely supported, and allow the front wheels to rotate freely, or raise the vehicle on a lift.

4. Start the engine, disable the VSA by pressing the VSA OFF button, move the shift lever to D, and run the vehicle with the engine speed above 2, 000 RPM for at least 10 seconds. Slow down, and stop the wheels.

5. Check for pending or Confirmed DTCs with the HDS.

   Is DTC P0718 or P0723 indicated?

   YES - Go to the **DTC P0718 TROUBLESHOOTING** or the **DTC P0723 TROUBLESHOOTING** .

   NO - Go to step 6.

6. Check for Pending or Confirmed DTCs with the HDS.

   Is DTC P0716 or P0721 indicated?

   YES - Go to step 7.

   NO - Intermittent failure, the system is OK at this time.

7. Check the input shaft (mainshaft) speed sensor or the output shaft (countershaft) speed sensor for poor connection and proper installation.

   Are the connection and installation OK?

   YES - Replace the input shaft (mainshaft) speed sensor or the output shaft (countershaft) speed sensor, then go to step 8.

   NO - Reinstall the speed sensor and connect the speed sensor connector, then go to step 8.

8. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
9. Clear the DTC with HDS.
10. Start the engine, disable the VSA by pressing the VSA OFF button, move the shift lever to D, and run the vehicle with the engine speed above 2, 000 RPM for at least 10 seconds. Slow down, and stop the wheels.
11. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P0716 or P0721 indicated?

    YES - Go to step 1.

    NO - Troubleshooting is complete.

DTC P0717: PROBLEM IN INPUT SHAFT (MAINSHAFT) SPEED SENSOR CIRCUIT (NO SIGNAL INPUT); DTC P0718: INPUT SHAFT (MAINSHAFT) SPEED SENSOR INTERMITTENT FAILURE

NOTE:

- **Before you troubleshoot, record all freeze data and any on-board snapshot with the HDS, and review the General Troubleshooting Information (see GENERAL TROUBLESHOOTING INFORMATION).**
- **This code is caused by an electrical circuit problem and cannot be caused**

by a mechanical problem in the transmission.

1. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
2. Clear the DTC with the HDS.
3. With SH-AWD: Raise the vehicle on a lift, make sure it is securely supported, and allow all four wheels to rotate freely.

   Without SH-AWD: Block the rear wheels, and raise the front of the vehicle, make sure it is securely supported, and allow the front wheels to rotate freely, or raise the vehicle on a lift.

4. Start the engine, disable the VSA by pressing the VSA OFF button, move the shift lever to D, and run the vehicle with the engine speed above 2, 000 RPM. Compare the Input Shaft (Mainshaft) Speed and the Output Shaft (Countershaft) Speed with the HDS in the A/T Data List. Slow down, and stop the wheels.

   Are the speeds about the same?

   YES - Intermittent failure, the system is OK at this time.

   NO - Go to step 5.

5. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
6. Disconnect the input shaft (mainshaft) speed sensor connector.
7. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
8. Measure the voltage between input shaft (mainshaft) speed sensor connector terminal No. 1 and body ground.

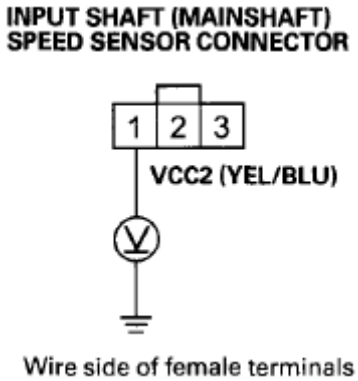


Fig. 69: Measuring Voltage Between Input Shaft Speed Sensor Connector Terminal No. 1 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there about 5 V?

YES - Go to step 9.

NO - Repair an open in the wire between PCM connector terminal C12 and the input shaft (mainshaft) speed sensor, then go to step 15.

9. Measure the voltage between input shaft (mainshaft) speed sensor connector terminal No. 2 and body ground.

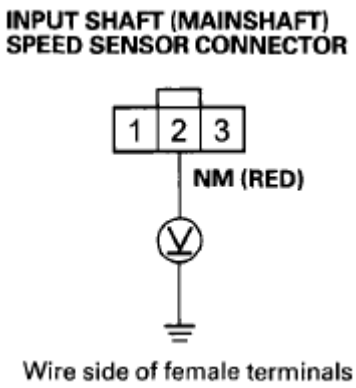


Fig. 70: Measuring Voltage Between Input Shaft Speed Sensor Connector Terminal No. 2 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there about 5 V?

YES - Go to step 10.

NO - Go to step 11.

10. Check for continuity between input shaft (mainshaft) speed sensor connector terminal No. 3 and body ground.

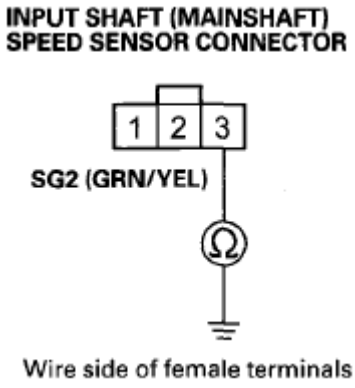


Fig. 71: Checking Continuity Between Input Shaft Speed Sensor Connector Terminal No. 3 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Replace the input shaft (mainshaft) speed sensor (see **INPUT SHAFT (MAINSHAFT) SPEED SENSOR REPLACEMENT**), then go to step 15.

NO - Repair an open in the wire between the input shaft (mainshaft) speed sensor connector and PCM connector terminal C16, then go to step 15.

11. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
12. Jump the SCS line with the HDS.
13. Disconnect PCM connector B (49P).
14. Check for continuity between input shaft (mainshaft) speed sensor connector terminal No. 2 and body ground.

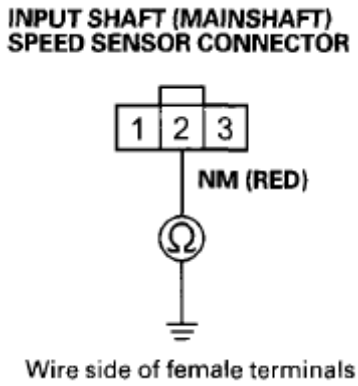


Fig. 72: Checking Continuity Between Input Shaft Speed Sensor Connector Terminal No. 2 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair a short to body ground in the wire between PCM connector terminal B37 and the input shaft (mainshaft) speed sensor, then go to step 15.

NO - Repair an open in the wire between PCM connector terminal B37 and the input shaft (mainshaft) speed sensor, then go to step 15.

15. Reconnect all connectors.
16. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
17. Clear the DTC with the HDS.
18. Start the engine, disable the VSA by pressing the VSA OFF button, move the shift lever to D, and run the vehicle with the engine speed above 2, 000 RPM. Compare the Input Shaft (Mainshaft) Speed and the Output Shaft (Countershaft) Speed with the HDS in the A/T Data List. Slow down, and stop the wheels.

Are the speeds about the same?

YES - Troubleshooting is complete.

NO - Replace the PCM (see **ECM/PCM REPLACEMENT**).

DTC P0722: PROBLEM IN OUTPUT SHAFT (COUNTERSHAFT) SPEED SENSOR CIRCUIT (NO SIGNAL INPUT); DTC P0723: OUTPUT SHAFT (COUNTERSHAFT) SPEED SENSOR INTERMITTENT FAILURE

NOTE:

- **Before you troubleshoot, record all freeze data and any on-board snapshot with the HDS, and review the General Troubleshooting Information (see GENERAL TROUBLESHOOTING INFORMATION).**
- **This code is caused by an electrical circuit problem and cannot be caused by a mechanical problem in the transmission.**

1. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
2. Clear the DTC with the HDS.
3. With SH-AWD: Raise the vehicle on a lift, make sure it is securely supported, and allow all four wheels to rotate freely.

   Without SH-AWD: Block the rear wheels, and raise the front of the vehicle, make sure it is securely supported, and allow the front wheels to rotate freely, or raise the vehicle on a lift.

4. Start the engine, disable the VSA by pressing the VSA OFF button, move the shift lever to D, and run the vehicle with the engine speed above 2, 000 RPM. Compare the Input Shaft (Mainshaft) Speed and the Output Shaft (Countershaft) Speed with the HDS in the A/T Data List. Slow down, and stop the wheels.

   Are the speeds about the same?

   YES - Intermittent failure, the system is OK at this time.

   NO - Go to step 5.

5. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
6. Disconnect the output shaft (countershaft) speed sensor connector.
7. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
8. Measure the voltage between output shaft (countershaft) speed sensor connector terminal No. 1 and body ground.

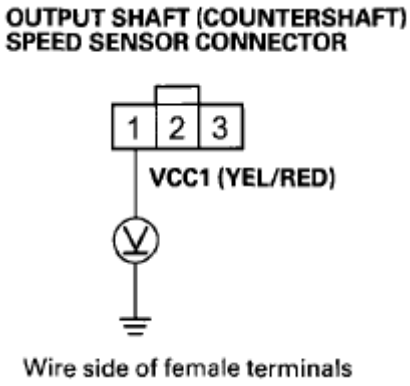


Fig. 73: Measuring Voltage Between Output Shaft Speed Sensor Connector Terminal No. 1 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there about 5 V?

YES - Go to step 9.

NO - Repair an open in the wire between PCM connector terminal B36 and the output shaft (countershaft) speed sensor, then go to step 15.

9. Measure the voltage between output shaft (countershaft) speed sensor connector terminal No. 2 and body ground.

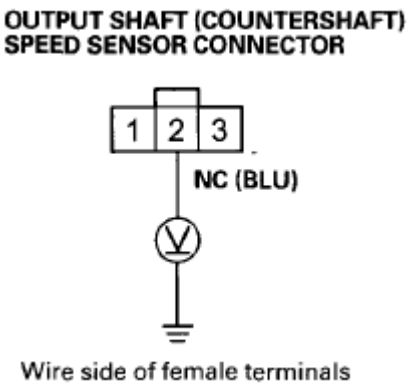


Fig. 74: Measuring Voltage Between Output Shaft Speed Sensor Connector Terminal No. 2 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there about 5 V?

YES - Go to step 10.

NO - Go to step 11.

10. Check for continuity between output shaft (countershaft) speed sensor connector terminal No. 3 and body ground.

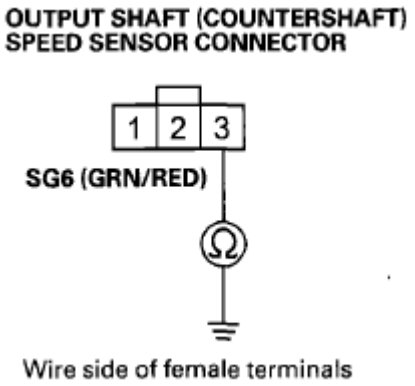


Fig. 75: Checking Continuity Between Output Shaft Speed Sensor Connector Terminal No. 3 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Replace the output shaft (countershaft) speed sensor (see **OUTPUT SHAFT (COUNTERSHAFT) SPEED SENSOR REPLACEMENT**), then go to step 15.

NO - Repair an open in the wire between the output shaft (countershaft) speed sensor and PCM connector terminal C15, then go to step 15.

11. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
12. Jump the SCS line with the HDS.
13. Disconnect PCM connector B (49P).
14. Check for continuity between output shaft (countershaft) speed sensor connector terminal No. 2 and body ground.

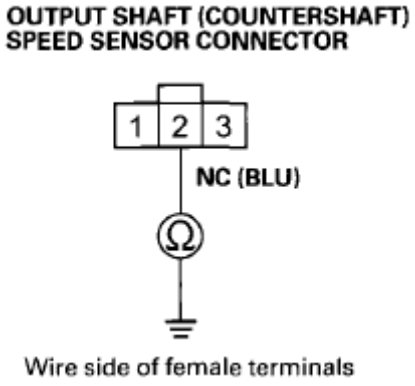


Fig. 76: Checking Continuity Between Output Shaft Speed Sensor Connector Terminal No. 2 And Body Ground

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair a short to body ground in the wire between PCM connector terminal B38 and the output shaft (countershaft) speed sensor, then go to step 15.

NO - Repair an open in the wire between PCM connector terminal B38 and the output shaft (countershaft) speed sensor, then go to step 15.

15. Reconnect all connectors.
16. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
17. Clear the DTC with the HDS.
18. Start the engine, disable the VSA by pressing the VSA OFF button, move the shift lever to D, and run the vehicle with the engine speed above 2, 000 RPM. Compare the Input Shaft (Mainshaft) Speed and the Output Shaft (Countershaft) Speed with the HDS in the A/T Data List. Slow down, and stop the wheels.

Are the speeds about the same?

YES - Troubleshooting is complete.

NO - Replace the PCM (see **ECM/PCM REPLACEMENT**).

DTC P0729: PROBLEM IN 6TH CLUTCH AND 6TH CLUTCH HYDRAULIC CIRCUIT

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot with the HDS, and review the General Troubleshooting Information (see GENERAL TROUBLESHOOTING INFORMATION).

1. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
2. Clear the DTC with the HDS.
3. Test-drive the vehicle in 6th gear in D for at least 12 seconds. Slow down, and stop the wheels.
4. Check for Pending or Confirmed DTCs with the HDS.

Is DTC P0729 indicated?

YES - Go to step 5.

NO - Intermittent failure, the system is OK at this time. If any other Pending or Confirmed DTCs were indicated, go to the indicated **DTC'S TROUBLESHOOTING**.

5. Measure the 6th clutch pressure (see **PRESSURE TEST**).

Is the 6th clutch pressure within the service limit?

YES - Faulty 6th clutch. Replace the 3rd/6th clutch or the transmission. If you are replacing the 3rd/6th clutch, clean off any metal debris or excessive clutch material inside the transmission, the ATF cooler, the ATF hoses, the ATF pipes, and the hydraulic circuit. Then, replace the 3rd/6th clutch and the torque converter.

NO - Go to step 6.

6. Measure the line pressure (see **PRESSURE TEST**).

   Is the line pressure within the service limits?

   YES - Clogged 6th clutch hydraulic circuit. Clean the 6th clutch hydraulic circuit or replace the transmission. If you are cleaning the 6th clutch hydraulic circuit, clean off any metal debris or excessive clutch material inside the transmission, the ATF cooler, the ATF hoses, the ATF pipes, and the hydraulic circuit. Then, replace the torque converter.

   NO - Faulty ATF pump or main regulator valve. Replace the main valve body (ATF pump), the regulator valve body (main regulator valve), or the transmission. If you are replacing the main valve body or the regulator valve body, clean off any metal debris or excessive clutch material inside the transmission, the ATF cooler, the ATF hoses, the ATF pipes, and the hydraulic circuit. Then, replace the main valve body or the regulator valve body and the torque converter.

DTC P0731: PROBLEM IN 1ST CLUTCH AND 1ST CLUTCH HYDRAULIC CIRCUIT

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot with the HDS, and review the General Troubleshooting Information (see GENERAL TROUBLESHOOTING INFORMATION).

1. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
2. Clear the DTC with the HDS.
3. Test-drive the vehicle in 1st gear in D, at speeds over 7 mph (12 km/h), and for at least 12 seconds. Slow down, and stop the wheels.
4. Check for Pending or Confirmed DTCs with the HDS.

   Is DTC P0731 indicated?

   YES - Go to step 5.

   NO - Intermittent failure, the system is OK at this time. If any other Pending or Confirmed DTCs were indicated, go to the indicated **DTC'S TROUBLESHOOTING**.

5. Measure the 1st clutch pressure (see **PRESSURE TEST**).

   Is the 1st clutch pressure within the service limit?

   YES - Faulty 1st clutch. Replace the 1st clutch or the transmission. If you are replacing the 1st clutch,

clean off any metal debris or excessive clutch material inside the transmission, the ATF cooler, the ATF hoses, the ATF pipes, and the hydraulic circuit. Then, replace the 1st clutch and the torque converter.

NO - Go to step 6.

6. Measure the line pressure (see **PRESSURE TEST**).

   Is the line pressure within the service limits?

   YES - Clogged 1st clutch hydraulic circuit. Clean the 1st clutch hydraulic circuit or replace the transmission. If you are cleaning the 1st clutch hydraulic circuit, clean off any metal debris or excessive clutch material inside the transmission, the ATF cooler, the ATF hoses, the ATF pipes, and the hydraulic circuit. Then, replace the torque converter.

   NO - Faulty ATF pump or main regulator valve. Replace the main valve body (ATF pump), the regulator valve body (main regulator valve), or the transmission. If you are replacing the main valve body or the regulator valve body, clean off any metal debris or excessive clutch material inside the transmission, the ATF cooler, the ATF hoses, the ATF pipes, and the hydraulic circuit. Then, replace the main valve body or the regulator valve body and the torque converter.

DTC P0732: PROBLEM IN 2ND CLUTCH AND 2ND CLUTCH HYDRAULIC CIRCUIT

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot with the HDS, and review the General Troubleshooting Information (see GENERAL TROUBLESHOOTING INFORMATION).

1. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
2. Clear the DTC with the HDS.
3. Test-drive the vehicle in 2nd gear in D, at speeds over 7 mph (12 km/h), and for at least 12 seconds. Slow down, and stop the wheels.
4. Check for Pending or Confirmed DTCs with the HDS.

   Is DTC P0732 indicated?

   YES - Go to step 5.

   NO - Intermittent failure, the system is OK at this time. If any other Pending or Confirmed DTCs were indicated, go to the indicated **DTC'S TROUBLESHOOTING**.

5. Measure the 2nd clutch pressure (see **PRESSURE TEST**).

   Is the 2nd clutch pressure within the service limit?

   YES - Faulty 2nd clutch. Replace the 2nd/5th clutch or the transmission. If you are replacing the 2nd/5th clutch, clean off any metal debris or excessive clutch material inside the transmission, the ATF cooler, the ATF hoses, the ATF pipes, and the hydraulic circuit. Then, replace the 2nd/5th clutch and the torque

converter.

NO - Go to step 6.

6. Measure the line pressure (see **PRESSURE TEST**).

   Is the line pressure within the service limits?

   YES - Clogged 2nd clutch hydraulic circuit. Clean the 2nd clutch hydraulic circuit or replace the transmission. If you are cleaning the 2nd clutch hydraulic circuit, clean off any metal debris or excessive clutch material inside the transmission, the ATF cooler, the ATF hoses, the ATF pipes, and the hydraulic circuit. Then, replace the torque converter.

   NO - Faulty ATF pump or main regulator valve. Replace the main valve body (ATF pump), the regulator valve body (main regulator valve), or the transmission. If you are replacing the main valve body or the regulator valve body, clean off any metal debris or excessive clutch material inside the transmission, the ATF cooler, the ATF hoses, the ATF pipes, and the hydraulic circuit. Then, replace the main valve body or the regulator valve body and the torque converter.

DTC P0733: PROBLEM IN 3RD CLUTCH AND 3RD CLUTCH HYDRAULIC CIRCUIT

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot with the HDS, and review the General Troubleshooting Information (see GENERAL TROUBLESHOOTING INFORMATION).

1. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
2. Clear the DTC with the HDS.
3. Test-drive the vehicle in 3rd gear in D for at least 12 seconds. Slow down, and stop the wheels.
4. Check for Pending or Confirmed DTCs with the HDS.

   Is DTC P0733 indicated?

   YES - Go to step 5.

   NO - Intermittent failure, the system is OK at this time. If any other Pending or Confirmed DTCs were indicated, go to the indicated **DTC'S TROUBLESHOOTING**.

5. Measure the 3rd clutch pressure (see **PRESSURE TEST**).

   Is the 3rd clutch pressure within the service limit?

   YES - Faulty 3rd clutch. Replace the 3rd/6th clutch or the transmission. If you are replacing the 3rd/6th clutch, clean off any metal debris or excessive clutch material inside the transmission, the ATF cooler, the ATF hoses, the ATF pipes, and the hydraulic circuit. Then, replace the 3rd/6th clutch and the torque converter.

NO - Go to step 6.

6. Measure the line pressure (see **PRESSURE TEST**).

   Is the line pressure within the service limits?

   YES - Clogged 3rd clutch hydraulic circuit. Clean the 3rd clutch hydraulic circuit or replace the transmission. If you are cleaning the 3rd clutch hydraulic circuit, clean off any metal debris or excessive clutch material inside the transmission, the ATF cooler, the ATF hoses, the ATF pipes, and the hydraulic circuit. Then, replace the torque converter.

   NO - Faulty ATF pump or main regulator valve. Replace the main valve body (ATF pump), the regulator valve body (main regulator valve), or the transmission. If you are replacing the main valve body or the regulator valve body, clean off any metal debris or excessive clutch material inside the transmission, the ATF cooler, the ATF hoses, the ATF pipes, and the hydraulic circuit. Then, replace the main valve body or the regulator valve body and the torque converter.

DTC P0734: PROBLEM IN 4TH CLUTCH AND 4TH CLUTCH HYDRAULIC CIRCUIT

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot with the HDS, and review the General Troubleshooting Information (see GENERAL TROUBLESHOOTING INFORMATION).

1. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
2. Clear the DTC with the HDS.
3. Test-drive the vehicle in 4th gear in D for at least 12 seconds. Slow down, and stop the wheels.
4. Check for Pending or Confirmed DTCs with the HDS.

   Is DTC P0734 indicated?

   YES - Go to step 5.

   NO - Intermittent failure, the system is OK at this time. If any other Pending or Confirmed DTCs were indicated, go to the indicated **DTC'S TROUBLESHOOTING**.

5. Measure the 4th clutch pressure (see **PRESSURE TEST**).

   Is the 4th clutch pressure within the service limit?

   YES - Faulty 4th clutch. Replace the 4th clutch or the transmission. If you are replacing the 4th clutch, clean off any metal debris or excessive clutch material inside the transmission, the ATF cooler, the ATF hoses, the ATF pipes, and the hydraulic circuit. Then, replace the 4th clutch and the torque converter.

   NO - Go to step 6.

6. Measure the line pressure (see **PRESSURE TEST**).

Is the line pressure within the service limits?

YES - Clogged 4th clutch hydraulic circuit. Clean the 4th clutch hydraulic circuit or replace the transmission. If you are cleaning the 4th clutch hydraulic circuit, clean off any metal debris or excessive clutch material inside the transmission, the ATF cooler, the ATF hoses, the ATF pipes, and the hydraulic circuit. Then, replace the torque converter.

NO - Faulty ATF pump or main regulator valve. Replace the main valve body (ATF pump), the regulator valve body (main regulator valve), or the transmission. If you are replacing the main valve body or the regulator valve body, clean off any metal debris or excessive clutch material inside the transmission, the ATF cooler, the ATF hoses, the ATF pipes, and the hydraulic circuit. Then, replace the main valve body or the regulator valve body and the torque converter.

DTC P0735: PROBLEM IN 5TH CLUTCH AND 5TH CLUTCH HYDRAULIC CIRCUIT

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot with the HDS, and review the General Troubleshooting Information (see GENERAL TROUBLESHOOTING INFORMATION).

1. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
2. Clear the DTC with the HDS.
3. Test-drive the vehicle in 5th gear in D for at least 12 seconds. Slow down, and stop the wheels.
4. Check for Pending or Confirmed DTCs with the HDS.

   Is DTC P0735 indicated?

   YES - Go to step 5.

   NO - Intermittent failure, the system is OK at this time. If any other Pending or Confirmed DTCs were indicated, go to the indicated **DTC'S TROUBLESHOOTING**.

5. Measure the 5th clutch pressure (see **PRESSURE TEST**).

   Is the 5th clutch pressure within the service limit?

   YES - Faulty 5th clutch. Replace the 2nd/5th clutch or the transmission. If you are replacing the 2nd/5th clutch, clean off any metal debris or excessive clutch material inside the transmission, the ATF cooler, the ATF hoses, the ATF pipes, and the hydraulic circuit. Then, replace the 2nd/5th clutch and the torque converter.

   NO - Go to step 6.

6. Measure the line pressure (see **PRESSURE TEST**).

   Is the line pressure within the service limits?

YES - Clogged 5th clutch hydraulic circuit. Clean the 5th clutch hydraulic circuit or replace the transmission. If you are cleaning the 5th clutch hydraulic circuit, clean off any metal debris or excessive clutch material inside the transmission, the ATF cooler, the ATF hoses, the ATF pipes, and the hydraulic circuit. Then, replace the torque converter.

NO - Faulty ATF pump or main regulator valve. Replace the main valve body (ATF pump), the regulator valve body (main regulator valve), or the transmission. If you are replacing the main valve body or the regulator valve body, clean off any metal debris or excessive clutch material inside the transmission, the ATF cooler, the ATF hoses, the ATF pipes, and the hydraulic circuit. Then, replace the main valve body or the regulator valve body and the torque converter.

DTC P0741: TORQUE CONVERTER CLUTCH HYDRAULIC CIRCUIT STUCK OFF

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot with the HDS, and review the General Troubleshooting Information (see GENERAL TROUBLESHOOTING INFORMATION).

1. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
2. Check for Pending or Confirmed DTCs with the HDS.

   Is DTC P0761 indicated?

   YES - Go to the **DTC P0761 TROUBLESHOOTING**.

   NO - Go to step 3.

3. Warm up the engine to normal operating temperature (the radiator fan comes on).
4. Make sure that the transmission is filled to the proper level, and check for fluid leaks.
5. Drain the ATF (see **ATF REPLACEMENT**) through a strainer. Inspect the strainer for metal debris or excessive clutch material.

   Does the strainer have metal debris or excessive clutch material?

   YES - Replace the transmission.

   NO - Replace the ATF (see **ATF REPLACEMENT**), then go to step 6.

6. Warm up the engine to normal operating temperature (the radiator fan comes on).
7. Clear the DTC with the HDS.
8. Test-drive the vehicle on a level road with a steady throttle at 60 mph (96 km/h) for at least 22 seconds, or test-drive the vehicle for several minutes under the same conditions as those indicated by the freeze data.
9. Check for Pending or Confirmed DTCs with the HDS.

   Is DTC P0741 indicated?

YES - Go to step 10.

NO - Intermittent failure, the system is OK at this time.

10. Select Clutch Pressure Control (Linear) Solenoid Valve D in the Miscellaneous Test Menu, and test A/T clutch pressure control solenoid valve D with the HDS.

    Does the HDS indicate NORMAL?

    YES - If the HDS indicates NORMAL, go to step 11. If the HDS indicates failure other than A/T clutch pressure control solenoid valve D, follow the instructions indicated on the HDS for the test result.

    NO - Faulty A/T clutch pressure control solenoid valve D. Replace the secondary valve body (A/T clutch pressure control solenoid valve D) (see **SECONDARY VALVE BODY REPLACEMENT**).

11. Measure the torque converter clutch pressure (see **PRESSURE TEST**) while monitoring the A/T Shift Sol VLV. C signal with the HDS.

    Dose the torque converter clutch pressure rise when A/T Shift Sol VLV. C turns on?

    YES - Faulty lock-up shift valve or lock-up control valve. Replace the main valve body (lock-up shift valve), the regulator valve body (lock-up control valve), or the transmission. If you are replacing the main valve body or the regulator valve body, clean off any metal debris or excessive clutch material inside the transmission, the ATF cooler, the ATF hoses, the ATF pipes, and the hydraulic circuit. Then, replace the main valve body or the regulator valve body and the torque converter.

    NO - Faulty torque converter clutch. Replace the torque converter.

DTC P0746: A/T CLUTCH PRESSURE CONTROL SOLENOID VALVE A STUCK OFF

NOTE:

- **Before you troubleshoot, record all freeze data and any on-board snapshot with the HDS, and review the General Troubleshooting Information (see GENERAL TROUBLESHOOTING INFORMATION).**
- **If DTC P0746 is stored in the PCM, the transmission does not shift to any gear other than 3rd or 4th gear because of the fail-safe function.**

1. Warm up the engine to normal operating temperature (the radiator fan comes on).
2. Make sure that the transmission is filled to the proper level, and check for fluid leaks.
3. Drain the ATF (see **ATF REPLACEMENT**) through a strainer. Inspect the strainer for metal debris or excessive clutch material.

   Does the strainer have metal debris or excessive clutch material?

   YES - Replace the transmission.

   NO - Replace the ATF (see **ATF REPLACEMENT**), then go to step 4.

4. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
5. Clear the DTC with the HDS.
6. Select Clutch Pressure Control (Linear) Solenoid Valve A in the Miscellaneous Test Menu, and test A/T clutch pressure control solenoid valve A with the HDS.

   Does the HDS indicate NORMAL?

   YES - Intermittent failure, the system is OK at this time.

   NO - Faulty A/T clutch pressure control solenoid valve A. Replace the secondary valve body (A/T clutch pressure control solenoid valve A) (see **SECONDARY VALVE BODY REPLACEMENT**).

DTC P0747: A/T CLUTCH PRESSURE CONTROL SOLENOID VALVE A STUCK ON

NOTE:

- **Before you troubleshoot, record all freeze data and any on-board snapshot with the HDS, and review the General Troubleshooting Information (see GENERAL TROUBLESHOOTING INFORMATION).**
- **If DTC P0747 is stored in the PCM, the transmission does not shift to any gear other than 2nd or 5th gear because of the fail-safe function.**

1. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
2. Clear the DTC with the HDS.
3. Check the 5th Pressure Switch signal with the HDS in the A/T Data List.

   Is the 5th Pressure Switch ON?

   YES - Replace transmission fluid pressure switch D (5th clutch) (see **TRANSMISSION FLUID PRESSURE SWITCH D (5TH CLUTCH) REPLACEMENT**).

   NO - Go to step 4.

4. Warm up the engine to normal operating temperature (the radiator fan comes on).
5. Make sure that the transmission is filled to the proper level, and check for fluid leaks.
6. Drain the ATF (see **ATF REPLACEMENT**) through a strainer. Inspect the strainer for metal debris or excessive clutch material.

   Does the strainer have metal debris or excessive clutch material?

   YES - Replace the transmission.

   NO - Replace the ATF (see **ATF REPLACEMENT**), then go to step 7.

7. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
8. Start the engine.

9. With the brake pedal pressed, shift to D, and check the 2nd Pressure Switch signal with the HDS in the A/T Data List.

   Does the 2nd Pressure Switch turn on with a shock caused by engaging gears?

   YES - Faulty A/T clutch pressure control solenoid valve A. Replace the secondary valve body (A/T clutch pressure control solenoid valve A) (see **SECONDARY VALVE BODY REPLACEMENT**).

   NO - Intermittent failure, the system is OK at this time.

DTC P0751: SHIFT SOLENOID VALVE A STUCK OFF

NOTE:

- **Before you troubleshoot, record all freeze data and any on-board snapshot with the HDS, and review the General Troubleshooting Information (see GENERAL TROUBLESHOOTING INFORMATION).**
- **If DTC P0751 is stored in the PCM, the transmission does not shift to any gear other than 3rd or 4th gear because of the fail-safe function.**

1. Warm up the engine to normal operating temperature (the radiator fan comes on).
2. Make sure that the transmission is filled to the proper level, and check for fluid leaks.
3. Drain the ATF (see **ATF REPLACEMENT**) through a strainer. Inspect the strainer for metal debris or excessive clutch material.

   Does the strainer have metal debris or excessive clutch material?

   YES - Replace the transmission.

   NO - Replace the ATF (see **ATF REPLACEMENT**), then go to step 4.

4. With SH-AWD: Raise the vehicle on a lift, make sure it is securely supported, and allow all four wheels to rotate freely.

   Without SH-AWD: Block the rear wheels, and raise the front of the vehicle, make sure it is securely supported, and allow the front wheels to rotate freely, or raise the vehicle on a lift.

5. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
6. Clear the DTC with the HDS.
7. Start the engine, disable the VSA by pressing the VSA OFF button.
8. Run the vehicle with the shift lever in D, and let the transmission shift slowly to 2nd gear, and check the 3rd Pressure Switch signal, the 5th Pressure Switch signal, and the Shift Control when the transmission shifts from 1st gear to 2nd gear with the HDS in the A/T Data List. Slow down, and stop the wheels.

   NOTE: Repeat two or three times if shifts are normal.

   Does the 5th Pressure Switch turn on momentarily in 2nd gear, then does the 3rd Pressure Switch turn on

with a harsh shift?

YES - Go to step 9.

NO - Intermittent failure, the system is OK at this time.

9. Select Shift Solenoid Valve A in the Miscellaneous Test Menu, and check that shift solenoid valve A operates with the HDS.

   Is a clicking sound heard?

   YES - Faulty shift valve A. Replace the secondary valve body (shift valve A) (see **SECONDARY VALVE BODY REPLACEMENT**).

   NO - Faulty shift solenoid valve A. Replace the secondary valve body (shift solenoid valve A) (see **SECONDARY VALVE BODY REPLACEMENT**).

DTC P0752: SHIFT SOLENOID VALVE A STUCK ON

NOTE:

- **Before you troubleshoot, record all freeze data and any on-board snapshot with the HDS, and review the General Troubleshooting Information (see GENERAL TROUBLESHOOTING INFORMATION).**
- **If DTC P0752 is stored in the PCM, the transmission does not shift to any gear other than 2nd or 4th gear because of the fail-safe function, but if that DTC is a Pending DTC, the transmission does not shift to any gear other than 3rd or 6th gear because of the fail-safe function.**

1. Warm up the engine to normal operating temperature (the radiator fan comes on).
2. Make sure that the transmission is filled to the proper level, and check for fluid leaks.
3. Drain the ATF (see **ATF REPLACEMENT**) through a strainer. Inspect the strainer for metal debris or excessive clutch material.

   Does the strainer have metal debris or excessive clutch material?

   YES - Replace the transmission.

   NO - Replace the ATF (see **ATF REPLACEMENT**), then go to step 4.

4. With SH-AWD: Raise the vehicle on a lift, make sure it is securely supported, and allow all four wheels to rotate freely.

   Without SH-AWD: Block the rear wheels, and raise the front of the vehicle, make sure it is securely supported, and allow the front wheels to rotate freely, or raise the vehicle on a lift.

5. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
6. Clear the DTC with the HDS.

7. Start the engine, disable the VSA by pressing the VSA OFF button.
8. Run the vehicle with the shift lever in D, and let the transmission shift slowly to 4th gear, and check the 3rd Pressure Switch signal, the 4th Pressure Switch signal, and the Shift Control when the transmission shifts from 3rd gear to 4th gear with the HDS in the A/T Data List. Slow down, and stop the wheels.

NOTE: Repeat two or three times if shifts are normal.

Does the 4th Pressure Switch turn off in 4th gear, then does the 3rd Pressure Switch turn on with a harsh shift?

YES - Go to step 9.

NO - Intermittent failure, the system is OK at this time.

9. Select Shift Solenoid Valve A in the Miscellaneous Test Menu, and check that shift solenoid valve A operates with the HDS.

Is a clicking sound heard?

YES - Faulty shift valve A. Replace the secondary valve body (shift valve A) (see **SECONDARY VALVE BODY REPLACEMENT**).

NO - Faulty shift solenoid valve A. Replace the secondary valve body (shift solenoid valve A) (see **SECONDARY VALVE BODY REPLACEMENT**).

DTC P0756: SHIFT SOLENOID VALVE B STUCK OFF

NOTE:

- **Before you troubleshoot, record all freeze data and any on-board snapshot with the HDS, and review the General Troubleshooting Information (see GENERAL TROUBLESHOOTING INFORMATION).**
- **If DTC P0756 is stored in the PCM, the transmission does not shift to any gear other than 2nd or 5th gear because of the fail-safe function.**

1. Warm up the engine to normal operating temperature (the radiator fan comes on).
2. Make sure that the transmission is filled to the proper level, and check for fluid leaks.
3. Drain the ATF (see **ATF REPLACEMENT**) through a strainer. Inspect the strainer for metal debris or excessive clutch material.

Does the strainer have metal debris or excessive clutch material?

YES - Replace the transmission.

NO - Replace the ATF (see **ATF REPLACEMENT**), then go to step 4.

4. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.

5. Clear the DTC with the HDS.
6. Start the engine.
7. With the brake pedal pressed, shift to D, and check the A/T Shift Sol VLV. B signal, the Input Shaft (Mainshaft) Speed, and the Shift Control with the HDS in the A/T Data List.

   Is the Input Shaft (Mainshaft) Speed 0 RPM when A/T Shift Sol VLV. B is OFF, and about the same as the engine speed when A/T Shift Sol VLV. B is ON?

   YES - Shift to P, and go to step 10.

   NO - Shift to P, and go to step 8.

8. Clear the DTC with the HDS.
9. With the brake pedal pressed, shift to D, and check the A/T Shift Sol VLV. B signal, the Input Shaft (Mainshaft) Speed, and the Shift Control with the HDS in the A/T Data List.

   Does the Input Shaft (Mainshaft) Speed remain steady when A/T Shift Sol VLV. B is OFF and when it is ON?

   YES - Faulty 1st gear one-way clutch. Replace the countershaft 1st gear or the transmission. If you are replacing the countershaft 1st gear, clean off any metal debris or excessive clutch material inside the transmission, the ATF cooler, the ATF hoses, the ATF pipes, and the hydraulic circuit. Then, replace the countershaft 1st gear and the torque converter.

   NO - Intermittent failure, the system is OK at this time.

10. Select Shift Solenoid Valve B in the Miscellaneous Test Menu, and check that shift solenoid valve B operates with the HDS.

    Is a clicking sound heard?

    YES - Go to step 11.

    NO - Faulty shift solenoid valve B. Replace the secondary valve body (shift solenoid valve B) (see **SECONDARY VALVE BODY REPLACEMENT**).

11. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
12. With SH-AWD: Raise the vehicle on a lift, make sure it is securely supported, and allow all four wheels to rotate freely.

    Without SH-AWD: Block the rear wheels, and raise the front of the vehicle, make sure it is securely supported, and allow the front wheels to rotate freely, or raise the vehicle on a lift.

13. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
14. Clear the DTC with the HDS.
15. Start the engine, disable the VSA by pressing the VSA OFF button. With the brake pedal pressed, shift to

S, and upshift to 2nd gear by pressing the paddle shifter + (upshift switch).

16. Run the vehicle, and upshift to 3rd gear by pressing the paddle shifter + (upshift switch), and check the 3rd Pressure Switch signal, the 6th Pressure Switch signal, and the Shift Control with the HDS in the A/T Data List. Slow down, and stop the wheels.

    In 3rd gear, was the 3rd Pressure Switch OFF and was the 6th Pressure Switch ON?

    YES - Faulty shift valve B. Replace the secondary valve body (shift valve B) (see **SECONDARY VALVE BODY REPLACEMENT**).

    NO - Faulty shift valve C. Replace the main valve body (shift valve C) or the transmission. If you are replacing the main valve body, clean off any metal debris or excessive clutch material inside the transmission, the ATF cooler, the ATF hoses, the ATF pipes, and the hydraulic circuit. Then, replace the main valve body and the torque converter.

DTC P0757: SHIFT SOLENOID VALVE B STUCK ON

NOTE:

- **Before you troubleshoot, record all freeze data and any on-board snapshot with the HDS, and review the General Troubleshooting Information (see GENERAL TROUBLESHOOTING INFORMATION).**
- **If DTC P0757 is stored in the PCM, the transmission does not shift to any gear other than 2nd or 4th gear because of the fail-safe function.**

1. Warm up the engine to normal operating temperature (the radiator fan comes on).
2. Make sure that the transmission is filled to the proper level, and check for fluid leaks.
3. Drain the ATF (see **ATF REPLACEMENT**) through a strainer. Inspect the strainer for metal debris or excessive clutch material.

   Does the strainer have metal debris or excessive clutch material?

   YES - Replace the transmission.

   NO - Replace the ATF (see **ATF REPLACEMENT**), then go to step 4.

4. With SH-AWD: Raise the vehicle on a lift, make sure it is securely supported, and allow all four wheels to rotate freely.

   Without SH-AWD: Block the rear wheels, and raise the front of the vehicle, make sure it is securely supported, and allow the front wheels to rotate freely, or raise the vehicle on a lift.

5. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
6. Clear the DTC with the HDS.
7. Start the engine, disable the VSA by pressing the VSA OFF button.
8. Run the vehicle with the shift lever in D, and let the transmission shift slowly to 6th gear, and check the 2nd Pressure Switch signal, the 3rd Pressure Switch signal, the 4th Pressure Switch signal, and the Shift

Control when the transmission shifts from 5th gear to 6th gear with the HDS in the A/T Data List. Slow down, and stop the wheels.

NOTE: Repeat two or three times if shifts are normal.

Does the 3rd Pressure Switch turn on momentarily in 6th gear, then does the 2nd Pressure Switch or the 4th Pressure Switch turn on in 6th gear?

YES - Go to step 9.

NO - Intermittent failure, the system is OK at this time.

9. Select Shift Solenoid Valve B in the Miscellaneous Test Menu, and check that shift solenoid valve B operates with the HDS.

   Is a clicking sound heard?

   YES - Faulty shift valve B. Replace the secondary valve body (shift valve B) (see **SECONDARY VALVE BODY REPLACEMENT**).

   NO - Faulty shift solenoid valve B. Replace the secondary valve body (shift solenoid valve B) (see **SECONDARY VALVE BODY REPLACEMENT**).

DTC P0761: SHIFT SOLENOID VALVE C STUCK OFF

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot with the HDS, and review the General Troubleshooting Information (see GENERAL TROUBLESHOOTING INFORMATION).

1. Warm up the engine to normal operating temperature (the radiator fan comes on).
2. Make sure that the transmission is filled to the proper level, and check for fluid leaks.
3. Drain the ATF (see **ATF REPLACEMENT**) through a strainer. Inspect the strainer for metal debris or excessive clutch material.

   Does the strainer have metal debris or excessive clutch material?

   YES - Replace the transmission.

   NO - Replace the ATF (see **ATF REPLACEMENT**), then go to step 4.

4. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
5. Clear the DTC with the HDS.
6. Test-drive the vehicle in reverse gear.

NOTE: Repeat two or three times if shifts are normal.

Does the vehicle move with reverse gear?

YES - Intermittent failure, the system is OK at this time.

NO - Go to step 7.

7. Select Shift Solenoid Valve C in the Miscellaneous Test Menu, and check that shift solenoid valve C operates with the HDS.

   Is a clicking sound heard?

   YES - Faulty reverse inhibitor valve or shift fork shaft. Replace the main valve body (reverse inhibitor valve), the regulator valve body (shift fork shaft), or the transmission. If you are replacing the main valve body or the regulator valve body, clean off any metal debris or excessive clutch material inside the transmission, the ATF cooler, the ATF hoses, the ATF pipes, and the hydraulic circuit. Then, replace the main valve body or the regulator valve body and the torque converter.

   NO - Faulty shift solenoid valve C. Replace shift solenoid valve C (see **SHIFT SOLENOID VALVE C TEST AND REPLACEMENT**).

DTC P0762: SHIFT SOLENOID VALVE C STUCK ON

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot with the HDS, and review the General Troubleshooting Information (see GENERAL TROUBLESHOOTING INFORMATION).

1. Warm up the engine to normal operating temperature (the radiator fan comes on).
2. Make sure that the transmission is filled to the proper level, and check for fluid leaks.
3. Drain the ATF (see **ATF REPLACEMENT**) through a strainer. Inspect the strainer for metal debris or excessive clutch material.

   Does the strainer have metal debris or excessive clutch material?

   YES - Replace the transmission.

   NO - Replace the ATF (see **ATF REPLACEMENT**), then go to step 4.

4. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
5. Clear the DTC with the HDS.
6. Start the engine.
7. With the brake pedal pressed, shift to D, and check the A/T Shift Sol VLV. B signal, the Input Shaft (Mainshaft) Speed, and the Shift Control with the HDS in the A/T Data List.

   Does the Input Shaft (Mainshaft) Speed remain steady when A/T Shift Sol VLV. B is OFF, and does the Input Shaft (Mainshaft) Speed read 0 RPM when A/T Shift Sol VLV. B is ON?

YES - Go to step 8.

NO - Intermittent failure, the system is OK at this time.

8. Select Shift Solenoid Valve C in the Miscellaneous Test Menu, and check that shift solenoid valve C operates with the HDS.

   Is a clicking sound heard?

   YES - Faulty 1st gear one-way clutch. Replace the countershaft 1st gear or the transmission. If you are replacing the countershaft 1st gear, clean off any metal debris or excessive clutch material inside the transmission, the ATF cooler, the ATF hoses, the ATF pipes, and the hydraulic circuit. Then, replace the countershaft 1st gear and the torque converter.

   NO - Faulty shift solenoid valve C. Replace shift solenoid valve C (see **SHIFT SOLENOID VALVE C TEST AND REPLACEMENT**).

DTC P0776: A/T CLUTCH PRESSURE CONTROL SOLENOID VALVE B STUCK OFF

NOTE:

- **Before you troubleshoot, record all freeze data and any on-board snapshot with the HDS, and review the General Troubleshooting Information (see GENERAL TROUBLESHOOTING INFORMATION).**
- **If DTC P0776 is stored in the PCM, the transmission does not shift to any gear other than 2nd or 4th gear because of the fail-safe function.**

1. Warm up the engine to normal operating temperature (the radiator fan comes on).
2. Make sure that the transmission is filled to the proper level, and check for fluid leaks.
3. Drain the ATF (see **ATF REPLACEMENT**) through a strainer. Inspect the strainer for metal debris or excessive clutch material.

   Does the strainer have metal debris or excessive clutch material?

   YES - Replace the transmission.

   NO - Replace the ATF (see **ATF REPLACEMENT**), then go to step 4.

4. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
5. Clear the DTC with the HDS.
6. Select Clutch Pressure Control (Linear) Solenoid Valve B in the Miscellaneous Test Menu, and test A/T clutch pressure control solenoid valve B with the HDS.

   Does the HDS indicate NORMAL?

   YES - Intermittent failure, the system is OK at this time.

NO - Faulty A/T clutch pressure control solenoid valve B. Replace the secondary valve body (A/T clutch pressure control solenoid valve B) (see **SECONDARY VALVE BODY REPLACEMENT**).

DTC P0777: A/T CLUTCH PRESSURE CONTROL SOLENOID VALVE B STUCK ON

NOTE:

- **Before you troubleshoot, record all freeze data and any on-board snapshot with the HDS, and review the General Troubleshooting Information (see GENERAL TROUBLESHOOTING INFORMATION).**
- **If DTC P0777 is stored in the PCM, the transmission does not shift to any gear other than 3rd or 6th gear because of the fail-safe function.**

1. Warm up the engine to normal operating temperature (the radiator fan comes on).
2. Make sure that the transmission is filled to the proper level, and check for fluid leaks.
3. Drain the ATF (see **ATF REPLACEMENT**) through a strainer. Inspect the strainer for metal debris or excessive clutch material.

   Does the strainer have metal debris or excessive clutch material?

   YES - Replace the transmission.

   NO - Replace the ATF (see **ATF REPLACEMENT**), then go to step 4.

4. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
5. Clear the DTC with the HDS.
6. Start the engine.
7. With the brake pedal pressed, shift to D, and check the 3rd Pressure Switch signal and the 6th Pressure Switch signal with the HDS in the A/T Data List.

   Does the 6th Pressure Switch turn on momentarily, then does the 3rd Pressure Switch turn on with a harsh shift?

   YES - Faulty A/T clutch pressure control solenoid valve B. Replace the secondary valve body (A/T clutch control solenoid valve B) (see **SECONDARY VALVE BODY REPLACEMENT**).

   NO - Intermittent failure, the system is OK at this time.

DTC P0796: A/T CLUTCH PRESSURE CONTROL SOLENOID VALVE C STUCK OFF

NOTE:

- **Before you troubleshoot, record all freeze data and any on-board snapshot with the HDS, and review the General Troubleshooting Information (see GENERAL TROUBLESHOOTING INFORMATION).**
- **If DTC P0796 is stored in the PCM, the transmission does not shift to any gear other than 2nd or 5th gear because of the fail-safe function, but if that DTC is a Pending DTC, the transmission does not shift to any gear other**

than 3rd or 6th gear because of the fail-safe function.

1. Warm up the engine to normal operating temperature (the radiator fan comes on).
2. Make sure that the transmission is filled to the proper level, and check for fluid leaks.
3. Drain the ATF (see **ATF REPLACEMENT**) through a strainer. Inspect the strainer for metal debris or excessive clutch material.

   Does the strainer have metal debris or excessive clutch material?

   YES - Replace the transmission.

   NO - Replace the ATF (see **ATF REPLACEMENT**), then go to step 4.

4. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
5. Clear the DTC with the HDS.
6. Select Clutch Pressure Control (Linear) Solenoid Valve C in the Miscellaneous Test Menu, and test A/T clutch pressure control solenoid valve C with the HDS.

   Does the HDS indicate NORMAL?

   YES - Intermittent failure, the system is OK at this time.

   NO - Faulty A/T clutch pressure control solenoid valve C, shift valve C, D inhibitor valve, reverse inhibitor valve, or shift fork shaft. Replace the secondary valve body (A/T clutch pressure control solenoid valve C) (see **SECONDARY VALVE BODY REPLACEMENT**), the main valve body (shift valve C, D inhibitor valve, or reverse inhibitor valve), the regulator valve body (shift fork shaft), or the transmission. If you are replacing the main valve body or the regulator valve body, clean off any metal debris or excessive clutch material inside the transmission, the ATF cooler, the ATF hoses, the ATF pipes, and the hydraulic circuit. Then, replace the main valve body or the regulator valve body and the torque converter.

DTC P0797: A/T CLUTCH PRESSURE CONTROL SOLENOID VALVE C STUCK ON

NOTE:

- **Before you troubleshoot, record all freeze data and any on-board snapshot with the HDS, and review the General Troubleshooting Information (see GENERAL TROUBLESHOOTING INFORMATION).**
- **If DTC P0797 is stored in the PCM, the transmission does not shift to any gear other than 1st or 4th gear because of the fail-safe function.**

1. Warm up the engine to normal operating temperature (the radiator fan comes on).
2. Make sure that the transmission is filled to the proper level, and check for fluid leaks.
3. Drain the ATF (see **ATF REPLACEMENT**) through a strainer. Inspect the strainer for metal debris or excessive clutch material.

   Does the strainer have metal debris or excessive clutch material?

YES - Replace the transmission.

NO - Replace the ATF (see **ATF REPLACEMENT**), then go to step 4.

4. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
5. Clear the DTC with the HDS.
6. Start the engine.
7. With the brake pedal pressed, shift to D, and check the 4th Pressure Switch signal with the HDS in the A/T Data List.

   Does the 4th Pressure Switch turn on momentarily?

   YES - Faulty A/T clutch pressure control solenoid valve C. Replace the secondary valve body (A/T clutch pressure control solenoid valve C) (see **SECONDARY VALVE BODY REPLACEMENT**).

   NO - Intermittent failure, the system is OK at this time.

DTC P0812: OPEN IN TRANSMISSION RANGE SWITCH ATPR SWITCH CIRCUIT

NOTE:

- **Before you troubleshoot, record all freeze data and any on-board snapshot with the HDS, and review the General Troubleshooting Information (see GENERAL TROUBLESHOOTING INFORMATION).**
- **This code is caused by an electrical circuit problem and cannot be caused by a mechanical problem in the transmission.**

1. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
2. Shift to R, and monitor the A/T R Switch signal with the HDS in the A/T Data List.

   Is the A/T R Switch ON?

   YES - Intermittent failure, the system is OK at this time.

   NO - Go to step 3.

3. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
4. Disconnect the transmission range switch connector.
5. Connect a jumper wire between transmission range switch connector terminal No. 8 and body ground.

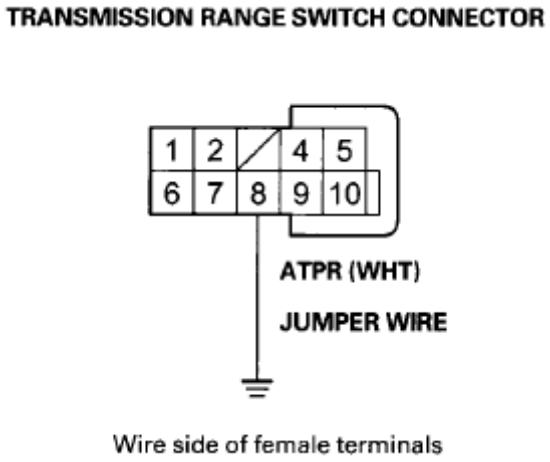


Fig. 77: Identifying Jumper Wire Between Transmission Range Switch Connector Terminal No. 8 And Body Ground Connection
Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
7. Check the A/T R Switch signal with the HDS.

   Is the A/T R Switch ON?

   YES - Replace the transmission range switch (see **TRANSMISSION RANGE SWITCH REPLACEMENT**), then go to step 12.

   NO - Go to step 8.

8. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
9. Jump the SCS line with the HDS.
10. Disconnect PCM connector C (49P).
11. Check for continuity between PCM connector terminal C25 and body ground.

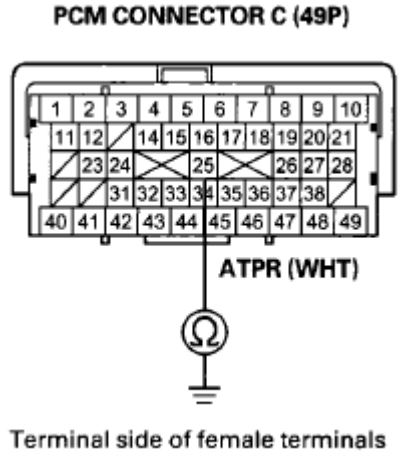


Fig. 78: Checking Continuity Between PCM Connector Terminal C25 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 18.

NO - Repair an open in the wire between PCM connector terminal C25 and the transmission range switch, then go to step 12.

12. Reconnect all connectors.
13. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
14. Clear the DTC with the HDS.
15. Test-drive the vehicle in R at speeds below 3 mph (5 km/h) for at least 2 seconds, then increase the speed and test-drive at speeds over 3 mph (5 km/h) for at least 2 seconds. Slow down, and stop the wheels.
16. Check for Pending or Confirmed DTCs with the HDS.

Is DTC P0812 indicated?

YES - Check for poor connections or loose terminals between the transmission range switch and the PCM, then go to step 1.

NO - Go to step 17.

17. Monitor the OBD STATUS for P0812 in the DTCs MENU with the HDS.

Does the HDS indicate PASSED?

YES - Troubleshooting is complete. If any other Pending or Confirmed DTCs were indicated in step 16, go to the indicated **DTC'S TROUBLESHOOTING**.

NO - If the HDS indicates FAILED, check for poor connections or loose terminals between the transmission range switch and the PCM, then go to step 1. If the HDS indicates NOT COMPLETED, go to step 15.

18. Reconnect all connectors.
19. Update the PCM if it does not have the latest software (see **ECM/PCM UPDATE**), or substitute a known-good PCM (see **SUBSTITUTING THE ECM/PCM**).
20. Test-drive the vehicle in R at speeds below 3 mph (5 km/h) for at least 2 seconds, then increase the speed and test-drive at speeds over 3 mph (5 km/h) for at least 2 seconds. Slow down, and stop the wheels.
21. Check for Pending or Confirmed DTCs with the HDS.

Is DTC P0812 indicated?

YES - Check for poor connections or loose terminals between the transmission range switch and the PCM. If the PCM was updated, substitute a known-good PCM (see **SUBSTITUTING THE**

ECM/PCM), then go to step 20. If the PCM was substituted, go to step 1.

NO - Go to step 22.

22. Monitor the OBD STATUS for P0812 in the DTCs MENU with the HDS.

    Does the HDS indicate PASSED?

    YES - If the PCM was updated, troubleshooting is complete. If the PCM was substituted, replace the original PCM (see **ECM/PCM REPLACEMENT**). If any other Pending or Confirmed DTCs were indicated in step 21, go to the indicated **DTC'S TROUBLESHOOTING**.

    NO - If the HDS indicates FAILED, check for poor connections or loose terminals between the transmission range switch and the PCM. If the PCM was updated, substitute a known-good PCM (see **SUBSTITUTING THE ECM/PCM**), then go to step 20. If the PCM was substituted, go to step 1. If the HDS indicates NOT COMPLETED, go to step 20.1

DTC P0842: SHORT IN TRANSMISSION FLUID PRESSURE SWITCH A (2ND CLUTCH) CIRCUIT, OR TRANSMISSION FLUID PRESSURE SWITCH A (2ND CLUTCH) STUCK ON

NOTE:

- **Before you troubleshoot, record all freeze data and any on-board snapshot with the HDS, and review the General Troubleshooting Information (see GENERAL TROUBLESHOOTING INFORMATION).**
- **This code is caused by an electrical circuit problem and cannot be caused by a mechanical problem in the transmission.**
- **If DTC P0842 is stored in the PCM, the transmission does not shift to any gear other than 2nd or 5th gear because of the fail-safe function.**

1. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
2. Clear the DTC with the HDS.
3. Check the 2nd Pressure Switch signal with the HDS in the A/T Data List.

   Is the 2nd Pressure Switch ON?

   YES - Go to step 4.

   NO - Intermittent failure, the system is OK at this time.

4. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
5. Disconnect the transmission fluid pressure switch A (2nd clutch) connector.
6. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
7. Check the 2nd Pressure Switch signal with the HDS in the A/T Data List.

   Is the 2nd Pressure Switch OFF?

YES - Replace transmission fluid pressure switch A (2nd clutch) (see **TRANSMISSION FLUID PRESSURE SWITCH A (2ND CLUTCH) REPLACEMENT**).

NO - Go to step 8.

8. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
9. Jump the SCS line with the HDS.
10. Disconnect PCM connector C (49P).
11. Check for continuity between PCM connector terminal C27 and body ground.

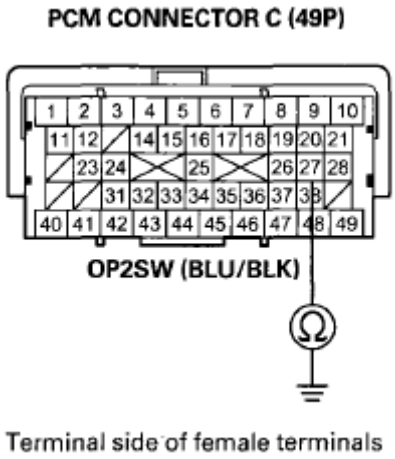


Fig. 79: Checking Continuity Between PCM Connector Terminal C27 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair a short to body ground in the wire between PCM connector terminal C27 and transmission fluid pressure switch A (2nd clutch).

NO - Replace the PCM (see **ECM/PCM REPLACEMENT**).

DTC P0843: OPEN IN TRANSMISSION FLUID PRESSURE SWITCH A (2ND CLUTCH) CIRCUIT, OR TRANSMISSION FLUID PRESSURE SWITCH A (2ND CLUTCH) STUCK OFF

NOTE:

- **Before you troubleshoot, record all freeze data and any on-board snapshot with the HDS, and review the General Troubleshooting Information (see GENERAL TROUBLESHOOTING INFORMATION)**
- **If DTC P0843 is stored in the PCM, the transmission does not shift to any gear other than 2nd through 4th gear because of the fail-safe function.**

1. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
2. Clear the DTC with the HDS.
3. With SH-AWD: Raise the vehicle on a lift, make sure it is securely supported, and allow all four wheels

to rotate freely.

Without SH-AWD: Block the rear wheels, and raise the front of the vehicle, make sure it is securely supported, and allow the front wheels to rotate freely, or raise the vehicle on a lift.

4. Start the engine, disable the VSA by pressing the VSA OFF button. Run the vehicle with the sequential sportshift mode in 2nd gear. Check the 2nd Pressure Switch signal with the HDS in the A/T Data List. Slow down, and stop the wheels.

   Is the 2nd Pressure Switch ON in 2nd gear?

   YES - Intermittent failure, the system is OK at this time. Check for poor connections and loose terminals between transmission fluid pressure switch A (2nd clutch) and the PCM.

   NO - Go to step 5.

5. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
6. Disconnect the transmission fluid pressure switch A (2nd clutch) connector.
7. Connect a jumper wire between the transmission fluid pressure switch A (2nd clutch) connector terminal and body ground.

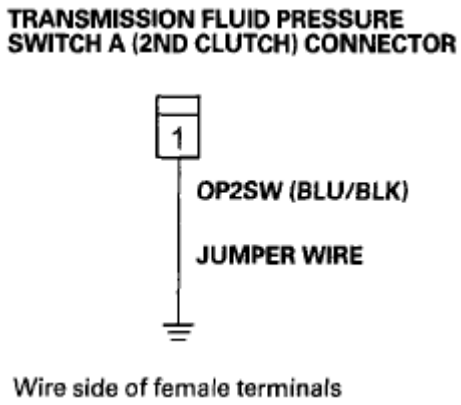


Fig. 80: Identifying Jumper Wire Between Transmission Fluid Pressure Switch A (2nd Clutch) Connector Terminal And Body Ground Connection
Courtesy of AMERICAN HONDA MOTOR CO., INC.

8. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
9. Check the 2nd Pressure Switch signal with the HDS in the A/T Data List.

   Is the 2nd Pressure Switch ON?

   YES - Replace transmission fluid pressure switch A (2nd clutch) (see **TRANSMISSION FLUID PRESSURE SWITCH A (2ND CLUTCH) REPLACEMENT**).

   NO - Go to step 10.

10. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
11. Remove the jumper wire.
12. Jump the SCS line with the HDS.
13. Disconnect PCM connector C (49P).
14. Check for continuity between PCM connector terminal C27 and the transmission fluid pressure switch A (2nd clutch) connector terminal.

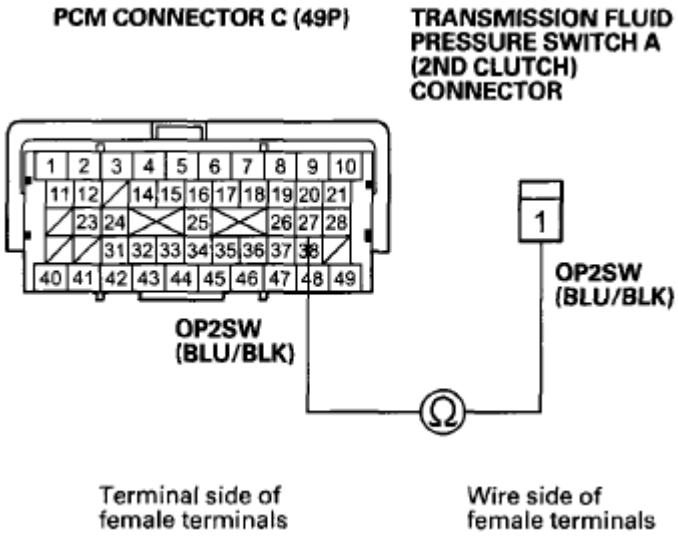


Fig. 81: Checking Continuity Between PCM Connector Terminal C27 And Transmission Fluid Pressure Switch A (2nd Clutch) Connector Terminal
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Replace the PCM (see **ECM/PCM REPLACEMENT**).

NO - Repair an open in the wire between PCM connector terminal C27 and transmission fluid pressure switch A (2nd clutch).

DTC P0847: SHORT IN TRANSMISSION FLUID PRESSURE SWITCH B (3RD CLUTCH) CIRCUIT, OR TRANSMISSION FLUID PRESSURE SWITCH B (3RD CLUTCH) STUCK ON

NOTE:

- **Before you troubleshoot, record all freeze data and any on-board snapshot with the HDS, and review the General Troubleshooting Information (see GENERAL TROUBLESHOOTING INFORMATION).**
- **This code is caused by an electrical circuit problem and cannot be caused by a mechanical problem in the transmission.**
- **If DTC P0847 is stored in the PCM, the transmission does not shift to any gear other than 3rd or 6th gear because of the fail-safe function.**

1. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
2. Clear the DTC with the HDS.
3. Check the 3rd Pressure Switch signal with the HDS in the A/T Data List.

   Is the 3rd Pressure Switch ON?

   YES - Go to step 4.

   NO - Intermittent failure, the system is OK at this time.

4. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
5. Disconnect the transmission fluid pressure switch B (3rd clutch) connector.
6. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
7. Check the 3rd Pressure Switch signal with the HDS in the A/T Data List.

   Is the 3rd Pressure Switch OFF?

   YES - Replace transmission fluid pressure switch B (3rd clutch) (see **TRANSMISSION FLUID PRESSURE SWITCH B (3RD CLUTCH) REPLACEMENT**).

   NO - Go to step 8.

8. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
9. Jump the SCS line with the HDS.
10. Disconnect PCM connector C (49P).
11. Check for continuity between PCM connector terminal C38 and body ground.

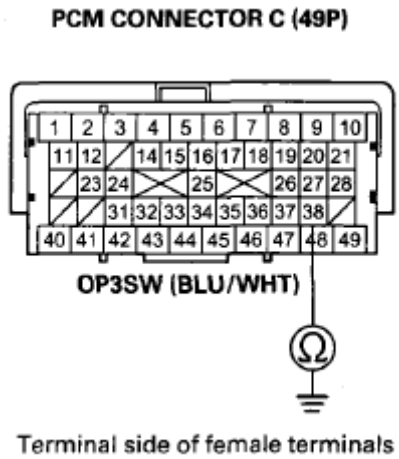


Fig. 82: Checking Continuity Between PCM Connector Terminal C38 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair a short to body ground in the wire between PCM connector terminal C38 and transmission fluid pressure switch B (3rd clutch).

NO - Replace the PCM (see **ECM/PCM REPLACEMENT**).

DTC P0848: OPEN IN TRANSMISSION FLUID PRESSURE SWITCH B (3RD CLUTCH) CIRCUIT, OR TRANSMISSION FLUID PRESSURE SWITCH B (3RD CLUTCH) STUCK OFF

NOTE:

- **Before you troubleshoot, record all freeze data and any on-board snapshot with the HDS, and review the General Troubleshooting Information (see GENERAL TROUBLESHOOTING INFORMATION)**
- **If DTC P0848 is stored in the PCM, the transmission does not shift to any gear other than 3rd through 5th gear because of the fail-safe function.**

1. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
2. Clear the DTC with the HDS.
3. With SH-AWD: Raise the vehicle on a lift, make sure it is securely supported, and allow all four wheels to rotate freely.

   Without SH-AWD: Block the rear wheels, and raise the front of the vehicle, make sure it is securely supported, and allow the front wheels to rotate freely, or raise the vehicle on a lift.

4. Start the engine, disable the VSA by pressing the VSA OFF button. Run the vehicle with the sequential sportshift mode in 3rd gear. Check the 3rd Pressure Switch signal with the HDS in the A/T Data List. Slow down, and stop the wheels.

   Is the 3rd Pressure Switch ON in 3rd gear?

   YES - Intermittent failure, the system is OK at this time. Check for poor connections and loose terminals between transmission fluid pressure switch B (3rd clutch) and the PCM.

   NO - Go to step 5.

5. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
6. Disconnect the transmission fluid pressure switch B (3rd clutch) connector.
7. Connect a jumper wire between the transmission fluid pressure switch B (3rd clutch) connector terminal and body ground.

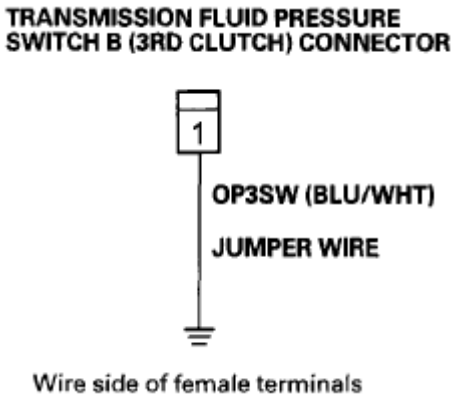


Fig. 83: Identifying Jumper Wire Between Transmission Fluid Pressure Switch B (3rd Clutch) Connector Terminal And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

8. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
9. Check the 3rd Pressure Switch signal with the HDS in the A/T Data List.

   Is the 3rd Pressure Switch ON?

   YES - Replace transmission fluid pressure switch B (3rd clutch) (see **TRANSMISSION FLUID PRESSURE SWITCH B (3RD CLUTCH) REPLACEMENT**).

   NO - Go to step 10.

10. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
11. Remove the jumper wire.
12. Jump the SCS line with the HDS.
13. Disconnect PCM connector C (49P).
14. Check for continuity between PCM connector terminal C38 and the transmission fluid pressure switch B (3rd clutch) connector terminal.

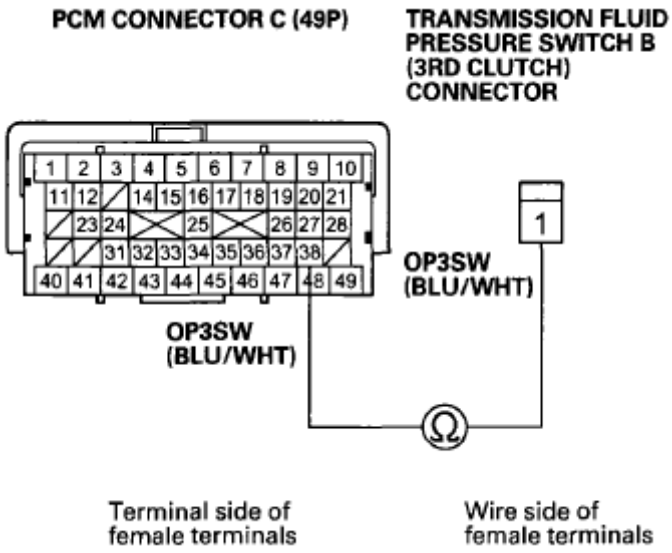


Fig. 84: Checking Continuity Between PCM Connector Terminal C38 And Transmission Fluid Pressure Switch B (3rd Clutch) Connector Terminal
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Replace the PCM (see **ECM/PCM REPLACEMENT**).

NO - Repair an open in the wire between PCM connector terminal C38 and transmission fluid pressure switch B (3rd clutch).

DTC P084C: SHORT IN LINE PRESSURE SWITCH CIRCUIT, OR LINE PRESSURE SWITCH STUCK ON

NOTE:

- **Before you troubleshoot, record all freeze data and any on-board snapshot with the HDS, and review the General Troubleshooting Information (see GENERAL TROUBLESHOOTING INFORMATION).**
- **If DTC P084C is stored in the PCM, engine torque is restricted because of the fail-safe function.**

1. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
2. Clear the DTC with the HDS.
3. Check the Line Pressure Pressure Switch signal with the HDS in the A/T Data List.

Is the Line Pressure Pressure Switch ON?

YES - Go to step 4.

NO - Intermittent failure, the system is OK at this time.

4. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
5. Disconnect the line pressure switch connector.
6. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
7. Check the Line Pressure Pressure Switch signal with the HDS in the A/T Data List.

   Is the Line Pressure Pressure Switch OFF?

   YES - Replace the line pressure switch (see **LINE PRESSURE SWITCH REPLACEMENT**).

   NO - Go to step 8.

8. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
9. Jump the SCS line with the HDS.
10. Disconnect PCM connector C (49P).
11. Check for continuity between PCM connector terminal C35 and body ground.

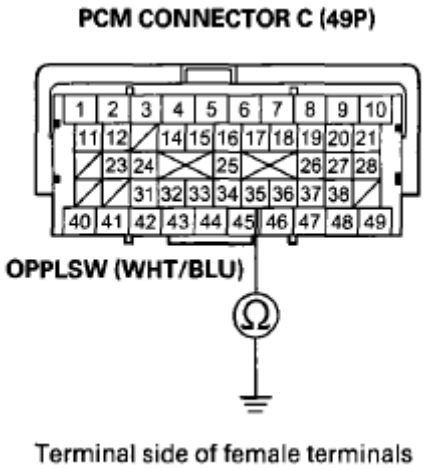


Fig. 85: Checking Continuity Between PCM Connector Terminal C35 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair a short to body ground in the wire between PCM connector terminal C35 and the line pressure switch.

NO - Replace the PCM (see **ECM/PCM REPLACEMENT**).

DTC P0872: SHORT IN TRANSMISSION FLUID PRESSURE SWITCH C (4TH CLUTCH) CIRCUIT, OR TRANSMISSION FLUID PRESSURE SWITCH C (4TH CLUTCH) STUCK ON

NOTE:

- **Before you troubleshoot, record all freeze data and any on-board snapshot with the HDS, and review the General Troubleshooting Information (see**

GENERAL TROUBLESHOOTING INFORMATION).

- **This code is caused by an electrical circuit problem and cannot be caused by a mechanical problem in the transmission.**
- **If DTC P0872 is stored in the PCM, the transmission does not shift to any gear other than 1st or 4th gear because of the fail-safe function.**

1. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
2. Clear the DTC with the HDS.
3. Check the 4th Pressure Switch signal with the HDS in the A/T Data List.

   Is the 4th Pressure Switch ON?

   YES - Go to step 4.

   NO - Intermittent failure, the system is OK at this time.

4. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
5. Disconnect the transmission fluid pressure switch C (4th clutch) connector.
6. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
7. Check the 4th Pressure Switch signal with the HDS in the A/T Data List.

   Is the 4th Pressure Switch OFF?

   YES - Replace transmission fluid pressure switch C (4th clutch) (see **TRANSMISSION FLUID PRESSURE SWITCH C (4TH CLUTCH) REPLACEMENT**).

   NO - Go to step 8.

8. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
9. Jump the SCS line with the HDS.
10. Disconnect PCM connector C (49P).
11. Check for continuity between PCM connector terminal C37 and body ground.

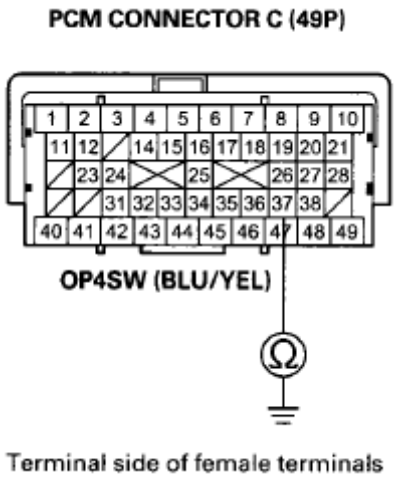


Fig. 86: Checking Continuity Between PCM Connector Terminal C37 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair a short to body ground in the wire between PCM connector terminal C37 and transmission fluid pressure switch C (4th clutch).

NO - Replace the PCM (see **ECM/PCM REPLACEMENT**).

DTC P0873: OPEN IN TRANSMISSION FLUID PRESSURE SWITCH C (4TH CLUTCH) CIRCUIT, OR TRANSMISSION FLUID PRESSURE SWITCH C (4TH CLUTCH) STUCK OFF

NOTE:

- **Before you troubleshoot, record all freeze data and any on-board snapshot with the HDS, and review the General Troubleshooting Information (see GENERAL TROUBLESHOOTING INFORMATION).**
- **If DTC P0873 is stored in the PCM, the transmission does not shift to any gear other than 1st or 4th gear because of the fail-safe function.**

1. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
2. Clear the DTC with the HDS.
3. With SH-AWD: Raise the vehicle on a lift, make sure it is securely supported, and allow all four wheels to rotate freely.

   Without SH-AWD: Block the rear wheels, and raise the front of the vehicle, make sure it is securely supported, and allow the front wheels to rotate freely, or raise the vehicle on a lift.

4. Start the engine, disable the VSA by pressing the VSA OFF button. Run the vehicle with the sequential sportshift mode in 4th gear. Check the 4th Pressure Switch signal with the HDS in the A/T Data List. Slow down, and stop the wheels.

   Is the 4th Pressure Switch ON in 4th gear?

YES - Intermittent failure, the system is OK at this time. Check for poor connections and loose terminals between transmission fluid pressure switch C (4th clutch) and the PCM.

NO - Go to step 5.

5. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
6. Disconnect the transmission fluid pressure switch C (4th clutch) connector.
7. Connect a jumper wire between the transmission fluid pressure switch C (4th clutch) connector terminal and body ground.

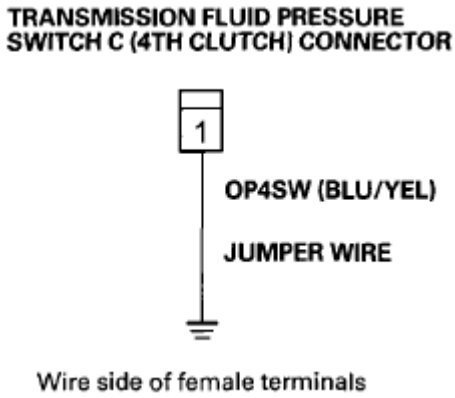


Fig. 87: Identifying Jumper Wire Between Transmission Fluid Pressure Switch C (4th Clutch) Connector Terminal And Body Ground Connection
Courtesy of AMERICAN HONDA MOTOR CO., INC.

8. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
9. Check the 4th Pressure Switch signal with the HDS in the A/T Data List.

Is the 4th Pressure Switch ON?

YES - Replace transmission fluid pressure switch C (4th clutch) (see **TRANSMISSION FLUID PRESSURE SWITCH C (4TH CLUTCH) REPLACEMENT**).

NO - Go to step 10.

10. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
11. Remove the jumper wire.
12. Jump the SCS line with the HDS.
13. Disconnect PCM connector C (49P).
14. Check for continuity between PCM connector terminal C37 and the transmission fluid pressure switch C (4th clutch) connector terminal.

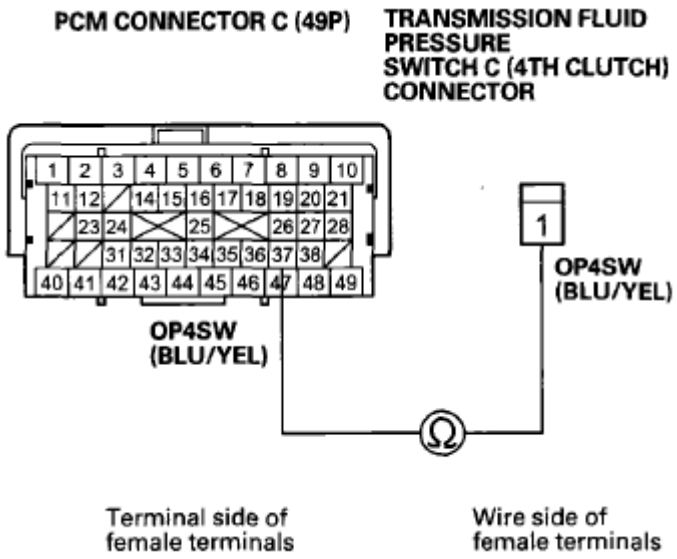


Fig. 88: Checking Continuity Between PCM Connector Terminal C37 And Transmission Fluid Pressure Switch C (4th Clutch) Connector Terminal
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Replace the PCM (see **ECM/PCM REPLACEMENT**).

NO - Repair an open in the wire between PCM connector terminal C37 and transmission fluid pressure switch C (4th clutch).

DTC P0877: SHORT IN TRANSMISSION FLUID PRESSURE SWITCH D (5TH CLUTCH) CIRCUIT, OR TRANSMISSION FLUID PRESSURE SWITCH D (5TH CLUTCH) STUCK ON

NOTE:

- **Before you troubleshoot, record all freeze data and any on-board snapshot with the HDS, and review the General Troubleshooting Information (see GENERAL TROUBLESHOOTING INFORMATION).**
- **This code is caused by an electrical circuit problem and cannot be caused by a mechanical problem in the transmission.**
- **If DTC P0877 is stored in the PCM, the transmission does not shift to any gear other than 2nd or 5th gear because of the fail-safe function.**

1. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
2. Clear the DTC with the HDS.
3. Check the 5th Pressure Switch signal with the HDS in the A/T Data List.

Is the 5th Pressure Switch ON?

YES - Go to step 4.

NO - Intermittent failure, the system is OK at this time.

4. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
5. Disconnect the transmission fluid pressure switch D (5th clutch) connector.
6. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
7. Check the 5th Pressure Switch signal with the HDS in the A/T Data List.

Is the 5th Pressure Switch OFF?

YES - Replace transmission fluid pressure switch D (5th clutch) (see **TRANSMISSION FLUID PRESSURE SWITCH D (5TH CLUTCH) REPLACEMENT**).

NO - Go to step 8.

8. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
9. Jump the SCS line with the HDS.
10. Disconnect PCM connector C (49P).
11. Check for continuity between PCM connector terminal C14 and body ground.

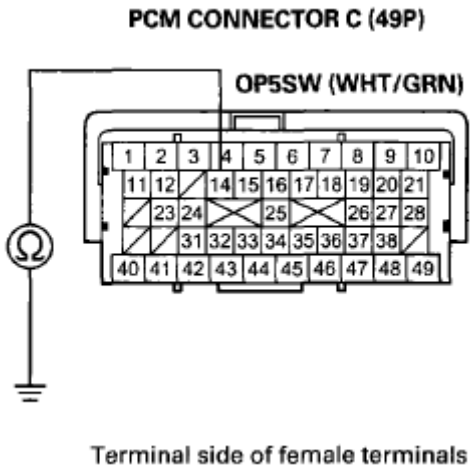


Fig. 89: Checking Continuity Between PCM Connector Terminal C14 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair a short to body ground in the wire between PCM connector terminal C14 and transmission fluid pressure switch D (5th clutch).

NO - Replace the PCM (see **ECM/PCM REPLACEMENT**).

DTC P0878: OPEN IN TRANSMISSION FLUID PRESSURE SWITCH D (5TH CLUTCH) CIRCUIT, OR TRANSMISSION FLUID PRESSURE SWITCH D (5TH CLUTCH) STUCK OFF

NOTE:

- **Before you troubleshoot, record all freeze data and any on-board snapshot with the HDS, and review the General Troubleshooting Information (see GENERAL TROUBLESHOOTING INFORMATION).**
- **If DTC P0878 is stored in the PCM, the transmission does not shift to any gear other than 2nd through 5th gear because of the fail-safe function.**

1. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
2. Clear the DTC with the HDS.
3. With SH-AWD: Raise the vehicle on a lift, make sure it is securely supported, and allow all four wheels to rotate freely.

   Without SH-AWD: Block the rear wheels, and raise the front of the vehicle, make sure it is securely supported, and allow the front wheels to rotate freely, or raise the vehicle on a lift.

4. Start the engine, disable the VSA by pressing the VSA OFF button. Run the vehicle with the sequential sportshift mode in 5th gear. Check the 5th Pressure Switch signal with the HDS in the A/T Data List. Slow down, and stop the wheels.

   Is the 5th Pressure Switch ON in 5th gear?

   YES - Intermittent failure, the system is OK at this time. Check for poor connections and loose terminals between transmission fluid pressure switch D (5th clutch) and the PCM.

   NO - Go to step 5.

5. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
6. Disconnect the transmission fluid pressure switch D (5th clutch) connector.
7. Connect a jumper wire between the transmission fluid pressure switch D (5th clutch) connector terminal and body ground.

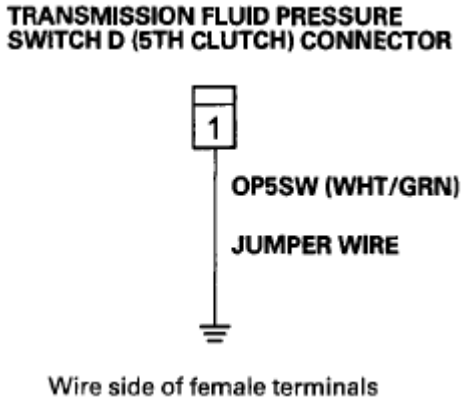


Fig. 90: Identifying Jumper Wire Between Transmission Fluid Pressure Switch D (5th Clutch) Connector Terminal And Body Ground Connection
Courtesy of AMERICAN HONDA MOTOR CO., INC.

8. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
9. Check the 5th Pressure Switch signal with the HDS in the A/T Data List.

   Is the 5th Pressure Switch ON?

   YES - Replace transmission fluid pressure switch D (5th clutch) (see **TRANSMISSION FLUID PRESSURE SWITCH D (5TH CLUTCH) REPLACEMENT**).

   NO - Go to step 10.

10. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
11. Remove the jumper wire.
12. Jump the SCS line with the HDS.
13. Disconnect PCM connector C (49P).
14. Check for continuity between PCM connector terminal C14 and the transmission fluid pressure switch D (5th clutch) connector terminal.

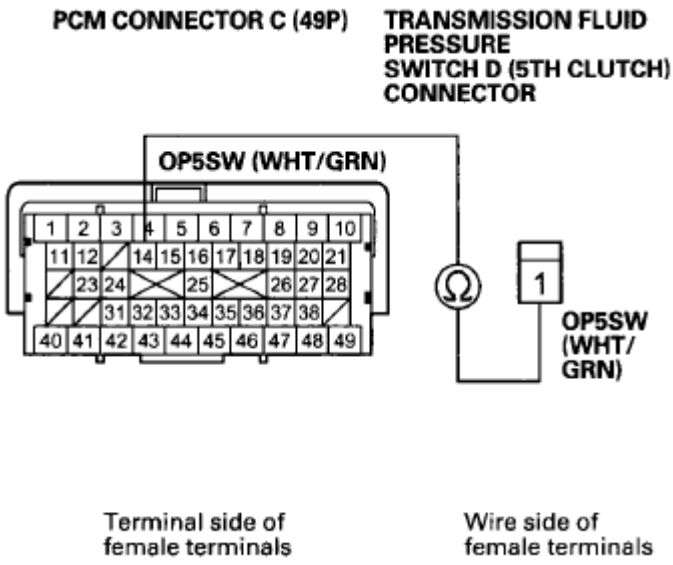


Fig. 91: Checking Continuity Between PCM Connector Terminal C14 And Transmission Fluid Pressure Switch D (5th Clutch) Connector Terminal
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Replace the PCM (see **ECM/PCM REPLACEMENT**).

NO - Repair an open in the wire between PCM connector terminal C14 and transmission fluid pressure switch D (5th clutch).

DTC P0962: PROBLEM IN A/T CLUTCH PRESSURE CONTROL SOLENOID VALVE A CIRCUIT

NOTE:

- **Before you troubleshoot, record all freeze data and any on-board snapshot with the HDS, and review the General Troubleshooting Information (see GENERAL TROUBLESHOOTING INFORMATION).**
- **This code is caused by an electrical circuit problem and cannot be caused by a mechanical problem in the transmission.**
- **If DTC P0962 is stored in the PCM, the transmission does not shift to 2nd or 5th gear because of the fail-safe function.**

1. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
2. Clear the DTC with the HDS.
3. Check for Pending or Confirmed DTCs with the HDS.

   Is DTC P0962 indicated?

   YES - Go to step 4.

   NO - Intermittent failure, the system is OK at this time. Check for poor connections and loose terminals between A/T clutch pressure control solenoid valve A and the PCM.

4. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
5. Check for a blown No. 10 (10 A) fuse in the driver's under-dash fuse/relay box.

   Is the No. 10 (10 A) fuse OK?

   YES - Go to step 6.

   NO - Repair a short to body ground in the wire between PCM connector terminal A1 and the driver's under-dash fuse/relay box.

6. Jump the SCS line with the HDS.
7. Disconnect PCM connectors A (49P).
8. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
9. Measure the voltage between PCM connector terminals A1 and body ground.

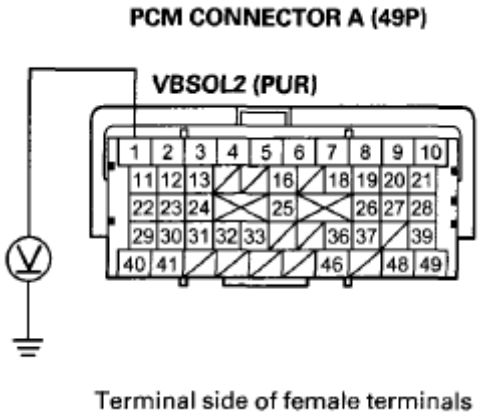


Fig. 92: Measuring Voltage Between PCM Connector Terminals A1 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there battery voltage?

YES - Go to step 10.

NO - Repair an open in the wire between PCM connector terminal A1 and the driver's under-dash fuse/relay box.

10. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
11. Jump the SCS line with the HDS.
12. Disconnect PCM connector C (49P).
13. Check for continuity between PCM connector terminal C21 and body ground.

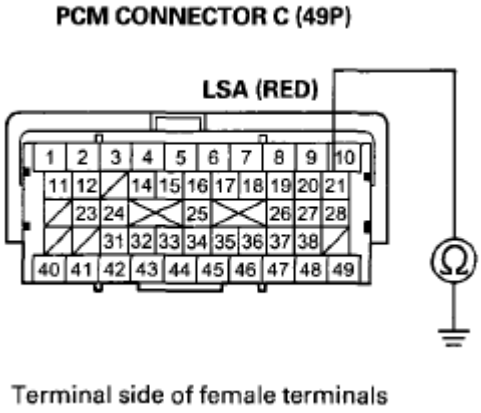


Fig. 93: Checking Continuity Between PCM Connector Terminal C21 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 14.

NO - Go to step 16.

14. Disconnect the A/T clutch pressure control solenoid valve A connector.
15. Check for continuity between A/T clutch pressure control solenoid valve A connector terminal No. 1 and body ground.

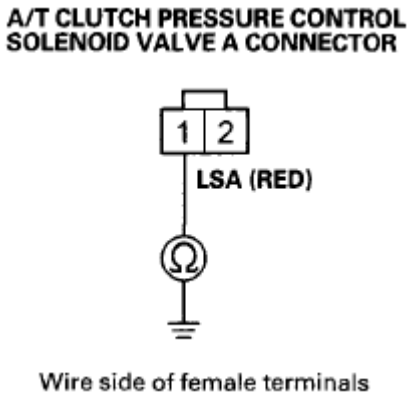


Fig. 94: Checking Continuity Between A/T Clutch Pressure Control Solenoid Valve A Connector Terminal No. 1 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair a short to body ground in the wire between PCM connector terminal C21 and A/T clutch pressure control solenoid valve A.

NO - Faulty A/T clutch pressure control solenoid valve A. Replace the secondary valve body (A/T clutch pressure control solenoid valve A) (see **SECONDARY VALVE BODY REPLACEMENT**).

16. Disconnect the A/T clutch pressure control solenoid valve A connector.
17. Check for continuity between PCM connector terminal C21 and A/T clutch pressure control solenoid valve A connector terminal No. 1.

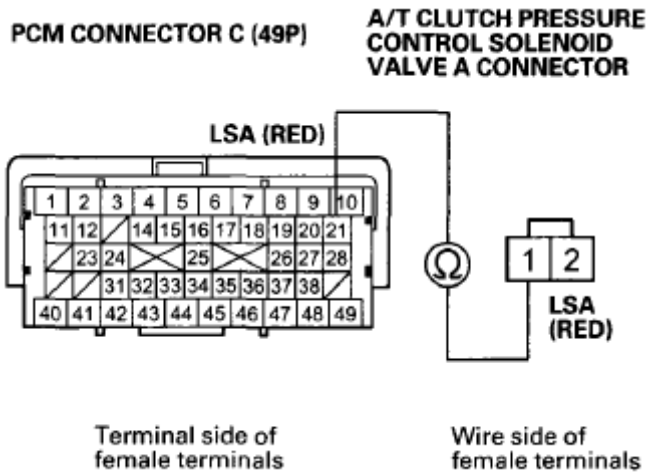


Fig. 95: Checking Continuity Between PCM Connector And A/T Clutch Pressure Control Solenoid Valve A Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 18.

NO - Repair an open in the wire between A/T clutch pressure control solenoid valve A connector terminal No. 1 and PCM connector terminal C21.

18. Check for continuity between A/T clutch pressure control solenoid valve A connector terminal No. 2 and body ground.

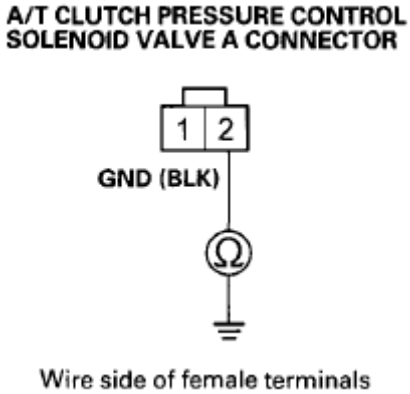


Fig. 96: Checking Continuity Between A/T Clutch Pressure Control Solenoid Valve A Connector Terminal No. 2 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 19.

NO - Repair an open in the wire between the A/T clutch pressure control solenoid valve A connector and body ground (G101) (see **CONNECTOR TO FUSE/RELAY BOX INDEX**), or repair poor body ground (G101).

19. Measure the resistance between A/T clutch pressure control solenoid valve A connector terminals No. 1 and No. 2.

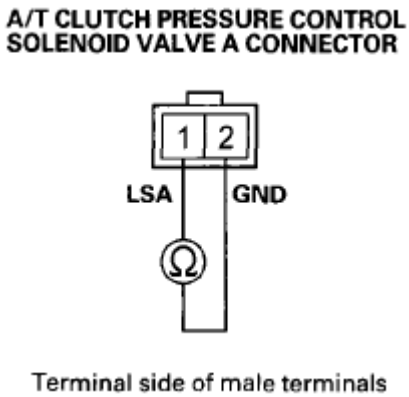


Fig. 97: Measuring Resistance Between A/T Clutch Pressure Control Solenoid Valve A Connector Terminals No. 1 And No. 2
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there 4.7-5.9 ohms?

YES - Replace the PCM (see **ECM/PCM REPLACEMENT**).

NO - Faulty A/T clutch pressure control solenoid valve A. Replace the secondary valve body (A/T clutch pressure control solenoid valve A) (see **SECONDARY VALVE BODY REPLACEMENT**).

DTC P0963: PROBLEM IN A/T CLUTCH PRESSURE CONTROL SOLENOID VALVE A

NOTE:

- **Before you troubleshoot, record all freeze data and any on-board snapshot with the HDS, and review the General Troubleshooting Information (see GENERAL TROUBLESHOOTING INFORMATION).**
- **This code is caused by an electrical circuit problem and cannot be caused by a mechanical problem in the transmission.**
- **If DTC P0963 is stored in the PCM, the transmission does not shift to 2nd or 5th gear because of the fail-safe function.**

1. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
2. Clear the DTC with the HDS.
3. Check for Pending or Confirmed DTCs with the HDS.

Is DTC P0963 indicated?

YES - Go to step 4.

NO - Intermittent failure, the system is OK at this time.

4. Check the A/T C.P.C. Sol VLV. A Actual command with the HDS in the A/T Data List.

   Is there 35 mA or more?

   YES - Go to step 5.

   NO - Faulty A/T clutch pressure control solenoid valve A. Replace the secondary valve body (A/T clutch control solenoid valve A) (see **SECONDARY VALVE BODY REPLACEMENT**).

5. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
6. Jump the SCS line with the HDS.
7. Disconnect PCM connector B (49P).
8. Check for continuity between:
   - PCM connector terminal B1 and body ground.
   - PCM connector terminal B40 and body ground.

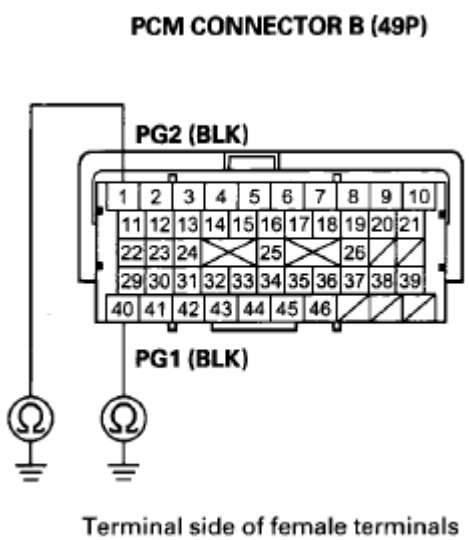


Fig. 98: Checking Continuity Between PCM Connector Terminal B1 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Replace the PCM (see **ECM/PCM REPLACEMENT**).

NO - Repair an open in the wires between:

- PCM connector terminal B1 and body ground (G101) (see **CONNECTOR TO FUSE/RELAY**

BOX INDEX), or repair poor body ground (G101).

- PCM connector terminal B40 and body ground (G101) (see **CONNECTOR TO FUSE/RELAY BOX INDEX**), or repair poor body ground (G101).

DTC P0966: PROBLEM IN A/T CLUTCH PRESSURE CONTROL SOLENOID VALVE B CIRCUIT

NOTE:

- **Before you troubleshoot, record all freeze data and any on-board snapshot with the HDS, and review the General Troubleshooting Information (see GENERAL TROUBLESHOOTING INFORMATION).**
- **This code is caused by an electrical circuit problem and cannot be caused by a mechanical problem in the transmission.**
- **If DTC P0966 is stored in the PCM, the transmission does not shift to any gear other than 1st, 2nd, or 5th gear because of the fail-safe function.**

1. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
2. Clear the DTC with the HDS.
3. Check for Pending or Confirmed DTCs with the HDS.

   Is DTC P0966 Indicated?

   YES - Go to step 4.

   NO - Intermittent failure, the system is OK at this time. Check for poor connections and loose terminals between A/T clutch pressure control solenoid valve B and the PCM.

4. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
5. Jump the SCS line with the HDS.
6. Disconnect PCM connector B (49P).
7. Check for continuity between PCM connector terminal B10 and body ground.

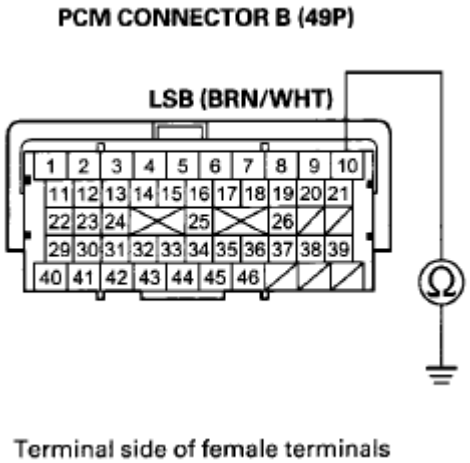


Fig. 99: Checking Continuity Between PCM Connector Terminal B10 And Body Ground

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 8.

NO - Go to step 10.

8. Disconnect the A/T clutch pressure control solenoid valve B connector.
9. Check for continuity between A/T clutch pressure control solenoid valve B connector terminal No. 1 and body ground.

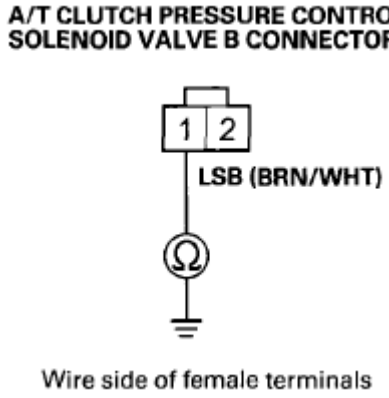


Fig. 100: Checking Continuity Between A/T Clutch Pressure Control Solenoid Valve B Connector Terminal No. 1 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair a short to body ground in the wire between PCM connector terminal B10 and A/T clutch pressure control solenoid valve B.

NO - Faulty A/T clutch pressure control solenoid valve B. Replace the secondary valve body (A/T clutch pressure control solenoid valve B) (see **SECONDARY VALVE BODY REPLACEMENT**).

10. Disconnect the A/T clutch pressure control solenoid valve B connector.
11. Check for continuity between PCM connector terminal B10 and A/T clutch pressure control solenoid valve B connector terminal No. 1.

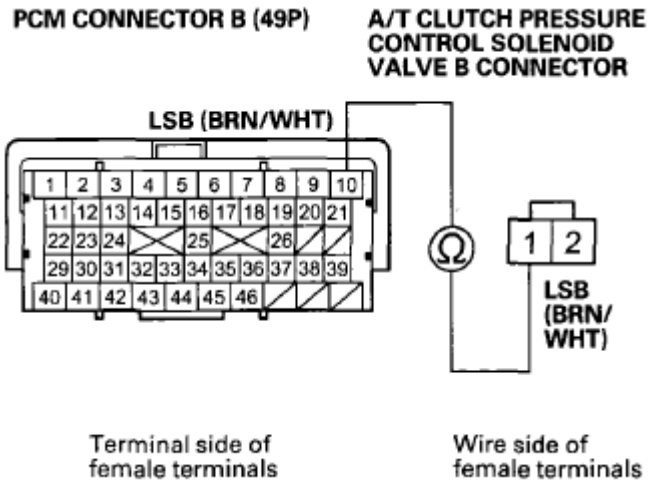


Fig. 101: Checking Continuity Between PCM Connector Terminal B10 And A/T Clutch Pressure Control Solenoid Valve B Connector Terminal No. 1
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 12.

NO - Repair an open in the wire between A/T clutch pressure control solenoid valve B connector terminal No. 1 and PCM connector terminal B10.

12. Check for continuity between A/T clutch pressure control solenoid valve B connector terminal No. 2 and body ground.

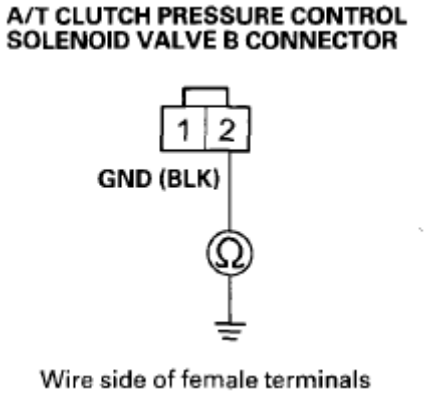


Fig. 102: Checking Continuity Between A/T Clutch Pressure Control Solenoid Valve B Connector Terminal No. 2 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 13.

NO - Repair an open in the wire between the A/T clutch pressure control solenoid valve B connector and body ground (G101) (see **CONNECTOR TO FUSE/RELAY BOX INDEX**), or repair poor body ground (G101).

13. Measure the resistance between A/T clutch pressure control solenoid valve B connector terminals No. 1 and No. 2.

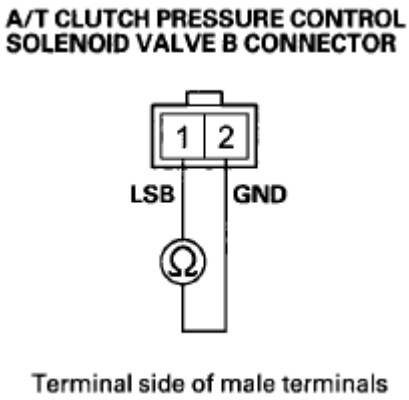


Fig. 103: Measuring Resistance Between A/T Clutch Pressure Control Solenoid Valve B Connector Terminals No. 1 And No. 2
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there 4.7-5.9 ohms?

YES - Replace the PCM (see **ECM/PCM REPLACEMENT**).

NO - Faulty A/T clutch pressure control solenoid valve B. Replace the secondary valve body (A/T clutch pressure control solenoid valve B) (see **SECONDARY VALVE BODY REPLACEMENT**).

DTC P0967: PROBLEM IN A/T CLUTCH PRESSURE CONTROL SOLENOID VALVE B

NOTE:

- **Before you troubleshoot, record all freeze data and any on-board snapshot with the HDS, and review the General Troubleshooting Information (see GENERAL TROUBLESHOOTING INFORMATION).**
- **This code is caused by an electrical circuit problem and cannot be caused by a mechanical problem in the transmission.**
- **If DTC P0967 is stored in the PCM, the transmission does not shift to any gear other than 1st, 2nd, or 5th gear because of the fail-safe function.**

1. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
2. Clear the DTC with the HDS.
3. Check for Pending or Confirmed DTCs with the HDS.

Is DTC P0967 indicated?

YES - Go to step 4.

NO - Intermittent failure, the system is OK at this time.

4. Check the A/T C.P.C. Sol VLV. B Actual command with the HDS in the A/T Data List.

   Is there 35 mA or more?

   YES - Go to step 5.

   NO - Faulty A/T clutch pressure control solenoid valve B. Replace the secondary valve body (A/T clutch pressure control solenoid valve B) (see **SECONDARY VALVE BODY REPLACEMENT**).

5. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
6. Jump the SCS line with the HDS.
7. Disconnect PCM connector B (49P).
8. Check for continuity between:
   - PCM connector terminal B1 and body ground.
   - PCM connector terminal B40 and body ground.

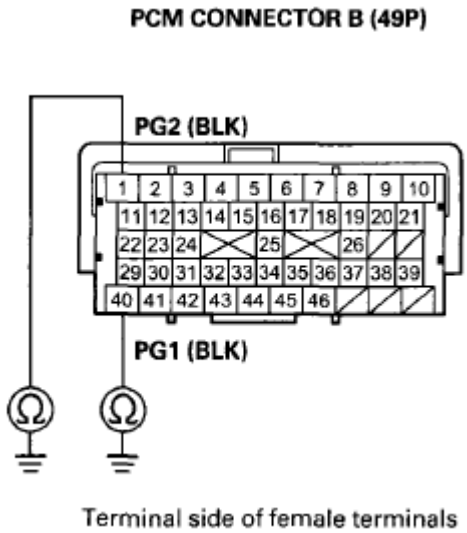


Fig. 104: Checking Continuity Between PCM Connector Terminal B1 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Replace the PCM (see **ECM/PCM REPLACEMENT**).

NO - Repair an open in the wires between:

- PCM connector terminal B1 and body ground (G101) (see **CONNECTOR TO FUSE/RELAY**

BOX INDEX), or repair poor body ground (G101).

- PCM connector terminal B40 and body ground (G101) (see **CONNECTOR TO FUSE/RELAY BOX INDEX**), or repair poor body ground (G101).

DTC P0970: PROBLEM IN A/T CLUTCH PRESSURE CONTROL SOLENOID VALVE C CIRCUIT

NOTE:

- **Before you troubleshoot, record all freeze data and any on-board snapshot with the HDS, and review the General Troubleshooting Information (see GENERAL TROUBLESHOOTING INFORMATION).**
- **This code is caused by an electrical circuit problem and cannot be caused by a mechanical problem in the transmission.**
- **If DTC P0970 is stored in the PCM, the transmission does not shift to any gear other than 1st, 2nd, or 5th gear because of the fail-safe function.**

1. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
2. Clear the DTC with the HDS.
3. Check for Pending or Confirmed DTCs with the HDS.

   Is DTC P0970 indicated?

   YES - Go to step 4.

   NO - Intermittent failure, the system is OK at this time. Check for poor connections and loose terminals between A/T clutch pressure control solenoid valve C and the PCM.

4. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
5. Jump the SCS line with the HDS.
6. Disconnect PCM connector B (49P).
7. Check for continuity between PCM connector terminal B21 and body ground.

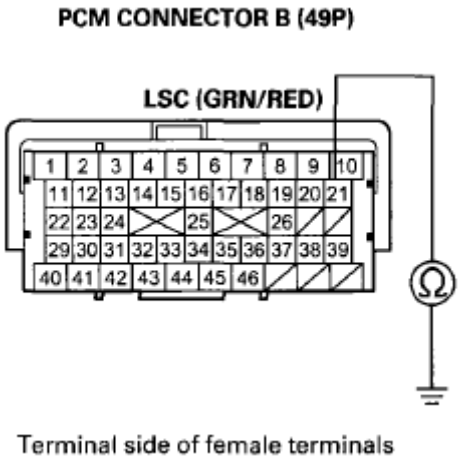


Fig. 105: Checking Continuity Between PCM Connector Terminal B21 And Body Ground

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 8.

NO - Go to step 10.

8. Disconnect the A/T clutch pressure control solenoid valve C connector.
9. Check for continuity between A/T clutch pressure control solenoid valve C connector terminal No. 1 and body ground.

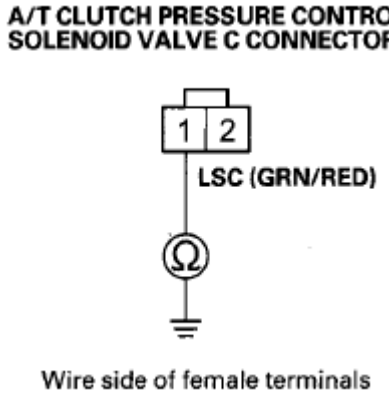


Fig. 106: Checking Continuity Between A/T Clutch Pressure Control Solenoid Valve C Connector Terminal No. 1 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair a short to body ground in the wire between PCM connector terminal B21 and A/T clutch pressure control solenoid valve C.

NO - Faulty A/T clutch pressure control solenoid valve C. Replace the secondary valve body (A/T clutch pressure control solenoid valve C) (see **SECONDARY VALVE BODY REPLACEMENT**).

10. Disconnect the A/T clutch pressure control solenoid valve C connector.
11. Check for continuity between PCM connector terminal B21 and A/T clutch pressure control solenoid valve C connector terminal No. 1.

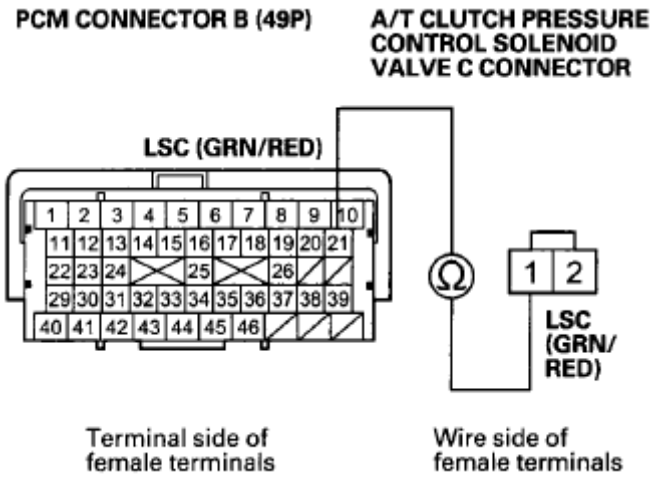


Fig. 107: Checking Continuity Between PCM Connector Terminal B21 And A/T Clutch Pressure Control Solenoid Valve C Connector Terminal No. 1
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 12.

NO - Repair an open in the wire between A/T clutch pressure control solenoid valve C connector terminal No. 1 and PCM connector terminal B21.

12. Check for continuity between A/T clutch pressure control solenoid valve C connector terminal No. 2 and body ground.

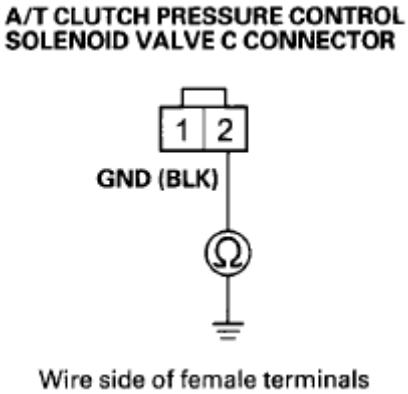


Fig. 108: Checking Continuity Between A/T Clutch Pressure Control Solenoid Valve C Connector Terminal No. 2 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 13.

NO - Repair an open in the wire between the A/T clutch pressure control solenoid valve C connector and body ground (G101) (see **CONNECTOR TO FUSE/RELAY BOX INDEX**), or repair poor body ground (G101).

13. Measure the resistance between A/T clutch pressure control solenoid valve C connector terminals No. 1 and No. 2.

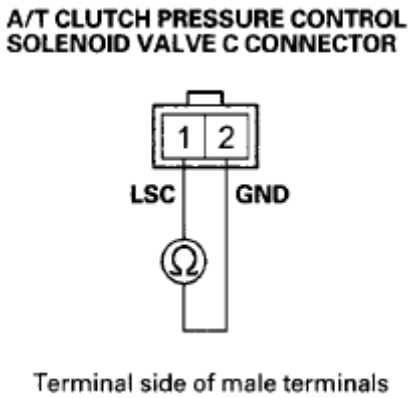


Fig. 109: Measuring Resistance Between A/T Clutch Pressure Control Solenoid Valve C Connector Terminals No. 1 And No. 2
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there 4.7-5.9 ohms?

YES - Replace the PCM (see **ECM/PCM REPLACEMENT**).

NO - Faulty A/T clutch pressure control solenoid valve C. Replace the secondary valve body (A/T clutch pressure control solenoid valve C) (see **SECONDARY VALVE BODY REPLACEMENT**).

DTC P0971: PROBLEM IN A/T CLUTCH PRESSURE CONTROL SOLENOID VALVE C

NOTE:

- **Before you troubleshoot, record all freeze data and any on-board snapshot with the HDS, and review the General Troubleshooting Information (see GENERAL TROUBLESHOOTING INFORMATION).**
- **This code is caused by an electrical circuit problem and cannot be caused by a mechanical problem in the transmission.**
- **If DTC P0971 is stored in the PCM, the transmission does not shift to any gear other than 1st, 2nd, or 5th gear because of the fail-safe function.**

1. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
2. Clear the DTC with the HDS.
3. Check for Pending or Confirmed DTCs with the HDS.

Is DTC P0971 indicated?

YES - Go to step 4.

NO - Intermittent failure, the system is OK at this time.

4. Check the A/T C.P.C. Sol VLV. C Actual command with the HDS in the A/T Data List.

   Is there 35 mA or more?

   YES - Go to step 5.

   NO - Faulty A/T clutch pressure control solenoid valve C. Replace the secondary valve body (A/T clutch pressure control solenoid valve C) (see **SECONDARY VALVE BODY REPLACEMENT**).

5. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
6. Jump the SCS line with the HDS.
7. Disconnect PCM connector B (49P).
8. Check for continuity between:
   - PCM connector terminal B1 and body ground.
   - PCM connector terminal B40 and body ground.

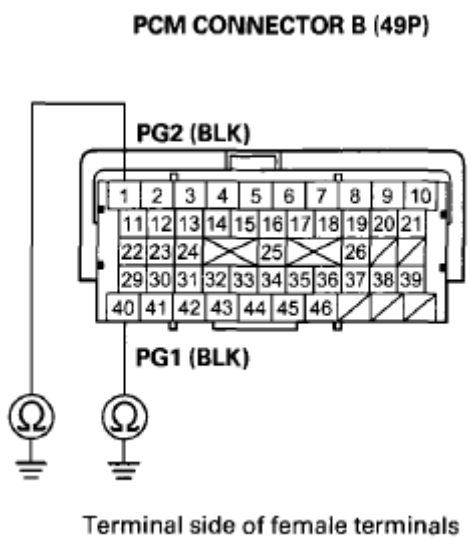


Fig. 110: Checking Continuity Between PCM Connector Terminal B1 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Replace the PCM (see **ECM/PCM REPLACEMENT**).

NO - Repair an open in the wires between:

- PCM connector terminal B1 and body ground (G101) (see **CONNECTOR TO FUSE/RELAY**

BOX INDEX), or repair poor body ground (G101).

- PCM connector terminal B40 and body ground (G101) (see **CONNECTOR TO FUSE/RELAY BOX INDEX**), or repair poor body ground (G101).

DTC P0973: SHORT IN SHIFT SOLENOID VALVE A CIRCUIT

NOTE:

- **Before you troubleshoot, record all freeze data and any on-board snapshot with the HDS, and review the General Troubleshooting Information (see GENERAL TROUBLESHOOTING INFORMATION).**
- **This code is caused by an electrical circuit problem and cannot be caused by a mechanical problem in the transmission.**
- **If DTC P0973 is stored in the PCM, the transmission does not shift to 2nd or 5th gear because of the fail-safe function.**

1. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
2. Clear the DTC with the HDS.
3. Start the engine in P, and wait for at least 1 second.
4. Check for Pending or Confirmed DTCs with the HDS.

   Is DTC P0973 indicated?

   YES - Go to step 5.

   NO - Intermittent failure, the system is OK at this time. Check for poor connections and loose terminals between shift solenoid valve A and the PCM.

5. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
6. Check for a blown No. 10 (10 A) fuse in the driver's under-dash fuse/relay box.

   Is the No. 10 (10 A) fuse OK?

   YES - Go to step 7.

   NO - Repair a short to body ground in the wire between PCM connector terminal A1 and the driver's under-dash fuse/relay box.

7. Jump the SCS line with the HDS.
8. Disconnect PCM connectors A (49P).
9. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
10. Measure the voltage between PCM connector terminals A1 and body ground.

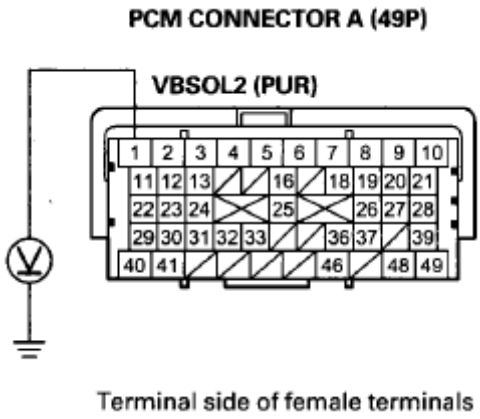


Fig. 111: Measuring Voltage Between PCM Connector Terminals A1 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there battery voltage?

YES - Go to step 11.

NO - Repair an open in the wire between PCM connector terminal A1 and the driver's under-dash fuse/relay box.

11. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
12. Disconnect the shift solenoid valve A connector.
13. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
14. Clear the DTC with the HDS.
15. Start the engine in P, and wait for at least 1 second.
16. Check for Pending or Confirmed DTCs with the HDS.

Is DTC P0973 indicated?

YES - Go to step 17.

NO - Faulty shift solenoid valve A. Replace the secondary valve body (shift solenoid valve A) (see **SECONDARY VALVE BODY REPLACEMENT**).

17. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
18. Jump the SCS line with the HDS.
19. Disconnect PCM connector C (49P).
20. Check for continuity between PCM connector terminals C20 and body ground.

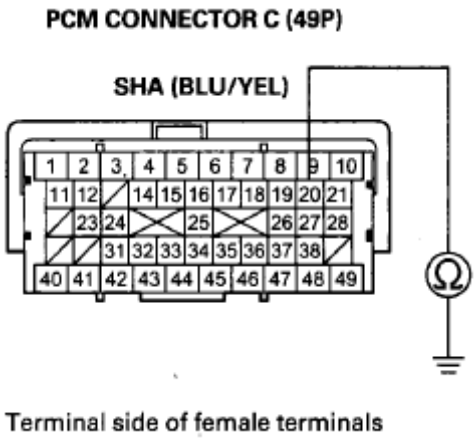


Fig. 112: Checking Continuity Between PCM Connector Terminals C20 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair a short to body ground in the wire between PCM connector terminal C20 and shift solenoid valve A connector terminal No. 2.

NO - Replace the PCM (see **ECM/PCM REPLACEMENT**).

DTC P0974: OPEN IN SHIFT SOLENOID VALVE A CIRCUIT

NOTE:

- **Before you troubleshoot, record all freeze data and any on-board snapshot with the HDS, and review the General Troubleshooting Information (see GENERAL TROUBLESHOOTING INFORMATION).**
- **This code is caused by an electrical circuit problem and cannot be caused by a mechanical problem in the transmission.**
- **If DTC P0974 is stored in the PCM, the transmission does not shift to 2nd or 5th gear because of the fail-safe function.**

1. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
2. Clear the DTC with the HDS.
3. Start the engine. With the brake pedal pressed, shift to R, and wait for at least 1 second.
4. Check for Pending or Confirmed DTCs with the HDS.

Is DTC P0974 indicated?

YES - Go to step 5.

NO - Intermittent failure, the system is OK at this time. Check for poor connections and loose terminals between shift solenoid valve A and the PCM.

5. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
6. Check for a blown No. 10 (10 A) fuse in the driver's under-dash fuse/relay box.

   Is the No. 10 (10 A) fuse OK?

   YES - Go to step 7.

   NO - Repair a short to body ground in the wire between PCM connector terminal A1 and the driver's under-dash fuse/relay box.

7. Jump the SCS line with the HDS.
8. Disconnect PCM connectors A (49P).
9. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
10. Measure the voltage between PCM connector terminals A1 and body ground.

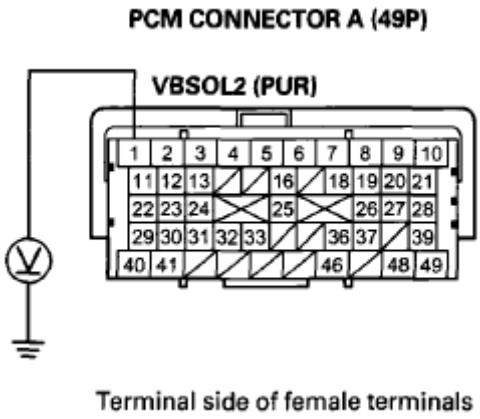


Fig. 113: Measuring Voltage Between PCM Connector Terminals A1 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there battery voltage?

YES - Go to step 11.

NO - Repair an open in the wire between PCM connector terminal A1 and the driver's under-dash fuse/relay box.

11. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
12. Disconnect the shift solenoid valve A connector.
13. Connect a jumper wire between shift solenoid valve A connector terminal No. 2 and body ground.

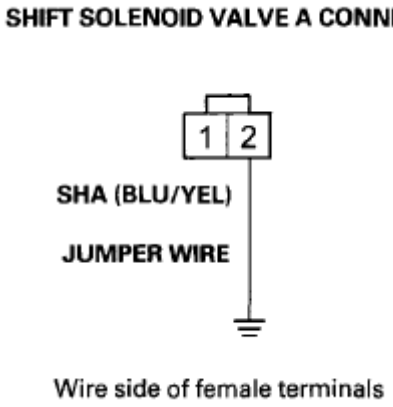


Fig. 114: Identifying Jumper Wire Between Shift Solenoid Valve A Connector Terminal No. 2 And Body Ground Connection
Courtesy of AMERICAN HONDA MOTOR CO., INC.

14. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
15. Clear the DTC with the HDS.
16. Start the engine in P, and wait for at least 1 second.
17. Check for Pending or Confirmed DTCs with the HDS.

Is DTC P0973 indicated?

YES - Go to step 18.

NO - Go to step 21.

18. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
19. Remove the jumper wire.
20. Check for continuity between shift solenoid valve A connector terminal No. 1 and body ground.

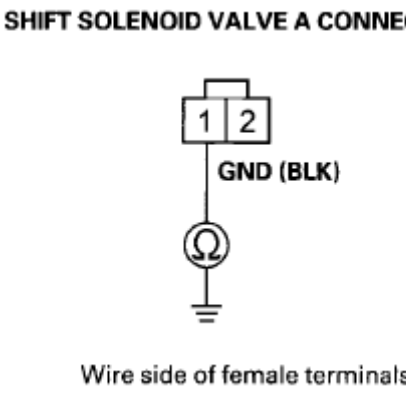


Fig. 115: Checking Continuity Between Shift Solenoid Valve A Connector Terminal No. 1 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Faulty shift solenoid valve A. Replace the secondary valve body (shift solenoid valve A) (see **SECONDARY VALVE BODY REPLACEMENT**).

NO - Repair an open in the wire between shift solenoid valve A and body ground (G101) (see **CONNECTOR TO FUSE/RELAY BOX INDEX**), or repair poor body ground (G101).

21. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
22. Remove the jumper wire.
23. Jump the SCS line with the HDS.
24. Disconnect PCM connector C (49P).
25. Check for continuity between PCM connector terminal C20 and shift solenoid valve A connector terminal No. 2.

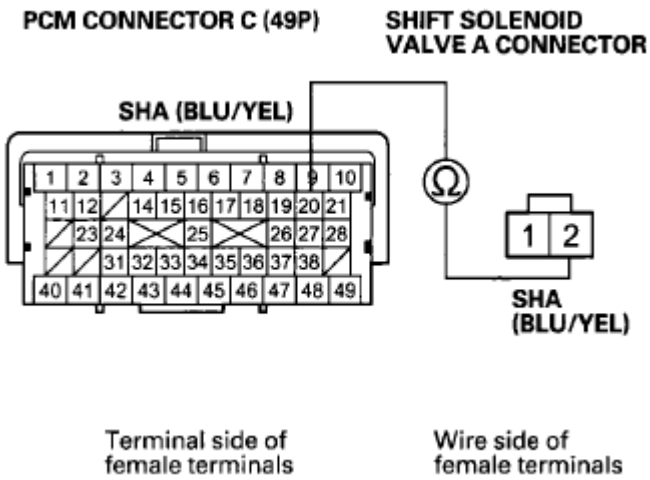


Fig. 116: Checking Continuity Between PCM Connector Terminal C20 And Shift Solenoid Valve A Connector Terminal No. 2
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Replace the PCM (see **ECM/PCM REPLACEMENT**).

NO - Repair an open in the wire between PCM connector terminal C20 and shift solenoid valve A connector terminal No. 2.

DTC P0976: SHORT IN SHIFT SOLENOID VALVE B CIRCUIT

NOTE:

- **Before you troubleshoot, record all freeze data and any on-board snapshot with the HDS, and review the General Troubleshooting Information (see GENERAL TROUBLESHOOTING INFORMATION).**

- **This code is caused by an electrical circuit problem and cannot be caused by a mechanical problem in the transmission.**
- **If DTC P0976 is stored in the PCM, the transmission does not shift to any gear other than 1st, 2nd, or 5th gear because of the fail-safe function.**

1. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
2. Clear the DTC with the HDS.
3. Start the engine. With the brake pedal pressed, shift to D, and wait for at least 3 seconds, then move the shift lever back into P.
4. Check for Pending or Confirmed DTCs with the HDS.

   Is DTC P0976 indicated?

   YES - Go to step 5.

   NO - Intermittent failure, the system is OK at this time.

5. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
6. Disconnect the shift solenoid valve B connector.
7. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
8. Clear the DTC with the HDS.
9. Start the engine. With the brake pedal pressed, shift to D, and wait for at least 3 seconds, then move the shift lever back into P.
10. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P0976 indicated?

    YES - Go to step 11.

    NO - Faulty shift solenoid valve B. Replace the secondary valve body (shift solenoid valve B) (see **SECONDARY VALVE BODY REPLACEMENT**).

11. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
12. Jump the SCS line with the HDS.
13. Disconnect PCM connector C (49P).
14. Check for continuity between PCM connector terminals C28 and body ground.

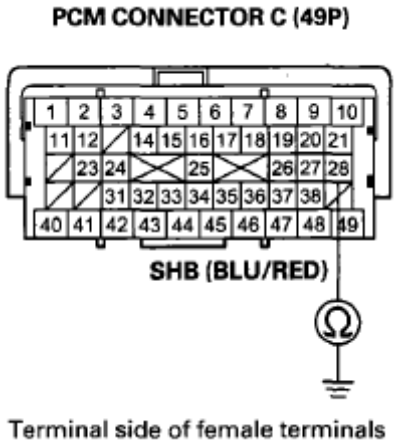


Fig. 117: Checking Continuity Between PCM Connector Terminals C28 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair a short to body ground in the wire between PCM connector terminal C28 and shift solenoid valve B connector terminal No. 2.

NO - Replace the PCM (see **ECM/PCM REPLACEMENT**).

DTC P0977: OPEN IN SHIFT SOLENOID VALVE B CIRCUIT

NOTE:

- **Before you troubleshoot, record all freeze data and any on-board snapshot with the HDS, and review the General Troubleshooting Information (see GENERAL TROUBLESHOOTING INFORMATION).**
- **This code is caused by an electrical circuit problem and cannot be caused by a mechanical problem in the transmission.**
- **If DTC P0977 is stored in the PCM, the transmission does not shift to any gear other than 1st, 2nd, or 5th gear because of the fail-safe function.**

1. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
2. Clear the DTC with the HDS.
3. Start the engine in P, and wait for at least 1 second.
4. Check for Pending or Confirmed DTCs with the HDS.

Is DTC P0977 indicated?

YES - Go to step 5.

NO - Intermittent failure, the system is OK at this time. Check for poor connections and loose terminals between shift solenoid valve B and the PCM.

5. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
6. Disconnect the shift solenoid valve B connector.
7. Connect a jumper wire between shift solenoid valve B connector terminal No. 2 and body ground.

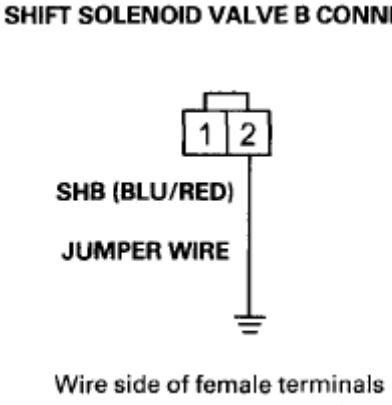


Fig. 118: Identifying Jumper Wire Between Shift Solenoid Valve B Connector Terminal No. 2 And Body Ground Connection
Courtesy of AMERICAN HONDA MOTOR CO., INC.

8. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
9. Clear the DTC with the HDS.
10. Start the engine. With the brake pedal pressed, shift to D, and wait for at least 3 seconds, then move the shift lever back into P.
11. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P0976 indicated?

    YES - Go to step 12.

    NO - Go to step 15.

12. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
13. Remove the jumper wire.
14. Check for continuity between shift solenoid valve B connector terminal No. 1 and body ground.

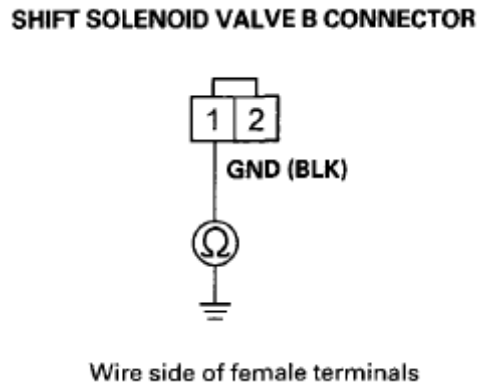


Fig. 119: Checking Continuity Between Shift Solenoid Valve B Connector Terminal No. 1 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Faulty shift solenoid valve B. Replace the secondary valve body (shift solenoid valve B) (see **SECONDARY VALVE BODY REPLACEMENT**).

NO - Repair an open in the wire between shift solenoid valve B and body ground (G101) (see **CONNECTOR TO FUSE/RELAY BOX INDEX**), or repair poor body ground (G101).

15. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
16. Remove the jumper wire.
17. Jump the SCS line with the HDS.
18. Disconnect PCM connector C (49P).
19. Check for continuity between PCM connector terminal C28 and shift solenoid valve B connector terminal No. 2.

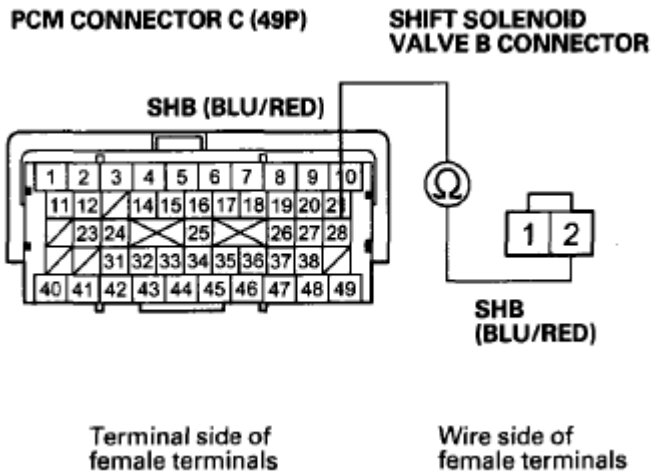


Fig. 120: Checking Continuity Between PCM Connector Terminal C28 And Shift Solenoid Valve B Connector Terminal No. 2

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Replace the PCM (see **ECM/PCM REPLACEMENT**).

NO - Repair an open in the wire between PCM connector terminal C28 and shift solenoid valve B connector terminal No. 2.

DTC P0979: SHORT IN SHIFT SOLENOID VALVE C CIRCUIT

NOTE:

- **Before you troubleshoot, record all freeze data and any on-board snapshot with the HDS, and review the General Troubleshooting Information (see GENERAL TROUBLESHOOTING INFORMATION).**
- **This code is caused by an electrical circuit problem and cannot be caused by a mechanical problem in the transmission.**
- **If DTC P0979 is stored in the PCM, the transmission does not shift to 2nd or 5th gear because of the fail-safe function.**

1. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
2. Clear the DTC with the HDS.
3. Start the engine in P, and wait for at least 1 second.
4. Check for Pending or Confirmed DTCs with the HDS.

   Is DTC P0979 indicated?

   YES - Go to step 5.

   NO - Intermittent failure, the system is OK at this time. Check for poor connections and loose terminals between shift solenoid valve C and the PCM.

5. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
6. Check for a blown No. 10 (10 A) fuse in the driver's under-dash fuse/relay box.

   Is the No. 10 (10 A) fuse OK?

   YES - Go to step 7.

   NO - Repair a short to body ground in the wire between PCM connector terminal A1 and the driver's under-dash fuse/relay box.

7. Jump the SCS line with the HDS.
8. Disconnect PCM connectors A (49P).
9. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.

10. Measure the voltage between PCM connector terminals A1 and body ground.

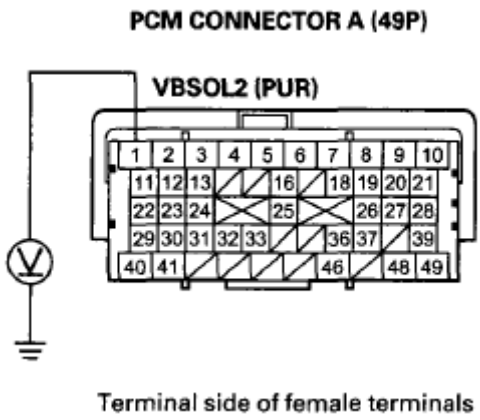


Fig. 121: Measuring Voltage Between PCM Connector Terminals A1 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there battery voltage?

YES - Go to step 11.

NO - Repair an open in the wire between PCM connector terminal A1 and the driver's under-dash fuse/relay box.

11. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
12. Disconnect the shift solenoid valve C connector.
13. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
14. Clear the DTC with the HDS.
15. Start the engine in P, and wait for at least 1 second.
16. Check for Pending or Confirmed DTCs with the HDS.

Is DTC P0979 indicated?

YES - Go to step 17.

NO - Replace shift solenoid valve C (see **SHIFT SOLENOID VALVE C TEST AND REPLACEMENT**).

17. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
18. Jump the SCS line with the HDS.
19. Disconnect PCM connector C (49P).
20. Check for continuity between PCM connector terminals C9 and body ground.

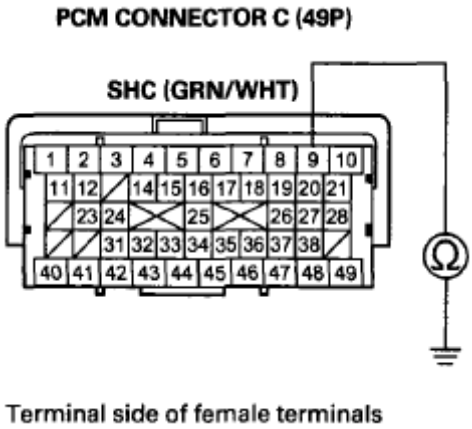


Fig. 122: Checking Continuity Between PCM Connector Terminals C9 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair a short to body ground in the wire between PCM connector terminal C9 and shift solenoid valve C connector terminal No. 2.

NO - Replace the PCM (see **ECM/PCM REPLACEMENT**).

DTC P0980: OPEN IN SHIFT SOLENOID VALVE C CIRCUIT

NOTE:

- **Before you troubleshoot, record all freeze data and any on-board snapshot with the HDS, and review the General Troubleshooting Information (see GENERAL TROUBLESHOOTING INFORMATION).**
- **This code is caused by an electrical circuit problem and cannot be caused by a mechanical problem in the transmission.**
- **If DTC P0980 is stored in the PCM, the transmission does not shift to 2nd or 5th gear because of the fail-safe function.**

1. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
2. Clear the DTC with the HDS.
3. Start the engine. With the brake pedal pressed, shift to N or D, and wait for at least 1 second.
4. Check for Pending or Confirmed DTCs with the HDS.

Is DTC P0980 indicated?

YES - Go to step 5.

NO - Intermittent failure, the system is OK at this time. Check for poor connections and loose terminals between shift solenoid valve C and the PCM.

5. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.

6. Check for a blown No. 10 (10 A) fuse in the driver's under-dash fuse/relay box.

   Is the No. 10 (10 A) fuse OK?

   YES - Go to step 7.

   NO - Repair a short to body ground in the wire between PCM connector terminal A1 and the driver's under-dash fuse/relay box.

7. Jump the SCS line with the HDS.
8. Disconnect PCM connectors A (49P).
9. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
10. Measure the voltage between PCM connector terminals A1 and body ground.

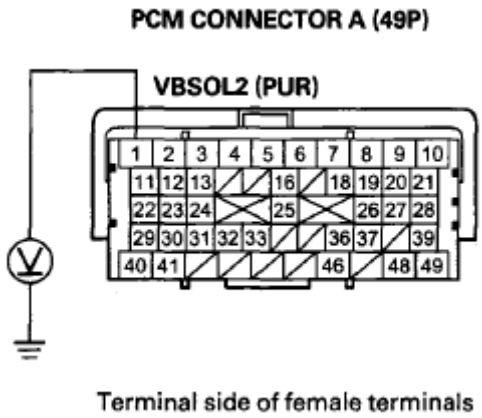


Fig. 123: Measuring Voltage Between PCM Connector Terminals A1 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there battery voltage?

YES - Go to step 11.

NO - Repair an open in the wire between PCM connector terminal A1 and the driver's under-dash fuse/relay box.

11. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
12. Connect PCM connector A (49P).
13. Disconnect the shift solenoid valve C connector.
14. Connect a jumper wire between shift solenoid valve C connector terminal No. 2 and body ground.

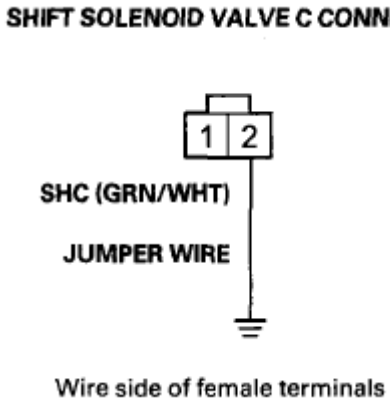


Fig. 124: Identifying Jumper Wire Between Shift Solenoid Valve C Connector Terminal No. 2 And Body Ground Connection
Courtesy of AMERICAN HONDA MOTOR CO., INC.

15. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
16. Clear the DTC with the HDS.
17. Start the engine in P, and wait for at least 1 second.
18. Check for Pending or Confirmed DTCs with the HDS.

Is DTC P0979 indicated?

YES - Go to step 19.

NO - Go to step 22.

19. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
20. Remove the jumper wire.
21. Check for continuity between shift solenoid valve C connector terminal No. 1 and body ground.

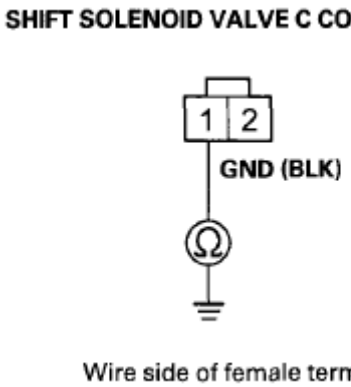


Fig. 125: Checking Continuity Between Shift Solenoid Valve C Connector Terminal No. 1 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Replace shift solenoid valve C (see **SHIFT SOLENOID VALVE C TEST AND REPLACEMENT**).

NO - Repair an open in the wire between shift solenoid valve C and body ground (G101) (see **CONNECTOR TO FUSE/RELAY BOX INDEX**), or repair poor body ground (G101).

22. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
23. Remove the jumper wire.
24. Jump the SCS line with the HDS.
25. Disconnect PCM connector C (49P).
26. Check for continuity between PCM connector terminal C9 and shift solenoid valve C connector terminal No. 2.

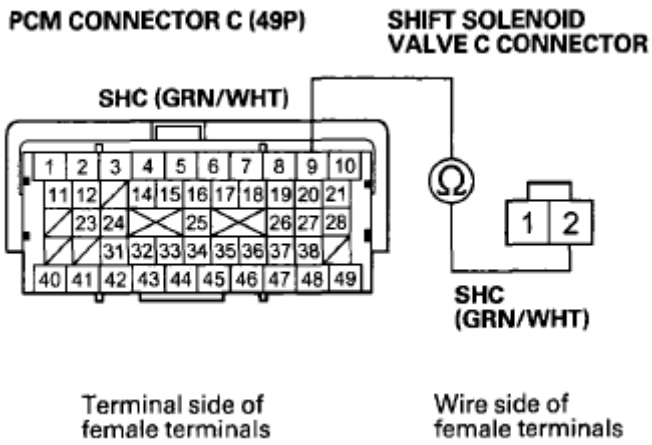


Fig. 126: Checking Continuity Between PCM Connector Terminal C9 And Shift Solenoid Valve C Connector Terminal No. 2
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Replace the PCM (see **ECM/PCM REPLACEMENT**).

NO - Repair an open in the wire between PCM connector terminal C9 and shift solenoid valve C connector terminal No. 2.

DTC P0989: SHORT IN TRANSMISSION FLUID PRESSURE SWITCH E (6TH CLUTCH) CIRCUIT, OR TRANSMISSION FLUID PRESSURE SWITCH E (6TH CLUTCH) STUCK ON

NOTE:

- **Before you troubleshoot, record all freeze data and any on-board snapshot with the HDS, and review the General Troubleshooting Information (see GENERAL TROUBLESHOOTING INFORMATION).**

- **This code is caused by an electrical circuit problem and cannot be caused by a mechanical problem in the transmission.**
- **If DTC P0989 is stored in the PCM, the transmission does not shift to any gear other than 3rd or 6th gear because of the fail-safe function.**

1. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
2. Clear the DTC with the HDS.
3. Check the 6th Pressure Switch signal with the HDS in the A/T Data List.

   Is the 6th Pressure Switch ON?

   YES - Go to step 4.

   NO - Intermittent failure, the system is OK at this time.

4. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
5. Disconnect the transmission fluid pressure switch E (6th clutch) connector.
6. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
7. Check the 6th Pressure Switch signal with the HDS in the A/T Data List.

   Is the 6th Pressure Switch OFF?

   YES - Replace transmission fluid pressure switch E (6th clutch) (see **TRANSMISSION FLUID PRESSURE SWITCH E (6TH CLUTCH) REPLACEMENT**).

   NO - Go to step 8.

8. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
9. Jump the SCS line with the HDS.
10. Disconnect PCM connector C (49P).
11. Check for continuity between PCM connector terminal C31 and body ground.

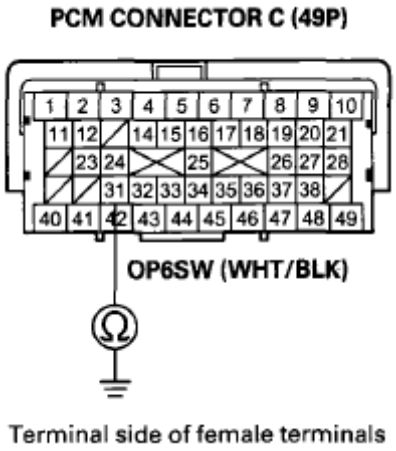


Fig. 127: Checking Continuity Between PCM Connector Terminal C31 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair a short to body ground in the wire between PCM connector terminal C31 and transmission fluid pressure switch E (6th clutch).

NO - Replace the PCM (see **ECM/PCM REPLACEMENT**).

DTC P0990: OPEN IN TRANSMISSION FLUID PRESSURE SWITCH E (6TH CLUTCH) CIRCUIT, OR TRANSMISSION FLUID PRESSURE SWITCH E (6TH CLUTCH) STUCK OFF

NOTE:

- **Before you troubleshoot, record all freeze data and any on-board snapshot with the HDS, and review the General Troubleshooting Information (see GENERAL TROUBLESHOOTING INFORMATION).**
- **If DTC P0990 is stored in the PCM, the transmission does not shift to any gear other than 3rd or 6th gear because of the fail-safe function.**

1. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
2. Clear the DTC with the HDS.
3. With SH-AWD: Raise the vehicle on a lift, make sure it is securely supported, and allow all four wheels to rotate freely.

   Without SH-AWD: Block the rear wheels, and raise the front of the vehicle, make sure it is securely supported, and allow the front wheels to rotate freely, or raise the vehicle on a lift.

4. Start the engine, disable the VSA by pressing the VSA OFF button. Run the vehicle with the sequential sportshift mode in 6th gear. Check the 6th Pressure Switch signal with the HDS in the A/T Data List. Slow down, and stop the wheels.

   Is the 6th Pressure Switch ON in 6th gear?

YES - Intermittent failure, the system is OK at this time. Check for poor connections and loose terminals between transmission fluid pressure switch E (6th clutch) and the PCM.

NO - Go to step 5.

5. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
6. Disconnect the transmission fluid pressure switch E (6th clutch) connector.
7. Connect a jumper wire between the transmission fluid pressure switch E (6th clutch) connector terminal and body ground.

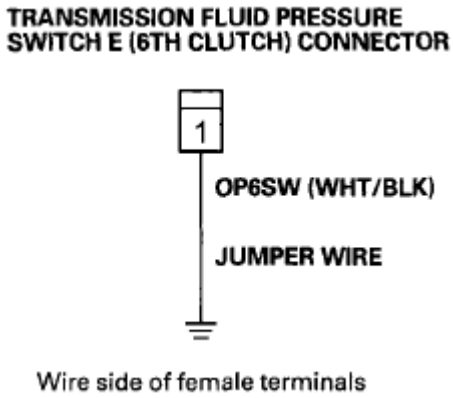


Fig. 128: Identifying Jumper Wire Between Transmission Fluid Pressure Switch E (6th Clutch) Connector Terminal And Body Ground Connection
Courtesy of AMERICAN HONDA MOTOR CO., INC.

8. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
9. Check the 6th Pressure Switch signal with the HDS in the A/T Data List.

Is the 6th Pressure Switch ON?

YES - Replace transmission fluid pressure switch E (6th clutch) (see **TRANSMISSION FLUID PRESSURE SWITCH E (6TH CLUTCH) REPLACEMENT**).

NO - Go to step 10.

10. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
11. Remove the jumper wire.
12. Jump the SCS line with the HDS.
13. Disconnect PCM connector C (49P).
14. Check for continuity between PCM connector terminal C31 and the transmission fluid pressure switch E (6th clutch) connector terminal.

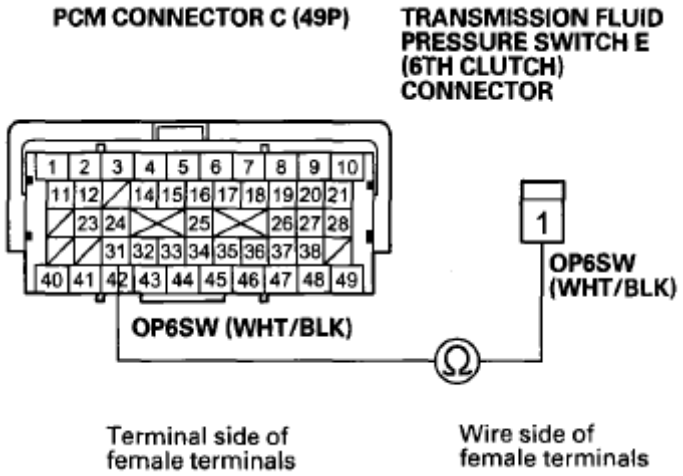


Fig. 129: Checking Continuity Between PCM Connector And Transmission Fluid Pressure Switch E (6th Clutch) Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Replace the PCM (see **ECM/PCM REPLACEMENT**).

NO - Repair an open in the wire between PCM connector terminal C31 and transmission fluid pressure switch E (6th clutch).

DTC P1717: OPEN IN TRANSMISSION RANGE SWITCH ATPRVS SWITCH CIRCUIT

NOTE:

- **Before you troubleshoot, record all freeze data and any on-board snapshot with the HDS, and review the General Troubleshooting Information (see GENERAL TROUBLESHOOTING INFORMATION).**
- **This code is caused by an electrical circuit problem and cannot be caused by a mechanical problem in the transmission.**

1. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
2. Shift to R, and monitor the Reverse Switch (ATPRVS) signal with the HDS.

   Is the Reverse Switch (ATPRVS) ON?

   YES - Intermittent failure, the system is OK at this time.

   NO - Go to step 3.

3. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
4. Disconnect the transmission range switch connector.
5. Connect a jumper wire between the transmission range switch connector terminal No. 1 and body ground.

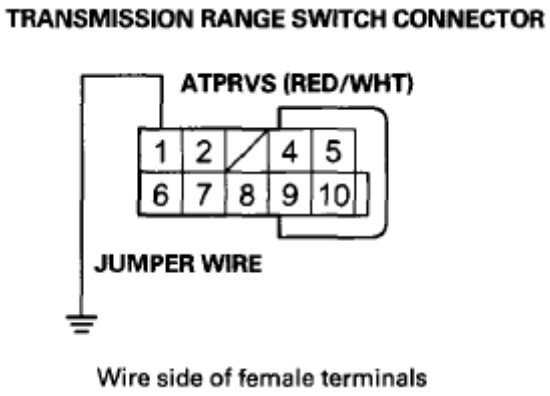


Fig. 130: Identifying Jumper Wire Between Transmission Range Switch Connector Terminal No. 1 And Body Ground Connection
Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
7. Check the Reverse Switch (ATPRVS) signal with the HDS.

   Is the Reverse Switch (ATPRVS) ON?

   YES - Replace the transmission range switch (see **TRANSMISSION RANGE SWITCH REPLACEMENT**).

   NO - Go to step 8.

8. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
9. Remove the jumper wire.
10. Jump the SCS line with the HDS.
11. Disconnect PCM connector C (49P).
12. Check for continuity between PCM connector terminal C19 and transmission range switch connector terminal No. 1.

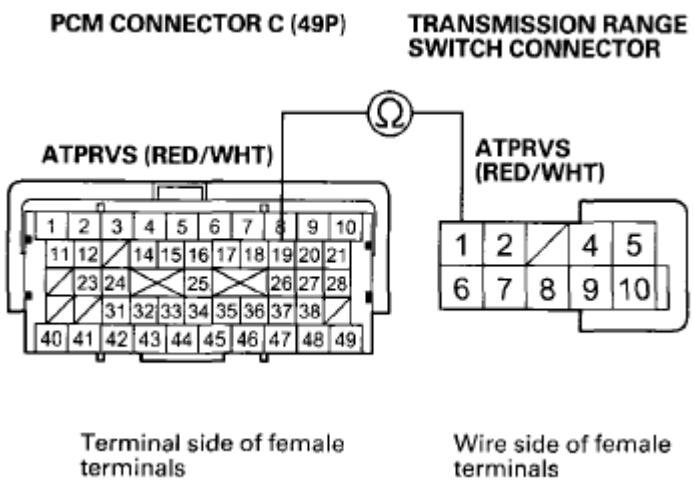


Fig. 131: Checking Continuity Between PCM Connector Terminal C19 And Transmission Range Switch Connector Terminal No. 1
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Replace the PCM (see **ECM/PCM REPLACEMENT**).

NO - Repair an open in the wire between PCM connector terminal C19 and the transmission range switch.

DTC P177A: LINE PRESSURE SOLENOID VALVE A STUCK OFF, OR LINE PRESSURE SWITCH STUCK OFF

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot with the HDS, and review the General Troubleshooting Information (see GENERAL TROUBLESHOOTING INFORMATION).

1. Warm up the engine to normal operating temperature (the radiator fan comes on).
2. Make sure that the transmission is filled to the proper level, and check for fluid leaks.
3. Drain the ATF (see **ATF REPLACEMENT**) through a strainer. Inspect the strainer for metal debris or excessive clutch material.

   Does the strainer have metal debris or excessive clutch material?

   YES - Replace the transmission.

   NO - Replace the ATF (see **ATF REPLACEMENT**), then go to step 4.

4. With SH-AWD: Raise the vehicle on a lift, make sure it is securely supported, and allow all four wheels to rotate freely.

   Without SH-AWD: Block the rear wheels, and raise the front of the vehicle, make sure it is securely supported, and allow the front wheels to rotate freely, or raise the vehicle on a lift.

5. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
6. Clear the DTC with the HDS.
7. Start the engine. With the brake pedal pressed, shift to D, then release the brake pedal.
8. Monitoring the APP Sensor (%) with the HDS in the A/T Data List, press (2 % opened) and release (0 % opened) the accelerator pedal every 2 seconds. Then check the Line Pressure Sol VLV. A signal and the Line Pressure Pressure Switch signal with the HDS in the A/T Data List.

   Is the Line Pressure Pressure Switch ON when Line Pressure Sol VLV. A is ON, and OFF when Line Pressure Sol VLV. A is OFF?

   YES - Intermittent failure, the system is OK at this time. Check for poor connections and loose terminals

between the line pressure switch and the PCM.

NO - Go to step 9.

9. Select Line Pressure Solenoid A in the Miscellaneous Test Menu, and check that line pressure solenoid valve A operates with the HDS.

   Is a clicking sound heard?

   YES - Go to step 16.

   NO - Go to step 10.

10. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
11. Check for a blown No. 13 (15 A) fuse in the driver's under-dash fuse/relay box.

    Is the No. 13 (15 A) fuse OK?

    YES - Go to step 12.

    NO - Repair a short to body ground in the wire between PCM connector terminal B2 and the driver's under-dash fuse/relay box.

12. Jump the SCS line with the HDS.
13. Disconnect PCM connector B (49P).
14. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
15. Measure the voltage between PCM connector terminal B2 and body ground.

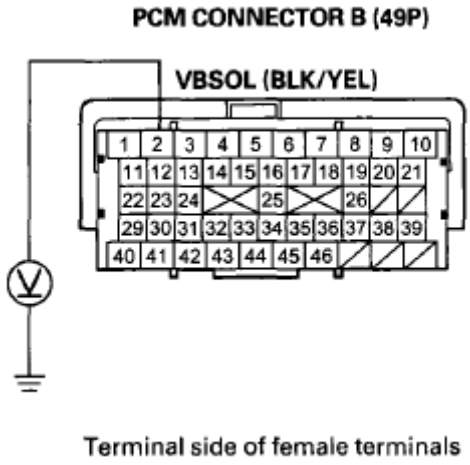


Fig. 132: Measuring Voltage Between PCM Connector Terminal B2 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there battery voltage?

YES - Faulty line pressure solenoid valve A. Replace the secondary valve body (line pressure solenoid valve A) (see **SECONDARY VALVE BODY REPLACEMENT**).

NO - Repair an open in the wire between PCM connector terminal B2 and the driver's under-dash fuse/relay box.

16. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
17. Disconnect the line pressure switch connector.
18. Connect a jumper wire between the line pressure switch connector terminal and body ground.

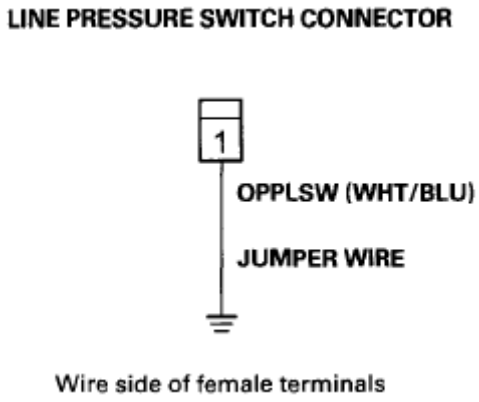


Fig. 133: Identifying Jumper Wire Between Line Pressure Switch Connector Terminal And Body Ground Connection
Courtesy of AMERICAN HONDA MOTOR CO., INC.

19. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
20. Check the Line Pressure Pressure Switch signal with the HDS in the A/T Data List.

Is the Line Pressure Pressure Switch ON?

YES - Replace the line pressure switch (see **LINE PRESSURE SWITCH REPLACEMENT**).

NO - Go to step 21.

21. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
22. Remove the jumper wire.
23. Jump the SCS line with the HDS.
24. Disconnect PCM connector C (49P).
25. Check for continuity between PCM connector terminal C35 and the line pressure switch connector terminal.

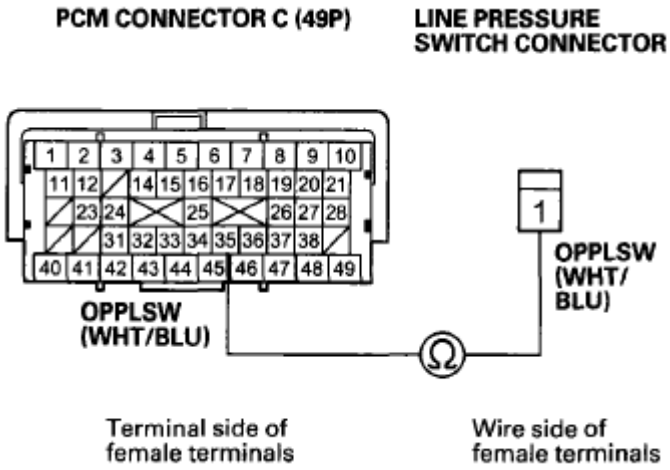


Fig. 134: Checking Continuity Between PCM Connector Terminal C35 And Line Pressure Switch Connector Terminal
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Replace the PCM (see **ECM/PCM REPLACEMENT**).

NO - Repair an open in the wire between the line pressure switch connector terminal and PCM connector terminal C35.

DTC P2714: A/T CLUTCH PRESSURE CONTROL SOLENOID VALVE D STUCK OFF

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot with the HDS, and review the General Troubleshooting Information (see GENERAL TROUBLESHOOTING INFORMATION).

1. Warm up the engine to normal operating temperature (the radiator fan comes on).
2. Make sure that the transmission is filled to the proper level, and check for fluid leaks.
3. Drain the ATF (see **ATF REPLACEMENT**) through a strainer. Inspect the strainer for metal debris or excessive clutch material.

   Does the strainer have metal debris or excessive clutch material?

   YES - Replace the transmission.

   NO - Replace the ATF (see **ATF REPLACEMENT**), then go to step 4.

4. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
5. Clear the DTC with the HDS.
6. Start the engine.
7. With the brake pedal pressed, shift to D, and check the A/T Shift Sol VLV. B signal, the Input Shaft

(Mainshaft) Speed, and the Shift Control with the HDS in the A/T Data List.

Does the Input Shaft (Mainshaft) Speed remain steady when A/T Shift Sol VLV. B is OFF, and does the Input Shaft (Mainshaft) Speed read 0 RPM when A/T Shift Sol VLV. B is ON?

YES - Go to step 8.

NO - Intermittent failure, the system is OK at this time.

8. Clear the DTC with the HDS.
9. Select Clutch Pressure Control (Linear) Solenoid Valve D in the Miscellaneous Test Menu, and test A/T clutch pressure control solenoid valve D with the HDS.

   Does the HDS indicate NORMAL?

   YES - Faulty lock-up shift valve. Replace the main valve body (lock-up shift valve) or the transmission. If you are replacing the main valve body, clean off any metal debris or excessive clutch material inside the transmission, the torque converter, the ATF cooler, the ATF hoses, the ATF pipes, and the hydraulic circuit. Then, replace the main valve body.

   NO - Faulty A/T clutch pressure control solenoid valve D. Replace the secondary valve body (A/T clutch pressure control solenoid valve D) (see **SECONDARY VALVE BODY REPLACEMENT**).

DTC P2720: PROBLEM IN A/T CLUTCH PRESSURE CONTROL SOLENOID VALVE D CIRCUIT

NOTE:

- **Before you troubleshoot, record all freeze data and any on-board snapshot with the HDS, and review the General Troubleshooting Information (see GENERAL TROUBLESHOOTING INFORMATION).**
- **This code is caused by an electrical circuit problem and cannot be caused by a mechanical problem in the transmission.**
- **If DTC P2720 is stored in the PCM, the transmission does not shift to 2nd or 5th gear because of the fail-safe function.**

1. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
2. Clear the DTC with the HDS.
3. Check for Pending or Confirmed DTCs with the HDS.

   Is DTC P2720 indicated?

   YES - Go to step 4.

   NO - Intermittent failure, the system is OK at this time. Check for poor connections and loose terminals between A/T clutch pressure control solenoid valve D and the PCM.

4. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.

5. Check for a blown No. 10 (10 A) fuse in the driver's under-dash fuse/relay box.

   Is the No. 10 (10 A) fuse OK?

   YES - Go to step 6.

   NO - Repair a short to body ground in the wire between PCM connector terminal A1 and the driver's under-dash fuse/relay box.

6. Jump the SCS line with the HDS.
7. Disconnect PCM connectors A (49P).
8. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
9. Measure the voltage between PCM connector terminals A1 and body ground.

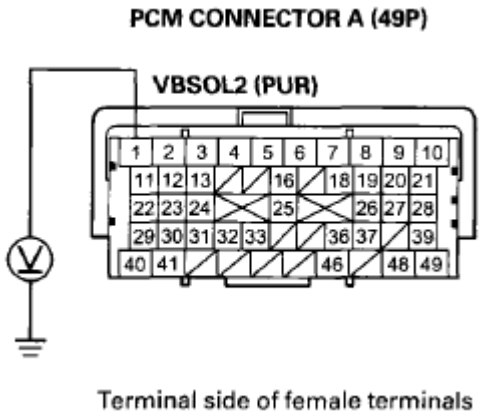


Fig. 135: Measuring Voltage Between PCM Connector Terminals A1 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

   Is there battery voltage?

   YES - Go to step 10.

   NO - Repair an open in the wire between PCM connector terminal A1 and the driver's under-dash fuse/relay box.

10. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
11. Jump the SCS line with the HDS.
12. Disconnect PCM connector B (49P).
13. Check for continuity between PCM connector terminal B43 and body ground.

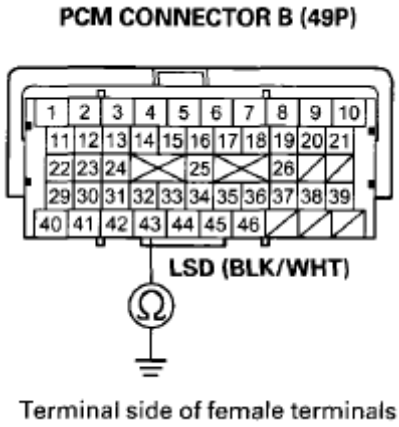


Fig. 136: Checking Continuity Between PCM Connector Terminal B43 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 14.

NO - Go to step 16.

14. Disconnect the A/T clutch pressure control solenoid valve D connector.
15. Check for continuity between A/T clutch pressure control solenoid valve D connector terminal No. 1 and body ground.

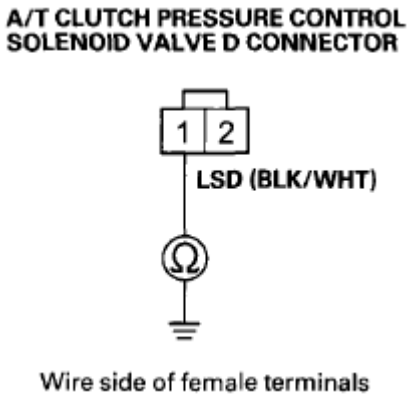


Fig. 137: Checking Continuity Between A/T Clutch Pressure Control Solenoid Valve D Connector Terminal No. 1 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair a short to body ground in the wire between PCM connector terminal B43 and A/T clutch pressure control solenoid valve D.

NO - Faulty A/T clutch pressure control solenoid valve D. Replace the secondary valve body (A/T clutch

pressure control solenoid valve D) (see **SECONDARY VALVE BODY REPLACEMENT**).

16. Disconnect the A/T clutch pressure control solenoid valve D connector.
17. Check for continuity between PCM connector terminal B43 and A/T clutch pressure control solenoid valve D connector terminal No. 1.

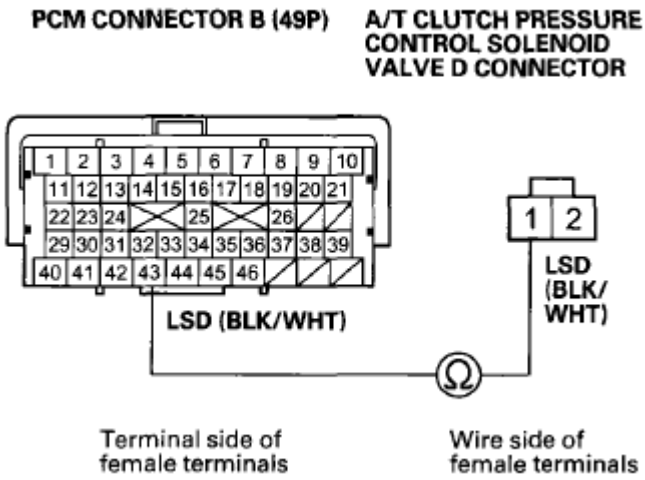


Fig. 138: Checking Continuity Between PCM Connector And A/T Clutch Pressure Control Solenoid Valve D Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 18.

NO - Repair an open in the wire between A/T clutch pressure control solenoid valve D connector terminal No. 1 and PCM connector terminal B43.

18. Check for continuity between A/T clutch pressure control solenoid valve D connector terminal No. 2 and body ground.

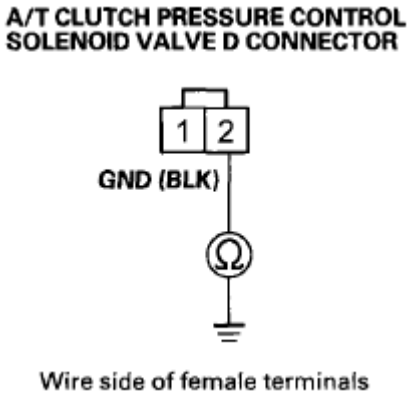


Fig. 139: Checking Continuity Between A/T Clutch Pressure Control Solenoid Valve D Connector

Terminal No. 2 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 19.

NO - Repair an open in the wire between the A/T clutch pressure control solenoid valve D connector and body ground (G101) (see **CONNECTOR TO FUSE/RELAY BOX INDEX**), or repair poor body ground (G101).

19. Measure the resistance between A/T clutch pressure control solenoid valve D connector terminals No. 1 and No. 2.

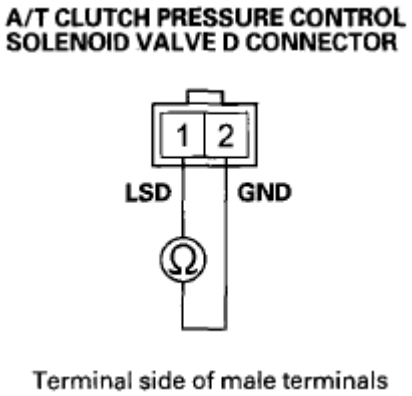


Fig. 140: Measuring Resistance Between A/T Clutch Pressure Control Solenoid Valve D Connector Terminals No. 1 And No. 2
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there 4.7 - 5.9 ohms?

YES - Replace the PCM (see **ECM/PCM REPLACEMENT**).

NO - Faulty A/T clutch pressure control solenoid valve D. Replace the secondary valve body (A/T clutch pressure control solenoid valve D) (see **SECONDARY VALVE BODY REPLACEMENT**).

DTC P2721: PROBLEM IN A/T CLUTCH PRESSURE CONTROL SOLENOID VALVE D

NOTE:

- **Before you troubleshoot, record all freeze data and any on-board snapshot with the HDS, and review the General Troubleshooting Information (see GENERAL TROUBLESHOOTING INFORMATION).**
- **This code is caused by an electrical circuit problem and cannot be caused by a mechanical problem in the transmission.**
- **If DTC P2721 is stored in the PCM, the transmission does not shift to 2nd or 5th gear because of the fail-safe function.**

1. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
2. Clear the DTC with the HDS.
3. Check for Pending or Confirmed DTCs with the HDS.

   Is DTC P2721 indicated?

   YES - Go to step 4.

   NO - Intermittent failure, the system is OK at this time.

4. Check the A/T C.P.C. Sol VLV. D Actual command with the HDS in the A/T Data List.

   Is there 35 mA or more?

   YES - Go to step 5.

   NO - Faulty A/T clutch pressure control solenoid valve D. Replace the secondary valve body (A/T clutch pressure control solenoid valve D) (see **SECONDARY VALVE BODY REPLACEMENT**).

5. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
6. Jump the SCS line with the HDS.
7. Disconnect PCM connector B (49P).
8. Check for continuity between:
   - PCM connector terminal B1 and body ground.
   - PCM connector terminal B40 and body ground.

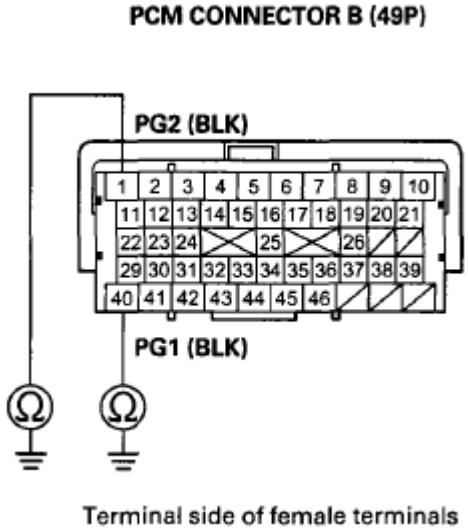


Fig. 141: Checking Continuity Between PCM Connector Terminal B1 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Replace the PCM (see **ECM/PCM REPLACEMENT**).

NO - Repair an open in the wires between:

- PCM connector terminal B1 and body ground (G101) (see **CONNECTOR TO FUSE/RELAY BOX INDEX**), or repair poor body ground (G101).
- PCM connector terminal B40 and body ground (G101) (see **CONNECTOR TO FUSE/RELAY BOX INDEX**), or repair poor body ground (G101).

DTC P2821: LINE PRESSURE SOLENOID VALVE A STUCK ON

NOTE:

- **Before you troubleshoot, record all freeze data and any on-board snapshot with the HDS, and review the General Troubleshooting Information (see GENERAL TROUBLESHOOTING INFORMATION).**
- **If DTC P2821 is stored in the PCM, engine torque is restricted because of the fail-safe function.**

1. Warm up the engine to normal operating temperature (the radiator fan comes on).
2. Make sure that the transmission is filled to the proper level, and check for fluid leaks.
3. Drain the ATF (see **ATF REPLACEMENT**) through a strainer. Inspect the strainer for metal debris or excessive clutch material.

   Does the strainer have metal debris or excessive clutch material?

   YES - Replace the transmission.

   NO - Replace the ATF (see **ATF REPLACEMENT**), then go to step 4.

4. With SH-AWD: Raise the vehicle on a lift, make sure it is securely supported, and allow all four wheels to rotate freely.

   Without SH-AWD: Block the rear wheels, and raise the front of the vehicle, make sure it is securely supported, and allow the front wheels to rotate freely, or raise the vehicle on a lift.

5. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
6. Clear the DTC with the HDS.
7. Start the engine. With the brake pedal pressed, shift to D, then release the brake pedal.
8. Monitoring the APP Sensor (%) with the HDS in the A/T Data List, press (2 % opened) and release (0 % opened) the accelerator pedal every 2 seconds. Then check the Line Pressure Sol VLV. A signal and the Line Pressure Pressure Switch signal with the HDS in the A/T Data List.

   Is the Line Pressure Pressure Switch ON when Line Pressure Sol VLV. A is ON, and OFF when Line Pressure Sol VLV. A is OFF?

   YES - Intermittent failure, the system is OK at this time.

NO - Faulty line pressure solenoid valve A. Replace the secondary valve body (line pressure solenoid valve A) (see **SECONDARY VALVE BODY REPLACEMENT**).

DTC P2826: SHORT IN LINE PRESSURE SOLENOID VALVE A CIRCUIT

NOTE:

- **Before you troubleshoot, record all freeze data and any on-board snapshot with the HDS, and review the General Troubleshooting Information (see GENERAL TROUBLESHOOTING INFORMATION).**
- **This code is caused by an electrical circuit problem and cannot be caused by a mechanical problem in the transmission.**

1. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
2. Clear the DTC with the HDS.
3. With SH-AWD: Raise the vehicle on a lift, make sure it is securely supported, and allow all four wheels to rotate freely.

   Without SH-AWD: Block the rear wheels, and raise the front of the vehicle, make sure it is securely supported, and allow the front wheels to rotate freely, or raise the vehicle on a lift.

4. Start the engine. With the brake pedal pressed, shift to D, then release the brake pedal.
5. Monitoring the APP Sensor (%) with HDS in the A/T Data List, press (2 % opened) and release (0 % opened) the accelerator pedal every 2 seconds.
6. Check for Pending or Confirmed DTCs with the HDS.

   Is DTC P2826 indicated?

   YES - Go to step 7.

   NO - Intermittent failure, the system is OK at this time. Check for poor connections and loose terminals between line pressure solenoid valve A and the PCM.

7. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
8. Check for a blown No. 13 (15 A) fuse in the driver's under-dash fuse/relay box.

   Is the No. 13 (15 A) fuse OK?

   YES - Go to step 9.

   NO - Repair a short to body ground in the wire between PCM connector terminal B2 and the driver's under-dash fuse/relay box.

9. Jump the SCS line with the HDS.
10. Disconnect PCM connector B (49P).
11. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.

12. Measure the voltage between PCM connector terminal B2 and body ground.

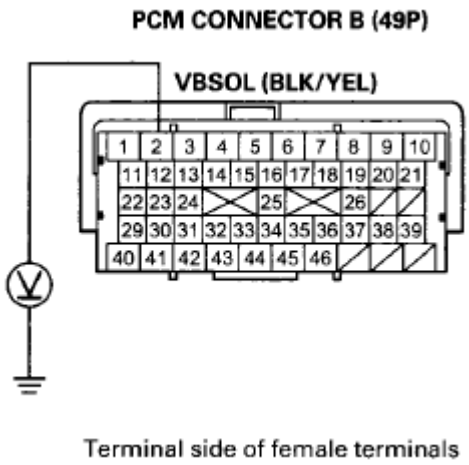


Fig. 142: Measuring Voltage Between PCM Connector Terminal B2 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there battery voltage?

YES - Go to step 13.

NO - Repair an open in the wire between PCM connector terminal B2 and the driver's under-dash fuse/relay box.

13. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
14. Disconnect the line pressure solenoid valve A connector.
15. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
16. Clear the DTC with the HDS.
17. Start the engine. With the brake pedal pressed, shift to D, then release the brake pedal.
18. Monitoring the APP Sensor (%) with HDS in the A/T Data List, press (2 % opened) and release (0 % opened) the accelerator pedal every 2 seconds.
19. Check for Pending or Confirmed DTCs with the HDS.

Is DTC P2826 indicated?

YES - Go to step 20.

NO - Faulty line pressure solenoid valve A. Replace the secondary valve body (line pressure solenoid valve A) (see **SECONDARY VALVE BODY REPLACEMENT**).

20. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
21. Jump the SCS line with the HDS.
22. Disconnect PCM connector B (49P).

23. Check for continuity between PCM connector terminal B44 and body ground.

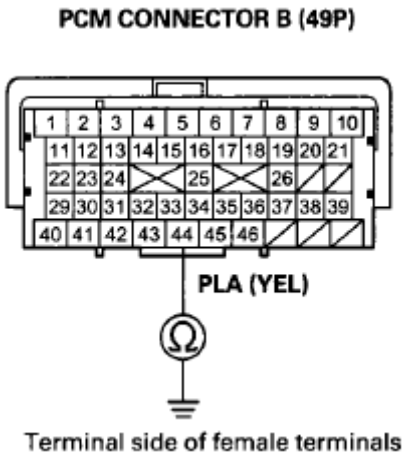


Fig. 143: Checking Continuity Between PCM Connector Terminal B44 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair a short to body ground in the wire between PCM connector terminal B44 and line pressure solenoid valve A connector terminal No. 2.

NO - Replace the PCM (see **ECM/PCM REPLACEMENT**).

DTC P2827: OPEN IN LINE PRESSURE SOLENOID VALVE A CIRCUIT

NOTE:

- **Before you troubleshoot, record all freeze data and any on-board snapshot with the HDS, and review the General Troubleshooting Information (see GENERAL TROUBLESHOOTING INFORMATION).**
- **This code is caused by an electrical circuit problem and cannot be caused by a mechanical problem in the transmission.**

1. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
2. Clear the DTC with the HDS.
3. Start the engine in P, and wait for at least 1 second.
4. Check for Pending or Confirmed DTCs with the HDS.

Is DTC P2827 indicated?

YES - Go to step 5.

NO - Intermittent failure, the system is OK at this time. Check for poor connections and loose terminals between line pressure solenoid valve A and the PCM.

5. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
6. Check for a blown No. 13 (15 A) fuse in the driver's under-dash fuse/relay box.

   Is the No. 13 (15 A) fuse OK?

   YES - Go to step 7.

   NO - Repair a short to body ground in the wire between PCM connector terminal B2 and the driver's under-dash fuse/relay box.

7. Jump the SCS line with the HDS.
8. Disconnect PCM connector B (49P).
9. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
10. Measure the voltage between PCM connector terminal B2 and body ground.

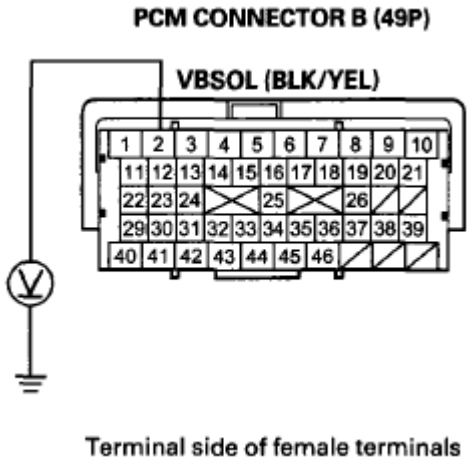


Fig. 144: Measuring Voltage Between PCM Connector Terminal B2 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there battery voltage?

YES - Go to step 11.

NO - Repair an open in the wire between PCM connector terminal B2 and the driver's under-dash fuse/relay box.

11. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
12. Disconnect the line pressure solenoid valve A connector.
13. Connect a jumper wire between line pressure solenoid valve A connector terminal No. 2 and body ground.

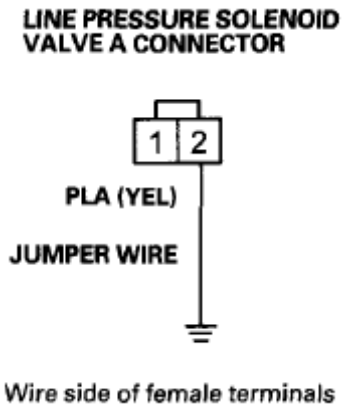


Fig. 145: Identifying Jumper Wire Between Line Pressure Solenoid Valve A Connector Terminal No. 2 And Body Ground Connection
Courtesy of AMERICAN HONDA MOTOR CO., INC.

14. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
15. Clear the DTC with the HDS.
16. With SH-AWD: Raise the vehicle on a lift, make sure it is securely supported, and allow all four wheels to rotate freely.

    Without SH-AWD: Block the rear wheels, and raise the front of the vehicle, make sure it is securely supported, and allow the front wheels to rotate freely, or raise the vehicle on a lift.

17. Start the engine. With the brake pedal pressed, shift to D, then release the brake pedal.
18. Monitoring the APP Sensor (%) with HDS in the A/T Data List, press (2 % opened) and release (0 % opened) the accelerator pedal every 2 seconds.
19. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P2826 indicated?

    YES - Go to step 20.

    NO - Go to step 23.

20. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
21. Remove the jumper wire.
22. Check for continuity between line pressure solenoid valve A connector terminal No. 1 and body ground.

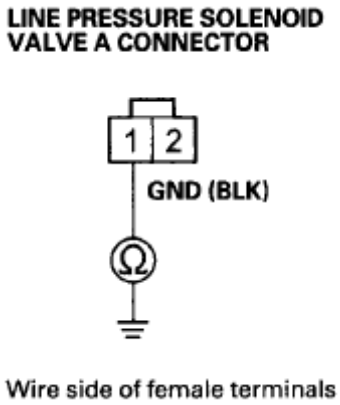


Fig. 146: Checking Continuity Between Line Pressure Solenoid Valve A Connector Terminal No. 1 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Faulty line pressure solenoid valve A. Replace the secondary valve body (line pressure solenoid valve A) (see **SECONDARY VALVE BODY REPLACEMENT**).

NO - Repair an open in the wire between line pressure solenoid valve A and body ground (G101) (see **CONNECTOR TO FUSE/RELAY BOX INDEX**), or repair poor body ground (G101).

23. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
24. Remove the jumper wire.
25. Jump the SCS line with the HDS.
26. Disconnect PCM connector B (49P).
27. Check for continuity between PCM connector terminal B44 and line pressure solenoid valve A connector terminal No. 2.

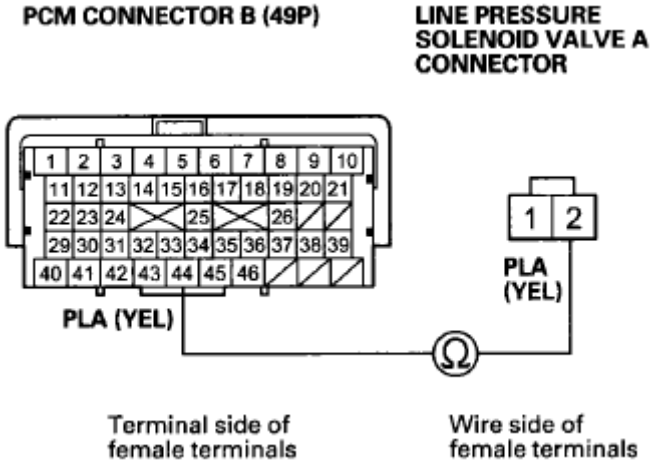


Fig. 147: Checking Continuity Between PCM Connector Terminal B44 And Line Pressure Solenoid Valve A Connector Terminal No. 2

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Replace the PCM (see **ECM/PCM REPLACEMENT**).

NO - Repair an open in the wire between PCM connector terminal B44 and line pressure solenoid valve A connector terminal No. 2.

ROAD TEST

1. Apply the parking brake, and block all four wheels.
2. Warm up the engine to normal operating temperature (the radiator fan comes on).
3. Shift to D while pressing the brake pedal. Press the accelerator pedal, and release it suddenly; the engine should not stall.
4. Repeat step 3 in all shift lever positions.
5. Connect the HDS to the DLC (A) located under the driver's side of the dashboard.

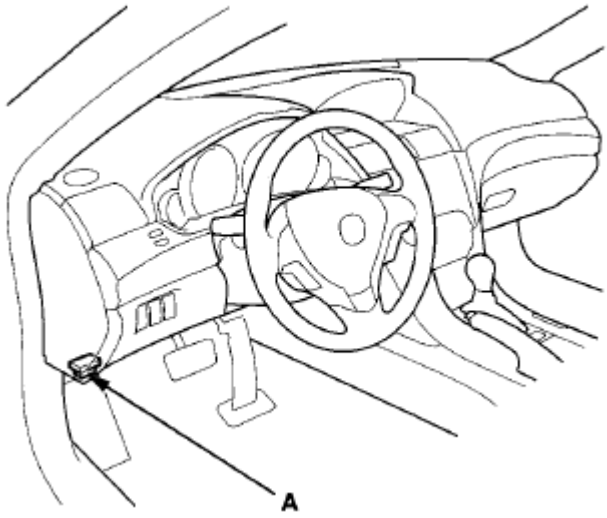


Fig. 148: Identifying DLC Under Driver's Side Of Dashboard
Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
7. Make sure the HDS communicates with the PCM, and go to the A/T Data List. If it does not, go to the DLC circuit troubleshooting (see **DLC CIRCUIT TROUBLESHOOTING**).
8. Prepare the HDS to take a HIGH SPEED SNAP SHOT (refer to the HDS user's guide for more details if needed):
    - Select the High Speed icon.
    - Select these parameters:
        - Vehicle Speed

- Output Shaft (Countershaft) Speed (RPM)
- Input Shaft (Mainshaft) Speed (RPM)
- Engine Speed
- TP Sensor
- APP Sensor A (V)
- ETR
- Battery Voltage
- Shift Control
- Brake Switch

- Set the Trigger Type to Parameter.
- Adjust the Parameter setting to APP Sensor A above 1.4 V.
- Set the Record Time to 60 seconds.
- Set the Trigger Point to (Negative) - 30 seconds.

9. Find a suitable level road. When you are ready to do the test, press OK with the HDS.
10. Accelerate quickly until APP Sensor A reads 1.5 V. Maintain a steady throttle until the transmission shifts to 6th gear, then slow the vehicle and come to a stop.
11. Save the snapshot if the entire event was recorded, or increase the recording time setting as necessary, and repeat step 10.
12. Adjust the parameter setting to 2.18 V. Test-drive the vehicle again. Accelerate quickly until APP Sensor A reads 2.28 V. Maintain a steady throttle until the transmission shifts to 6th gear (or a reasonable speed), then slow the vehicle and come to a stop.
13. Save the snapshot if the entire event was recorded, or increase the recording time setting as necessary, and repeat step 12.
14. Accelerate quickly until the accelerator pedal is to the floor. Maintain a steady pedal until the transmission shifts to 5th gear, then slow to a stop, and save the snapshot.

NOTE: Only perform the full throttle test pass the 2-3 shift if road conditions and local law/regulations allow it.

15. Review each snapshot individually, and compare the Shift Control, APP Sensor A (V), and the Vehicle Speed to the following table:

UPSHIFT: D POSITION (WITH SH-AWD)

APP Sensor A (V): 1.5 V	
1st --> 2nd	6 - 7 mph (9 - 11 km/h)
2nd --> 3rd	11 - 14 mph (18 - 22 km/h)
3rd --> 4th	21 - 23 mph (33 - 37 km/h)
4th --> 5th	27 - 31 mph (43 - 49 km/h)
5th --> 6th	41 - 44 mph (65 - 71 km/h)
Lock-up ON	3 - 5 mph (4 - 8 km/h)
APP Sensor A (V): 2.28 V	

1st --> 2nd	14 - 17 mph (23 - 27 km/h)
2nd --> 3rd	29 - 33 mph (47 - 53 km/h)
3rd --> 4th	46 - 49 mph (73 - 79 km/h)
4th --> 5th	65 - 69 mph (104 - 110 km/h)
5th --> 6th	90 - 94 mph (144 - 150 km/h)
Lock-up ON	5 - 8 mph (8 - 12 km/h)
Fully - opened throttle APP Sensor A (V): 4.5 V	
1st --> 2nd	41 - 44 mph (65 - 71 km/h)
2nd --> 3rd	67 - 71 mph (107 - 113 km/h)
3rd --> 4th	95 - 99 mph (152 - 158 km/h)
4th --> 5th	112 - 116 mph (179 - 185 km/h)
Lock-up ON	10 - 14 mph (16 - 22 km/h)

DOWNSHIFT: D POSITION (WITH SH-AWD)

APP Sensor A (V): 1.5 V	
Lock-up OFF	1 - 4 mph (2 - 6 km/h)
6th --> 5th	38 - 41 mph (60 - 66 km/h)
5th --> 4th	25 - 29 mph (40 - 46 km/h)
4th --> 3rd	17 - 19 mph (27 - 31 km/h)
2nd --> 1st	4 - 7 mph (7 - 11 km/h)
APP Sensor A (V): 2.28 V	
Lock-up OFF	1 - 4 mph (2 - 6 km/h)
6th --> 5th	58 - 61 mph (92 - 98 km/h)
5th --> 4th	36 - 39 mph (57 - 63 km/h)
4th --> 3rd	21 - 25 mph (34 - 40 km/h)
3rd --> 2nd	11 - 14 mph (17 - 23 km/h)
2nd --> 1st	4 - 7 mph (7 - 11 km/h)
Fully-opened throttle APP Sensor A (V): 4.5 V	
Lock-up OFF	1 - 4 mph (2 - 6 km/h)
5th --> 4th	104 - 108 mph (167 - 173 km/h)
4th --> 3rd	75 - 79 mph (120 - 126 km/h)
3rd --> 2nd	51 - 54 mph (81 - 87 km/h)
2nd --> 1st	25 - 28 mph (40 - 44 km/h)

UPSHIFT: D POSITION (WITHOUT SH - AWD)

APP Sensor A (V): 1.5 V	
1st --> 2nd	6 - 7 mph (9 - 11 km/h)
2nd --> 3rd	11 - 14 mph (18 - 22 km/h)
3rd --> 4th	21 - 23 mph (33 - 37 km/h)
4th --> 5th	27 - 31 mph (43 - 49 km/h)
5th --> 6th	41 - 44 mph (65 - 71 km/h)

Lock-up ON	3 - 5 mph (4 - 8 km/h)
APP Sensor A (V): 2.28 V	
1st --> 2nd	16 - 24 mph (25 - 38 km/h)
2nd --> 3rd	31 - 43 mph (50 - 69 km/h)
3rd --> 4th	48 - 61 mph (76 - 98 km/h)
4th --> 5th	67 - 87 mph (107 - 139 km/h)
5th --> 6th	92 - 118 mph (147 - 188 km/h)
Lock-up ON	5 - 8 mph (8 - 12 km/h)
Fully - opened throttle APP Sensor A (V): 4.5 V	
1st --> 2nd	41 - 44 mph (65 - 71 km/h)
2nd --> 3rd	67 - 71 mph (107 - 113 km/h)
3rd --> 4th	95 - 99 mph (152 - 158 km/h)
Lock-up ON	10 - 14 mph (16 - 22 km/h)

DOWNSHIFT: D POSITION (WITHOUT SH - AWD)

APP Sensor A (V): 1.5 V	
Lock-up OFF	1 - 4 mph (2 - 6 km/h)
6th --> 5th	38 - 41 mph (60 - 66 km/h)
5th --> 4th	25 - 29 mph (40 - 46 km/h)
4th --> 3rd	17 - 19 mph (27 - 31 km/h)
3rd --> 1st	4 - 7 mph (7 - 11 km/h)
APP Sensor A (V): 2.28 V	
Lock-up OFF	1 - 4 mph (2 - 6 km/h)
6th --> 5th	58 - 61 mph (92 - 98 km/h)
5th --> 4th	36 - 39 mph (57 - 63 km/h)
4th --> 3rd	21 - 25 mph (34 - 40 km/h)
3rd --> 2nd	11 - 14 mph (17 - 23 km/h)
2nd --> 1st	4 - 7 mph (7 - 11 km/h)
Fully - opened throttle APP Sensor A (V): 4.5 V	
Lock-up OFF	1 - 4 mph (2 - 6 km/h)
5th --> 4th	104 - 108 mph (167 - 173 km/h)
4th --> 3rd	75 - 79 mph (120 - 126 km/h)
3rd --> 2nd	51 - 54 mph (81 - 87 km/h)
2nd --> 1st	25 - 28 mph (40 - 44 km/h)

16. Drive the vehicle in 5th or 6th gear in S with the sequential sportshift mode, then decelerate and downshift to 2nd gear. The vehicle should immediately begin to slow down from the engine braking, then slow to a stop.
17. Shift to R, accelerate from a stop at full throttle momentarily, and check for abnormal noise and clutch slippage.
18. Park the vehicle on an upward slope (about 16 degrees), apply the parking brake, and shift into P. Release the brake; the vehicle should not move.

NOTE: **Always use the parking brake to hold the vehicle when stopped on an incline in gear. Depending on the grade of the incline, the vehicle could roll if the brake is released.**

STALL SPEED TEST

1. Make sure the transmission fluid is filled to the proper level (see **ATF LEVEL CHECK**).
2. Apply the parking brake, and block all four wheels.
3. Connect the HDS to the DLC (A) located under the driver's side of the dashboard.

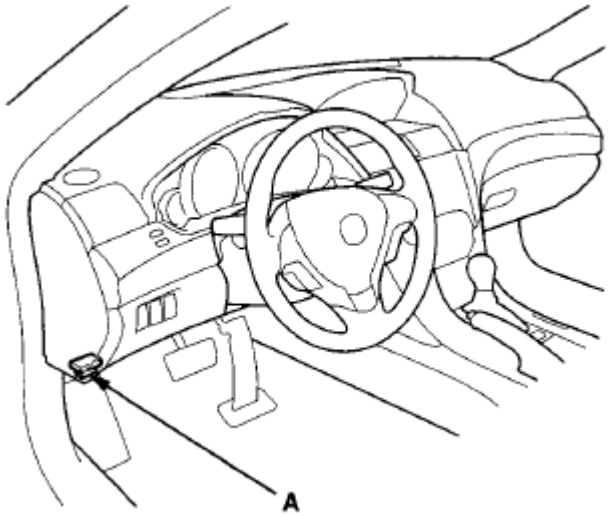


Fig. 149: Identifying Data Link Connector Location
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
5. Make sure the HDS communicates with the PCM, and go to the A/T Data List. If it does not, go to the DLC circuit troubleshooting (see **DLC CIRCUIT TROUBLESHOOTING**).
6. Make sure the A/C switch is OFF.
7. Start the engine, and warm it up to normal operating temperature (the radiator fan comes on).
8. Shift to D while pressing the brake pedal firmly, then press the accelerator pedal for 6 to 8 seconds, and note the engine speed. Do not move the shift lever or remove your foot off the brake pedal, while raising the engine speed.
9. Allow 2 minutes for cooling between test, then repeat the test with the shift lever in S and R.

NOTE:

- **Do not test stall speed for more than 10 seconds at a time.**
- **Record the engine speed at 6 to 8 seconds after pressing the accelerator pedal. Higher engine speed will be indicated for 5 seconds.**
- **Stall speed tests should be used for diagnostic purposes only.**

- **The stall speed should be the same in D, S, and R.**
- **Do not test stall speed with A/T pressure gauges installed.**

Stall Speed RPM:

Specification: 2, 000 RPM

Service Limit: 1, 800- 2, 100 RPM

10. If any of the stall speeds are out of the service limit, refer to the problems and probable causes listed in the table below.

Problem	Probable causes
Stall speed RPM high in D, S, and R	• ATF pump output low • Main regulator valve stuck • Slipping clutch
Stall speed RPM high in R	Slippage of 4th clutch
Stall speed RPM low in D, S, and R	• Engine output low • Engine throttle valve closed • Torque converter one-way clutch slipping

PRESSURE TEST

Special Tools Required

- A/T Oil Pressure Gauge Set 07406-0020400 or 07406-0020401
- AT Pressure Test Hose 07AAJ-PY4A100
- A/T Pressure Adapter 07MAJ-PY40120
- Pressure Gauge Adapter 070AJ-RT4A101

NOTE:

- **Check for DTCs. If any DTCs are stored, troubleshoot and clear them first.**
- **Do not allow dust or other foreign particles to enter the port while installing the pressure gauge adapter.**
- **Disable the VSA by pressing the VSA OFF button.**
- **Be sure to check the ATF level after each pressure port test. When installing or removing the pressure gauge adapter, ATF may run out of the pressure inspection ports.**
- **VSA DTC(s) may come on during the test-drive. If the VSA DTC(s) come on, clear the DTC(s) after testing is done with the HDS.**

1. Make sure the transmission fluid is filled to the proper level (see **ATF LEVEL CHECK**).

2. With SH-AWD: Raise the vehicle on a lift, make sure it is securely supported, and allow all four wheels to rotate freely.

   Without SH-AWD: Block the rear wheels, and raise the front of the vehicle, make sure it is securely supported, and allow the front wheels to rotate freely, or raise the vehicle on a lift.

3. Remove the front splash shield (see **FRONT SPLASH SHIELD REPLACEMENT**).
4. Connect the HDS to the DLC (A) located under the driver's side of the dashboard.

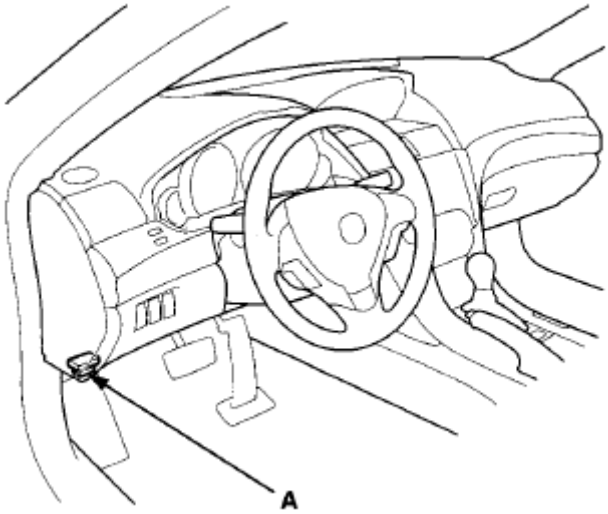


Fig. 150: Identifying Data Link Connector Location
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
6. Make sure the HDS communicates with the PCM, and go to the A/T Data List. If it does not, go to the DLC circuit troubleshooting (see **DLC CIRCUIT TROUBLESHOOTING**).
7. Connect the A/T pressure adapter to the A/T pressure test hose, then connect the A/T pressure test hose to the A/T oil pressure gauge set.

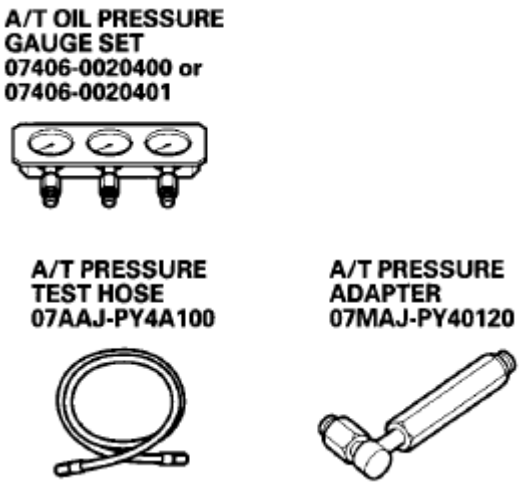


Fig. 151: Identifying A/T Oil Pressure Gauge Set
Courtesy of AMERICAN HONDA MOTOR CO., INC.

8. When testing the oil pressure at each inspection port, select a suitable adapter from the following table, and connect each adapter to the pressure gauge assembled in step 7.

Tool	Connect to
Pressure gauge adapter A and E	• 2nd clutch pressure • 4th clutch pressure
Pressure gauge adapter B	• 1st clutch pressure • 5th clutch pressure • Torque converter clutch pressure
Pressure gauge adapter C	• Line pressure
Pressure gauge adapter D	• 3rd clutch pressure • 6th clutch pressure

PRESSURE GAUGE ADAPTER 070AJ-RT4A101

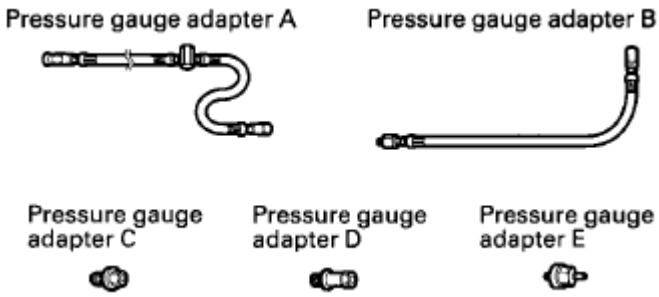


Fig. 152: Identifying Pressure Gauge Adapter
Courtesy of AMERICAN HONDA MOTOR CO., INC.

9. Install pressure gauge adapter C to the line pressure inspection port (A), then connect the A/T pressure adapter to pressure gauge adapter C.

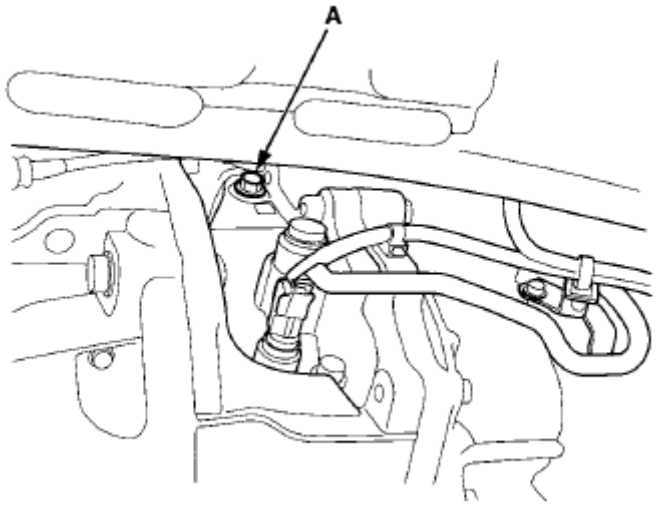


Fig. 153: Identifying Line Pressure Inspection Port
Courtesy of AMERICAN HONDA MOTOR CO., INC.

10. Start the engine in P, and warm it up to normal operating temperature (ATF temperature between 122°F and 212°F (50°C and 100°C)).
11. Move the shift lever to D.
12. Measure the low line pressure when the APP sensor opening less than 25 % and Line Pressure Sol VLV. A is ON with the HDS in the A/T Data List.
13. Measure the normal line pressure while holding the engine speed at 2, 000 RPM with the shift lever in P or N.

NOTE: When measuring the normal line pressure, do not measure with the shift lever in other than P or N.

Line Pressure	Fluid Pressure	
	Standard	Service Limit
Low	667 - 716 kPa (6.80 - 7.30 kgf/cm^2 , 96.7 - 103.8 psi)	Lower limit: 618 kPa (6.30 kgf/cm^2 , 89.6 psi) Upper limit: 765 kPa (7.80 kgf/cm^2 , 111.0 psi)
Normal	1, 177-1, 294 kPa (12.0-13.2 kgf/cm^2 , 170.7-187.7 psi)	1, 079 kPa (11.00 kgf/cm^2 , 156.5 psi)

14. Turn the engine off, then disconnect pressure gauge adapter C from the line pressure inspection port.
15. Install a new sealing bolt to the line pressure inspection port, and tighten the bolt to 20 N.m (2.0 kgf.m, 14 lbf.ft). Do not reuse the old sealing bolt.
16. Connect pressure gauge adapter B to the torque converter clutch pressure inspection port (A), then connect the A/T pressure adapter to pressure gauge adapter B.

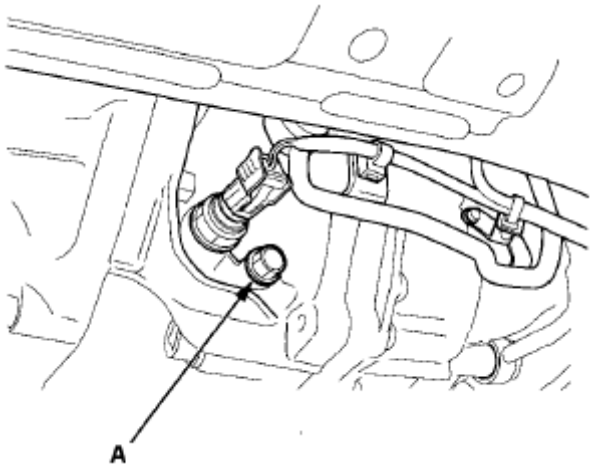


Fig. 154: Identifying Torque Converter Clutch Pressure Inspection Port
Courtesy of AMERICAN HONDA MOTOR CO., INC.

17. Start the engine, and run the vehicle with sequential sportshift mode in 2nd gear.
18. Measure the torque converter clutch pressure while holding the engine speed at 4, 000 RPM.

Pressure	Fluid Pressure	
	Standard	Service Limit
Torque converter clutch pressure	294 kPa (3.00 kgf/cm^2 , 42.7 psi)	245 kPa (2.50 kgf/cm^2 , 35.6 psi)

19. Turn the engine off, then disconnect pressure gauge adapter B from the torque converter clutch pressure inspection port.
20. Install a new sealing bolt to the torque converter clutch pressure inspection port, and tighten the sealing bolt to 20 N.m (2.0 kgf.m, 14 lbf.ft). Do not reuse the old sealing bolt.
21. Do the battery removal procedure (see **BATTERY REMOVAL AND INSTALLATION**).
22. Remove the battery base (see **ENGINE REMOVAL**).

NOTE: The following procedure must be done to accurately test the pressure.

23. Remove the harness clamp (A).

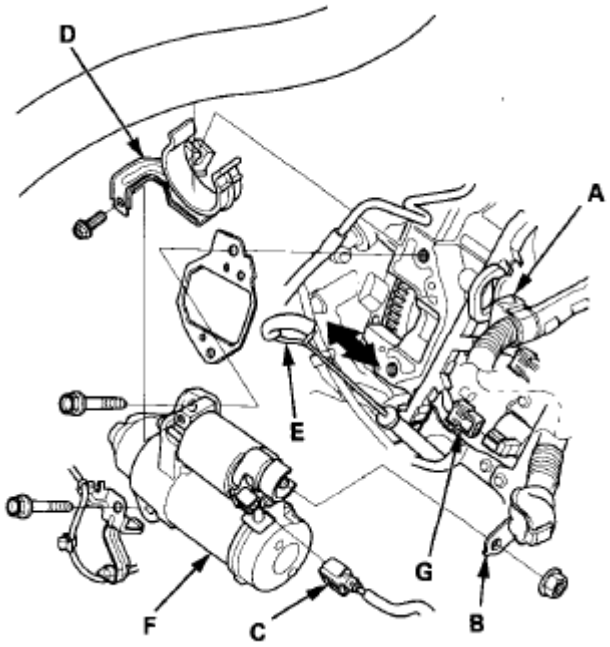


Fig. 155: Identifying Clamp, Starter Cable, Terminal Connector, Bracket, Dipstick And Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

24. Disconnect the positive starter cable (B) and the S terminal connector (C).
25. Remove the lower radiator hose bracket (D) and the dipstick (E).
26. Remove the two bolts holding the starter, then remove the starter (F).
27. Disconnect the line pressure solenoid valve A connector (G).
28. Temporarily install the starter (A), then tighten the bolts.

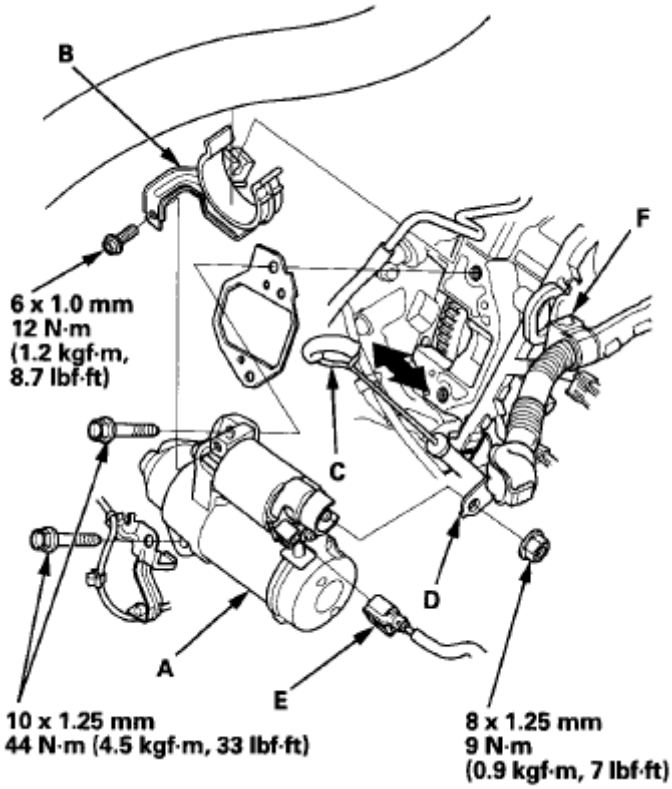


Fig. 156: Identifying Starter, Bracket, Dipstick, Starter Cable, Connector And Clamp With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

29. Install the lower radiator hose bracket (B) and the dipstick (C).
30. Connect the positive starter cable (D) and the S terminal connector (E). Make sure the crimped side of the ring terminal faces away from the starter when you connect it.
31. Install the harness clamp (F).
32. Install the battery base (see **ENGINE INSTALLATION**).
33. Do the battery installation procedure (see **BATTERY REMOVAL AND INSTALLATION**).
34. Disconnect the transmission fluid pressure switch C (4th clutch) connector, and remove transmission fluid pressure switch C (4th clutch).
35. Install transmission fluid pressure switch C (4th clutch) and the washer (B) to pressure gauge adapter A, then connect the A/T pressure adapter to pressure gauge adapter A.

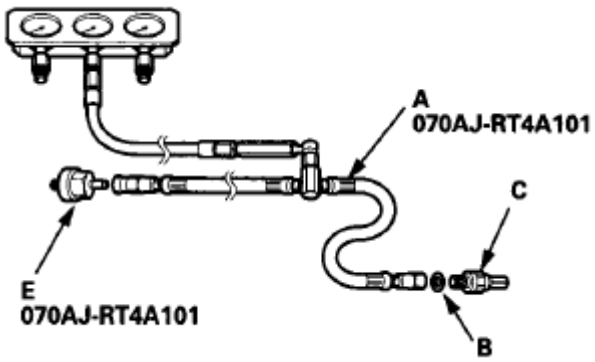


Fig. 157: Identifying Transmission Fluid Pressure Switch C And Washer
Courtesy of AMERICAN HONDA MOTOR CO., INC.

36. Install pressure gauge adapter E (quick connector) to the 4th clutch pressure inspection port (B), then connect pressure gauge adapter A to pressure gauge adapter E (quick connector). Connect the transmission fluid pressure switch C (4th clutch) connector to transmission fluid pressure switch C (4th clutch).

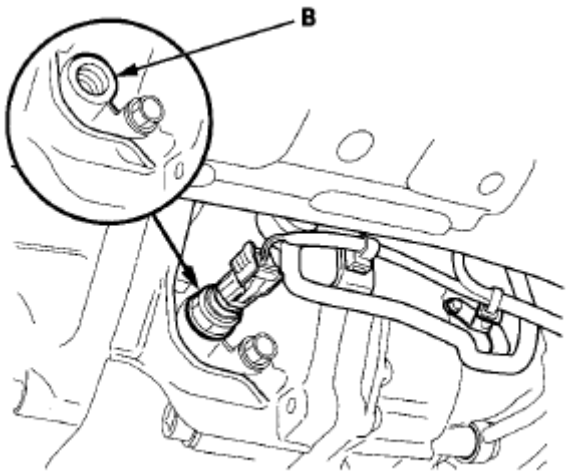


Fig. 158: Identifying Clutch Pressure Inspection Port
Courtesy of AMERICAN HONDA MOTOR CO., INC.

37. Start the engine, and run the vehicle with the sequential sportshift mode in 4th gear.
38. Measure the 4th clutch pressure while holding the engine speed at 2, 000 RPM.

Pressure	Fluid Pressure	
	Standard	Service Limit
4th clutch	1, 123 - 1, 172 kPa (11.45 - 11.95 kgf/cm^2 , 162.9 - 170.0 psi)	1, 079 kPa (11.00 kgf/cm^2 , 156.5 psi)

39. Bring the engine back to an idle, then apply the brake pedal to stop the wheels from rotating.

40. Shift to R, then release the brake pedal. Measure the 4th clutch pressure while holding the engine speed at 2, 000 RPM.

Pressure	Fluid Pressure	
	Standard	Service Limit
4th clutch in R	1, 123 - 1, 172 kPa (11.45 - 11.95 kgf/cm^2 , 162.9 - 170.0 psi)	1, 079 kPa (11.00 kgf/cm^2 , 156.5 psi)

41. Turn the engine off.
42. Disconnect the transmission fluid pressure switch C (4th clutch) connector from transmission fluid pressure switch C (4th clutch). Remove the pressure gauge adapters from the 4th clutch pressure inspection port.
43. Remove transmission fluid pressure switch C (4th clutch) from pressure gauge adapter A.
44. Install transmission fluid pressure switch C (4th clutch) and a new sealing washer, and tighten transmission fluid pressure switch C (4th clutch) to 20 N.m (2.0 kgf.m, 14 lbf.ft). Do not reuse the old sealing washer.
45. Connect the transmission fluid pressure switch C (4th clutch) connector.
46. Remove the air cleaner (see **THROTTLE BODY CLEANING**).
47. Remove the intake air duct (see **INTAKE MANIFOLD REMOVAL AND INSTALLATION**).
48. Connect pressure gauge adapter B to the 1st clutch pressure inspection port (A) or the 5th clutch pressure inspection port (C), then connect the A/T pressure adapter to pressure gauge adapter B.

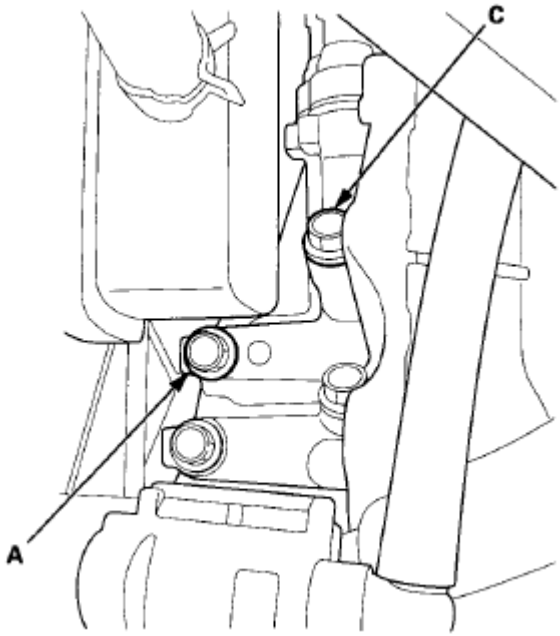


Fig. 159: Identifying 1st And 5th Clutch Pressure Inspection Port
Courtesy of AMERICAN HONDA MOTOR CO., INC.

49. Temporarily install the intake air duct and the air cleaner.

50. Start the engine, and run the vehicle with the sequential sportshift mode in 1st or 5th gear.
51. Measure the 1st or 5th clutch pressure while holding the engine speed at 2, 000rpm.

Pressure	Fluid Pressure	
	Standard	Service Limit
1st clutch 5th clutch	1, 123 - 1, 172 kPa (11.45 - 11.95 kgf/cm^2 , 162.9 - 170.0 psi)	1, 079 kPa (11.00 kgf/cm^2 , 156.5 psi)

52. Turn the engine off, remove the intake air duct and the air cleaner.
53. Disconnect the pressure gauge adapter from the 1st or 5th clutch pressure inspection port.
54. Install a new sealing bolt in the 1st or 5th clutch pressure inspection port, and tighten the sealing bolt to 20 N.m (2.0 kgf.m, 14 lbf.ft). Do not reuse the old sealing bolt.
55. Connect pressure gauge adapter D to the 3rd pressure inspection port (A) or the 6th pressure inspection port (B), then connect the A/T pressure adapter to pressure gauge adapter 0.

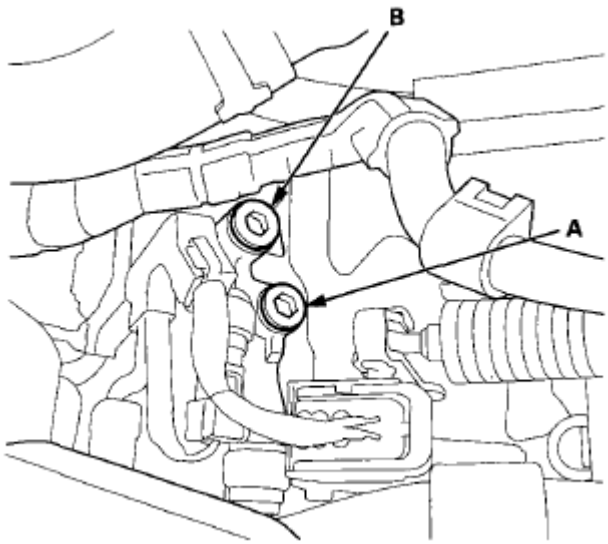


Fig. 160: Identifying 3rd Pressure Inspection Port And 6th Pressure Inspection Port
Courtesy of AMERICAN HONDA MOTOR CO., INC.

56. Temporarily install the intake air duct and the air cleaner.
57. Start the engine, and run the vehicle with the sequential sportshift mode in 3rd or 6th gear.
58. Measure the 3rd or 6th clutch pressure while holding the engine speed at 2, 000 RPM.

Pressure	Fluid Pressure	
	Standard	Service Limit
3rd clutch 6th clutch	1, 123 - 1, 172 kPa (11.45 - 11.95 kgf/cm^2 , 162.9 - 170.0 psi)	1, 079 kPa (11.00 kgf/cm^2 , 156.5 psi)

59. Turn the engine off, then remove the intake air duct and the air cleaner.

60. Disconnect the pressure gauge adapter from the 3rd or 6th clutch pressure inspection port.
61. Install a new sealing bolt in the 3rd or 6th clutch pressure inspection port, and tighten the sealing bolt to 27 N.m (2.8 kgf.m, 20 lbf.ft). Do not reuse the old sealing bolt.
62. Disconnect the transmission fluid pressure switch A (2nd clutch) connector, and remove transmission fluid pressure switch A (2nd clutch).
63. Install transmission fluid pressure switch A (2nd clutch) (B) and the washer (C) to pressure gauge adapter A, then connect the A/T pressure adapter to pressure gauge adapter A.

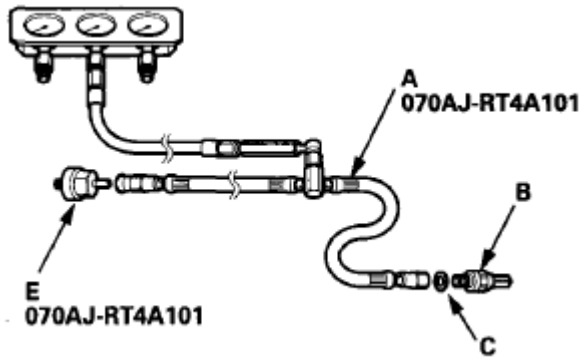


Fig. 161: Identifying Transmission Fluid Pressure Switch A, Washer, Quick Connector And A/T Pressure Adapter
Courtesy of AMERICAN HONDA MOTOR CO., INC.

64. Install pressure gauge adapter E (quick connector) to the 2nd clutch pressure inspection port (B), then connect pressure gauge adapter A to pressure gauge adapter E (quick connector). Connect the transmission fluid pressure switch A (2nd clutch) connector to transmission fluid pressure switch A (2nd clutch).

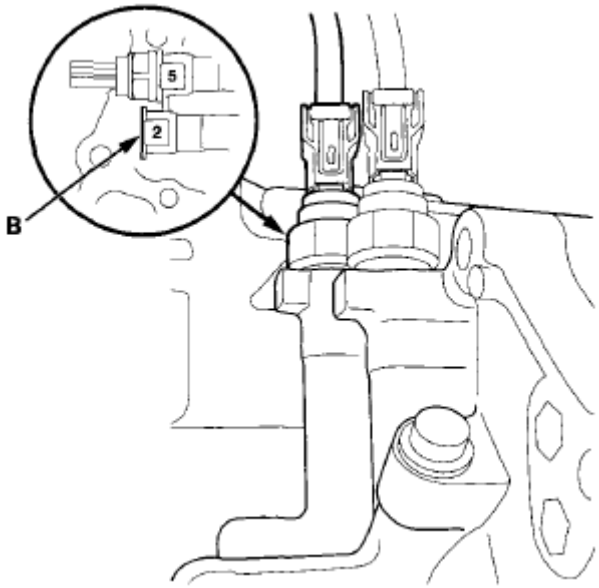


Fig. 162: Identifying 2nd Clutch Pressure Inspection Port

Courtesy of AMERICAN HONDA MOTOR CO., INC.

65. Temporarily install the intake air duct and the air cleaner.
66. Start the engine, and run the vehicle with the sequential sportshift mode in 2nd gear.
67. Measure the 2nd clutch pressure while holding the engine speed at 2, 000 RPM.

Pressure	Fluid Pressure	
	Standard	Service Limit
2nd clutch	1, 123 - 1, 172 kPa (11.45 - 11.95 kgf/cm^2 , 162.9 - 170.0 psi)	1, 079 kPa (11.00 kgf/cm^2 , 156.5 psi)

68. Turn the engine off, remove the intake air duct and the air cleaner.
69. Disconnect the transmission fluid pressure switch A (2nd clutch) connector from transmission fluid pressure switch A (2nd clutch). Disconnect the pressure gauge adapters from the 2nd clutch pressure inspection port.
70. Remove transmission fluid pressure switch A (2nd clutch) from pressure gauge adapter A.
71. Install transmission fluid pressure switch A (2nd clutch) and a new sealing washer, and tighten transmission fluid pressure switch A (2nd clutch) to 20 N.m (2.0 kgf.m, 14 lbf.ft). Do not reuse the old sealing washer.
72. Connect the transmission fluid pressure switch A (2nd clutch) connector.
73. Install the intake air duct (see **INTAKE MANIFOLD REMOVAL AND INSTALLATION**).
74. Install the air cleaner (see **THROTTLE BODY CLEANING**).
75. Do the battery removal procedure (see **BATTERY REMOVAL AND INSTALLATION**).
76. Remove the battery base (see **ENGINE REMOVAL**).
77. Remove the harness clamp (A).

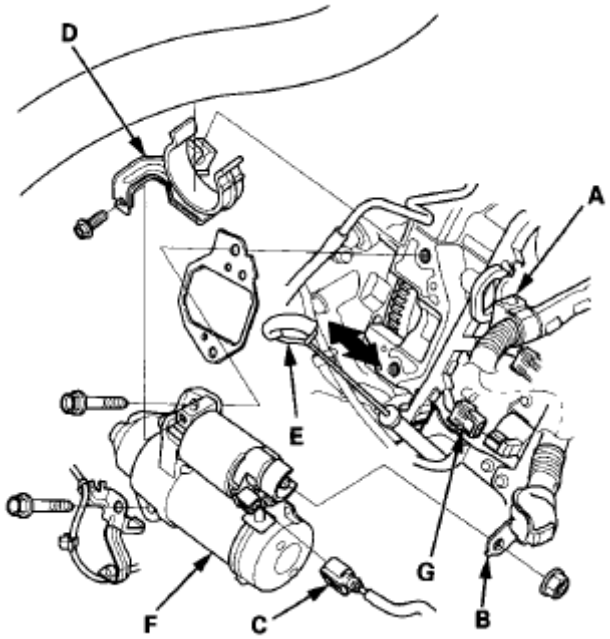


Fig. 163: Identifying Clamp, Starter Cable, Connector, Bracket, Dipstick, Starter And Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

78. Disconnect the positive starter cable (B) and the S terminal connector (C).
79. Remove the lower radiator hose bracket (D) and the dipstick (E).
80. Remove the two bolts holding the starter, then remove the starter (F).
81. Connect the line pressure solenoid valve A connector (G).
82. Install the starter (A), then tighten the bolts.

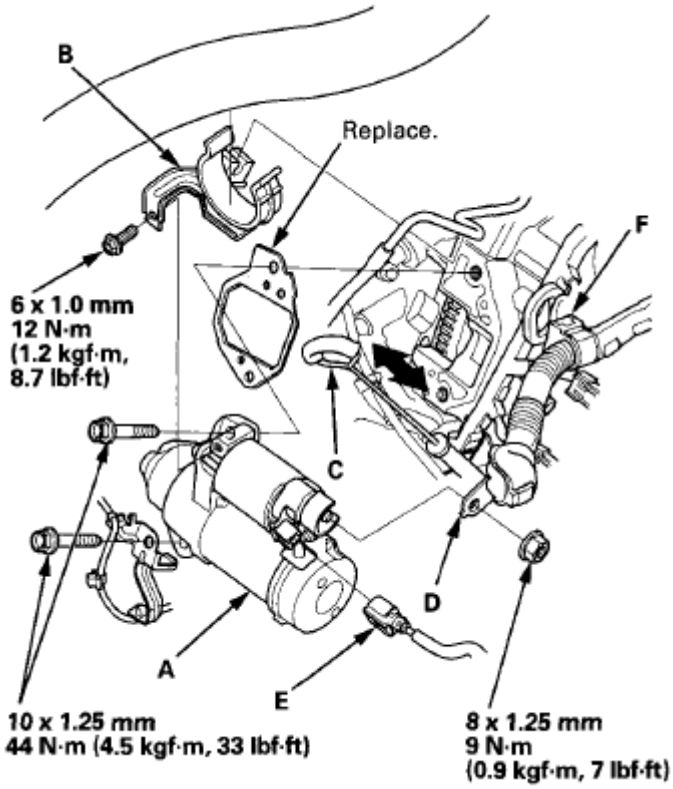


Fig. 164: Identifying Starter, Bracket, Dipstick, Starter Cable, Terminal Connector And Clamp With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

83. Install the lower radiator hose bracket (B) and the dipstick (C).
84. Connect the positive starter cable (D) and the S terminal connector (E). Make sure the crimped side of the ring terminal faces away from the starter when you connect it.
85. Install the harness clamp (F).
86. Install the battery base (see **ENGINE INSTALLATION**).
87. Do the battery installation procedure (see **BATTERY REMOVAL AND INSTALLATION**).
88. If any DTCs are stored, clear the DTC with the HDS.
89. If any of the pressures are out of the service limit, refer to the problems and probable causes listed in the table below.

Problem	Probable causes
No or low line pressure	• Torque converter • ATF pump • Main regulator valve • Clogged ATF strainer
No or low 1st clutch pressure	1st clutch
No or low 2nd clutch pressure	2nd clutch

No or low 3rd clutch pressure	3rd clutch
No or low 4th clutch pressure	4th clutch
No or low 5th clutch pressure	5th clutch
No or low 6th clutch pressure	6th clutch
No or low 4th clutch pressure in R	• Shift fork shaft • 4th clutch
No or low torque converter clutch pressure	• Lock-up control valve • Lock-up shift valve • Shift solenoid valve C

90. Install the front splash shield (see **FRONT SPLASH SHIELD REPLACEMENT**).

SECONDARY VALVE BODY REPLACEMENT

1. Do the battery removal procedure (see **BATTERY REMOVAL AND INSTALLATION**).
2. Remove the battery base (see **ENGINE REMOVAL**).
3. Remove the starter (see **STARTER REMOVAL AND INSTALLATION**).
4. Disconnect these connectors:
   - Shift solenoid valve A connector (A)
   - Shift solenoid valve B connector (B)
   - Shift solenoid valve C connector (C)
   - Line pressure solenoid valve A connector (D)

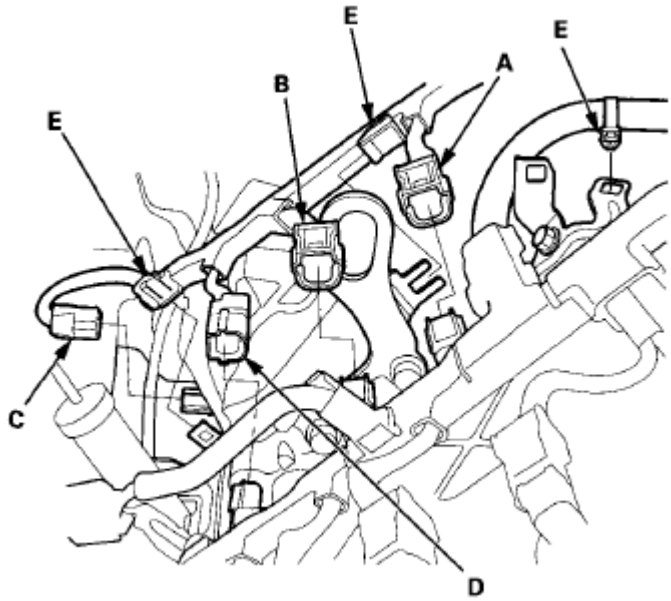


Fig. 165: Identifying A, B And C Connectors And Line Pressure Solenoid Valve A Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Remove the harness clamps (E).
6. Disconnect these connectors:
   - A/T clutch pressure control solenoid valve A connector (A)
   - A/T clutch pressure control solenoid valve B connector (B)
   - A/T clutch pressure control solenoid valve C connector (C)
   - A/T clutch pressure control solenoid valve D connector (D)
   - Transmission fluid pressure switch B (3rd clutch) connector (E)
   - Transmission fluid pressure switch E (6th clutch) connector (F)
   - Line pressure switch connector (G)
   - Transmission range switch connector (H)

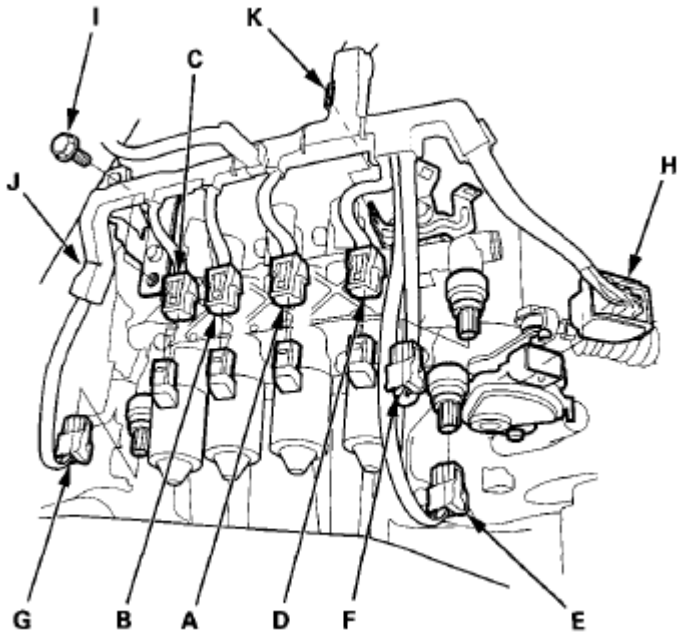


Fig. 166: Identifying A, B, C And D, Transmission Fluid Pressure Switch E, Line Pressure Switch And Transmission Range Switch Connectors
Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Remove the bolt (I) securing the harness cover (J), and remove the harness clamp (K).
8. Remove the harness cover bracket (A).

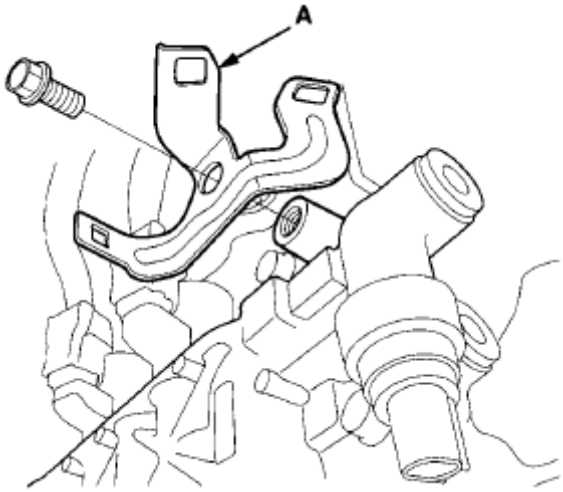


Fig. 167: Identifying Harness Cover Bracket
Courtesy of AMERICAN HONDA MOTOR CO., INC.

9. Raise the vehicle on a lift, and make sure it is supported securely.
10. Remove the front splash shield (see **FRONT SPLASH SHIELD REPLACEMENT**).
11. Remove the harness clamp (A), then remove the ATF dipstick (B) and the ATF dipstick guide tube (C) with the O-ring (D).

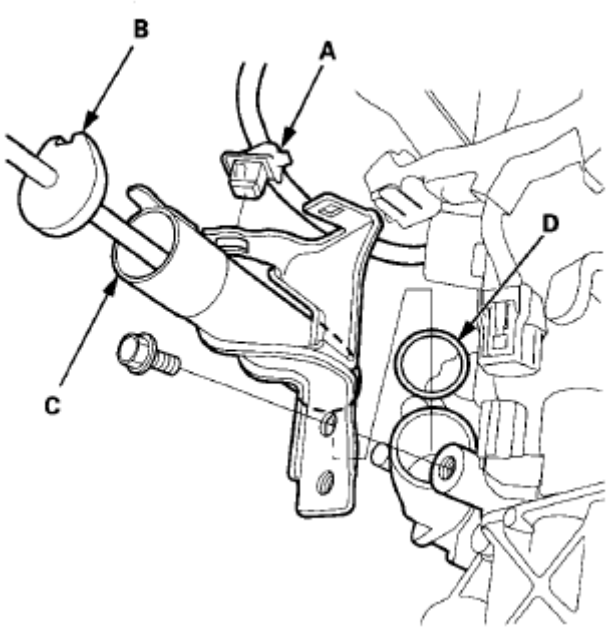


Fig. 168: Identifying Clamp, ATF Dipstick, ATF Dipstick Guide Tube And O-Ring
Courtesy of AMERICAN HONDA MOTOR CO., INC.

12. Remove the secondary valve body (A) and the gasket (B). Remove the ATF pipes (C).

NOTE: There are 11 ATF pipes. Do not drop the ATF pipes into the transmission. If an ATF pipe is dropped into the transmission, the transmission will need to be disassembled to recover the pipe(s).

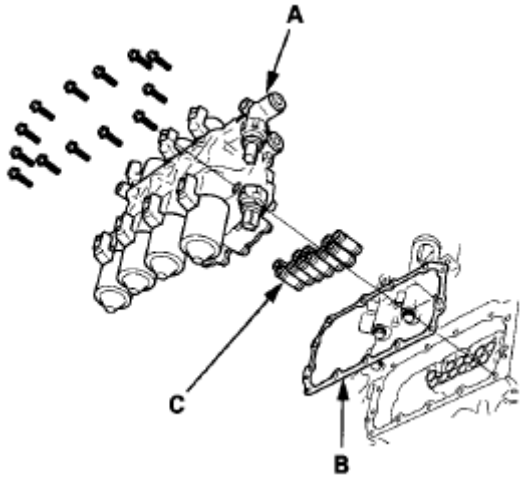


Fig. 169: Identifying Secondary Valve Body, Gasket And ATF Pipes
Courtesy of AMERICAN HONDA MOTOR CO., INC.

13. Replace the secondary valve body.
14. Clean the mounting surfaces of the transmission housing. Do not allow dust or other foreign particles to enter the transmission.
15. Apply ATF to new O-rings (A), and install the O-rings over the ATF pipes (B). Then install the ATF pipes with the filter ends (C) facing the secondary valve body (D) into the transmission.

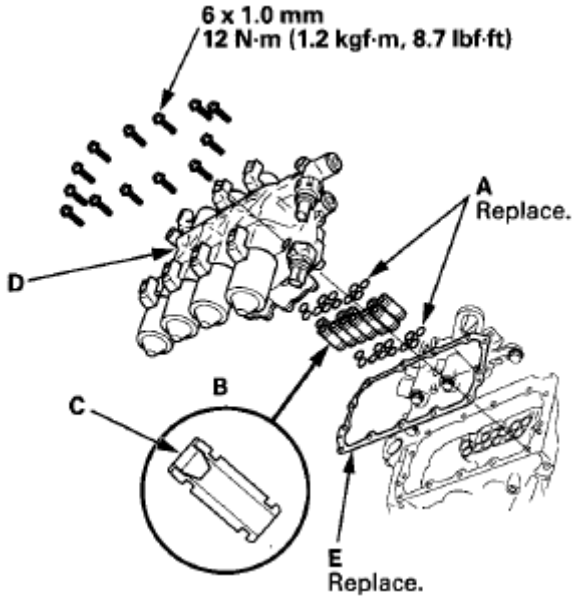


Fig. 170: Identifying O-Ring, Atf Pipes, Filter Ends And Secondary Valve Body With Torque Specifications

Courtesy of AMERICAN HONDA MOTOR CO., INC.

16. Install a new gasket (E) to the transmission housing.
17. Install the secondary valve body while aligning the ATF pipes with the pipe holes on the secondary valve body, and secure the secondary valve body with the bolts.
18. Install the dipstick guide tube (A) with a new O-ring (B), the dipstick (C), and the harness clamp (D).

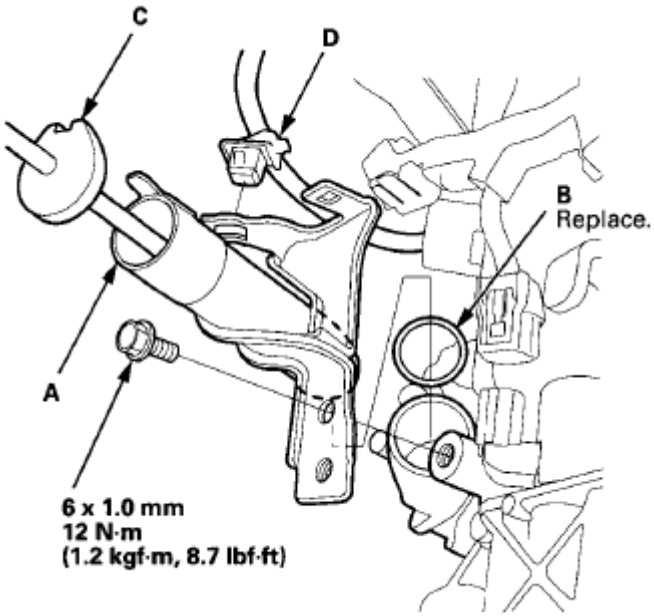


Fig. 171: Identifying Dipstick Guide Tube, O-Ring, Dipstick And Harness Clamp With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

19. Install the harness cover bracket (A).

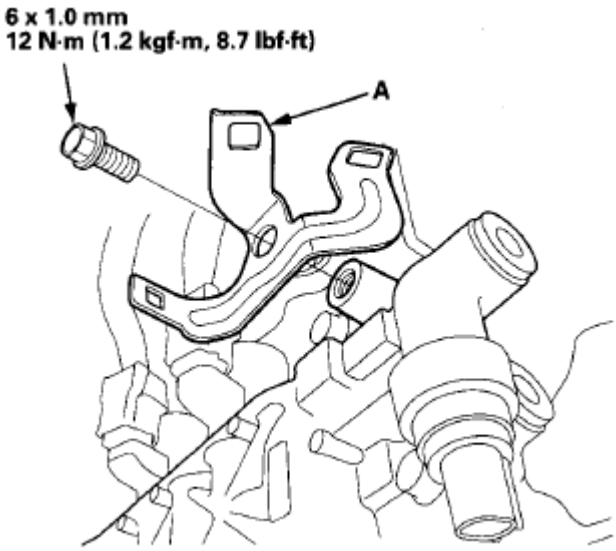


Fig. 172: Identifying Harness Cover Bracket With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

20. Install the bolt (A) securing the harness cover (B), and install the harness clamp (C).

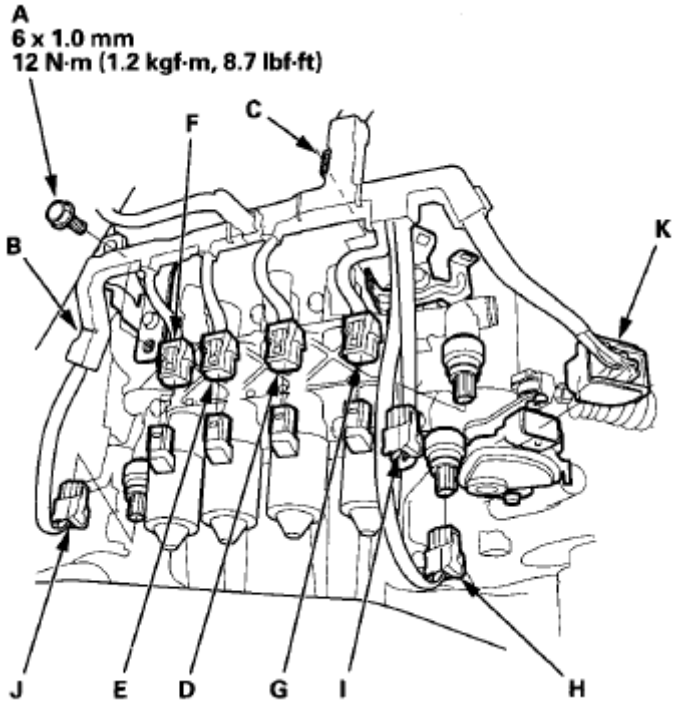


Fig. 173: Identifying Bolt, Harness Cover And Harness Clamp With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

21. Connect these connectors:
    - A/T clutch pressure control solenoid valve A connector (D)
    - A/T clutch pressure control solenoid valve B connector (E)
    - A/T clutch pressure control solenoid valve C connector (F)
    - A/T clutch pressure control solenoid valve D connector (G)
    - Transmission fluid pressure switch B (3rd clutch) connector (H)
    - Transmission fluid pressure switch E (6th clutch) connector (I)
    - Line pressure switch connector (J)
    - Transmission range switch connector (K)
22. Install the harness clamps (A).

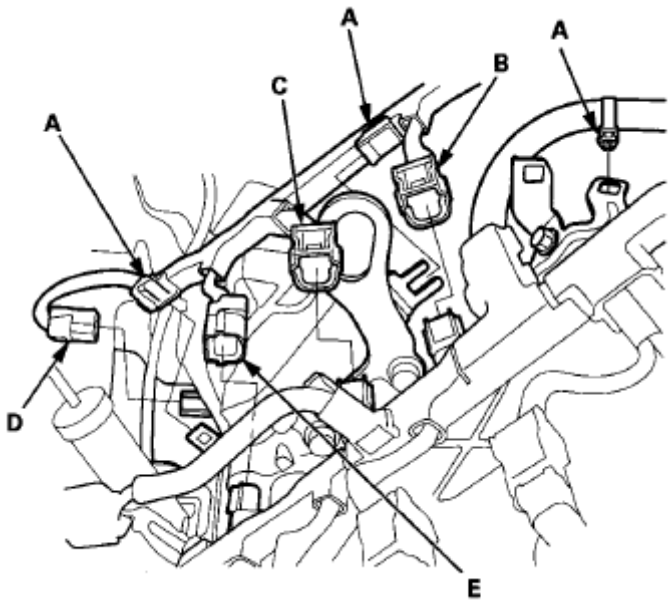


Fig. 174: Identifying Harness Clamps, A, B, C And D Connector And Line Pressure Solenoid Valve A Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

23. Connect these connectors:
    - Shift solenoid valve A connector (B)
    - Shift solenoid valve B connector (C)
    - Shift solenoid valve C connector (D)
    - Line pressure solenoid valve A connector (E)
24. Install the front splash shield (see **FRONT SPLASH SHIELD REPLACEMENT**).
25. Install the starter (see **STARTER REMOVAL AND INSTALLATION**).
26. Install the battery base (see **ENGINE INSTALLATION**).
27. Do the battery installation procedure (see **BATTERY REMOVAL AND INSTALLATION**).

SHIFT SOLENOID VALVE A AND B TEST

1. Connect the HDS to the DLC (A) located under the driver's side of the dashboard.

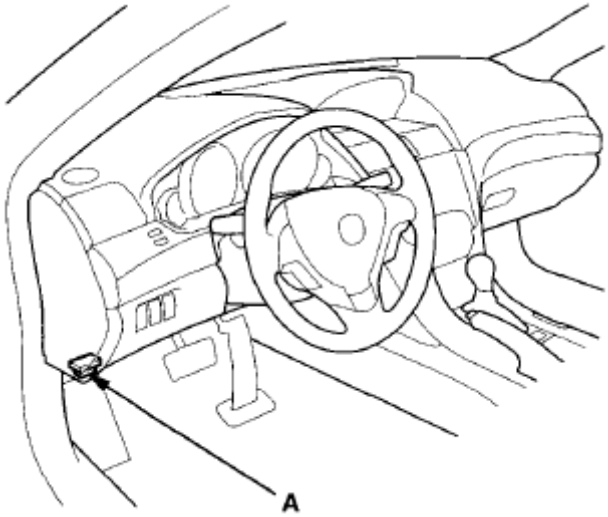


Fig. 175: Identifying Data Link Connector Location
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode. Make sure the HDS communicates with the PCM. If it does not, go to the DLC circuit troubleshooting (see **DLC CIRCUIT TROUBLESHOOTING**).
3. Select Shift Solenoid Valve A or B in the Miscellaneous Test Menu on the HDS.
4. Check that shift solenoid valve A or B operates with the HDS. A clicking sound should be heard.
   - If a clicking sound is heard, the solenoid valve is OK. The test is complete, disconnect the HDS.
   - If no clicking sound is heard, go to step 5 and test the solenoid valve.
5. Do the battery removal procedure (see **BATTERY REMOVAL AND INSTALLATION**).
6. Remove the battery base (see **ENGINE REMOVAL**).
7. Remove the starter (see **STARTER REMOVAL AND INSTALLATION**).
8. Remove the secondary valve body (see **SECONDARY VALVE BODY REPLACEMENT**).
9. Measure the resistance of the shift solenoid valve between connector terminals No. 1 and No. 2.

   Standard: 13.8 - 17.1 ohms

   - If the resistance is out of the standard, replace the secondary valve body, then go to step 11.
   - If the resistance is within the standard, go to step 10 and check the solenoid valve for a clicking sound.

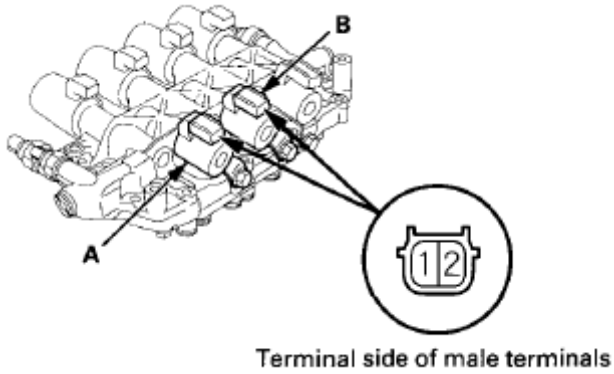


Fig. 176: Measuring Resistance Of Shift Solenoid Valve Between Connector Terminals No. 1 And No. 2
Courtesy of AMERICAN HONDA MOTOR CO., INC.

10. Connect a jumper wire from the negative battery terminal to shift solenoid valve A or B connector terminal No. 1, and connect another jumper wire from the positive battery terminal to connector terminal No. 2.
    - If a clicking sound is heard, repair the wire between the PCM connector terminal and the defective shift solenoid valve, then go to step 11.
    - If no clicking sound is heard, replace the secondary valve body, then go to step 11.
11. Install the secondary valve body (see **SECONDARY VALVE BODY REPLACEMENT**).
12. Install the starter (see **STARTER REMOVAL AND INSTALLATION**).
13. Install the battery base (see **ENGINE INSTALLATION**).
14. Do the battery installation procedure (see **BATTERY REMOVAL AND INSTALLATION**).

SHIFT SOLENOID VALVE C TEST AND REPLACEMENT

1. Connect the HDS to the DLC (A) located under the driver's side of the dashboard.

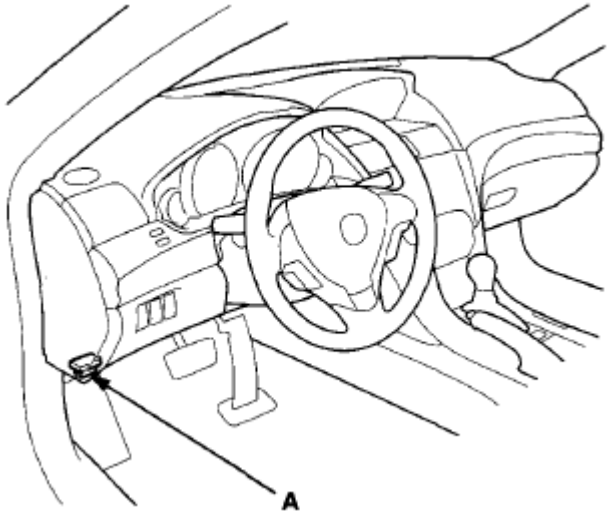


Fig. 177: Identifying Data Link Connector Location
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode. Make sure the HDS communicates with the PCM. If it does not, go to the DLC circuit troubleshooting (see **DLC CIRCUIT TROUBLESHOOTING**).
3. Select Shift Solenoid Valve C in the Miscellaneous Test Menu on the HDS.
4. Check that shift solenoid valve C operates with the HDS. A clicking sound should be heard.
   - If a clicking sound is heard, the solenoid valve is OK. The test is complete, disconnect the HDS.
   - If no clicking sound is heard, go to step 5 and test the solenoid valve.
5. Do the battery removal procedure (see **BATTERY REMOVAL AND INSTALLATION**).
6. Remove the ATF dipstick.
7. Remove the harness clamps (A).

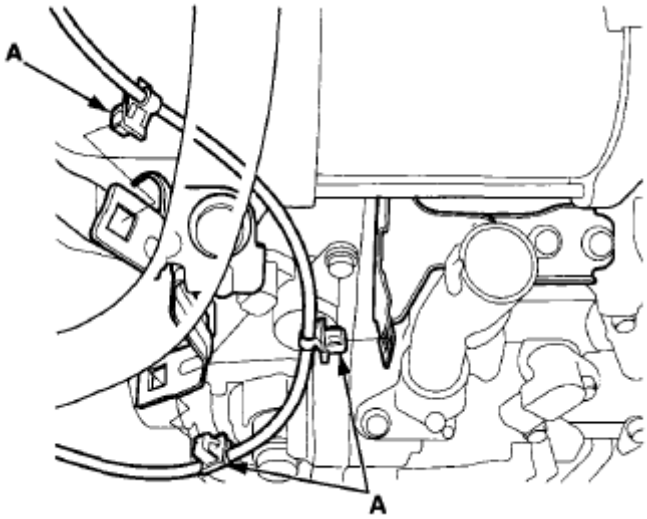


Fig. 178: Identifying Harness Clamps
Courtesy of AMERICAN HONDA MOTOR CO., INC.

8. Disconnect the shift solenoid valve C connector (A), and remove shift solenoid valve C with the O-rings (B).

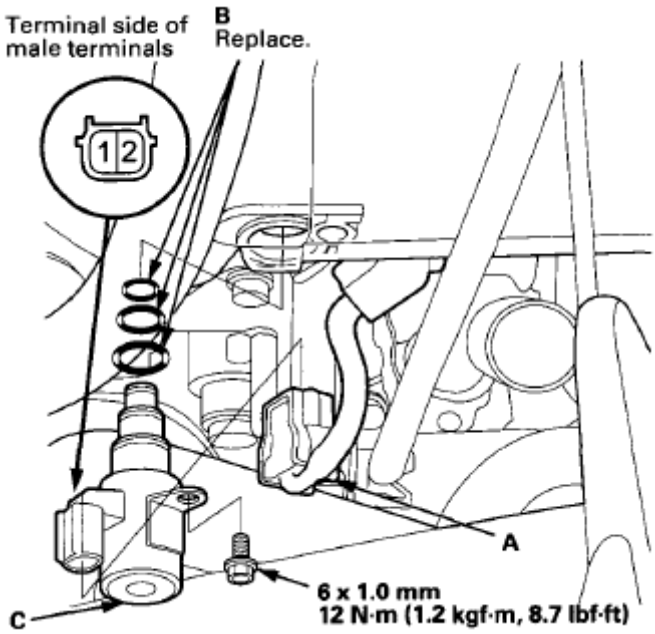


Fig. 179: Identifying Shift Solenoid Valve C Connector And O-Rings With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

9. Measure the resistance of the shift solenoid valve between connector terminals No. 1 and No. 2.

   Standard: 13.8 - 17.1 ohms

   - If the resistance is out of the standard, go to step 14 and replace the shift solenoid valve.
   - If the resistance is within the standard, go to step 10 and check the solenoid valve for a clicking sound and operation.

10. Connect a tube (A) to shift solenoid valve C.

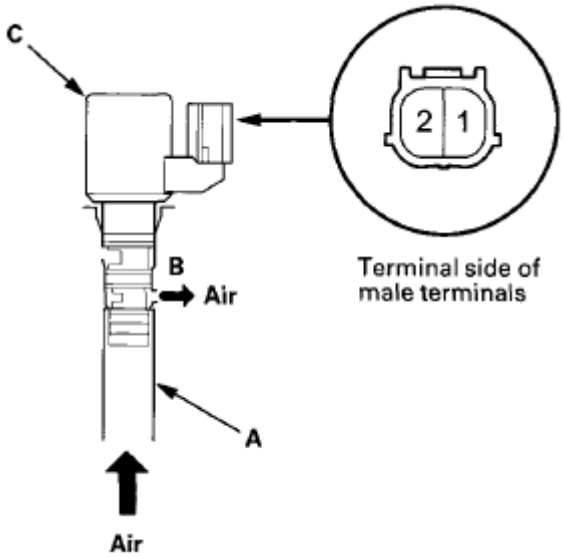


Fig. 180: Identifying Tube, Air Exhaust Valve And Shift Solenoid Valve C
Courtesy of AMERICAN HONDA MOTOR CO., INC.

11. Connect a jumper wire from the negative battery terminal to shift solenoid valve C connector terminal No. 1, and connect another jumper wire from the positive battery terminal to connector terminal No. 2.
    - If a clicking sound is heard, go to step 12.
    - If no clicking sound is heard, go to step 14 and replace the shift solenoid valve.
12. Connect a jumper wire from the negative battery terminal to shift solenoid valve C connector terminal No. 1, and connect another jumper wire from the positive battery terminal to connector terminal No. 2. Blow the air to the tube.
    - If the air goes out of the port (B), go to step 13.
    - If the air does not go out of the port (B), go to step 14 and replace the shift solenoid valve.
13. Disconnect the jumper wires from the shift solenoid valve C connector. Blow air into the tube (A):
    - If the air goes out of the port (B), go to step 14 and replace shift solenoid valve C.
    - If the air does not go out of the port (B), repair the wire between the PCM connector terminal and shift solenoid valve C.
14. Install new O-rings (three O-rings per solenoid valve) on the solenoid valve.

NOTE: A new solenoid valve comes with new O-rings. If you install a new solenoid valve, use the O-rings provided with it.

15. Install shift solenoid valve C, and connect the shift solenoid valve C connector.
16. Connect the harness clamps.
17. Install the ATF dipstick.
18. Do the battery installation procedure (see **BATTERY REMOVAL AND INSTALLATION**).

LINE PRESSURE SOLENOID VALVE A TEST

1. Connect the HDS to the DLC (A) located under the driver's side of the dashboard.

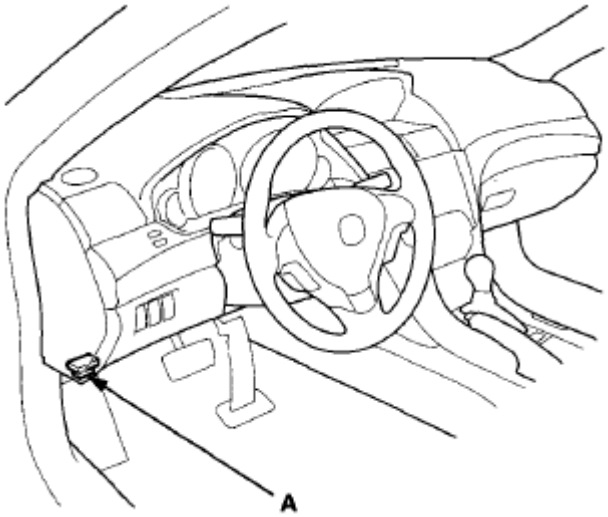


Fig. 181: Identifying Data Link Connector (DLC) Location
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode. Make sure the HDS communicates with the PCM. If it does not, go to the DLC circuit troubleshooting (see **DLC CIRCUIT TROUBLESHOOTING**).
3. Select Line Pressure Solenoid Valve A in the Miscellaneous Test Menu on the HDS.
4. Check that line pressure solenoid valve A operates with the HDS. A clicking sound should be heard.
   - If a clicking sound is heard, the solenoid valve is OK. The test is complete, disconnect the HDS.
   - If no clicking sound is heard, go to step 5 and test the solenoid valve.
5. Do the battery removal procedure (see **BATTERY REMOVAL AND INSTALLATION**).
6. Remove the battery base (see **ENGINE REMOVAL**).
7. Remove the starter (see **STARTER REMOVAL AND INSTALLATION**).
8. Remove the secondary valve body (see **SECONDARY VALVE BODY REPLACEMENT**).
9. Measure the resistance of line pressure solenoid valve A between connector terminals No. 1 and No. 2.

   Standard: 13.8 - 17.1 ohms

   - If the resistance is out of the standard, replace the secondary valve body, then go to step 11.
   - If the resistance is within the standard, go to step 10 and check the solenoid valve for a clicking sound.

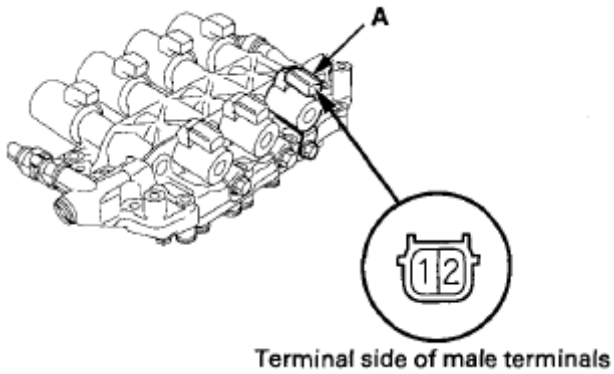


Fig. 182: Identifying Line Pressure Solenoid Valve
Courtesy of AMERICAN HONDA MOTOR CO., INC.

10. Connect a jumper wire from the negative battery terminal to line pressure solenoid valve A connector terminal No. 1, and connect another jumper wire from the positive battery terminal to connector terminal No. 2.
    - If a clicking sound is heard, repair the wire between the PCM connector terminal and line pressure solenoid valve A, then go to step 11.
    - If no clicking sound is heard, replace the secondary valve body, then go to step 11.
11. Install the secondary valve body (see **SECONDARY VALVE BODY REPLACEMENT**).
12. Install the starter (see **STARTER REMOVAL AND INSTALLATION**).
13. Install the battery base (see **ENGINE INSTALLATION**).
14. Do the battery installation procedure (see **BATTERY REMOVAL AND INSTALLATION**).

A/T CLUTCH PRESSURE CONTROL SOLENOID VALVE A, B, C, AND D TEST

1. Connect the HDS to the DLC (A) located under the driver's of the dashboard.

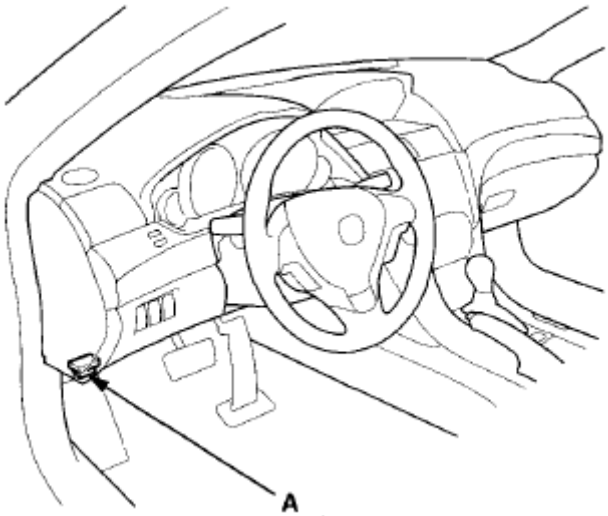


Fig. 183: Identifying Data Link Connector (DLC) Location
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode. Make sure the HDS communicates with the PCM. If it does not, go to the DLC circuit troubleshooting (see **DLC CIRCUIT TROUBLESHOOTING**).
3. Select Clutch Pressure Control (Linear) Solenoid Valve A, B, C, and D individually in the Miscellaneous Test Menu on the HDS.
4. Test A/T clutch pressure control solenoid valve A, B, C, and D individually with the HDS.
   - If the valves test OK, the test is complete. Disconnect the HDS.
   - If any of the valves do not test OK, follow the instructions on the HDS.
   - If any of the valves do not test OK, and the HDS does not determine the cause, go to step 5.
5. Do the battery removal procedure (see **BATTERY REMOVAL AND INSTALLATION**).
6. Remove the battery base (see **ENGINE REMOVAL**).
7. Disconnect the A/T clutch pressure control solenoid valve A, B, C, or D connector.

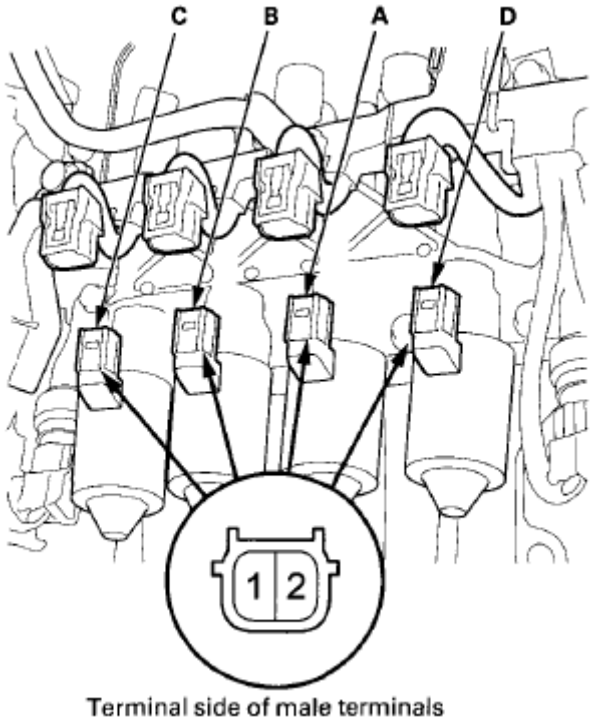


Fig. 184: Identifying A/T Clutch Pressure Control Solenoid Valve A, B, C, Or D Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

8. Measure the resistance between connector terminals No. 1 and No. 2 for each A/T clutch pressure control solenoid valve A, B, C, and D.

Standard: 4.7 - 5.9 ohms

- If the resistance is out of the standard, replace the secondary valve body (see **SECONDARY VALVE BODY REPLACEMENT**).
- If the resistance is within the standard, go to step 9.

9. Connect a jumper wire from the negative battery terminal to solenoid valve A, B, C, and D connector terminal No. 2, and connect another jumper wire from the positive battery terminal to connector terminal No. 1 individually.
   - If an operating sound is heard, the solenoid valve is OK. Reconnect the connector, and install all removed parts.
   - If no operating sound is heard, replace the secondary valve body (see **SECONDARY VALVE BODY REPLACEMENT**).

INPUT SHAFT (MAINSHAFT) SPEED SENSOR REPLACEMENT

1. Raise the vehicle on a lift, or apply the parking brake, block both rear wheels, and raise the front of the vehicle. Make sure it is securely supported.
2. Remove the front splash shield (see **FRONT SPLASH SHIELD REPLACEMENT**).
3. Disconnect the input shaft (mainshaft) speed sensor connector, and remove the input shaft (mainshaft) speed sensor (A).

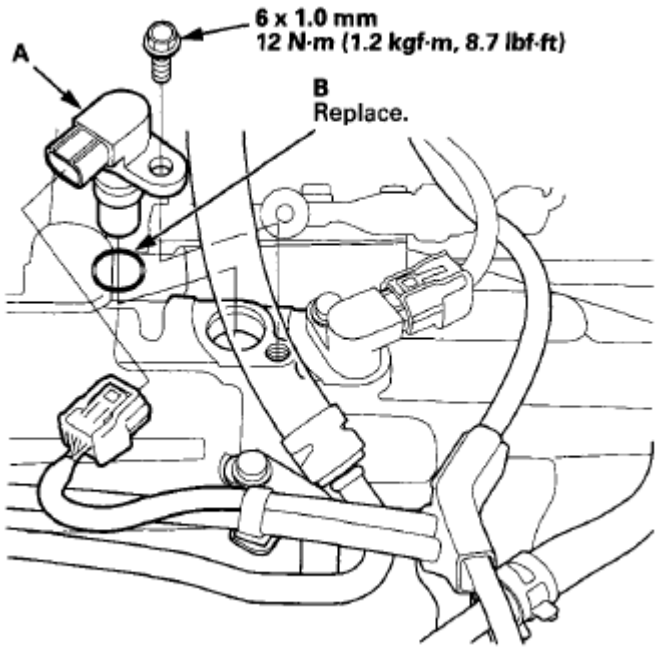


Fig. 185: Identifying Input Shaft Speed Sensor With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Install a new O-ring (B) on the new input shaft (mainshaft) speed sensor, then install the input shaft (mainshaft) speed sensor.
5. Check the connector for corrosion, dirt, or oil, and clean or repair if necessary, then connect the connector securely.

6. Install the front splash shield (see **FRONT SPLASH SHIELD REPLACEMENT**).

OUTPUT SHAFT (COUNTERSHAFT) SPEED SENSOR REPLACEMENT

1. Raise the vehicle on a lift, or apply the parking brake, block both rear wheels, and raise the front of the vehicle. Make sure it is securely supported.
2. Remove the front splash shield (see **FRONT SPLASH SHIELD REPLACEMENT**).
3. Disconnect the output shaft (countershaft) speed sensor connector, and remove the output shaft (countershaft) speed sensor (A).

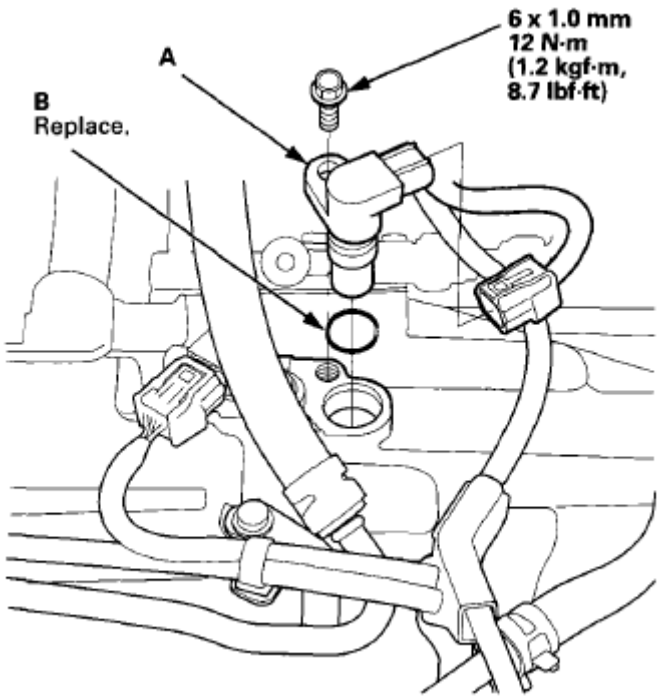


Fig. 186: Identifying Output Shaft Speed Sensor With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Install a new O-ring (B) on the new output shaft (countershaft) speed sensor, then install the output shaft (countershaft) speed sensor.
5. Check the connector for corrosion, dirt, or oil, and clean or repair if necessary, then connect the connector securely.
6. Install the front splash shield (see **FRONT SPLASH SHIELD REPLACEMENT**).

TRANSMISSION FLUID PRESSURE SWITCH A (2ND CLUTCH) REPLACEMENT

1. Remove the air cleaner (see **THROTTLE BODY CLEANING**).
2. Remove the intake air duct (see **INTAKE MANIFOLD REMOVAL AND INSTALLATION**).
3. Disconnect the transmission fluid pressure switch A (2nd clutch) connector, and remove transmission

fluid pressure switch A (2nd clutch) and the sealing washer (B).

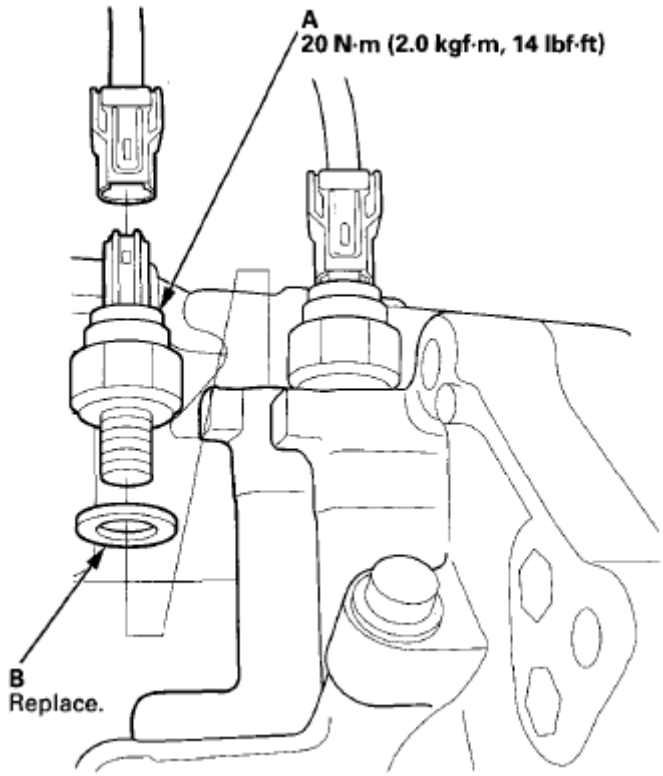


Fig. 187: Identifying Transmission Fluid Pressure Switch And Sealing Washer With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Install a new transmission fluid pressure switch A (2nd clutch) with a new sealing washer, and tighten the switch.
5. Check the connector for corrosion, dirt, or oil, and clean or repair if necessary, then connect the connector securely.
6. Install the intake air duct (see **INTAKE MANIFOLD REMOVAL AND INSTALLATION**).
7. Install the air cleaner (see **THROTTLE BODY CLEANING**).

TRANSMISSION FLUID PRESSURE SWITCH B (3RD CLUTCH) REPLACEMENT

1. Remove the air cleaner (see **THROTTLE BODY CLEANING**).
2. Remove the intake air duct (see **INTAKE MANIFOLD REMOVAL AND INSTALLATION**).
3. Disconnect the transmission fluid pressure switch B (3rd clutch) connector, and remove transmission fluid pressure switch B (3rd clutch) and the sealing washer (A).

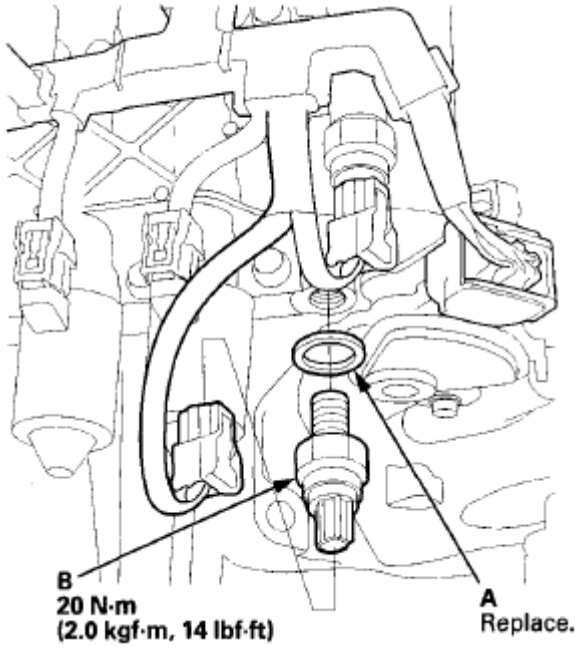


Fig. 188: Identifying Transmission Fluid Pressure Switch B And Sealing Washer With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Install a new transmission fluid pressure switch B (3rd clutch) with a new sealing washer, and tighten the switch.
5. Check the connector for corrosion, dirt, or oil, and clean or repair if necessary, then connect the connector securely.
6. Install the intake air duct (see **INTAKE MANIFOLD REMOVAL AND INSTALLATION**).
7. Install the air cleaner (see **THROTTLE BODY CLEANING**).

TRANSMISSION FLUID PRESSURE SWITCH C (4TH CLUTCH) REPLACEMENT

1. Raise the vehicle on a lift, or apply the parking brake, block both rear wheels, and raise the front of the vehicle. Make sure it is securely supported.
2. Remove the front splash shield (see **FRONT SPLASH SHIELD REPLACEMENT**).
3. Disconnect the transmission fluid pressure switch C (4th clutch) connector, and remove transmission fluid pressure switch C (4th clutch) and the sealing washer (A).

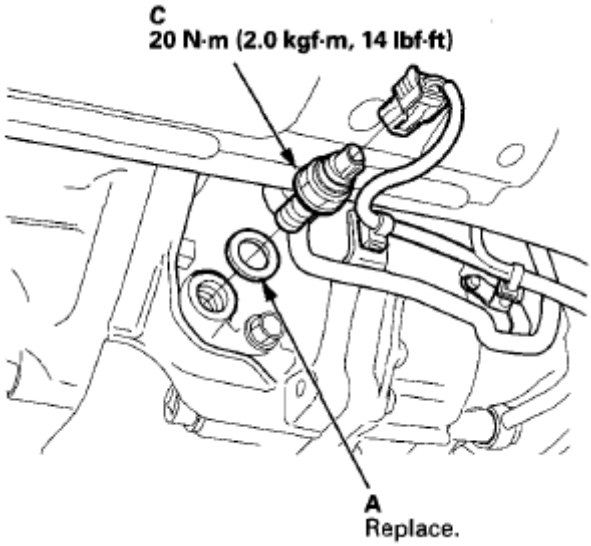


Fig. 189: Identifying Transmission Fluid Pressure Switch And Sealing Washer With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Install a new transmission fluid pressure switch C (4th clutch) with a new sealing washer, and tighten the switch.
5. Check the connector for corrosion, dirt, or oil, and clean or repair if necessary, then connect the connector securely.
6. Install the front splash shield (see **FRONT SPLASH SHIELD REPLACEMENT**).

TRANSMISSION FLUID PRESSURE SWITCH D (5TH CLUTCH) REPLACEMENT

1. Remove the air cleaner (see **THROTTLE BODY CLEANING**).
2. Remove the intake air duct (see **INTAKE MANIFOLD REMOVAL AND INSTALLATION**).
3. Disconnect the transmission fluid pressure switch D (5th clutch) connector, and remove transmission fluid pressure switch D (5th clutch) and the sealing washer (A).

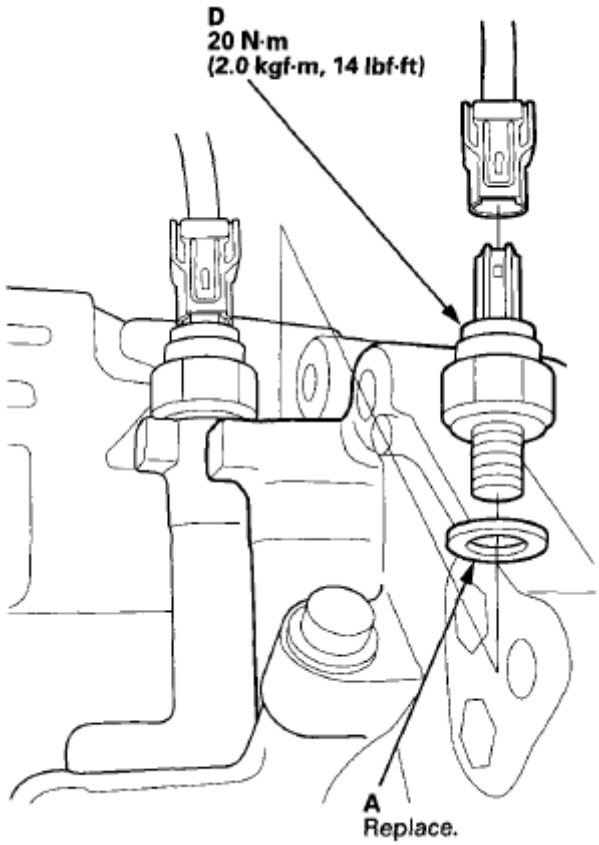


Fig. 190: Identifying Transmission Fluid Pressure Switch D And Sealing Washer With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Install a new transmission fluid pressure switch D (5th clutch) with a new sealing washer, and tighten the switch.
5. Check the connector for corrosion, dirt, or oil, and clean or repair if necessary, then connect the connector securely.
6. Install the intake air duct (see **INTAKE MANIFOLD REMOVAL AND INSTALLATION**).
7. Install the air cleaner (see **THROTTLE BODY CLEANING**).

TRANSMISSION FLUID PRESSURE SWITCH E (6TH CLUTCH) REPLACEMENT

1. Remove the air cleaner (see **THROTTLE BODY CLEANING**).
2. Remove the intake air duct (see **INTAKE MANIFOLD REMOVAL AND INSTALLATION**).
3. Disconnect the transmission fluid pressure switch E (6th clutch) connector, and remove transmission fluid pressure switch E (6th clutch) and the sealing washer (A).

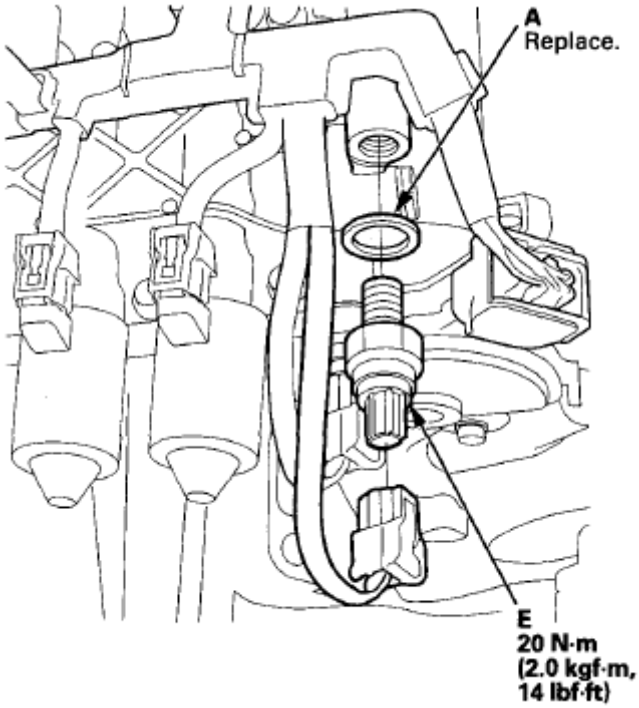


Fig. 191: Identifying Transmission Fluid Pressure Switch E And Sealing Washer With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Install a new transmission fluid pressure switch E (6th clutch) with a new sealing washer, and tighten the switch.
5. Check the connector for corrosion, dirt, or oil, and clean or repair if necessary, then connect the connector securely.
6. Install the intake air duct (see **INTAKE MANIFOLD REMOVAL AND INSTALLATION**).
7. Install the air cleaner (see **THROTTLE BODY CLEANING**).

LINE PRESSURE SWITCH REPLACEMENT

1. Do the battery removal procedure (see **BATTERY REMOVAL AND INSTALLATION**).
2. Remove the battery base (see **ENGINE REMOVAL**).
3. Disconnect the line pressure switch connector, and remove the line pressure switch (A) and the sealing washer (B).

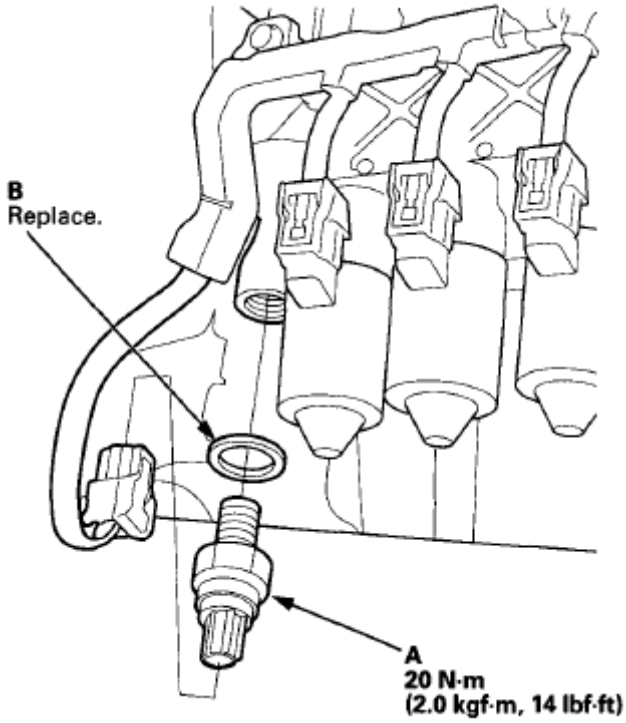


Fig. 192: Identifying Line Pressure Switch And Sealing Washer With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Install a new line pressure switch with a new sealing washer, and tighten the switch.
5. Check the connector for corrosion, dirt, or oil, and clean or repair if necessary, then connect the connector securely.
6. Install the battery base (see **ENGINE INSTALLATION**).
7. Do the battery installation procedure (see **BATTERY REMOVAL AND INSTALLATION**).

ATF TEMPERATURE SENSOR REPLACEMENT

1. Raise the vehicle on a lift, or apply the parking brake, block both rear wheels, and raise the front of the vehicle. Make sure it is securely supported.
2. Remove the front splash shield (see **FRONT SPLASH SHIELD REPLACEMENT**).
3. Remove the drain plug (A), and drain the automatic transmission fluid (ATF).

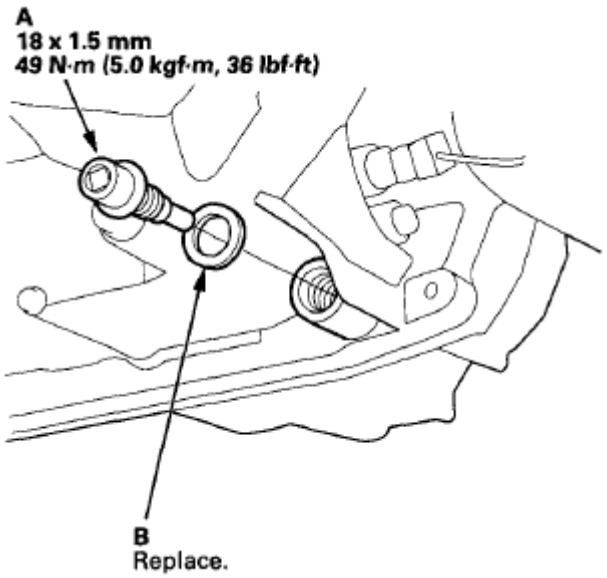


Fig. 193: Identifying Drain Plug And Automatic Transmission Fluid (ATF) With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Reinstall the drain plug with a new sealing washer (B).
5. Disconnect the ATF temperature sensor connector (A), then remove the ATF temperature sensor (B).

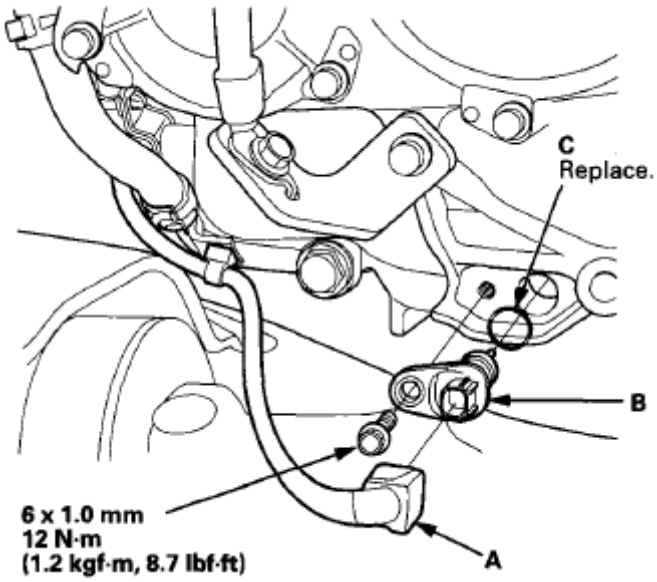


Fig. 194: Identifying ATF Temperature Sensor Connector And ATF Temperature Sensor With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Install a new O-ring (C) on a new ATF temperature sensor, and install the ATF temperature sensor.
7. Check the connector for corrosion, dirt, or oil, and clean or repair if necessary, then connect the connector

securely.

8. Refill the transmission with ATF (see **ATF REPLACEMENT**).
9. Install the front splash shield (see **FRONT SPLASH SHIELD REPLACEMENT**).

ATF LEVEL CHECK

NOTE:

- **Keep all foreign particles out of the transmission.**
- **Check the fluid level within 60- 90 seconds after turning the engine off.**
- **Higher fluid level may be indicated if the radiator fan comes on twice or more.**

1. Park the vehicle on the level ground.
2. Warm up the engine to normal operating temperature (the radiator fan comes on), then turn the engine off.
3. Remove the ATF dipstick (yellow loop) (A) from the dipstick guide tube, and wipe it with a clean cloth.

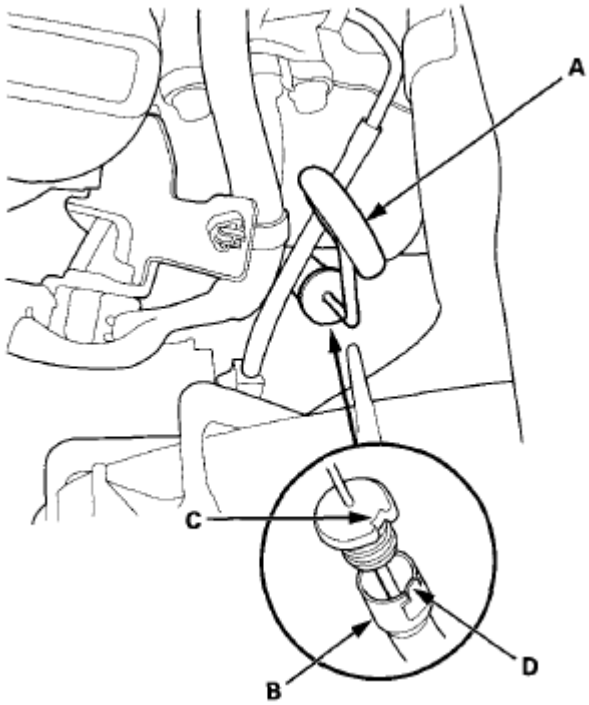


Fig. 195: Identifying ATF Dipstick (Yellow Loop), Dipstick Guide Tube, Notch And Guide Tab
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Insert the dipstick back into the dipstick guide tube (B) aligning the notch (C) with the guide tab (D).
5. Remove the dipstick and check the fluid level. It should be between the upper mark (A) and the lower mark (B).

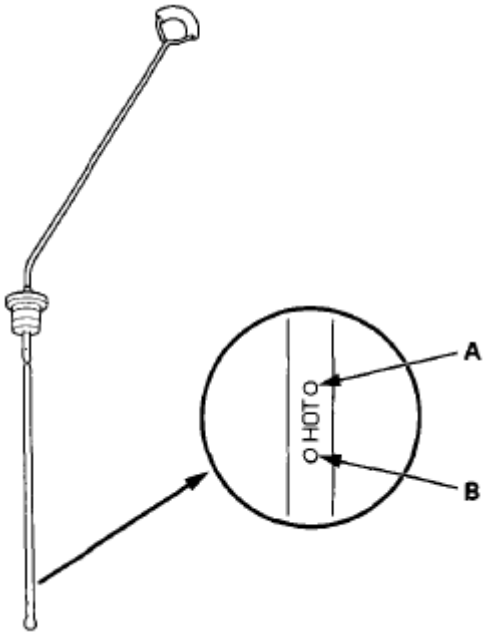


Fig. 196: Identifying Upper And Lower Mark On Dipstick
Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. If the ATF level is below the lower mark, check for fluid leaks at the transmission, the hoses, and the line joints. If a problem is found, fix it before filling the transmission with ATF.

NOTE: If the vehicle is driven when the ATF level is below the lower mark, one or more of these symptoms may occur:

- Transmission damage.
- Vehicle does not move in any gear.
- Vehicle accelerates poorly, and flares when starting off in forward and reverse positions.
- The engine vibrates at idle.

7. If the ATF level is above the upper mark, drain the ATF to proper level (see **ATF REPLACEMENT**).

NOTE: If the vehicle is driven when the ATF level is above the upper mark, the vehicle may creep forward while in N, or have shifting problems.

8. If necessary, fill the transmission with the recommended fluid through the filler hole (A) to bring the fluid level between the upper mark and the lower mark of the dipstick. Do not fill past the upper mark. Always use Acura ATF DW-1 Automatic Transmission Fluid (ATF). Using a non-Acura ATF can affect shift quality.

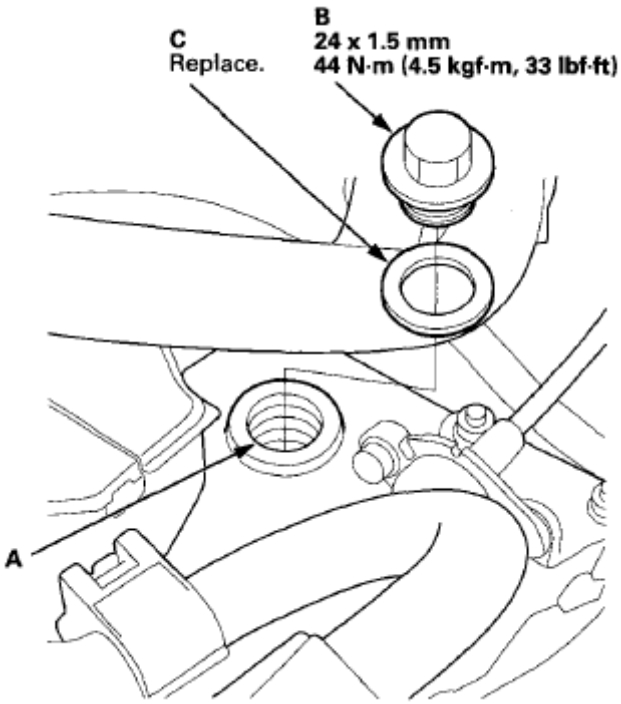


Fig. 197: Identifying Filler Hole & Bolt With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

9. Install the ATF filler bolt (B) with a new sealing washer (C).
10. Insert the dipstick back into the dipstick guide tube.

ATF REPLACEMENT

NOTE: Keep all foreign particles out of the transmission.

1. Park the vehicle on the level ground.
2. Warm up the engine to normal operating temperature (the radiator fan comes on), and turn the engine off.
3. Raise the vehicle on a lift, make sure it is securely supported.
4. Remove the air cleaner (see **THROTTLE BODY CLEANING**).
5. Remove the intake air duct (see **INTAKE MANIFOLD REMOVAL AND INSTALLATION**).
6. Remove the ATF filler bolt (A) and the sealing washer (B).

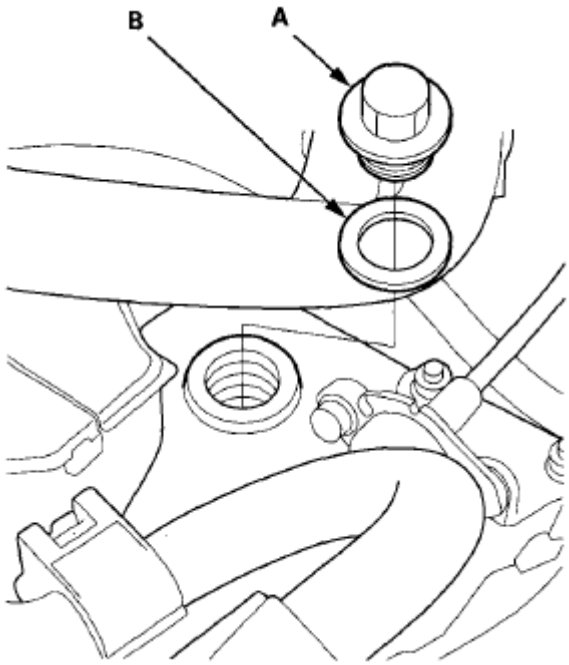


Fig. 198: Identifying Filler Bolt And Sealing Washer
Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Remove the drain plug (A), and drain the automatic transmission fluid (ATF).

NOTE: If a cooler cleaning is necessary, refer to the ATF COOLER CLEANING.

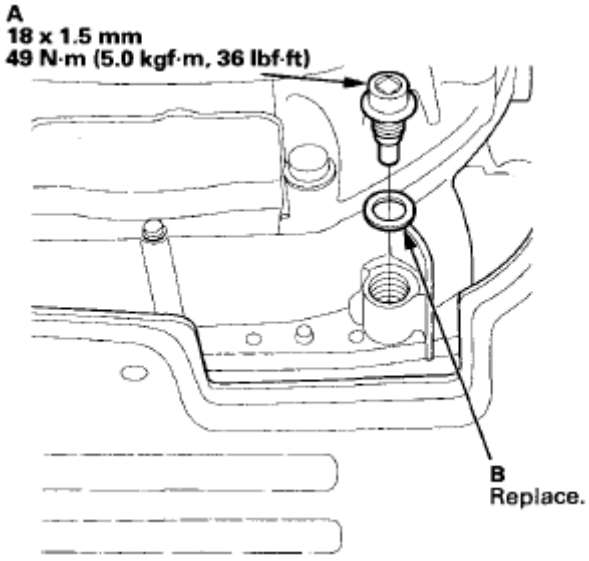


Fig. 199: Identifying Drain Plug And Automatic Transmission Fluid (ATF) With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

8. Reinstall the drain plug with a new sealing washer (B).
9. Refill the transmission with the recommended fluid through the filler hole (A). Always use Acura ATF DW-1 Automatic Transmission Fluid (ATF). Using a non-Acura ATF can affect shift quality.

   Automatic Transmission Fluid Capacity

   With SH-AWD:

   3.1 L (3.3 US qt) at change

   7.8 L (8.2 US qt) at overhaul

   Without SH-AWD:

   3.1 L (3.3 US qt) at change

   7.1 L (7.5 US qt) at overhaul

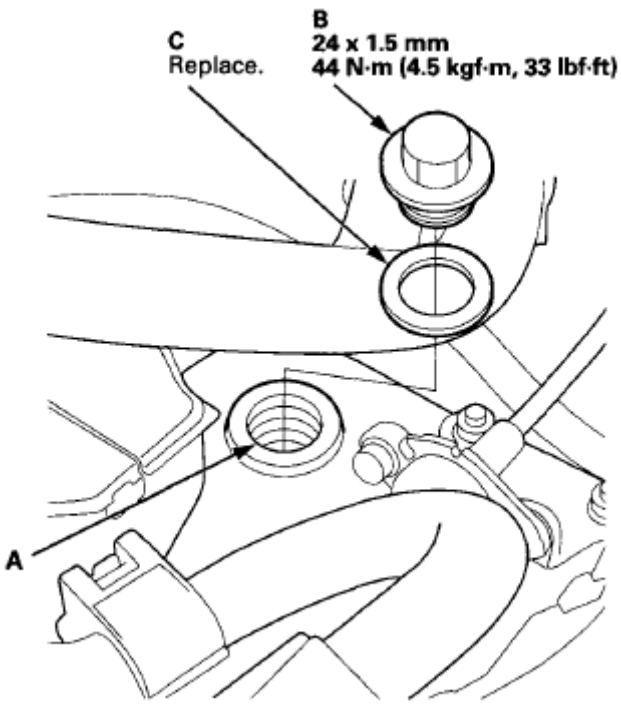


Fig. 200: Identifying Filler Hole, Filler Bolt And Sealing Washer With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

10. Install the ATF filler bolt (B) with a new sealing washer (C).
11. Remove the ATF dipstick (A).

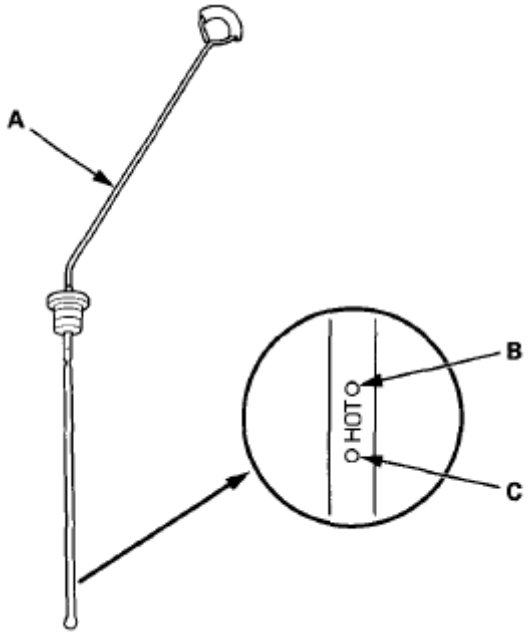


Fig. 201: Identifying ATF Dipstick, Upper And Lower Mark On Dipstick
Courtesy of AMERICAN HONDA MOTOR CO., INC.

12. Make sure the fluid level is between the upper mark (B) and the lower mark (C) on the dipstick, then insert the dipstick back into the dipstick guide tube.
13. Install the intake air duct (see **INTAKE MANIFOLD REMOVAL AND INSTALLATION**).
14. Install the air cleaner (see **THROTTLE BODY CLEANING**).
15. If the Maintenance Minder required ATF replacement, reset the Maintenance Minder (see **MAINTENANCE MINDER™**), and this procedure is complete. If the Maintenance Minder did not require you to replace the ATF, go to step 16.
16. Connect the HDS to the DLC (A) located under the driver's side of the dashboard.

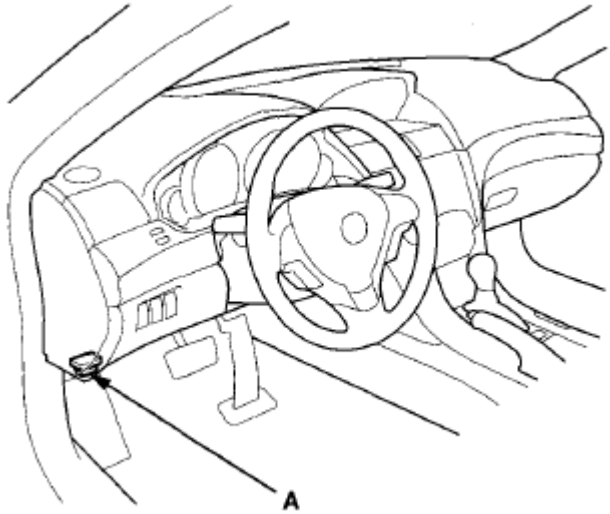


Fig. 202: Identifying Data Link Connector Location

Courtesy of AMERICAN HONDA MOTOR CO., INC.

17. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode. Make sure the HDS communicates with the PCM. If it does not, go to the DLC circuit troubleshooting (see **DLC CIRCUIT TROUBLESHOOTING**).
18. Select GAUGES in the BODY ELECTRICAL with the HDS.
19. Select ADJUSTMENT in the GAUGES with the HDS.
20. Select MAINTENANCE MINDER in the ADJUSTMENT with the HDS.
21. Select RESET in the MAINTENANCE MINDER with the HDS.
22. Select MAINTENANCE SUB ITEM 3 RESET in the RESET with the HDS, and reset the ATF life with the HDS.

TRANSMISSION REMOVAL

Special Tools Required

- Engine Support Hanger, A and Reds AAR-T1256*
- 2008 V6 Attachment Arm SIL02C000033*
- Engine Hanger Balance Bar VSB02C000019*
- Subframe Adapter VSB02C000016*

*: Available through the Acura Tool and Equipment Program 888-424-6857.

NOTE:

- **Use fender covers to avoid damaging painted surfaces.**
- **Special tool Reds engine support hanger AAR-T1256 must be used with the side engine mount installed.**

1. Remove the engine compartment covers (see **ENGINE COMPARTMENT COVER REPLACEMENT**).
2. Disconnect the support strut from the pivot ball on both sides (bolted to the hood). Raise and secure the hood in a vertical position. Remove the passenger's side pivot ball and install it into the lower threaded hole, then reattach the support strut.

NOTE: Do not attempt to close the hood with the support strut in the vertical position; it will damage the support strut and the hood.

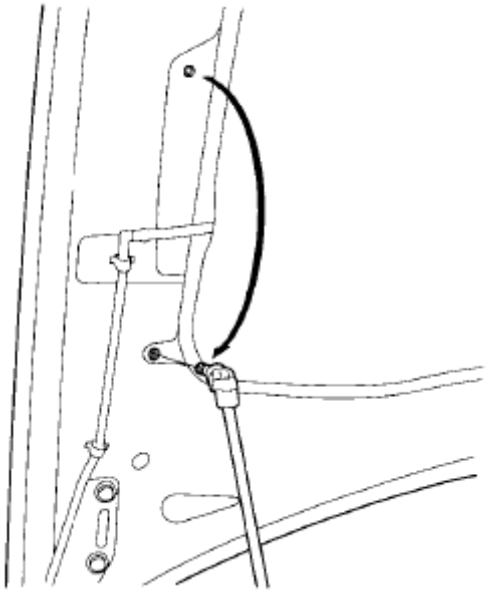


Fig. 203: Installing Pivot Ball Into Lower Threaded Hole And Reattach Support Strut
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Do the battery removal procedure (see **BATTERY REMOVAL AND INSTALLATION**).
4. Remove the air cleaner (see **THROTTLE BODY CLEANING**).
5. Remove the strut brace (see **FRAME BRACE REPLACEMENT**).
6. Remove the steering joint cover (A).

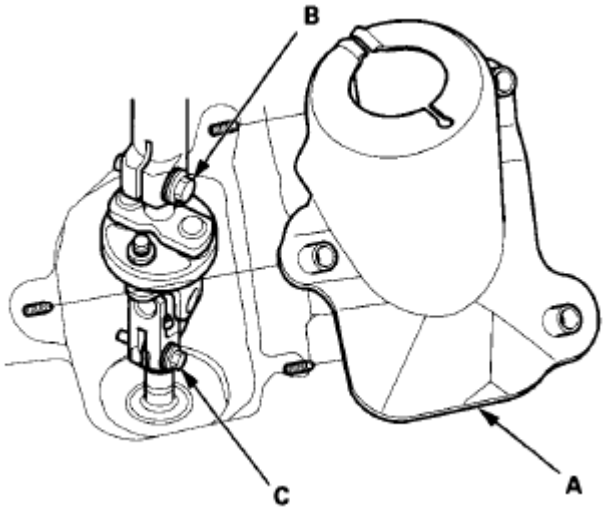


Fig. 204: Identifying Steering Joint Cover, Upper And Lower Steering Joint Bolt
Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Loosen the upper steering joint bolt (B) and the lower steering bolt (C).
8. Center the steering wheel spokes, and install a commercially available steering wheel holder tool (A).

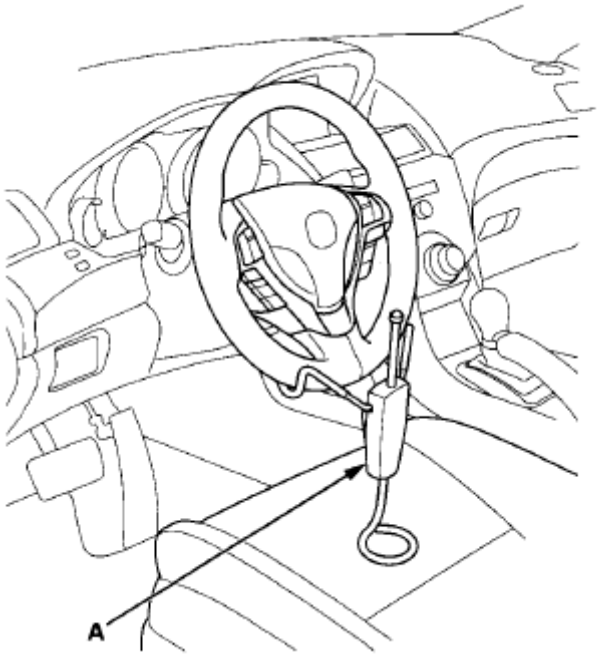


Fig. 205: Holding Steering Wheel Using Holder Tool
Courtesy of AMERICAN HONDA MOTOR CO., INC.

9. Remove the lower steering joint bolt (A). Disconnect the steering joint (B) by sliding the steering joint into the column shaft (C). Tighten the upper steering joint bolt (D) to hold the steering joint in place.

NOTE: Do not disconnect the steering joint from the column shaft.

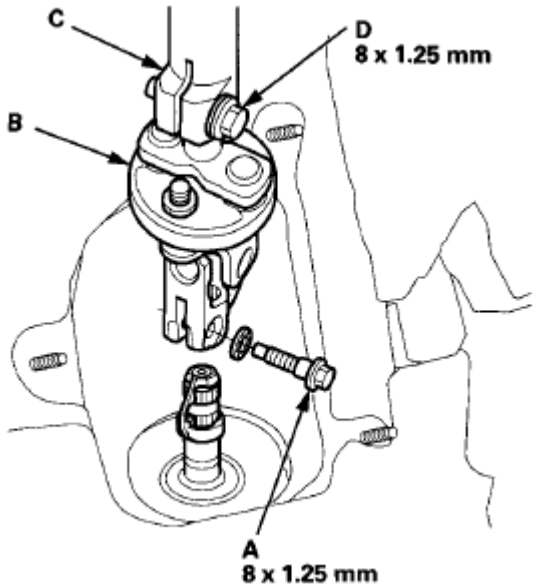


Fig. 206: Identifying Lower Steering Joint Bolt, Steering Joint, Column Shaft And Upper Steering Joint Bolt
Courtesy of AMERICAN HONDA MOTOR CO., INC.

10. Remove the center guide (A) (if equipped) from the top of the pinion shaft (B), and discard it.

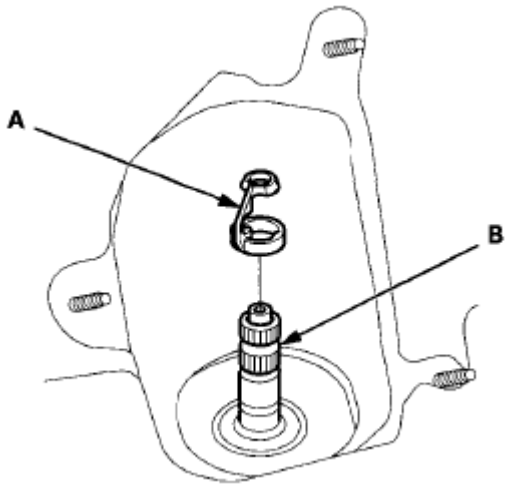


Fig. 207: Identifying Center Guide And Pinion Shaft
Courtesy of AMERICAN HONDA MOTOR CO., INC.

11. Wrap vinyl tape over the splines on the pinion shaft.
12. Remove the ATF dipstick, then remove the starter (see **STARTER REMOVAL AND INSTALLATION**).
13. Remove the bolt (A) securing the harness cover (B), and remove the harness clamp (C).

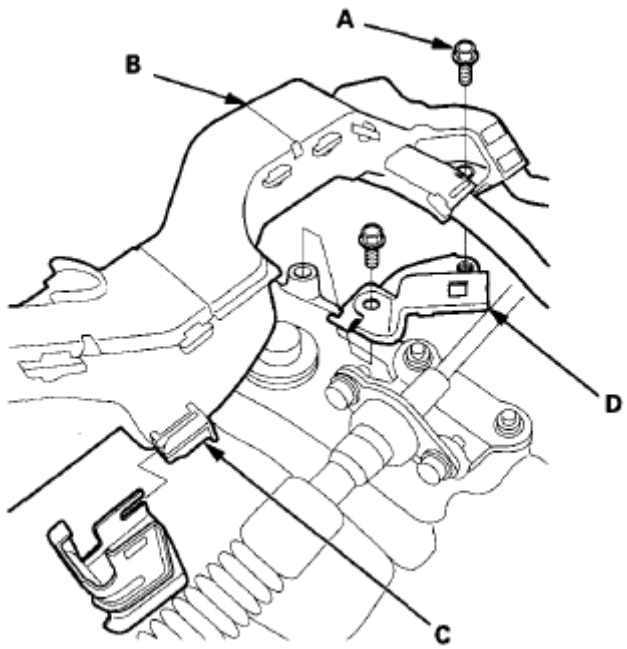


Fig. 208: Identifying Bolt, Harness Cover, Clamp And Clamp Bracket
Courtesy of AMERICAN HONDA MOTOR CO., INC.

14. Remove the clamp bracket (D).
15. Remove the harness clamp (A), and remove the clamp bracket (B).

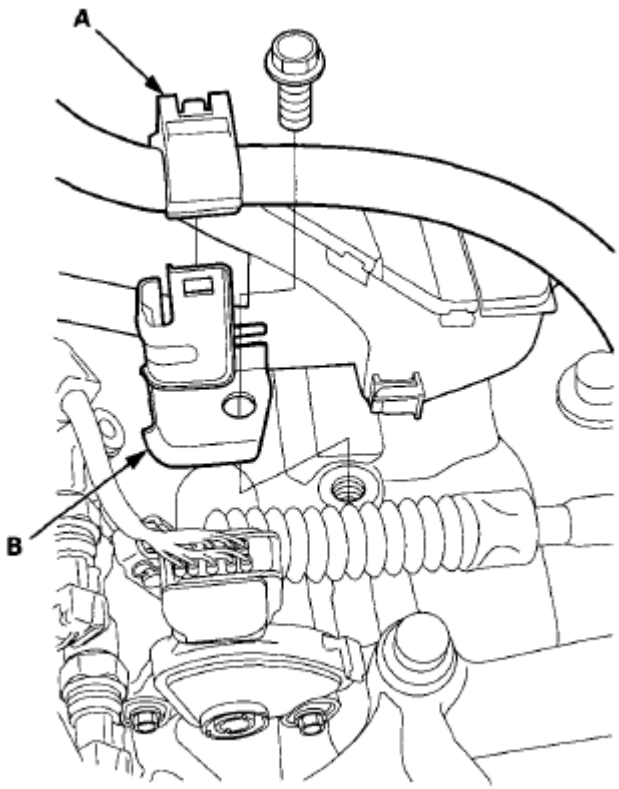


Fig. 209: Identifying Harness Clamp And Clamp Bracket
Courtesy of AMERICAN HONDA MOTOR CO., INC.

16. Remove the spring clip (A) and the control pin (B), then separate the shift cable end (C) from the selector control lever (D).

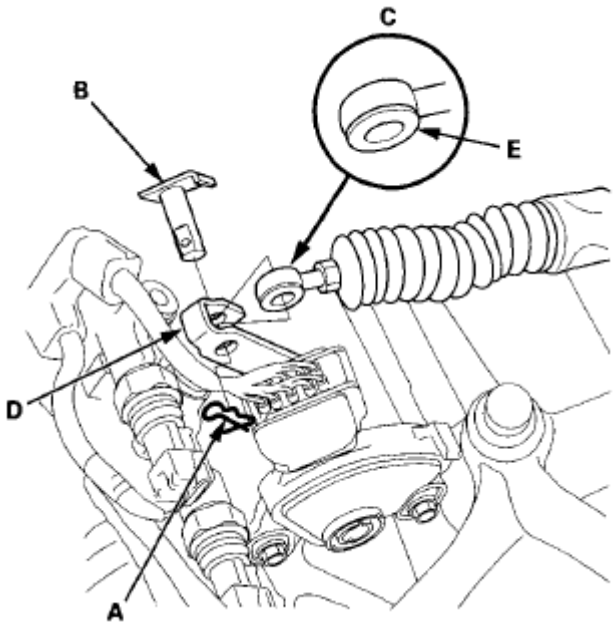


Fig. 210: Identifying Spring Clip, Control Pin, Shift Cable End And Selector Control Lever
Courtesy of AMERICAN HONDA MOTOR CO., INC.

17. Check the bushing (E) in the shift cable end for proper fit and wear. If the bushing is loose or worn, replace the shift cable (see **SHIFT CABLE REPLACEMENT**).
18. Remove the nuts (A) securing the shift cable bracket (B).

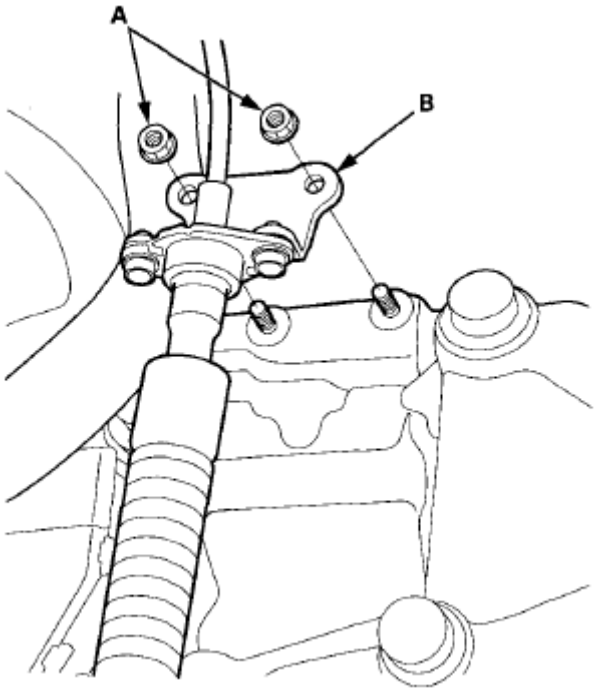


Fig. 211: Identifying Nuts And Shift Cable Bracket
Courtesy of AMERICAN HONDA MOTOR CO., INC.

19. Disconnect these connectors:
    - Shift solenoid valve A connector (A)
    - Shift solenoid valve B connector (B)
    - Shift solenoid valve C connector (C)
    - Line pressure solenoid valve A connector (D)

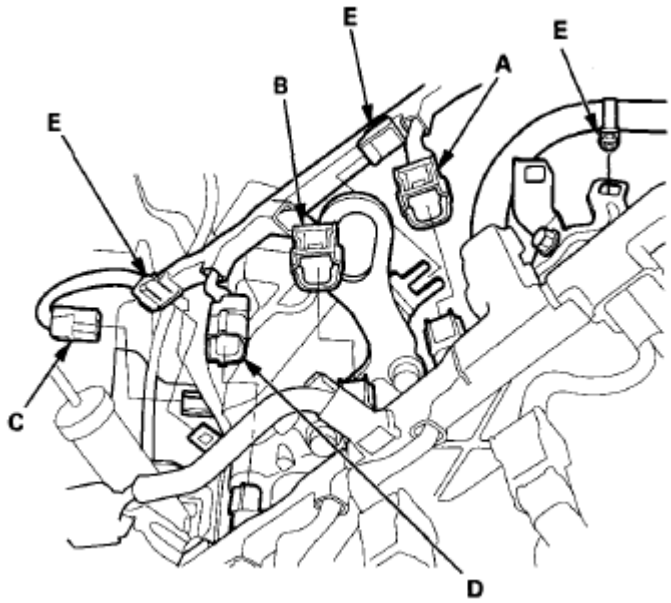


Fig. 212: Identifying Shift Solenoid Valve A, B And C Connector And Line Pressure Solenoid Valve A Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

20. Remove the harness clamps (E).
21. Disconnect these connectors:
    - A/T clutch pressure control solenoid valve A connector (A)
    - A/T clutch pressure control solenoid valve B connector (B)
    - A/T clutch pressure control solenoid valve C connector (C)
    - A/T clutch pressure control solenoid valve D connector (D)
    - Transmission fluid pressure switch B (3rd clutch) connector (E)
    - Transmission fluid pressure switch E (6th clutch) connector (F)
    - Line pressure switch connector (G)
    - Transmission range switch connector (H)

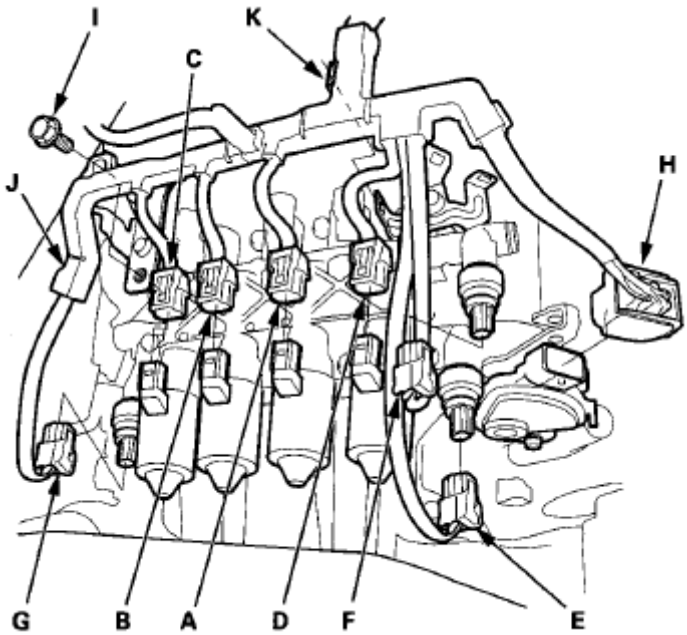


Fig. 213: Identifying Different Connectors, Bolts, Harness Cover And Harness Clamp
Courtesy of AMERICAN HONDA MOTOR CO., INC.

22. Remove the bolt (I) securing the harness cover (J), and remove the harness clamp (K).
23. Remove the harness cover bracket (A).

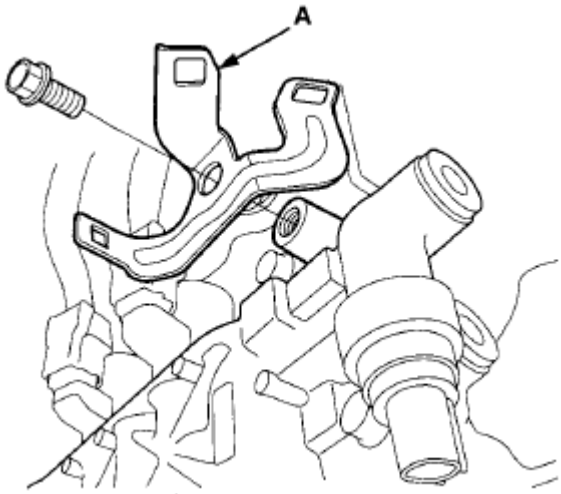


Fig. 214: Identifying Cover Bracket
Courtesy of AMERICAN HONDA MOTOR CO., INC.

24. Disconnect the transmission fluid pressure switch A (2nd clutch) connector (A) and the transmission fluid pressure switch D (5th clutch) connector (B).

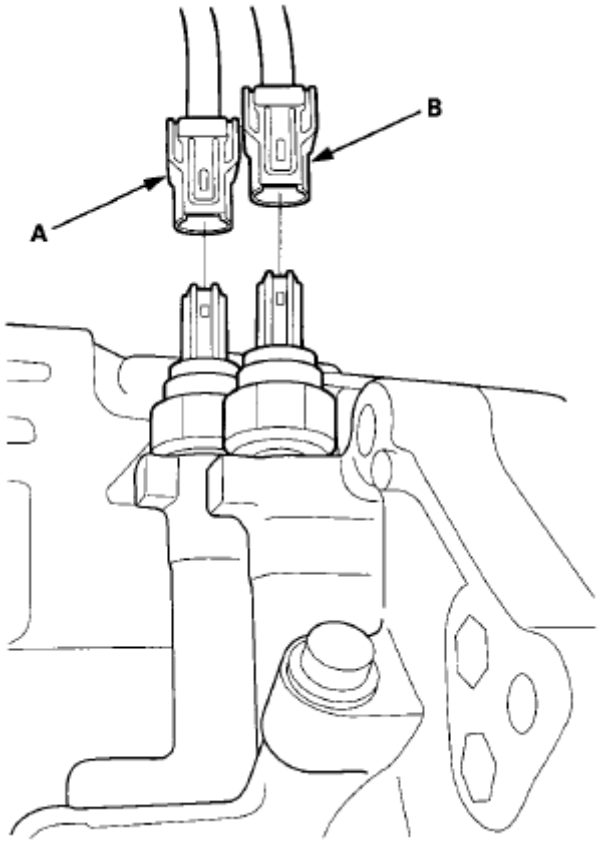


Fig. 215: Identifying Transmission Fluid Pressure Switch A Connector And Transmission Fluid Pressure Switch D Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

25. Remove the bolt (A) securing the connector bracket (B) from the front cylinder head; use the bracket bolt hole (C) to attach the engine hanger balance bar front arm.

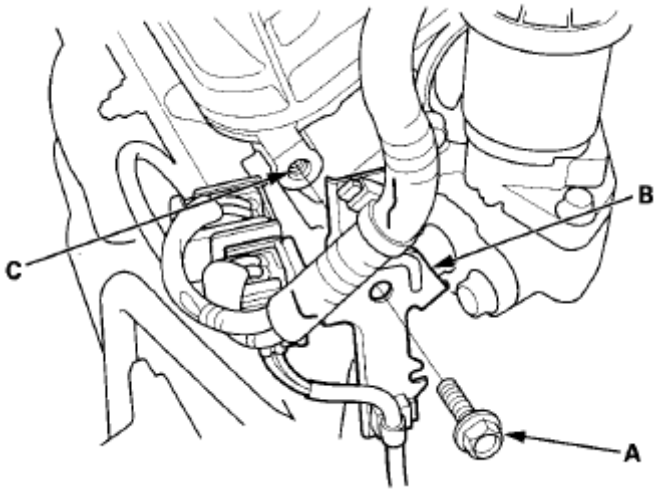


Fig. 216: Identifying Bolt, Connector Bracket And Bracket Bolt Hole
Courtesy of AMERICAN HONDA MOTOR CO., INC.

26. Remove the harness clamp (A), then remove the bolt (B) securing the engine mount control solenoid valve bracket (C) from the rear cylinder head; use the bracket bolt hole (D) to attach the 2008 V6 attachment arm.

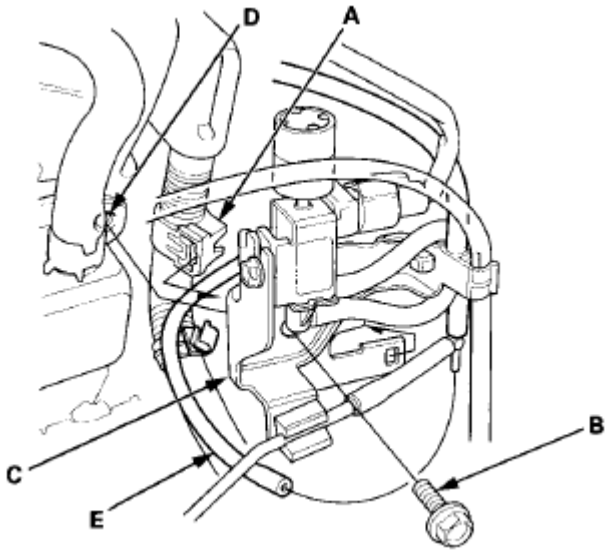


Fig. 217: Identifying Harness Clamp, Bolt, Vacuum Hose And Control Solenoid Valve Bracket
Courtesy of AMERICAN HONDA MOTOR CO., INC.

27. Disconnect the vacuum hose (E).
28. Install the engine hanger balance bar (VSB02C000019). Attach the front arm (A) to the front cylinder head with a 10 mm (0.39 in) spacer (B) and a 10 x 1.25 mm bolt (C). Remove the rear arm from the engine hanger balance bar, then install the 2008 V6 attachment arm (SIL02C000033). Attach the 2008 V6 attachment arm to the rear cylinder head with a 10 mm (0.39 in) spacer (D) and an 8 x 1.25 mm bolt (E).

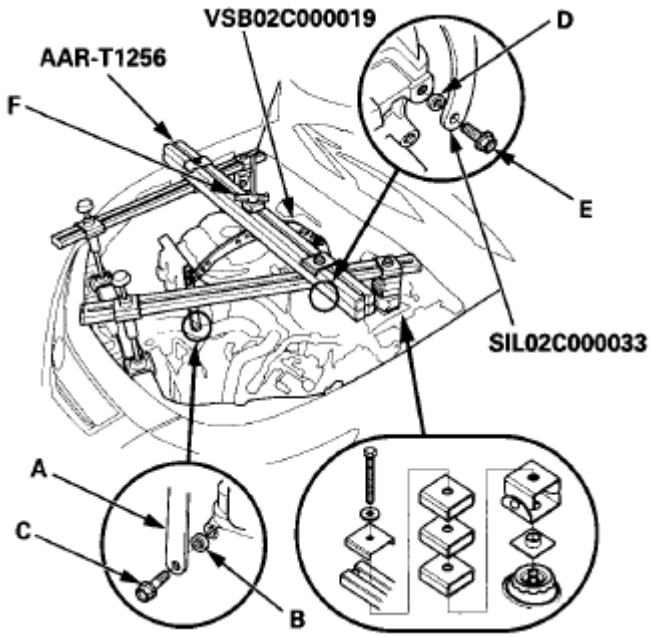


Fig. 218: Identifying Front Arm, Spacer And Bolt Of Engine Hanger Balance Bar
Courtesy of AMERICAN HONDA MOTOR CO., INC.

29. Install the engine support hanger (AAR-T1256) onto the vehicle as shown, and attach the hook to the slotted hole in the engine hanger balance bar. Tighten the wing nut (F) by hand, and lift and support the transmission.

NOTE:

- **Be careful when working around the windshield.**
- **AAR-T1256 two sets required for stacking two cross section bars.**

30. Remove the upper transmission housing mounting bolts.

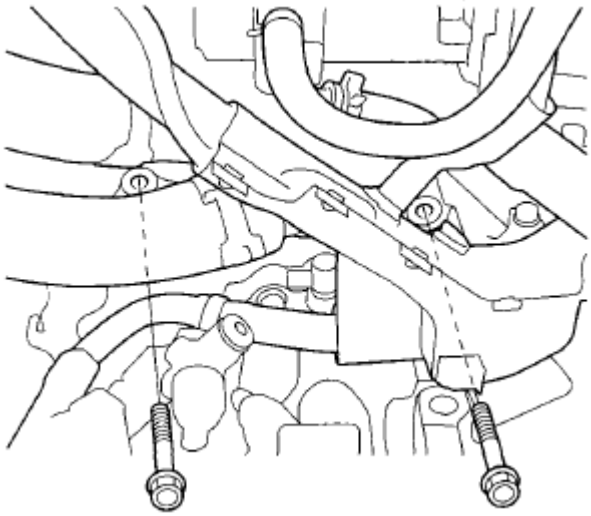


Fig. 219: Removing Upper Transmission Housing Mounting Bolts

Courtesy of AMERICAN HONDA MOTOR CO., INC.

31. Remove the upper transmission mount bracket bolts (A) (B), and remove the bolt (C) securing the clamp bracket.

NOTE: Do not remove the bolt (D) from the upper transmission mount. If the bolt is removed, the upper transmission mount must be replaced as an assembly.

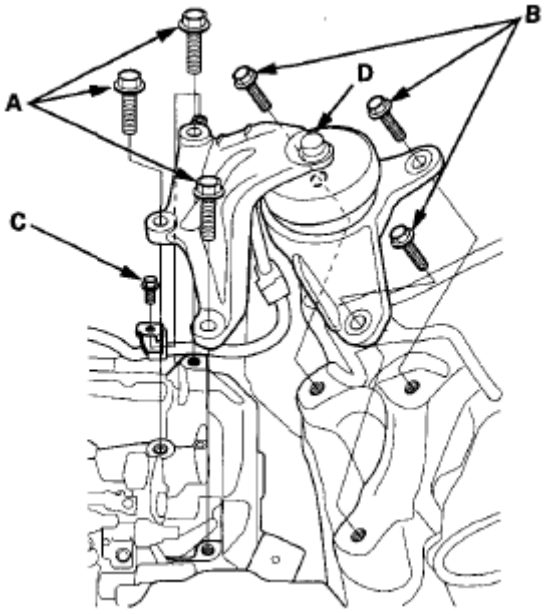


Fig. 220: Identifying Bracket Bolts And Transmission Assembly Bolts
Courtesy of AMERICAN HONDA MOTOR CO., INC.

32. Remove the vacuum hose (A) from the vacuum pipe (B), and remove the vacuum pipe from its clamp (C).

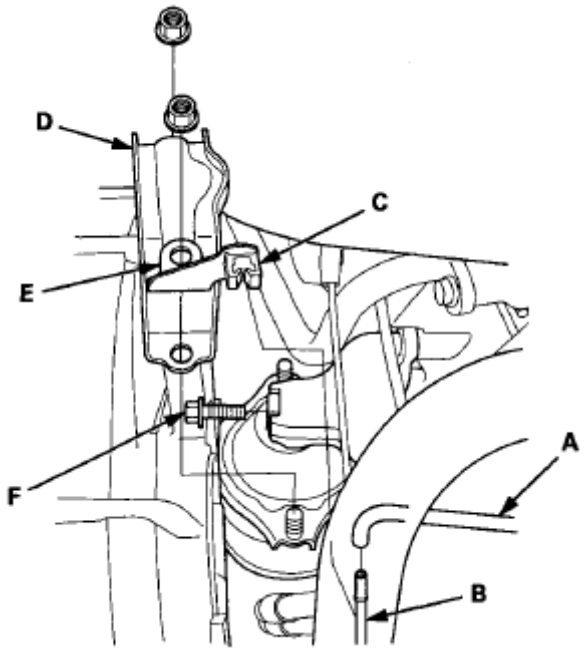


Fig. 221: Identifying Vacuum Hose, Vacuum Pipe, Front Engine Mount Bolt, Clamp Bracket And Clamp
Courtesy of AMERICAN HONDA MOTOR CO., INC.

33. Remove the front engine mount stop (D) and the clamp bracket (E), and remove the front engine mount bolt (F).
34. Remove the rear engine mount stop (A) and the heat shield (B), and remove the rear engine mount bolt (C).

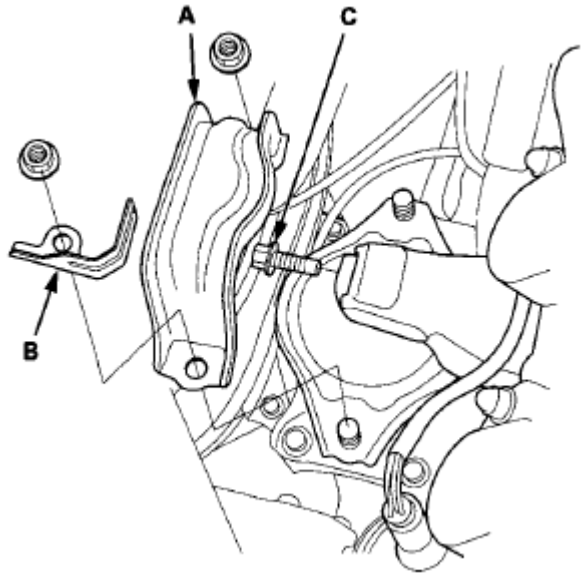


Fig. 222: Identifying Rear Engine Mount Stop, Heat Shield And Rear Engine Mount Bolt
Courtesy of AMERICAN HONDA MOTOR CO., INC.

35. Disconnect the EPS connectors (A) and remove the harness clamps (B).

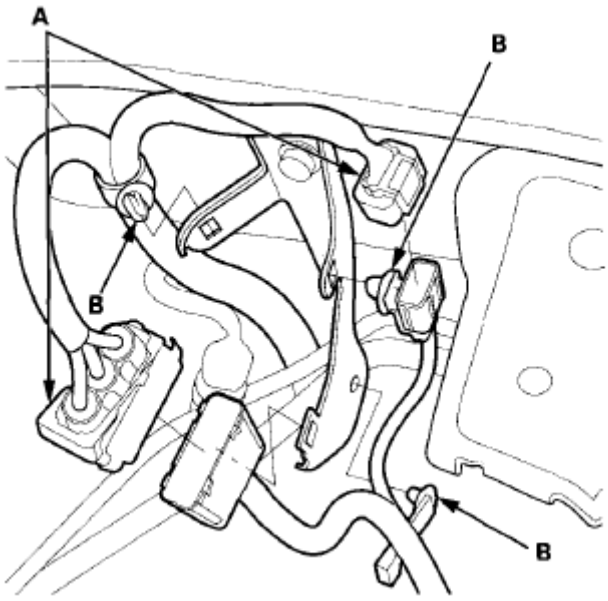


Fig. 223: Identifying EPS Connectors And Harness Clamps
Courtesy of AMERICAN HONDA MOTOR CO., INC.

36. Raise the vehicle on a lift, and make sure it is securely supported.
37. Remove the front wheels.
38. Remove the front splash shield (see **FRONT SPLASH SHIELD REPLACEMENT**).
39. Remove the drain plug (A), and drain the ATF.

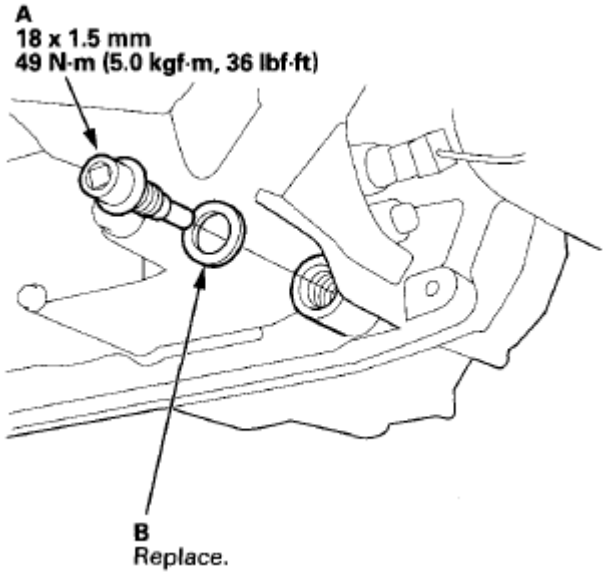


Fig. 224: Identifying Drain Plug And Sealing Washer With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

40. Reinstall the drain plug with a new sealing washer (B).
41. Disconnect the ATF temperature sensor connector (A), then remove the harness clamp (B).

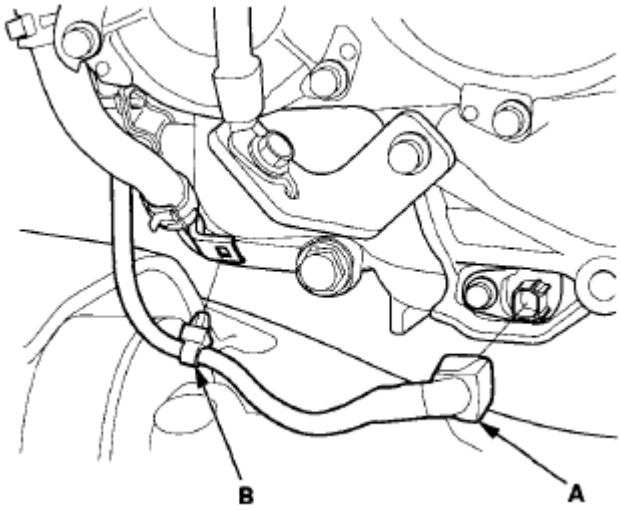


Fig. 225: Identifying ATF Temperature Sensor Connector And Harness Clamp
Courtesy of AMERICAN HONDA MOTOR CO., INC.

42. Disconnect the transmission fluid pressure switch C (4th clutch) connector (A), then remove the harness clamp (B).

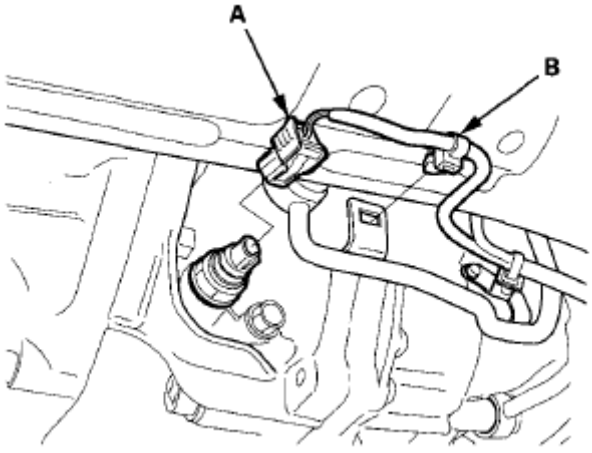


Fig. 226: Identifying Transmission Fluid Pressure Switch C (4th Clutch) Connector And Harness Clamp
Courtesy of AMERICAN HONDA MOTOR CO., INC.

43. Disconnect the input shaft (mainshaft) speed sensor connector (A) and the output shaft (countershaft) speed sensor connector (B), then remove the harness clamps (C).

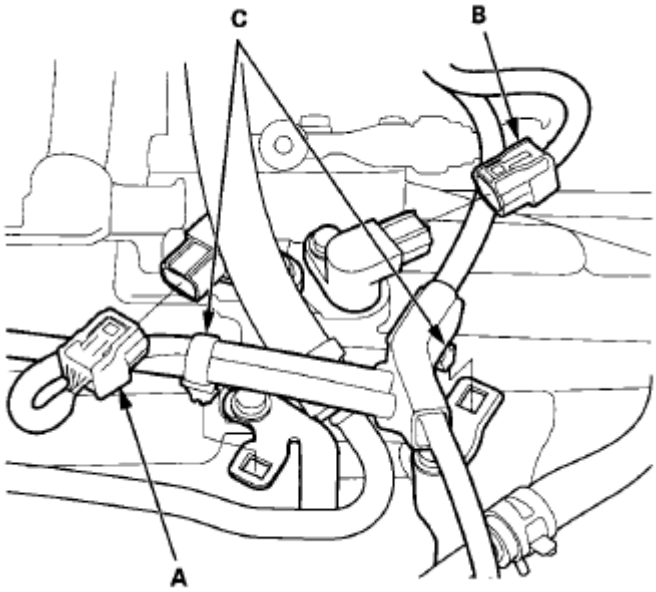


Fig. 227: Identifying Input And Output Shaft Speed Sensor Connectors And Harness Clamps
Courtesy of AMERICAN HONDA MOTOR CO., INC.

44. Remove the ATF cooler hoses (A) from the ATF cooler lines (B). Turn the ends of the cooler hoses up to prevent ATF from flowing out, then plug the cooler hoses and the lines.

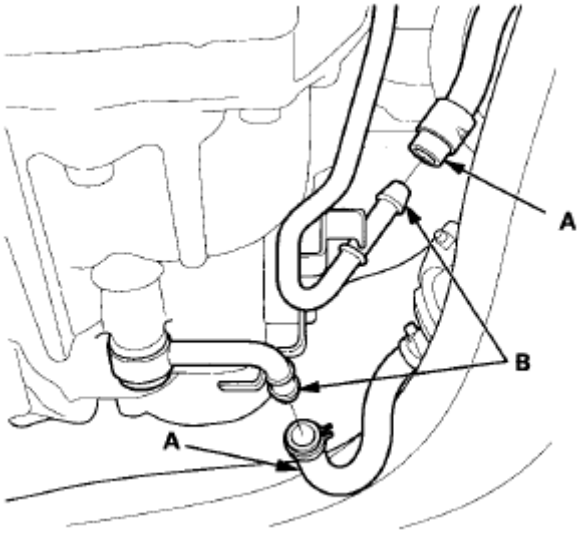


Fig. 228: Identifying ATF Cooler Hoses And Cooler Lines
Courtesy of AMERICAN HONDA MOTOR CO., INC.

45. Remove the ATF cooler hoses (A) from the ATF cooler lines (B). Turn the ends of the cooler hoses up to prevent ATF from flowing out, then plug the cooler hoses and the lines.

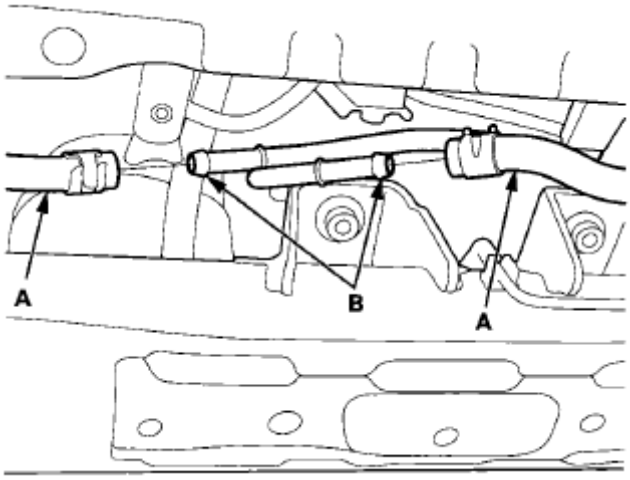


Fig. 229: Identifying ATF Cooler Hoses And Cooler Lines
Courtesy of AMERICAN HONDA MOTOR CO., INC.

46. Remove the front subframe stiffener.

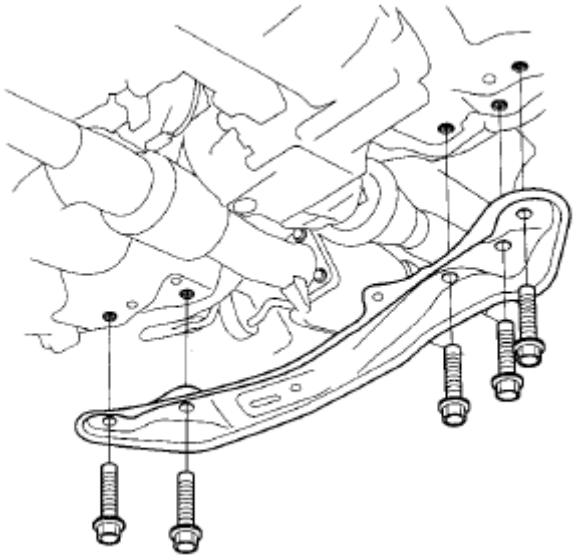


Fig. 230: Removing Front Subframe Stiffener
Courtesy of AMERICAN HONDA MOTOR CO., INC.

47. Remove exhaust pipe A and the under-floor three way catalytic converter (TWC):
    - With SH-AWD (see **J37A4 ENGINE (WITH SH-AWD)**).
    - Without SH-AWD (see **EXHAUST PIPE AND MUFFLER REPLACEMENT**).
48. With SH-AWD: Remove the propeller shaft (see **PROPELLER SHAFT REMOVAL**).
49. With SH-AWD: Disconnect the breather hose (A) from the breather pipe (B) on the transfer assembly, and remove the breather hose from the clamp (C).

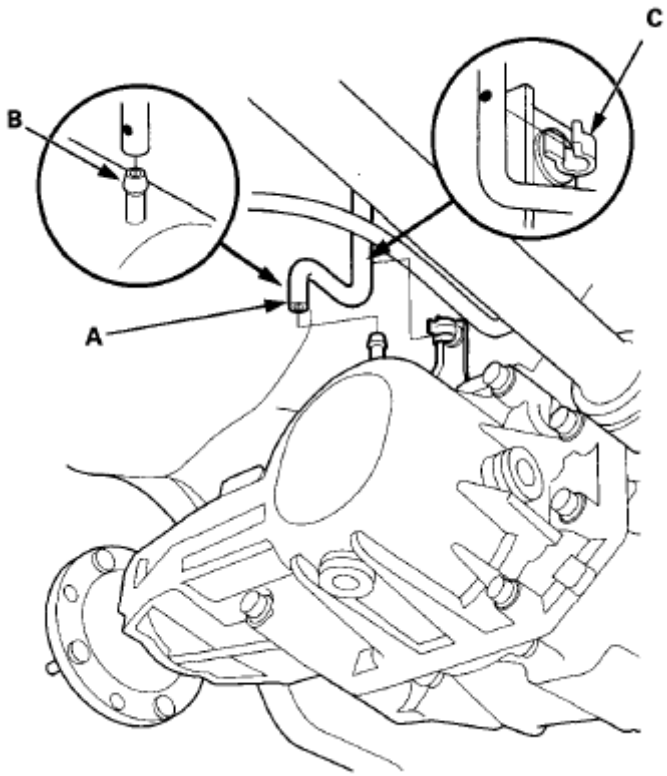


Fig. 231: Identifying Breather Hose, Breather Pipe And Clamp
Courtesy of AMERICAN HONDA MOTOR CO., INC.

50. With SH-AWD: Remove the transfer assembly from the transmission.

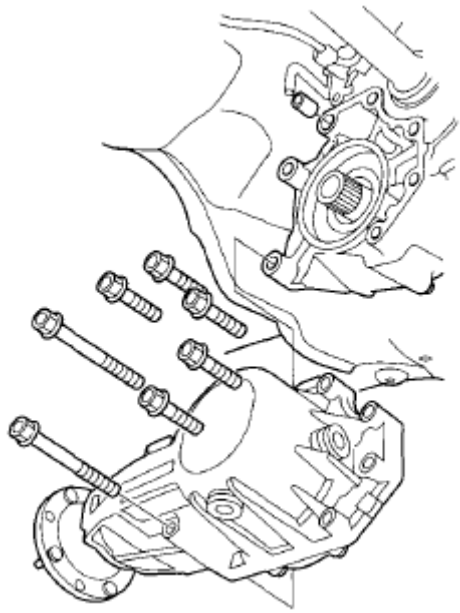


Fig. 232: Removing Transfer Assembly From Transmission
Courtesy of AMERICAN HONDA MOTOR CO., INC.

51. Remove the cotter pins (A) and the nuts (B), and separate the tie-rod end ball joints (C) from the knuckles (see **KNUCKLE/HUB/WHEEL BEARING REPLACEMENT**).

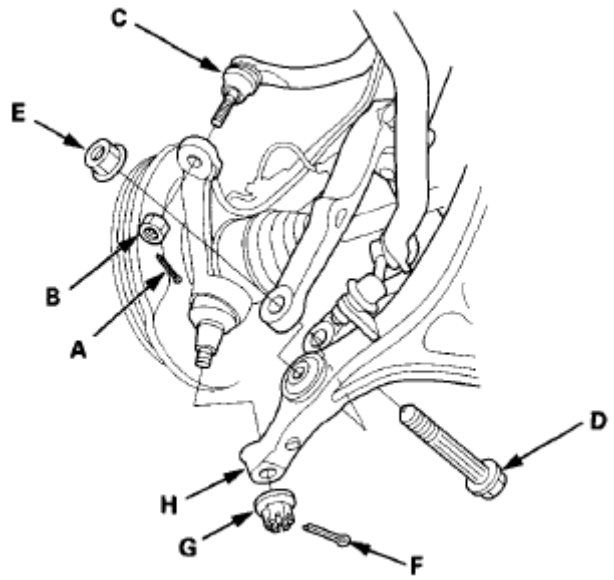


Fig. 233: Identifying Cotter Pins, Nuts, Tie-Rod End Ball Joints, Damper Fork Mounting Bolts And Nuts
Courtesy of AMERICAN HONDA MOTOR CO., INC.

52. Remove the damper fork mounting bolts (D) and nuts (E).
53. Remove the cotter pins (F) and the castle nuts (G), and separate the lower arms (H) from the knuckles (see **LOWER ARM REMOVAL/INSTALLATION**).
54. Remove the left side driveshaft from the differential and the right side driveshaft from the intermediate shaft. Coat all precision machined surfaces with clean engine oil, then put plastic bags over the driveshaft ends. Support the driveshafts on both sides with nylon straps.

NOTE: Plug the left side driveshaft hole to prevent dirt and solvent from entering the transmission.

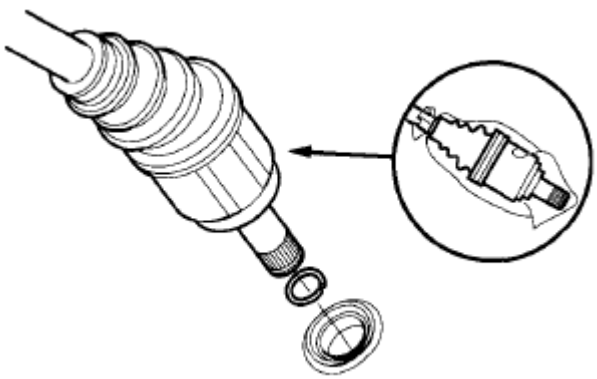


Fig. 234: Identifying Driveshafts With Nylon Straps

Courtesy of AMERICAN HONDA MOTOR CO., INC.

55. Remove the torque converter cover (A), and remove the drive plate bolts (B) (8) while rotating the crankshaft pulley.

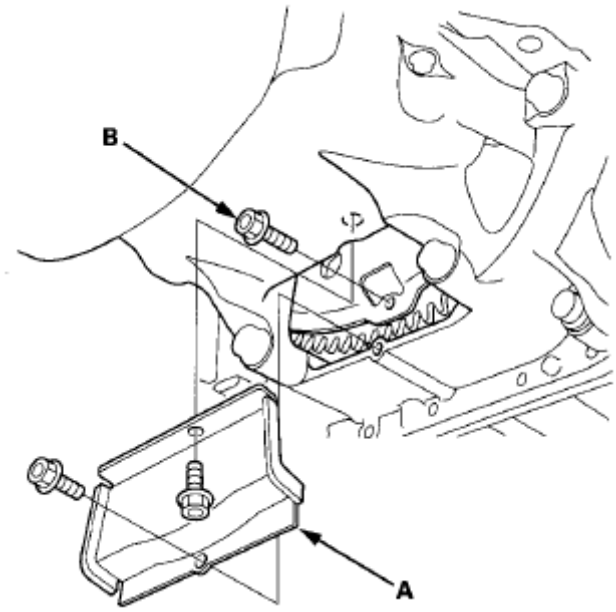


Fig. 235: Identifying Torque Converter Cover And Drive Plate Bolts
Courtesy of AMERICAN HONDA MOTOR CO., INC.

56. Remove the lower transmission mount bolts (A) and the transmission ground terminal bracket (B).

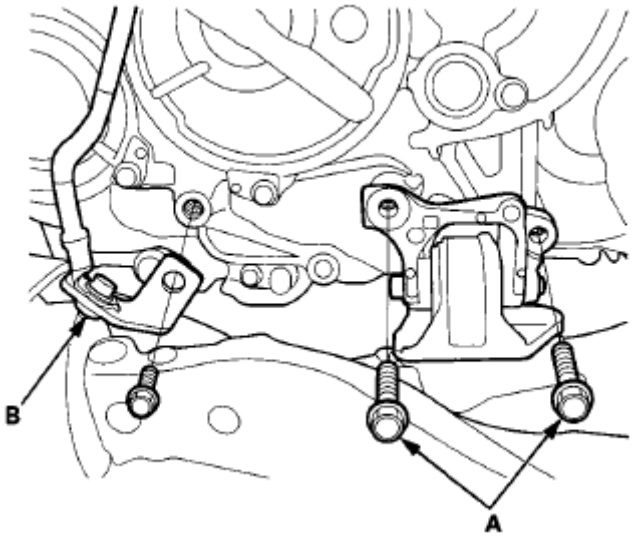


Fig. 236: Identifying Lower Transmission Mount Bolts And Transmission Ground Terminal Bracket
Courtesy of AMERICAN HONDA MOTOR CO., INC.

57. Loosen both front subframe middle mount bolts.

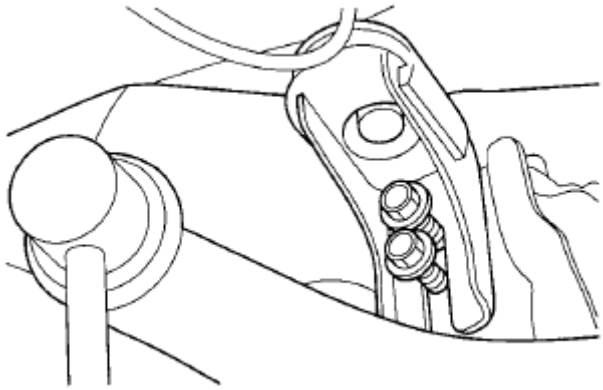


Fig. 237: Loosening Front Subframe Middle Mount Bolts
Courtesy of AMERICAN HONDA MOTOR CO., INC.

58. Attach the subframe adapter (VSB02C000016) to the front subframe by looping the strap (A) over the front of the front subframe, then secure the strap with the stop (B), then tighten the wing nut (C).

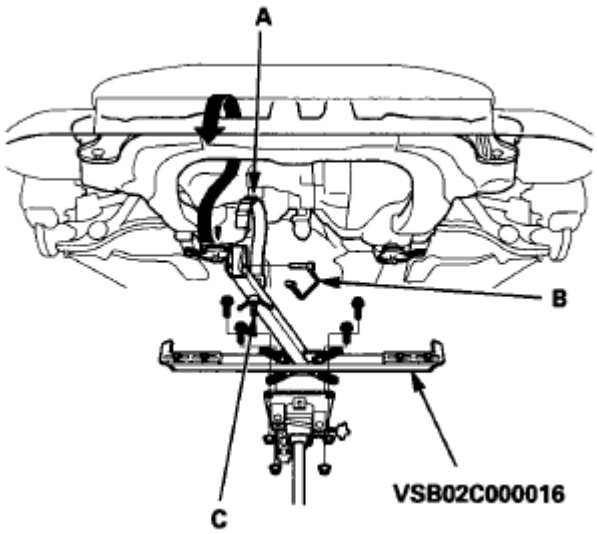


Fig. 238: Identifying Strap, Stop And Wing Nut Of Subframe Adapter
Courtesy of AMERICAN HONDA MOTOR CO., INC.

59. Raise the jack and line up the slots in the arms with the bolt holes on the corner of the jack base, then tighten the bolts.
60. Remove the four bolts securing the stiffeners (A) and the four bolts securing the front subframe (B), then lower the front subframe.

NOTE: Check that the front subframe is free of the ATF cooler hoses and the electrical wiring.

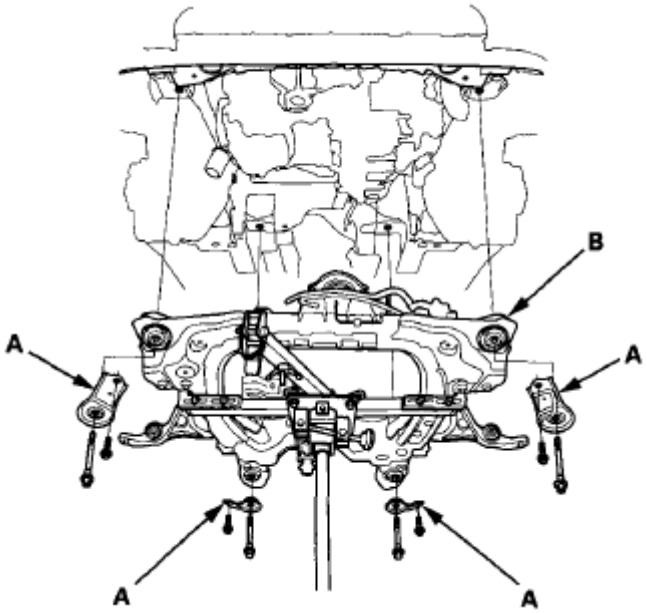


Fig. 239: Identifying Stiffeners And Front Subframe
Courtesy of AMERICAN HONDA MOTOR CO., INC.

61. Support the transmission with a transmission jack.
62. Remove the intermediate shaft (A). Coat all precision machined surfaces with clean engine oil, then put plastic bags over intermediate shaft ends.

NOTE: Plug the intermediate shaft hole (B) to prevent dirt and solvent from entering the transmission.

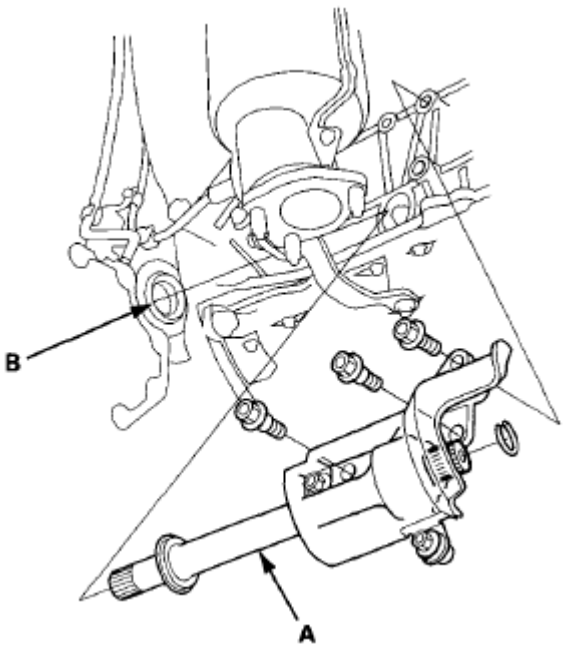


Fig. 240: Identifying Intermediate Shaft And Intermediate Shaft Hole
Courtesy of AMERICAN HONDA MOTOR CO., INC.

63. Remove the front engine mount bracket.

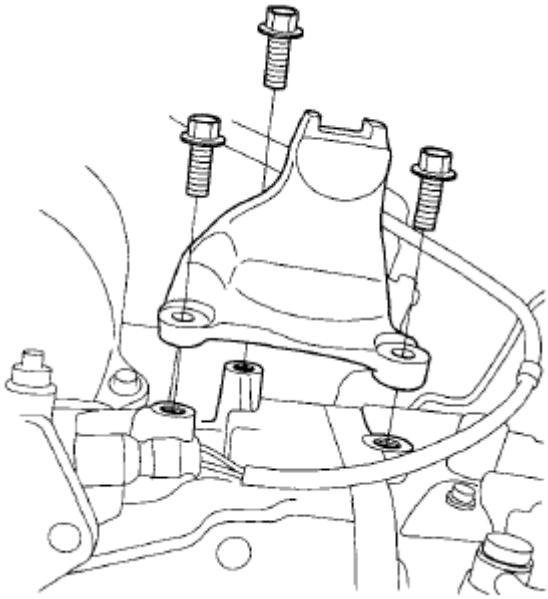


Fig. 241: Removing Front Engine Mount Bracket
Courtesy of AMERICAN HONDA MOTOR CO., INC.

64. Remove the crankshaft position (CKP) sensor cover (A), and disconnect the CKP sensor connector (B).

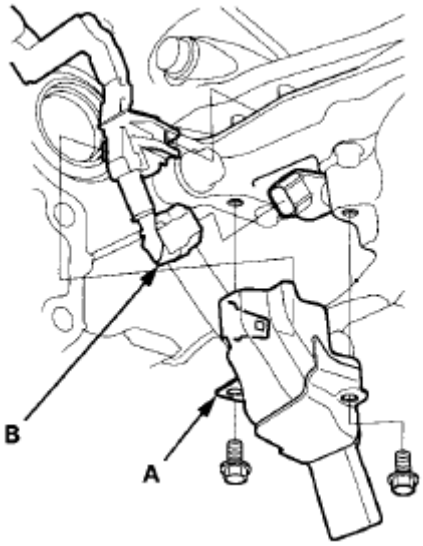


Fig. 242: Identifying Crankshaft Position (CKP) Sensor Cover And CKP Sensor Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

65. Remove the lower transmission housing mounting bolts.

Front side

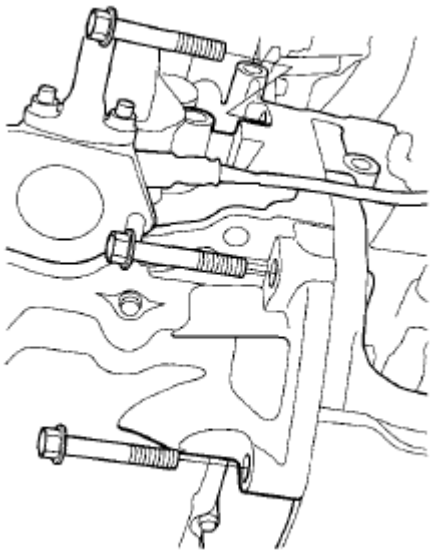


Fig. 243: Removing Lower Transmission Housing Mounting Bolts (Front Side)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Rear side

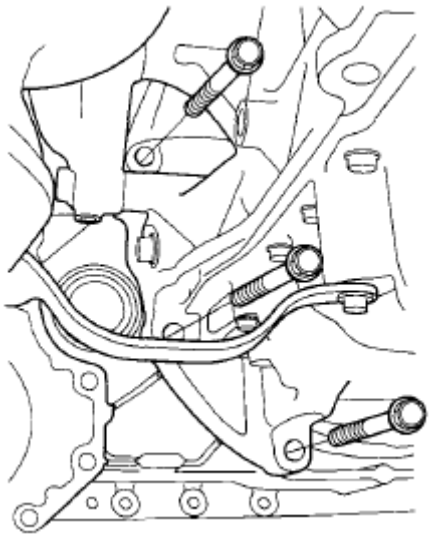


Fig. 244: Removing Lower Transmission Housing Mounting Bolts (Rear Side)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

66. Lower the transmission by loosening the wing nut of the engine support hanger, and tilt the engine just enough for the transmission to clear its end from the side frame.
67. Slide the transmission away from the engine to remove it from the vehicle.
68. Remove the torque converter (A), the O-ring (B), and the dowel pins (C).

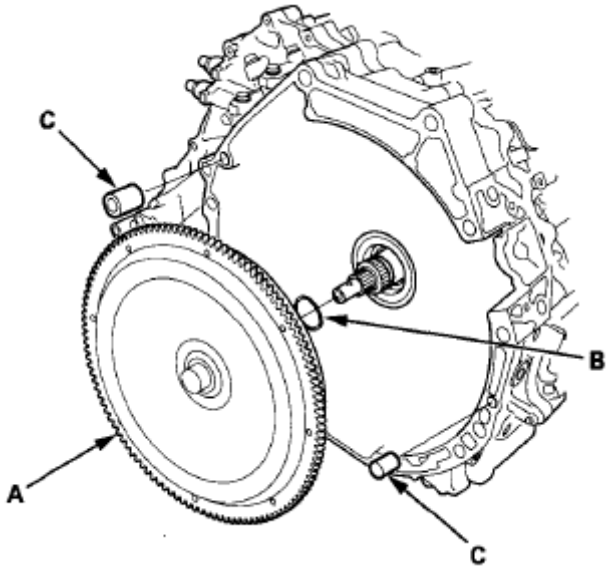


Fig. 245: Identifying Torque Converter, O-Ring And Dowel Pins
Courtesy of AMERICAN HONDA MOTOR CO., INC.

69. Inspect the drive plate, and replace it if it is damaged (see **DRIVE PLATE REMOVAL AND INSTALLATION**).

DRIVE PLATE REMOVAL AND INSTALLATION

1. Remove the transmission assembly (see **TRANSMISSION REMOVAL**).
2. Remove the drive plate (A) and the washer (B) from the engine.

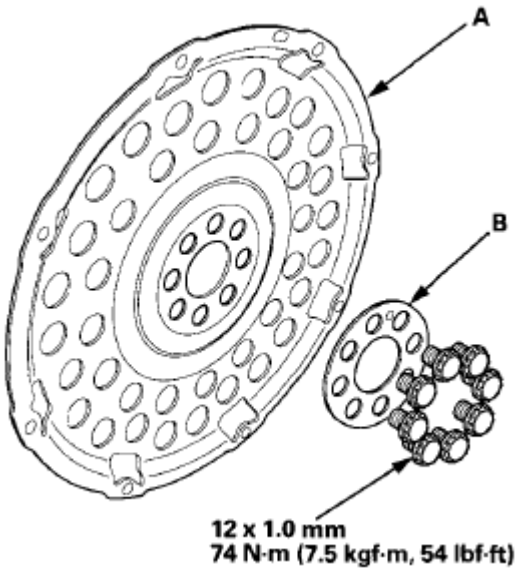


Fig. 246: Identifying Drive Plate And Washer With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Install the drive plate and the washer on the engine crankshaft, and tighten the eight bolts in a crisscross pattern in at least two steps.
4. Install the transmission assembly (see **TRANSMISSION INSTALLATION**).

TRANSMISSION INSTALLATION

Special Tools Required

- 2008 V6 Attachment Arm SIL02C000033
- Engine Support Hanger, A and Reds AAR-T1256*
- Engine Hanger Balance Bar VSB02C000019*
- Subframe Adapter VSB02C000016*

*: Available through the Acura Tool and Equipment Program 888-424-6857.

NOTE: Use fender covers to avoid damaging painted surfaces.

1. If you did not clean the ATF cooler after removing the transmission, and you are installing an overhauled or remanufactured transmission, clean the ATF cooler (see **ATF COOLER CLEANING**), failure to do this can cause a repeat transmission failure.
2. Install a new O-ring (A) on the torque converter (B), then install the torque converter on the mainshaft (C).

NOTE: Make sure the torque converter is fully engaged on the mainshaft, the stator shaft, and the ATF pump drive gear. Failure to do so will result in severe transmission or engine damage.

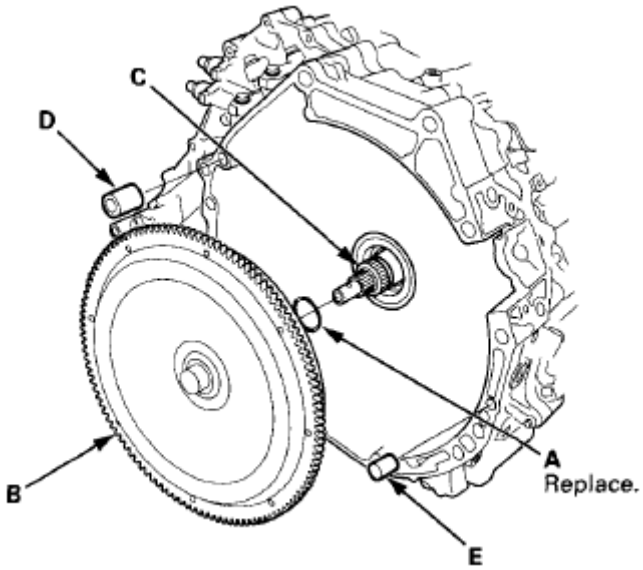


Fig. 247: Identifying O-Ring, Torque Converter, Dowel Pins And Mainshaft

Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Install the 14x20 mm dowel pin (D) and the 10x20 mm dowel pin (E) in the torque converter housing.
4. Place the transmission on the jack, and raise it to the engine level.
5. Attach the transmission to the engine, and install the lower transmission housing mounting bolts.

Front side

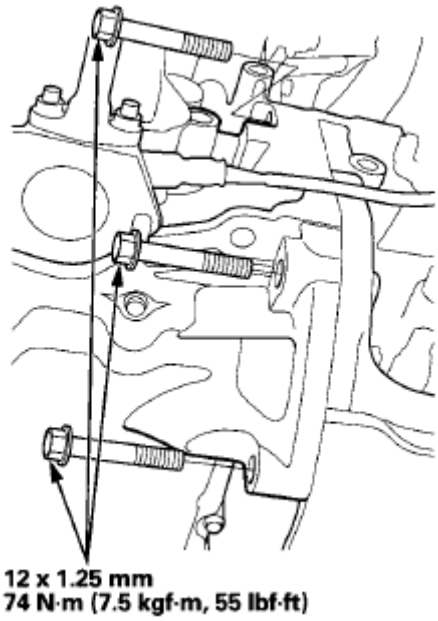


Fig. 248: Installing Lower Transmission Housing Mounting Bolts With Torque Specifications (Front Side)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Rear side

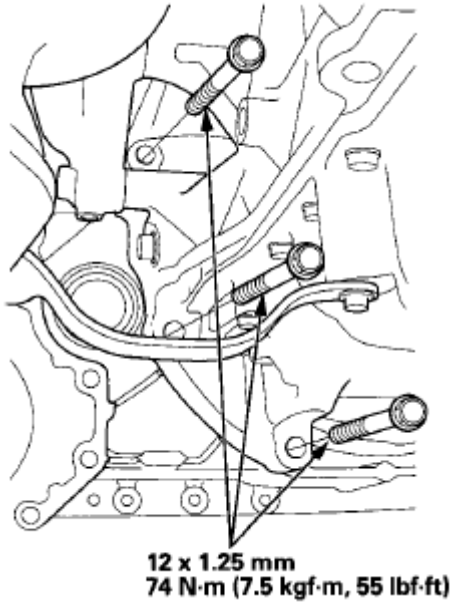


Fig. 249: Installing Lower Transmission Housing Mounting Bolts With Torque Specifications (Rear Side)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Connect the crankshaft position (CKP) sensor connector (A), and install the CKP sensor cover (B).

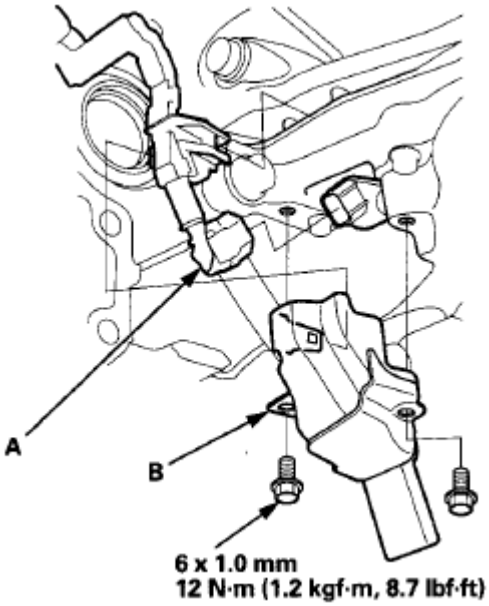


Fig. 250: Identifying Crankshaft Position (CKP) Sensor Connector And CKP Sensor Cover With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Install the front engine mount bracket with new bolts.

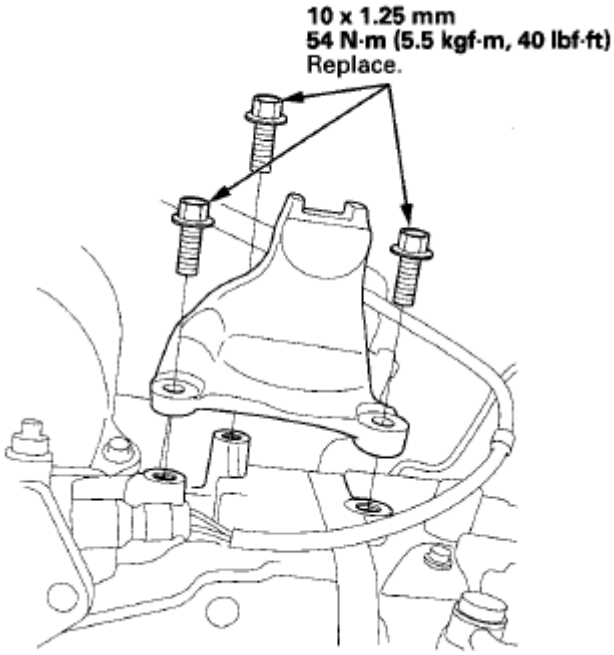


Fig. 251: Installing Front Engine Mount Bracket With New Bolts With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

8. Install a new set ring (A) on the intermediate shaft (B).

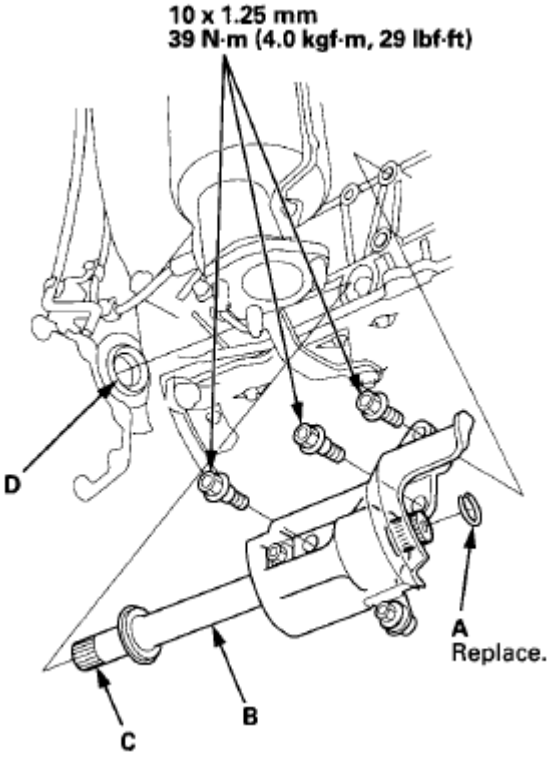


Fig. 252: Identifying Set Ring And Intermediate Shaft With Torque Specifications

Courtesy of AMERICAN HONDA MOTOR CO., INC.

9. Clean the areas where the intermediate shaft contacts the transmission (differential) with solvent, and dry with compressed air. Apply ATF to the intermediate shaft splines (C), then install the intermediate shaft, be sure not to allow dust or other foreign particles to enter the transmission.

NOTE: Insert the intermediate shaft carefully to prevent damaging the oil seal (D).

10. Install a new set ring (A) on the left driveshaft (B).

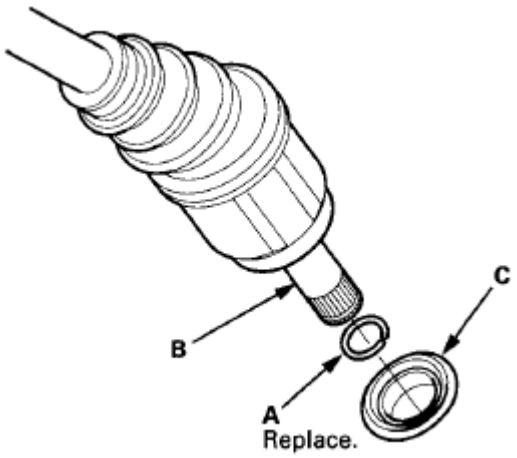


Fig. 253: Identifying Set Ring And Left Driveshaft
Courtesy of AMERICAN HONDA MOTOR CO., INC.

11. Clean the areas where the left driveshaft contacts the transmission (differential) with solvent, and dry with compressed air. Then install the left driveshaft, be sure not to allow dust or other foreign particles to enter the transmission. Turn the steering knuckle fully outward, and slide the driveshaft into the differential until you feel its set ring fully engages the side gear.

NOTE: Insert the left driveshaft horizontally to prevent damaging the oil seal (C).

12. Apply the recommended grease to the right driveshaft inboard joint splines (see **FRONT DRIVESHAFT INSTALLATION**).
13. Slide the right driveshaft over the intermediate shaft splines until you feel the driveshaft fully engages the intermediate shaft set ring.
14. Set the subframe adapter (VSB02C000016) to the front subframe by looping the strap (A) over the front of the front subframe, then secure the strap with the stop (B), then tighten the wing nut (C).

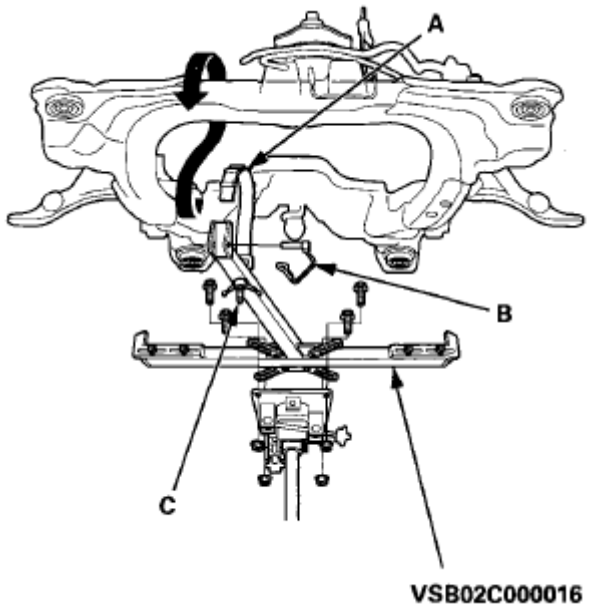


Fig. 254: Identifying Strap, Stop And Wing Nut
Courtesy of AMERICAN HONDA MOTOR CO., INC.

15. Raise the front subframe up to the body, then loosely install new front subframe mounting bolts (A), the front stiffener mounting bolts (B), and new rear stiffener mounting bolts (C).

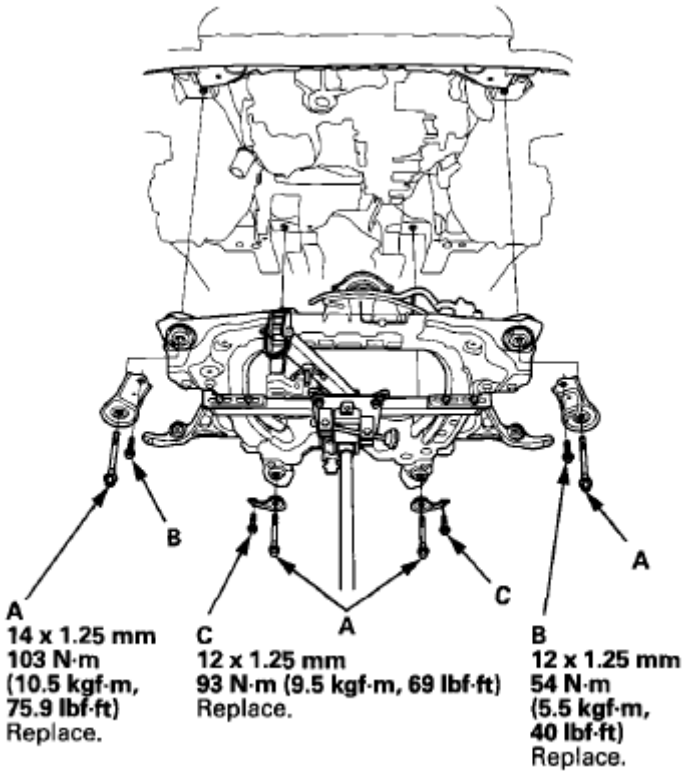


Fig. 255: Identifying Front Subframe Mounting Bolts, Front Stiffener Mounting Bolts And Rear

Stiffener Mounting Bolts With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

16. Align the front subframe with the subframe alignment pin (see **SUBFRAME REPLACEMENT**).
17. Remove the jack and the subframe adapter.
18. Replace the front subframe middle mount bolts, then tighten the bolts to the specified torque.

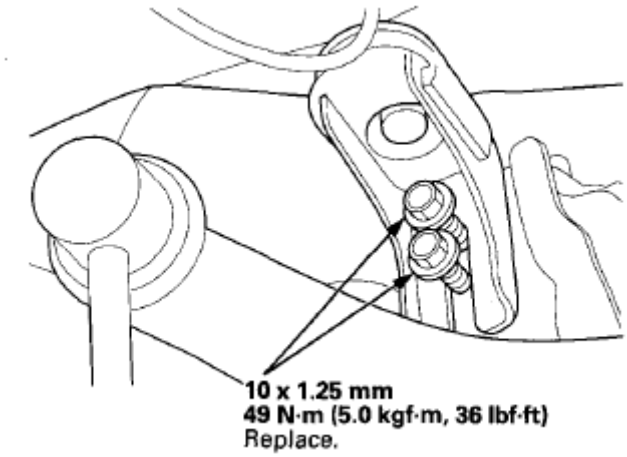


Fig. 256: Tightening Bolts To Specified Torque With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

19. Install the lower transmission mount bolts (A) and the transmission ground terminal bracket (B).

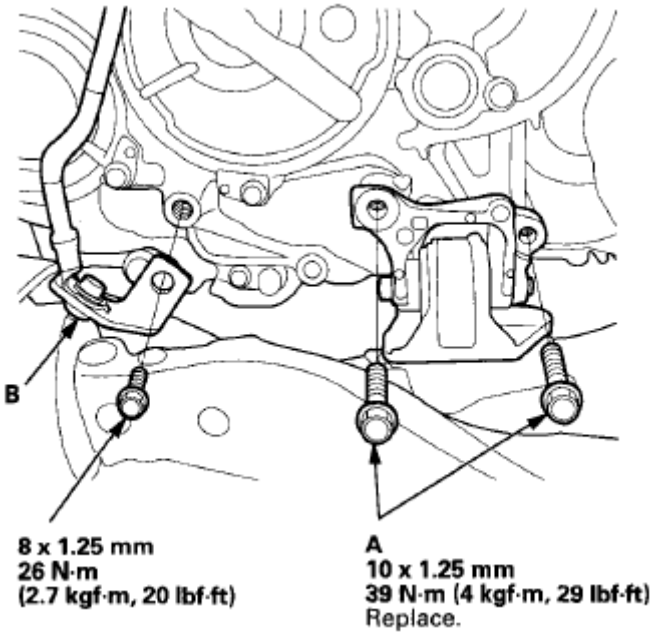


Fig. 257: Identifying Lower Transmission Mount Bolts And Transmission Ground Terminal Bracket With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

20. Attach the torque converter to the drive plate (A) with eight bolts (B). Rotate the crankshaft pulley as necessary to tighten the bolt to half of the specified torque, then to the final torque, in a crisscross pattern. After tightening the last bolt, check that the crankshaft rotates freely.

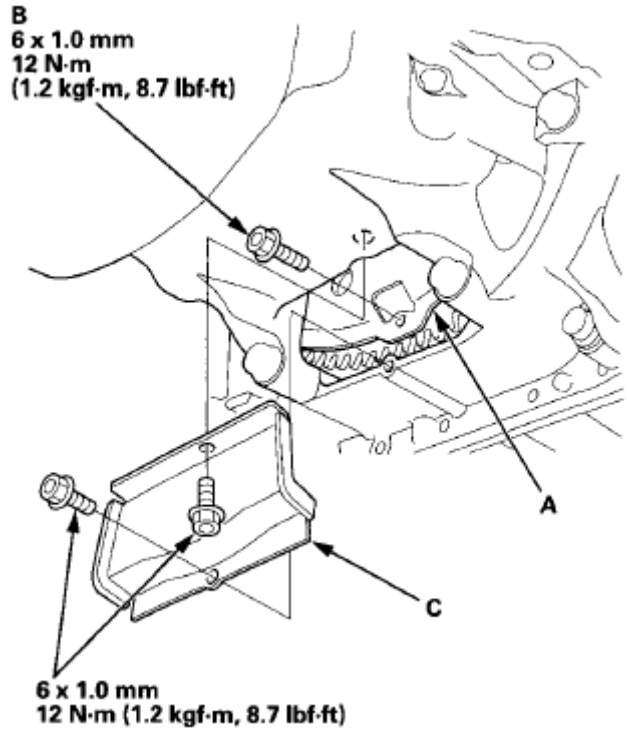


Fig. 258: Identifying Drive Plate, Torque Converter Cover And Bolts Of Transmission With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

21. Install the torque converter cover (C).
22. Install the ball joints (A) to each lower arm (B).

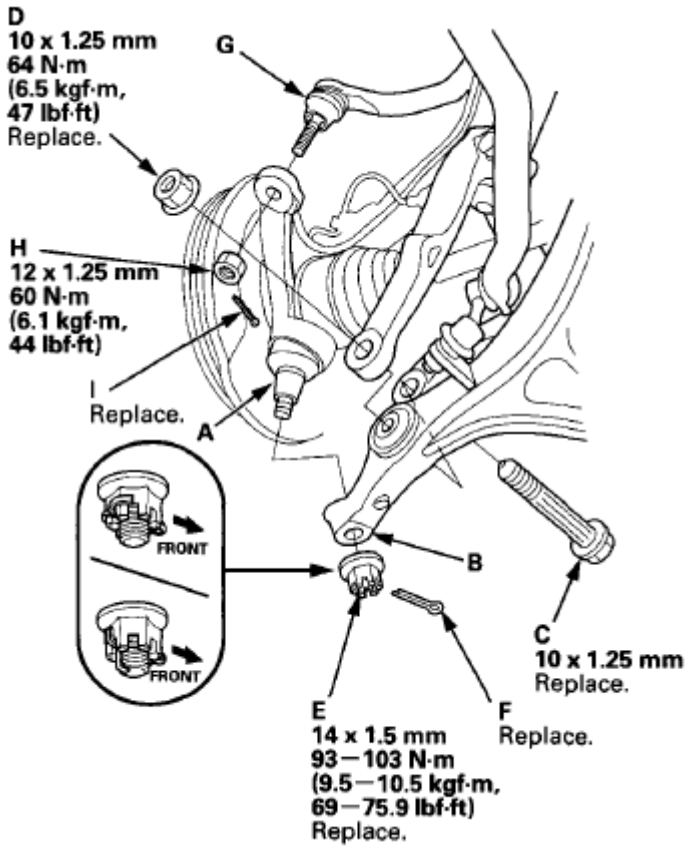


Fig. 259: Identifying Ball Joints, Damper Fork Bolts, Nuts, Cotter Pins And Lower Arm With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

23. Install new damper fork mounting bolts (C) and nuts (D), and secure the ball joints with new castle nuts (E).

NOTE: Do not install the cotter pin (F) onto the castle nut until the castle nut tightened to the specified torque.

24. Install the tie-rod end ball joints (G) to the knuckles with nuts (H), and install new cotter pins (I).
25. With SH-AWD: Install the dowel pin (A) in the transmission, and install the transfer assembly (B) on the transmission.

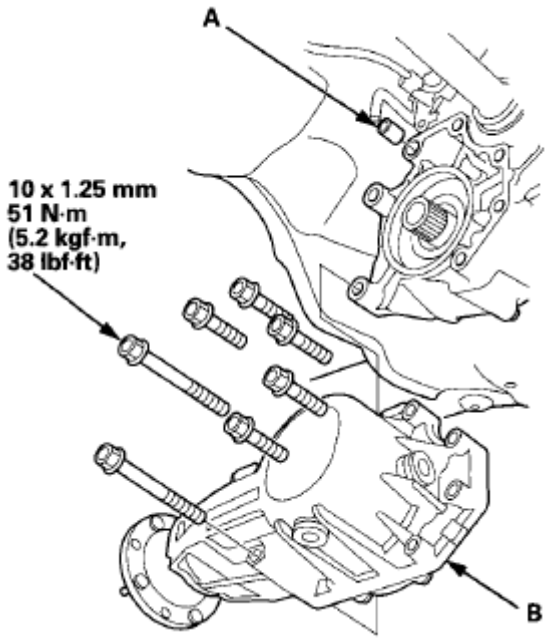


Fig. 260: Identifying Dowel Pin And Transfer Assembly With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

26. With SH-AWD: Connect the breather hose (A) over the breather pipe (B) with facing the dot mark (C) to the rear side of the vehicle, and install the breather hose to the clamp (D) at the dot mark (E).

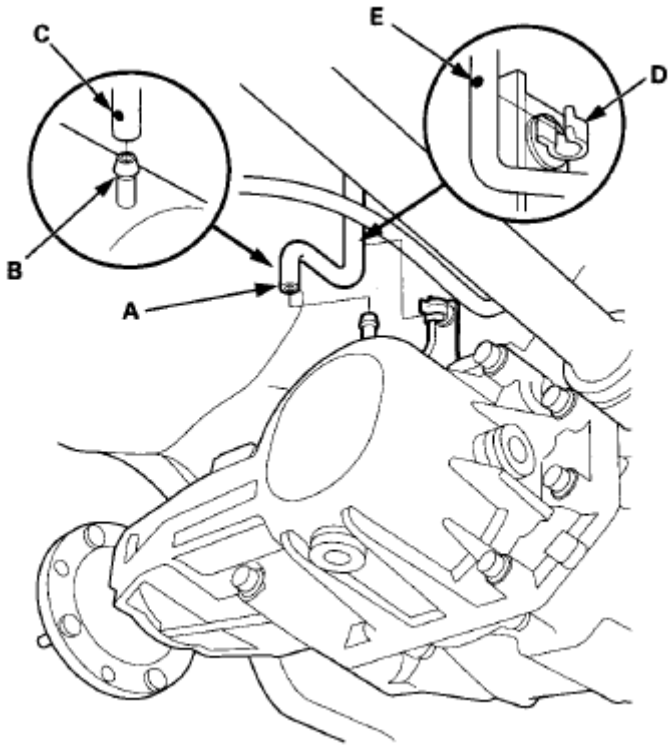


Fig. 261: Identifying Breather Hose, Breather Pipe Dot Mark, Clamp And Dot Mark

Courtesy of AMERICAN HONDA MOTOR CO., INC.

27. With SH-AWD: Install the propeller shaft (see **PROPELLER SHAFT INSTALLATION**).
28. Install exhaust pipe A and the under-floor three way catalytic converter (TWC):
    - With SH-AWD (see **J37A4 ENGINE (WITH SH-AWD)**).
    - Without SH-AWD (see **EXHAUST PIPE AND MUFFLER REPLACEMENT**).
29. Install the front subframe stiffener with new mounting bolts.

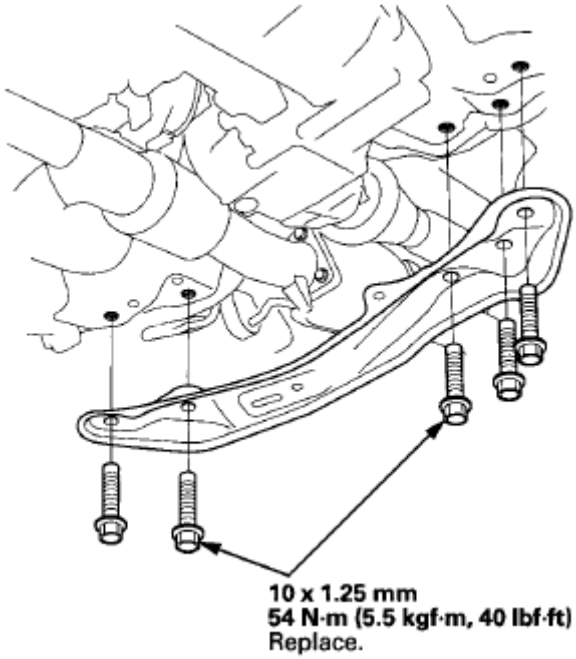


Fig. 262: Installing Front Subframe Stiffener With Mounting Bolts With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

30. Connect the ATF cooler hoses (A) to the ATF cooler lines (B), then secure the hoses with the clips (C) (see **ATF COOLER HOSE REPLACEMENT**).

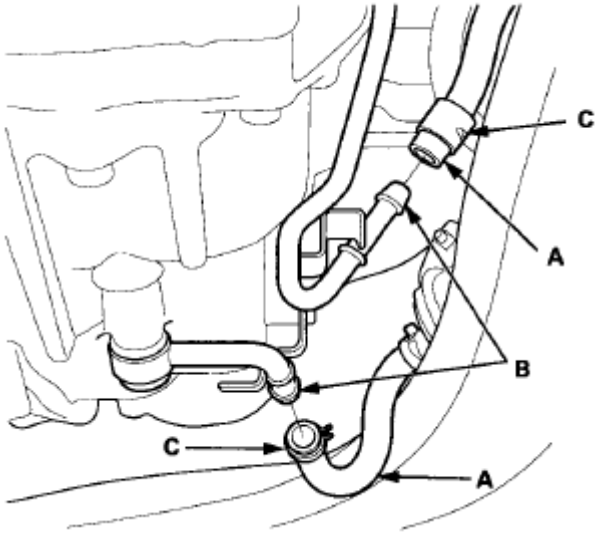


Fig. 263: Identifying ATF Cooler Lines And Hoses And Clips
Courtesy of AMERICAN HONDA MOTOR CO., INC.

31. Connect the ATF cooler hoses (A) to the ATF cooler lines (B), then secure the hoses with the clips (C) (see **ATF COOLER HOSE REPLACEMENT**).

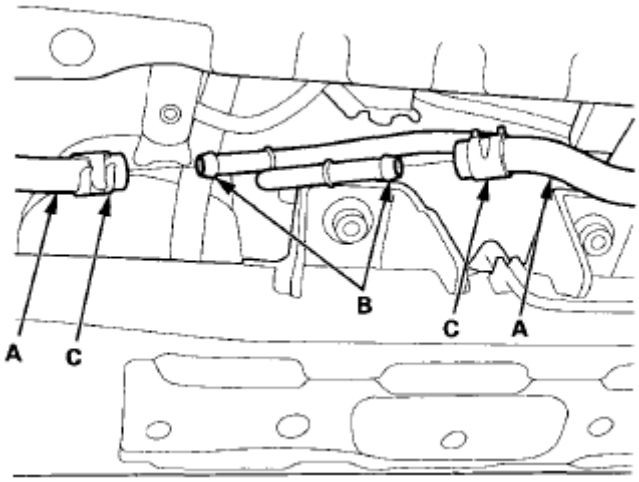


Fig. 264: ATF Cooler Hoses And Lines And Clips
Courtesy of AMERICAN HONDA MOTOR CO., INC.

32. Connect the input shaft (mainshaft) speed sensor connector (A) and the output shaft (countershaft) speed sensor connector (B), then install the harness clamps (C).

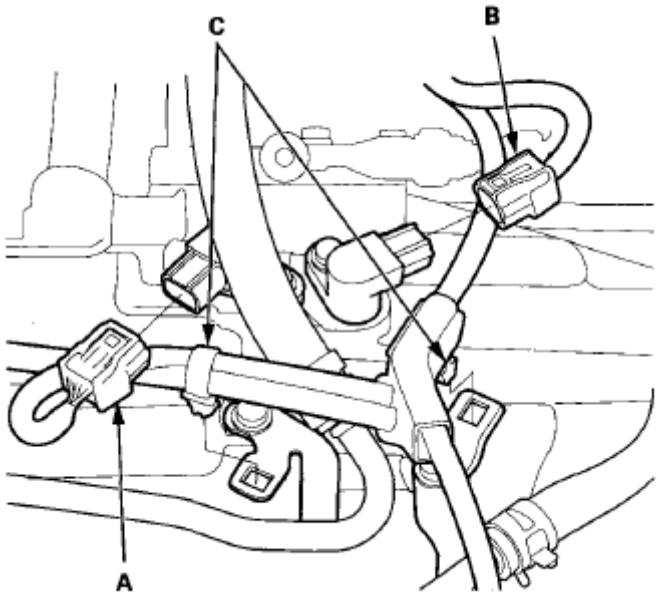


Fig. 265: Identifying Input And Output Shaft Speed Sensor Connector And Harness Clamps
Courtesy of AMERICAN HONDA MOTOR CO., INC.

33. Connect the transmission fluid pressure switch C (4th clutch) connector (A), then install the harness clamp (B).

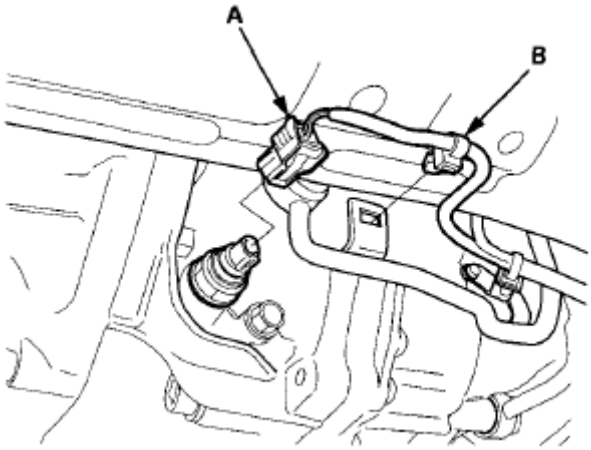


Fig. 266: Identifying Transmission Fluid Pressure Switch C Connector And Harness Clamp
Courtesy of AMERICAN HONDA MOTOR CO., INC.

34. Connect the ATF temperature sensor connector (A), then install the harness clamp (B).

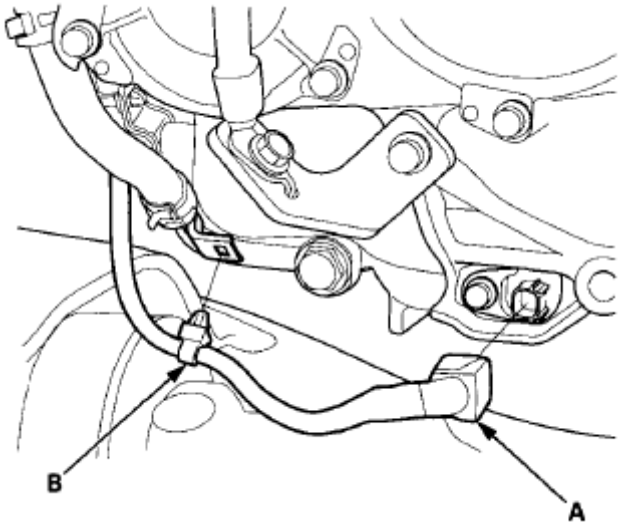


Fig. 267: Identifying ATF Temperature Sensor Connector And Harness Clamp
Courtesy of AMERICAN HONDA MOTOR CO., INC.

35. Connect the EPS connectors (A) and install the harness clamps (B).

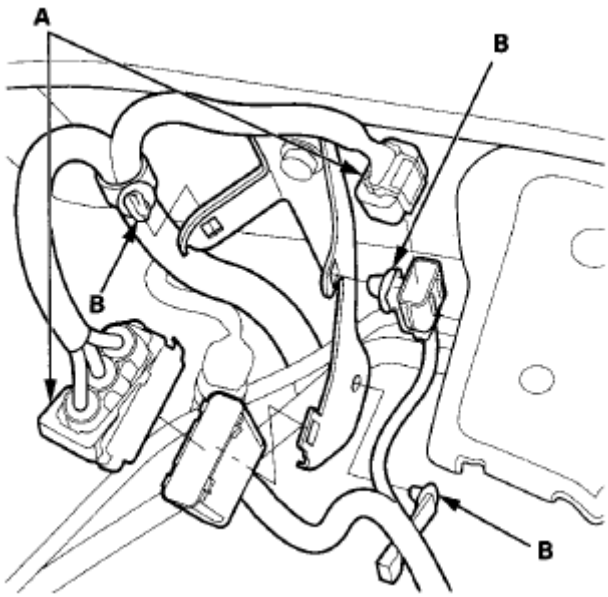


Fig. 268: Identifying EPS Connectors And Harness Clamps
Courtesy of AMERICAN HONDA MOTOR CO., INC.

36. Install new upper transmission housing mounting bolts.

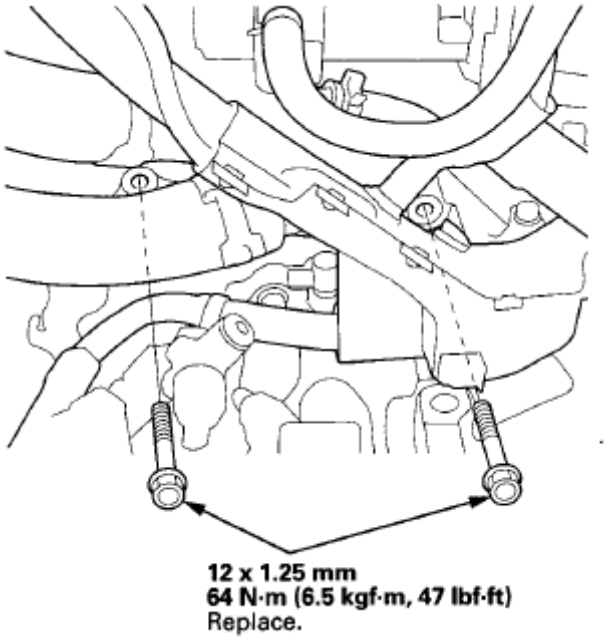


Fig. 269: Installing Upper Transmission Housing Mounting Bolts With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

37. Install new upper transmission mount bracket bolts (A) (B), and install the bolt (C) securing the clamp bracket.

NOTE: If bolt (D) was removed by mistake during removal, the upper transmission mount bracket must be replaced as an assembly.

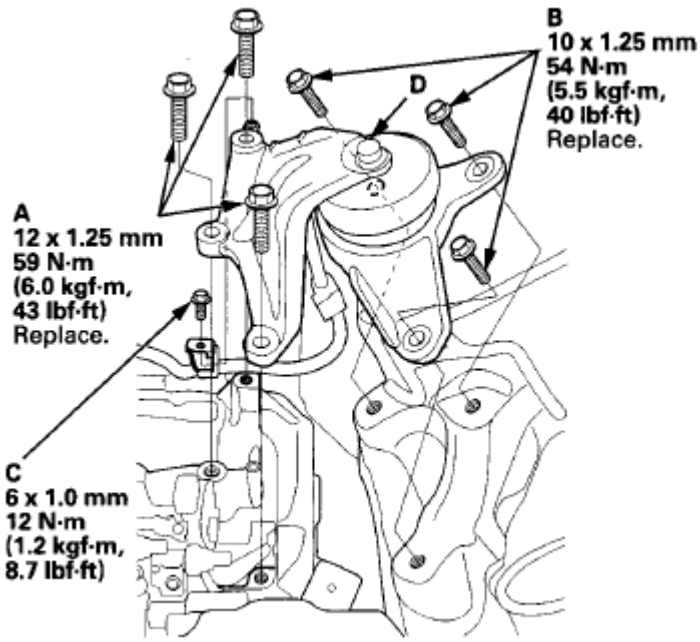


Fig. 270: Identifying Mount Bracket And Bolts With Torque Specifications

Courtesy of AMERICAN HONDA MOTOR CO., INC.

38. Install a new rear engine mount bolt (A), then install the rear engine mount stop (B) and the heat shield (C) with new nuts (D).

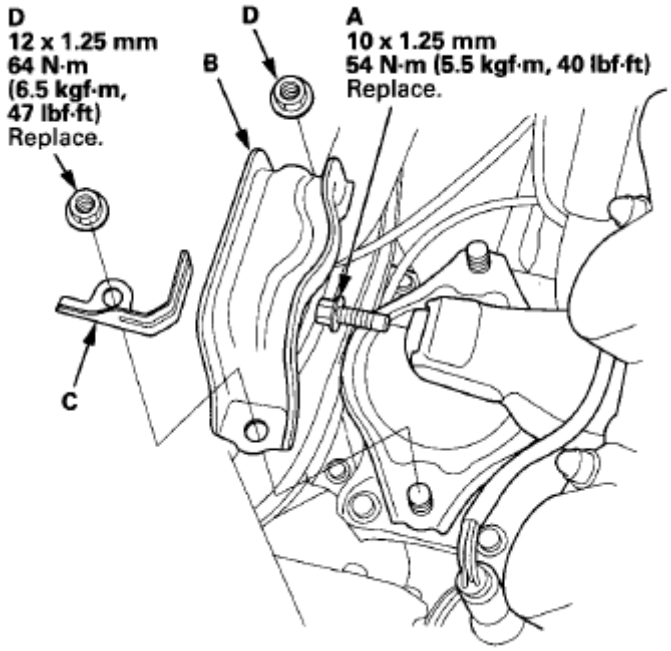


Fig. 271: Identifying Rear Engine Mount Bolt, Rear Engine Mount Stop And Heat Shield Nuts With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

39. Install a new front engine mount bolt (A), then install the front engine mount stop (B) and the clamp bracket (C) with new nuts (D).

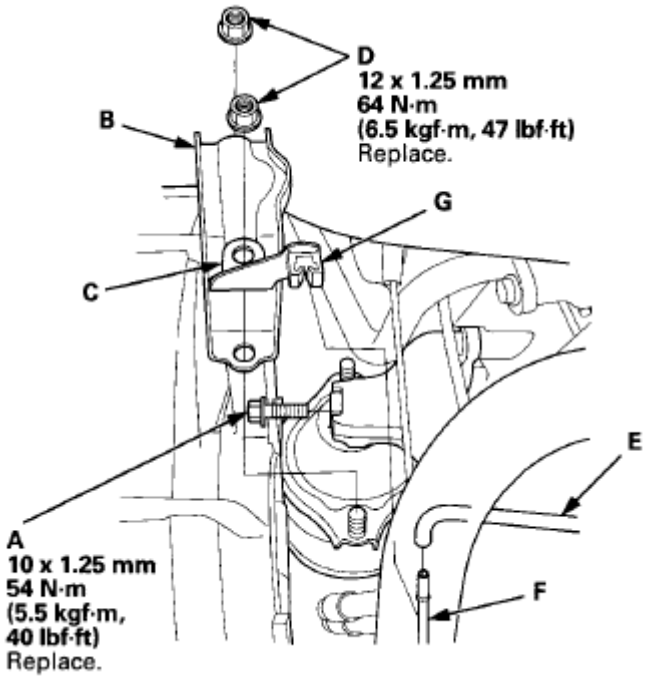


Fig. 272: Identifying Front Engine Mount Stop And Bolt, Vacuum Pipe And Hose And Clamp Bracket Nuts With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

40. Install the vacuum hose (E) to the vacuum pipe (F), and install the vacuum pipe on its clamp (G).
41. Remove the engine support hanger, the engine hanger balance bar, and the 2008 V6 attachment arm.
42. Install the connector bracket to the front cylinder head.

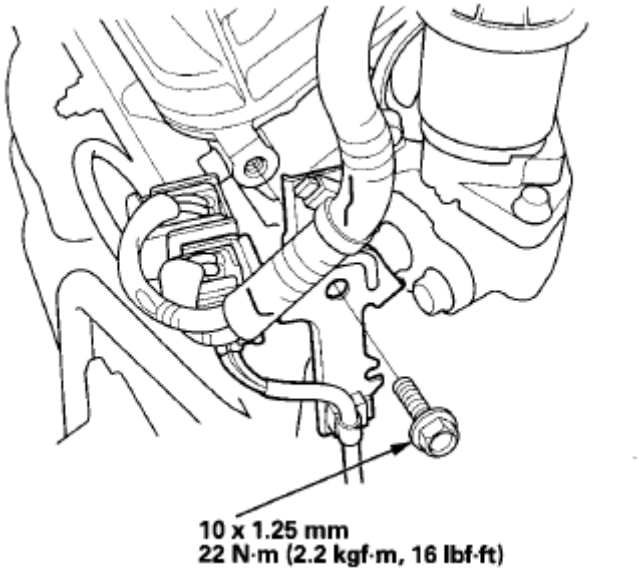


Fig. 273: Installing Connector Bracket To Front Cylinder Head With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

43. Install the engine mount control solenoid valve bracket to the rear cylinder head, then install the harness clamp (A).

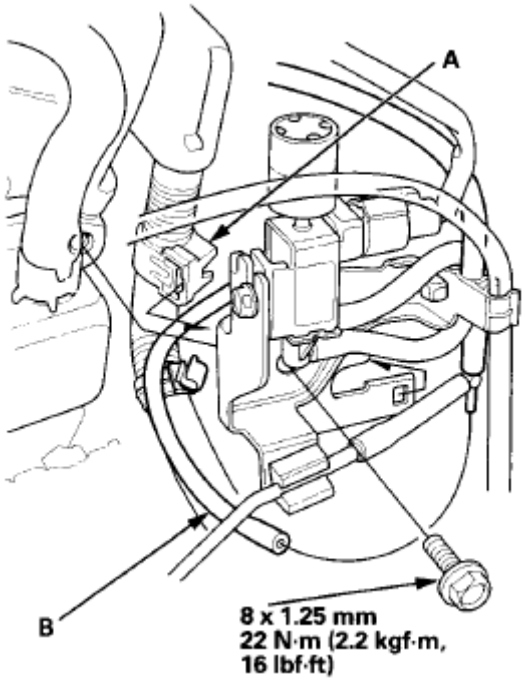


Fig. 274: Identifying Harness Clamp And Vacuum Hose With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

44. Connect the vacuum hose (B).
45. Connect the transmission fluid pressure switch A (2nd clutch) connector (A) and the transmission fluid pressure switch D (5th clutch) connector (B).

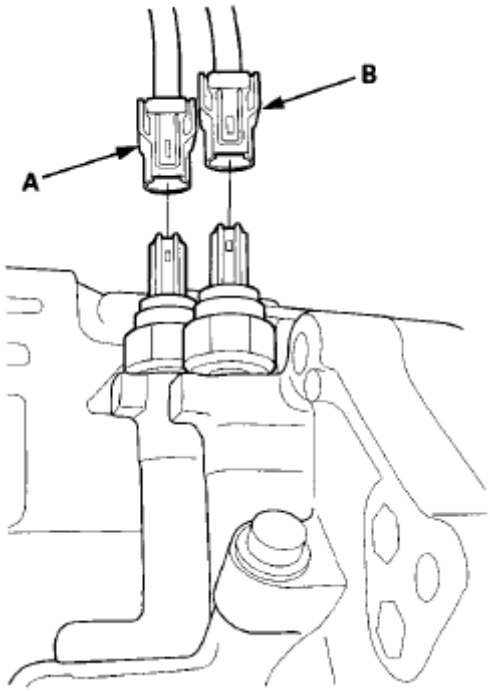


Fig. 275: Identifying Transmission Fluid Pressure Switch A Connector And Transmission Fluid Pressure Switch D Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

46. Install the harness cover bracket (A).

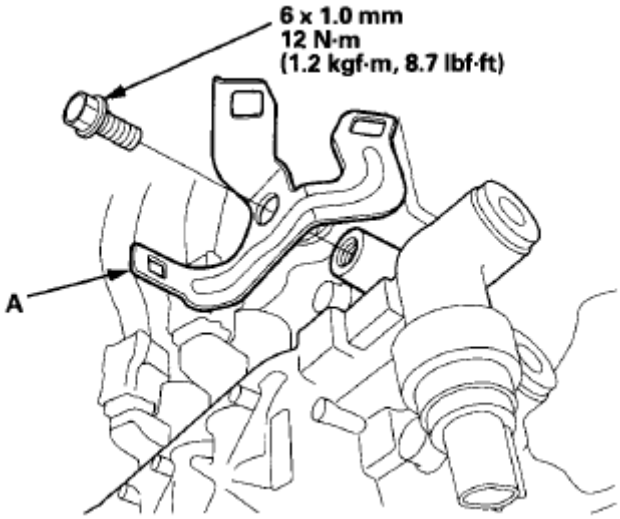


Fig. 276: Installing Harness Cover Bracket With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

47. Install the bolt (A) securing the harness cover (B), and install the harness clamp (C).

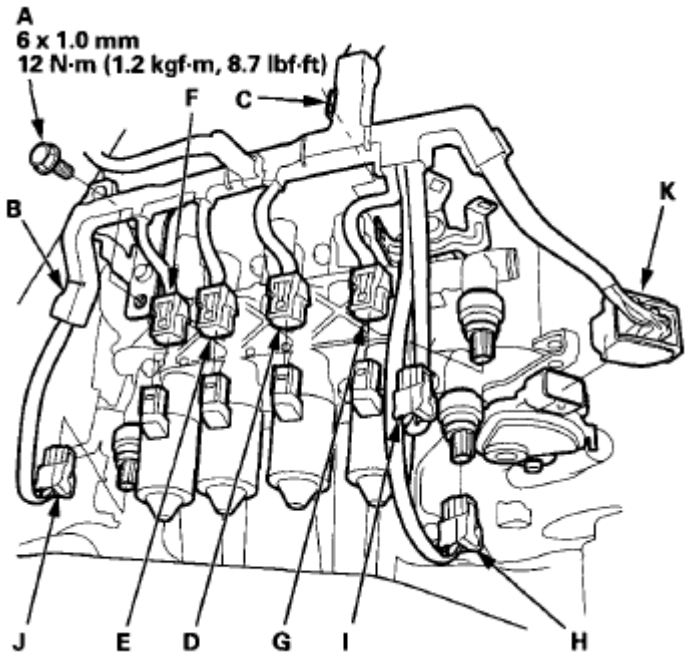


Fig. 277: Identifying Bolt, Harness Cover And Harness Clamp With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

48. Connect these connectors:
    - A/T clutch pressure control solenoid valve A connector (D)
    - A/T clutch pressure control solenoid valve B connector (E)
    - A/T clutch pressure control solenoid valve C connector (F)
    - A/T clutch pressure control solenoid valve D connector (G)
    - Transmission fluid pressure switch B (3rd clutch) connector (H)
    - Transmission fluid pressure switch E (6th clutch) connector (I)
    - Line pressure switch connector (J)
    - Transmission range switch connector (K)
49. Install the harness clamps (A).

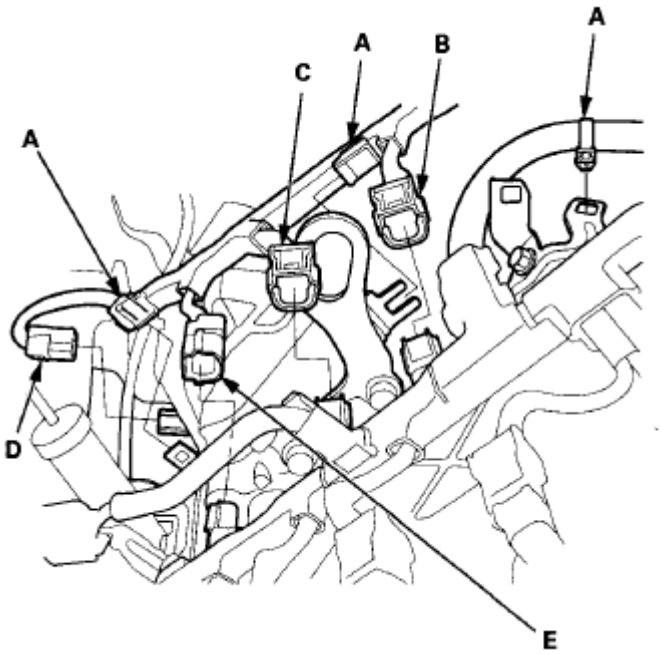


Fig. 278: Identifying Solenoid Valve A, B And C Connectors And Line Pressure Solenoid Valve A Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

50. Connect these connectors:
    - Shift solenoid valve A connector (B)
    - Shift solenoid valve B connector (C)
    - Shift solenoid valve C connector (D)
    - Line pressure solenoid valve A connector (E)
51. Install the shift cable bracket (A).

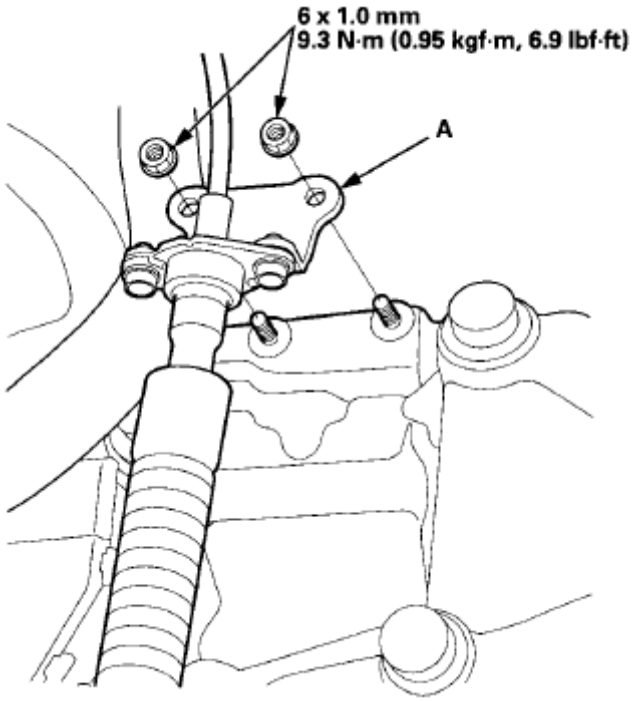


Fig. 279: Installing Shift Cable Bracket With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

52. Apply molybdenum grease to the hole in the bushing (A) in the shift cable end (B).

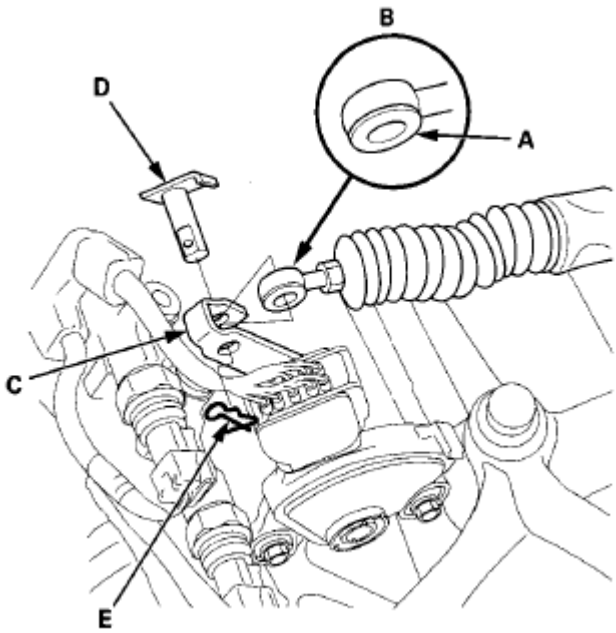


Fig. 280: Identifying Bushing, Shift Cable End, Control End, Control Pin And Spring Clip
Courtesy of AMERICAN HONDA MOTOR CO., INC.

53. Attach the shift cable end to the control lever (C), then insert the control pin (D) into the control lever

hole through the shift cable end, and secure the control pin with the spring clip (E).

54. Install the clamp bracket (A), and install the harness clamp (B).

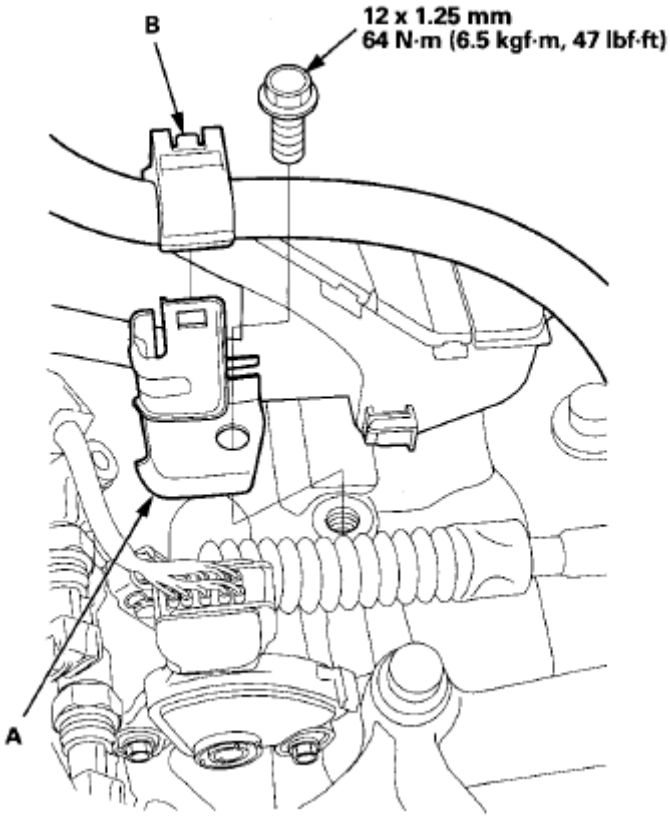


Fig. 281: Identifying Clamp Bracket And Harness Clamp With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

55. Install the bolt (A) securing the harness cover (B) and install the harness clamp (C).

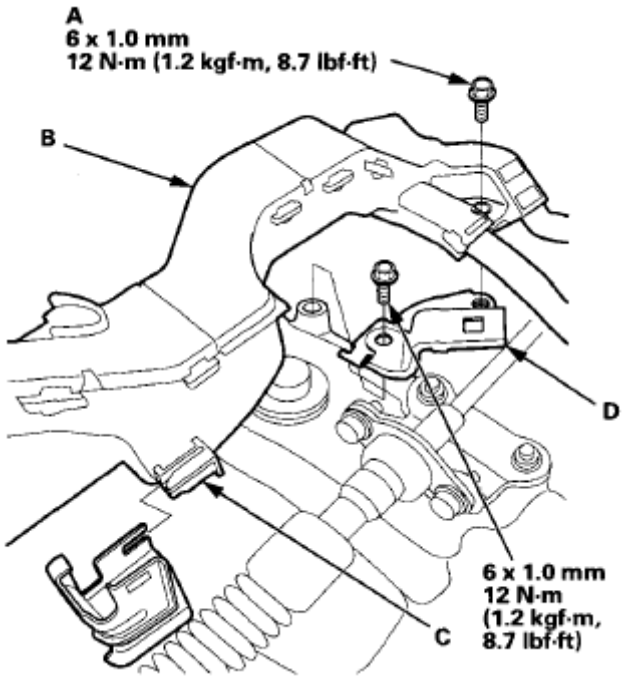


Fig. 282: Identifying Harness Cover And Clamp And Bolts With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

56. Install the clamp bracket (D).
57. Install the starter (see **STARTER REMOVAL AND INSTALLATION**) and install the ATF dipstick.
58. Loosen the upper steering joint bolt (A), and slip the lower end of the steering joint (B) onto the pinion shaft (C).

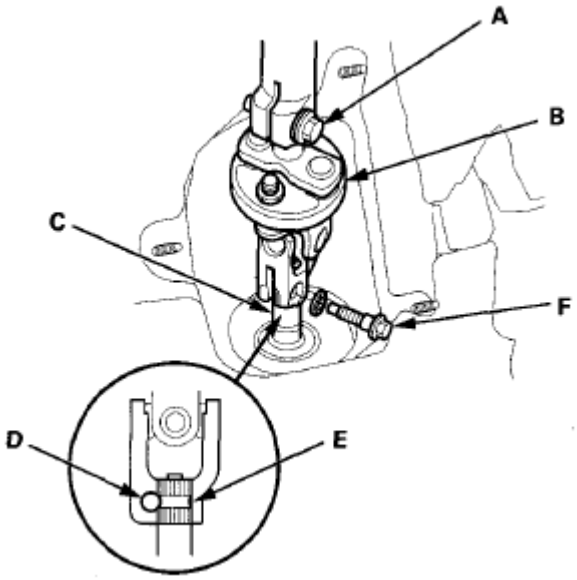


Fig. 283: Identifying Upper Steering Bolts, Lower End Housing Steering Joint And Pinion Shaft
Courtesy of AMERICAN HONDA MOTOR CO., INC.

59. Align the bolt hole (D) on the steering joint with the groove (E) around the pinion shaft, then loosely install the lower steering joint bolt (F). Be sure that the joint bolt is securely in the groove in the pinion shaft.
60. Remove the steering wheel holder tool (A).

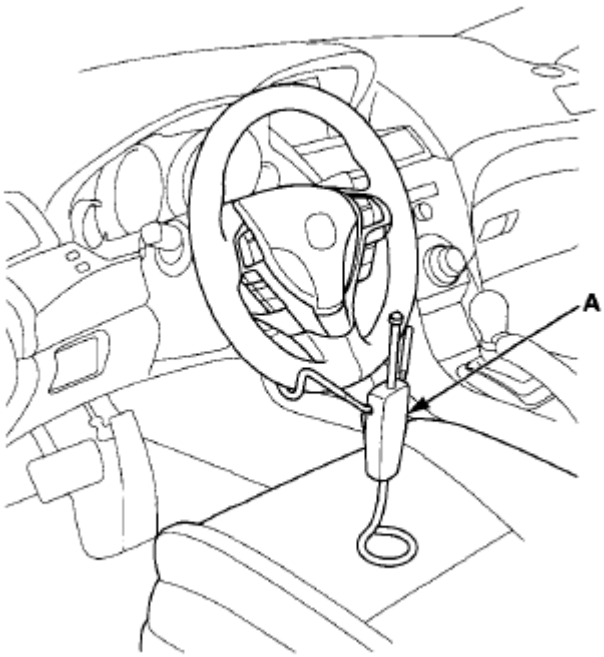


Fig. 284: Removing Steering Wheel Holder Tool
Courtesy of AMERICAN HONDA MOTOR CO., INC.

61. Tighten the upper and lower steering joint bolts (A) to the specified torque.

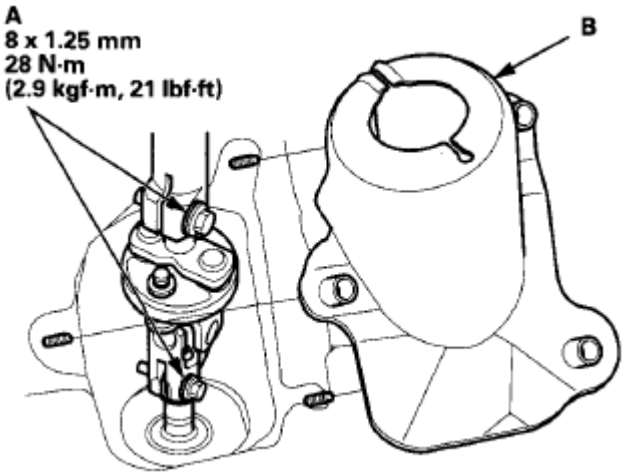


Fig. 285: Identifying Upper And Lower Steering Joint Bolts And Steering Joint Cover With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

62. Install the steering joint cover (B).
63. Install the strut brace (see **FRAME BRACE REPLACEMENT**). Loosely install the strut brace mounting nuts.
64. Refill the transmission with ATF (see **ATF REPLACEMENT**).
65. Install the air cleaner (see **THROTTLE BODY CLEANING**).
66. Do the battery installation procedure (see **BATTERY REMOVAL AND INSTALLATION**).
67. Place a floor jack under the lower arm, and raise the front suspension to load it with the vehicle's weight. Do not place the jack against the ball joint pin of the knuckle. Tighten the damper fork mounting nuts while holding the mounting bolt to 64 N.m (6.5 kgf.m, 47 lbf.ft)
68. Tighten the ball joint mounting castle nuts to 93 - 103 N.m (9.5 - 10.5 kgf.m, 69-75.9 lbf.ft), then install new cotter pins onto the castle nuts, then bend the cotter pin ends (see **LOWER ARM REMOVAL/INSTALLATION**).
69. Tighten the strut brace mounting nuts to 22 N.m (2.2 kgf.m, 16 lbf.ft).
70. Install the engine compartment covers (see **ENGINE COMPARTMENT COVER REPLACEMENT**).
71. Reinstall the hood support struts to the upper location on both sides of the hood.
72. Install the front splash shield (see **FRONT SPLASH SHIELD REPLACEMENT**).
73. Install the front wheels.
74. Set the parking brake. Start the engine, and shift the transmission through all positions three times. Check the shift lever operation, the A/T gear position indicator operation, and the shift cable adjustment (see **SHIFT CABLE ADJUSTMENT**).
75. Check the front wheel alignment (see **WHEEL ALIGNMENT**).
76. Start the engine in P or N, and warm it up to normal operating temperature (the radiator fan comes on).
77. Turn off the engine, and Check the ATF level (see **ATF LEVEL CHECK**).
78. Do the road test (see **ROAD TEST**).

ATF COOLER CLEANING

Special Tools Required

- ATF Cooler Cleaner GHTTTCF6H*
- Magnetic Nonbypass Spin-On Filter GTHGNBP2*

*: Available through the Acura Tool and Equipment Program 888-424-6857.

Before installing an overhauled or remanufactured automatic transmission, you must thoroughly clean the ATF cooler to prevent system contamination. Failure to do so could cause a repeat automatic transmission failure.

The cleaning procedure involves heated ATF delivered under high pressure (100 psi). Check the security of all hoses and connections. Always wear safety glasses or a face shield, along with gloves and protective clothing. If you get ATF in your eyes or on your skin, rinse with water immediately.

WARNING:

- **Improper use of the ATF cooler cleaner can result in burns and other**

serious injuries.

- **Always wear eye protection and protective clothing, and follow this procedure.**

1. Check the fluid in the cooler cleaner tank. (The fluid level should be 4.5 inches from the top of the filler neck.) Adjust the level if needed; do not overfill. Use only Acura ATF DW-1; do not use any additives.

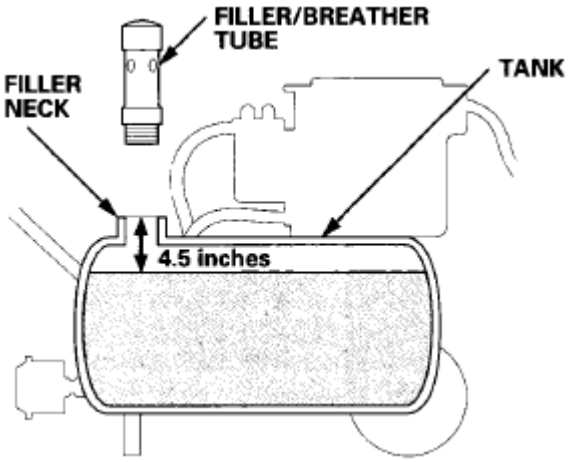


Fig. 286: Identifying Filler Neck, Filler/Breather Tube And Tank Of Cooler Cleaner Tank
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Plug the cooler cleaner into a 110 V grounded electrical outlet.

NOTE: Make sure the outlet has no other appliances (light fixtures, drop lights, extension cords) plugged into it. Also, never plug the cooler cleaner into an extension cord or drop light; you could damage the unit.

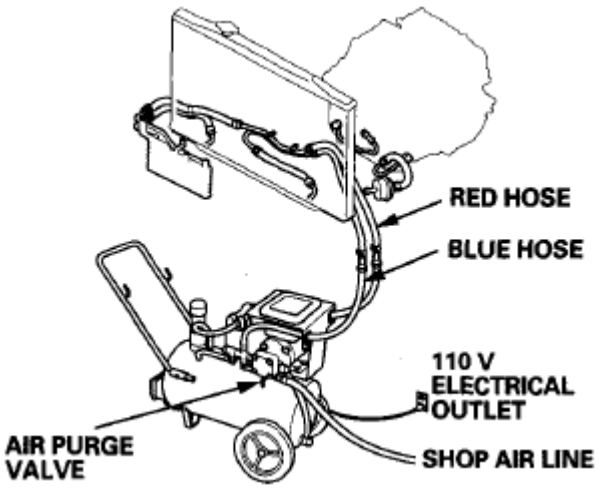


Fig. 287: Identifying Air Purge Valve, Shop Air Line, Electrical Outlet, Blue And Red Hoses
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Flip the HEAT toggle switch to ON; the green indicator above the toggle switch comes on. Wait 1 hour for the cooler cleaner to reach its operating temperature. (The cooler cleaner is ready to use when the temperature gauge reads 140°F to 150°F.)

NOTE: If the red indicator above the HEAT toggle switch comes on, the fluid level in the tank is too low for the tank heater to work (see step 1 of this procedure).

4. Select the appropriate pair of fittings, and attach them to the radiator, to the hoses, or to the banjo bolts for flow through the ATF cooler cleaner.

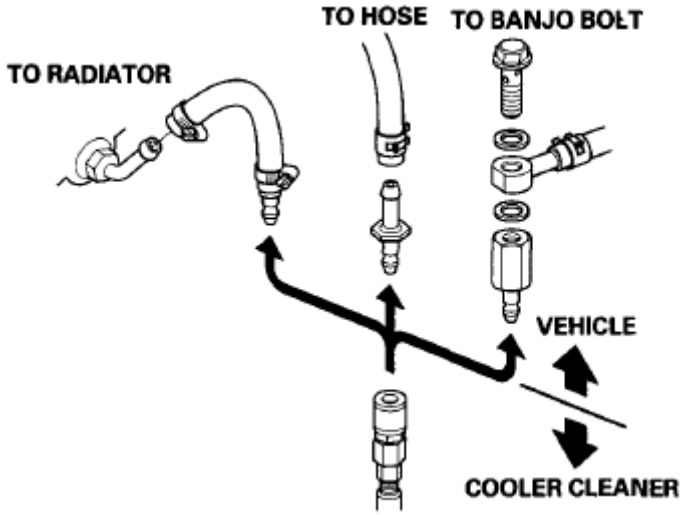


Fig. 288: Identifying Pair Of Fittings For Radiator, Hoses And Banjo Bolts
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Connect the red hose to the cooler outlet line (the line that normally goes to the external filter on the transmission).
6. Connect the blue hose to the cooler inlet line.
7. Connect a shop air hose (regulated to 100 to 125 psi) to the air purge valve.

NOTE: The quick-connect fitting has a one-way check valve to keep ATF from entering your shop's air system. Do not remove or replace the fitting. Attach the coupler provided with the cooler cleaner to your shop air line if your coupler is not compatible.

8. Flip the MOTOR toggle switch to ON; the green indicator above the toggle switch comes on. Let the pump run for 5 minutes. While the pump is running, open and close the air purge valve periodically to cause agitation and improve the cleaning process. Always open the valve slowly. At the end of the 5-minute cleaning period, leave the air purge valve open.

NOTE: While the pump is running with the air purge valve open, it is normal to

see vapor coming from the filler/breather tube vents.

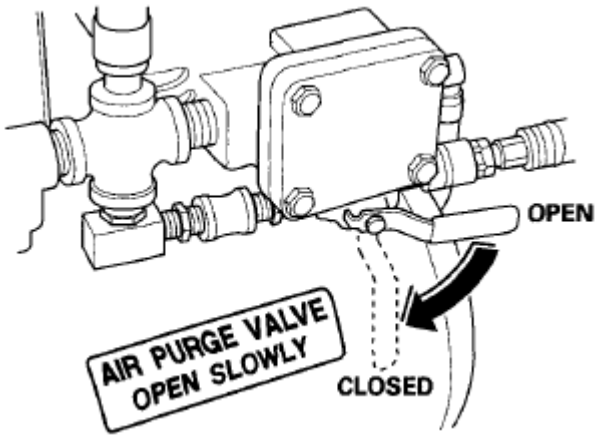


Fig. 289: Identifying ATF Cooler Cleaner And Related Components
Courtesy of AMERICAN HONDA MOTOR CO., INC.

9. With the air purge valve open, flip the MOTOR toggle switch to OFF; the green indicator goes off. Leave the air purge valve open for at least 15 seconds to purge the lines and hoses of residual ATF, then close the valve.
10. Disconnect the red and blue hoses from the ATF cooler. Now connect the red hose to the cooler inlet line.
11. Now connect the blue hose to the cooler outlet line.
12. Flip the MOTOR toggle switch to ON, and let the pump run for 5 minutes. While the pump is running, open and close the air purge valve periodically. Always open the valve slowly. At the end of the 5-minute cleaning period, leave the air purge valve open.

NOTE: While the pump is running with the air purge valve open, it is normal to see vapor coming from the filler/breather tube vents.

13. With the air purge valve open, flip the MOTOR toggle switch to OFF. Leave the air purge valve open for at least 15 seconds to purge the lines and hoses of residual ATF, then close the valve.
14. Disconnect the red and blue hoses from the ATF cooler lines.
15. Connect the red and blue hoses to each other.
16. Disconnect the shop air from the air purge valve. Disconnect and stow the coupler if used.
17. Disconnect and stow the fittings from the ATF cooler inlet and outlet lines.
18. Unplug the cooler cleaner from the 110 V outlet.

Tool Maintenance

Follow these instructions to keep the ATF cooler cleaner working properly:

- Replace the two magnetic nonbypass spin-on filters after every 20 hours of use, based on the hour-meter, or when you notice a restriction in the ATF flow.

- Check the level and condition of the fluid in the tank before each use.
- Replace the ATF in the tank when it looks dark or dirty.

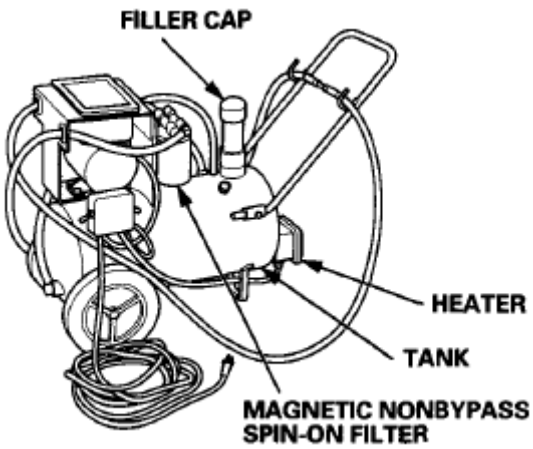


Fig. 290: Identifying Filler Cap, Heater, Tank And Magnetic Non By Pass Spin On Filter
Courtesy of AMERICAN HONDA MOTOR CO., INC.

ATF COOLER HOSE REPLACEMENT

EXPLODED VIEW

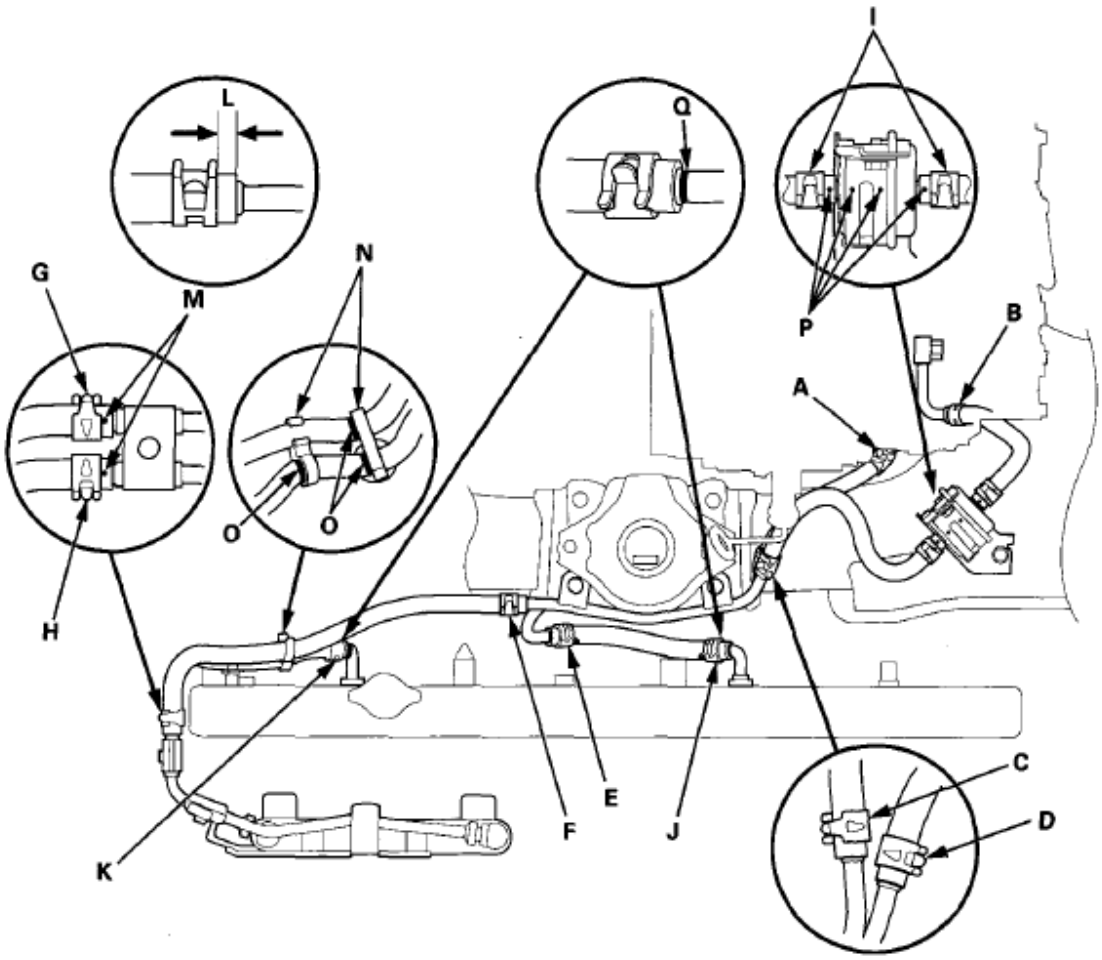


Fig. 291: Exploded View Of ATF Cooler Hose
Courtesy of AMERICAN HONDA MOTOR CO., INC.

NOTE: When installing the hose clamps, make sure they do not interfere with the surrounding parts.

1. Install the ATF cooler hoses over the ATF cooler lines with the clips at the appropriate points in reference to the following list. Align the white paint marks (M) facing the right of the vehicle.

Point	Distance from Hose End to Clip (L)	Hose End Contact Point
A	6 - 8 mm (0.24 - 0.31 in)	Bulge
B		
C		
D		
E		
F		
G		
H		

I		Nearest point to ATF filter housing
J K	2 - 4 mm (0.08-0.16 in)	Paint Mark (Q)

2. Secure the ATF cooler hose with the clamps (N) at the white paint line (O) in the direction shown.
3. Align the paint marks (P) facing up of the vehicle.
4. Refill the transmission with ATF to the proper level (see **ATF REPLACEMENT**).

ATF COOLER REPLACEMENT

1. Raise the vehicle on a lift, or apply parking brake, block both rear wheels, and raise the front of the vehicle. Make sure it is securely supported.
2. Remove the ATF cooler assembly.

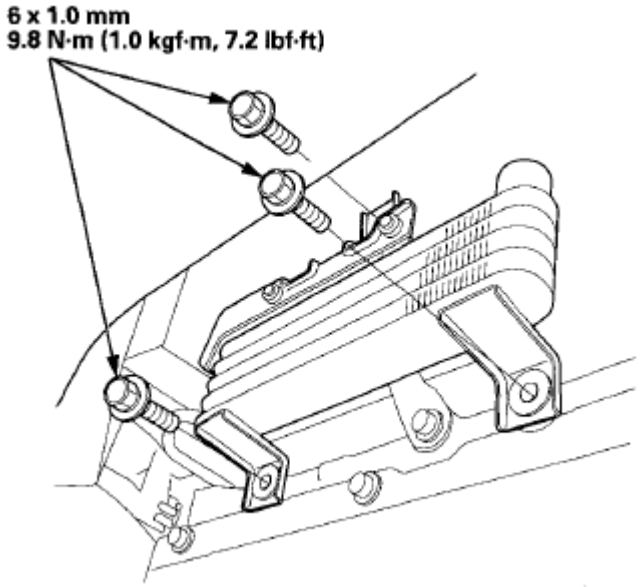


Fig. 292: Identifying ATF Cooler Assembly With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Disconnect the ATF cooler hoses (A) from the ATF cooler lines (B), then plug the hoses. Replace the ATF cooler.

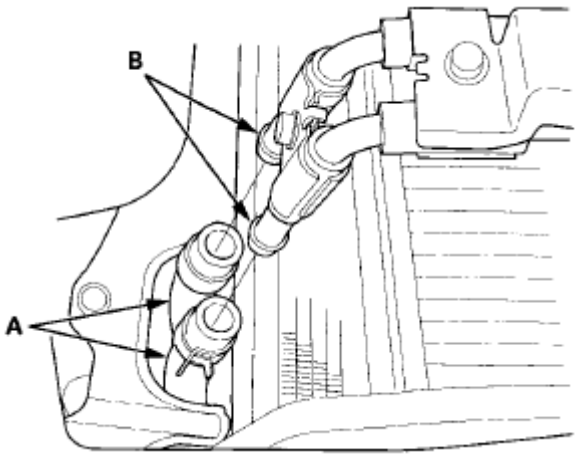


Fig. 293: Identifying ATF Cooler Hoses And Lines
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. If needed, replace the ATF cooler rubber mounts (A) and the collars (B).

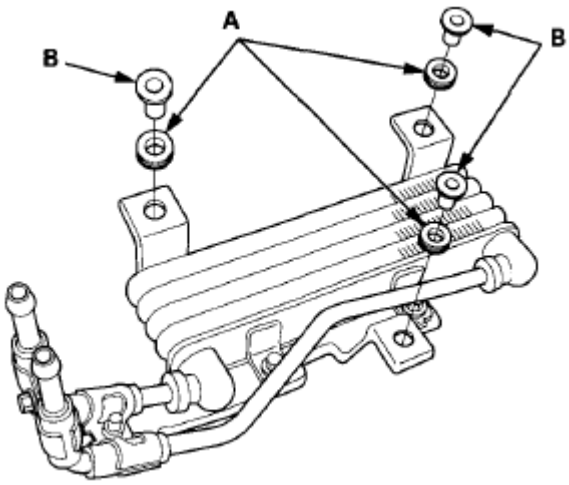


Fig. 294: Identifying ATF Cooler Rubber Mounts And Collars
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Install the ATF cooler, then remove the plugs from the hose.
6. Connect the ATF cooler hoses (see **ATF COOLER HOSE REPLACEMENT**).
7. Secure the ATF cooler with the bolts.
8. Check the ATF level (see **ATF LEVEL CHECK**).

ATF FILTER REPLACEMENT

NOTE: The ATF filter is not a scheduled maintenance item. Replace the filter only if it is leaking, or contaminated, or when the transmission is being overhauled or replaced with a remanufactured unit.

1. Do the battery removal procedure (see **BATTERY REMOVAL AND INSTALLATION**).
2. Remove the battery base (see **ENGINE REMOVAL**).
3. Raise the vehicle on a lift, and make sure it is securely supported.
4. Remove the drain plug (A), and drain the ATF.

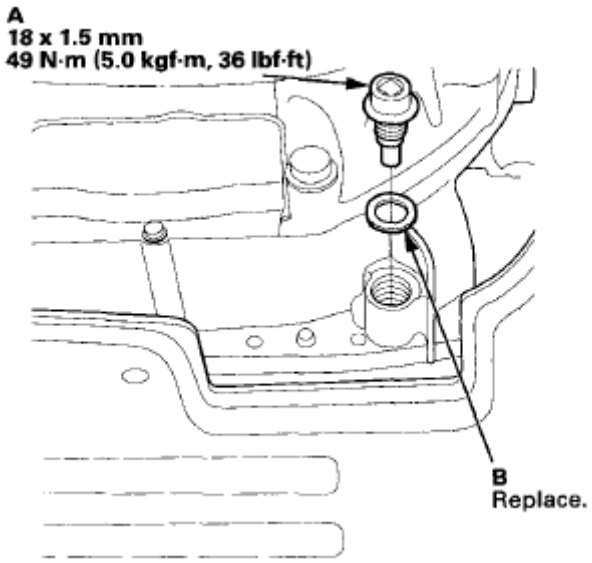


Fig. 295: Identifying Drain Plug And Sealing Washer With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Reinstall the drain plug with a new sealing washer (B).
6. Disconnect the ATF cooler hoses (A) from the ATF filter (B).

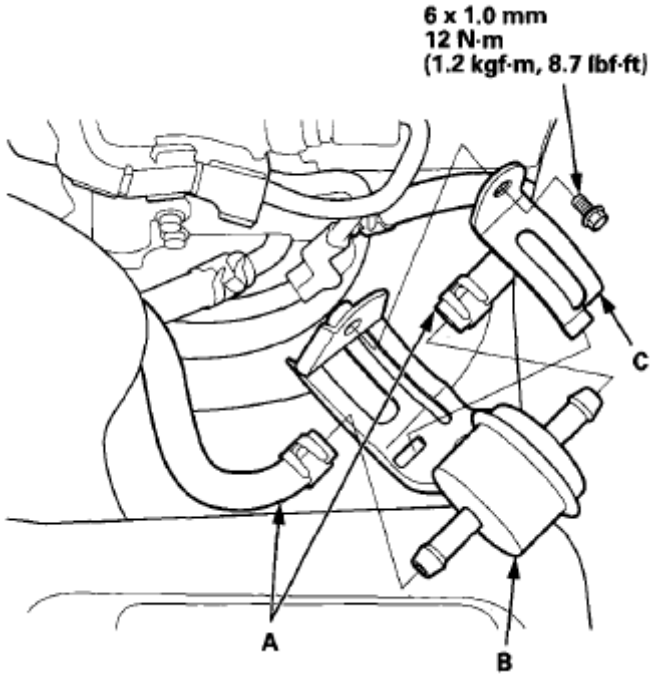


Fig. 296: Identifying ATF Cooler Hoses, ATF Filter And ATF Filter Holder With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Remove the ATF filter holder (C), and remove the ATF filter.
8. Install a new ATF filter, and secure it with its holder and bolt.
9. Connect the ATF cooler hose (see **ATF COOLER HOSE REPLACEMENT**).
10. Refill the transmission with ATF (see **ATF REPLACEMENT**).
11. Install the battery base (see **ENGINE INSTALLATION**).
12. Do the battery installation procedure (see **BATTERY REMOVAL AND INSTALLATION**).

SHIFT LEVER REMOVAL

1. Remove the center console (see **CENTER CONSOLE REMOVAL/INSTALLATION**).
2. Move the shift lever to R.
3. Remove the nut securing the shift cable end.

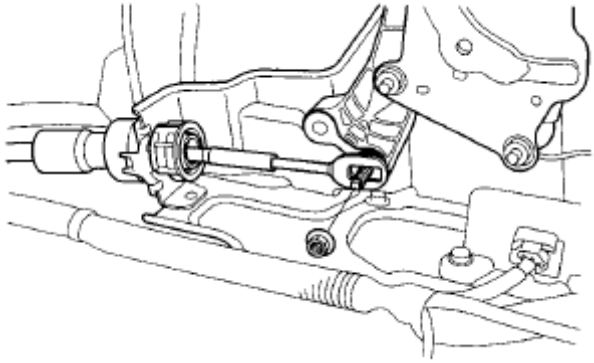


Fig. 297: Removing Nut Securing Shift Cable End
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Unlock the retainer (A).

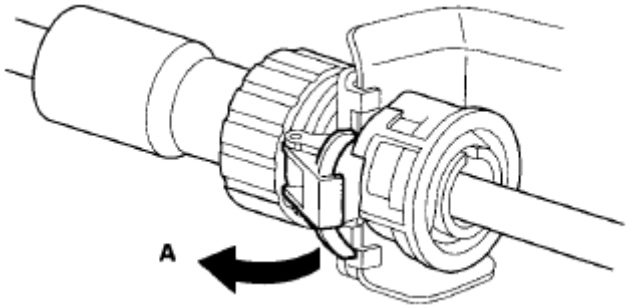


Fig. 298: Unlock Retainer
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Rotate the socket holder retainer (A) counterclockwise (B) until it stops, and push the retainer lock (C) into the socket holder retainer to lock the retainer.

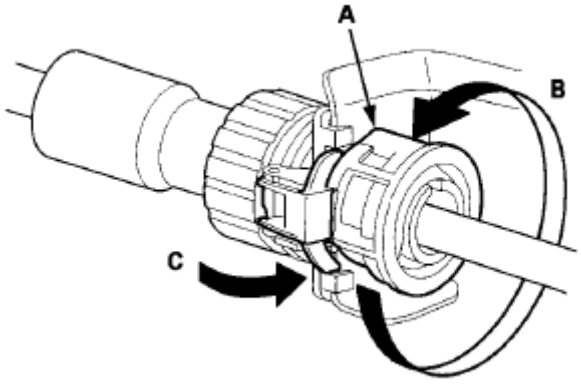


Fig. 299: Rotating Socket Holder Retainer Counterclockwise And Retainer Lock
Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Slide the socket holder (A) away from the bracket as shown to remove the shift cable (B) from the shift

cable bracket (C). Do not remove the shift cable by pulling the shift cable guide (D).

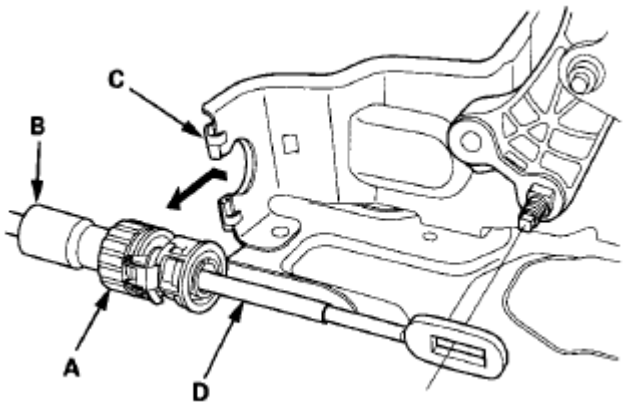


Fig. 300: Identifying Socket Holder, Shift Cable, Shift Cable Bracket And Shift Cable Guide
Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Disconnect the shift lever 4P connector (A), and remove the shift lever 4P connector from the shift lever bracket base (B).

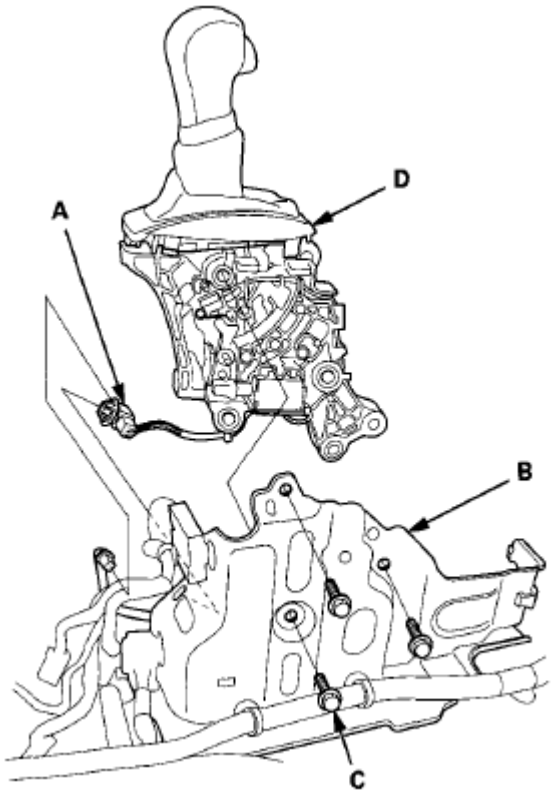


Fig. 301: Identifying 4P Connector, Shift Lever Bracket Base And Mounting Bolts And Shift Lever Assembly
Courtesy of AMERICAN HONDA MOTOR CO., INC.

8. Remove the shift lever mounting bolts (C), then remove the shift lever assembly (D).

SHIFT LEVER INSTALLATION

1. Install the shift lever assembly (A).

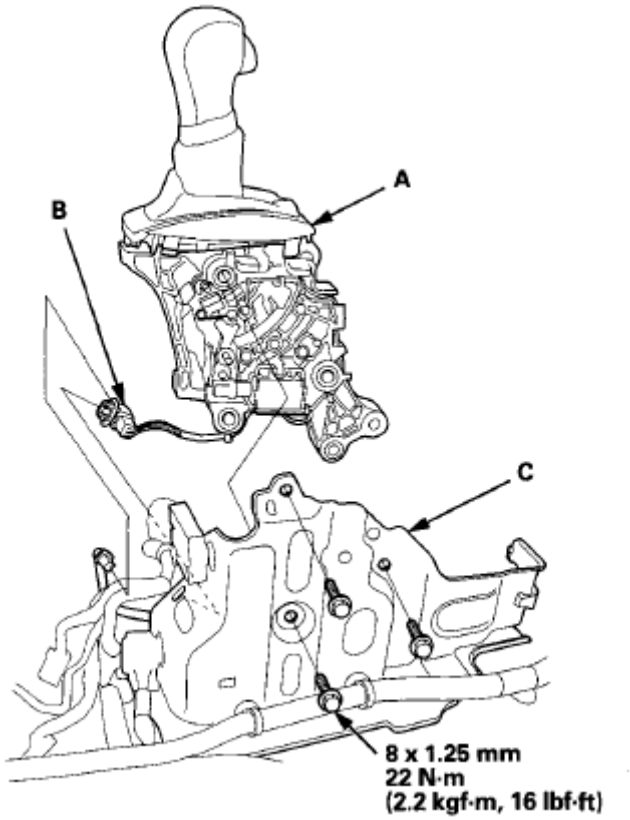


Fig. 302: Identifying Shift Lever Assembly, 4P Connector And Shift Lever Bracket Base With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Connect the shift lever 4P connector (B).
3. Install the shift lever 4P connector on the shift lever bracket base (C).
4. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode, and check that the R position indicator comes on.

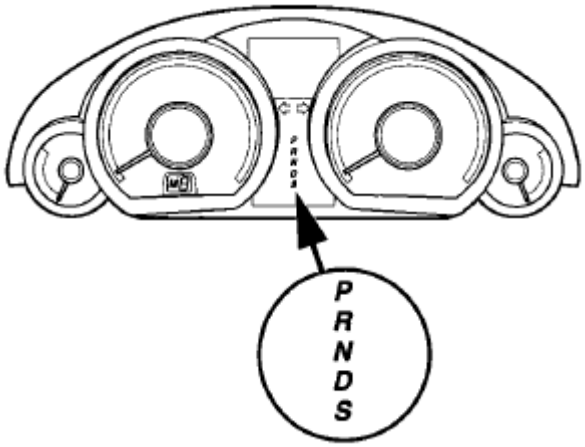


Fig. 303: Display - PRNDS Indicators
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. If necessary, push the shift cable (A) until it stops, then release it. Pull the shift cable back one step from the P position so that the shift position is in R. Do not hold the shift cable guide (B) to adjust the shift cable.

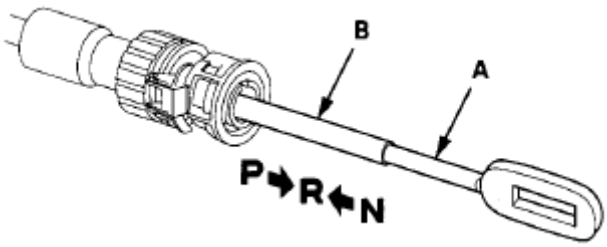


Fig. 304: Identifying Shift Cable And Shift Cable Guide
Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Move the shift lever in P, then turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
7. Move the shift lever in R, then insert a 6.0 mm (0.24 in) pin (A) into the positioning hole (B) on the shift lever positioning guide, and into the positioning hole on the shift lever bracket. Use only a 6.0 mm (0.24 in) pin with no burrs.

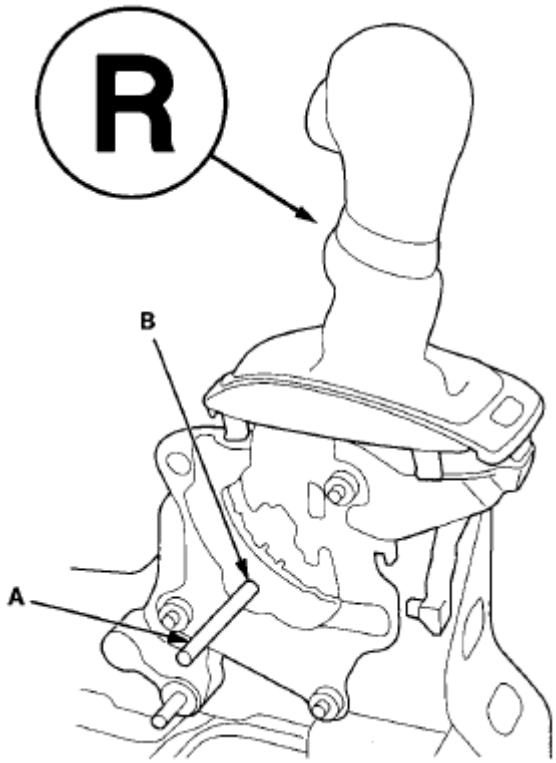


Fig. 305: Identifying Shift Lever, Pin And Positioning Hole
Courtesy of AMERICAN HONDA MOTOR CO., INC.

8. Align the shift cable slot (A) between the socket holder (B) and the socket holder retainer (C) with the opening (D) in the shift cable bracket (E), then slide the holder into the bracket while installing the shift cable end (F) over the mounting stud (G) by aligning its square hole with the square fitting (H) at the bottom of the stud. Do not install the shift cable by holding the shift cable guide (I).

NOTE: When the socket holder is installed in the shift cable bracket, the retainer lock is unhinged and releases the holder retainer lock, then the holder retainer returns under spring force to secure the shift cable.

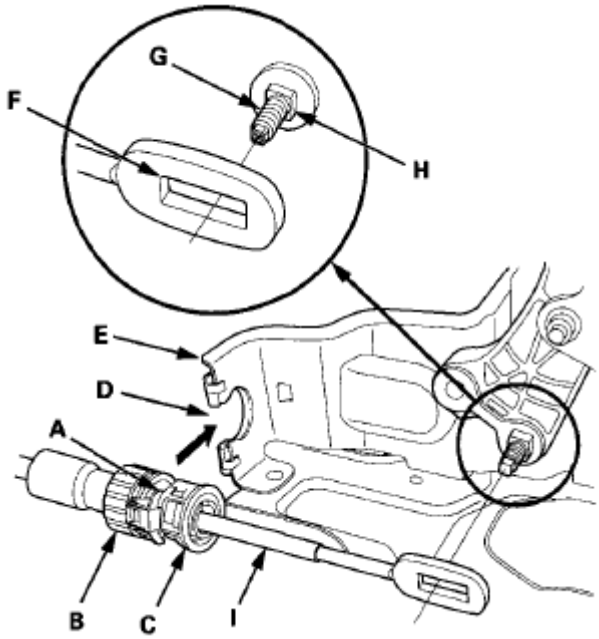


Fig. 306: Identifying Shift Lever And Related Components
Courtesy of AMERICAN HONDA MOTOR CO., INC.

9. Push the retainer lock (A) fully to lock the socket holder retainer (8), and make sure that the retainer lock fits into the hinged-joint (C). If the retainer lock does not fit with the edge of the hinged-joint, rotate the holder retainer counterclockwise while pushing the retainer lock until it locks.

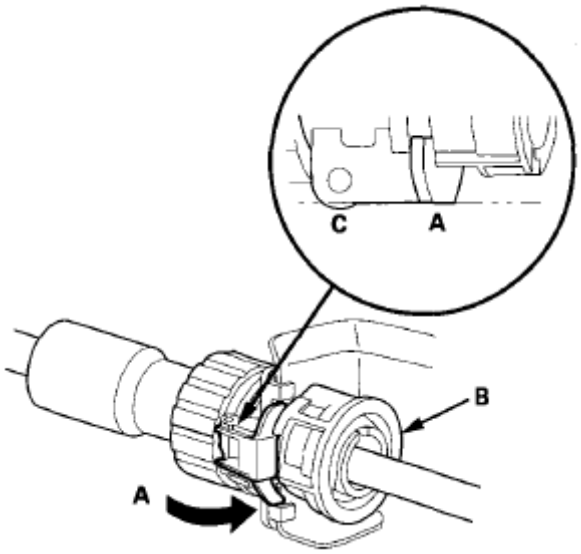


Fig. 307: Pushing Retainer Lock
Courtesy of AMERICAN HONDA MOTOR CO., INC.

10. Make sure the shift cable end (A) is properly installed on the mounting stud (B).
    - If the cable end is out of position with the mounting stud, remove the shift cable from the shift

cable bracket, then reinstall the cable end over the mounting stud before reinstalling the shift cable to the shift cable bracket. Do not install the shift cable end on the mounting stud with the shift cable installed on the shift cable bracket.

- If the shift cable end does not ride at the bottom of the mounting stud, rotate the stud to align the square fitting with the hole.

Properly installed:

Cable end rides at the bottom of the mounting stud.



Fig. 308: Identifying Shift Cable End And Mounting Stud (Properly Installed)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Improperly installed:

Cable end out of position with the mounting stud.



Fig. 309: Identifying Shift Cable End And Mounting Stud (Improperly Installed)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Cable end out of alignment with the mounting stud.

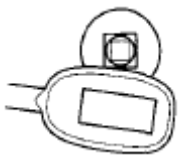


Fig. 310: Cable End Out Of Alignment With Mounting Bolts - Diagram
Courtesy of AMERICAN HONDA MOTOR CO., INC.

11. Install and tighten the nut (A) on the shift cable end.

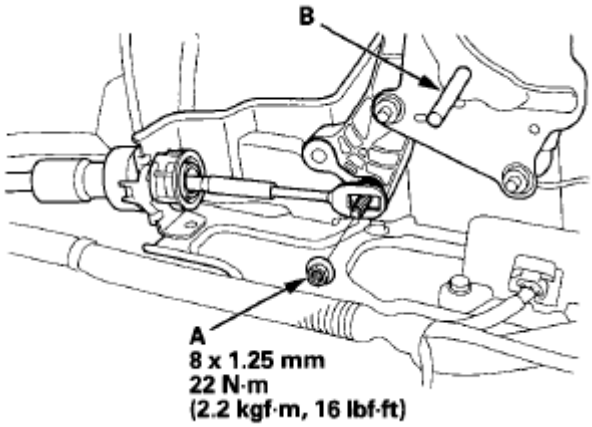


Fig. 311: Identifying Nut And Pin Of Shift Lever Assembly With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

12. Remove the 6.0 mm (0.24 in) pin (B) that was installed to hold the shift lever.
13. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode. Move the shift lever to each position, and check that the A/T gear position indicator follows the transmission range switch.
14. Shift the shift lever to P, and check that the shift lock works properly. Push the shift lock release, and check that the shift lever releases, and also check that the shift lever locks when it is shifted back to P.
15. Install the center console (see **CENTER CONSOLE REMOVAL/INSTALLATION**).

SHIFT LEVER KNOB REPLACEMENT

NOTE: Make sure not to get any silicone grease on the terminal part of the connectors and switches, especially if you have silicone grease on your hands or gloves.

1. Grasp the shift lever boot ring, and slip it out of the shift lever knob.

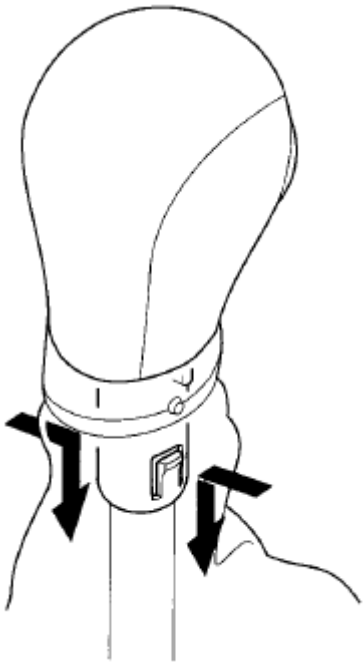


Fig. 312: Grasping Shift Lever Boot Ring And Slip It Out Of Shift Lever Knob
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Wrap the end of a flat-tip screwdriver with tape, pry the shift lever knob cover locks (A), and remove the shift lever knob cover (B).

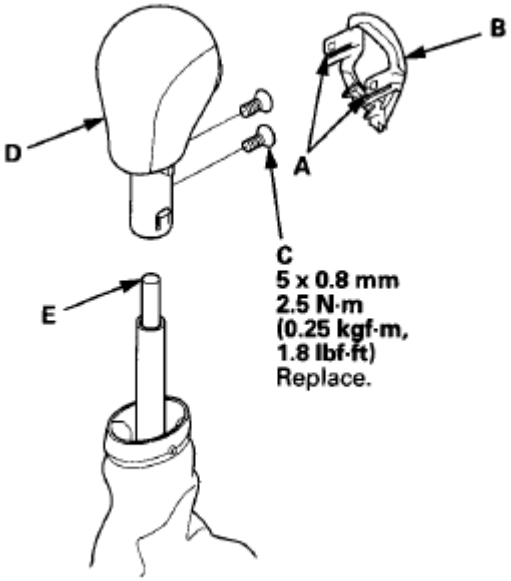


Fig. 313: Identifying Shift Lever Knob Cover Locks And Shift Lever Knob Cover With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Remove the screws (C), and remove the shift lever knob (D).

4. Apply silicone grease to the top (E) of the shift lever rod.
5. Install a new shift lever knob on the shift lever, and secure it with new screws.
6. Install the shift lever knob cover on the shift lever knob.
7. Slide the shift lever boot ring over the shift lever knob until it snaps on.

SHIFT LEVER DISASSEMBLY/REASSEMBLY

EXPLODED VIEW

NOTE: Make sure not to get any silicone grease on the terminal part of the connectors and switches, especially if you have silicone grease on your hands or gloves.

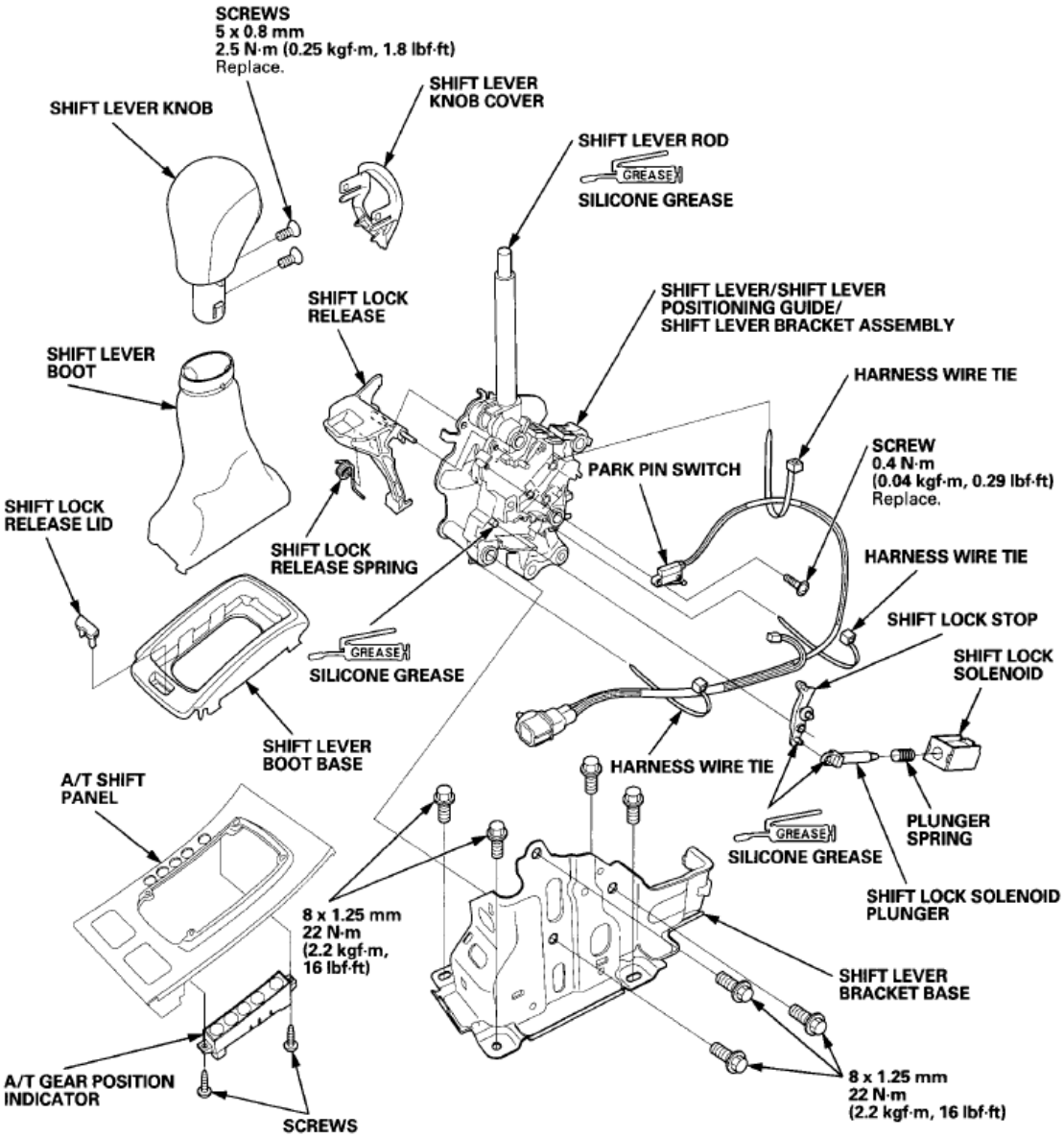


Fig. 314: Exploded View Of Shift Lever Assembly With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

SHIFT LEVER BOOT AND SHIFT LEVER BOOT BASE REPLACEMENT

1. Remove the shift lever knob (see **SHIFT LEVER KNOB REPLACEMENT**).
2. Apply protective tape (A) to the A/T shift panel (B) along the side edge of the shift lever boot base (C). Pry up on the edge of the shift lever trim with a flat-tapped screwdriver wrapped with protective tape to release the hooks (D).

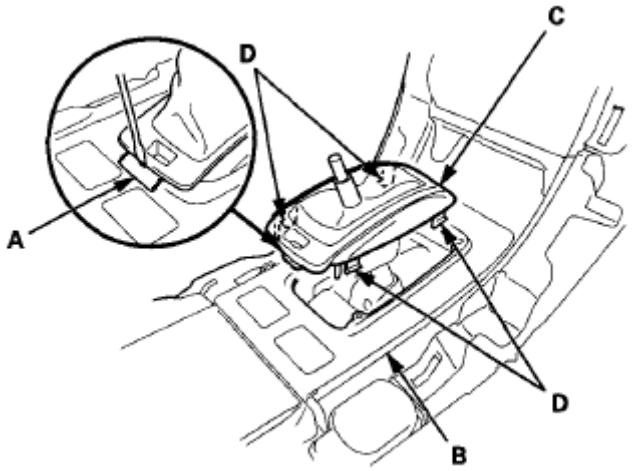


Fig. 315: Identifying Protective Tape, A/T Shift Panel, Shift Lever Boot Base And Hooks
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Release the lock tabs (A) on the shift lever boot using a screwdriver.

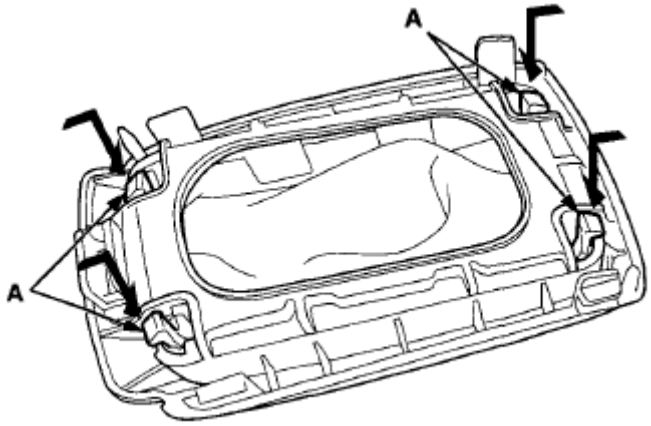


Fig. 316: Releasing Lock Tabs On Shift Lever Boot Using Screwdriver
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Replace the shift lever boot (A) or the shift lever boot base (B).

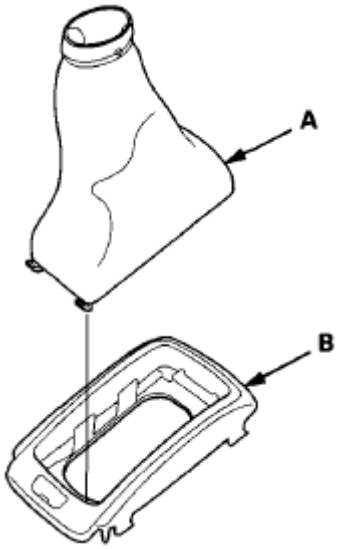


Fig. 317: Identifying Shift Lever Boot And Shift Lever Boot Base
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Install the shift lever boot on the shift lever boot base.
6. Install the shift lever boot base (A) on the A/T shift panel.

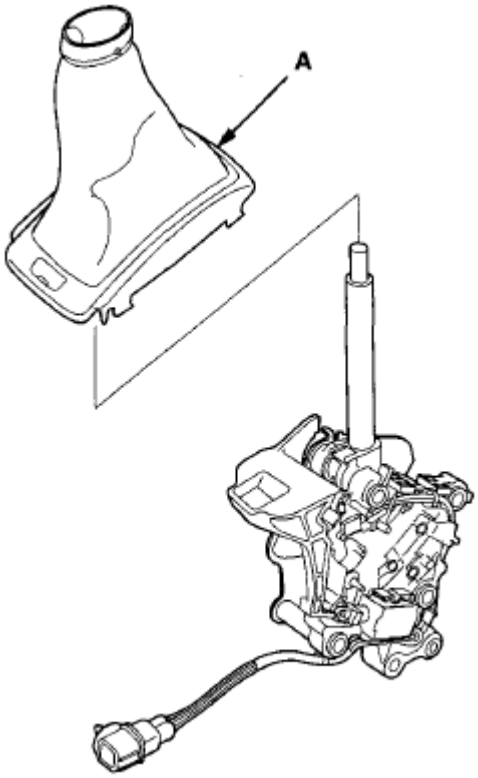


Fig. 318: Installing Shift Lever Boot Base On A/T Shift Panel
Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Install the shift lever knob (see **SHIFT LEVER KNOB REPLACEMENT**).

SHIFT CABLE REPLACEMENT

1. Remove the center console (see **CENTER CONSOLE REMOVAL/INSTALLATION**).
2. Move the shift lever to R.
3. Remove the nut securing the shift cable end.

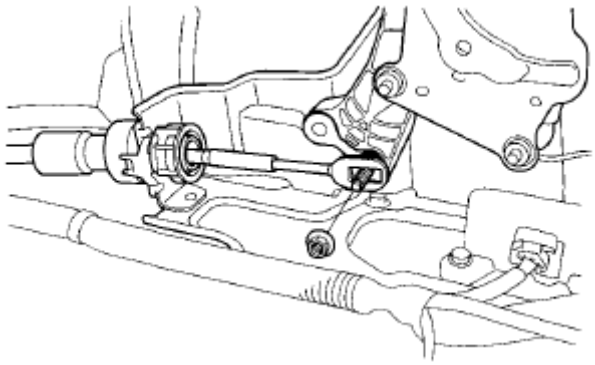


Fig. 319: Removing Nut Securing Shift Cable End
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Unlock the retainer lock (A).

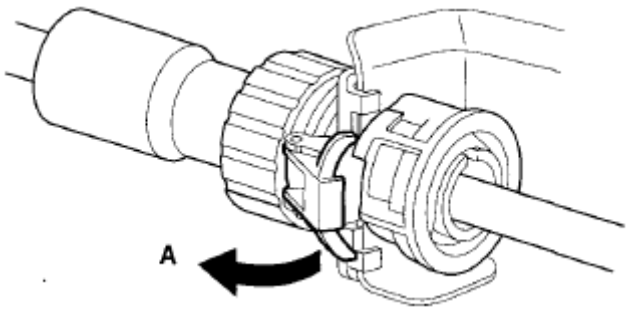


Fig. 320: Unlock Retainer Lock
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Rotate the socket holder retainer (A) counterclockwise (B) until it stops, and push the retainer lock (C) into the socket holder retainer to lock the retainer.

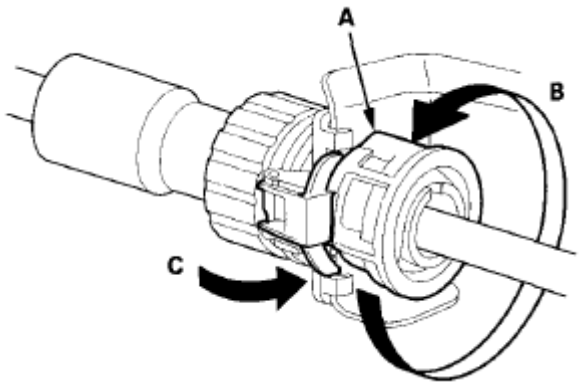


Fig. 321: Rotating Socket Holder Retainer Counterclockwise
Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Slide the socket holder (A) away from the bracket as shown to remove the shift cable (B) from the socket holder bracket (C). Do not remove the shift cable by pulling the shift cable guide (D).

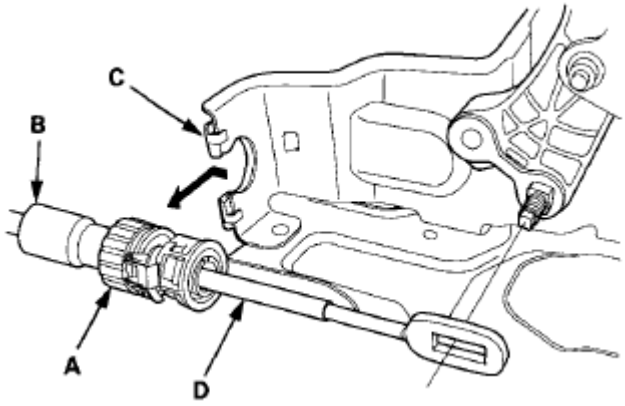


Fig. 322: Identifying Socket Holder, Shift Cable, Socket Holder Bracket And Shift Cable Guide
Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Remove the air cleaner (see **THROTTLE BODY CLEANING**).
8. Remove the front splash shield (see **FRONT SPLASH SHIELD REPLACEMENT**).
9. Remove the spring clip (A) and the control pin (B), then separate the shift cable end (C) from the control lever (D).

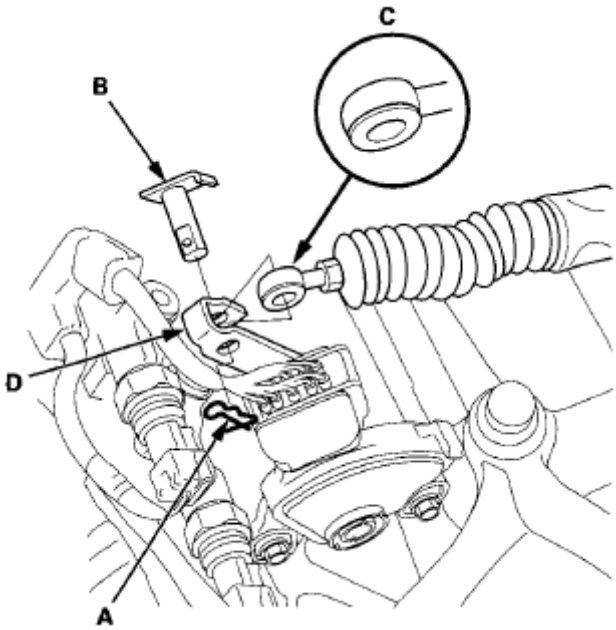


Fig. 323: Identifying Spring Clip, Control Pin, Shift Cable End And Control Lever
Courtesy of AMERICAN HONDA MOTOR CO., INC.

10. Remove the nuts (A) securing the shift cable bracket (B).

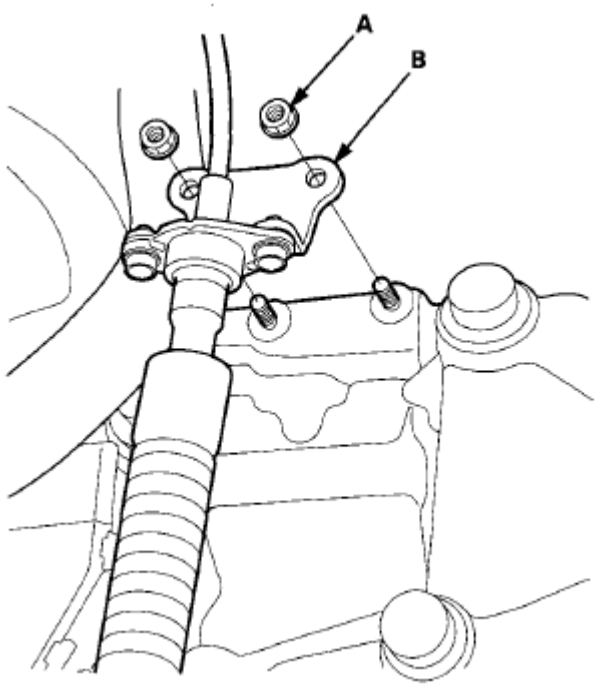


Fig. 324: Identifying Shift Cable Bracket And Nuts
Courtesy of AMERICAN HONDA MOTOR CO., INC.

11. Raise the vehicle on a lift, or apply parking brake, block both rear wheels, and raise the front of the

vehicle. Make sure it is securely supported.

12. Remove the heat shield.

With SH-AWD

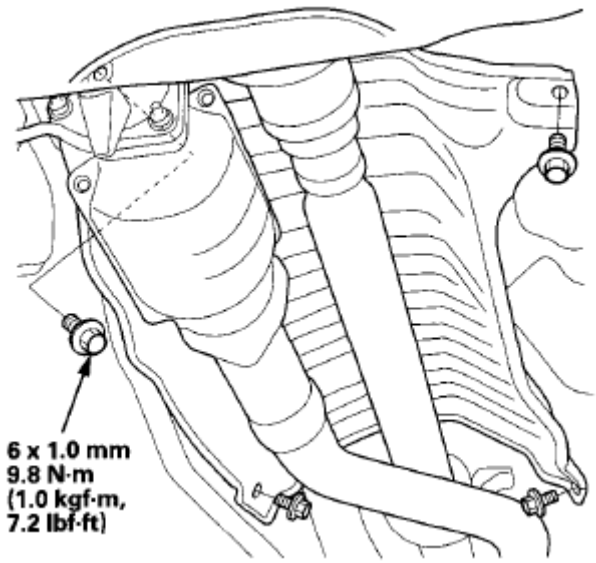


Fig. 325: Identifying Heat Shield With Torque Specifications (With SH-AWD)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Without SH-AWD

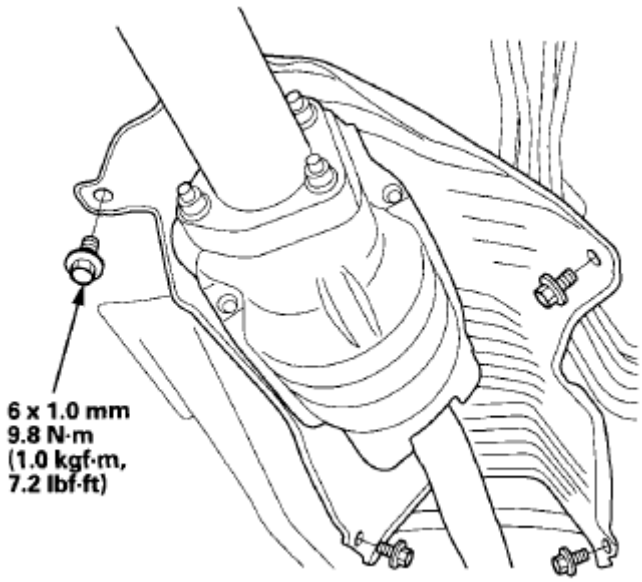


Fig. 326: Identifying Heat Shield With Torque Specifications (Without SH-AWD)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

13. Remove the bolt securing the shift cable bracket (A).

With SH-AWD

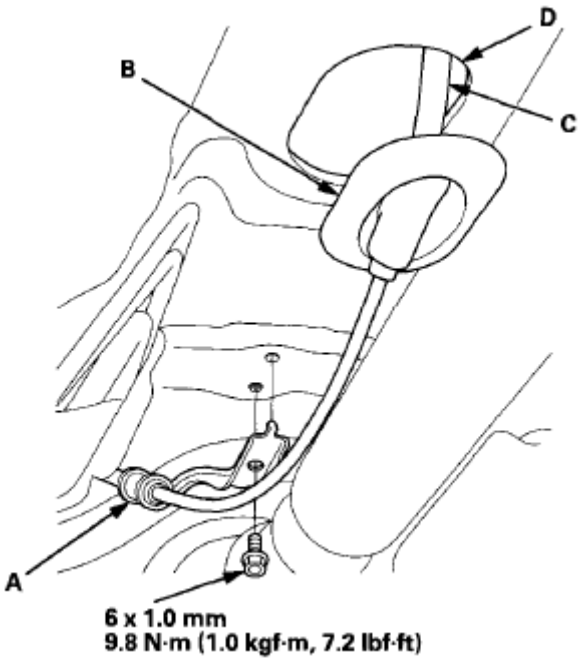


Fig. 327: Identifying Cable Bracket, Cable Grommet, Shift Cable And Grommet Hole With Torque Specifications (With SH-AWD)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Without SH-AWD

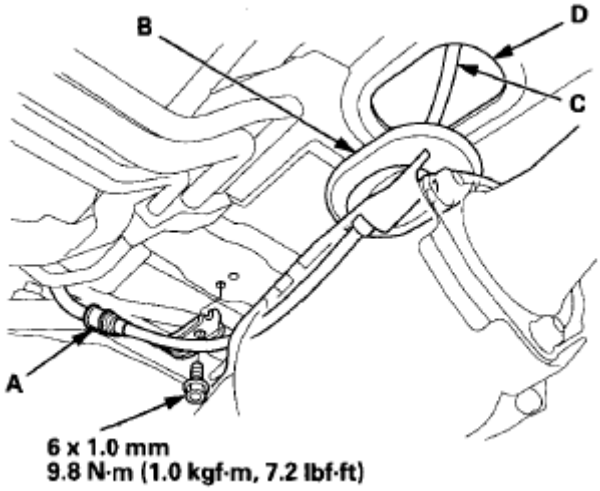


Fig. 328: Identifying Cable Bracket, Cable Grommet, Shift Cable And Grommet Hole With Torque Specifications (Without SH-AWD)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

14. Remove the shift cable grommet (B), and pull out the shift cable (C).

15. Insert a new shift cable through the grommet hole (D), and install the grommet in its hole. Do not bend the shift cable excessively.
16. Secure the shift cable bracket with the bolt.
17. Install the heat shield.
18. Install the shift cable bracket (A).

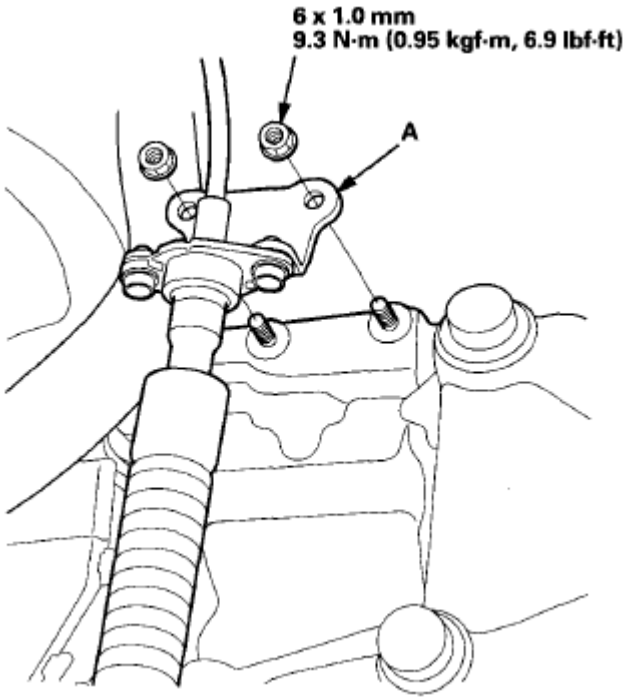


Fig. 329: Installing Shift Cable Bracket With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

19. Attach the shift cable end (A) to the control lever (B), then insert the control pin (C) into the control lever hole through the shift cable end, and secure the control pin with the spring clip (D).

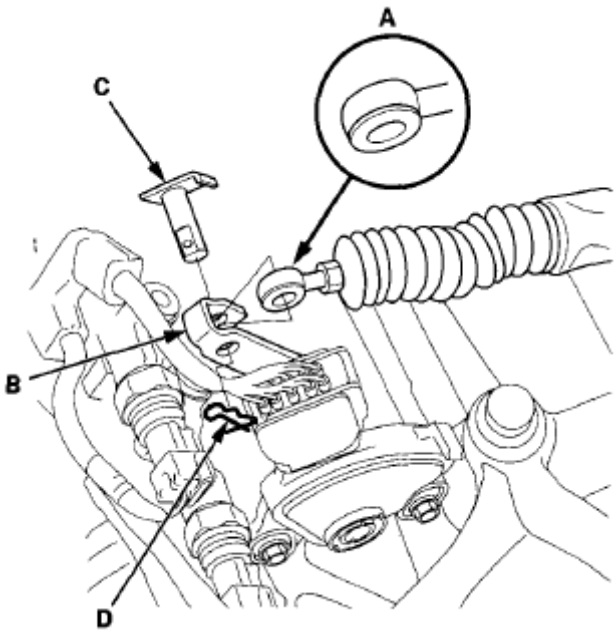


Fig. 330: Identifying Shift Cable End, Control Lever, Control Pin And Spring Clip
Courtesy of AMERICAN HONDA MOTOR CO., INC.

20. Install the front splash shield (see **FRONT SPLASH SHIELD REPLACEMENT**).
21. Install the air cleaner (see **THROTTLE BODY CLEANING**).
22. Adjust the shift cable (see **SHIFT CABLE ADJUSTMENT**).

SHIFT CABLE ADJUSTMENT

1. Remove the center console (see **CENTER CONSOLE REMOVAL/INSTALLATION**).
2. Move the shift lever to R.
3. Remove the nut securing the shift cable end.

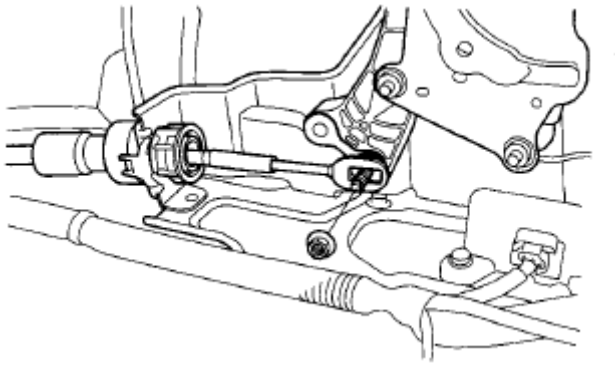


Fig. 331: Identifying Nut Securing Shift Cable End
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Unlock the retainer (A).

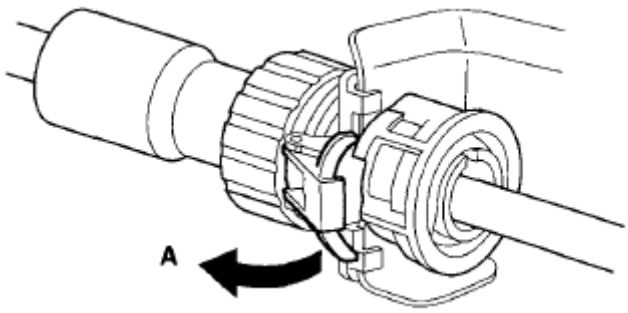


Fig. 332: Unlock Retainer
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Rotate the socket holder retainer (A) counterclockwise (B) until it stops, and push the retainer lock (C) into the socket holder retainer to lock the retainer.

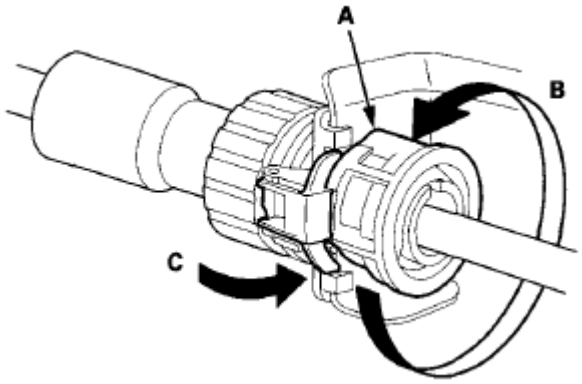


Fig. 333: Rotating Socket Holder Retainer Counterclockwise
Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Slide the socket holder (A) away from the bracket as shown to remove the shift cable (B) from the shift cable bracket (C). Do not remove the shift cable by pulling the shift cable guide (D).

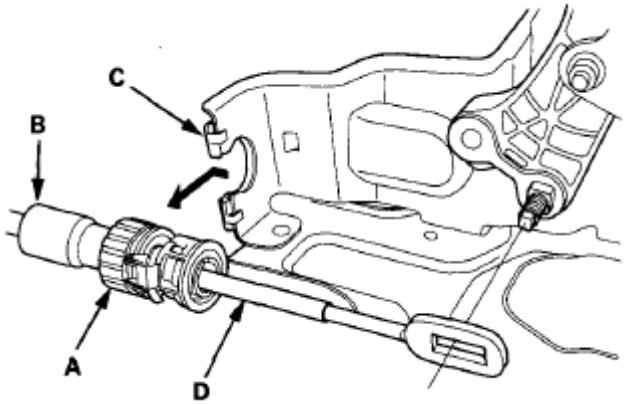


Fig. 334: Identifying Socket Holder, Shift Cable, Shift Cable Bracket And Shift Cable Guide
Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode, and check that the R position indicator comes on.

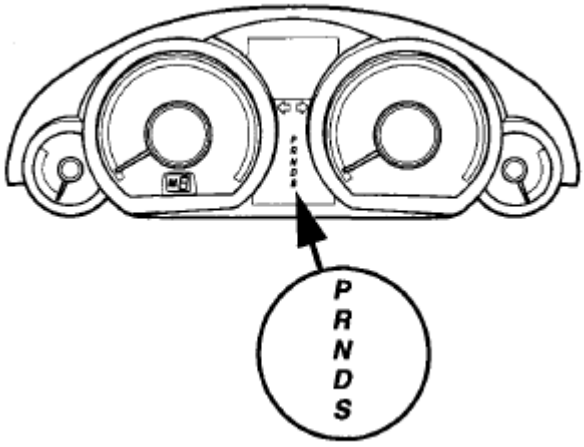


Fig. 335: Display - PRNDS Indicators
Courtesy of AMERICAN HONDA MOTOR CO., INC.

8. If necessary, push the shift cable (A) until it stops, then release it. Pull the shift cable back one step from the P position so that the shift position is in R. Do not hold the shift cable guide (B) to adjust the shift cable.

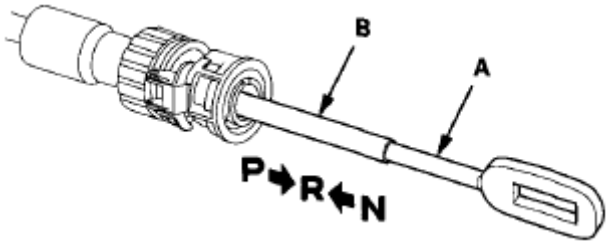


Fig. 336: Identifying Shift Cable And Shift Cable Guide
Courtesy of AMERICAN HONDA MOTOR CO., INC.

9. Move the shift lever in P, turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
10. Move the shift lever in R, then insert a 6.0 mm (0.24 in) pin (A) into the positioning hole (B) on the shift lever positioning guide, and into the positioning hole on the shift lever bracket. Use only a 6.0 mm (0.24 in) pin with no burrs.

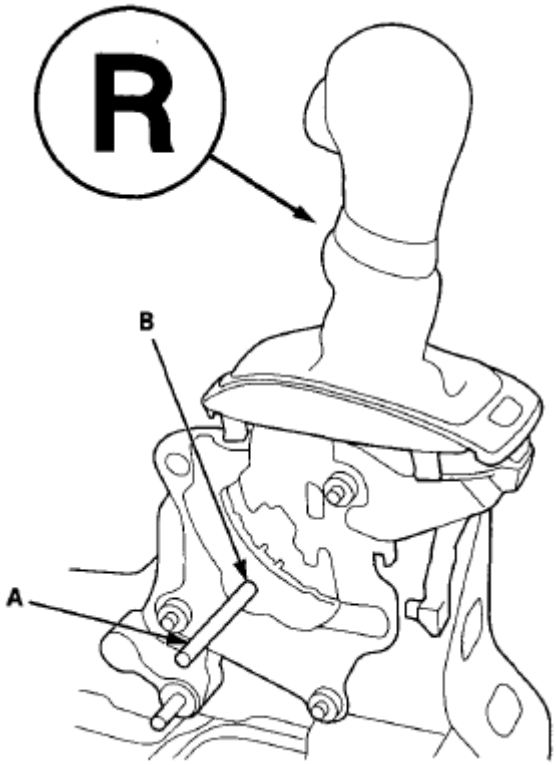


Fig. 337: Identifying Shift Lever (R), Pins And Positioning Hole
Courtesy of AMERICAN HONDA MOTOR CO., INC.

11. Align the shift cable slot (A) between the socket holder (B) and the socket holder retainer (C) with the opening (D) in the shift cable bracket (E), then slide the holder into the bracket while installing the shift cable end (F) over the mounting stud (G) by aligning its square hole with the square fitting (H) at the bottom of the stud. Do not install the shift cable by holding the shift cable guide (I).

NOTE: When the socket holder is installed in the shift cable bracket, the retainer lock is unhinged and releases the holder retainer lock, then the holder retainer returns under spring force to secure the shift cable.

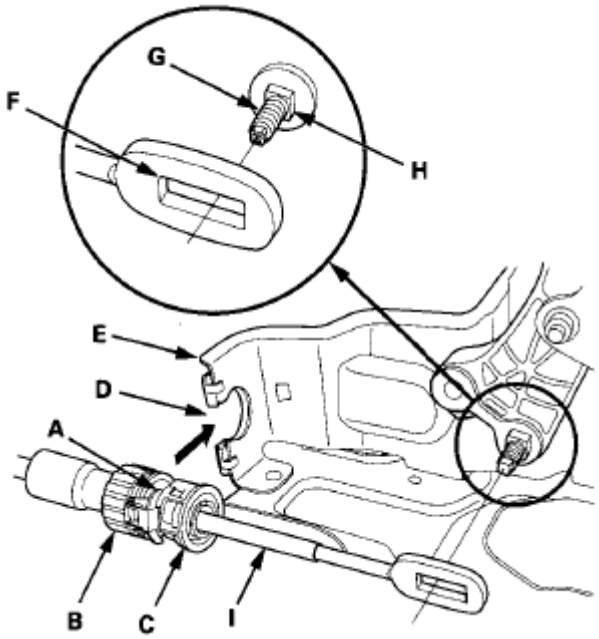


Fig. 338: Identifying Shift Cable And Related Components
Courtesy of AMERICAN HONDA MOTOR CO., INC.

12. Push the retainer lock (A) fully to lock the socket holder retainer (B), and make sure that the retainer lock fits into the hinged-joint (C). If the retainer lock does not fit with the edge of the hinged-joint, rotate the holder retainer counterclockwise while pushing the retainer lock until it locks.

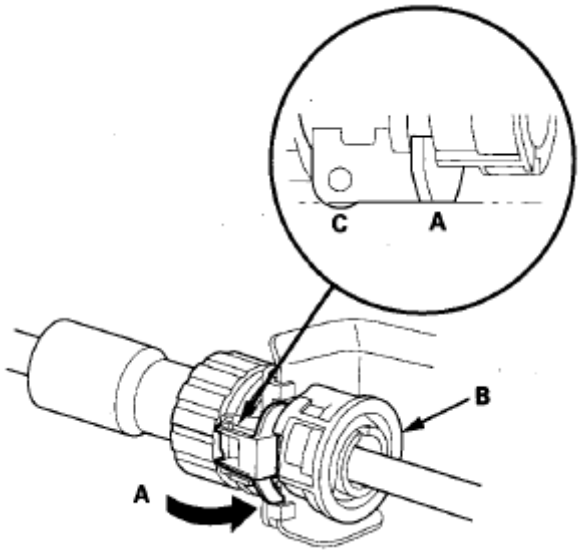


Fig. 339: Pushing Retainer Lock
Courtesy of AMERICAN HONDA MOTOR CO., INC.

13. Make sure the shift cable end (A) is properly installed on the mounting stud (B).
    - If the cable end is out of position with the mounting stud, remove the shift cable from the shift

cable bracket, then reinstall the cable end over the mounting stud before reinstalling the shift cable to the shift cable bracket. Do not install the shift cable end on the mounting stud with the shift cable installed on the shift cable bracket.

- If the shift cable end does not ride at the bottom of the mounting stud, rotate the stud to align the square fitting with the hole.

Properly installed:

Cable end rides at the bottom of the mounting stud.

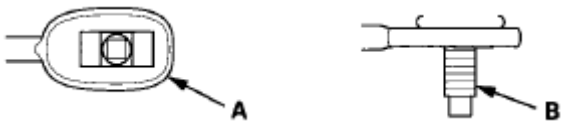


Fig. 340: Identifying Shift Cable End And Mounting Stud (Properly Installed)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Improperly installed:

Cable end out of position with the mounting stud.



Fig. 341: Identifying Shift Cable End And Mounting Stud (Improperly Installed)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Cable end out of alignment with the mounting stud.

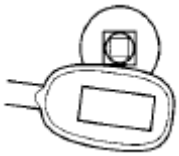


Fig. 342: Cable End Out Of Alignment With Mounting Stud - Diagram
Courtesy of AMERICAN HONDA MOTOR CO., INC.

14. Install and tighten the nut (A) on the shift cable end.

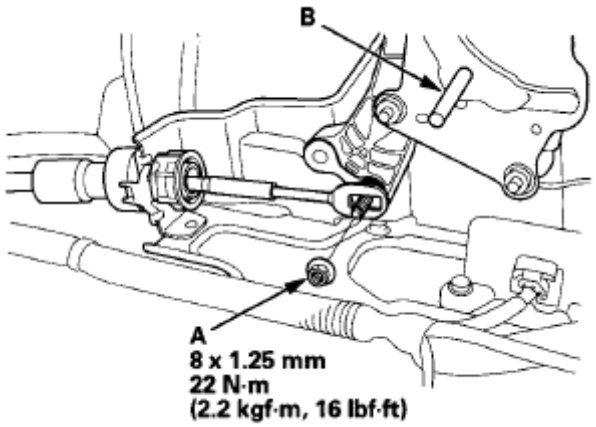


Fig. 343: Identifying Nut And Pin Of Shift Cable Assembly With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

15. Remove the 6.0 mm (0.24 in) pin (B) that was installed to hold the shift lever.
16. Turn the ignition switch to ON (II), or press the engine/start stop button to select the ON mode. Move the shift lever to each position, and check that the A/T gear position indicator follows the transmission range switch.
17. Shift the shift lever to P, and check that the shift lock works properly. Push the shift lock release, and check that the shift lever releases, and also check that the shift lever locks when it is shifted back to P.
18. Install the center console (see **CENTER CONSOLE REMOVAL/INSTALLATION**).

COMPONENT LOCATION INDEX

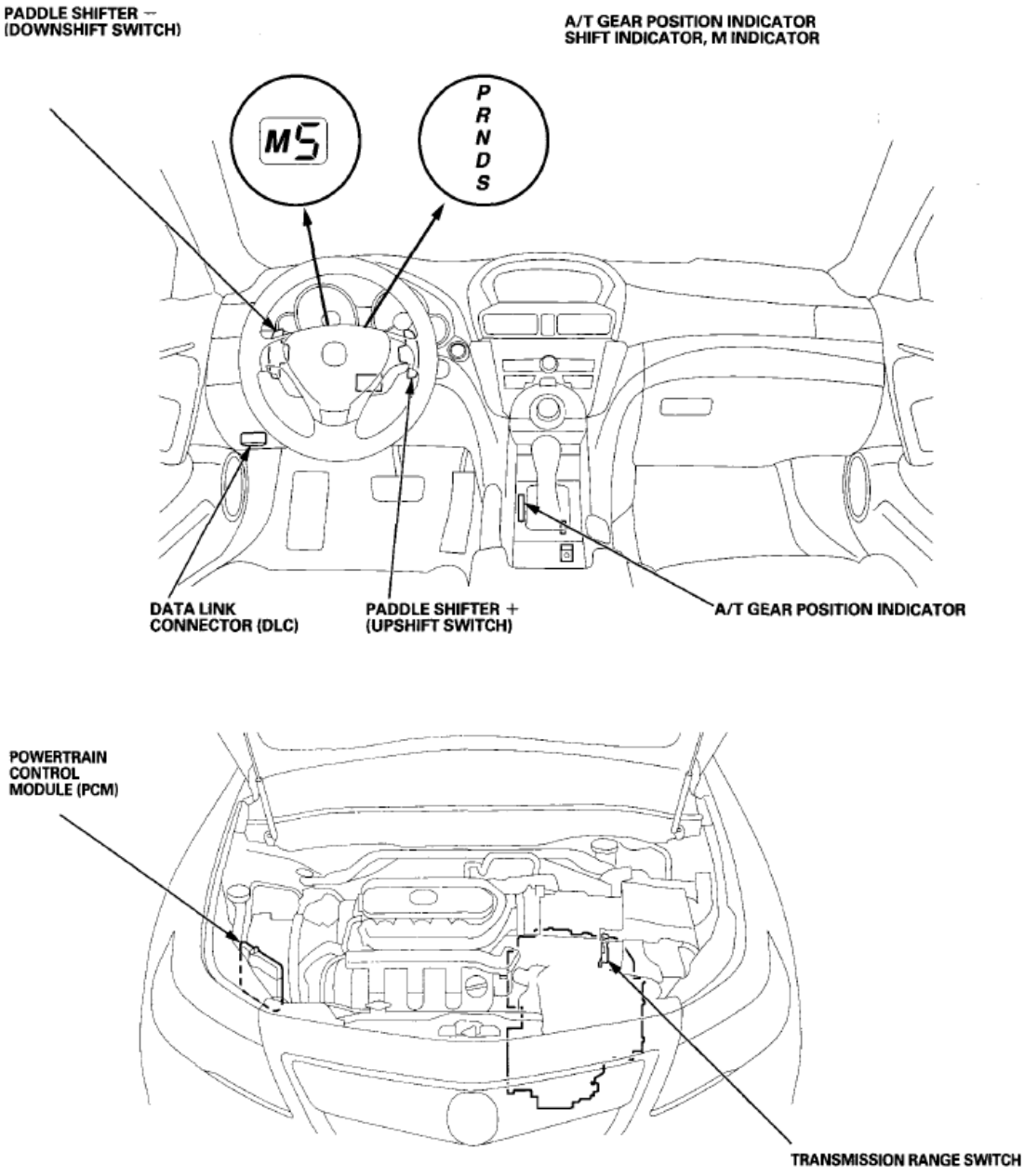


Fig. 344: Identifying A/T Gear Position Indicator Components Location
Courtesy of AMERICAN HONDA MOTOR CO., INC.

CIRCUIT DIAGRAM

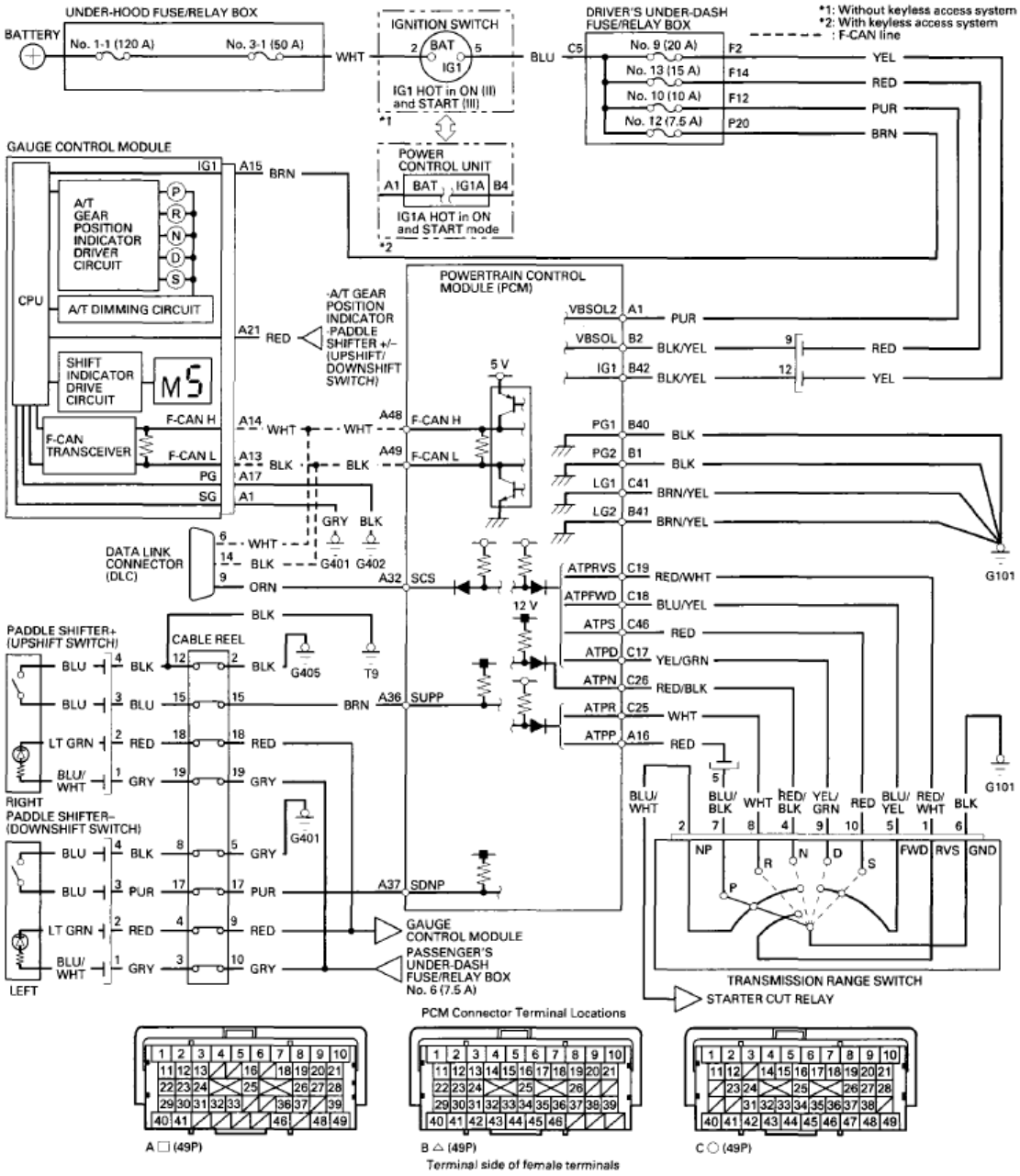


Fig. 345: A/T Gear Position Indicator - Circuit Diagram
Courtesy of AMERICAN HONDA MOTOR CO., INC.

TRANSMISSION RANGE SWITCH TEST

1. Remove the air cleaner (see **THROTTLE BODY CLEANING**).
2. Disconnect the transmission range switch connector.

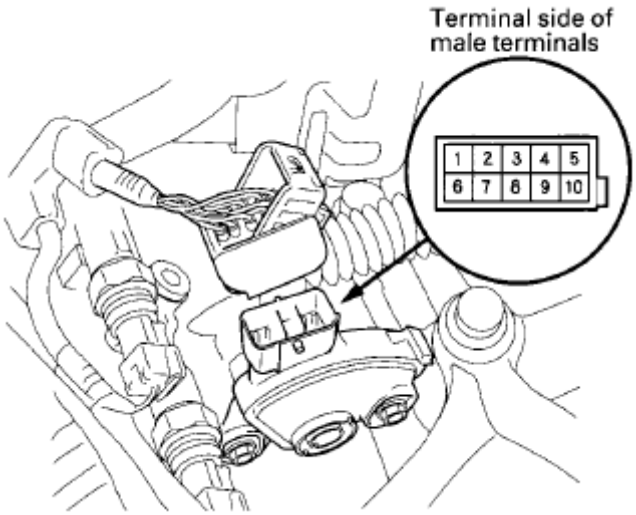


Fig. 346: Identifying Transmission Range Switch Connector Terminals
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Check for continuity between the terminals at the transmission range switch connector. There should be continuity between the terminals in the following table for each transmission range switch position.

Transmission Range Switch Connector

Position/Connector Terminal/Signal Connections										
	1	2	3	4	5	6	7	8	9	10
	ATP RVS	ATP NP	–	ATP N	ATP FWD	GND	ATP P	ATP R	ATP D	ATP S
P		○				○	○			
R	○					○		○		
N		○		○		○				
D					○	○			○	
S					○	○				○

Fig. 347: Checking Continuity Between Terminals At Transmission Range Switch Connector Using Reference Table
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. The transmission range switch test is finished if the test results are OK. Reinstall all removed components. If there is no continuity between any terminals, check the transmission range switch installation. If the switch installation is OK, replace the switch (see **TRANSMISSION RANGE SWITCH REPLACEMENT**).
5. Install the air cleaner (see **THROTTLE BODY CLEANING**).

TRANSMISSION RANGE SWITCH REPLACEMENT

1. Remove the air cleaner (see **THROTTLE BODY CLEANING**).
2. Remove the spring clip (A) and the control pin (B), then separate the shift cable end (C) from the control lever (D).

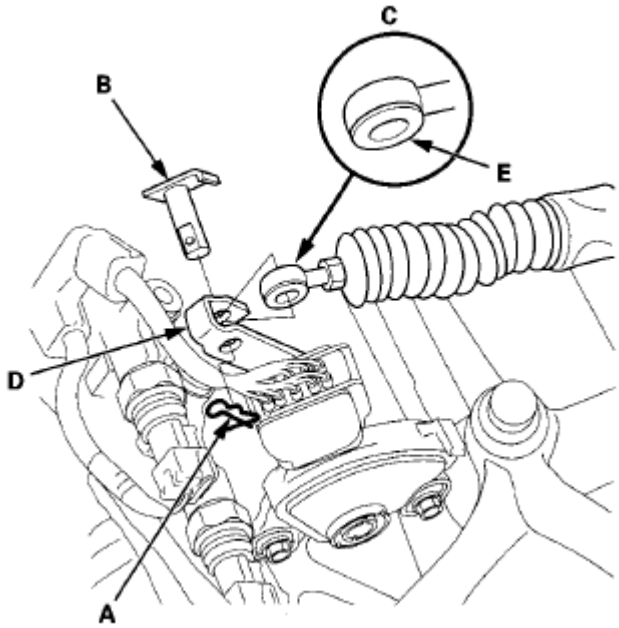


Fig. 348: Identifying Spring Clip, Control Pin, Shift Cable End And Control Lever
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Check the bushing (E) in the shift cable end for a proper fit and wear. If the bushing is loose or worn, replace the shift cable (see **SHIFT CABLE REPLACEMENT**).
4. Disconnect the transmission range switch connector.
5. Remove the nuts (A) securing the shift cable bracket (B).

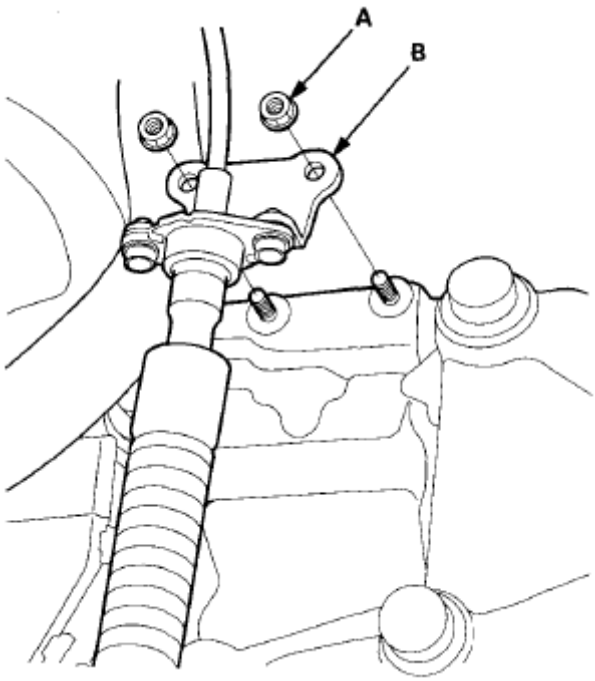


Fig. 349: Identifying Nuts And Shift Cable Bracket
Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Remove the transmission range switch.

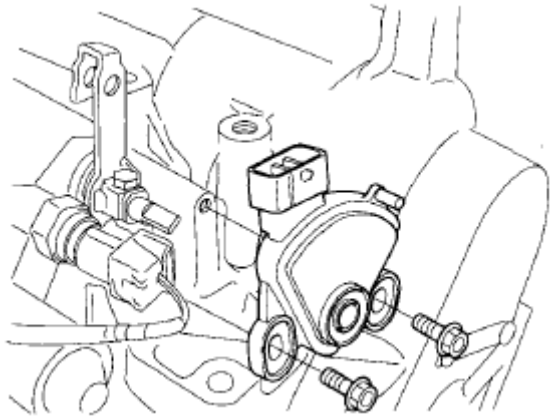


Fig. 350: Removing Transmission Range Switch
Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Turn the control lever fully counterclockwise to the P position. Turn the control lever clockwise two clicks to the N position.

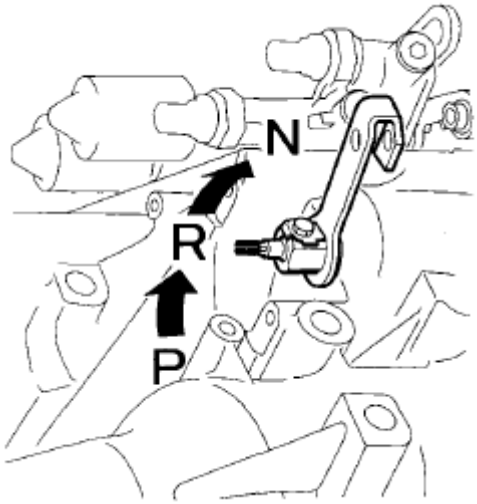


Fig. 351: Turning Control Lever Clockwise Two Clicks To N Position
Courtesy of AMERICAN HONDA MOTOR CO., INC.

8. Set a new transmission range switch (A) to the N position. Align the cutouts (B) on the rotary-frame with the neutral positioning cutouts (C) on the transmission range switch, then put a 2.0 mm (0.079 in) feeler gauge blade (D) in the cutouts to hold the transmission range switch in the N position.

NOTE: Be sure to use a 2.0 mm (0.079 in) feeler gauge blade or equivalent to hold the transmission range switch in the N position.

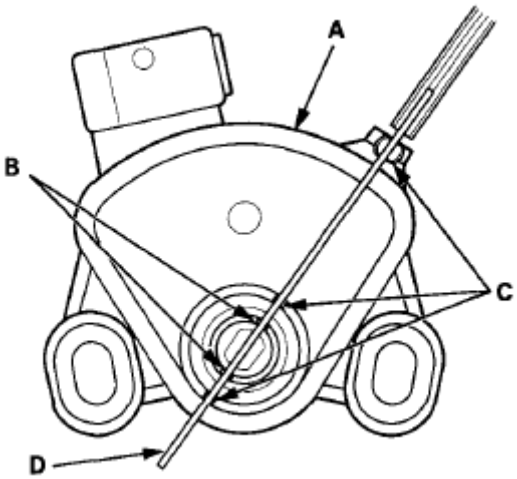


Fig. 352: Identifying Transmission Range Switch, Cutouts, Neutral Positioning Cutouts And Feeler Gauge Blade
Courtesy of AMERICAN HONDA MOTOR CO., INC.

9. Install the transmission range switch (A) gently on the selector control shaft (B) while holding it in the N position with the 2.0 mm (0.079 in) blade (C).

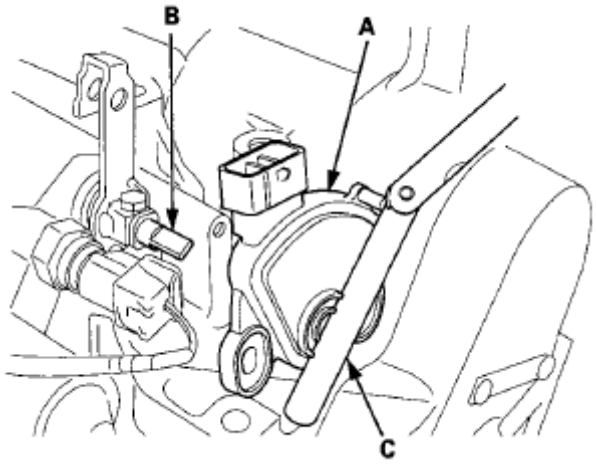


Fig. 353: Identifying Transmission Range Switch, Control Shaft And Blade
Courtesy of AMERICAN HONDA MOTOR CO., INC.

10. Tighten the bolts on the transmission range switch while you continue to hold the N position. Do not move the transmission range switch when tightening the bolts. Then remove the feeler gauge.

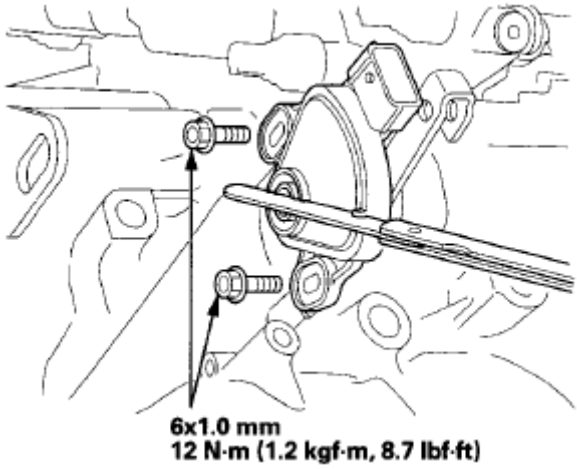


Fig. 354: Identifying Bolts On Transmission Range Switch With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

11. Check the connectors for corrosion, dirt, or oil, and clean or repair if necessary, then connect the connector securely.
12. Install the shift cable bracket (A).

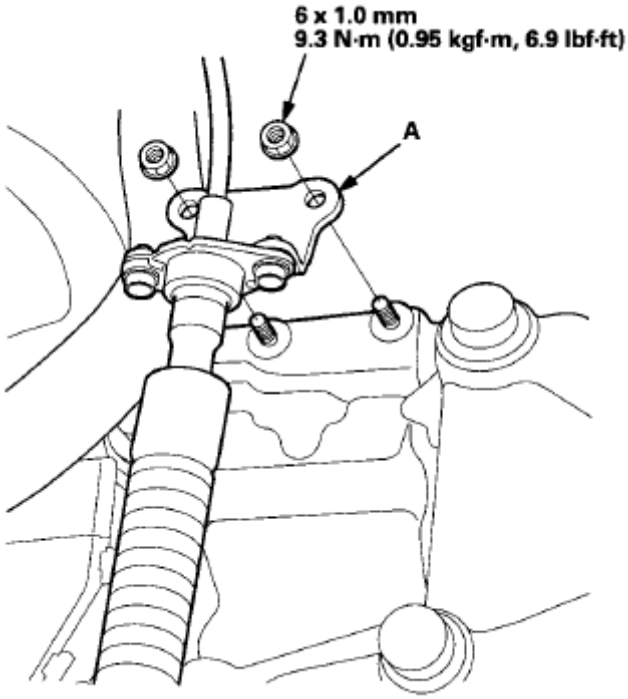


Fig. 355: Installing Shift Cable Bracket With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

13. Apply molybdenum grease to the hole in the bushing (A) in the shift cable end (B).

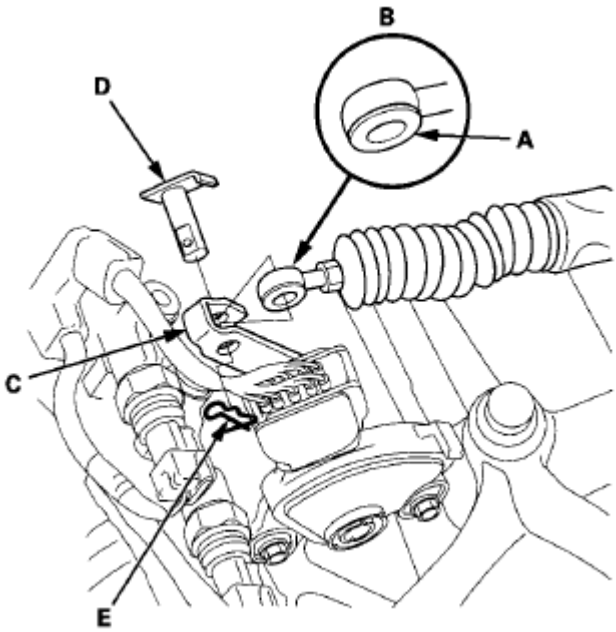


Fig. 356: Identifying Bushing, Shift Cable End, Control Lever, Control Pin And Spring Clip
Courtesy of AMERICAN HONDA MOTOR CO., INC.

14. Attach the shift cable end to the control lever (C), then insert the control pin (D) into the control lever

hole through the shift cable end, and secure the control pin with the spring clip (E).

15. Install the air cleaner (see **THROTTLE BODY CLEANING**).
16. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode. Move the shift lever through all positions, and verify the transmission range switch matches with the A/T gear position indicator.
17. Check that the engine starts in P and N, and does not start in any other shift lever position.
18. Check that the back-up lights come on when the shift lever is in R.
19. Raise the vehicle on a lift, make sure it is securely supported, and allow all four wheels to rotate freely. Then start the engine, and check the shift lever operation.

PADDLE SHIFTER + (UPSHIFT SWITCH) CIRCUIT TROUBLESHOOTING

SRS components are located in this area. Review the SRS component locations (see **COMPONENT LOCATION INDEX**) and the precautions and procedures (see **PRECAUTIONS AND PROCEDURES**) before doing repair or service.

1. Remove the steering wheel (see **STEERING WHEEL REMOVAL**).
2. Check for continuity between cable reel subharness 20P connector terminals No. 15 and No. 12 when pressing and releasing the paddle shifter + (upshift switch).

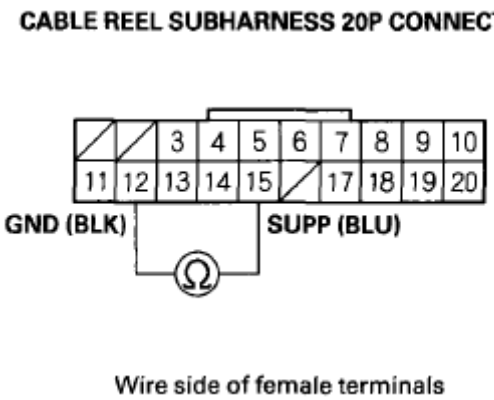


Fig. 357: Checking Continuity Between Cable Reel Subharness 20P Connector Terminals No. 15 And No. 12
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity when pressing the paddle shifter + (upshift switch) and no continuity when the paddle shifter + (upshift switch) is released?

YES - Go to step 5.

NO - Go to step 3.

3. Disconnect the paddle shifter + (upshift switch) connector.
4. Check for continuity between paddle shifter + (upshift switch) connector terminals No. 3 and No. 4 when pressing and releasing the paddle shifter + (upshift switch).

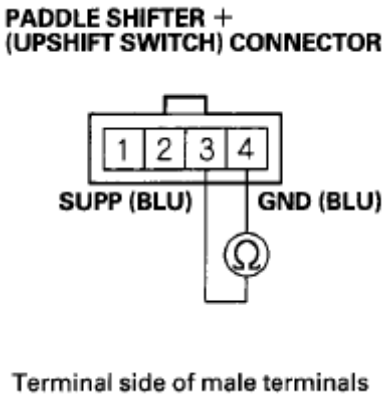


Fig. 358: Checking Continuity Between Paddle Shifter + (Upshift Switch) Connector Terminals No. 3 And No. 4
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity when pressing the paddle shifter + (upshift switch) and no continuity when the paddle shifter + (upshift switch) is released?

YES - Replace the cable reel subharness.

NO - Replace the paddle shifter + (upshift switch (see **PADDLE SHIFTER REPLACEMENT**)).

5. Remove the cable reel (see **CABLE REEL REPLACEMENT**).
6. Check for continuity between cable reel 20P connector terminal No. 2 and body ground.

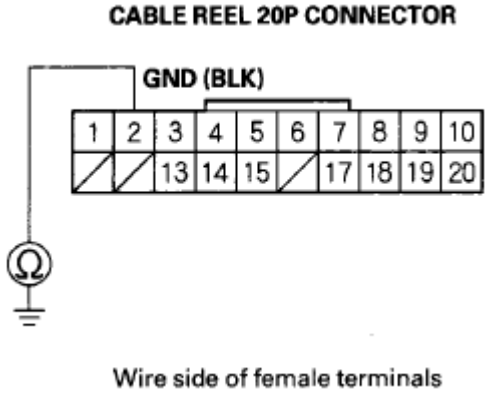


Fig. 359: Checking Continuity Between Cable Reel 20P Connector Terminal No. 2 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 7.

NO - Repair an open in the wire between cable reel 20P connector terminal No. 2 and body ground

(G405) (see **CONNECTOR TO FUSE/RELAY BOX INDEX**), or repair poor body ground (G405).

7. Check for continuity between cable reel 20P connector terminal No. 15 and body ground.

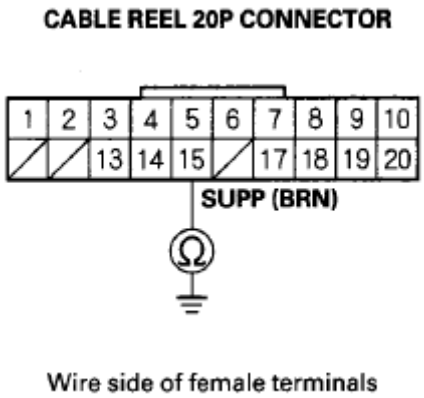


Fig. 360: Checking Continuity Between Cable Reel 20P Connector Terminal No. 15 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair a short to body ground in wire between cable reel 20P connector terminal No. 15 and PCM connector terminal A36.

NO - Go to step 8.

8. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
9. Measure the voltage between cable reel 20P connector terminals No. 2 and No. 15.

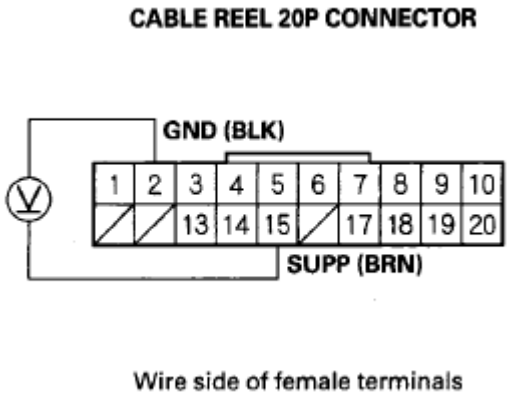


Fig. 361: Measuring Voltage Between Cable Reel 20P Connector Terminals No. 2 And No. 15
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there battery voltage?

YES - Replace the cable reel (see **CABLE REEL REPLACEMENT**).

NO - Go to step 10.

10. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
11. Jump the SCS line with the HDS.
12. Disconnect PCM connector A (49P).
13. Connect cable reel 20P connector terminal No. 15 to body ground with a jumper wire.

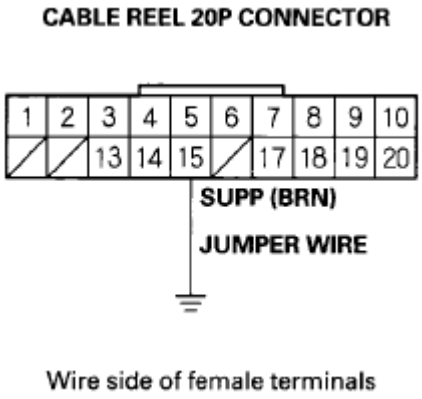


Fig. 362: Identifying Cable Reel 20P Connector Terminal No. 15 Connection With Body Ground Using Jumper Wire
Courtesy of AMERICAN HONDA MOTOR CO., INC.

14. Check for continuity between PCM connector terminal A36 and body ground.

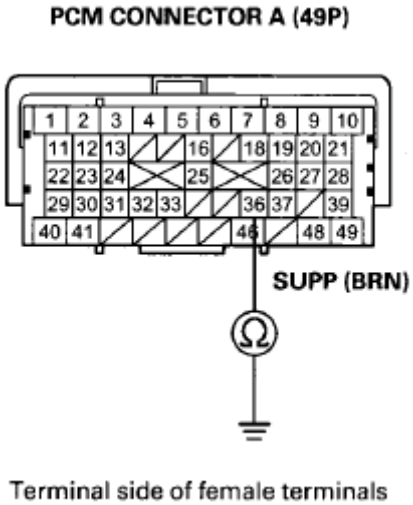


Fig. 363: Checking Continuity Between PCM Connector Terminal A36 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Check for loose or poor connections at PCM connector terminal A36. If the connection is OK, substitute a known-good PCM (see **SUBSTITUTING THE ECM/PCM**) and recheck.

NO - Repair an open in the wire between PCM connector terminal A36 and the cable reel 20P connector.

PADDLE SHIFTER - (DOWNSHIFT SWITCH) CIRCUIT TROUBLESHOOTING

SRS components are located in this area. Review the SRS component locations (see **COMPONENT LOCATION INDEX**) and the precautions and procedures (see **PRECAUTIONS AND PROCEDURES**) before doing repair or service.

1. Remove the steering wheel (see **STEERING WHEEL REMOVAL**).
2. Check for continuity between cable reel subharness 20P connector terminals No. 17 and No. 8 when pressing and releasing the paddle shifter - (downshift switch).

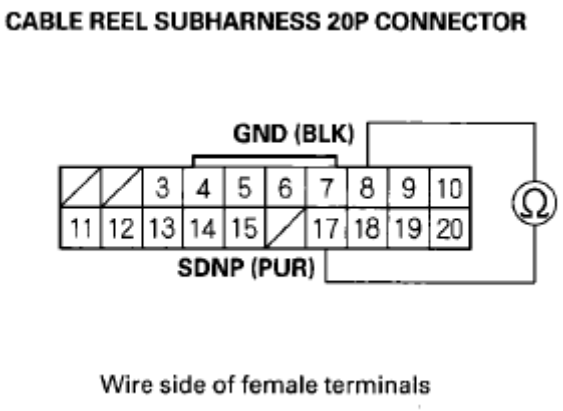


Fig. 364: Checking Continuity Between Cable Reel Subharness 20P Connector Terminals No. 17 And No. 8
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity when pressing the paddle shifter - (downshift switch) and no continuity when the paddle shifter - (downshift switch) is released?

YES - Go to step 5.

NO - Go to step 3.

3. Disconnect the paddle shifter - (downshift switch) connector.
4. Check for continuity between paddle shifter - (downshift switch) connector terminals No. 3 and No. 4 when pressing and releasing the paddle shifter - (downshift switch).

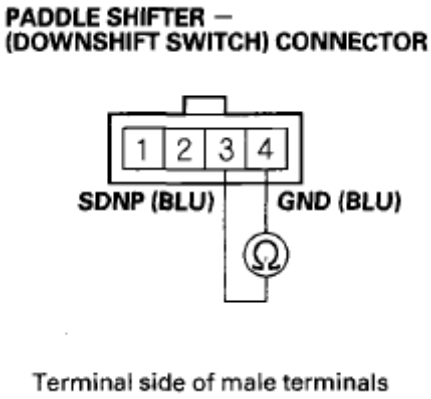


Fig. 365: Checking Continuity Between Paddle Shifter - Connector Terminals No. 3 And No. 4
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity when pressing the paddle shifter - (downshift switch) and no continuity when the paddle shifter - (downshift switch) is released?

YES - Replace the cable reel subharness.

NO - Replace the paddle shifter - (downshift switch) (see **PADDLE SHIFTER REPLACEMENT**)).

5. Remove the cable reel (see **CABLE REEL REPLACEMENT**).
6. Check for continuity between cable reel 20P connector terminal No. 5 and body ground.

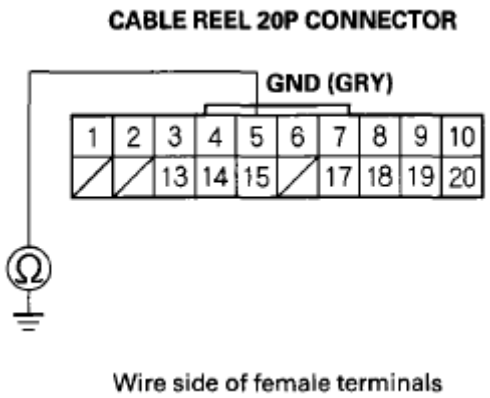


Fig. 366: Checking Continuity Between Cable Reel 20P Connector Terminal No. 5 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 7.

NO - Repair an open in the wire between cable reel 20P connector terminal No. 5 and body ground (G401) (see **CONNECTOR TO FUSE/RELAY BOX INDEX**), or repair poor body ground (G401).

7. Check for continuity between cable reel 20P connector terminal No. 17 and body ground.

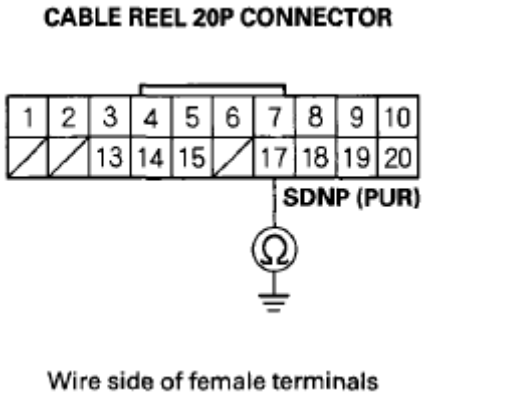


Fig. 367: Checking Continuity Between Cable Reel 20P Connector Terminal No. 17 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair a short to body ground in the wire between cable reel 20P connector terminal No. 17 and PCM connector terminal A37.

NO - Go to step 8.

8. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
9. Measure the voltage between cable reel 20P connector terminals No. 5 and No. 17.

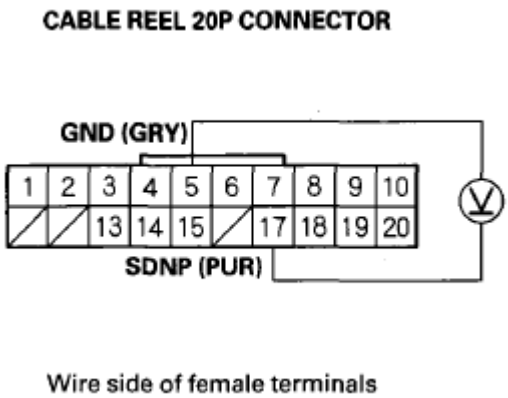


Fig. 368: Measuring Voltage Between Cable Reel 20P Connector Terminals No. 5 And No. 17
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there battery voltage?

YES - Replace the cable reel (see **CABLE REEL REPLACEMENT**).

NO - Go to step 10.

10. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
11. Jump the SCS line with the HDS.
12. Disconnect PCM connector A (49P).
13. Connect cable reel 20P connector terminal No. 17 to body ground with a jumper wire.

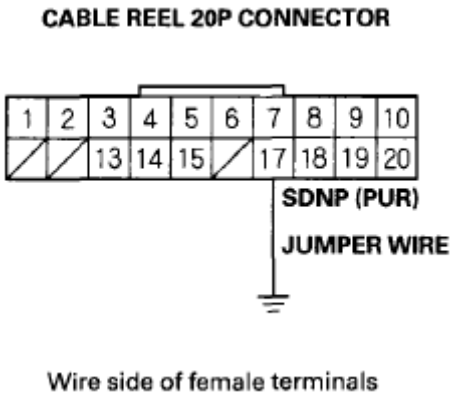


Fig. 369: Identifying Cable Reel 20P Connector Terminal No. 17 Connection With Body Ground Using Jumper Wire
Courtesy of AMERICAN HONDA MOTOR CO., INC.

14. Check for continuity between PCM connector terminal A37 and body ground.

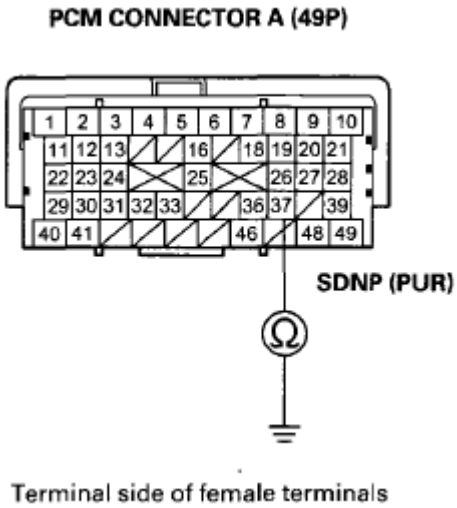


Fig. 370: Checking Continuity Between PCM Connector Terminal A37 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Check for loose or poor connections at PCM connector terminal A37. If the connection is OK, substitute a known-good PCM (see **SUBSTITUTING THE ECM/PCM**) and recheck.

NO - Repair an open in the wire between PCM connector terminal A37 and the cable reel 20P connector.

PADDLE SHIFTER ILLUMINATION CIRCUIT TROUBLESHOOTING

SRS components are located in this area. Review the SRS component locations (see **COMPONENT LOCATION INDEX**) and the precautions and procedures (see **PRECAUTIONS AND PROCEDURES**) before doing repair or service.

1. Remove the driver's airbag (see **DRIVER'S AIRBAG REPLACEMENT**).
2. Disconnect the paddle shifter connector.
3. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode, and turn the combination light switch to the PARKING (SMALL) position.
4. Measure the voltage between paddle shifter connector terminal No. 1 and body ground.

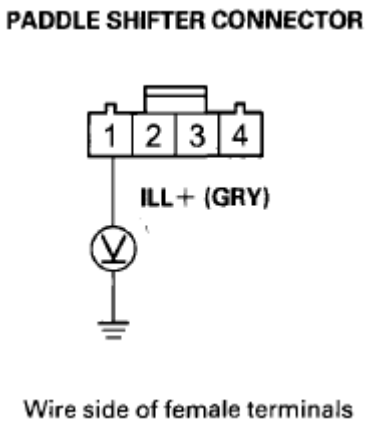


Fig. 371: Measuring Voltage Between Paddle Shifter Connector Terminal No. 1 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there battery voltage?

YES - Go to step 8.

NO - Go to step 5.

5. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode, and turn the combination light switch to the OFF position.
6. Check the No. 6 (7.5 A) fuse in the passenger's under-dash fuse/relay box.

Is the fuse OK?

YES - Repair an open in the wire between paddle shifter connector terminal No. 1 and the passenger's under-dash fuse/relay box.

NO - Go to step 7.

7. Check for continuity between paddle shifter connector terminal No. 1 and body ground.

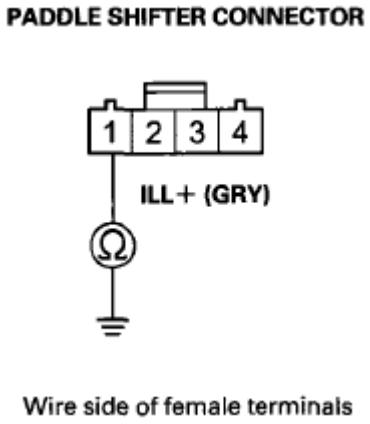


Fig. 372: Checking Continuity Between Paddle Shifter Connector Terminal No. 1 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair a short to body ground in the wire between paddle shifter connector terminal No. 1 and the passenger's under-dash fuse/relay box.

NO - Install a new No. 6 (7.5 A) fuse in the passenger's under-dash fuse/relay box, then go to step 4.

8. Remove the gauge control module (see **GAUGE CONTROL MODULE REPLACEMENT**).
9. Check for continuity between paddle shifter connector terminal No. 2 and the gauge control module 32P connector terminal No. 21.

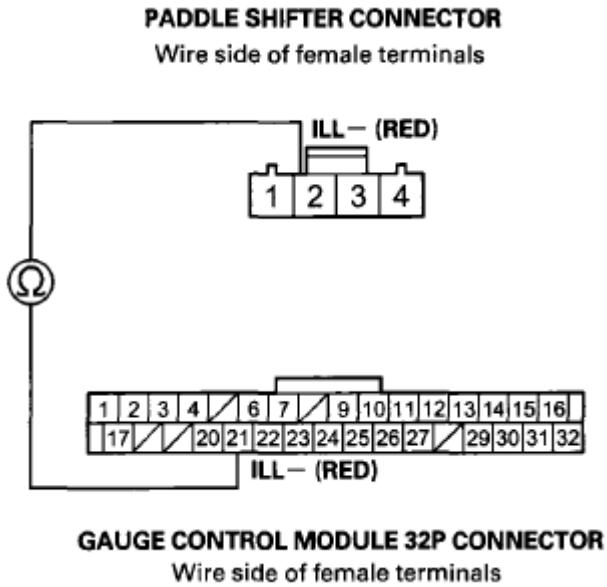


Fig. 373: Checking Continuity Between Paddle Shifter Connector And Gauge Control Module 32P Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Check the illumination control circuit in the gauge control module self-diagnostic function (see **SELF-DIAGNOSTIC FUNCTION**). If the test results are OK, replace the paddle shifter (see **PADDLE SHIFTER REPLACEMENT**).

NO - Repair an open in the wire between paddle shifter connector terminal No. 2 and the gauge control module.

PADDLE SHIFTER REPLACEMENT

SRS components are located in this area. Review the SRS component locations (see **COMPONENT LOCATION INDEX**) and the precautions and procedures (see **PRECAUTIONS AND PROCEDURES**) before doing repair or service.

1. Remove the steering wheel (see **STEERING WHEEL REMOVAL**).
2. Remove the four screws (A) securing the steering wheel rear cover (B).

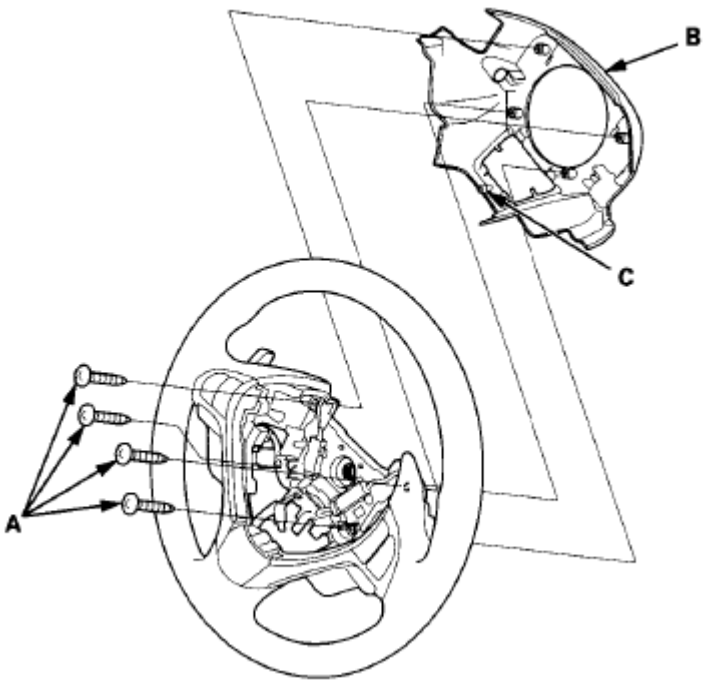


Fig. 374: Identifying Screws, Steering Wheel Rear Cover And Snap-Fit Portion
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Pull the snap-fit portion (C) up carefully, then remove the steering wheel rear cover.
4. Disconnect the paddle shifter + (upshift switch) connector or the paddle shifter - (downshift switch)

connector. Remove the screws (A) securing the paddle shifter + (upshift switch) (B) or the paddle shifter - (downshift switch) (C), then remove the paddle shifter + or the paddle shifter -.

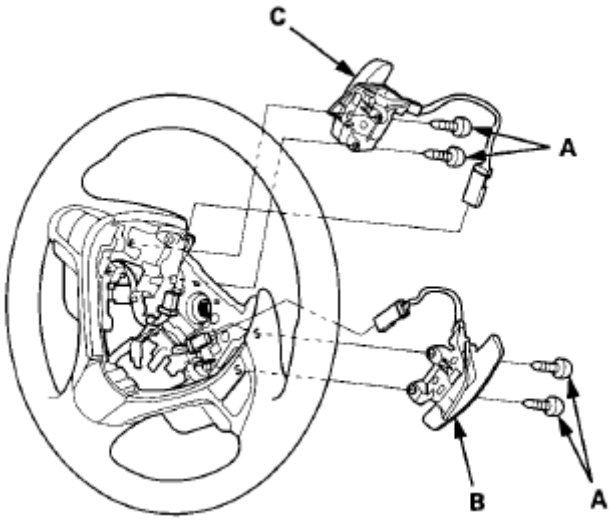


Fig. 375: Identifying Screws, Paddle Shifter + (Upshift Switch) And Paddle Shifter - (Downshift Switch)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Install a new paddle shifter + or a new paddle shifter - on the steering wheel.
6. Connect the paddle shifter + connector or the paddle shifter - connector securely, and install the connector in the connector holder.
7. Install the steering wheel rear cover with the screws.
8. Install the steering wheel (see **STEERING WHEEL INSTALLATION**).

A/T GEAR POSITION INDICATOR REPLACEMENT

1. Remove the A/T shift panel (see **CENTER CONSOLE PANEL REMOVAL/INSTALLATION**).
2. Remove the A/T gear position indicator (A) from the A/T shift panel (B).

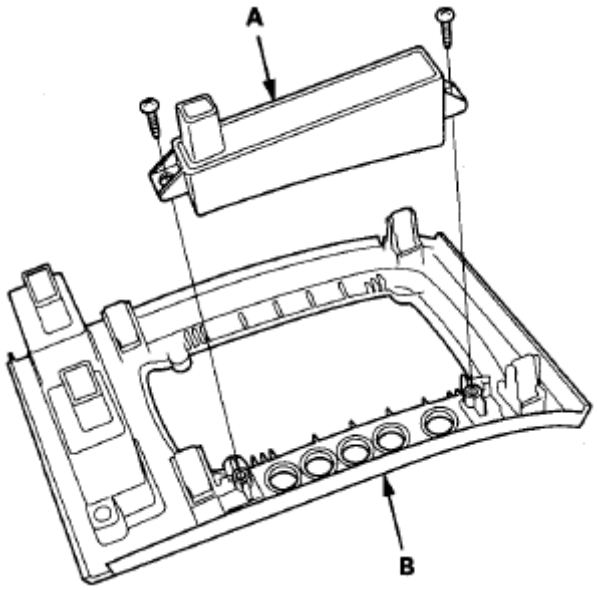


Fig. 376: Removing A/T Gear Position Indicator From A/T Shift Panel
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Install a new A/T gear position indicator with the screws.
4. Install the A/T shift panel (see **CENTER CONSOLE PANEL REMOVAL/INSTALLATION**).

COMPONENT LOCATION INDEX

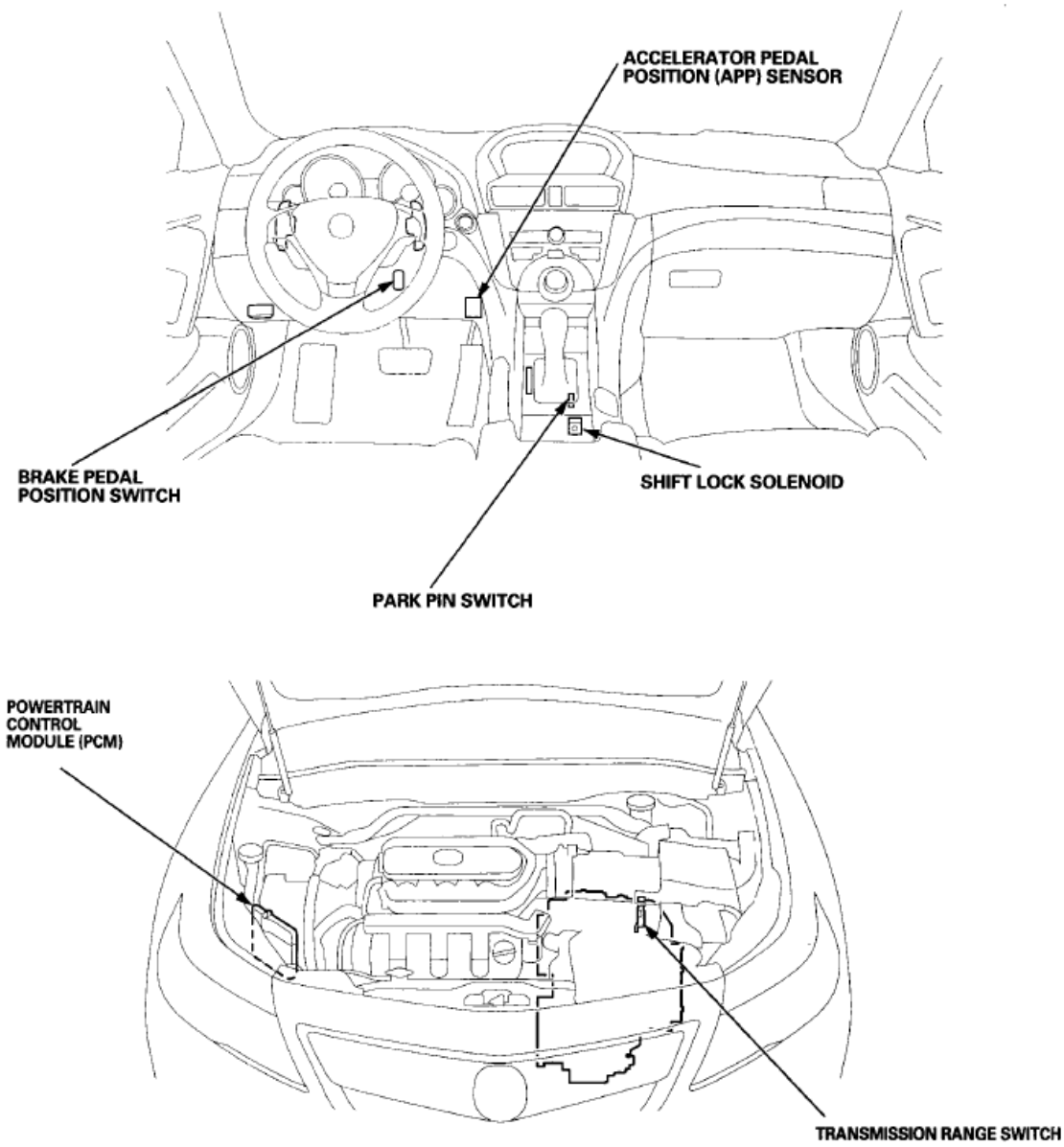


Fig. 377: Identifying A/T Inter Lock System Components Location
Courtesy of AMERICAN HONDA MOTOR CO., INC.

CIRCUIT DIAGRAM

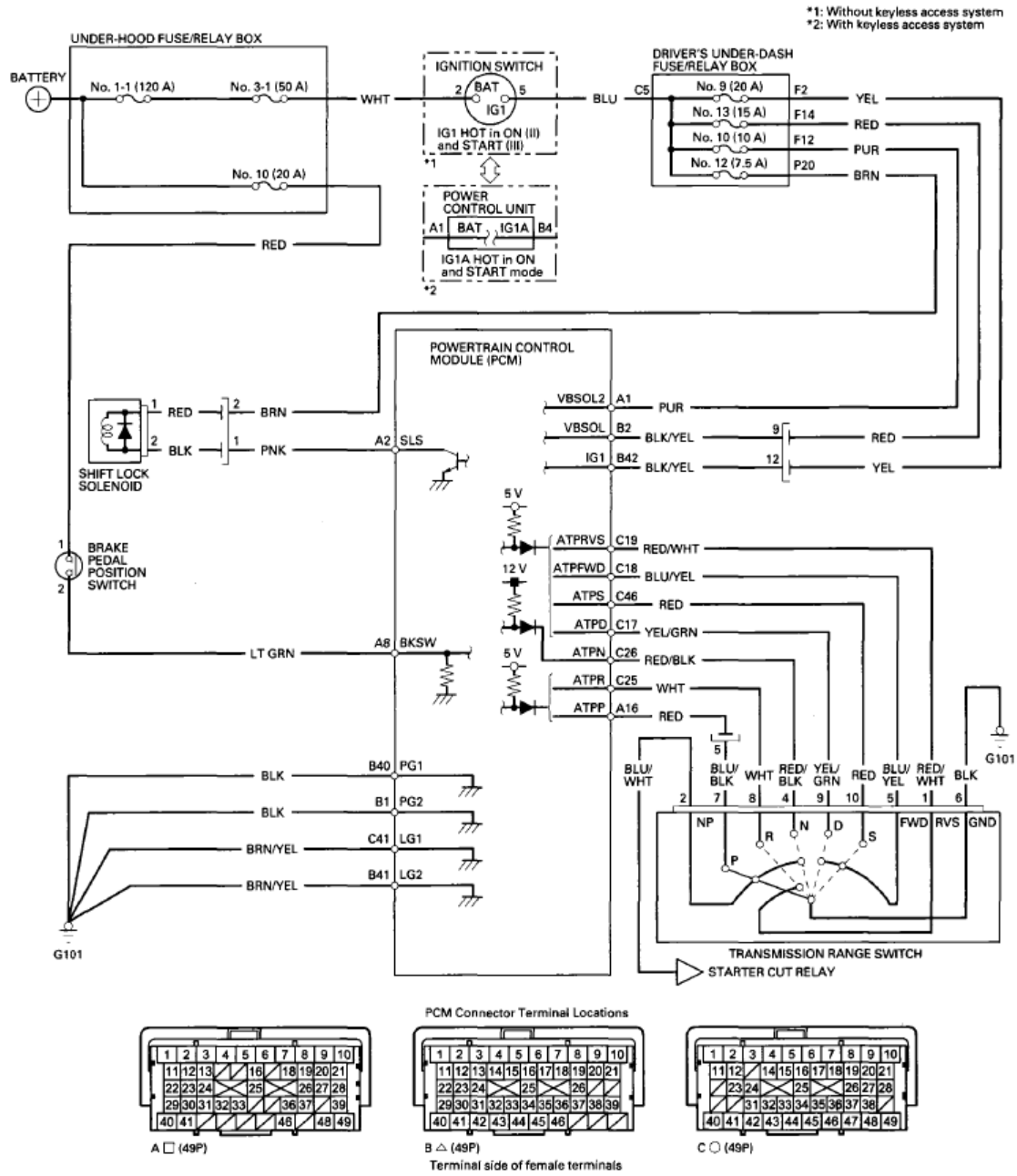


Fig. 378: A/T Inter Lock System - Circuit Diagram
Courtesy of AMERICAN HONDA MOTOR CO., INC.

SHIFT LOCK SYSTEM CIRCUIT TROUBLESHOOTING

NOTE: Check for A/T DTCs. If any DTCs are present, troubleshoot those first.

1. Connect the HDS to the DLC (A) located under the driver's side of the dashboard.

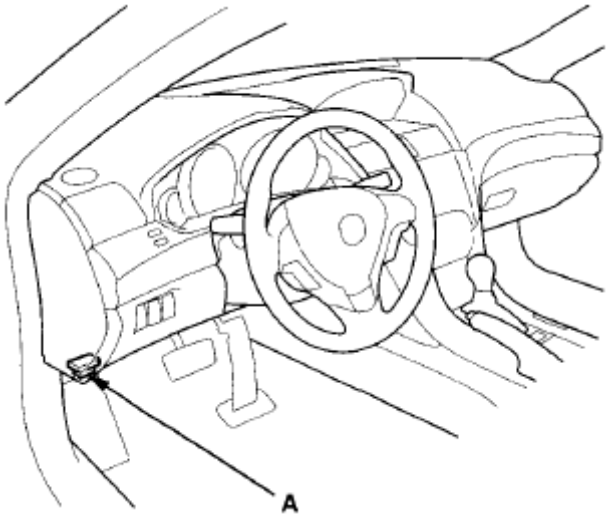


Fig. 379: Identifying Data Link Connector Location
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode. Make sure the HDS communicates with the PCM. If it does not, go to the DLC circuit troubleshooting (see **DLC CIRCUIT TROUBLESHOOTING**).
3. Select Shift Lock Solenoid Test in the Miscellaneous Test Menu, and check that the shift lock solenoid operates with the HDS.

   Does the shift lock solenoid work properly?

   YES - Go to step 16.

   NO - Go to step 4.

4. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
5. Remove the center console (see **CENTER CONSOLE REMOVAL/INSTALLATION**).
6. Disconnect the shift lock solenoid connector (see **SHIFT LOCK SOLENOID REPLACEMENT**).
7. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
8. Measure the voltage between shift lock solenoid connector terminal No. 1 and body ground.

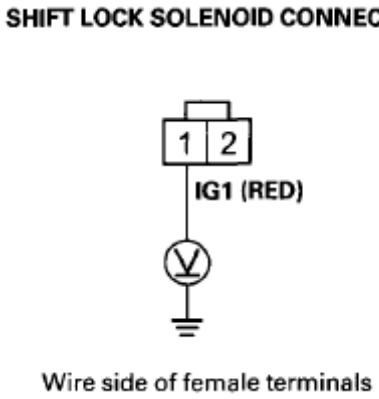


Fig. 380: Measuring Voltage Between Shift Lock Solenoid Connector Terminal No. 1 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there battery voltage?

YES - Go to step 9.

NO - Check for a blown No. 12 (7.5 A) fuse in the driver's under-dash fuse/relay box. If the fuse is blown, replace it. If the fuse blows again, repair a short in the No. 12 (7.5 A) fuse circuit. If the fuse is OK, repair an open in the wire between shift lock solenoid connector terminal No. 1 and the driver's under-dash fuse/relay box.

9. With the shift lever in P, press the brake pedal. Do not press the accelerator pedal.
10. Measure the voltage between shift lock solenoid connector terminals No. 1 and No. 2 while pressing the brake pedal.

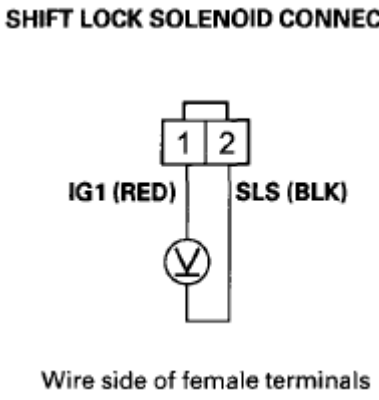


Fig. 381: Measuring Voltage Between Shift Lock Solenoid Connector Terminals No. 1 And No. 2
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there battery voltage?

YES - Go to step 11.

NO - Go to step 12.

11. Release the brake pedal, and measure the voltage between shift lock solenoid connector terminals No. 1 and No. 2. The shift lever must be in P.

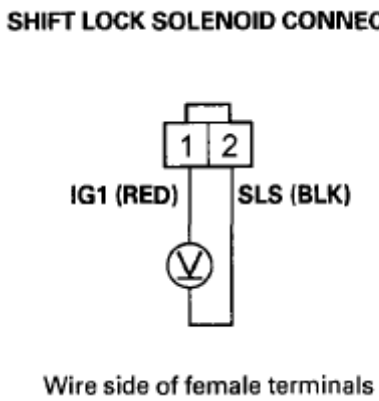


Fig. 382: Measuring Voltage Between Shift Lock Solenoid Connector Terminals No. 1 And No. 2
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there battery voltage?

YES - Repair a short to body ground in the wire between PCM connector terminal A2 and the shift lock solenoid connector.

NO - Check the shift lock mechanism. If the mechanism is OK, replace the shift lock solenoid (see **SHIFT LOCK SOLENOID REPLACEMENT**).

12. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
13. Jump the SCS line with the HDS.
14. Disconnect PCM connector A (49P).
15. Check for continuity between PCM connector terminal A2 and shift lock solenoid connector terminal No. 2.

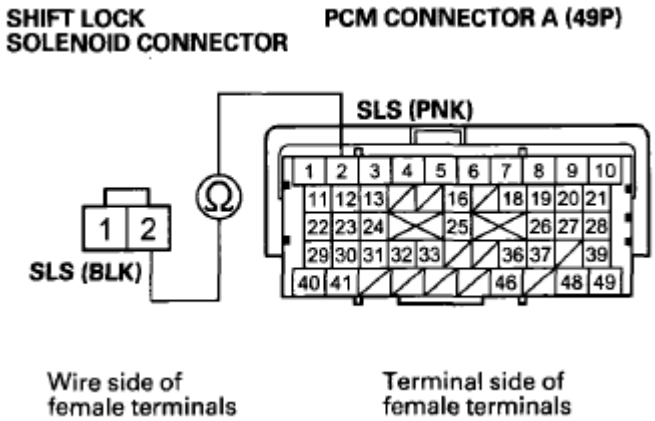


Fig. 383: Checking Continuity Between PCM Connector Terminal A2 And Shift Lock Solenoid Connector Terminal No. 2
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Update the PCM if it does not have the latest software (see **ECM/PCM UPDATE**), or substitute a known-good PCM (see **SUBSTITUTING THE ECM/PCM**), and recheck. If the symptom goes away with a known-good PCM, replace the original PCM (see **ECM/PCM REPLACEMENT**).

NO - Repair an open in the wire between PCM connector terminal A2 and the shift lock solenoid connector.

16. Monitor the Brake Switch with the HDS in the A/T Data List, and press the brake pedal.

    Is the Brake Switch ON?

    YES - Go to step 21.

    NO - If the brake lights come on, go to step 17. If the brake lights do not work, repair faulty brake light circuit.

17. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
18. Jump the SCS line with the HDS.
19. Disconnect PCM connector A (49P).
20. Measure the voltage between PCM connector terminal A8 and body ground while pressing the brake pedal and when the brake pedal is released.

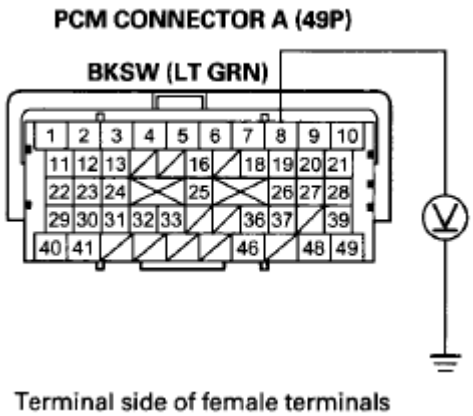


Fig. 384: Measuring Voltage Between PCM Connector Terminal A8 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there battery voltage while pressing the brake pedal and about 0 V when the pedal is released?

YES - Update the PCM if it does not have the latest software (see **ECM/PCM UPDATE**), or substitute a

known-good PCM (see **SUBSTITUTING THE ECM/PCM**), and recheck. If the symptom goes away with a known-good PCM, replace the original PCM (see **ECM/PCM REPLACEMENT**).

NO - Repair an open in the wire between PCM connector terminal A8 and the brake pedal position switch.

21. Monitor the A/T P Switch with the HDS in the A/T Data List with the shift lever in P.

    Is the A/T P Switch ON?

    YES - Go to step 31.

    NO - Go to step 22.

22. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
23. Disconnect the transmission range switch connector.
24. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
25. Connect a jumper wire between transmission range switch connector terminal No. 7 and body ground.

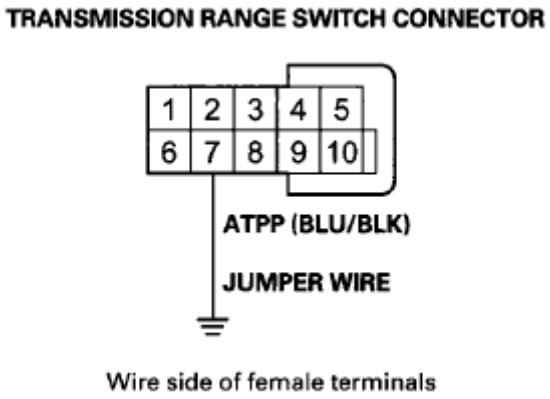


Fig. 385: Identifying Jumper Wire Between Transmission Range Switch Connector Terminal No. 7 And Body Ground Connection
Courtesy of AMERICAN HONDA MOTOR CO., INC.

26. Check the A/T P Switch signal with the HDS in the A/T Data list.

    Is the A/T P Switch ON?

    YES - Replace the transmission range switch.

    NO - Go to step 27.

27. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
28. Jump the SCS line with the HDS.
29. Disconnect PCM connector A (49P).

30. Check for continuity between PCM connector terminal A16 and transmission range switch connector terminal No. 7.

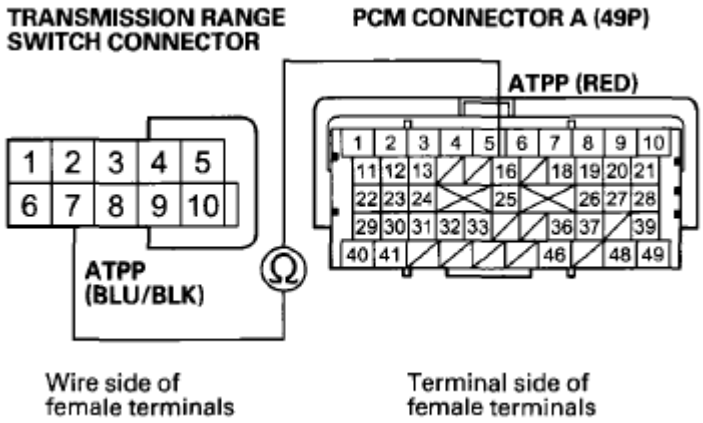


Fig. 386: Checking Continuity Between PCM Connector Terminal A16 And Transmission Range Switch Connector Terminal No. 7
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Update the PCM if it does not have the latest software (see **ECM/PCM UPDATE**), or substitute a known-good PCM (see **SUBSTITUTING THE ECM/PCM**), and recheck. If the symptom goes away with a known-good PCM, replace the original PCM (see **ECM/PCM REPLACEMENT**).

NO - Repair an open in the wire between PCM connector terminal A16 and the transmission range switch connector.

31. Check APP Sensor A with the HDS in the A/T Data List. Do not press the accelerator pedal.

Is the APP Sensor (%) opening 5 % or more, or APP sensor A (V)1.16 V or higher?

YES - Check the APP Sensor (see **APP SENSOR SIGNAL INSPECTION**).

NO - Update the PCM if it does not have the latest software (see **ECM/PCM UPDATE**), or substitute a known-good PCM (see **SUBSTITUTING THE ECM/PCM**), and recheck. If the symptom goes away with a known-good PCM, replace the original PCM (see **ECM/PCM REPLACEMENT**).

SHIFT LOCK SOLENOID TEST

1. Connect the HDS to the DLC (A) located under the driver's side of the dashboard.

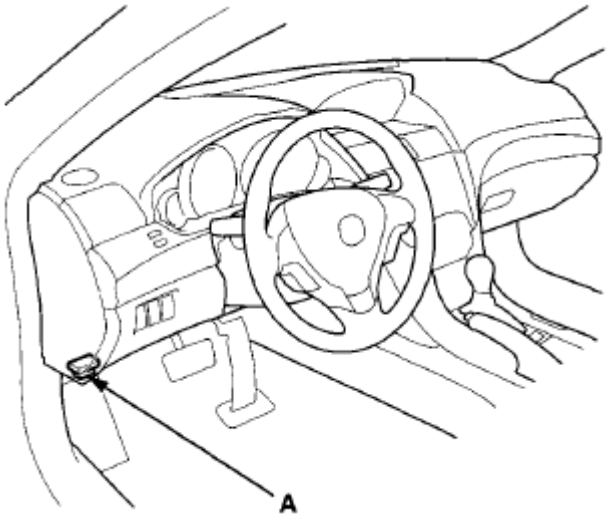


Fig. 387: Identifying Data Link Connector Location
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode. Make sure the HDS communicates with the PCM. If it does not, go to the DLC circuit troubleshooting (see **DLC CIRCUIT TROUBLESHOOTING**).
3. Select Shift Lock Solenoid Test in the Miscellaneous Test Menu, and check that the shift lock solenoid operates with the HDS.
4. Check that the shift lever can be moved out of P when the Shift Lock Solenoid is ON. Move the shift lever back to P, and check that it locks with the Shift Lock Solenoid is OFF.
5. Check that the shift lock releases when the shift lock release is pushed, and check that it locks when the shift lock release is released.
6. If the shift lock solenoid does not work properly, go to the **SHIFT LOCK SYSTEM TROUBLESHOOTING** (see).

SHIFT LOCK SOLENOID REPLACEMENT

NOTE: Make sure not to get any silicone grease on the terminal part of the connectors and switches, especially if you have silicone grease on your hands or gloves.

1. Remove the shift lever assembly (see **SHIFT LEVER REMOVAL**).
2. Release the lock tabs retaining the shift lock solenoid using thin-bladed screwdrivers.

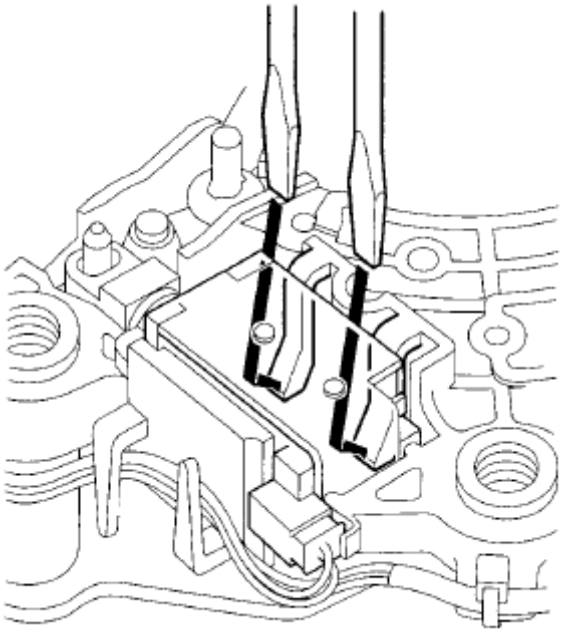


Fig. 388: Releasing Lock Tabs Retaining Shift Lock Solenoid Using Thin-Bladed Screwdrivers
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Insert a 6.0 mm pin (A), and push the shift lock solenoid (B) out.

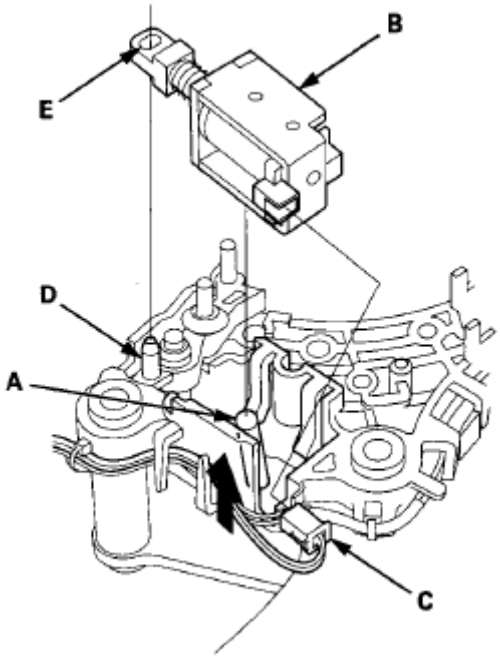


Fig. 389: Identifying Pin, Shift Lock Solenoid And Connector, Tip And Solenoid Plunger Hole
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Disconnect the shift lock solenoid connector (C).

5. Apply silicone grease to the tip (D) of the shift lock stop and the solenoid plunger hole (E).
6. Connect the shift lock solenoid connector.
7. Install a new shift lock solenoid by aligning the joint of the shift lock solenoid plunger with the tip of the shift lock stop, then push the shift lock solenoid into the shift lever securely.
8. Install the shift lever assembly (see **SHIFT LEVER INSTALLATION**).

SHIFT LOCK STOP/SHIFT LOCK STOP CUSHION REPLACEMENT

NOTE: Make sure not to get any silicone grease on the terminal part of the connectors and switches, especially if you have silicone grease on your hands or gloves.

1. Remove the shift lock solenoid (see **SHIFT LOCK SOLENOID REPLACEMENT**).
2. Remove the shift lock stop (A) and the stop cushion (B) as a set.

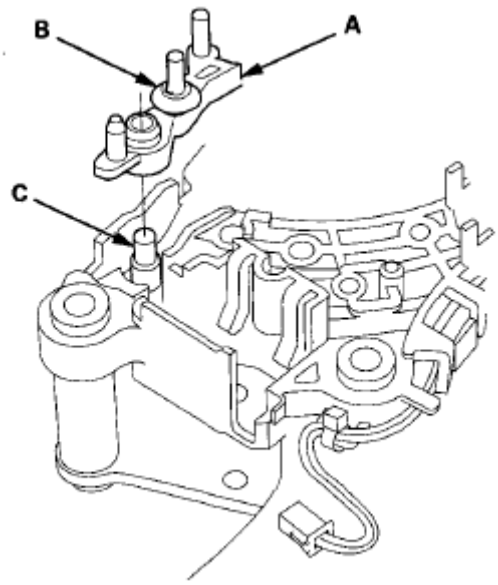


Fig. 390: Identifying Shift Lock Stop, Stop Cushion And Pin
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Apply silicone grease to the pin (C) on the shift lever bracket, and install new shift lock stop over the pin.
4. Install the shift lock solenoid (see **SHIFT LOCK SOLENOID REPLACEMENT**).

SHIFT LOCK RELEASE AND RELEASE SPRING REPLACEMENT

1. Remove the shift lever assembly (see **SHIFT LEVER REMOVAL**).
2. Remove the shift lever knob (see **SHIFT LEVER KNOB REPLACEMENT**).
3. Remove the shift lever boot and the shift lever boot base (see **SHIFT LEVER BOOT AND SHIFT LEVER BOOT BASE REPLACEMENT**).
4. Release the lock (A) of the shift lock release (B), then remove the shift lock release.

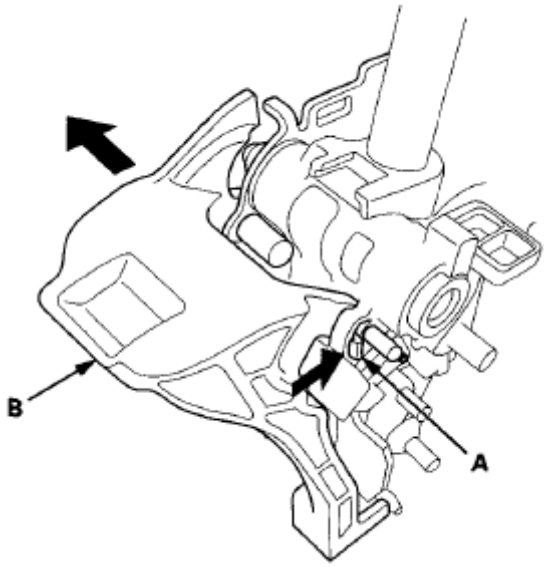


Fig. 391: Identifying Lock, Shift Lock Release And Release Spring
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Remove the release spring (A) from the shift lock release (B).

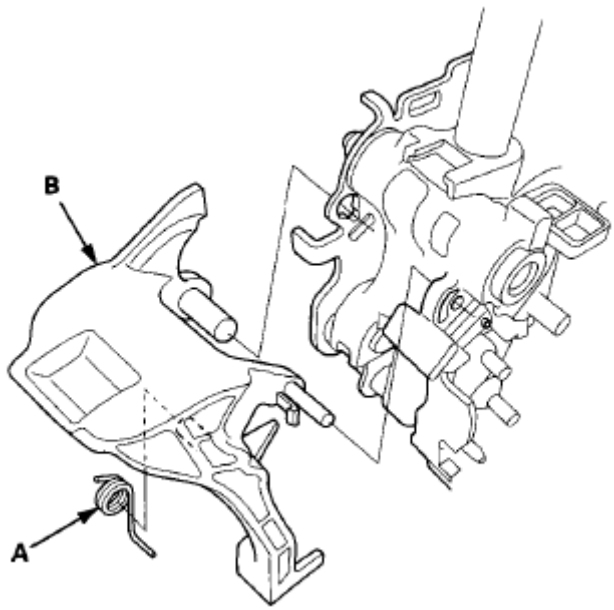


Fig. 392: Identifying Release Spring And Shift Lock Release
Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Replace the shift lock release or the release spring.
7. Install the shift lock release spring in the shift lock release.
8. Install the shift lock release on the shift lever.
9. Make sure that the release spring end (A) is installed in the shift lock release (B), and the hooked end (C)

of the release spring is on the shift lever bracket as shown.

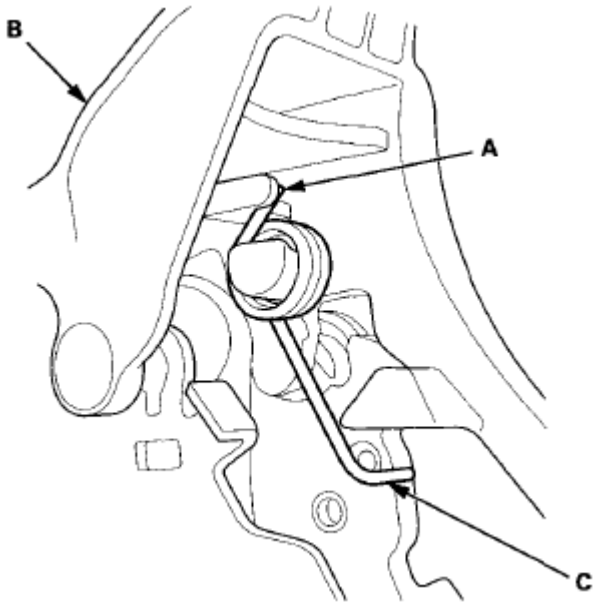


Fig. 393: Identifying Release Spring End, Shift Lock Release And Hooked End
Courtesy of AMERICAN HONDA MOTOR CO., INC.

10. Install the shift lever boot and the shift lever boot base (see **SHIFT LEVER BOOT AND SHIFT LEVER BOOT BASE REPLACEMENT**).
11. Install the shift lever knob (see **SHIFT LEVER KNOB REPLACEMENT**).
12. Install the shift lever assembly (see **SHIFT LEVER INSTALLATION**).

PARK PIN SWITCH REPLACEMENT

NOTE: The park pin switch and the shift lock solenoid harness are not available separately. Replace the park pin switch and the shift lock solenoid harness as a set.

1. Remove the shift lever knob (see **SHIFT LEVER KNOB REPLACEMENT**).
2. Remove the shift lever boot and the shift lever boot base (see **SHIFT LEVER BOOT AND SHIFT LEVER BOOT BASE REPLACEMENT**).
3. Remove the shift lock solenoid (see **SHIFT LOCK SOLENOID REPLACEMENT**).
4. Remove the harness wire ties (A), and remove the park pin switch (B).

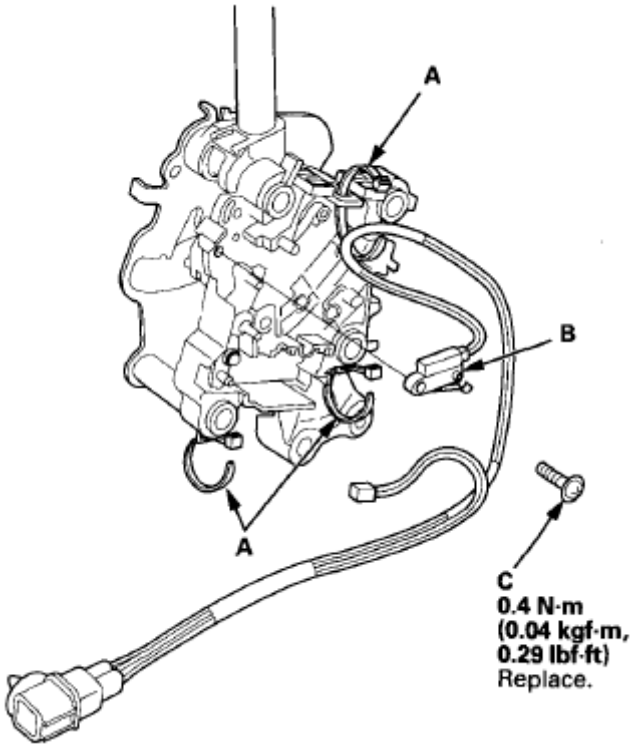


Fig. 394: Identifying Harness Wire Ties And Park Pin Switch With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Replace the park pin switch.
6. Install the park pin switch, and secure the park pin switch with a new screw (C).
7. Connect the shift lock solenoid connector to the shift lock solenoid. Then install the shift lock solenoid (see step 7).
8. Route the harnesses as shown. Take the slack out of the harnesses, and secure the harnesses with the harness wire ties (A).

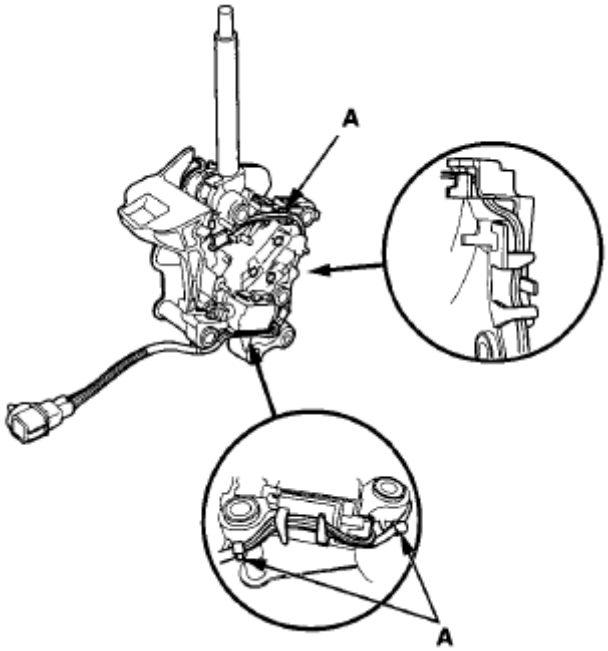


Fig. 395: Identifying Harness Wire Ties
Courtesy of AMERICAN HONDA MOTOR CO., INC.

9. Install the shift lever boot and the shift lever boot base (see **SHIFT LEVER BOOT AND SHIFT LEVER BOOT BASE REPLACEMENT**).
10. Install the shift lever knob (see **SHIFT LEVER KNOB REPLACEMENT**).
11. Install the shift lever assembly (see **SHIFT LEVER INSTALLATION**).

TRANSMISSION DISASSEMBLY

EXPLODED VIEW

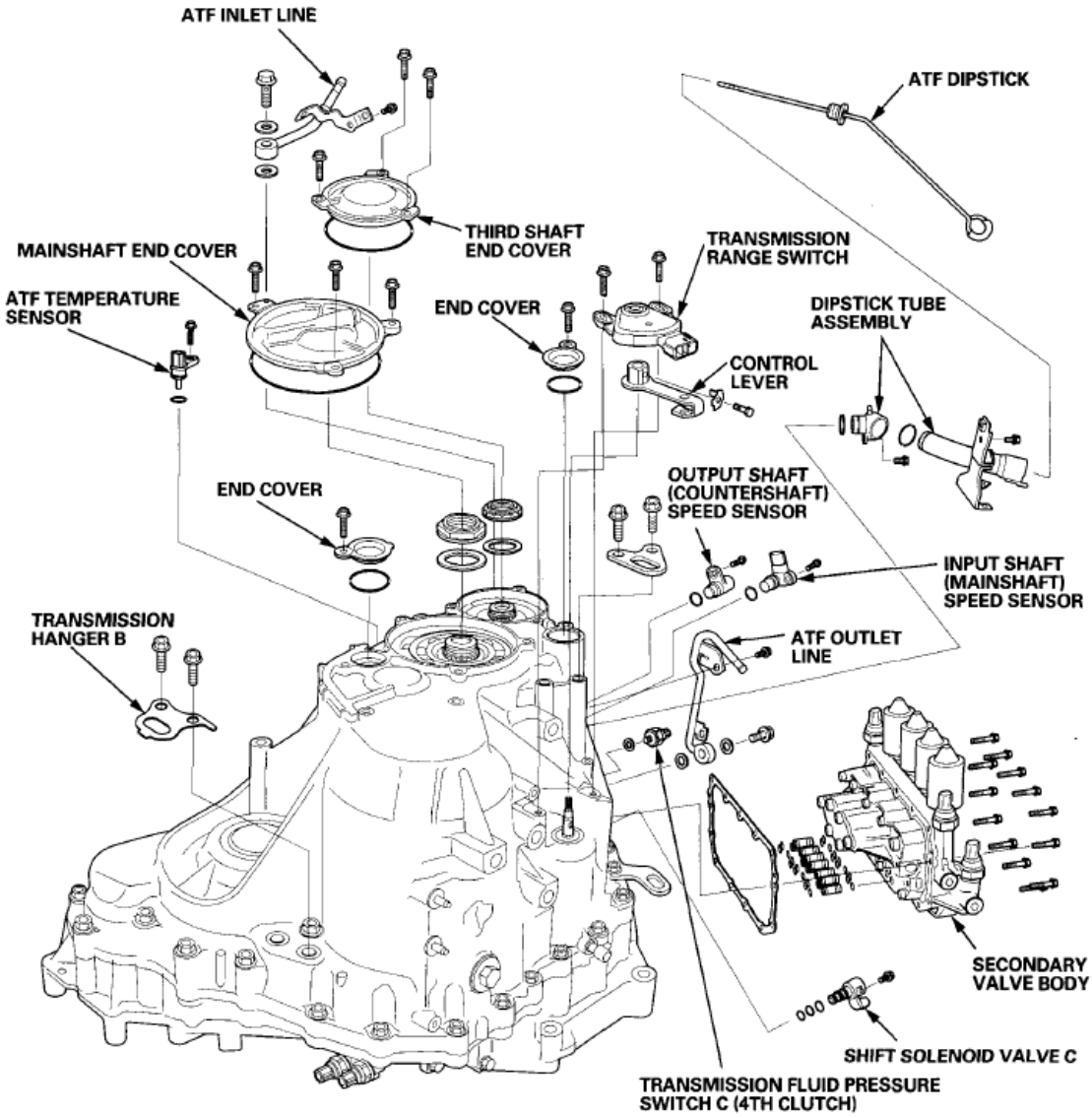


Fig. 396: Exploded View Of Transmission Disassembly (1 Of 3)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

NOTE: This illustration shows the SH-AWD transfer assembly that is not available on all models.

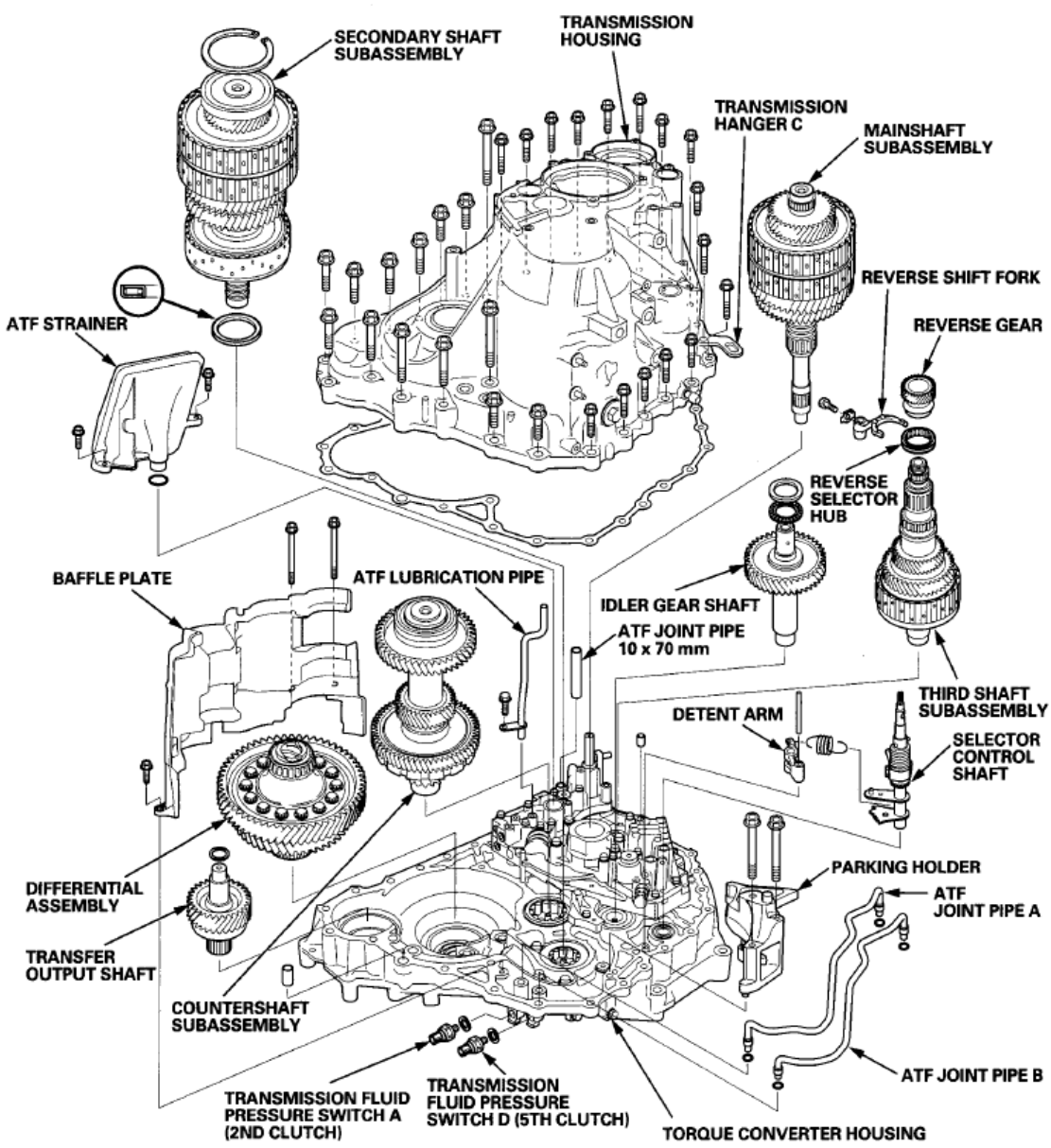


Fig. 397: Exploded View Of Transmission Disassembly (2 Of 3)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

NOTE: This illustration shows the SH-AWD transfer assembly that is not available on all models.

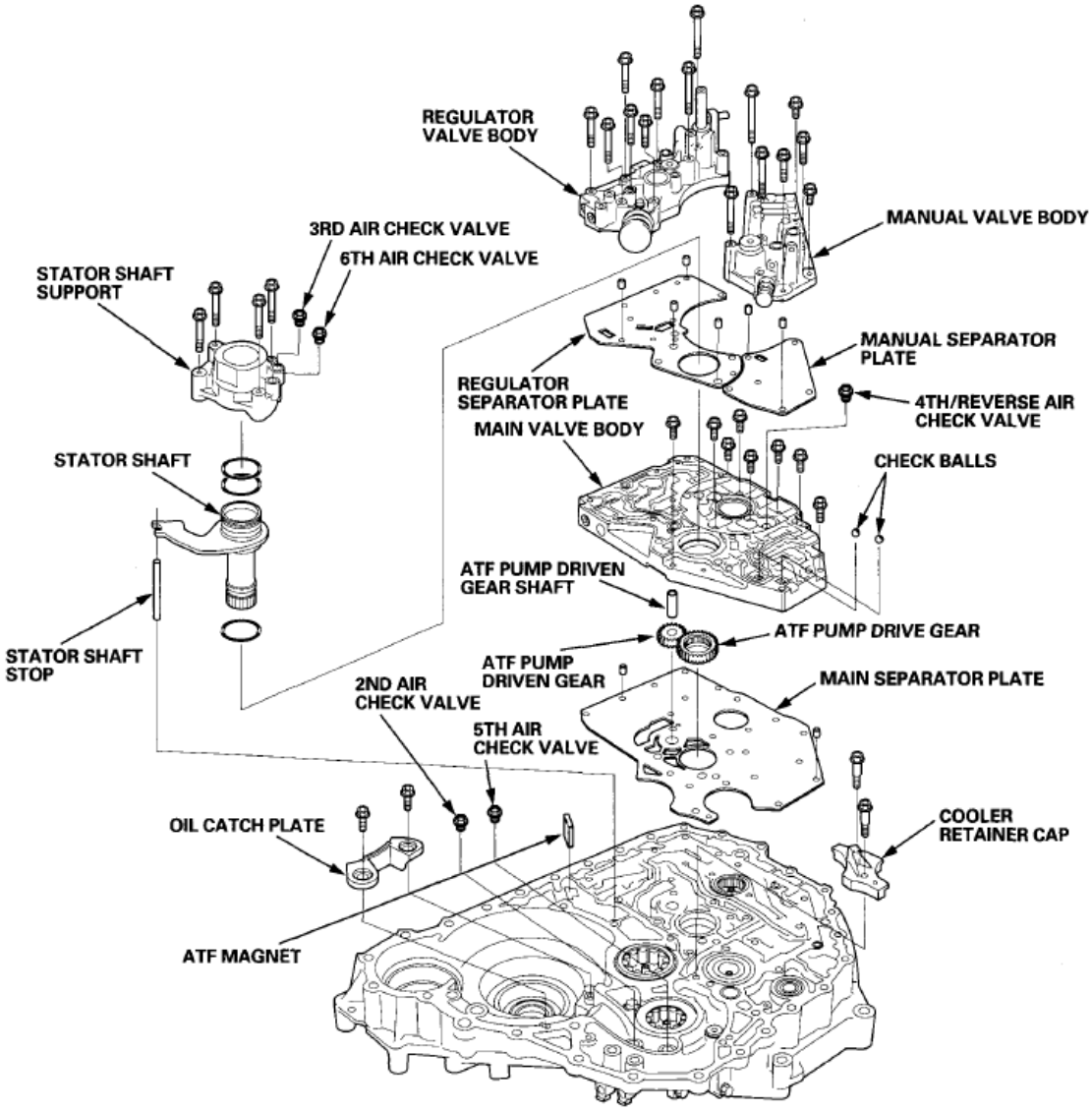


Fig. 398: Exploded View Of Transmission Disassembly (3 Of 3)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

NOTE: This illustration shows the SH-AWD transfer assembly that is not available on all models.

Special Tools Required

Mainshaft Holder Set 07PAB-0010001

NOTE: Refer to the EXPLODED VIEW as needed during the following procedure.

1. Remove the dipstick tube assembly (A) with the O-rings.

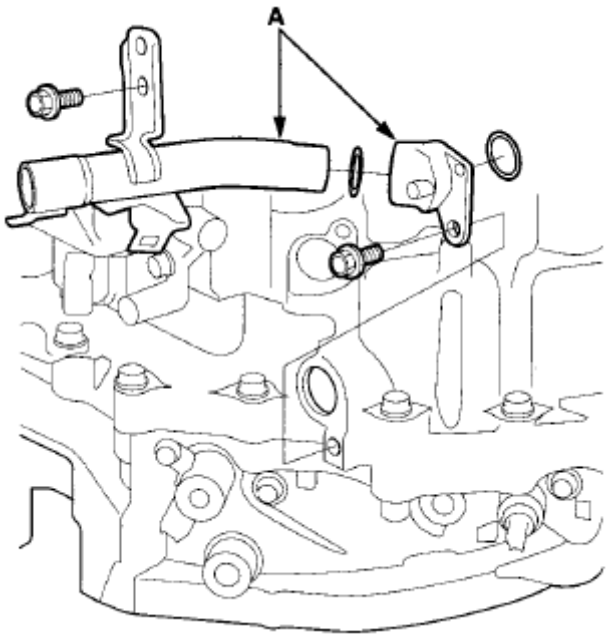


Fig. 399: Identifying Dipstick Tube Assembly With O-Rings
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Remove the transmission range switch (A).

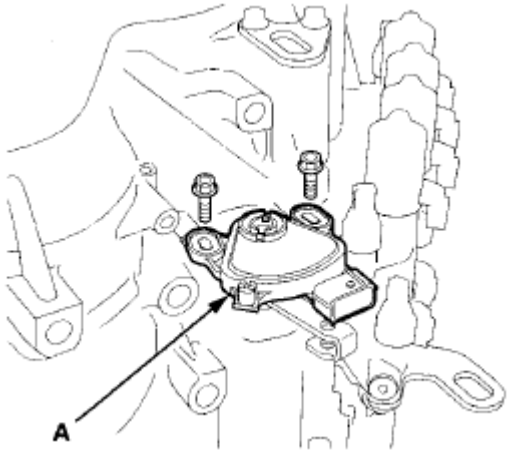


Fig. 400: Identifying Transmission Range Switch
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Pry the lock tab of the lock washer (A) on the control lever (B), then remove the bolt, the lock washer, and the control lever.

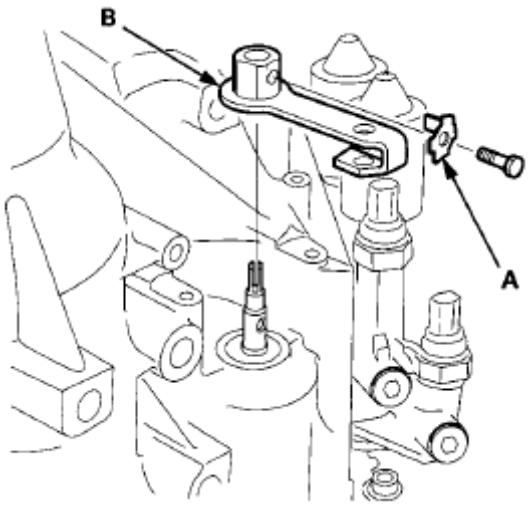


Fig. 401: Identifying Lock Washer And Control Lever
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Remove the input shaft (mainshaft) speed sensor (A) and the output shaft (countershaft) speed sensor (B) with the O-rings.

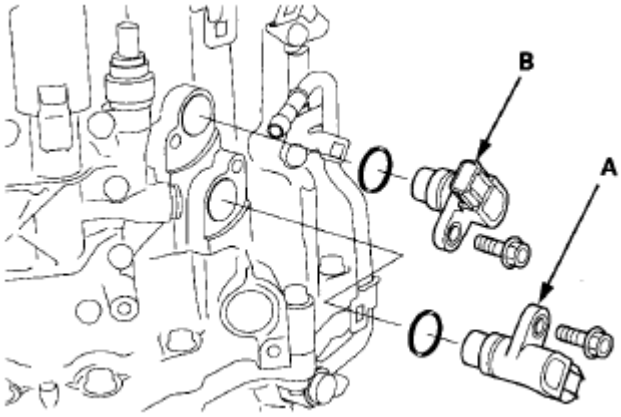


Fig. 402: Identifying Input And Output Mainshaft Speed Sensors
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Remove the ATF temperature sensor (A) with the O-ring.

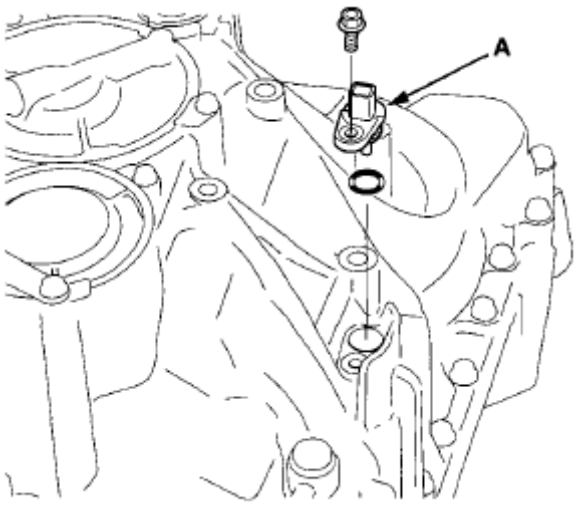


Fig. 403: Identifying ATF Temperature Sensor With O-Ring
Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Remove the ATF outlet line banjo bolt (A) with the sealing washers, and remove the ATF outlet line (B).

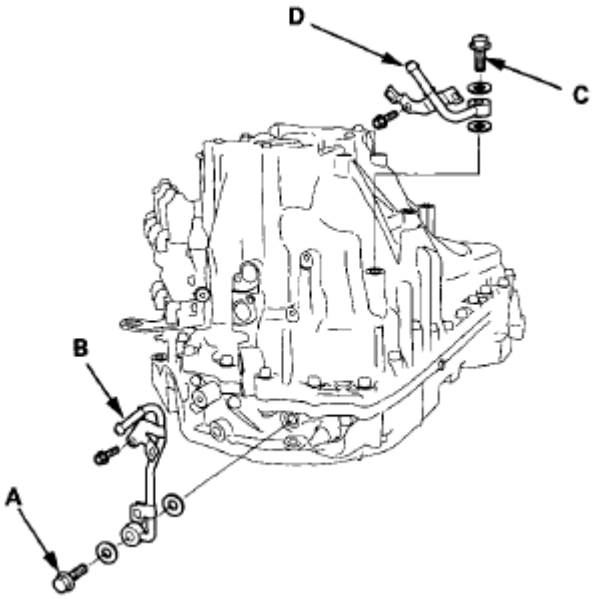


Fig. 404: Identifying ATF Outlet And Inlet Line Banjo Bolt, And ATF Inlet And Outlet Line
Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Remove the ATF inlet line banjo bolt (C) with the sealing washers and remove the ATF inlet line (D).
8. Remove transmission hanger A.

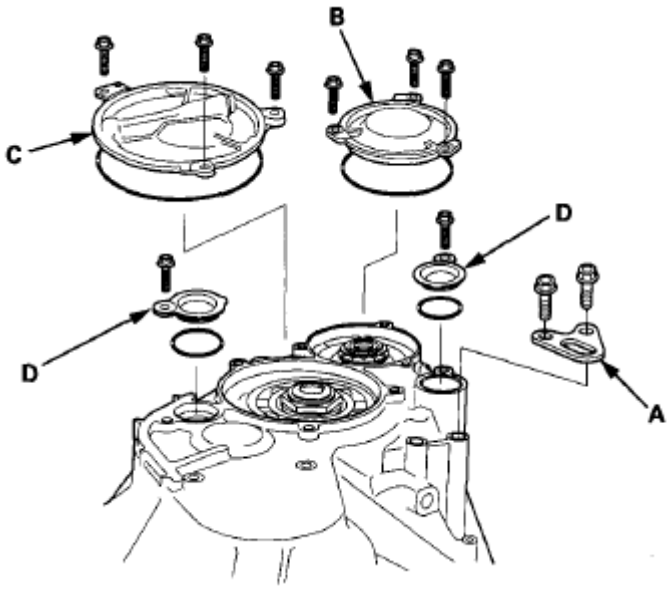


Fig. 405: Identifying Transmission Hanger, Shaft Cover, Mainshaft End Cover And End Covers
Courtesy of AMERICAN HONDA MOTOR CO., INC.

9. Remove the third shaft end cover (B), the mainshaft end cover (C), and the end covers (D) (two) with the O-rings.
10. Remove transmission fluid pressure switch A (2nd clutch) with the sealing washer.

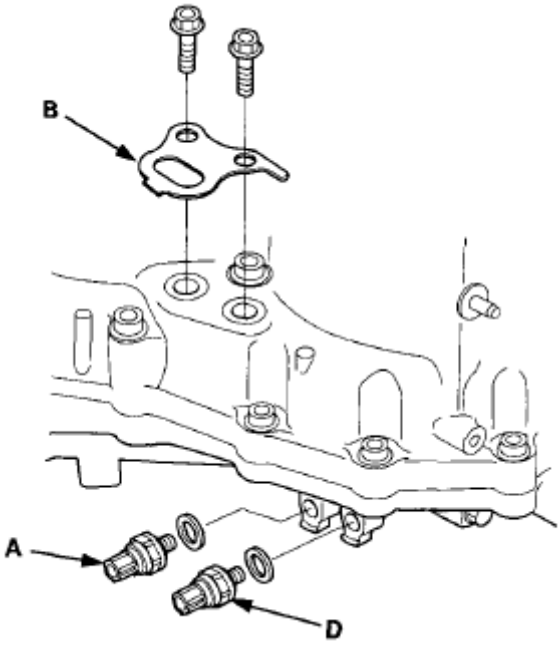


Fig. 406: Identifying Transmission Fluid Pressure Switch A And D And Transmission Hanger
Courtesy of AMERICAN HONDA MOTOR CO., INC.

11. Remove transmission fluid pressure switch D (5th clutch) with the sealing washer.

12. Remove transmission hanger B.
13. Remove transmission fluid pressure switch C (4th clutch) (A) with the sealing washer.

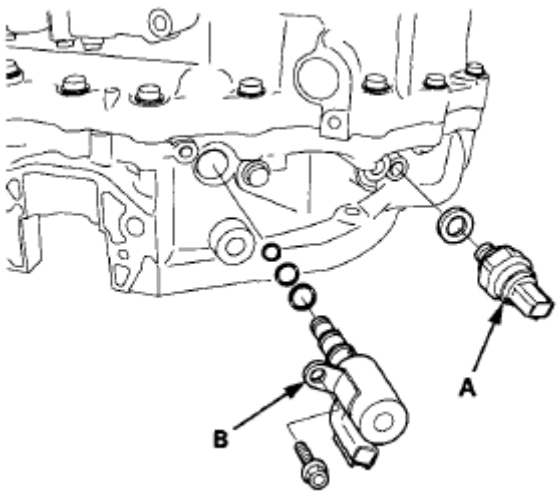


Fig. 407: Identifying Transmission Fluid Pressure Switch C (4th Clutch) And Shift Solenoid Valve C
Courtesy of AMERICAN HONDA MOTOR CO., INC.

14. Remove shift solenoid valve C (B) with the O-rings.
15. Remove the secondary valve body (A). Remove the ATF pipes (B) with the O-rings, and the gasket (C).

NOTE: Do not disassemble the secondary valve body. If any problem occurs, replace the assembly.

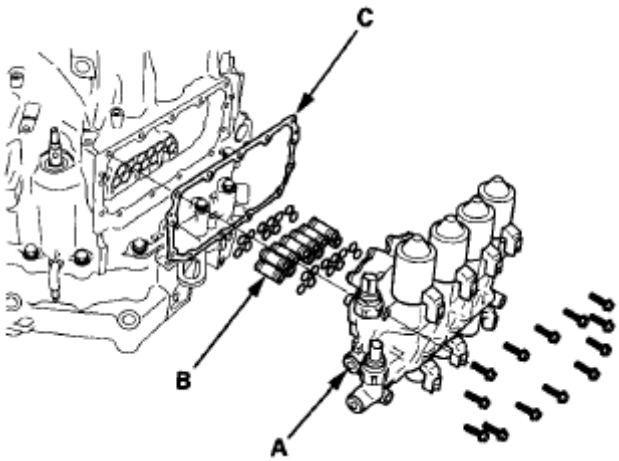


Fig. 408: Identifying Secondary Valve Body And ATF Pipes
Courtesy of AMERICAN HONDA MOTOR CO., INC.

16. Install the mainshaft holder onto the mainshaft.

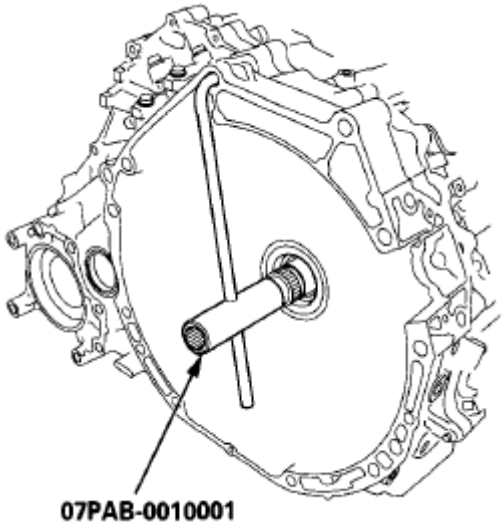


Fig. 409: Installing Mainshaft Holder Onto Mainshaft
Courtesy of AMERICAN HONDA MOTOR CO., INC.

17. Using a chisel, cut the lock tab (A) of the locknut (B) securing the mainshaft and third shaft locknuts.

NOTE:
- **Keep all of the chiseled particles out of the transmission.**
- **The illustration shows the mainshaft locknut.**

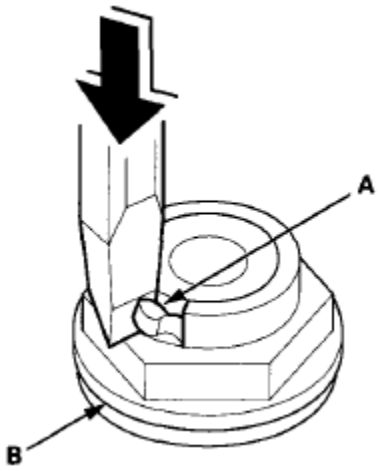


Fig. 410: Cutting Lock Tab Of Lock Nut Using Chisel
Courtesy of AMERICAN HONDA MOTOR CO., INC.

18. Remove the locknuts (A) from the mainshaft (B) and the third shaft (C).

NOTE: The third shaft locknut has left-hand threads.

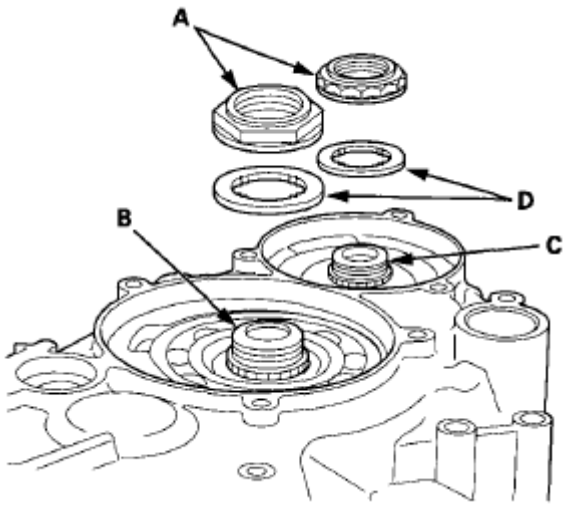


Fig. 411: Identifying Locknuts, Mainshaft, Lock Washers And Third Shaft
Courtesy of AMERICAN HONDA MOTOR CO., INC.

19. Pry the lock washers (D), and remove them.

NOTE: Keep all of the particles out of the transmission.

20. Remove the transmission housing mounting bolts (10 x 1.25 mm bolts (A), 8 x 1.25 mm bolts (B)) and transmission hanger C.

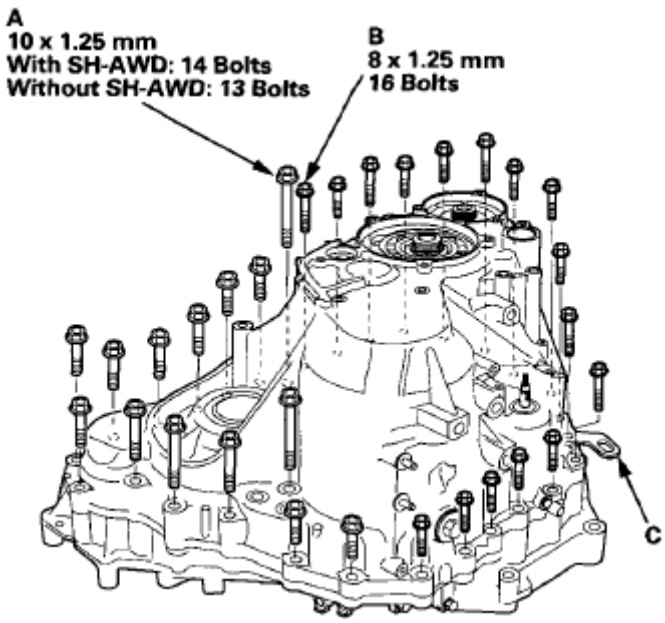


Fig. 412: Identifying Transmission Housing Mounting Bolts And Transmission Hanger
Courtesy of AMERICAN HONDA MOTOR CO., INC.

21. While expanding the snap ring of the countershaft bearing with snap ring pliers, lift the transmission

housing.

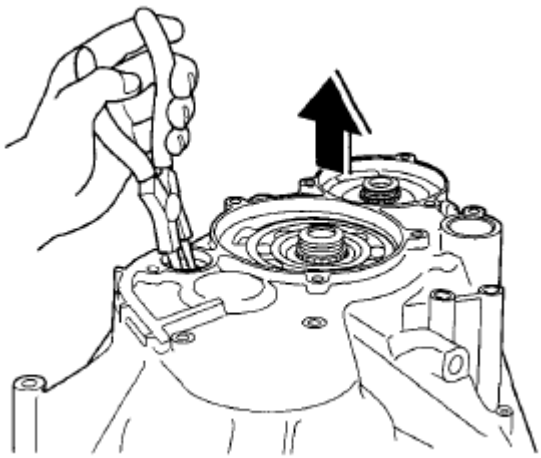


Fig. 413: Lifting Transmission Housing By Expanding Snap Ring Using Ring Pliers
Courtesy of AMERICAN HONDA MOTOR CO., INC.

22. Release the snap ring pliers, and remove the transmission housing (A), the two dowel pins (B), and the gasket (C).

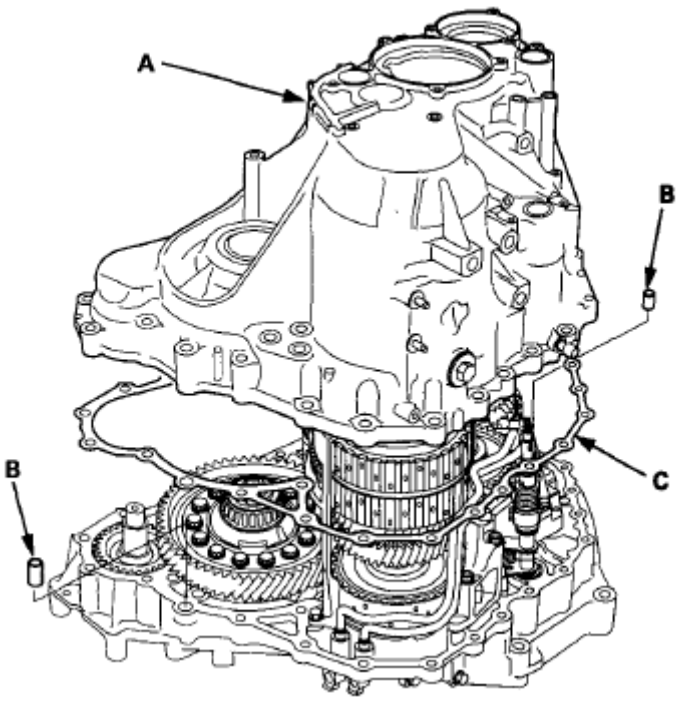


Fig. 414: Identifying Transmission Housing, Dowel Pins And Gasket
Courtesy of AMERICAN HONDA MOTOR CO., INC.

23. Remove ATF joint pipes A and B with the O-rings.

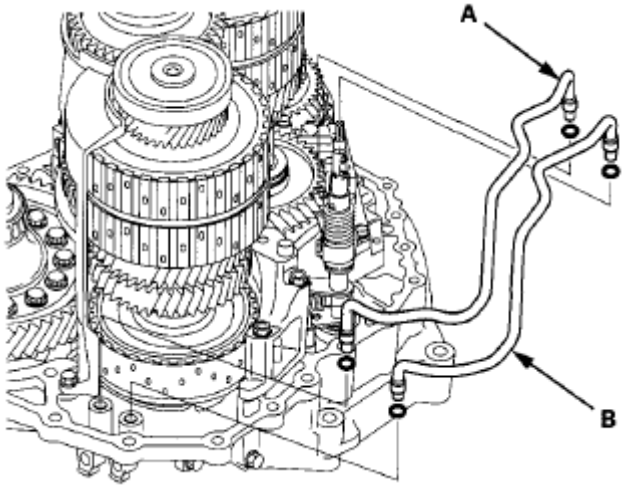


Fig. 415: Identifying ATF Joint Pipes A And B
Courtesy of AMERICAN HONDA MOTOR CO., INC.

24. Remove the ATF strainer (A) with the O-ring.

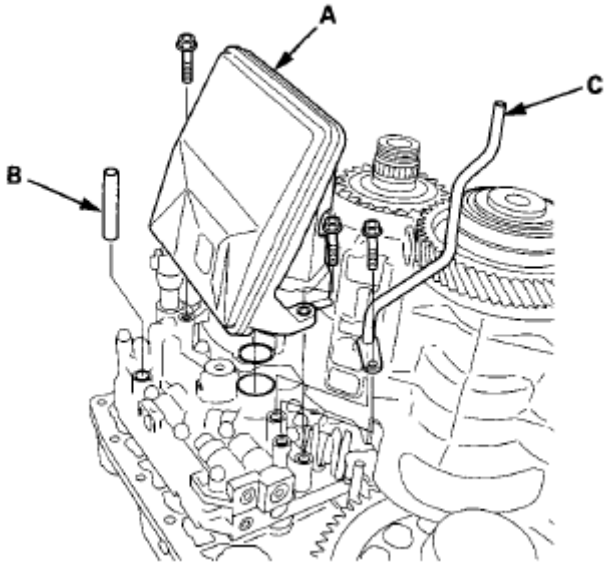


Fig. 416: Identifying ATF Strainer, ATF Joint Pipe And ATF Lubrication Pipe
Courtesy of AMERICAN HONDA MOTOR CO., INC.

25. Remove the 10 x 70 mm ATF joint pipe (B) and the ATF lubrication pipe (C).
26. Remove the mainshaft holder from the mainshaft.
27. Pry the lock tab of the lock washer (A) on the shift fork (B), then remove the bolt and the lock washer.

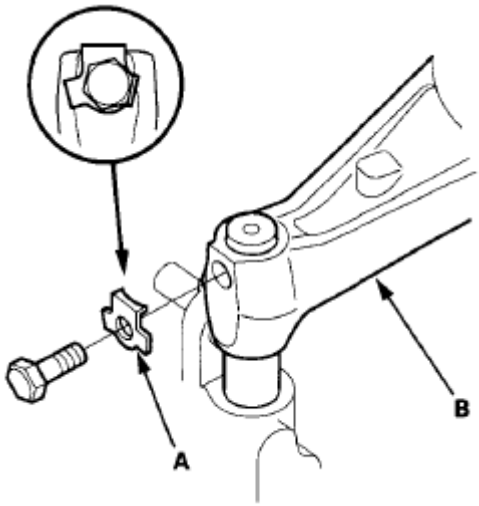


Fig. 417: Identifying Lock Washer And Shift Fork
Courtesy of AMERICAN HONDA MOTOR CO., INC.

28. Remove the reverse gear (A), the reverse selector hub (B), the shift fork (C), and the baffle plate (D) together.

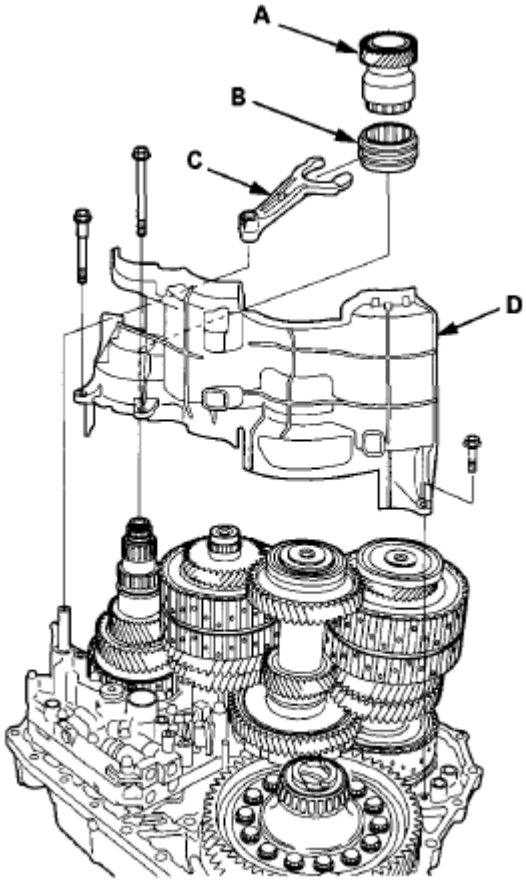


Fig. 418: Identifying Reverse Gear, Reverse Selector Hub, Shift Fork And Baffle Plate

Courtesy of AMERICAN HONDA MOTOR CO., INC.

29. Remove the mainshaft subassembly (A), the countershaft subassembly (B), the secondary shaft subassembly (C), and the idler gear shaft (D) together, and remove the needle bearing (E) from the torque converter housing.

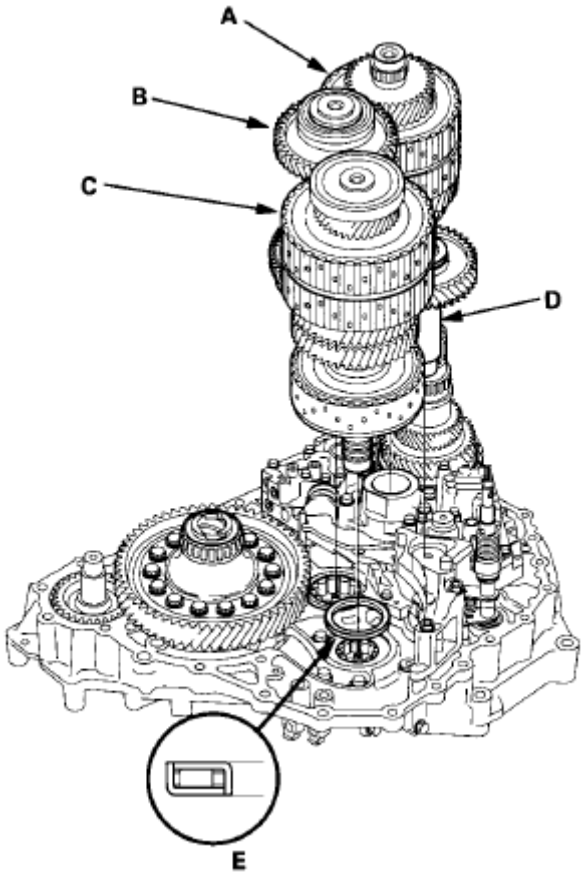


Fig. 419: Identifying Mainshaft, Countershaft And Secondary Subassemblies, Idler Gear Shaft And Needle Bearing
Courtesy of AMERICAN HONDA MOTOR CO., INC.

30. Remove the third shaft (A).

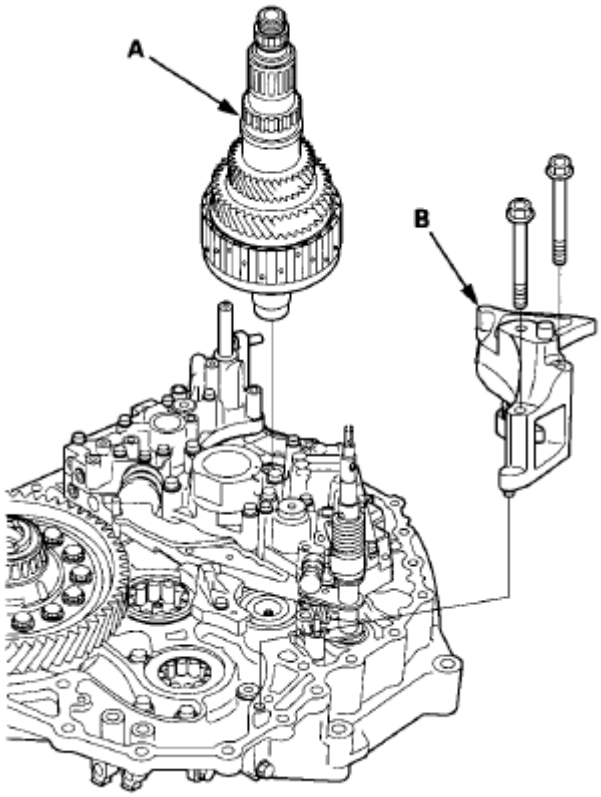


Fig. 420: Identifying Third Shaft And Parking Holder
Courtesy of AMERICAN HONDA MOTOR CO., INC.

31. Remove the parking holder (B).
32. Remove the detent arm (A), the detent arm shaft (B), and the detent arm spring (C).

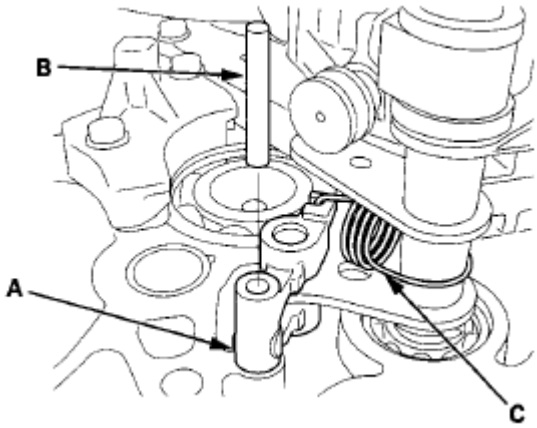


Fig. 421: Identifying Detent Arm, Detent Arm Shaft And Detent Arm Spring
Courtesy of AMERICAN HONDA MOTOR CO., INC.

33. Remove the selector control shaft (A).

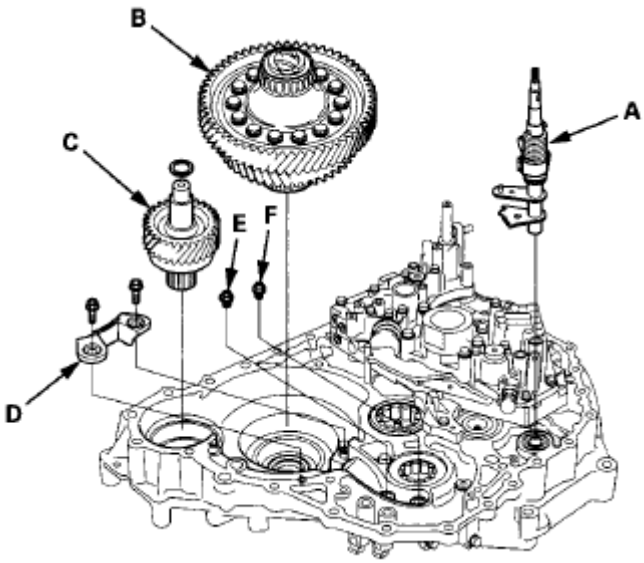


Fig. 422: Identifying Selector Control Shaft
Courtesy of AMERICAN HONDA MOTOR CO., INC.

34. Remove the differential assembly (B).
35. With SH-AWD: Remove the transfer output shaft (C) with the thrust shim.
36. Remove the oil catch plate (D), the 2nd air check valve (E), and the 5th air check valve (F).
37. Remove the cooler retainer cap (A).

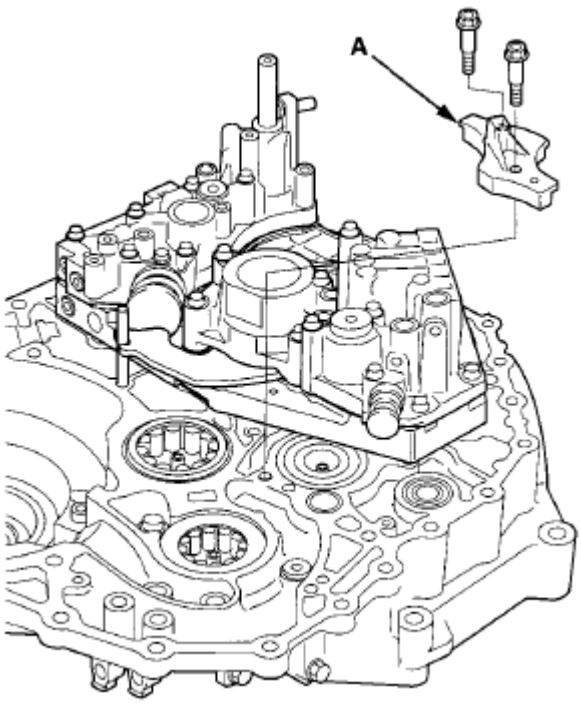


Fig. 423: Identifying Cooler Retainer Cap
Courtesy of AMERICAN HONDA MOTOR CO., INC.

38. Remove the 3rd air check valve (A), the 6th air check valve (B), the stator shaft support (C), the stator shaft (D), the stator shaft stop (E), and the dowel pins (F) (two).

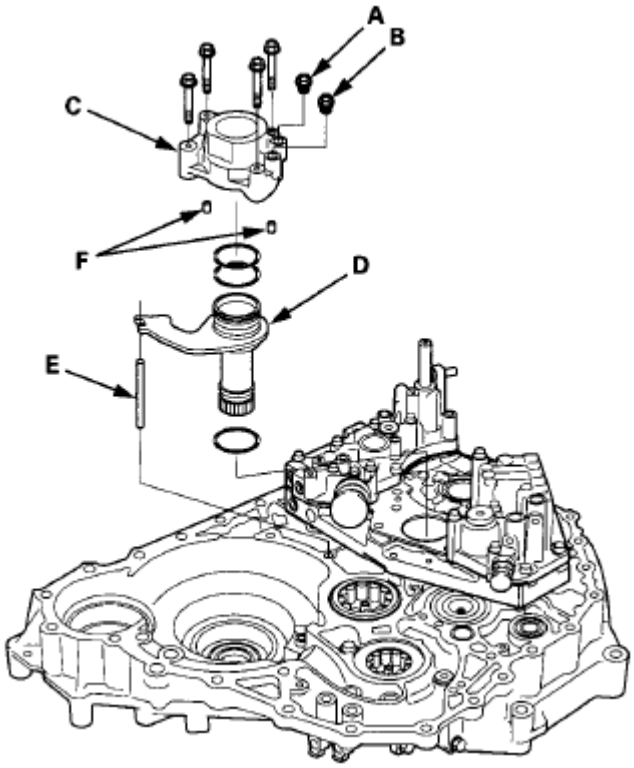


Fig. 424: Identifying 3rd And 6th Air Check Valves, Stator Shaft Support, Stator Shaft And Stop And Dowel Pins
Courtesy of AMERICAN HONDA MOTOR CO., INC.

39. Remove the manual valve body (A) (seven bolts), the dowel pins (B) (two), the manual separator plate (C), and the check balls (D) (two). Do not let the check balls fall out, and do not use a magnet to remove the check balls, it may magnetize them.

NOTE: Do not disassemble the manual valve body. If any problem occurs, replace the assembly.

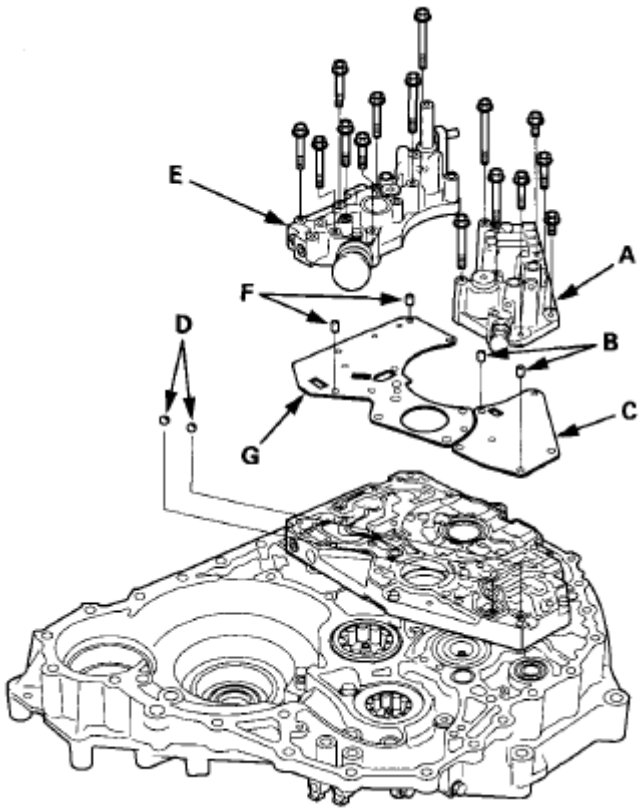


Fig. 425: Identifying Manual Valve Body, Dowel Pins, Manual Separator Plate And Check Balls
Courtesy of AMERICAN HONDA MOTOR CO., INC.

40. Remove the regulator valve body (E) (eight bolts), the dowel pins (F) (two), and the regulator separator plate (G).

NOTE: Do not disassemble the regulator valve body. If any problem occurs, replace the assembly.

41. Remove the 4th/reverse air check valve (A) and the main valve body (B) (eight bolts).

NOTE: Do not disassemble the main valve body. If any problem occurs, replace the assembly.

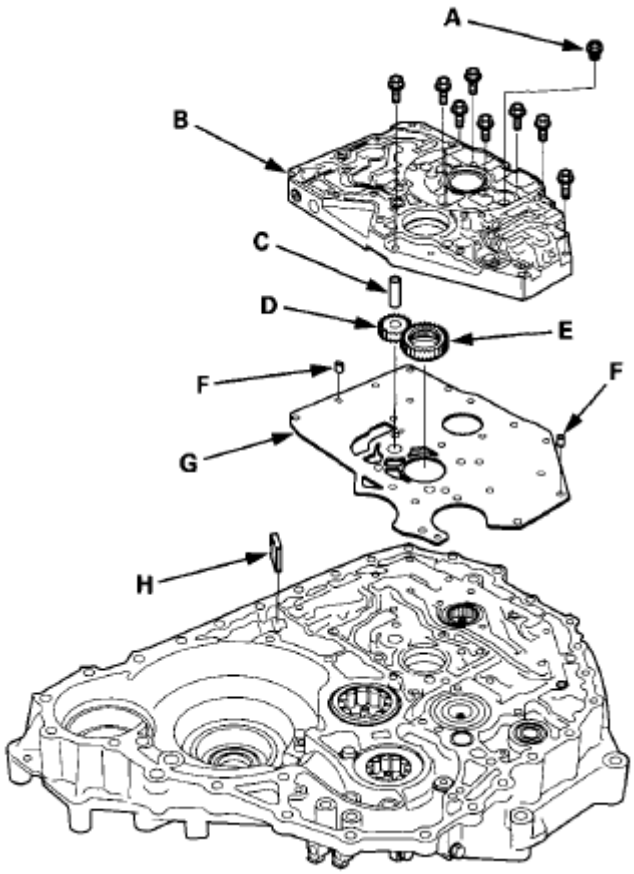


Fig. 426: Identifying Air Check Valve, Main Valve Body, ATF Pump Driven Gear Shaft, ATF Pump Driven And Drive Gear
Courtesy of AMERICAN HONDA MOTOR CO., INC.

42. Remove the ATF pump driven gear shaft (C), then remove the ATF pump driven gear (D) and the ATF pump drive gear (E).
43. Remove the dowel pins (F) (two) and the main separator plate (G).
44. Remove the ATF magnet (H), clean it, then reinstall it in the torque converter housing.
45. Clean the inlet opening (A) of the ATF strainer (B) thoroughly with compressed air, then check that it is good condition and that the inlet opening is not clogged.

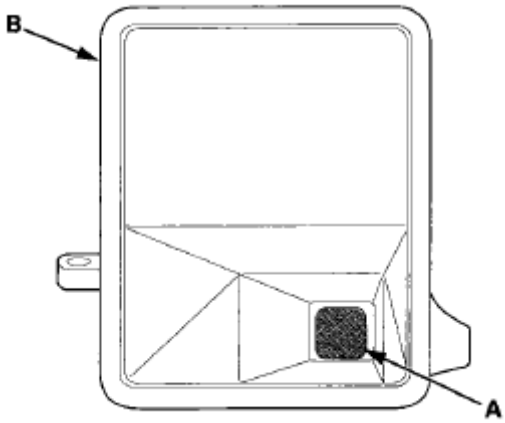


Fig. 427: Identifying Inlet Opening And ATF Strainer
Courtesy of AMERICAN HONDA MOTOR CO., INC.

46. Check the ATF strainer for clogs, debris, or damage. If the strainer is clogged or damaged, replace it.

ATF PUMP INSPECTION

1. Lubricate the ATF pump drive gear (A), the ATF pump driven gear (B), and the ATF pump driven gear shaft (C) with ATF, then install them in the main valve body (D). Install the ATF pump driven gear with its grooved and chamfered side facing up.

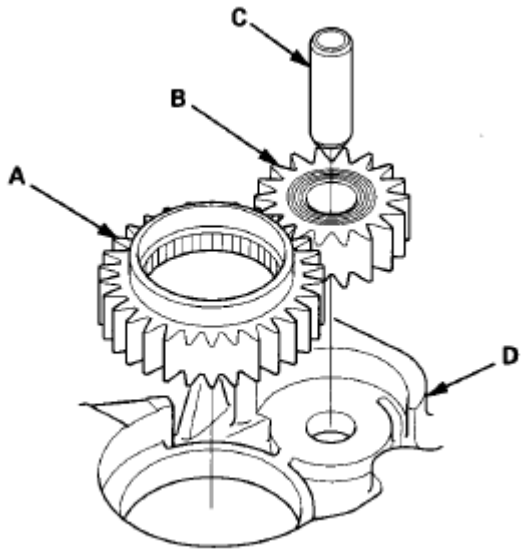


Fig. 428: Identifying ATF Pump Drive Gear, ATF Pump Driven Gear, ATF Pump Driven Gear Shaft And Main Valve Body
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Measure the side clearance of the ATF pump drive gear (A) and the ATF pump driven gear (B).

ATF Pump Gears Side (Radial) Clearance

Standard (New):

ATF Pump Drive Gear

0.210 - 0.265 mm (0.009 - 0.010 in)

ATF Pump Driven Gear

0.070 - 0.125 mm (0.003 - 0.004 in)

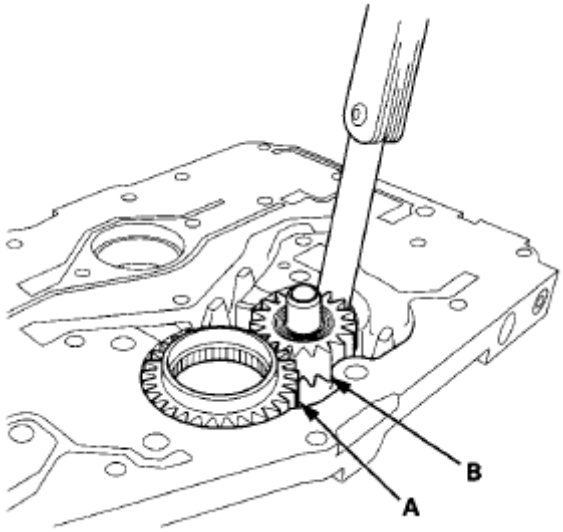


Fig. 429: Measuring Side Clearance Of ATF Pump Drive Gear And ATF Pump Driven Gear
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Remove the ATF pump driven gear shaft. Measure the thrust clearance between the ATF pump drive gear (A) and the main valve body (B), and between the ATF pump driven gear (C) and the main valve body using a straight edge (D) and a feeler gauge (E).

ATF Pump Drive/Driven Gear Thrust (Axial)

Clearance

Standard (New): 0.04 - 0.07 mm (0.002 - 0.002 in)

Service Limit: 0.07 mm (0.002 in)

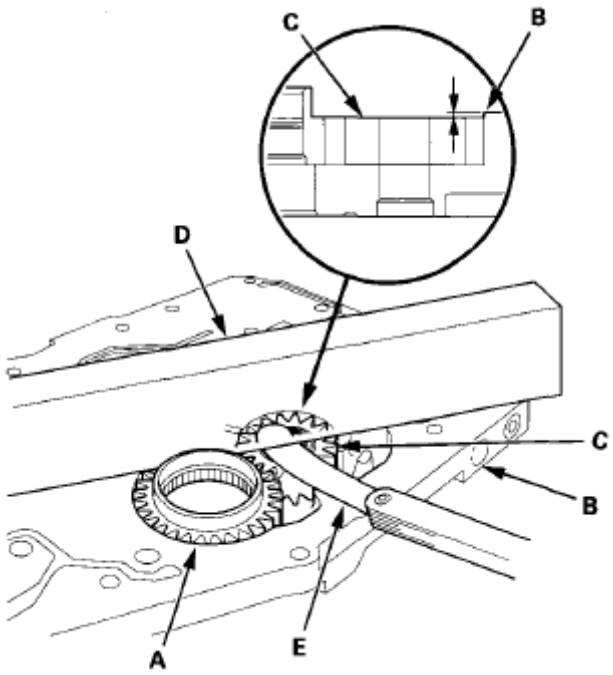


Fig. 430: Identifying ATF Pump Drive And Driven Gear, Main Valve Body, Straight Edge And Feeler Gauge
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. If the measurements are out of the standards, replace the main valve body assembly.

REVERSE IDLER GEAR REMOVAL/INSTALLATION

1. Remove the reverse idler gear assembly (A) from the transmission housing.

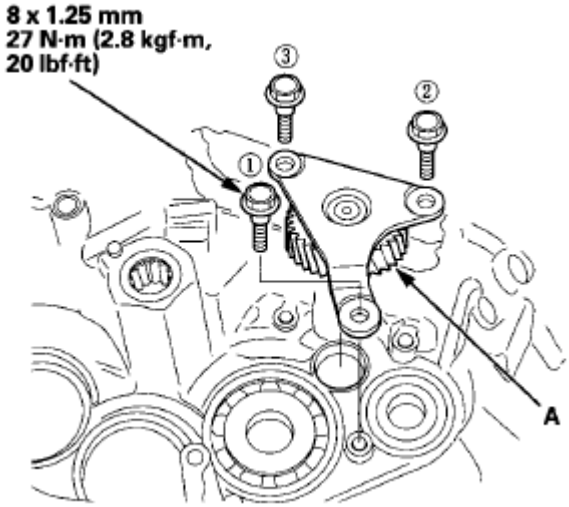


Fig. 431: Identifying Reverse Idler Gear Assembly With Tightening Sequence & With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Install the reverse idler gear assembly in the transmission housing. Tighten the bolts in the numbered sequence shown.

MAINSHAFT BEARING REMOVAL

Special Tools Required

- Driver Handle, 15 x 135L 07749-0010000
- Seal Driver Attachment, 80 mm ID. 07VAD-P8A010A

1. Remove the reverse idler gear assembly (see **REVERSE IDLER GEAR REMOVAL/INSTALLATION**).
2. To remove the mainshaft bearing, expand the snap ring using snap ring pliers, then push the bearing out using the 15 x 135L driver handle and the 80 mm I.D. seal driver attachment. Do not remove the snap ring unless it is necessary to clean the groove in the transmission housing.

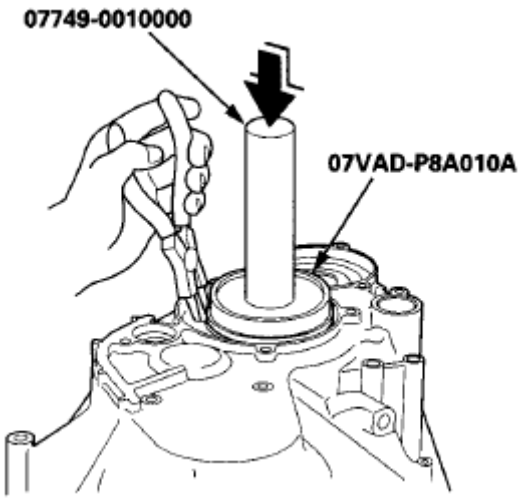


Fig. 432: Expanding Snap Ring Using Snap Ring Pliers To Remove Mainshaft Bearing
Courtesy of AMERICAN HONDA MOTOR CO., INC.

MAINSHAFT BEARING INSTALLATION

Special Tools Required

- Driver Handle, 15 x 135L 07749-0010000
- Seal Driver Attachment, 80 mm ID. 07VAD-P8A010A

1. Install the mainshaft bearing (A) in the direction shown.

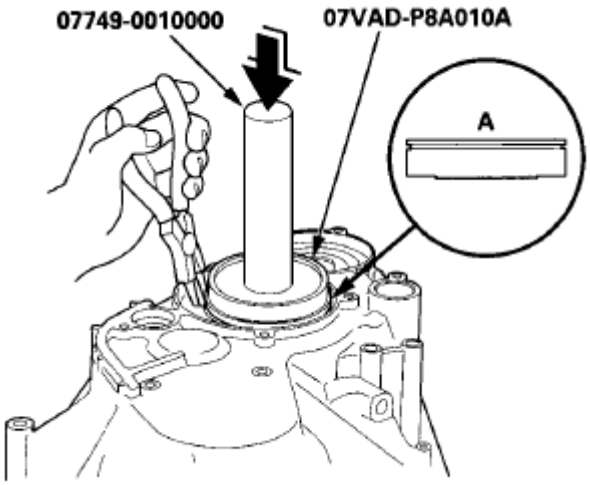


Fig. 433: Installing Mainshaft Bearing
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Expand the snap ring using snap ring pliers, and insert the bearing part-way into the transmission housing using the 15 x 135L driver handle and the 80 mm I.D. seal driver attachment.
3. Release the snap ring pliers, then push the bearing down into the transmission housing until the snap ring snaps in place around it.
4. After installing the bearing, check that the snap ring (A) is seated in the bearing and the housing groove, and that the snap ring end gap (B) is 0 - 7 mm (0 - 0.28 in).

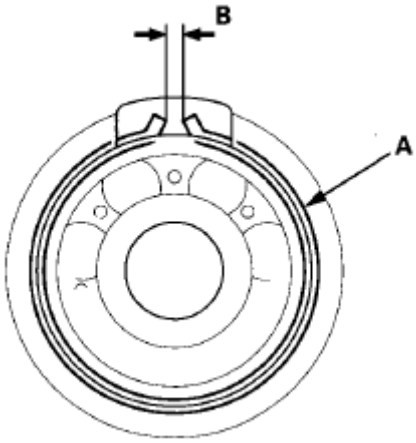


Fig. 434: Identifying Snap Ring And Snap Ring End Gap
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Install the reverse idler gear assembly (see **REVERSE IDLER GEAR REMOVAL/INSTALLATION**).

THIRD SHAFT BEARING REMOVAL

Special Tools Required

- Oil Seal Driver Attachment, 71.5mm 07GAD-SE00100
- Driver Handle, 15 x 135L 07749-0010000

1. Remove the reverse idler gear assembly (see **REVERSE IDLER GEAR REMOVAL/INSTALLATION**).
2. To remove the third shaft bearing, expand the snap ring using snap ring pliers, then push the bearing out using the 15 x 135L driver handle and the 71.5 mm oil seal driver attachment. Do not remove the snap ring unless it is necessary to clean the groove in the transmission housing.

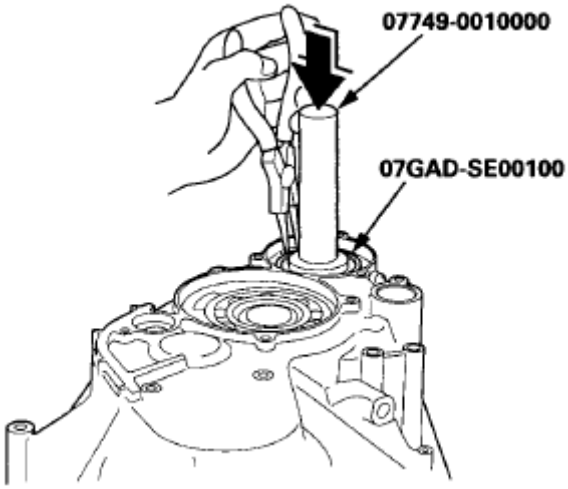


Fig. 435: Expanding Snap Ring Using Snap Ring Pliers To Remove Third Shaft Bearing
Courtesy of AMERICAN HONDA MOTOR CO., INC.

THIRD SHAFT BEARING INSTALLATION

Special Tools Required

- Oil Seal Driver Attachment, 71.5mm 07GAD-SE00100
- Driver Handle, 15 x 135L 07749-0010000

1. Install the third shaft bearing (A) in the direction shown.

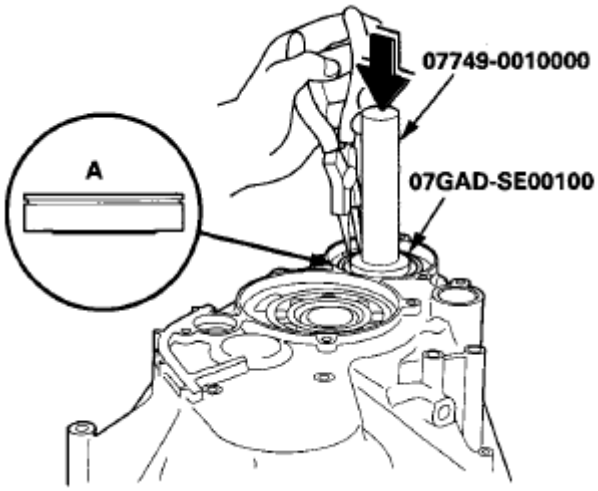


Fig. 436: Installing Third Shaft Bearing
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Expand the snap ring using snap ring pliers, and insert the bearing part-way into the transmission housing using the 15 x 135L driver handle and the 71.5 mm oil seal driver attachment.
3. Release the snap ring pliers, then push the bearing down into the transmission housing until the snap ring snaps in place around it.
4. After installing the bearing, check that the snap ring (A) is seated in the bearing and the housing groove, and that the snap ring end gap (B) is 0 - 7 mm (0 - 0.28 in).

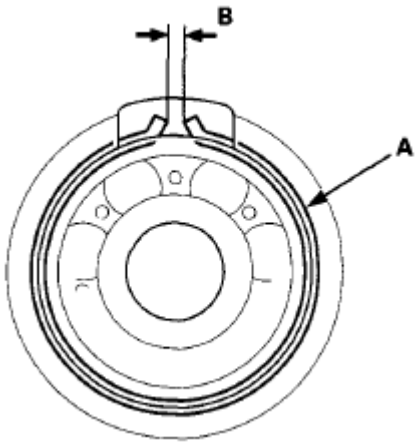


Fig. 437: Identifying Snap Ring And Snap Ring End Gap
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Install the reverse idler gear assembly (see **REVERSE IDLER GEAR REMOVAL/INSTALLATION**).

IDLER GEAR SHAFT BEARING REPLACEMENT

Special Tools Required

- Bearing Driver Attachment, 37 x 40 mm 07746-0010200
- Driver Handle, 15 x 135L 07749-0010000
- Slide Hammer 07936-371020A
- Remover Handle 07936-3710100
- Bearing Remover Shaft Set, 22 mm 070MC-MFR0100

1. Heating the transmission housing to about 212°F (100°C) using a heat gun (A). Do not heat the transmission housing more than 212°F (100°C).

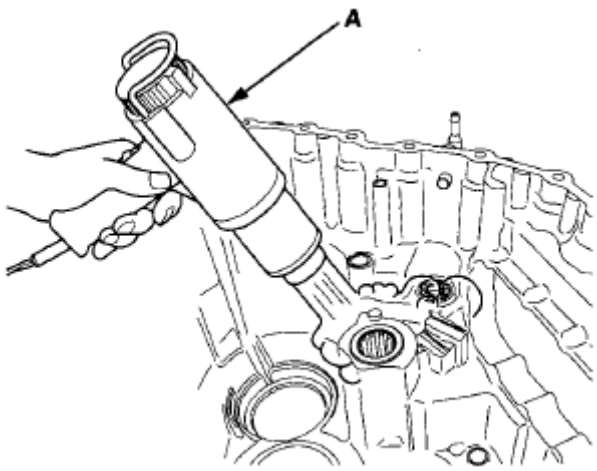


Fig. 438: Heating Transmission Housing To About 212°F (100°C) Using Heat Gun
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Remove the idler gear shaft bearing from the transmission housing using the 22 mm bearing remover shaft, the remover handle, and the slide hammer.

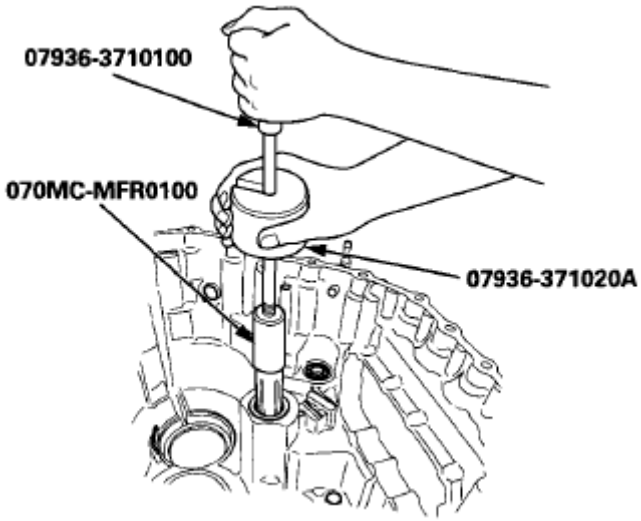


Fig. 439: Removing Idler Gear Shaft Bearing Using Bearing Remover Shaft, Remover Handle And Slide Hammer

Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Install a new bearing until it bottoms in the transmission housing using the 15 x 135L driver handle and the 37 x 40 mm bearing driver attachment.

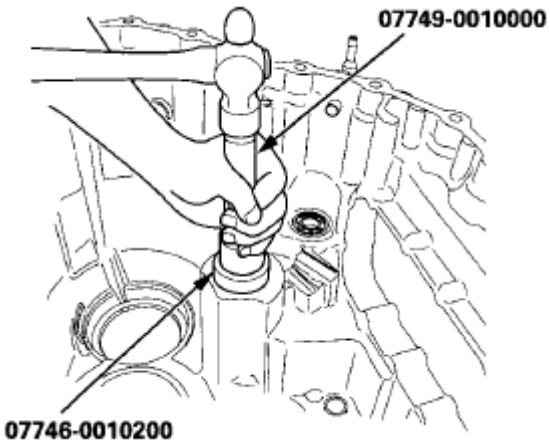


Fig. 440: Installing Bearing In Transmission Housing Using Driver Handle And Bearing Driver Attachment
Courtesy of AMERICAN HONDA MOTOR CO., INC.

SELECTOR CONTROL SHAFT BEARING REPLACEMENT

Special Tools Required

- Driver Handle, 15 x 135L 07749-0010000
- Bearing Remover Shaft Set, 15 mm 07936-KC10500
- Slide Hammer 07936-371020A
- Bearing Driver Attachment, 28x30 mm 07946-1870100

1. Remove the selector control shaft bearing from the transmission housing using the 15 mm bearing remover shaft and the slide hammer.

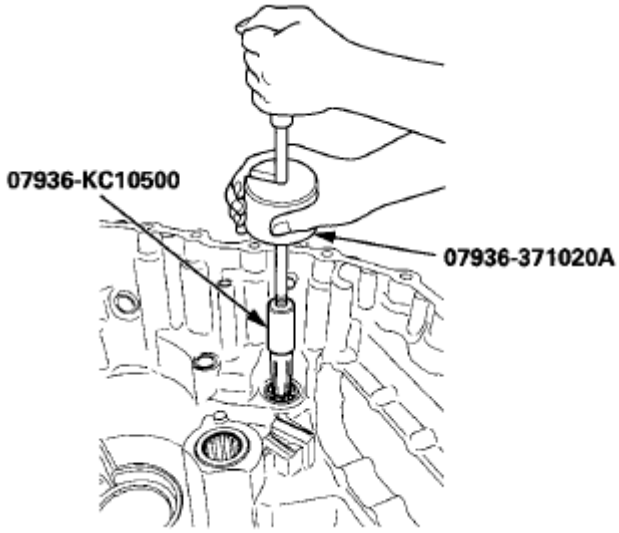


Fig. 441: Removing Selector Control Shaft Bearing Using Bearing Remover Shaft And Slide Hammer
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Install a new bearing until it bottoms in the transmission housing using the 15 x 135L driver handle and the 28 x 30 mm bearing driver attachment.

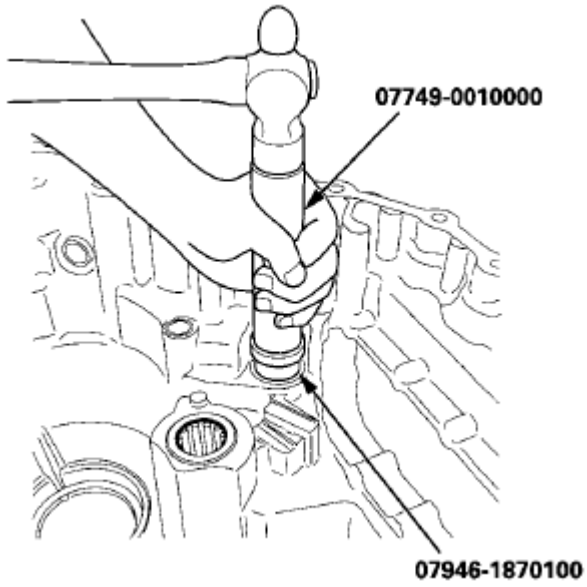


Fig. 442: Installing New Bearing Using Driver Handle And Bearing Driver Attachment
Courtesy of AMERICAN HONDA MOTOR CO., INC.

SELECTOR CONTROL SHAFT OIL SEAL REPLACEMENT

Special Tools Required

- Attachment, 22 x 24 mm 07746-001A800
- Driver Handle, 15 x 135L 07749-0010000

1. Remove the oil seal from the transmission housing.

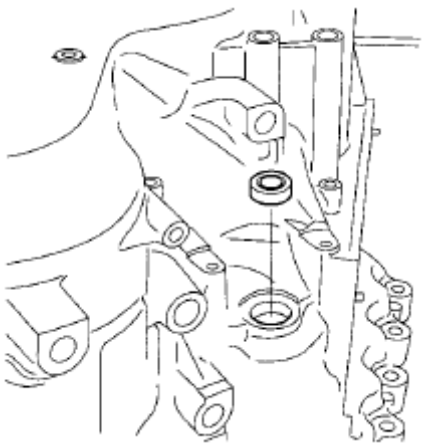


Fig. 443: Removing Oil Seal From Transmission Housing
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Install a new oil seal (A) in the transmission housing to a depth (B) of 0.3 - 1.0 mm (0.012 - 0.039 in) below the transmission housing surface (C) using the 15 x 135L driver handle and the 22 x 24 mm attachment.

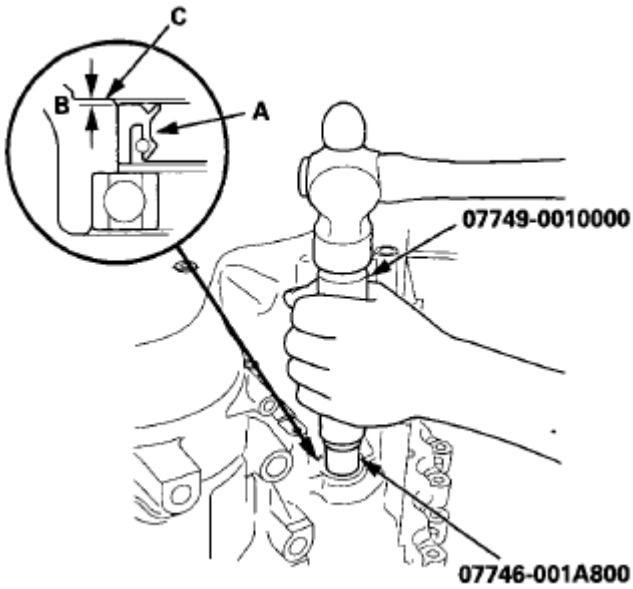


Fig. 444: Installing Oil Seal Using Driver Handle And Bearing Driver Attachment
Courtesy of AMERICAN HONDA MOTOR CO., INC.

MAINSHAFT BEARING AND OIL SEAL REPLACEMENT

Special Tools Required

- Adjustable Bearing Puller, 25 - 40 mm 07736-A01000B
- Bearing Driver Attachment, 62x68 mm 07746-0010500
- Bearing Driver Attachment, 72 x 75 mm 07746-0010600
- Driver Handle, 15 x 135L 07749-0010000
- Slide Hammer 07936-371020A
- Bearing Remover Shaft 07JAC-PH80200

1. Remove the oil seal from the torque converter housing.

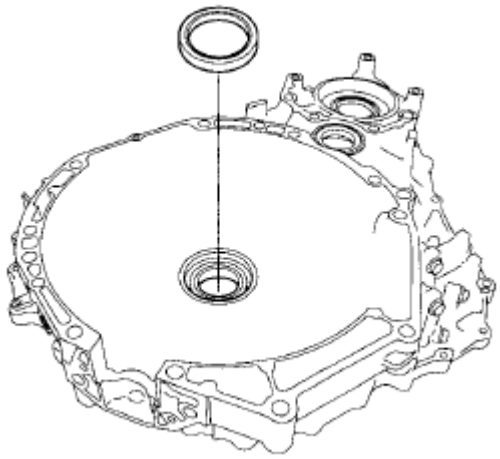


Fig. 445: Removing Oil Seal From Torque Converter Housing
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Remove the mainshaft bearing using the 25- 40 mm adjustable bearing puller, the bearing remover shaft, and the slide hammer.

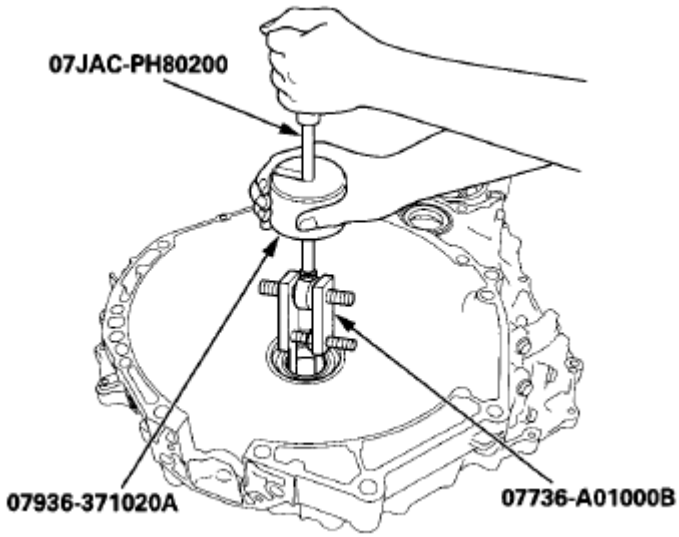


Fig. 446: Removing Mainshaft Bearing Using Adjustable Bearing Puller, Bearing Remover Shaft And Slide Hammer
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Install a new bearing until it bottoms in the torque converter housing using the 15 x 135L driver handle and the 62 x 68 mm bearing driver attachment.

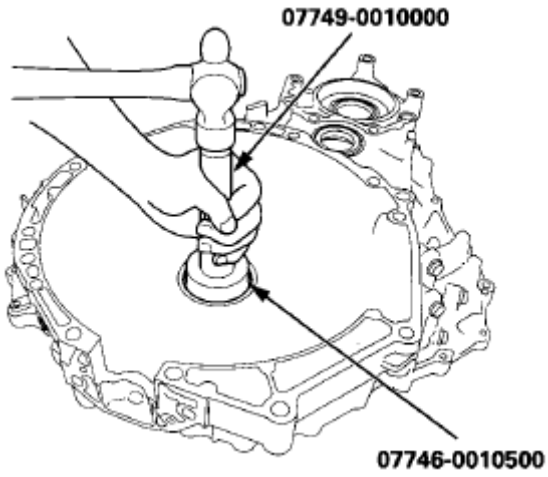


Fig. 447: Installing Bearing In Torque Converter Housing Using Driver Handle And Bearing Driver Attachment
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Install a new oil seal flush with the torque converter housing using the 15 x 135L driver handle and the 72 x 75 mm bearing driver attachment.

NOTE: Do not drive the oil seal into the torque converter housing until it bottoms out, it will block the fluid return passage and cause transmission damage.

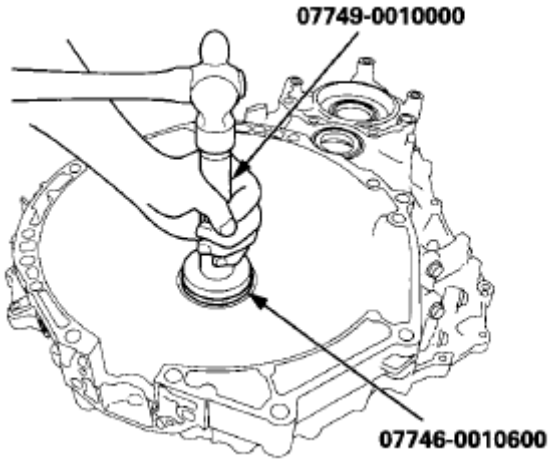


Fig. 448: Installing Oil Seal Flush Using Driver Handle And Bearing Driver Attachment
Courtesy of AMERICAN HONDA MOTOR CO., INC.

COUNTERSHAFT BEARING REPLACEMENT

Special Tools Required

- Bearing Driver Attachment, 72 x 75 mm 07746-0010600
- Adjustable Bearing Puller, 25 - 40 mm 07736-A01000B
- Driver Handle, 15 x 135L 07749-0010000
- Slide Hammer 07936-371020A
- Bearing Remover Shaft 07JAC-PH80200

1. Remove the countershaft bearing from the torque converter housing using the 25- 40 mm adjustable bearing puller, the bearing remover shaft, and the slide hammer.

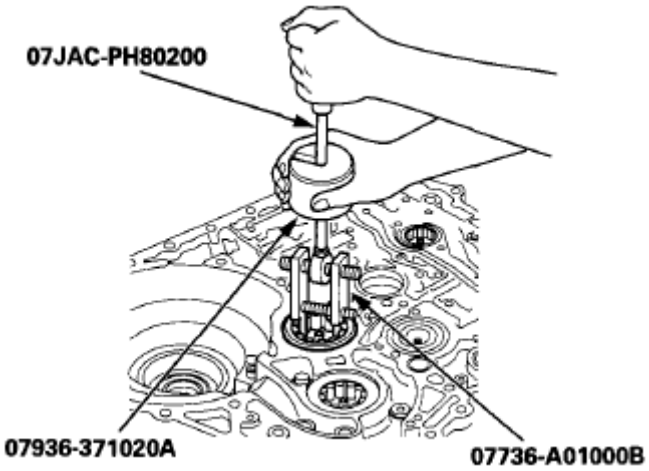


Fig. 449: Removing Countershaft Bearing Housing Using Bearing Puller, Bearing Remover Shaft And Slide Hammer
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Check the ATF guide plate (A), and replace it if it is damaged.

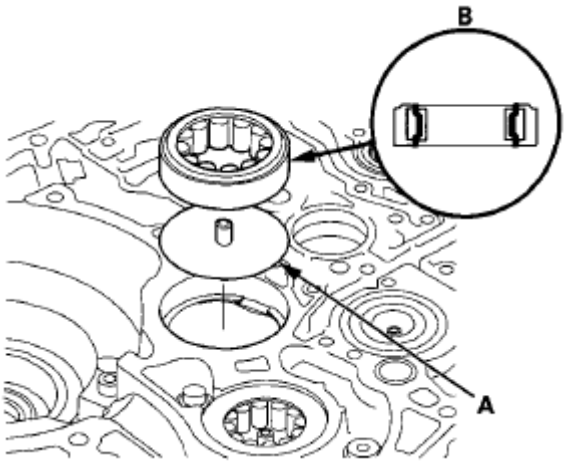


Fig. 450: Identifying ATF Guide Plate And Bearing
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Install a new bearing (B) in the direction shown.
4. Drive the bearing (A) in the torque converter housing using the 15 x 135L driver handle and the 72 x 75 mm bearing driver attachment; install the bearing outer notch-cut (B) to a depth (C) of 0- 0.14 mm (0- 0.0055 in) below the torque converter housing surface (D). 07749-0010000

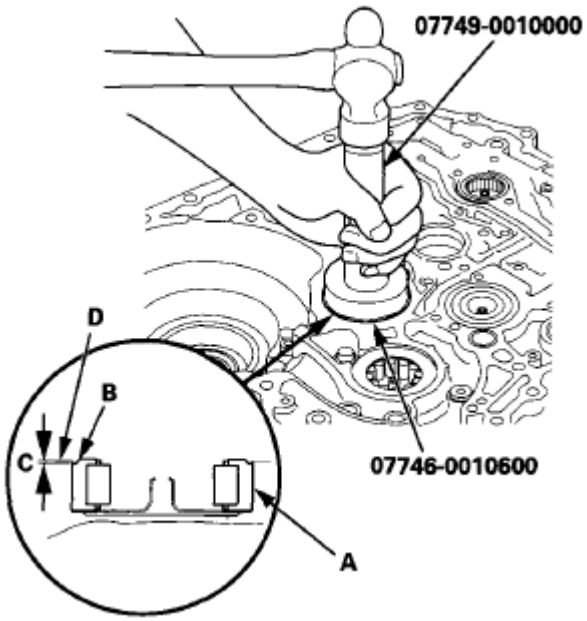


Fig. 451: Driving Bearing In Torque Converter Housing Using Driver Handle And Bearing Driver Attachment
Courtesy of AMERICAN HONDA MOTOR CO., INC.

SECONDARY SHAFT BEARING REPLACEMENT

Special Tools Required

- Adjustable Bearing Puller, 45- 75 mm 07YAC-0010100
- Bearing Driver Attachment, 62 x 68 mm 07746-0010500
- Driver Handle, 15 x 135L 07749-0010000
- Slide Hammer 07936-371020A
- Bearing Remover Shaft 07JAC-PH80200

1. Remove the secondary shaft bearing from the torque converter housing using the 45- 75 mm adjustable bearing puller, the bearing remover shaft, and the slide hammer.

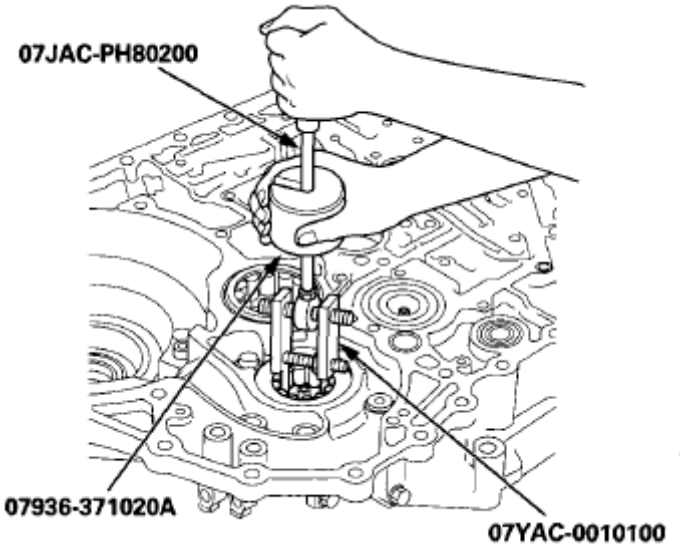


Fig. 452: Removing Secondary Shaft Bearing Using Bearing Puller, Bearing Remover Shaft And Slide Hammer
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Cover the tip of the 1st clutch ATF feed pipe with a shop rag. Apply air pressure to the ATF feed pipe hole (A) of the 1st clutch hydraulic circuit, and remove the ATF guide collar (B), the 28.6 x 40.8 x 13 mm secondary shaft bearing (C), and the ATF feed pipe assembly (D) from the transmission housing.

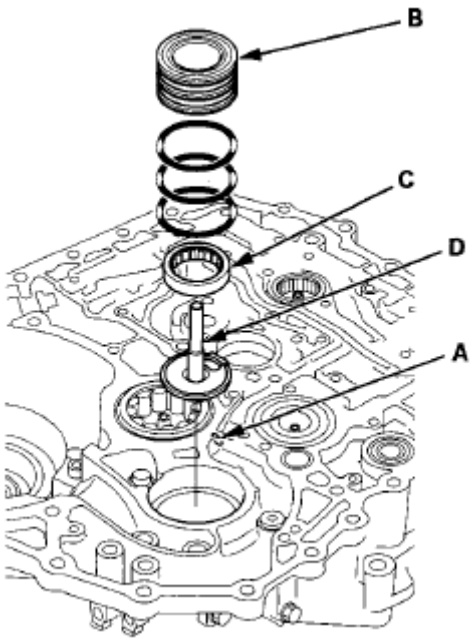


Fig. 453: Identifying ATF Feed Pipe Hole, ATF Guide Collar, Secondary Shaft Bearing And ATF Feed Pipe Assembly
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Install a new O-ring (A) on the ATF feed pipe assembly (B), then install the ATF feed pipe assembly in

the torque converter housing by aligning the finger (C) with the groove (D).

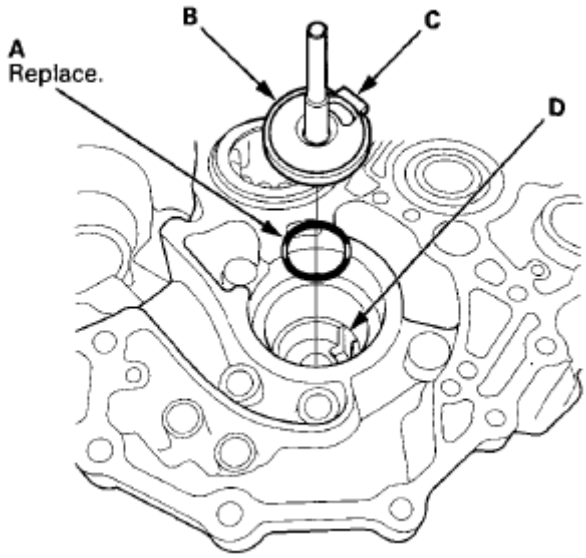


Fig. 454: Identifying O-Ring, ATF Feed Pipe Assembly, Finger And Groove
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Install the 28.6 x 40.8 x 13 mm bearing (A) into the torque converter housing.

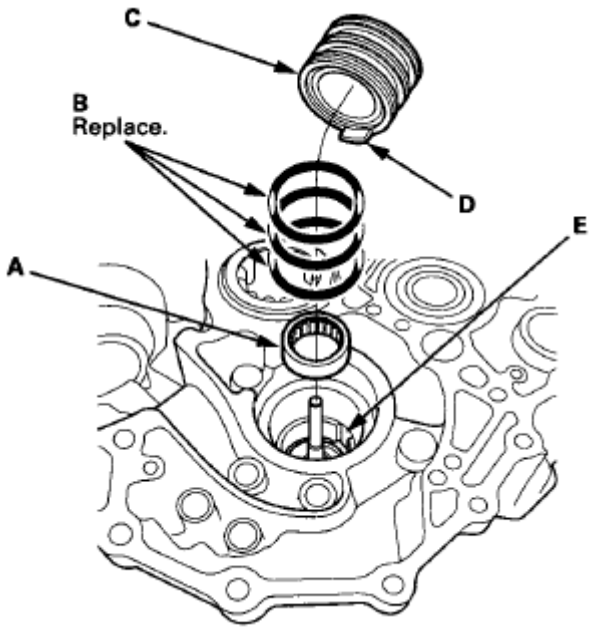


Fig. 455: Identifying Bearing, O-rings, ATF Guide Collar, Finger And Groove
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Install new O-rings (B) on the ATF guide collar (C), then install the guide collar in the torque converter housing by aligning the finger (D) with the groove (E).

6. Install the bearing until it bottoms in the direction shown in the torque converter housing using the 15 x 135L driver handle and the 62 x 68 mm bearing driver attachment.

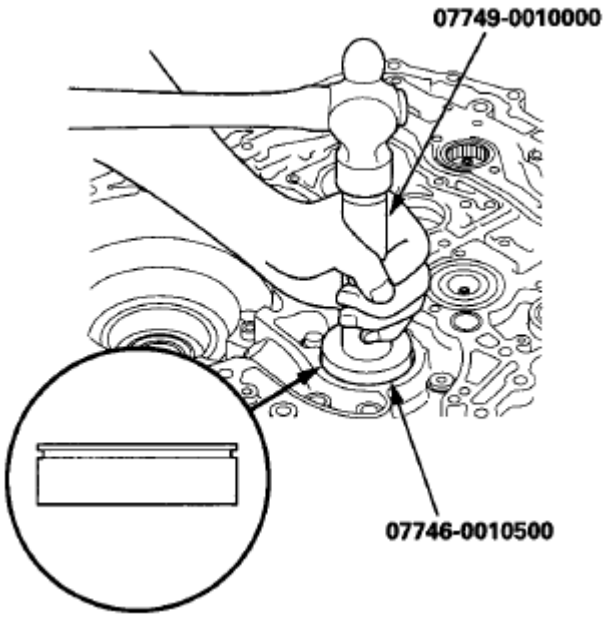


Fig. 456: Installing Bearing In Torque Converter Housing Using Driver Handle And Bearing Driver Attachment
Courtesy of AMERICAN HONDA MOTOR CO., INC.

THIRD SHAFT BEARING REPLACEMENT

Special Tools Required

- Adjustable Bearing Puller, 25- 40 mm 07736-A01000B
- Bearing Driver Attachment, 52 x 55 mm 07746-0010400
- Driver Handle, 15 x 135L 07749-0010000
- Slide Hammer 07936-371020A
- Bearing Remover Shaft 07JAC-PH80200

1. Remove the third shaft bearing from the torque converter housing using the 25- 40 mm adjustable bearing puller, the bearing remover shaft, and the slide hammer.

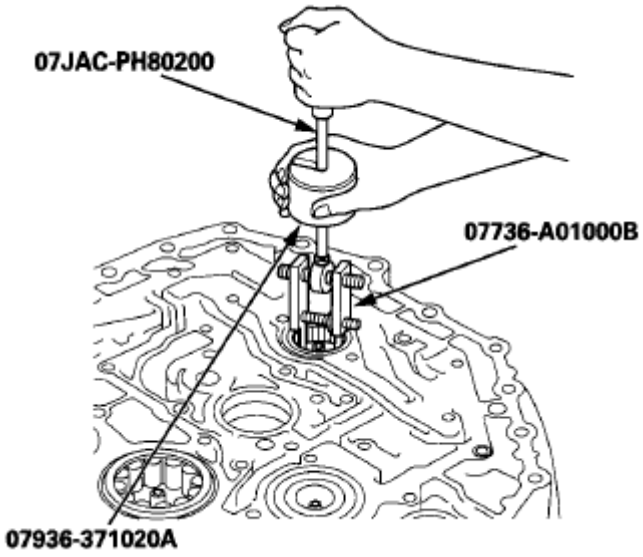


Fig. 457: Removing Third Shaft Bearing Housing Using Bearing Puller, Bearing Remover Shaft And Slide Hammer
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Check the ATF guide plate (A), and replace it if it is damaged.

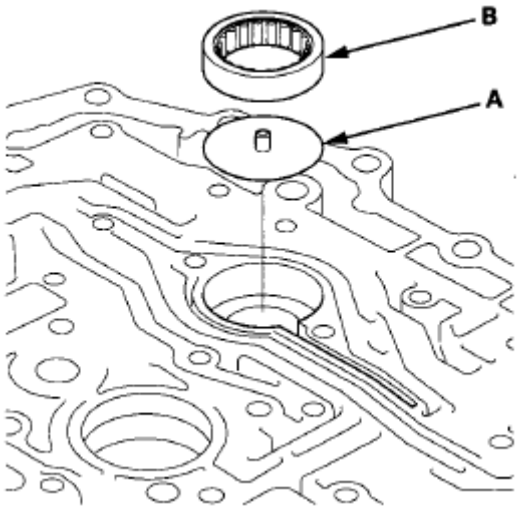


Fig. 458: Identifying ATF Guide Plate And Bearing In Torque Converter Housing
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Install a new bearing (B) in the torque converter housing.
4. Drive the bearing (A) into the torque converter housing using the 15 x 135L driver handle and the 52 x 55 mm bearing driver attachment; install the bearing to a depth (B) of 0 - 0.07 mm (0 - 0.0012 in) below the torque converter housing surface (C).

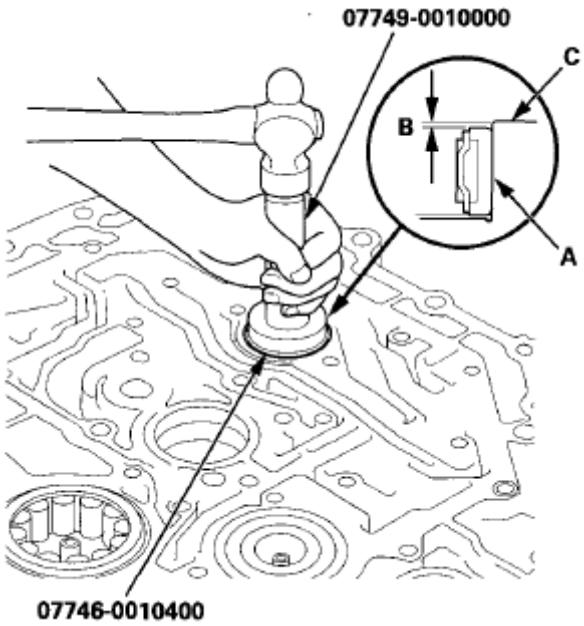


Fig. 459: Drive Bearing Into Torque Converter Housing Using Driver Handle And Bearing Driver Attachment
Courtesy of AMERICAN HONDA MOTOR CO., INC.

IDLER GEAR SHAFT BEARING REPLACEMENT

Special Tools Required

- Adjustable Bearing Puller, 25- 40 mm 07736-A01000B
- Bearing Driver Attachment, 52 x 55 mm 07746-0010400
- Driver Handle, 15 x 135L 07749-0010000
- Slide Hammer 07936-371020A
- Bearing Remover Shaft 07JAC-PH80200

1. Remove the idler gear shaft bearing from the torque converter housing using the 25- 40 mm adjustable bearing puller, the bearing remover shaft, and the slide hammer.

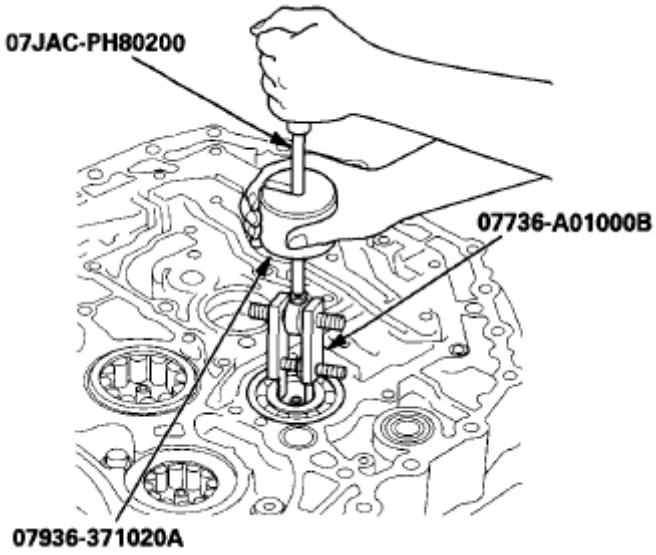


Fig. 460: Removing Idler Gear Shaft Bearing Using Bearing Puller, Bearing Remover Shaft And Slide Hammer
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Check the ATF guide plate (A), and replace it if it is damaged.

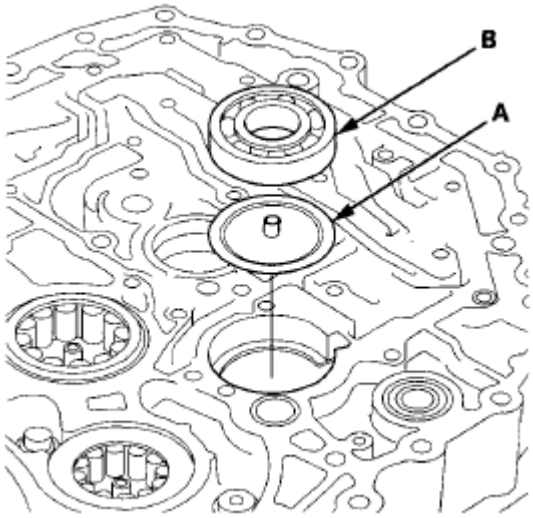


Fig. 461: Identifying ATF Guide Plate And Bearing In Torque Converter Housing
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Install a new bearing (B) in the torque converter housing.
4. Drive the bearing until it bottoms into the torque converter housing using the 15 x 135L driver handle and the 52 x 55 mm bearing driver attachment.

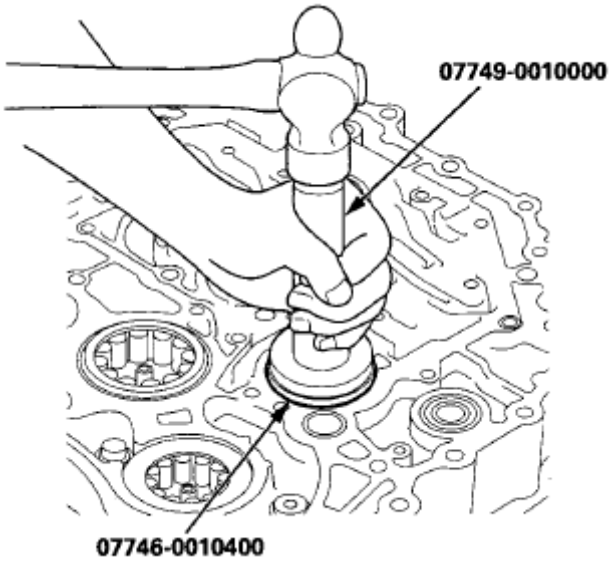


Fig. 462: Driving Bearing Into Torque Converter Housing Using Driver Handle And Bearing Driver Attachment
Courtesy of AMERICAN HONDA MOTOR CO., INC.

SELECTOR CONTROL SHAFT BEARING REPLACEMENT

Special Tools Required

- Bearing Driver Attachment, 32 x 35 mm 07746-0010100
- Driver Handle, 15 x 135L 07749-0010000
- Slide Hammer 07936-371020A
- Bearing Remover Shaft Set, 15 mm 07936-KC10500

1. Remove the selector control shaft bearing from the torque converter housing using the 15 mm bearing remover shaft and the slide hammer.

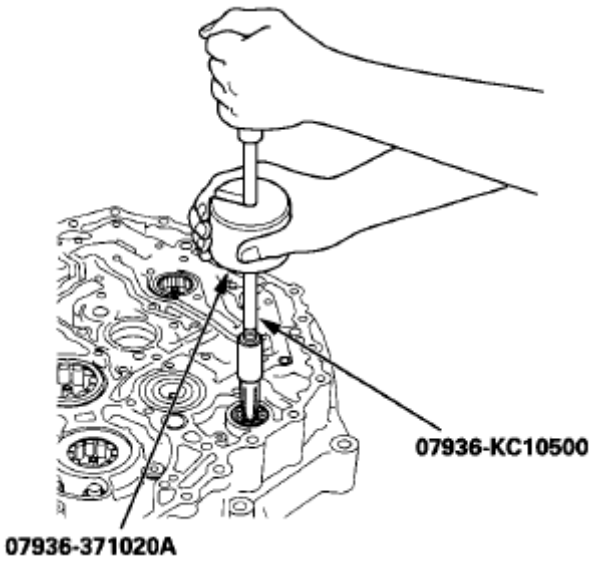


Fig. 463: Removing Selector Control Shaft Bearing Using Bearing Remover Shaft And Slide Hammer
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Install a new bearing until it bottoms out in the torque converter housing using the 15 x 135L driver handle and the 32 x 35 mm bearing driver attachment.

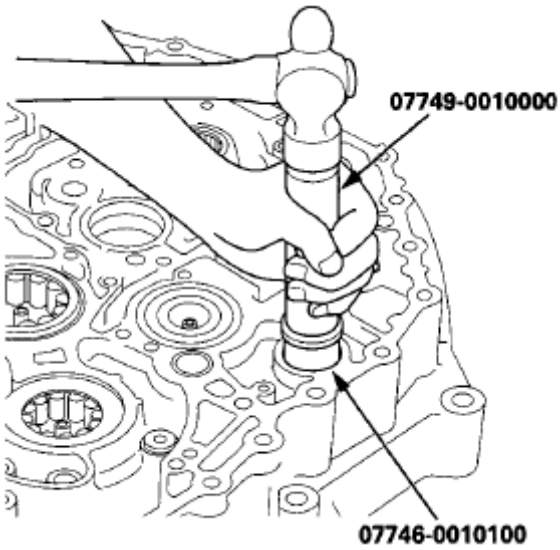


Fig. 464: Installing Bearing In Torque Converter Housing Using Driver Handle And Bearing Driver Attachment
Courtesy of AMERICAN HONDA MOTOR CO., INC.

MAINSHAFT DISASSEMBLY

EXPLODED VIEW

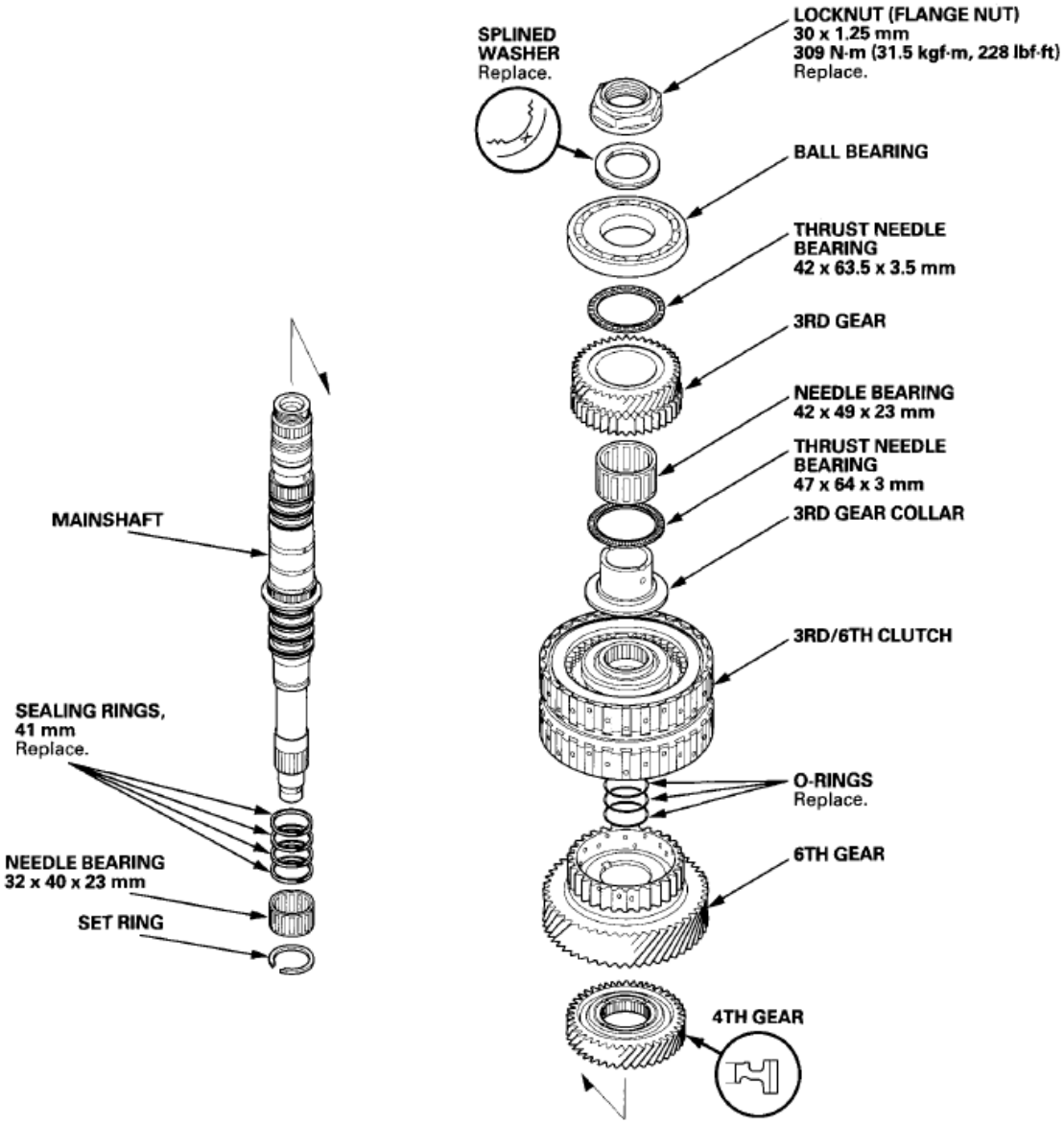


Fig. 465: Exploded View Of Mainshaft With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

NOTE: Refer to the EXPLODED VIEW as needed during the following procedure.

1. Remove the 42 x 63.5 x 3.5 mm thrust needle bearing (A), 3rd gear (B), the 42 x 49 x 23 mm needle bearing (C), and the 47 x 64 x 3 mm thrust needle bearing (D) from the mainshaft (E).

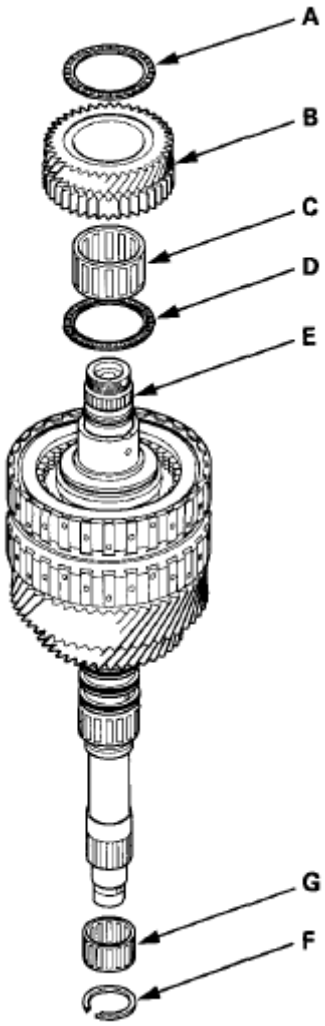


Fig. 466: Removing Thrust Needle Bearing, 3rd Gear, Needle Bearing And Thrust Needle Bearing From Mainshaft
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Remove the set ring (F) and the 32 x 40 x 23 mm needle bearing (G).
3. Place 4th gear (A) on press bases (B), and place a spacer (C) between the mainshaft (D) and the press to prevent damaging the mainshaft.

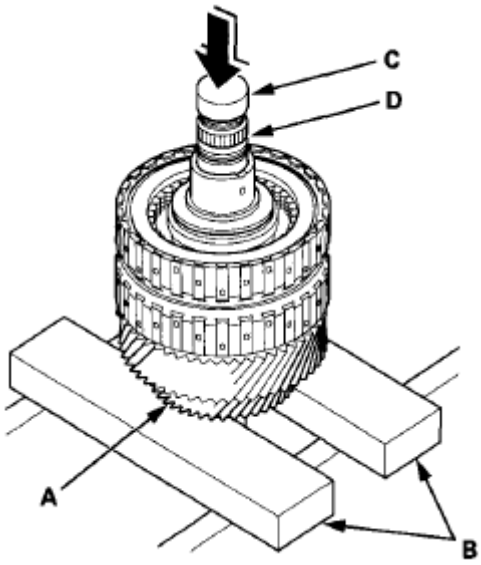


Fig. 467: Identifying 4th Gear, Press Bases, Spacer And Mainshaft
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Remove the 3rd gear collar (A), the 3rd/6th clutch (B), 6th gear (C), and 4th gear (D) using a press.

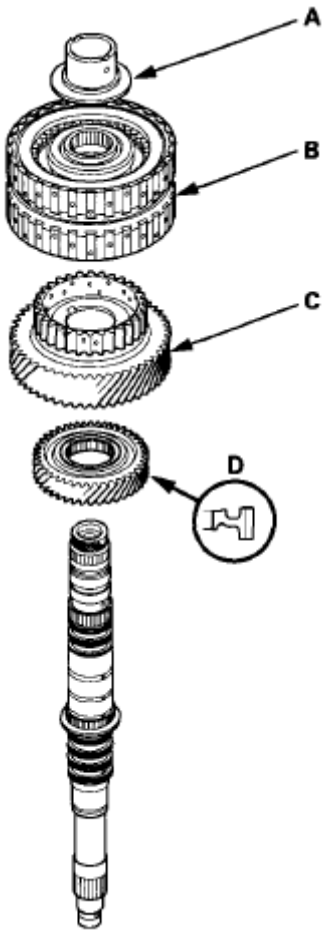


Fig. 468: Identifying 3rd Gear Collar, 3rd/6th Clutch, 6th Gear And 4th Gear
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Remove the O-rings (A) from the mainshaft (B).

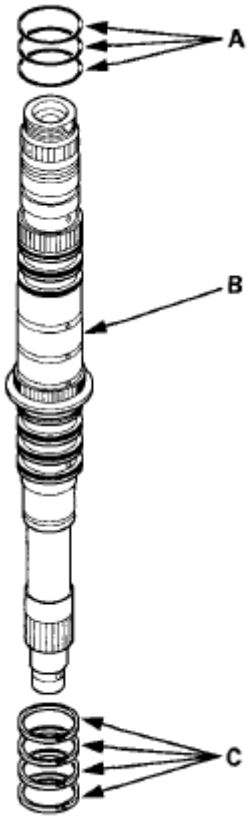


Fig. 469: Identifying O-Rings, Mainshaft And Sealing Rings
Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Remove the sealing rings (C) from the mainshaft.
7. Inspect the bearings for galling and rough movement.
8. Check the shaft bearing surfaces for scoring and excessive wear, and check the shaft splines for excessive wear and damage.
9. Inspect 6th gear for wear and damage, and inspect the 6th gear bearing for wear and rough rotation.
10. Replace the 6th gear if the gear or the bearing is worn or damaged.

MAINSHAFT REASSEMBLY

Special Tools Required

- Driver Handle, 40 mm I.D. 07746-0030100
- Bearing Driver Attachment, 35 mm I.D. 07746-0030400

1. Install new sealing rings (A).

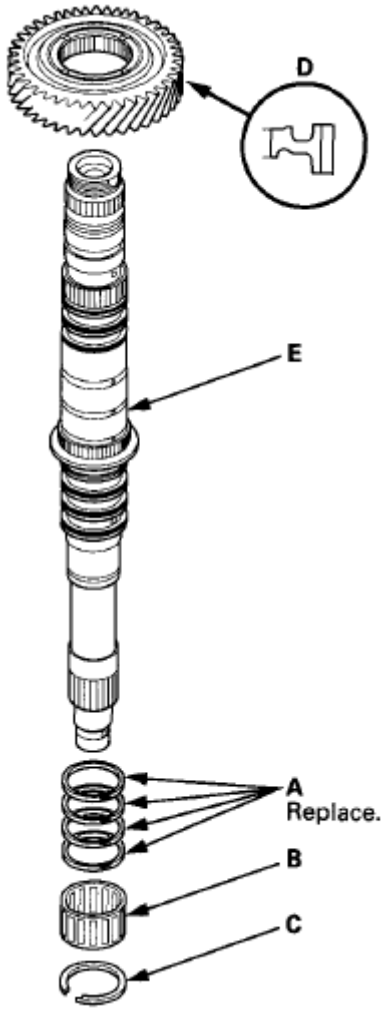


Fig. 470: Identifying Sealing Rings, Needle Bearing, 4th Gear, Mainshaft And Set Ring
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Install the 32 x 40 x 23 mm needle bearing (B) and the set ring (C).
3. Slide 4th gear (D) over the mainshaft (E) in the direction shown.
4. Place 4th gear (A) on press bases (B), and place a spacer (C) between the mainshaft (D) and the press to prevent damaging the mainshaft.

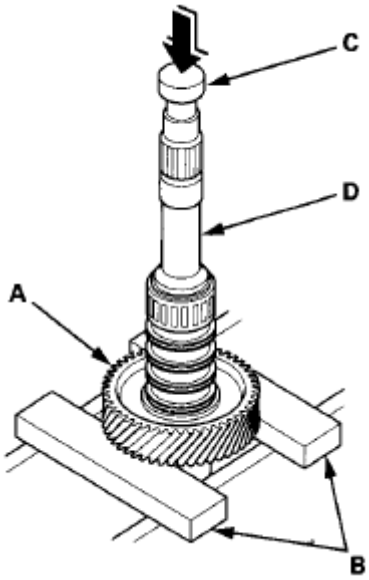


Fig. 471: Identifying 4th Gear, Press Bases, Spacer And Mainshaft
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Install 4th gear using a press.
6. Install 6th gear (A) over the mainshaft (B), then press it into place using the 40 mm I.D. driver handle and the press.

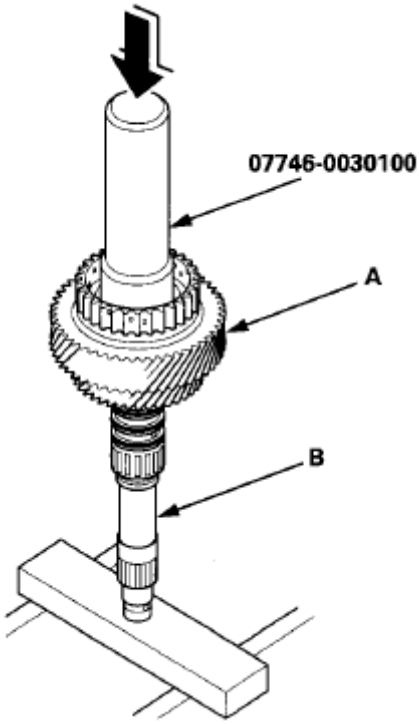


Fig. 472: Identifying 6th Gear And Mainshaft
Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Wrap the shaft splines with electrical tape to prevent O-ring damage, install new O-rings (A) on the mainshaft (B), then remove the tape.

NOTE: Lubricate the O-rings with ATF before installing them.

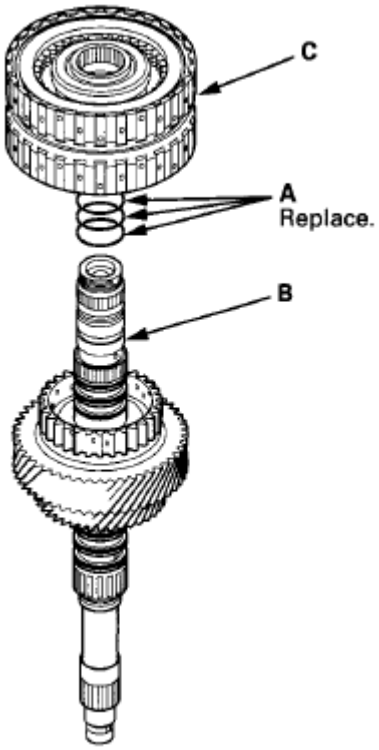


Fig. 473: Identifying O-Rings, 3rd/6th Clutch And Mainshaft
Courtesy of AMERICAN HONDA MOTOR CO., INC.

8. Install the 3rd/6th clutch (C).
9. Install the 3rd gear collar (A) over the mainshaft (B), then press it into place using the 40 mm I.D. driver handle, the 35 mm I.D. bearing driver attachment, and the press.

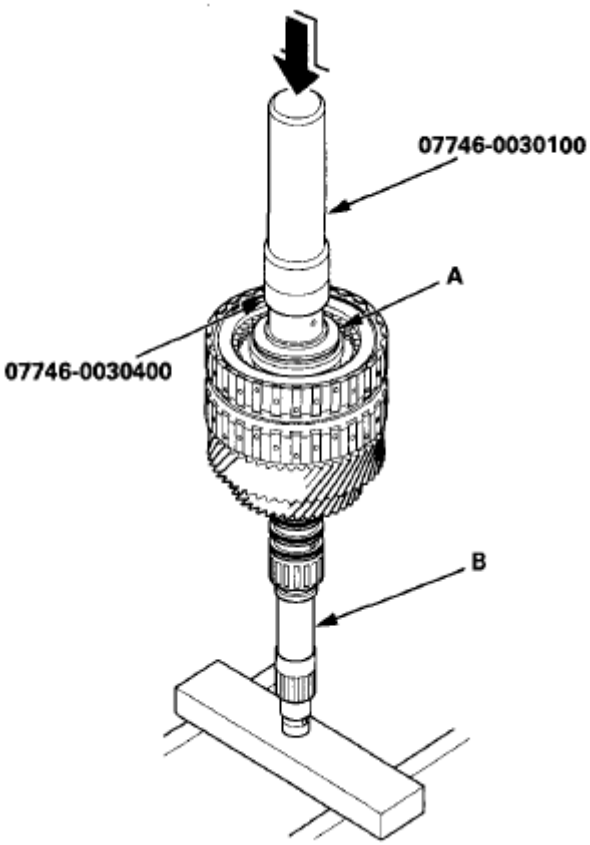


Fig. 474: Installing 3rd Gear Collar Over Mainshaft
Courtesy of AMERICAN HONDA MOTOR CO., INC.

10. Install the 47 x 64 x 3 mm thrust needle bearing (A), the 42 x 49 x 23 mm needle bearing (B), 3rd gear (C), and the 42 x 63.5 x 3.5 mm needle bearing (D).

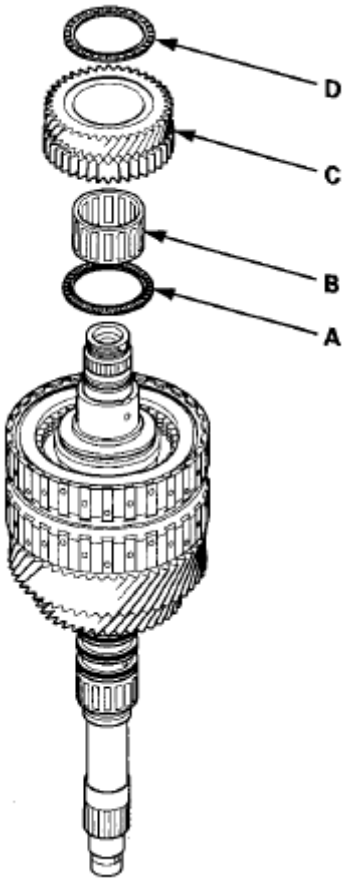


Fig. 475: Identifying Thrust Needle Bearing, Needle Bearing, 3rd Gear, And Needle Bearing
Courtesy of AMERICAN HONDA MOTOR CO., INC.

COUNTERSHAFT DISASSEMBLY

EXPLODED VIEW

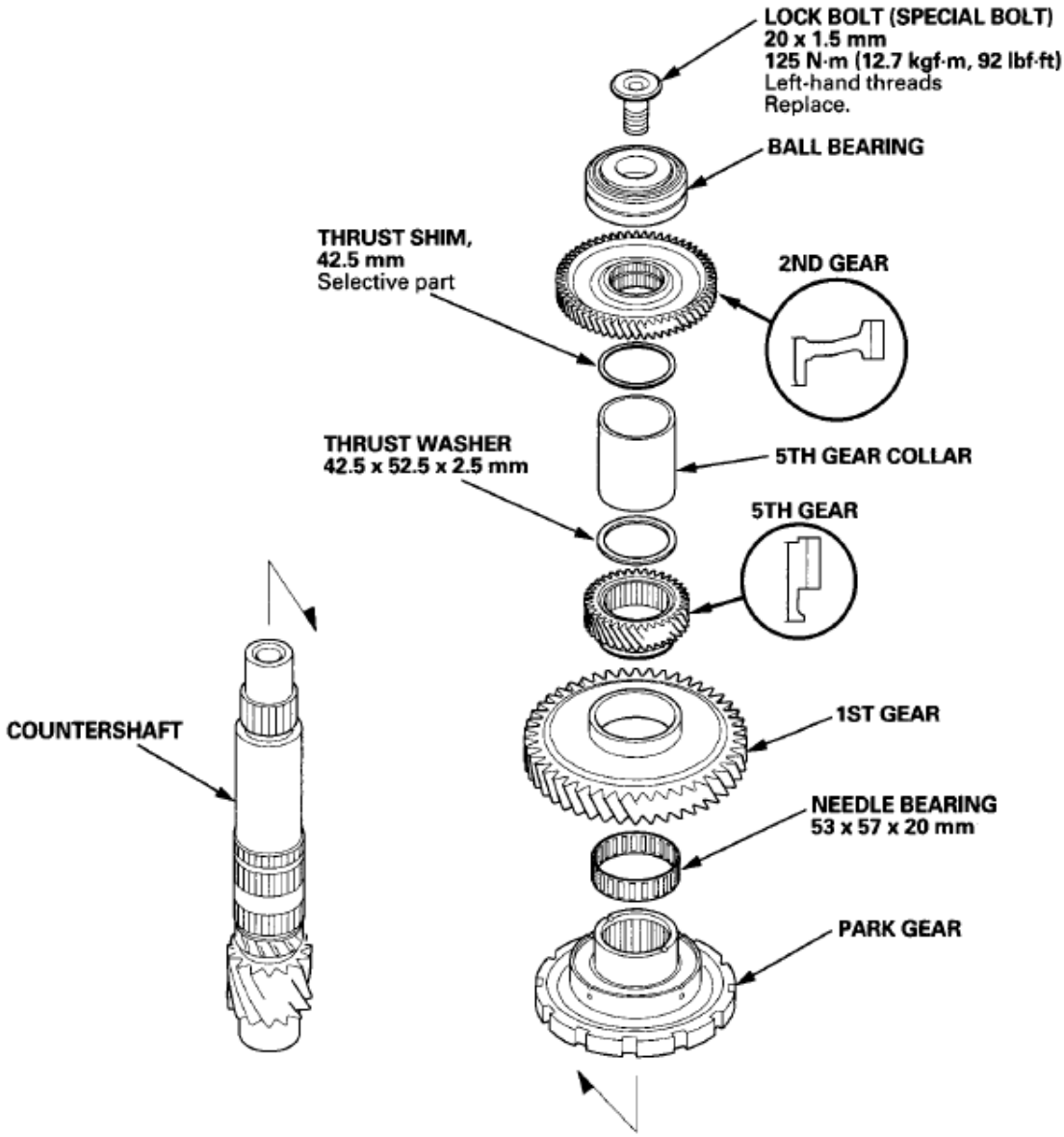


Fig. 476: Exploded View Of Countershaft With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

NOTE: Refer to the EXPLODED VIEW as needed during the following procedure.

1. Secure the final drive gear part of the countershaft in a bench vise with wood blocks, loosen the lock bolt (A), and remove it. The lock bolt has left-hand threads.

NOTE: After this procedure, remove wood chips that may be stuck to the gear.

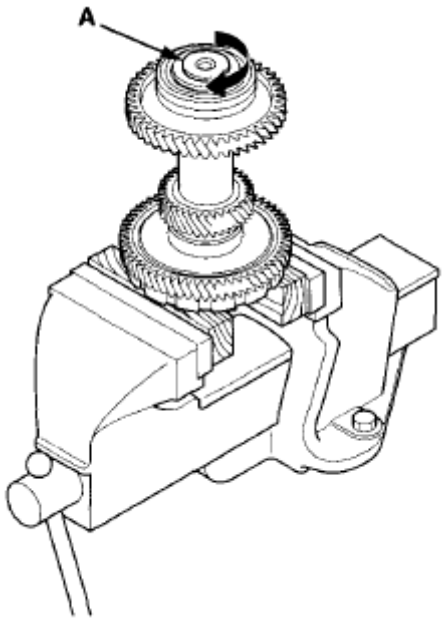


Fig. 477: Loosening Lock Bolt
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Place the park gear (A) on press bases (B), and place a spacer (C) between the countershaft (D) and the press to prevent damaging the countershaft.

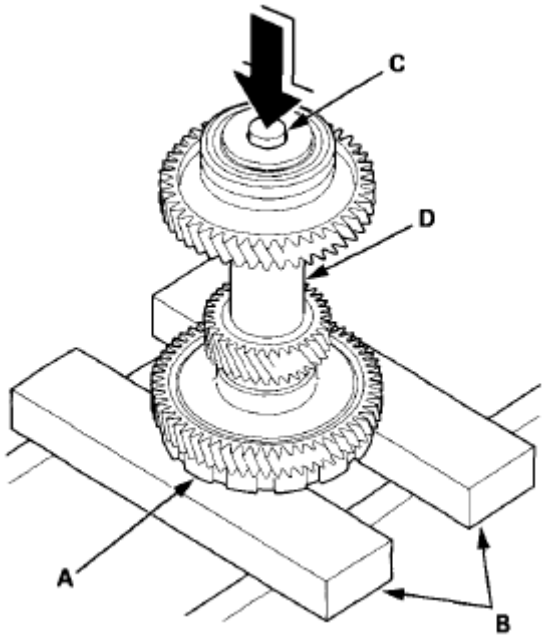


Fig. 478: Placing Park Gear On Press Bases And Place Spacer Between Countershaft
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Remove the ball bearing (A), 2nd gear (B), the 42.5 mm thrust shim (C), the 5th gear collar (D), the 42.5 x 52.5 x 2.5 mm thrust washer (E), 5th gear (F), 1st gear (G), the 53 x 57 x 20 mm needle bearing (H),

and the park gear (I) using a press.

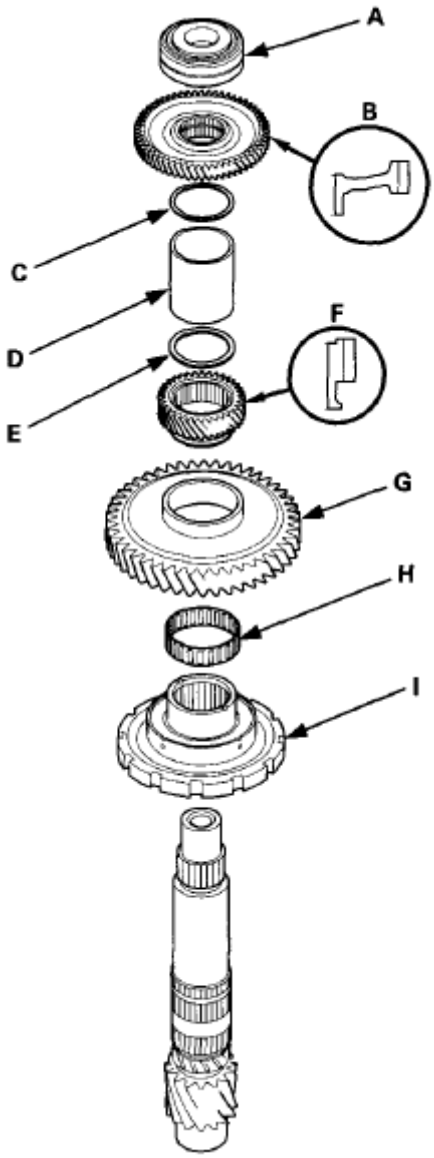


Fig. 479: Identifying Ball And Needle Bearing, 2nd Gear, Thrust Shim, 5th Gear And Collar, Thrust Washer, 1st Gear, And Park Gear
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Inspect the bearing for galling and rough movement.
5. Check the shaft bearing surfaces for scoring and excessive wear, and check the shaft splines for excessive wear and damage.
6. Check the countershaft 2nd gear axial clearance and the 5th gear axial clearance (see **COUNTERSHAFT 2ND GEAR AND 5TH GEAR AXIAL CLEARANCE INSPECTION**), and check the 1st gear one-way clutch (see **1ST GEAR ONE-WAY CLUTCH INSPECTION**).

COUNTERSHAFT 2ND GEAR AND 5TH GEAR AXIAL CLEARANCE

INSPECTION

Special Tools Required

Driver Handle, 40 mm I.D. 07746-0030100

1. Slide the park gear (A) over the countershaft (B).

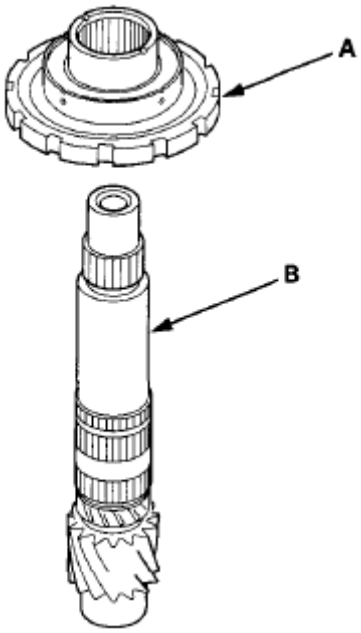


Fig. 480: Identifying Park Gear And Countershaft
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Place the park gear (A) on press bases (B), and place a spacer (C) between the countershaft (D) and the press to prevent damaging the countershaft.

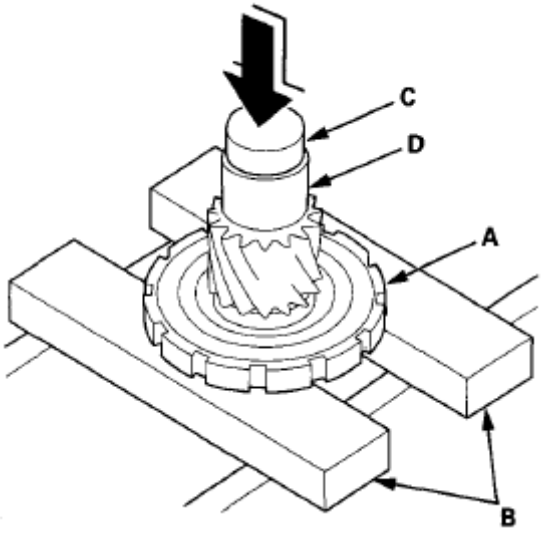


Fig. 481: Placing Park Gear On Press Bases And Place Spacer Between Countershaft
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Install the park gear using a press.
4. Install the 53 x 57 x 20 mm needle bearing (A), 1st gear (B), 5th gear (C), the 42.5 x 52.5 x 2.5 mm thrust washer (D), the 5th gear collar (E), the 42.5 mm thrust shim (F), and 2nd gear (G) on the countershaft (H). Install 2nd gear and 5th gear in the direction shown.

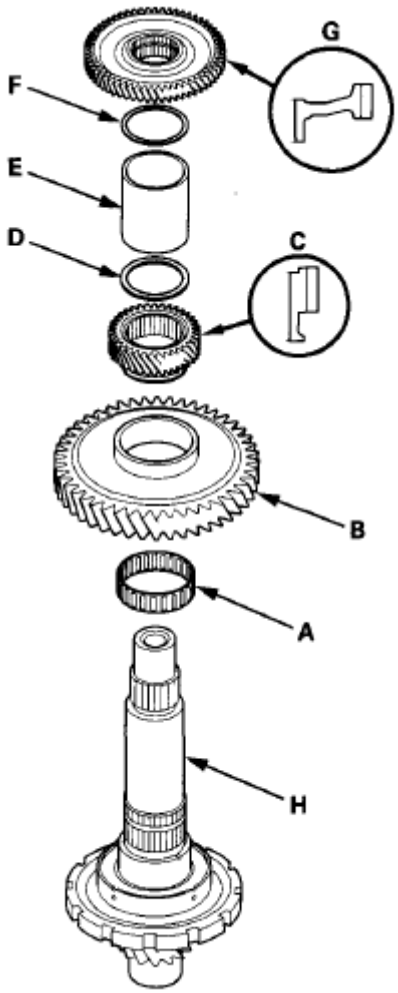


Fig. 482: Identifying Needle Bearing, 1st Gear, 5th Gear, Thrust Washer, Gear Collar, Thrust Shim, And 2nd Gear On Countershaft
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Install the ball bearing (A) over the countershaft (B), then press it into place using the 40 mm I.D. driver handle and the press.

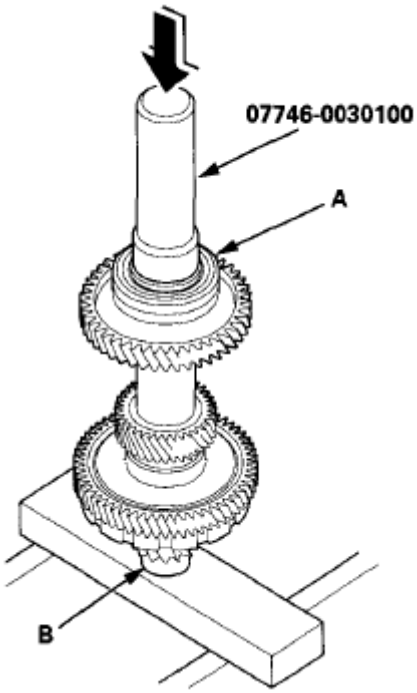


Fig. 483: Identifying Ball Bearing And Countershaft
Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Secure the final drive gear part of the countershaft in a bench vise with wood blocks, install the old lock bolt (A), and tighten it to 125 N.m (12.7 kgf.m, 92 lbf.ft). The lock bolt has left-hand threads.

NOTE: After this procedure, remove wood chips that may be stuck to the gear.

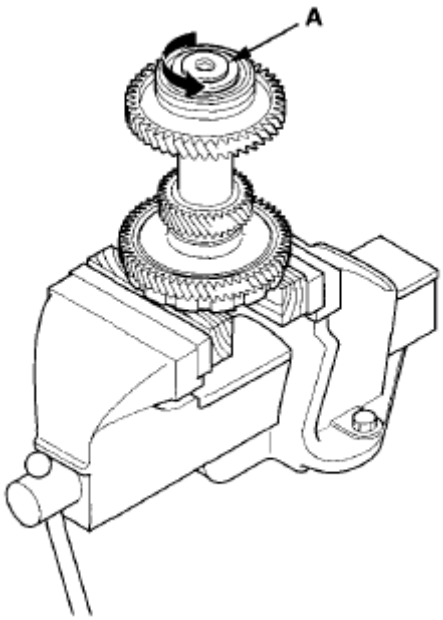


Fig. 484: Installing Lock Bolt

Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Measure the clearance between the 5th gear collar (A) and the 42.5 mm thrust shim (B) with a feeler gauge (C) in at least three places. Use the average as the actual clearance.

   Standard: 0.04 - 0.10 mm (0.002 - 0.003 in)

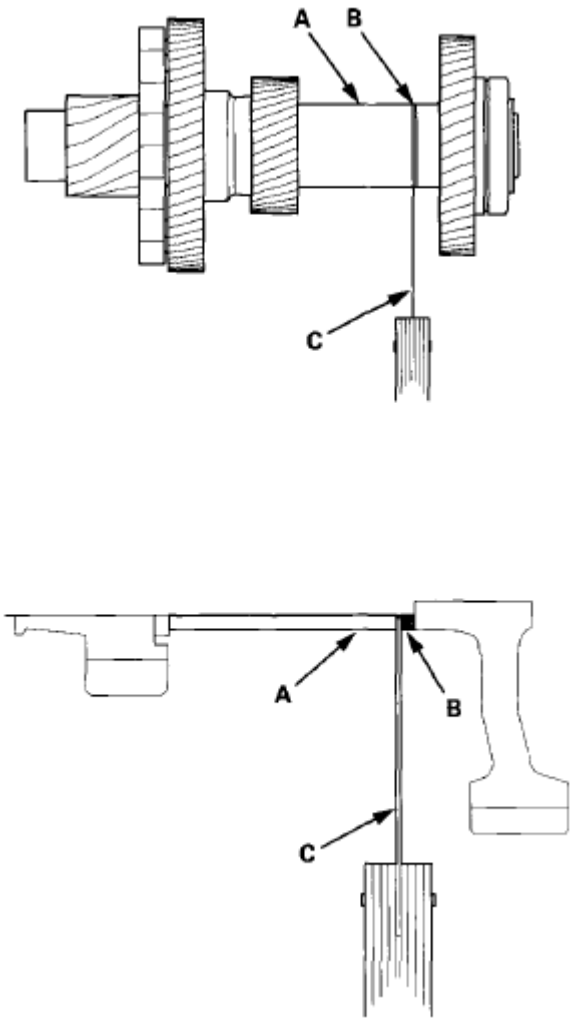


Fig. 485: Measuring Clearance Between 5th Gear Collar And Thrust Shim With Feeler Gauge
Courtesy of AMERICAN HONDA MOTOR CO., INC.

8. If the clearance is out of the standard, remove the 42.5 mm thrust shim and measure its thickness.
9. Select and install a new 42.5 mm thrust shim, then recheck the clearance.

THRUST SHIM, 42.5 MM

No.	Thickness
A	1.82 mm (0.0717 in)
B	1.86 mm (0.0732 in)

C	1.90 mm (0.0748 in)
D	1.94 mm (0.0764 in)
E	1.98 mm (0.0780 in)
F	2.02 mm (0.0795 in)
G	2.06 mm (0.0811 in)
H	2.10 mm (0.0827 in)
I	2.14 mm (0.0843 in)
J	2.18 mm (0.0858 in)
K	2.22 mm (0.0874 in)
L	2.26 mm (0.0890 in)

1ST GEAR ONE-WAY CLUTCH INSPECTION

1. Install the 53 x 57 x 20 mm needle bearing (A) and 1st gear (B) on the park gear (C).

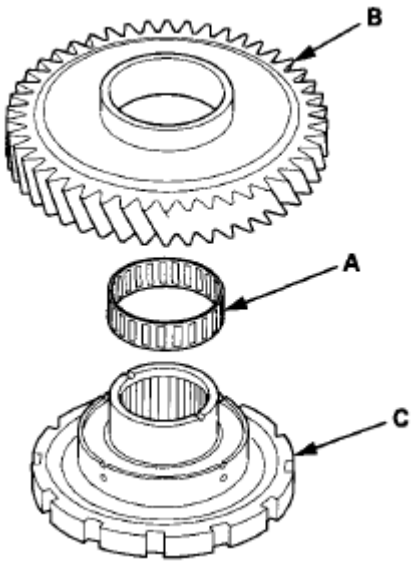


Fig. 486: Installing Needle Bearing And 1st Gear On Park Gear
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Hold the park gear (A), and turn 1st gear (B) in the direction shown to be sure it turns freely. Also make sure 1st gear locks in the opposite direction.

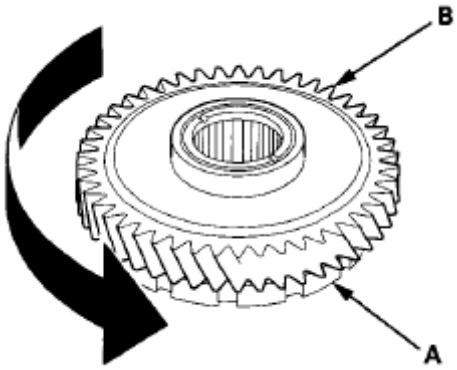


Fig. 487: Identifying Park Gear And 1st Gear
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. If any problem occurs on the 1st gear one-way clutch, replace 1st gear. The 1st gear one-way clutch is not available separately from 1st gear.

COUNTERSHAFT REASSEMBLY

Special Tools Required

Driver Handle, 40 mm I.D. 07746-0030100

1. Slide the park gear (A) over the countershaft (B).

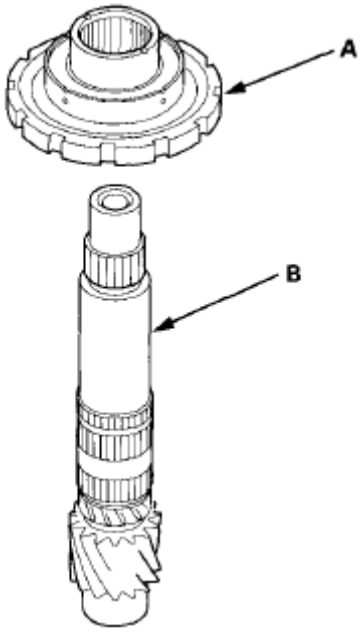


Fig. 488: Identifying Park Gear And Countershaft
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Place the park gear (A) on press bases (B), and place a spacer (C) between the countershaft (D) and the press to prevent damaging the countershaft.

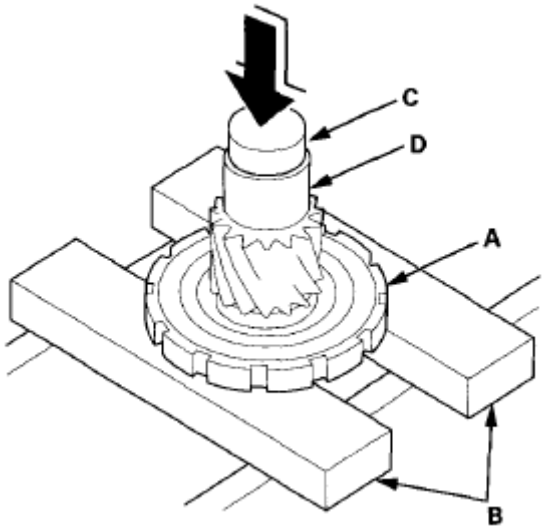


Fig. 489: Placing Park Gear On Press Bases And Place Spacer Between Countershaft
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Install the park gear using a press.
4. Install the 53 x 57 x 20 mm needle bearing (A), 1st gear (B), 5th gear (C), the 42.5 x 52.5 x 2.5 mm thrust washer (D), the 5th gear collar (E), the selected 42.5 mm thrust shim (F), and 2nd gear (G) on the countershaft (H). Install 2nd gear and 5th gear in the direction shown.

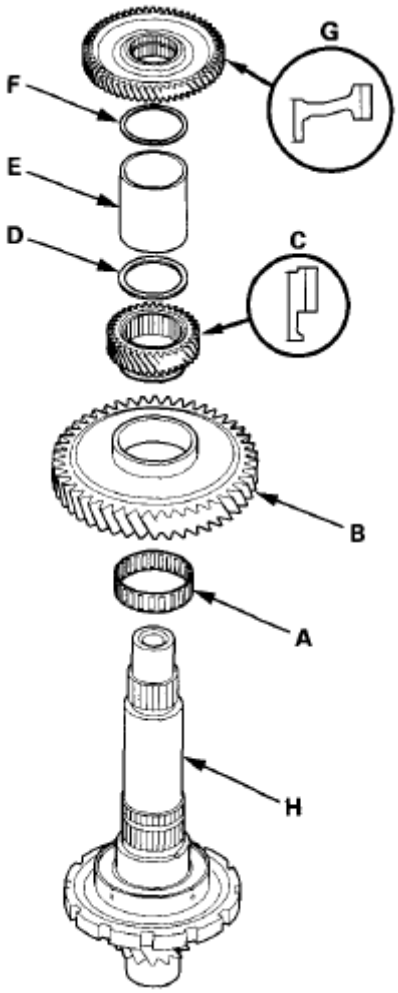


Fig. 490: Identifying Needle Bearing, 1st Gear, 5th Gear, Thrust Washer, 5th Gear Collar, Thrust Shim, 2nd Gear And Countershaft
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Install the ball bearing (A) over the countershaft (B), then press it into place using the 40 mm I.D. driver handle and the press.

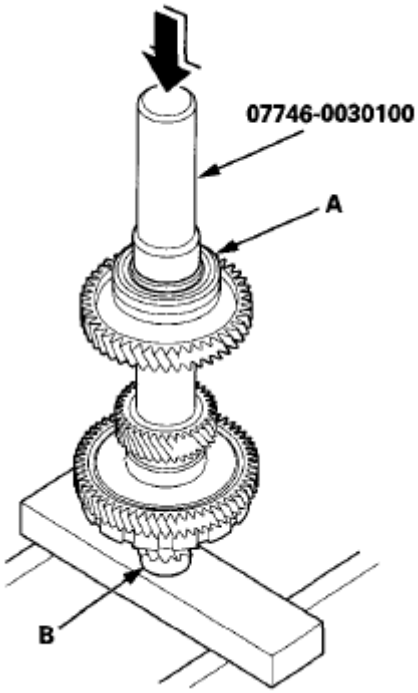


Fig. 491: Installing Ball Bearing Over Countershaft Using Driver Handle And Press
Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Secure the final drive gear part of the countershaft in a bench vise with wood blocks, install a new lock bolt (A), and tighten it to 125 N.m (12.7 kgf.m, 92 lbf.ft). The lock bolt has left-hand threads.

NOTE: After this procedure, remove wood chips that may be stuck to the gear.

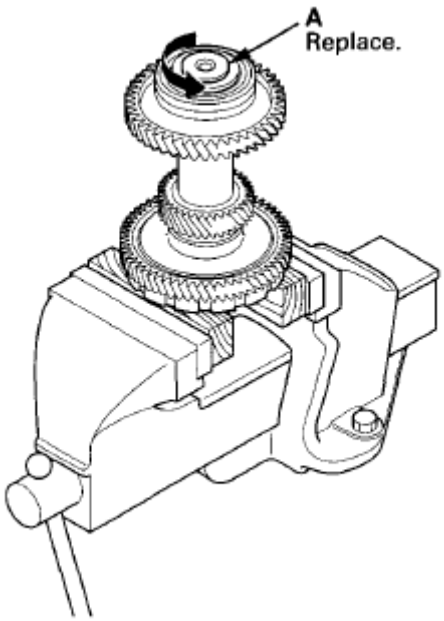


Fig. 492: Installing Lock Bolt

Courtesy of AMERICAN HONDA MOTOR CO., INC.

SECONDARY SHAFT DISASSEMBLY

EXPLODED VIEW

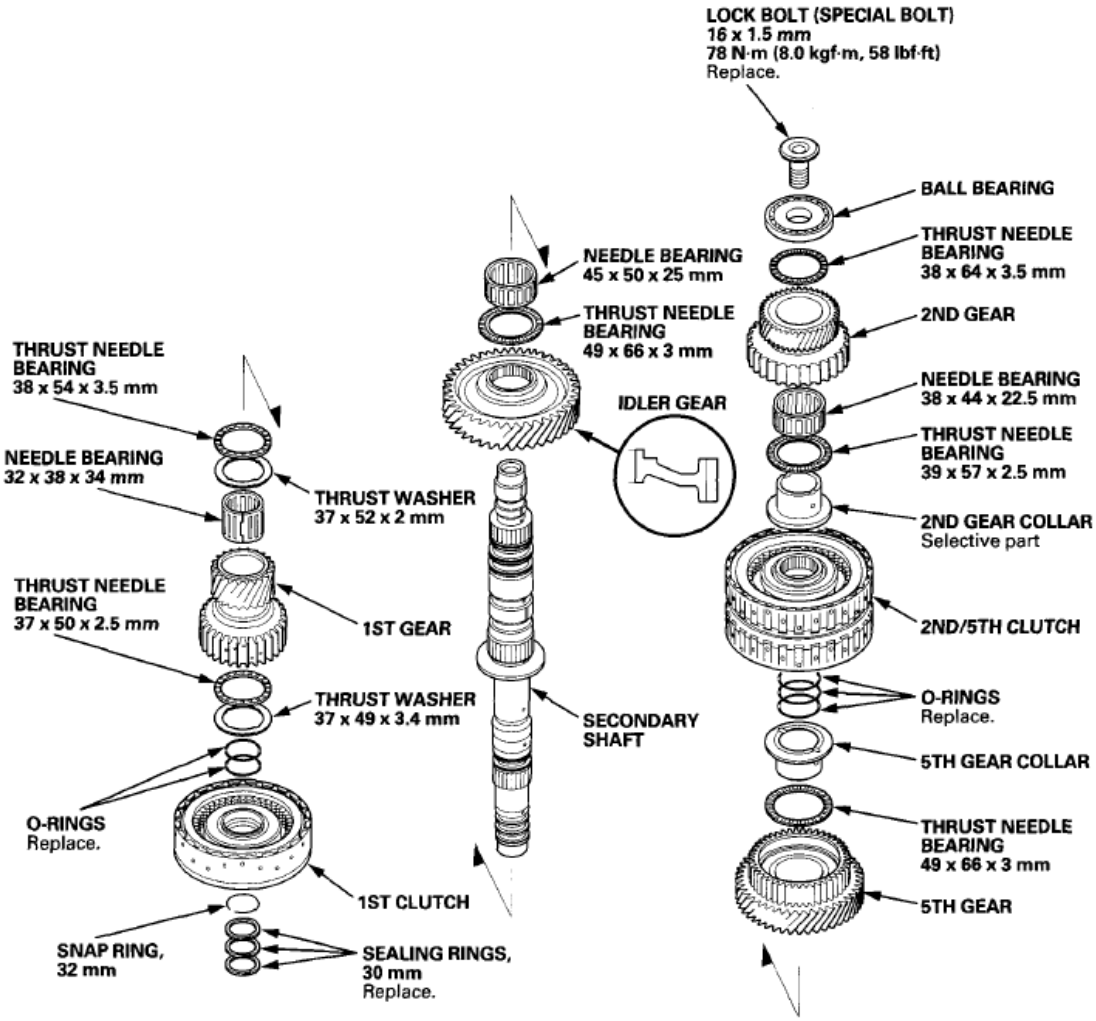


Fig. 493: Exploded View Of Secondary Shaft With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

NOTE: Refer to the EXPLODED VIEW as needed during the following procedure.

1. Remove the sealing rings (A).

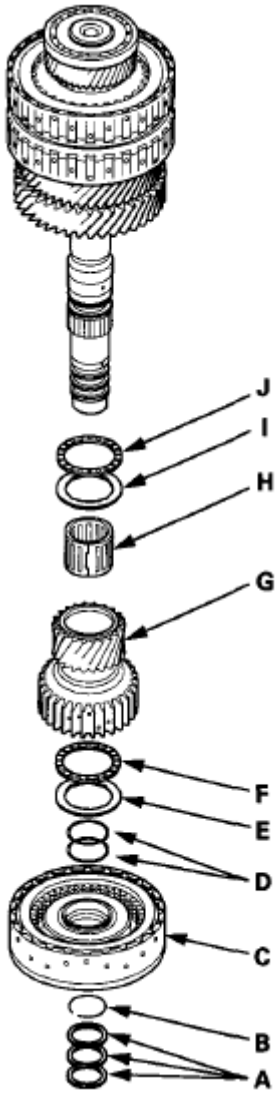


Fig. 494: Identifying Sealing Rings And Snap Ring
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Remove the 32 mm snap ring (B), and remove the 2nd clutch (C) and O-rings (D).
3. Remove the 37 x 49 x 3.4 mm thrust washer (E), the 37 x 50 x 2.5 mm thrust needle bearing (F), 1st gear (G), the 32 x 38 x 34 mm needle bearing (H), the 37 x 52 x 2 mm thrust washer (I), and the 38 x 54 x 3.5 mm thrust needle bearing (J).
4. Secure the idler gear (A) on the secondary shaft (B) in a bench vise with wood blocks, loosen the lock bolt (C), and remove it.

NOTE: After this procedure, remove wood chips that may be stuck to the gear.

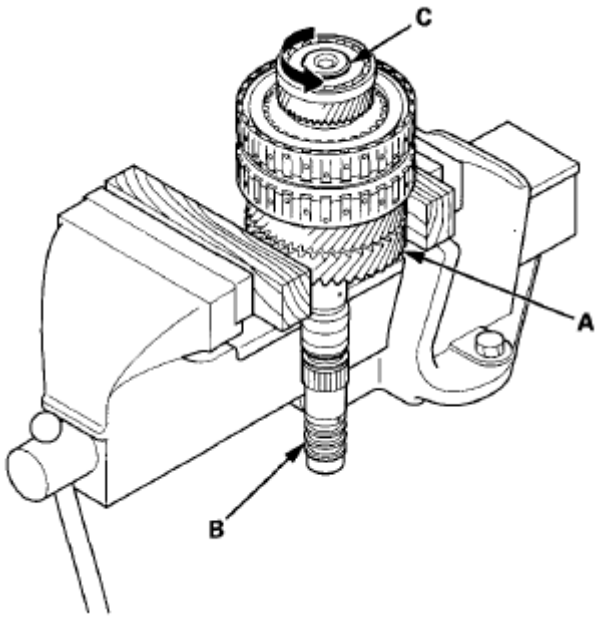


Fig. 495: Loosening Lock Bolt
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Place the idler gear (A) on press bases (B), and place a spacer (C) between the secondary shaft (D) and the press to prevent damaging the secondary shaft.

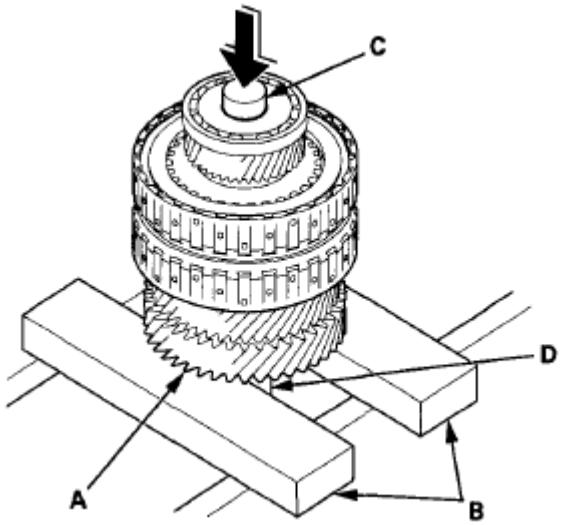


Fig. 496: Placing Idler Gear On Press Bases, And Place Spacer Between Secondary Shaft
Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Remove the ball bearing (A), the 38 x 64 x 3.5 mm thrust needle bearing (B), 2nd gear (C), the 38 x 44 x 22.5 mm needle bearing (D), the 39 x 57 x 2.5 mm thrust needle bearing (E), the 2nd gear collar (F), the 2nd/5th clutch (G), the O-rings (H), the 5th gear collar (I), the 49 x 66 x 3 mm thrust needle bearing (J), 5th gear (K), the 45 x 50 x 25 mm needle bearing (L), the 49 x 66 x 3 mm thrust needle bearing (M), and the idler gear (N) using a press.

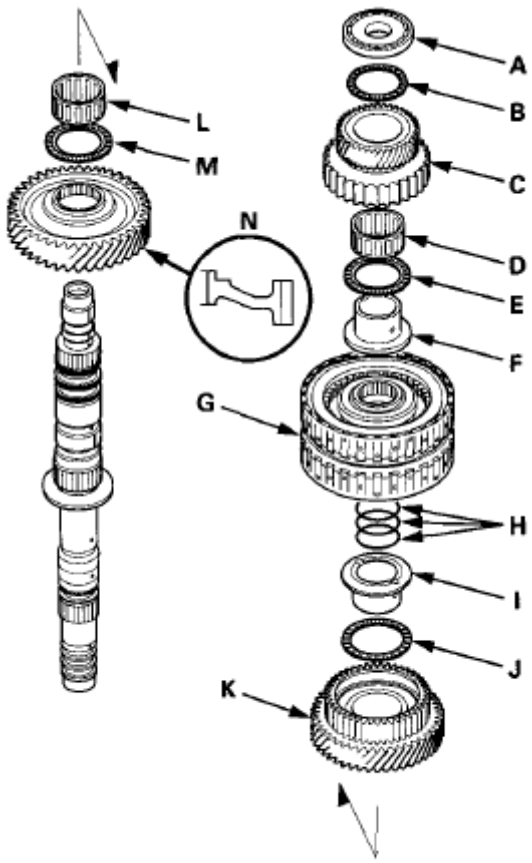


Fig. 497: Identifying Ball And Needle Bearings, Thrust Needle Bearing, 2nd And 5th Gears And Collars, 2nd/5th Clutch, O-Rings And Idler Gear
Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Inspect the bearings for galling and rough movement.
8. Check the shaft bearing surfaces for scoring and excessive wear, and check the shaft splines for excessive wear and damage.
9. Check the secondary shaft 2nd gear and 5th gear axial clearance (see **SECONDARY SHAFT 2ND GEAR AND 5TH GEAR AXIAL CLEARANCE INSPECTION**), and check the secondary shaft installation height (see **SECONDARY SHAFT INSTALLATION HEIGHT INSPECTION/ADJUSTMENT**).

SECONDARY SHAFT 2ND GEAR AND 5TH GEAR AXIAL CLEARANCE INSPECTION

Special Tools Required

Driver Handle, 40 mm I.D. 07746-0030100

1. Slide the idler gear (A) over the secondary shaft (B) in the direction shown.

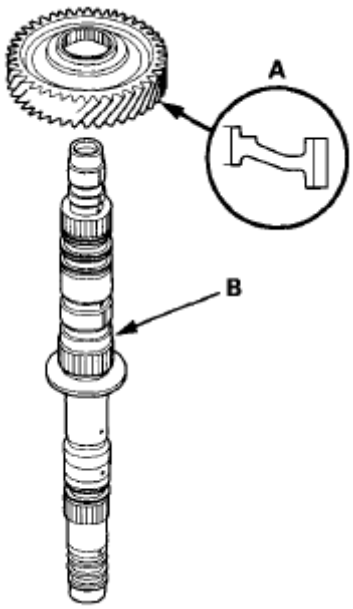


Fig. 498: Identifying Idler Gear And Secondary Shaft
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Place the idler gear (A) on press bases (B), and place a spacer (C) between the secondary shaft (D) and the press to prevent damaging the secondary shaft.

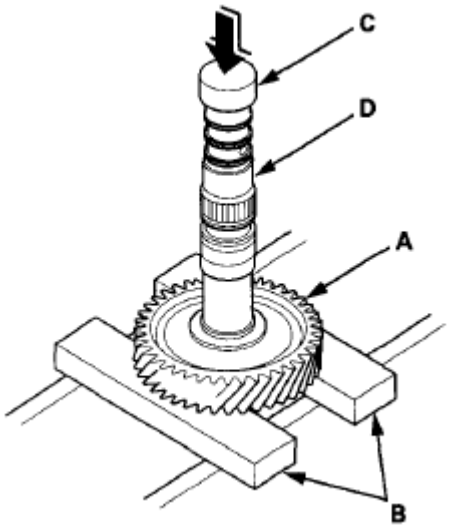


Fig. 499: Placing Idler Gear On Press Bases And Place Spacer Between Secondary Shaft
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Install the idler gear using a press.
4. Install the 49 x 66 x 3 mm thrust needle bearing (A), the 45 x 50 x 25 mm needle bearing (B), 5th gear (C), the 49 x 66 x 3 mm thrust needle bearing (D), and the 5th gear collar (E) on the secondary shaft (F).

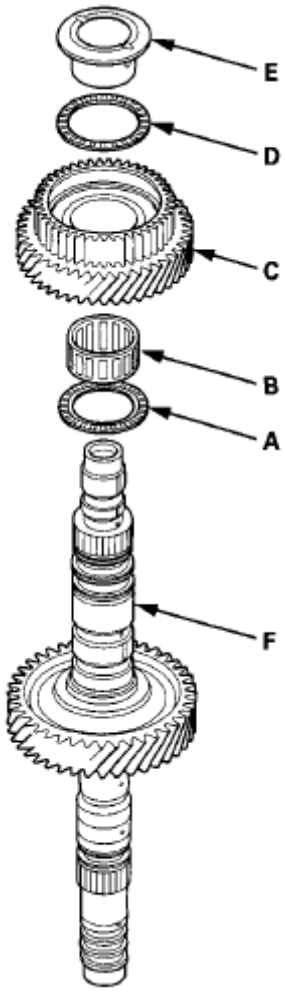


Fig. 500: Identifying Thrust Needle Bearing, Needle Bearing, 5th Gear, Thrust Needle Bearing, 5th Gear Collar And Secondary Shaft
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Press the 5th gear collar into place using the 40 mm I.D. driver handle and the press.

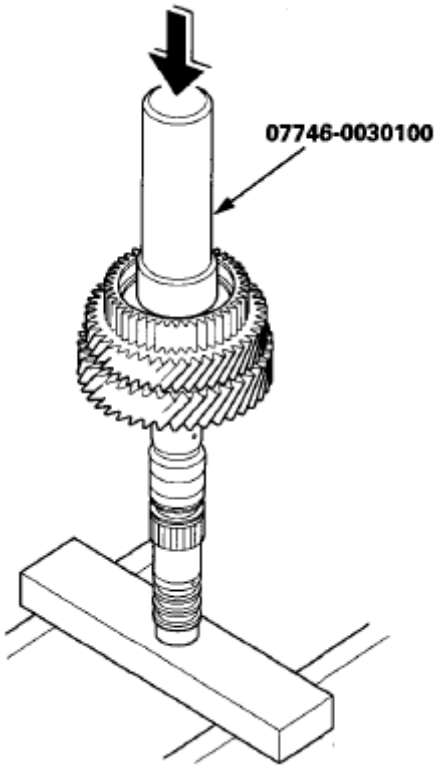


Fig. 501: Pressing 5th Gear Collar
Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Install the 2nd/5th clutch (A) and the 2nd gear collar (B) on the secondary shaft (C).

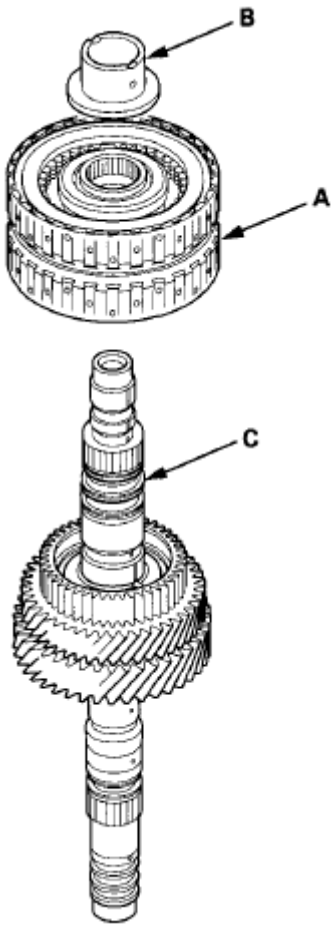


Fig. 502: Identifying 2nd/5th Clutch And 2nd Gear Collar On Secondary Shaft
Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Install the ball bearing (A) over the secondary shaft (B), then press it into place using the 40 mm I.D. driver handle and the press.

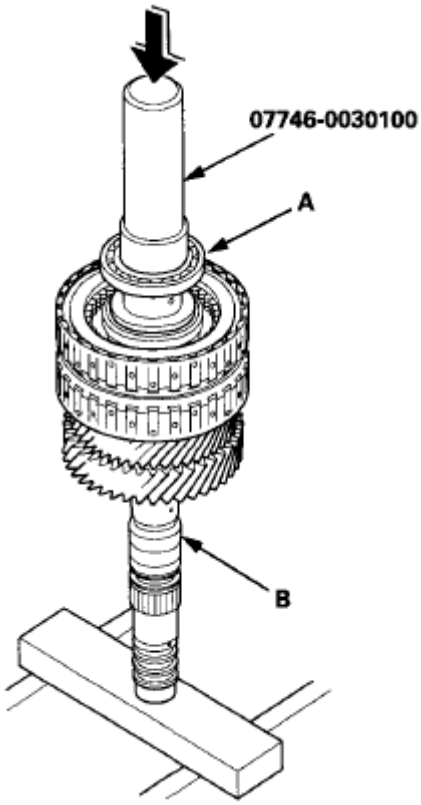


Fig. 503: Identifying Ball Bearing Over Secondary Shaft
Courtesy of AMERICAN HONDA MOTOR CO., INC.

8. Secure the idler gear (A) on the secondary shaft (B) in a bench vise with wood blocks, install the old lock bolt (C), and tighten it to 78 N.m (8.0 kgf.m, 58 lbf.ft).

NOTE: After this procedure, remove wood chips that may be stuck to the gear.

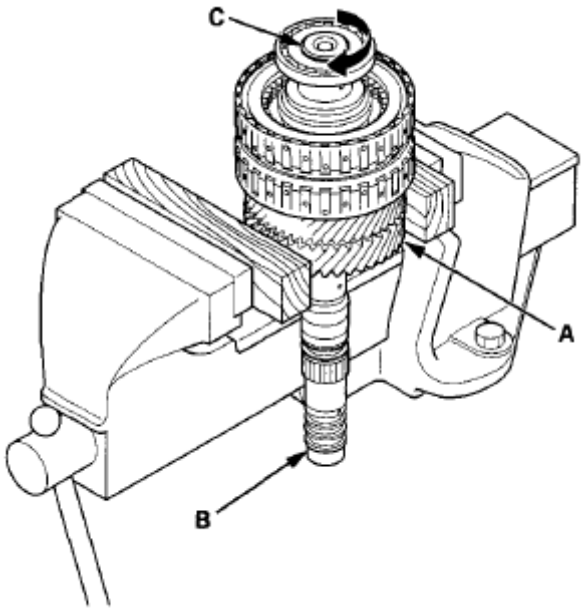


Fig. 504: Identifying Idler Gear Secondary Shaft, Wood Blocks And Lock Bolt
Courtesy of AMERICAN HONDA MOTOR CO., INC.

9. Measure the clearance between the 2nd gear collar (A) and the ball bearing (B) with a feeler gauge (C) in at least three places. Use the average as the actual clearance.

   Standard: 0.05 - 0.12 mm (0.002 - 0.004 in)

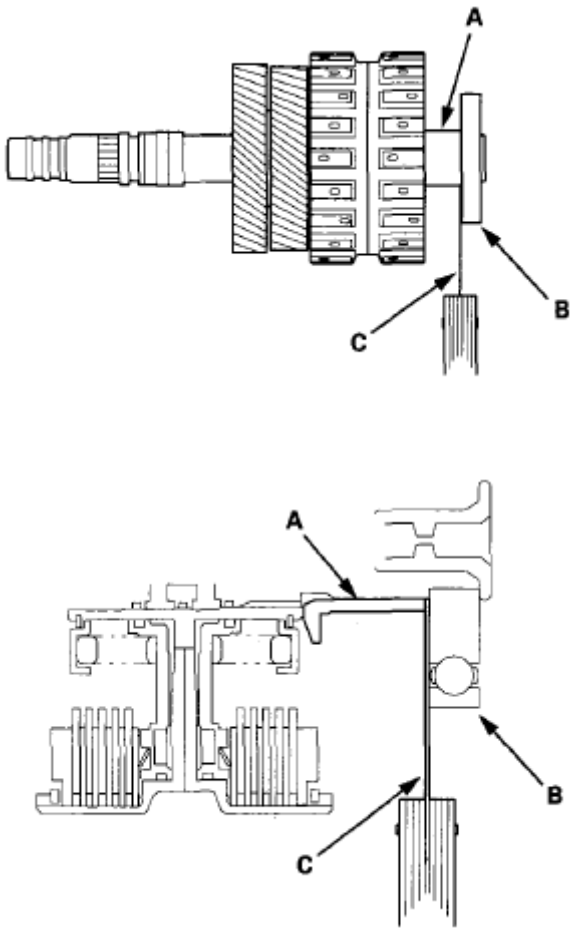


Fig. 505: Measuring Clearance Between 2nd Gear Collar And Ball Bearing With Feeler Gauge
Courtesy of AMERICAN HONDA MOTOR CO., INC.

10. If the clearance is out of the standard, remove the 2nd gear collar and measure its height.

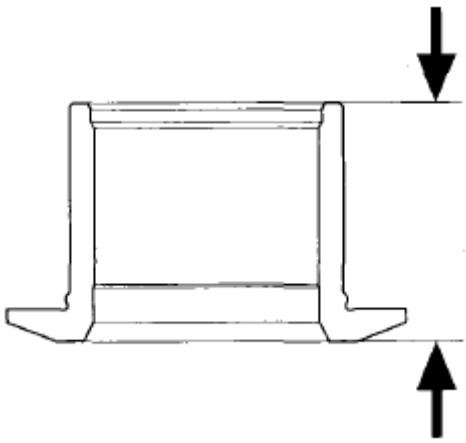


Fig. 506: Measuring Height Of Collar
Courtesy of AMERICAN HONDA MOTOR CO., INC.

11. Select and install a new 2nd gear collar, then recheck the clearance.

2ND GEAR COLLAR

No.	Height
A	32.89 mm (1.2949 in)
B	32.94 mm (1.2968 in)
C	32.99 mm (1.2988 in)
D	33.04 mm (1.3008 in)
E	33.09 mm (1.3028 in)
F	33.14 mm (1.3047 in)
G	33.19 mm (1.3067 in)
H	33.24 mm (1.3087 in)

SECONDARY SHAFT REASSEMBLY

Special Tools Required

Driver Handle, 40 mm I.D. 07746-0030100

1. Slide the idler gear (A) over the secondary shaft (B) in the direction shown.

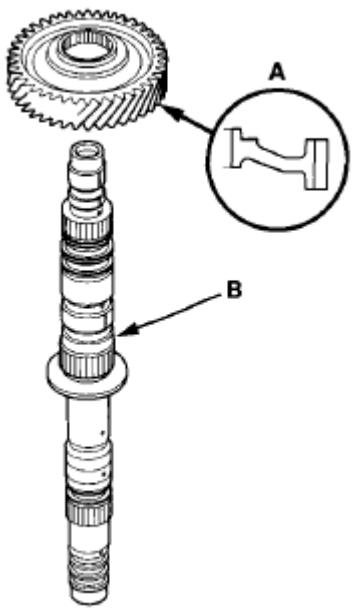


Fig. 507: Identifying Idler Gear And Secondary Shaft
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Place the idler gear (A) on press bases (B), and place a spacer (C) between the secondary shaft (D) and the press to prevent damaging the secondary shaft.

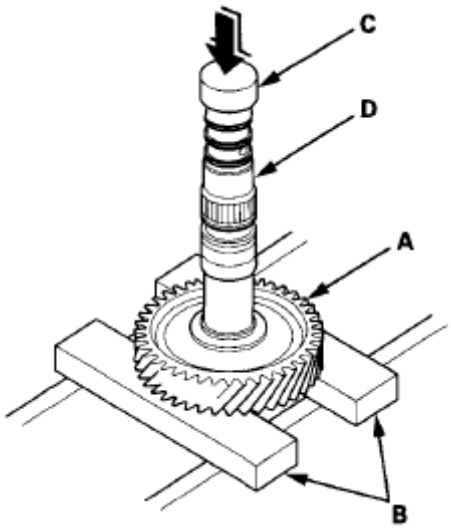


Fig. 508: Placing Idler Gear On Press Bases And Place Spacer Between Secondary Shaft
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Install the idler gear using a press.
4. Install the 49 x 66 x 3 mm thrust needle bearing (A), the 45 x 50 x 25 mm needle bearing (B), 5th gear (C), the 49 x 66 x 3 mm thrust needle bearing (D), and the 5th gear collar (E) on the secondary shaft (F).

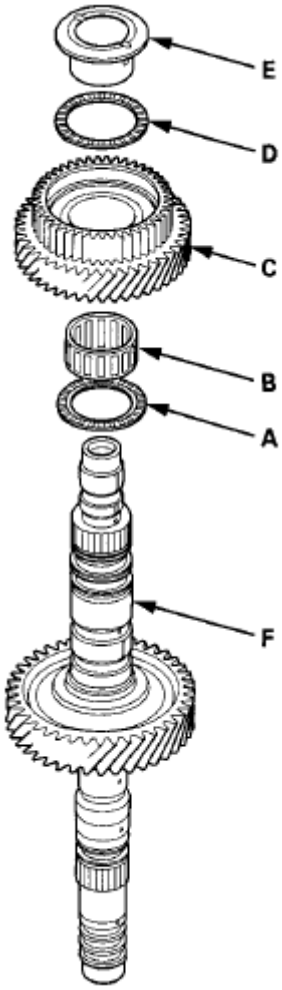


Fig. 509: Identifying Thrust Needle Bearing, Needle Bearing, 5th Gear, Thrust Needle Bearing, 5th Gear Collar And Secondary Shaft
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Press the 5th gear collar into place using the 40 mm I.D. driver handle and the press.

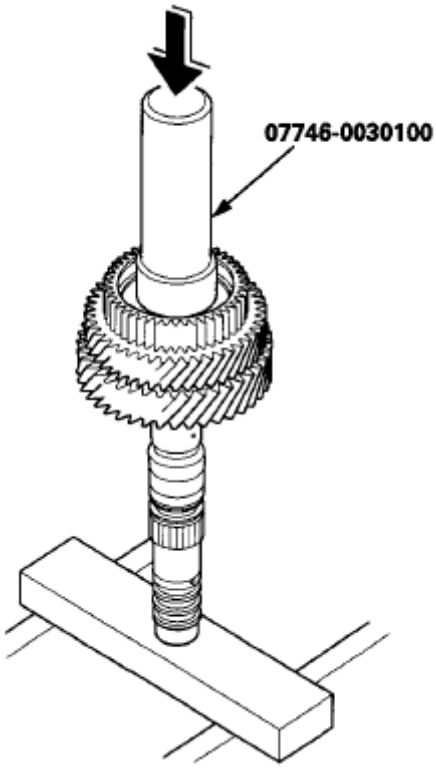


Fig. 510: Pressing 5th Gear Collar Using Driver Handle And Press
Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Wrap the shaft splines with electrical tape to prevent O-ring damage, install new O-rings (A) on the secondary shaft (B), then remove the tape.

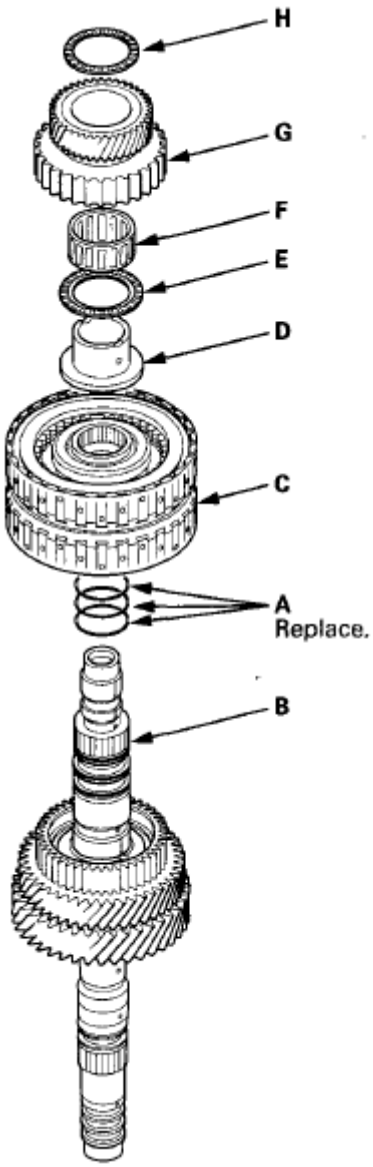


Fig. 511: Identifying O-Rings, 2nd/5th Clutch, 2nd Gear Collar, Thrust Needle Bearing, Needle Bearing, 2nd Gear And Thrust Needle Bearing
Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Install the 2nd/5th clutch (C), the selected 2nd gear collar (D), the 39 x 57 x 2.5 mm thrust needle bearing (E), the 38 x 44 x 22.5 mm needle bearing (F), 2nd gear (G), and the 38 x 64 x 3.5 mm thrust needle bearing (H).
8. Install the ball bearing (A) over the secondary shaft (B), then press it into place using the 40 mm I.D. driver handle and the press.

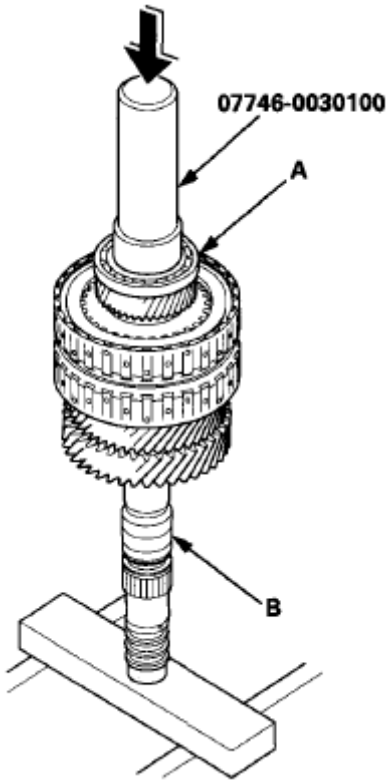


Fig. 512: Installing Ball Bearing Over Secondary Shaft Using Driver Handle And Press
Courtesy of AMERICAN HONDA MOTOR CO., INC.

9. Secure the idler gear (A) on the secondary shaft (B) in a bench vise with wood blocks, install a new lock bolt (C), and tighten it to 78 N.m (8.0 kgf.m, 58 lbf.ft).

NOTE: After this procedure, remove wood chips that may be stuck to the gear.

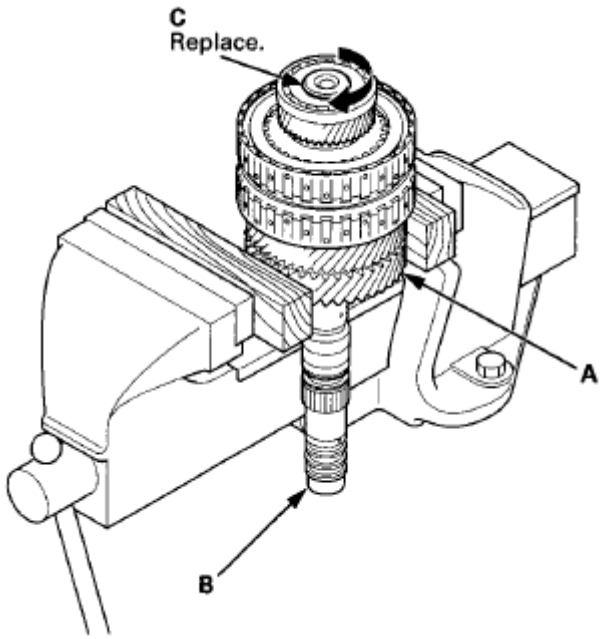


Fig. 513: Identifying Idler Gear, Secondary Shaft And Lock Bolt
Courtesy of AMERICAN HONDA MOTOR CO., INC.

10. Install the 38 x 54 x 3.5 mm thrust needle bearing (A), the 37 x 52 x 2 mm thrust washer (B), the 32 x 38 x 34 mm needle bearing (C), 1st gear (D), the 37 x 50 x 2.5 mm thrust needle bearing (E), and the 37 x 49 x 3.4 mm thrust washer (F) on the secondary shaft (G).

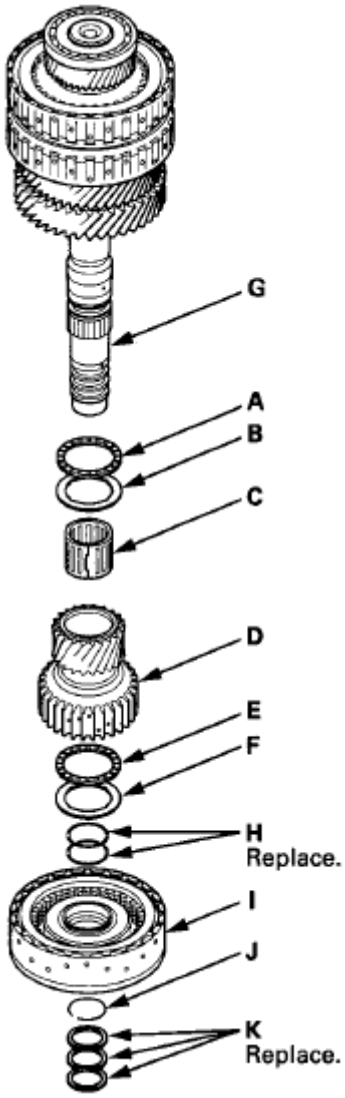


Fig. 514: Identifying Needle Bearing, Thrust Washer, Needle Bearing, 1st Gear, Thrust Needle Bearing, Thrust Washer And Secondary Shaft
Courtesy of AMERICAN HONDA MOTOR CO., INC.

11. Wrap the shaft splines with electrical tape, and install new O-rings (H) in the O-ring grooves, then remove the tape.
12. Install the 1st clutch (I) on the secondary shaft, and secure the 1st clutch with the 32 mm snap ring (J).
13. Install new sealing rings (K).

SECONDARY SHAFT INSTALLATION HEIGHT INSPECTION/ADJUSTMENT

1. Install the thrust needle bearing (A) in the torque converter housing (B) in the direction shown, and install the secondary shaft assembly (C).

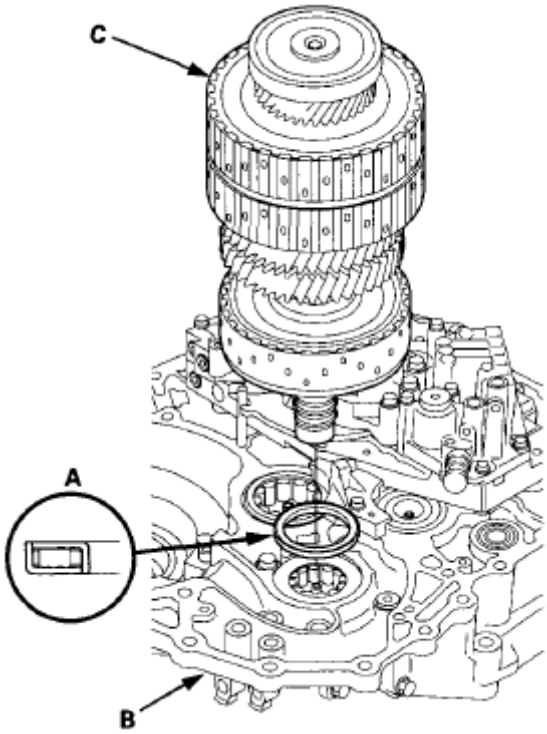


Fig. 515: Installing Thrust Needle Bearing In Torque Converter Housing
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Install a new gasket (A) on the torque converter housing.

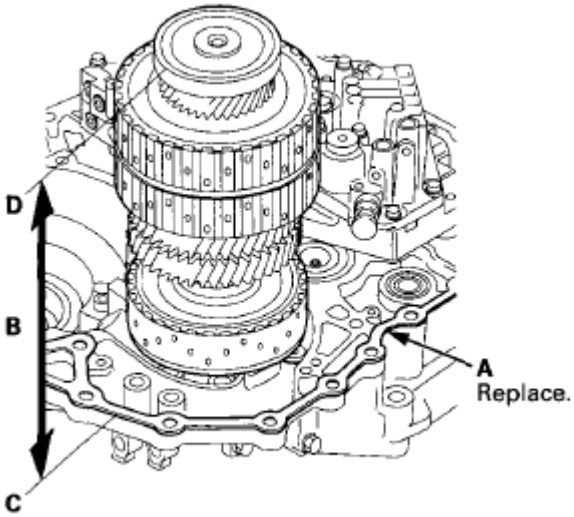


Fig. 516: Measuring Height Of Secondary Shaft
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Secondary Shaft Cutaway View

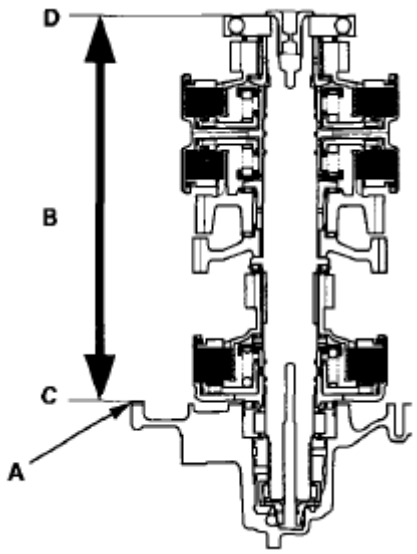


Fig. 517: Secondary Shaft Cutaway View
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Measure the height (B) of the secondary shaft installation between the surface (C) of the gasket and the top of the ball bearing outer race (D), then note the measurement.
4. While compressing the 89 mm thrust shim (A) using snap ring pliers, remove the 89 mm thrust shim from the transmission housing, and measure its thickness.

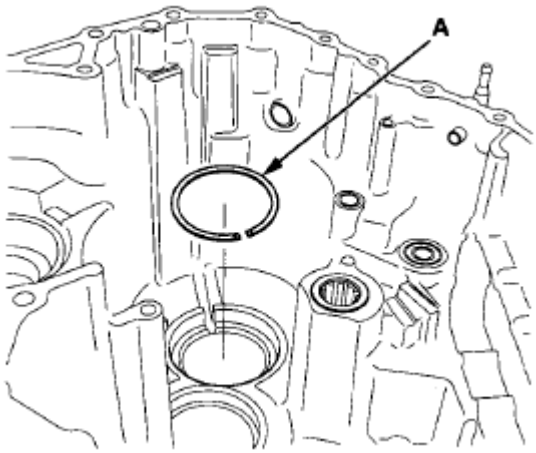


Fig. 518: Identifying Thrust Shim
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Calculate the thickness of the 89 mm thrust shim using the formula.

Formula:

89 mm Thrust Shim Thickness

= Secondary Shaft Installation Height Standard - Measurement

Secondary Shaft Installation Height

Standard:

259.10 - 259.19 mm (10.2008 - 10.2043 in)

6. Select an 89 mm thrust shim from the following table.

THRUST SHIM, 89 MM

No.	Thickness
A	0.85 mm (0.0335 in)
B	0.92 mm (0.0362 in)
C	0.99 mm (0.0390 in)
D	1.06 mm (0.0417 in)
E	1.13 mm (0.0445 in)
F	1.20 mm (0.0472 in)
G	1.27 mm (0.0500 in)
H	1.34 mm (0.0528 in)
I	1.41 mm (0.0555 in)
J	1.48 mm (0.0583 in)
K	1.55 mm (0.0610 in)
L	1.62 mm (0.0638 in)
M	1.69 mm (0.0665 in)
N	1.76 mm (0.0693 in)
O	1.83 mm (0.0720 in)
P	1.90 mm (0.0748 in)
Q	1.97 mm (0.0776 in)
R	2.04 mm (0.0803 in)
S	2.11 mm (0.0831 in)
T	2.18 mm (0.0858 in)

7. Install the thrust shim in the transmission housing.

THIRD SHAFT DISASSEMBLY

EXPLODED VIEW

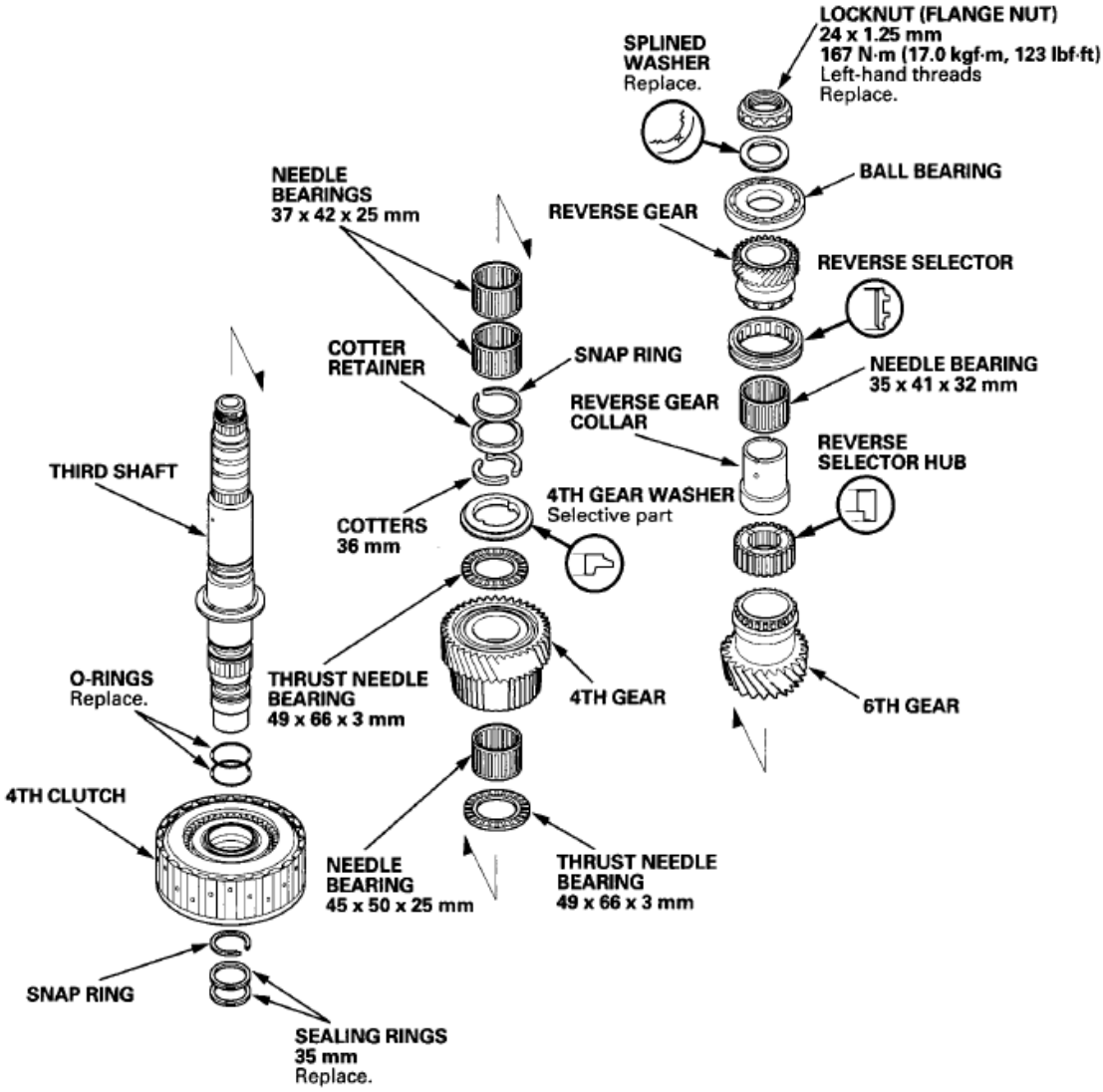


Fig. 519: Exploded View Of Third Shaft With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

NOTE: Refer to the EXPLODED VIEW as needed during the following procedure.

1. Remove the reverse gear (A), the reverse selector (B), the 35 x 41 x 32 mm needle bearing (C), and the reverse gear collar (D).

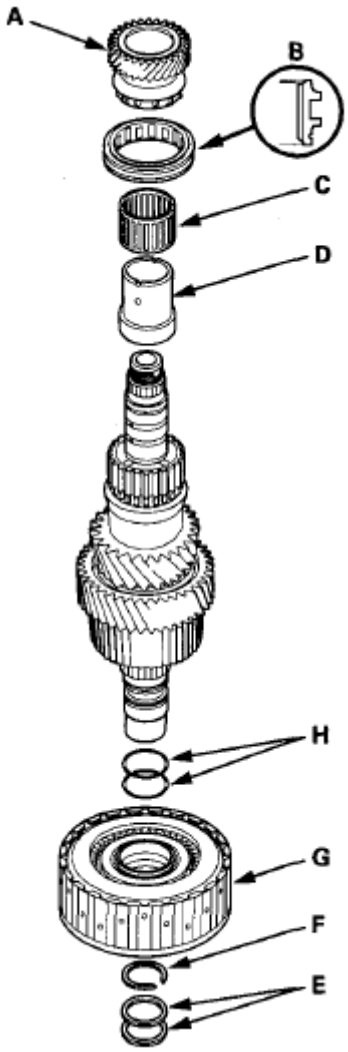


Fig. 520: Identifying Reverse Gear, Reverse Selector, Needle Bearing, Reverse Gear Collar, Sealing Rings, Snap Ring, 4th Clutch And O-Rings
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Remove the sealing rings (E), the snap ring (F), the 4th clutch (G), and the O-rings (H).
3. Install a commercially available bearing separator (A) on the tapered part (B) of 6th gear (C). Place a spacer (D) between the third shaft (E) and the press to prevent damaging the third shaft.

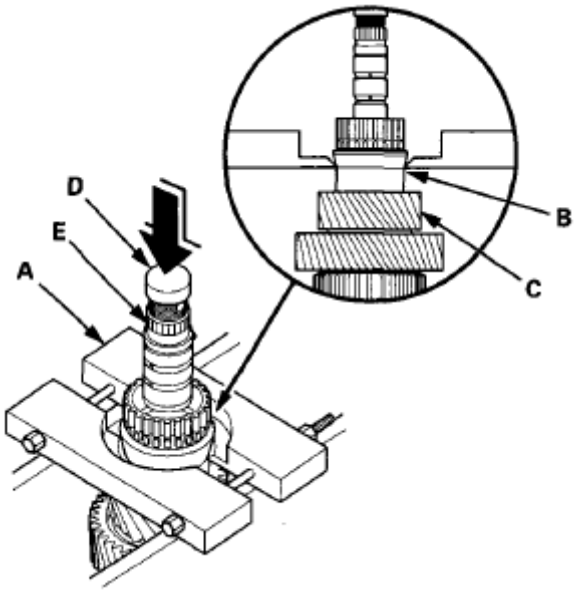


Fig. 521: Installing Bearing Separator On Tapered Part Of 6th Gear
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Remove the reverse selector hub (A), 6th gear (B), and the 37 x 42 x 25 mm needle bearings (C) using a press.

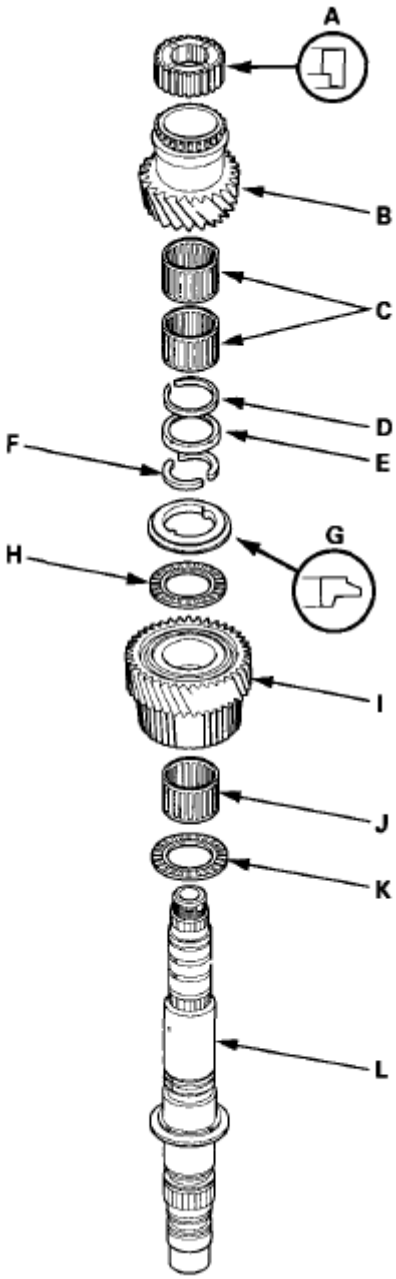


Fig. 522: Identifying Third Shaft Assembly Related Parts
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Remove the snap ring (D), the cotter retainer (E), and the 36 mm cotters (F), and remove the 4th gear washer (G), the 49 x 66 x 3 mm thrust needle bearing (H), 4th gear (I), the 45 x 50 x 25 mm needle bearing (J), and the 49 x 66 x 3 mm thrust needle bearing (K) from the third shaft (L).
6. Inspect the bearings for galling and rough movement.
7. Check the shaft bearing surfaces for scoring and excessive wear, and check the shaft splines for excessive wear and damage.
8. Check the third shaft 6th gear axial clearance (see **THIRD SHAFT 6TH GEAR AXIAL CLEARANCE**

INSPECTION).

THIRD SHAFT 6TH GEAR AXIAL CLEARANCE INSPECTION

Special Tools Required

- Driver Handle, 40 mm I.D. 07746-0030100
- Bearing Driver Attachment, 30 mm I.D. 07746-0030300

1. Install the 49 x 66 x 3 mm thrust needle bearing (A), the 45 x 50 x 25 mm needle bearing (B), 4th gear (C), the 49 x 66 x 3 mm thrust needle bearing (D), and the 4th gear washer (E), and install the 36 mm cotters (F), the cotter retainer (G), and the snap ring (H) on the third shaft (I). Install the 4th gear washer by aligning the fingers (J) with the grooves (K), and in the direction shown.

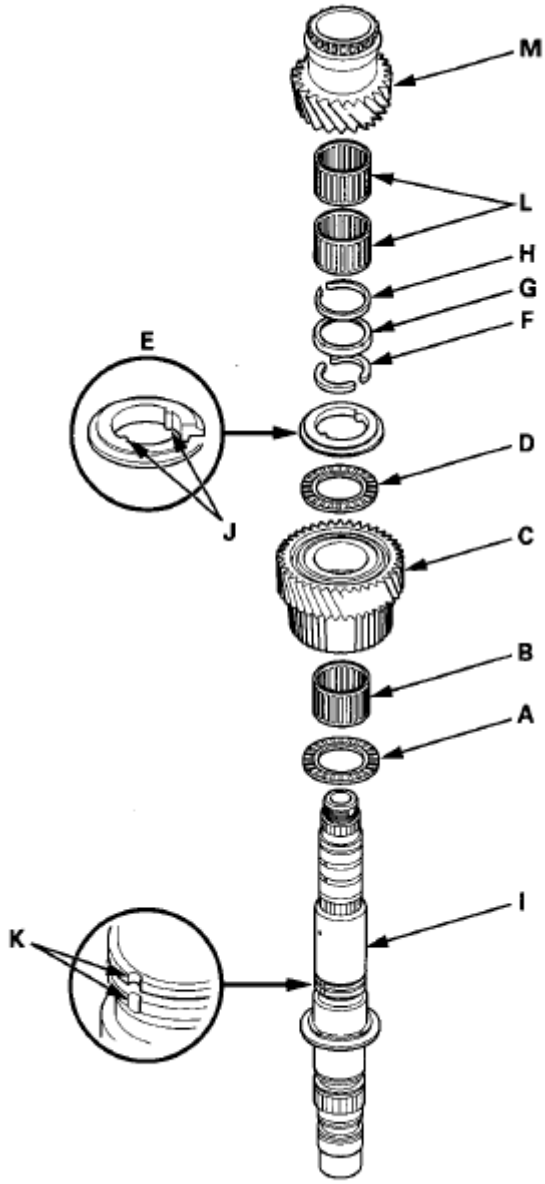


Fig. 523: Identifying Third Shaft 6th Gear Axial Related Parts
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Install the 37 x 42 x 25 mm needle bearings (L) and 6th gear (M) on the third shaft.
3. Apply ATF to the shaft splines of the reverse selector hub contact area, then slide the reverse selector hub (A) over the third shaft (B), then press it into place using the 40 mm I.D. driver handle, the 30 mm I.D. bearing driver attachment, and a press.

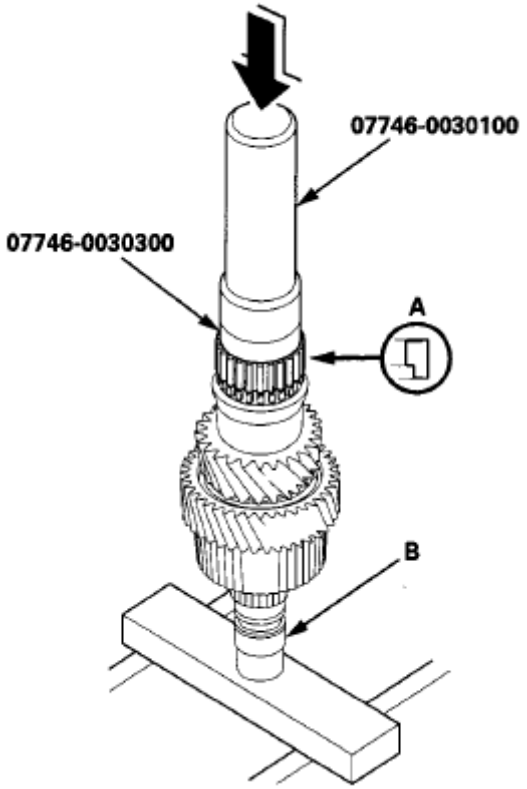


Fig. 524: Sliding Reverse Selector Hub Over Third Shaft
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Measure the clearance between 6th gear (A) and the reverse selector hub (B) with a feeler gauge (C) in at least three places. Use the average as the actual clearance.

   Standard: 0.045 - 0.420 mm (0.002 - 0.016 in)

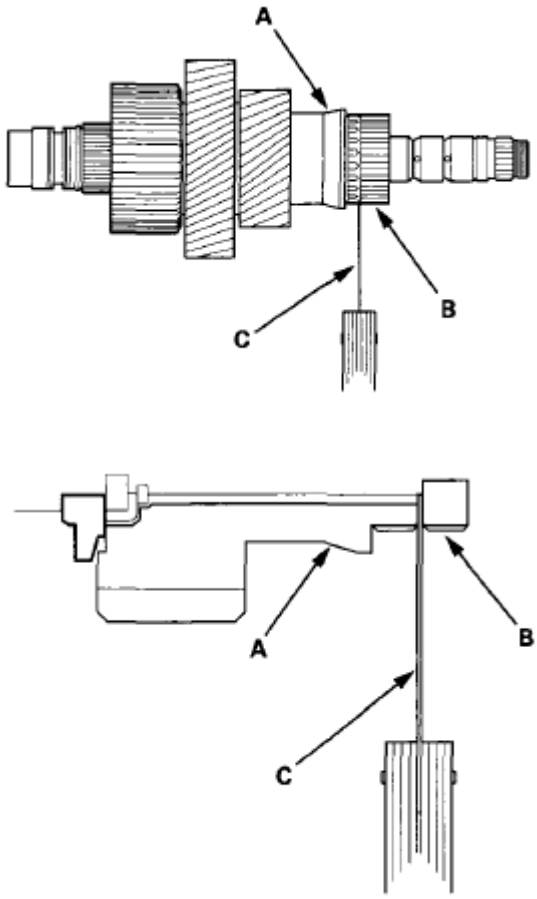


Fig. 525: Measuring Clearance Between 6th Gear And Reverse Selector Hub With Feeler Gauge
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. If the clearance is out of the standard, remove the 4th gear washer and measure its thickness.

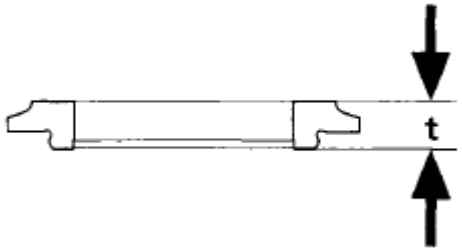


Fig. 526: Measuring Thickness Of 4th Gear Washer
Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Select and install a new 4th gear washer, then recheck the clearance.

4TH GEAR WASHER

No.	Thickness (t)
A	8.515 mm (0.33524 in)

B	8.540 mm (0.33622 in)
C	8.565 mm (0.33720 in)
D	8.590 mm (0.33819 in)
E	8.615 mm (0.33917 in)
F	8.640 mm (0.34016 in)

THIRD SHAFT REASSEMBLY

Special Tools Required

- Driver Handle, 40 mm I.D. 07746-0030100
- Bearing Driver Attachment, 30 mm I.D. 07746-0030300

1. Install the 49 x 66 x 3 mm thrust needle bearing (A), the 45 x 50 x 25 mm needle bearing (B), 4th gear (C), the 49 x 66 x 3 mm thrust needle bearing (D), and the selected 4th gear washer (E), and install the 36 mm cotters (F), the cotter retainer (G), and the snap ring (H) on the third shaft (I). Install the 4th gear washer by aligning the fingers (J) with the grooves (K), and in the direction shown.

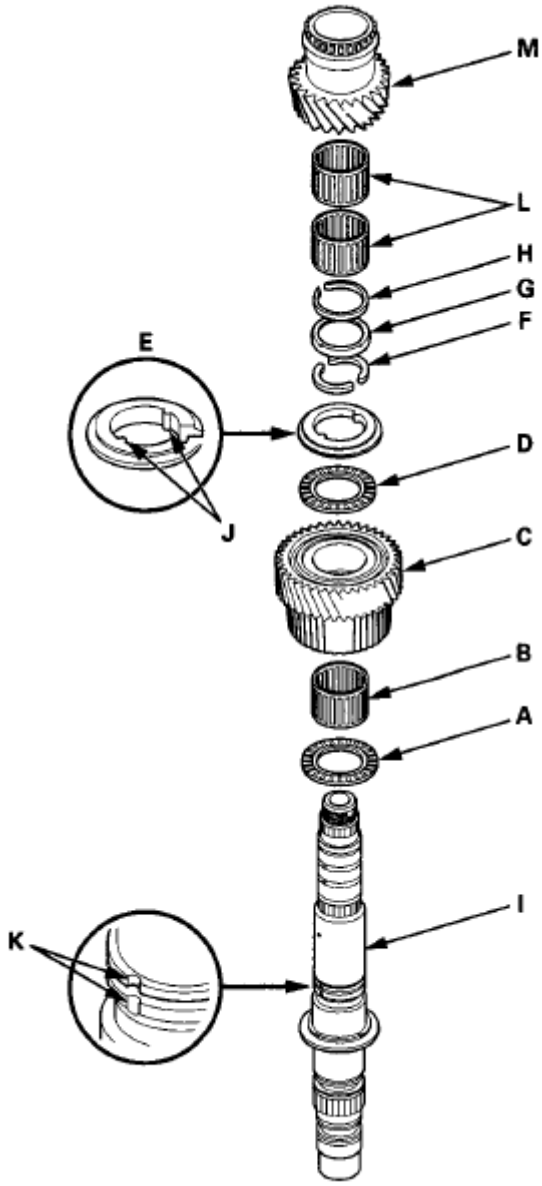


Fig. 527: Identifying Third Shaft Assembly Parts
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Install the 37 x 42 x 25 mm needle bearings (L) and 6th gear (M) on the third shaft.
3. Apply ATF to the shaft splines of the reverse selector hub contact area, then slide the reverse selector hub (A) over the third shaft (B), then press it into place using the 40 mm I.D. driver handle, the 30 mm I.D. bearing driver attachment, and a press.

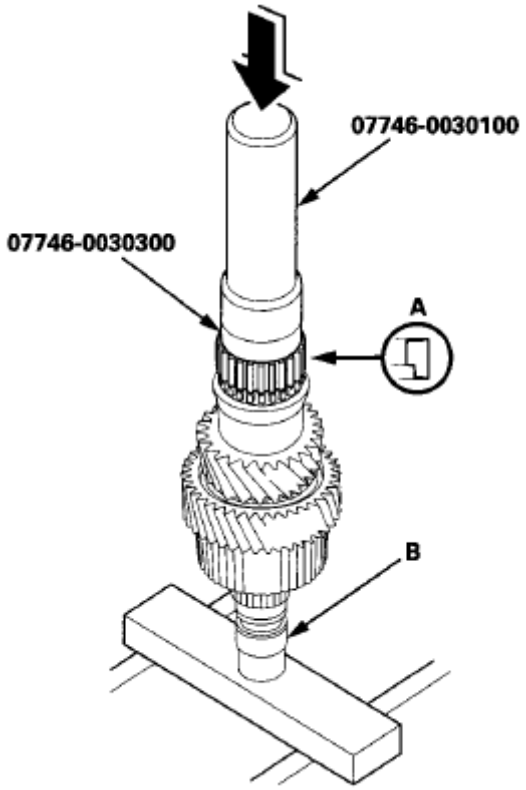


Fig. 528: Sliding Reverse Selector Hub Over Third Shaft
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Install the reverse gear collar (A), the 35 x 41 x 32 mm needle bearing (B), the reverse selector (C), and the reverse gear (D) on the third shaft (E).

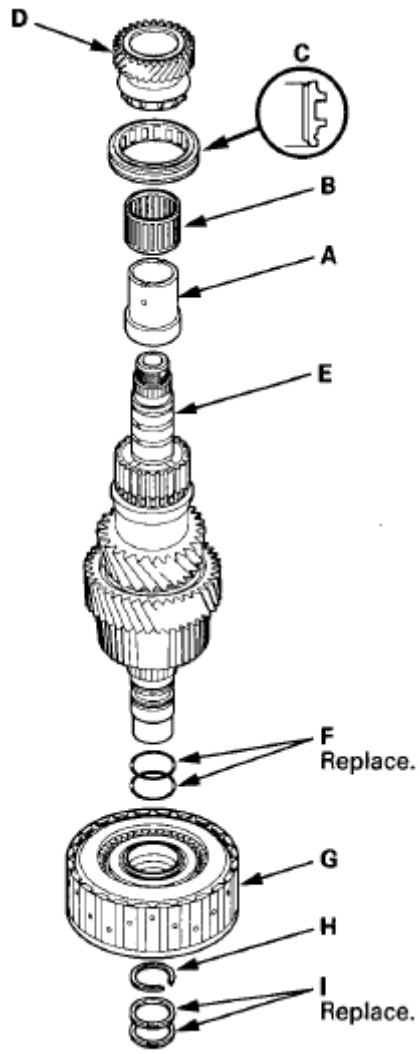


Fig. 529: Identifying Reverse Gear Related Components
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Wrap the shaft splines with electrical tape, and install new O-rings (F) in the 4th clutch O-ring grooves, then remove the tape.
6. Install the 4th clutch (G) on the secondary shaft, and secure the 4th clutch with the 35 mm snap ring (H).
7. Install new sealing rings (I).

IDLER GEAR SHAFT DISASSEMBLY

EXPLODED VIEW

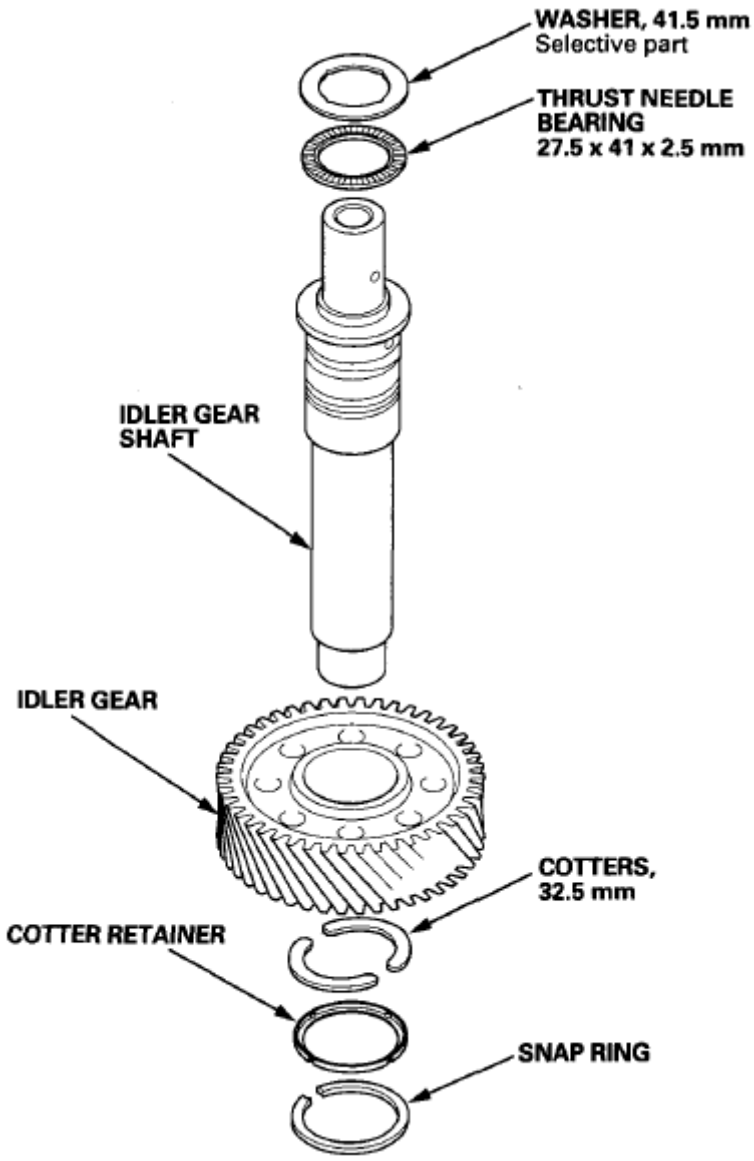


Fig. 530: Exploded View Of Idler Gear Shaft Assembly
Courtesy of AMERICAN HONDA MOTOR CO., INC.

NOTE: Refer to the EXPLODED VIEW as needed during the following procedure.

1. Remove the 41.5 mm washer (A) and the 27.5 x 41 x 2.5 mm thrust needle bearing (B).

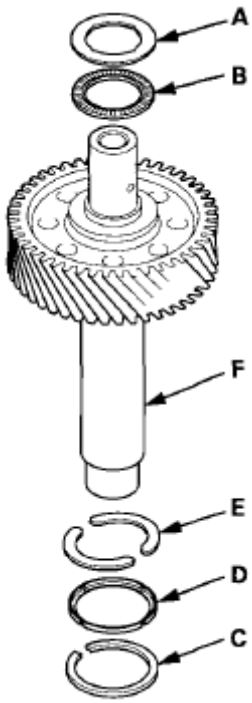


Fig. 531: Identifying Washer, Thrust Needle Bearing, Cotter Retainer, Idler Gear Shaft And Cotters
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Remove the snap ring (C), the cotter retainer (D), and the 32.5 mm cotters (E) from the idler gear shaft (F).
3. Place the idler gear (A) on press bases (B), and place a spacer (C) between the idler gear shaft (D) and the press to prevent damaging the idler gear shaft.

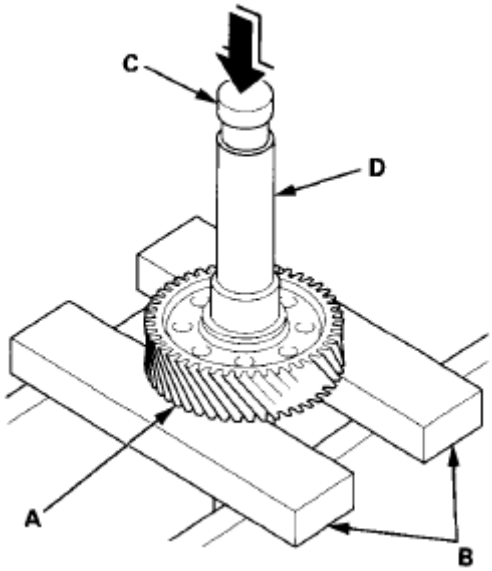


Fig. 532: Placing Idler Gear On Press Bases And Spacer Between Idler Gear Shaft

Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Remove the idler gear using a press.
5. Inspect the bearings for galling and rough movement.
6. Check the shaft bearing surfaces for scoring and excessive wear.
7. Check the idler gear shaft installation height (see **IDLER GEAR SHAFT INSTALLATION HEIGHT INSPECTION/ADJUSTMENT**).

IDLER GEAR SHAFT REASSEMBLY

1. Install the idler gear (A) over the idler gear shaft (B).

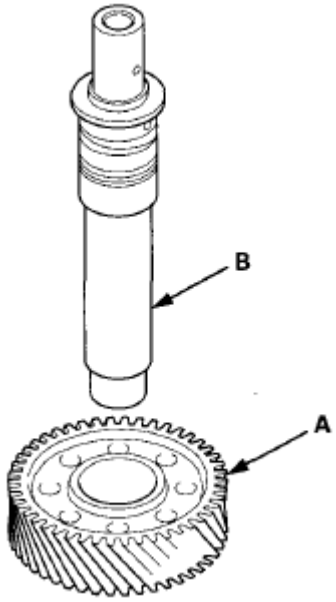


Fig. 533: Installing Idler Gear Over Idler Gear Shaft
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Place the idler gear (A) on press bases (B), and place a spacer (C) between the idler gear shaft (D) and the press to prevent damaging the idler gear shaft.

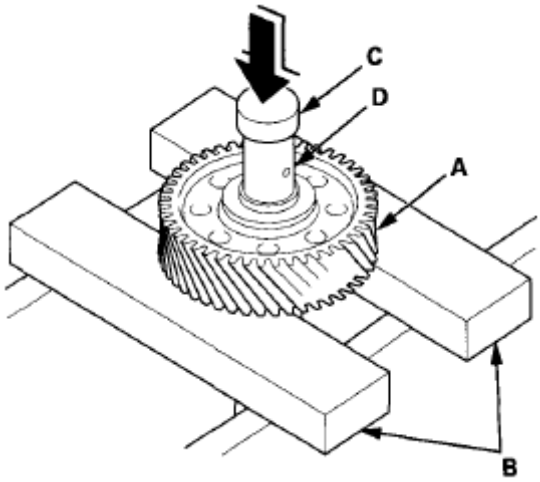


Fig. 534: Placing Idler Gear On Press Bases And Place Spacer Between Idler Gear Shaft
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Install the idler gear using a press.
4. Install the 32.5 mm cotter (A), the cotter retainer (B), and the snap ring (C) on the idler gear shaft (D).

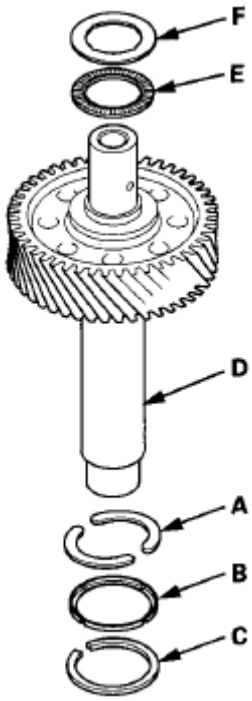


Fig. 535: Identifying Cotter, Cotter Retainer, Snap Ring, Idler Gear Shaft, Thrust Needle Bearing And Washer
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Install the 27.5 x 41 x 2.5 mm thrust needle bearing (E) and the 41.5 mm washer (F).

IDLER GEAR SHAFT INSTALLATION HEIGHT INSPECTION/ADJUSTMENT

1. Install the idler gear shaft (A) in the torque converter housing, and install the 27.5 x 41 x 2.5 mm thrust needle bearing (B) and the 41.5 mm washer (C) on the idler gear shaft.

   Idler Gear Shaft Installation Height:

   Standard:

   116.24 - 116.30 mm (4.5764 - 4.5787 in)

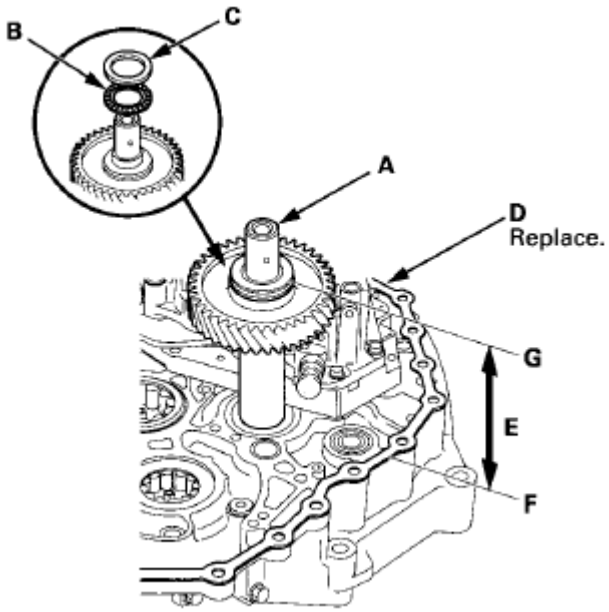


Fig. 536: Identifying Idler Gear Shaft, Thrust Needle Bearing, Washer, Gasket And Surfaces
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Idler Gear Shaft Cutaway View

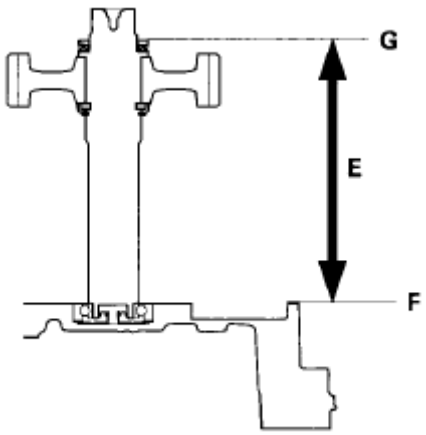


Fig. 537: Idler Gear Shaft Cutaway View
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Install a new gasket (D) on the torque converter housing.
3. Measure the installation height (E) of the idler gear shaft between the surface (F) of the gasket and the surface (G) of the 41.5 mm washer.
4. If the measurement is out of the standard, remove the 41.5 mm washer and measure its thickness.
5. Select and install a new 41.5 mm washer, then recheck the installation height.

WASHER, 41.5 MM

No.	Thickness
A	1.26 mm (0.0496 in)
B	1.30 mm (0.0512 in)
C	1.34 mm (0.0528 in)
D	1.38 mm (0.0543 in)
E	1.42 mm (0.0559 in)
F	1.46 mm (0.0575 in)
G	1.50 mm (0.0591 in)
H	1.54 mm (0.0606 in)
I	1.58 mm (0.0622 in)
J	1.62 mm (0.0638 in)
K	1.66 mm (0.0654 in)
L	1.70 mm (0.0669 in)
M	1.74 mm (0.0685 in)
N	1.78 mm (0.0701 in)
O	1.82 mm (0.0717 in)
P	1.86 mm (0.0732 in)
Q	1.90 mm (0.0748 in)
R	1.94 mm (0.0764 in)
S	1.98 mm (0.0780 in)
T	2.02 mm (0.0795 in)
U	2.06 mm (0.0811 in)

CLUTCH CLEARANCE INSPECTION

Special Tools Required

Clutch Compressor Attachment 07ZAE-PRP0100

1. Set a dial indicator (A) on the clutch end-plate (B).

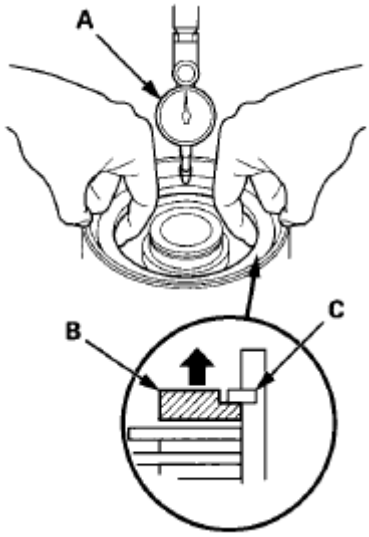


Fig. 538: Setting Dial Indicator On Clutch End-Plate
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Zero the dial indicator with the clutch end-plate lifted up to the snap ring (C).
3. Release the clutch end-plate to lower it, then put the clutch compressor attachment on the end-plate (A).

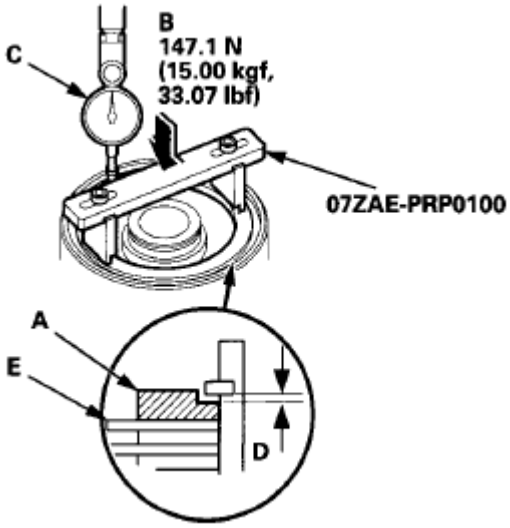


Fig. 539: Identifying Clutch End-Plate With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Press the clutch compressor attachment down with 147.1 N (15.00 kgf, 33.07 lbf) (B) using a force gauge or equivalent, and read the dial indicator (C).
5. The dial indicator reads the clearance (D) between the clutch end-plate and the top disc (E). Take measurements in at least three places, and use the average as the actual clearance.

Clearance Between Clutch End-Plate and Top Disc

Standard:

1st Clutch: 1.50 - 1.70 mm (0.0591 - 0.0669 in)

2nd Clutch: 1.25 - 1.45 mm (0.0492 - 0.0571 in)

3rd Clutch: 1.25 - 1.45 mm (0.0492 - 0.0571 in)

4th Clutch: 1.50 - 1.70 mm (0.0591 - 0.0669 in)

5th Clutch: 1.25 - 1.45 mm (0.0492 - 0.0571 in)

6th Clutch: 1.25 - 1.45 mm (0.0492 - 0.0571 in)

6. If the measurement is out of the standard, replace the clutch assembly.

TRANSMISSION REASSEMBLY

Special Tools Required

Mainshaft Holder Set 07PAB-0010001

NOTE:

- **Refer to the EXPLODED VIEW in the Transmission Disassembly as needed during the following procedure.**
- **Apply a light coat of clean ATF on all tubes, O-rings, and moving parts before reassembly.**

1. Make sure that the ATF magnet (A) is cleaned and installed in the torque converter housing. Clean and install the ATF magnet, if necessary.

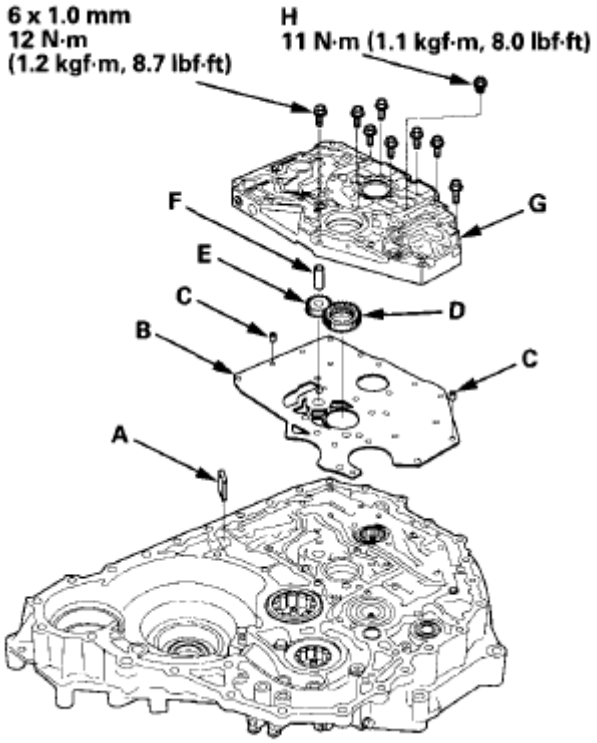


Fig. 540: Identifying ATF Magnet, Main Separator Plate, Dowel Pins And ATF Pump Driven Gear With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

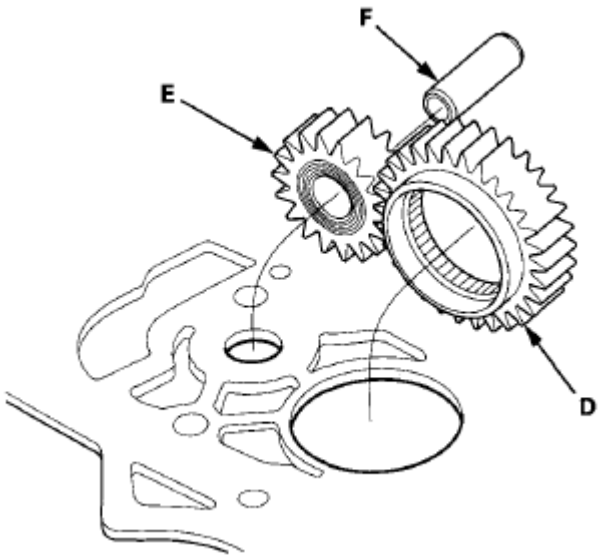


Fig. 541: Identifying ATF Pump Driven And Drive Gear And Shaft
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Install the main separator plate (B) and the two dowel pins (C) on the torque converter housing.
3. Install the ATF pump drive gear (D), the ATF pump driven gear (E), and the ATF pump driven gear shaft

(F). Install the ATF pump driven gear with its grooved and chamfered side facing down.

4. Install the main valve body (G) (eight bolts).
5. Install the 4th/reverse air check valve (H).
6. Make sure the ATF pump drive gear (A) rotates smoothly in the normal operating direction, and the ATF pump driven gear shaft (B) moves smoothly in the axial and normal operating direction.

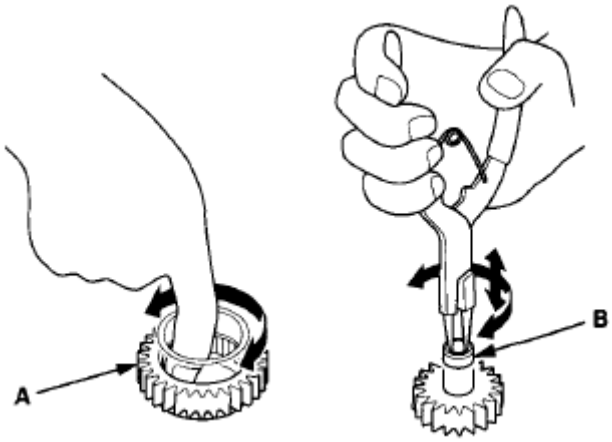


Fig. 542: Rotating ATF Pump Drive And Driven Gear Shaft
Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. If the ATF pump drive gear and ATF pump driven gear shaft do not move smoothly, loosen the main valve body bolts. Realign the ATF pump driven gear shaft, and retighten the bolts to the specified torques, then recheck. Failure to align the ATF pump driven gear shaft correctly will result in a seized ATF pump drive gear or ATF pump driven gear shaft.
8. Install the two check balls (A) in the main valve body.

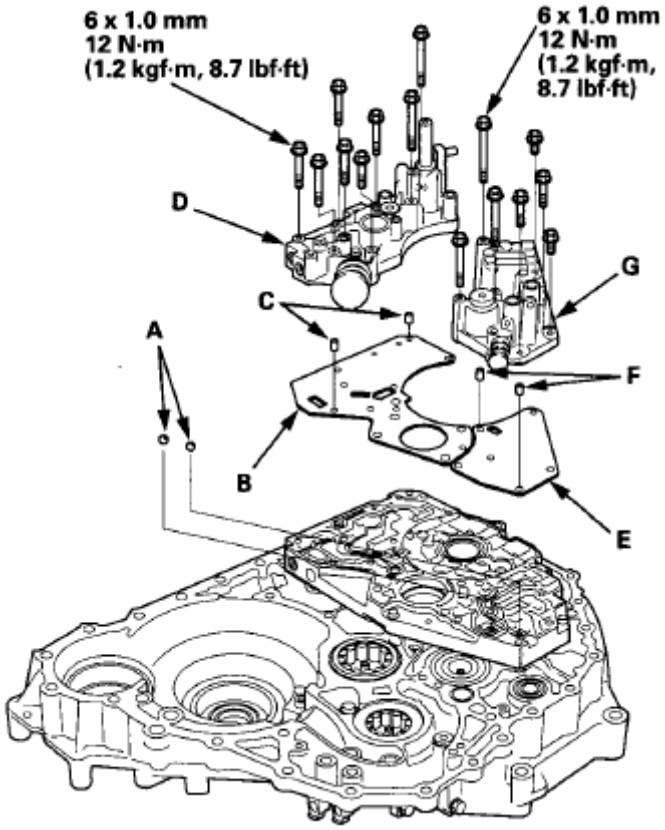


Fig. 543: Identifying Transmission Assembly Components With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

9. Install the regulator separator plate (B) and the two dowel pins (C) on the main valve body, and install the regulator valve body (D) (eight bolts).
10. Install the manual separator plate (E) and the two dowel pins (F) on the main valve body, and install the manual valve body (G) (seven bolts).
11. Install the two dowel pins (A) on the main valve body.

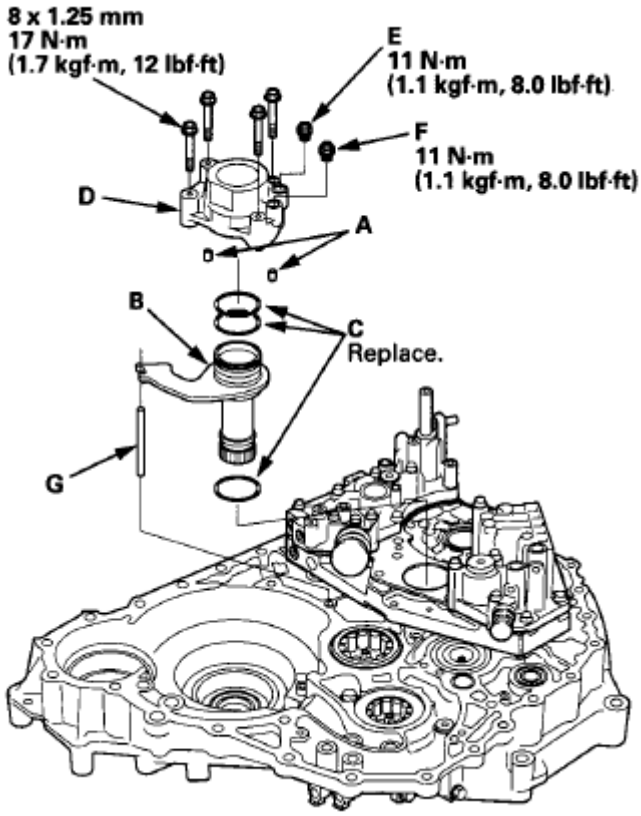


Fig. 544: Identifying Dowel Pins, Stator Shaft, O-Ring, Shaft Support, 3rd And 6th Air Check Valve And Shaft Stop With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

12. Install the stator shaft (B) with new O-rings (three) (C), and install the stator shaft support (D) (four bolts).
13. Install the 3rd air check valve (E) and the 6th air check valve (F).
14. Install the stator shaft stop (G) in the torque converter housing.
15. Install the cooler retainer cap (A).

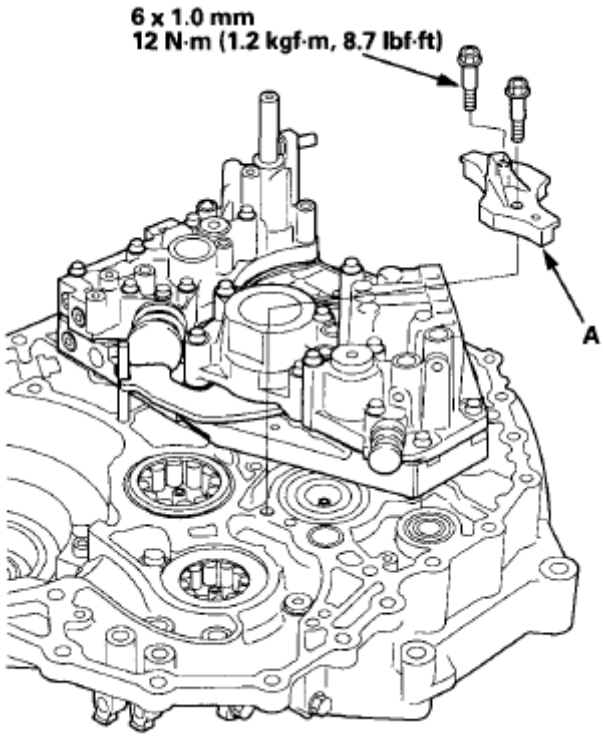


Fig. 545: Identifying Cooler Retainer Cap With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

16. Install the 2nd air check valve (A), the 5th air check valve (B), and the oil catch plate (C).

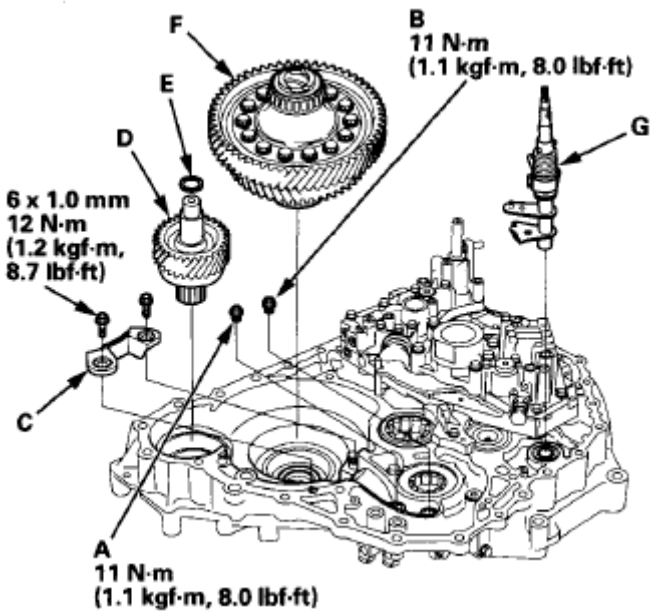


Fig. 546: Identifying 2nd Air Check Valve, 5th Air Check Valve, Oil Catch Plate, Transfer Output Shaft And Thrust Shim With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

17. With SH-AWD: Install the transfer output shaft (D) in the torque converter housing, and install the thrust shim (E) on the top of the transfer output shaft.
18. Install the differential assembly (F) in the torque converter housing.
19. Install the selector control shaft (G).
20. Align the control lever pin (A) with the manual valve guide (B).

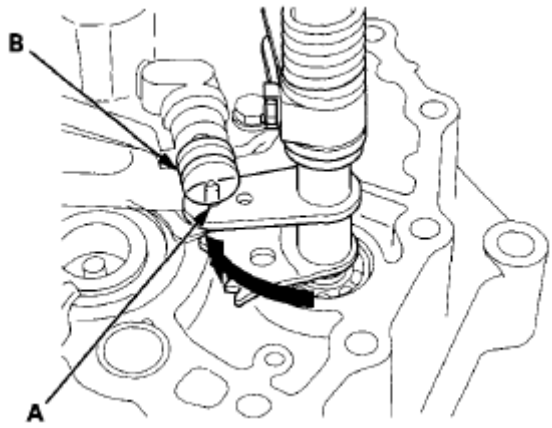


Fig. 547: Identifying Control Lever Pin And Manual Valve Guide
Courtesy of AMERICAN HONDA MOTOR CO., INC.

21. Hook the detent spring (A) to the detent arm (B) and the selector control shaft (C), then install the detent arm and the detent arm shaft (D) into the torque converter housing.

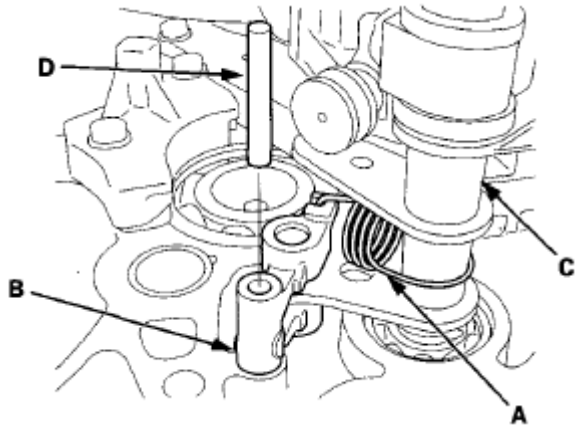


Fig. 548: Identifying Detent Spring, Detent Arm, Selector Control Shaft, Detent Arm And Detent Arm Shaft
Courtesy of AMERICAN HONDA MOTOR CO., INC.

22. Install the parking holder (A).

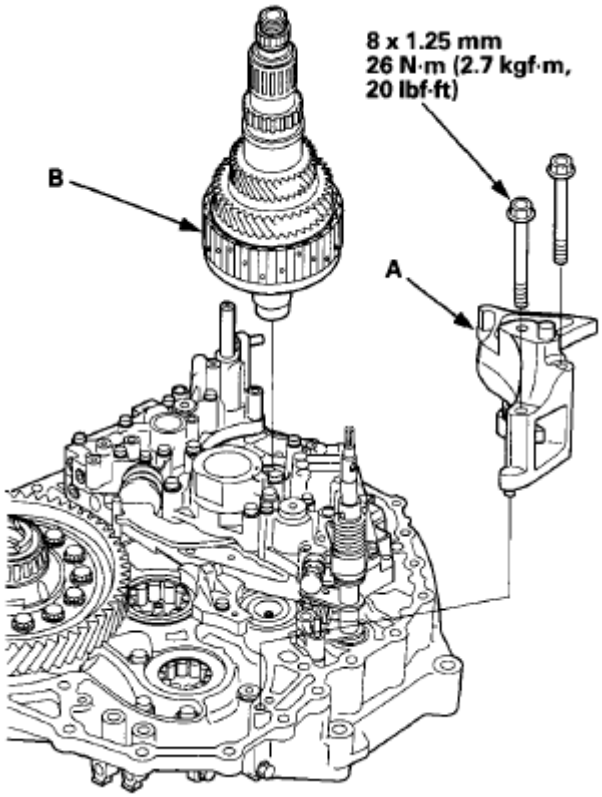


Fig. 549: Identifying Parking Holder And 3rd Shaft With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

23. Install the third shaft (B) into the main valve body.
24. Assemble the mainshaft, the countershaft, the secondary shaft, and the idler gear shaft.
25. Install the thrust needle bearing (A) on the secondary shaft bearing in the torque converter housing.

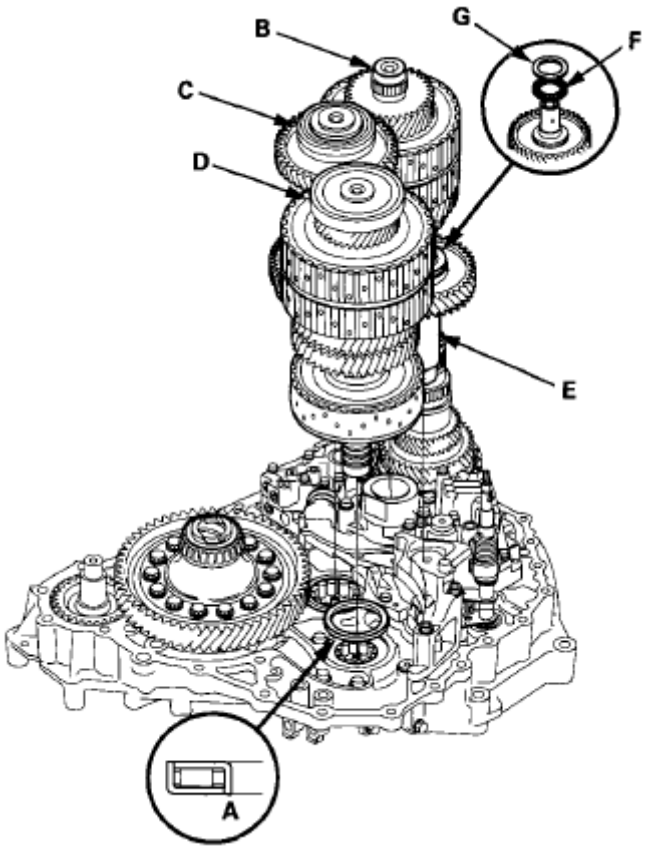


Fig. 550: Identifying Transmission Reassembly Related Parts
Courtesy of AMERICAN HONDA MOTOR CO., INC.

26. Join the mainshaft subassembly (B), the countershaft subassembly (C), the secondary shaft subassembly (D), and the idler gear shaft subassembly (E) together, and install them in the torque converter housing. Install the 27.5 x 41 x 2.5 mm thrust needle bearing (F) and the 41.5 mm washer (G) on the top of the idler gear shaft.
27. Turn the shift fork shaft (A) so the large chamfered hole is facing the fork bolt hole of the shift fork.

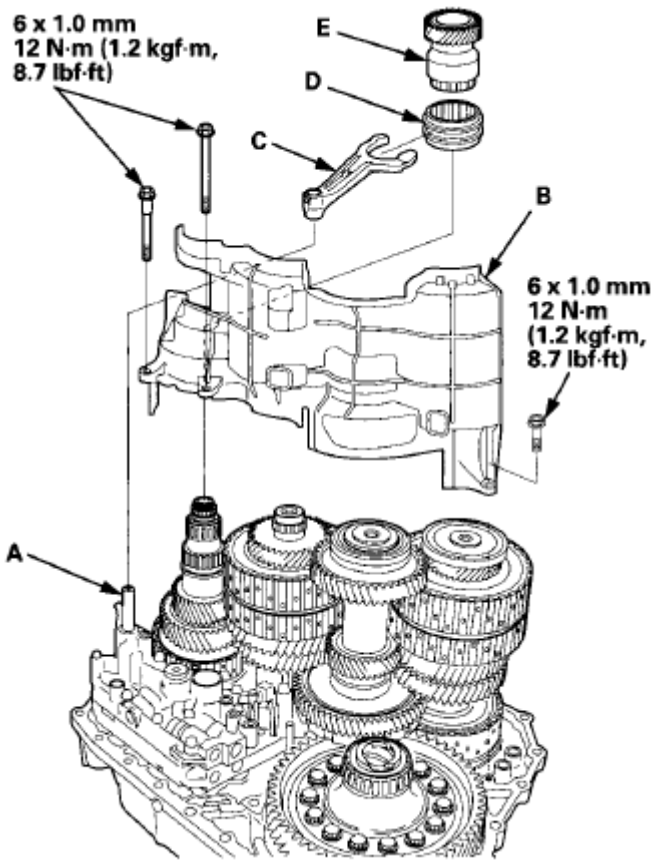


Fig. 551: Identifying Shift Fork Shaft, Baffle Plate, Shift Fork Reverse Selector Hub And Gear With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

28. Install the baffle plate (B), the shift fork (C), the reverse selector hub (D), and the reverse gear (E) together.
29. Secure the shift fork (A) to the shift fork shaft with the lock bolt and a new lock washer (B), then bend the lock tab of the lock washer against the bolt head.

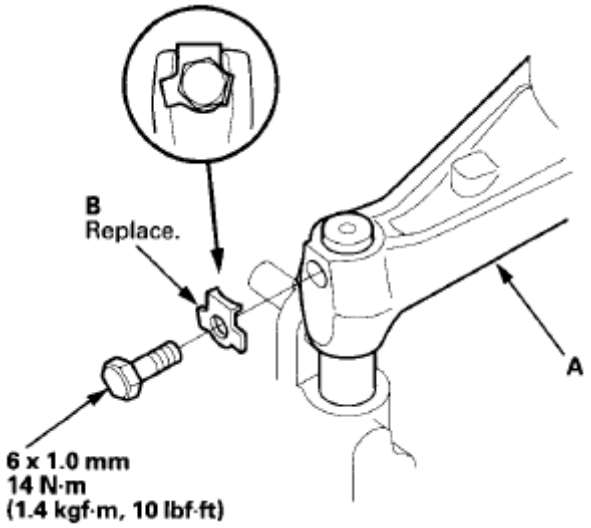


Fig. 552: Identifying Shift Fork And Lock Washer With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

30. Install the lubrication pipe (A) and the 10 x 70 mm ATF joint pipe (B) into the regulator valve body (C).

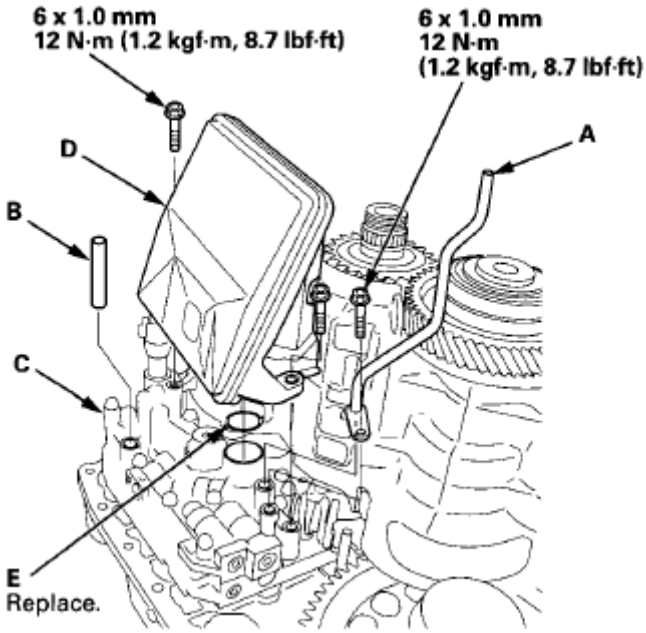


Fig. 553: Identifying Lubrication Pipe, ATF Joint Pipe, Regulator Valve Body, ATF Strainer And O-Ring With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

31. Install the ATF strainer (D) with a new O-ring (E).
32. Install new O-rings (C) (four) on the ATF joint pipes A and B, and install the ATF joint pipes A and B into the manual valve body (D) and the torque converter housing (E).

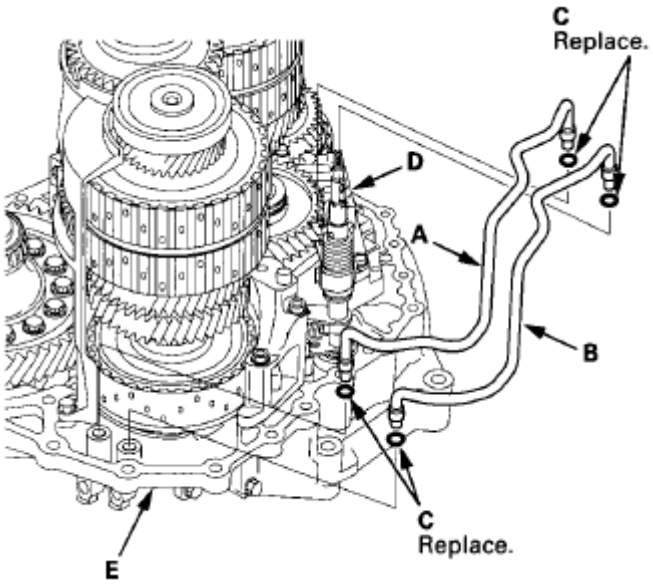


Fig. 554: Identifying O-Rings And Manual Valve Body
Courtesy of AMERICAN HONDA MOTOR CO., INC.

33. Install the two dowel pins (A) and a new gasket (B) on the torque converter housing (C).

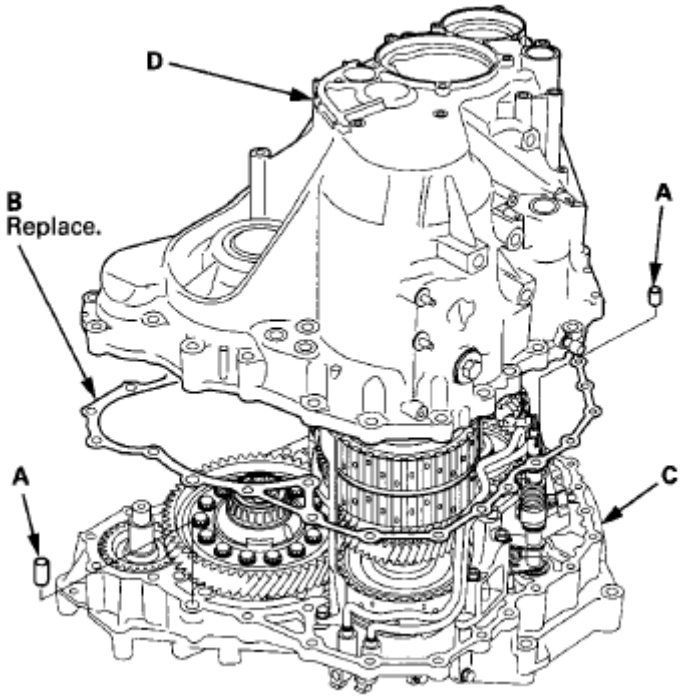


Fig. 555: Identifying Dowel Pins, Gasket, Torque Converter Housing And Transmission Housing
Courtesy of AMERICAN HONDA MOTOR CO., INC.

34. Place the transmission housing (D) on the torque converter housing.
35. Wrap a screwdriver tip with tape to prevent damaging the reverse idler gear teeth. Engage the reverse

idler gear with the reverse gears by rotating the idler gear using a screwdriver.

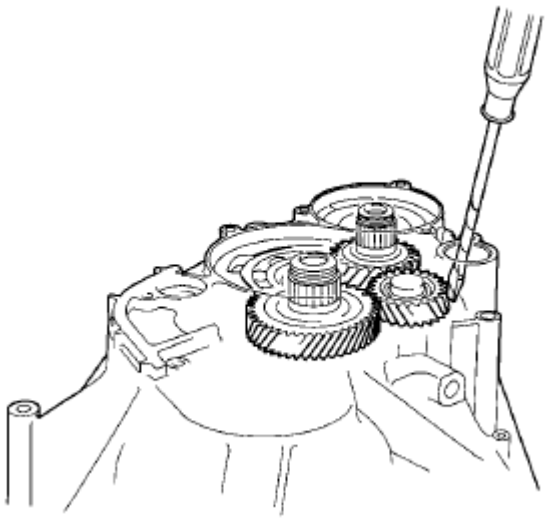


Fig. 556: Engaging Reverse Idler Gear With Reverse Gears By Rotating Idler Gear Using Screwdriver
Courtesy of AMERICAN HONDA MOTOR CO., INC.

36. While expanding the snap ring of the countershaft bearing using snap ring pliers, install the transmission housing onto the bearing part-way. Then release snap ring pliers, and push down on the transmission housing until it bottoms and snap ring snaps into place on the countershaft bearing snap ring groove.

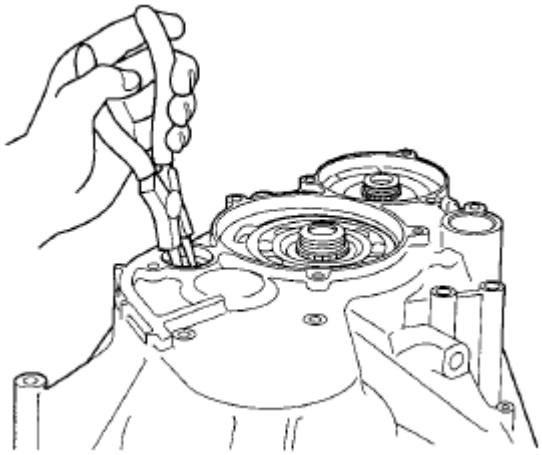


Fig. 557: Expanding Snap Ring Of Countershaft Bearing Using Snap Ring Pliers
Courtesy of AMERICAN HONDA MOTOR CO., INC.

37. Install the transmission housing mounting bolts along with transmission hanger C, and tighten the bolts in at least two steps in a criss-cross pattern to the specified torques.

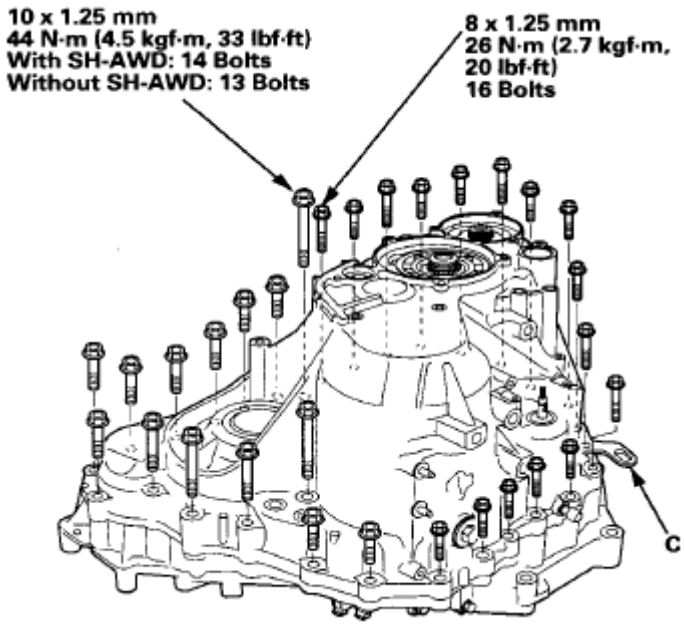


Fig. 558: Installing Transmission Housing Mounting Bolts Along With Transmission Hanger C With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

38. Install the mainshaft holder onto the mainshaft.

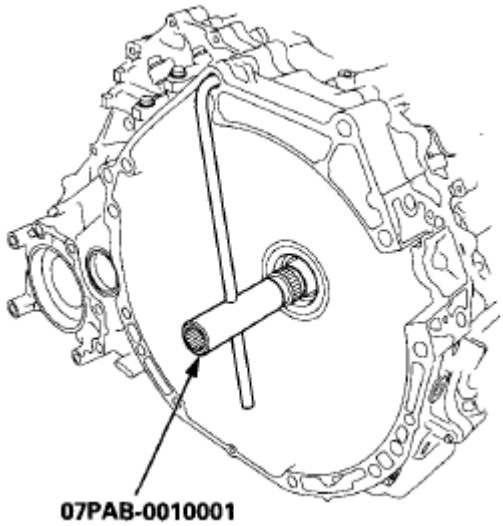


Fig. 559: Installing Mainshaft Holder Onto Mainshaft
Courtesy of AMERICAN HONDA MOTOR CO., INC.

39. Install the control lever (A) over the selector control shaft (B). Secure the control lever with a new lock washer (C) and the bolt, then bend the lock tab of the lock washer against the bolt head.

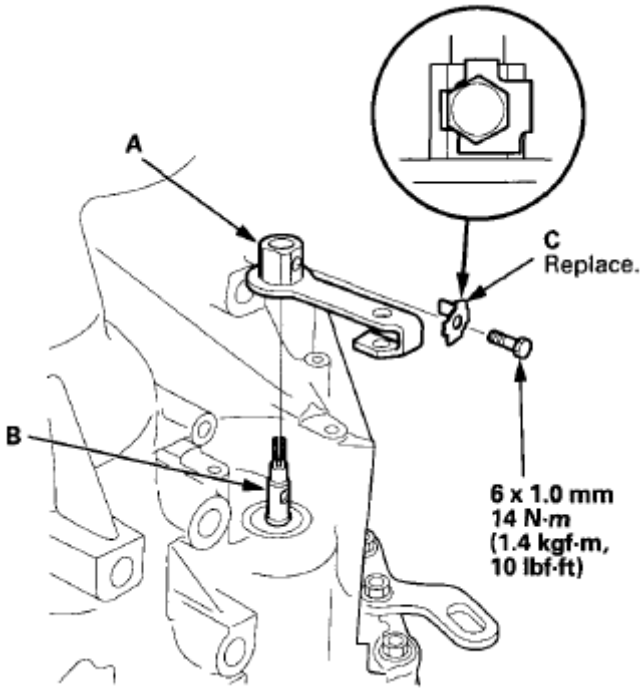


Fig. 560: Identifying Control Lever, Selector Control Shaft And Lock Washer With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

40. Shift the transmission in the P position by rotating the control lever. Do not use the control shaft to adjust the shift position. If the selector control shaft tips are squeezed together, it will cause a faulty signal or position due to play between the control shaft and the transmission range switch.

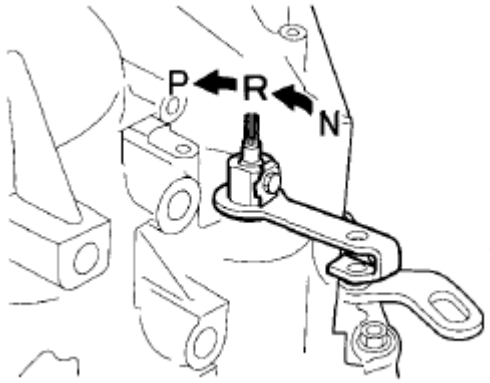


Fig. 561: Rotating Control Lever By Shifting Transmission In P Position
Courtesy of AMERICAN HONDA MOTOR CO., INC.

41. Install the old lock washers (A) with the marked side (B) up over the mainshaft (C) and the third shaft (D), and apply ATF to surfaces of the old lock washers and the old locknuts (E).

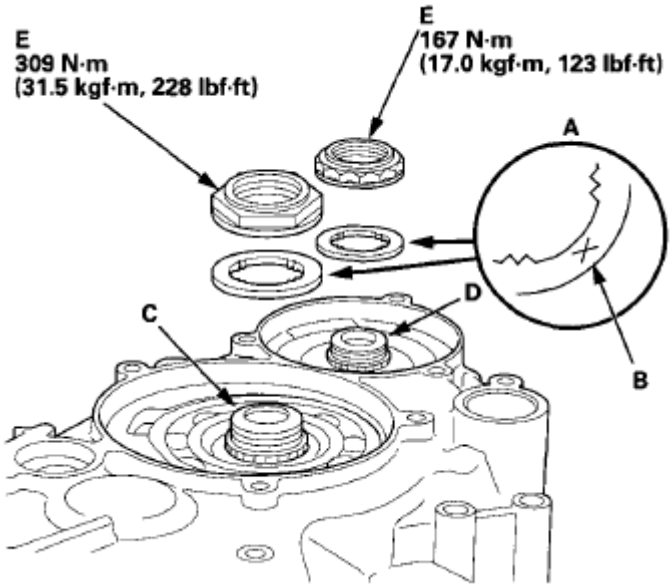


Fig. 562: Identifying Lock Washers, Marked Side, Mainshaft, Third Shaft And Locknuts With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

42. Install the old locknuts, and tighten them to seat the lock washers to the specified torques, then remove the old locknuts and the old lock washers.

NOTE: The third shaft locknut has left-hand threads.

43. Install new locknuts and new lock washers, and tighten them to the specified torques, then stake the locknuts to a depth (A) of 0.7 - 1.3 mm (0.028- 0.051 in) using a 3.5 mm punch (B).

NOTE:

- **Do not rotate the locknuts in the reverse direction after the locknuts are seated to the lock washers.**
- **The third shaft locknut has left-hand threads.**

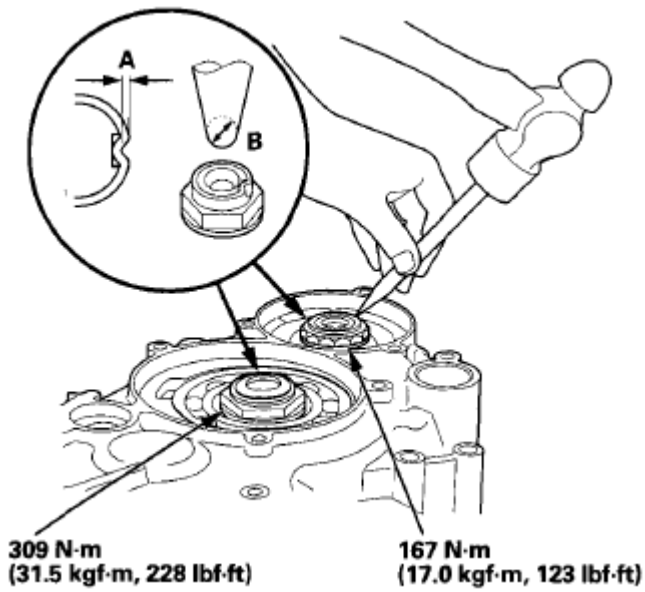


Fig. 563: Installing Locknuts And Lock Washers With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

44. Install transmission hanger A.

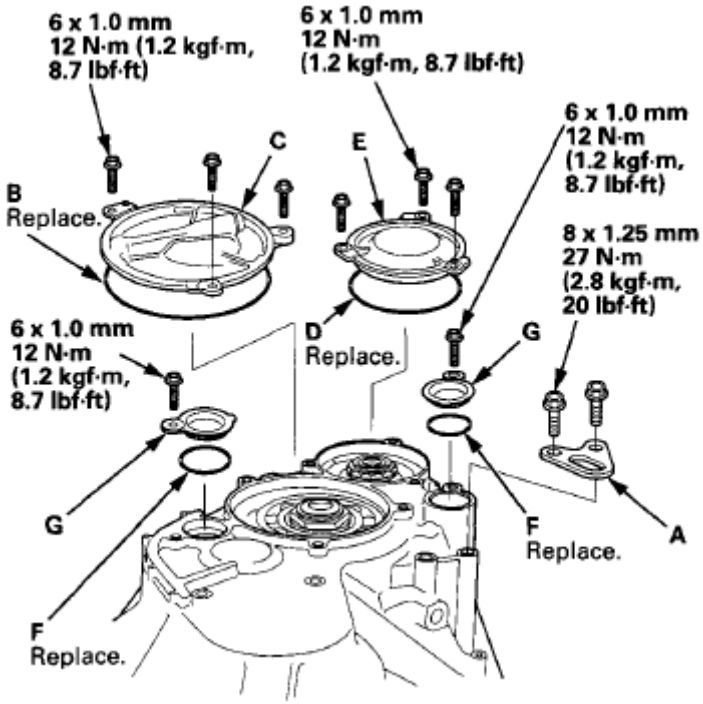


Fig. 564: Identifying Transmission Hangers, O-Rings, Mainshaft And End Covers With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

45. Install a new O-ring (B) on the mainshaft end cover (C), and install the mainshaft end cover. Install a new O-ring (D) on the third shaft end cover (E), and install the third shaft end cover.
46. Install new O-rings (F) on the end covers (G), and install the end covers.
47. Apply ATF to new O-rings (A), and install the O-rings over the ATF pipes (B). Then install the ATF pipes with the filter ends (C) facing the secondary valve body (D) into the transmission.

NOTE: There are 11 ATF pipes. Do not drop the ATF pipes into the transmission. If an ATF pipe is dropped into the transmission, the transmission will need to be disassembled.

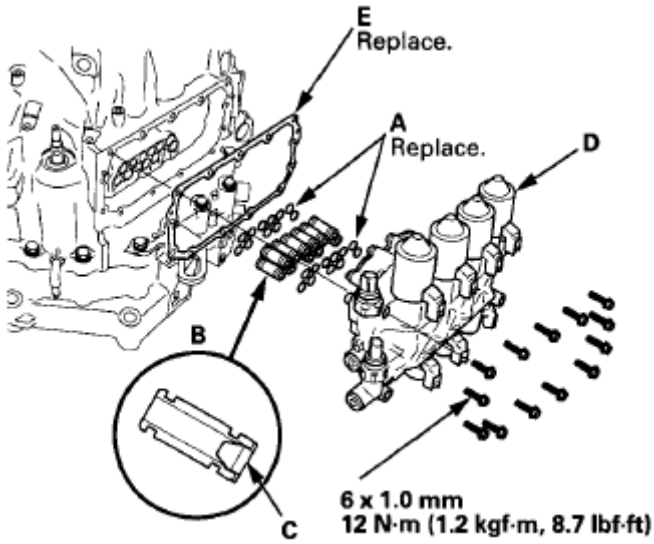


Fig. 565: Identifying O-Ring, ATF Pipes, Filter Ends, Gasket And Secondary Valve Body With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

48. Install a new gasket (E) on the transmission housing.
49. Install the secondary valve body while aligning the ATF pipes with the pipe holes on the secondary valve body, and secure the secondary valve body with the bolts.
50. Install new O-rings (A) on shift solenoid valve C (B), and install shift solenoid valve C.

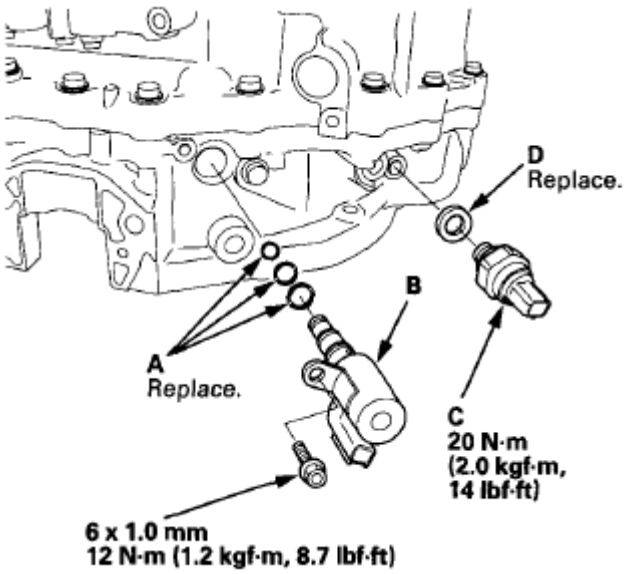


Fig. 566: Identifying O-Ring, Shift Solenoid Valve C And Sealing Washer With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

51. Install transmission fluid pressure switch C (4th clutch) (C) with a new sealing washer (D). Tighten the switch by gripping the metal part, not the plastic part.
52. Install transmission fluid pressure switch A (2nd clutch) with a new sealing washer (C). Tighten the switch by gripping the metal part, not the plastic part.

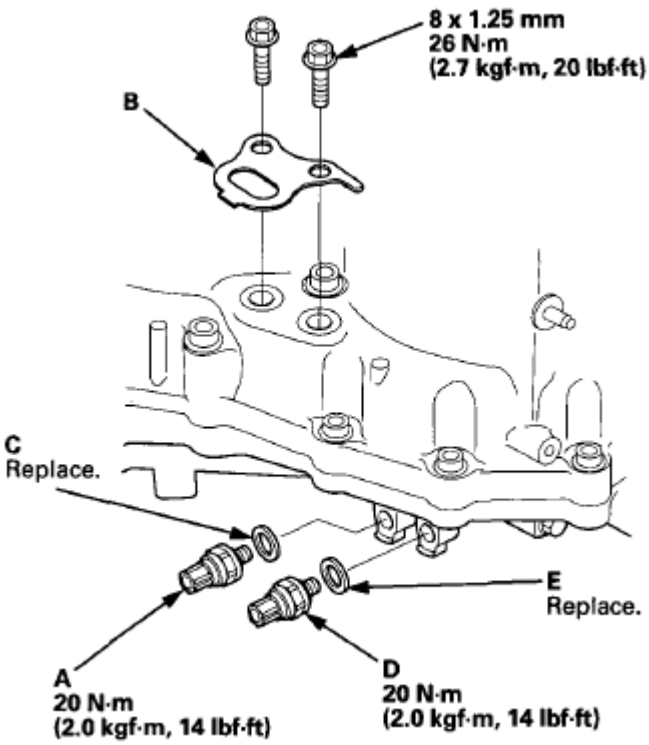


Fig. 567: Identifying Fluid Pressure Switch And Sealing Washer With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

53. Install transmission fluid pressure switch D (5th clutch) with a new sealing washer (E). Tighten the switch by gripping the metal part, not the plastic part.
54. Install transmission hanger B.
55. Install the ATF outlet line (A), and secure it with the banjo bolt (B) and new sealing washers (C), then secure the ATF outlet line with the bracket bolt.

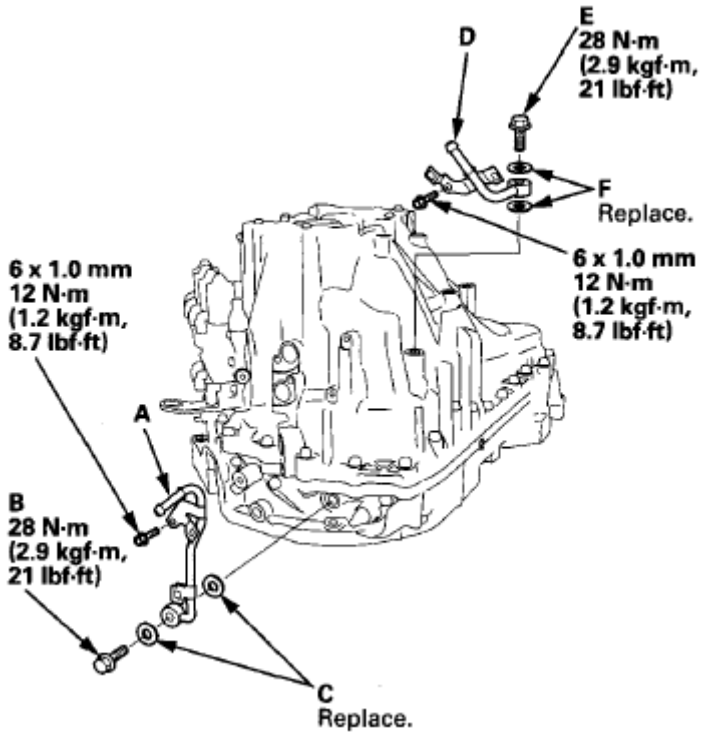


Fig. 568: Identifying ATF Outlet Line, Banjo Bolt, Sealing Washers And ATF Inlet Line With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

56. Install the ATF inlet line (D), and secure it with the banjo bolt (E) and new sealing washers (F).
57. Install a new O-ring (A) on the ATF temperature sensor (B), and install the ATF temperature sensor.

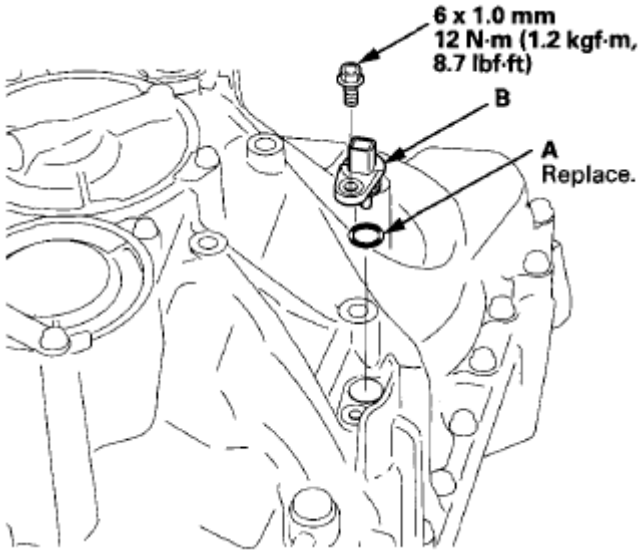


Fig. 569: Identifying O-Ring And ATF Temperature Sensor With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

58. Install a new O-ring (A) on the input shaft (mainshaft) speed sensor (B), and install the input shaft (mainshaft) speed sensor.

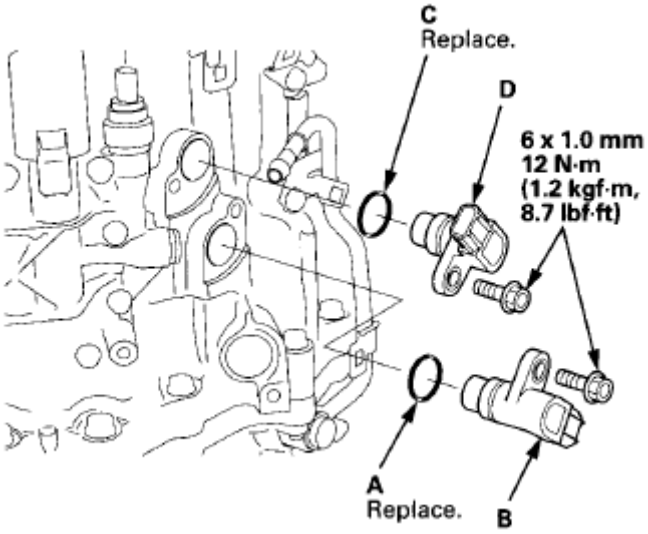


Fig. 570: Identifying O-Ring And Input Shaft Speed Sensor With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

59. Install a new O-ring (C) on the output shaft (countershaft) speed sensor (D), and install the output shaft (countershaft) speed sensor.
60. Shift the transmission into the N position by rotating the control lever from the P position. Do not use the control shaft to adjust the shift position. If the selector control shaft tips are squeezed together, it will cause a faulty signal or position due to play between the control shaft and the transmission range switch.

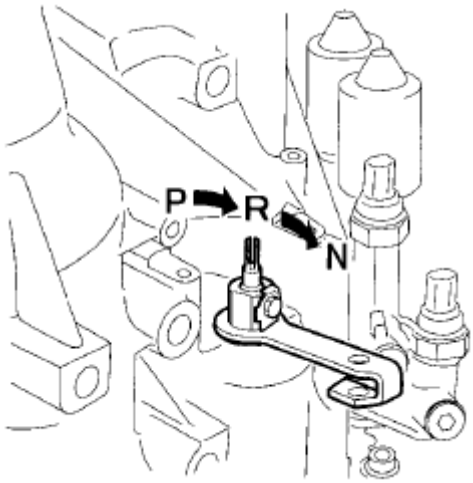


Fig. 571: Rotating Control Lever From P Position To N Position
Courtesy of AMERICAN HONDA MOTOR CO., INC.

61. Align the cutouts (A) on the rotary-frame with the N positioning cutouts (B) on the transmission range switch (C), then put a 2.0 mm (0.079 in) feeler gauge blade (D) in the cutouts to hold the switch in the N position.

NOTE: Be sure to use a 2.0 mm (0.079 in) blade or equivalent to hold the switch in the N position.

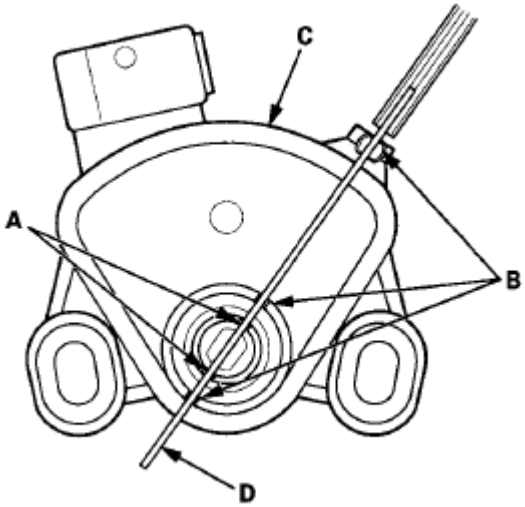


Fig. 572: Identifying Cutouts, Transmission Range Switch And Feeler Gauge Blade
Courtesy of AMERICAN HONDA MOTOR CO., INC.

62. Install the transmission range switch (A) gently on the selector control shaft while holding it in the N position with the 2.0 mm (0.079 in) blade (B).

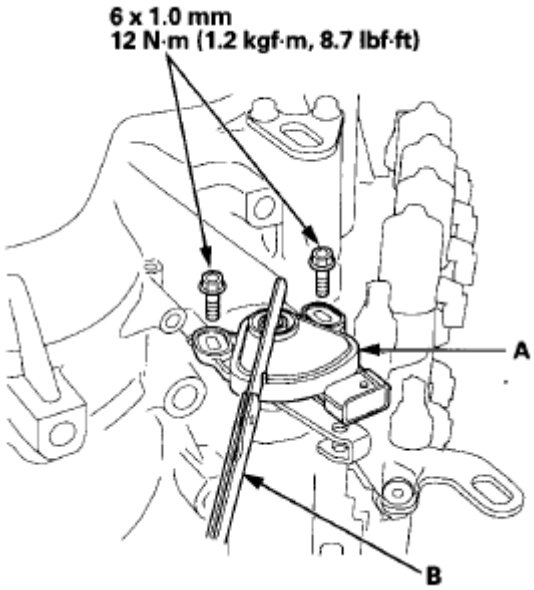


Fig. 573: Identifying Transmission Range Switch And Blade With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

63. Tighten the bolts on the transmission range switch while you continue to hold the N position. Do not move the transmission range switch when tightening the bolts. Remove the feeler gauge.
64. Install the ATF dipstick guide tubes (A) with new O-rings (B).

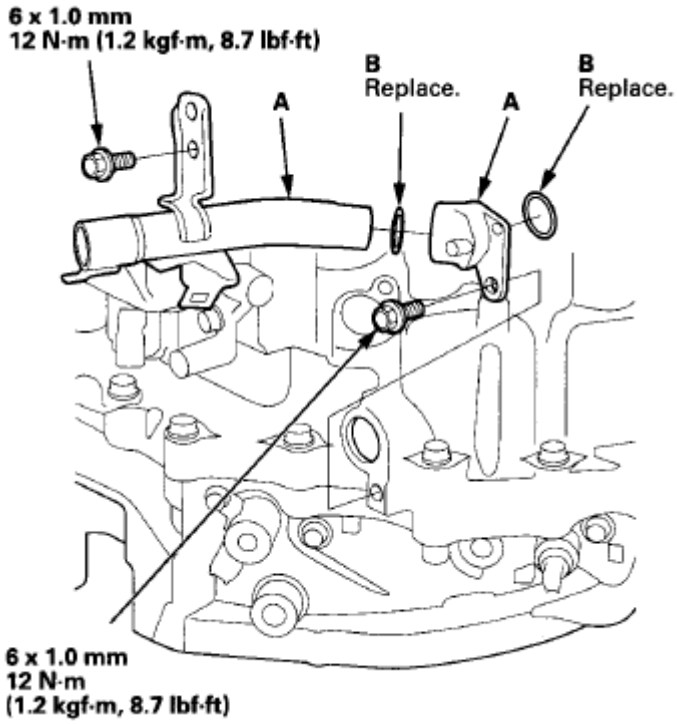


Fig. 574: Identifying ATF Dipstick Guide Tubes And O-Rings With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

65. Install the ATF dipstick in the guide tube.

COMPONENT LOCATION INDEX

WITH SH-AWD

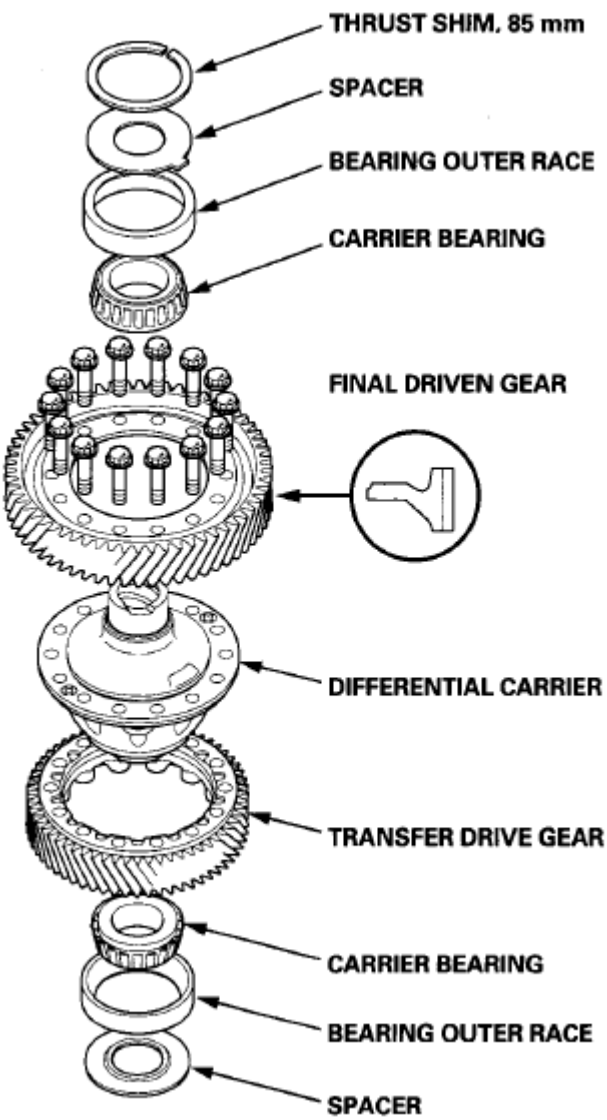


Fig. 575: Identifying A/T Differential And Related Components (With SH-AWD)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

WITHOUT SH-AWD

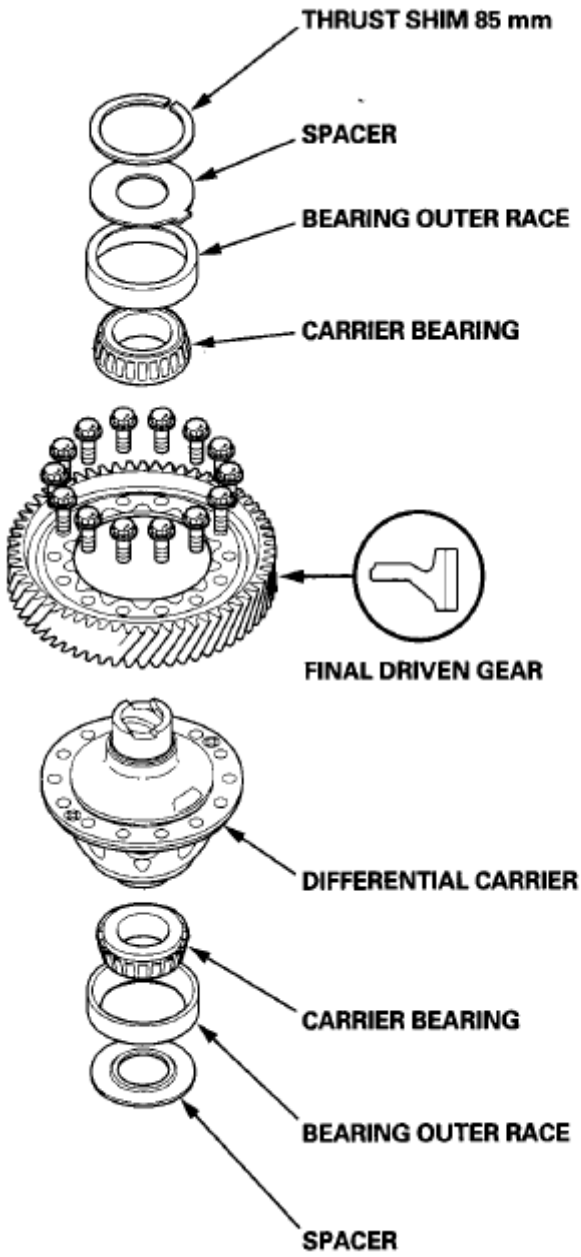


Fig. 576: Identifying A/T Differential And Related Components (Without SH-AWD)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

BACKLASH INSPECTION

1. With SH-AWD: Remove the final driven gear and the transfer drive gear from the differential carrier (see **DIFFERENTIAL CARRIER, FINAL DRIVEN GEAR, AND TRANSFER DRIVE GEAR REPLACEMENT**).

   Without SH-AWD: Remove the final driven gear (see **DIFFERENTIAL CARRIER AND FINAL DRIVEN GEAR REPLACEMENT**).

2. Install both axles into the differential assembly (A) and place the axles on V-blocks (B).

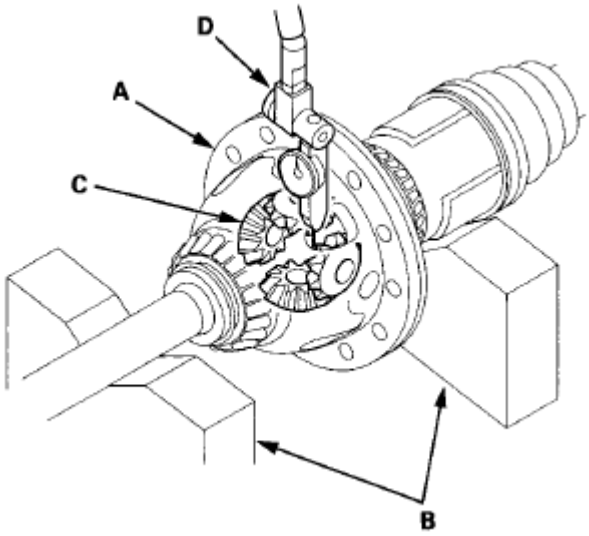


Fig. 577: Identifying Differential Assembly, V-Blocks, Pinion Gears And Dial Indicators
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Measure the backlash of the pinion gears (C) with a dial indicator (D).

   Standard (New): 0.05 - 0.15 mm (0.0020 - 0.0059 in)

4. If the backlash is out of the standard, replace the differential assembly.
5. With SH-AWD: Install the final driven gear and the transfer drive gear on the differential carrier (see **DIFFERENTIAL CARRIER, FINAL DRIVEN GEAR, AND TRANSFER DRIVE GEAR REPLACEMENT**).

   Without SH-AWD: Install the final driven gear (see **DIFFERENTIAL CARRIER AND FINAL DRIVEN GEAR REPLACEMENT**).

DIFFERENTIAL CARRIER, FINAL DRIVEN GEAR, AND TRANSFER DRIVE GEAR REPLACEMENT

NOTE: Inspect and adjust the bearing preload whenever the differential carrier is replaced.

1. Remove the final driven gear (A) and the transfer drive gear (B) from the differential carrier (C).

   NOTE: The final driven gear bolts have left-hand threads.

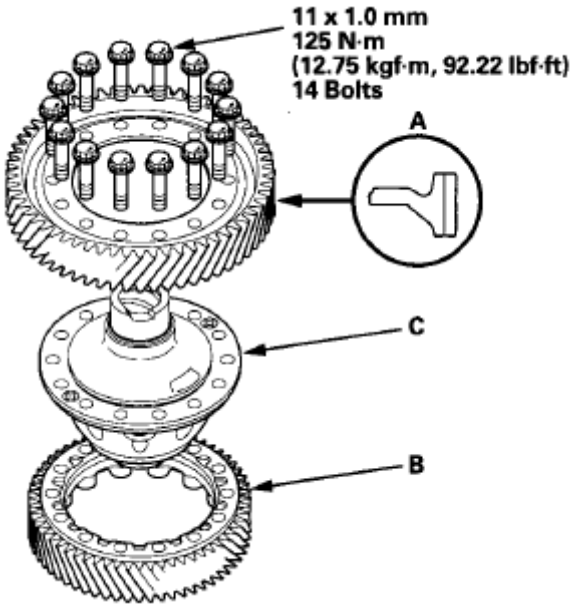


Fig. 578: Identifying Driven Gear, Drive Gear And Differential Carrier With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Install the final driven gear and the transfer drive gear on the differential carrier in the direction shown.
3. Install the bolts through the differential carrier to the transfer drive gear.
4. Tighten the bolts to the specified torque in a crisscross pattern in at least two steps.

DIFFERENTIAL CARRIER AND FINAL DRIVEN GEAR REPLACEMENT

NOTE: Inspect and adjust the carrier bearing preload whenever the differential carrier is replaced.

1. Remove the final driven gear (A) from the differential carrier (B).

NOTE: The final driven gear bolts (C) have left-hand threads.

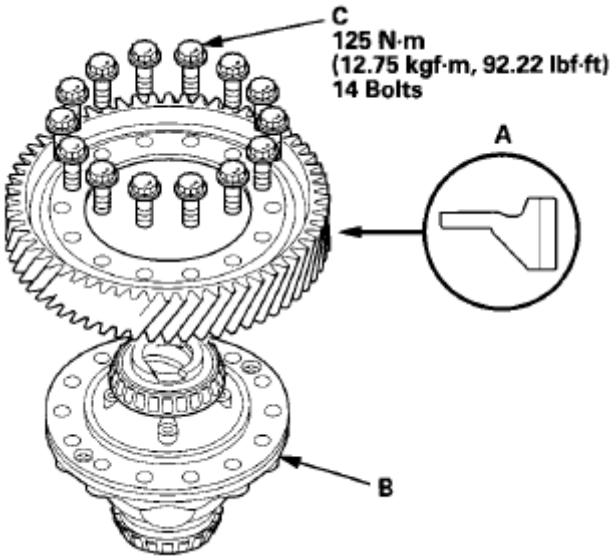


Fig. 579: Identifying Driven Gear, Differential Carrier And Driven Gear Bolts With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Install the final driven gear on the differential carrier in the direction shown.
3. Tighten the bolts to the specified torque in a crisscross pattern in at least two steps.

CARRIER BEARING REPLACEMENT

Special Tools Required

Installer Attachment, 45 x 55 mm 07MAD-PR90100

NOTE:

- **The carrier bearing and the carrier bearing outer race should be replaced as a set.**
- **Inspect and adjust the carrier bearing preload whenever the bearing is replaced.**
- **Check the bearing for wear and rough rotation. If the bearing is OK, removal is not necessary.**

1. Remove the carrier bearing (A) using a commercially available bearing puller (B), a bearing separator (C), and a spacer (D).

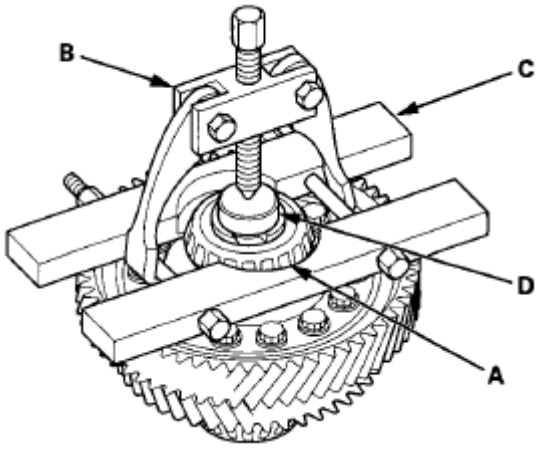


Fig. 580: Identifying Carrier Bearing, Bearing Puller, Bearing Separator And Spacer
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Install a new carrier bearing until it bottoms using the 45 x 55 mm installer attachment and a press.

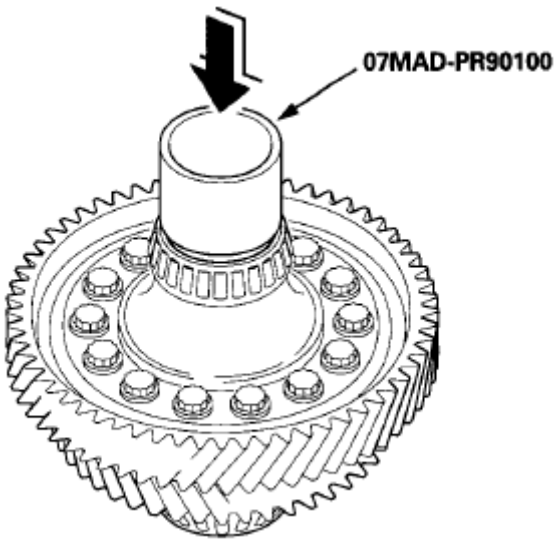


Fig. 581: Installing Carrier Bearing Until It Bottoms Using Installer Attachment And Press
Courtesy of AMERICAN HONDA MOTOR CO., INC.

OIL SEAL REPLACEMENT

Special Tools Required

- Driver Handle, 15 x 135L 07749-0010000
- Oil Seal Driver Attachment, 58 mm 07JAD-PH80101
- Oil Seal Driver Attachment, 60 mm 07LAD-SM40100

1. Remove the oil seal from the transmission housing.



Fig. 582: Removing Oil Seal From Transmission Housing
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Remove the oil seal from the torque converter housing.

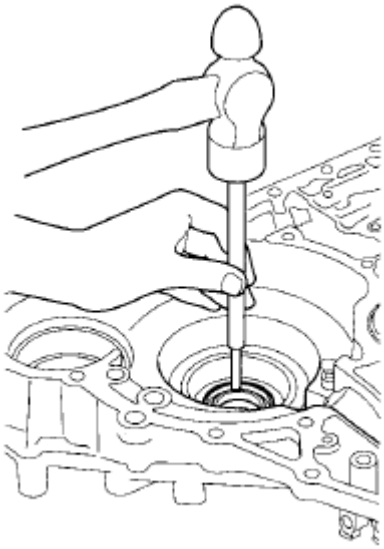


Fig. 583: Removing Oil Seal From Torque Converter Housing
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Install a new oil seal flush with the transmission housing using the 15 x 135L drive handle and the 60 mm oil seal driver attachment.

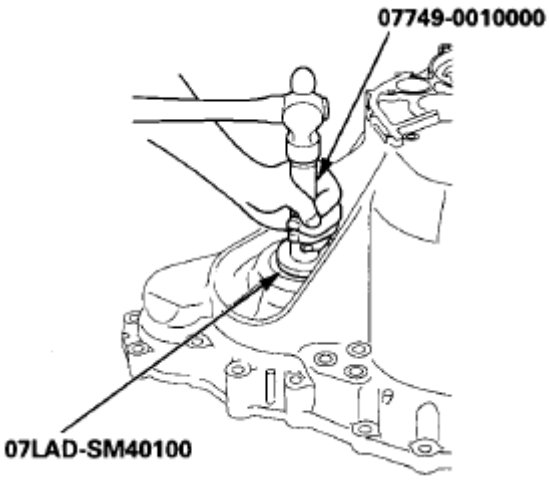


Fig. 584: Installing Oil Seal Flush With Transmission Housing Using Drive Handle And Oil Seal Driver Attachment
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Install a new oil seal flush with the torque converter housing using the 15 x 135L drive handle and the 58 mm oil seal driver attachment.

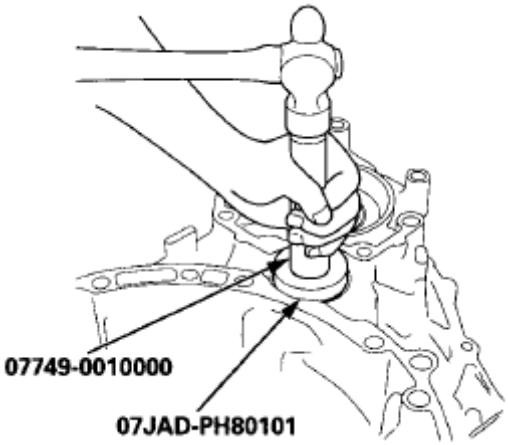


Fig. 585: Installing Oil Seal Flush With Torque Converter Housing Using Drive Handle And Oil Seal Driver Attachment
Courtesy of AMERICAN HONDA MOTOR CO., INC.

CARRIER BEARING OUTER RACE REPLACEMENT

Special Tools Required

- Driver Handle, 15 x 135L 07749-0010000
- Attachment, 83 mm 07HAD-SG00100

NOTE:

- **Replace the carrier bearing with a new one whenever the bearing outer**

race is replaced.

- **Do not use the 85 mm thrust shim on the torque converter housing side.**
- **Adjust the preload after replacing the bearing and the outer race.**
- **Coat all parts with ATF during installation.**

1. Remove the bearing outer race (A), the spacer (B), and the 85 mm thrust shim (C) from the transmission housing (D) by heating the transmission housing to about 212°F (100°C) with a heat gun (E). Do not heat the transmission housing more than 212°F (100°C).

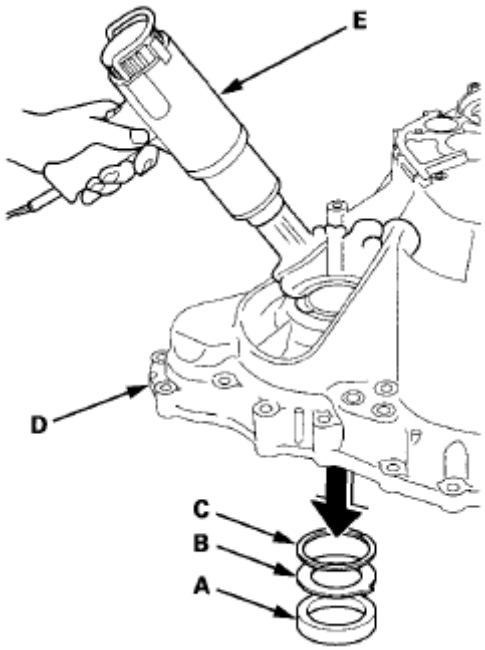


Fig. 586: Removing Bearing Outer Race, Spacer And Thrust Shim From Transmission Housing By Heating With Heat Gun
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Install the 85 mm thrust shim (A) in the transmission housing (B).

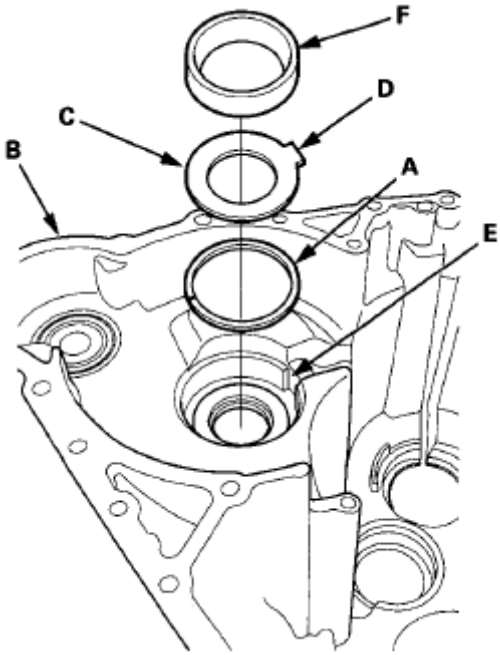


Fig. 587: Identifying Thrust Shim, Transmission Housing, Spacer, Tab, Groove And Bearing Outer Race
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Install the spacer (C) by aligning the tab (D) with the groove (E), and install the bearing outer race (F) in the transmission housing.
4. Drive the outer race securely into the transmission housing using the 15 x 135L driver handle and the 83 mm attachment so there is no clearance between the outer race, the spacer, the 85 mm thrust shim, and the transmission housing.

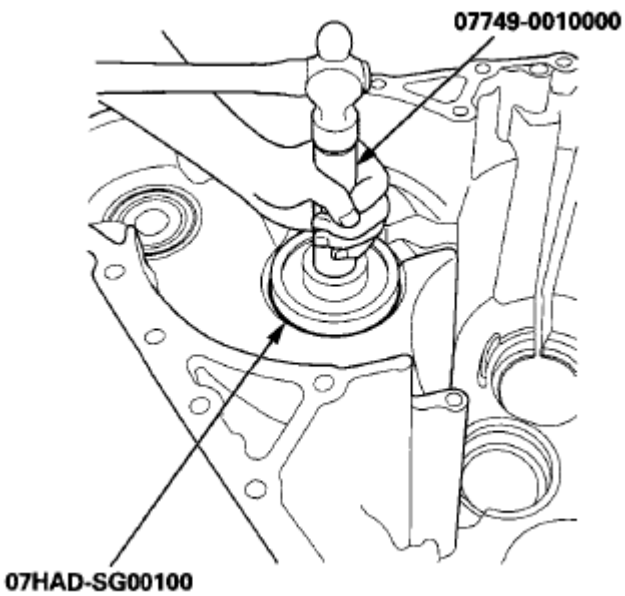


Fig. 588: Driving Outer Race Securely Into Transmission Housing Using Driver Handle And

Attachment
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Remove the bearing outer race (A) and the spacer (B) from the torque converter housing (C).

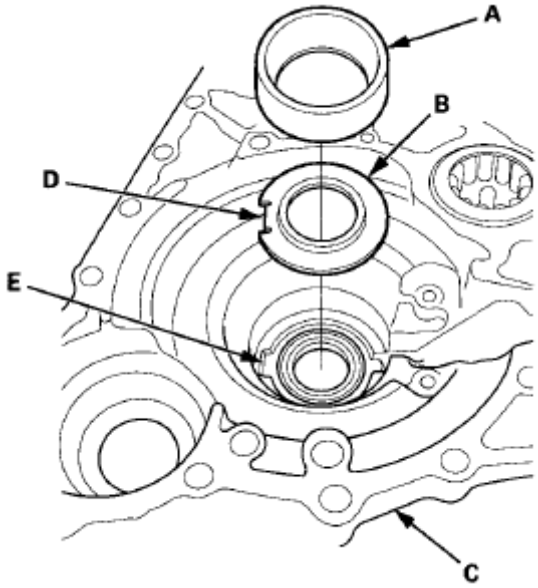


Fig. 589: Identifying Bearing Outer Race, Spacer, Tab And Groove
Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Install the spacer by aligning the tab (D) with the groove (E), and install a new bearing outer race in the torque converter housing.
7. Drive the bearing outer race securely in the torque converter housing using the 15 x 135L driver handle and the 83 mm attachment.

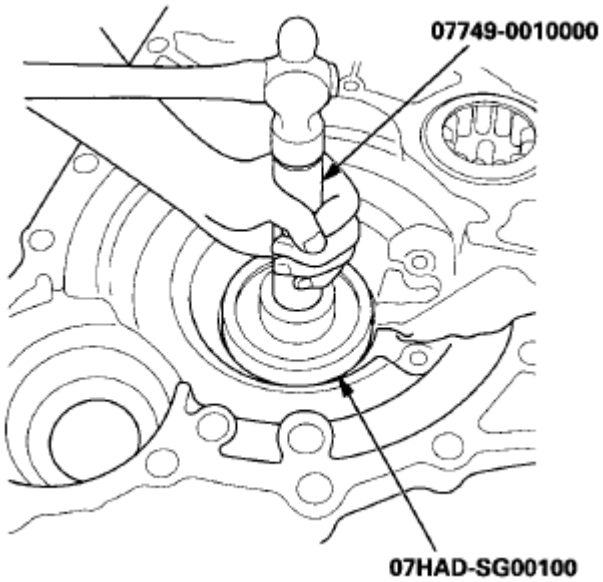


Fig. 590: Driving Bearing Outer Race Securely In Torque Converter Housing Using Driver Handle And Attachment
Courtesy of AMERICAN HONDA MOTOR CO., INC.

CARRIER BEARING PRELOAD INSPECTION

Special Tools Required

- Attachment, 83 mm 07HAD-SG00100
- Preload Inspection Tool 070AJ-0020101
- Driver Handle, 15 x 135L 07749-0010000

NOTE: If the transmission housing, the torque converter housing, the differential carrier, the tapered roller bearing, the bearing outer race, or the thrust shim were replaced, the bearing preload must be adjusted.

1. Remove the bearing outer race (A), the spacer (B), and the 85 mm thrust shim (C) from the transmission housing (D) by heating the transmission housing to about 212°F (100 CC) with a heat gun (E). Do not heat the transmission housing more than 212°F (100°C).

NOTE: Let the transmission housing cool to room temperature before adjusting the bearing preload.

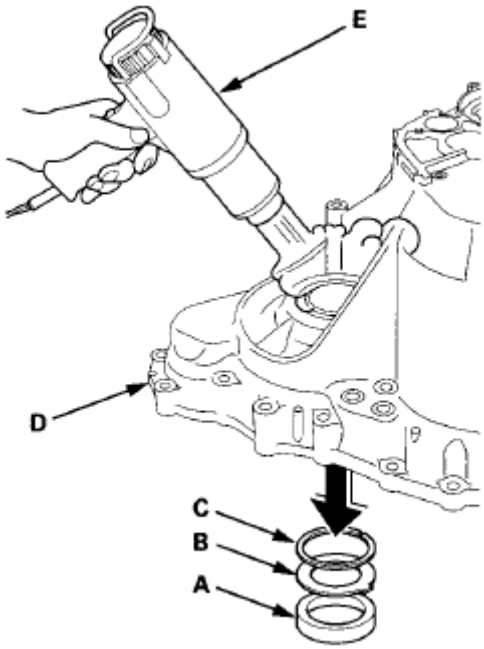


Fig. 591: Removing Bearing Outer Race, Spacer And Thrust Shim From Transmission Housing By Heating With Heat Gun
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Replace the tapered roller bearing when the bearing outer race is to be replaced.
3. Do not use an 85 mm shim on the torque converter housing side.
4. Install the 85 mm thrust shim (A) in the transmission housing (B). If you install a new 85 mm thrust shim, use the same thickness shim as the old one.

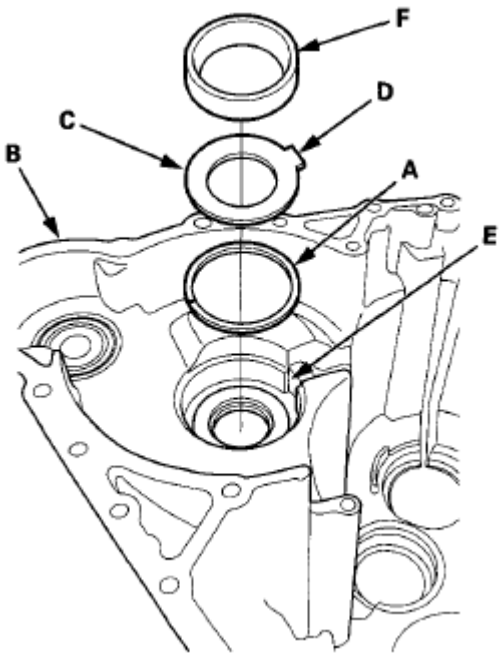


Fig. 592: Identifying Thrust Shim, Transmission Housing, Spacer, Tab And Groove
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Install the spacer (C) by aligning the tab (D) with the groove (E), and install the bearing outer race (F) in the transmission housing.
6. Drive the bearing outer race securely in the transmission housing using the 15 x 135L driver handle and the 83 mm attachment so there is no clearance between the bearing outer race, the spacer, the 85 mm thrust shim, and the transmission housing.

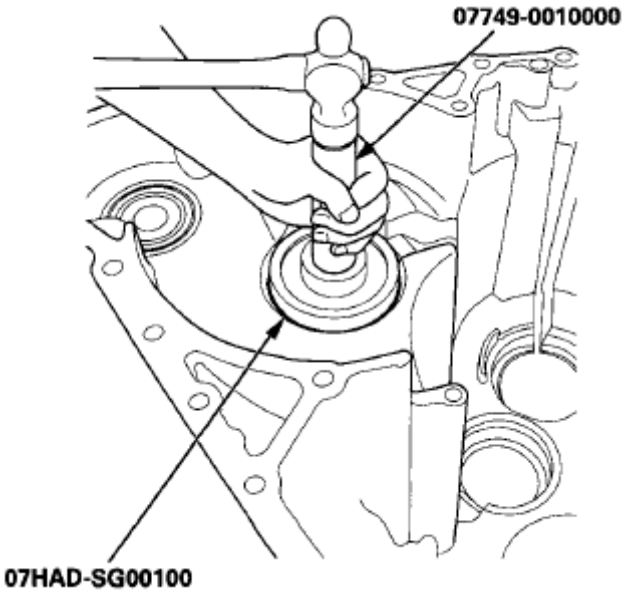


Fig. 593: Driving Bearing Outer Race Securely In Transmission Housing Using Driver Handle And Attachment
Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Install the differential assembly (B) in the torque converter housing (C), and install a new gasket (D) and the two dowel pins (E) on the torque converter housing.

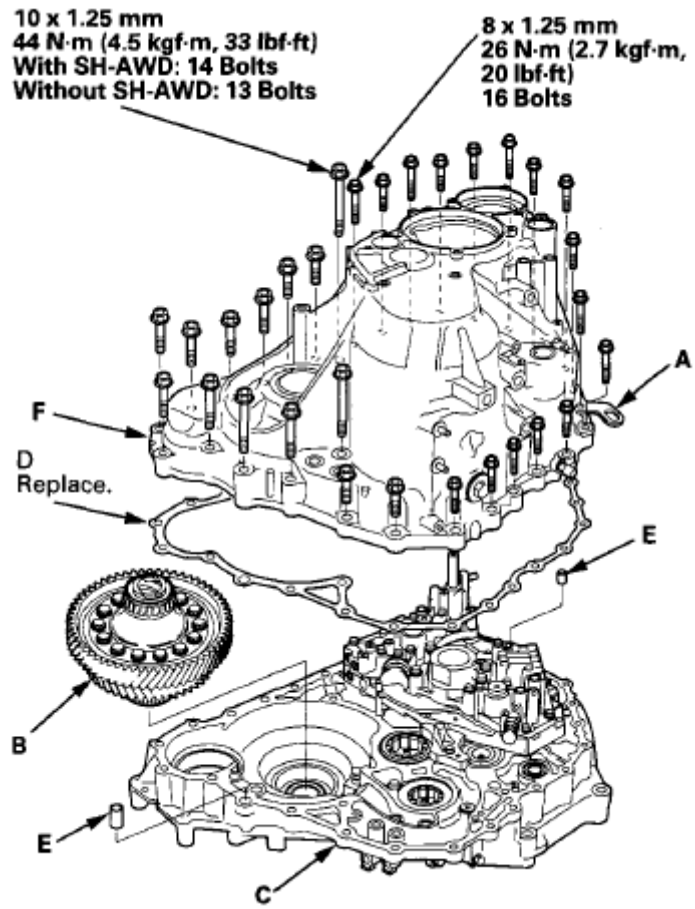


Fig. 594: Identifying Differential Assembly, Torque Converter Housing, Gasket And Dowel Pins With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

8. Install the transmission housing (F), and install the mounting bolts (With SH-AWD: 30 bolts, without SH-AWD: 29 bolts) with transmission hanger A, then tighten the bolts.
9. Rotate the differential assembly in both directions to seat the bearings.
10. Measure the starting torque of the differential assembly with the preload inspection tool, a torque wrench (A), and a socket (B). Measure the starting torque at normal room temperature in both directions.

Standard

New bearings:

3.9- 5.6 N.m (40- 57 kgf.cm, 35- 49 lbf.in)

Reused bearings:

3.6- 5.3 N.m (37- 54 kgf.cm, 32- 47 lbf.in)

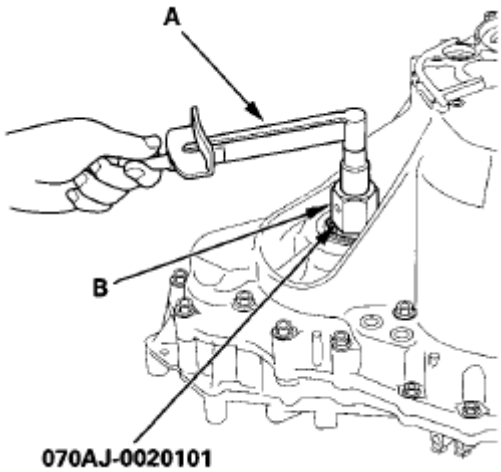


Fig. 595: Measuring Starting Torque Of Differential Assembly With Inspection Tool, Torque Wrench And Socket
Courtesy of AMERICAN HONDA MOTOR CO., INC.

11. If the measurement is out of the standard, remove the 85 mm thrust shim and measure its thickness.
12. Select a new 85 mm thrust shim. To increase the starting torque, increase thickness of the 85 mm thrust shim. To decrease the starting torque, decrease the thickness of the 85 mm thrust shim. Changing the 85 mm shim to the next size will increase or decrease the starting torque about 0.5- 0.6 N.m (5.10- 6.12 kgf.cm, 4.4- 5.3 lbf.in).

THRUST SHIM, 85 MM

No.	Thickness
A	1.350 mm (0.05315 in)
B	1.375 mm (0.05413 in)
C	1.400 mm (0.05512 in)
D	1.425 mm (0.05610 in)
E	1.450 mm (0.05709 in)
F	1.475 mm (0.05807 in)
G	1.500 mm (0.05906 in)
H	1.525 mm (0.06004 in)
I	1.550 mm (0.06102 in)
J	1.575 mm (0.06201 in)
K	1.600 mm (0.06299 in)
L	1.625 mm (0.06398 in)
M	1.650 mm (0.06496 in)
N	1.675 mm (0.06594 in)
O	1.700 mm (0.06693 in)
P	1.725 mm (0.06791 in)
Q	1.750 mm (0.06890 in)
R	1.775 mm (0.06988 in)

S	1.800 mm (0.07087 in)
T	1.825 mm (0.07185 in)
U	1.850 mm (0.07283 in)
V	1.875 mm (0.07382 in)
W	1.900 mm (0.07480 in)
X	1.925 mm (0.07579 in)
Y	1.950 mm (0.07677 in)
Z	1.975 mm (0.07776 in)
AA	2.000 mm (0.07874 in)
AB	2.025 mm (0.07972 in)
AC	2.050 mm (0.08071 in)
AD	2.075 mm (0.08169 in)
AE	2.100 mm (0.08268 in)
AF	2.125 mm (0.08366 in)
AG	2.150 mm (0.08465 in)
AH	2.175 mm (0.08563 in)
AI	2.200 mm (0.08661 in)
AJ	2.225 mm (0.08760 in)
AK	2.250 mm (0.08858 in)
AL	2.275 mm (0.08957 in)
AM	2.300 mm (0.09055 in)
AN	2.325 mm (0.09154 in)
AO	2.350 mm (0.09252 in)
AP	1.250 mm (0.04921 in)
AQ	1.275 mm (0.05020 in)
AR	1.300 mm (0.05118 in)
AS	1.325 mm (0.05217 in)

13. Install a new thrust shim, then recheck the starting torque.

COMPONENT LOCATION INDEX

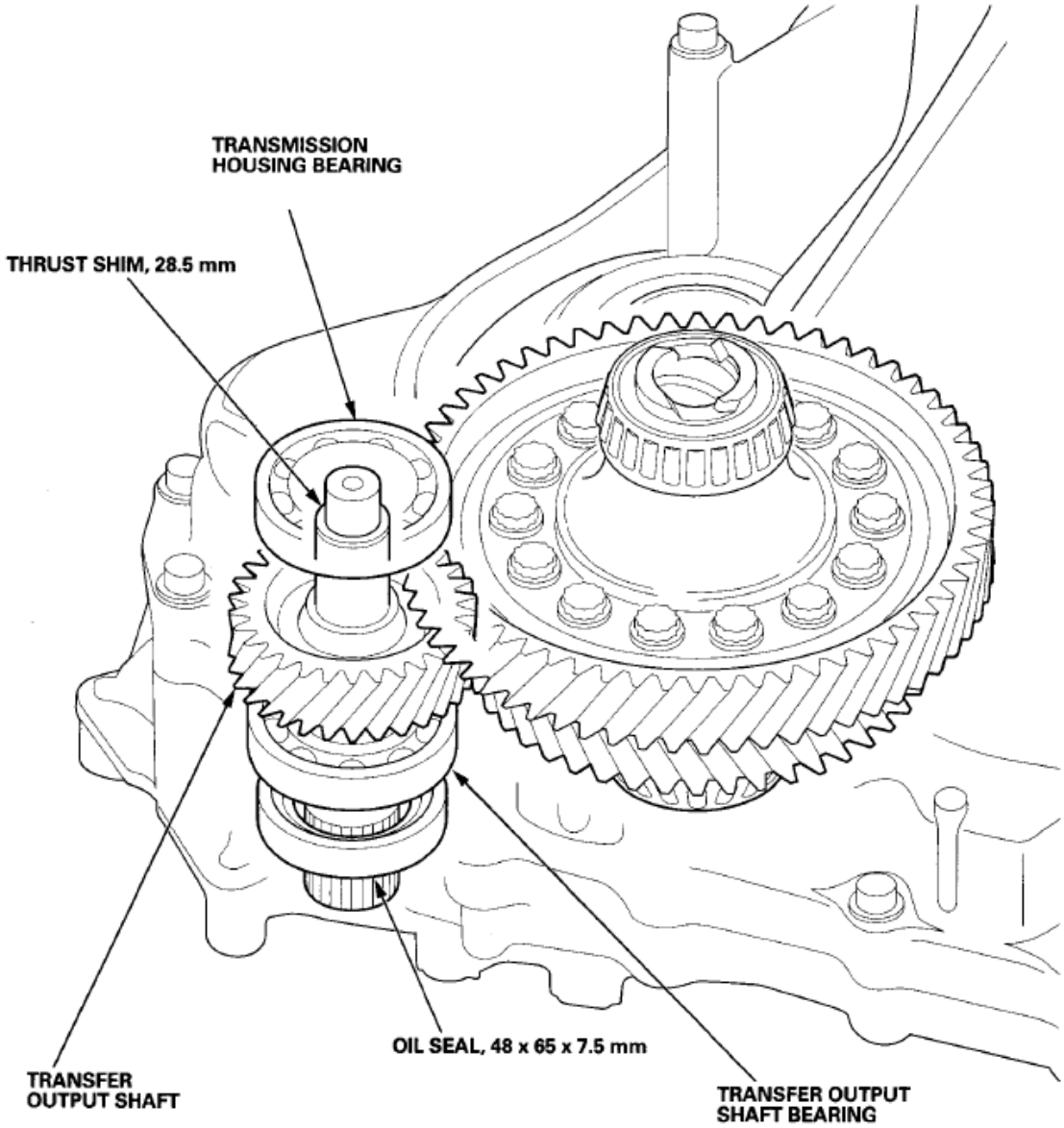


Fig. 596: Identifying Transfer Output Shaft Components Location
Courtesy of AMERICAN HONDA MOTOR CO., INC.

TRANSFER OUTPUT SHAFT BEARING REPLACEMENT

Special Tools Required

Driver Handle, 40 mm I.D. 07746-0030100

1. Remove the transfer output shaft bearing (A) with a commercially available puller (B), a bearing separator (C), and a spacer (D). Place a spacer between the transfer output shaft and the puller to prevent damaging the transfer output shaft.

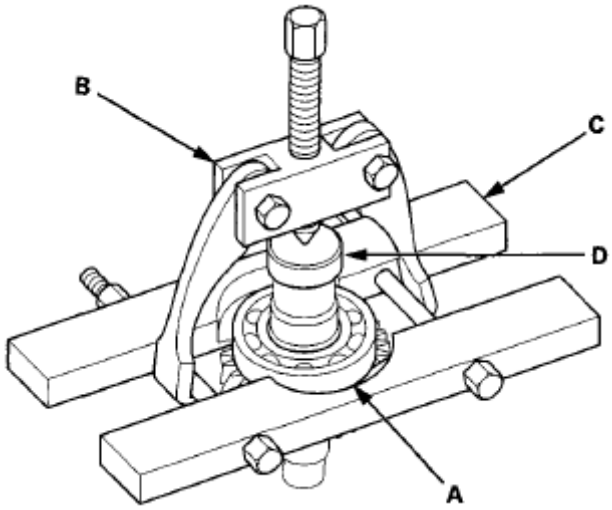


Fig. 597: Removing Transfer Output Shaft Bearing With Puller, Bearing Separator And Spacer
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Install a new bearing (A) until it bottoms on the transfer output shaft using the 40 mm I.D. driver handle and a press.

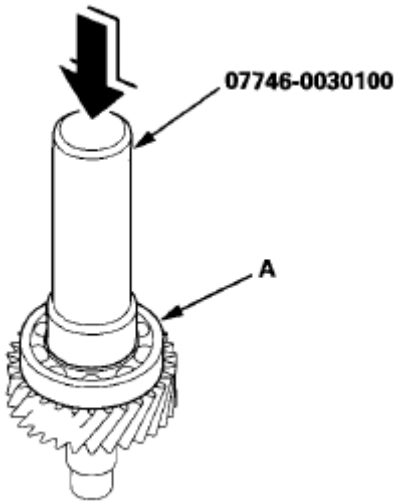


Fig. 598: Installing Bearing Until It Bottoms On Transfer Output Shaft Using Driver Handle And Press
Courtesy of AMERICAN HONDA MOTOR CO., INC.

OIL SEAL REPLACEMENT

Special Tools Required

- Oil Seal Driver Attachment, 65 mm 07JAD-SH30100
- Driver Handle, 15 x 135L 07749-0010000

1. Remove the oil seal from the torque converter housing.

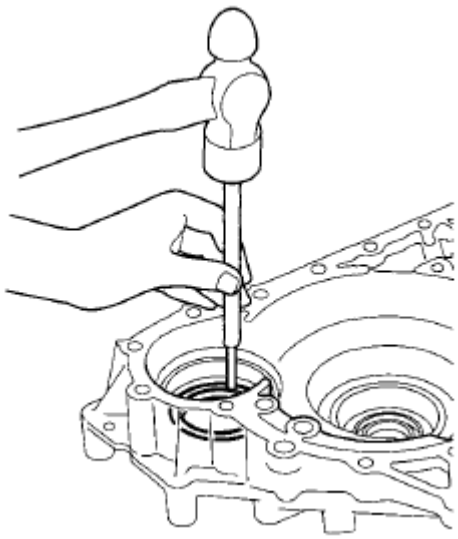


Fig. 599: Removing Oil Seal From Torque Converter Housing
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Install a new oil seal flush with the torque converter housing using the 15 x 135L driver handle and the 65 mm oil seal driver attachment.

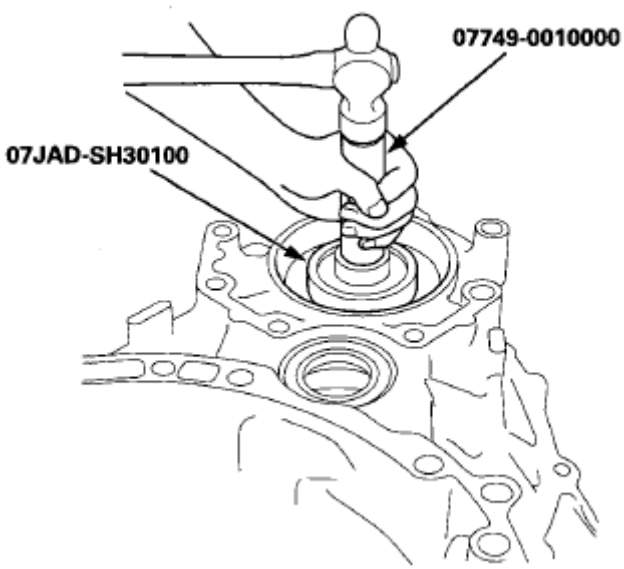


Fig. 600: Installing Oil Seal Flush Using Driver Handle And Oil Seal Driver Attachment
Courtesy of AMERICAN HONDA MOTOR CO., INC.

TRANSMISSION HOUSING BEARING REPLACEMENT

Special Tools Required

- Driver Handle, 15 x 135L 07749-0010000
- Oil Seal Driver, 66 mm 07947-3710200

1. Remove the transfer output shaft bearing (A) from the transmission housing (B) by heating the transmission housing to about 212°F (100°C) with a heat gun (C). Do not heat the transmission housing more than 212°F(100°C).

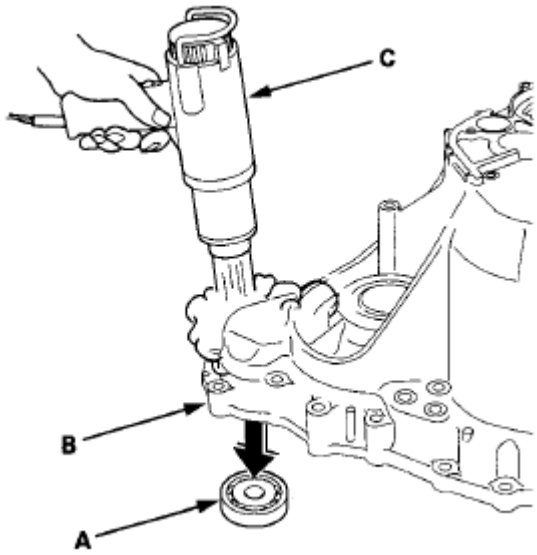


Fig. 601: Removing Transfer Output Shaft Bearing From Transmission Housing By Heating With Heat Gun
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Install a new bearing in the transmission housing in the direction shown.

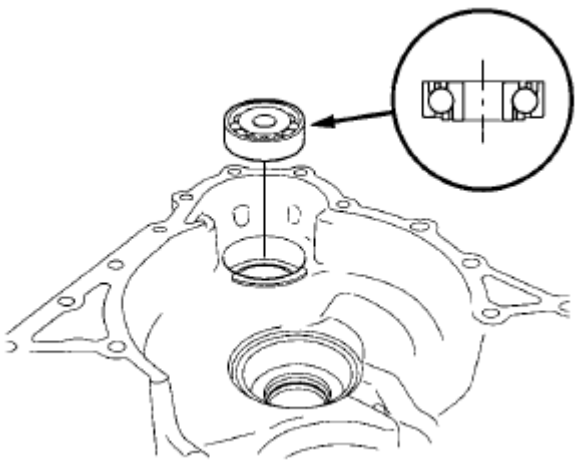


Fig. 602: Installing Bearing In Transmission Housing
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Drive a new bearing until it bottoms in the transmission housing using the 15 x 135L driver handle and

the 66 mm oil seal driver.

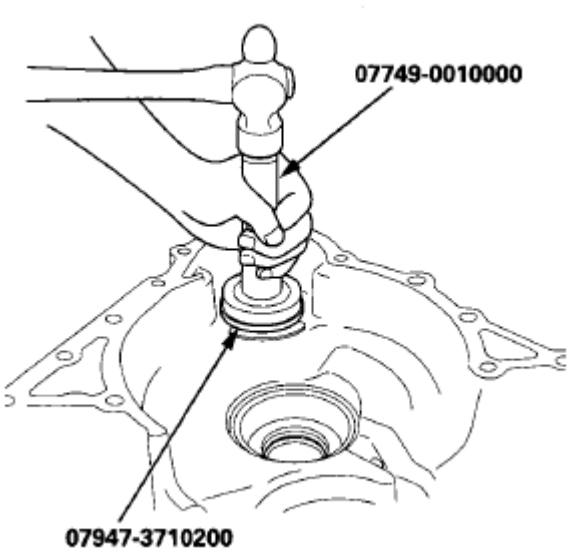


Fig. 603: Driving Bearing Until It Bottoms In Transmission Housing Using Driver Handle And Oil Seal Driver
Courtesy of AMERICAN HONDA MOTOR CO., INC.

TRANSFER OUTPUT SHAFT INSTALLATION HEIGHT INSPECTION/ADJUSTMENT

NOTE: If the transfer output shaft, the transfer output shaft bearing, the transmission housing bearing, the transmission housing, or the torque converter housing were replaced, adjust the transfer output shaft installation height with the 28.5 mm thrust shim.

1. Install the transfer output shaft (A) in the torque converter housing, and install the 28.5 mm thrust shim (B) on the top of the shaft. If you install a new 28.5 mm thrust shim, use the same thickness shim as the old one.

   Standard: 47.26 - 47.30 mm (1.8606 - 1.8622 in)

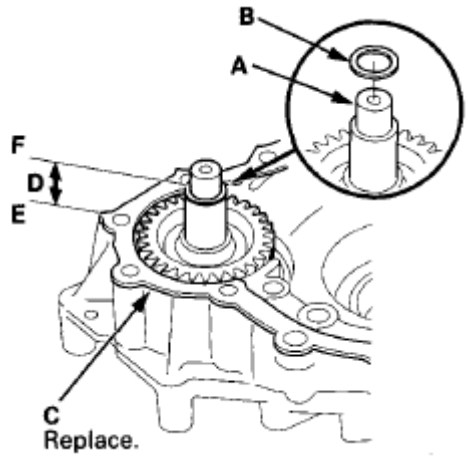


Fig. 604: Installing Transfer Output Shaft In Torque Converter Housing And Thrust Shim On Top Of Shaft
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Transfer Output Shaft Cutaway View

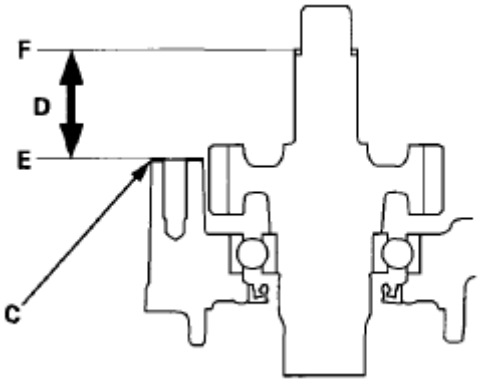


Fig. 605: Transfer Output Shaft Cutaway View
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Install a new gasket (C) on the torque converter housing.
3. Measure the height (D) of the transfer output shaft installation between the surface (E) of the gasket and the top (F) of the 28.5 mm thrust shim in at least three places. Use the average as the actual height.
4. If the measurement is out of the standard, remove the 28.5 mm thrust shim and measure its thickness.
5. Select and install a new thrust shim, then recheck the installation height.

THRUST SHIM, 28.5 MM

No.	Thickness
A	1.82 mm (0.0717 in)
B	1.84 mm (0.0724 in)
C	1.86 mm (0.0732 in)
D	1.88 mm (0.0740 in)

E	1.90 mm (0.0748 in)
F	1.92 mm (0.0756 in)
G	1.94 mm (0.0764 in)
H	1.96 mm (0.0772 in)
I	1.98 mm (0.0780 in)
J	2.00 mm (0.0787 in)
K	2.02 mm (0.0795 in)
L	2.04 mm (0.0803 in)
M	2.06 mm (0.0811 in)
N	2.08 mm (0.0819 in)
O	2.10 mm (0.0827 in)
P	2.12 mm (0.0835 in)
Q	2.14 mm (0.0843 in)
R	2.16 mm (0.0850 in)
S	2.18 mm (0.0858 in)
T	2.20 mm (0.0866 in)
U	2.22 mm (0.0874 in)
V	2.24 mm (0.0882 in)
W	2.26 mm (0.0890 in)
X	2.28 mm (0.0898 in)
Y	2.30 mm (0.0906 in)
Z	2.32 mm (0.0913 in)
AA	2.34 mm (0.0921 in)
AB	1.78 mm (0.0701 in)
AC	1.80 mm (0.0709 in)

COMPONENT LOCATION INDEX

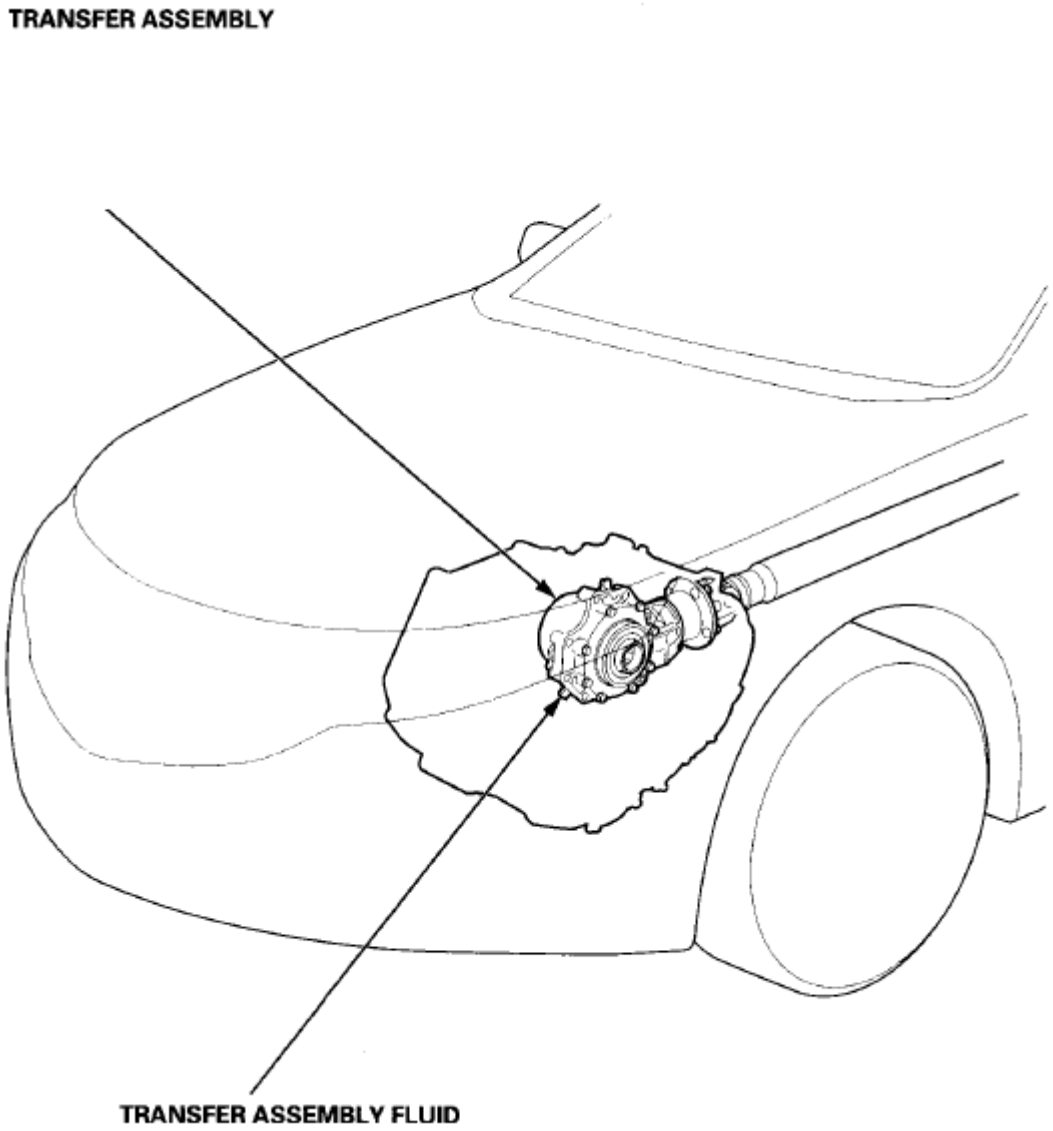


Fig. 606: Identifying Transfer Assembly Components Location
Courtesy of AMERICAN HONDA MOTOR CO., INC.

TRANSFER ASSEMBLY FLUID REPLACEMENT

1. Warm up the engine to normal operating temperature (the radiator fan comes on), then turn the engine off.
2. Raise the vehicle on a lift, and make sure it is securely supported.
3. Remove the drain plug (A), and drain the transfer fluid (hypoid gear oil).

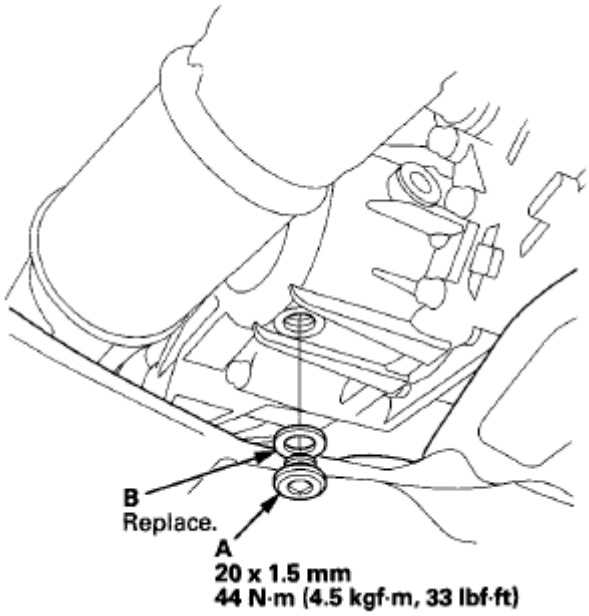


Fig. 607: Identifying Drain Plug And Sealing Washer Of Transfer Assembly With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Reinstall the drain plug with a new sealing washer (B).
5. Remove the filler plug (A) and the sealing washer (B).

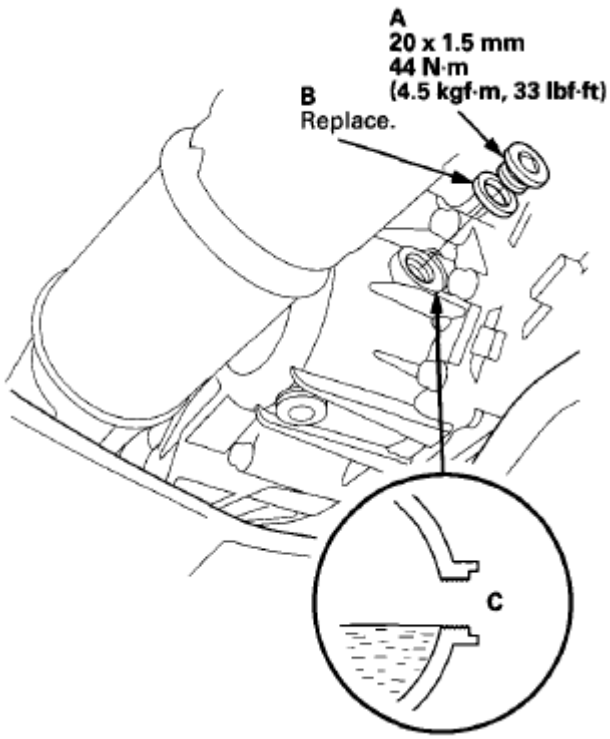


Fig. 608: Removing Filler Plug And Sealing Washer With Torque Specifications

Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Refill the transfer assembly with the recommended fluid (hypoid gear oil) through the filler hole (C) until the fluid flows out. Use a SAE 90 viscosity hypoid gear oil, API classified GL4 or GL5 only.

   Viscosity:

   SAE 90: Above 0°F (-18°C)

   Transfer Fluid (Hypoid Gear Oil) Capacity:

   0.43 L (0.45 US qt) at change

   0.45 L (0.48 US qt) at overhaul

7. Install the filler plug with a new sealing washer.

INSPECTION

TRANSFER GEAR BACKLASH MEASUREMENT

1. Raise the vehicle on a lift, and make sure it is supported securely.
2. Shift the transmission into N.
3. Make reference marks (A) across the No. 1 propeller shaft (B) and the transfer companion flange (C).

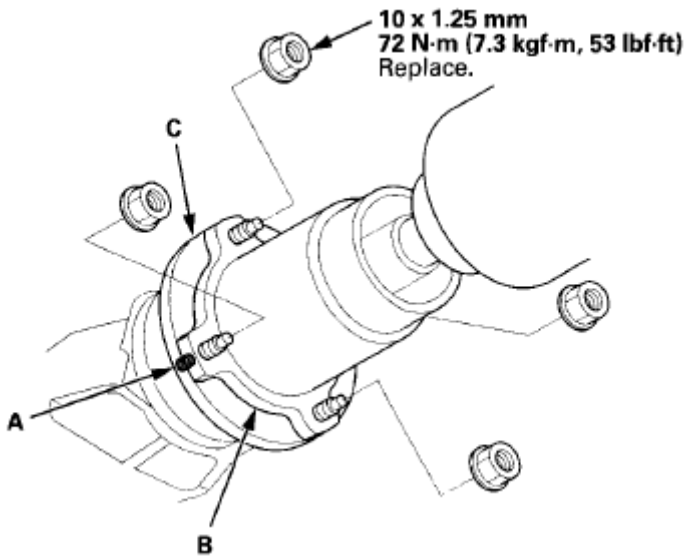


Fig. 609: Making Reference Marks Across Propeller Shaft And Transfer Companion Flange With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Separate the No. 1 propeller shaft from the transfer companion flange.

5. Set a dial indicator (A) on the transfer companion flange (B); position the dial indicator tip (C) on the direct extension of the bolt hole center (D).

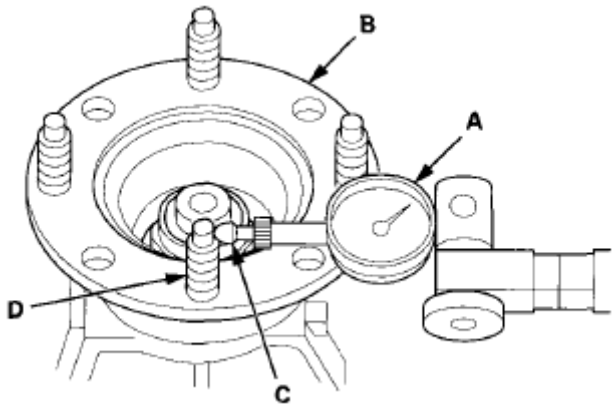


Fig. 610: Setting Dial Indicator On Transfer Companion Flange
Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Measure the transfer gear backlash.

   Standard: 0.06 - 0.16 mm (0.0024 - 0.0063 in)

7. If the transfer gear backlash is out of the standard, replace the transfer assembly.

TOTAL STARTING TORQUE MEASUREMENT

NOTE: To prevent damage to the transfer housing, always use wood blocks or equivalent materials between the transfer housing and a bench vice.

1. Remove the transfer assembly (see **TRANSFER ASSEMBLY REMOVAL**).
2. Secure the transfer housing (A) in a bench vise (B) with wood blocks.

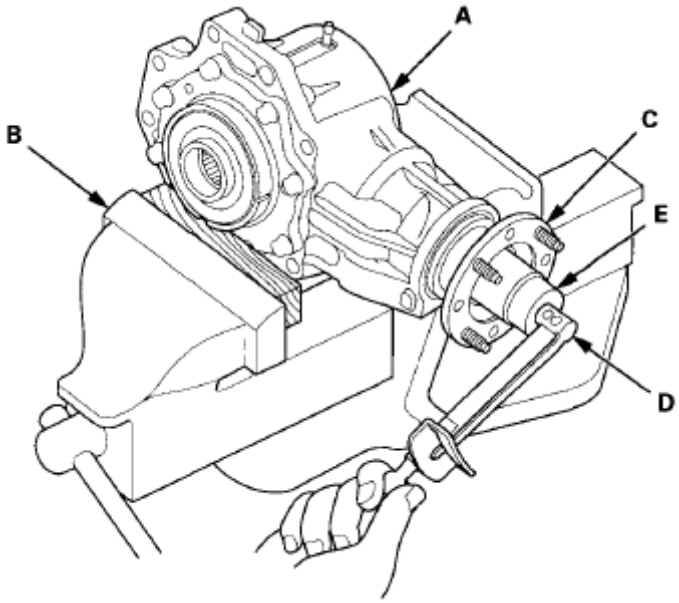


Fig. 611: Identifying Transfer Housing, Bench Vise, Companion Flange, Torque Wrench And Socket
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Rotate the companion flange several turns to seat the tapered roller bearings.
4. Measure the total starting torque at the companion flange (C) with a torque wrench (D) and a socket (E).

   Standard: 2.64 - 4.23 N.m (26.9 - 43.1 kgf.cm, 23.3 - 37.4 lbf.in)

5. If the total starting torque is out of the standard, replace the transfer assembly.

Fluid Leak Check

1. Check for fluid leaks between the mating faces of the transfer assembly and the transmission.
2. If there is leak, remove the transfer cover, then replace the transfer cover oil seal and the O-ring (see **TRANSFER COVER OIL SEAL REPLACEMENT**).
3. Check for fluid leaks between the transfer companion flange and the transfer oil seal.
4. If there is leak, replace the transfer oil seal and the O-ring (see **TRANSFER COVER OIL SEAL REPLACEMENT**). Do not replace the oil seal with the transfer assembly on the transmission.

TRANSFER ASSEMBLY REMOVAL

1. Raise the vehicle on a lift, and make sure it is supported securely.
2. Shift the transmission into N.
3. Remove the front splash shield (see **FRONT SPLASH SHIELD REPLACEMENT**).
4. Remove the drain plug (A), and drain the automatic transmission fluid (ATF).

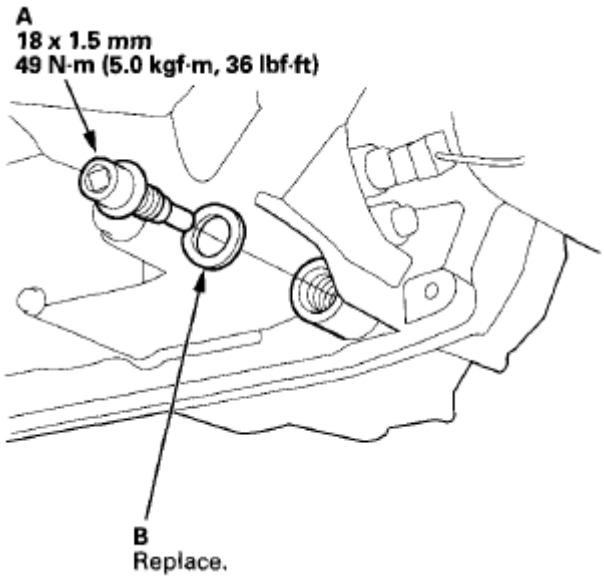


Fig. 612: Identifying Drain Plug And Drain Automatic Transmission Fluid (ATF) With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Reinstall the drain plug with a new sealing washer (B).
6. Remove the front subframe stiffener.

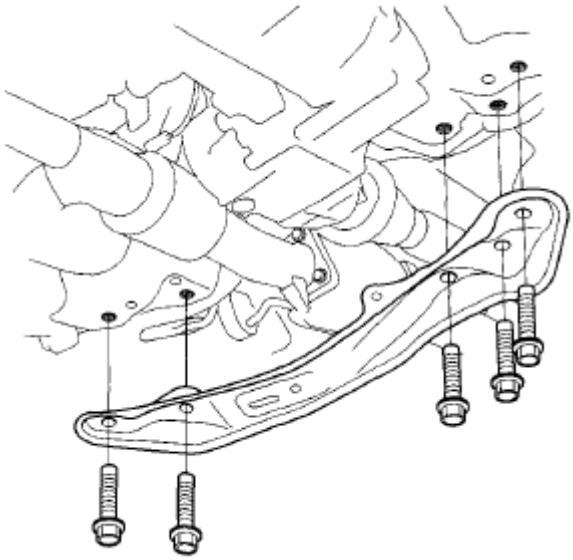


Fig. 613: Identifying Front Subframe Stiffener
Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Remove exhaust pipe A (see **J37A4 ENGINE (WITH SH-AWD)**).
8. Remove the bolt securing the transfer breather hose bracket (A), and disconnect the breather hose (B) from the breather pipe (C) on the transfer assembly.

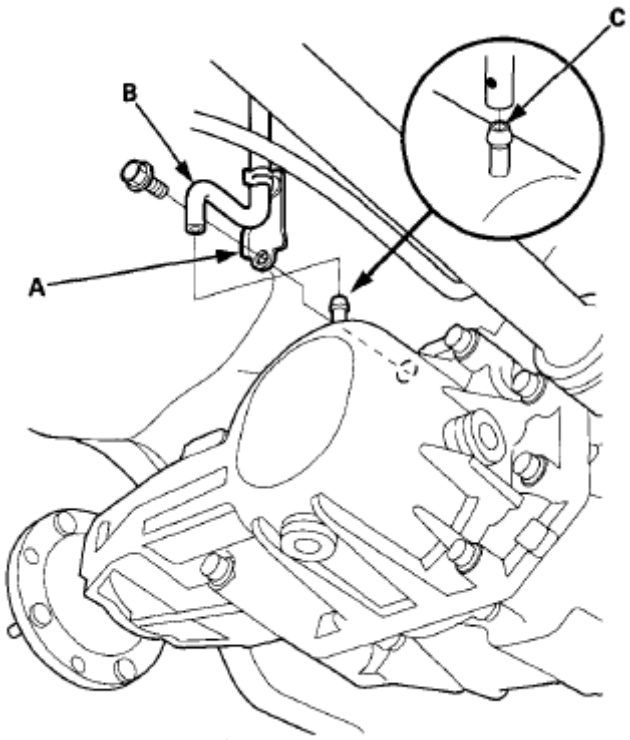


Fig. 614: Identifying Transfer Breather Hose Bracket, Breather Hose And Breather Pipe
Courtesy of AMERICAN HONDA MOTOR CO., INC.

9. Make reference marks (A) across the No. 1 propeller shaft (B) and the transfer companion flange (C).

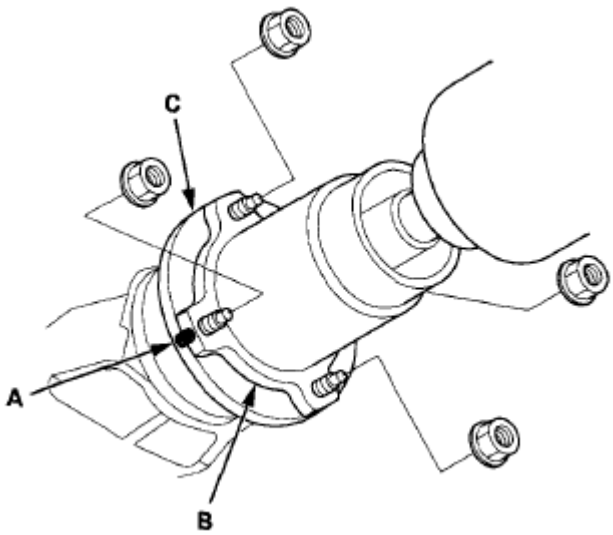


Fig. 615: Making Reference Marks Across Propeller Shaft And Transfer Companion Flange
Courtesy of AMERICAN HONDA MOTOR CO., INC.

10. Separate the No. 1 propeller shaft from the transfer companion flange.
11. Remove the transfer assembly from the transmission.

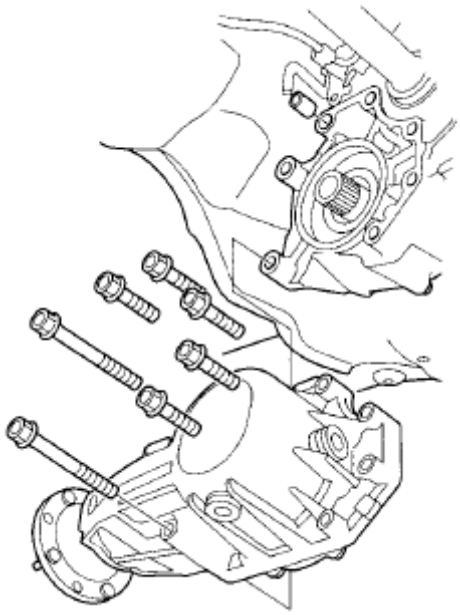


Fig. 616: Removing Transfer Assembly From Transmission
Courtesy of AMERICAN HONDA MOTOR CO., INC.

TRANSFER ASSEMBLY INSTALLATION

1. Clean the areas where the transfer assembly contacts the transmission with solvent, and dry with compressed air. Then apply ATF to the contact area.
2. Install the dowel pin (A) in the transmission, and install the transfer assembly (B) on the transmission.

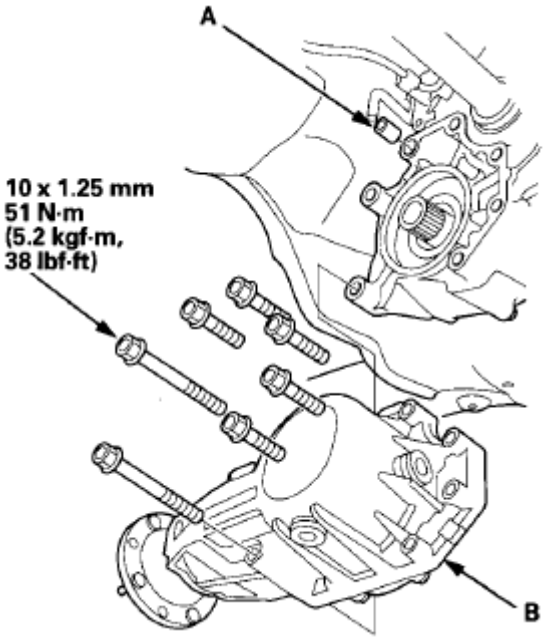


Fig. 617: Identifying Dowel Pins And Transfer Assembly On Transmission With Torque

Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Install the No. 1 propeller shaft (A) to the transfer companion flange (B) by aligning the reference marks (C). Make sure you use new mounting bolts.

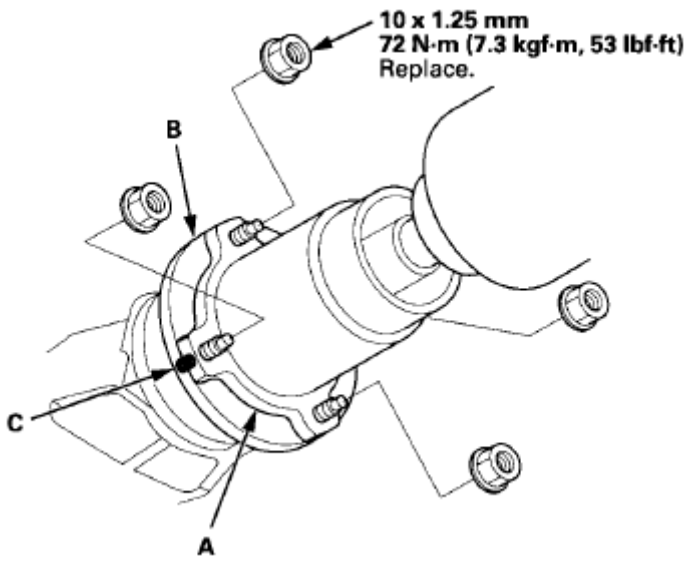


Fig. 618: Identifying Propeller Shaft And Transfer Companion Flange With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Install the transfer breather hose bracket (A) on the transfer assembly, and connect the breather hose (B) over the breather pipe (C) with facing the dot mark (D) to the rear side of the vehicle.

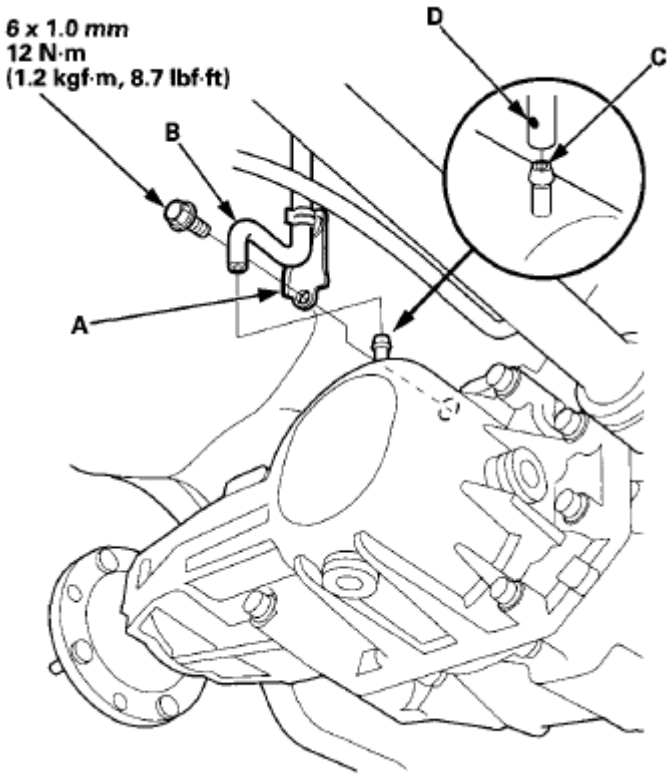


Fig. 619: Identifying Transfer Breather Hose Bracket, Breather Hose And Breather Pipe With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Install exhaust pipe A (see **J37A4 ENGINE (WITH SH-AWD)**).
6. Install the front subframe stiffener with new mounting bolts.

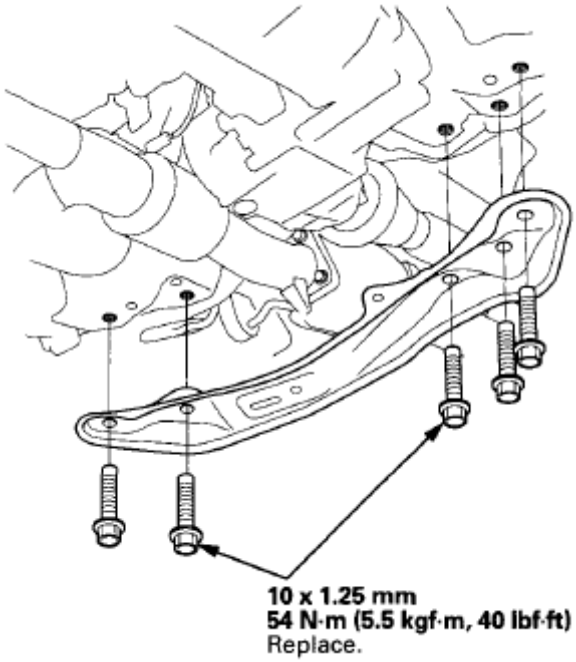


Fig. 620: Installing Front Subframe Stiffener With Mounting Bolts With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Refill the transfer assembly with transfer fluid (hypoid gear oil), if necessary (see **TRANSFER ASSEMBLY FLUID REPLACEMENT**).
8. Refill the transmission with ATF (see **ATF REPLACEMENT**).
9. Install the front splash shield (see **FRONT SPLASH SHIELD REPLACEMENT**).

DISASSEMBLY

EXPLODED VIEW

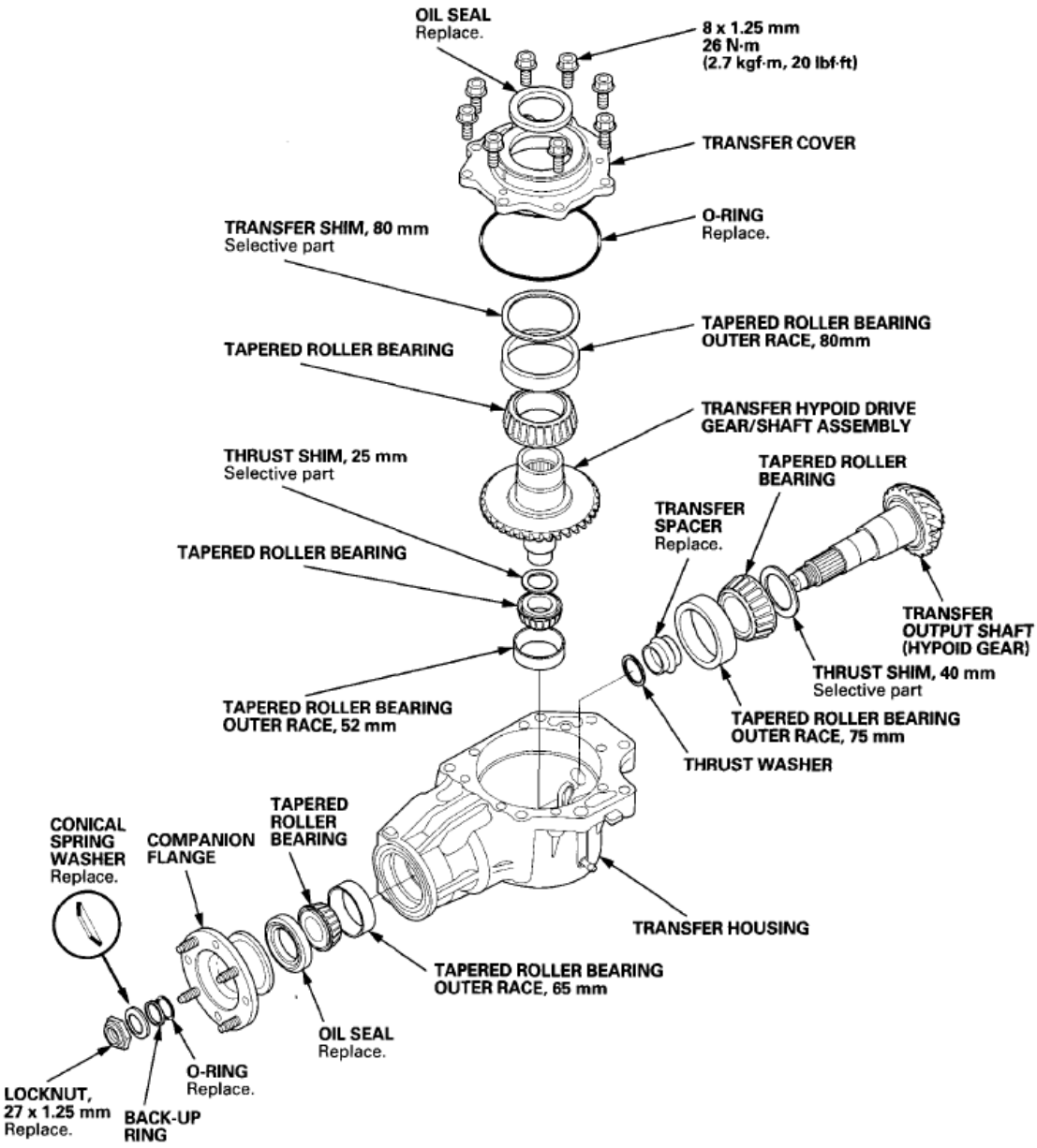


Fig. 621: Exploded View Of Transmission With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Special Tools Required

Flange Holder 07XAB-0010101

NOTE: To prevent damage to the transfer housing, always use wood blocks or equivalent materials between the transfer housing and a bench vise.

1. Remove the transfer cover (A) from the transfer housing (6).

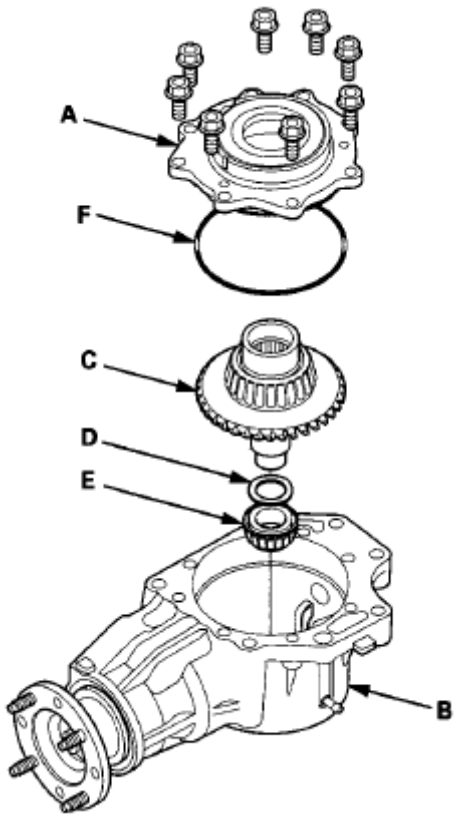


Fig. 622: Identifying Transfer Cover And Housing, Thrust Shim, Roller Bearing, O-Ring And Drive Gear/Shaft Assembly
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Remove the transfer hypoid drive gear/shaft assembly (C), the 25 mm thrust shim (D), and the tapered roller bearing (E).
3. Remove the O-ring (F) from the transfer cover.
4. Remove the oil seal from the transfer cover (see **TRANSFER COVER OIL SEAL REPLACEMENT**).
5. Drain the transfer fluid (hypoid gear oil) from the transfer housing.
6. Cut the lock tab on the locknut using a chisel.

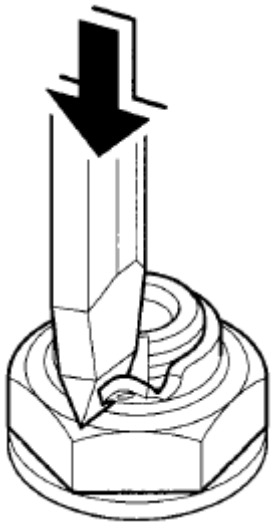


Fig. 623: Cutting Lock Tab On Locknut Using Chisel
Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Secure the transfer housing in a bench vise with wood blocks.

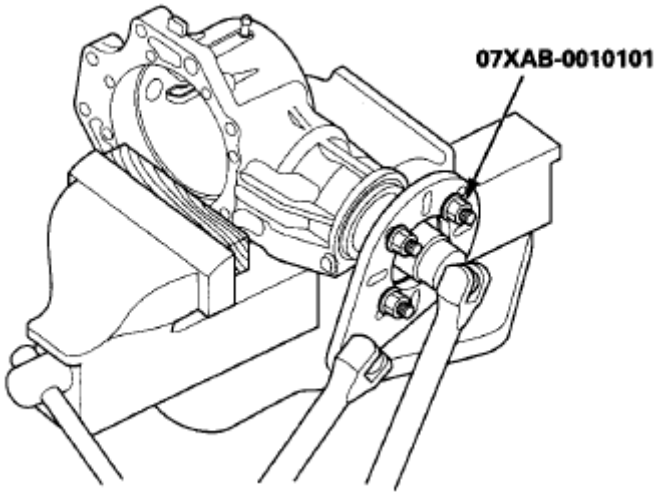


Fig. 624: Securing Transfer Housing In Bench Vise With Wood Blocks
Courtesy of AMERICAN HONDA MOTOR CO., INC.

8. Install the flange holder on the companion flange, then loosen the locknut.
9. Remove the flange holder.
10. Remove the locknut (A), the conical spring washer (B), the back-up ring (C), the O-ring (D), and the companion flange (E) from the transfer output shaft (hypoid gear) (F).

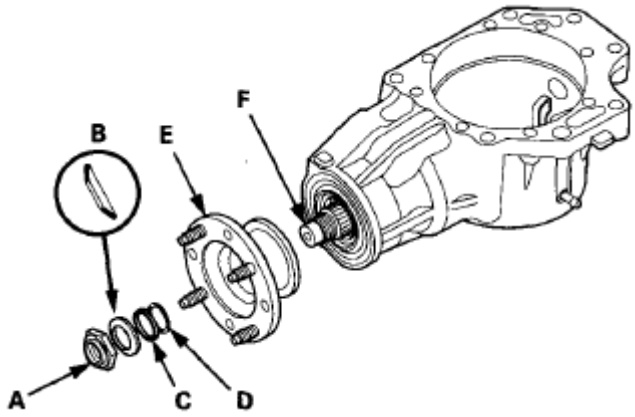


Fig. 625: Identifying Locknut, Conical Spring Washer, Back-Up Ring, O-Ring, Companion Flange And Transfer Output Shaft
Courtesy of AMERICAN HONDA MOTOR CO., INC.

11. Remove the transfer output shaft (hypoid gear) (A) from the transfer housing (B), then remove the thrust washer (C) and the transfer spacer (D) from the transfer output shaft (hypoid gear).

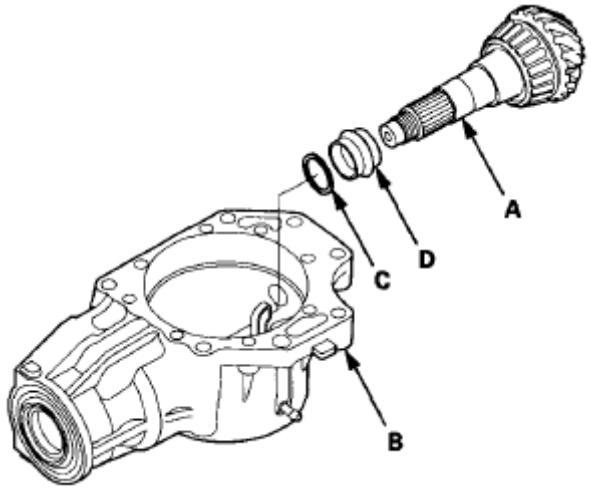


Fig. 626: Identifying Transfer Output Shaft, Transfer Housing, Thrust Washer And Transfer Spacer
Courtesy of AMERICAN HONDA MOTOR CO., INC.

12. Remove the oil seal (A) and the tapered roller bearing (B) from the transfer housing (C).

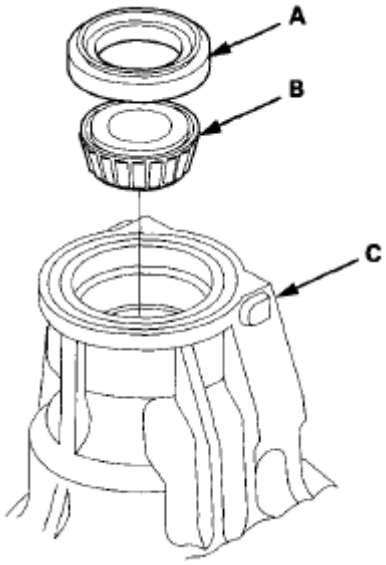


Fig. 627: Identifying Oil Seal, Tapered Roller Bearing And Transfer Housing
Courtesy of AMERICAN HONDA MOTOR CO., INC.

TRANSFER HYPOID DRIVE GEAR BEARING REPLACEMENT

Special Tools Required

- Driver Handle, 15 x 135L 07749-0010000
- Bearing Driver Attachment, 42 x 47 mm 07746-0010300
- Installer Attachment 40 mm 07LAD-PW50601

1. Remove the tapered roller bearing (A) from the transfer hypoid drive gear (B) using the 15 x 135L driver handle, the 42 x 47 mm bearing driver attachment, a bearing separator (C) and a press.

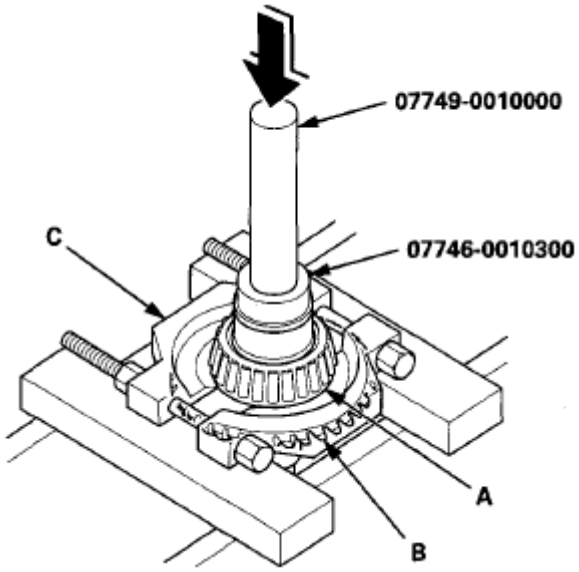


Fig. 628: Removing Tapered Roller Bearing From Transfer Hypoid Drive Gear Using Driver Handle And Bearing Separator
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Install a new bearing on the transfer hypoid drive gear using the 42 x47 mm driver handle, the 15 x 135L bearing driver attachment, the installer attachment 40 mm, and the press.

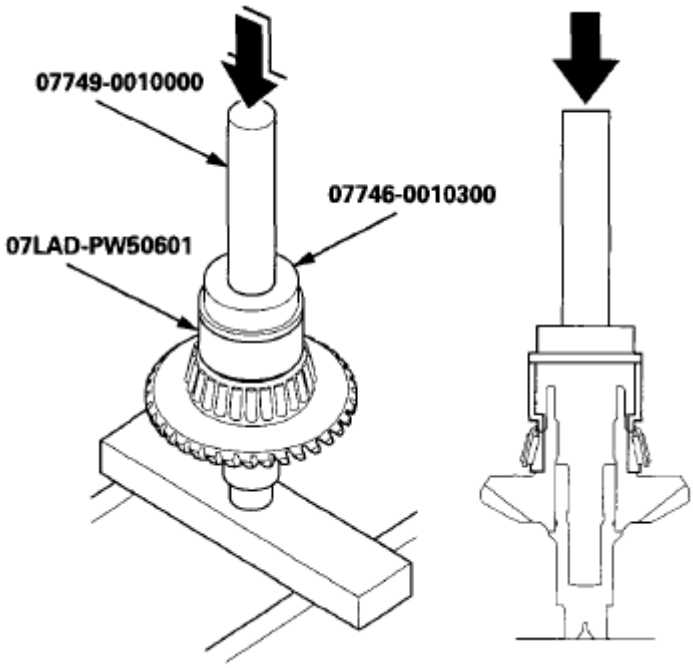


Fig. 629: Installing Bearing On Transfer Hypoid Drive Gear Using Driver Handle And Press
Courtesy of AMERICAN HONDA MOTOR CO., INC.

TRANSFER OUTPUT SHAFT (HYPOID GEAR) BEARING

REMOVAL/INSTALLATION

Special Tools Required

Driver Handle, 40 mm I.D. 07746-0030100

1. Remove the tapered roller bearing (A) from the transfer output shaft (hypoid gear) (B) using a bearing separator (C) and a press. Place a spacer (D) between the transfer output shaft and the press to prevent damaging the transfer output shaft.

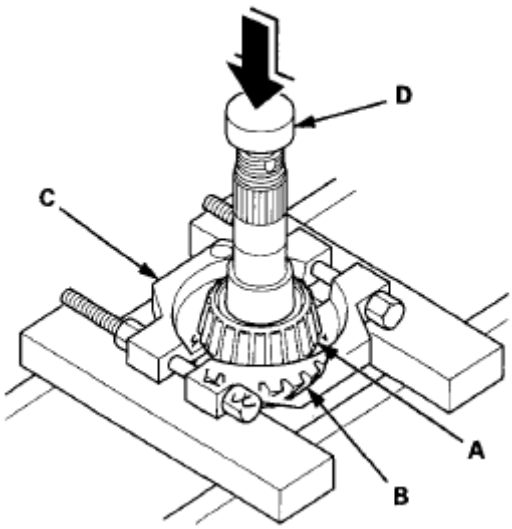


Fig. 630: Removing Tapered Roller Bearing From Transfer Output Shaft Using Bearing Separator
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Install the 40 mm thrust shim (A) over the transfer output shaft (hypoid gear).

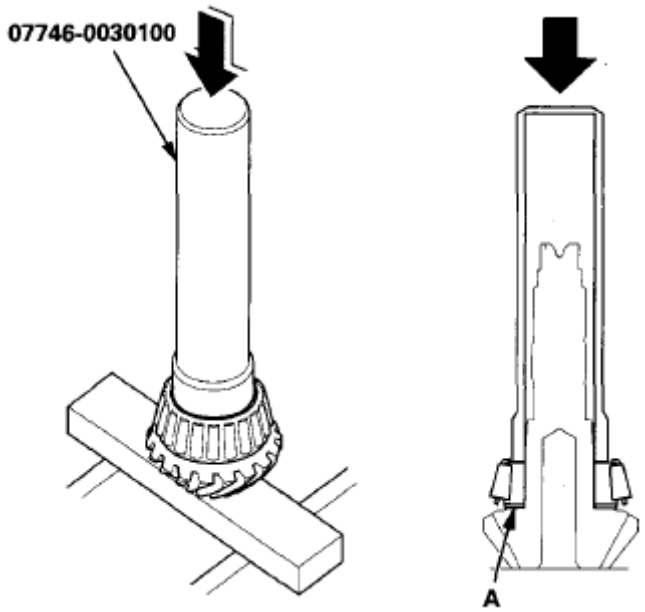


Fig. 631: Installing Thrust Shim Over Transfer Output Shaft
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Install the tapered roller bearing over the transfer output shaft (hypoid gear) using the 40 mm driver I.D. handle and the press.

TRANSFER HOUSING TAPERED ROLLER BEARING OUTER RACE REPLACEMENT

Special Tools Required

- Driver Handle, 15 x 135L 07749-0010000
- Bearing Driver Attachment, 52x55 mm 07746-0010400
- Oil Seal Driver Attachment, 65 mm 07JAD-SH30100
- Tapered Bearing Race Installer A 07MAF-SP0011A
- Installer Shaft 07MAF-SP0013A

NOTE: Replace the tapered roller bearing outer race and the tapered roller bearing as a set.

1. Remove the 52 mm tapered roller bearing outer race (A), the 75 mm tapered roller bearing outer race (B), and the 65 mm tapered roller bearing outer race (C) from the transfer housing (D).

NOTE: Some tapered roller bearing outer races (52 mm, 65 mm, and 75 mm) are press-fitted in the transfer housing and must be removed by heating the transfer housing.

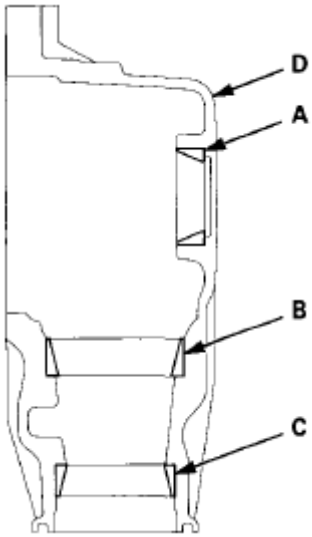


Fig. 632: Identifying Roller Bearing Outer Races And Transfer Housing
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Remove the press-fitted tapered roller bearing outer race (A) from the transfer housing (B) by heating the transfer housing to about 212°F (100°C) using a heat gun (C). Do not heat the transfer housing more than 212°F(100°C).

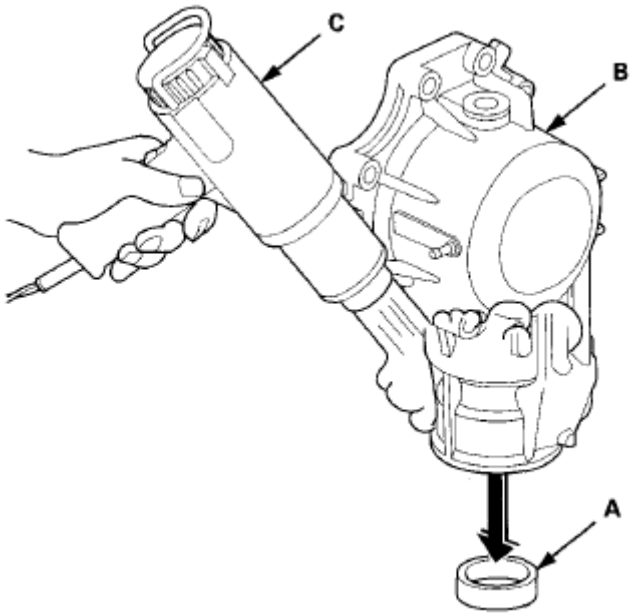


Fig. 633: Removing Press-Fitted Tapered Roller Bearing Outer Race By Heating Using Heat Gun
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Install a new 52 mm tapered roller bearing outer race (A) until it bottoms in the transfer housing (B) using the 15 x 135L driver handle and the 52 x 55 mm bearing driver attachment.

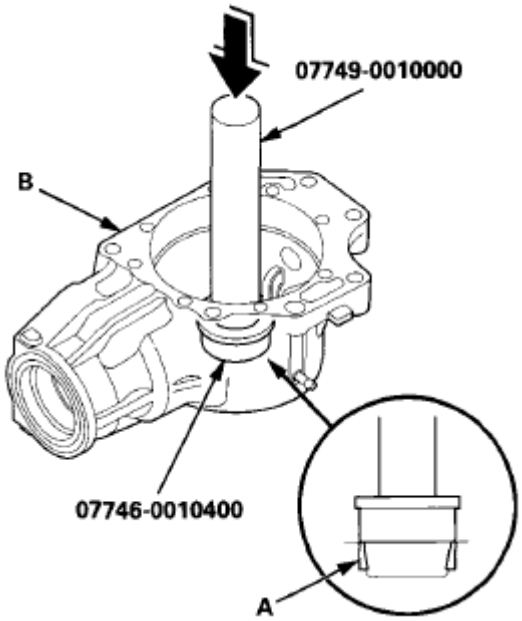


Fig. 634: Installing Tapered Roller Bearing Outer Race Using Driver Handle And Bearing Driver Attachment
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Install a new 75 mm tapered roller bearing outer race (A) and a new 65 mm tapered roller bearing outer race (B) in the transfer housing (C), set the 65 mm oil seal driver attachment and tapered bearing race installer A over the tapered roller bearing outer races, and install the installer shaft through the 65 mm oil seal driver attachment and installer.

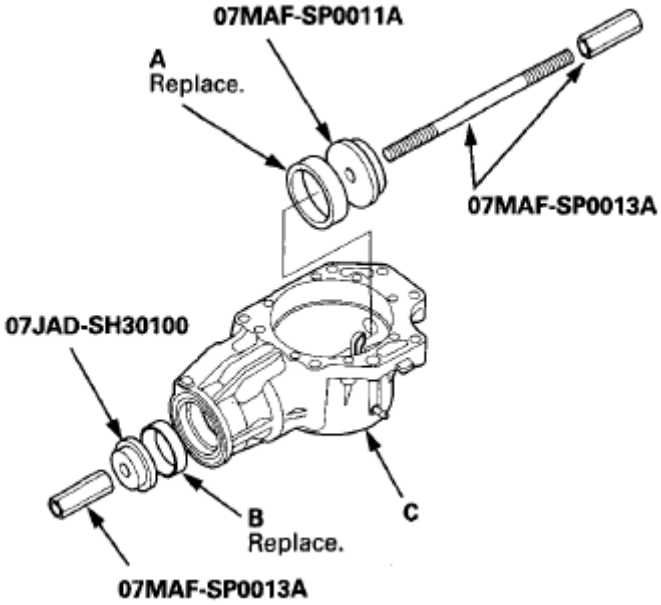


Fig. 635: Identifying Roller Bearing Outer Race, Tapered Roller Bearing Outer Race And Transfer Housing
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Tighten the installer shaft nut (A) to install the tapered roller bearing outer races (B) (C) into the transfer housing (D) securely.

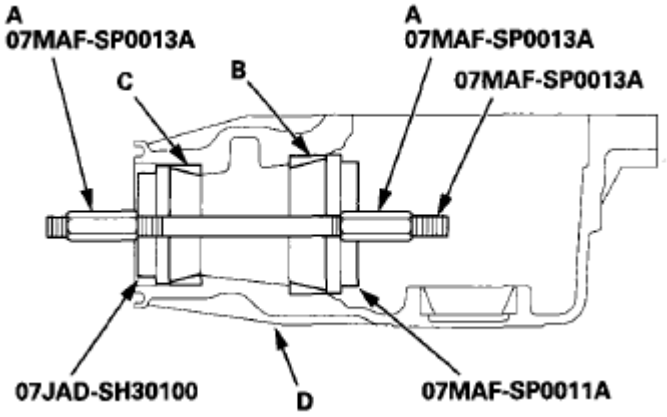


Fig. 636: Identifying Installer Shaft Nut, Tapered Roller Bearing Outer Races And Transfer Housing
Courtesy of AMERICAN HONDA MOTOR CO., INC.

TRANSFER COVER TAPERED ROLLER BEARING OUTER RACE REMOVAL/INSTALLATION

Special Tools Required

- Driver Handle, 15 x 135L 07749-0010000
- Bearing Driver Attachment, 78 x 80 mm 07NAD-PX40100

NOTE: Replace the tapered roller bearing with the outer race whenever the tapered roller bearing is replaced.

1. Remove the 80 mm bearing outer race (A) and the 80 mm thrust shim (B) from the transfer cover (C). If the tapered roller bearing outer race is press-fitted, remove the tapered roller bearing outer race by heating the transfer cover to about 212°F (100°C) using a heat gun (D). Do not heat the transfer cover more than 212°F (100°C).

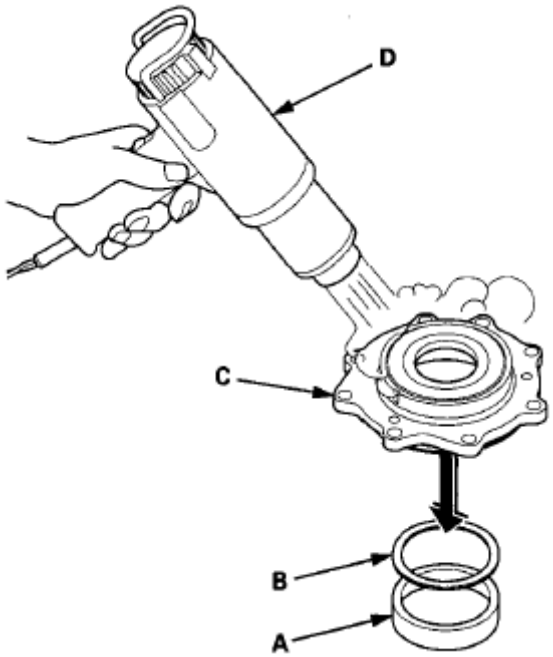


Fig. 637: Removing Tapered Roller Bearing Outer Race By Heating Transfer Cover Using Heat Gun
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Install the 80 mm thrust shim (A) and the 80 mm tapered roller bearing outer race (B) in the transfer cover (C).

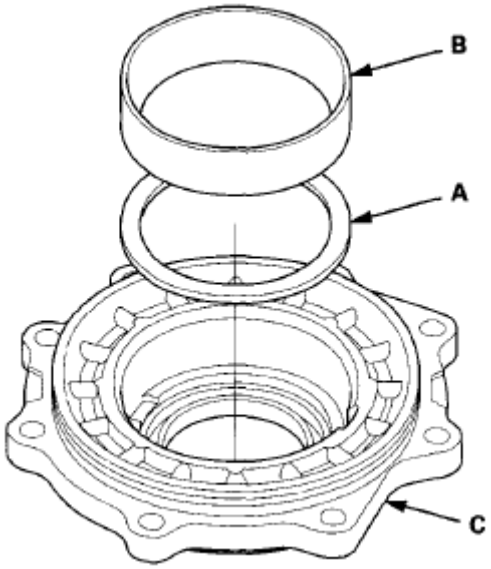


Fig. 638: Identifying Thrust Shim, Tapered Roller Bearing Outer Race And Transfer Cover
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Drive the 80 mm tapered roller bearing outer race securely in the transfer cover using the 15 x 135L driver handle and the 78 x 80 mm bearing driver attachment so there is no clearance between the 80 mm

tapered roller bearing outer race, the 80 mm thrust shim, and the transfer cover.

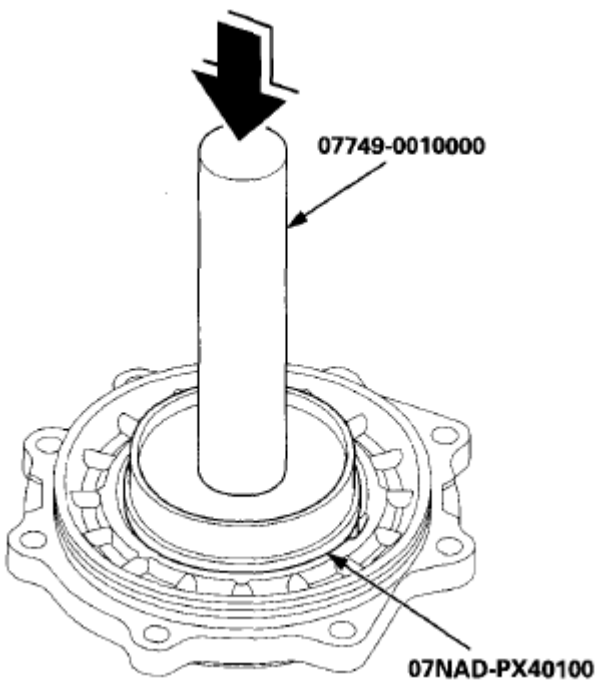


Fig. 639: Driving Tapered Roller Bearing Outer Race Using Driver Handle And Bearing Driver Attachment
Courtesy of AMERICAN HONDA MOTOR CO., INC.

TRANSFER COVER OIL SEAL REPLACEMENT

Special Tools Required

- Driver Handle, 15 x 135L 07749-0010000
- Oil Seal Driver Attachment, 65 mm 07JAD-SH30100

1. Remove the oil seal (A) from the transfer cover (B).

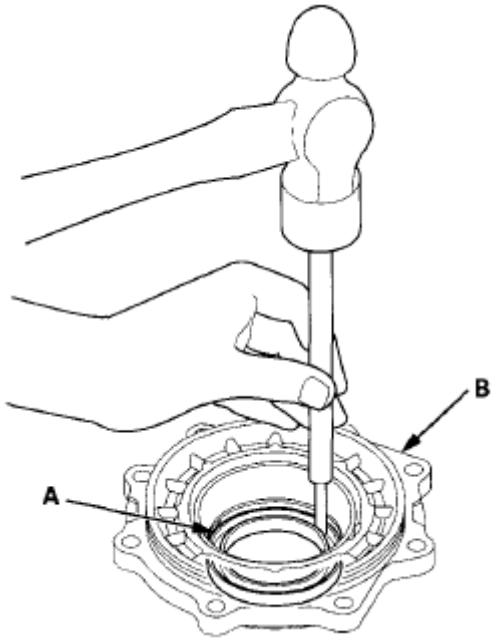


Fig. 640: Removing Oil Seal From Transfer Cover
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Install a new oil seal (A) in the transfer cover (B) to a height (C) of 0- 1 mm (0- 0.04 in) above the transfer cover surface using the 15 x 135L driver handle and the 65 mm oil seal driver attachment.

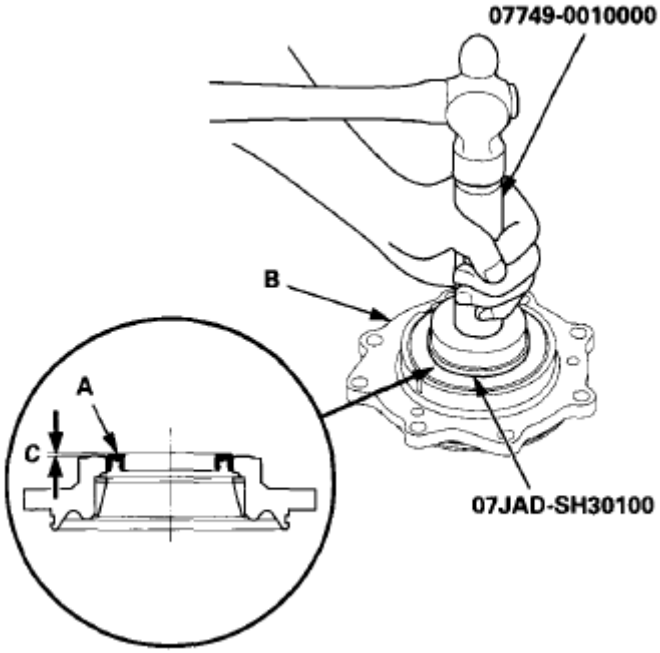


Fig. 641: Installing Oil Seal In Transfer Cover Using Driver Handle And Oil Seal Driver Attachment
Courtesy of AMERICAN HONDA MOTOR CO., INC.

REASSEMBLY

Special Tools Required

- Driver Handle, 40 mm I.D. 07746-0030100
- Driver Handle, 15 x 135L 07749-0010000
- Oil Seal Driver Attachment, 65 mm 07JAD-SH30100
- Flange Holder 07XAB-0010101
- Bearing Driver Attachment, 78 x 80 mm 07NAD-PX40100

NOTE:

- **While reassembling the transfer assembly:**
  - **Check and adjust the transfer gear tooth contact.**
  - **Measure and adjust the transfer gear backlash.**
  - **Check and adjust the tapered roller bearing starting torque.**
- **Coat all parts with transfer fluid (hypoid gear oil) during reassembly.**
- **Replace the tapered roller bearing and the tapered roller bearing outer race as a set.**
- **Replace the transfer hypoid drive gear and the transfer output shaft (hypoid gear) as a set if either part is replaced.**
- **To prevent damage to the transfer housing, always use wood blocks or equivalent materials between the transfer housing and a bench vise.**

1. Select the 40 mm thrust shim if the transfer output shaft (hypoid gear) is replaced. Calculate the thickness of the 40 mm thrust shim using the following formula, and select the shim from the following table.

   FORMULA: A/100 - B/100 + C = X

   A: Number on the existing transfer output shaft (hypoid gear)

   B: Number on the replacement transfer output shaft (hypoid gear)

   C: Thickness of the existing 40 mm thrust shim

   X: Thickness needed for the replacement 40 mm thrust shim

   NOTE: The number on the transfer output shaft (hypoid gear) is shown in 1/100 mm.

   EXAMPLE

   A: Existing transfer output shaft (hypoid gear) Number= +2

   B: Replacement transfer output shaft (hypoid gear) Number = - 1

C: Existing 40 mm thrust shim thickness = 1.05 mm

X: Replacement 40 mm thrust shim thickness

X = A/100-B/100 + C

= 2/100 - (- 1)/100 + 1.05

= 0.02 + 0.01 + 1.05 = 1.08 (mm)

Select No. M 40 mm thrust shim of 1.08 mm (0.043 in)

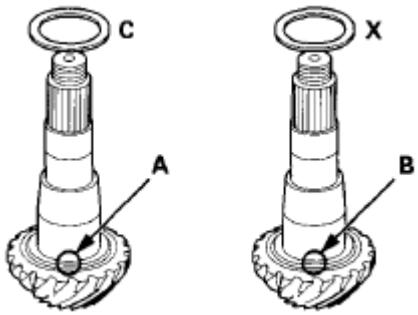


Fig. 642: Identifying Transfer Output Shafts And Thrust Shims
Courtesy of AMERICAN HONDA MOTOR CO., INC.

THRUST SHIM, 40 MM

No.	Thickness
A	0.72 mm (0.0283 in)
B	0.75 mm (0.0295 in)
C	0.78 mm (0.0307 in)
D	0.81 mm (0.0319 in)
E	0.84 mm (0.0331 in)
F	0.87 mm (0.0343 in)
G	0.90 mm (0.0354 in)
H	0.93 mm (0.0366 in)
I	0.96 mm (0.0378 in)
J	0.99 mm (0.0390 in)
K	1.02 mm (0.0402 in)
L	1.05 mm (0.0413 in)
M	1.08 mm (0.0425 in)
N	1.11 mm (0.0437 in)
O	1.14 mm (0.0449 in)

2. Select the 40 mm thrust shim if the tapered roller bearing on the transfer output shaft (hypoid gear) is replaced. Measure the thickness of the replacement bearing and the existing bearing, and calculate the

difference of the bearing thickness. Adjust the thickness of the existing 40 mm thrust shim by the amount of difference in bearing thickness, and select the replacement 40 mm thrust shim.

3. Install the 40 mm thrust shim (A) on the transfer output shaft (hypoid gear) (B), then install the tapered roller bearing (C) using the 40 mm I.D. driver handle and a press.

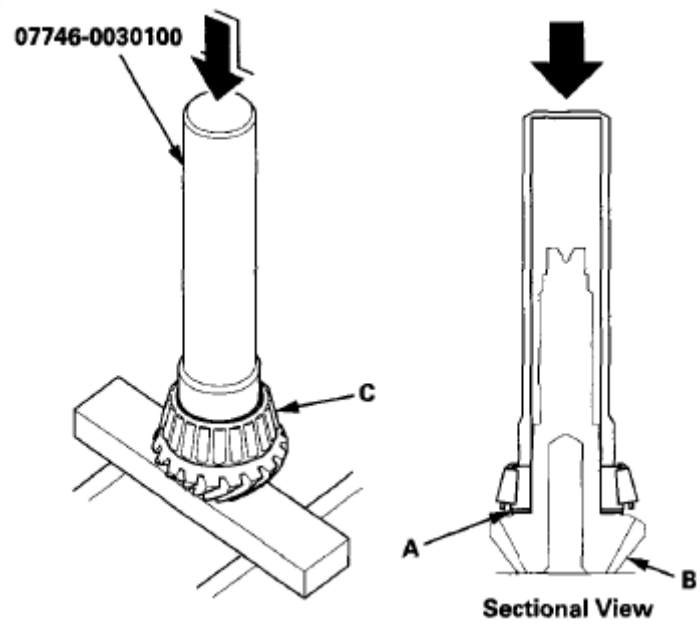


Fig. 643: Installing Thrust Shim On Transfer Output Shaft Using Driver Handle And Press
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Place the tapered roller bearing (A) on the tapered roller bearing outer race of the companion flange side in the transfer housing (B), and install a new oil seal (C).

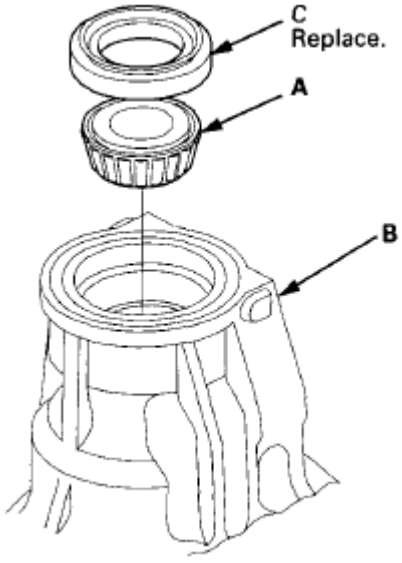


Fig. 644: Placing Tapered Roller Bearing On Tapered Roller Bearing Outer Race In Transfer

Housing And Oil Seal
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Drive the oil seal securely in the transfer housing using the 15 x 135L driver handle and the 65 mm oil seal driver attachment.

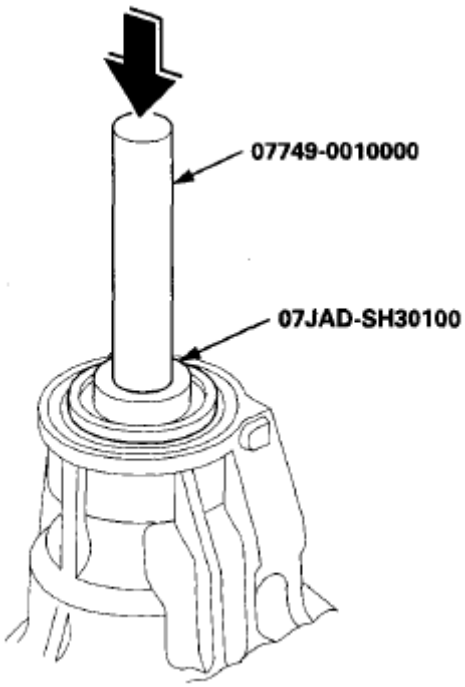


Fig. 645: Driving Oil Seal In Transfer Housing Using Driver Handle And Oil Seal Driver Attachment
Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Install the transfer output shaft (hypoid gear) (A) in the transfer housing (B). Do not install the transfer spacer and the thrust washer on the transfer output shaft (hypoid gear).

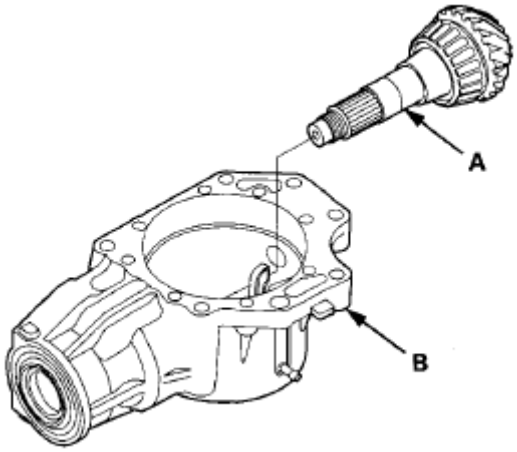


Fig. 646: Installing Transfer Output Shaft In Transfer Housing

Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Install the companion flange (A), the conical spring washer (B) (in the direction shown), and a new locknut (C) on the transfer output shaft (hypoid gear) (D). Do not install the O-ring and the back-up ring.

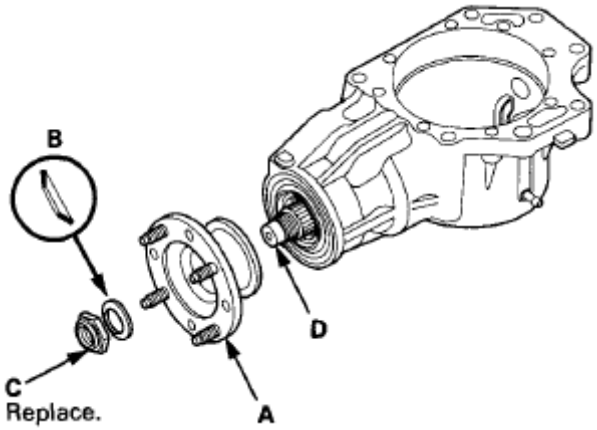


Fig. 647: Identifying Companion Flange, Conical Spring Washer Locknut And Transfer Output Shaft
Courtesy of AMERICAN HONDA MOTOR CO., INC.

8. Secure the transfer housing (A) in a bench vise (B) with wood blocks.

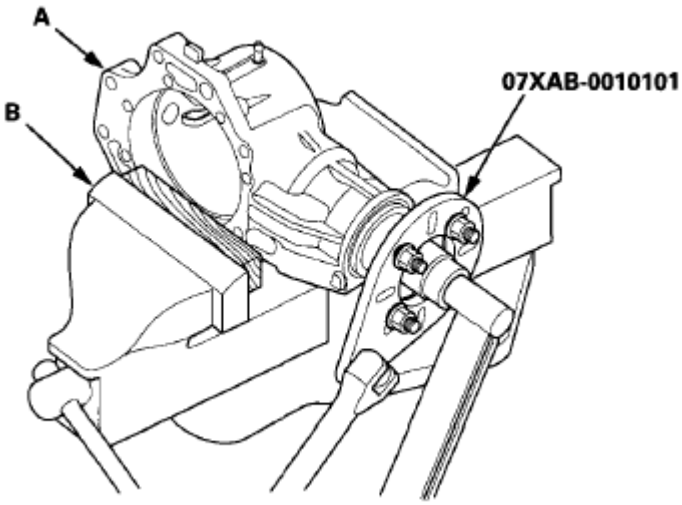


Fig. 648: Securing Transfer Housing In Bench Vise With Wood Blocks
Courtesy of AMERICAN HONDA MOTOR CO., INC.

9. Install the flange holder on the companion flange.
10. Tighten the locknut while measuring the starting torque of the transfer output shaft (hypoid gear) so the starting torque is within 1.15- 1.71 N.m (11.7- 17.4 kgf.cm, 10.2- 15.1 lbf.in). Do not stake the locknut in this step.
11. Remove the flange holder.

12. Apply Prussian Blue to both sides of the transfer hypoid drive gear teeth lightly and evenly.
13. Install the tapered roller bearing (A), the 25 mm thrust shim (B), and the transfer drive gear/shaft assembly (C) in the transfer housing (D).

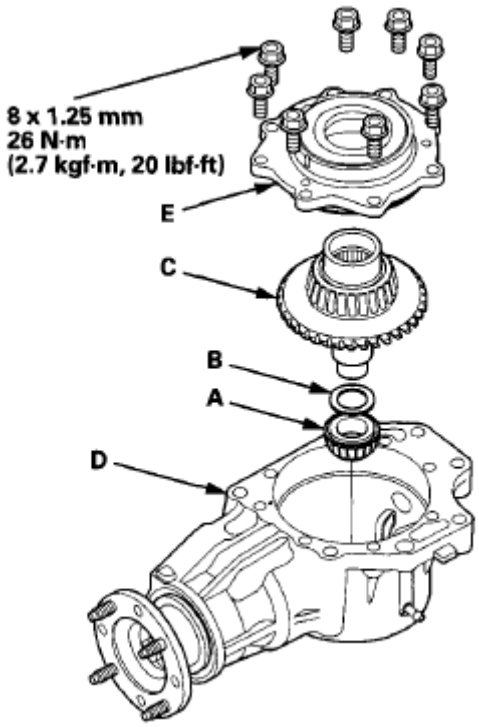


Fig. 649: Identifying Tapered Roller Bearing, Thrust Shim And Transfer Drive Gear/Shaft Assembly With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

14. Install the transfer cover (E), and secure it with the bolts. Do not install the O-ring on the transfer cover.
15. Rotate the companion flange in both directions until the transfer gears rotate one full turn in both directions.
16. Set a dial indicator (A) on the transfer companion flange (B); position the dial indicator tip (C) on the top of the bolt (D).

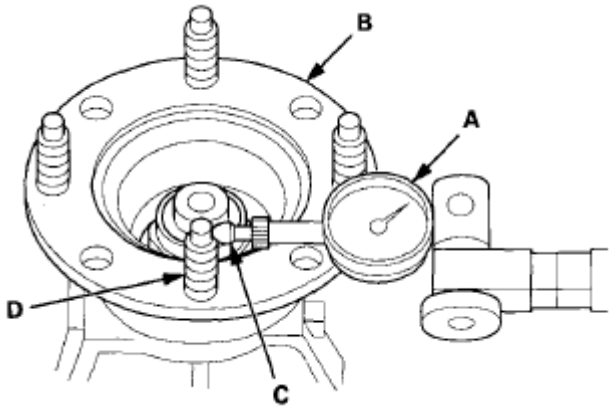


Fig. 650: Setting Dial Indicator On Transfer Companion Flange, Position Dial Indicator Tip On Top Of Bolt
Courtesy of AMERICAN HONDA MOTOR CO., INC.

17. Measure transfer gear backlash.

    Standard: 0.06- 0.16 mm (0.0024- 0.0063 in)

18. Remove the transfer cover and the transfer hypoid drive gear/shaft assembly, and check the transfer hypoid drive gear tooth contact pattern.

    CORRECT TOOTH CONTACT PATTERN

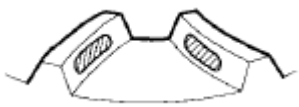


Fig. 651: Checking Transfer Hypoid Drive Gear Tooth Contact Pattern (Correct Tooth Contact Pattern)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

INCORRECT TOOTH CONTACT PATTERN

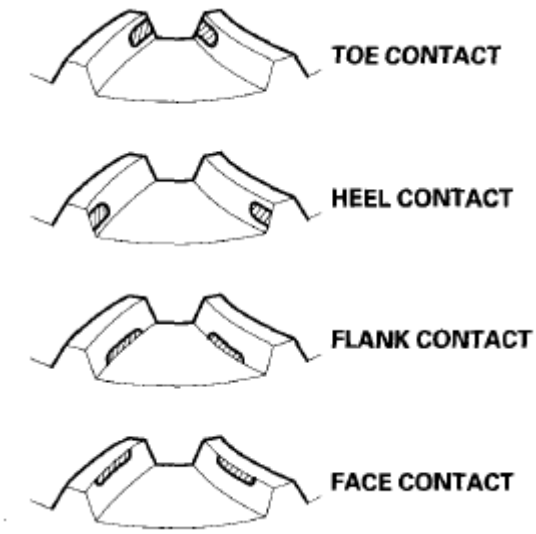


Fig. 652: Checking Transfer Hypoid Drive Gear Tooth Contact Pattern (Incorrect Tooth Contact Pattern)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

19. If the backlash is out of the standard, adjust the backlash with the 40 mm thrust shim, and recheck. Do not use more than two 40 mm thrust shims to adjust the backlash.
20. If the transfer gear tooth contact is incorrect, adjust the tooth contact with the 25 mm, 40 mm, or 80 mm thrust shim. Do not use more than two shims of each thrust shim to adjust the tooth contact.
    - Toe Contact

      Use a thinner 40 mm thrust shim to move the transfer output shaft (hypoid gear) away from the transfer hypoid drive gear. Because this movement causes the transfer gear backlash to change, move the transfer hypoid drive gear toward the transfer output shaft (hypoid gear) to adjust the transfer gear backlash as follows:

      - Reduce the thickness of the 25 mm thrust shim.
      - Increase the thickness of the 80 mm thrust shim by reducing the amount of the 25 mm thrust shim.
    - Heel Contact

      Use a thicker 40 mm thrust shim to move the transfer output shaft (hypoid gear) toward the transfer hypoid drive gear. Because this movement causes the transfer backlash to change, move the transfer hypoid drive gear away from the transfer output shaft (hypoid gear) to adjust the transfer gear backlash as follows:

      - Increase the thickness of the 25 mm thrust shim.
      - Reduce the thickness of the 80 mm thrust shim by reducing the amount of the 25 mm thrust shim.
    - Flank Contact

Use a thicker 25 mm thrust shim to move the transfer hypoid drive gear away from the transfer output shaft (hypoid gear).

Flank contact must be adjusted within the limits of the transfer gear backlash. If the backlash exceeds the limits, adjust as described under Heel Contact.

- Face Contact

  Use a thinner 25 mm thrust shim to move the transfer hypoid drive gear toward the transfer output shaft (hypoid gear).

  Face contact must be adjusted within the limits of the transfer gear backlash. If the backlash exceeds the limits, adjust as described under Toe Contact.

THRUST SHIM, 25 MM

No.	Thickness
1.70	1.70 mm (0.0669 in)
1.73	1.73 mm (0.0681 in)
1.76	1.76 mm (0.0693 in)
1.79	1.79 mm (0.0705 in)
1.82	1.82 mm (0.0717 in)
1.85	1.85 mm (0.0728 in.)
1.88	1.88 mm (0.0740 in)
1.91	1.91 mm (0.0752 in)
1.94	1.94 mm (0.0764 in)
1.97	1.97 mm (0.0776 in)
2.00	2.00 mm (0.0787 in)
2.03	2.03 mm (0.0799 in)
2.06	2.06 mm (0.0811 in)
2.09	2.09 mm (0.0823 in)
2.12	2.12 mm (0.0835 in)
2.15	2.15 mm (0.0846 in)
2.18	2.18 mm (0.0858 in)
2.21	2.21 mm (0.0870 in)
2.24	2.24 mm (0.0882 in)

21. Remove the transfer cover (A), the transfer hypoid drive gear/shaft assembly (B), the 25 mm thrust shim (C), and the tapered roller bearing (D) from the transfer housing (E) after adjusting the transfer gear backlash or transfer gear tooth contact.

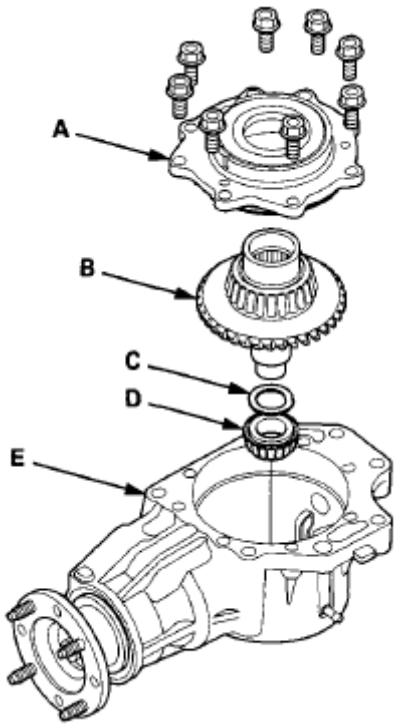


Fig. 653: Identifying Transfer Cover And Housing, Drive Gear/Shaft Assembly, Thrust Shim And Tapered Roller Bearing
Courtesy of AMERICAN HONDA MOTOR CO., INC.

22. Secure the transfer housing (A) in the bench vise (B) with wood blocks.

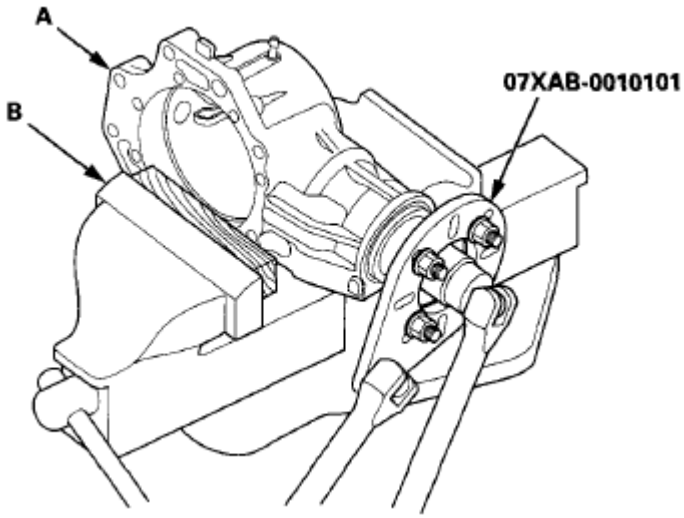


Fig. 654: Securing Transfer Housing In Bench Vise With Wood Blocks
Courtesy of AMERICAN HONDA MOTOR CO., INC.

23. Install the flange holder on the companion flange, then loosen the locknut.
24. Remove the flange holder.

25. Remove the locknut (A), the conical spring washer (B), and the companion flange (C) from the transfer output shaft (hypoid gear) (D).

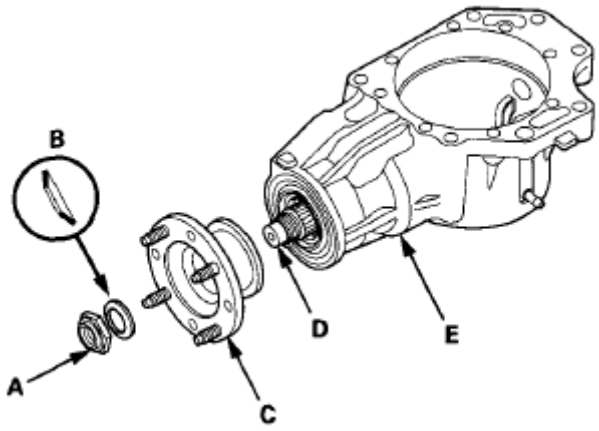


Fig. 655: Identifying Locknut, Conical Spring Washer, Companion Flange, Transfer Housing And Transfer Output Shaft
Courtesy of AMERICAN HONDA MOTOR CO., INC.

26. Remove the transfer output shaft (hypoid gear) from the transfer housing (E).
27. Install a thrust washer (A) and a new transfer spacer (B) on the transfer output shaft (hypoid gear) (C), and install them in the transfer housing (D).

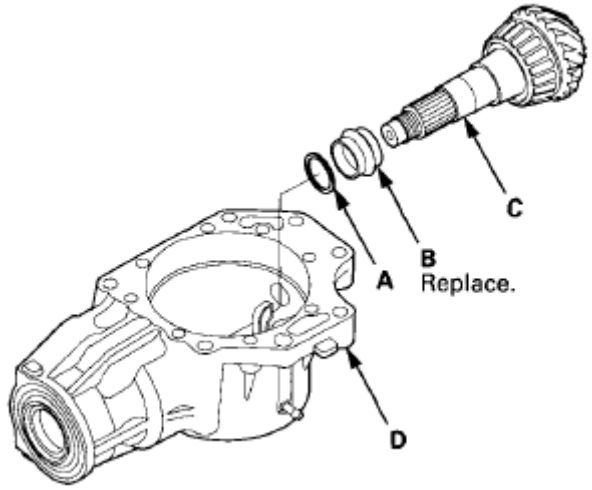


Fig. 656: Identifying Thrust Washer, Transfer Spacer, Transfer Output Shaft, And Transfer Housing
Courtesy of AMERICAN HONDA MOTOR CO., INC.

28. Coat the threads of the locknut and transfer output shaft (hypoid gear) with transfer fluid (hypoid gear oil).
29. Install the companion flange (A). Coat a new O-ring (B) with transfer fluid (hypoid gear oil), then install the O-ring, the back-up ring (C), a new conical spring washer (D), and a new locknut (E) on the transfer

output shaft (hypoid gear) (F). Install the conical spring washer in the direction shown.

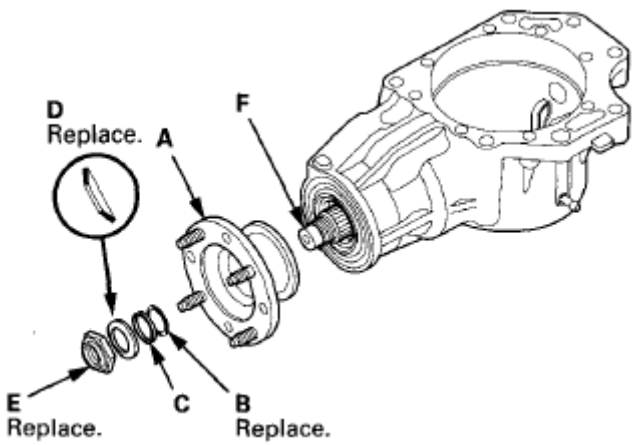


Fig. 657: Identifying Companion Flange, Transfer Fluid, O-Ring, Back-Up Ring, Washer, Locknut And Output Shaft
Courtesy of AMERICAN HONDA MOTOR CO., INC.

30. Secure the transfer housing (A) in the bench vise (B) with wood blocks.

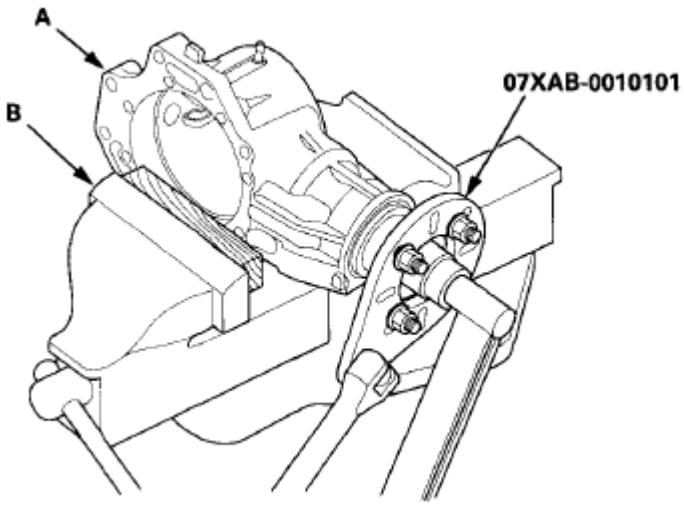


Fig. 658: Securing Transfer Housing In Bench Vise With Wood Blocks
Courtesy of AMERICAN HONDA MOTOR CO., INC.

31. Install the flange holder on the companion flange.
32. Tighten the locknut to the lower torque specification, then check starting torque. If starting torque is low, increase the torque on the locknut until the starting torque is acceptable.

Tightening Torque:

108 - 294 N.m (11.0 - 30.0 kgf.m, 79.6 - 217 lbf.ft)

Starting Torque:

1.15 - 1.71 N.m (11.7 - 17.4 kgf.cm, 10.2 - 15.1 lbf.in)

NOTE:

- **Rotate the companion flange several times to seat the tapered roller bearings, then measure the starting torque.**
- **If the starting torque exceeds 1.71 N.m (17.4 kgf.cm, 15.1 lbf.in), replace the transfer spacer and reassemble the parts. Do not adjust the torque with the locknut loose.**
- **If the tightening torque exceeds 294 N.m (30.0 kgf.m, 217 lbf.ft), replace the transfer spacer and reassemble the parts.**

33. Remove the flange holder.
34. Stake the locknut to a depth (A) of at least 0.7 mm (0.03 in) using a 3.5 mm punch (B). Be careful not to make a crack on the locknut when staking.

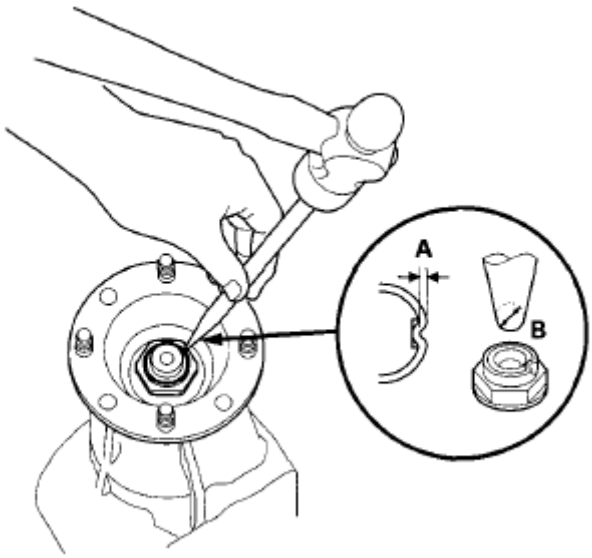


Fig. 659: Staking Locknut To Depth At Least Using Punch
Courtesy of AMERICAN HONDA MOTOR CO., INC.

35. Install the tapered roller bearing (A), the 25 mm thrust shim (B), and the transfer hypoid drive gear/shaft assembly (C) in the transfer housing (D).

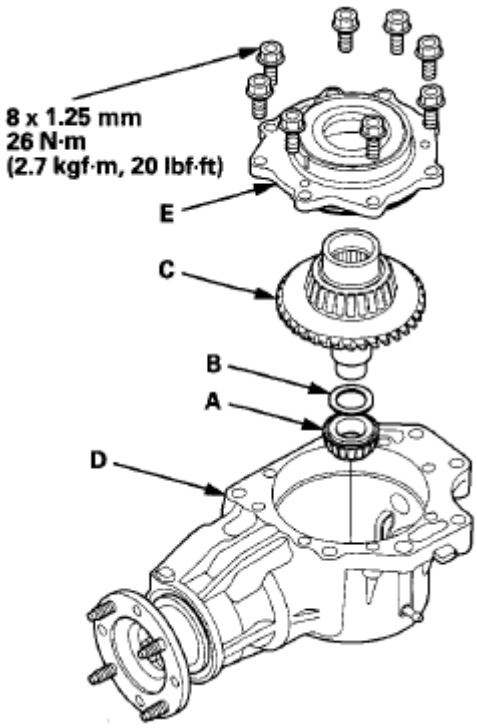


Fig. 660: Identifying Tapered Roller Bearing, Thrust Shim, Drive Gear/Shaft Assembly, Transfer Housing And Cover With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

36. Temporally install the transfer cover (E) without the O-ring. Install and tighten the bolts.
37. Secure the transfer housing (A) in the bench vise (B) with wood blocks.

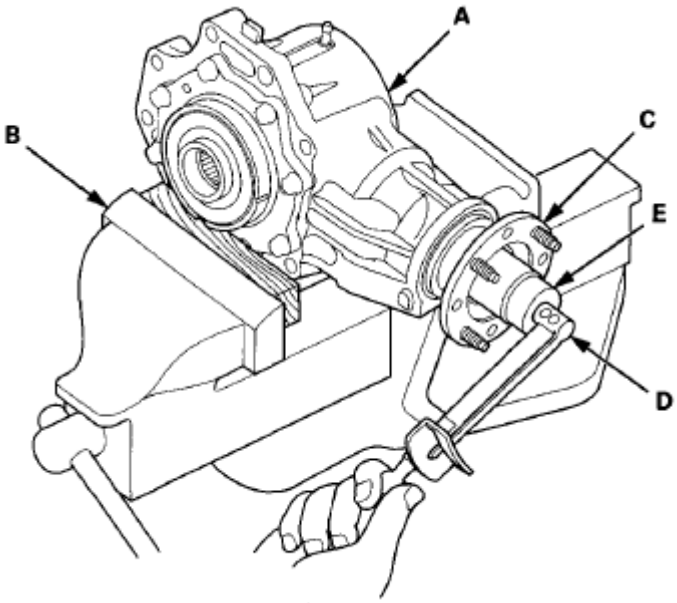


Fig. 661: Securing Transfer Housing In Bench Vise With Wood Blocks

Courtesy of AMERICAN HONDA MOTOR CO., INC.

38. Rotate the transfer companion flange (C) several times to seat the tapered roller bearings.
39. Measure the total starting torque at the companion flange by using a torque wrench (D) and a socket (E).
40. Calculate the transfer hypoid drive gear/shaft starting torque by using the following formula.

Transfer Hypoid Drive Gear/Shaft Starting

Torque Formula:

A - B = X

A: Actual total starting torque (measured in step 39)

B: Actual transfer output shaft (hypoid gear) starting torque (measured in step 32)

X: Transfer hypoid drive gear-shaft starting torque

41. Check that the calculated transfer hypoid drive gear/shaft starting torque is within the following reference value range.

Reference Value Range of Transfer Hypoid Drive Gear/Shaft Starting Torque:

1.49 - 2.52 N.m (15.2 - 25.7 kgf.cm, 13.1 - 22.3 lbf.in)

- If the calculated transfer hypoid drive gear/shaft starting torque is within the reference value range, remove the transfer cover from the transfer housing, then go to step 48.
- If the calculated transfer hypoid drive gear/shaft starting torque is out of the reference value range, go to step 42.

42. Remove the bearing outer race (A) and the 80 mm thrust shim (B) from the transfer cover (C). If the tapered roller bearing outer race is press-fitted, remove the tapered roller bearing outer race by heating the transfer cover to about 212°F (100°C) using a heat gun (D). Do not heat the transfer cover more than 212° F (100°C).

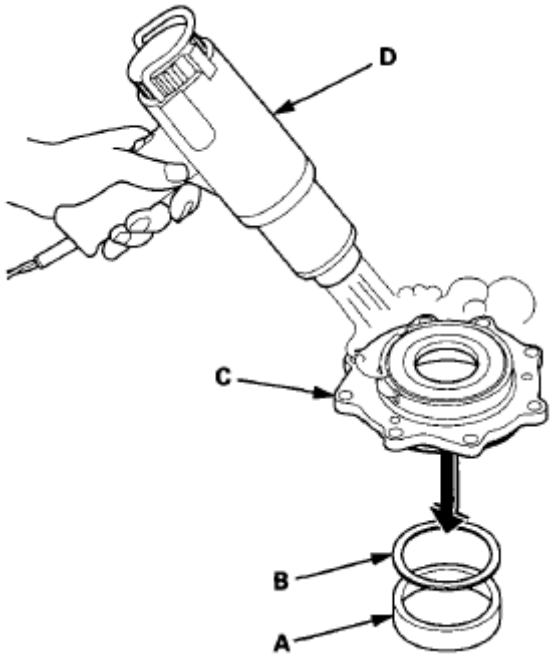


Fig. 662: Removing Tapered Roller Bearing Outer Race By Heating Transfer Cover Using Heat Gun
Courtesy of AMERICAN HONDA MOTOR CO., INC.

43. Measure thickness of the removed 80 mm thrust shim, and select a new 80 mm thrust shim.

THRUST SHIM, 80 MM

No.	Thickness
A	1.52 mm (0.0598 in)
B	1.55 mm (0.0610 in)
C	1.58 mm (0.0622 in)
D	1.61 mm (0.0634 in)
E	1.64 mm (0.0646 in)
F	1.67 mm (0.0657 in)
G	1.70 mm (0.0669 in)
H	1.73 mm (0.0681 in)
1	1.76 mm (0.0693 in)
J	1.79 mm (0.0705 in)
K	1.82 mm (0.0717 in)
L	1.85 mm (0.0728 in)
M	1.88 mm (0.0740 in)
N	1.91 mm (0.0752 in)
O	1.94 mm (0.0764 in)
P	1.97 mm (0.0776 in)
Q	2.00 mm (0.0787 in)

R	2.03 mm (0.0799 in)
S	2.06 mm (0.0811 in)
T	2.09 mm (0.0823 in)
U	2.12 mm (0.0835 in)
V	2.15 mm (0.0846 in)
W	2.18 mm (0.0858 in)
X	2.21 mm (0.0870 in)
Y	2.24 mm (0.0882 in)
Z	2.27 mm (0.0894 in)
AA	2.30 mm (0.0906 in)
AB	2.33 mm (0.0917 in)
AC	2.36 mm (0.0929 in)
AD	2.39 mm (0.0941 in)
AE	2.42 mm (0.0953 in)
AF	2.45 mm (0.0965 in)
AG	2.48 mm (0.0976 in.)
AH	2.51 mm (0.0988 in)
Al	2.54 mm (0.1000 in)
AJ	2.57 mm (0.1012 in)
AK	2.60 mm (0.1024 in)
AL	2.63 mm (0.1035 in)
AM	2.66 mm (0.1047 in)

44. Install the 80 mm thrust shim (A) and the tapered roller bearing outer race (B) in the transfer cover (C). If you heated the transfer cover, let it cool to room temperature before installing the 80 mm thrust shim.

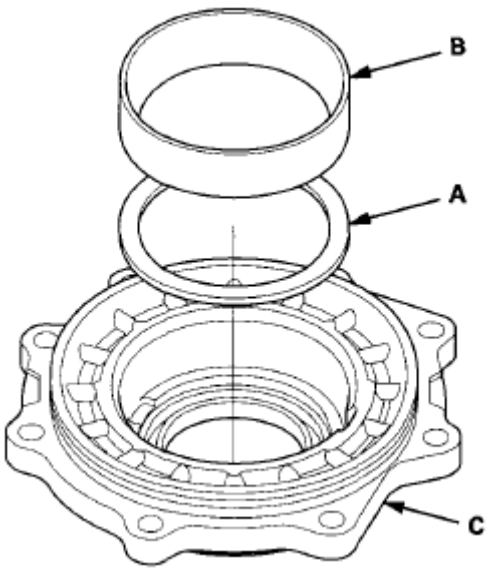


Fig. 663: Identifying Thrust Shim And Tapered Roller Bearing Outer Race In Transfer Cover

Courtesy of AMERICAN HONDA MOTOR CO., INC.

45. Drive the 80 mm tapered roller bearing outer race securely in the transfer cover using the 15 x 135L driver handle and the 78 x 80 mm bearing driver attachment so there is no clearance between the 80 mm tapered roller bearing outer race, the 80 mm thrust shim, and the transfer cover.

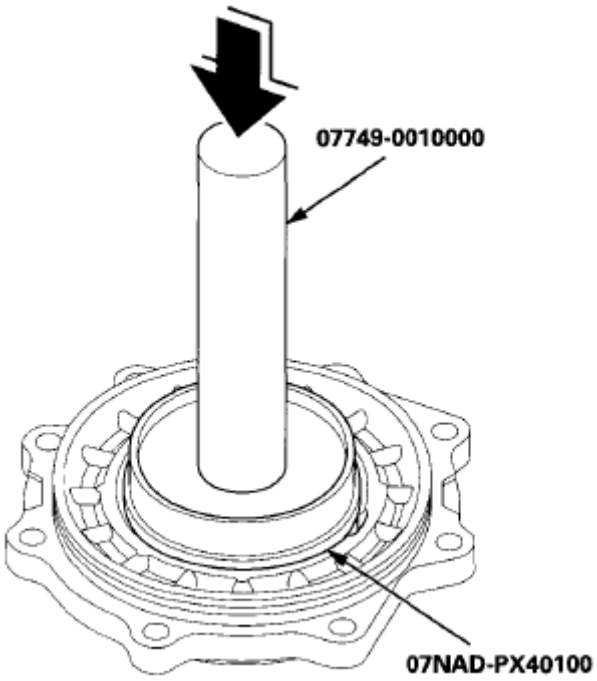


Fig. 664: Driving Tapered Roller Bearing Outer Race Using Driver Handle And Bearing Driver Attachment
Courtesy of AMERICAN HONDA MOTOR CO., INC.

46. Install the oil seal from the transfer cover (see **TRANSFER COVER OIL SEAL REPLACEMENT**).
47. After replacing the 80 mm thrust shim, recheck and make sure that the total starting torque is within specification.
48. Install a new O-ring (A) on the transfer cover (B), then install the transfer cover on the transfer housing (C).

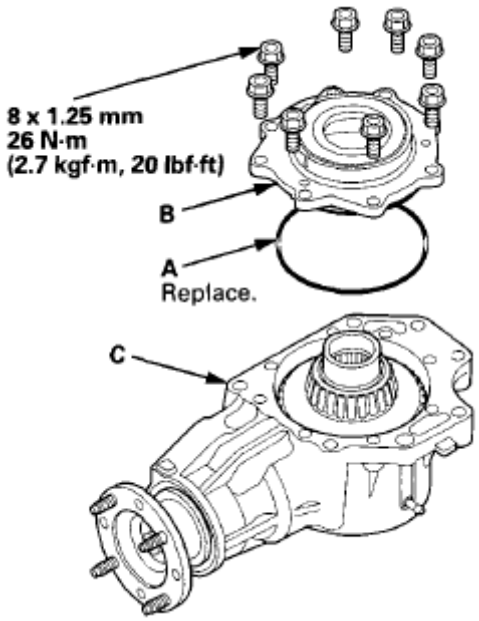


Fig. 665: Identifying O-Ring, Transfer Cover And Transfer Housing With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

49. Remove the filler plug (A), then refill the transfer assembly with transfer fluid (hypoid gear oil). Use an SAE 90 viscosity hypoid gear oil, API classified GL4 or GL5 only.

Viscosity:

SAE 90: Above 0°F (-18°C)

Hypoid Gear Oil Capacity: 0.45 L (0.48 US qt)

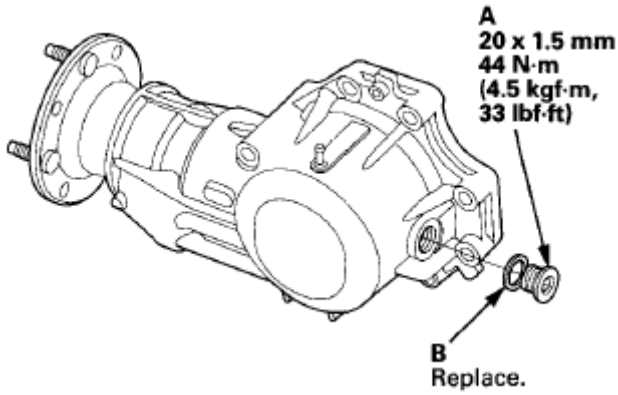


Fig. 666: Identifying Filler Plug And Sealing Washer With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

50. Install the filler plug with a new sealing washer (B).

2012 TRANSMISSION

M/T Clutch - TL

SPECIAL TOOLS

Ref.No.	Tool Number	Description	Qty
①	07746-0010800	Bearing Driver Attachment, 22 x 24 mm	1
②	07749-0010000	Driver Handle, 15 x 135L	1
③	07936-3710100	Remover Handle	1
④	07936-371020A	Slide Hammer	1
⑤	07936-3710600	Bearing Remover Shaft Set, 20 mm	1
⑥	07AAF-P8EA000	Clutch Alignment Shaft	1
⑦	07JAF-PM7011A	Clutch Alignment Disc	1
⑧	07LAB-PV00100	Ring Gear Holder	1
⑨	07ZAF-PR8A100	Clutch Alignment Shaft	1

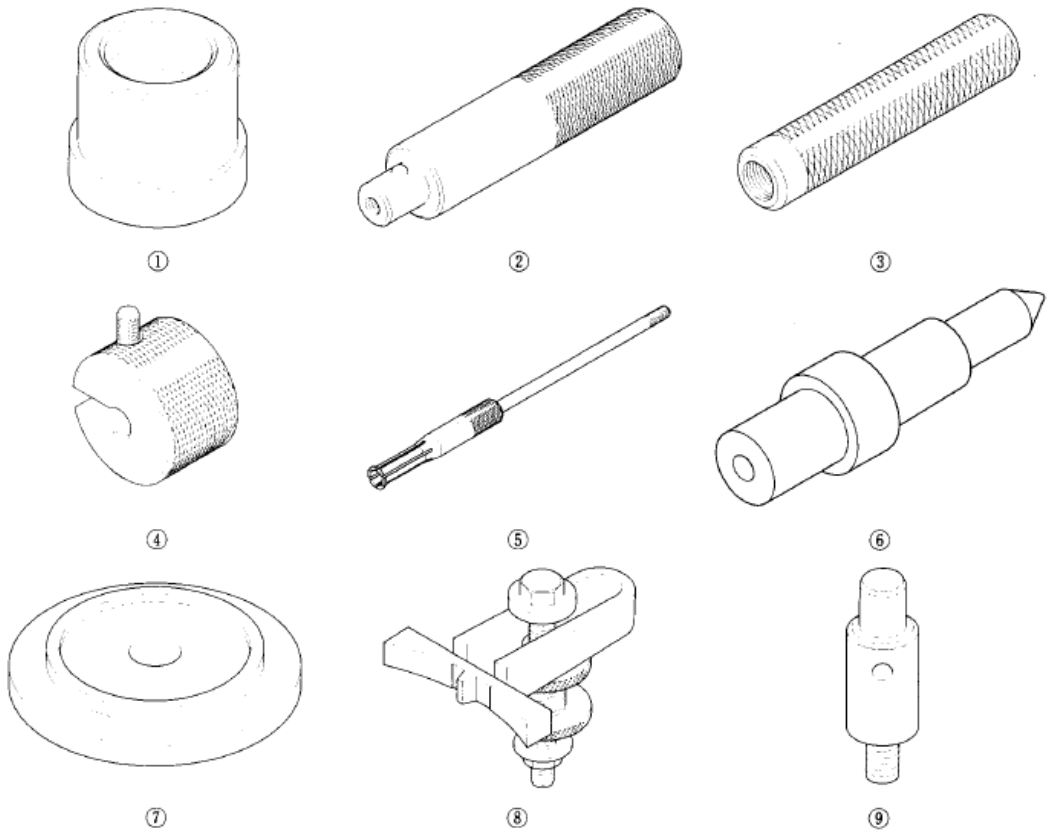


Fig. 1: Identifying Clutch Special Tools
Courtesy of AMERICAN HONDA MOTOR CO., INC.

COMPONENT LOCATION INDEX

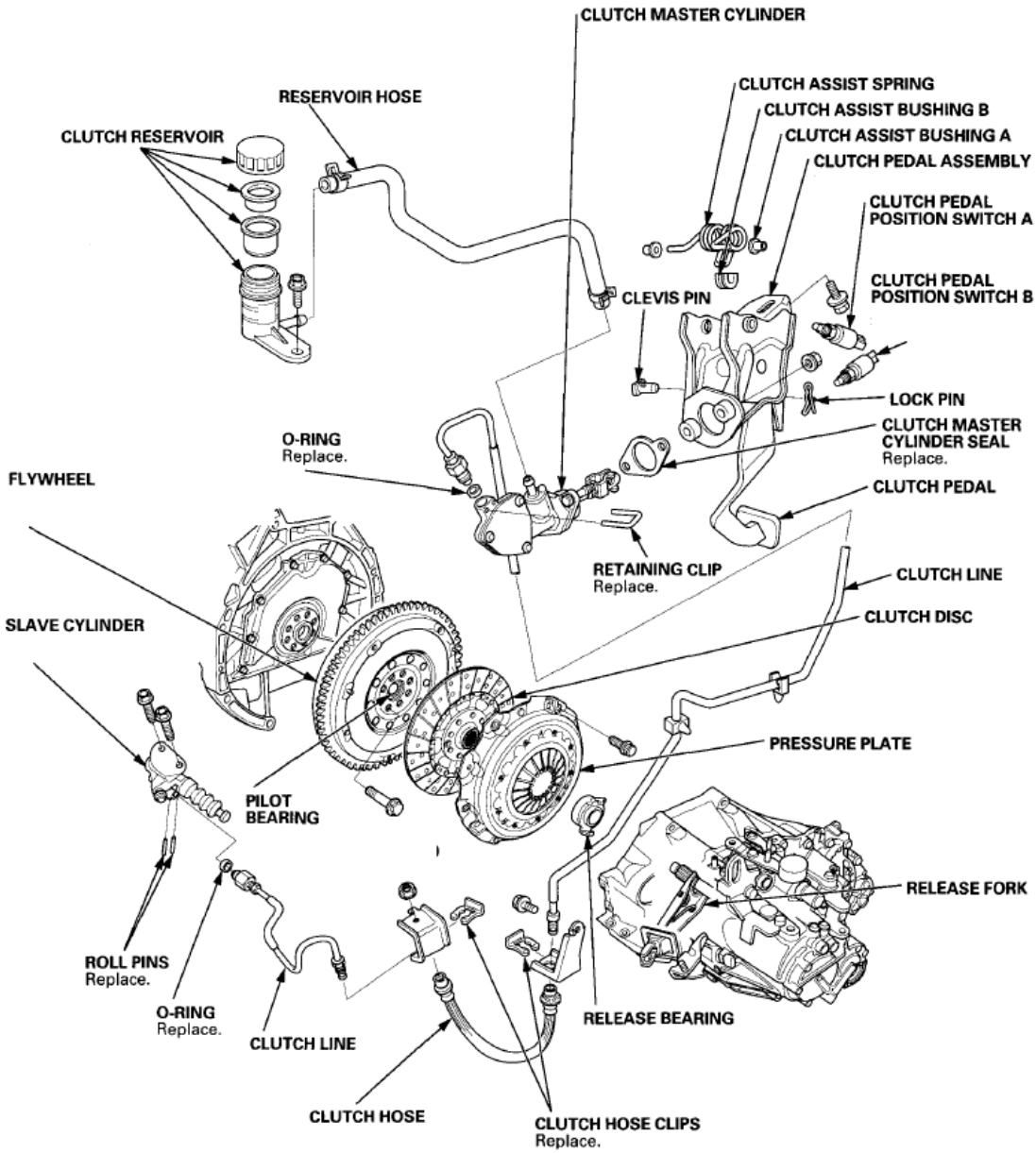


Fig. 2: Identifying Clutch Components Location
Courtesy of AMERICAN HONDA MOTOR CO., INC.

SYSTEM DESCRIPTION

DUAL MASS FLYWHEEL

Function

The dual mass flywheel is designed to reduce the noise and vibration produced by the engine, the clutch, and the transmission during acceleration and cruising.

Construction

The flywheel assembly is actually two flywheels in one, which raises the inertial mass on both the engine and transmission when the clutch is engaged. The inner and outer flywheels are connected by torsion springs. This combination effectively dampers changes in engine speed before they are transmitted to the transmission. Since there are torsion springs between the flywheels, none are used in the clutch disc, which reduces the inertial mass on the mainshaft when the clutch is disengaged. This reduction of the rotating inertial mass reduces the load on the synchro rings, allowing the transmission to shift smoothly.

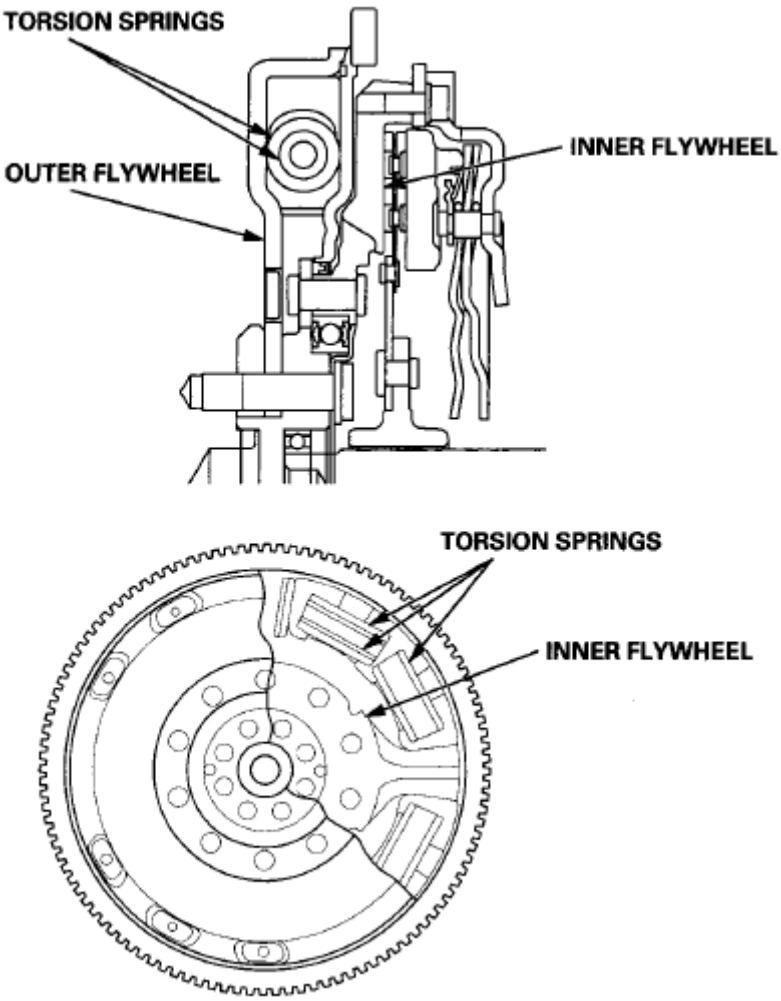


Fig. 3: Identifying Dual Mass Flywheel And Related Components
Courtesy of AMERICAN HONDA MOTOR CO., INC.

CLUTCH HYDRAULIC SYSTEM BLEEDING

NOTE:

- **Do not reuse the drained fluid. Always use Acura DOT 3 Brake Fluid from an unopened container. Using a non-Acura brake fluid can cause corrosion and shorten the life of the system.**
- **Make sure no dirt or other foreign matter is allowed to contaminate the brake fluid.**

- **Do not spill brake fluid on the vehicle; it may damage the paint or plastic. If brake fluid does contact the paint or plastic, wash it off immediately with water.**
- **It may be necessary to limit the movement of the release fork with a block of wood to remove all the air from the system.**
- **Use fender covers to avoid damaging painted surfaces.**

1. Make sure the brake fluid level in the clutch reservoir (A) is at the MAX (upper) level line (B).

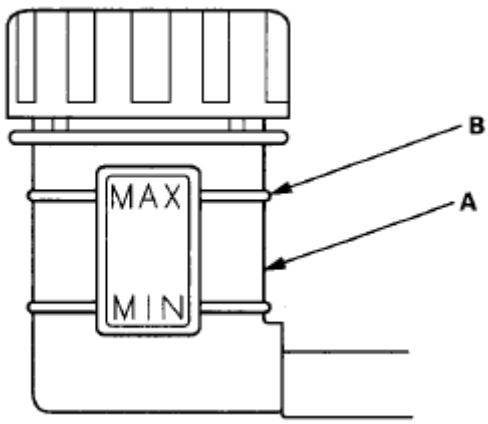


Fig. 4: Identifying Clutch Reservoir And Level Line
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Attach one end of a clear tube to the bleeder screw (A), and put the other end into a container. Loosen the bleeder screw to allow air to escape from the system.

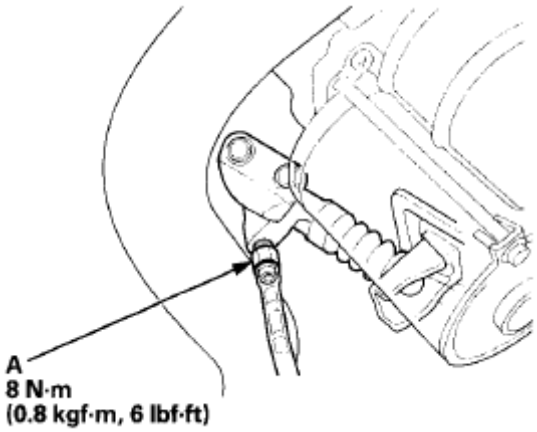


Fig. 5: Identifying Bleeder Screw With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Make sure there is an adequate supply of fluid in the reservoir, then slowly push the clutch pedal all the way down. Before releasing the pedal, have an assistant temporarily tighten the bleeder screw. Loosen the bleeder screw, and push the clutch pedal down again. Repeat this step until no more bubbles appear at the

clear tube.

NOTE: Make sure the fluid level on the reservoir does not go below MIN.

4. Tighten the bleeder screw securely.
5. Refill the brake fluid in the reservoir to the MAX (upper) level line.

CLUTCH PEDAL, CLUTCH PEDAL POSITION SWITCH A, AND CLUTCH PEDAL POSITION SWITCH B ADJUSTMENT

NOTE:

- **For a cruise control problem, check clutch pedal position switch B (see CLUTCH PEDAL POSITION SWITCH B TEST).**
- **For a clutch pedal position switch operation problem, check clutch pedal position switch A (see CLUTCH PEDAL POSITION SWITCH A TEST).**
- **Remove the driver's floor mat before adjusting the clutch pedal.**
- **If there is no clearance between the master cylinder piston and the push rod, the release bearing will be held against the diaphragm spring, which can result in clutch slippage or other clutch problems.**

1. Disconnect the clutch pedal position switch A connector and the clutch pedal position switch B connector.
2. Loosen the clutch pedal position switch B locknut (A), and back off clutch pedal position switch B until it no longer touches the clutch pedal (C).

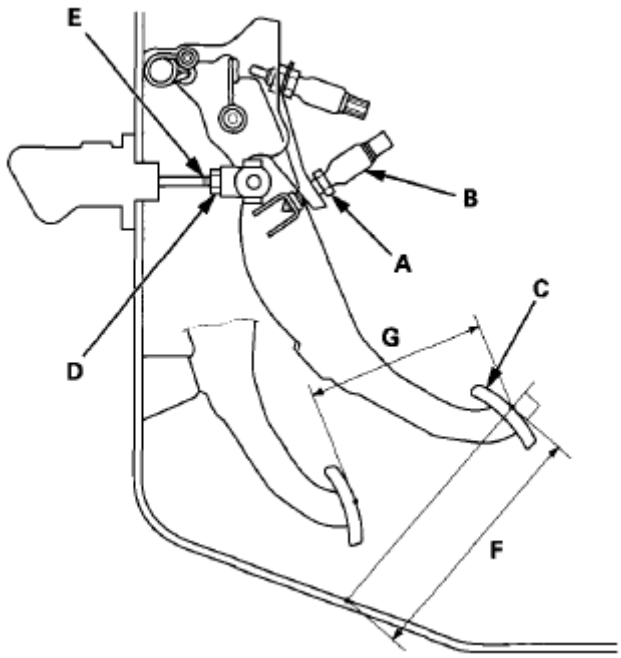


Fig. 6: Identifying Locknut, Back Off Clutch Pedal Position Switch B, Clutch Pedal
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Loosen the clutch push rod locknut (D), and turn the push rod (E) in or out to get the specified height (F), and the stroke (G) at the clutch pedal. If adjusting the push rod causes the clutch pedal to contact clutch pedal position switch B, back off the switch further.

   F Clutch Pedal Height: 156 mm (6.14 in)

   G Clutch Pedal Stroke: 130-140 mm (5.12-5.51 in)

4. Tighten the clutch push rod locknut (A).

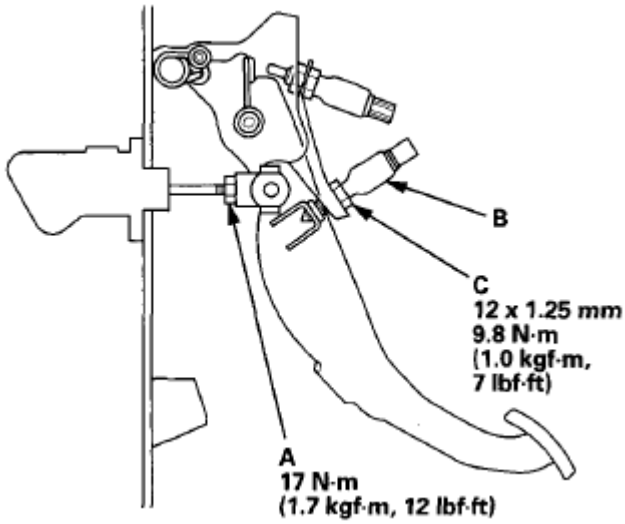


Fig. 7: Identifying Clutch Push Rod Locknut And Clutch Pedal Position Switch B With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. With the clutch pedal released, turn in clutch pedal position switch B until it contacts the clutch pedal.
6. Turn in clutch pedal position switch B an additional 3/4 to 1 turn. Make sure the clutch pedal height did not change.
7. While holding clutch pedal position switch B, tighten the locknut (C).
8. Loosen the clutch pedal position switch A locknut (B).

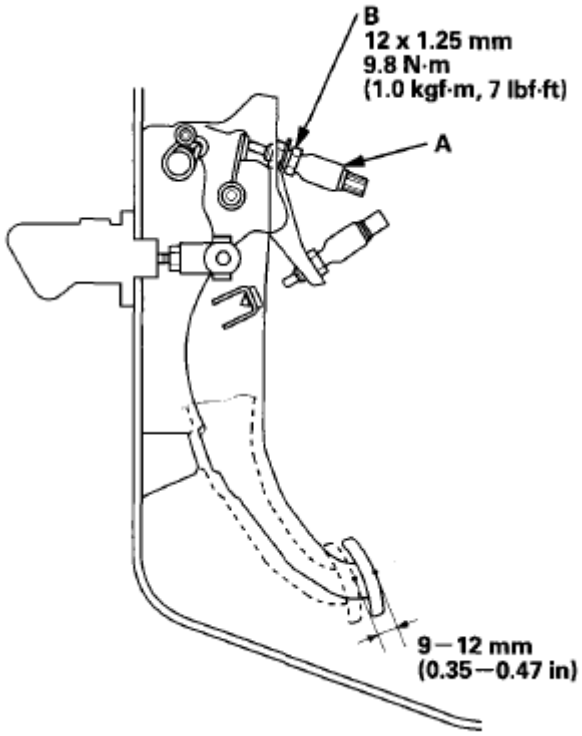


Fig. 8: Identifying Clutch Pedal Position Switch A Locknut With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

9. Fully press the clutch pedal to the floor, then release the clutch pedal 9-12 mm (0.35-0.47 in) and hold it there.
10. Adjust the position of clutch pedal position switch A so the engine starts with the clutch pedal in this position.
11. While holding clutch pedal position switch A, tighten the locknut.
12. Check the clutch operation.
13. Connect the clutch pedal position switch A connector and the clutch pedal position switch B connector, then check the cruise control and the clutch pedal position switch operation.

CLUTCH PEDAL ASSEMBLY REPLACEMENT

1. Remove the driver's dashboard undercover (see **DRIVER'S DASHBOARD UNDERCOVER REMOVAL/INSTALLATION**).
2. Disconnect the clutch pedal position switch A connector (C) and the clutch pedal position switch B connector (D).

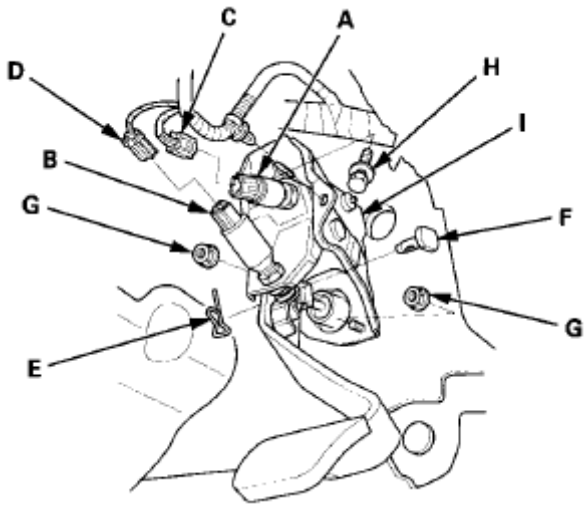


Fig. 9: Identifying Clutch Pedal Assembly And Related Components
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Pry out the lock pin (E), and pull the clevis pin (F) out of the clevis.
4. Remove the master cylinder mounting nuts (G) and the clutch pedal mounting bolt (H).
5. Remove the clutch pedal assembly (I).
6. Remove clutch pedal position switch A and clutch pedal position switch B.
7. Loosely install clutch pedal position switch A and clutch pedal position switch B.

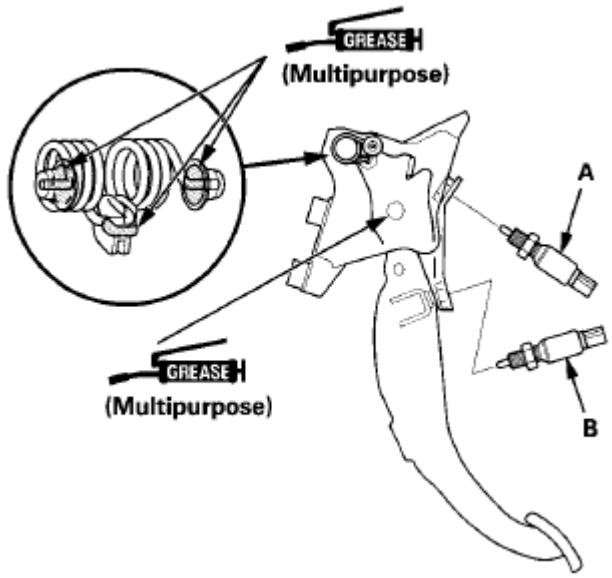


Fig. 10: Identifying Clutch Pedal Position Switch A And B
Courtesy of AMERICAN HONDA MOTOR CO., INC.

8. Install the clutch pedal assembly (A).

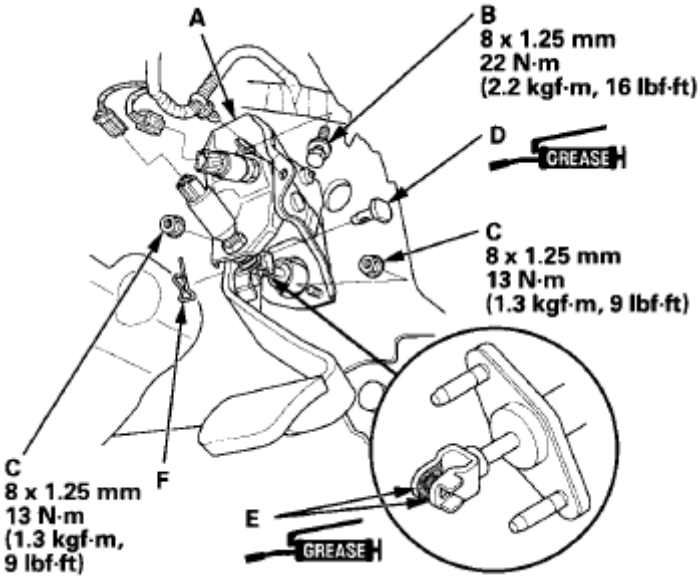


Fig. 11: Identifying Clutch Pedal Assembly, Mounting Bolts And Nuts, Clevis Pin, Lock Pin And Mating Surfaces With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

9. Install the clutch pedal mounting bolt (B) and the master cylinder mounting nuts (C).
10. Apply multipurpose grease to the clevis pin (D), and the mating surfaces (E) of the clevis and the pedal. Slide the clevis pin into the clevis, then install the lock pin (F).
11. Adjust the clutch pedal, **CLUTCH PEDAL POSITION SWITCH B, AND CLUTCH PEDAL POSITION SWITCH A**.

NOTE: Connect the switch connectors after adjusting them.

12. Check the clutch operation.
13. Reinstall the driver's dashboard undercover (see **DRIVER'S DASHBOARD UNDERCOVER REMOVAL/INSTALLATION**).

CLUTCH MASTER CYLINDER REPLACEMENT

NOTE:

- **Use fender covers to avoid damaging painted surfaces.**
- **Do not spill brake fluid on the vehicle; it may damage the paint or plastic. If brake fluid does contact the paint or plastic, wash it off immediately with water.**

1. Remove and discard the brake fluid from the clutch reservoir with a syringe or other suitable device.
2. Remove the clutch reservoir (A).

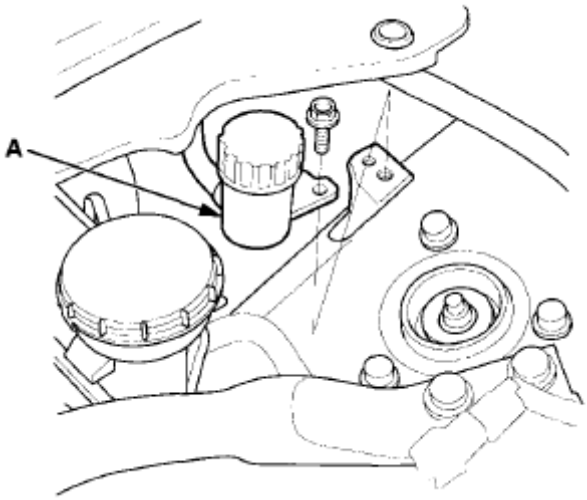


Fig. 12: Identifying Clutch Reservoir
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Disconnect the clutch line (A) from the clutch master cylinder (B). To prevent spills, cover the line joint with rags or clean shop towels.

NOTE: Loosen the flare nut (C) while holding the clutch line connector (D) using a wrench.

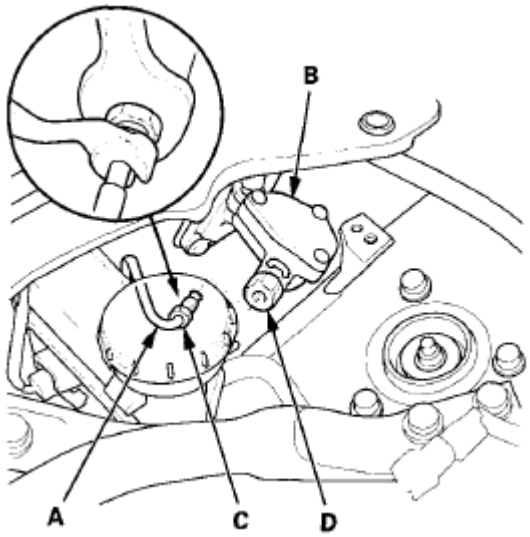


Fig. 13: Identifying Clutch Line, Clutch Master Cylinder, Flare Nut And Clutch Line Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Remove the driver's dashboard undercover (see **DRIVER'S DASHBOARD UNDERCOVER REMOVAL/INSTALLATION**).
5. Pry out the lock pin (A), and pull the clevis pin (B) out of the clevis. Remove the master cylinder mounting nuts (C).

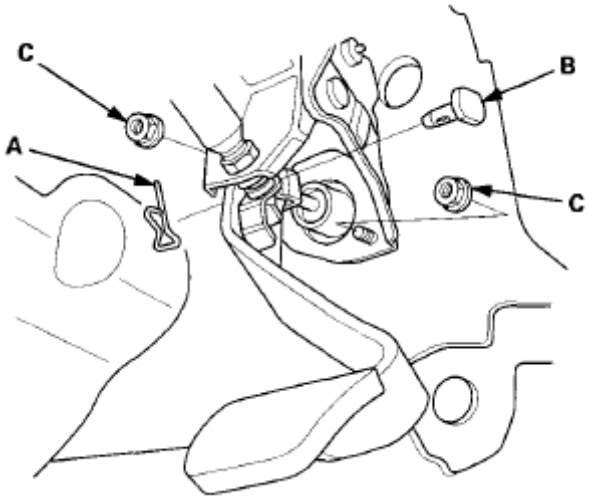


Fig. 14: Identifying Lock Pin, Clevis Pin And Master Cylinder Mounting Nuts
Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Remove the clutch master cylinder (A) and the clutch master cylinder seal (B).

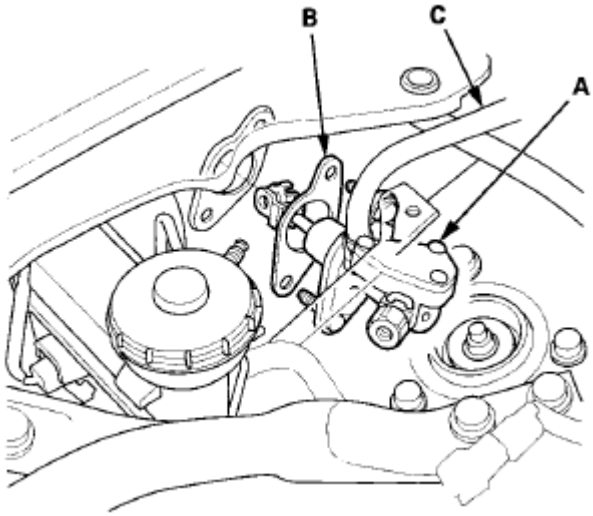


Fig. 15: Identifying Clutch Master Cylinder And Seal
Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Disconnect the reservoir hose (C).

NOTE: Inspect the hose. If the hose has damage, leaks, interference, or twisting, replace it.

8. Remove the retaining clip (A), then remove the clutch line connector (B) and the O-ring (C) from the master cylinder (D).

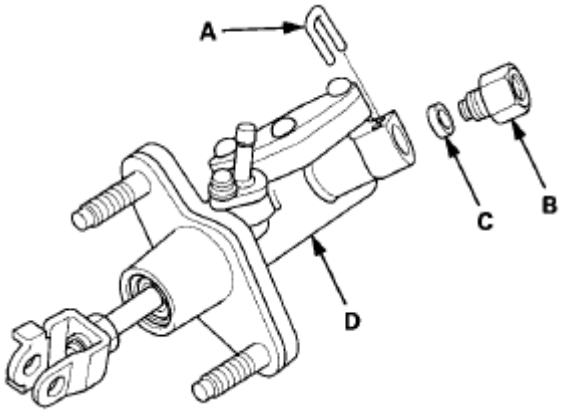


Fig. 16: Identifying Retaining Clip, Clutch Line Connector, O-Ring And Master Cylinder
Courtesy of AMERICAN HONDA MOTOR CO., INC.

9. Install the clutch line connector (A) with a new O-ring (B), then set in a new retaining clip (C) to the master cylinder (D).

NOTE:

- **Apply silicone grease (P/N 08C30-B0234M) on the O-ring and the joint part (E) of the clutch line connector.**
- **Make sure not to get any silicone grease on the terminal part of the connectors and switches, especially if you have silicone grease on your hands or gloves.**

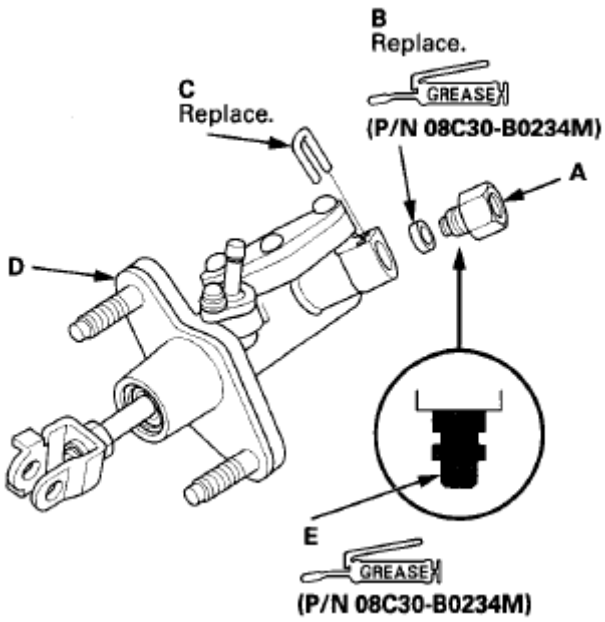


Fig. 17: Identifying Clutch Line Connector, O-Ring, Retaining Clip And Master Cylinder
Courtesy of AMERICAN HONDA MOTOR CO., INC.

10. To prevent the retaining clip (A) from coming off, pry apart the tip (B) of the clip with a screwdriver.

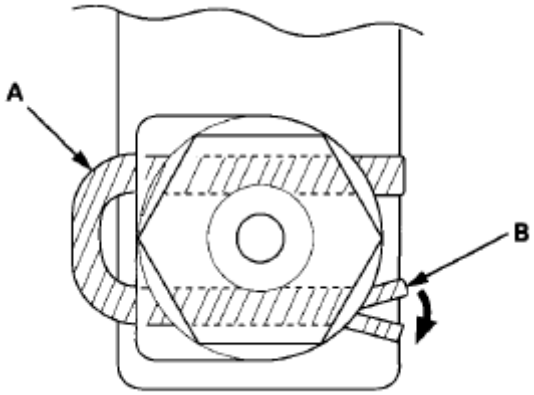


Fig. 18: Identifying Retaining Clip And Clip Tip
Courtesy of AMERICAN HONDA MOTOR CO., INC.

11. Connect the reservoir hose, and adjust the hose clamp (A) positions and its direction.

NOTE: When attaching the reservoir hose, align the yellow mark on the hose to the rib on reservoir connection area, and the blue mark on the hose to the rib on the clutch master cylinder connection area.

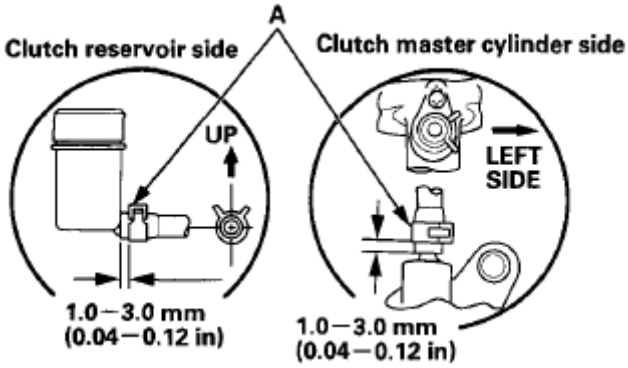


Fig. 19: Identifying Hose Clamp
Courtesy of AMERICAN HONDA MOTOR CO., INC.

12. Install a new clutch master cylinder seal (A) and the clutch master cylinder (B).

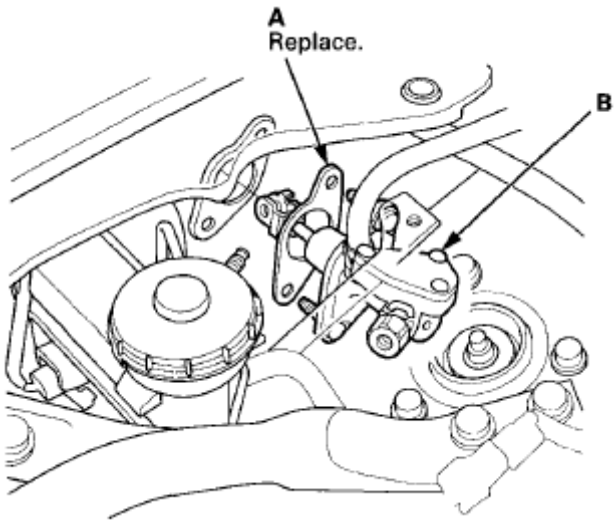


Fig. 20: Identifying Clutch Master Cylinder And Seal
Courtesy of AMERICAN HONDA MOTOR CO., INC.

13. Install the master cylinder mounting nuts (A).

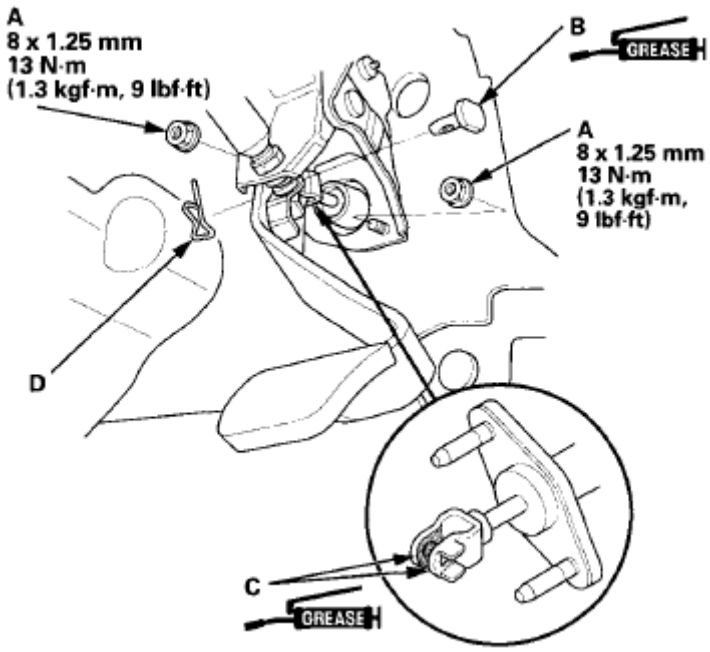


Fig. 21: Identifying Mounting Nuts, Clevis Pin, Mating Surfaces And Clutch Line Connector With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

14. Apply multipurpose grease to the clevis pin (B), and the mating surfaces (C) of the clevis and the pedal. Slide the clevis pin into the clevis, then install the lock pin (D).
15. Connect the clutch line (A) to the clutch master cylinder (B).

NOTE: **Tighten the flare nut (C) while holding the clutch line connector (D) using a wrench.**

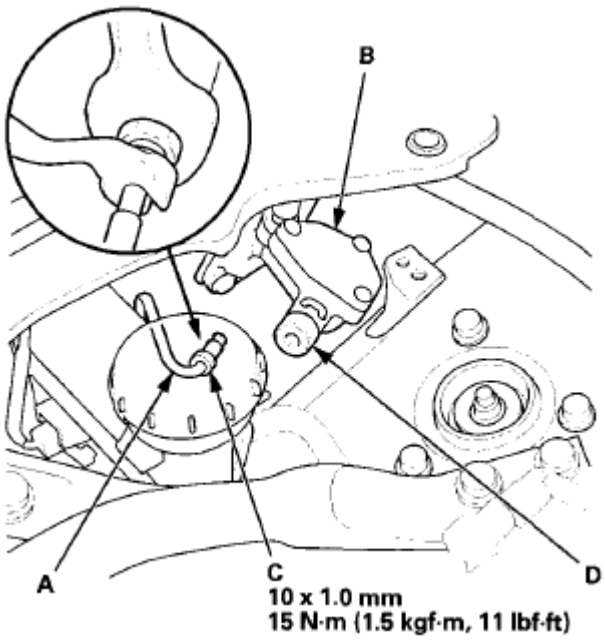


Fig. 22: Identifying Clutch Line, Clutch Master Cylinder, Flare Nut And Clutch Line Connector And Wrench With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

16. Install the clutch reservoir (A).

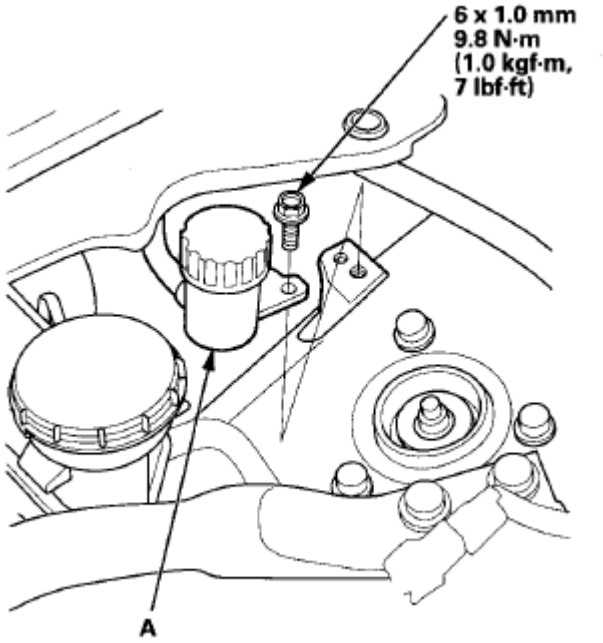


Fig. 23: Identifying Clutch Reservoir With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

17. Bleed the **CLUTCH HYDRAULIC SYSTEM**.
18. Adjust the clutch pedal, **CLUTCH PEDAL POSITION SWITCH B, AND CLUTCH PEDAL POSITION SWITCH A**.
19. Check the clutch operation and check for leaks.
20. Reinstall the driver's dashboard undercover (see **DRIVER'S DASHBOARD UNDERCOVER REMOVAL/INSTALLATION**).
21. Test-drive the vehicle.

SLAVE CYLINDER REPLACEMENT

NOTE:

- **Use fender covers to avoid damaging painted surfaces.**
- **Do not spill brake fluid on the vehicle; it may damage the paint or plastic. If brake fluid does contact the paint or plastic, wash it off immediately with water.**
- **Make sure not to get any silicone grease on the terminal part of the connectors and switches, especially if you have silicone grease on your hands or gloves.**

REMOVAL/INSTALLATION

1. Remove the clutch line bracket (A) and the slave cylinder (B).

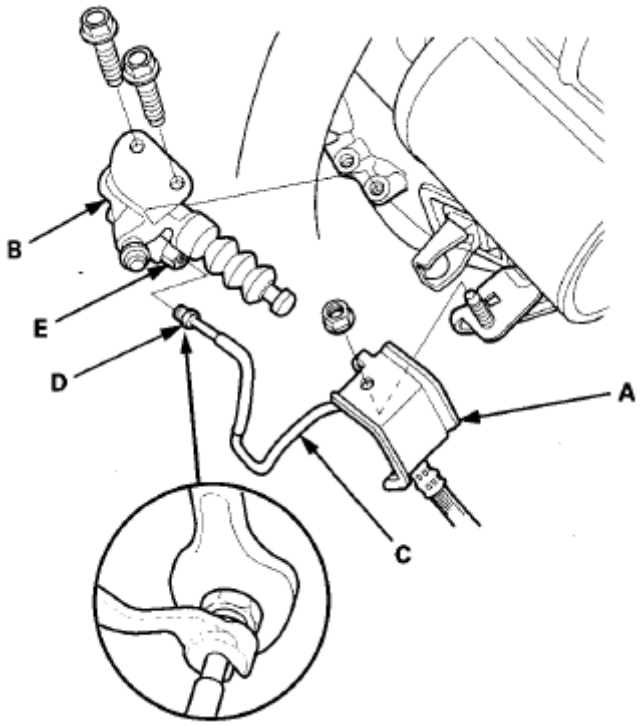


Fig. 24: Identifying Clutch Line Bracket And Slave Cylinder
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Disconnect the clutch line (C) from the slave cylinder. To prevent spills, cover the line joint with rags or clean shop towels.

NOTE: Loosen the flare nut (D) while holding the clutch line connector (E) using a wrench.

3. Pull back the boot (A), and apply silicone grease (P/N 08C30-B0234M) to the boot and slave cylinder. Reinstall the boot.

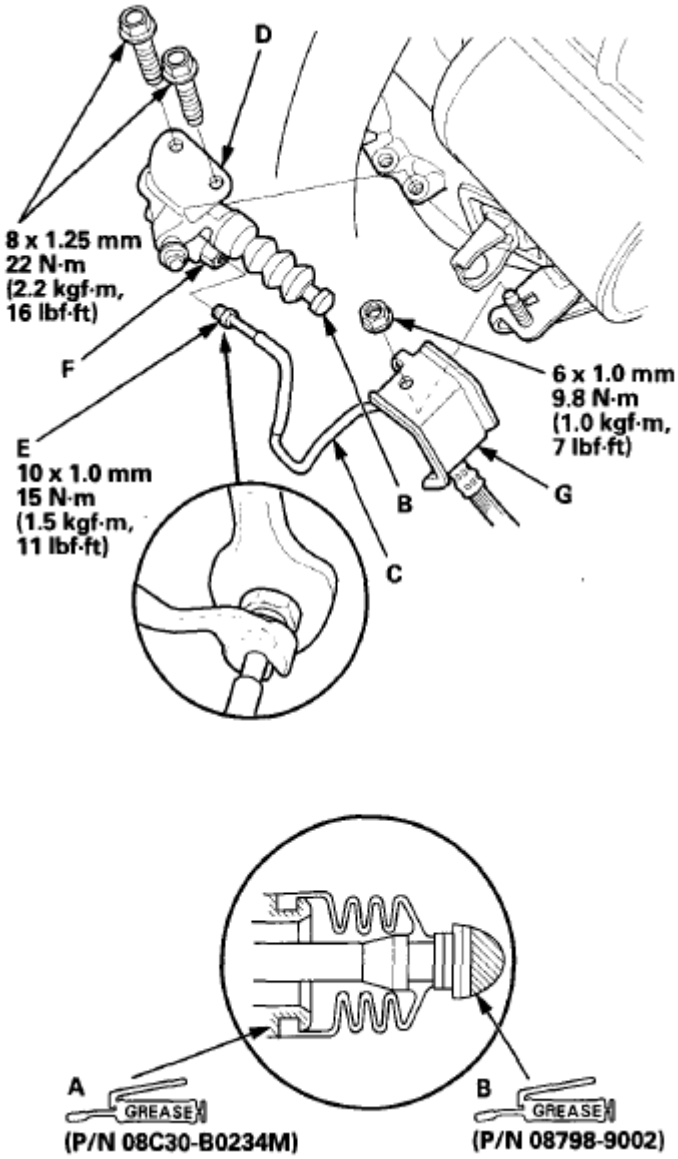


Fig. 25: Identifying Boot, Push Rod, Clutch Line, Slave Cylinder, Flare Nut And Clutch Line Connector With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Apply a light coat of super high temp urea grease (P/N 08798-9002) to the push rod (B) of the slave cylinder.
5. Connect the clutch line (C) to the slave cylinder (D), and tighten the flare nut (E).

NOTE: Tighten the flare nut while holding the clutch line connector (F) using a wrench.

6. Install the slave cylinder and the clutch line bracket (G).
7. Bleed the **CLUTCH HYDRAULIC SYSTEM**.

8. Check the clutch operation and check for leaks.
9. Test-drive the vehicle.

O-RING REPLACEMENT

1. Remove the slave cylinder.
2. Remove the roll pins (A), then remove the clutch line connector (B) and the O-ring (C) from the slave cylinder (D).

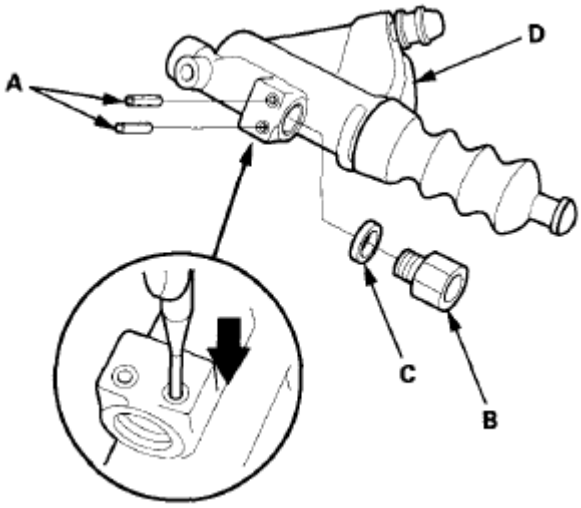


Fig. 26: Identifying Roll Pins, Clutch Line Connector, O-Ring And Slave Cylinder
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Install the clutch line connector (A) with a new O-ring (B), then set in new roll pins (C) to the slave cylinder (D).

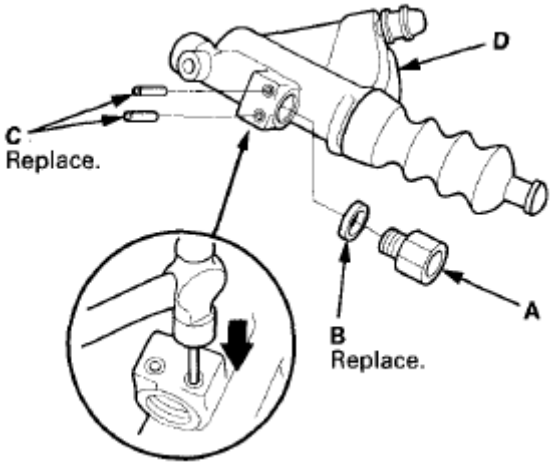


Fig. 27: Identifying Clutch Line Connector, O-ring, Roll Pins And Slave Cylinder
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Install the slave cylinder.

CLUTCH HOSE REPLACEMENT

NOTE:

- **Replace the clutch hose if it is twisted, cracked, or if it leaks.**
- **Use fender covers to avoid damaging painted surfaces.**
- **Do not spill brake fluid on the vehicle; it may damage the paint or plastic. If brake fluid does contact the paint or plastic, wash it off immediately with water.**

1. Remove the air intake duct splash separator (A).

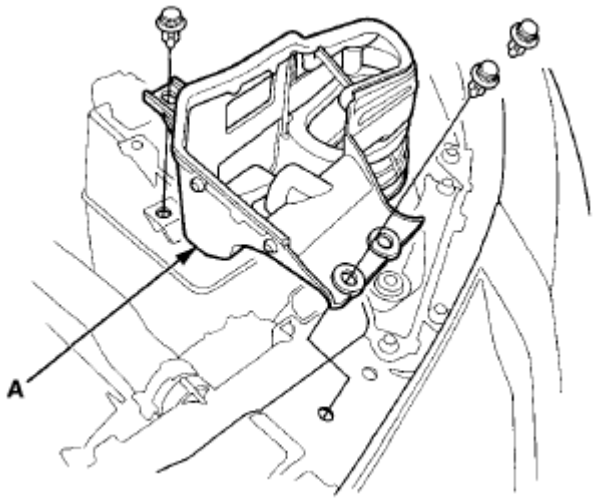


Fig. 28: Identifying Air Intake Duct Splash Separator
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Do the battery removal procedure (see **BATTERY REMOVAL AND INSTALLATION**).
3. Remove the harness clamps (A), then remove the battery base (B).

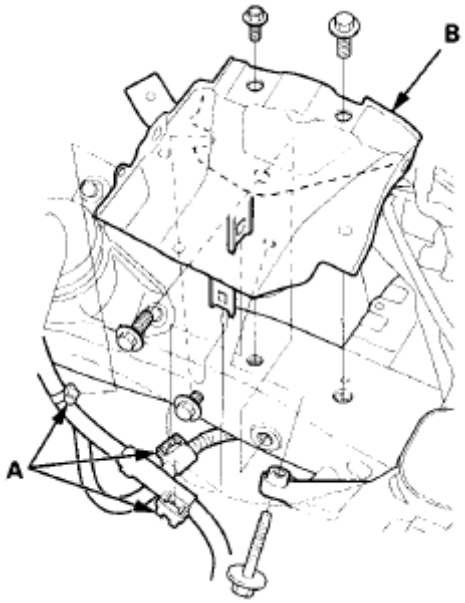


Fig. 29: Identifying Harness Clamps And Battery Base
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Disconnect the clutch hose (A) from the clutch lines (B).

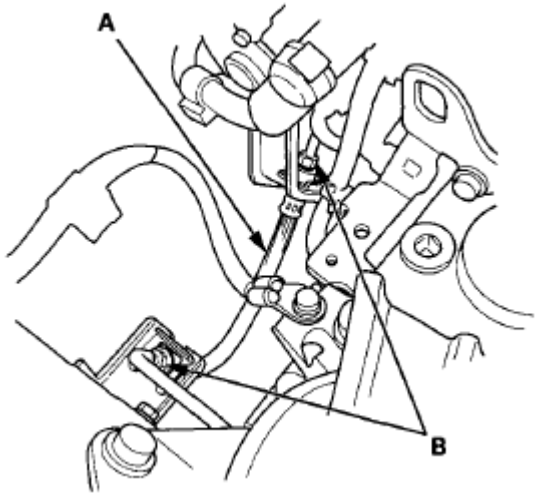


Fig. 30: Identifying Clutch Hose And Clutch Lines
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Remove and discard the clutch hose clips (A) from the clutch hose (B).

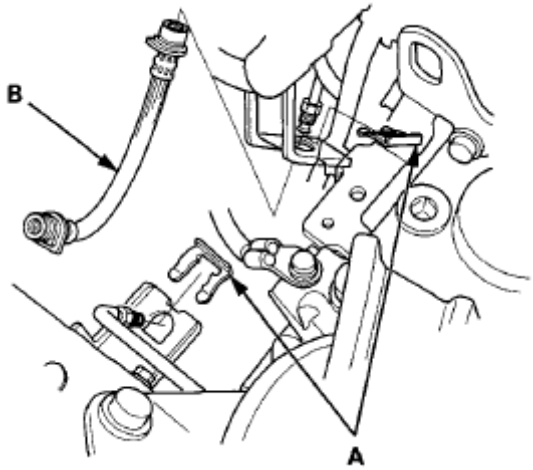


Fig. 31: Identifying Clutch Hose Clips And Clutch Hose
Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Remove the clutch hose from the clutch hose brackets.
7. Install the clutch hose (A) into the clutch hose brackets with the new clutch hose clips (B).

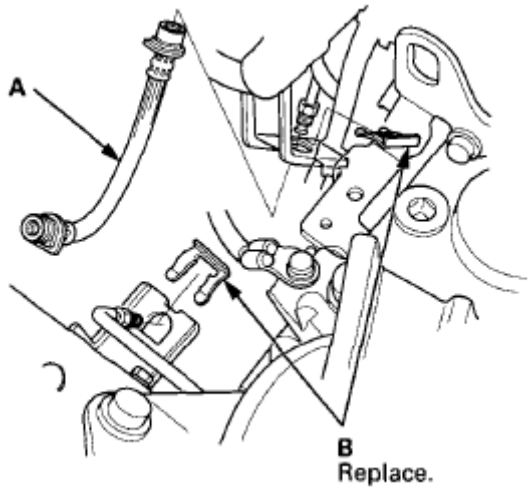


Fig. 32: Identifying Clutch Hose And Clips
Courtesy of AMERICAN HONDA MOTOR CO., INC.

8. Connect the clutch lines (A) to the clutch hose (B).

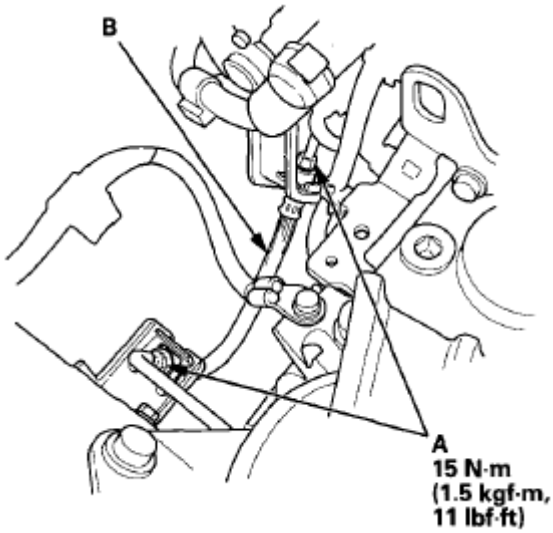


Fig. 33: Identifying Clutch Lines And Clutch Hose With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

9. Bleed the **CLUTCH HYDRAULIC SYSTEM**.
10. Do the following checks:
    - Check the clutch hose and line joint for leaks, and tighten if necessary.
    - Check the clutch hose for interference and twisting.
11. Install the battery base (A) and the harness clamps (B).

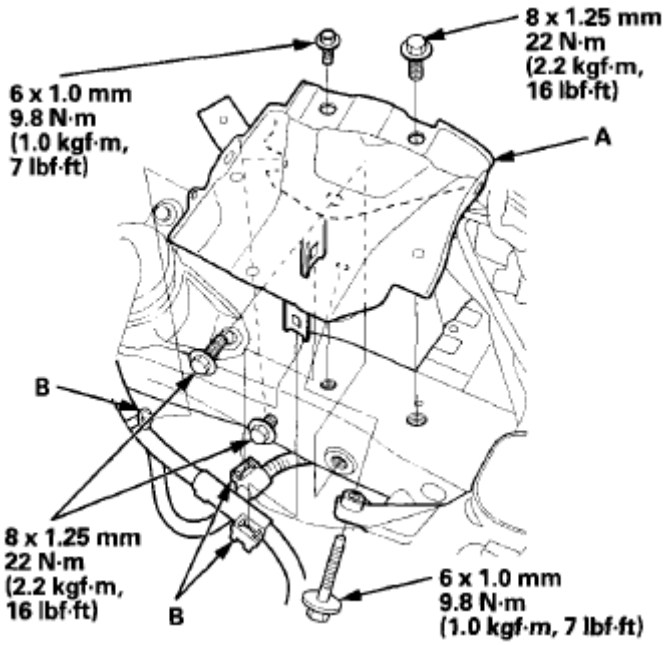


Fig. 34: Identifying Battery Base And Harness Clamps With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

12. Do the battery installation procedure (see **BATTERY REMOVAL AND INSTALLATION**).
13. Install the air intake duct splash separator (A).

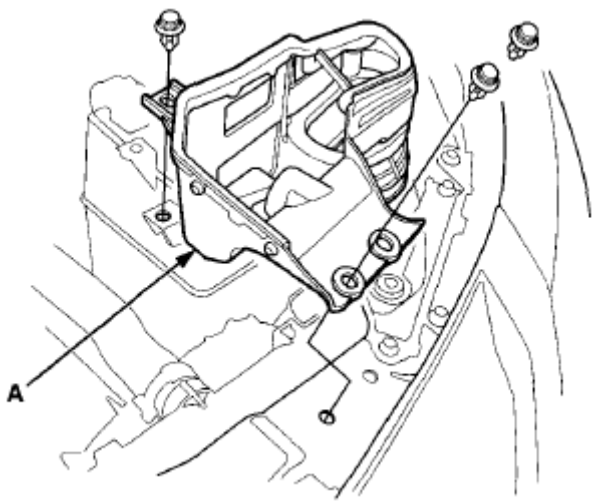


Fig. 35: Identifying Air Intake Duct Splash Separator
Courtesy of AMERICAN HONDA MOTOR CO., INC.

14. Test-drive the vehicle.

CLUTCH REPLACEMENT

Special Tools Required

- Bearing Driver Attachment, 22 x 24 mm 07746-0010800
- Driver Handle, 15 x 135L 07749-0010000
- Remover Handle 07936-3710100
- Slide Hammer 07936-371020A
- Bearing Remover Shaft Set, 20 mm 07936-3710600
- Clutch Alignment Shaft 07AAF-P8EA000
- Clutch Alignment Disc 07JAF-PM7011A
- Ring Gear Holder 07LAB-PV00100
- Clutch Alignment Shaft 07ZAF-PR8A100

ENGINE SIDE

Pressure Plate Inspection and Removal

1. Remove the transmission (see **TRANSMISSION REMOVAL**).
2. Check the evenness of the height of the diaphragm spring fingers using the clutch alignment disc (A), the clutch alignment shaft (B), the remover handle (C), and a feeler gauge (D). If the height difference is

more than the service limit, replace the pressure plate.

Standard (New): 0.6 mm (0.024 in) max.

Service Limit: 0.8 mm (0.031 in)

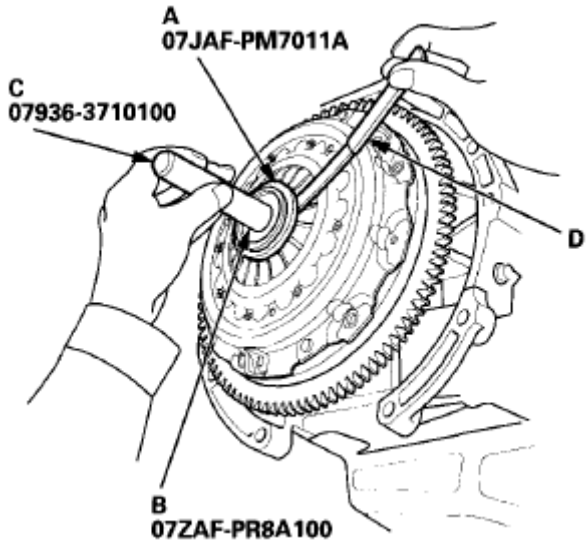


Fig. 36: Identifying Clutch Alignment Disc And Shaft, Remover Handle, Feeler Gauge
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Install the ring gear holder (A) and the clutch alignment shaft (B).

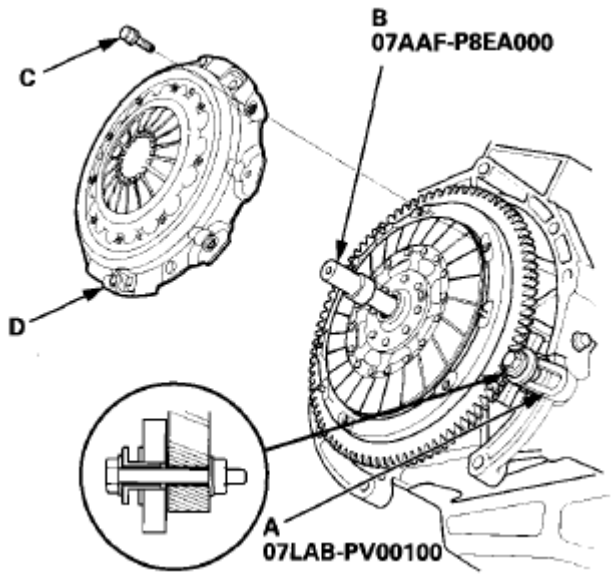


Fig. 37: Identifying Ring Gear Holder, Clutch Alignment Shaft, Mounting Bolts And Pressure Plate
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. To prevent warping, loosen the pressure plate mounting bolts (C) in a crisscross pattern in several steps,

then remove the pressure plate (D).

5. Inspect the fingers of the diaphragm spring (A) for wear at the release bearing contact area.

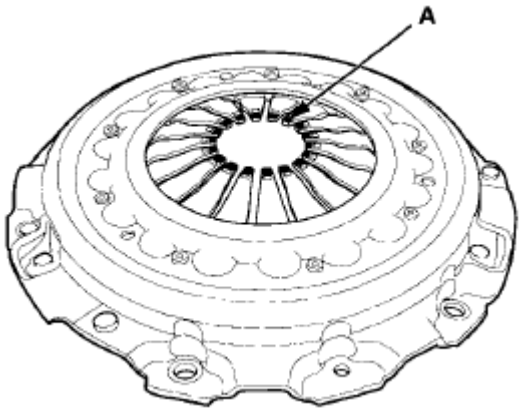


Fig. 38: Identifying Diaphragm Spring
Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Inspect the pressure plate surface (A) for wear, cracks, and burning.

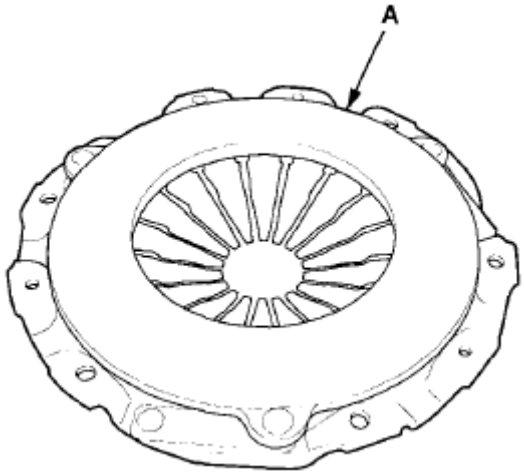


Fig. 39: Identifying Pressure Plate Surface
Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Inspect for warpage using a straight edge (A) and a feeler gauge (B). Measure across the pressure plate (C). If the most measurement difference is more than the service limit, replace the pressure plate.

   Standard (New): 0.02 mm (0.001 in) max.

   Service Limit: 0.15 mm (0.005 in)

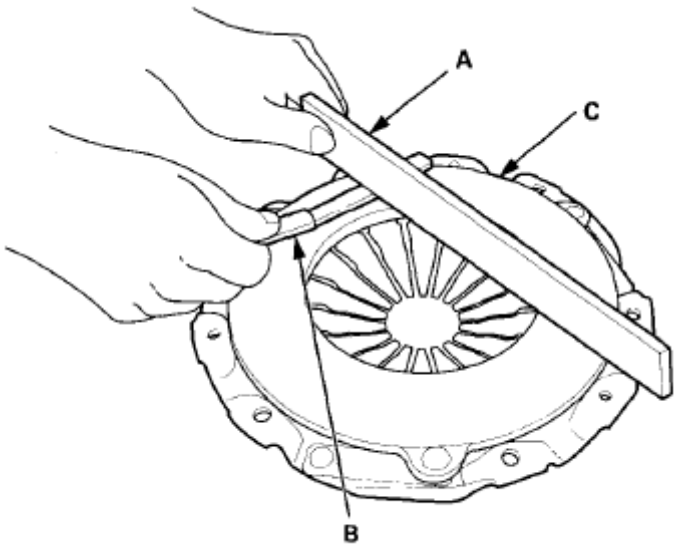


Fig. 40: Identifying Straight Edge, Feeler Gauge And Pressure Plate
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Clutch Disc Inspection and Removal

8. Remove the clutch disc (A) and the clutch alignment shaft (B).

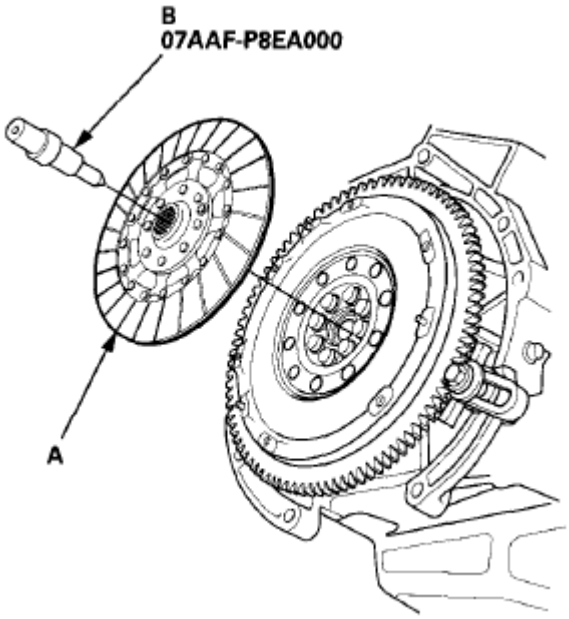


Fig. 41: Identifying Clutch Disc And Clutch Alignment Shaft
Courtesy of AMERICAN HONDA MOTOR CO., INC.

9. Inspect the lining of the clutch disc for signs of slippage or oil. If the clutch disc looks burnt or is oil soaked, replace the clutch disc. If the clutch disc is oil soaked, find and repair the source of the oil leak.

10. Measure the clutch disc thickness. If the measurement is less than the service limit, replace the clutch disc.

    Standard (New): 7.9-8.5 mm (0.311-0.335 in)

    Service Limit: 6.0 mm (0.236 in)

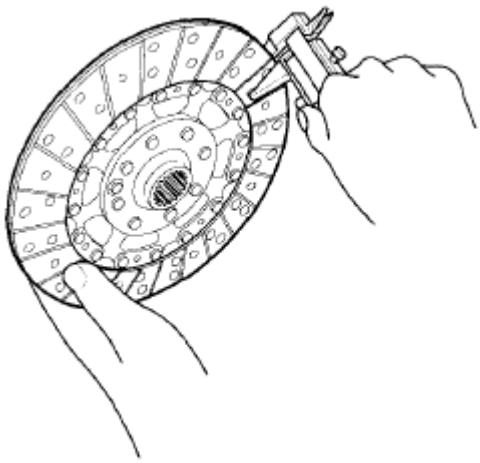


Fig. 42: Measuring Clutch Disc Thickness
Courtesy of AMERICAN HONDA MOTOR CO., INC.

11. Measure the depths of the rivets from the clutch disc lining surface (A) to the rivets (B) on both sides. If the measurement is less than the service limit, replace the clutch disc.

    Standard (New): 1.35-1.95 mm (0.0531-0.0768 in)

    Service Limit: 0.7 mm (0.028 in)

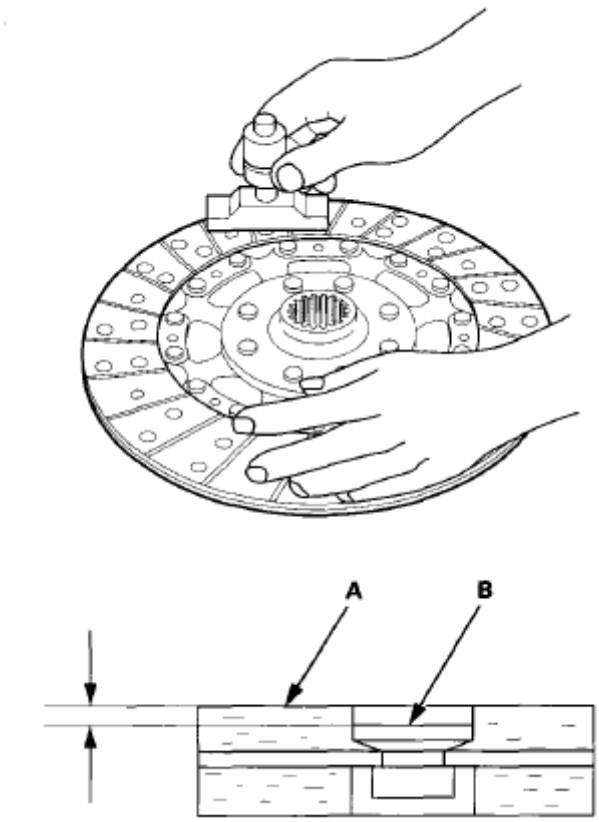


Fig. 43: Measuring Depths Of Rivets From Clutch Disc Lining Surface To Rivets On Both Sides
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Flywheel Inspection

12. Remove the ring gear holder.
13. Inspect the ring gear teeth for wear and damage.
14. Inspect the clutch disc mating surface on the flywheel for wear, cracks, and burning.
15. Measure the flywheel (A) runout using a dial indicator (B). Through at least two full turns with pushing against the flywheel each time you turn it to take up the crankshaft thrust washer clearance. If the measurement is not within the standard, replace the flywheel, and recheck the runout; go to step 16.

    Standard (New): 0.3 mm (0.012 in) max.

    Service Limit: 0.4 mm (0.016 in)

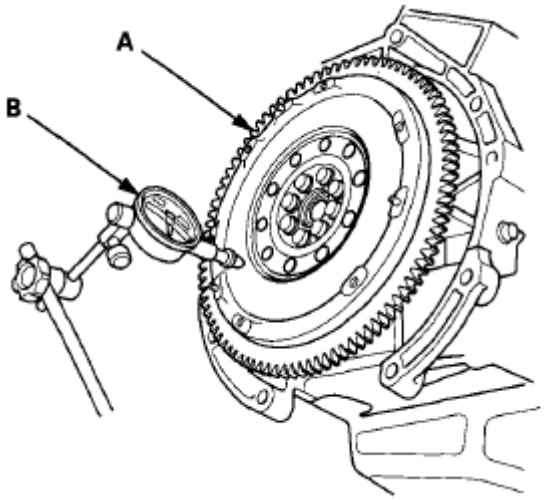


Fig. 44: Measuring Flywheel Runout Using Dial Indicator
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Flywheel Replacement

16. Install the ring gear holder (A).

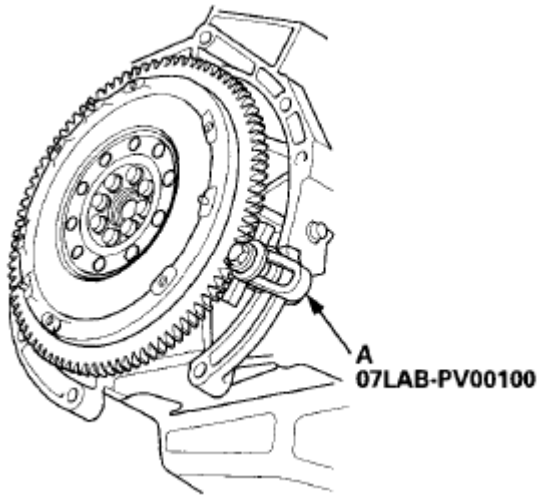


Fig. 45: Identifying Ring Gear Holder
Courtesy of AMERICAN HONDA MOTOR CO., INC.

17. Loosen the flywheel mounting bolts in a crisscross pattern in several steps. Remove the bolts, then remove the flywheel and the ring gear holder.
18. Install the flywheel on the crankshaft, and install the mounting bolts finger-tight.
19. Install the ring gear holder (A), then torque the flywheel mounting bolts (B) in a crisscross pattern in several steps.

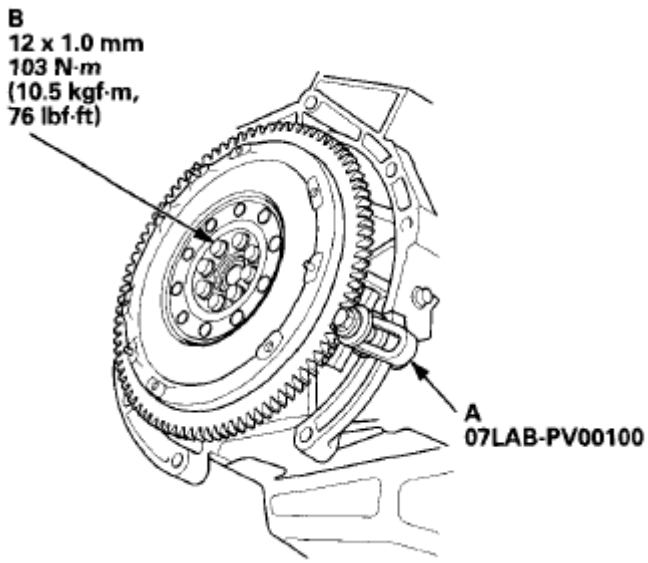


Fig. 46: Identifying Ring Gear Holder And Flywheel Mounting Bolts With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Pilot Bearing Inspection

20. Turn the inner race of the pilot bearing with your finger. The pilot bearing should turn smoothly and quietly. Check that the pilot bearing outer race fits tightly in the flywheel. If the race does not turn smoothly, quietly, or fit tight in the flywheel, replace the pilot bearing; go to step 21.

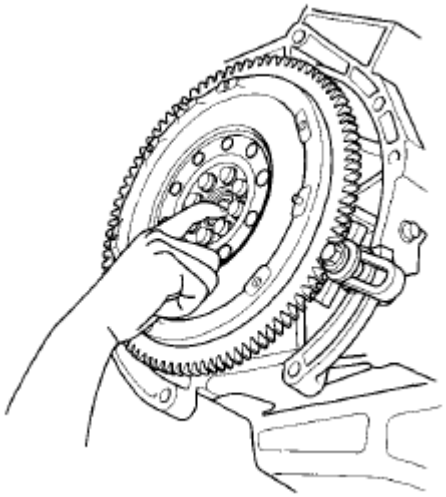


Fig. 47: Turning Inner Race Of Pilot Bearing With Your Finger
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Pilot Bearing Replacement

21. Remove the pilot bearing (A) using the slide hammer (B), the remover handle (C), and the 20 mm bearing remover shaft set (D).

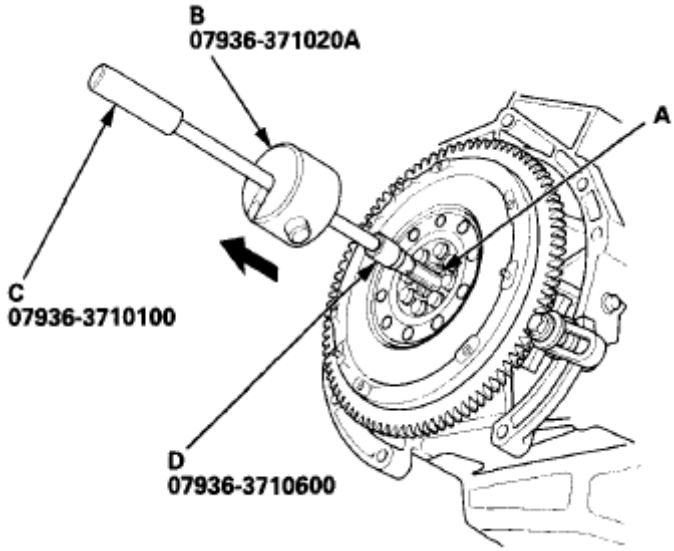


Fig. 48: Identifying Pilot Bearing, Slide Hammer, Remover Handle And Bearing Remover Shaft Set
Courtesy of AMERICAN HONDA MOTOR CO., INC.

22. Install a new pilot bearing (A) into the flywheel using the 15 x 135L driver handle (B) and the 22 x 24 mm bearing driver attachment (C).

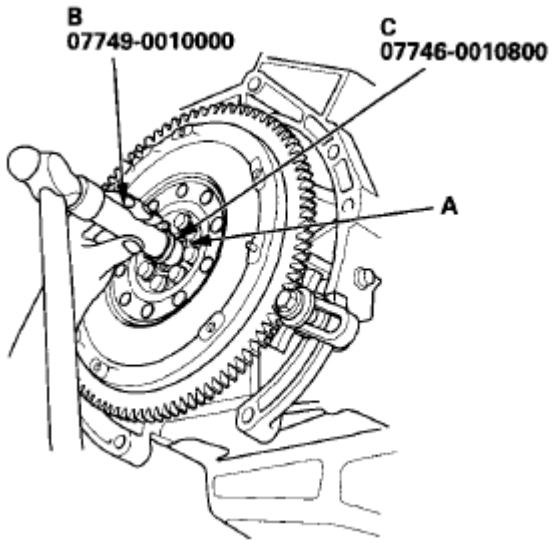


Fig. 49: Identifying Pilot Bearing, Driver Handle And Bearing Driver Attachment
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Clutch Disc and Pressure Plate Installation

23. Temporarily install the clutch disc onto the splines of the transmission mainshaft. Make sure the clutch disc slides freely on the mainshaft.
24. Apply super high temp urea grease (P/N 08798-9002) to the splines (A) of the clutch disc (B), then install the clutch disc using the clutch alignment shaft (C).

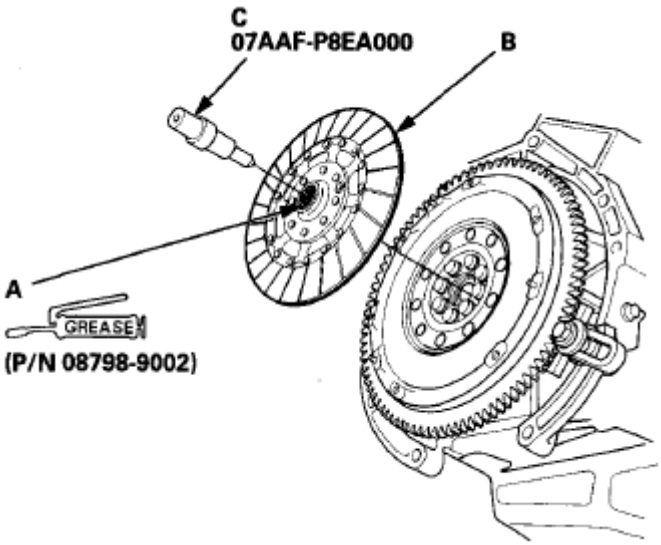


Fig. 50: Identifying Splines, Clutch Disc And Clutch Alignment Shaft
Courtesy of AMERICAN HONDA MOTOR CO., INC.

25. Align (±60 degrees) the point marks (A) across the pressure plate (B) and the flywheel (C).

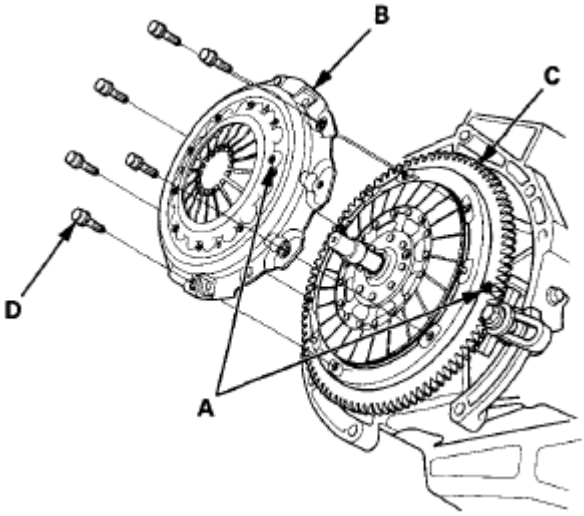


Fig. 51: Identifying Point Marks, Pressure Plate And Flywheel
Courtesy of AMERICAN HONDA MOTOR CO., INC.

26. Install the pressure plate and the mounting bolts (D), finger-tight.
27. Torque the pressure plate mounting bolts (A) in a crisscross pattern. Tighten the bolts in several steps to prevent warping the diaphragm spring. Make sure that there is no clearance between the pressure plate and the flywheel.

Specified Torque: 25 N.m (2.6 kgf.m, 19 lbf.ft)

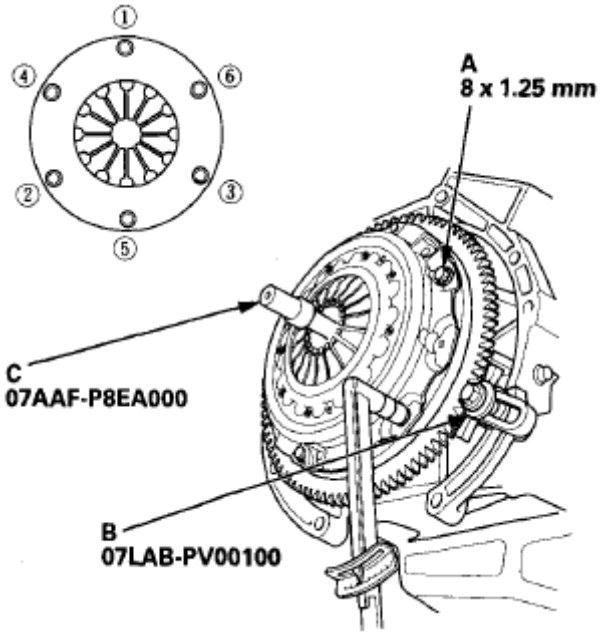


Fig. 52: Identifying Mounting Bolts, Ring Gear Holder And Clutch Alignment Shaft
Courtesy of AMERICAN HONDA MOTOR CO., INC.

28. Remove the ring gear holder (B) and the clutch alignment shaft (C).
29. Make sure the diaphragm spring fingers are all the same height.
30. Do the release bearing inspection, and replace it if necessary.
31. Install the transmission (see **TRANSMISSION INSTALLATION**).

TRANSMISSION SIDE

Release Bearing Removal

1. Remove the transmission (see **TRANSMISSION REMOVAL**).
2. Remove the release fork boot (A) from the clutch housing (B).

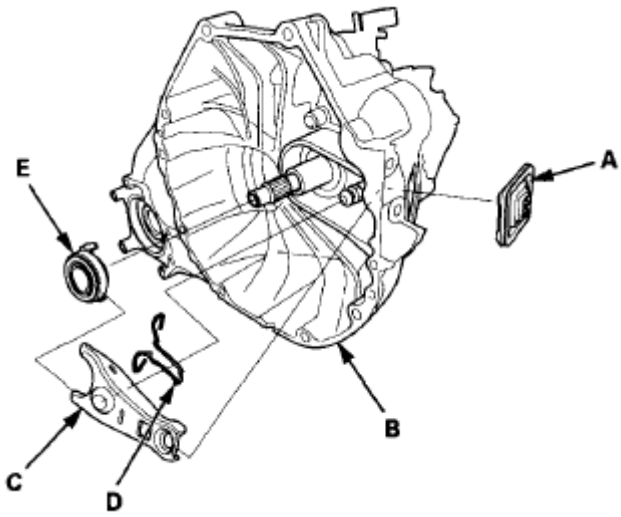


Fig. 53: Identifying Fork Boot, Clutch Housing, Fork Set Spring And Bearing
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Remove the release fork (C) from the clutch housing by squeezing the release fork set spring (D). Remove the release bearing (E).

Release Bearing Inspection

4. Check the play of the release bearing by spinning it by hand. If there is excessive play or noise, replace the release bearing.

NOTE: The release bearing is packed with grease. Do not wash it in solvent.

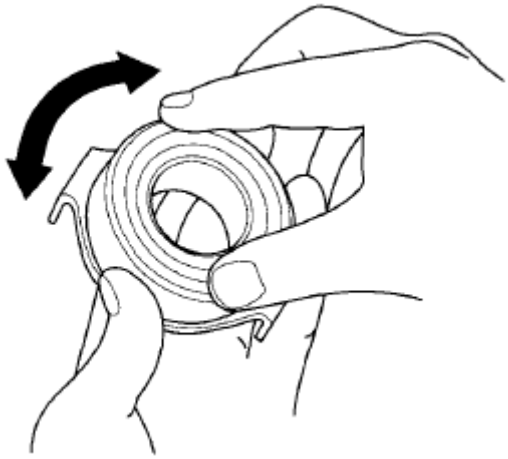


Fig. 54: Checking Play Of Release Bearing By Spinning It By Hand
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Release Bearing Installation

5. Apply super high temp urea grease (P/N 08798-9002) to the release fork (A), the release fork bolt (B), the release bearing (C), and the release bearing guide (D) in the shaded areas, then set the release fork set spring (E).

NOTE: Replace the release fork bolt if necessary.

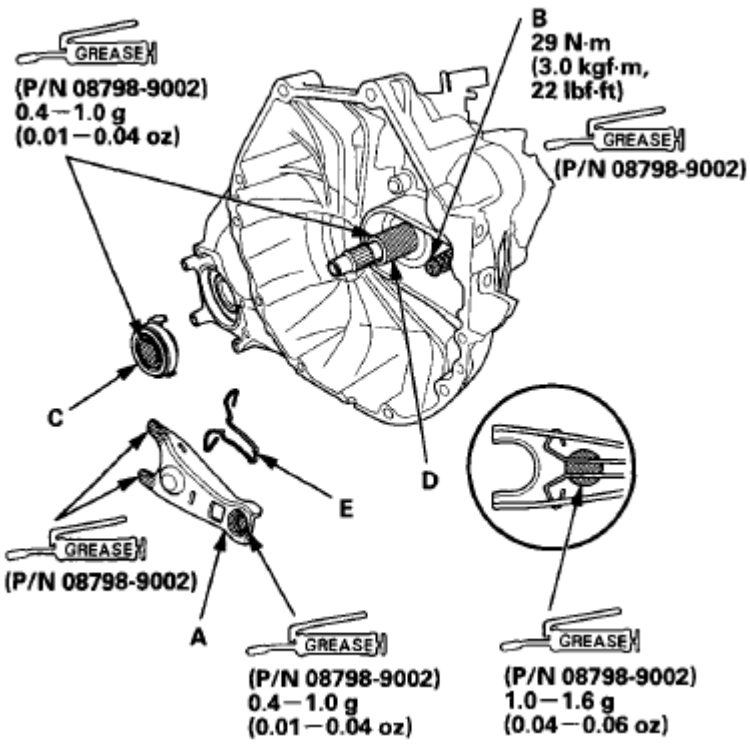


Fig. 55: Identifying Fork, Fork Bolt, Bearing, Bearing Guide And Fork Set Spring With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. With the release fork (A) slide between the release bearing pawls (B), install the release bearing on the mainshaft while inserting the release fork through the hole (C) in the clutch housing.

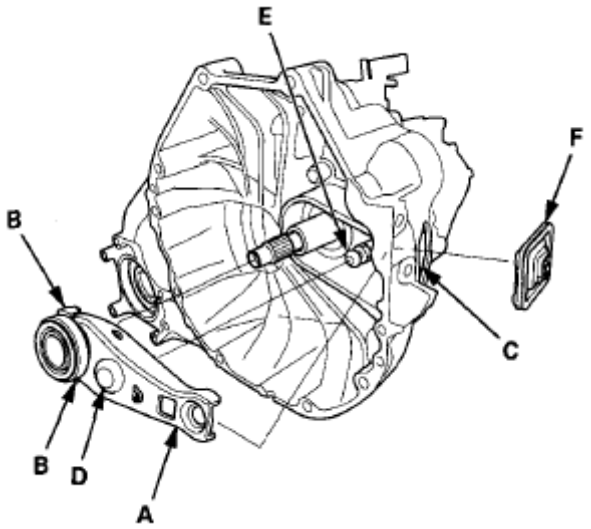


Fig. 56: Identifying Fork, Bearing Pawls, Hole, Detent, Fork Bolt And Clutch Housing
Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Align the detent (D) of the release fork with the release fork bolt (E), then press the detent of the release fork over the release fork bolt squarely.
8. Install the release fork boot (F). Make sure the boot seals around the release fork and the clutch housing.
9. Move the release fork (A) right and left to make sure that it fits properly against the release bearing (B) and that the release bearing slides smoothly. Wipe off any excess grease.

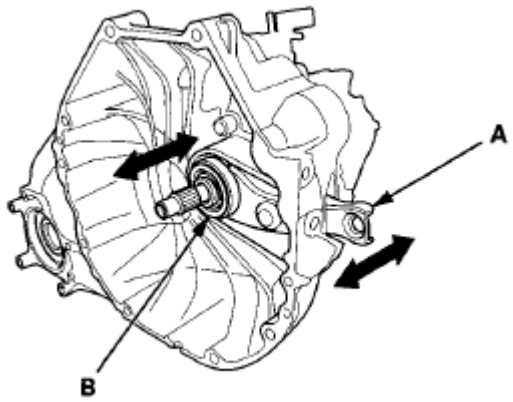


Fig. 57: Identifying Fork And Bearing
Courtesy of AMERICAN HONDA MOTOR CO., INC.

10. Install the transmission (see **TRANSMISSION INSTALLATION**).

2012 TRANSMISSION

Manual Transmission - TL

SPECIAL TOOLS

Ref.No.	Tool Number	Description	Qty
①	070AD-PYZA100	Driver, 58 x 62 mm	1
②	070AG-SJAA10S	Subframe Alignment Pin	1
③	070AJ-0020101	Preload Inspection Tool	1
④	07746-0010300	Bearing Driver Attachment, 42 x 47 mm	1
⑤	07746-0010400	Bearing Driver Attachment, 52 x 55 mm	1
⑥	07746-0010600	Bearing Driver Attachment, 72 x 75 mm	1
⑦	07746-0030100	Driver Handle, 40 mm I.D.	1
⑧	07749-0010000	Driver Handle, 15 x 135L	1
⑨	07946-MB00000	Driver, 30 mm I.D.	1
⑩	07GAJ-PG20110	Mainshaft Holder	1
⑪	07GAJ-PG20130	Mainshaft Base	1
⑫	07JAD-SH30100	Oil Seal Driver Attachment, 65 mm	1
⑬	07LAD-PW50601	Installer Attachment 40 mm	1
⑭	07MAF-SP0011A	Tapered Bearing Race Installer A	1
⑮	07MAF-SP0013A	Installer Shaft	1
⑯	07NAD-P20A100	Oil Seal Driver Attachment	1
⑰	07NAD-PX40100	Bearing Driver Attachment, 78 x 80 mm	1
⑱	07PAF-0030100	Remover Installer, 22 x 37/46 x 52 mm	1
⑲	07XAB-0010101	Flange Holder	1
⑳	07YAC-0010100	Adjustable Bearing Puller, 45—75 mm	1

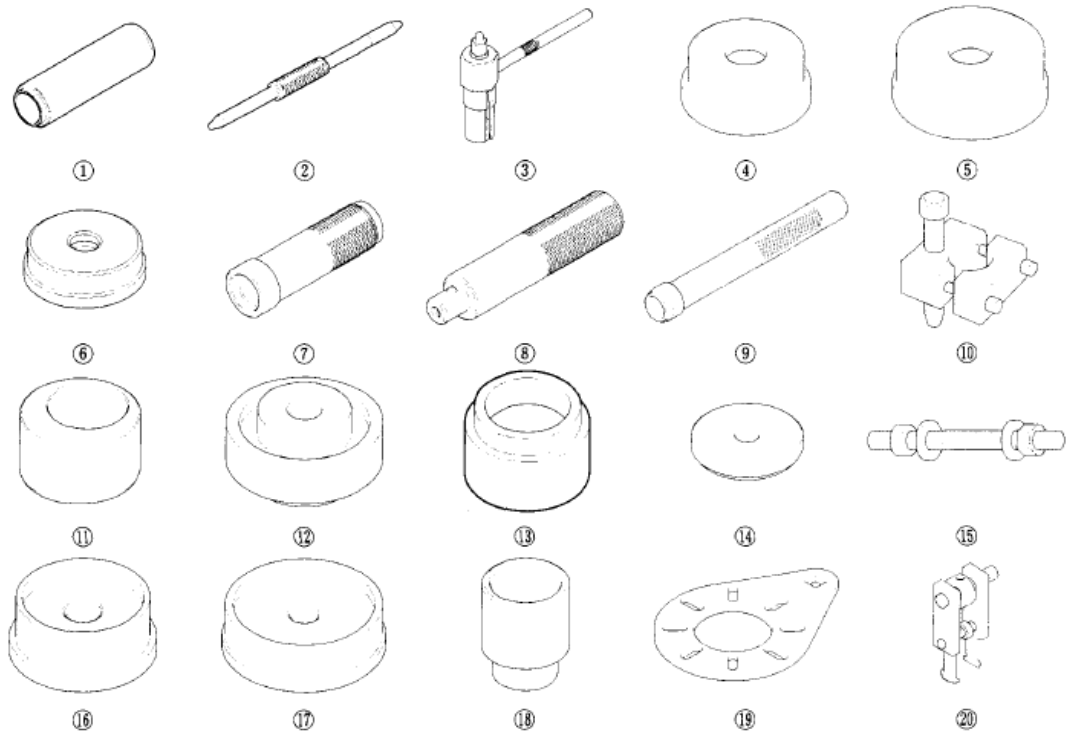


Fig. 1: Identifying Manual Transmission Special Tools
Courtesy of AMERICAN HONDA MOTOR CO., INC.

COMPONENT LOCATION INDEX

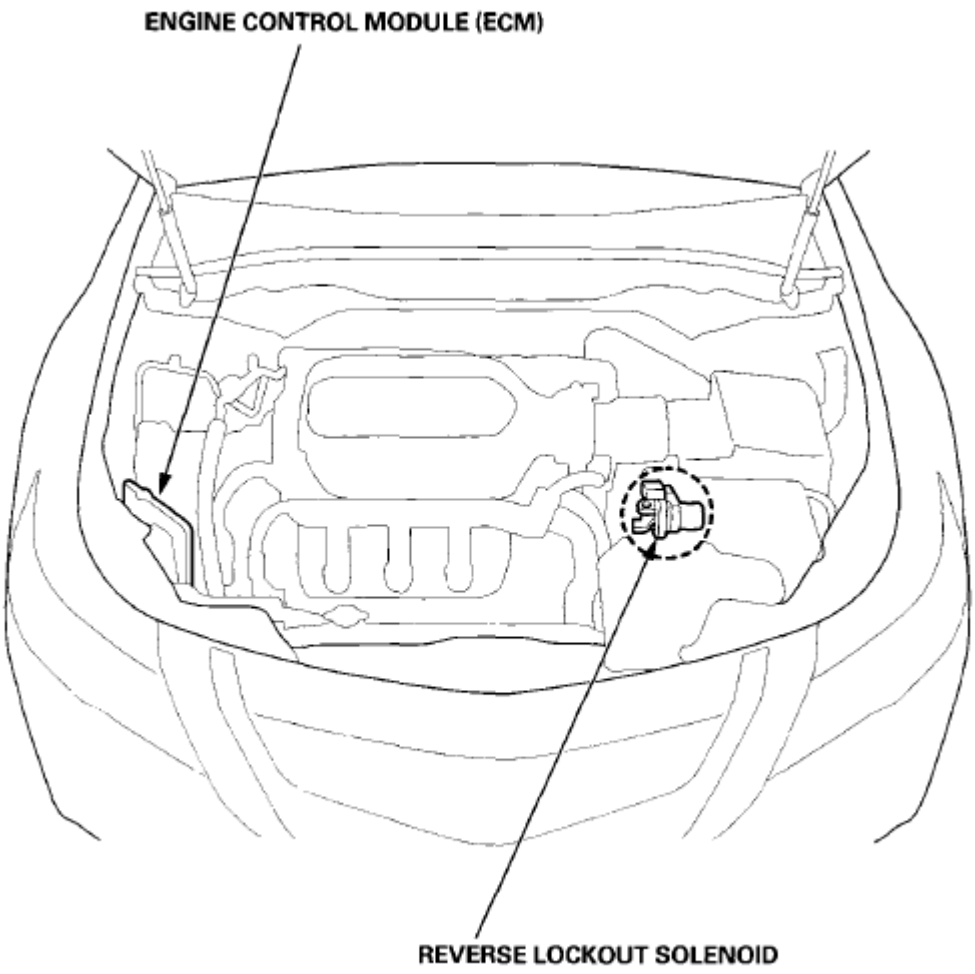


Fig. 2: ECM & Reverse Lockout Solenoid Components Location
Courtesy of AMERICAN HONDA MOTOR CO., INC.

SYSTEM DESCRIPTION

At vehicle speeds of 12 mph (20 km/h) or more, the ECM, which monitors the signals from the output shaft (countershaft) speed sensor, activates the reverse lockout solenoid, which pushes the select lock cam and the select lock pin into the locked position. As a result, the interlock cannot rotate to the reverse select position, making it impossible to engage reverse gear. As the vehicle speed drops to of 9 mph (15 km/h) or less, the ECM turns off the reverse lockout solenoid. The select lock pin spring pulls back the select lock pin, enabling the interlock to move freely so reverse gear can be selected.

Vehicle speed	Inhibitor	Reverse selection
Above 12 mph (20 km/h)	ON	Not allowed
Below 9 mph (15 km/h)	OFF	OK

Vehicle in OFF mode	OFF	OK

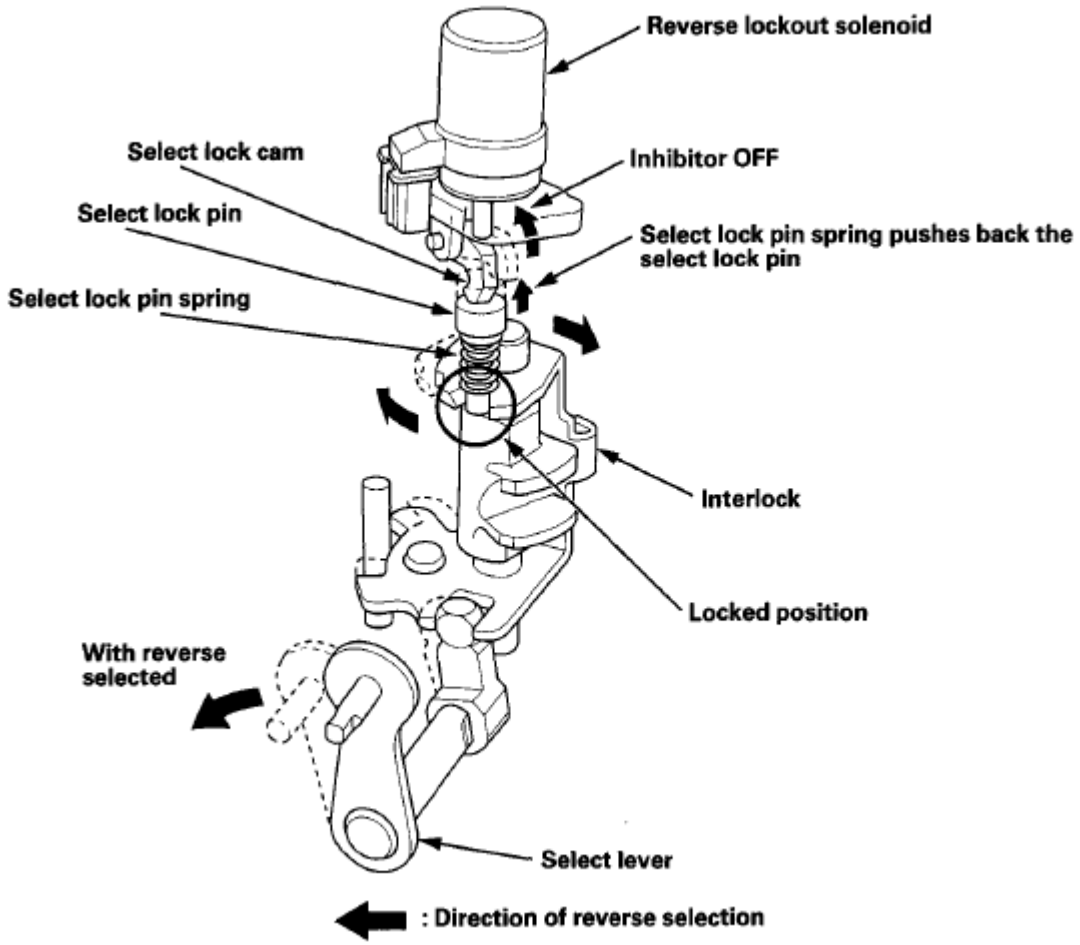


Fig. 3: Identifying Reverse Lockout System Components
Courtesy of AMERICAN HONDA MOTOR CO., INC.

CIRCUIT DIAGRAM

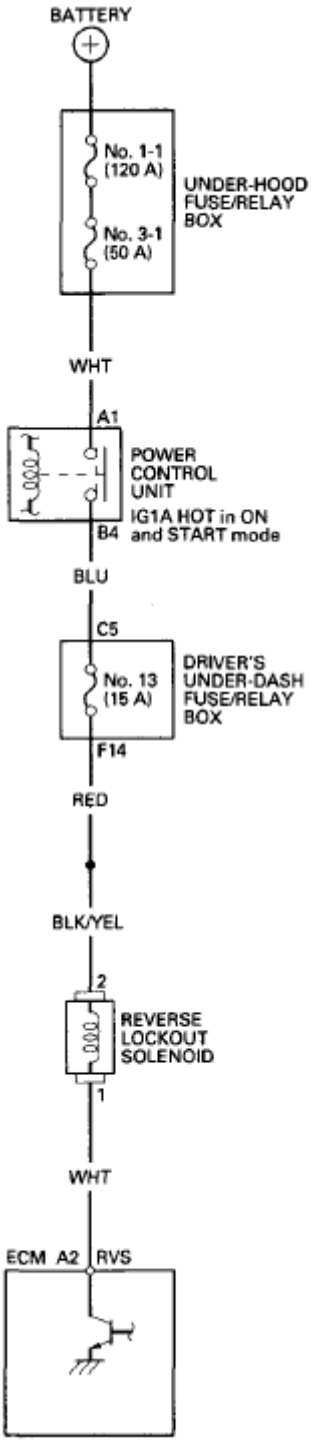


Fig. 4: Reverse Lockout System - Circuit Diagram
Courtesy of AMERICAN HONDA MOTOR CO., INC.

SYMPTOM TROUBLESHOOTING

DRIVER CAN SELECT REVERSE GEAR WHEN VEHICLE SPEED IS 12 MPH (20 KM/H) OR

MORE

NOTE:

- **When checking if the transmission will shift to reverse while the wheels are being driven forward, raise the vehicle on a lift, make sure it is securely supported, and allow the front wheels to rotate freely.**
- **Do not release the clutch pedal if you can select reverse gear while the wheels are driven forward.**
- **When the vehicle is on a lift, and you make the wheels rotate, turn off the VSA system by the VSA OFF switch.**
- **Refer to How to Troubleshoot Circuits at the ECM Connectors in the Fuel and Emissions Systems Information before troubleshooting this circuit (see HOW TO TROUBLESHOOT CIRCUITS AT THE ECM/PCM CONNECTORS).**

1. Press the engine start/stop button to select the OFF mode.
2. Check the No. 13 (15 A) fuse in the driver's under-dash fuse/relay box.

   Is the fuse OK?

   YES - Reinstall the fuse, then go to step 3.

   NO - Install a new No. 13(15 A) fuse, and recheck. If the fuse continues to blow, check for short to body ground in the wire between the No. 13 (15 A) fuse in the driver's under-dash fuse/relay box and the reverse lockout solenoid.

3. Test-drive the vehicle.
4. Check for fuel and emissions system's DTCs with the HDS.

   Are there any DTCs stored in the ECM?

   YES - Go to the indicated ECM DTC's troubleshooting.

   NO - Go to step 5.

5. Press the engine start/stop button to select the OFF mode.
6. Disconnect the reverse lockout solenoid 2P connector.
7. Press the engine start/stop button to select the ON mode.
8. Measure the voltage between reverse lockout solenoid 2P connector terminal No. 2 and body ground.

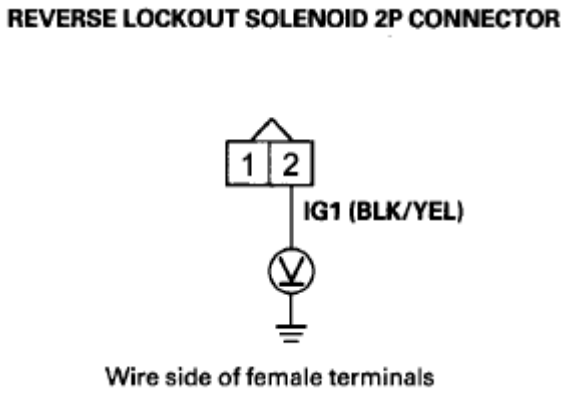


Fig. 5: Measuring Voltage Between Reverse Lockout Solenoid 2P Connector Terminal No. 2 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there battery voltage?

YES - Go to step 9.

NO - Repair an open in the wire between the reverse lockout solenoid and the No. 13 (15 A) fuse in the driver's under-dash fuse/relay box.

9. Press the engine start/stop button to select the OFF mode.
10. Jump the SCS line with the HDS.
11. Disconnect ECM connector A (49P).
12. Check for continuity between reverse lockout solenoid 2P connector terminal No. 1 and ECM connector A (49P) terminal No. 2.

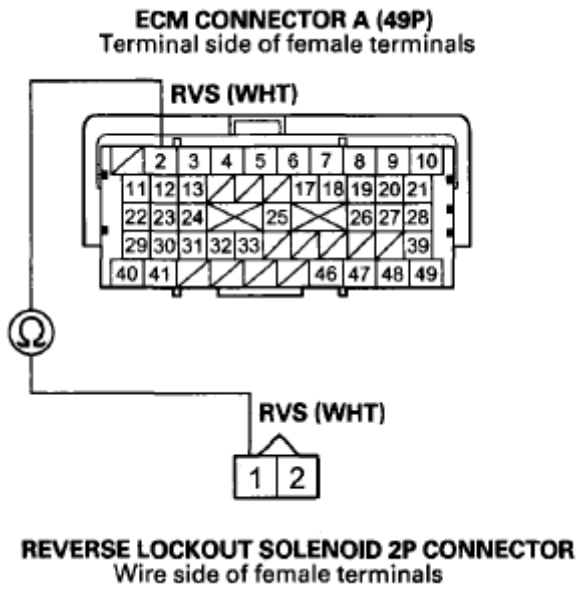


Fig. 6: Checking Continuity Between Reverse Lockout Solenoid 2P Connector Terminal No. 1 And

ECM Connector (49P) Terminal No. 2
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 13.

NO - Repair an open in the wire between the reverse lockout solenoid and the ECM.

13. Do the reverse lockout solenoid test (see **REVERSE LOCKOUT SOLENOID TEST**).

Is the reverse lockout solenoid OK?

YES - Check for loose terminals or poor connections at the ECM. If necessary, update the ECM if it does not have the latest software (see **ECM/PCM UPDATE**), or substitute a known-good ECM (see **SUBSTITUTING THE ECM/PCM**), then recheck. If the symptom goes away with a known-good ECM, replace the original ECM (see **ECM/PCM REPLACEMENT**).

NO - Repair or replace the reverse lockout solenoid (see **REVERSE LOCKOUT SOLENOID DISASSEMBLY/REASSEMBLY**).

DRIVER CANNOT SELECT REVERSE GEAR WHEN VEHICLE SPEED IS 9 MPH (15 KM/H) OR LESS

NOTE:

- **When checking if the transmission will shift to reverse while the wheels are being driven forward, raise the vehicle on a lift, make sure it is securely supported, and allow the front wheels to rotate freely.**
- **Do not release the clutch pedal if you can select reverse gear while the wheels are driven forward.**
- **When the vehicle is on a lift, and you make the wheels rotate, turn off the VSA system by the VSA OFF switch.**
- **Refer to How to Troubleshoot Circuits at the ECM Connectors in the Fuel and Emissions Systems Information before troubleshooting this circuit (see HOW TO TROUBLESHOOT CIRCUITS AT THE ECM/PCM CONNECTORS).**

1. Press the engine start/stop button to select the OFF mode.
2. Try to shift the transmission into reverse.

Can you shift the transmission into the reverse?

YES - Go to step 4.

NO - Go to step 3.

3. Do the reverse lockout solenoid test (see **REVERSE LOCKOUT SOLENOID TEST**).

Is the reverse lockout solenoid OK?

YES - Check the reverse idler gear shaft assembly (see **REVERSE IDLER GEAR SHAFT ASSEMBLY DISASSEMBLY/REASSEMBLY**), or inspect the internal transmission.

NO - Repair or replace the reverse lockout solenoid (see **REVERSE LOCKOUT SOLENOID DISASSEMBLY/REASSEMBLY**).

4. Start the engine.

   Can you shift the transmission into the reverse?

   YES - Intermittent failure, the system is OK at this time.

   NO - Go to step 5.

5. Press the engine start/stop button to select the OFF mode.
6. Jump the SCS line with the HDS.
7. Disconnect ECM connector A (49P).
8. Disconnect the reverse lockout solenoid 2P connector.
9. Check for continuity between body ground and reverse lockout solenoid 2P connector terminal No. 1.

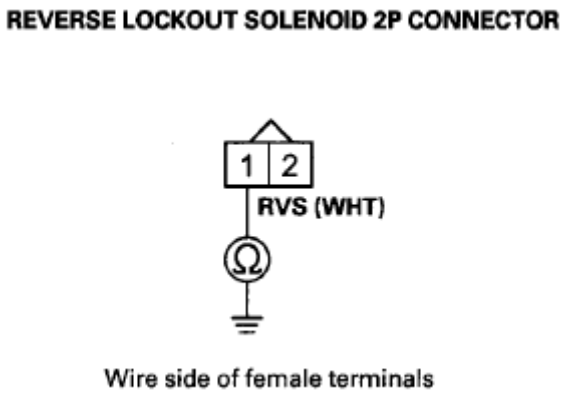


Fig. 7: Checking Continuity Between Body Ground And Reverse Lockout Solenoid 2P Connector Terminal No. 1
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair a short to body ground in the wire between the reverse lockout solenoid and the ECM.

NO - Check for loose terminals or poor connections at the ECM. If necessary, update the ECM if it does not have the latest software (see **ECM/PCM UPDATE**), or substitute a known-good ECM (see **SUBSTITUTING THE ECM/PCM**), then recheck. If the symptom goes away with a known-good ECM, replace the original ECM (see **ECM/PCM REPLACEMENT**).

REVERSE LOCKOUT SOLENOID TEST

1. Remove the reverse lockout solenoid (see **REVERSE LOCKOUT SOLENOID DISASSEMBLY/REASSEMBLY**).
2. Connect jumper wires from the battery positive terminal to reverse lockout solenoid 2P connector terminal No. 2, and from the battery negative terminal to reverse lockout solenoid 2P connector terminal No. 1.

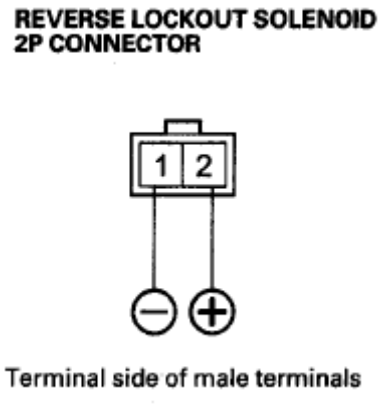


Fig. 8: Identifying Reverse Lockout Solenoid 2P Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Make sure the reverse lockout solenoid works. If the reverse lockout solenoid does not work, replace it.

NOTE: The inhibitor should be pushed out when applying battery voltage to the solenoid, and the inhibitor should be released when there is no battery voltage at the solenoid.

REVERSE LOCKOUT SOLENOID DISASSEMBLY/REASSEMBLY

NOTE: Use fender covers to avoid damaging painted surfaces.

1. Do the battery removal procedure (see **BATTERY REMOVAL AND INSTALLATION**).
2. Remove the air cleaner assembly (see **THROTTLE BODY CLEANING**).
3. Remove the front splash shield (see **FRONT SPLASH SHIELD REPLACEMENT**).
4. Support the under engine/transmission with a floor jack.

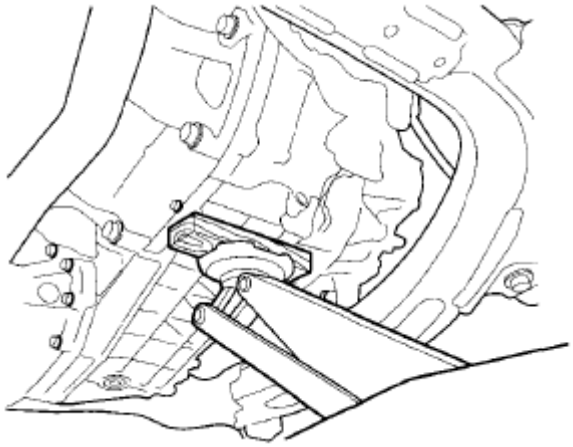


Fig. 9: Supporting Under Engine/Transmission Using Floor Jack
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Remove the upper transmission mount bracket bolts (A).

NOTE: Do not remove the bolt (B) from the upper transmission mount. If the bolt is removed, the upper transmission mount must be replaced as an assembly.

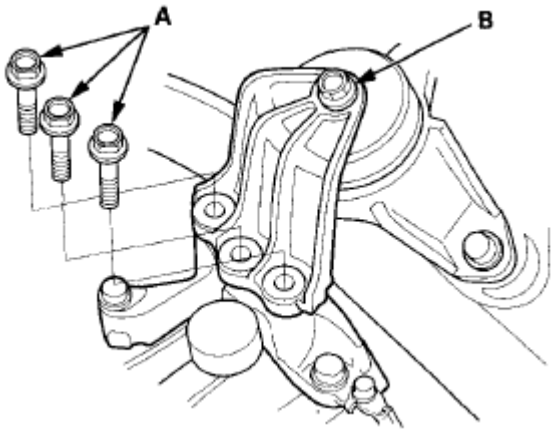


Fig. 10: Identifying Upper Transmission Mount Bracket Bolts
Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Disconnect the ground cable (A), then remove the upper transmission mount bracket (B).

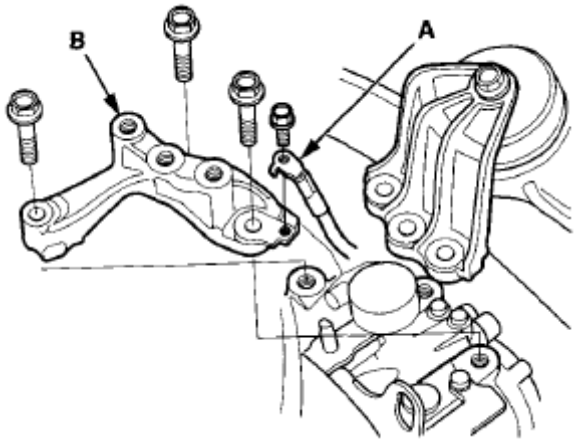


Fig. 11: Identifying Upper Transmission Mount Bracket And Ground Cable
Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Disconnect the reverse lockout solenoid connector (A).

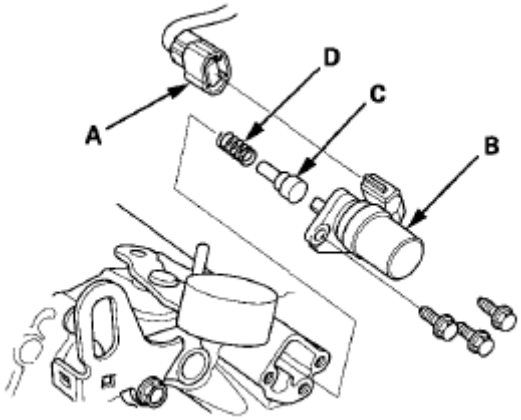


Fig. 12: Identifying Reverse Lockout Solenoid, Reverse Lockout Solenoid Connector, Lock Pin And Lock Pin Spring
Courtesy of AMERICAN HONDA MOTOR CO., INC.

8. Remove the reverse lockout solenoid (B), the select lock pin (C), and the select lock pin spring (D).
9. Remove the pin (A) and the select lock cam (B).

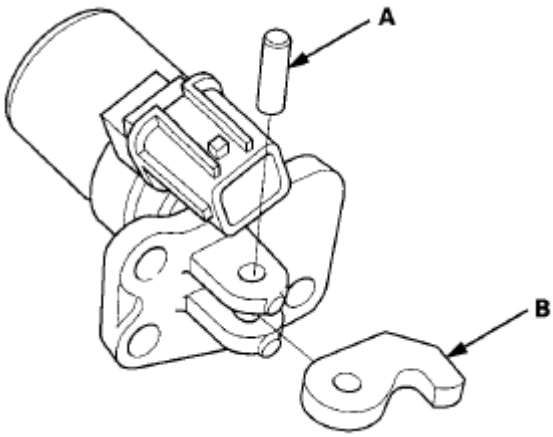


Fig. 13: Identifying Lock Cam And Pin
Courtesy of AMERICAN HONDA MOTOR CO., INC.

10. Install the components of the reverse lockout solenoid in the reverse order of removal.
11. Clean any dirt and oil from the sealing surface of the reverse lockout solenoid and the transmission housing.
12. Apply liquid gasket, P/N 08717-0004, 08718-0001, 08718-0003, 08718-0004, or 08718-0009 evenly to the transmission housing mating surface of the reverse lockout solenoid. Install the component within 5 minutes of applying the liquid gasket.

NOTE:

- **If you apply liquid gasket P/N 08718-0012, the component must be installed within 4 minutes.**
- **If too much time has passed after applying the liquid gasket, remove the old liquid gasket and residue, then reapply new liquid gasket.**

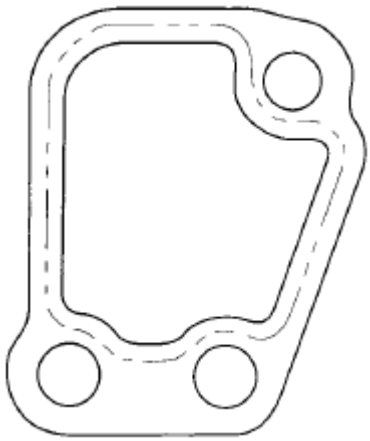


Fig. 14: Identifying Transmission Housing Mating Surface
Courtesy of AMERICAN HONDA MOTOR CO., INC.

13. Install the select lock pin spring (A), the select lock pin (B), and the reverse lockout solenoid (C).

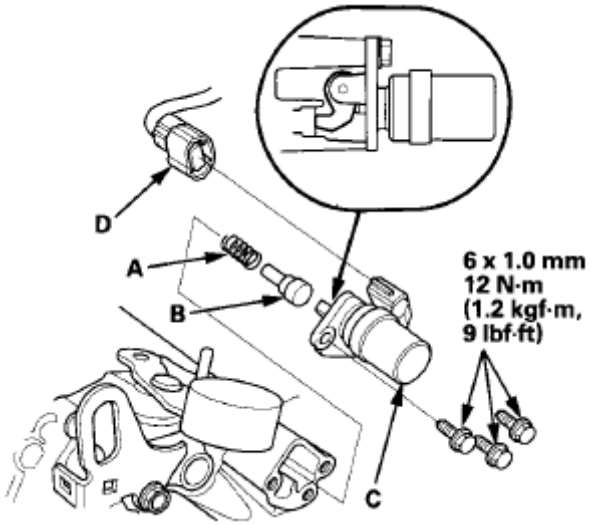


Fig. 15: Identifying Lock Pin, Lock Pin Spring, Reverse Lockout Solenoid And Reverse Lockout Solenoid Connector With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

14. Connect the reverse lockout solenoid connector (D).
15. Install the upper transmission mount bracket (A) with new bolts, and connect the ground cable (B).

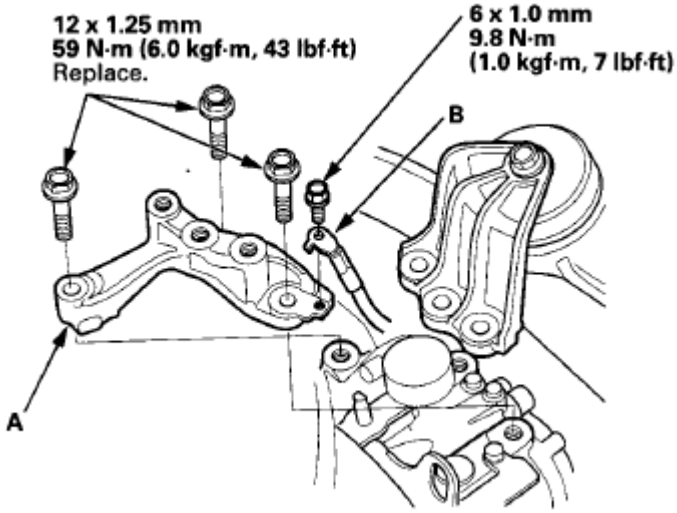


Fig. 16: Identifying Upper Transmission Mount Bracket And Ground Cable With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

16. Connect the upper transmission mount bracket (A) and the upper transmission mount (B) with new bolts.

NOTE: If the bolt (C) was loosened by mistake during removal, the upper transmission mount must be replaced as an assembly.

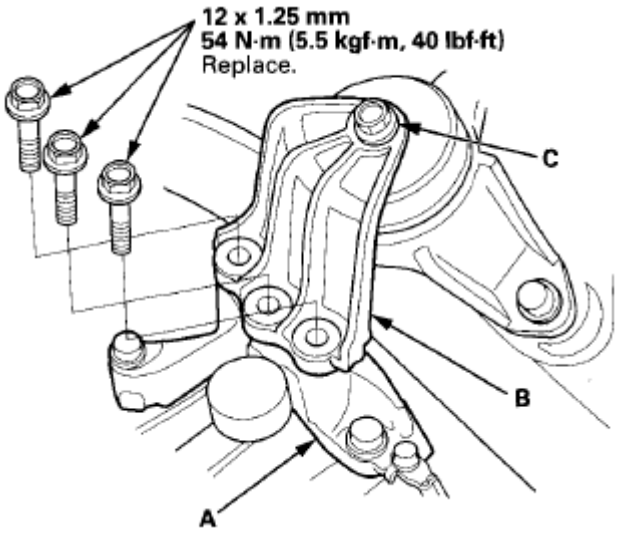


Fig. 17: Identifying Upper Transmission Mount Bracket, Upper Transmission Mount And Bolt With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

17. Remove the floor jack that support the engine/transmission.
18. Install the front splash shield (see **FRONT SPLASH SHIELD REPLACEMENT**).
19. Install the air cleaner assembly (see **THROTTLE BODY CLEANING**).
20. Do the battery installation procedure (see **BATTERY REMOVAL AND INSTALLATION**).

COMPONENT LOCATION INDEX

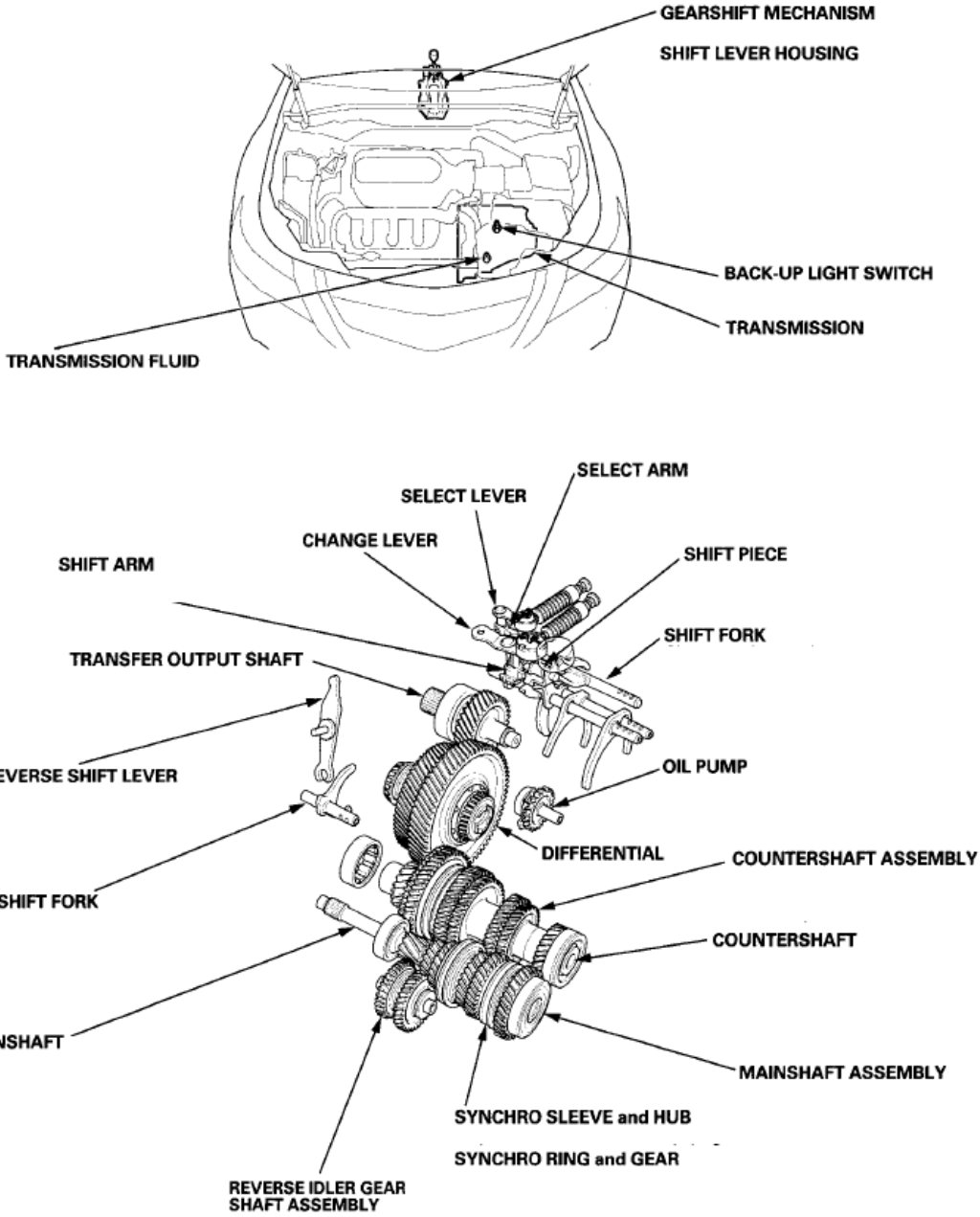


Fig. 18: Identifying Manual Transmission Components Location
Courtesy of AMERICAN HONDA MOTOR CO., INC.

SYMPTOM TROUBLESHOOTING INDEX

Symptom	Diagnostic procedure
	1. Check and/or replace the MTF (see **TRANSMISSION FLUID INSPECTION AND REPLACEMENT**). 2. Check the clutch (see **CLUTCH REPLACEMENT**).

Hard to shift into 1st gear	3. Check the change lever and the select lever (see **TRANSMISSION DISASSEMBLY**). 4. Check the 1st synchro ring and 1st gear (see **SYNCHRO RING AND GEAR INSPECTION**). 5. Check the 1st/2nd synchro sleeve and hub (see **SYNCHRO SLEEVE AND HUB INSPECTION AND REASSEMBLY**).
Hard to shift into 2nd gear	1. Check and/or replace the MTF (see **TRANSMISSION FLUID INSPECTION AND REPLACEMENT**). 2. Check the change lever and the select lever (see **TRANSMISSION DISASSEMBLY**). 3. Check the 2nd synchro ring and 2nd gear (see **SYNCHRO RING AND GEAR INSPECTION**). 4. Check the 1st/2nd synchro sleeve and hub (see **SYNCHRO SLEEVE AND HUB INSPECTION AND REASSEMBLY**).
Hard to shift into 3rd gear	1. Check and/or replace the MTF (see **TRANSMISSION FLUID INSPECTION AND REPLACEMENT**). 2. Check the change lever and the select lever (see **TRANSMISSION DISASSEMBLY**). 3. Check the 3rd synchro ring and 3rd gear (see **SYNCHRO RING AND GEAR INSPECTION**). 4. Check the 3rd/4th synchro sleeve and hub (see **SYNCHRO SLEEVE AND HUB INSPECTION AND REASSEMBLY**).
Hard to shift into 4th gear	1. Check and/or replace the MTF (see **TRANSMISSION FLUID INSPECTION AND REPLACEMENT**). 2. Check the change lever and the select lever (see **TRANSMISSION DISASSEMBLY**). 3. Check the 4th synchro ring and 4th gear (see **SYNCHRO RING AND GEAR INSPECTION**). 4. Check the 3rd/4th synchro sleeve and hub (see **SYNCHRO SLEEVE AND HUB INSPECTION AND REASSEMBLY**).
Hard to shift into 5th gear	1. Check and/or replace the MTF (see **TRANSMISSION FLUID INSPECTION AND REPLACEMENT**). 2. Check the change lever and the select lever (see **TRANSMISSION DISASSEMBLY**). 3. Check the 5th synchro ring and 5th gear (see **SYNCHRO RING AND GEAR INSPECTION**). 4. Check the 5th/6th synchro sleeve and hub (see **SYNCHRO SLEEVE AND HUB INSPECTION AND**

	REASSEMBLY).
Hard to shift into 6th gear	1. Check and/or replace the MTF (see **TRANSMISSION FLUID INSPECTION AND REPLACEMENT**). 2. Check the change lever and the select lever (see **TRANSMISSION DISASSEMBLY**). 3. Check the 6th synchro ring and 6th gear (see **SYNCHRO RING AND GEAR INSPECTION**). 4. Check the 5th/6th synchro sleeve and hub (see **SYNCHRO SLEEVE AND HUB INSPECTION AND REASSEMBLY**).
Hard to shift into reverse	1. Check and/or replace the MTF (see **TRANSMISSION FLUID INSPECTION AND REPLACEMENT**). 2. Check the clutch (see **CLUTCH REPLACEMENT**). 3. Check the change lever and the select lever (see **TRANSMISSION DISASSEMBLY**). 4. Check the reverse shift lever (see **REVERSE SHIFT LEVER CLEARANCE INSPECTION**). 5. Check the reverse shift fork and reverse idler gear (see **SHIFT FORK CLEARANCE INSPECTION**). 6. Check reverse gears.
HDS does not communicate with the ECM or the vehicle	Troubleshoot the DLC circuit (see **DLC CIRCUIT TROUBLESHOOTING**).
Driver can select reverse gear when vehicle speed is 12 mph (20 km/h) or more	Do the symptom troubleshooting (see **SYMPTOM TROUBLESHOOTING**).
Driver cannot select reverse gear when vehicle speed is 9 mph (15 km/h) or less	Do the symptom troubleshooting (see **DRIVER CANNOT SELECT REVERSE GEAR WHEN VEHICLE SPEED IS 9 MPH (15 KM/H) OR LESS**).
Noise from the transmission	1. Check and/or replace the MTF (see **TRANSMISSION FLUID INSPECTION AND REPLACEMENT**). 2. Check the MTF level (unfilled or in surplus the transmission with the MTF). 3. Check the transmission gears. 4. Check the transmission bearings. 5. Check the differential carrier, the final driven gear, and the carrier bearings.
Shift lever does not operate smoothly	1. Check and/or replace the MTF (see **TRANSMISSION FLUID INSPECTION AND REPLACEMENT**). 2. Check the shift cables and their joints (see **GEARSHIFT MECHANISM REPLACEMENT**). 3. Check the shift lever housing with the shift lever shaft.

	4. Check the change lever and the select lever (see **TRANSMISSION DISASSEMBLY**).
Transmission jumps out of gear	1. Check and/or replace the MTF (see **TRANSMISSION FLUID INSPECTION AND REPLACEMENT**). 2. Check the detent balls and springs for proper size and/or damage (see **EXPLODED VIEW - TRANSMISSION HOUSING**). 3. Check the teeth of the synchro rings and the gears (see **SYNCHRO RING AND GEAR INSPECTION**). 4. Check for bent, deform, or damage of the shift forks.

TRANSMISSION FLUID INSPECTION AND REPLACEMENT

NOTE: Use fender covers to avoid damaging painted surfaces.

1. Raise the vehicle on a lift, and make sure it is securely supported.
2. Remove the front splash shield (see **FRONT SPLASH SHIELD REPLACEMENT**).
3. Remove the fluid check bolt (A) and the sealing washer (B). Check the condition of the MTF and make sure it is at the proper level (C).

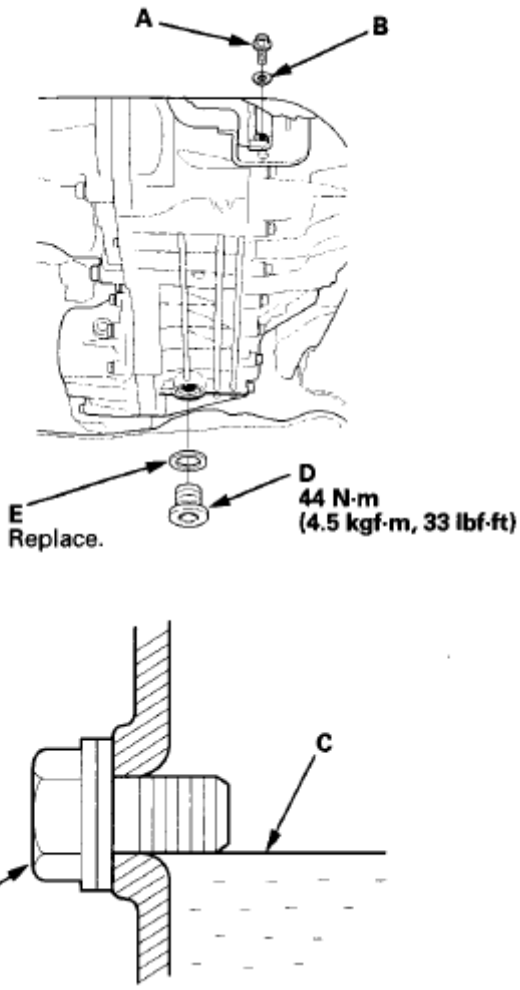


Fig. 19: Identifying Sealing Washer, Drain Plug, MTF Proper Level And Fluid Check Bolt With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. If the fluid is dirty, remove the drain plug (D) and the sealing washer (E), and drain the MTF.
5. Install the drain plug with a new sealing washer.
6. Lower the vehicle.
7. Remove the filler plug (A) and the sealing washer (B).

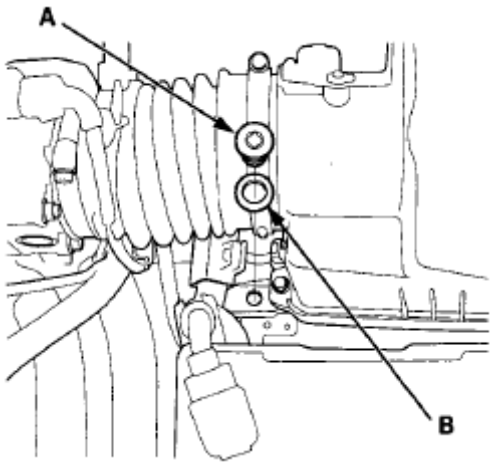


Fig. 20: Identifying Filler Plug And Sealing Washer
Courtesy of AMERICAN HONDA MOTOR CO., INC.

8. Refill the MTF from the filler plug hole on the transmission, until the MTF overflows from the fluid check bolt hole (A). Always use Acura Manual Transmission Fluid (MTF).

   Fluid Capacity:

   2.1 L (2.2 US qt) at fluid change

   2.5 L (2.6 US qt) at overhaul

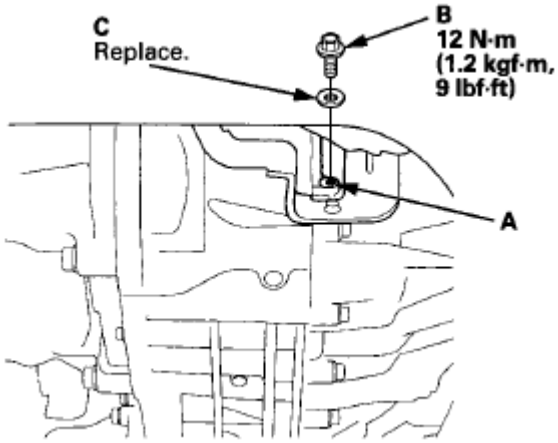


Fig. 21: Identifying Fluid Check Bolt Hole, Sealing Washer And Fluid Check Bolt With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

9. Raise the vehicle on a lift.
10. After the fluid stops overflowing, install the fluid check bolt (B) with a new sealing washer (C).
11. Install the front splash shield (see **FRONT SPLASH SHIELD REPLACEMENT**).
12. Lower the vehicle.

13. Install the filler plug (A) with a new sealing washer (B).

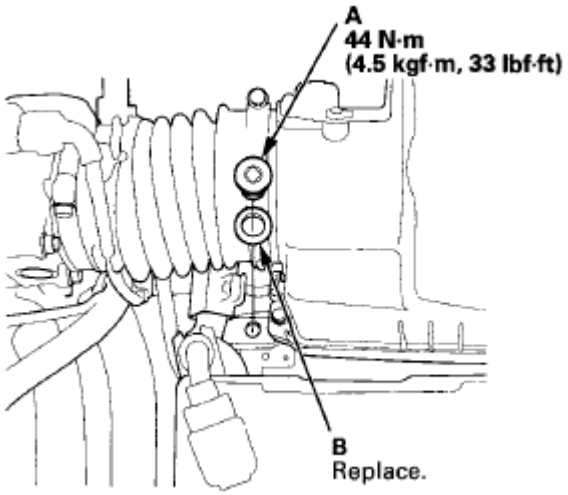


Fig. 22: Identifying Sealing Washer And Filler Plug With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

14. Connect the Honda Diagnostic System (HDS) to the data link connector (DLC) (see **GENERAL TROUBLESHOOTING INFORMATION**).
15. Press the engine start/stop button to select the ON mode.
16. Make sure the HDS communicates with the vehicle and the engine control module (ECM). If it does not communicate, troubleshoot the DLC circuit (see **DLC CIRCUIT TROUBLESHOOTING**).
17. Select GAUGES in the BODY ELECTRICAL with the HDS.
18. Select ADJUSTMENT in the GAUGES with the HDS.
19. Select MAINTENANCE MINDER in the ADJUSTMENT with the HDS.
20. Select RESET in the MAINTENANCE MINDER with the HDS.
21. Select RESETTING THE MTF LIFE with the HDS.

BACK-UP LIGHT SWITCH TEST/REPLACEMENT

NOTE: Use fender covers to avoid damaging painted surfaces.

1. Remove the air intake duct splash separator (A).

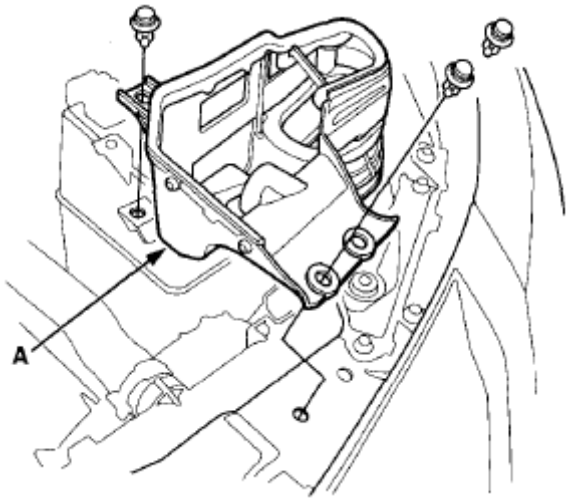


Fig. 23: Identifying Air Intake Duct Splash Separator
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Do the battery removal procedure (see **BATTERY REMOVAL AND INSTALLATION**).
3. Remove the harness clamps (A), then remove the battery base (B).

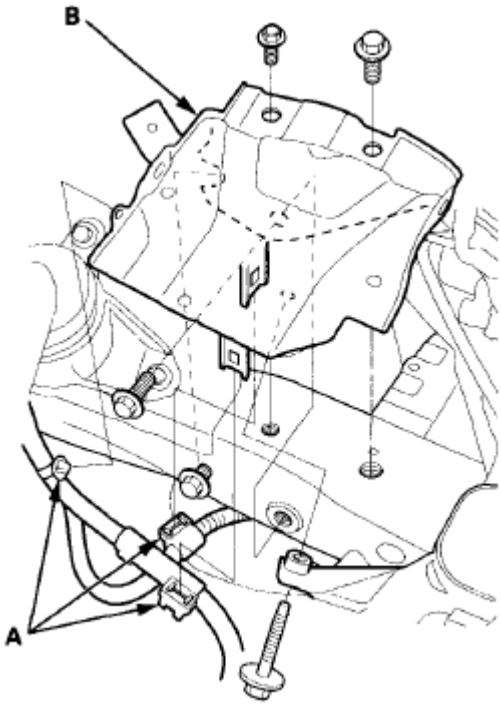


Fig. 24: Identifying Battery Base And Harness Clamps
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Remove transmission hanger A.



Fig. 25: Identifying Transmission Hanger
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Disconnect the back-up light switch 2P connector (A).

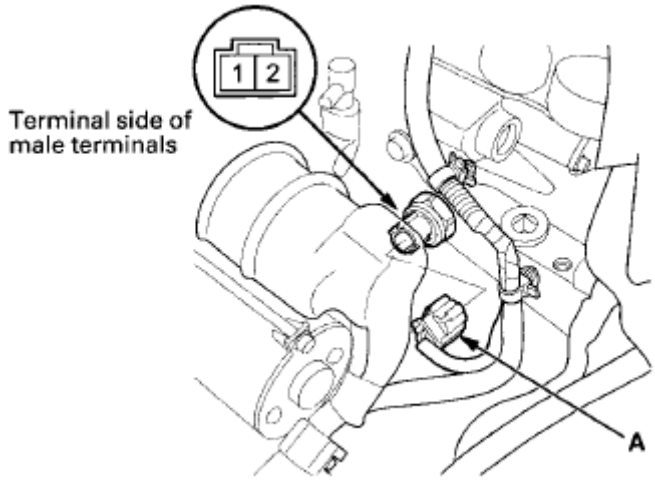


Fig. 26: Identifying Back-Up Light Switch 2P Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Check for continuity between back-up light switch 2P connector terminals No. 1 and No. 2. There should be continuity only when the shift lever is in reverse.
   - If the test result is OK, go to step 9.
   - If the test result is not OK, go to step 7.

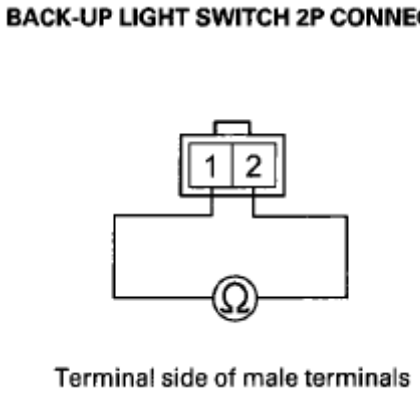


Fig. 27: Checking Continuity Between Back-Up Light Switch 2P Connector Terminals No. 1 And No. 2
Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Remove the back-up light switch (A). Check for continuity between back-up light switch 2P connector terminals No. 1 and No. 2. There should be continuity when the switch end (B) is pressed, and no continuity when the switch end is released.
   - If the test result is OK, check the reverse shift mechanism in the transmission.
   - If the test result is not OK, replace the back-up light switch.

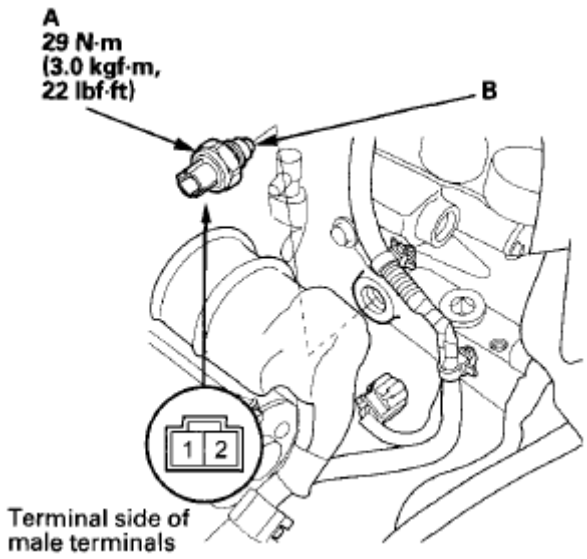


Fig. 28: Identifying Back-Up Light Switch And Switch End With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

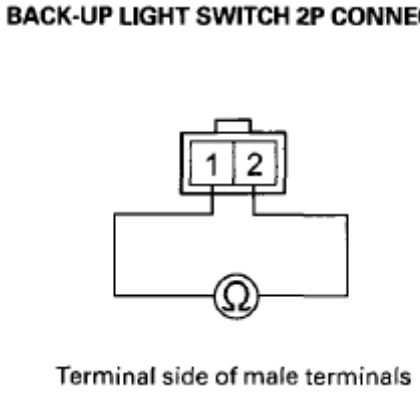


Fig. 29: Identifying Back-Up Light Switch 2P Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

8. Apply liquid gasket (P/N 08717-0004, 08718-0001, 08718-0012, 08718-0003, 08718-0004, or P/N 08718-0009) to the threads of the back-up light switch, and install it on the transmission housing.
9. Connect the back-up light switch 2P connector.
10. Install transmission hanger A.

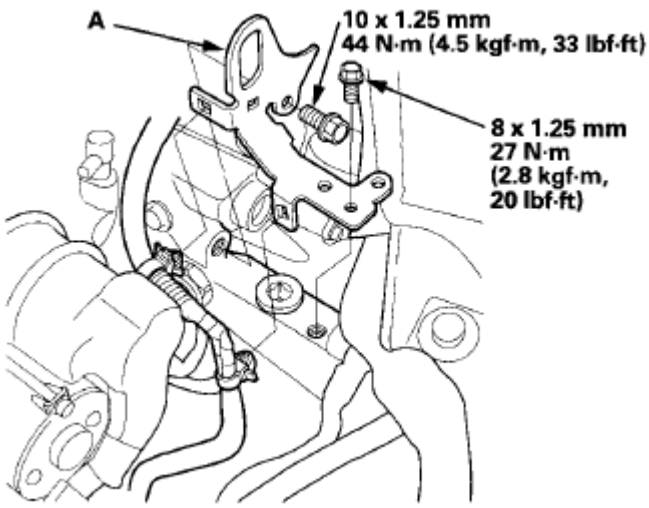


Fig. 30: Identifying Transmission Hanger With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

11. Install the battery base (A) and the harness clamps (B).

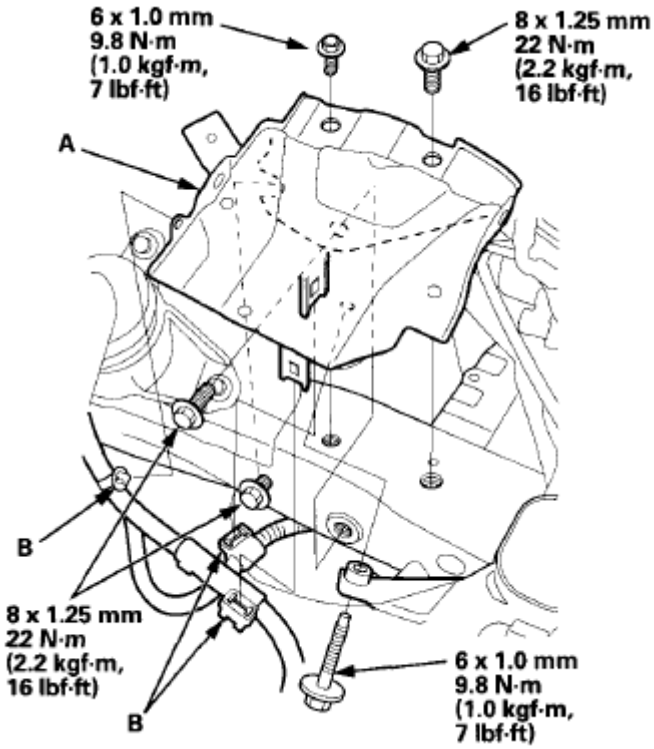


Fig. 31: Identifying Battery Base And Harness Clamps With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

12. Do the battery installation procedure (see **BATTERY REMOVAL AND INSTALLATION**).
13. Install the air intake duct splash separator (A). A.

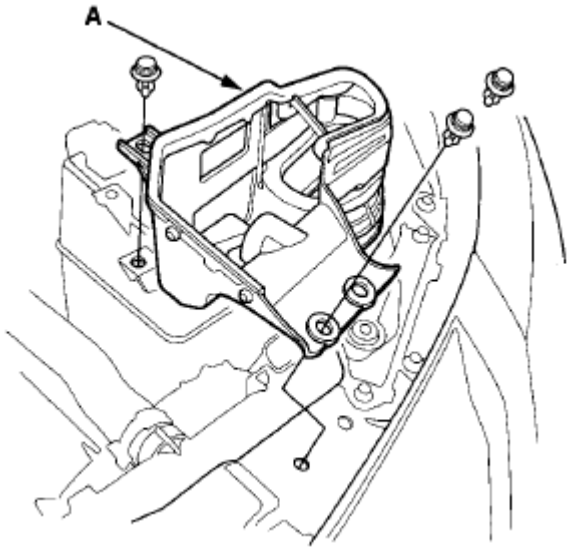


Fig. 32: Identifying Air Intake Duct Splash Separator
Courtesy of AMERICAN HONDA MOTOR CO., INC.

TRANSMISSION REMOVAL

Special Tools Required

- Engine Support Hanger, A and Reds AAR-T1256*
- 2008 V6 Attachment Arm SIL02C000033*
- Subframe Adapter VSB02C000016*
- Engine Hanger Balance Bar VSB02C000019*

*: Available through the Acura Tool and Equipment Program 888-424-6857

NOTE: Use fender covers to avoid damaging painted surfaces.

1. Remove the engine compartment cover (see **ENGINE COMPARTMENT COVER REPLACEMENT**).
2. Disconnect the support strut (A) from the pivot ball on both sides (bolted to the hood). Raise and secure the hood in a vertical position. Remove the passenger's side pivot ball and install it into the lower threaded hole, then reattach the support strut.

NOTE: Do not attempt to close the hood with the support strut in the vertical position; it will damage the support strut and the hood.

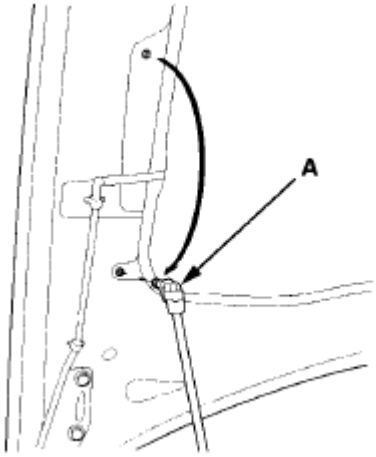


Fig. 33: Identifying Support Strut
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Remove the air intake duct splash separator (A).

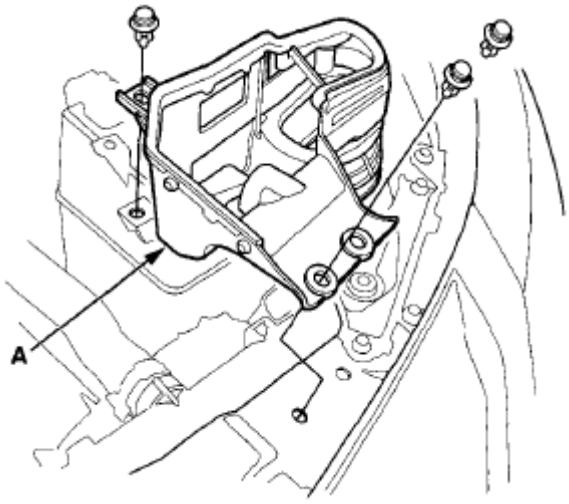


Fig. 34: Identifying Air Intake Duct Splash Separator
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Do the battery removal procedure (see **BATTERY REMOVAL AND INSTALLATION**).
5. Remove the air cleaner assembly (see **THROTTLE BODY CLEANING**).
6. Remove the intake air duct (A).

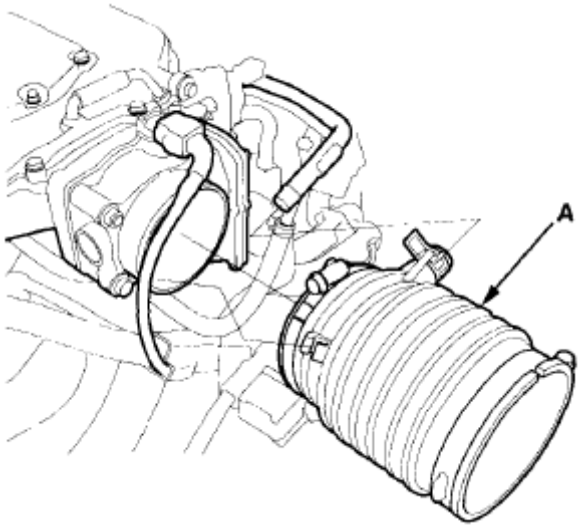


Fig. 35: Identifying Intake Air Duct
Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Remove the harness clamps (A), then remove the battery base (B).

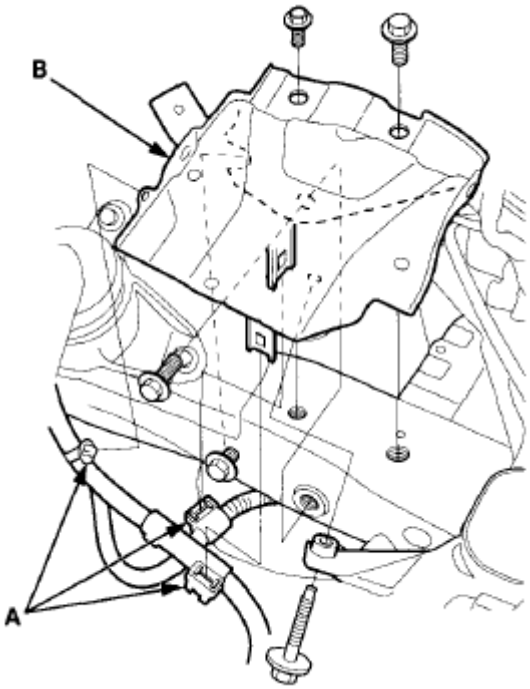


Fig. 36: Identifying Harness Clamps And Battery Base
Courtesy of AMERICAN HONDA MOTOR CO., INC.

8. Remove the steering joint cover (A).

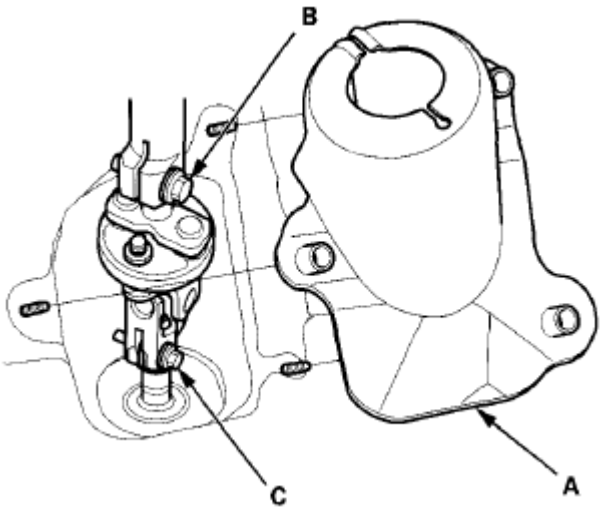


Fig. 37: Identifying Steering Joint Cover, Upper And Lower Steering Joint Bolt
Courtesy of AMERICAN HONDA MOTOR CO., INC.

9. Loosen the upper steering joint bolt (B) and the lower steering bolt (C).
10. Center the steering wheel spokes, and install a commercially available steering wheel holder tool (A).

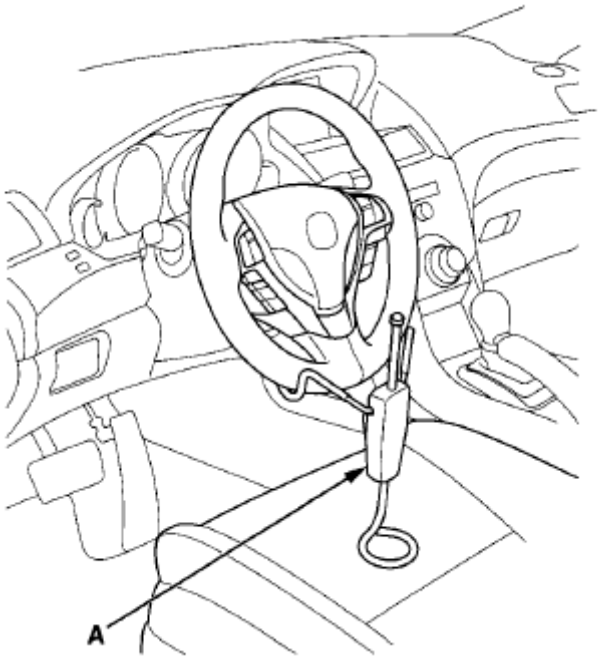


Fig. 38: Identifying Steering Wheel Holder Tool
Courtesy of AMERICAN HONDA MOTOR CO., INC.

11. Remove the lower steering joint bolt (A). Disconnect the steering joint (B) by sliding the steering joint into the column shaft (C). Tighten the upper steering joint bolt (D) to hold the steering joint in place.

NOTE: Do not disconnect the steering joint from the column shaft.

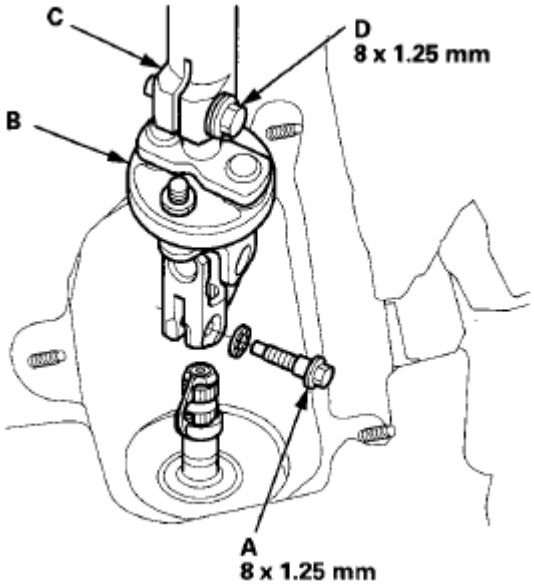


Fig. 39: Identifying Steering Joint, Column Shaft, Upper And Lower Steering Joint Bolt
Courtesy of AMERICAN HONDA MOTOR CO., INC.

12. Remove the center guide (A) (if equipped) from the top of the pinion shaft (B), and discard it.

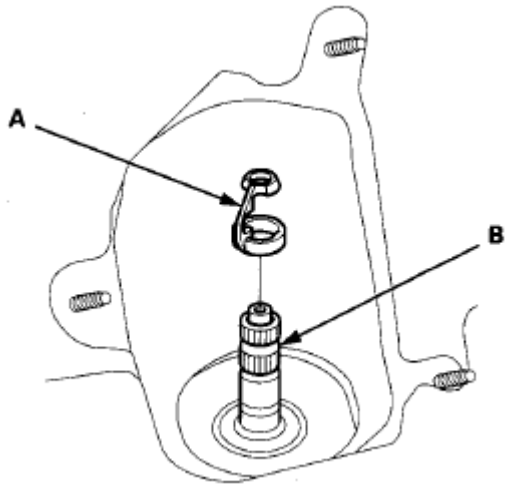


Fig. 40: Identifying Center Guide And Pinion Shaft
Courtesy of AMERICAN HONDA MOTOR CO., INC.

13. Wrap vinyl tape over the splines on the pinion shaft.
14. Disconnect the EPS connectors (A), and remove the harness clamps (B).

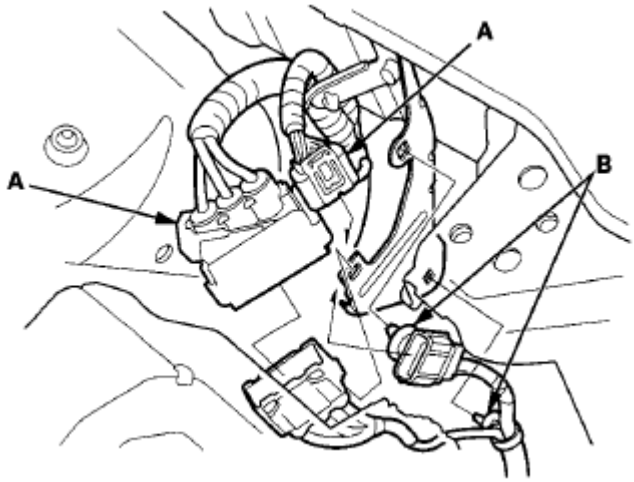


Fig. 41: Identifying EPS Connectors And Harness Clamps
Courtesy of AMERICAN HONDA MOTOR CO., INC.

15. Raise the vehicle on a lift, and make sure it is securely supported.
16. Remove the front wheels.
17. Remove the strut brace (see **FRAME BRACE REPLACEMENT**).
18. Remove the harness clamp (A), disconnect the positive starter cable (B) and the S terminal connector (C).

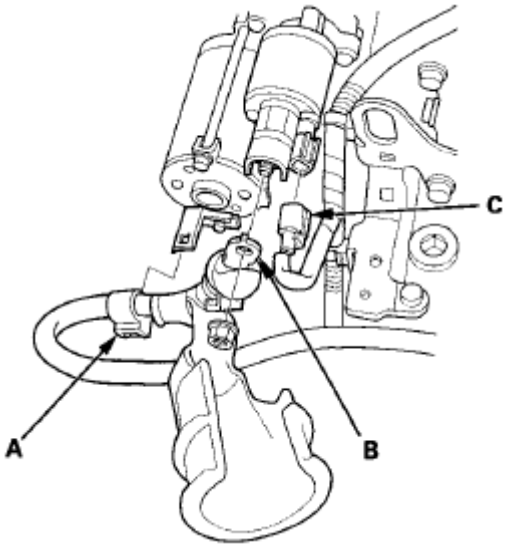


Fig. 42: Identifying S Terminal Connector, Positive Starter Cable And Harness Clamp
Courtesy of AMERICAN HONDA MOTOR CO., INC.

19. Remove the starter (A) and the vacuum pipe bracket (B).

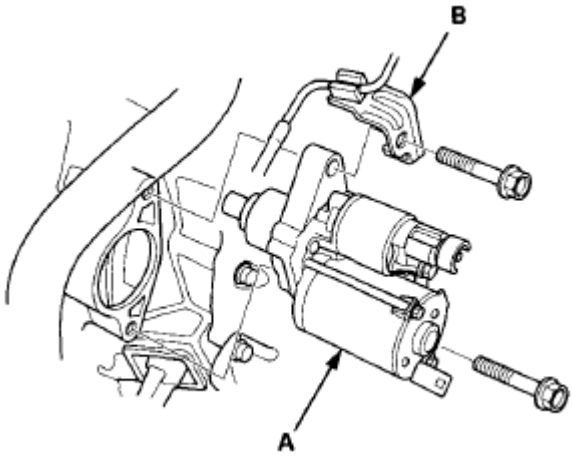


Fig. 43: Identifying Starter And Vacuum Pipe Bracket
Courtesy of AMERICAN HONDA MOTOR CO., INC.

20. Disconnect the back-up light switch connector (A), the input shaft (mainshaft) speed sensor connector (B), the output shaft (countershaft) speed sensor connector (C), and the front secondary HO2S 4P connector (D), then remove the harness clamps (E).

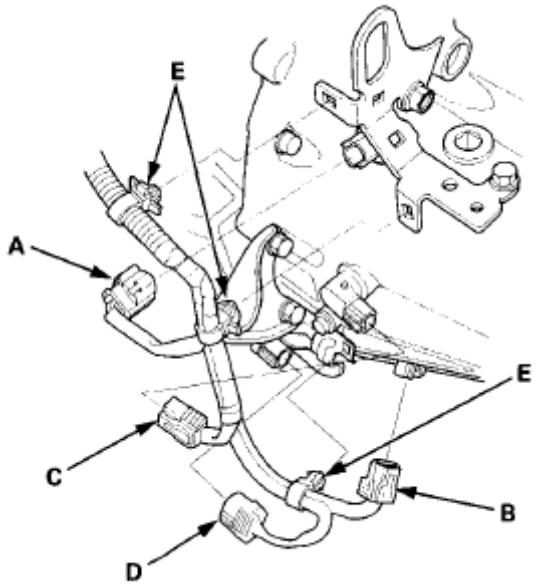


Fig. 44: Identifying Back-Up Light Switch Connector, Input And Output Shaft Speed Sensor Connector, Front Secondary HO2S 4P Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

21. Disconnect the reverse lockout solenoid connector (A), remove the harness holder mounting bolt (B) and the harness clamps (C), then swing the harness holder (D) out of the way.

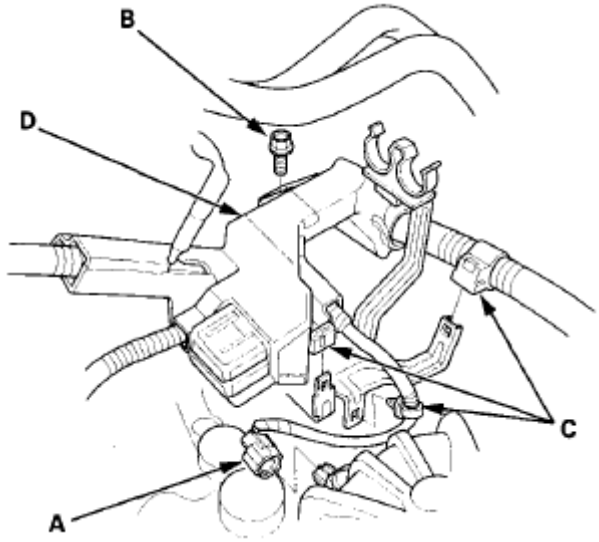


Fig. 45: Identifying Reverse Lockout Solenoid Connector, Harness Clamps, Harness Holder And Harness Holder Mounting Bolt
Courtesy of AMERICAN HONDA MOTOR CO., INC.

22. Remove the harness bracket (A).

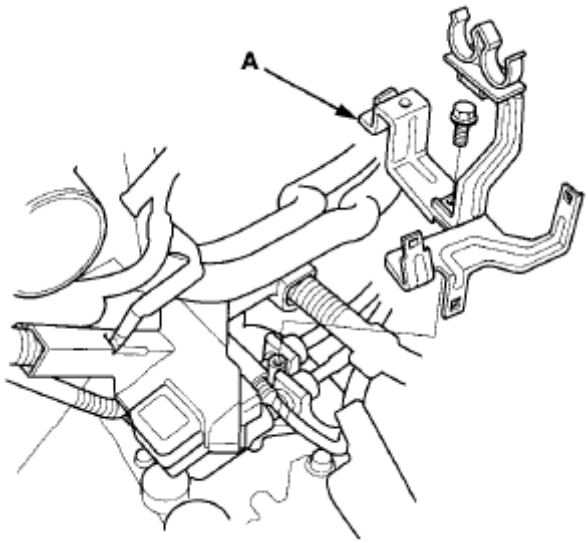


Fig. 46: Identifying Harness Bracket
Courtesy of AMERICAN HONDA MOTOR CO., INC.

23. Remove the lock pins (A) and the shift cable bracket bolts (B), then carefully remove both cables (C) and the bracket (D) together out of the way to avoid bending the cables.

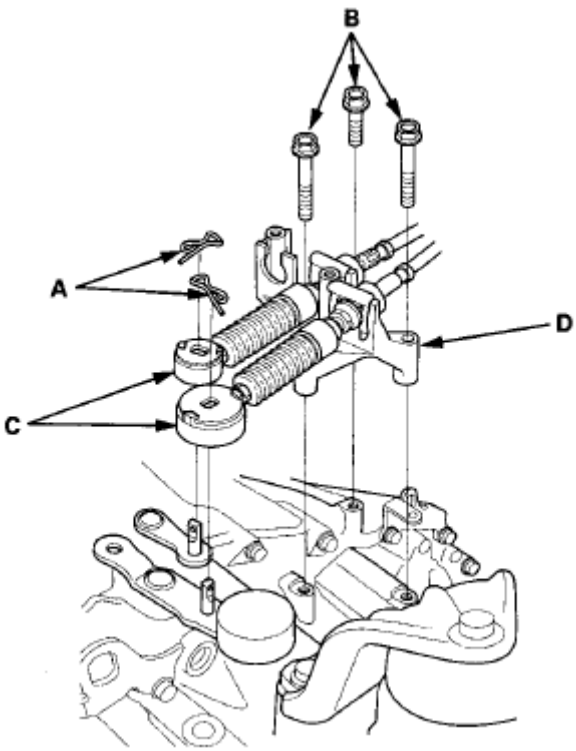


Fig. 47: Identifying Cables, Bracket, Lock Pins And Shift Cable Bracket Bolts
Courtesy of AMERICAN HONDA MOTOR CO., INC.

24. Remove the slave cylinder mounting bolts (A) and the clutch line bracket mounting nut (B), then

carefully move the slave cylinder (C) out of the way to avoid bending the clutch line.

NOTE: Do not press the clutch pedal after the slave cylinder has been removed.

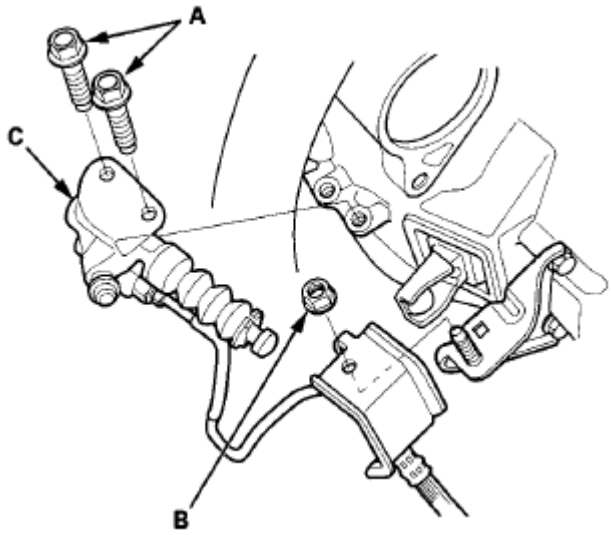


Fig. 48: Identifying Slave Cylinder, Slave Cylinder Mounting Bolts And Clutch Line Bracket Mounting Nut
Courtesy of AMERICAN HONDA MOTOR CO., INC.

25. Remove the bolt (A) securing the connector bracket (B) from the front cylinder head; use the bracket bolt hole (C) to attach the engine hanger balance bar front arm.

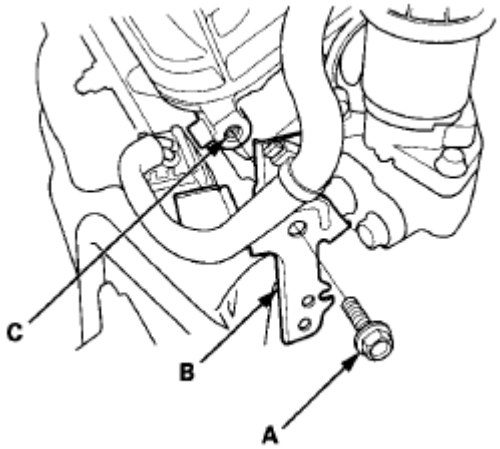


Fig. 49: Identifying Connector Bracket, Bracket Bolt Hole And Bolt
Courtesy of AMERICAN HONDA MOTOR CO., INC.

26. Remove the bolt (A) securing the engine mount control solenoid valve bracket (B) from the rear cylinder head; use the bracket bolt hole (C) to attach the 2008 V6 attachment arm.

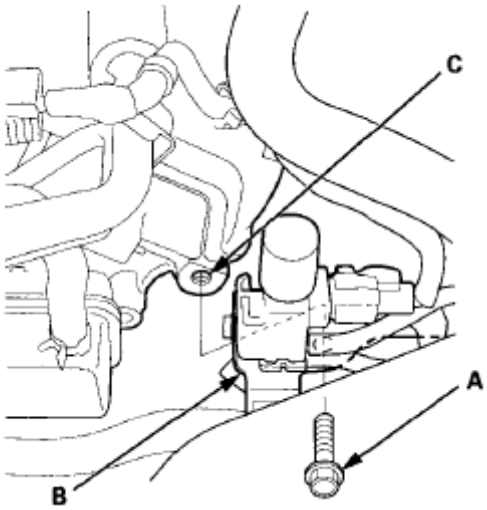


Fig. 50: Identifying Engine Mount Control Solenoid Valve Bracket, Bracket Bolt Hole And Bolt
Courtesy of AMERICAN HONDA MOTOR CO., INC.

27. Lift and support the engine with the A and Reds engine support hanger (AAR-T1256) and the engine hanger balance bar (VSB02C000019). Attach the front arm (A) to the front cylinder head with a spacer (B) and a 10 x 1.25 mm bolt (C). Attach the 2008 V6 attachment arm (SIL02C000033) to the rear cylinder head with an 8 x 1.25 mm bolt (D).

NOTE:

- **Be careful when working around the windshield.**
- **Be careful not to damage the hood opener cable when installing the engine support hanger at the front bulkhead.**
- **AAR-T1256 two sets required for stacking additional cross section bar.**

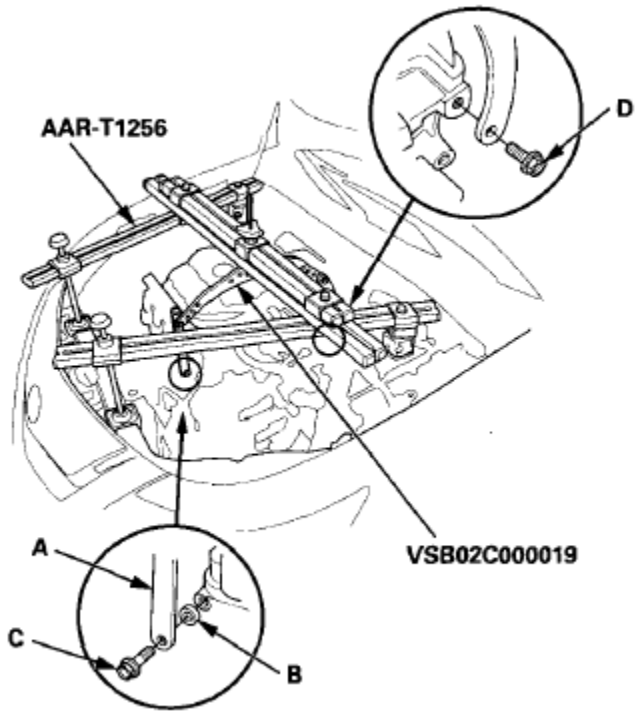


Fig. 51: Identifying Front Arm, Front Cylinder Head With A Spacer And Bolts
Courtesy of AMERICAN HONDA MOTOR CO., INC.

28. Remove the front engine mount stop (A) with the vacuum pipe bracket (B), and disconnect the vacuum hose (C).

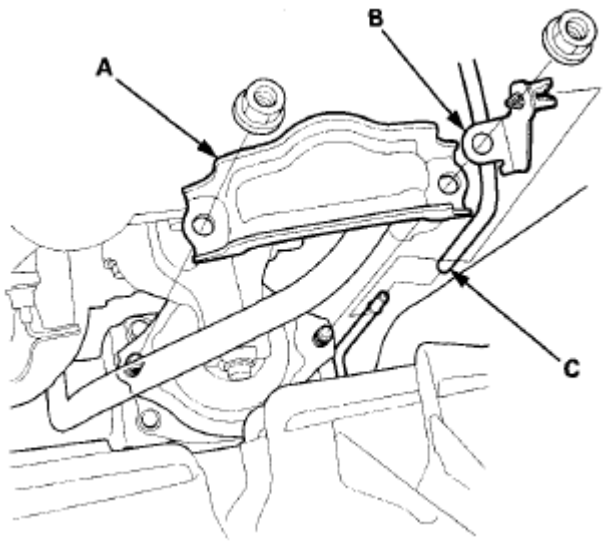


Fig. 52: Identifying Front Engine Mount Stop, Vacuum Pipe Bracket And Vacuum Hose
Courtesy of AMERICAN HONDA MOTOR CO., INC.

29. Remove the front engine mount bolts (A).

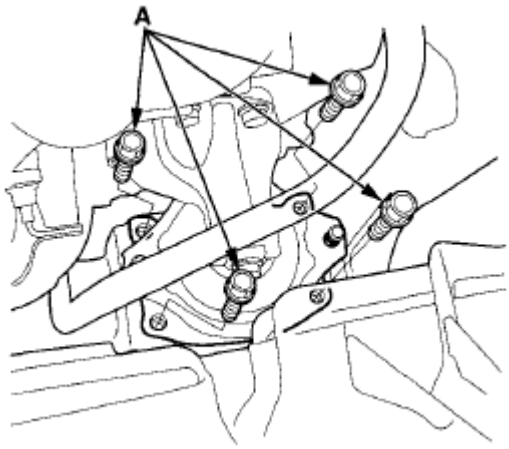


Fig. 53: Identifying Front Engine Mount Bolts
Courtesy of AMERICAN HONDA MOTOR CO., INC.

30. Remove the rear engine mount bolt (A).

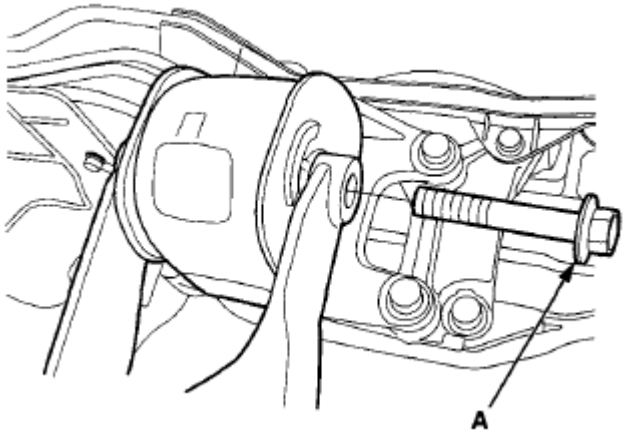


Fig. 54: Identifying Rear Engine Mount Bolt
Courtesy of AMERICAN HONDA MOTOR CO., INC.

31. Remove the upper transmission mount bracket bolts (A).

NOTE: Do not remove the bolt (B) from the upper transmission mount. If the bolt is removed, the upper transmission mount must be replaced as an assembly.

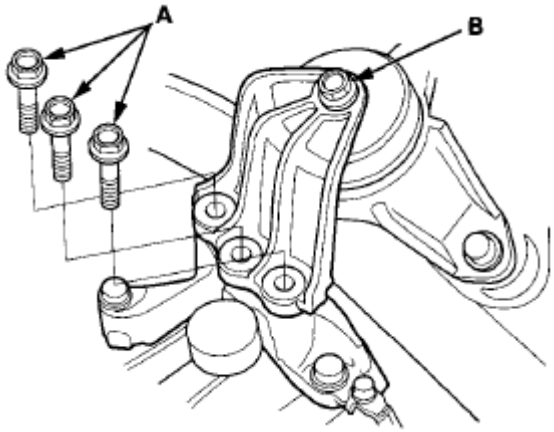


Fig. 55: Identifying Upper Transmission Mount Bracket Bolts
Courtesy of AMERICAN HONDA MOTOR CO., INC.

32. Disconnect the ground cable (A), then remove the upper transmission mount bracket (B).

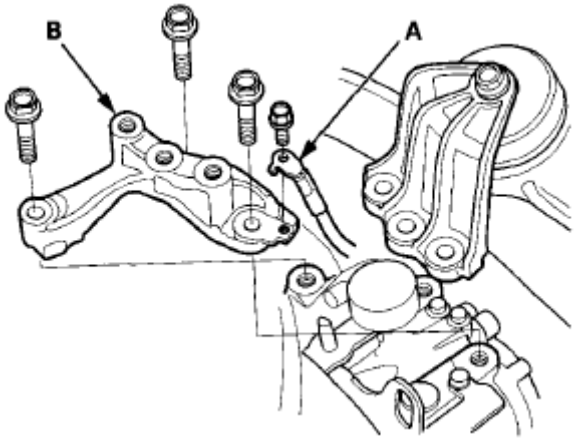


Fig. 56: Identifying Upper Transmission Mount Bracket And Ground Cable
Courtesy of AMERICAN HONDA MOTOR CO., INC.

33. Remove the upper transmission mounting bolts (A).

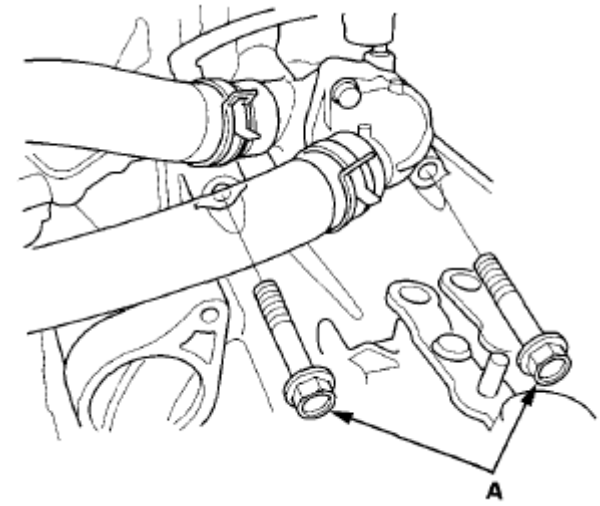


Fig. 57: Identifying Upper Transmission Mounting Bolts
Courtesy of AMERICAN HONDA MOTOR CO., INC.

34. Remove the front splash shield (see **FRONT SPLASH SHIELD REPLACEMENT**).
35. Remove the drain plug (A) and drain the MTF. Reinstall the drain plug with a new sealing washer (B).

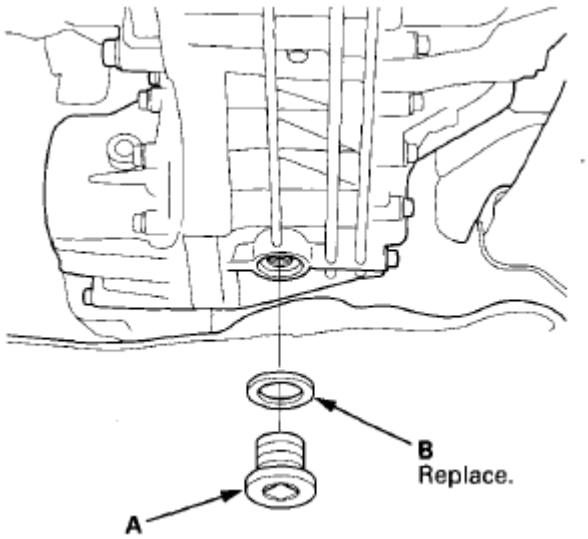


Fig. 58: Identifying Drain Plug And Sealing Washer
Courtesy of AMERICAN HONDA MOTOR CO., INC.

36. Remove exhaust pipes A and B (see **J37A4 ENGINE (WITH SH-AWD)**).
37. Remove the propeller shaft (see **PROPELLER SHAFT REMOVAL**).
38. Remove the damper fork (see **DAMPER/SPRING REMOVAL AND INSTALLATION**).
39. Remove the cotter pin from the tie-rod end ball joint, then remove the nut (see **KNUCKLE BALL JOINT INSPECTION**).
40. Disconnect the tie-rod end ball joint from the knuckle (see **KNUCKLE BALL JOINT INSPECTION**).

41. Remove the cotter pin from the knuckle ball joint, then remove the castle nut (see **KNUCKLE BALL JOINT INSPECTION**).
42. Disconnect the knuckle ball joint from the lower arm (see **KNUCKLE BALL JOINT INSPECTION**).
43. Remove the subframe middle mount (A).

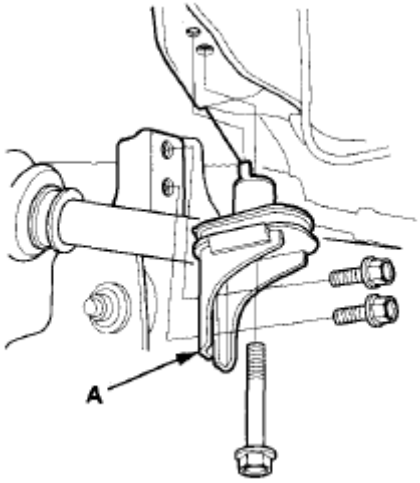


Fig. 59: Identifying Subframe Middle Mount
Courtesy of AMERICAN HONDA MOTOR CO., INC.

44. Remove the lower transmission mount mounting nuts (A).

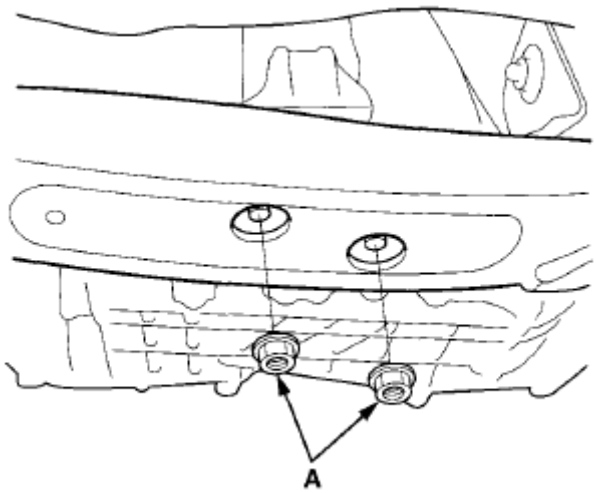


Fig. 60: Identifying Lower Transmission Mount Mounting Nuts
Courtesy of AMERICAN HONDA MOTOR CO., INC.

45. Disconnect the breather hose (A) from the breather pipe (B) on the transfer assembly (C).

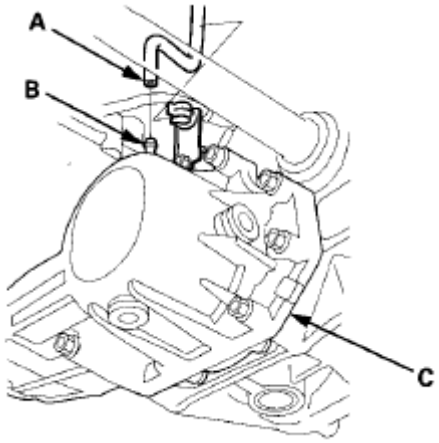


Fig. 61: Identifying Breather Hose, Breather Pipe And Transfer Assembly
Courtesy of AMERICAN HONDA MOTOR CO., INC.

46. Remove the transfer assembly (A) and the dowel pin (B) from the transmission.

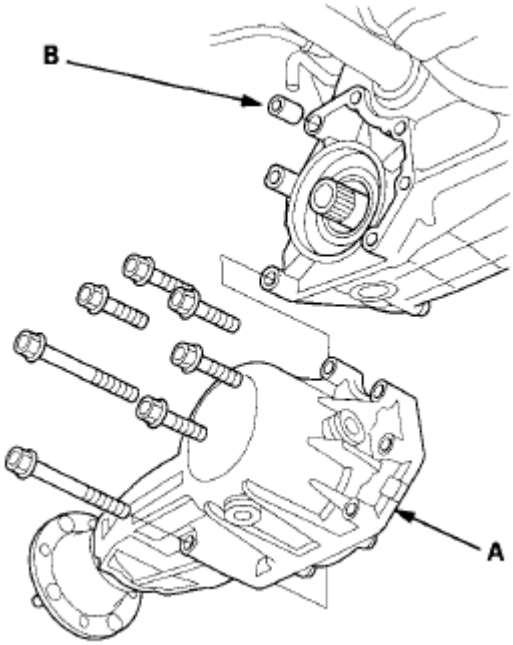


Fig. 62: Identifying Transfer Assembly And Dowel Pin
Courtesy of AMERICAN HONDA MOTOR CO., INC.

47. Disconnect the vacuum hose (A) located under the front engine mount.

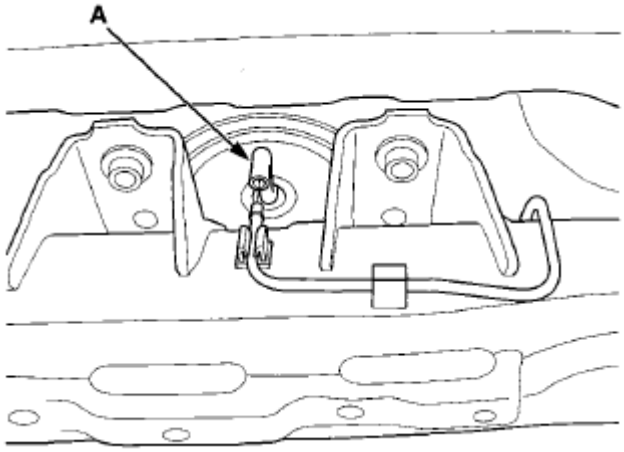


Fig. 63: Identifying Vacuum Hose
Courtesy of AMERICAN HONDA MOTOR CO., INC.

48. Attach the subframe adapter (VSB02C000016) to the front subframe and hang the belt of the subframe adapter over the front of the subframe, then secure the belt with its stop.

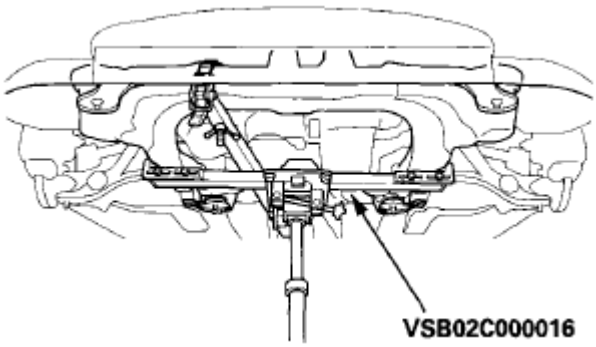


Fig. 64: Identifying Subframe Adapter
Courtesy of AMERICAN HONDA MOTOR CO., INC.

49. Raise the jack and line up the slots in the subframe adapter arms with the bolt holes on the jack base, then securely attach them with four bolts.
50. Remove the front stiffener mounting bolts (A) and the front subframe mounting bolts (B), then lower and remove the front subframe (C).

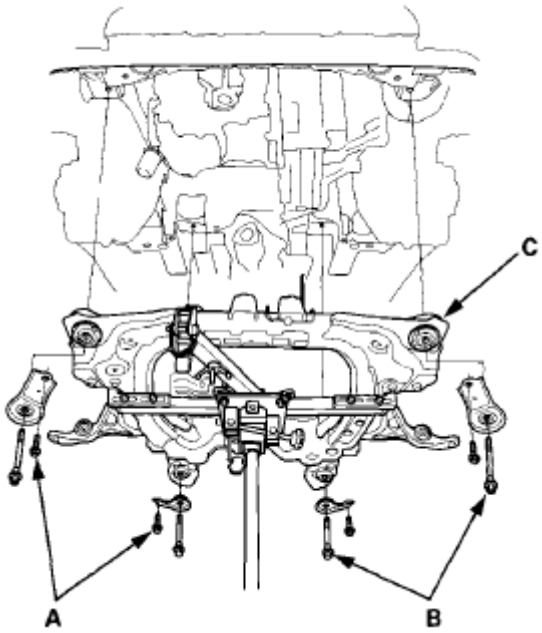


Fig. 65: Identifying Front Subframe, Front Stiffener Mounting Bolts And Front Subframe Mounting Bolts
Courtesy of AMERICAN HONDA MOTOR CO., INC.

51. Support the transmission with a transmission jack.
52. Remove the front engine mount (A).

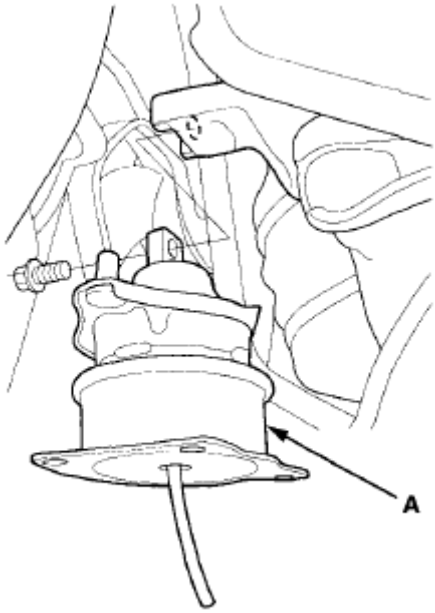


Fig. 66: Identifying Front Engine Mount
Courtesy of AMERICAN HONDA MOTOR CO., INC.

53. Remove the front engine mount bracket (A).

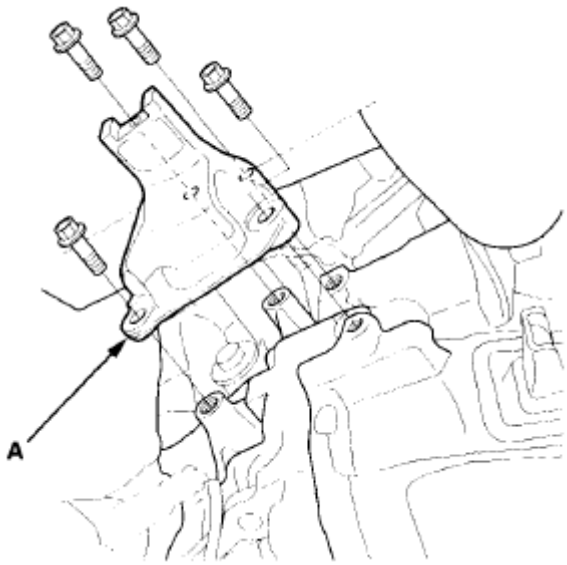


Fig. 67: Identifying Front Engine Mount Bracket
Courtesy of AMERICAN HONDA MOTOR CO., INC.

54. Remove the lower transmission mount (A).

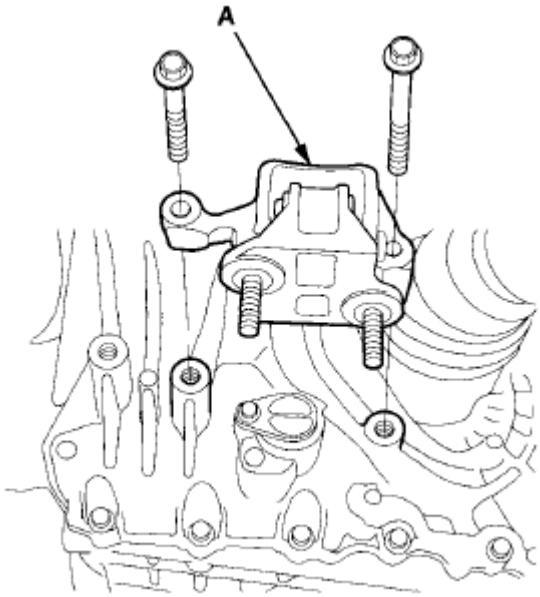


Fig. 68: Identifying Lower Transmission Mount
Courtesy of AMERICAN HONDA MOTOR CO., INC.

55. Separate the left driveshaft inboard joint from the differential (see **FRONT DRIVESHAFT REMOVAL**).
56. Separate the right driveshaft inboard joint from the intermediate shaft (see **FRONT DRIVESHAFT REMOVAL**).
57. Remove the intermediate shaft (see **INTERMEDIATE SHAFT REMOVAL**).

58. Remove the clutch cover (A).

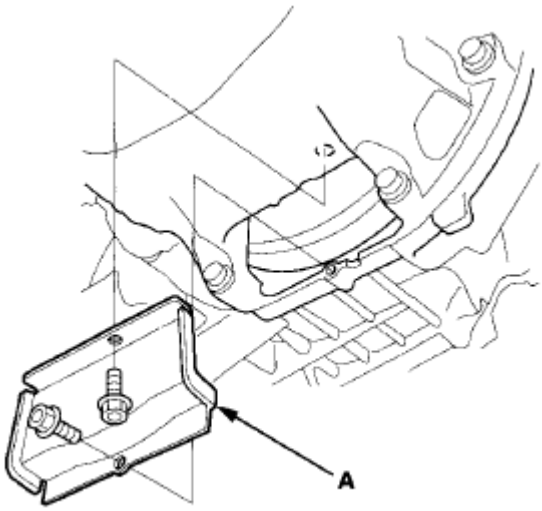


Fig. 69: Identifying Clutch Cover
Courtesy of AMERICAN HONDA MOTOR CO., INC.

59. Remove the crankshaft position (CKP) sensor cover (A), and disconnect the CKP sensor connector (B).

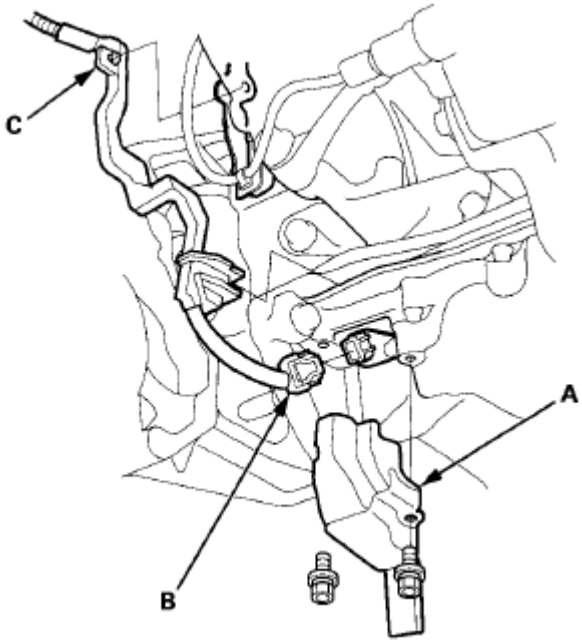


Fig. 70: Identifying Crankshaft Position (CKP) Sensor Cover, CKP Sensor Connector And Harness Clamp
Courtesy of AMERICAN HONDA MOTOR CO., INC.

60. Remove the harness clamp (C).

61. Remove the harness clamp bracket (A).

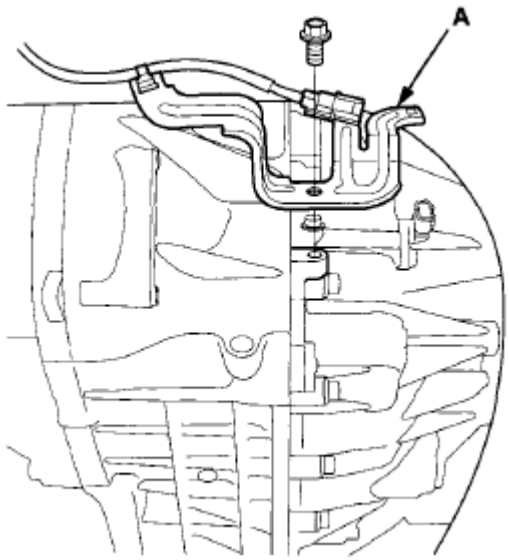


Fig. 71: Identifying Harness Clamp Bracket
Courtesy of AMERICAN HONDA MOTOR CO., INC.

62. Remove the lower transmission mounting bolts. Front side

Front side

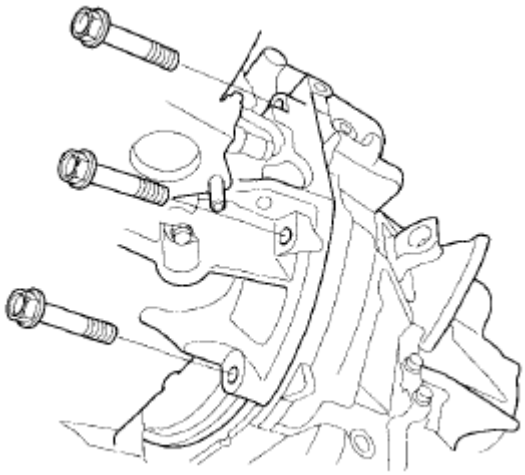


Fig. 72: Identifying Lower Transmission Mounting Bolts - Front Side
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Rear side

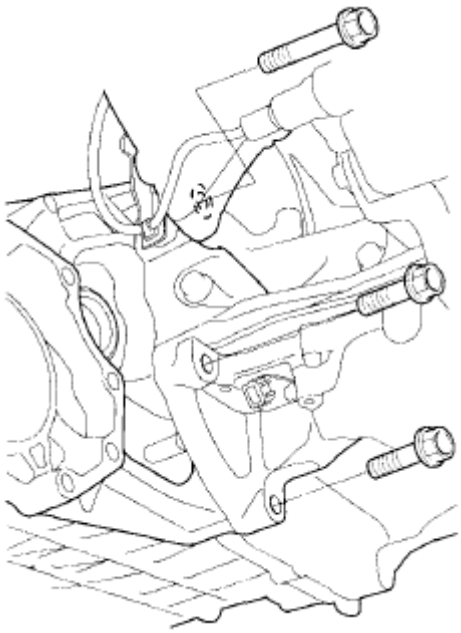


Fig. 73: Identifying Lower Transmission Mounting Bolts - Rear Side
Courtesy of AMERICAN HONDA MOTOR CO., INC.

63. Pull the transmission away from the engine until the transmission mainshaft clears the clutch pressure plate.
64. Slowly lower the transmission about 150 mm (6 in). Check once again that all hoses and harnesses are disconnected and free from the transmission, then lower it completely.

TRANSMISSION INSTALLATION

Special Tools Required

- Subframe Alignment Pin 070AG-SJAA10S
- Engine Support Hanger, A and Reds AAR-T1256*
- 2008 V6 Attachment Arm SIL02C000033*
- Subframe Adapter VSB02C000016*
- Engine Hanger Balance Bar VSB02C000019*

*: Available through the Acura Tool and Equipment Program 888-424-6857

NOTE: Use fender covers to avoid damaging painted surfaces.

1. Check the release bearing, and reinstall the release bearing and the release fork with the appropriate grease (see **TRANSMISSION SIDE**).
2. Make sure the 14 x 20 mm dowel pin (A) and the 10 x 20 mm dowel pin (B) are installed in the clutch housing.

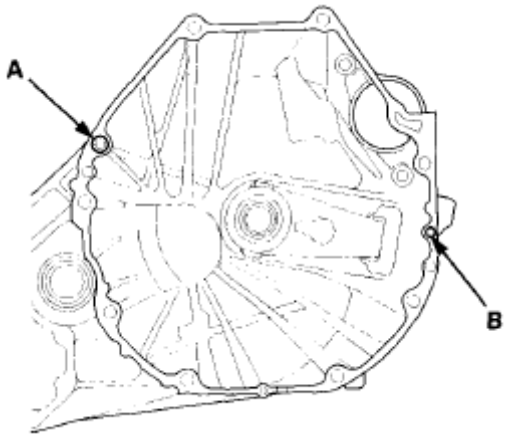


Fig. 74: Identifying Dowel Pins
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Place the transmission on the transmission jack, and raise it to the engine level.
4. Align the transmission mainshaft and the clutch pressure plate, then move the transmission inward until there is no gap between the transmission housing and the engine block.
5. Install the lower transmission mounting bolts. Front side

Front side

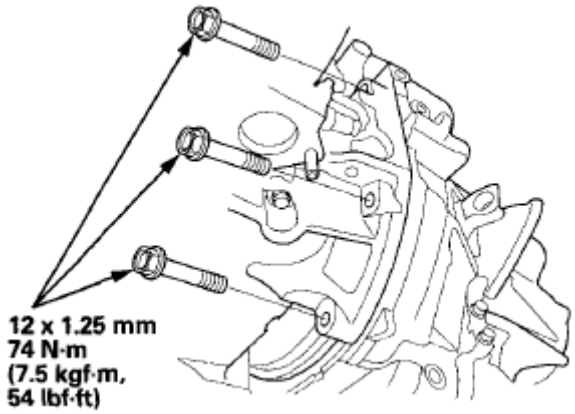


Fig. 75: Identifying Lower Transmission Mounting Bolts With Torque Specifications - Front Side
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Rear side

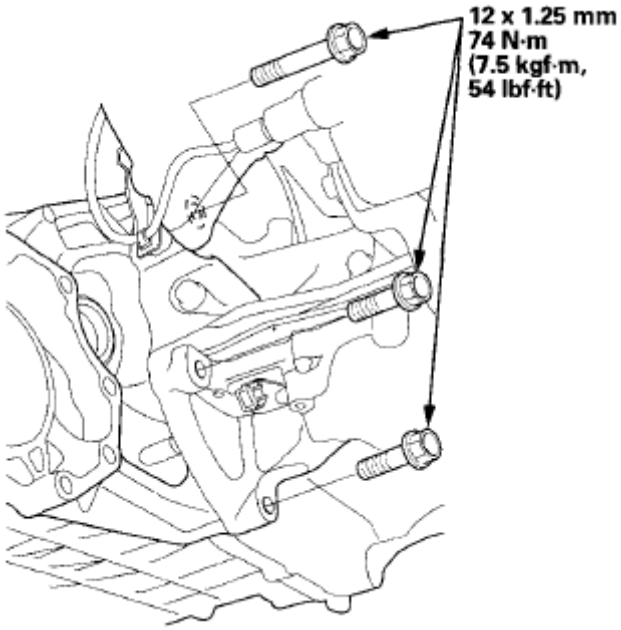


Fig. 76: Lower Transmission Mounting Bolts With Torque Specifications - Rear Side
Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Install the harness clamp bracket (A).

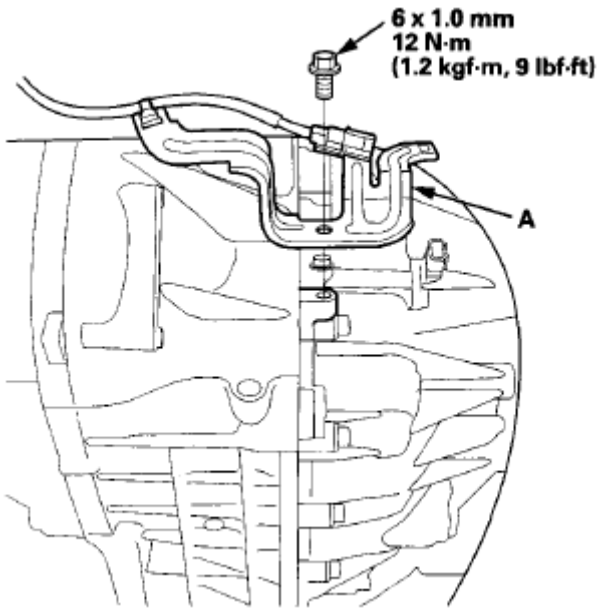


Fig. 77: Identifying Harness Clamp Bracket With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Connect the CKP sensor connector (A), then install the harness clamp (B) and the CKP sensor cover (C).

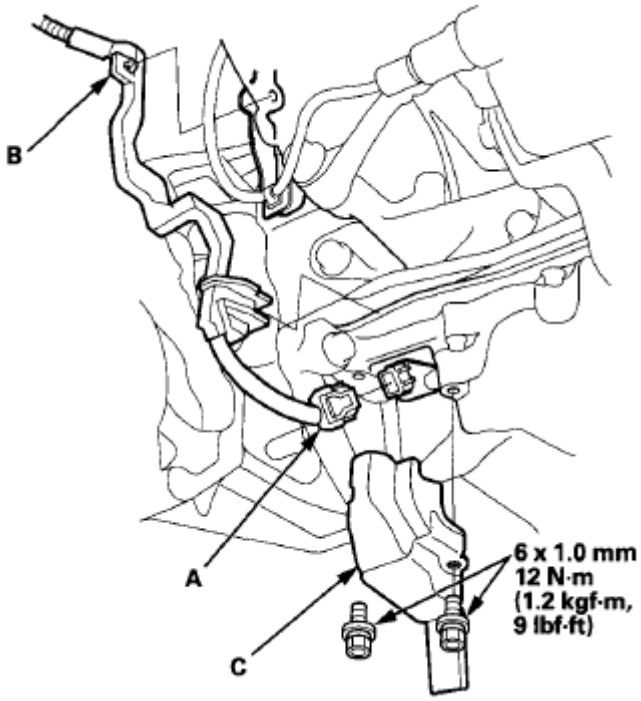


Fig. 78: Identifying CKP Sensor Connector, Harness Clamp And CKP Sensor Cover With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

8. Install the clutch cover (A).

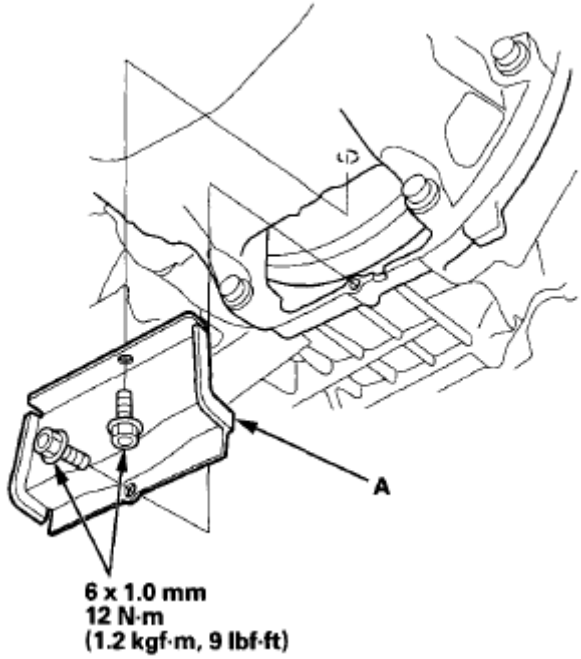


Fig. 79: Identifying Clutch Cover With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

9. Install the intermediate shaft (see **INTERMEDIATE SHAFT INSTALLATION**).
10. Install both driveshafts (see **FRONT DRIVESHAFT INSTALLATION**).
11. Install the lower transmission mount (A) with new bolts.

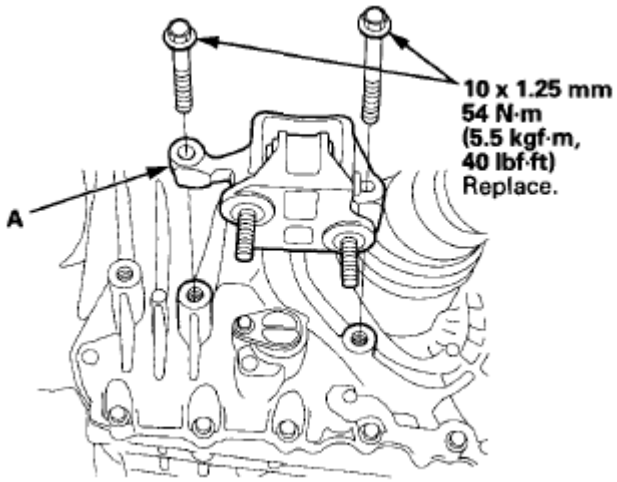


Fig. 80: Identifying Lower Transmission Mount With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

12. Install the front engine mount bracket (A) with new bolts.

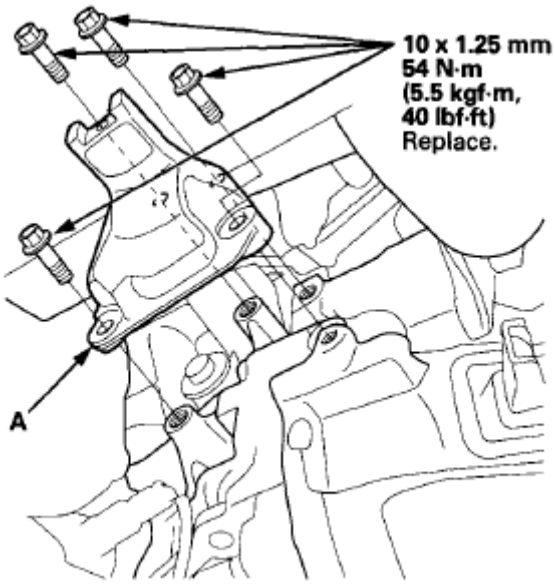


Fig. 81: Identifying Front Engine Mount Bracket With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

13. Install the front engine mount (A) with a new bolt, loosely tighten.

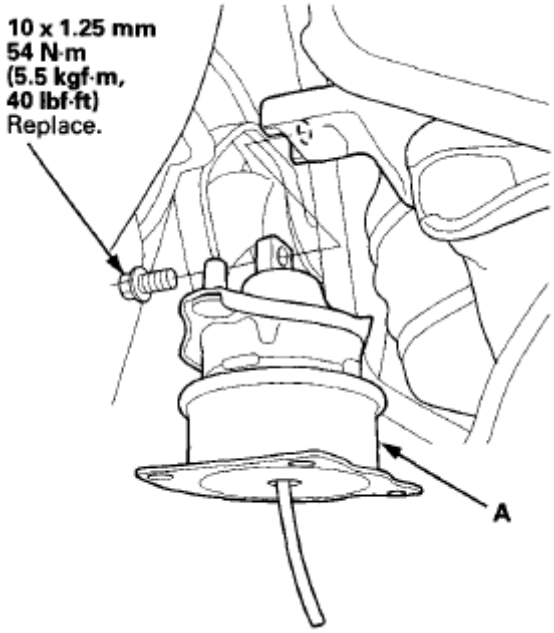


Fig. 82: Identifying Front Engine Mount With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

14. Support the front subframe with the subframe adapter (VSB02C000016) and a jack.

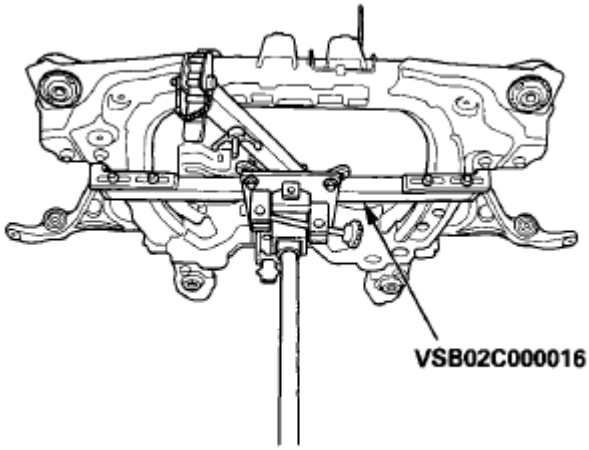


Fig. 83: Identifying Subframe Adapter
Courtesy of AMERICAN HONDA MOTOR CO., INC.

15. Lift the front subframe (A) up to the body.

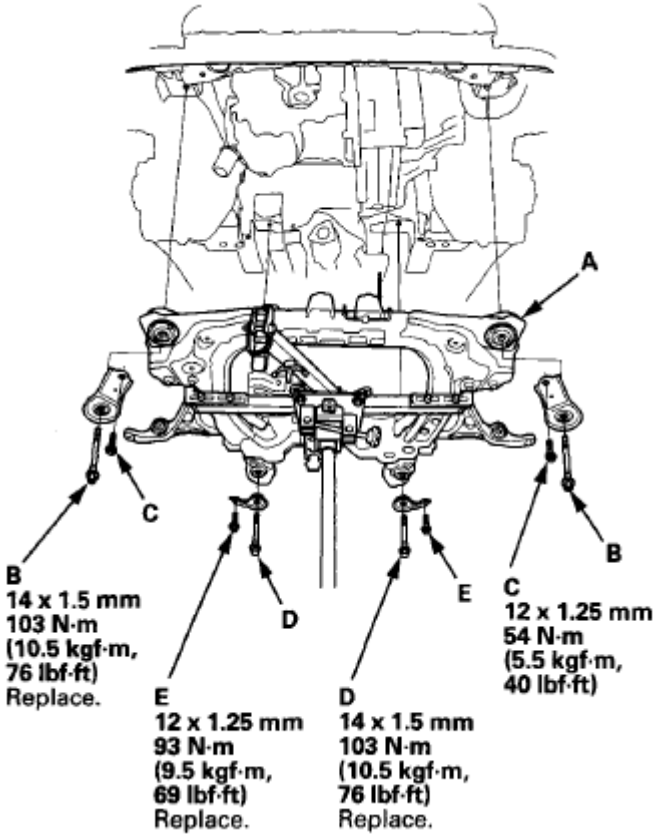


Fig. 84: Identifying Front Subframe And Bolts With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

16. Install the front stiffeners; loosely install new bolts (B) to the body through the front subframe, and loosely install the bolts (C) to the body.
17. Install the rear stiffeners; loosely install new bolts (D) to the body through the front subframe, and loosely install new bolts (E) to the body.
18. Loosely tighten the front subframe mounting bolt (A) and the stiffener mounting bolt (B) in the right rear stiffener, until the front subframe insulator contacts the body; insert the subframe alignment pin (070AG-SJAA10S) through the positioning slot (C) on the right rear stiffener, through the positioning hole (D) on the front subframe, and into the positioning hole on the body.

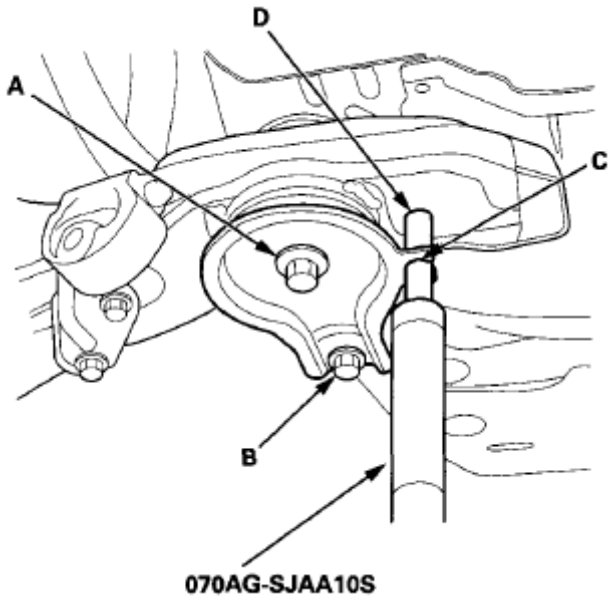


Fig. 85: Identifying Positioning Slot, Positioning Hole On Front Subframe, Front And Stiffener Subframe Mounting Bolt
Courtesy of AMERICAN HONDA MOTOR CO., INC.

19. Loosely tighten the front subframe mounting bolt in the left rear stiffener in the same manner as in step 18.
20. Reinsert the subframe alignment pin through the positioning slot on the right rear stiffener, through the positioning hole on the front subframe, and into the positioning hole on the body, then tighten the front subframe mounting bolt to the specified torque.
21. Tighten the front subframe mounting bolt in the left rear stiffener in the same manner as in step 20.
22. Tighten the front subframe mounting bolts in the right front stiffener and the left front stiffener to the specified torque.
23. Check that the positioning holes and slots are aligned using the subframe alignment pin.
24. Tighten the front and rear stiffener mounting bolts to the specified torque.
25. Remove the subframe adapter and the jack.
26. Install the lower transmission mount mounting nuts.

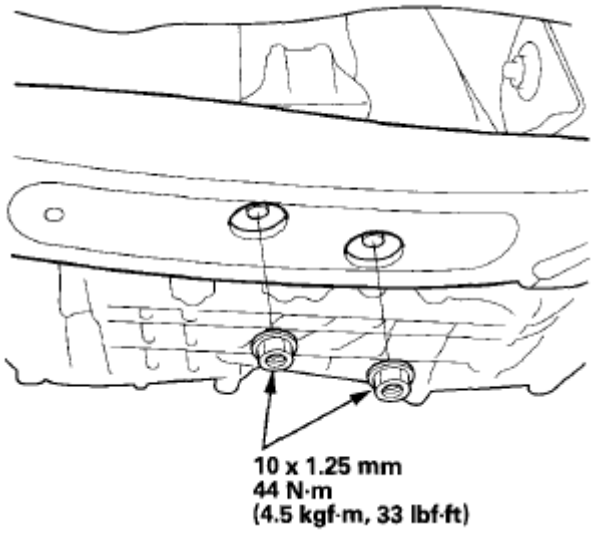


Fig. 86: Identifying Lower Transmission Mount Mounting Nuts With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

27. Install the subframe middle mount (A) on both sides with new bolts.

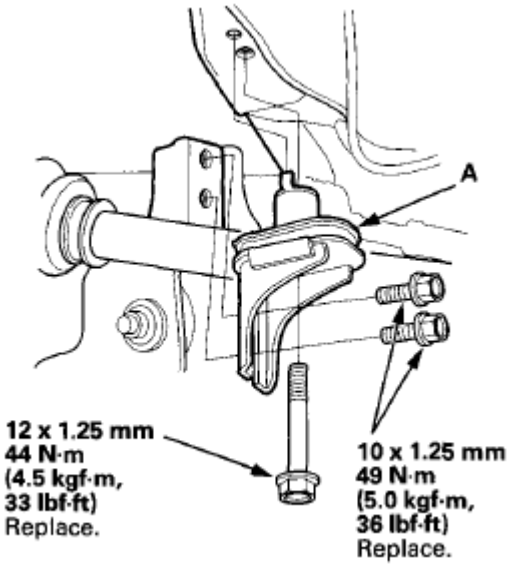


Fig. 87: Identifying Subframe Middle Mount With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

28. Install exhaust pipes A and B (see **J37A4 ENGINE (WITH SH-AWD)**).
29. Install the dowel pin (A) in the transmission, and install the transfer assembly (B) on the transmission.

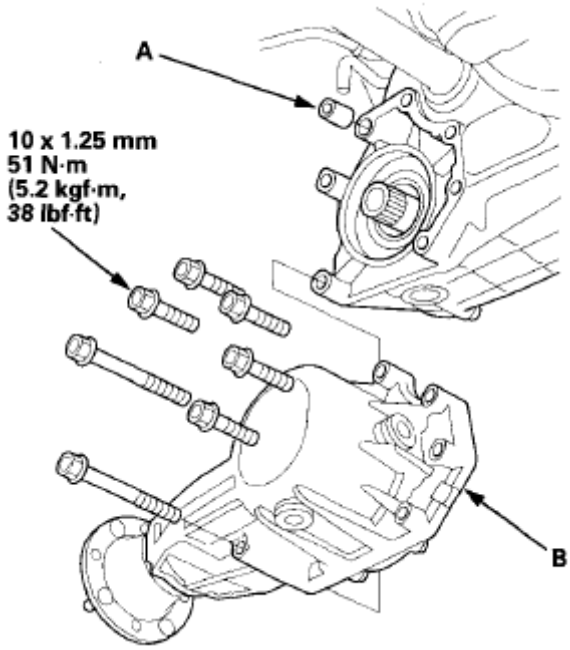


Fig. 88: Identifying Dowel Pin And Transfer Assembly With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

30. Connect the breather hose (A) over the breather pipe (B) with facing the dot mark (C) to the rear side of the vehicle, and install the hose on the clamp (D) at the dot mark (E).

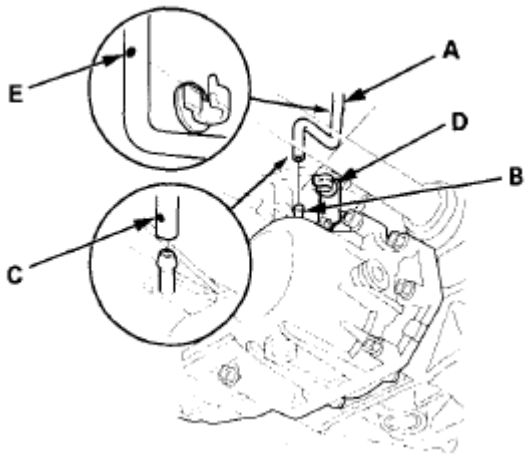


Fig. 89: Identifying Breather Hose, Breather Pipe, Dot Mark And Clamp
Courtesy of AMERICAN HONDA MOTOR CO., INC.

31. Install the propeller shaft (see **PROPELLER SHAFT INSTALLATION**).
32. Connect the vacuum hose (A) located under the front engine mount.

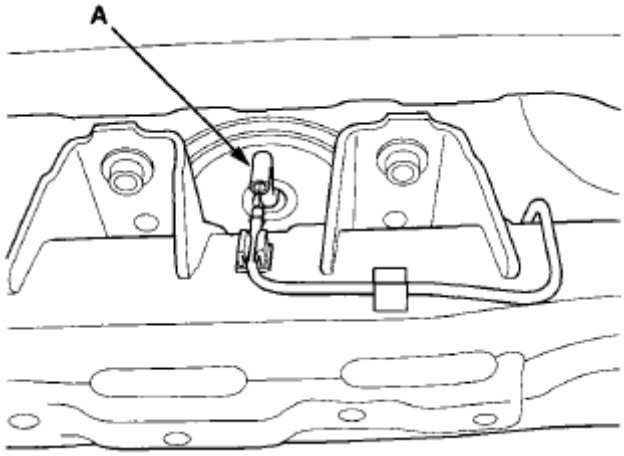


Fig. 90: Identifying Vacuum Hose
Courtesy of AMERICAN HONDA MOTOR CO., INC.

33. Connect the knuckle ball joint and the lower arm (see **KNUCKLE/HUB/WHEEL BEARING REPLACEMENT**).
34. Install the cotter pin to the knuckle ball joint (see **KNUCKLE/HUB/WHEEL BEARING REPLACEMENT**).
35. Connect the tie-rod end ball joint and the knuckle (see **KNUCKLE/HUB/WHEEL BEARING REPLACEMENT**).
36. Install the cotter pin to the tie-rod end ball joint (see **KNUCKLE/HUB/WHEEL BEARING REPLACEMENT**).
37. Install the damper fork (see **INSTALLATION**).
38. Lower the vehicle.
39. Install the upper transmission mounting bolts (A).

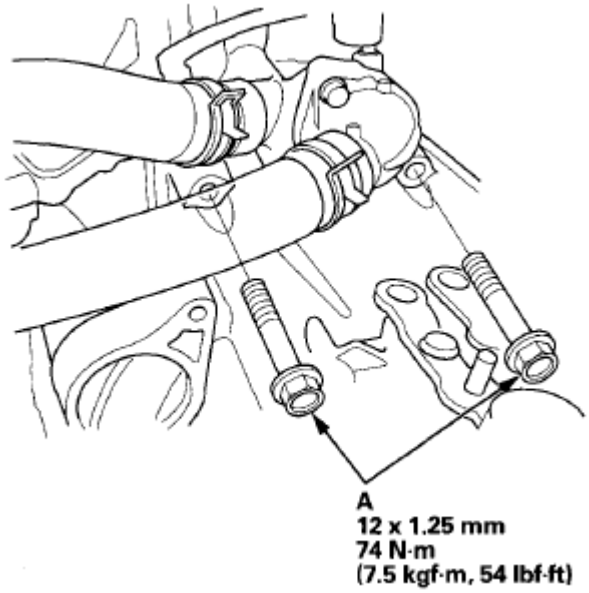


Fig. 91: Identifying Upper Transmission Mounting Bolts With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

40. Install the upper transmission mount bracket (A) with new bolts, and connect the ground cable (B).

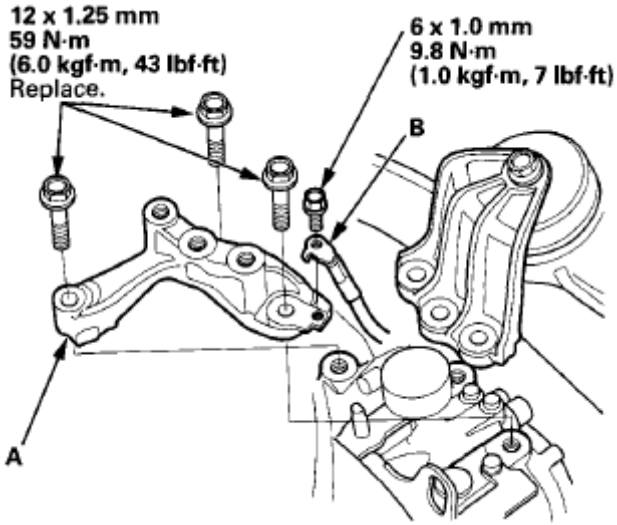


Fig. 92: Identifying Upper Transmission Mount Bracket And Ground Cable With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

41. Connect the upper transmission mount bracket (A) and the upper transmission mount (B) with new bolts loosely installed.

NOTE: If the bolt (C) was loosened by mistake during removal, the upper transmission mount must be replaced as an assembly.

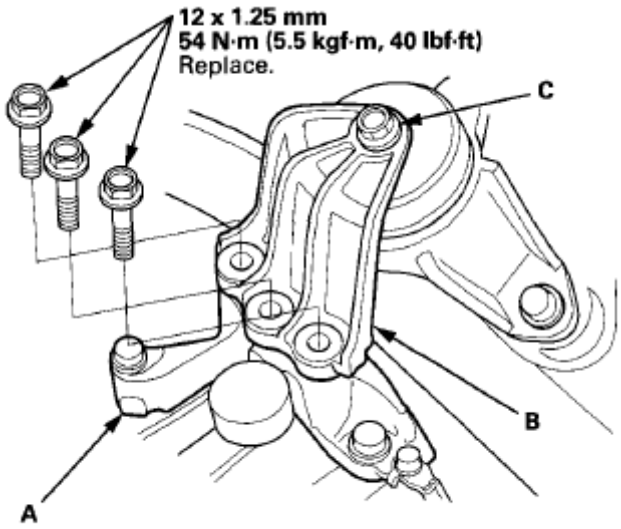


Fig. 93: Identifying Upper Transmission Mount Bracket, Upper Transmission Mount And Bolts With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

42. Connect the rear engine mount (A) and the rear engine mount bracket (B) with a new bolt loosely installed.

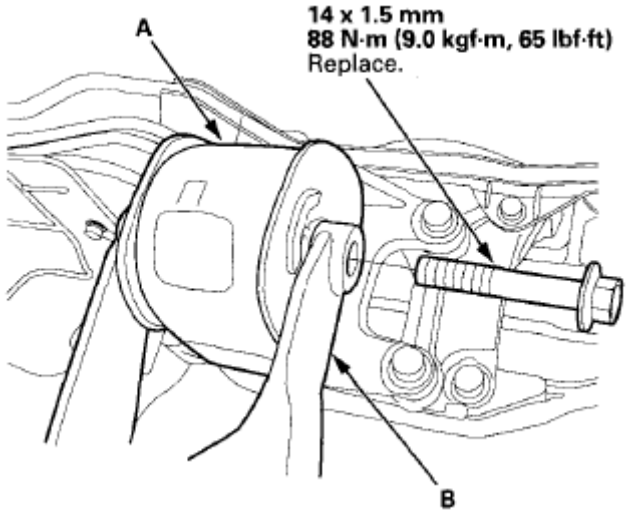


Fig. 94: Identifying Rear Engine Mount And Rear Engine Mount Bracket With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

43. Connect the front engine mount (A) and the front subframe with new bolts.

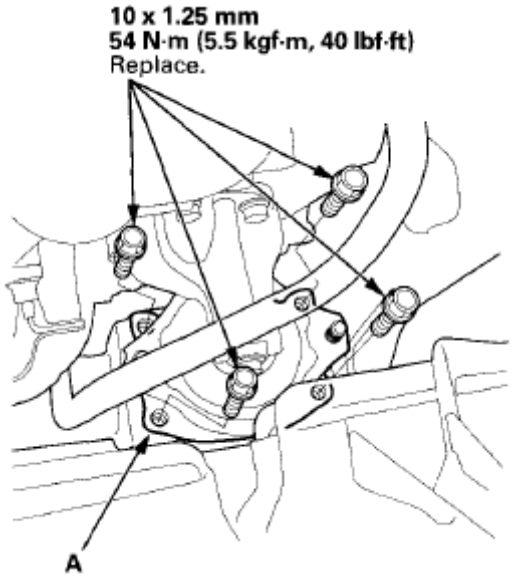


Fig. 95: Identifying Front Engine Mount With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

44. Install the front engine mount stop (A) and the vacuum pipe bracket (B) with new nuts, then connect the vacuum hose (C).

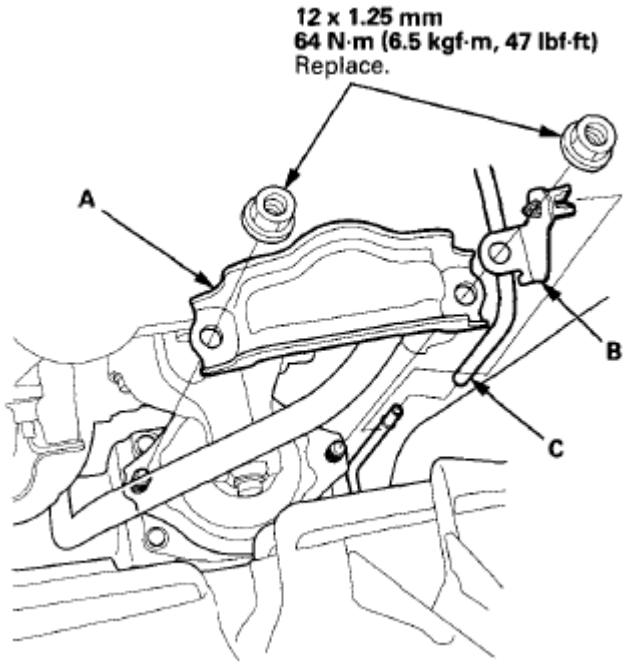


Fig. 96: Identifying Front Engine Mount Stop, Vacuum Pipe Bracket And Vacuum Hose With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

45. Remove the engine support hanger, the engine hanger balance bar, and the 2008 V6 attachment arm from

the engine.

46. Torque the bolts that were tightened loosely in steps 13, 41, and 42.
47. Install the engine mount control solenoid valve bracket (A) to the rear cylinder head.

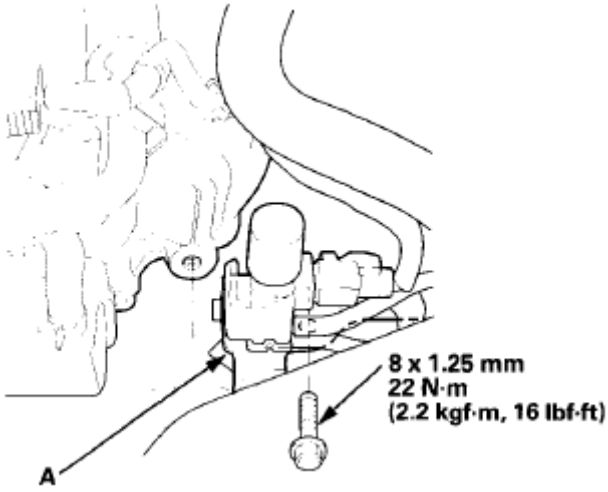


Fig. 97: Identifying Engine Mount Control Solenoid Valve Bracket With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

48. Install the connector bracket (A) to the front cylinder head.

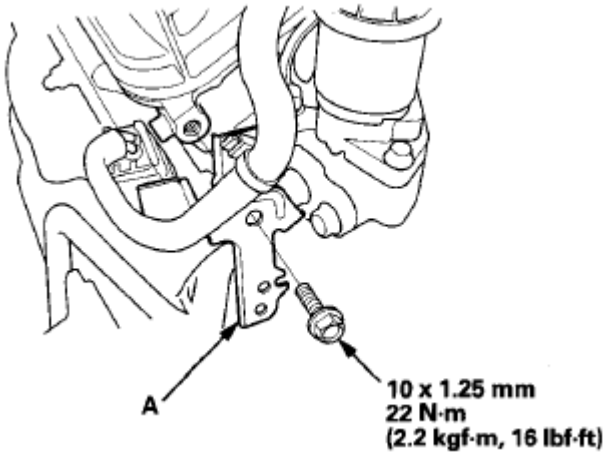


Fig. 98: Identifying Connector Bracket With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

49. Apply a light coat of super high temp urea grease (P/N 08798- 9002) to the end of the slave cylinder push rod. Install the slave cylinder (A) and the clutch line bracket (B). Be careful not to bend the clutch line.

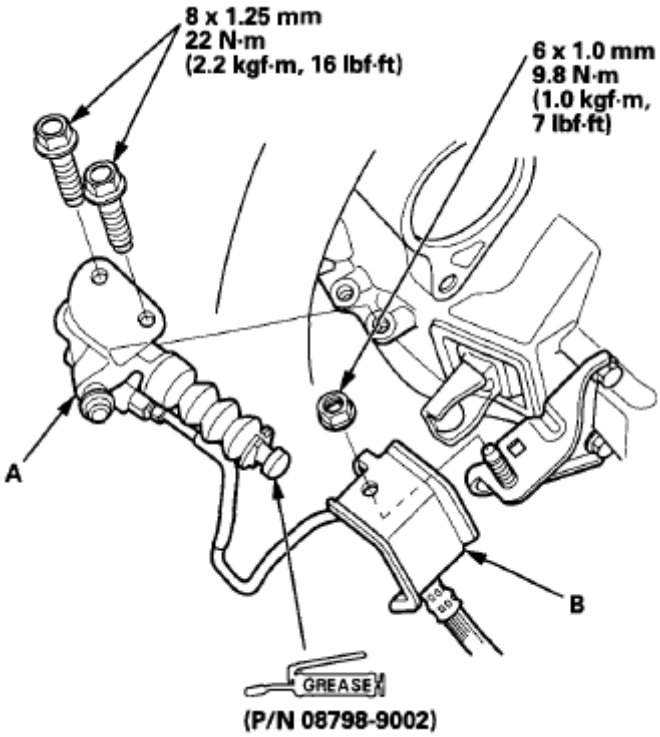


Fig. 99: Identifying Slave Cylinder And Clutch Line Bracket With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

50. Apply a light coat of silicone grease (P/N 08C30-B0234M) to the cable ends (A) and connect the cable ends to the select lever (B) and the change lever (C), then install the shift cable bracket (D) and the lock pins (E). Do not bend or damage the shift cables.

NOTE: Make sure not to get any silicone grease on the terminal part of the connectors and switches, especially if you have silicone grease on your hands or gloves.

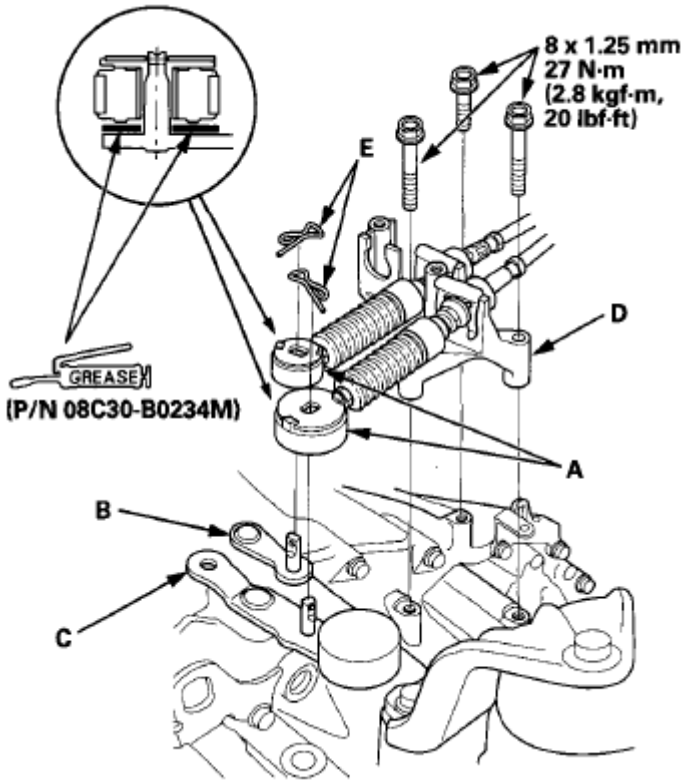


Fig. 100: Identifying Cable Ends, Select Lever, Change Lever, Shift Cable Bracket And Lock Pins With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

51. Install the harness bracket (A).

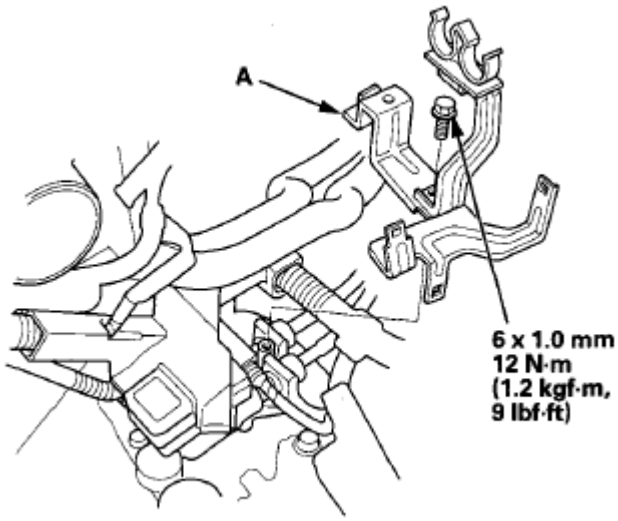


Fig. 101: Identifying Harness Bracket With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

52. Install the harness holder (A) and the harness clamps (B), then connect the reverse lockout solenoid connector (C).

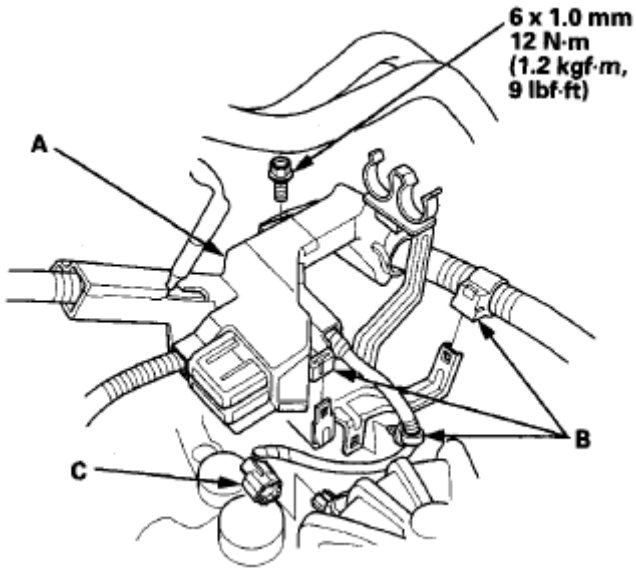


Fig. 102: Identifying Reverse Lockout Solenoid Connector, Harness Holder And Harness Clamps With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

53. Install the harness clamps (A), then connect the back-up light switch connector (B), the input shaft (mainshaft) speed sensor connector (C), the output shaft (countershaft) speed sensor connector (D), and the front secondary HO2S 4P connector (E).

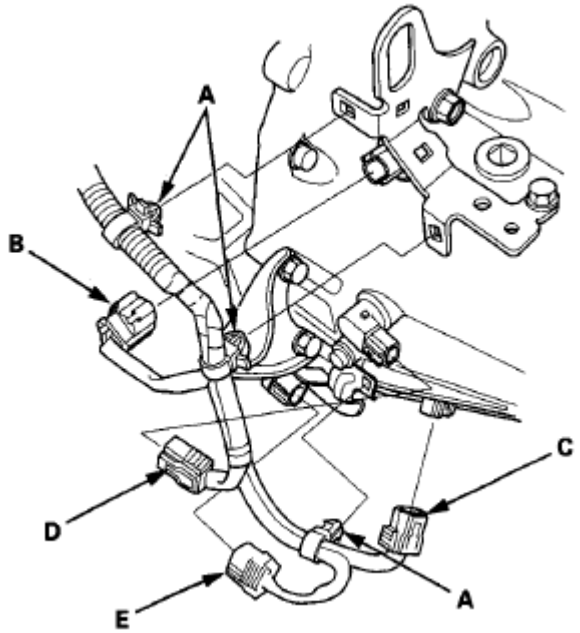


Fig. 103: Identifying Back-Up Light Switch Connector, Front Secondary Ho2S 4P Connector,

Harness Clamps, Input And Output Shaft Speed Sensor Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

54. Install the starter (A) and the vacuum pipe bracket (B).

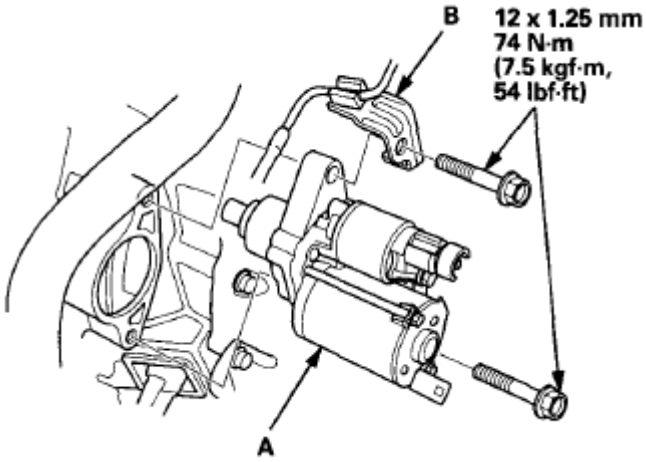


Fig. 104: Identifying Starter And Vacuum Pipe Bracket With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

55. Connect the positive starter cable (A) and the S terminal connector (B), and install the harness clamp (C).

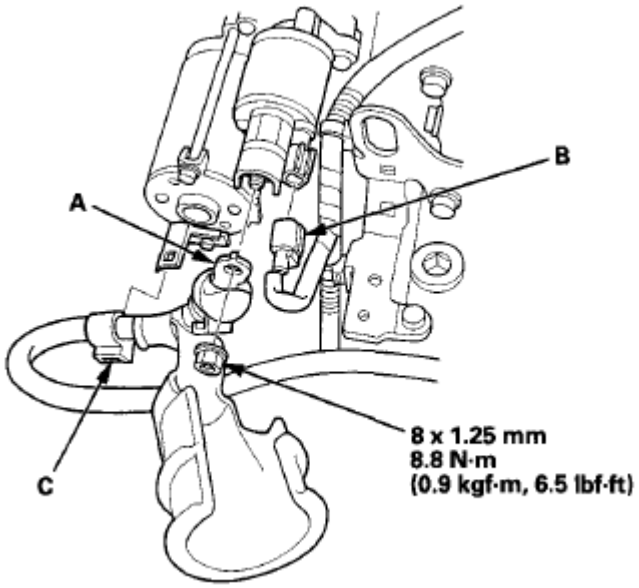


Fig. 105: Identifying Positive Starter Cable, S Terminal Connector And Harness Clamp With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

56. Loosen the upper steering joint bolt (A), and slip the lower end of the steering joint (B) onto the pinion shaft (C).

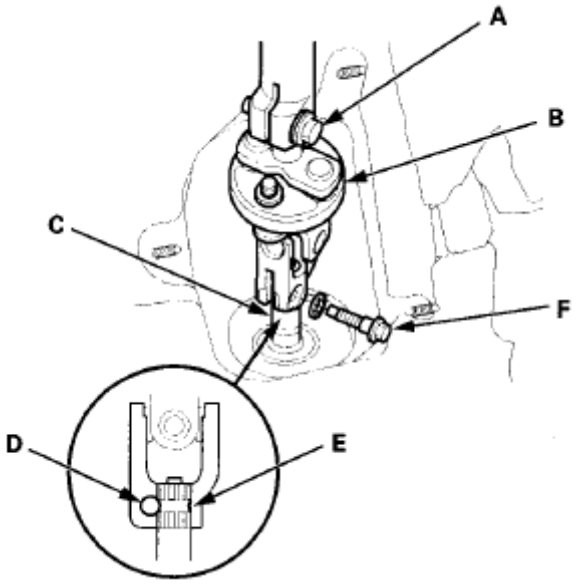


Fig. 106: Identifying Lower End Of Steering Joint, Pinion Shaft, Groove, Bolt Hole, Upper And Lower Steering Joint Bolt
Courtesy of AMERICAN HONDA MOTOR CO., INC.

57. Align the bolt hole (D) on the steering joint with the groove (E) around the pinion shaft, then loosely install the lower steering joint bolt (F). Be sure that the joint bolt is securely in the groove in the pinion shaft.
58. Remove the steering wheel holder tool (A).

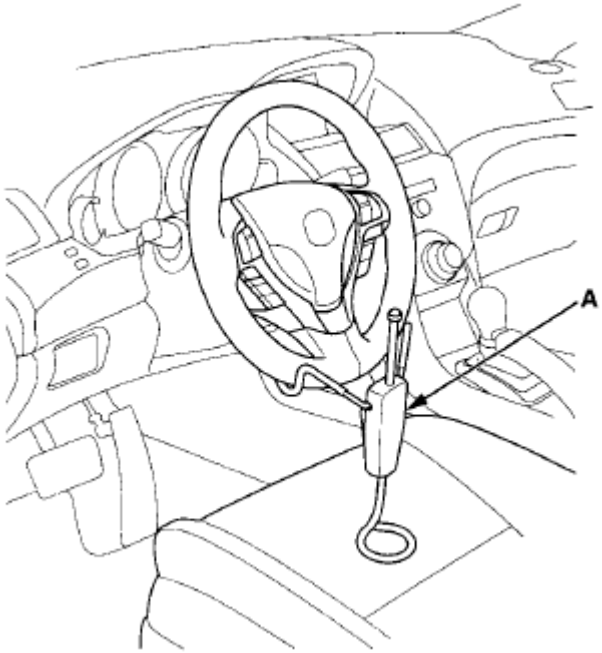


Fig. 107: Identifying Steering Wheel Holder Tool
Courtesy of AMERICAN HONDA MOTOR CO., INC.

59. Tighten the upper and lower steering joint bolts (A) to the specified torque.

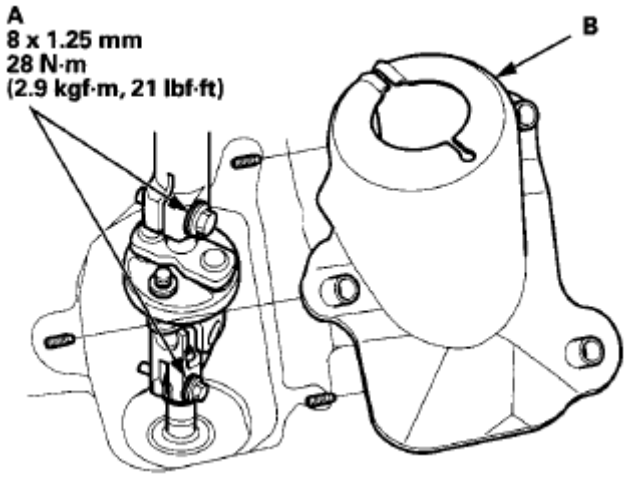


Fig. 108: Identifying Upper And Lower Steering Joint Bolts With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

60. Install the steering joint cover (B).
61. Install the harness clamps (A), then connect the EPS connectors (B).

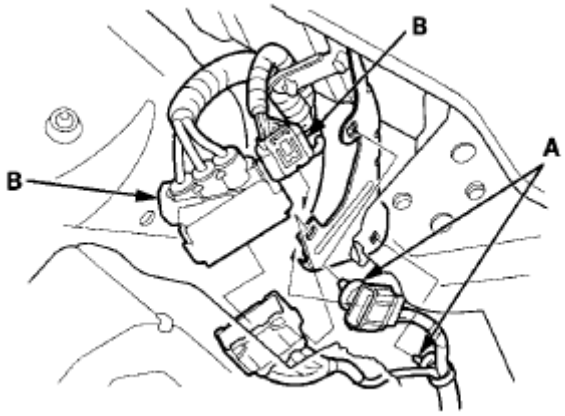


Fig. 109: Identifying Harness Clamps And EPS Connectors
Courtesy of AMERICAN HONDA MOTOR CO., INC.

62. Refill the transmission with MTF to the proper level (see **TRANSMISSION FLUID INSPECTION AND REPLACEMENT**).
63. Install the battery base (A) and the harness clamps (B).

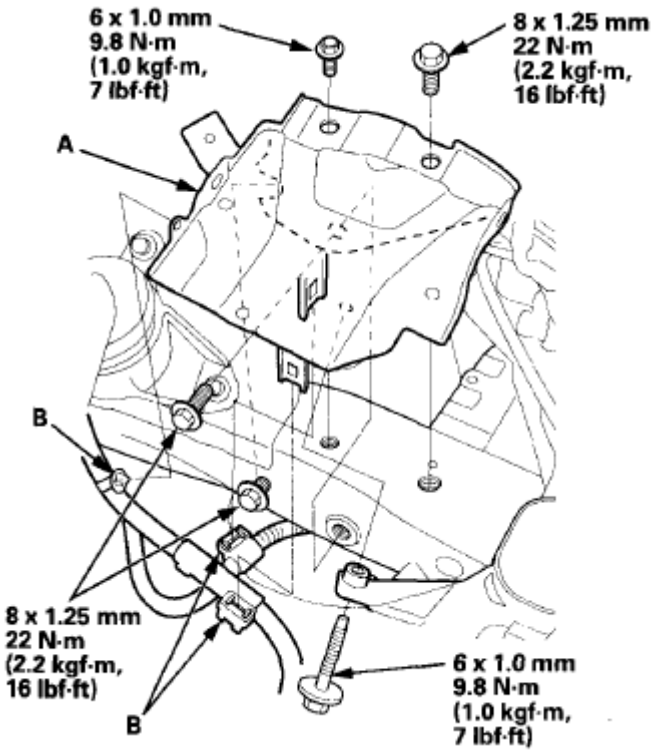


Fig. 110: Identifying Battery Base And Harness Clamps With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

64. Install the intake air duct (A).

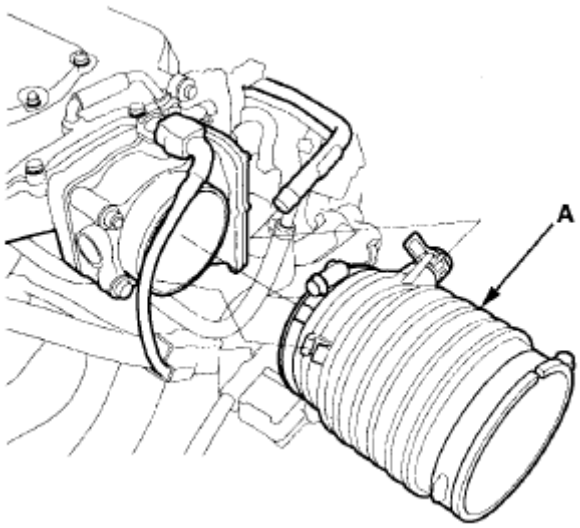


Fig. 111: Identifying Intake Air Duct
Courtesy of AMERICAN HONDA MOTOR CO., INC.

65. Install the air cleaner assembly (see **THROTTLE BODY CLEANING**).
66. Do the battery installation procedure (see **BATTERY REMOVAL AND INSTALLATION**).

67. Install the air intake duct splash separator (A).

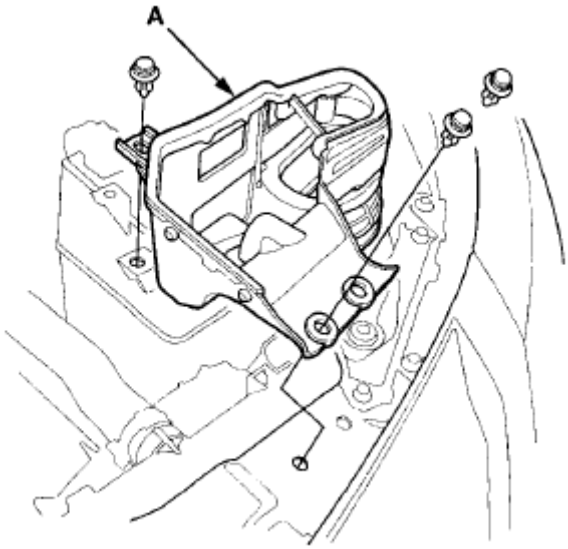


Fig. 112: Identifying Air Intake Duct Splash Separator
Courtesy of AMERICAN HONDA MOTOR CO., INC.

68. Install the front splash shield (see **FRONT SPLASH SHIELD REPLACEMENT**).
69. Place a floor jack under the lower arm, and raise the front suspension to load it with the vehicle's weight. Do not place the jack under the ball joint.
70. Torque the following parts to the specified torque.
    - Damper fork mounting nut
    - Damper pinch bolt
    - Lower arm ball joint nut
71. Install the strut brace (see **FRAME BRACE REPLACEMENT**).
72. Install the support strut (A) on both sides to the proper location.

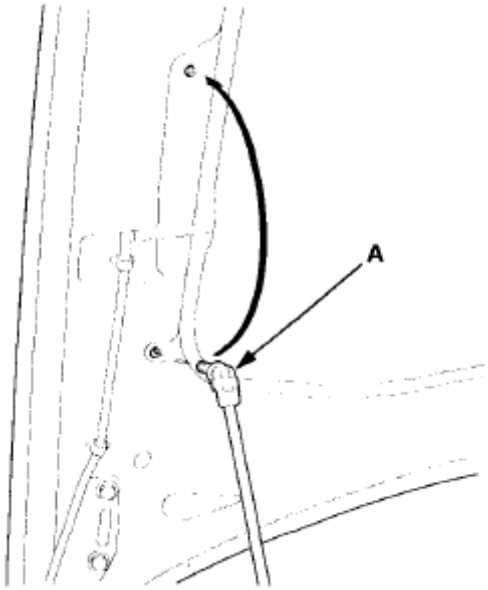
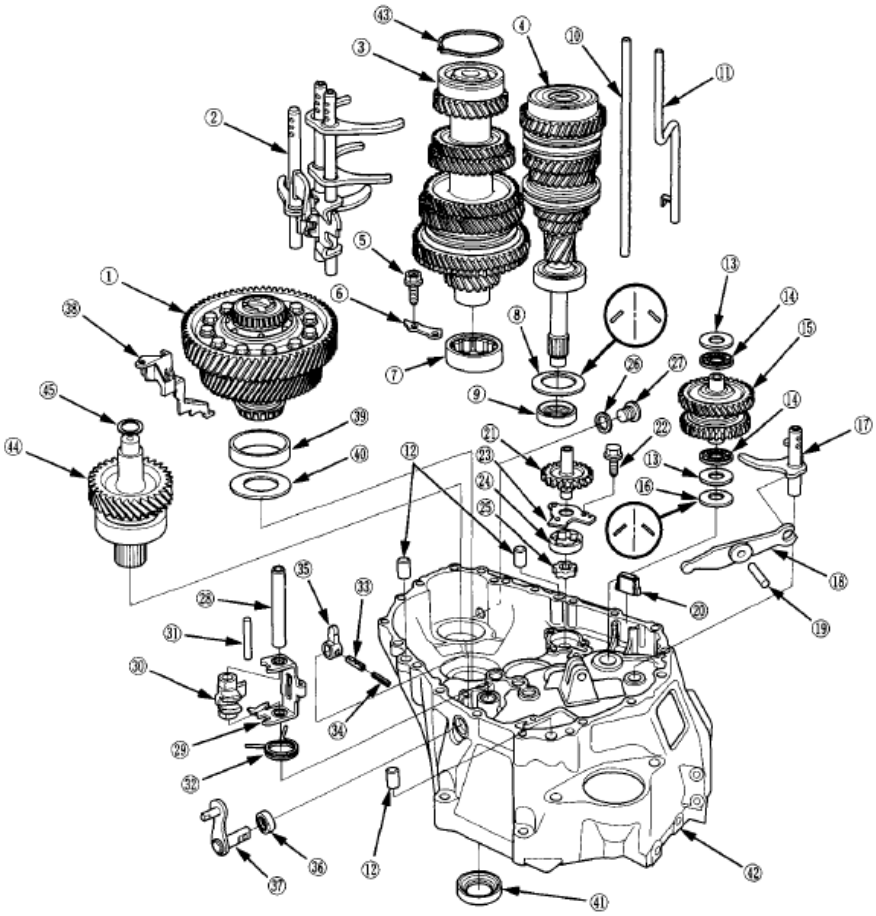


Fig. 113: Identifying Support Strut
Courtesy of AMERICAN HONDA MOTOR CO., INC.

73. Install the engine compartment covers (see **ENGINE COMPARTMENT COVER REPLACEMENT**).
74. Check the wheel alignment (see **WHEEL ALIGNMENT**).
75. Check the shift lever and clutch operation.
76. Test-drive the vehicle.

TRANSMISSION DISASSEMBLY

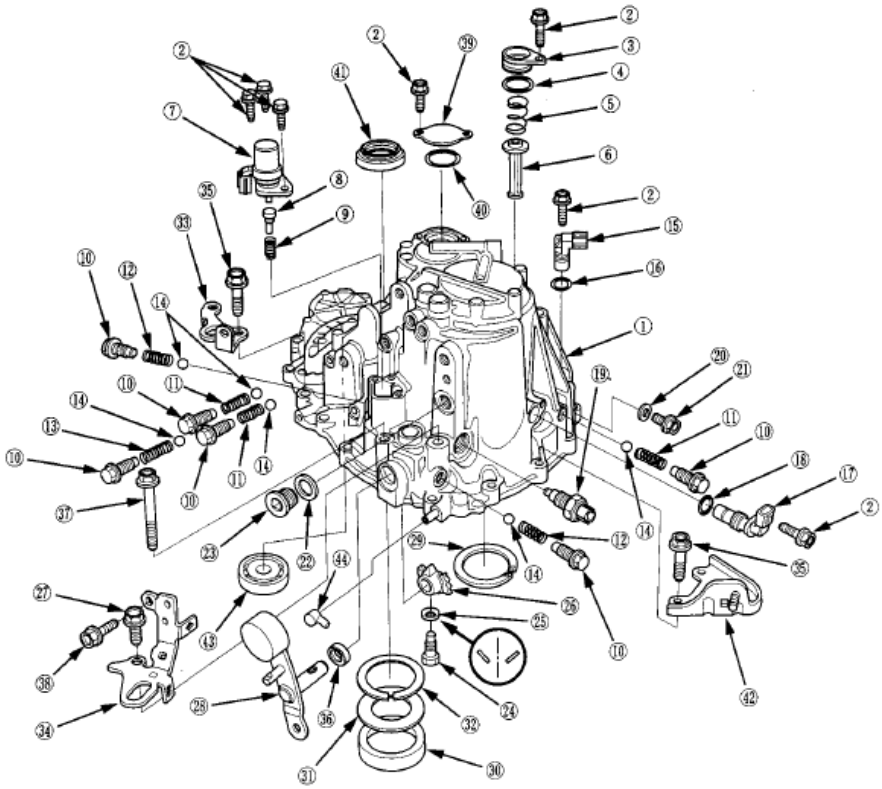
EXPLODED VIEW - CLUTCH HOUSING



① DIFFERENTIAL ASSEMBLY
② SHIFT FORK ASSEMBLY
③ COUNTERSHAFT ASSEMBLY
④ MAINSHAFT ASSEMBLY
⑤ 6 mm FLANGE BOLT
13 N·m (1.3 kgf·m, 9 lbf·ft)
⑥ BEARING SET PLATE
⑦ NEEDLE BEARING
⑧ 64 mm SPRING WASHER
⑨ 28 x 43 x 7 mm OIL SEAL
Replace.
⑩ OIL GUIDE PIPE A
⑪ OIL GUIDE PIPE
⑫ 14 x 20 mm DOWEL PIN
⑬ 25 mm THRUST WASHER
⑭ 25 mm THRUST NEEDLE BEARING
⑮ REVERSE IDLER GEAR SHAFT ASSEMBLY
⑯ 36 mm SPRING WASHER
⑰ REVERSE SHIFT FORK
⑱ REVERSE SHIFT LEVER
⑲ 8 x 50 mm PIN
⑳ MAGNET
㉑ OIL PUMP SHAFT
㉒ 6 mm FLANGE BOLT
12 N·m (1.2 kgf·m, 9 lbf·ft)
㉓ OIL PUMP PLATE
㉔ OIL PUMP OUTER ROTOR
㉕ OIL PUMP INNER ROTOR
㉖ 20 mm SEALING WASHER
Replace.
㉗ DRAIN PLUG
44 N·m (4.5 kgf·m, 33 lbf·ft)
㉘ SHIFT PIECE SHAFT
㉙ INTERLOCK
㉚ SHIFT PIECE
㉛ 8 x 50 mm PIN
㉜ SELECT RETURN SPRING
㉝ 5 x 22 mm SPRING PIN
Replace.
㉞ 3 x 22 mm SPRING PIN
Replace.
㉟ SELECT ARM
㊱ 14 x 20 x 4 mm DUST SEAL
Replace.
㊲ SELECT LEVER
㊳ OIL GUTTER PLATE
㊴ 45 x 80 x 21 mm BEARING OUTER RACE
㊵ 46 x 80 x 1 mm SPACER
㊶ 37 x 56 x 8 mm OIL SEAL
Replace.
㊷ CLUTCH HOUSING
㊸ 75 mm SNAP RING
㊹ TRANSFER OUTPUT SHAFT ASSEMBLY
㊺ 28.5 mm THRUST SHIM

Fig. 114: Exploded View Of Clutch Housing With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

EXPLODED VIEW - TRANSMISSION HOUSING



① TRANSMISSION HOUSING
② 6 mm FLANGE BOLT
12 N·m (1.2 kgf·m, 9 lbf·ft)
③ STRAINER COVER
④ O-RING
Replace.
⑤ STRAINER SET SPRING
⑥ OIL PUMP STRAINER
⑦ REVERSE LOCKOUT SOLENOID
⑧ SELECT LOCK PIN
⑨ SELECT LOCK PIN SPRING
⑩ DETENT BOLT
22 N·m (2.2 kgf·m, 16 lbf·ft)
⑪ DETENT BALL SPRING
(Free Length Size: 27.4 mm (1.079 in))
⑫ DETENT BALL SPRING
(Free Length Size: 22.0 mm (0.866 in))
⑬ DETENT BALL SPRING
(Free Length Size: 26.1 mm (1.028 in))
⑭ STEEL BALL
(Ball Size: 7.94 mm (0.3126 in))
⑮ INPUT SHAFT
(MAINSHAFT) SPEED SENSOR
⑯ O-RING
Replace.
⑰ OUTPUT SHAFT
(COUNTERSHAFT) SPEED SENSOR
⑱ O-RING
Replace.
⑲ BACK-UP LIGHT SWITCH
29 N·m (3.0 kgf·m, 22 lbf·ft)
⑳ 6 mm SEALING WASHER
Replace.
㉑ FLUID CHECK BOLT
12 N·m (1.2 kgf·m, 9 lbf·ft)
㉒ 20 mm SEALING WASHER
Replace.
㉓ FILLER PLUG
44 N·m (4.5 kgf·m, 33 lbf·ft)
㉔ 8 mm SPECIAL BOLT
31 N·m (3.2 kgf·m, 23 lbf·ft)
㉕ 8 mm SPRING WASHER
㉖ SHIFT ARM
㉗ 10 x 20 mm FLANGE BOLT
44 N·m (4.5 kgf·m, 33 lbf·ft)
㉘ CHANGE LEVER
㉙ 87 mm SHIM
㉚ 50 x 81 x 18 mm BEARING OUTER RACE
㉛ 46 x 81 x 1 mm SPACER
㉜ 81 mm SHIM
㉝ TRANSMISSION HANGER B
㉞ TRANSMISSION HANGER A
㉟ 10 x 42 mm FLANGE BOLT
44 N·m (4.5 kgf·m, 33 lbf·ft)
㊱ 16 x 23 x 5 mm DUST SEAL
Replace.
㊲ 10 x 90 mm FLANGE BOLT
44 N·m (4.5 kgf·m, 33 lbf·ft)
㊳ 8 mm FLANGE BOLT
27 N·m (2.8 kgf·m, 20 lbf·ft)
㊴ TRANSMISSION CASE CAP
㊵ O-RING
Replace.
㊶ 42 x 58 x 12.5 mm OIL SEAL
Replace.
㊷ CLUTCH LINE BRACKET
㊸ TRANSMISSION HOUSING BEARING
㊹ BREATHER CAP

Fig. 115: Exploded View Of Transmission Housing With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

NOTE: Place the clutch housing on two pieces of wood thick enough to keep the mainshaft from hitting the workbench.

1. Remove the release bearing and the release fork (see **TRANSMISSION SIDE**).
2. Remove the strainer cover (A), the O-ring (B), the strainer set spring (C), and the oil pump strainer (D).

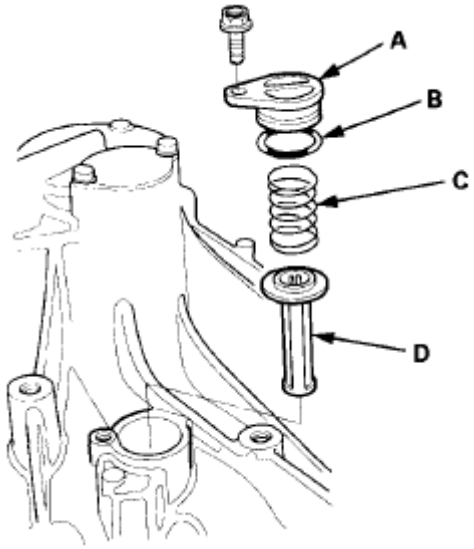


Fig. 116: Identifying Strainer Cover, O-Ring, Strainer Set Spring And Oil Pump Strainer
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Remove transmission hanger A.

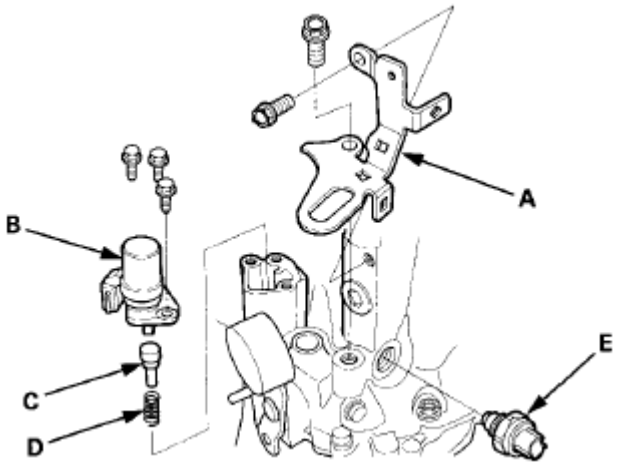


Fig. 117: Identifying Transmission Hanger, Reverse Lockout Solenoid, Lock Pin, Lock Pin Spring And Back-Up Light Switch
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Remove the reverse lockout solenoid (B), the select lock pin (C), the select lock pin spring (D), and the back-up light switch (E).
5. Remove the detent bolts (A), the 22.0 mm detent ball spring (B), the 26.1 mm detent ball spring (C), the 27.4 mm detent ball springs (D), the steel balls (E), the filler plug (F), and the 20 mm sealing washer (G).

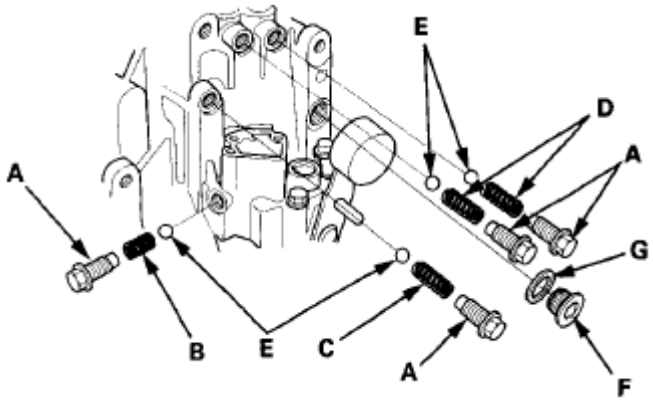


Fig. 118: Identifying Detent Ball Springs, Steel Balls, Filler Plug, Sealing Washer And Detent Bolts
Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Remove the detent bolts (A), the 22.0 mm detent ball spring (B), the 27.4 mm detent ball spring (C), the steel balls (D), the input shaft (mainshaft) speed sensor (E), the output shaft (countershaft) speed sensor (F), and the O-rings (G).

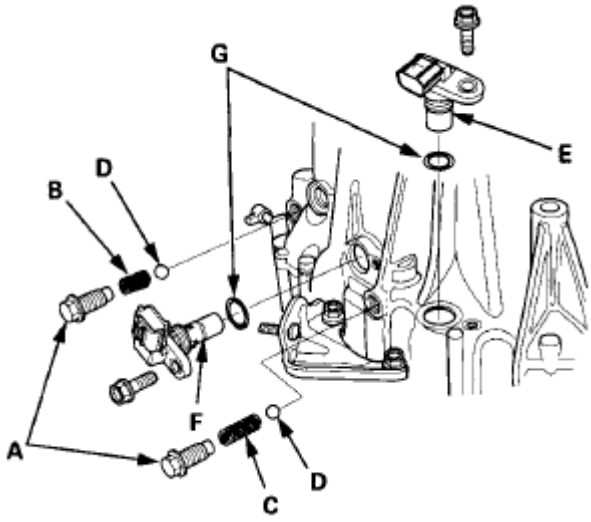


Fig. 119: Identifying Detent Ball Springs, Steel Balls, Detent Bolts, O-Rings, Input And Output Shaft Speed Sensor
Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Remove the fluid check bolt (A), the 6 mm sealing washer (B), the drain plug (C), and the 20 mm sealing washer (D).

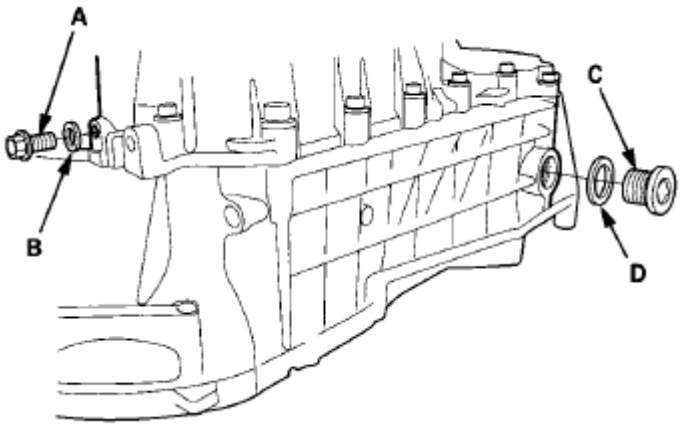


Fig. 120: Identifying Fluid Check Bolt, Drain Plug And Sealing Washers
Courtesy of AMERICAN HONDA MOTOR CO., INC.

8. Loosen the 10 mm flange bolts in a crisscross pattern in several steps, then remove them with the clutch line bracket (A) and transmission hanger B.

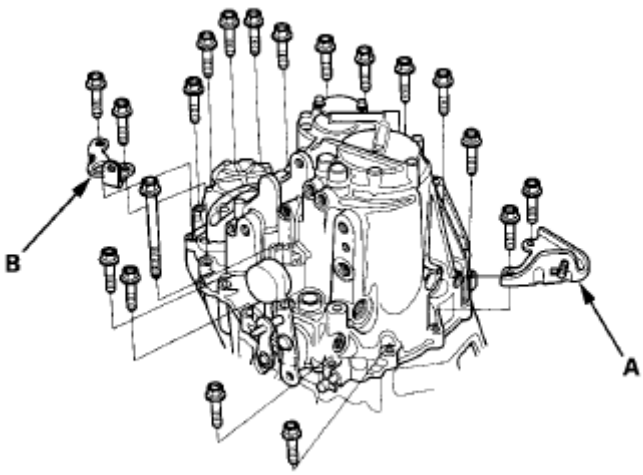


Fig. 121: Identifying Clutch Line Bracket And Transmission Hanger
Courtesy of AMERICAN HONDA MOTOR CO., INC.

9. Remove the transmission case cap (A) and the O-ring (B).

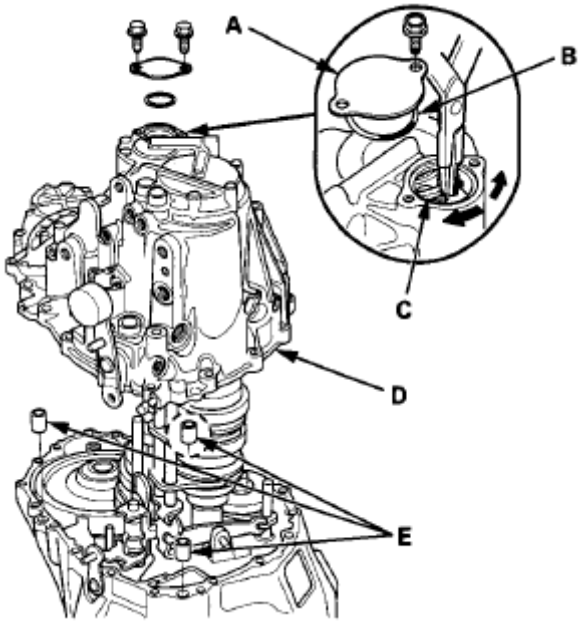


Fig. 122: Identifying Transmission Case Cap, Transmission Housing, Dowel Pins, O-Ring And Snap Ring
Courtesy of AMERICAN HONDA MOTOR CO., INC.

10. While expanding the 75 mm snap ring (C) on the countershaft ball bearing with snap ring pliers, lift the transmission housing (D). Release the snap ring pliers, and remove the transmission housing and the three 14 x 20 mm dowel pins (E).
11. Remove oil guide pipe A, the oil guide pipe (B), and the magnet (C).

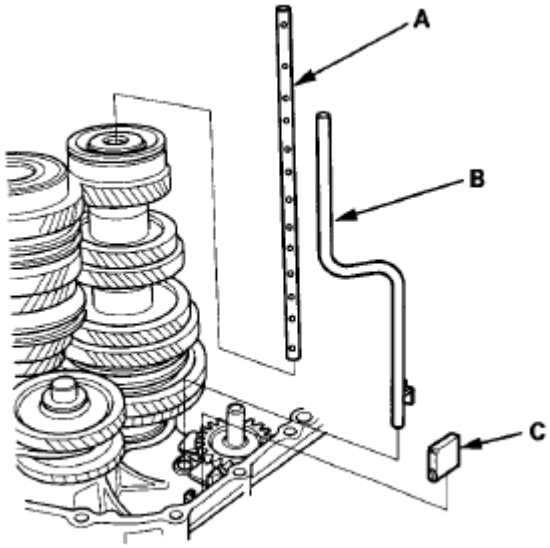


Fig. 123: Identifying Oil Guide Pipe And Magnet
Courtesy of AMERICAN HONDA MOTOR CO., INC.

12. Remove the 8 x 50 mm pin (A) and the reverse shift lever (B).

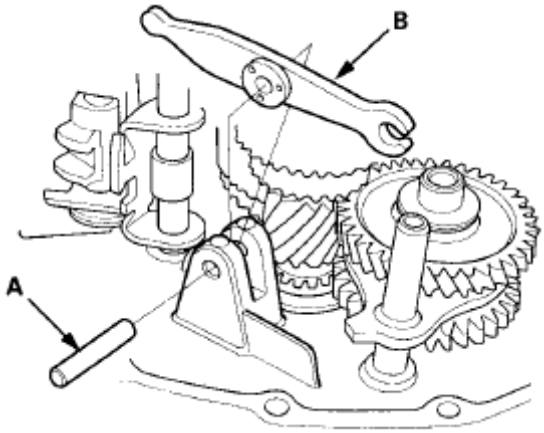


Fig. 124: Identifying Pin And Reverse Shift Lever
Courtesy of AMERICAN HONDA MOTOR CO., INC.

13. Remove the 25 mm thrust washers (A), the 25 mm thrust needle bearings (B), the reverse idler gear shaft assembly (C), the 36 mm spring washer (D), and the reverse shift fork (E) as an assembly.

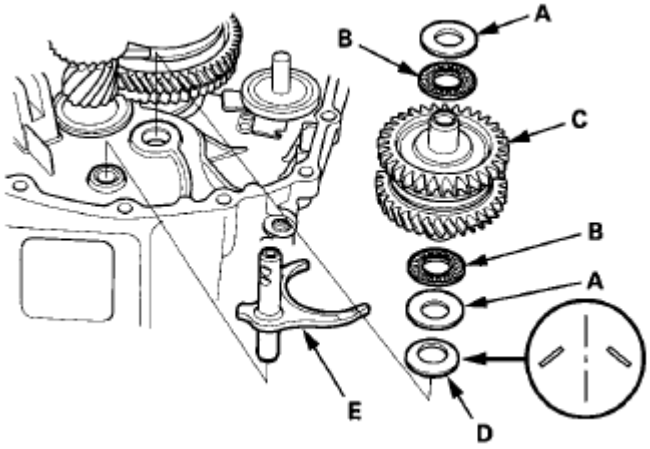


Fig. 125: Identifying Thrust Washers, Thrust Needle Bearings, Reverse Idler Gear Shaft Assembly, Spring Washer And Reverse Shift Fork
Courtesy of AMERICAN HONDA MOTOR CO., INC.

14. Remove the 8x50 mm pin (A), the select return spring (B), the shift piece shaft (C), the shift piece (D), and the interlock (E).

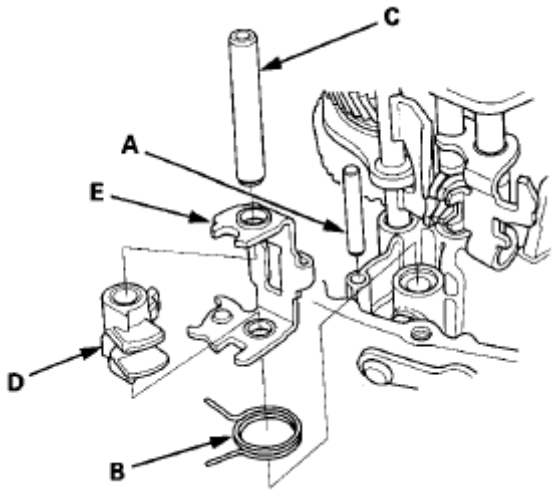


Fig. 126: Identifying Pin, Return Spring, Shift Piece Shaft, Shift Piece And Interlock
Courtesy of AMERICAN HONDA MOTOR CO., INC.

15. Remove the 5 x 22 mm spring pin (A), the 3 x 22 mm spring pin (B), the select arm (C), the select lever (D), and the 14 x 20 x 4 mm dust seal (E).

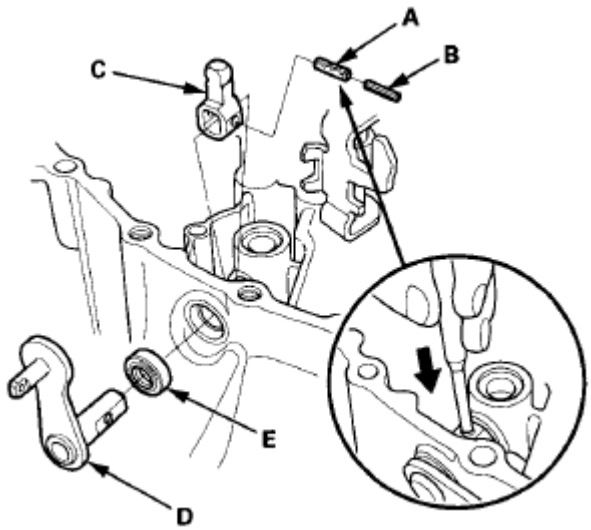


Fig. 127: Identifying Spring Pins, Select Arm, Select Lever And Dust Seal
Courtesy of AMERICAN HONDA MOTOR CO., INC.

16. Apply tape to the mainshaft splines to protect the seal, then remove the mainshaft assembly (A) and the countershaft assembly (B) with the shift fork assembly (C) from the clutch housing (D).

NOTE: Do not apply tape thick to damage the oil seal.

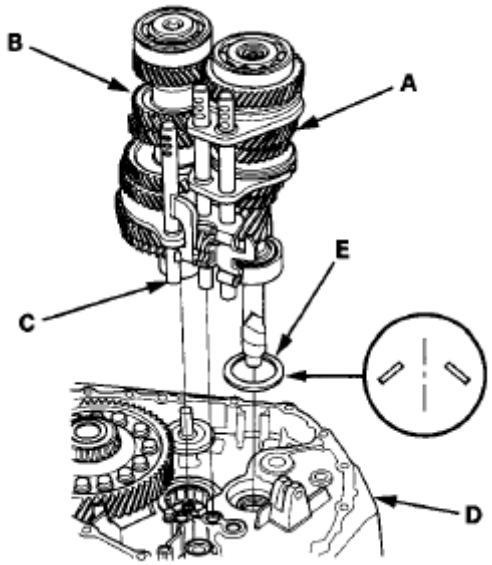


Fig. 128: Identifying Mainshaft Assembly, Countershaft Assembly, Shift Fork Assembly And Clutch Housing
Courtesy of AMERICAN HONDA MOTOR CO., INC.

17. Remove the 64 mm spring washer (E).
18. Remove the oil pump shaft (A) and the differential assembly (B).

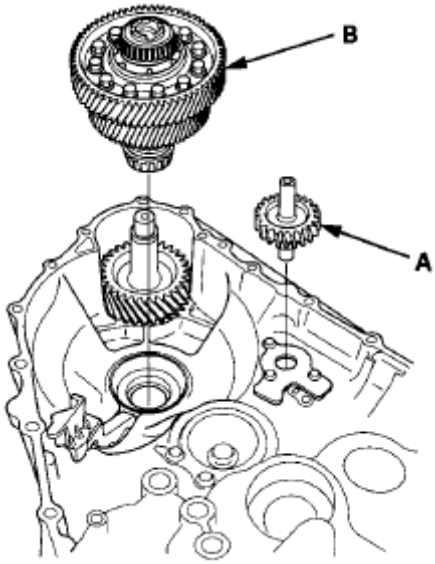


Fig. 129: Identifying Oil Pump Shaft And Differential Assembly
Courtesy of AMERICAN HONDA MOTOR CO., INC.

19. Remove the transfer output shaft assembly (A).

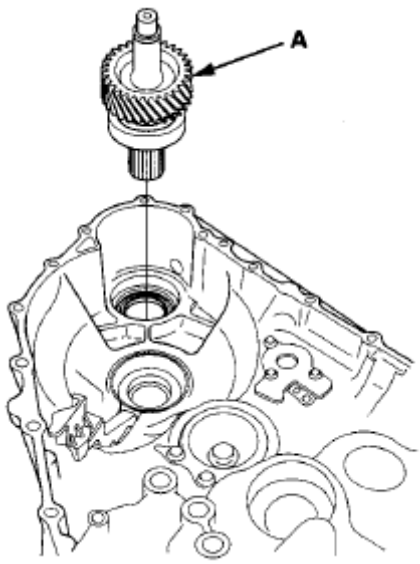


Fig. 130: Identifying Transfer Output Shaft Assembly
Courtesy of AMERICAN HONDA MOTOR CO., INC.

20. Remove the oil guide plate (A).

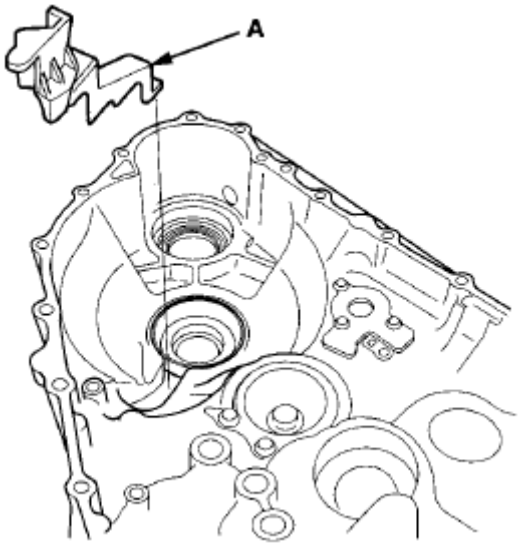


Fig. 131: Identifying Oil Guide Plate
Courtesy of AMERICAN HONDA MOTOR CO., INC.

21. Remove the oil pump plate (A), the oil pump inner rotor (B), and the oil pump outer rotor (C).

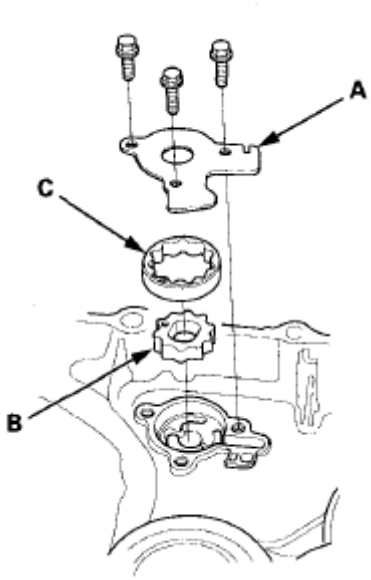


Fig. 132: Identifying Oil Pump Plate, Oil Pump Inner Rotor And Oil Pump Outer Rotor
Courtesy of AMERICAN HONDA MOTOR CO., INC.

22. Remove the 87 mm shim (A) from the transmission housing (B).

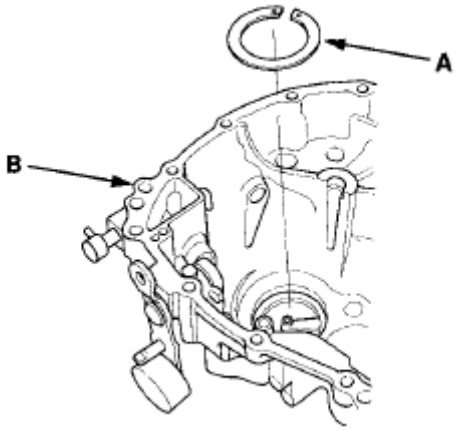


Fig. 133: Identifying Shim And Transmission Housing
Courtesy of AMERICAN HONDA MOTOR CO., INC.

23. Remove the 8 mm special bolt (A), the 8 mm spring washer (B), the shift arm (C), the change lever (D), and the 16 x 23 x 5 mm dust seal (E).

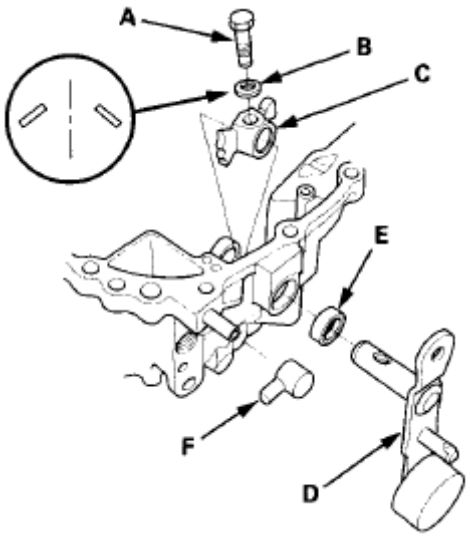


Fig. 134: Identifying Special Bolt, Spring Washer, Shift Arm, Change Lever And Dust Seal
Courtesy of AMERICAN HONDA MOTOR CO., INC.

24. Remove the breather cap (F).

REVERSE SHIFT LEVER CLEARANCE INSPECTION

1. Measure the clearance between the reverse shift lever (A) and the reverse shift fork (B) with a feeler gauge (C). If the clearance exceeds the service limit, go to step 2.

   Standard: 0.15- 0.60 mm (0.006- 0.023 in)

   Service Limit: 0.7 mm (0.027 in)

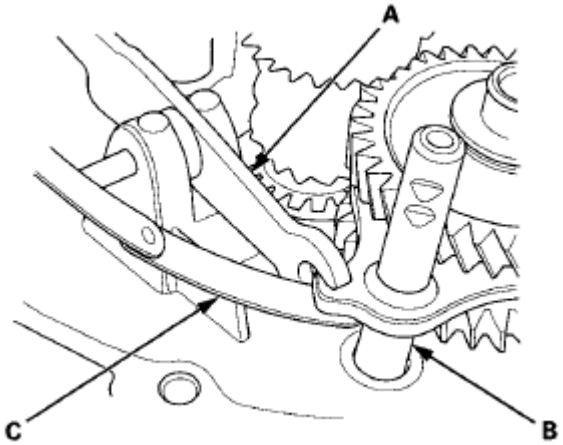


Fig. 135: Measuring Clearance Between Reverse Shift Lever And Reverse Shift Fork Using Feeler Gauge
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Measure the width of the reverse shift lever.
   - If the width is not within the standard, replace the reverse shift lever.
   - If the width is within the standard, replace the reverse shift fork.

   Standard: 6.50- 6.75 mm (0.2559- 0.2657 in)

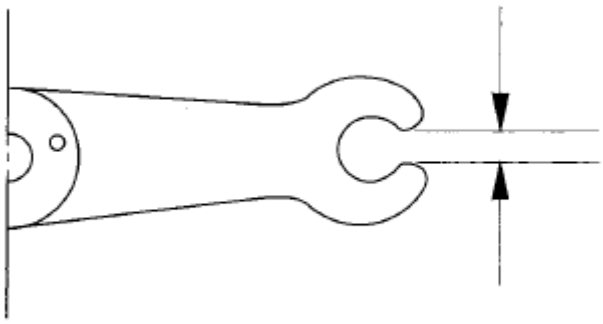


Fig. 136: Measuring Reverse Shift Lever Width
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Measure the clearance between the reverse shift lever (A) and the reverse shift piece (B) with a feeler gauge (C). If the clearance exceeds the service limit, go to step 4.

   Standard: 0- 0.4 mm (0.000- 0.015 in)

   Service Limit: 0.5 mm (0.019 in)

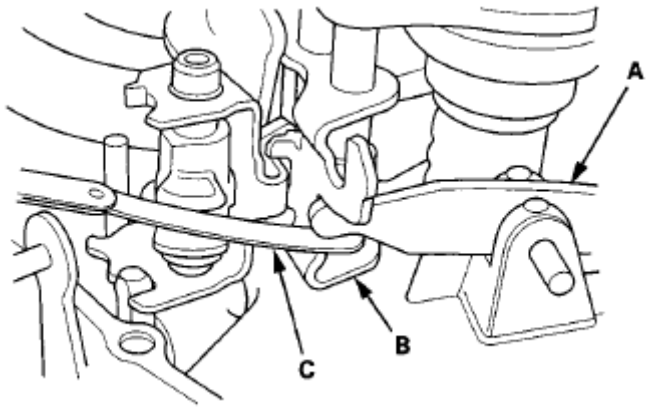


Fig. 137: Measuring Clearance Between Reverse Shift Lever And Reverse Shift Piece Using Feeler Gauge
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Measure the width of the reverse shift lever.
   - If the width is not within the standard, replace the reverse shift lever.
   - If the width is within the standard, replace the reverse shift piece.

Standard: 13.0- 13.2 mm (0.512- 0.520 in)

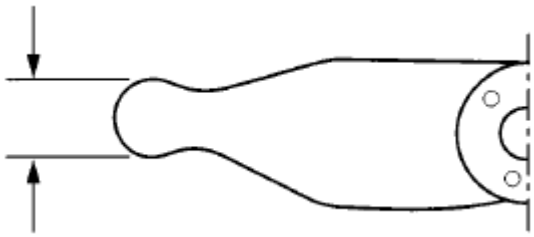


Fig. 138: Measuring Reverse Shift Lever Width
Courtesy of AMERICAN HONDA MOTOR CO., INC.

SELECT ARM CLEARANCE INSPECTION

1. Measure the clearance between the select arm (A) and the interlock (B) with a feeler gauge (C). If the clearance exceeds the service limit, go to step 2.

   Standard: 0.05- 0.25 mm (0.002- 0.009 in)

   Service Limit: 0.5 mm (0.019 in)

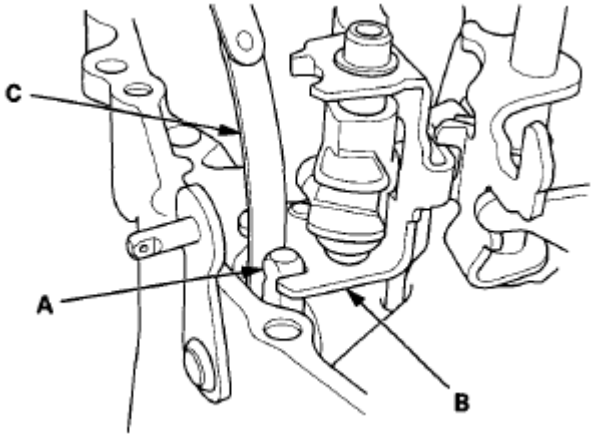


Fig. 139: Measuring Clearance Between Select Arm And Interlock Using Feeler Gauge
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Measure the width of the select arm.
   - If the width is not within the standard, replace the select arm.
   - If the width is within the standard, replace the interlock.

   Standard: 12.9- 13.0 mm (0.508- 0.512 in)

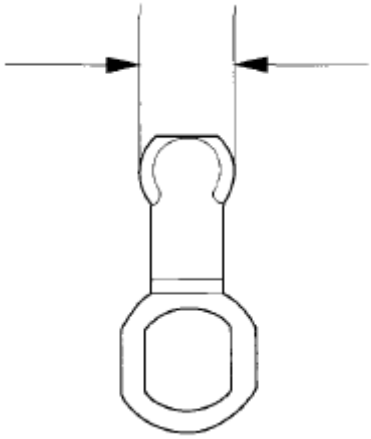


Fig. 140: Measuring Width Of Select Arm
Courtesy of AMERICAN HONDA MOTOR CO., INC.

SHIFT ARM CLEARANCE INSPECTION

1. Measure the clearance between the shift arm (A) and the shift piece (B) with a feeler gauge (C). If the clearance exceeds the service limit, go to step 2.

   Standard: 0.26- 0.57 mm (0.010- 0.022 in)

   Service Limit: 0.75 mm (0.029 in)

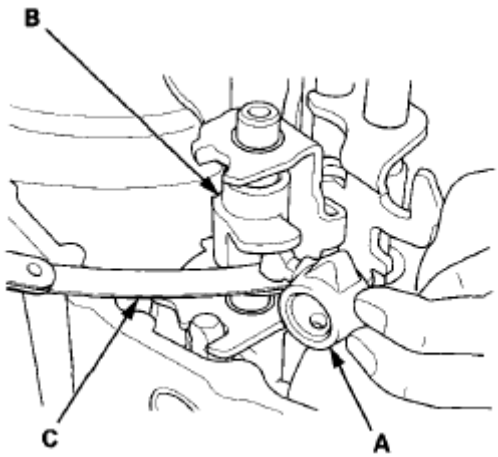


Fig. 141: Measuring Clearance Between Shift Arm And Shift Piece Using Feeler Gauge
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Measure the width of the shift arm.
   - If the width is not within the standard, replace the shift arm.
   - If the width is within the standard, replace the shift piece.

   Standard: 13.6- 13.8 mm (0.535- 0.543 in)

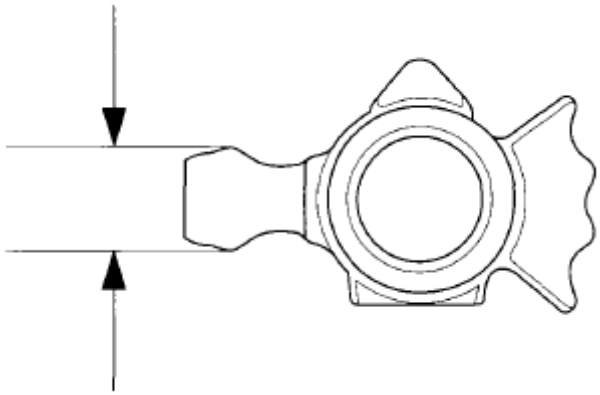


Fig. 142: Measuring Shift Arm Width
Courtesy of AMERICAN HONDA MOTOR CO., INC.

OIL PUMP CLEARANCE INSPECTION

1. Measure the thrust clearance between the oil pump rotors (A) and the clutch housing (B) with a straight edge (C) and a feeler gauge (D).

   Standard (new): 0.03- 0.13 mm (0.001- 0.005 in)

   Service Limit: 0.15 mm (0.005 in)

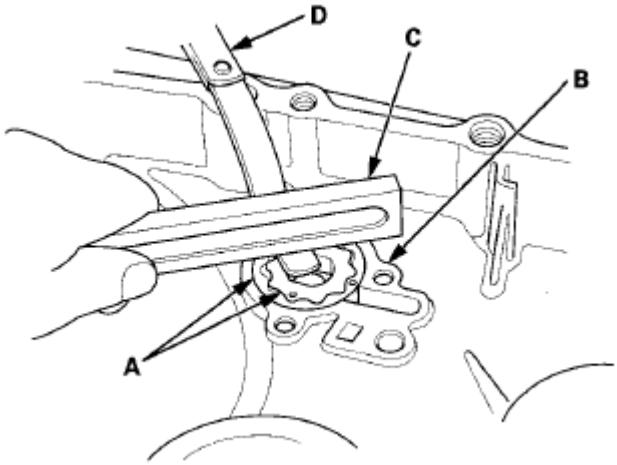


Fig. 143: Measuring Thrust Clearance Between Oil Pump Rotors And Clutch Housing Using Straight Edge And Feeler Gauge
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Measure the side clearance between the oil pump outer rotor (A) and the clutch housing (B) with a feeler gauge (C).

   Standard (new): 0.1- 0.2 mm (0.004- 0.007 in)

Service Limit: 0.22 mm (0.008 in)

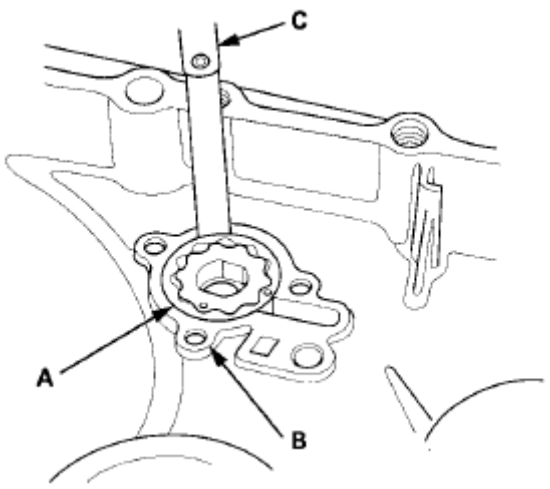


Fig. 144: Measuring Side Clearance Between Oil Pump Outer Rotor And Clutch Housing Using Feeler Gauge
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Measure the side clearance between the oil pump outer rotor (A) and the oil pump inner rotor (B) with a feeler gauge (C).

   Standard (new): 0.14 mm (0.006 in) max.

   Service Limit: 0.2 mm (0.007 in)

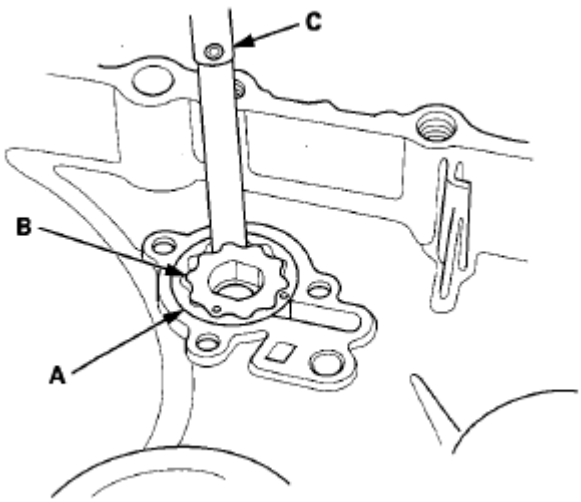


Fig. 145: Measuring Side Clearance Between Oil Pump Outer Rotor And Oil Pump Inner Rotor Using Feeler Gauge
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. If any clearance is not within the standard, replace the oil pump outer and inner rotors as a set.

SHIFT FORK CLEARANCE INSPECTION

1. Measure the clearance between each shift fork (A) and its matching synchro sleeve (B). If the clearance exceeds the service limit, go to step 2.

   Standard: 0.35- 0.65 mm (0.014- 0.025 in)

   Service Limit: 1.0 mm (0.039 in)

   1st/2nd, 3rd/4th, 5th/6th

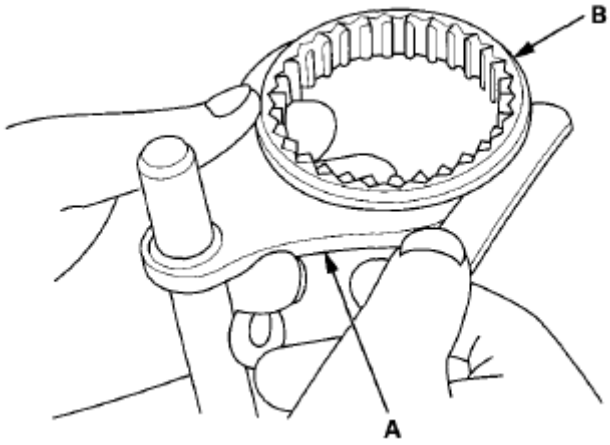


Fig. 146: Measuring Clearance Between Each Shift Fork And Its Matching Synchro Sleeve - 1st/2nd, 3rd/4th, 5th/6th
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Reverse

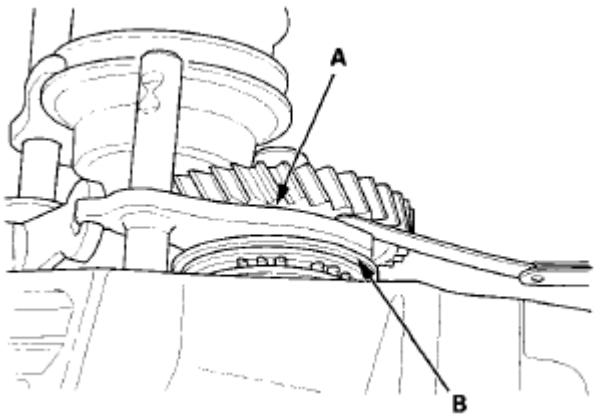


Fig. 147: Measuring Clearance Between Each Shift Fork And Its Matching Synchro Sleeve - Reverse
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Measure the thickness of the shift fork fingers.
   - If the thickness is not within the standard, replace the shift fork.
   - If the thickness is within the standard, replace the synchro sleeve and the synchro hub as a set.
   - If one arm of the shift fork shows more wear than others, the fork may be bent and needs to be replaced.

   Standard:

   1st/2nd, 3rd/4th, 5th/6th:

   7.4-7.6 mm (0.291- 0.299 in)

   Reverse: 6.2- 6.4 mm (0.244- 0.252 in)

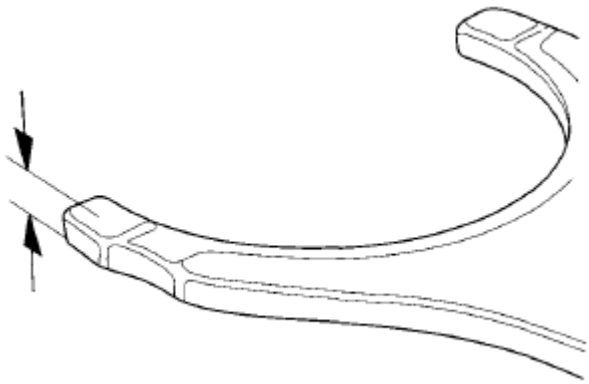


Fig. 148: Measuring Thickness Of Shift Fork Fingers
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Measure the clearance between each shift fork (A) and the shift piece (B). If the clearance exceeds the service limit, go to step 4.

   Standard: 0.2- 0.6 mm (0.008- 0.023 in)

   Service Limit: 0.7 mm (0.027 in)

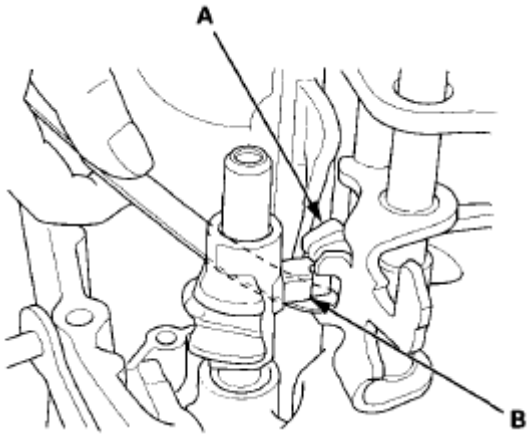


Fig. 149: Measuring Clearance Between Each Shift Fork And Shift Piece
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Measure the width of the shift piece.
   - If the width is not within the standard, replace the shift piece.
   - If the width is within the standard, replace the shift fork.

   Standard: 12.8- 13.0 mm (0.504- 0.512 in)

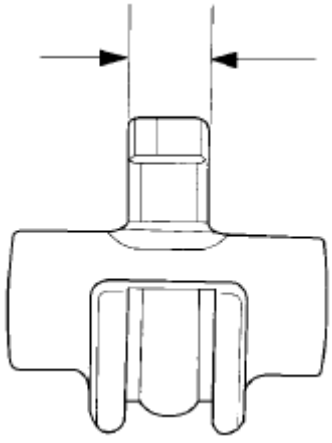


Fig. 150: Measuring Width Of Shift Piece
Courtesy of AMERICAN HONDA MOTOR CO., INC.

SHIFT FORK DISASSEMBLY/REASSEMBLY

NOTE: **Prior to reassembling, clean all parts in solvent, dry them, and apply MTF to all contact surfaces.**

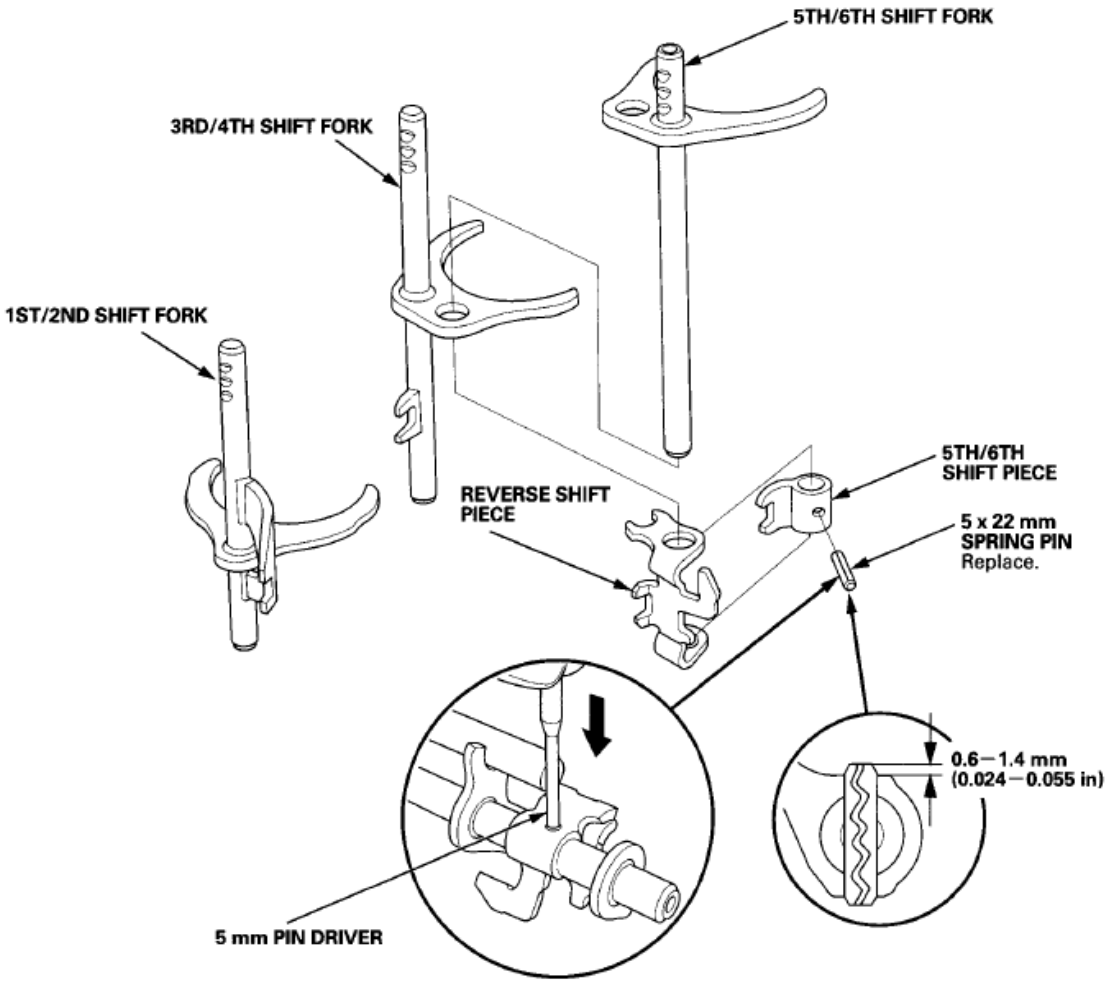


Fig. 151: Identifying Shift Fork Disassembly
Courtesy of AMERICAN HONDA MOTOR CO., INC.

MAINSHAFT ASSEMBLY CLEARANCE INSPECTION

1. Support the bearing inner race with an appropriate sized socket (A), and push down on the mainshaft (B).

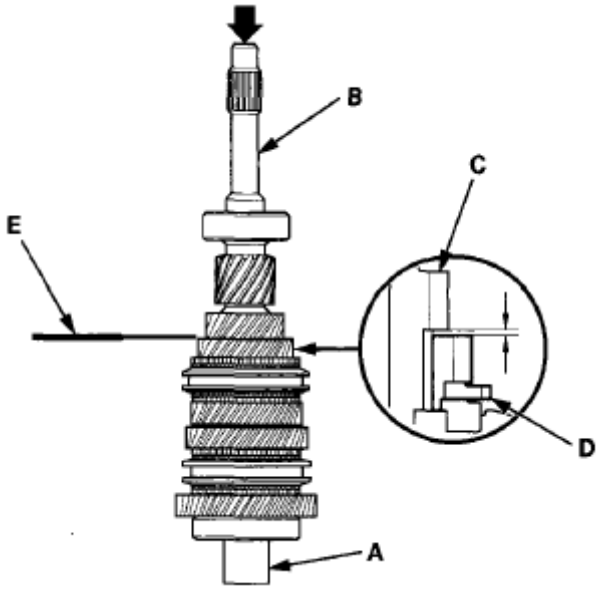


Fig. 152: Measuring Clearance Between 2nd Gear And 3rd Gear Using Feeler Gauge
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Measure the clearance between 2nd gear (C) and 3rd gear (D) with a feeler gauge (E).
   - If the clearance exceeds the service limit, go to step 3.
   - If the clearance is within the service limit, go to step 4.

   Standard: 0.06- 0.19 mm (0.002- 0.007 in)

   Service Limit: 0.3 mm (0.011 in)

3. Measure the thickness of 3rd gear.
   - If the thickness is less than the service limit, replace 3rd gear.
   - If the thickness is within the service limit, replace the 3rd/4th synchro hub and the 3rd/4th synchro sleeve as a set.

   Standard: 23.89- 23.97 mm (0.9405- 0.9437 in)

   Service Limit: 23.8 mm (0.937 in)

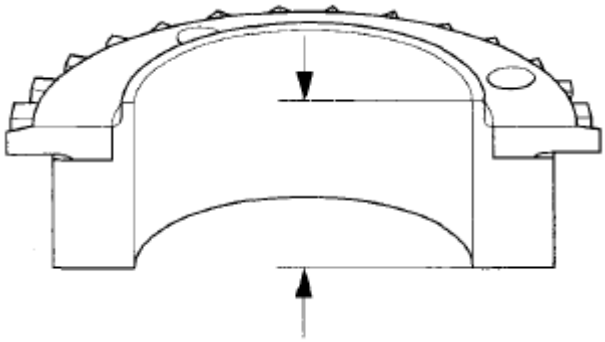


Fig. 153: Measuring Thickness Of 3rd Gear
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Measure the clearance between 4th gear (A) and the 4th/5th gear distance collar (B) with a dial indicator (C).
   - If the clearance exceeds the service limit, go to step 5.
   - If the clearance is within the service limit, go to step 7.

   Standard: 0.06- 0.19 mm (0.0024- 0.0075 in)

   Service Limit: 0.3 mm (0.012 in)

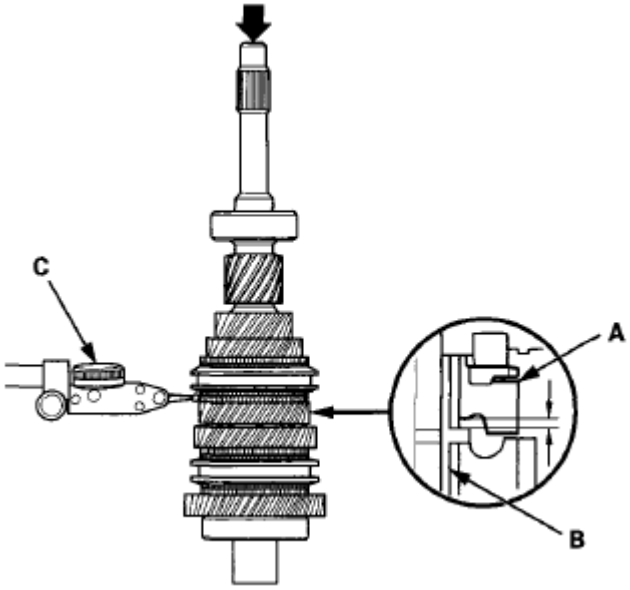


Fig. 154: Measuring Clearance Between 4th Gear And 4th/5th Gear Distance Collar Using Dial Indicator
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Measure the length (1) of the 4th/5th gear distance collar as shown.
   - If the length (1) is not within the standard, replace the 4th/5th gear distance collar.
   - If the length (1) is within the standard, go to step 6.

Standard: 22.53- 22.58 mm (0.8870- 0.8890 in)

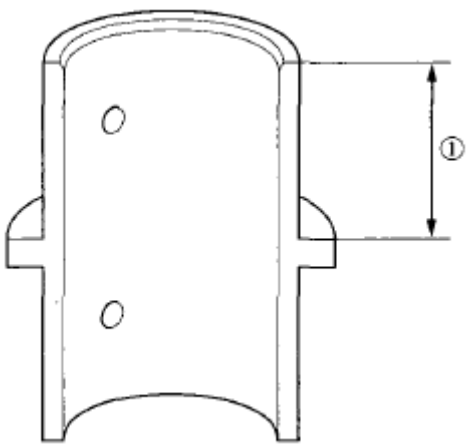


Fig. 155: Measuring Length Of 4th/5th Gear Distance Collar
Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Measure the thickness of 4th gear.
   - If the thickness is less than the service limit, replace 4th gear.
   - If the thickness is within the service limit, replace the 3rd/4th synchro hub and the 3rd/4th synchro sleeve as a set.

   Standard: 22.39- 22.47 mm (0.8815- 0.8846 in)

   Service Limit: 22.3 mm (0.878 in)

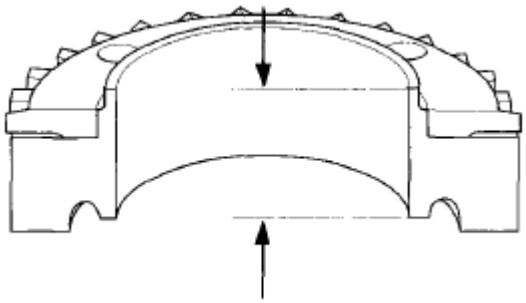


Fig. 156: Measuring Thickness Of 4th Gear
Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Measure the clearance between the 4th/5th gear distance collar (A) and 5th gear (B) with a dial indicator (C).
   - If the clearance exceeds the service limit, go to step 8.
   - If the clearance is within the service limit, go to step 10.

   Standard: 0.06- 0.19 mm (0.0024- 0.0075 in)

Service Limit: 0.3 mm (0.012 in)

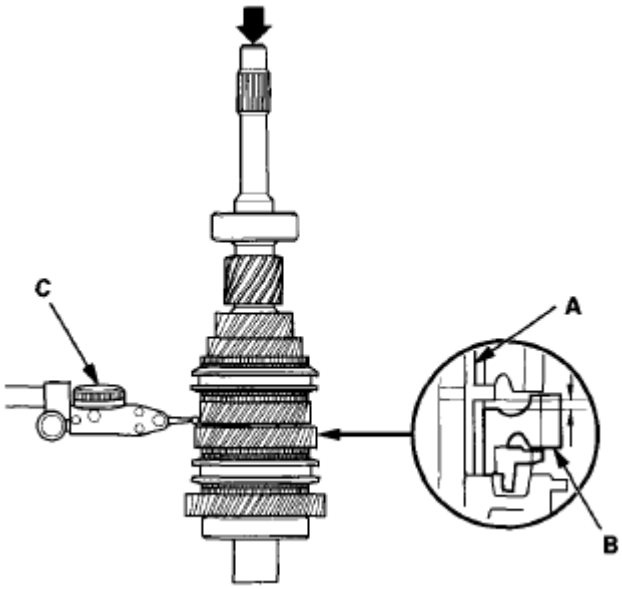


Fig. 157: Measuring Clearance Between 4th/5th Gear Distance Collar And 5th Gear Using Dial Indicator
Courtesy of AMERICAN HONDA MOTOR CO., INC.

8. Measure the length (2) of the 4th/5th gear distance collar as shown.
   - If the length (2) is not within the standard, replace the 4th/5th gear distance collar.
   - If the length (2) is within the standard, go to step 9.

Standard: 22.53- 22.58 mm (0.8870- 0.8890 in)

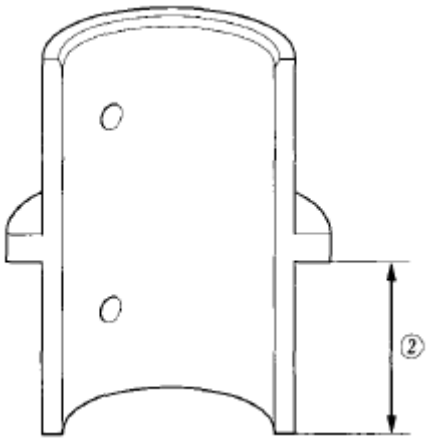


Fig. 158: Measuring Length Of 4th/5th Gear Distance Collar
Courtesy of AMERICAN HONDA MOTOR CO., INC.

9. Measure the thickness of 5th gear.

- If the thickness is less than the service limit, replace 5th gear.
- If the thickness is within the service limit, replace the 5th/6th synchro hub and the 5th/6th synchro sleeve as a set.

Standard: 22.39- 22.47 mm (0.8815- 0.8846 in)

Service Limit: 22.3 mm (0.878 in)

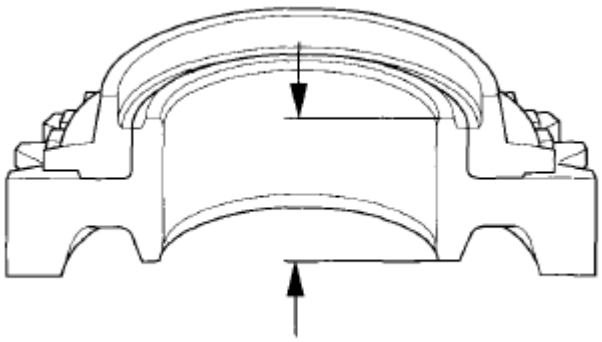


Fig. 159: Measuring Thickness Of 5th Gear
Courtesy of AMERICAN HONDA MOTOR CO., INC.

10. Measure the clearance between 6th gear (A) and the angular ball bearing inner race (B) with a dial indicator (C). If the clearance exceeds the service limit, go to step 11.

Standard: 0.06- 0.19 mm (0.0024- 0.0075 in)

Service Limit: 0.3 mm (0.012 in)

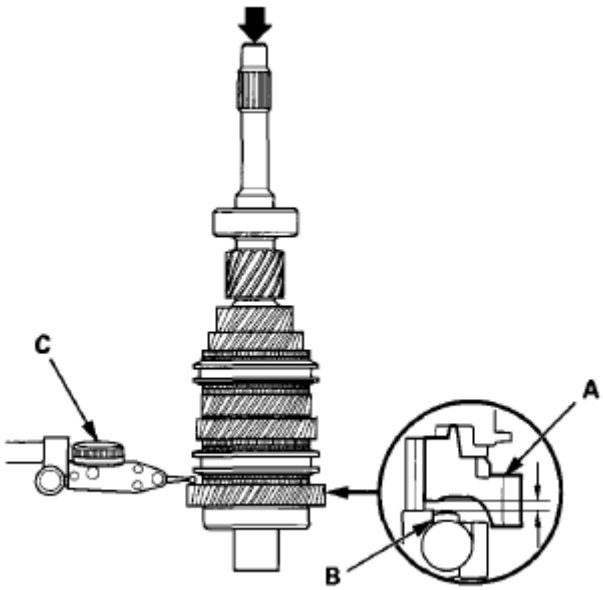


Fig. 160: Measuring Clearance Between 6th Gear And Angular Ball Bearing Inner Race Using Dial

Indicator
Courtesy of AMERICAN HONDA MOTOR CO., INC.

11. Measure the length of the 6th gear distance collar.
    - If the length is not within the standard, replace the 6th gear distance collar.
    - If the length is within the standard, go to step 12.

    Standard: 26.03- 26.08 mm (1.0248- 1.0268 in)

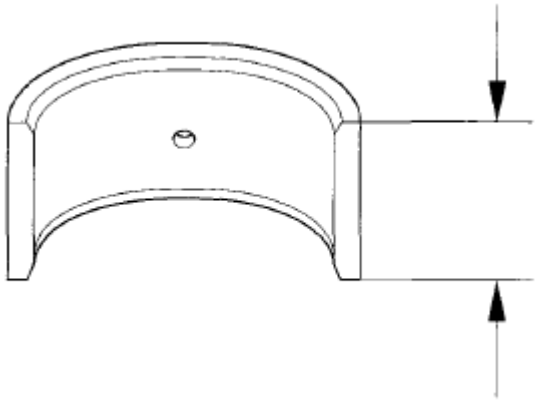


Fig. 161: Measuring Length Of 6th Gear Distance Collar
Courtesy of AMERICAN HONDA MOTOR CO., INC.

12. Measure the thickness of 6th gear.
    - If the thickness is less than the service limit, replace 6th gear.
    - If the thickness is within the service limit, replace the 5th/6th synchro hub and the 5th/6th synchro sleeve as a set.

    Standard: 25.89- 25.97 mm (1.0193- 1.0224 in)

    Service Limit: 25.8 mm (1.016 in)

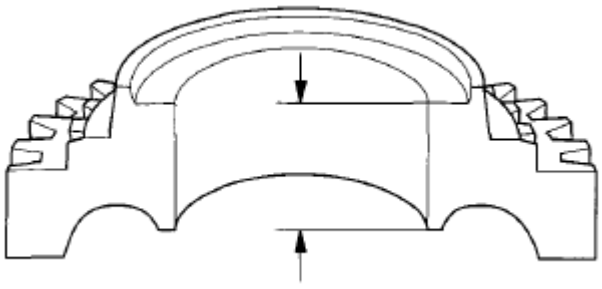


Fig. 162: Measuring Thickness Of 6th Gear
Courtesy of AMERICAN HONDA MOTOR CO., INC.

MAINSHAFT DISASSEMBLY

NOTE: Refer to the EXPLODED VIEW in the Mainshaft Reassembly, as needed, when removing components pressed onto the mainshaft (see MAINSHAFT REASSEMBLY).

1. Support 6th gear (A) on steel blocks, and press the mainshaft out of the angular ball bearing (B) and 6th gear using an attachment (C) and a press (D).

NOTE: Do not use a jaw-type puller; it can damage the gear teeth.

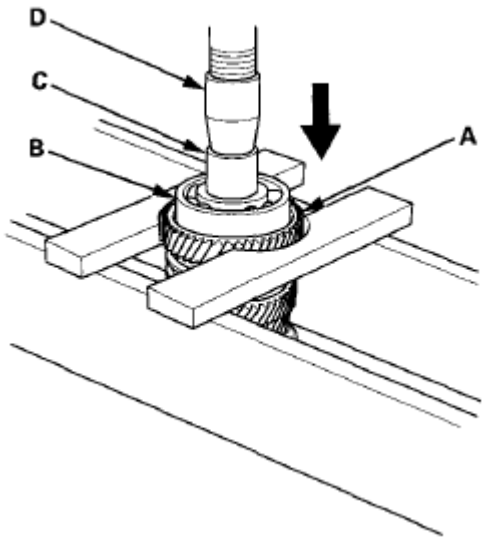


Fig. 163: Supporting 6th Gear On Steel Blocks And Pressing Mainshaft Out Of Angular Ball Bearing And 6th Gear Using Attachment And Press
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Support 5th gear (A) on steel blocks, and press the mainshaft out of the 5th/6th synchro hub (B) and 5th gear using an attachment (C) and a press (D).

NOTE: Do not use a jaw-type puller; it can damage the gear teeth.

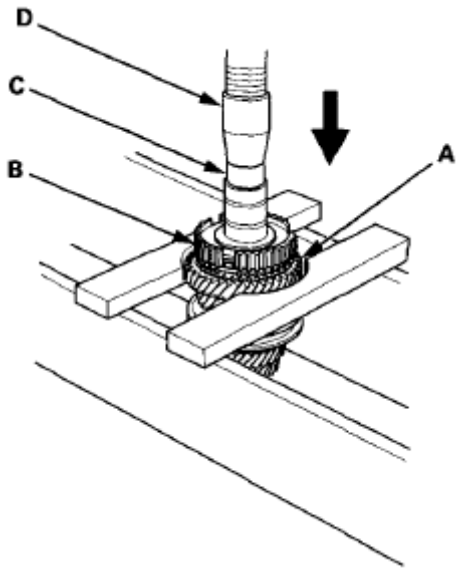


Fig. 164: Supporting 5th Gear On Steel Blocks And Press Mainshaft Out Of 5th/6th Synchro Hub And 5th Gear Using Attachment And Press
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Support 3rd gear (A) on steel blocks, and press the mainshaft out of the 3rd/4th synchro hub (B) and 3rd gear using an attachment (C) and a press (D).

NOTE: Do not use a jaw-type puller; it can damage the gear teeth.

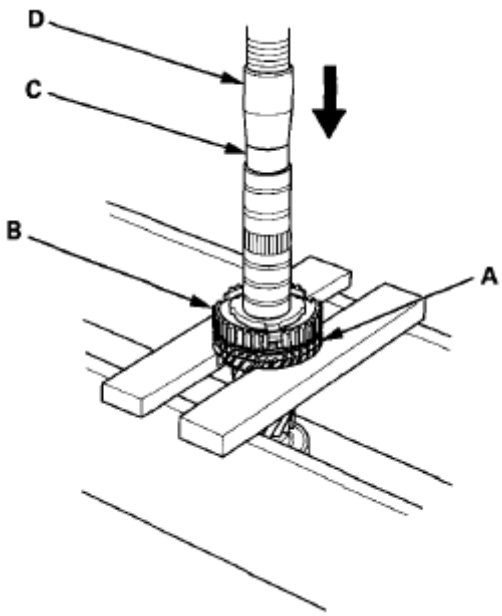


Fig. 165: Supporting 3rd Gear On Steel Blocks And Pressing Mainshaft Out Of 3rd/4th Synchro Hub And 3rd Gear Using Attachment And Press
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Support the angular ball bearing (A) on steel blocks, and press out the mainshaft using an attachment (B) and a press (C).

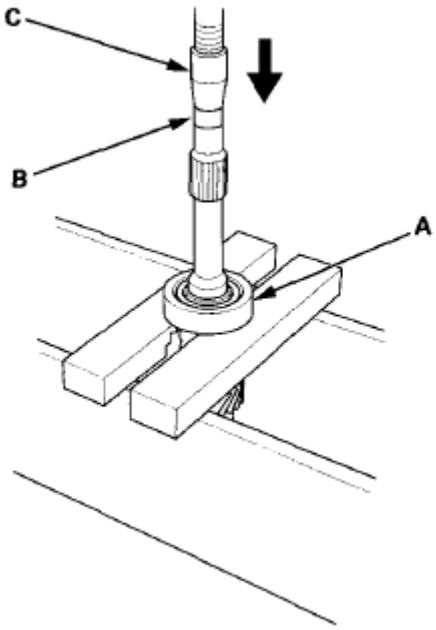


Fig. 166: Supporting Angular Ball Bearing On Steel Block And Pressing Out Mainshaft Using Attachment And Press
Courtesy of AMERICAN HONDA MOTOR CO., INC.

MAINSHAFT INSPECTION

1. Inspect the oil passage, gear, and bearing contact areas for wear and damage, then measure the mainshaft at points A, B, C, D, E, and F. If any part of the mainshaft is less than the service limit, replace it.

   Standard:

   A. **Ball Bearing Contact Area (Transmission Housing Side): 38.984- 39.000 mm (1.53480- 1.53543 in)**
   B. **6th Gear Distance Collar Contact Area: 38.984- 39.000 mm (1.53480- 1.53543 in)**
   C. **4th/5th Gear Distance Collar Contact Area: 41.984- 42.000 mm (1.65291- 1.65354 in)**
   D. **Needle Bearing Contact Area: 47.984- 48.000 mm (1.88913- 1.88976 in)**
   E. **Ball Bearing Contact Area (Clutch Housing Side): 28.002- 28.015 mm (1.10244- 1.10295 in)**
   F. **Pilot Bearing Contact Area: 19.967- 19.980 mm (0.78610- 0.78661 in)**

   Service Limit:

   A. **38.93 mm (1.5327 in)**
   B. **38.93 mm (1.5327 in)**
   C. **41.93 mm (1.6508 in)**

D. **47.93 mm (1.8870 in)**
E. **27.95 mm (1.1004 in)**
F. **19.91 mm (0.7839 in)**

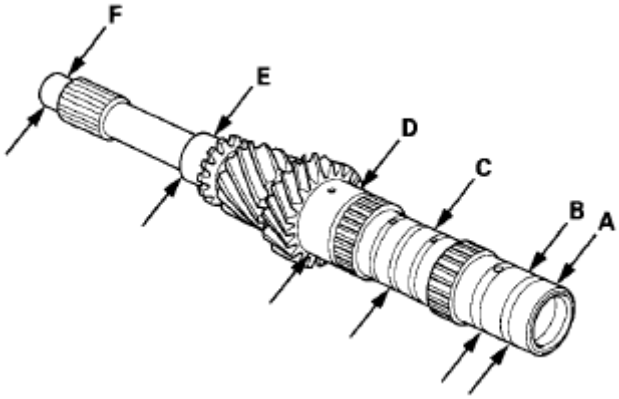


Fig. 167: Identifying Points On Mainshaft From Where Its To Be Check For Service Limit
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Inspect the runout by supporting both ends of the mainshaft. Then rotate the mainshaft two complete turns while measuring with a dial gauge. If the runout exceeds the service limit, replace the mainshaft.

   Standard: 0.02- mm (0.0008 in) max.

   Service Limit: 0.05 mm (0.0020 in)

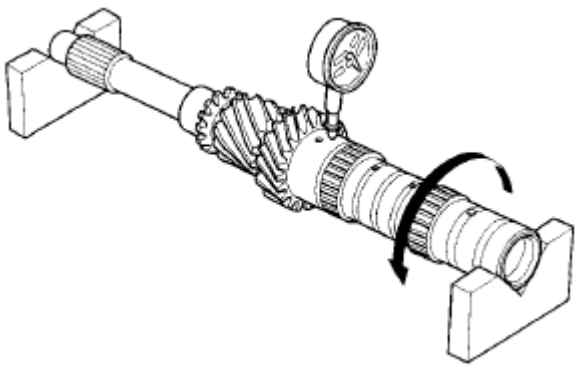
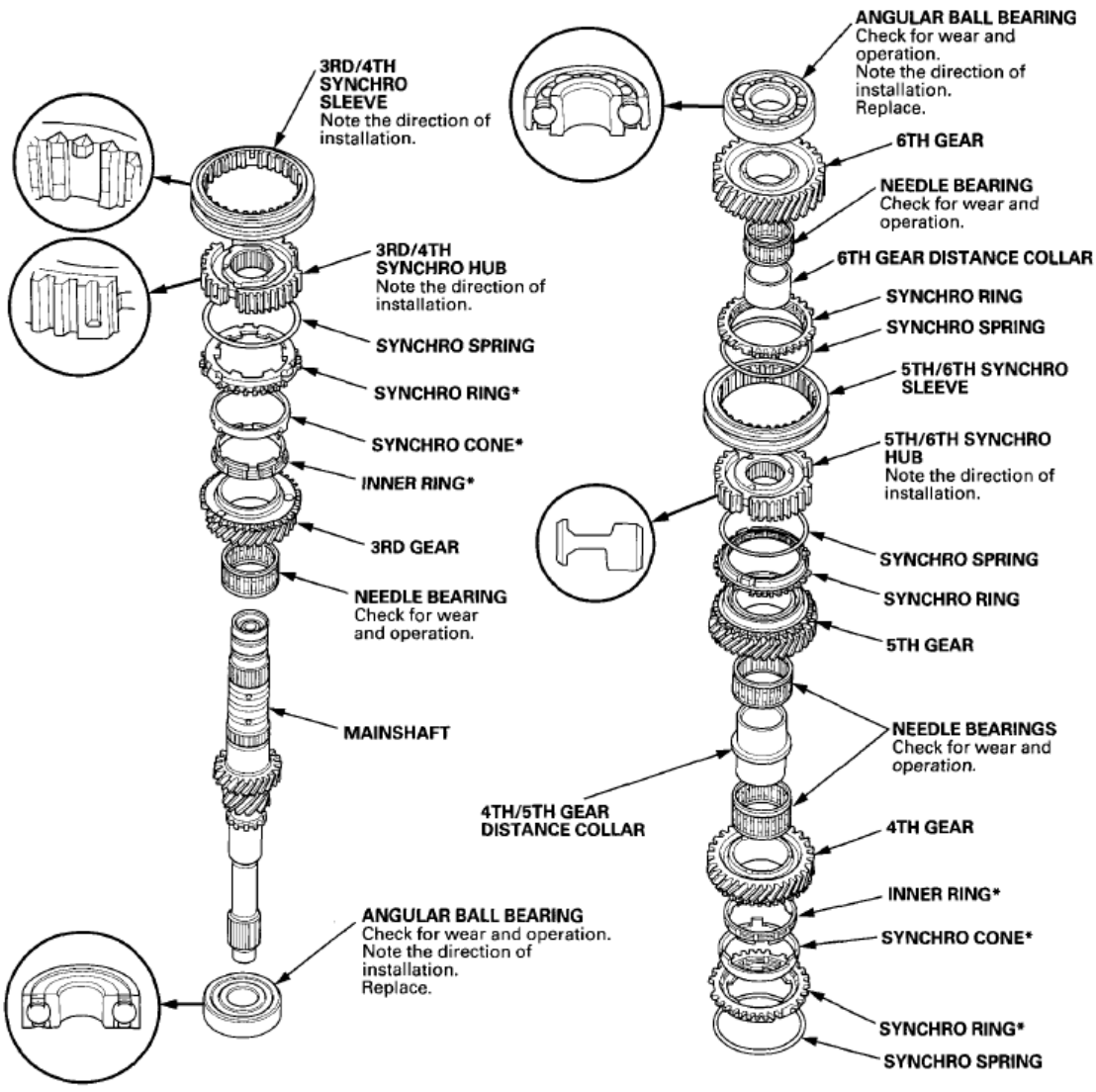


Fig. 168: Measuring Mainshaft Runout Using Dial Gauge
Courtesy of AMERICAN HONDA MOTOR CO., INC.

MAINSHAFT REASSEMBLY

EXPLODED VIEW



*: The components of the double cone synchro assembly.

Fig. 169: Exploded View Of Mainshaft
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Special Tools Required

- Driver Handle, 40 mm I.D. 07746-0030100
- Driver, 30 mm I.D. 07946-MB00000

NOTE: Refer to the EXPLODED VIEW, as needed, during this procedure.

1. Clean all parts in solvent, dry them, and apply MTF to all contact surfaces.
2. Press in a new angular ball bearing (A) using the 30 mm I.D. driver (B) and a press (C).

NOTE: Check the ball bearing install direction.

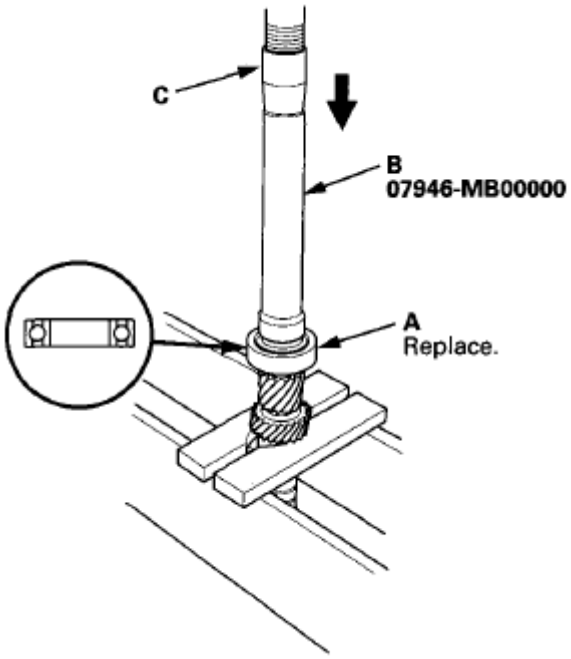


Fig. 170: Pressing Angular Ball Bearing Using I.D. Driver And Press
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Install the needle bearing (A) and 3rd gear (B) onto the mainshaft (C).

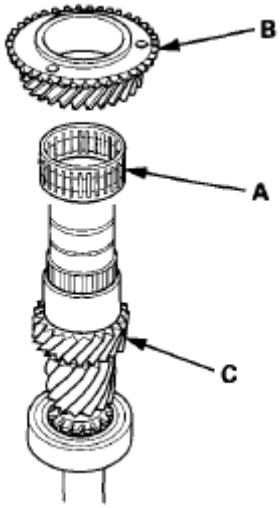


Fig. 171: Identifying Needle Bearing, 3rd Gear And Mainshaft
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Install the double cone synchro assembly (A) with the synchro spring (B) by aligning the synchro cone fingers (C) with the holes (D) in 3rd gear.

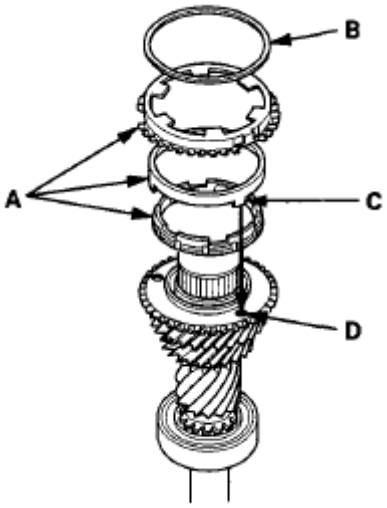


Fig. 172: Identifying Double Cone Synchro Assembly, Synchro Spring, Synchro Cone Fingers And Holes In 3rd Gear
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Install the 3rd/4th synchro hub (A) by aligning the synchro ring fingers (B) with the grooves (C) in the 3rd/4th synchro hub.

NOTE: Make sure to install the 3rd/4th synchro hub in the direction shown.

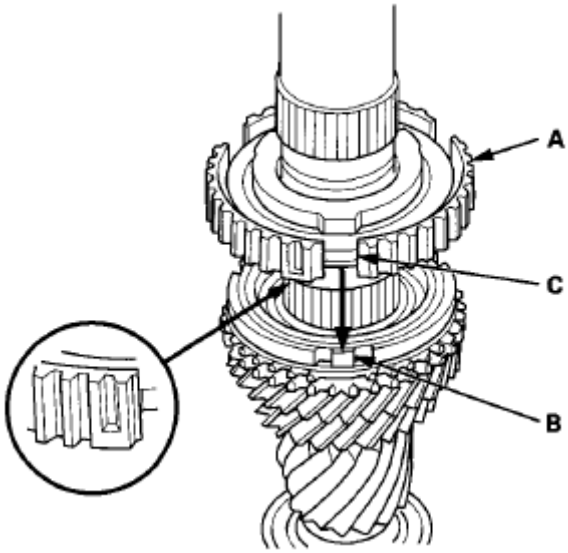


Fig. 173: Identifying 3rd/4th Synchro Hub, Synchro Ring Fingers And Grooves
Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Press on the 3rd/4th synchro hub (A) using the 40 mm I.D. driver handle (B) and a press (C).

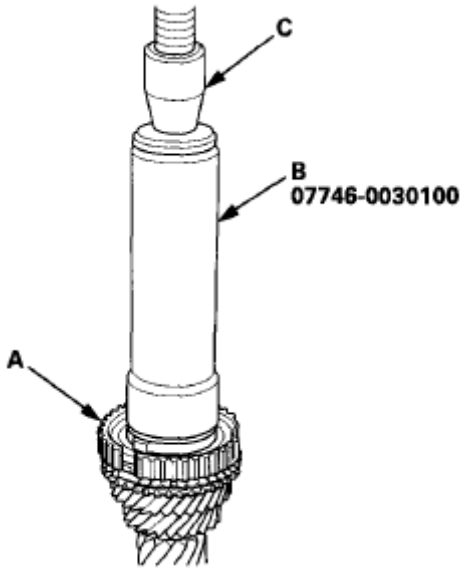


Fig. 174: Identifying 3rd/4th Synchro Hub, I.D. Driver Handle And Press
Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Install the 3rd/4th synchro sleeve (A) by aligning the stops (B) of the 3rd/4th synchro sleeve and the 3rd/4th synchro hub. After installing, check the operation of the 3rd/4th synchro hub set.

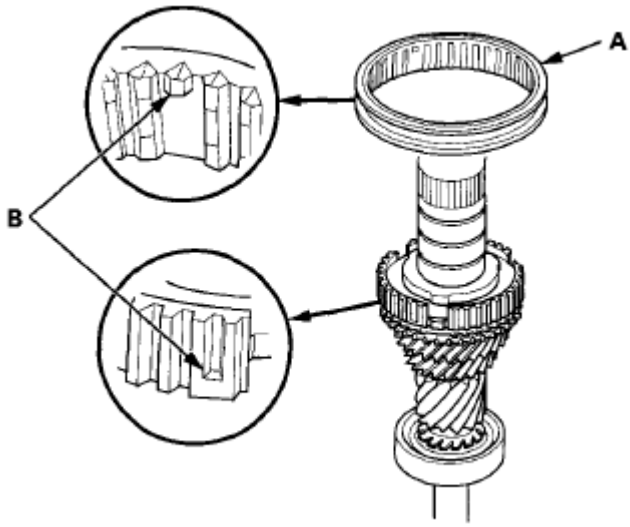


Fig. 175: Identifying 3rd/4th Synchro Sleeve And Stops Of 3rd/4th Synchro Sleeve
Courtesy of AMERICAN HONDA MOTOR CO., INC.

8. Install the double cone synchro assembly (A) with the synchro spring (B) by aligning the synchro ring fingers (C) with the grooves (D) in the 3rd/4th synchro hub.

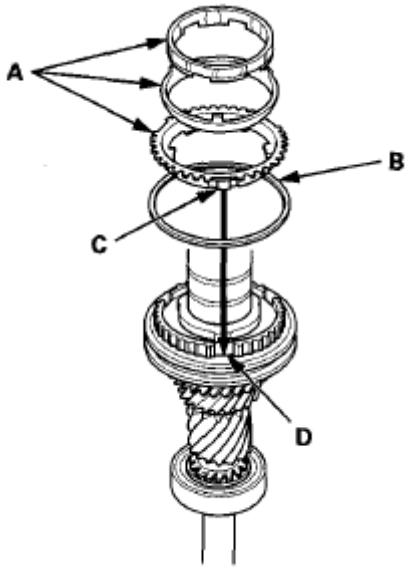


Fig. 176: Identifying Double Cone Synchro Assembly, Synchro Spring, Synchro Ring Fingers And Grooves In 3rd/4th Synchro Hub
Courtesy of AMERICAN HONDA MOTOR CO., INC.

9. Install 4th gear (A) by aligning the synchro cone fingers (B) with the holes (C) in 4th gear.

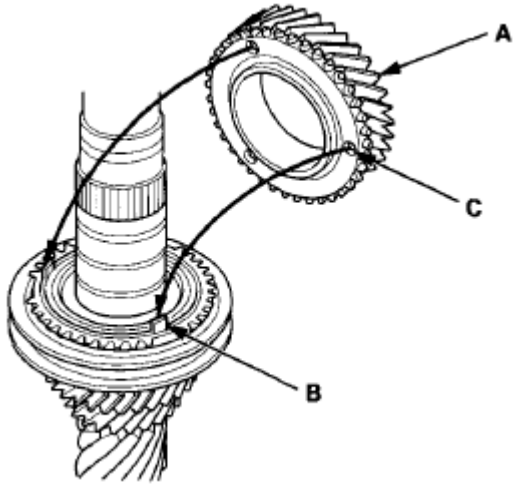


Fig. 177: Identifying 4th Gear, Synchro Cone Fingers And Holes In 4th Gear
Courtesy of AMERICAN HONDA MOTOR CO., INC.

10. Install the 4th/5th gear distance collar (A) with the needle bearings (B) and 5th gear (C).

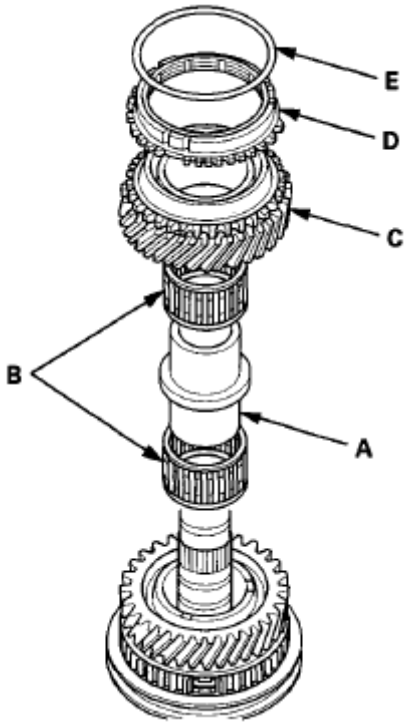


Fig. 178: Identifying 4th/5th Gear Distance Collar, Needle Bearings, 5th Gear, Synchro Ring And Synchro Spring
Courtesy of AMERICAN HONDA MOTOR CO., INC.

11. Install the synchro ring (D) with the synchro spring (E) onto 5th gear.
12. Install the 5th/6th synchro hub (A) by aligning the synchro ring fingers (B) with the grooves (C) in the 5th/6th synchro hub.

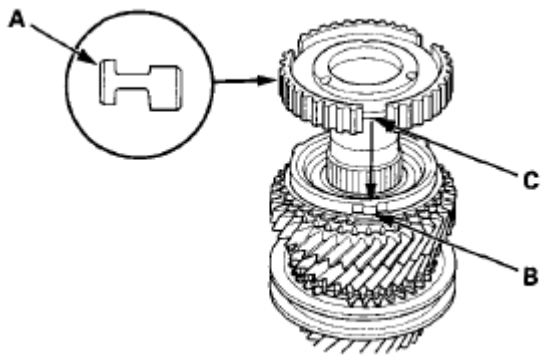


Fig. 179: Identifying 5th/6th Synchro Hub, Synchro Ring Fingers And Grooves In 5th/6th Synchro Hub
Courtesy of AMERICAN HONDA MOTOR CO., INC.

13. Press on the 5th/6th synchro hub (A) using the 40 mm I.D. driver handle (B) and a press (C).

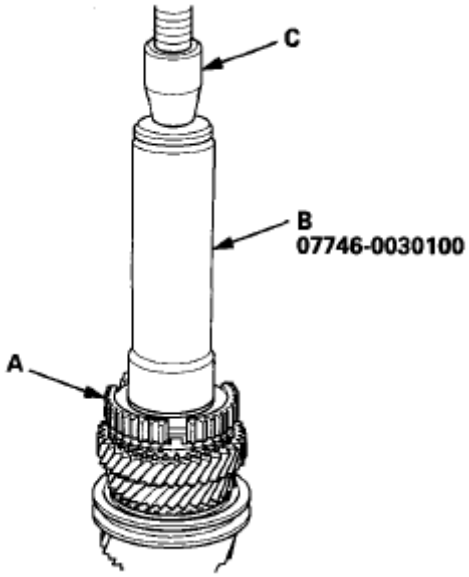


Fig. 180: Identifying 5th/6th Synchro Hub, I.D. Driver Handle And Press
Courtesy of AMERICAN HONDA MOTOR CO., INC.

14. Install the 5th/6th synchro sleeve (A) by aligning the slots of the 5th/6th synchro sleeve and the 5th/6th synchro hub (B). After installing, check the operation of the 5th/6th synchro hub set.

NOTE: Make sure to align the slots in the 5th/6th synchro sleeve as shown.

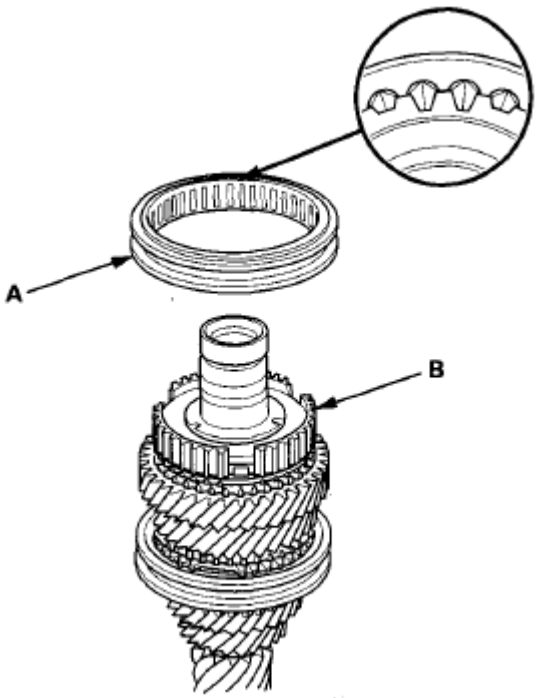


Fig. 181: Identifying 5th/6th Synchro Sleeve And Synchro Hub
Courtesy of AMERICAN HONDA MOTOR CO., INC.

15. Install the synchro ring (A) with the synchro spring (B) by aligning the synchro ring fingers (C) with the grooves (D) in the 5th/6th synchro hub.

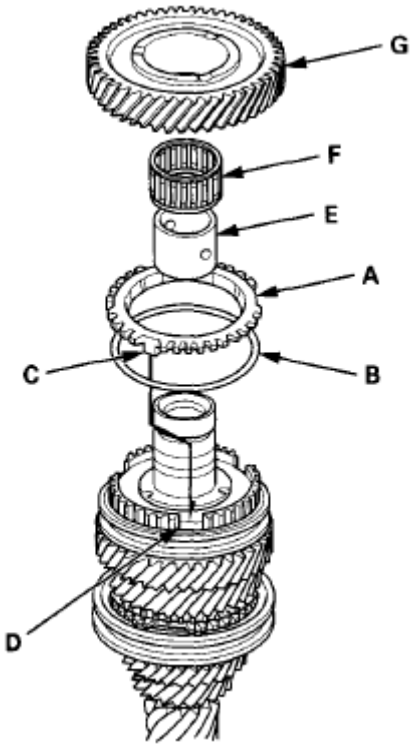


Fig. 182: Identifying Synchro Ring, Synchro Spring, Synchro Ring Fingers, Needle Bearing, 6th Gear, 6th Gear Distance Collar And Grooves In 5th/6th Synchro Hub
Courtesy of AMERICAN HONDA MOTOR CO., INC.

16. Install the 6th gear distance collar (E) with the needle bearing (F) and 6th gear (G).
17. Press on a new angular ball bearing (A) using the 40 mm I.D. driver handle (B) and a press (C).

NOTE: Check the ball bearing install direction.

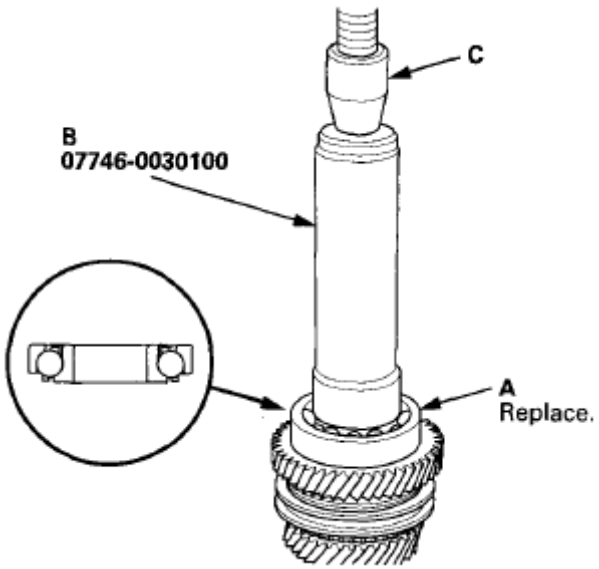


Fig. 183: Identifying Angular Ball Bearing, I.D. Driver Handle And Press
Courtesy of AMERICAN HONDA MOTOR CO., INC.

COUNTERSHAFT ASSEMBLY CLEARANCE INSPECTION

NOTE: Before inspection, make sure the special bolt is tightened to the specified torque (see COUNTERSHAFT REASSEMBLY).

1. Measure the clearance between 1st gear (A) and the countershaft reverse gear (B) with a dial indicator (C).
   - If the clearance exceeds the service limit, go to step 2.
   - If the clearance is within the service limit, go to step 4.

   Standard: 0.04- 0.17 mm (0.0016- 0.0067 in)

   Service Limit: 0.28 mm (0.0110 in)

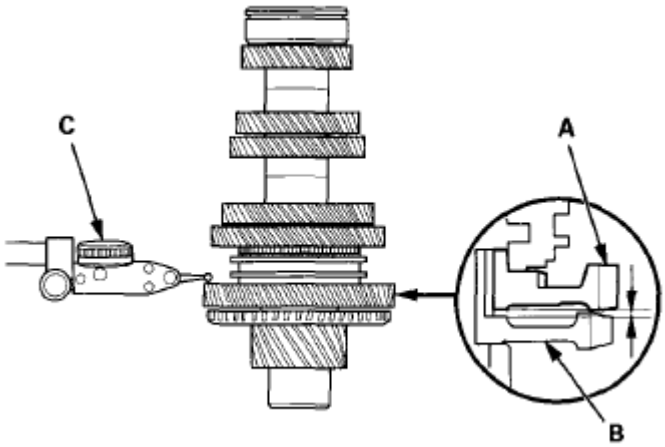


Fig. 184: Measuring Clearance Between 1st Gear And Countershaft Reverse Gear Using Dial Indicator
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Measure the length of the countershaft reverse gear as shown.
   - If the length is not within the standard, replace the countershaft reverse gear.
   - If the length is within the standard, go to step 3.

   Standard: 23.03- 23.08 mm (0.9067- 0.9087 in)

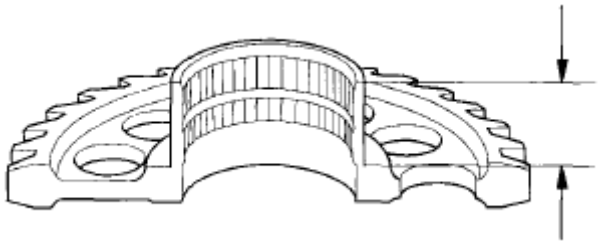


Fig. 185: Measuring Length Of Countershaft Reverse Gear
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Measure the thickness of 1st gear.
   - If the thickness is less than the service limit, replace 1st gear.
   - If the thickness within the service limit, replace the 1st/2nd synchro hub and the 1st/2nd synchro sleeve as a set.

   Standard: 22.91- 22.99 mm (0.9020- 0.9051 in)

   Service Limit: 22.86 mm (0.9000 in)

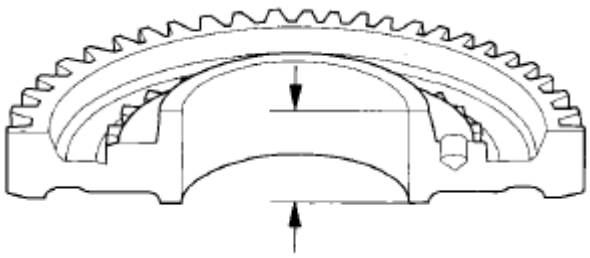


Fig. 186: Measuring Thickness Of 1st Gear
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Measure the clearance between 2nd gear (A) and 3rd gear (B) with a feeler gauge (C). If the clearance exceeds the service limit, go to step 5.

   Standard: 0.04- 0.17 mm (0.002- 0.006 in)

   Service Limit: 0.28 mm (0.011 in)

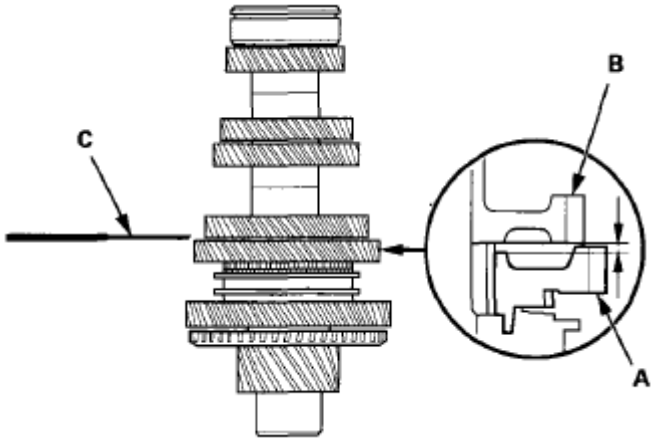


Fig. 187: Measuring Clearance Between 2nd Gear And 3rd Gear Using Feeler Gauge
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Measure the length of the 2nd gear distance collar.
   - If the length is not within the standard, replace the 2nd gear distance collar.
   - If the length is within the standard, go to step 6.

   Standard: 23.03- 23.08 mm (0.9067- 0.9087 in)

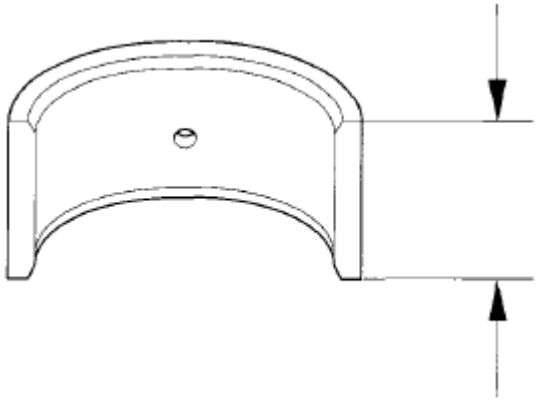


Fig. 188: Measuring Length Of 2nd Gear Distance Collar
Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Measure the thickness of 2nd gear as shown.
   - If the thickness is less than the service limit, replace 2nd gear.
   - If the thickness is within the service limit, replace the 1st/2nd synchro hub and the 1st/2nd synchro sleeve as a set.

   Standard: 22.91- 22.99 mm (0.9020- 0.9051 in)

   Service Limit: 22.86 mm (0.9000 in)

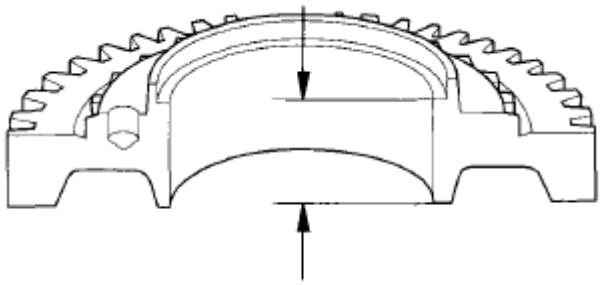


Fig. 189: Measuring Thickness Of 2nd Gear
Courtesy of AMERICAN HONDA MOTOR CO., INC.

COUNTERSHAFT DISASSEMBLY

NOTE: Refer to the EXPLODED VIEW in the Countershaft Reassembly, as needed, when removing components pressed onto the countershaft (see COUNTERSHAFT REASSEMBLY).

1. Securely clamp the countershaft assembly in a bench vise with wood blocks.

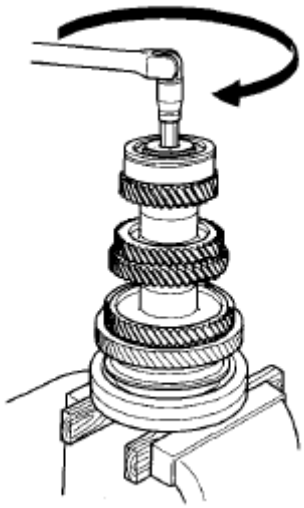


Fig. 190: Securely Clamping Countershaft Assembly In Bench Vise With Wood Blocks
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Remove the special bolt (left-hand threads).
3. Support 6th gear (A) on steel blocks, and press the countershaft (B) out of the ball bearing and 6th gear using an attachment (C) and a press (D).

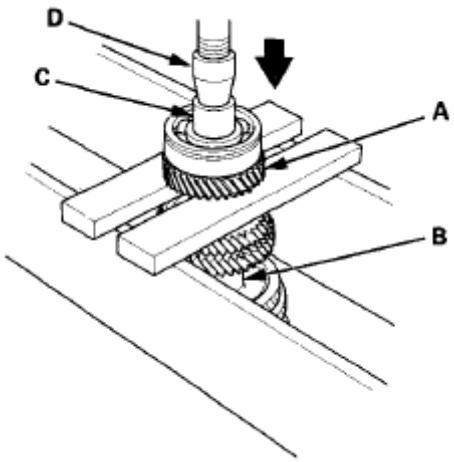


Fig. 191: Supporting 6th Gear On Steel Blocks And Press Countershaft Out Of Ball Bearing And 6th Gear Using Attachment And Press
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Remove the 35 mm shim.
5. Support 4th gear (A) on steel blocks, and press the countershaft (B) out of 4th gear and 5th gear using an attachment (C) and a press (D).

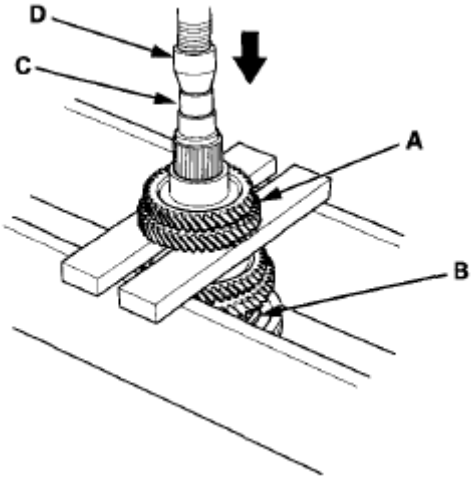


Fig. 192: Supporting 4th Gear On Steel Blocks And Press Countershaft Out Of 4th Gear And 5th Gear Using Attachment And Press
Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Support 2nd gear (A) on steel blocks, and press the countershaft (B) out of 2nd gear and 3rd gear using an attachment (C) and a press (D).

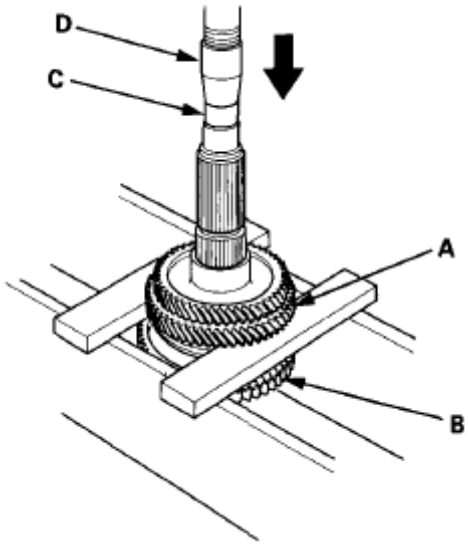


Fig. 193: Supporting 2nd Gear On Steel Blocks And Pressing Countershaft Out Of 2nd Gear And 3rd Gear Using Attachment And Press
Courtesy of AMERICAN HONDA MOTOR CO., INC.

COUNTERSHAFT INSPECTION

1. Inspect the oil passage, gear, and bearing contact areas for wear and damage, then measure the countershaft at points A, B, C, and D. If any part of the countershaft is less than the service limit, replace it.

   Standard:

   A. **Ball Bearing Contact Area (Transmission Housing Side): 30.002- 30.015 mm (1.18118- 1.18169 in)**
   B. **2nd Gear Distance Collar Contact Area: 42.975- 42.991 mm (1.69193- 1.69256 in)**
   C. **Countershaft Reverse Gear Contact Area: 45.934- 45.950 mm (1.80842- 1.80905 in)**
   D. **Needle Bearing Contact Area (Clutch Housing Side): 43.974- 43.990 mm (1.73126- 1.73189 in)**

   Service Limit:

   A. **29.95 mm (1.1791 in)**
   B. **42.92 mm (1.6898 in)**
   C. **45.88 mm (1.8063 in)**
   D. **43.92 mm (1.7291 in)**

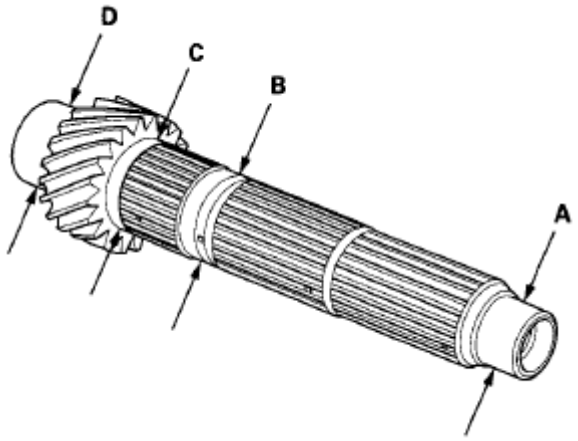


Fig. 194: Identifying Countershaft Contact Areas
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Inspect the runout by supporting both ends of the countershaft. Then rotate the countershaft two complete turns while measuring with a dial gauge. If the runout exceeds the service limit, replace the countershaft.

   Standard: 0.02 mm (0.0008 in) max.

   Service Limit: 0.05 mm (0.0020 in)

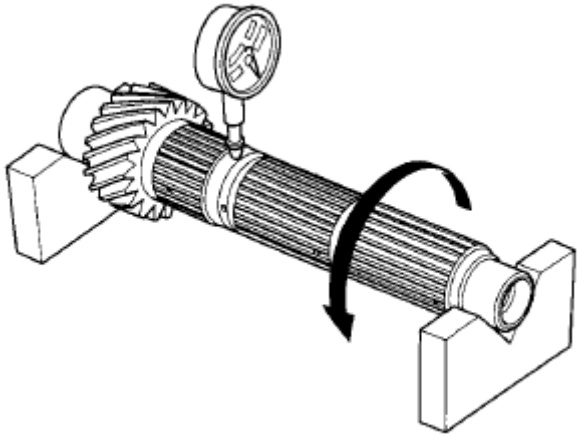
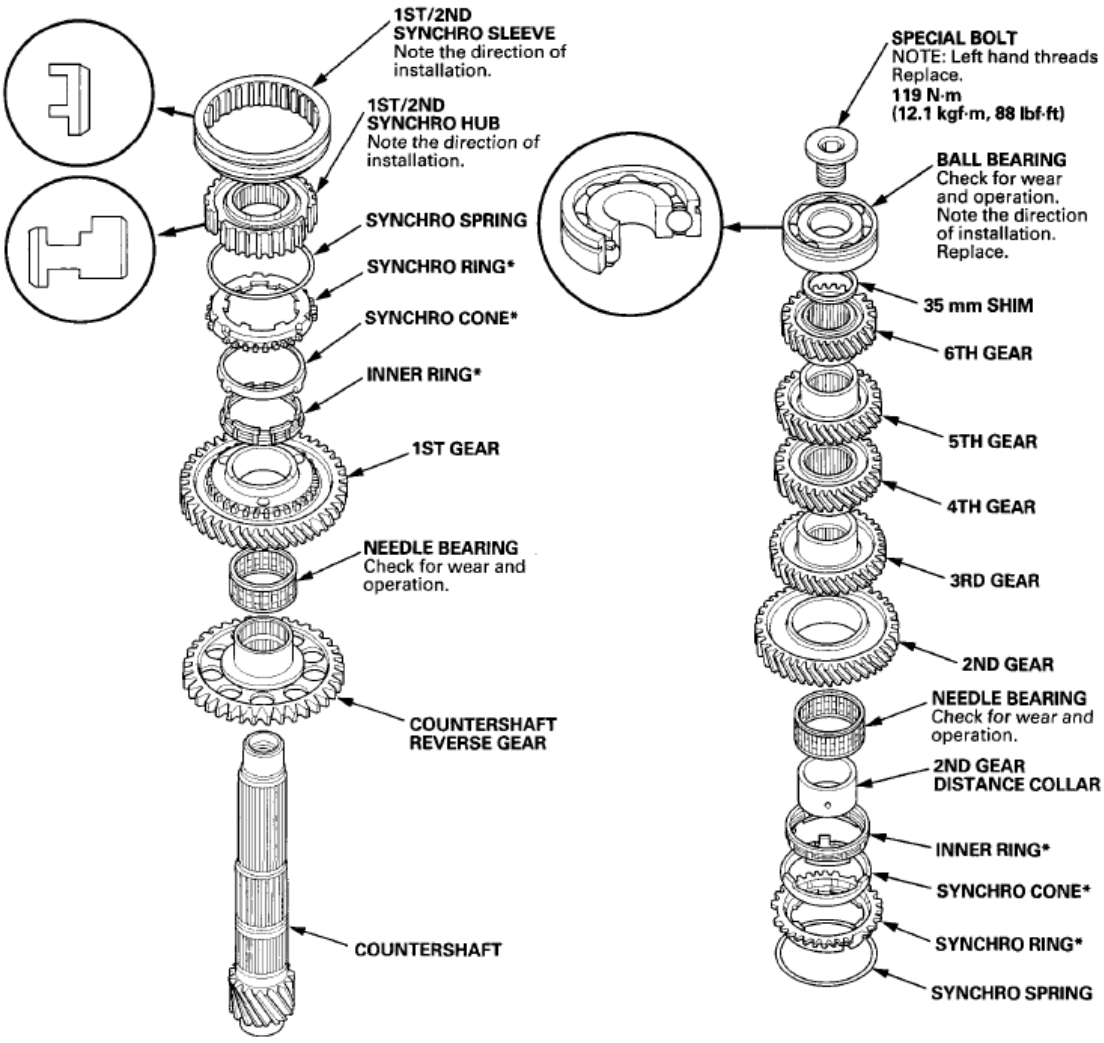


Fig. 195: Measuring Runout Of Countershaft Using Dial Gauge
Courtesy of AMERICAN HONDA MOTOR CO., INC.

COUNTERSHAFT REASSEMBLY

EXPLODED VIEW



*: The components of the triple cone synchro assembly.

Fig. 196: Exploded View Of Countershaft With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Special Tools Required

- Driver, 58 x 62 mm 070AD-PYZA100
- Driver Handle, 40 mm I.D. 07746-0030100

NOTE: Refer to the EXPLODED VIEW, as needed, during this procedure.

1. Clean all parts in solvent, dry them, and apply MTF to all contact surfaces.
2. Install the countershaft reverse gear (A) with the needle bearing (B), and 1st gear (C) onto the countershaft (D).

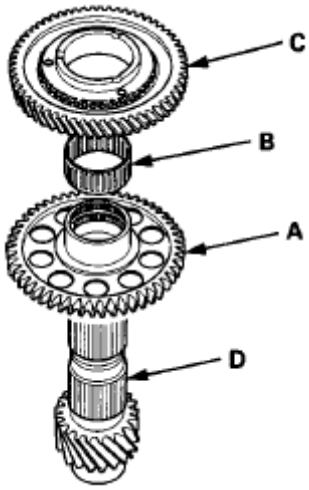


Fig. 197: Identifying Countershaft Reverse Gear, Needle Bearing, 1St Gear And Countershaft
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Install the triple cone synchro assembly (A) with the synchro spring (B) by aligning the synchro cone fingers (C) with the holes (D) in 1st gear.

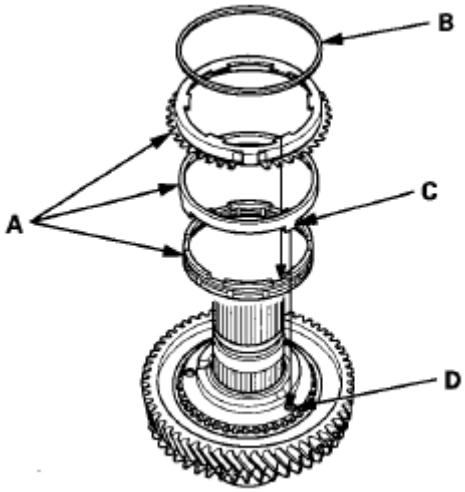


Fig. 198: Identifying Triple Cone Synchro Assembly, Synchro Spring, Synchro Cone Fingers And Holes In 1st Gear
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Install the 1st/2nd synchro hub (A) by aligning the synchro ring fingers (B) with the grooves (C) in the 1st/2nd synchro hub.

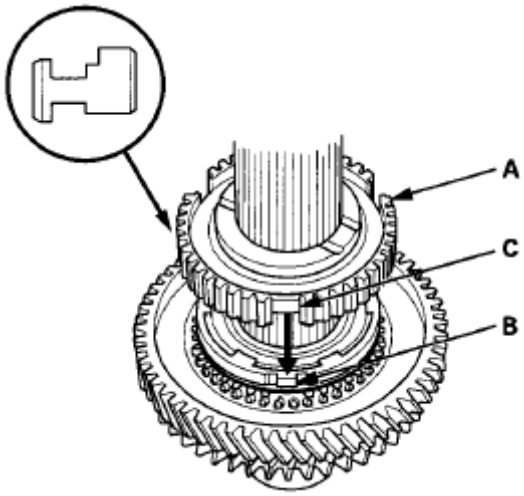


Fig. 199: Identifying 1st/2nd Synchro Hub, Synchro Ring Fingers And Grooves
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Install the 1st/2nd synchro sleeve (A) by aligning the slots of the 1st/2nd synchro sleeve and the 1st/2nd synchro hub (B). After installing, check the operation of the 1st/2nd synchro hub set.

NOTE: Make sure to align the slots in the 1st/2nd synchro hub as shown.

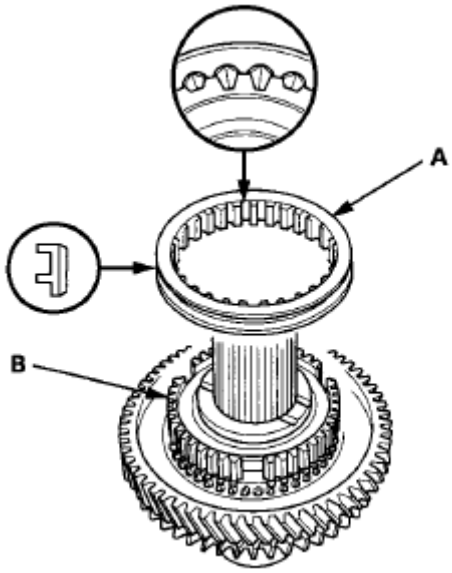


Fig. 200: Identifying 1st/2nd Synchro Sleeve And 1st/2nd Synchro Hub
Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Install the triple cone synchro assembly (A) with the synchro spring (B) by aligning the synchro ring fingers (C) with the grooves (D) in the 1st/2nd synchro hub.

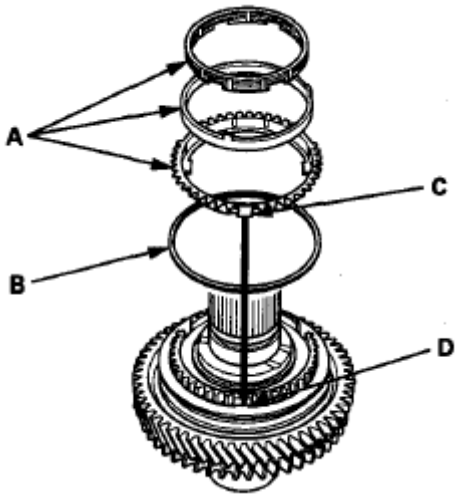


Fig. 201: Identifying Triple Cone Synchro Assembly, Synchro Spring, Synchro Ring Fingers, Grooves And 1st/2nd Synchro Hub
Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Install the 2nd gear distance collar (A) with the needle bearing (B).

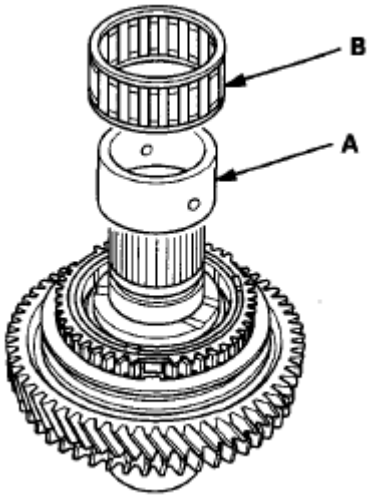


Fig. 202: Identifying 2nd Gear Distance Collar And Needle Bearing
Courtesy of AMERICAN HONDA MOTOR CO., INC.

8. Install 2nd gear (A) by aligning the synchro cone fingers (B) with the holes in 2nd gear (C).

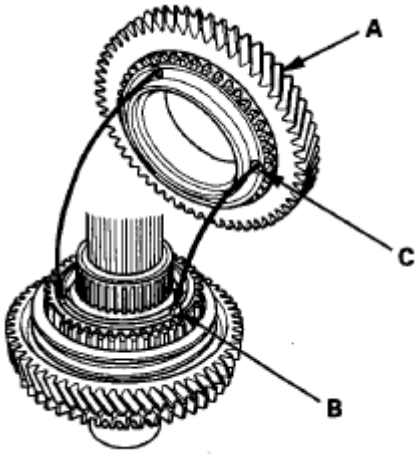


Fig. 203: Identifying 2nd Gear, Synchro Cone Fingers And Holes In 2nd Gear
Courtesy of AMERICAN HONDA MOTOR CO., INC.

9. Support the countershaft (A) on steel blocks, then press on 3rd gear (B) using the 58 x 62 mm driver (C) and a press (D).

NOTE: Do not exceed the maximum pressure.

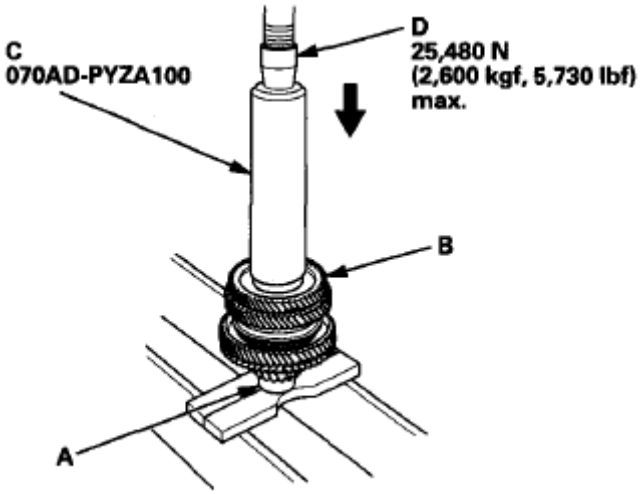


Fig. 204: Supporting Countershaft And Pressing On 3rd Gear Using Driver And Press With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

10. Press on 4th gear (A) using the 58 x 62 mm driver (B) and a press (C).

NOTE: Do not exceed the maximum pressure.

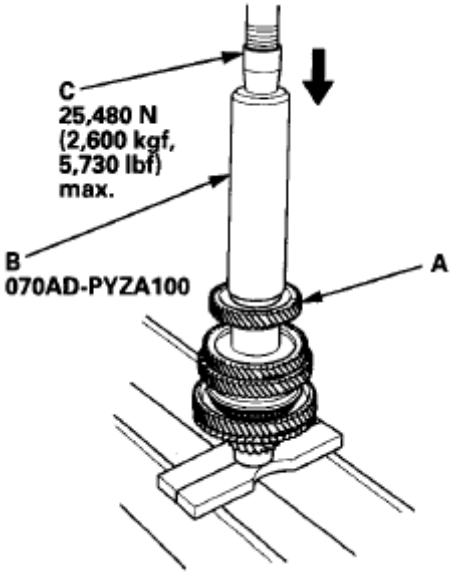


Fig. 205: Pressing On 4th Gear Using Driver And Press With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

11. Press on 5th gear (A) using the 40 mm I.D. driver handle (B) and a press (C).

NOTE: Do not exceed the maximum pressure.

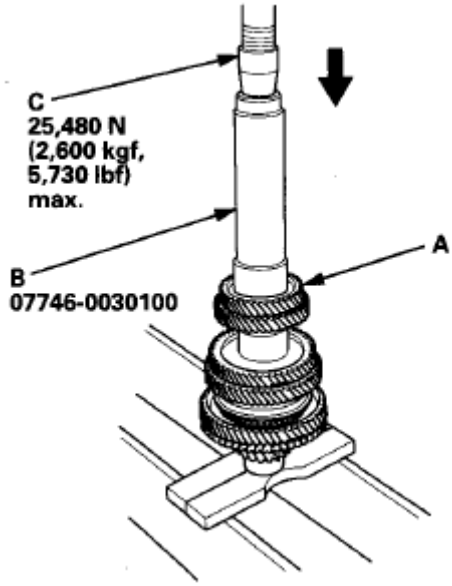


Fig. 206: Pressing On 5th Gear Using I.D. Driver Handle And Press With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

12. Press on 6th gear (A) using the 40 mm I.D. driver handle (B) and a press (C).

NOTE: Do not exceed the maximum pressure.

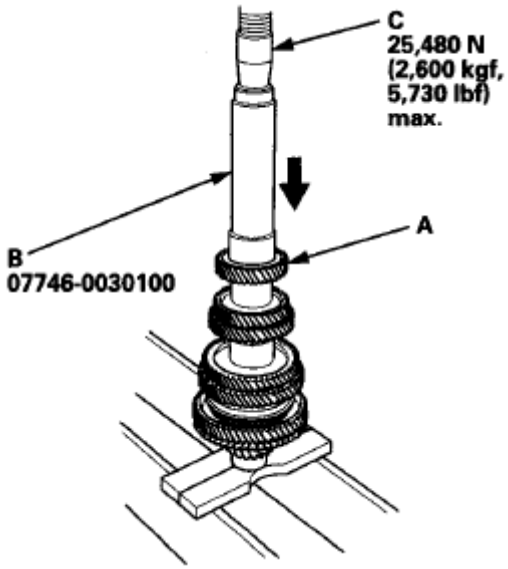


Fig. 207: Pressing On 6th Gear Using I.D. Driver Handle And Press With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

13. Install the 35 mm shim (A), and temporarily press on the used ball bearing (B) using the 40 mm I.D. driver handle (C) and a press (D).

NOTE:

- **Use any size of 35 mm shim, and note size you used. Measurements taken in the following steps will determine the correct shim to use for final assembly.**
- **Make sure the ball bearing is installed in the correct direction.**

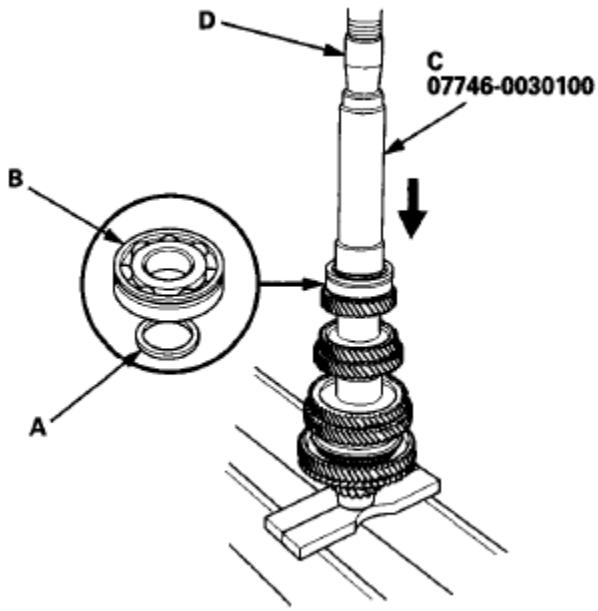


Fig. 208: Pressing On Used Ball Bearing Using I.D. Driver Handle And

Press
Courtesy of AMERICAN HONDA MOTOR CO., INC.

14. Measure the clearance between the ball bearing (A) and the 35 mm shim (B) with a feeler gauge (C).

    Standard: 0.04- 0.10 mm (0.002- 0.003 in)

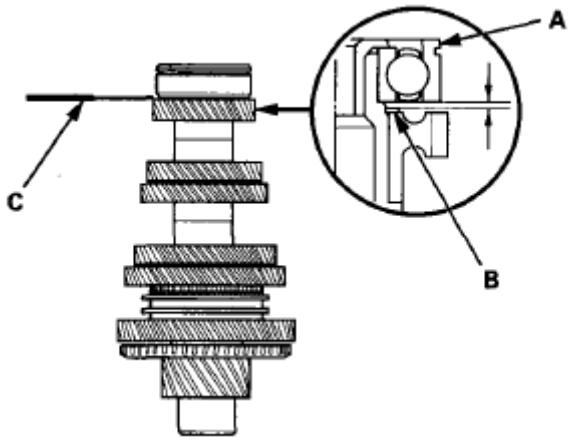


Fig. 209: Measuring Clearance Between Ball Bearing And Shim Using Feeler Gauge
Courtesy of AMERICAN HONDA MOTOR CO., INC.

15. If the measured clearance in step 14 is not within the standard, select another suitable 35 mm shim from the table, then go to next step to replace the 35 mm shim and the ball bearing with new ones. If the measured clearance in step 14 is within the standard, go to the next step to replace only the ball bearing with a new one.

35 MM SHIM

Type	Thickness
A	0.87 mm (0.034 in)
AA	0.91 mm (0.036 in)
B	0.95 mm (0.037 in)
AB	0.99 mm (0.039 in)
C	1.03 mm (0.041 in)
AC	1.07 mm (0.042 in)
D	1.11 mm (0.044 in)
AD	1.15 mm (0.045 in)
E	1.19 mm (0.047 in)
AE	1.23 mm (0.048 in)
F	1.27 mm (0.050 in)
AF	1.31 mm (0.052 in)
G	1.35 mm (0.053 in)
AG	1.39 mm (0.055 in)

H	1.43 mm (0.056 in)
AH	1.47 mm (0.058 in)
J	1.51 mm (0.059 in)
AJ	1.55 mm (0.061 in)
K	1.59 mm (0.063 in)
AK	1.63 mm (0.064 in)
L	1.67 mm (0.066 in)
AL	1.71 mm (0.067 in)
M	1.75 mm (0.069 in)
AM	1.79 mm (0.070 in)
N	1.83 mm (0.072 in)
AN	1.87 mm (0.074 in)
P	1.91 mm (0.075 in)
AP	1.95 mm (0.077 in)
Q	1.99 mm (0.078 in)

16. Remove 6th gear with the ball bearing and the 35 mm shim using a press (see step 3).
17. Repeat step 12 to install 6th gear.
18. Install the correct 35 mm shim (A) and a new ball bearing (B) using the 40 mm I.D. driver handle (C) and a press (D).

NOTE:

- **If necessary, replace the 35 mm shim with the correct one selected in step 15.**
- **Make sure the ball bearing is installed in the correct direction.**

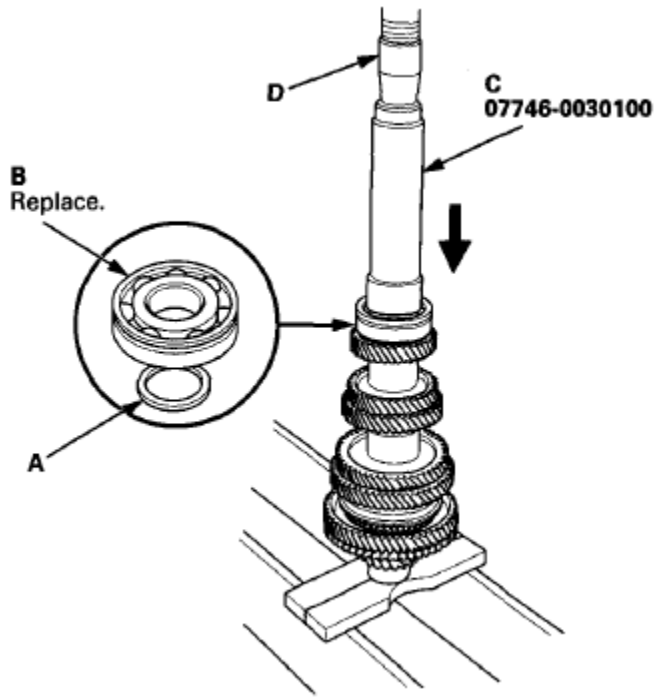


Fig. 210: Installing Shim And Ball Bearing Using I.D. Driver Handle And Press
Courtesy of AMERICAN HONDA MOTOR CO., INC.

19. Recheck the clearance between the ball bearing and the 35 mm shim with a feeler gauge.
20. Securely clamp the countershaft assembly in a bench vise with wood blocks (A).

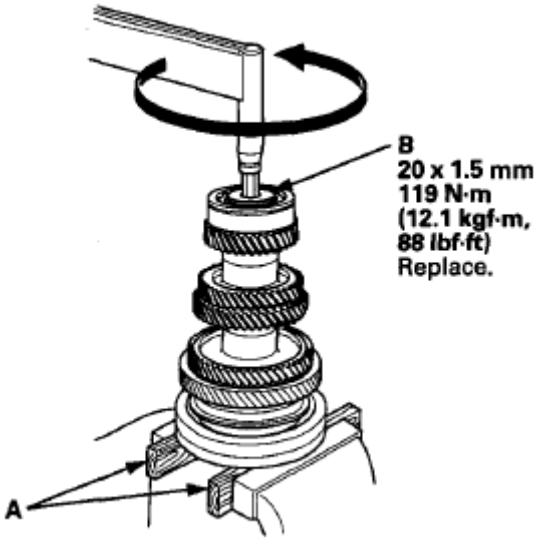


Fig. 211: Securely Clamping Countershaft Assembly In Bench Vise With Wood Blocks With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

21. Tighten a new special bolt (B) (left-hand threads).

NOTE: Apply new MTF to the bolt threads and flange.

REVERSE IDLER GEAR SHAFT ASSEMBLY DISASSEMBLY/REASSEMBLY

NOTE: Prior to reassembling, clean all parts in solvent, dry them, and apply MTF to all contact surfaces.

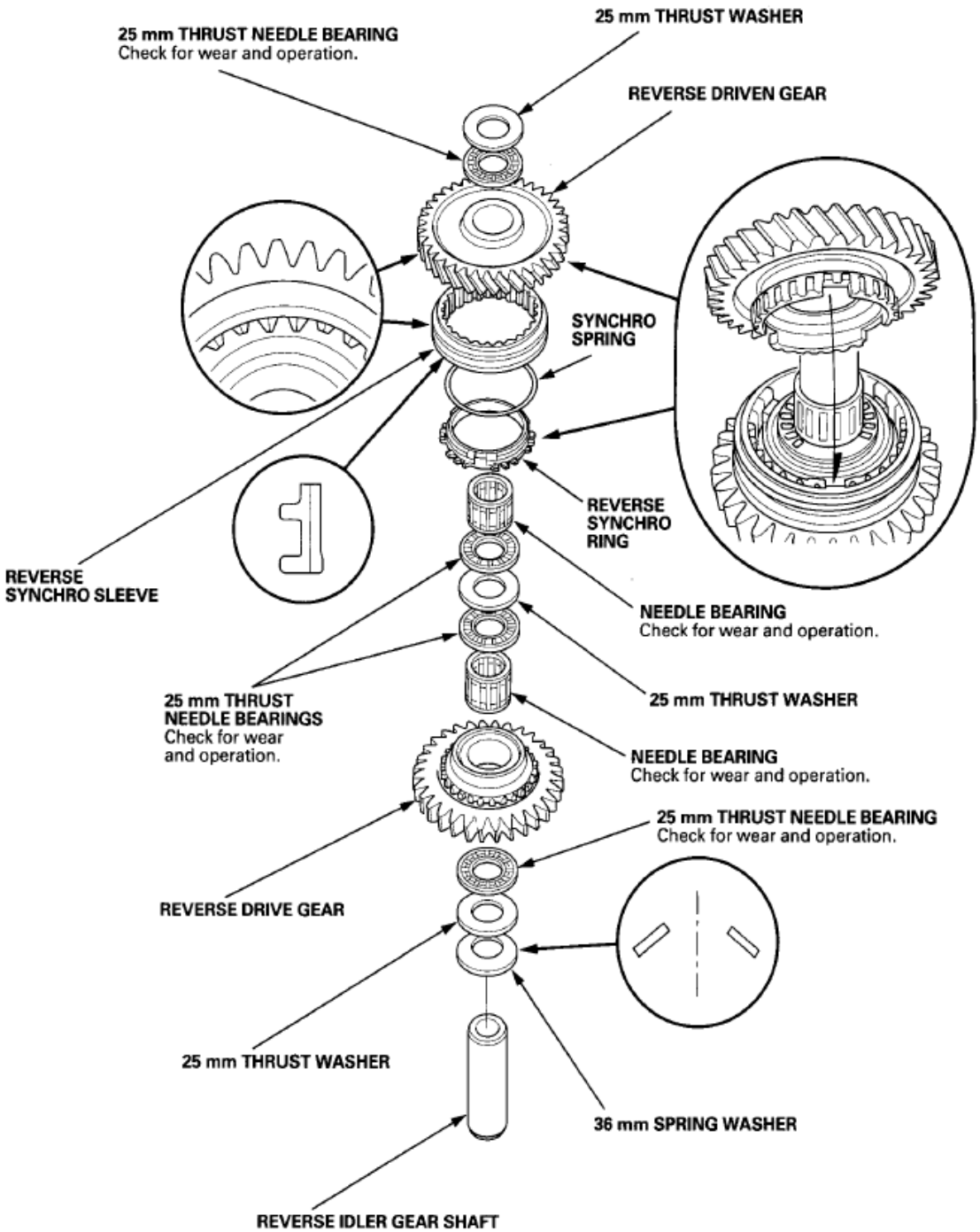


Fig. 212: Exploded View Of Reverse Idler Gear Shaft Assembly
Courtesy of AMERICAN HONDA MOTOR CO., INC.

SYNCHRO SLEEVE AND HUB INSPECTION AND REASSEMBLY

1. Inspect the gear teeth on all synchro hubs and synchro sleeves for wear (rounded off corners).
2. Install each synchro hub (A) in its mating synchro sleeve (B), and check for free movement. Make sure to match the three sets of longer teeth (C) (120 degrees apart) on the synchro sleeve with the three sets of

deeper grooves (D) in the synchro hub.

NOTE:

- **Do not install the synchro sleeve with its longer teeth in the 1st/2nd and 5th/6th synchro hub slots (E) because it will damage the spring ring.**
- **If replacement is required, always replace the synchro sleeve and the synchro hub as a set.**

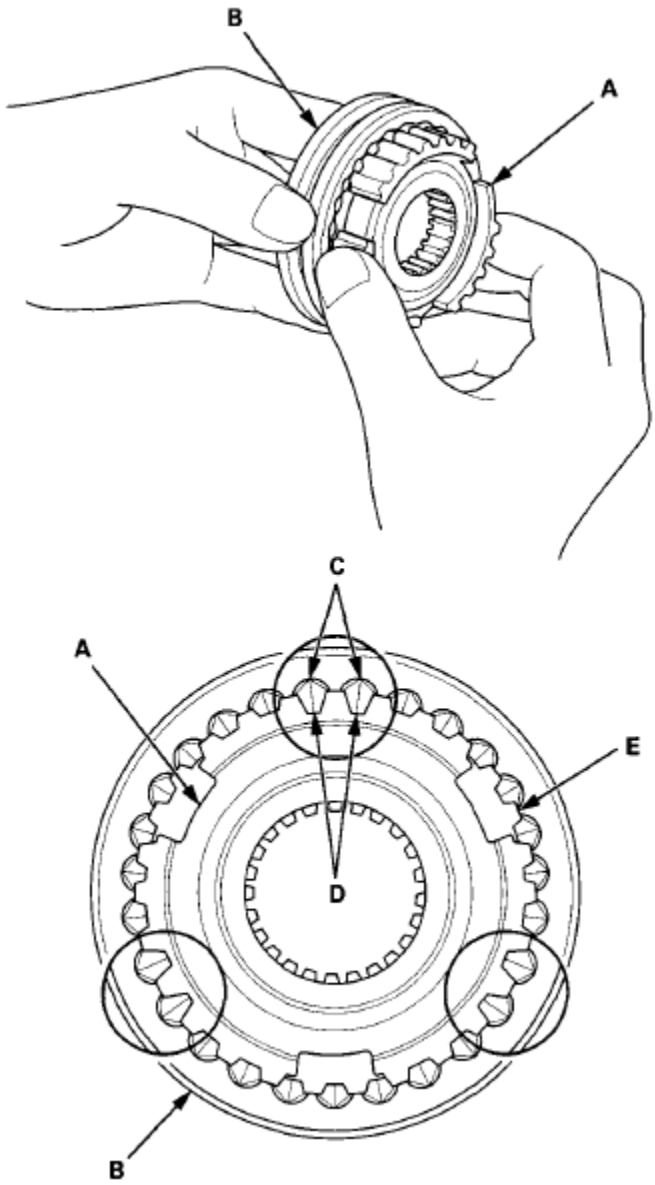


Fig. 213: Installing Synchro Hub In Mating Synchro Sleeve
Courtesy of AMERICAN HONDA MOTOR CO., INC.

SYNCHRO RING AND GEAR INSPECTION

1. Inspect the synchro rings for scoring, cracks, and damage (A).

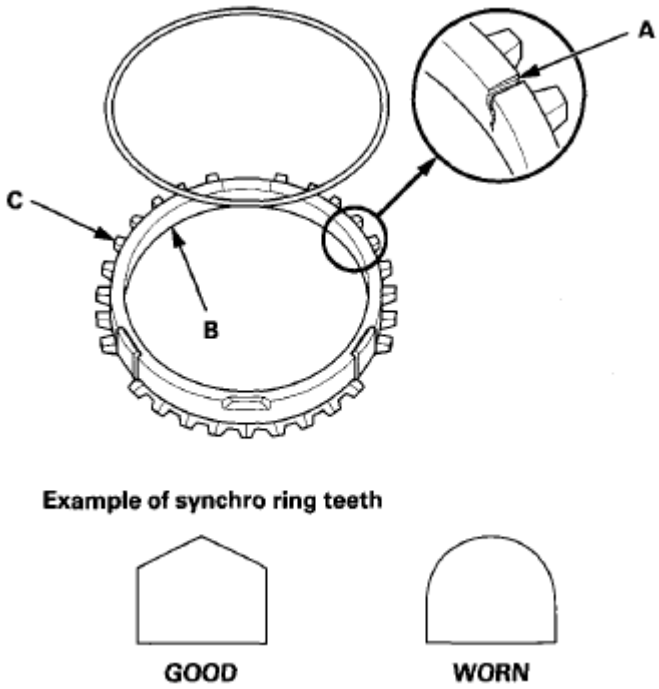


Fig. 214: Identifying Synchro Rings And Teeth Of Synchro Rings With Sign Of Cracks, Damage And Wear
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Inspect the inside of each synchro ring (B) for wear. Inspect the teeth (C) on each synchro ring for wear (rounded off).
3. Inspect the teeth (A) on each synchro sleeve and matching teeth on each gear for wear (rounded off).

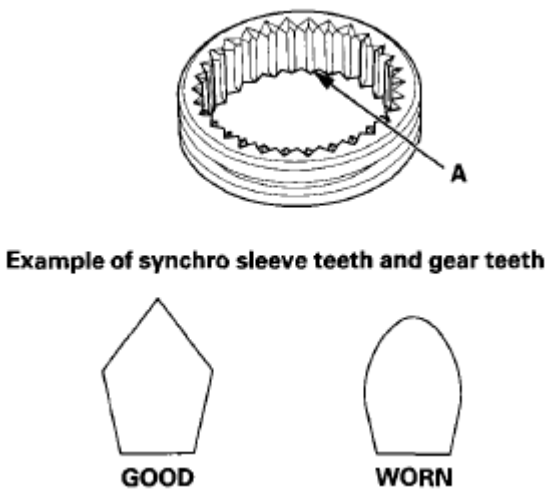


Fig. 215: Identifying Teeth Of Synchro Sleeve With Sign Of Good And Worn
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Inspect the synchro teeth on gear for scoring, cracks, and damage (A).

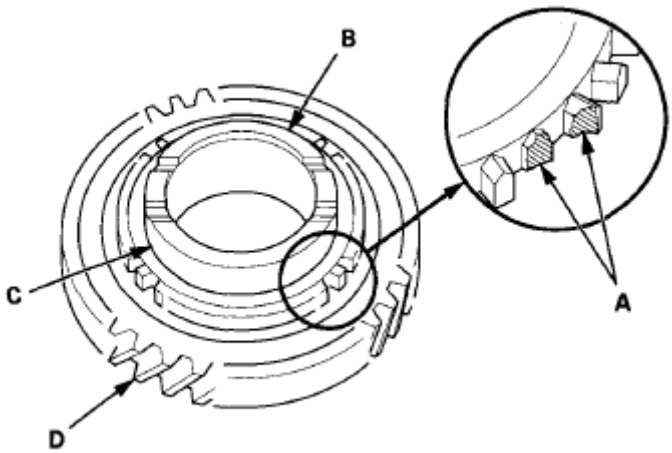


Fig. 216: Identifying Synchro Teeth, Thrust And Cone Surface With Sign Of Cracks, Damage And Wear
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Inspect the thrust surface (B) on each gear hub for wear.
6. Inspect the cone surface (C) on each gear hub for wear and roughness.
7. Inspect the teeth on all gears (D) for uneven wear, scoring, and cracks.
8. Coat the cone surface of each gear with MTF, and place its synchro ring on it. Rotate the synchro ring, making sure that it does not slip.
9. Measure the clearance between each gear (A) and its synchro ring (B) all around the gear. Hold the synchro ring against the gear evenly while measuring the clearance. If the clearance is less than the service limit, replace the synchro ring and gear.

Synchro Ring-to-Gear Clearance

Standard (5th gear): 0.70- 1.49 mm (0.028- 0.058 in)

Standard (6th gear): 0.73- 1.44 mm (0.029- 0.056 in)

Service Limit: 0.4 mm (0.016 in)

Double Cone Synchro and Triple Cone

Synchro-to-Gear Clearance

Standard: (1st Gear)

(1): Outer Synchro Ring (B)-to-Synchro Cone (C)

0.70- 1.19 mm (0.028- 0.046 in)

(2): Synchro Cone (C)-to-Gear (A)

0.70- 1.88 mm (0.028- 0.074 in)

(3): Outer Synchro Ring (B)-to-Gear (A)

1.12- 1.68 mm (0.044- 0.066 in)

Standard: (2nd Gear)

(1): Outer Synchro Ring (B)-to-Synchro Cone (C)

0.70- 1.19 mm (0.028- 0.046 in)

(2): Synchro Cone (C)-to-Gear (A)

0.70- 1.88 mm (0.028- 0.074 in)

(3): Outer Synchro Ring (B)-to-Gear (A)

1.12- 1.68 mm (0.044- 0.066 in)

Standard: (3rd Gear)

(1): Outer Synchro Ring (B)-to-Synchro Cone (C)

0.68- 1.19 mm (0.027- 0.046 in)

(2): Synchro Cone (C)-to-Gear (A)

0.48- 1.04 mm (0.019- 0.040 in)

(3): Outer Synchro Ring (B)-to-Gear (A)

0.95- 1.68 mm (0.037- 0.066 in)

Standard: (4th Gear)

(1): Outer Synchro Ring (B)-to-Synchro Cone (C)

0.70- 1.19 mm (0.028- 0.046 in)

(2): Synchro Cone (C)-to-Gear (A)

0.50- 1.14 mm (0.020- 0.044 in)

(3): Outer Synchro Ring (B)-to-Gear (A)

0.95- 1.68 mm (0.037- 0.066 in)

Service Limit: (1): 0.3 mm (0.012 in)

(2): 0.3 mm (0.012 in)

(3): 0.6 mm (0.024 in)

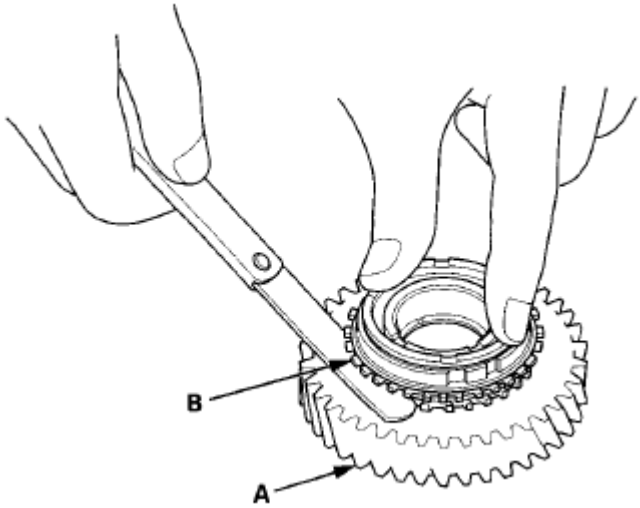


Fig. 217: Measuring Clearance Between Gear And Synchro Ring
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Synchro ring-to-gear clearance

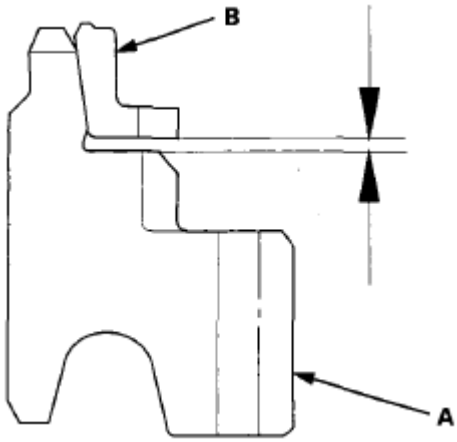


Fig. 218: Measuring Synchro Ring-To-Gear Clearance
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Double cone synchro and triple cone synchro-to-gear clearance

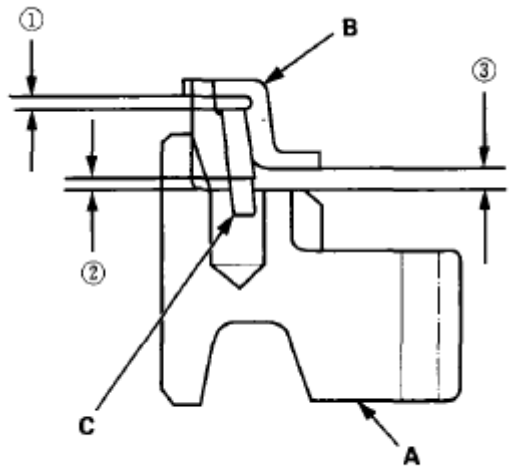


Fig. 219: Measuring Double Cone Synchro And Triple Cone Synchro-To-Gear Clearance
Courtesy of AMERICAN HONDA MOTOR CO., INC.

MAINSHAFT OIL SEAL REPLACEMENT

Special Tools Required

- Bearing Driver Attachment, 42 x 47 mm 07746-0010300
- Driver Handle, 15 x 135L 07749-0010000

1. Remove the oil seal (A) from the clutch housing.

NOTE: Be careful not to damage the clutch housing while removing the oil seal.

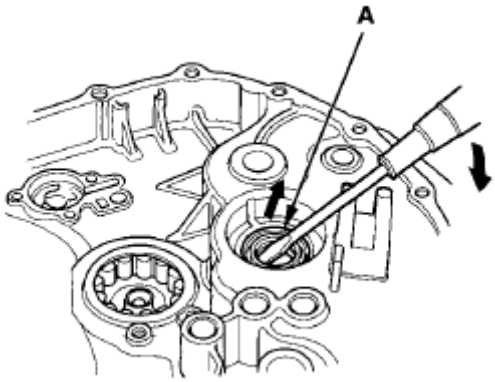


Fig. 220: Removing Oil Seal From Clutch Housing
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Drive in a new oil seal flush with the clutch housing using the 15 x 135L driver handle (A) and the 42 x 47 mm bearing driver attachment (B).

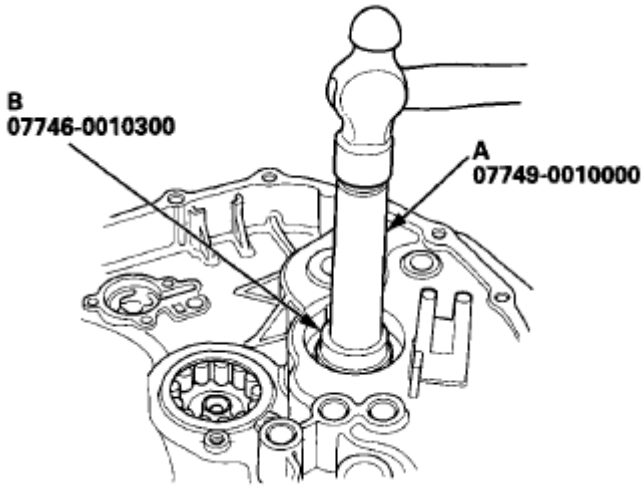


Fig. 221: Driving In Oil Seal Flush With Clutch Housing Using Driver Handle And Bearing Driver Attachment
Courtesy of AMERICAN HONDA MOTOR CO., INC.

COUNTERSHAFT BEARING REPLACEMENT

Special Tools Required

- Bearing Driver Attachment, 72 x 75 mm 07746-0010600
- Driver Handle, 15 x 135L 07749-0010000
- Adjustable Bearing Puller, 45-75 mm 07YAC-0010100
- Slide Hammer 3/8"-16 UNF, commercially available

1. Remove the bearing set plate (A) from the clutch housing (B).

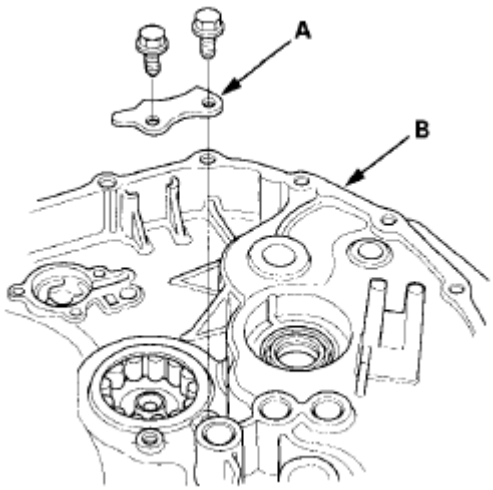


Fig. 222: Identifying Bearing Set Plate And Clutch Housing
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Remove the needle bearing (A) from the clutch housing (B) using the 45- 75 mm adjustable bearing puller (C) and a commercially available 3/8"-16 UNF slide hammer (D).

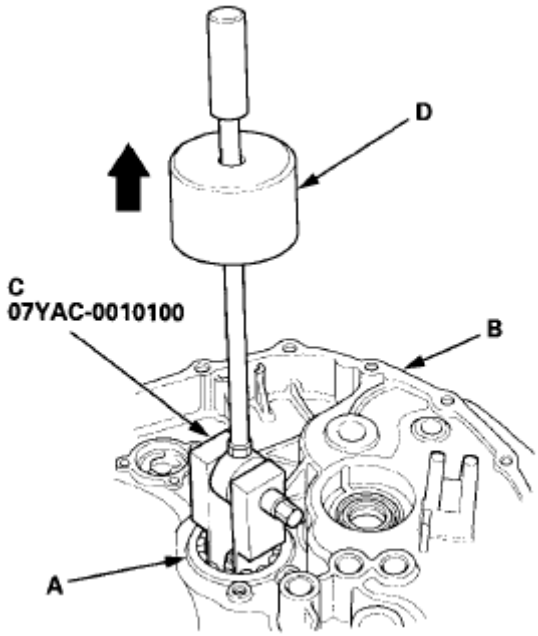


Fig. 223: Removing Needle Bearing From Clutch Housing Using Adjustable Bearing Puller And UNF Slide Hammer
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Install a new needle bearing (A) using the 15 x 135L driver handle (B) and the 72 x 75 mm bearing driver attachment (C).

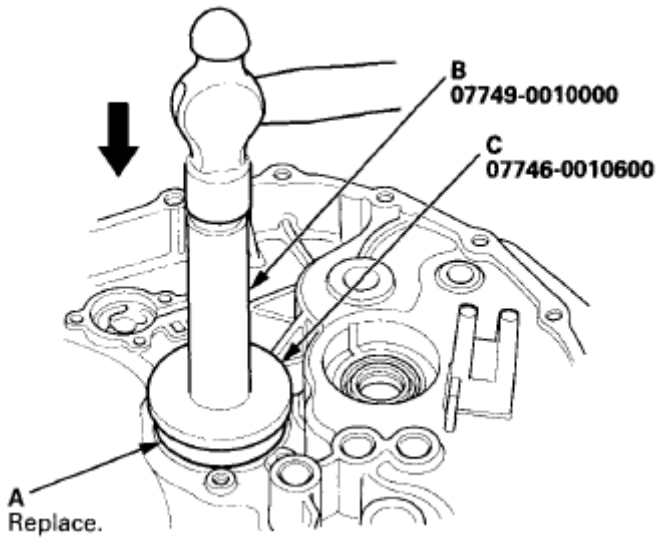


Fig. 224: Installing Needle Bearing Using Driver Handle And Bearing Driver Attachment
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Install the bearing set plate (A).

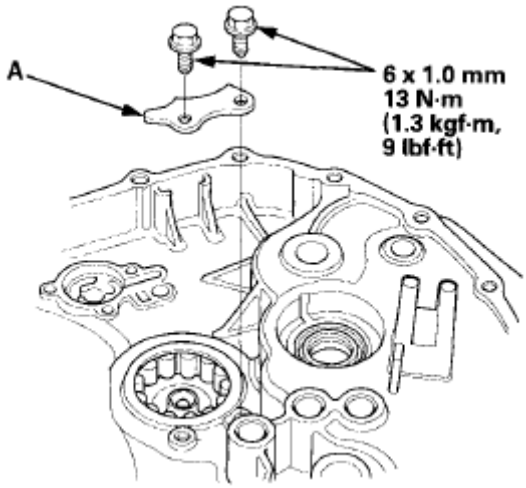


Fig. 225: Identifying Bearing Set Plate With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

MAINSHAFT THRUST CLEARANCE ADJUSTMENT

Special Tools Required

- Mainshaft Holder 07GAJ-PG20110
- Mainshaft Base 07GAJ-PG20130

NOTE:

- **Take measurements at normal room temperature.**
- **Clean all parts thoroughly before installation.**

1. Remove the 87 mm shim (A) from the transmission housing (B).

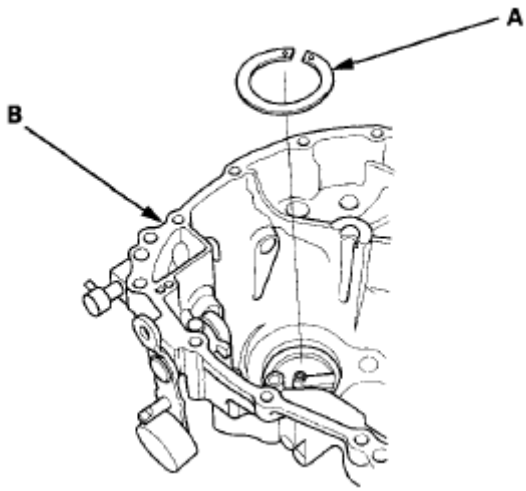


Fig. 226: Identifying Shim And Transmission Housing
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Install the angular ball bearing (A), the 3rd/4th synchro hub (B), the 4th/5th gear distance collar (C), the 5th/6th synchro hub (D), the 6th gear distance collar (E), and the angular ball bearing (F) on the mainshaft (G), then install the assembled mainshaft in the transmission housing (H).

NOTE: The angular ball bearing is directional. If installed the wrong way, the measurements will not be accurate.

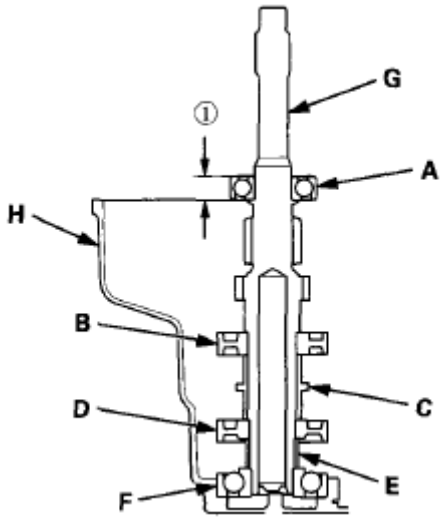


Fig. 227: Identifying Angular Ball Bearing, 3rd/4th Synchro Hub, 4th/5th Gear Distance Collar, 5th/6th Synchro Hub, 6th Gear Distance Collar, Angular Ball Bearing, Mainshaft And Transmission Housing
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Measure the distance (1) between the rim of the transmission housing and the angular ball bearing with a straight edge and a depth gauge. Measure at three locations, and average the readings.
4. Measure the distance (2) (the depth of the clutch housing) with a straight edge and a depth gauge. Measure at three locations, and average the readings.

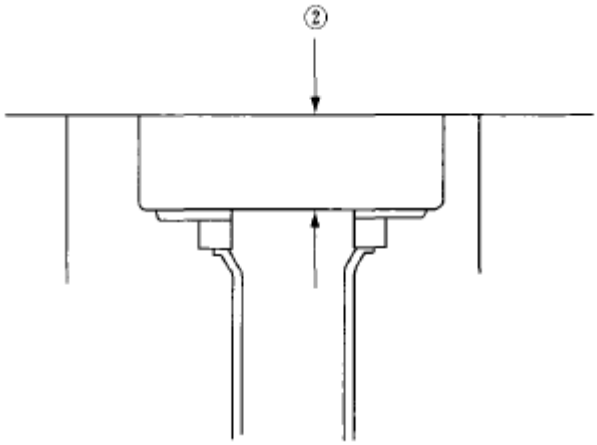


Fig. 228: Measuring Distance (Depth Of Clutch Housing) Using Straight Edge And Depth Gauge
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Shim Selection Formula

5. Select the proper 87 mm shim from the table. Follow the example below, and use the measurements you made in steps 3 and 4.

(Basic Formula)

(2) - (1) - (0.85 + 0.14) = shim thickness (maximum)

(2) - (1) - (0.85 + 0.21) = shim thickness (minimum)

- Subtract distance (1) (step 3) from distance (2) (step 4).
- 0.85 mm (0.033 in): Spring washer, a dimension in the installation.
- 0.14 mm (0.006 in): Minimum thrust clearance.
- 0.21 mm (0.008 in): Maximum thrust clearance.

(For example)

21.04 - 17.97 - (0.85 + 0.14) = 2.08 mm (0.082 in)

21.04 - 17.97 - (0.85 + 0.21) = 2.01 mm (0.079 in)

Take the middle value 2.04 mm (0.080 in) of the minimum value and the maximum value, and select the 0.93 mm (0.037 in) and 1.11 mm (0.044 in) shims.

NOTE: It is acceptable to select two 87 mm shims and put them together to get the required thickness. Make sure the washers are clean and dry to achieve an accurate measurement.

87 MM SHIM

Type	Thickness
A	0.60 mm (0.024 in)
B	0.63 mm (0.025 in)
C	0.66 mm (0.026 in)
D	0.69 mm (0.027 in)
E	0.72 mm (0.028 in)
F	0.75 mm (0.030 in)
G	0.78 mm (0.031 in)
H	0.81 mm (0.032 in)
J	0.84 mm (0.033 in)
K	0.87 mm (0.034 in)
L	0.90 mm (0.035 in)
M	0.93 mm (0.037 in)
N	0.96 mm (0.038 in)
P	0.99 mm (0.039 in)
R	1.02 mm (0.040 in)
S	1.05 mm (0.041 in)
T	1.08 mm (0.043 in)
U	1.11 mm (0.044 in)
V	1.14 mm (0.045 in)
W	1.17 mm (0.046 in)
X	1.20 mm (0.047 in)
Y	1.23 mm (0.048 in)
Z	1.26 mm (0.050 in)
AA	1.29 mm (0.051 in)
AB	1.32 mm (0.052 in)
AC	1.35 mm (0.053 in)
AD	1.38 mm (0.054 in)
AE	1.41 mm (0.056 in)
AF	1.44 mm (0.057 in)

6. Install the selected 87 mm shim (A) in the transmission housing (B).

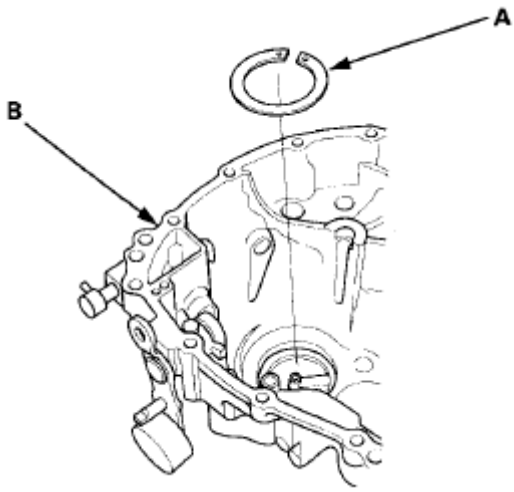


Fig. 229: Identifying Shim And Transmission Housing
Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Thoroughly clean the 64 mm spring washer (A) before installing it on the clutch housing (B).

NOTE: Be sure to install the spring washer in the direction shown.

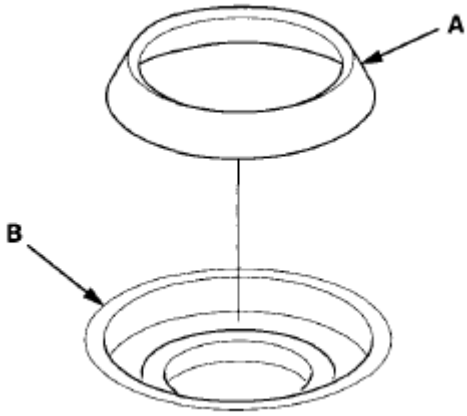


Fig. 230: Identifying Spring Washer And Clutch Housing
Courtesy of AMERICAN HONDA MOTOR CO., INC.

8. Install the assembled mainshaft in the clutch housing.
9. Place the transmission housing over the mainshaft and onto the clutch housing.
10. Tighten the clutch and transmission housings with several 10 mm bolts.

NOTE: It is not necessary to use sealing agent between the housings for this procedure.

11. Lightly tap on the mainshaft with a soft face hammer.
12. Attach the mainshaft holder (A) and the mainshaft base (B) to the mainshaft as follows:

- Back out the mainshaft holder bolt (C), and loosen the two hex bolts (D).
- Fit the mainshaft holder over the mainshaft so its lip is toward the transmission.
- Align the mainshaft holder lip around the groove at the inside of the mainshaft splines, then tighten the hex bolts.

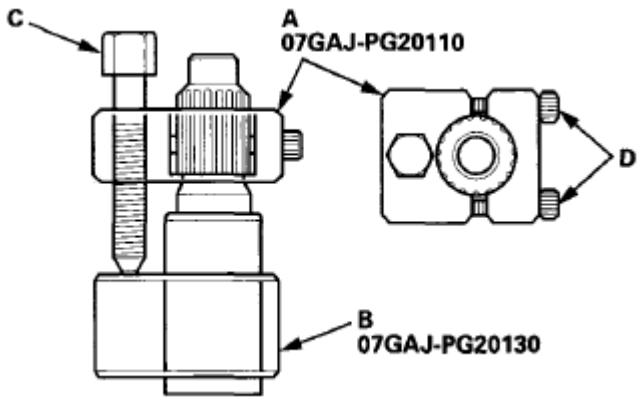


Fig. 231: Attaching Mainshaft Holder And Mainshaft Base To Mainshaft
Courtesy of AMERICAN HONDA MOTOR CO., INC.

13. Fully seat the mainshaft by tapping on its end with a soft face hammer.
14. Thread in the mainshaft holder bolt until it just contacts the wide surface of the mainshaft base.
15. Zero a dial gauge (A) on the end of the mainshaft.

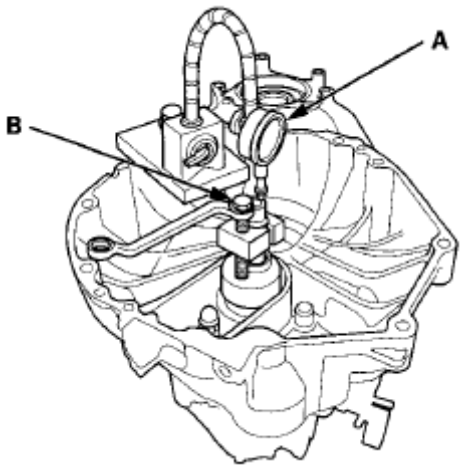


Fig. 232: Setting Dial Gauge To Zero On End Of Mainshaft
Courtesy of AMERICAN HONDA MOTOR CO., INC.

16. Turn the mainshaft holder bolt (B) clockwise; stop turning when the dial gauge has reached its maximum movement. The reading on the dial gauge is the amount of mainshaft thrust clearance.

NOTE: Do not turn the mainshaft holder bolt more than 60 degrees after the needle of the dial gauge stops moving. Applying more pressure with the

mainshaft holder bolt could damage the transmission.

17. If the reading is within the standard, the clearance is correct. If the reading is not within the standard, recheck the shim thickness.

    Standard: 0.14- 0.21 mm (0.0055- 0.0083 in)

TRANSMISSION REASSEMBLY

NOTE: Prior to reassembling, clean all parts in solvent, dry them, and apply MTF to all contact surfaces.

1. If any of the items listed were replaced, do the differential carrier bearing preload adjustment before reassembling the transmission (see **TRANSMISSION DISASSEMBLY**).
   - Transmission housing
   - Clutch housing
   - Differential carrier
   - Spacer
   - Differential carrier bearing and outer race
2. Press a new 16 x 23 x 5 mm dust seal (A) flush with the transmission housing surface, then install the change lever (B), the shift arm (C), the 8 mm spring washer (D), and the 8 mm special bolt (E).

NOTE: Be sure to install the spring washer in the direction shown.

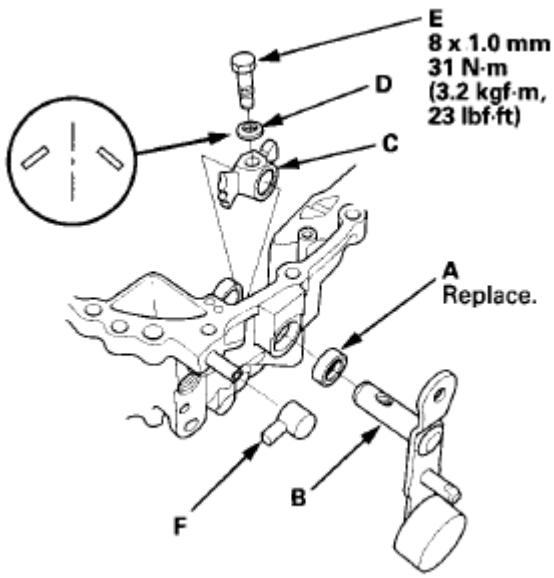


Fig. 233: Identifying Dust Seal, Change Lever, Shift Arm, Spring Washer, Breather Cap And Bolt With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Install the breather cap (F) with the arrow on the cap toward the front of the vehicle.
4. Select the proper size 87 mm shim (A) according to the measurements made during the Mainshaft Thrust Clearance Adjustment (see **MAINSHAFT THRUST CLEARANCE ADJUSTMENT**). Install it into the transmission housing (B).

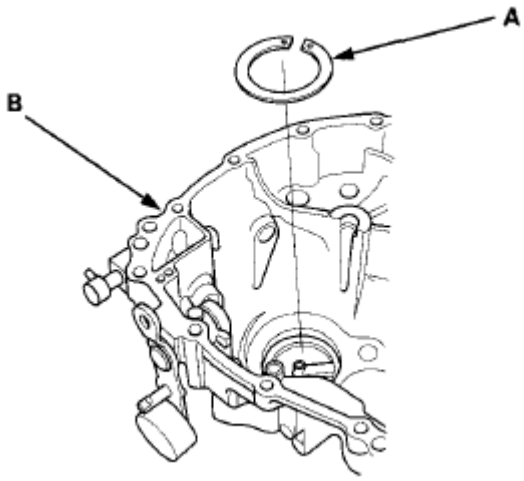


Fig. 234: Identifying Shim And Transmission Housing
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Install the oil pump outer rotor (A), the oil pump inner rotor (B), and the oil pump plate (C).

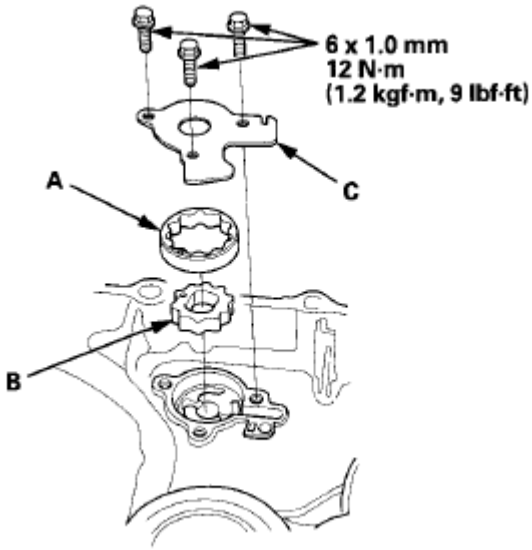


Fig. 235: Identifying Oil Pump Plate, Oil Pump Outer Rotor And Inner Rotor With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Install the oil gutter plate (A).

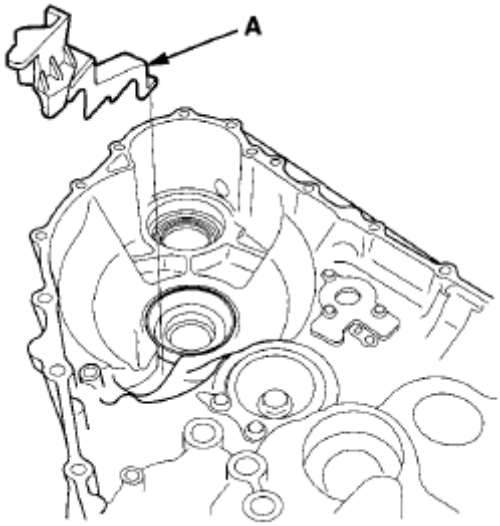


Fig. 236: Identifying Oil Gutter Plate
Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Install the transfer output shaft assembly (A).

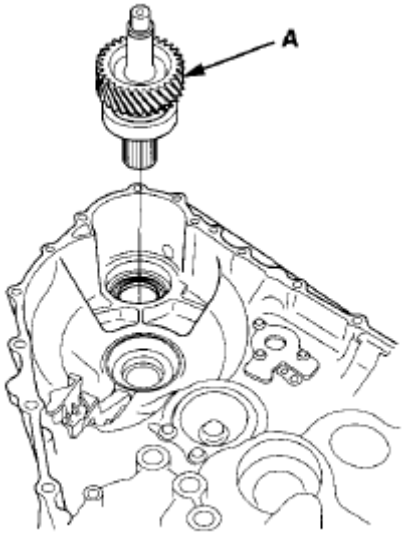


Fig. 237: Identifying Transfer Output Shaft Assembly
Courtesy of AMERICAN HONDA MOTOR CO., INC.

8. Install the differential assembly (A) and the oil pump shaft (B).

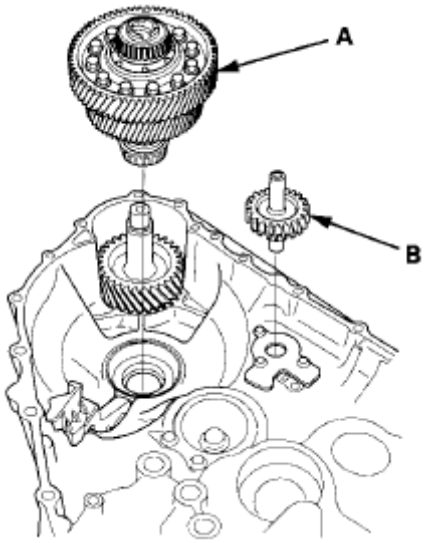


Fig. 238: Identifying Differential Assembly And Oil Pump Shaft
Courtesy of AMERICAN HONDA MOTOR CO., INC.

9. Install the 64 mm spring washer (A).

NOTE: Be sure to install the spring washer in the direction shown.

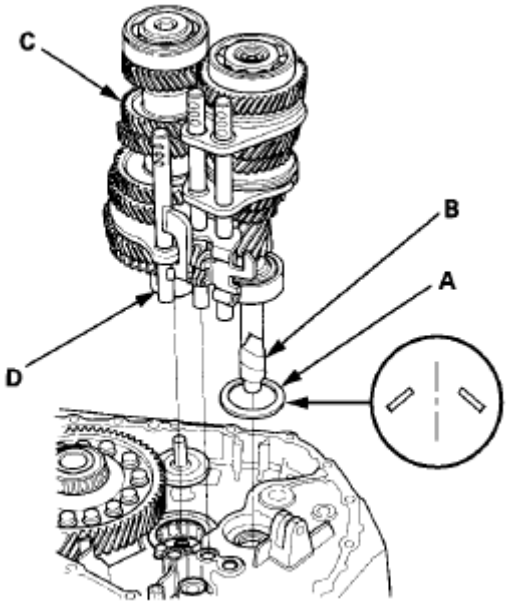


Fig. 239: Identifying Spring Washer, Mainshaft Splines, Countershaft And Shift Fork Assembly
Courtesy of AMERICAN HONDA MOTOR CO., INC.

10. Apply tape to the mainshaft splines (B) to protect the seal. Install the mainshaft and the countershaft (C) with the shift fork assembly (D) as an assembly.

NOTE: Do not apply tape thick to damage the oil seal.

11. Press a new 14 x 20 x 4 mm dust seal (A) flush with the clutch housing surface, then install the select lever (B), the select arm (C), a new 5 x 22 mm spring pin (D), and a new 3 x 22 mm spring pin (E).

NOTE: Make the seams (F) of the 5 x 22 mm and 3 x 22 mm spring pin are opposite side.

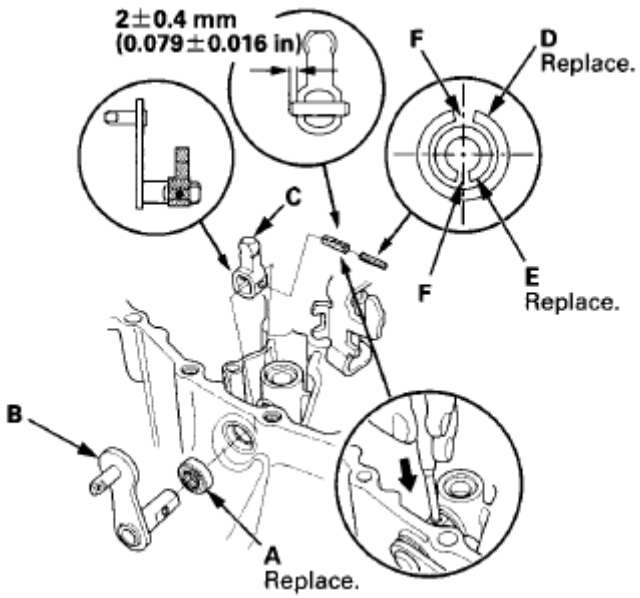


Fig. 240: Identifying Dust Seal, Lever, Arm, Seams And Spring Pins
Courtesy of AMERICAN HONDA MOTOR CO., INC.

12. Set the select return spring (A), the 8 x 50 mm pin (B), and the interlock (C) as shown.

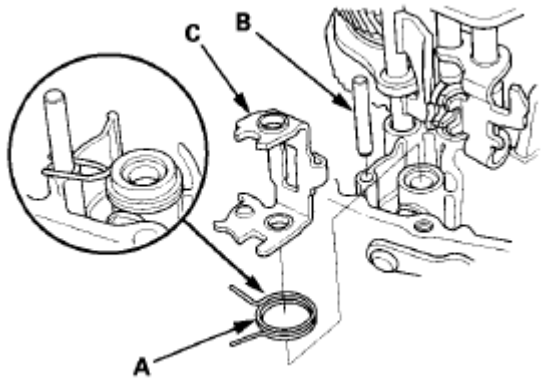


Fig. 241: Identifying Interlock, Return Spring And Pin
Courtesy of AMERICAN HONDA MOTOR CO., INC.

13. Install the shift piece (A) and the shift piece shaft (B).

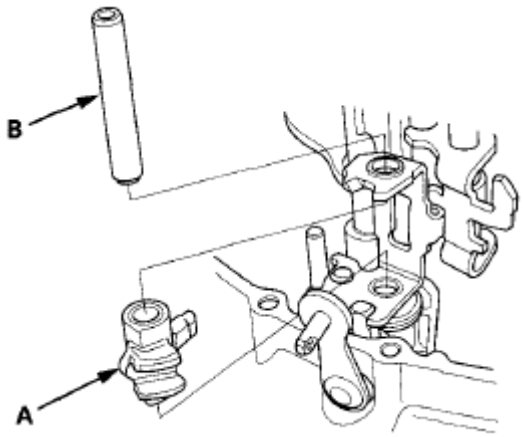


Fig. 242: Identifying Shift Piece And Shift Piece Shaft
Courtesy of AMERICAN HONDA MOTOR CO., INC.

14. Assemble the 25 mm thrust needle bearings (A), the 25 mm thrust washers (B), the reverse idler gear shaft assembly (C), and the reverse shift fork (D) (see **REVERSE IDLER GEAR SHAFT ASSEMBLY DISASSEMBLY/REASSEMBLY**).

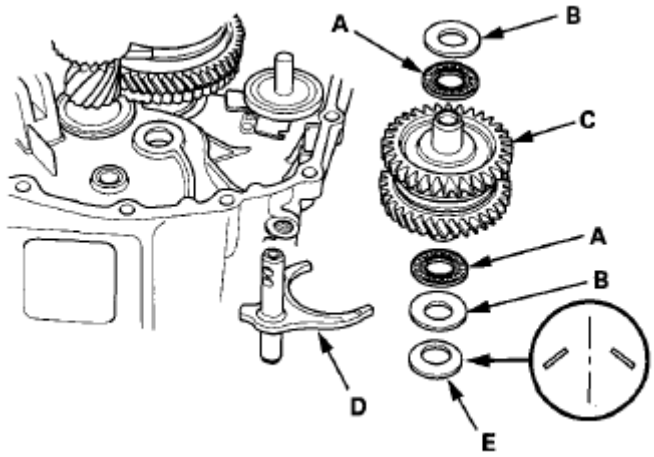


Fig. 243: Identifying Thrust Needle Bearings, Thrust Washers, Reverse Idler Gear Shaft Assembly, Reverse Shift Fork And Spring Washer
Courtesy of AMERICAN HONDA MOTOR CO., INC.

15. Install the 36 mm spring washer (E) to the reverse idler gear shaft assembly.

NOTE: Be sure to install the spring washer in the direction shown.

16. Slide the reverse idler gear shaft assembly (A) on the rib (B) of the clutch housing, then install it into the hole (C) of the clutch housing.

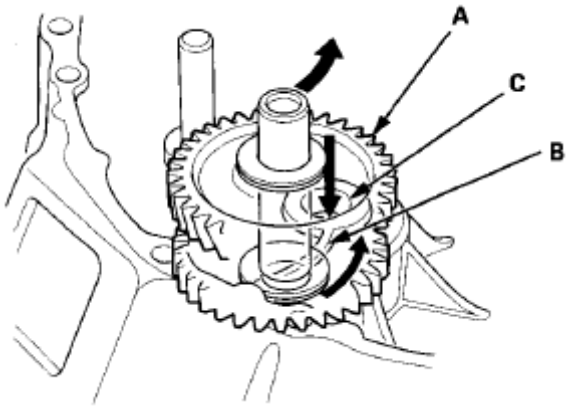


Fig. 244: Installing Reverse Idler Gear Shaft Assembly Into Hole Of Clutch Housing
Courtesy of AMERICAN HONDA MOTOR CO., INC.

17. Install the reverse shift lever (A) and the 8x50 mm pin (B).

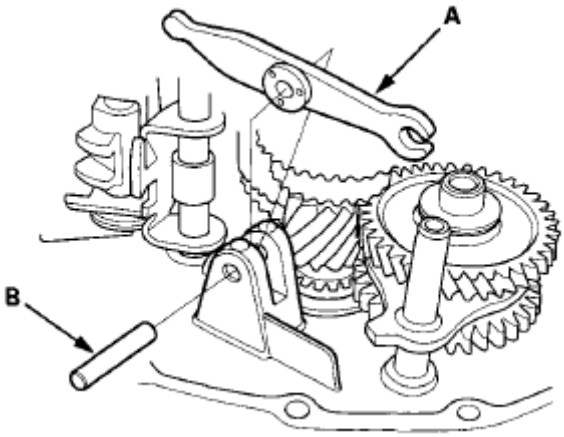


Fig. 245: Identifying Reverse Shift Lever And Pin
Courtesy of AMERICAN HONDA MOTOR CO., INC.

18. Install oil guide pipe A, the oil guide pipe (B), and the magnet (C).

NOTE: Clean the magnet anytime the transmission is disassembled.

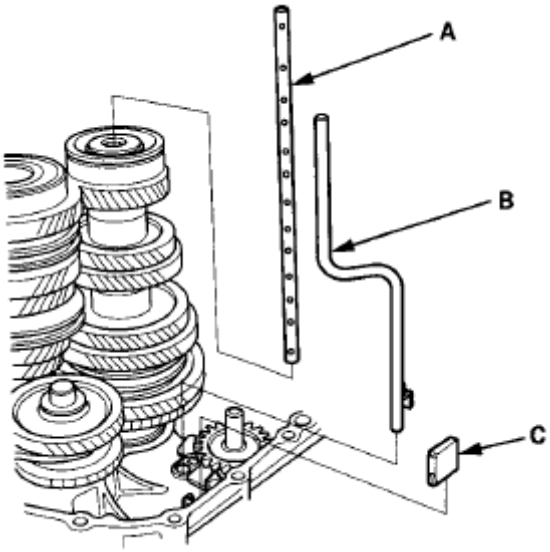


Fig. 246: Identifying Oil Guide Pipe And Magnet
Courtesy of AMERICAN HONDA MOTOR CO., INC.

19. Clean any dirt and oil from the transmission housing sealing surface.
20. Apply liquid gasket, P/N 08717-0004, 08718-0001, 08718-0003, 08718-0004, or 08718-0009 evenly to the clutch housing mating surface of the transmission housing. Install the component within 5 minutes of applying the liquid gasket.

NOTE:

- **If you apply liquid gasket P/N 08718-0012, the component must be installed within 4 minutes.**
- **If too much time has passed after applying the liquid gasket, remove the old liquid gasket and residue, then reapply new liquid gasket.**

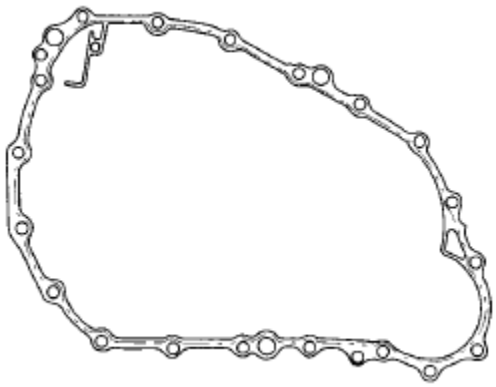


Fig. 247: Identifying Clutch Housing Mating Surface Of Transmission Housing
Courtesy of AMERICAN HONDA MOTOR CO., INC.

21. Install the three 14 x 20 mm dowel pins (A).

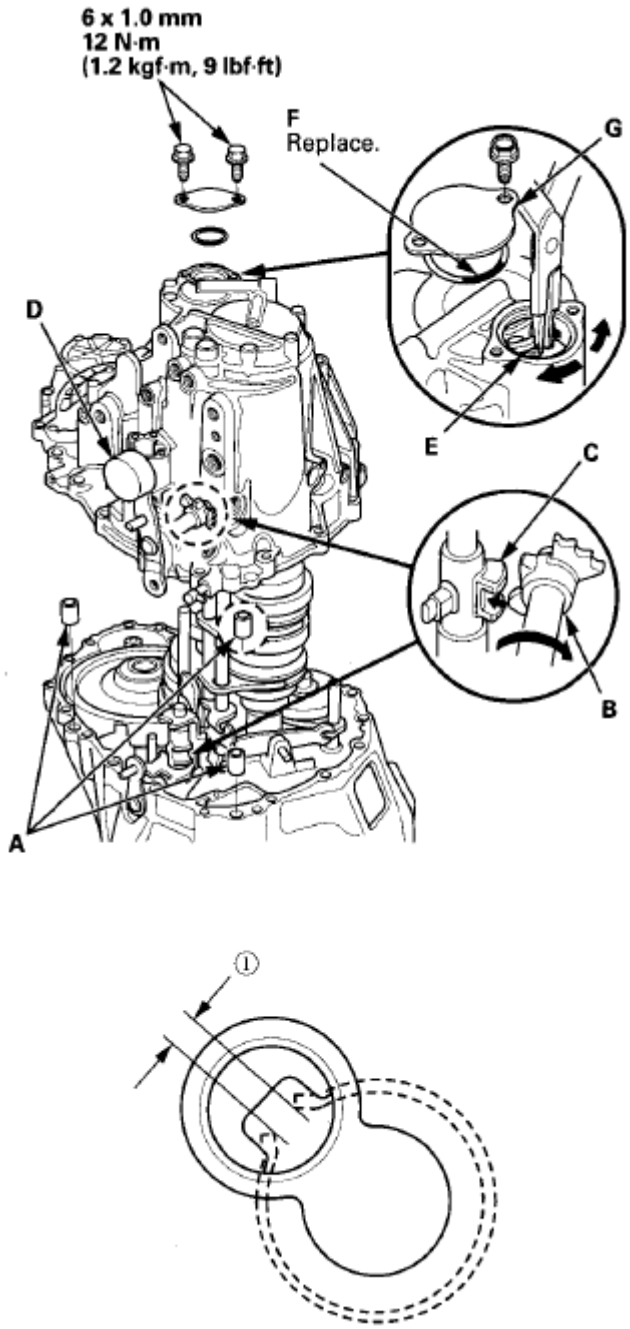


Fig. 248: Identifying Dowel Pins, Shift Arm, Groove Of Shift Piece, Change Lever And Snap Ring With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

22. Lower the transmission housing, then place the shift arm (B) in the groove of the shift piece (C) by turning the change lever (D).
23. While expanding the 75 mm snap ring (E) on the countershaft ball bearing using snap ring pliers, push the transmission housing down to start the countershaft ball bearing through the snap ring. Release the pliers, and push down the housing until it bottoms out and the snap ring snaps in place in the countershaft ball bearing snap ring groove.

24. Make sure the 75 mm snap ring is securely seated in the groove of the countershaft bearing.

    Dimension (1) as installed: 1.67- 9.42 mm (0.066- 0.371 in)

25. Install a new O-ring (F) and the transmission case cap (G).

    NOTE: Check the operation of the change lever and the select lever.

26. Install the 10 mm flange bolts finger-tight, with transmission hanger B and the clutch line bracket (A).

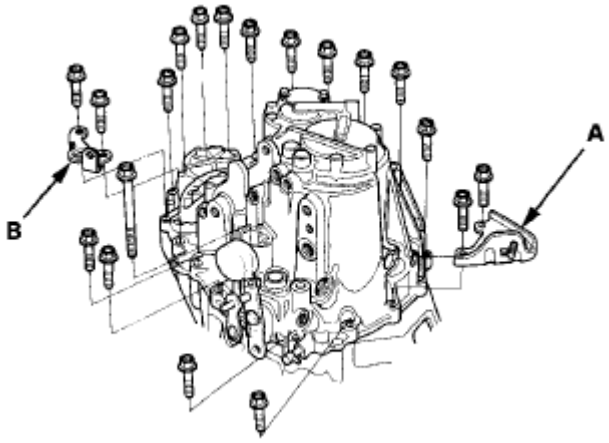


Fig. 249: Identifying Clutch Line Bracket And Transmission Hanger
Courtesy of AMERICAN HONDA MOTOR CO., INC.

27. Tighten the 10 mm flange bolts in a crisscross pattern in several steps.

    Specified Torque: 10 x 1.25 mm 44 N.m (4.5 kgf.m, 33 lbf.ft)

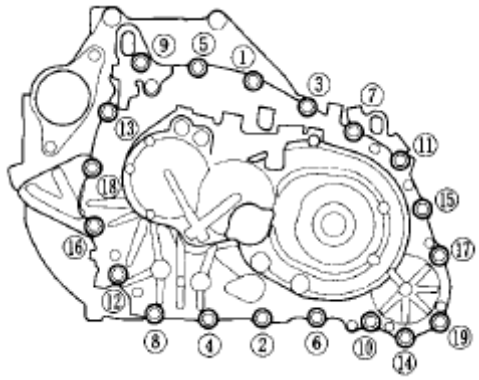


Fig. 250: Identifying Flange Bolts With Tightening Sequence
Courtesy of AMERICAN HONDA MOTOR CO., INC.

28. Install the drain plug (A) with a new sealing washer (B).

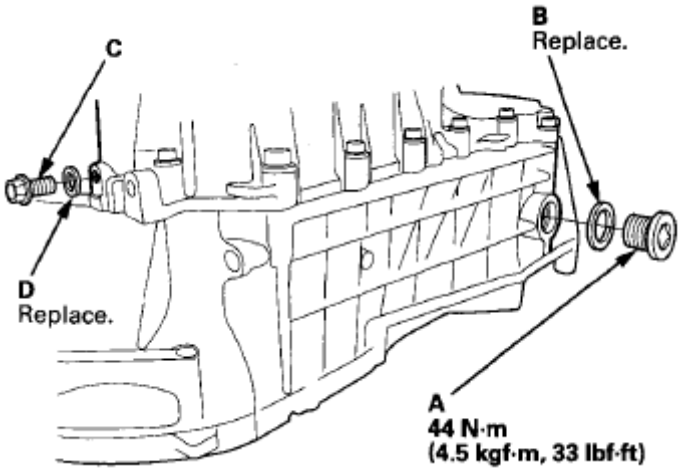


Fig. 251: Identifying Sealing Washer, Fluid Check Bolt And Drain Plug With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

29. Install the fluid check bolt (C) with a new sealing washer (D) by finger-tight.
30. Apply liquid gasket (P/N 08717-0004, 08718-0001, 08718-0012, 08718-0003, 08718-0004, or 08718-0009) to the thread of the detent bolts (A), then install the steel balls (B), the 22.0 mm detent ball spring (C), the 27.4 mm detent ball spring (D), and the detent bolts.

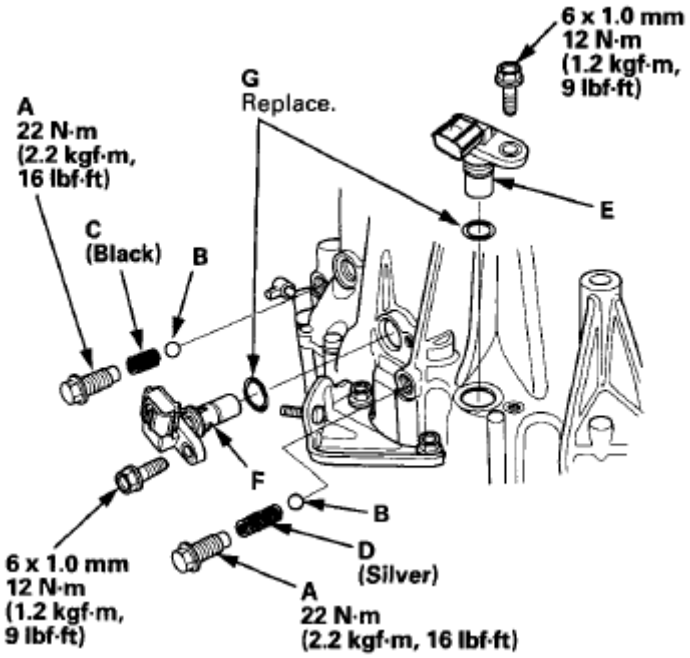


Fig. 252: Identifying Steel Balls, Detent Ball Spring, Detent Bolts, O-Rings, Input Shaft (Mainshaft) And Output Shaft (Countershaft) Speed Sensor With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

31. Install the input shaft (mainshaft) speed sensor (E), the output shaft (countershaft) speed sensor (F), and new O-rings (G).

32. Apply liquid gasket (P/N 08717-0004, 08718-0001, 08718-0012, 08718-0003, 08718-0004, or 08718-0009) to the thread of the detent bolts (A), then install the steel balls (B), the 22.0 mm detent ball spring (C), the 26.1 mm detent ball spring (D), the 27.4 mm detent ball spring (E), and the detent bolts.

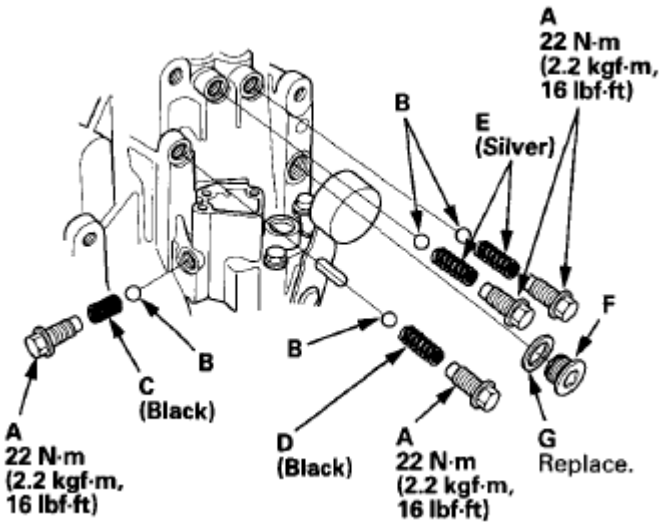


Fig. 253: Identifying Steel Balls, Detent Ball Springs, Detent Bolts, Filler Plug And Sealing Washer With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

33. Install the filler plug (F) with a new sealing washer (G) by finger-tight.
34. Clean any dirt or oil from the reverse lockout solenoid sealing surface.
35. Apply liquid gasket, P/N 08717-0004, 08718-0001, 08718-0003, 08718-0004, or 08718-0009 evenly to the transmission housing mating surface of the reverse lockout solenoid. Install the component within 5 minutes of applying the liquid gasket.

NOTE:

- **If you apply liquid gasket P/N 08718-0012, the component must be installed within 4 minutes.**
- **If too much time has passed after applying the liquid gasket, remove the old liquid gasket and residue, then reapply new liquid gasket.**

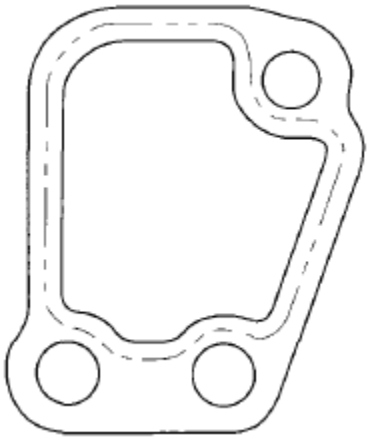


Fig. 254: Identifying Transmission Housing Mating Surface Of Reverse Lockout Solenoid
Courtesy of AMERICAN HONDA MOTOR CO., INC.

36. Install the select lock pin spring (B), the select lock pin (C), and the reverse lockout solenoid (D).

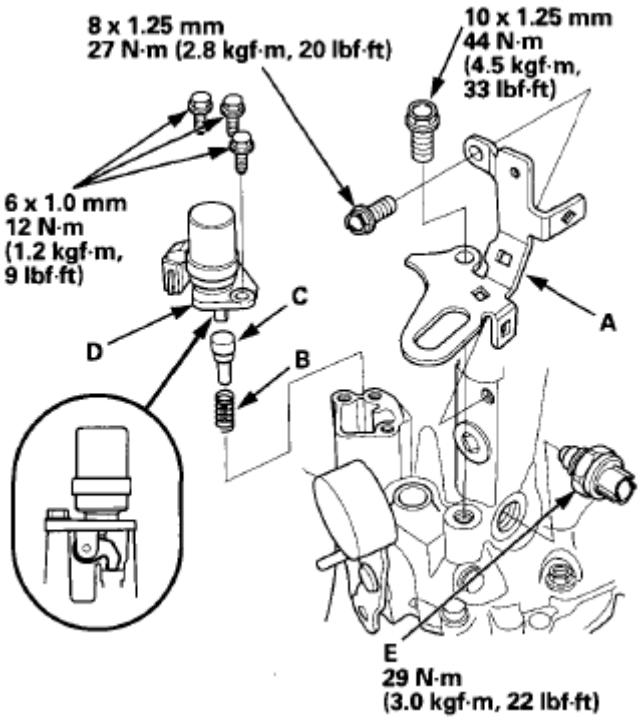


Fig. 255: Identifying Transmission Hanger, Lock Pin Spring, Lock Pin, Reverse Lockout Solenoid And Threads Of Back-Up Light Switch With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

37. Apply liquid gasket, (P/N 08717-0004, 08718-0001, 08718-0012, 08718-0003, 08718-0004, or 08718-0009) to the threads of the back-up light switch (E), and install it in the transmission housing.
38. Install transmission hanger A.

39. Install the oil pump strainer (A), the strainer set spring (B), and the strainer cover (C) with a new O-ring (D).

NOTE: Clean the strainer anytime the transmission is disassembled.

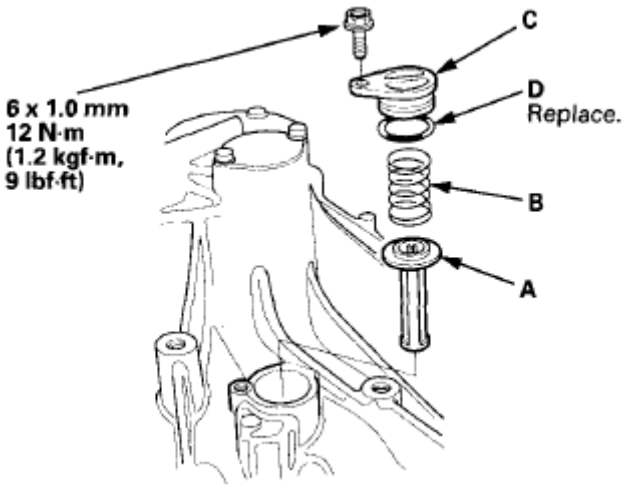


Fig. 256: Identifying Oil Pump Strainer, Strainer Set Spring, Strainer Cover And O-Ring With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

GEARSHIFT MECHANISM REPLACEMENT

NOTE: Make sure not to get any silicone grease on the terminal part of the connectors and switches, especially if you have silicone grease on your hands or gloves.

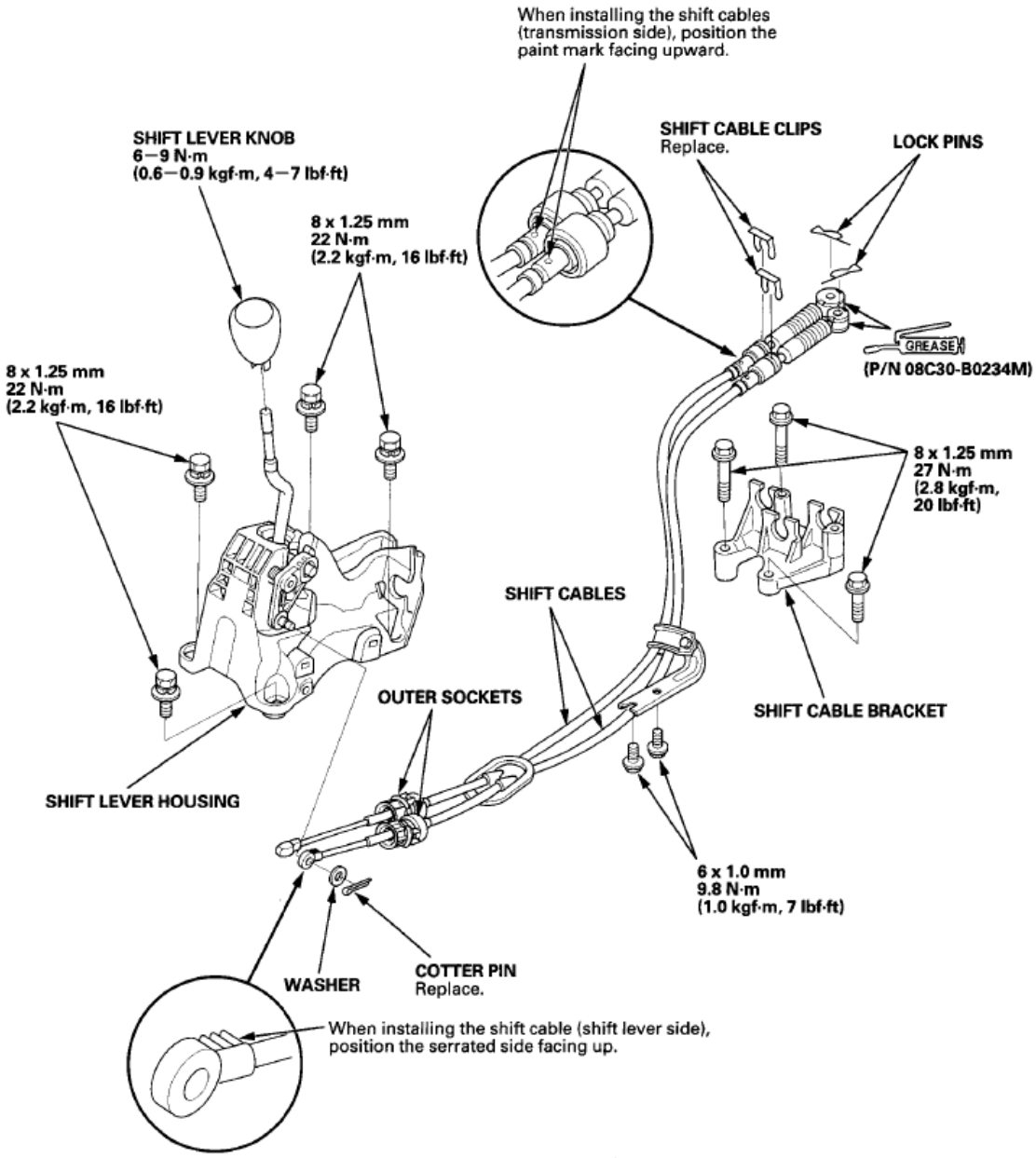


Fig. 257: Exploded View Of Gearshift Mechanism With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

SHIFT LEVER HOUSING REPLACEMENT

NOTE: Take care not to scratch the center console, the dashboard, and the related parts.

1. Remove the center console (see **CENTER CONSOLE REMOVAL/INSTALLATION**).
2. Remove the harness clamps.

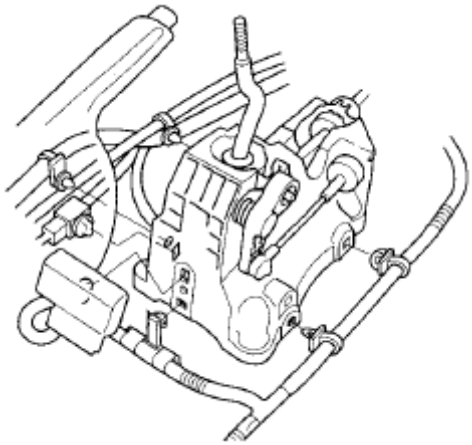


Fig. 258: Identifying Shift Lever Housing
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Remove the cotter pin (A), the washer (B), and the bolts.

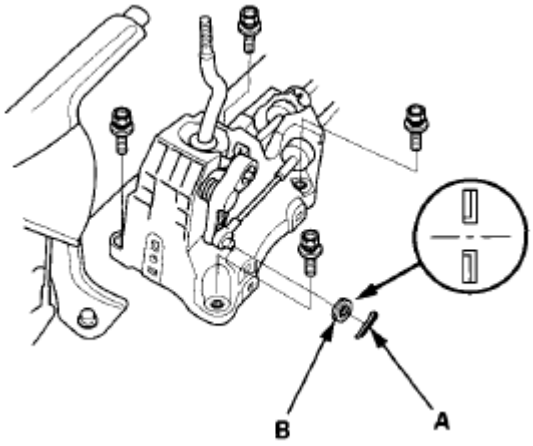


Fig. 259: Identifying Cotter Pin And Washer
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Unlock the retainer (A).

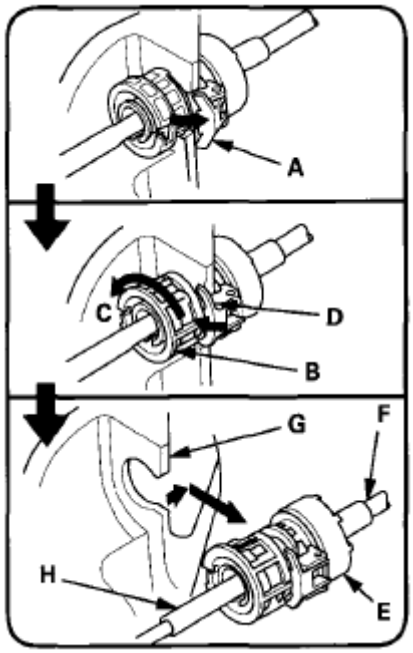


Fig. 260: Unlocking Retainer
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Rotate the socket holder retainer (B) counterclockwise (C) until it stops, and push the retainer lock (D) into the socket holder retainer to lock the retainer.
6. Slide the socket holder (E) and the shift cable (F) out of the shift cable bracket (G). Do not remove the shift cable by pulling the shift cable guide (H).
7. Remove the clip (A), and disconnect the shift cable ends (B) from the shift lever, then remove the shift lever housing (C).

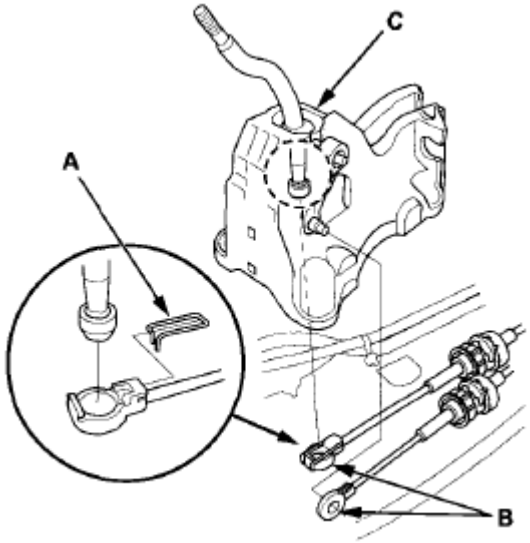
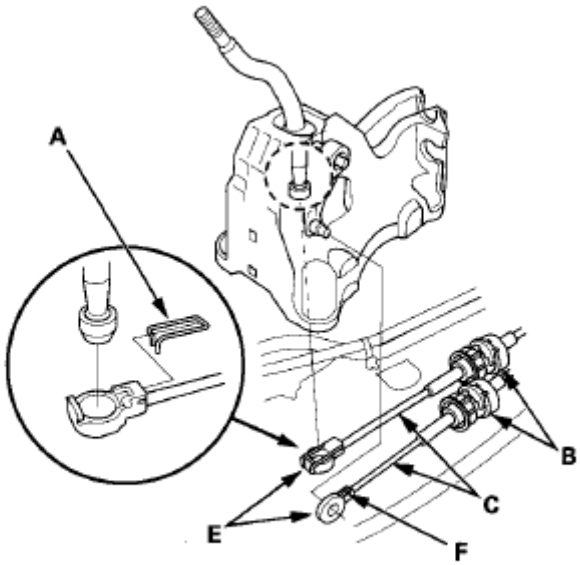


Fig. 261: Identifying Shift Cable Ends, Shift Lever Housing And Clip
Courtesy of AMERICAN HONDA MOTOR CO., INC.

8. Install the clip (A).



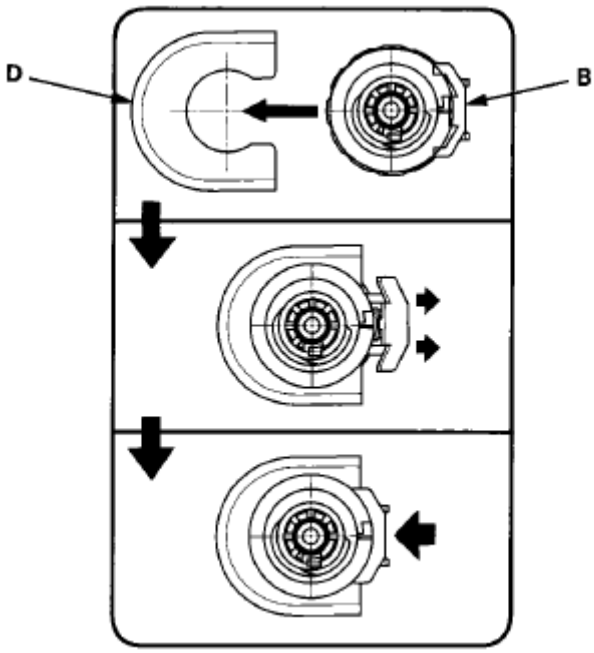


Fig. 262: Aligning Socket Holder On Shift Cables With Slot In Bracket Base
Courtesy of AMERICAN HONDA MOTOR CO., INC.

9. Align the socket holder (B) on the shift cables (C) with the slot in the bracket base (D), then slide the holder into the base. Install the shift cable ends (E) to the shift lever then install the shift lever housing.

NOTE: When installing the shift cable, position the serrated side (F) facing up.

10. Install the bolts, the washer (A), and a new cotter pin (B), then bend the cotter pin ends.

NOTE: You can install the cotter pin from either direction.

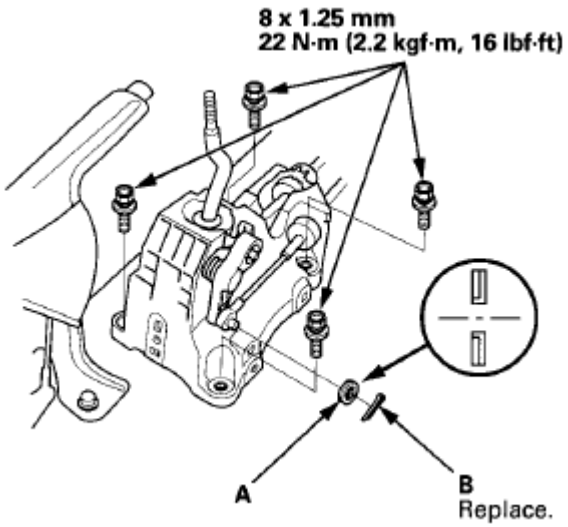


Fig. 263: Identifying Cotter Pin And Washer With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

11. Install the harness clamps.

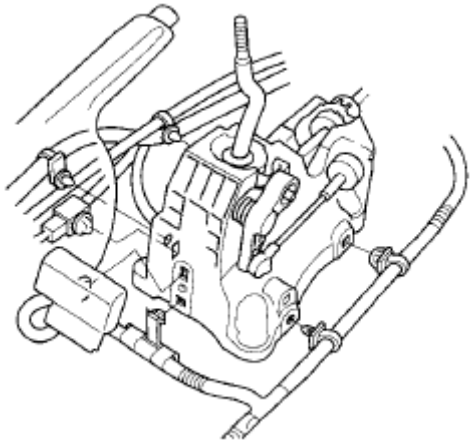


Fig. 264: Identifying Shift Lever Housing
Courtesy of AMERICAN HONDA MOTOR CO., INC.

12. Install the center console (see **CENTER CONSOLE REMOVAL/INSTALLATION**).

COMPONENT LOCATION INDEX

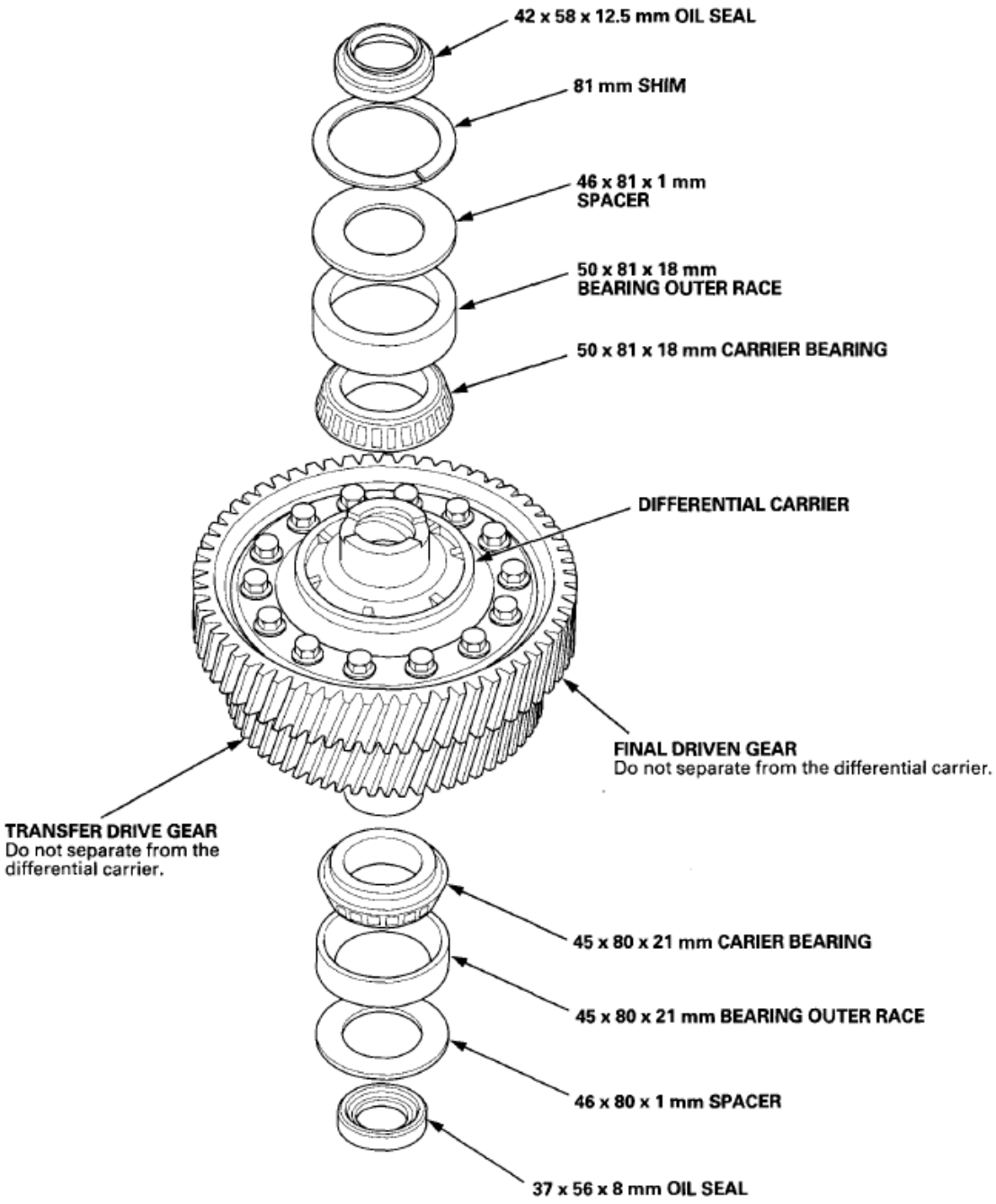


Fig. 265: Identifying M/T Differential Components Location
Courtesy of AMERICAN HONDA MOTOR CO., INC.

BACKLASH INSPECTION

1. Install the driveshaft and the intermediate shaft into the differential assembly.
2. Carefully clamp the driveshaft (A) in a bench vise (B).

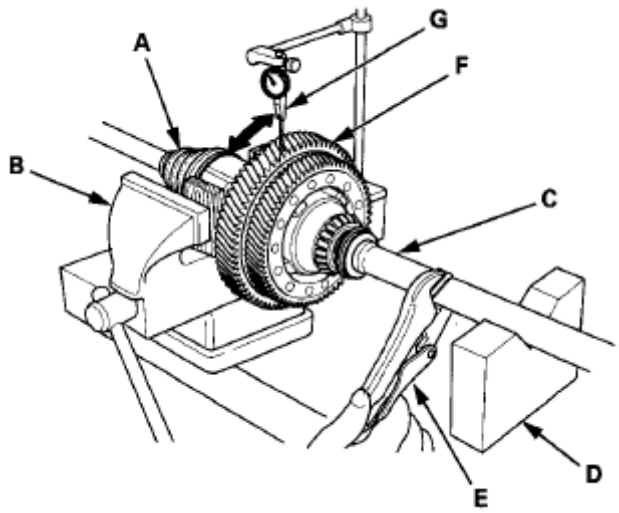


Fig. 266: Measuring Backlash Of Final Driven Gear Using Dial Indicator
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Place the intermediate shaft (C) on a V-block (D), then fix the intermediate shaft using vise grips or equivalent (E).
4. Measure the backlash of the final driven gear (F) with a dial indicator (G). If the backlash is not within the standard, replace the differential assembly.

NOTE: If it needs to replace the differential carrier, the final driven gear and the transfer drive gear as a set. Do not separate the final driven gear and the transfer drive gear from the differential carrier.

Standard (New): 0.6- 1.2 mm (0.024- 0.047 in)

CARRIER BEARING REPLACEMENT

Special Tools Required

Remover Installer, 22 x 37/46 x 52 mm 07PAF-0030100

NOTE:

- **The bearing outer race and the tapered roller bearing should be replaced as a set.**
- **Whenever the tapered roller bearing is replaced, do the carrier bearing preload adjustment (see CARRIER BEARING PRELOAD ADJUSTMENT) while reassembling the transmission.**

1. Check the carrier bearings for wear and rough rotation on the transmission or the clutch housing with the bearing outer race. If they rotate smoothly and their rollers show no signs of wear, the bearings are OK.
2. Remove the carrier bearings (A) using a commercially available bearing puller (B) and a bearing separator (C).

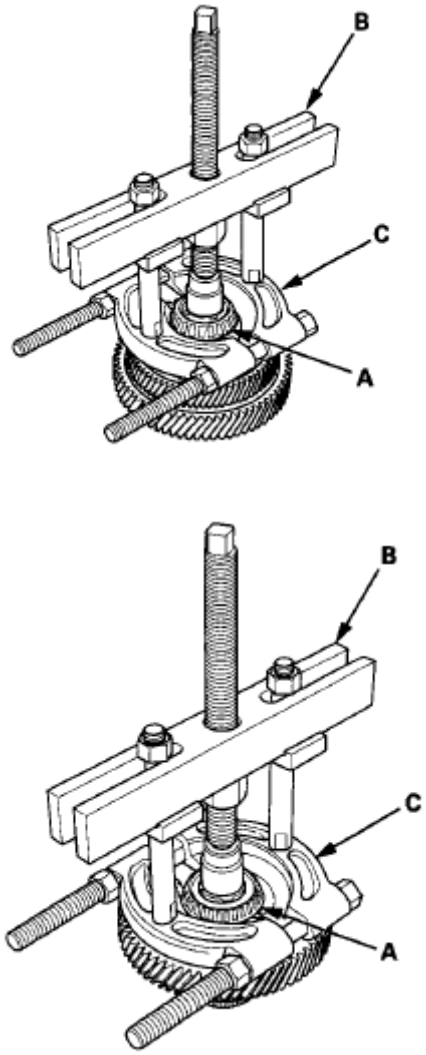


Fig. 267: Removing Carrier Bearings Using Bearing Puller And Bearing Separator
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Install new carrier bearings using the 22 x 37/46 x 52 mm remover installer (A) and a press (B). Press on each bearing until it bottoms out. There should be no clearance between the bearings and the differential carrier.

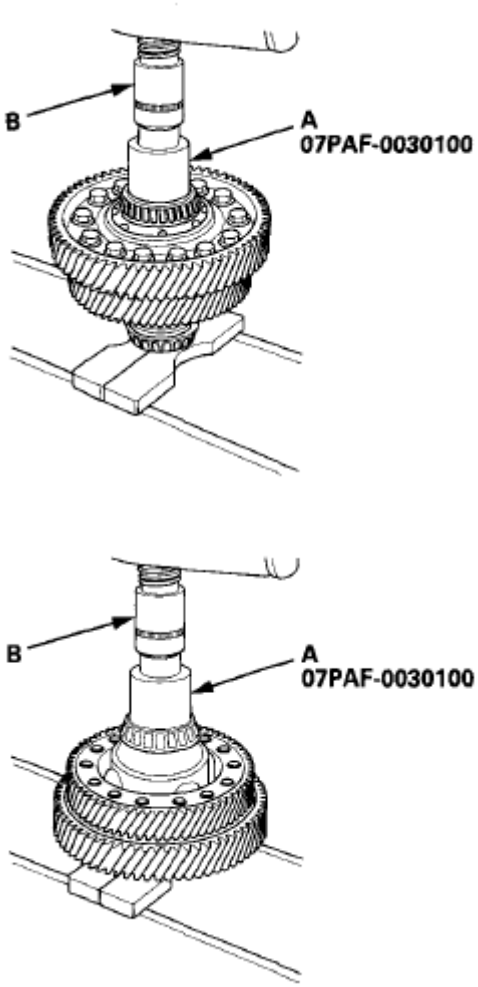


Fig. 268: Installing Carrier Bearings Using Remover Installer And Press
Courtesy of AMERICAN HONDA MOTOR CO., INC.

OIL SEAL REPLACEMENT

Special Tools Required

- Driver Handle, 15 x 135L 07749-0010000
- Oil Seal Driver Attachment 07NAD-P20A100

1. Remove the oil seal (A) from the transmission housing (B).

NOTE: Be careful not to damage the transmission housing while removing the oil seal.

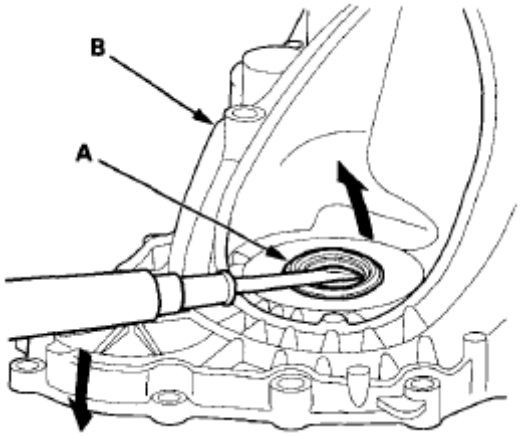


Fig. 269: Removing Oil Seal From Transmission Housing
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Remove the oil seal (A) from the clutch housing (B).

NOTE: Be careful not to damage the clutch housing while removing the oil seal.

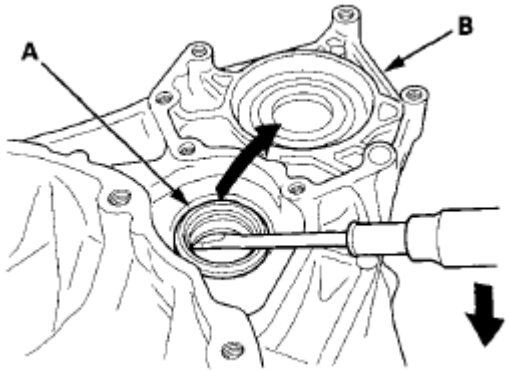


Fig. 270: Removing Oil Seal From Clutch Housing
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Install a new oil seal flush with the transmission housing using the 15 x 135L driver handle (A) and the oil seal driver attachment (B).

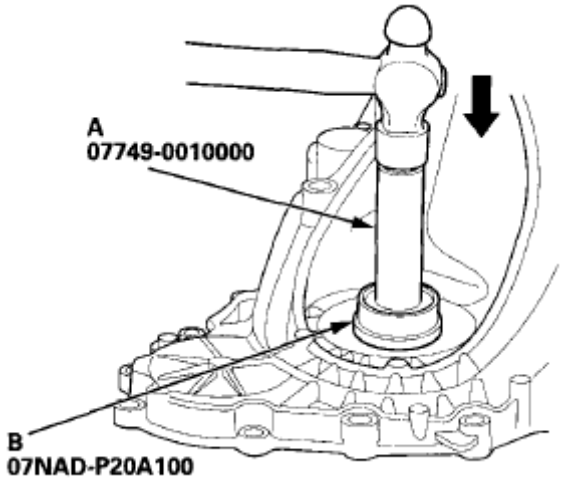


Fig. 271: Installing Oil Seal Flush With Transmission Housing Using Driver Handle And Oil Seal Driver Attachment
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Install a new oil seal flush with clutch housing using the 15 x 135L driver handle (A) and the oil seal driver attachment (B).

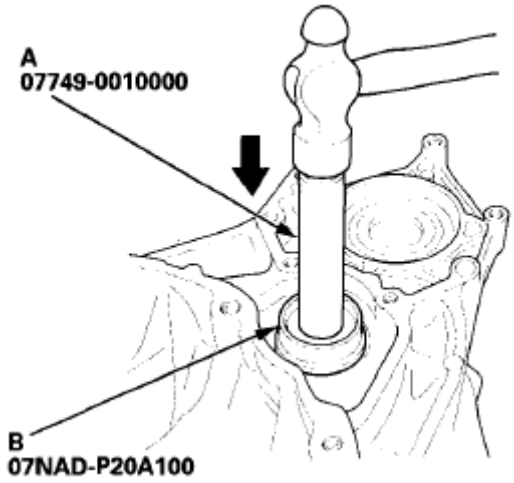


Fig. 272: Installing Oil Seal Flush With Clutch Housing Using Driver Handle And Oil Seal Driver Attachment
Courtesy of AMERICAN HONDA MOTOR CO., INC.

BEARING OUTER RACE REPLACEMENT

Special Tools Required

- Driver Handle, 15 x 135L 07749-0010000
- Bearing Driver Attachment, 78 x 80 mm 07NAD-PX40100

NOTE:

- **The bearing outer race and the tapered roller bearing should be replaced as a set.**
- **Whenever the tapered roller bearing and the bearing outer race are replaced, do the carrier bearing preload adjustment (see CARRIER BEARING PRELOAD ADJUSTMENT) while reassembling the transmission.**

1. Remove the oil seals from the transmission housing and the clutch housing (see **OIL SEAL REPLACEMENT**).
2. Remove the bearing outer race, the spacer, and the 81 mm shim from the transmission housing by heating the housing to about 212 CF (100 °C) with a heat gun.

NOTE: Do not reuse the 81 mm shim if the outer race was driven out.

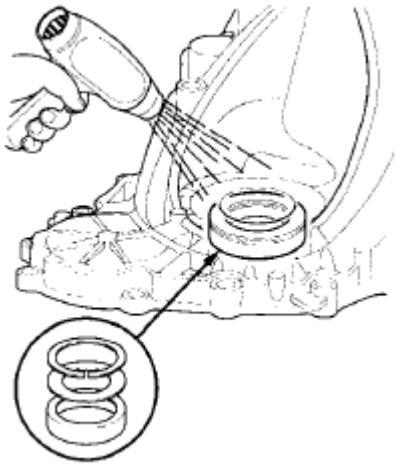


Fig. 273: Removing Bearing Outer Race, Spacer And Shim From Transmission Housing By Heating Housing Using Heat Gun
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Remove the bearing outer race and the spacer from the clutch housing by heating the housing to about 212 °F (100 °C) with a heat gun.

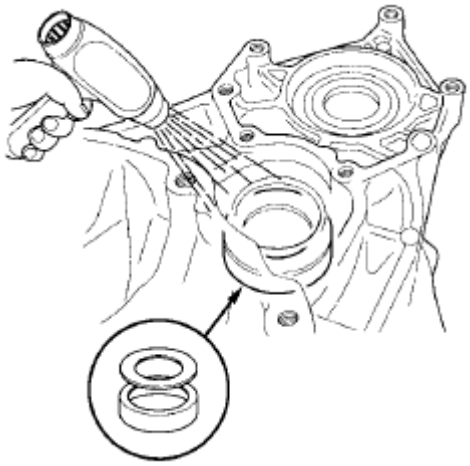


Fig. 274: Removing Bearing Outer Race And Spacer From Clutch Housing By Heating Housing Using Heat Gun
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Install the 81 mm shim (A), the spacer (B), and the bearing outer race (C) into the transmission housing (D) using the 15 x 135L driver handle (E) and the 78 x 80 mm bearing driver attachment (F).

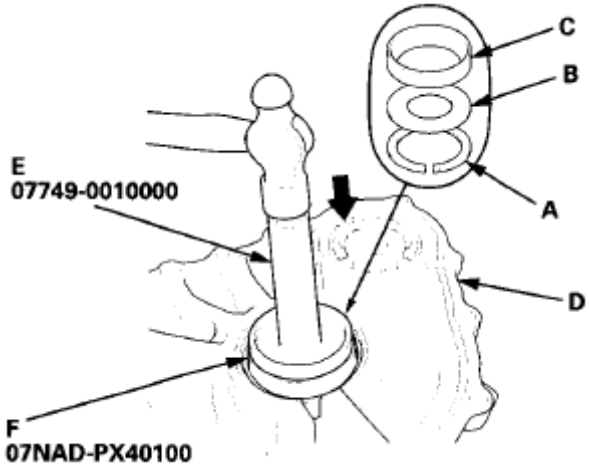


Fig. 275: Installing Shim, Spacer And Bearing Outer Race Into Transmission Housing Using Driver Handle And Bearing Driver Attachment
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Install the spacer (A) and the bearing outer race (B) into the clutch housing (C) using the 15 x 135L driver handle (D) and the 78 x 80 mm bearing driver attachment (E).

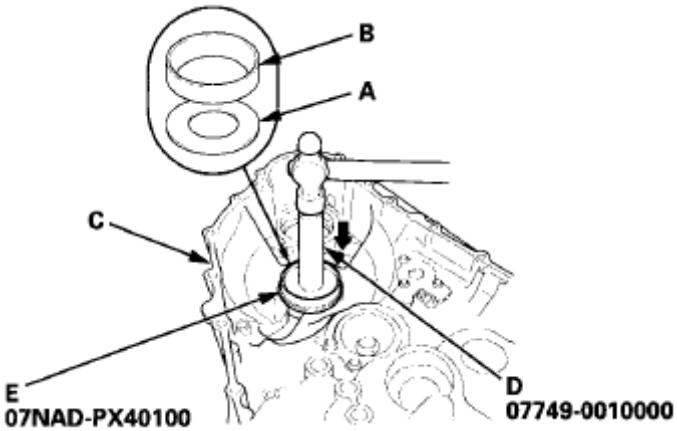


Fig. 276: Installing Spacer And Bearing Outer Race Into Clutch Housing Using Driver Handle And Bearing Driver Attachment
Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Install the oil seals into the transmission housing and the clutch housing (see **OIL SEAL REPLACEMENT**).

CARRIER BEARING PRELOAD ADJUSTMENT

Special Tools Required

Preload Inspection Tool 070AJ-0020101

If any of the items listed below were replaced, the carrier bearing preload must be adjusted.

- Transmission housing
- Clutch housing
- Differential carrier
- Spacer
- Carrier bearing and outer race

1. Disassemble the transmission (see **TRANSMISSION DISASSEMBLY**).
2. Install the 81 mm shim, the spacer, and the bearing outer race into the transmission housing, and install the spacer and the bearing outer race into the clutch housing, if they are removed (see **BEARING OUTER RACE REPLACEMENT**).

NOTE:
- **The tapered roller bearing and the bearing outer race compose the carrier bearing are always should be a set. Do not combine the other one.**
- **Note the thickness size of the used 81 mm shim.**

3. Install the differential carrier with the tapered roller bearing, and assemble the transmission housing and

the clutch housing using the 10 mm flange bolts by specified tightening torque (see step 27).

NOTE: It is not necessary to use sealing agent between the housings for this adjustment.

4. Rotate the differential assembly in both directions to seat the carrier bearings.
5. At normal room temperature, measure the starting torque of the differential assembly by rotating it in both directions using the preload inspection tool (A) and a torque wrench (B).

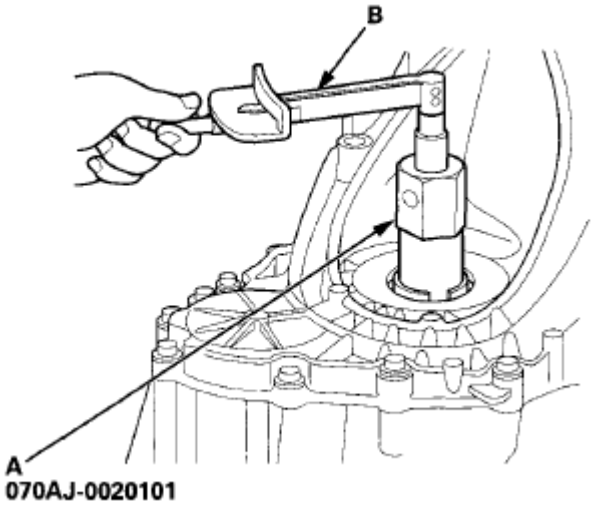


Fig. 277: Measuring Starting Torque Of Differential Assembly By Rotating It In Both Directions Using Preload Inspection Tool And Torque Wrench
Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. If the carrier bearing preload is not within the standard, select an 81 mm shim that will provide the correct preload:
   - Compare the bearing preload you got on the first try with the standard preload of 3.43- 4.51 N.m (35-46 kgf.cm, 30-40 lbf.in).
   - If the preload you measure was less than standard, subtract it from the standard preload.
   - If the preload you measure was more than standard, subtract the standard preload from the preload you measure.

   Standard: 3.4- 4.5 N.m (35-46 kgf.cm, 30-40 lbf.in)

7. Subtract the appropriate thrust shim thickness from the middle of the standard preload: 4.0 N.m (41 kgf.cm, 36 lbf.in).

NOTE:
- **Each shim size up or down from standard makes about 0.3- 0.4 N.m (3- - 4 kgf.cm, 2.6- 3.5 lbf.in) difference in preload.**
- **Assemble only one 81 mm shim. Do not install two or more 81 mm shim combined.**

Example 1 (measured preload was less than the standard):

Measured preload: 2.1 N.m (21 kgf.cm, 18 lbf.in) with a 2.50 mm (0.098 in) thrust shim:

(1) Standard 4.0 N.m (41 kgf.cm, 36 lbf.in)

- Measurement 2.1 N.m (21 kgf.cm, 18 lbf.in)

1.9 N.m (20 kgf.cm, 17 lbf.in) less

The subtracted preload was 1.9 N.m (20 kgf.cm, 18 lbf.in) less than the standard, so you need a shim five sizes thicker than in measured (try the 2.65 mm (0.104 in) 81 mm shim, and recheck).

Example 2 (measured preload was more than the standard):

Measured preload: 4.8 N.m (49 kgf.cm, 43 lbf.in) with a 2.50 mm (0.098 in) thrust shim:

(2) Standard 4.8 N.m (49 kgf.cm, 43 lbf.in)

- Measurement 4.0 N.m (41 kgf.cm, 36 lbf.in)

0.8 N.m (8 kgf.cm, 7 lbf.in) more

The subtracted preload was 0.8 N.m (8 kgf.cm, 7 lbf.in) more than the standard, so you need a shim two sizes thinner than in measured (try the 2.44 mm (0.096 in) 81 mm shim, and recheck).

81 MM SHIM

Type	Thickness
A	2.05 mm (0.081 in)
B	2.08 mm (0.082 in)
C	2.11 mm (0.083 in)
D	2.14 mm (0.084 in)
E	2.17 mm (0.085 in)
F	2.20 mm (0.087 in)
G	2.23 mm (0.088 in)
H	2.26 mm (0.089 in)
J	2.29 mm (0.090 in)
K	2.32 mm (0.091 in)
L	2.35 mm (0.093 in)
M	2.38 mm (0.094 in)
N	2.41 mm (0.095 in)
P	2.44 mm (0.096 in)
Q	2.47 mm (0.097 in)
R	2.50 mm (0.098 in)

S	2.53 mm (0.100 in)
T	2.56 mm (0.101 in)
U	2.59 mm (0.102 in)
V	2.62 mm (0.103 in)
W	2.65 mm (0.104 in)
X	2.68 mm (0.106 in)
Y	2.71 mm (0.107 in)
Z	2.74 mm (0.108 in)
AA	2.77 mm (0.109 in)
AB	2.80 mm (0.110 in)
AC	2.83 mm (0.111 in)
AD	2.86 mm (0.113 in)
AE	2.89 mm (0.114 in)
AF	2.92 mm (0.115 in)
AG	2.95 mm (0.116 in)
AH	2.98 mm (0.117 in)
AJ	3.01 mm (0.119 in)
AK	3.04 mm (0.120 in)
AL	3.07 mm (0.121 in)
AM	3.10 mm (0.122 in)
AN	3.13 mm (0.123 in)
AP	3.16 mm (0.124 in)

8. Replace the 81 mm shim to appropriate one (see **BEARING OUTER RACE REPLACEMENT**).
9. With the appropriate size 81 mm shim installed in the transmission housing, check the initial preload again to verify the preload is within the standard.
10. Reassemble the transmission (see **TRANSMISSION REASSEMBLY**).

COMPONENT LOCATION INDEX

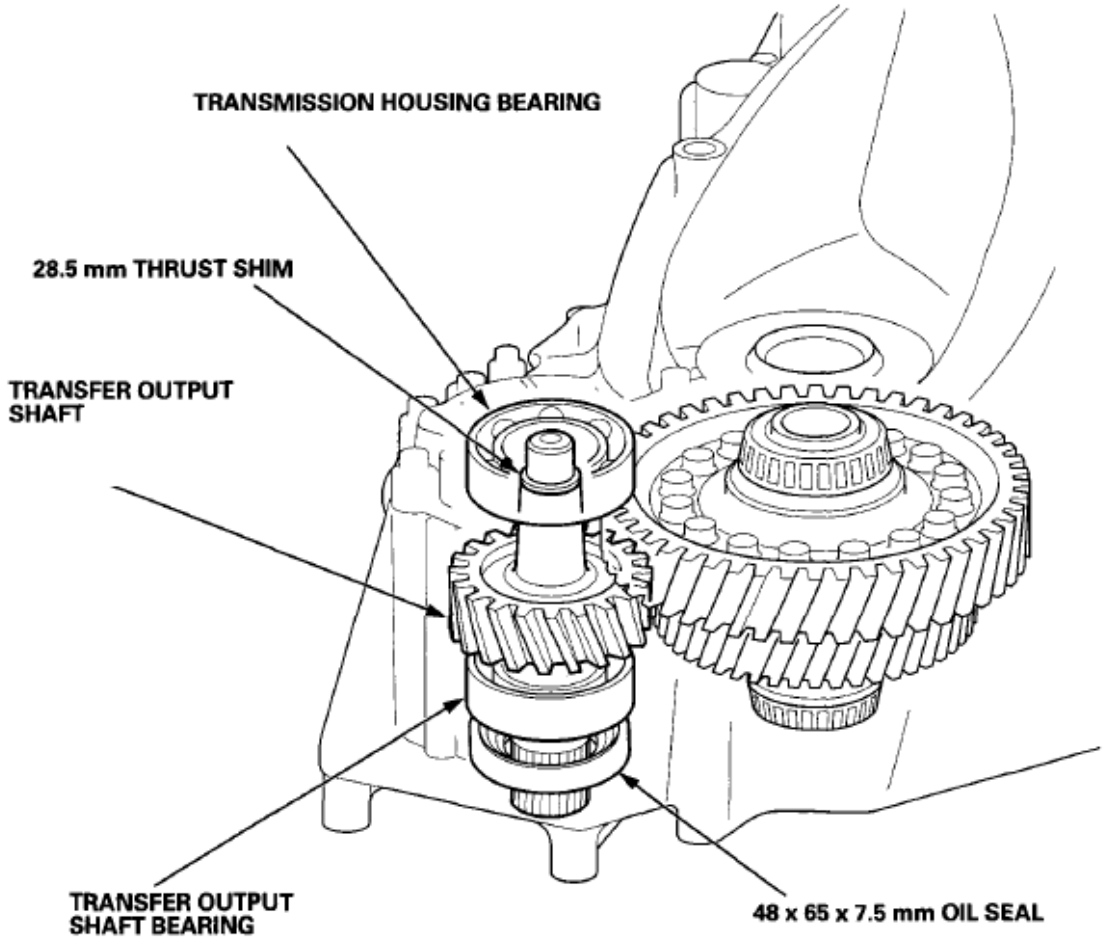


Fig. 278: Identifying Transfer Output Shaft Components Location
Courtesy of AMERICAN HONDA MOTOR CO., INC.

TRANSFER OUTPUT SHAFT BEARING REPLACEMENT

Special Tools Required

Driver Handle, 40 mm I.D. 07746-0030100

1. Remove the transfer output shaft bearing (A) using a commercially available puller (B), a bearing separator (C), and a spacer (D). Place the spacer between the transfer output shaft and the puller to prevent damaging the transfer output shaft.

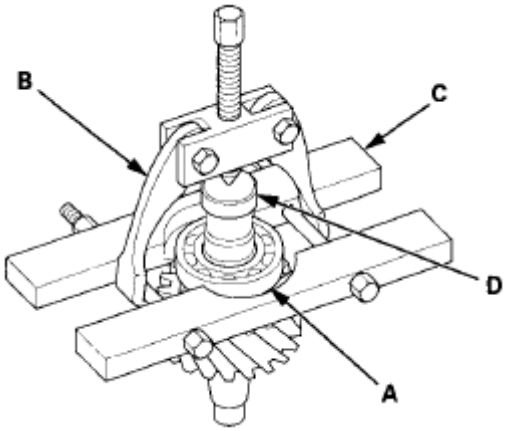


Fig. 279: Removing Transfer Output Shaft Bearing Using Puller, Bearing Separator And Spacer
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Install a new bearing (A) on the transfer output shaft (B) using the 40 mm I.D. driver handle (C) and a press.

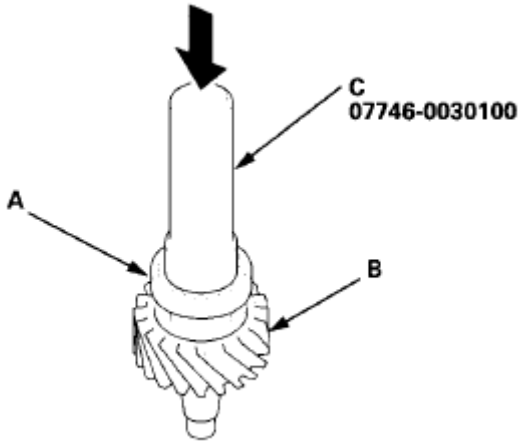


Fig. 280: Installing Bearing On Transfer Output Shaft Using I.D. Driver Handle And Press
Courtesy of AMERICAN HONDA MOTOR CO., INC.

OIL SEAL REPLACEMENT

Special Tools Required

- Driver Handle, 15 x 135L 07749-0010000
- Oil Seal Driver Attachment, 65 mm 07JAD-SH30100

1. Remove the oil seal from the clutch housing.

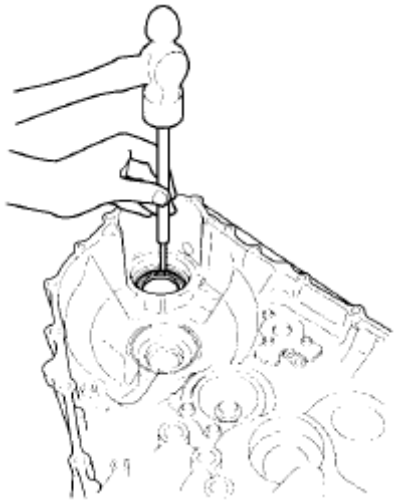


Fig. 281: Removing Oil Seal From Clutch Housing
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Install a new oil seal flush with the clutch housing using the driver handle (A) and the 65 mm oil seal driver attachment (B).

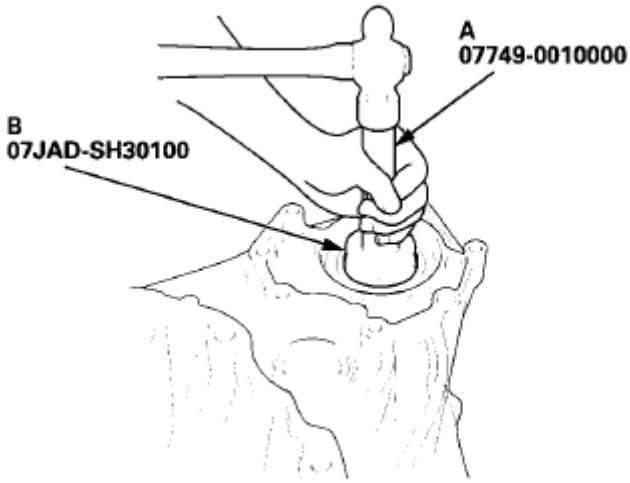


Fig. 282: Installing Oil Seal Flush With Clutch Housing Using Driver Handle And Oil Seal Driver Attachment
Courtesy of AMERICAN HONDA MOTOR CO., INC.

TRANSMISSION HOUSING BEARING REPLACEMENT

Special Tools Required

- Bearing Driver Attachment, 72 x 75 mm 07746-0010600
- Driver Handle, 15 x 135L 07749-0010000

1. Remove the transfer output shaft bearing (A) from the transmission housing (B) by heating the

transmission housing to about 212 °F (100 °C) using a heat gun (C). Do not heat the transmission housing more than 212°F(100°C).

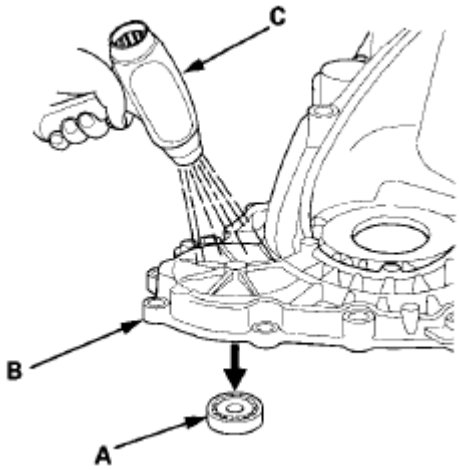


Fig. 283: Removing Transfer Output Shaft Bearing From Transmission Housing By Heating Transmission Housing Using Heat Gun
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Install a new bearing (A) in the transmission housing.

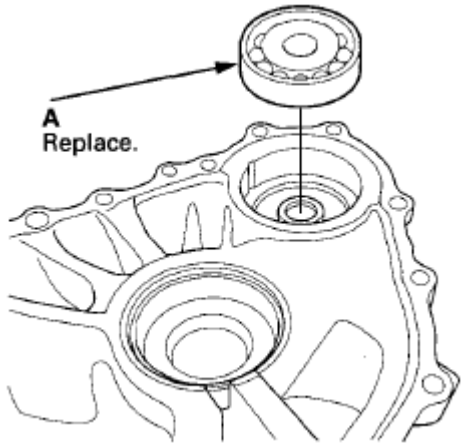


Fig. 284: Identifying Bearing
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Drive a new bearing until it bottoms in the transmission housing using the driver handle (A) and the 72 x 75 mm bearing driver attachment (B).

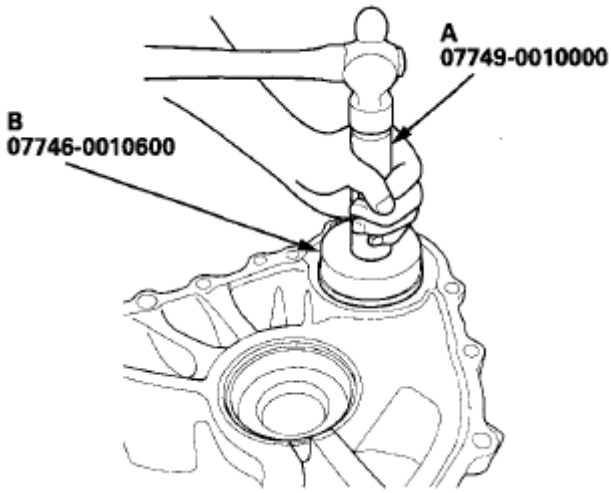


Fig. 285: Driving Bearing In Transmission Housing Using Driver Handle And Bearing Driver Attachment
Courtesy of AMERICAN HONDA MOTOR CO., INC.

TRANSFER OUTPUT SHAFT THRUST CLEARANCE ADJUSTMENT

NOTE: If the transfer output shaft, the transfer output shaft bearing, the transmission housing bearing, the transmission housing, or the clutch housing were replaced, adjust the transfer output shaft thrust clearance with the 28.5 mm thrust shim.

1. Install the transfer output shaft (A) in the clutch housing.

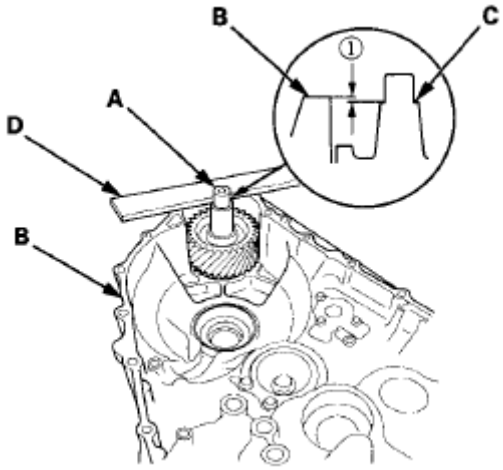


Fig. 286: Measuring Clearance Between Rim Of Clutch Housing And Thrust Shim Contact Area Using Straight Edge And Depth Gauge
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Measure the clearance (1) between the rim of the clutch housing (B) and the 28.5 mm thrust shim contact

area (C) using a straight edge (D) and a depth gauge in at least three places. Use the average as the actual clearance.

3. Measure the clearance (2) between the transmission housing bearing (A) and the rim of the transmission housing (B) using a straight edge (C) and a feeler gauge (D) in at least three places. Use the average as the actual clearance.

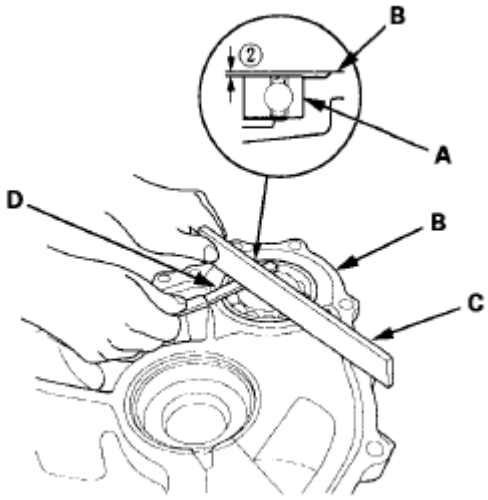


Fig. 287: Measuring Clearance Between Transmission Housing Bearing And Rim Of Transmission Housing Using Straight Edge And Feeler Gauge
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. To make the standard clearance, select a 28.5 mm thrust shim from the table; subtract the middle of the standard clearance from the sum of (1) and (2).

Standard Clearance:

0.08- 0.17 mm (0.003- 0.006 in)

Basic Formula

(1) + (2) - 0.13* = Shim thickness

Therefore, select a closest size shim from the table.

*: Middle of the standard clearance.

For Example

(1): 1.47 mm (0.058 in)

(2): 0.58 mm (0.023 in)

1.47 + 0.58- 0.13 = 1.92

Select the type F (1.92 mm (0.0756 in)) shim.

THRUST SHIM, 28.5 MM

Type	Thickness
A	1.82 mm (0.0717 in)
B	1.84 mm (0.0724 in)
C	1.86 mm (0.0732 in)
D	1.88 mm (0.0740 in)
E	1.90 mm (0.0748 in)
F	1.92 mm (0.0756 in)
G	1.94 mm (0.0764 in)
H	1.96 mm (0.0772 in)
I	1.98 mm (0.0780 in)
J	2.00 mm (0.0787 in)
K	2.02 mm (0.0795 in)
L	2.04 mm (0.0803 in)
M	2.06 mm (0.0811 in)
N	2.08 mm (0.0819 in)
O	2.10 mm (0.0827 in)
P	2.12 mm (0.0835 in)
Q	2.14 mm (0.0843 in)
R	2.16 mm (0.0850 in)
S	2.18 mm (0.0858 in)
T	2.20 mm (0.0866 in)
U	2.22 mm (0.0874 in)
V	2.24 mm (0.0882 in)
W	2.26 mm (0.0890 in)
X	2.28 mm (0.0898 in)
Y	2.30 mm (0.0906 in)
Z	2.32 mm (0.0913 in)
AA	2.34 mm (0.0921 in)

COMPONENT LOCATION INDEX

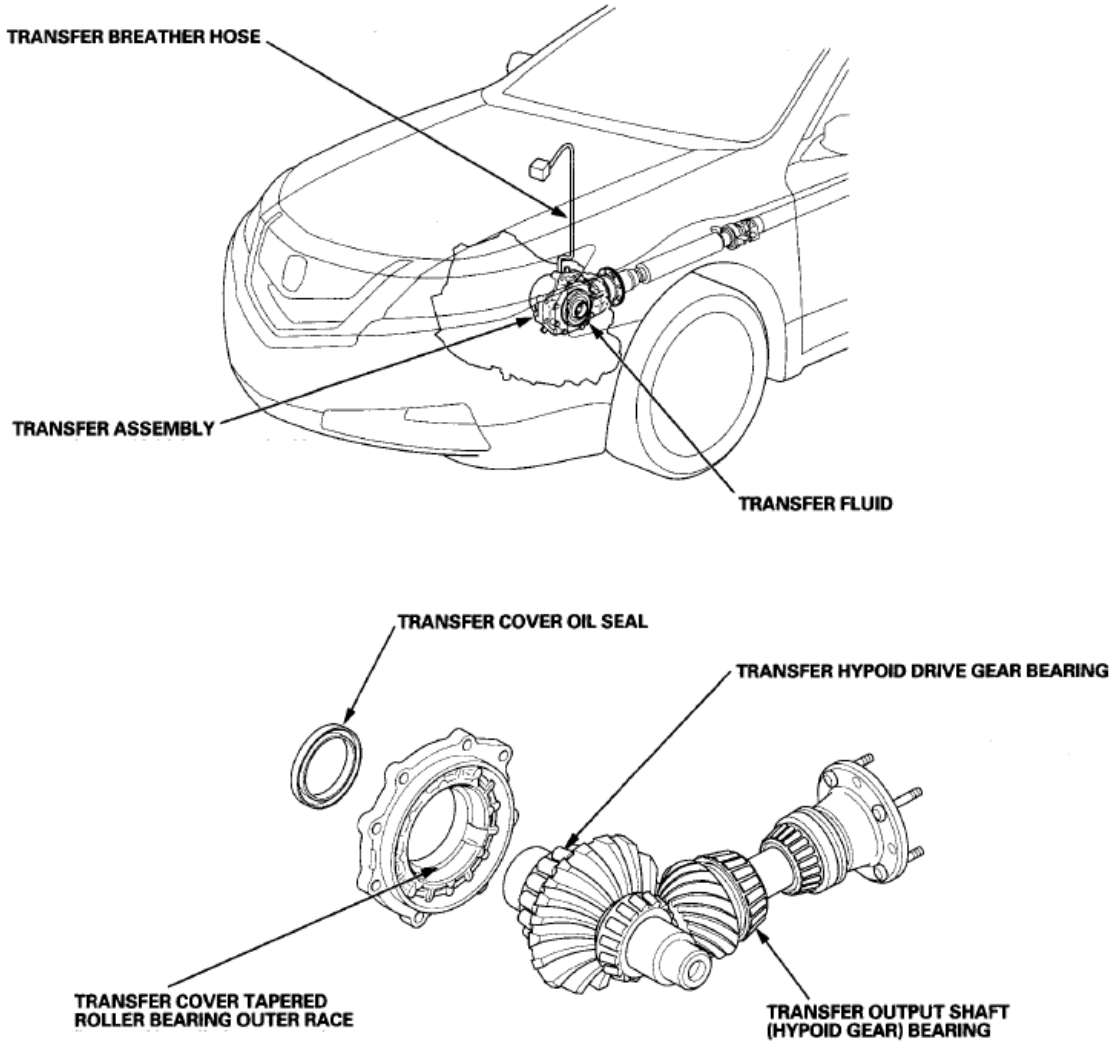


Fig. 288: Identifying Transfer Assembly Components Location
Courtesy of AMERICAN HONDA MOTOR CO., INC.

TRANSFER ASSEMBLY INSPECTION ON VEHICLE

1. Raise the vehicle on a lift, and make sure it is supported securely.
2. Shift the transmission into neutral.
3. Make reference mark (A) across the No. 1 propeller shaft (B) and the transfer companion flange (C).

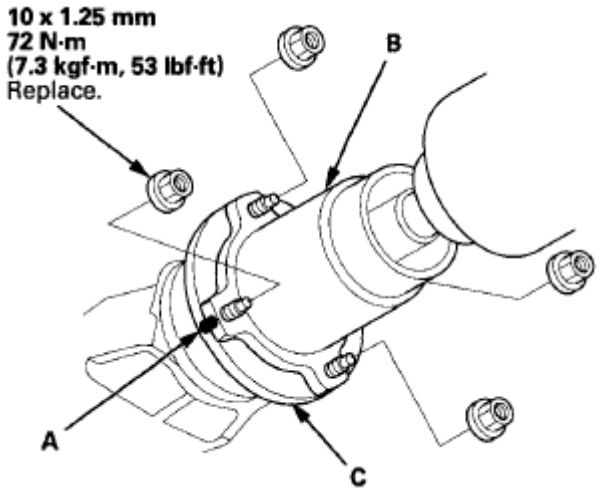


Fig. 289: Identifying Reference Mark, Propeller Shaft And Transfer Companion Flange With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Separate the No. 1 propeller shaft from the transfer companion flange.
5. Set a dial indicator (A) on the transfer companion flange (B); position the dial indicator tip (C) on the top of the bolt (D).

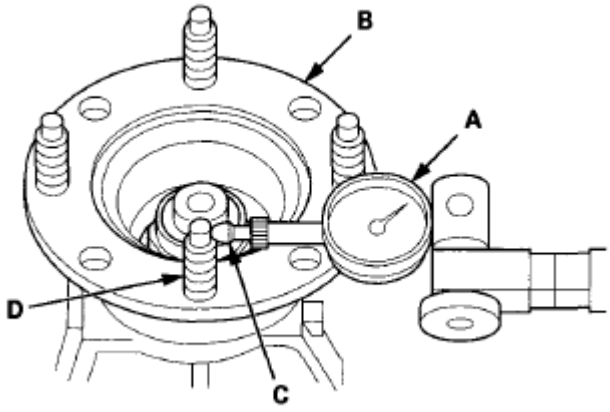


Fig. 290: Setting Dial Indicator On Transfer Companion Flange With Dial Indicator Tip On Top Of Bolt
Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Measure the transfer gear backlash.

   Standard: 0.06- 0.16 mm (0.0024- 0.0063 in)

7. If the backlash is out of the standard, remove and disassemble the transfer assembly, and adjust the transfer gear backlash (see **TRANSFER ASSEMBLY REASSEMBLY**).
8. Check for fluid leaks between the mating surfaces of the transfer assembly and the transmission.
9. If there is a leak, remove the transfer assembly, remove the transfer cover, and replace the O-ring.

10. Check for fluid leaks between the transfer companion flange and the transfer oil seal.
11. If there is a leak, remove the transfer assembly from the transmission, and replace the transfer oil seal and the O-ring on the transfer output shaft (hypoid gear). If an oil seal and O-ring replacement is required, you will need to check and adjust the transfer gear tooth contact, the transfer gear backlash, the tapered roller bearing starting torque, and the total starting torque (see **TRANSFER ASSEMBLY REASSEMBLY**). Do not replace the oil seal with the transfer assembly on the transmission.

TRANSFER ASSEMBLY FLUID INSPECTION AND REPLACEMENT

1. Raise the vehicle on a lift, and make sure it is supported securely.
2. Remove the filler plug (A) and the sealing washer (B), check the condition of the transfer fluid, and make sure it is at the proper level (C).

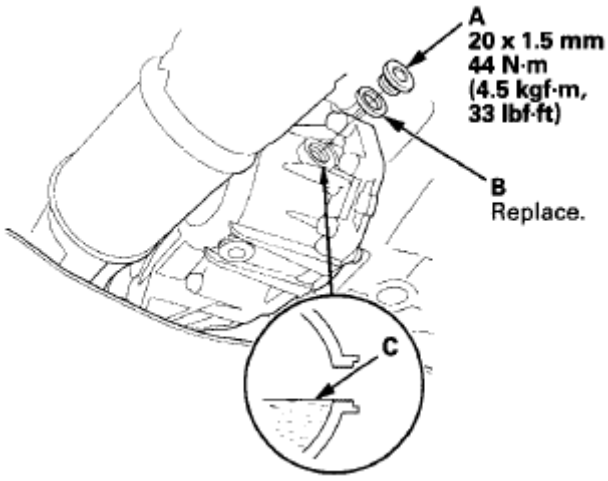


Fig. 291: Identifying Filler Plug, Sealing Washer And Proper Level Of Transfer Fluid With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. If the transfer fluid is dirty, remove the drain plug (A) and the sealing washer (B), drain the transfer fluid.

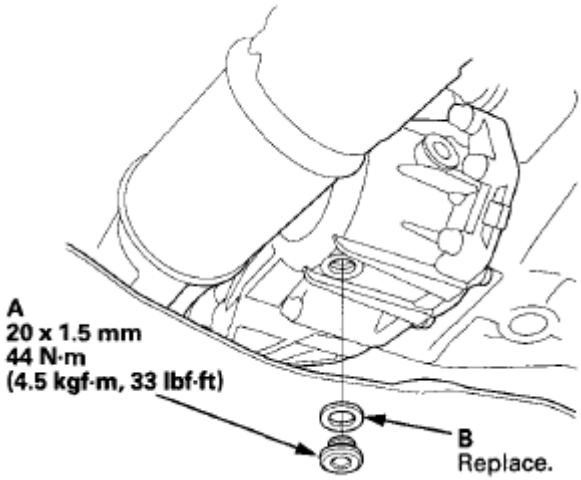


Fig. 292: Identifying Sealing Washer And Drain Plug With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Refill the transfer assembly with the recommended fluid (hypoid gear oil) through the filler plug hole until the fluid flows out. Use an SAE 90 viscosity hypoid gear oil, API classified GL4 or GL5 only.

   Viscosity:

   SAE 90: Above 0°F (- 18 °C)

   Transfer Fluid (Hypoid Gear Oil) Capacity:

   0.43 L (0.45 US qt) at fluid change

   0.45 L (0.48 US qt) at overhaul

5. Install the filler plug with a new sealing washer.

TRANSFER ASSEMBLY REMOVAL

1. Raise the vehicle on a lift, and make sure it is supported securely.
2. Shift the transmission into neutral.
3. Remove the drain plug (A), and drain the MTF.

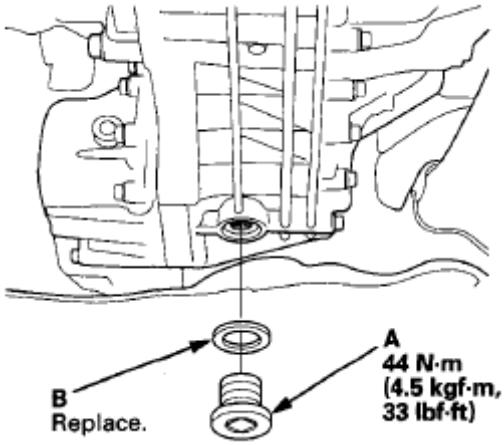


Fig. 293: Identifying Sealing Washer And Drain Plug With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Reinstall the drain plug with a new sealing washer (B).
5. Remove exhaust pipe A (see **J37A4 ENGINE (WITH SH-AWD)**).
6. Remove the bolt securing the transfer breather hose bracket (A), and disconnect the breather hose (B) from the breather pipe (C) on the transfer assembly.

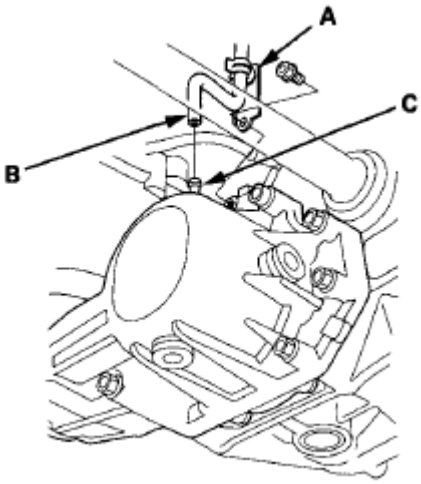


Fig. 294: Identifying Breather Hose Bracket, Breather Hose And Breather Pipe
Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Make reference mark (A) across the No. 1 propeller shaft (B) and the transfer companion flange (C).

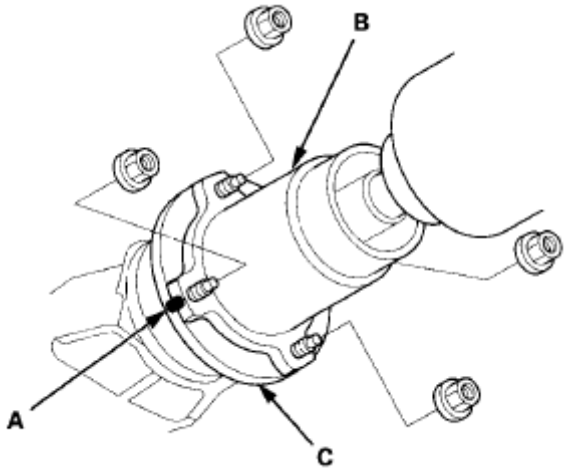


Fig. 295: Identifying Reference Mark, Propeller Shaft And Transfer Companion Flange
Courtesy of AMERICAN HONDA MOTOR CO., INC.

8. Separate the No. 1 propeller shaft from the transfer companion flange.
9. Remove the transfer assembly (A) and the dowel pin (B) from the transmission.

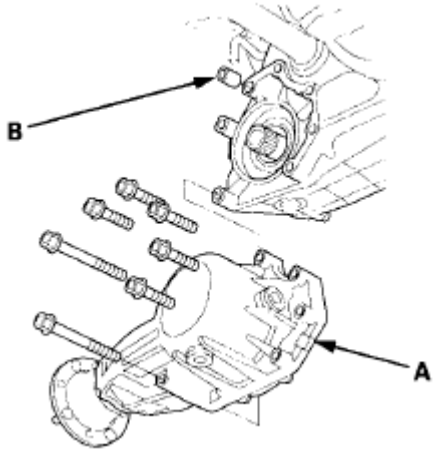


Fig. 296: Identifying Transfer Assembly And Dowel Pin
Courtesy of AMERICAN HONDA MOTOR CO., INC.

TRANSFER ASSEMBLY INSTALLATION

1. Clean the areas where the transfer assembly contacts the transmission with solvent, and dry with compressed air.
2. Install the dowel pin (A) in the transmission, and install the transfer assembly (B) on the transmission.

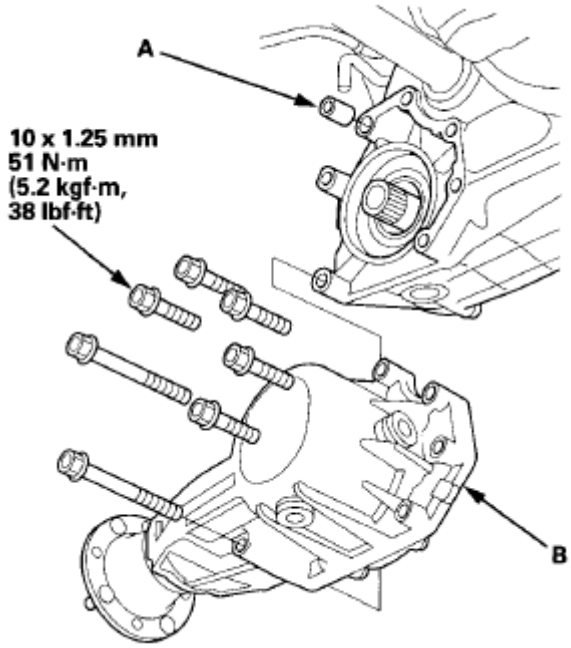


Fig. 297: Identifying Dowel Pin And Transfer Assembly With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Install the No. 1 propeller shaft (A) to the transfer companion flange (B) by aligning the reference mark (C) you made.

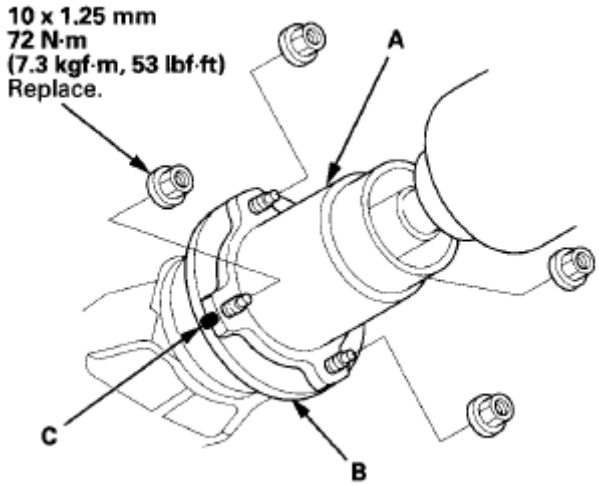


Fig. 298: Identifying Propeller Shaft, Companion Flange And Reference Mark With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Secure the transfer breather hose bracket (A) on the transfer assembly with the bolt, and install the breather hose (B) over the breather pipe (C) with facing the dot mark (D) to the rear side of the vehicle.

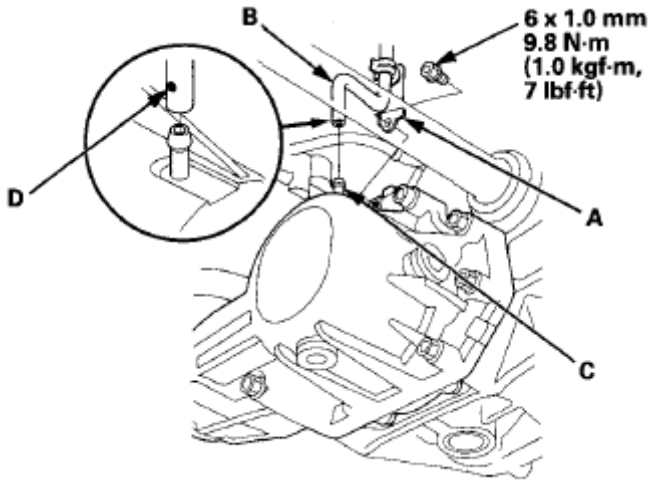


Fig. 299: Identifying Breather Hose Bracket, Breather Hose, Breather Pipe And Dot Mark With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Install exhaust pipe A (see **J37A4 ENGINE (WITH SH-AWD)**).
6. Check the fluid level, and refill the transfer assembly with transfer fluid (hypoid gear oil), if necessary (see **TRANSFER ASSEMBLY FLUID INSPECTION AND REPLACEMENT**).
7. Refill the transmission with MTF (see **TRANSMISSION FLUID INSPECTION AND REPLACEMENT**).
8. Test-drive the vehicle.

TRANSFER BREATHER HOSE REPLACEMENT

1. Raise the vehicle on a lift, and make sure it is supported securely.
2. Remove the transfer breather box (A) from its bracket (B).

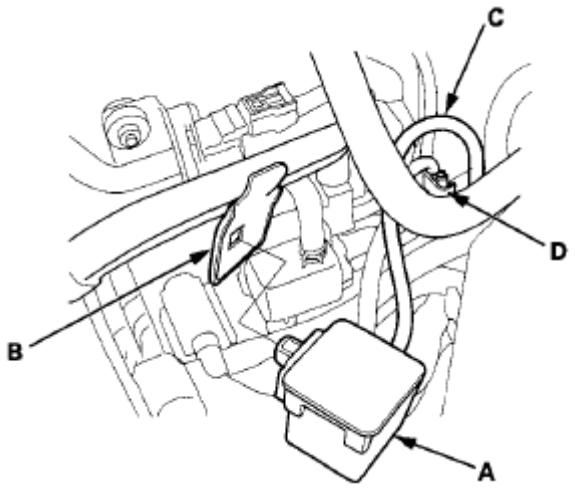


Fig. 300: Identifying Breather Box, Bracket, Breather Hose And Hose Clamp
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Remove the breather hose (C) from the hose clamp (D).
4. Remove the breather hose (A) from the hose clamp (B).

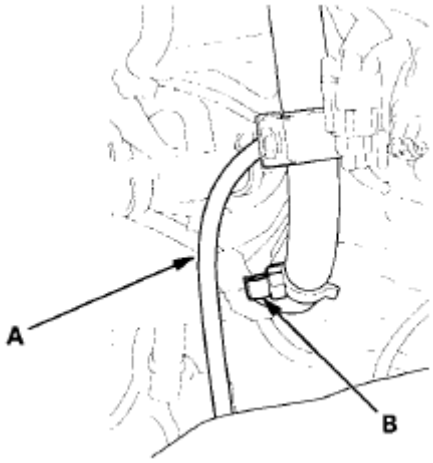


Fig. 301: Identifying Breather Hose And Hose Clamp
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Disconnect the breather hose (A) from the transfer breather pipe (B), and remove the breather hose from the hose clamp (C).

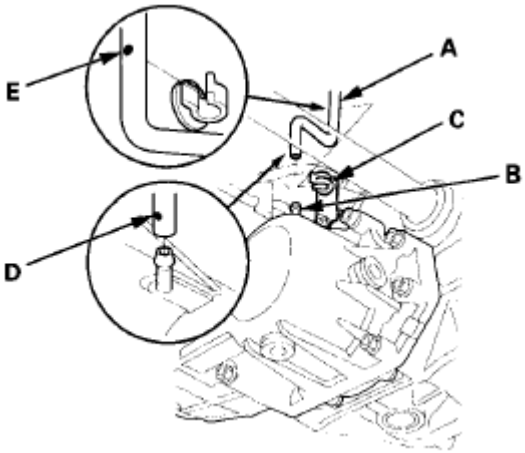


Fig. 302: Identifying Breather Hose, Breather Pipe, Hose Clamp And Dot Marks
Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Connect the breather hose over the breather pipe with facing the dot mark (D) to the rear side of the vehicle, and install the hose on the hose clamp at the dot mark (E).
7. Install the breather hose (A) on the hose clamp (B).

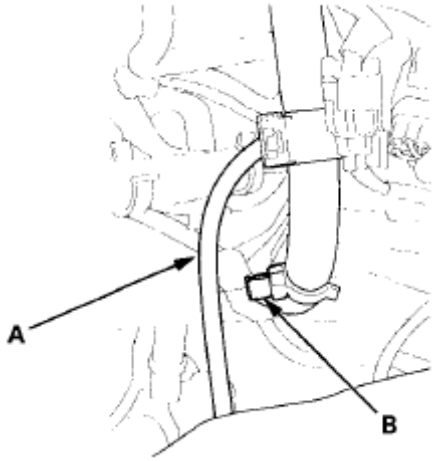


Fig. 303: Identifying Breather Hose And Hose Clamp
Courtesy of AMERICAN HONDA MOTOR CO., INC.

8. Install the transfer breather box (A) on its bracket (B).

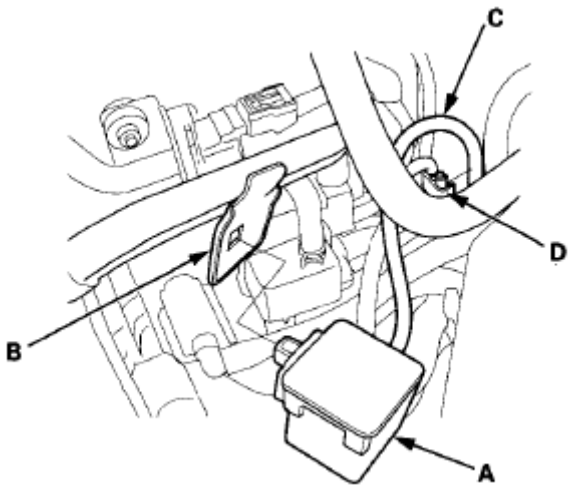


Fig. 304: Identifying Breather Box, Bracket, Breather Hose And Hose Clamp
Courtesy of AMERICAN HONDA MOTOR CO., INC.

9. Install the breather hose (C) on the hose clamp (D).

TRANSFER ASSEMBLY INSPECTION

NOTE: To prevent damaging the transfer housing, always use soft jaws or equivalent materials between the transfer housing and a bench vise.

Transfer Gear Backlash Measurement

1. Set a dial indicator (A) on the transfer companion flange (B); position the dial indicator tip (C) on the top of the bolt (D).

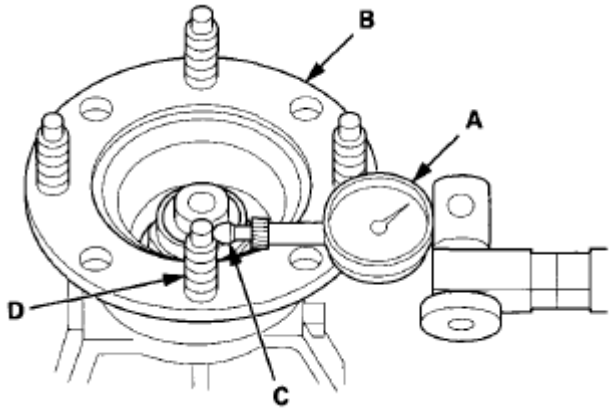


Fig. 305: Setting Dial Indicator On Transfer Companion Flange With Dial Indicator Tip On Top Of Bolt
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Measure the transfer gear backlash.

   Standard: 0.06- 0.16 mm (0.0024- 0.0063 in)

   Total Starting Torque Measurement

3. Secure the transfer housing (A) in a bench vise (B) with soft jaws.

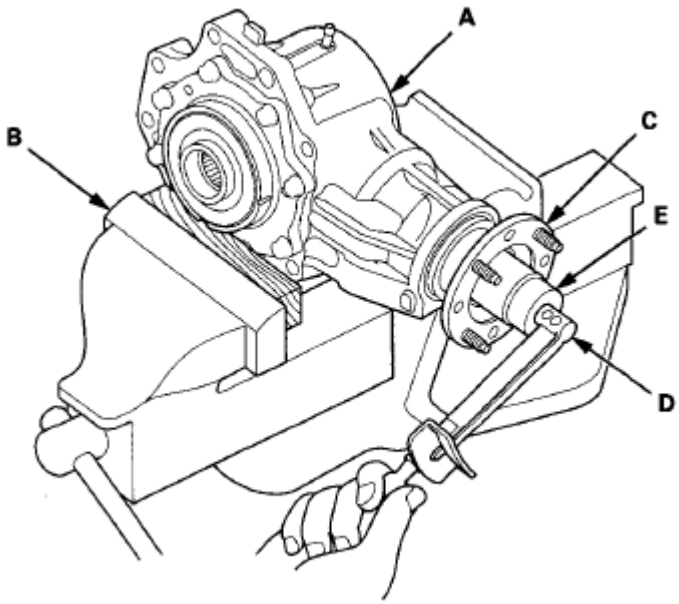


Fig. 306: Securing Transfer Housing In Bench Vise With Soft Jaws And Measuring Starting Torque At Companion Flange Using Torque Wrench And Socket
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Rotate the transfer companion flange several times to seat the tapered roller bearings.

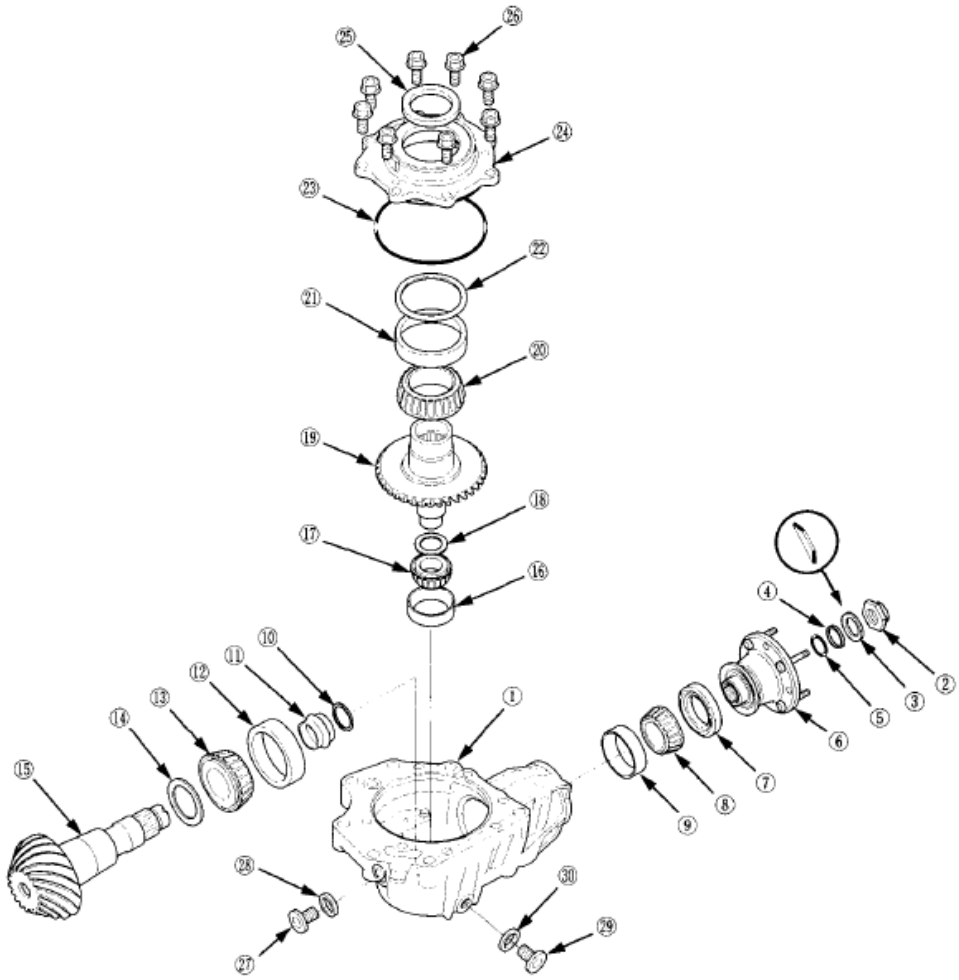
5. Measure the starting torque at the companion flange (C) using a torque wrench (D) and a socket (E).

   Standard: 2.64- 4.23 N.m (26.9-43.1 kgf.cm, 23.3-37.4 lbf.in)

6. If the measurements are out of the standard, disassemble the transfer assembly, and repair it.

TRANSFER ASSEMBLY DISASSEMBLY

EXPLODED VIEW



① TRANSFER HOUSING
② 27 mm LOCKNUT
Replace.
③ CONICAL SPRING WASHER
Replace.
④ BACK-UP RING
⑤ O-RING
Replace.
⑥ COMPANION FLANGE
⑦ 42 x 67 x 9 mm OIL SEAL
Replace.
⑧ 65 mm TAPERED ROLLER BEARING
⑨ 65 mm BEARING OUTER RACE
⑩ 32.1 x 37 x 1 mm THRUST WASHER
⑪ TRANSFER SPACER
Replace.
⑫ 75 mm BEARING OUTER RACE
⑬ TRANSFER OUTPUT SHAFT (HYPOID GEAR) BEARING
⑭ 40 mm THRUST SHIM
⑮ TRANSFER OUTPUT SHAFT (HYPOID GEAR)
⑯ 52 mm BEARING OUTER RACE
⑰ 52 mm TAPERED ROLLER BEARING
⑱ 25 mm THRUST SHIM
⑲ TRANSFER HYPOID DRIVE GEAR/SHAFT ASSEMBLY
⑳ TRANSFER HYPOID GEAR BEARING
㉑ 80 mm BEARING OUTER RACE
㉒ 80 mm THRUST SHIM
㉓ O-RING
Replace.
㉔ TRANSFER COVER
㉕ 48 x 67 x 7.5 mm OIL SEAL
Replace.
㉖ 8 mm FLANGE BOLT
26 N·m (2.7 kgf·m, 20 lbf·ft)
㉗ FILLER PULG
44 N·m (4.5 kgf·m, 33 lbf·ft)
㉘ 20 mm SEALING WASHER
Replace.
㉙ DRAIN PLUG
44 N·m (4.5 kgf·m, 33 lbf·ft)
㉚ 20 mm SEALING WASHER
Replace.

Fig. 307: Exploded View Of Transfer Assembly With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Special Tools Required

Flange Holder 07XAB-0010101

NOTE: To prevent damaging the transfer housing, always use soft jaws or equivalent materials between the transfer housing and a bench vise.

1. Remove the transfer cover (A) from the transfer housing (B).

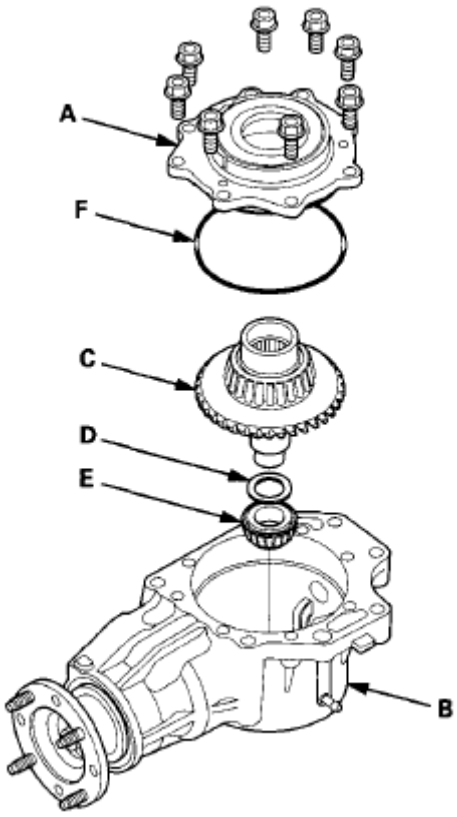


Fig. 308: Identifying Transfer Cover, Housing, Hypoid Drive Gear/Shaft Assembly, Thrust Shim, Tapered Roller Bearing And O-Ring
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Remove the transfer hypoid drive gear/shaft assembly (C), the 25 mm thrust shim (D), and the tapered roller bearing (E).
3. Remove the O-ring (F) from the transfer cover.
4. Remove the oil seal from the transfer cover (see **TRANSFER COVER OIL SEAL REPLACEMENT**).
5. Drain the transfer fluid (hypoid gear oil) from the transfer housing (see **TRANSFER ASSEMBLY FLUID INSPECTION AND REPLACEMENT**).
6. Cut the stake on the locknut using a chisel.

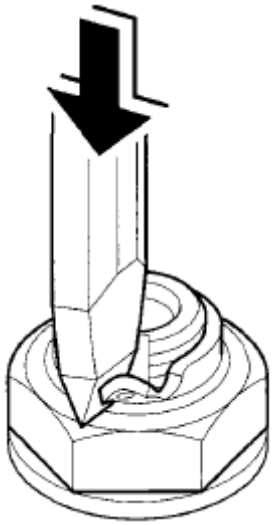


Fig. 309: Cutting Stake On Locknut Using Chisel
Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Secure the transfer housing in a bench vise with soft jaws.

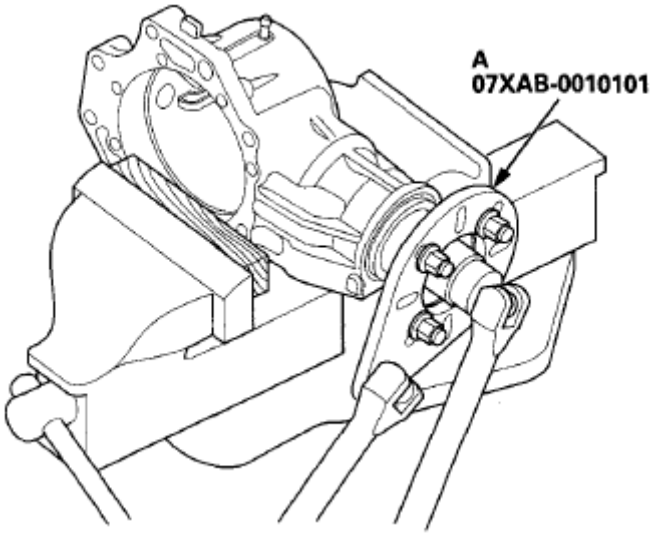


Fig. 310: Securing Transfer Housing In Bench Vise With Soft Jaws
Courtesy of AMERICAN HONDA MOTOR CO., INC.

8. Install the flange holder (A) on the companion flange, then loosen the locknut.
9. Remove the flange holder.
10. Remove the locknut (A), the conical spring washer (B), the back-up ring (C), the O-ring (D), and the companion flange (E) from the transfer output shaft (hypoid gear) (F).

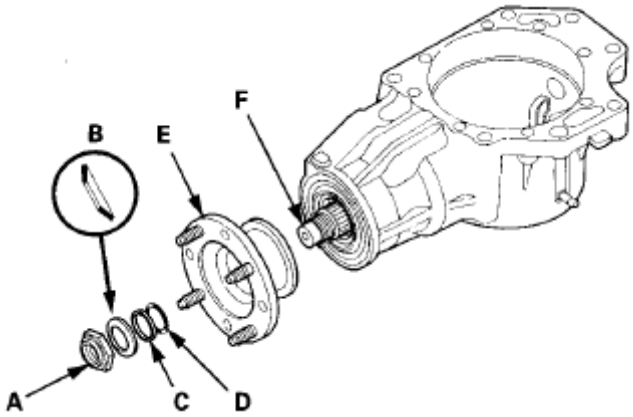


Fig. 311: Identifying Locknut, Conical Spring Washer, Back-Up Ring, O-Ring, Companion Flange And Output Shaft
Courtesy of AMERICAN HONDA MOTOR CO., INC.

11. Remove the transfer output shaft (hypoid gear) (A) from the transfer housing (B), then remove the thrust washer (C) and the transfer spacer (D) from the transfer output shaft (hypoid gear).

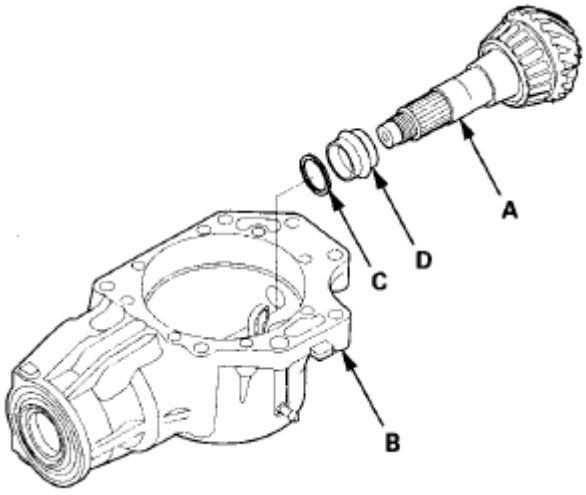


Fig. 312: Identifying Output Shaft (Hypoid Gear), Transfer Housing, Thrust Washer And Transfer Spacer
Courtesy of AMERICAN HONDA MOTOR CO., INC.

12. Remove the oil seal (A) and the tapered roller bearing (B) from the transfer housing.

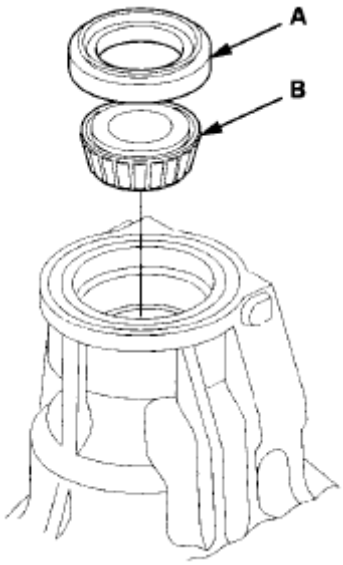


Fig. 313: Identifying Oil Seal And Tapered Roller Bearing
Courtesy of AMERICAN HONDA MOTOR CO., INC.

TRANSFER HYPOID DRIVE GEAR BEARING REPLACEMENT

Special Tools Required

- Bearing Driver Attachment, 42x47 mm 07746-0010300
- Driver Handle, 15 x 135L 07749-0010000
- Installer Attachment 40 mm 07LAD-PW50601

1. Remove the tapered roller bearing (A) from the transfer hypoid drive gear (B) using the 15 x 135L driver handle (C), the 42 x 47 mm bearing driver attachment (D), a bearing separator (E), and a press.

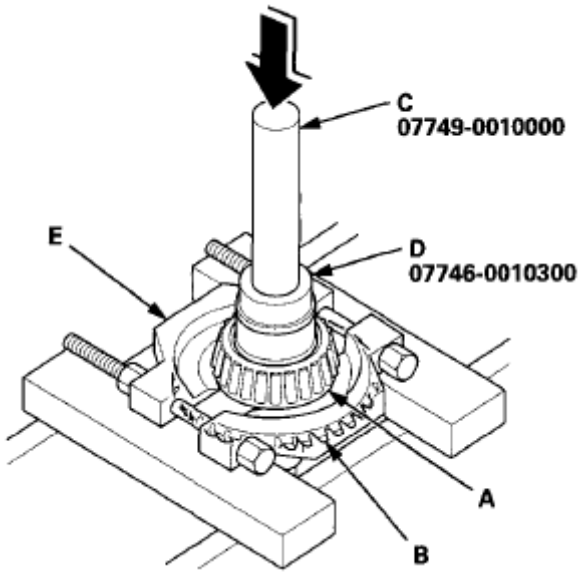


Fig. 314: Removing Tapered Roller Bearing From Transfer Hypoid Drive Gear Using Driver Handle, Bearing Driver Attachment, Bearing Separator And Press
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Install a new bearing on the transfer hypoid drive gear using the 15 x 135L driver handle (A), the 40 mm installer attachment (B), 42 x 47 mm bearing driver attachment (C), and a press.

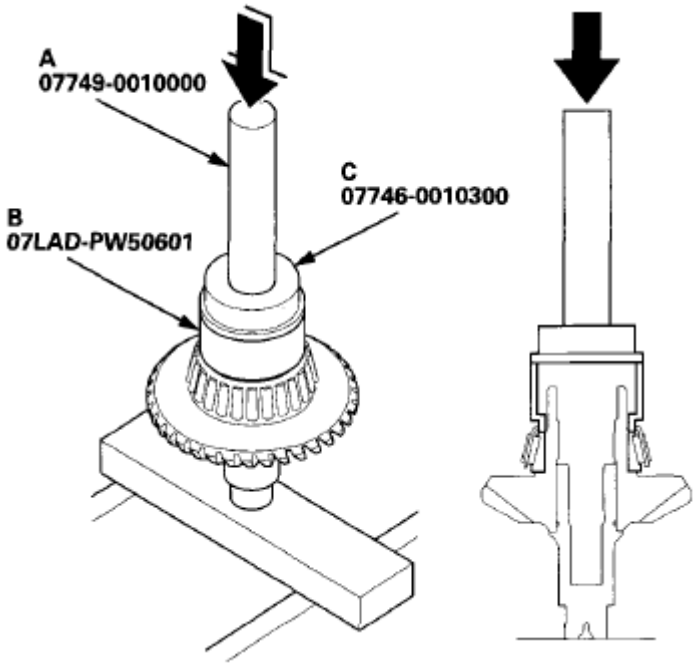


Fig. 315: Installing Bearing On Transfer Hypoid Drive Gear Using Driver Handle, Installer Attachment, Bearing Driver Attachment And Press
Courtesy of AMERICAN HONDA MOTOR CO., INC.

TRANSFER OUTPUT SHAFT (HYPOID GEAR) BEARING REMOVAL/INSTALLATION

Special Tools Required

Driver Handle, 40 mm I.D. 07746-0030100

1. Remove the tapered roller bearing (A) from the transfer output shaft (hypoid gear) (B) using a bearing separator (C) and a press. Place a spacer (D) between the transfer output shaft and a press to prevent damaging the transfer output shaft.

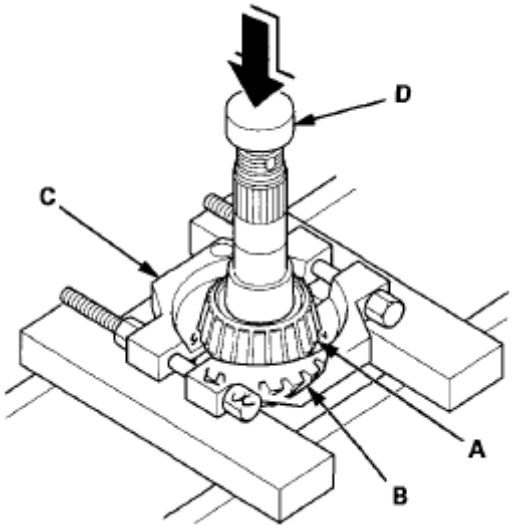


Fig. 316: Removing Tapered Roller Bearing From Transfer Output Shaft By Placing Spacer And Using Bearing Separator And Press
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Install the 40 mm thrust shim (A) over the transfer output shaft (hypoid gear).

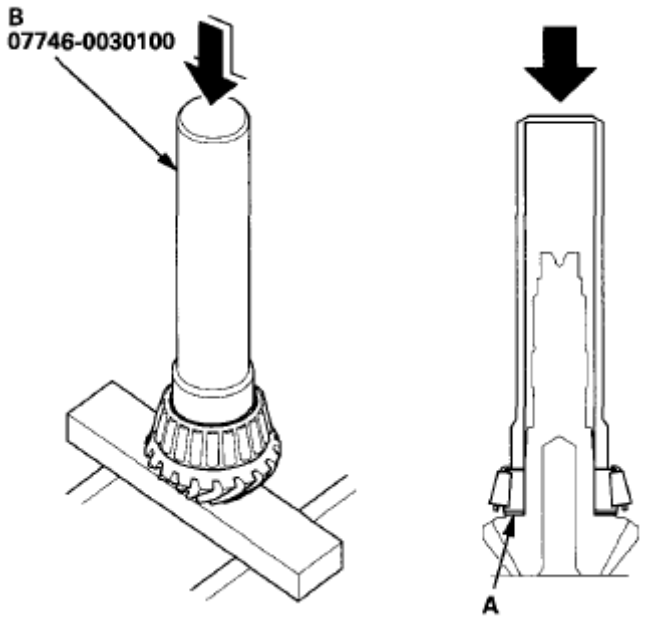


Fig. 317: Installing Thrust Shim Over Transfer Output Shaft (Hypoid Gear) Using I.D. Driver Handle
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Install the tapered roller bearing over the transfer output shaft (hypoid gear) using the 40 mm I.D. driver handle (B) and a press.

TRANSFER HOUSING TAPERED ROLLER BEARING OUTER RACE REPLACEMENT

Special Tools Required

- Bearing Driver Attachment, 52 x 55 mm 07746-0010400
- Driver Handle, 15 x 135L 07749-0010000
- Oil Seal Driver Attachment, 65 mm 07JAD-SH30100
- Tapered Bearing Race Installer A 07MAF-SP0011A
- Installer Shaft 07MAF-SP0013A

NOTE: Replace the bearing outer race whenever the tapered roller bearing is replaced.

1. Remove the 52 mm bearing outer race (A), the 75 mm bearing outer race (B), and the 65 mm bearing outer race (C) from the transfer housing (D).

NOTE: Some bearing outer races (52 mm, 65 mm, and 75 mm) are press-fitted in the transfer housing and must be removed by heating the transfer housing.

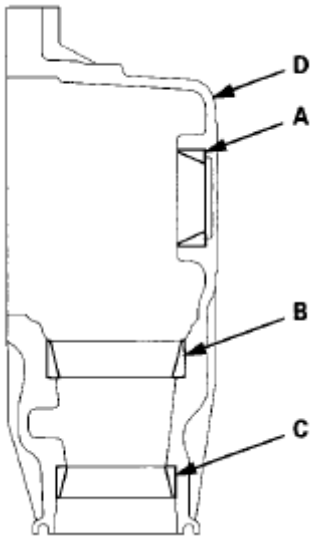


Fig. 318: Identifying Bearing Outer Races And Transfer Housing
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Remove the press-fitted bearing outer races (A) from the transfer housing (B) by heating the transfer housing to about 212 °F (100 °C) using a heat gun (C). Do not heat the transfer housing more than 212 °F (100 °C).

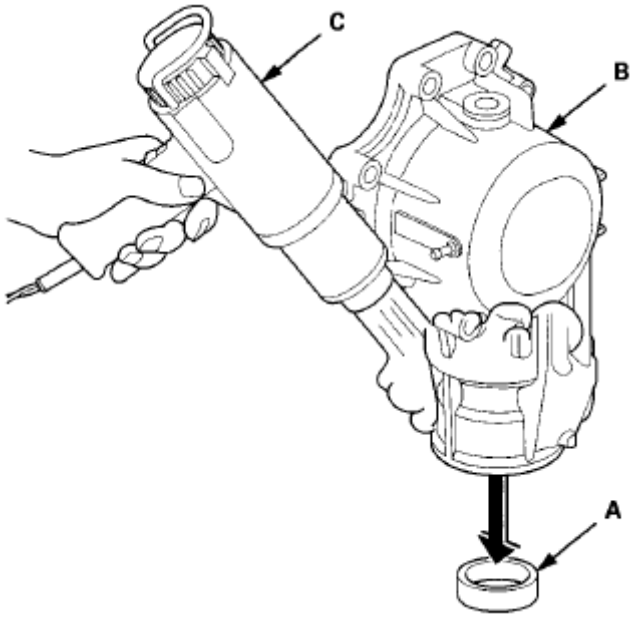


Fig. 319: Removing Press-Fitted Bearing Outer Races From Transfer Housing By Heating Transfer Housing Using Heat Gun
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Install a new 52 mm bearing outer race (A) until it bottoms in the transfer housing (B) using the 15 x 135L driver handle (C) and the 52 x 55 mm bearing driver attachment (D).

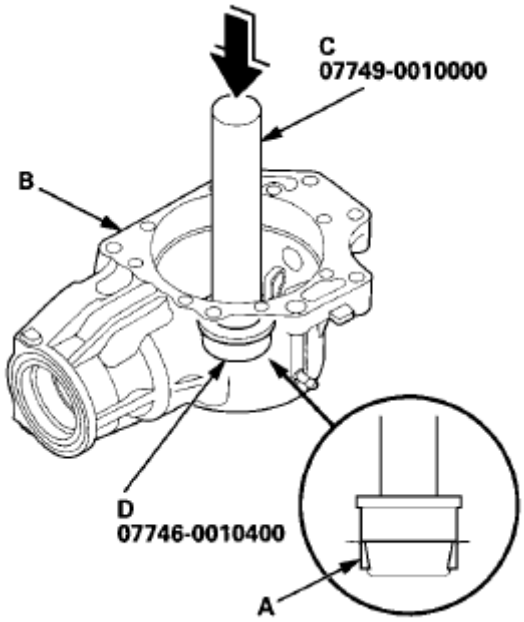


Fig. 320: Installing Bearing Outer Race In Transfer Housing Using Driver Handle And Bearing Driver Attachment
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Install a new 75 mm bearing outer race (A) and a new 65 mm bearing outer race (B) in the transfer housing (C), set the 65 mm oil seal driver attachment (D) and tapered bearing race installer A (E) over the bearing outer races, and install the installer shaft (F) through the 65 mm oil seal driver attachment (G) and installer.

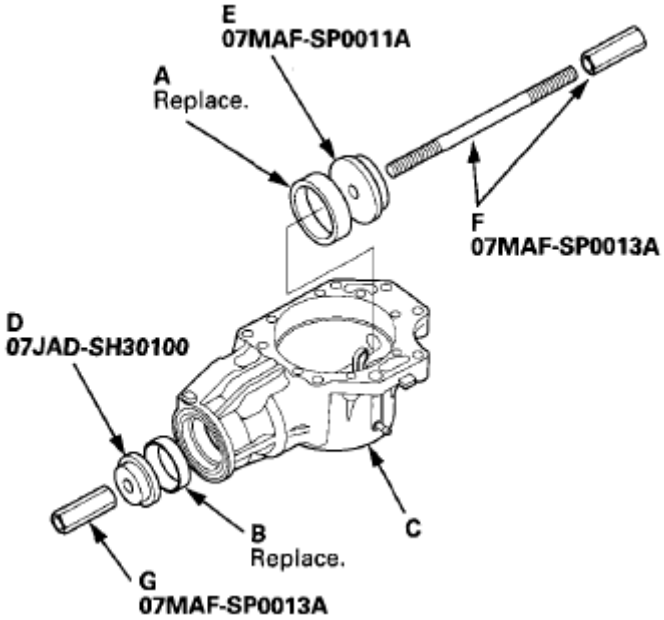


Fig. 321: Identifying Bearing Outer Races, Oil Seal Driver Attachment, Installer Shaft And Tapered Bearing Race Installer

Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Tighten the installer shaft nut (A) to install the bearing outer races (B) into the transfer housing (C) securely.

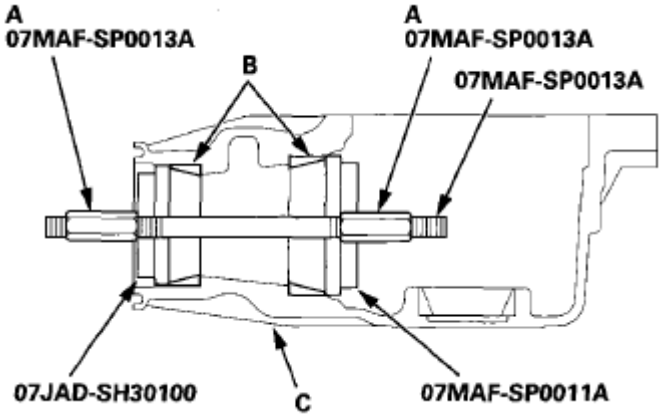


Fig. 322: Identifying Transfer Housing, Bearing Outer Races And Nut
Courtesy of AMERICAN HONDA MOTOR CO., INC.

TRANSFER COVER TAPERED ROLLER BEARING OUTER RACE REMOVAL/INSTALLATION

Special Tools Required

- Driver Handle, 15 x 135L 07749-0010000
- Bearing Driver Attachment, 78 x 80 mm 07NAD-PX40100

NOTE: Replace the bearing outer race whenever the tapered roller bearing is replaced.

1. Remove the 80 mm bearing outer race (A) and the 80 mm thrust shim (B) from the transfer cover (C). If the bearing outer race is press-fitted, remove the bearing outer race by heating the transfer cover to about 212 °F (100 °C) using a heat gun (D). Do not heat the transfer cover more than 212 °F (100 °C).

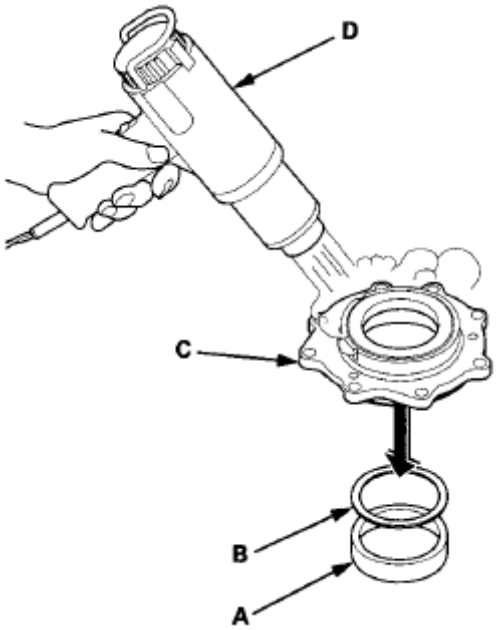


Fig. 323: Removing Bearing Outer Race And Thrust Shim From Transfer Cover By Heating Transfer Cover Using Heat Gun
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Install the 80 mm thrust shim (A) and the 80 mm bearing outer race (B) in the transfer cover (C).

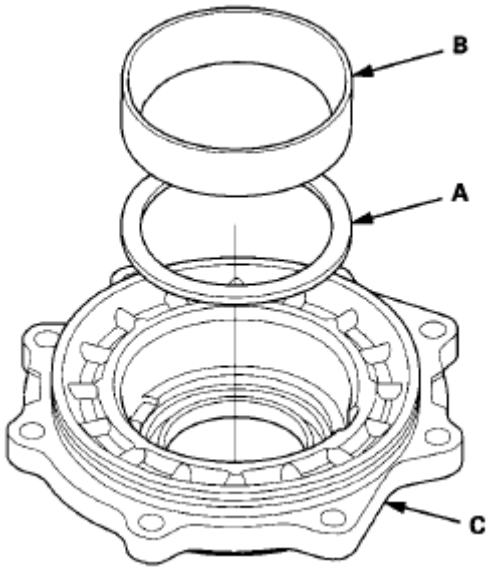


Fig. 324: Identifying Thrust Shim, Bearing Outer Race And Transfer Cover
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Drive the 80 mm bearing outer race securely in the transfer cover using the driver handle (A) and the 78 x 80 mm bearing driver attachment (B) so there is no clearance between the bearing outer race, the 80 mm thrust shim, and the transfer cover.

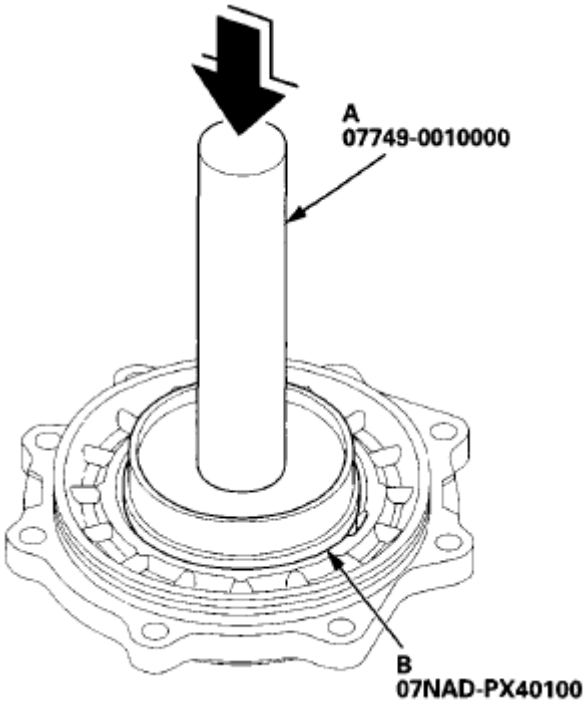


Fig. 325: Driving Bearing Outer Race In Transfer Cover Using Driver Handle And Bearing Driver Attachment
Courtesy of AMERICAN HONDA MOTOR CO., INC.

TRANSFER COVER OIL SEAL REPLACEMENT

Special Tools Required

- Driver Handle, 15 x 135L 07749-0010000
- Oil Seal Driver Attachment, 65 mm 07JAD-SH30100

1. Remove the oil seal (A) from the transfer cover (B).

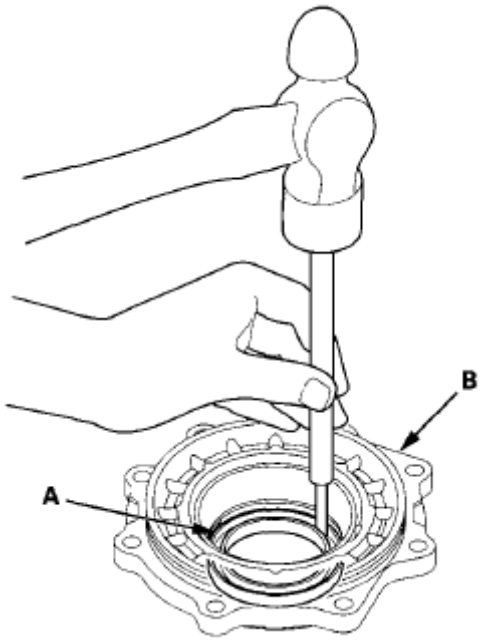


Fig. 326: Removing Oil Seal From Transfer Cover
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Install a new oil seal (A) in the transfer cover (B) to a height (C) of 0- 1 mm (0- 0.04 in) above the transfer cover surface using the driver handle (D) and the 65 mm oil seal driver attachment (E).

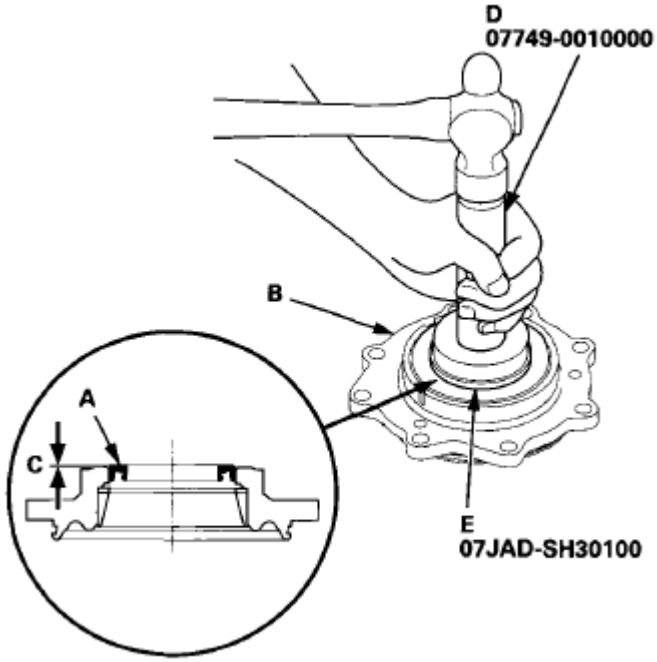


Fig. 327: Installing Oil Seal In Transfer Cover To Height Above Transfer Cover Surface Using Driver Handle And Oil Seal Driver Attachment
Courtesy of AMERICAN HONDA MOTOR CO., INC.

TRANSFER ASSEMBLY REASSEMBLY

Special Tools Required

- Driver Handle, 40 mm I.D. 07746-0030100
- Driver Handle, 15 x 135L 07749-0010000
- Oil Seal Driver Attachment, 65 mm 07JAD-SH30100
- Bearing Driver Attachment, 78 x 80 mm 07NAD-PX40100
- Flange Holder 07XAB-0010101

NOTE:

- **While reassembling the transfer assembly:**
  - **Check and adjust the transfer gear tooth contact.**
  - **Measure and adjust the transfer gear backlash.**
  - **Check and adjust the tapered roller bearing starting torque.**
- **Coat all parts with transfer fluid (hypoid gear oil) during reassembly.**
- **Replace the tapered roller bearing and the bearing outer race as a set if either part is replaced.**
- **Replace the transfer hypoid drive gear and the transfer output shaft (hypoid gear) as a set if either part is replaced.**
- **To prevent damaging the transfer housing, always use soft jaws or equivalent materials between the transfer housing and a bench vise.**

1. Select the 40 mm thrust shim if the transfer output shaft (hypoid gear) is replaced. Calculate the thickness of the 40 mm thrust shim using the following formula, and select the shim from the following table.

   FORMULA: A/100- B/100+C = X

   A. **Number on the existing transfer output shaft (hypoid gear)**
   B. **Number on the replacement transfer output shaft (hypoid gear)**
   C. **Thickness of the existing 40 mm thrust shim**

   X: Thickness needed for the replacement 40 mm thrust shim

   NOTE: The number on the transfer output shaft (hypoid gear) is shown in 1/100 mm.

   EXAMPLE

   A. **Existing transfer output shaft (hypoid gear) Number= +2**
   B. **Replacement transfer output shaft (hypoid gear) Number= -1**
   C. **Existing 40 mm thrust shim thickness = 1.05 mm**

X: Replacement 40 mm thrust shim thickness

X = A/100 - B/100 + C

= 2/100- (- 1)/100 +1.05

= 0.02 + 0.01 + 1.05 = 1.08 (mm)

Select type M 40 mm thrust shim of 1.08 mm (0.043 in)

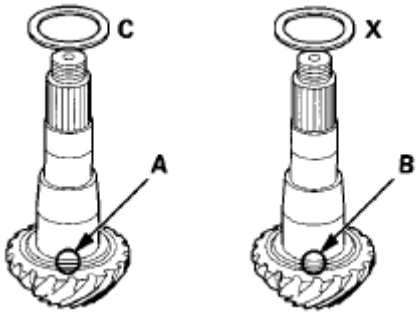


Fig. 328: Identifying Transfer Output Shaft And Thrust Shim
Courtesy of AMERICAN HONDA MOTOR CO., INC.

THRUST SHIM, 40 MM

Type	Thickness
A	0.72 mm (0.028 in)
B	0.75 mm (0.030 in)
C	0.78 mm (0.031 in)
D	0.81 mm (0.032 in)
E	0.84 mm (0.033 in)
F	0.87 mm (0.034 in)
G	0.90 mm (0.035 in)
H	0.93 mm (0.037 in)
I	0.96 mm (0.038 in)
J	0.99 mm (0.039 in)
K	1.02 mm (0.040 in)
L	1.05 mm (0.041 in)
M	1.08 mm (0.043 in)
N	1.11 mm (0.044 in)
O	1.14 mm (0.045 in)

2. Select the 40 mm thrust shim if the tapered roller bearing on the transfer output shaft (hypoid gear) is replaced. Measure the thickness of the replacement bearing and the existing bearing, and calculate the difference of the bearing thickness. Adjust the thickness of the existing 40 mm thrust shim by the amount of difference in bearing thickness, and select the replacement 40 mm thrust shim.

3. Install the 40 mm thrust shim (A) on the transfer output shaft (hypoid gear) (B), then install the tapered roller bearing (C) using the 40 mm I.D. driver handle (D) and a press.

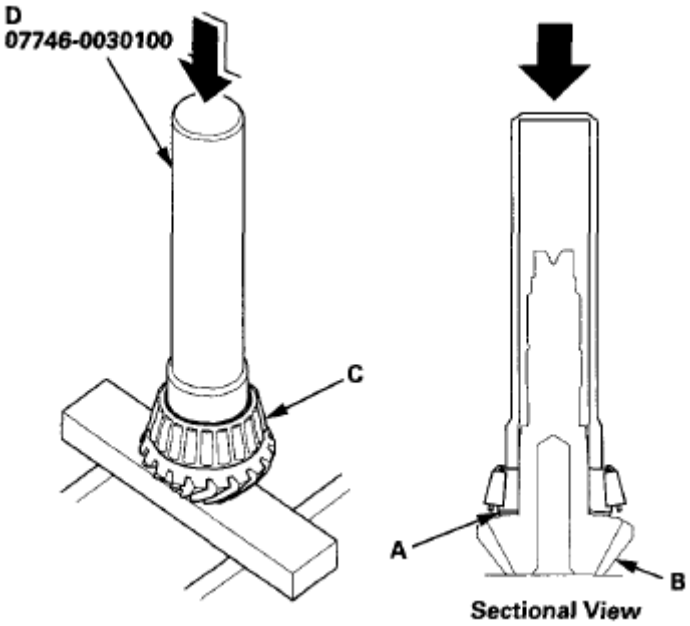


Fig. 329: Installing Thrust Shim On Transfer Output Shaft (Hypoid Gear) And Then Tapered Roller Bearing Using I.D. Driver Handle And Press
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Place the tapered roller bearing (A) on the bearing outer race of the companion flange side of the transfer housing, and install a new oil seal (B).

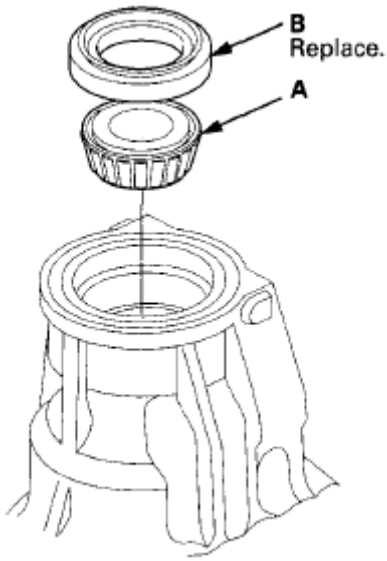


Fig. 330: Identifying Tapered Roller Bearing And Oil Seal
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Drive the oil seal flush with the transfer housing using the 15 x 135L driver handle (A) and the 65 mm oil seal driver attachment (B).

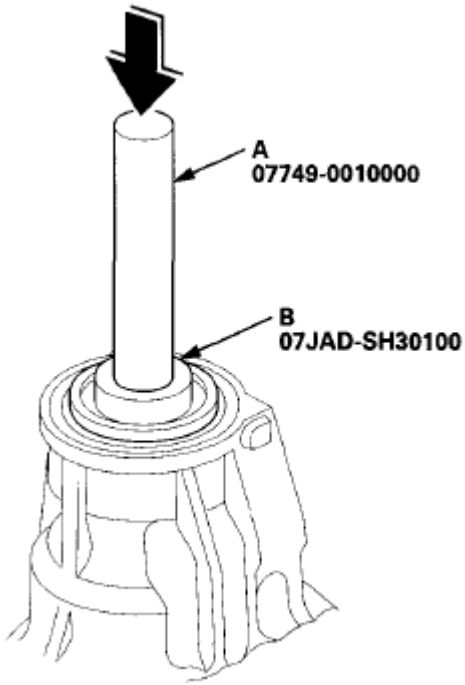


Fig. 331: Driving Oil Seal Flush With Transfer Housing Using Driver Handle And Oil Seal Driver Attachment
Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Install the transfer output shaft (hypoid gear) (A) in the transfer housing (B). Do not install the transfer spacer and the thrust washer on the transfer output shaft (hypoid gear).

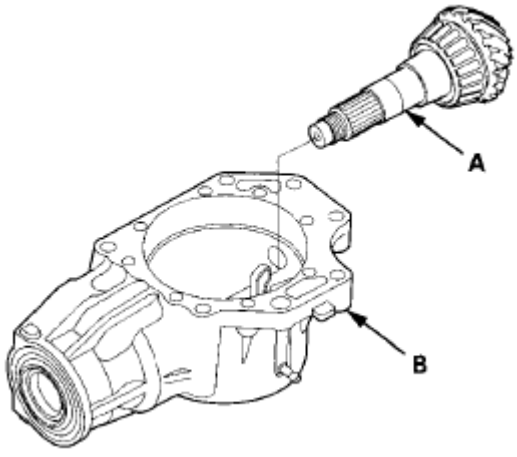


Fig. 332: Identifying Transfer Output Shaft (Hypoid Gear) And Transfer Housing
Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Install the companion flange (A), the conical spring washer (B) (in the direction shown), and a new

locknut (C) on the transfer output shaft (hypoid gear) (D). Do not install the O-ring and the back-up ring.

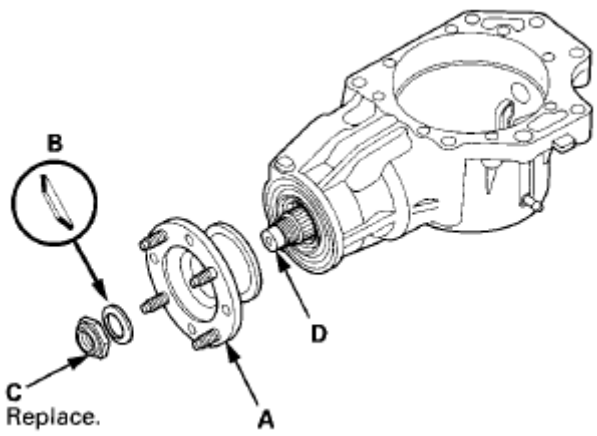


Fig. 333: Identifying Companion Flange, Conical Spring Washer, Locknut And Transfer Output Shaft
Courtesy of AMERICAN HONDA MOTOR CO., INC.

8. Secure the transfer housing (A) in a bench vise (B) with soft jaws.

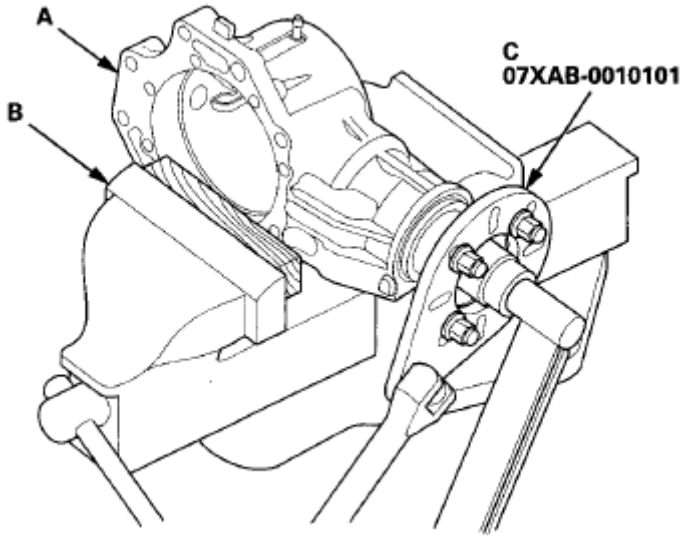


Fig. 334: Securing Transfer Housing In Bench Vise With Soft Jaws And Installing Flange Holder On Companion Flange
Courtesy of AMERICAN HONDA MOTOR CO., INC.

9. Install the flange holder (C) on the companion flange.
10. Tighten the locknut while measuring the starting torque of the transfer output shaft (hypoid gear) so the starting torque is within 1.15- 1.71 N.m (11.7- 17.4 kgf.cm, 10.2 - 15.1 lbf.in). Do not stake the locknut in this step.
11. Remove the flange holder.
12. Apply Prussian Blue to both sides of the transfer hypoid drive gear teeth lightly and evenly.

13. Install the tapered roller bearing (A), the 25 mm thrust shim (B), and the transfer hypoid drive gear/shaft assembly (C) in the transfer housing (D).

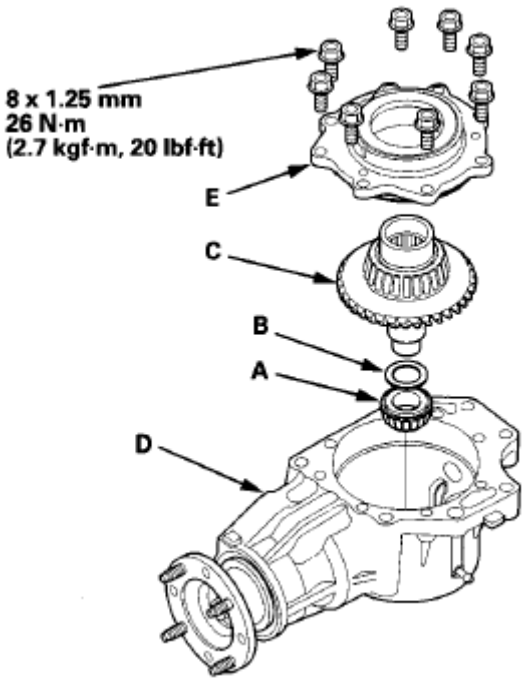


Fig. 335: Identifying Tapered Roller Bearing, Thrust Shim, Transfer Hypoid Drive Gear/Shaft Assembly, Transfer Housing And Transfer Cover With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

14. Install the transfer cover (E). Do not install the O-ring on the transfer cover.
15. Rotate the companion flange in both directions until the transfer gears rotate one full turn in both directions.
16. Set a dial indicator (A) on the transfer companion flange (B); position the dial indicator tip (C) on the top of the bolt (D).

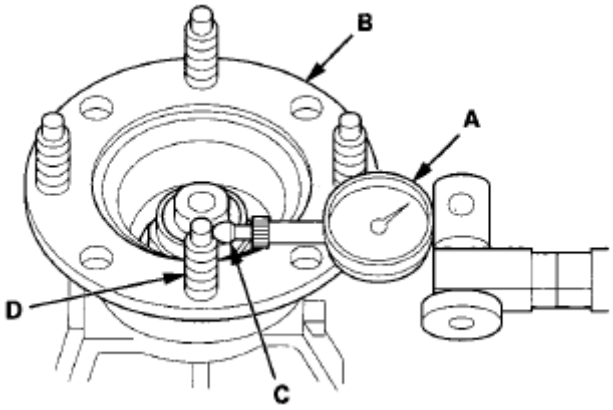


Fig. 336: Setting Dial Indicator On Transfer Companion Flange With Dial Indicator Tip On Top Of Bolt

Courtesy of AMERICAN HONDA MOTOR CO., INC.

17. Measure the transfer gear backlash.

    Standard: 0.06- 0.16 mm (0.0024- 0.0063 in)

18. Remove the transfer cover and the transfer hypoid drive gear/shaft assembly, and check the transfer hypoid drive gear tooth contact pattern.

    CORRECT TOOTH CONTACT PATTERN



Fig. 337: Identifying Hypoid Drive Gear Tooth For Correct Tooth Contact Pattern
Courtesy of AMERICAN HONDA MOTOR CO., INC.

INCORRECT TOOTH CONTACT PATTERN

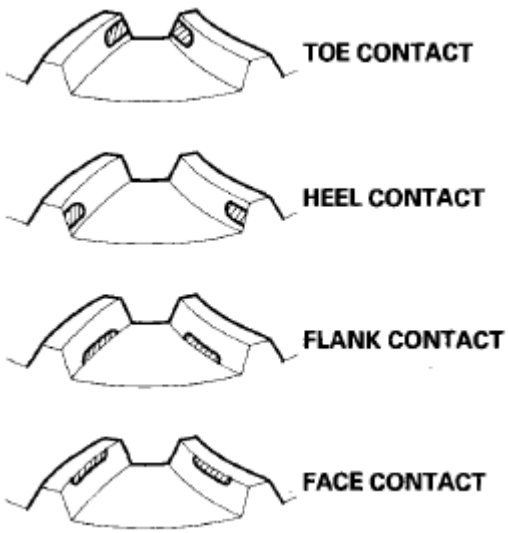


Fig. 338: Identifying Hypoid Drive Gear Tooth For Incorrect Tooth Contact Pattern
Courtesy of AMERICAN HONDA MOTOR CO., INC.

19. If the backlash is out of the standard, adjust the backlash with the 40 mm thrust shim, and recheck. Do not use more than two 40 mm thrust shims to adjust the backlash.
20. If the transfer gear tooth contact is incorrect, adjust the tooth contact with the 25 mm, 40 mm, or 80 mm thrust shim. Do not use more than two shims of each thrust shim to adjust the tooth contact.
    - Toe Contact

      Use a thinner 40 mm thrust shim to move the transfer output shaft (hypoid gear) away from the transfer hypoid drive gear. Because this movement causes the transfer gear backlash to change,

move the transfer hypoid drive gear toward the transfer output shaft (hypoid gear) to adjust the transfer gear backlash as follows:

  - Reduce the thickness of the 25 mm thrust shim.
  - Increase the thickness of the 80 mm thrust shim by amount the 25 mm thrust shim was reduced.

- Heel Contact

  Use a thicker 40 mm thrust shim to move the transfer output shaft (hypoid gear) toward the transfer hypoid drive gear. Because this movement causes the transfer backlash to change, move the transfer hypoid drive gear away from the transfer output shaft (hypoid gear) to adjust the transfer gear backlash as follows:

  - Increase the thickness of the 25 mm thrust shim.
  - Reduce the thickness of the 80 mm thrust shim by the amount the 25 mm thrust shim was reduced.

- Flank Contact

  Use a thicker 25 mm thrust shim to move the transfer hypoid drive gear away from the transfer output shaft (hypoid gear). Flank contact must be adjusted within the limits of the transfer gear backlash. If the backlash exceeds the limits, adjust as described under Heel Contact.

- Face Contact

  Use a thinner 25 mm thrust shim to move the transfer hypoid drive gear toward the transfer output shaft (hypoid gear). Face contact must be adjusted within the limits of the transfer gear backlash. If the backlash exceeds the limits, adjust as described under Toe Contact.

THRUST SHIM, 25 MM

Type	Thickness
1	1.70 mm (0.067 in)
2	1.73 mm (0.068 in)
3	1.76 mm (0.069 in)
4	1.79 mm (0.070 in)
5	1.82 mm (0.072 in)
6	1.85 mm (0.073 in)
7	1.88 mm (0.074 in)
8	1.91 mm (0.075 in)
9	1.94 mm (0.076 in)
10	1.97 mm (0.078 in)
11	2.00 mm (0.079 in)
12	2.03 mm (0.080 in)
13	2.06 mm (0.081 in)
14	2.09 mm (0.082 in)

15	2.12 mm (0.083 in)
16	2.15 mm (0.085 in)
17	2.18 mm (0.086 in)
18	2.21 mm (0.087 in)
19	2.24 mm (0.088 in)

21. Remove the transfer cover (A), the transfer hypoid drive gear/shaft assembly (B), the 25 mm thrust shim (C), and the tapered roller bearing (D) from the transfer housing (E) after adjusting the transfer gear backlash or the transfer gear tooth contact.

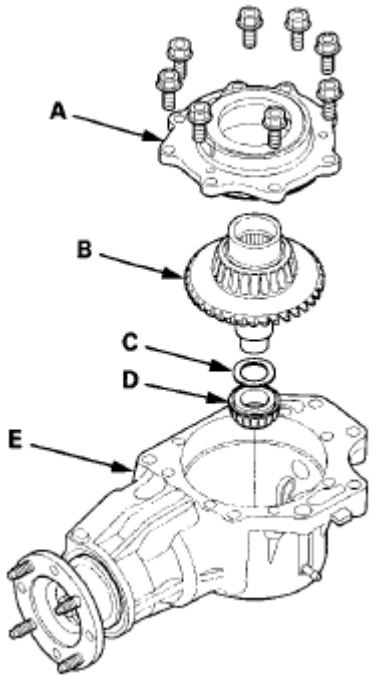


Fig. 339: Identifying Transfer Cover, Transfer Hypoid Drive Gear/Shaft Assembly, Thrust Shim, Tapered Roller Bearing And Transfer Housing
Courtesy of AMERICAN HONDA MOTOR CO., INC.

22. Secure the transfer housing (A) in a bench vise (B) with soft jaws.

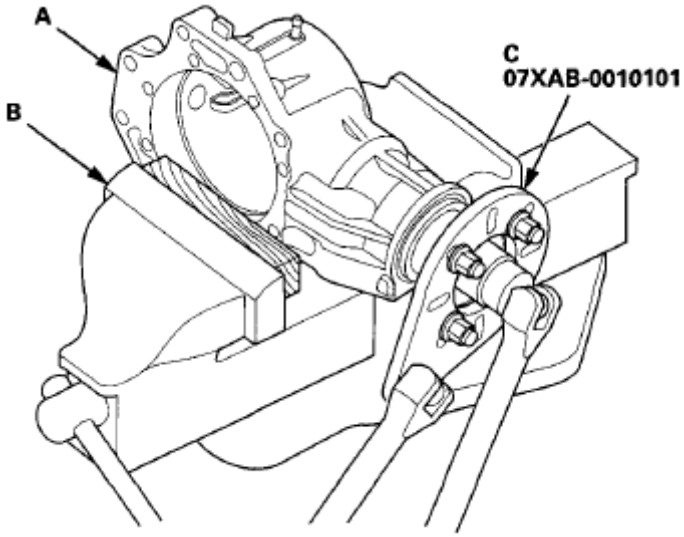


Fig. 340: Securing Transfer Housing In Bench Vise With Soft Jaws And Installing Flange Holder On Companion Flange
Courtesy of AMERICAN HONDA MOTOR CO., INC.

23. Install the flange holder (C) on the companion flange, then loosen the locknut.
24. Remove the flange holder.
25. Remove the locknut (A), the conical spring washer (B), and the companion flange (C) from the transfer output shaft (hypoid gear) (D).

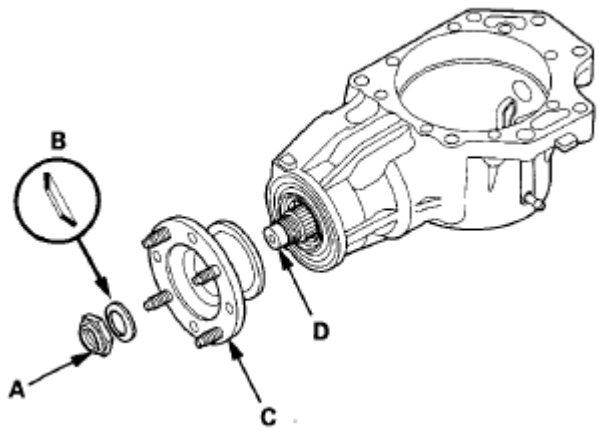


Fig. 341: Identifying Locknut, Conical Spring Washer And Companion Flange From Transfer Output Shaft (Hypoid Gear)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

26. Remove the transfer output shaft (hypoid gear) from the transfer housing.
27. Install a thrust washer (A) and a new transfer spacer (B) on the transfer output shaft (hypoid gear) (C), and install them in the transfer housing (D).

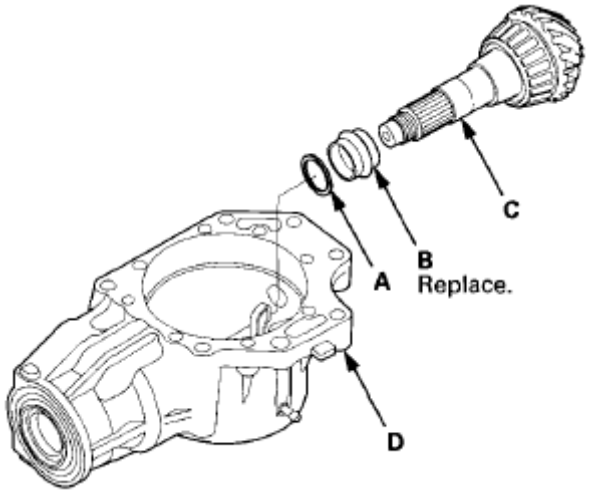


Fig. 342: Identifying Thrust Washer, Transfer Spacer, Transfer Output Shaft (Hypoid Gear) And Transfer Housing
Courtesy of AMERICAN HONDA MOTOR CO., INC.

28. Coat the threads of the locknut and the transfer output shaft (hypoid gear) with transfer fluid (hypoid gear oil).
29. Install the companion flange (A). Coat a new O-ring (B) with transfer fluid (hypoid gear oil), then install the O-ring, the back-up ring (C), a new conical spring washer (D), and a new locknut (E) on the transfer output shaft (hypoid gear) (F). Install the conical spring washer in the direction shown.

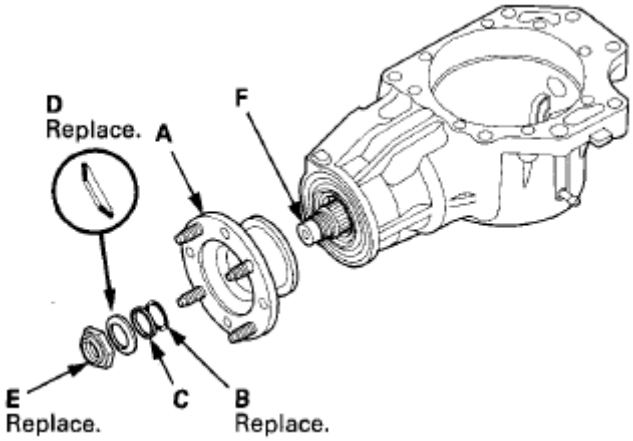


Fig. 343: Identifying Companion Flange, O-Ring, Back-Up Ring, Conical Spring Washer, Locknut And Transfer Output Shaft (Hypoid Gear)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

30. Secure the transfer housing (A) in a bench vise (B) with soft jaws.

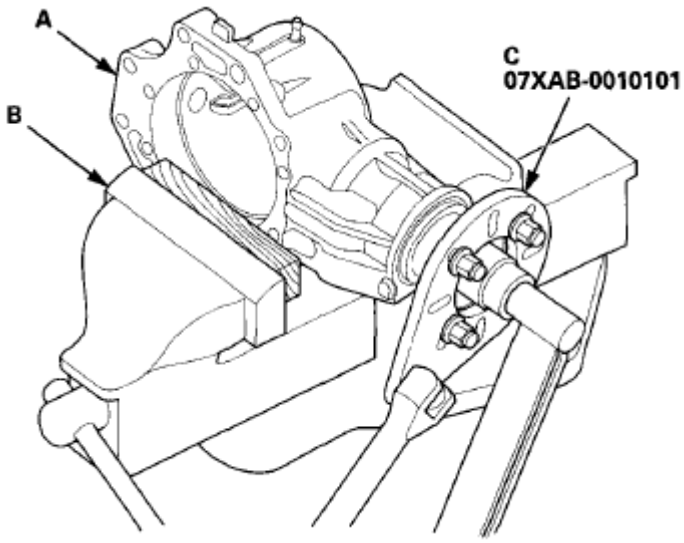


Fig. 344: Securing Transfer Housing In Bench Vise With Soft Jaws And Installing Flange Holder On Companion Flange
Courtesy of AMERICAN HONDA MOTOR CO., INC.

31. Install the flange holder (C) on the companion flange.
32. Tighten the locknut while measuring the starting torque of the transfer output shaft (hypoid gear) so the starting torque is within the standard.

Standard

Tightening Torque:

108- 294 N.m (11.0- 30.0 kgf.m, 79.6- 217.0 lbf.ft)

Starting Torque:

1.15- 1.71 N.m (11.7- 17.4 kgf cm, 10.2- 15.1 lbf.in)

NOTE:

- **Rotate the companion flange several times to seat the tapered roller bearings, then measure the starting torque.**
- **If the starting torque exceeds the standard, replace the transfer spacer and reassemble the parts. Do not adjust the torque with the locknut loose.**
- **If the tightening torque exceeds the standard, replace the transfer spacer and reassemble the parts.**

33. Remove the flange holder.
34. Stake the locknut to a depth (A) of at least 0.7 mm (0.03 in) using a 3.5 mm punch (B).

NOTE: Be careful not to make a crack on the locknut when staking.

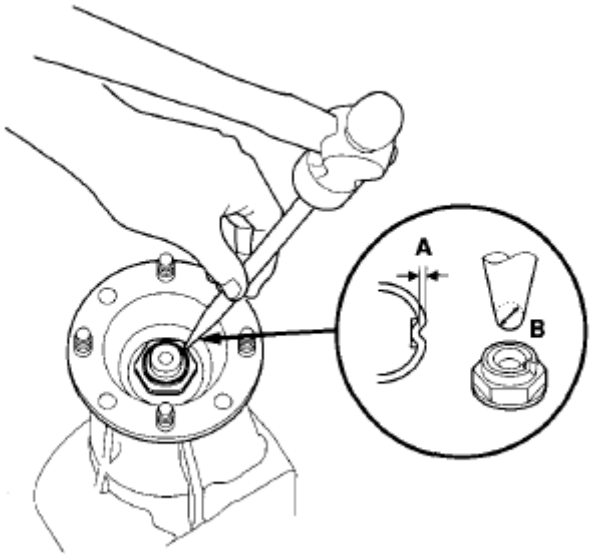


Fig. 345: Staking Locknut To Depth Using Punch
Courtesy of AMERICAN HONDA MOTOR CO., INC.

35. Install the tapered roller bearing (A), the 25 mm thrust shim (B), and the transfer hypoid drive gear/shaft assembly (C) in the transfer housing (D).

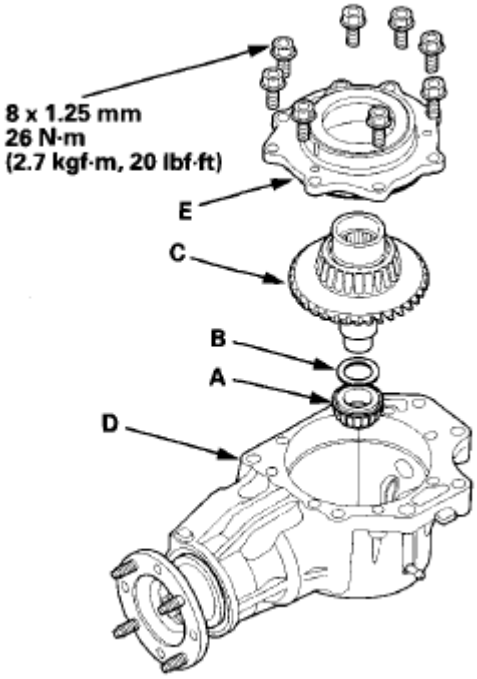


Fig. 346: Identifying Tapered Roller Bearing, Thrust Shim, Transfer Hypoid Drive Gear/Shaft Assembly, Transfer Housing And Transfer Cover With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

36. Temporarily install the transfer cover (E) without the O-ring. Install and tighten the bolts.
37. Secure the transfer housing (A) in the bench vise (B) with soft jaws.

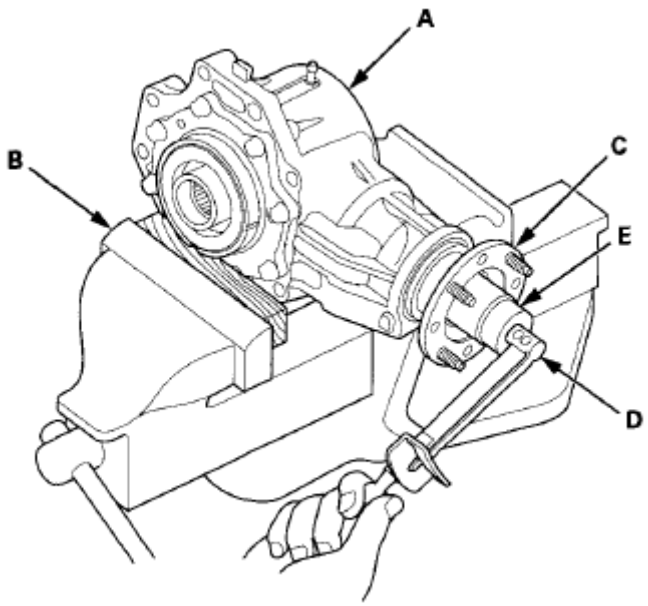


Fig. 347: Measuring Total Starting Torque At Companion Flange By Using Torque Wrench And Socket
Courtesy of AMERICAN HONDA MOTOR CO., INC.

38. Rotate the transfer companion flange (C) several times to seat the tapered roller bearings.
39. Measure the total starting torque at the companion flange by using a torque wrench (D) and a socket (E).
40. Calculate the transfer hypoid drive gear/shaft starting torque by using the following formula.

Transfer Hypoid Drive Gear/Shaft Starting Torque

Formula:

A - B = X

A: Actual total starting torque (measured in step 39)

B: Actual transfer output shaft (hypoid gear) starting torque (measured in step 32)

X: Transfer hypoid drive gear/shaft starting torque

41. Check that the calculated transfer hypoid drive gear/shaft starting torque is within the following reference value range.

Reference Value Range of Transfer Hypoid Drive

Gera/Shaft Starting Torque:

1.49- 2.52 N.m (15.2- 25.7 kgf.cm, 13.1- 22.3 lbf.in)

- If the calculated transfer hypoid drive gear/shaft starting torque is within the reference value range, remove the transfer cover from the transfer housing, then go to step 48.
- If the calculated transfer hypoid drive gear/shaft starting torque is out of the reference value range, go to step 42.

42. Remove the bearing outer race (A) and the 80 mm thrust shim (B) from the transfer cover (C). If the bearing outer race is press-fitted, remove the bearing outer race by heating the transfer cover to about 212°F(100°C) using a heat gun (D). Do not heat the transfer cover more than 212 °F (100 °C).

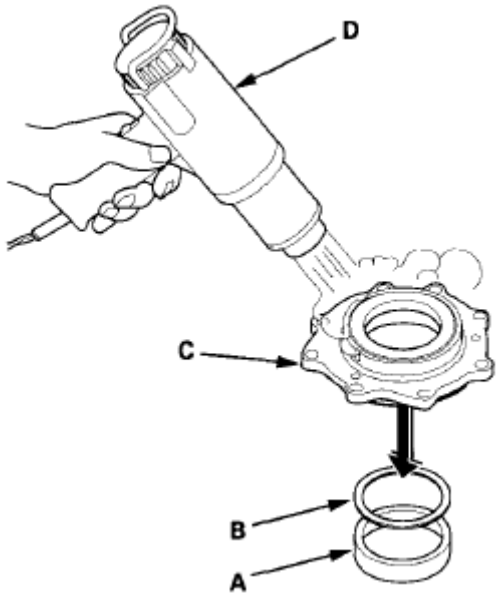


Fig. 348: Removing Bearing Outer Race And Thrust Shim From Transfer Cover By Heating Transfer Cover Using Heat Gun
Courtesy of AMERICAN HONDA MOTOR CO., INC.

43. Measure the thickness of the removed 80 mm thrust shim, and select a new 80 mm thrust shim in the table.

THRUST SHIM, 80 MM

Type	Thickness
A	1.52 mm (0.060 in)
B	1.55 mm (0.061 in)
C	1.58 mm (0.062 in)
D	1.61 mm (0.063 in)
E	1.64 mm (0.065 in)
F	1.67 mm (0.066 in)
G	1.70 mm (0.067 in)
H	1.73 mm (0.068 in)
I	1.76 mm (0.069 in)

J	1.79 mm (0.070 in)
K	1.82 mm (0.072 in)
L	1.85 mm (0.073 in)
M	1.88 mm (0.074 in)
N	1.91 mm (0.075 in)
O	1.94 mm (0.076 in)
P	1.97 mm (0.078 in)
Q	2.00 mm (0.079 in)
R	2.03 mm (0.080 in)
S	2.06 mm (0.081 in)
T	2.09 mm (0.082 in)
U	2.12 mm (0.083 in)
V	2.15 mm (0.085 in)
W	2.18 mm (0.086 in)
X	2.21 mm (0.087 in)
Y	2.24 mm (0.088 in)
Z	2.27 mm (0.089 in)
AA	2.30 mm (0.091 in)
AB	2.33 mm (0.092 in)
AC	2.36 mm (0.093 in)
AD	2.39 mm (0.094 in)
AE	2.42 mm (0.095 in)
AF	2.45 mm (0.096 in)
AG	2.48 mm (0.098 in)
AH	2.51 mm (0.099 in)
AI	2.54 mm (0.100 in)
AJ	2.57 mm (0.101 in)
AK	2.60 mm (0.102 in)
AL	2.63 mm (0.104 in)
AM	2.66 mm (0.105 in)

44. Install the 80 mm thrust shim (A) and the 80 mm bearing outer race (B) in the transfer cover (C). If you heated the transfer cover, let it cool to room temperature before installing the 80 mm thrust shim.

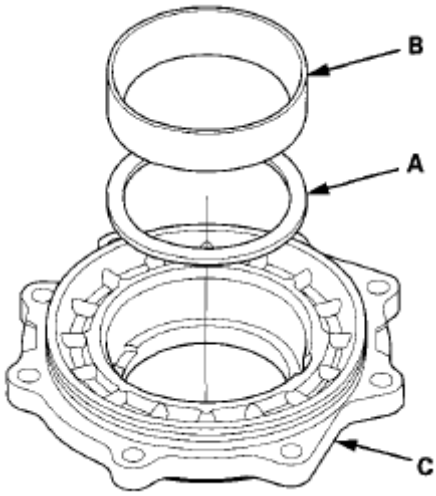


Fig. 349: Identifying Thrust Shim, Bearing Outer Race And Transfer Cover
Courtesy of AMERICAN HONDA MOTOR CO., INC.

45. Drive the 80 mm bearing outer race securely in the transfer cover using the driver handle (A) and the 78 x 80 mm bearing driver attachment (B) so there is no clearance between the bearing outer race, the 80 mm thrust shim, and the transfer cover.

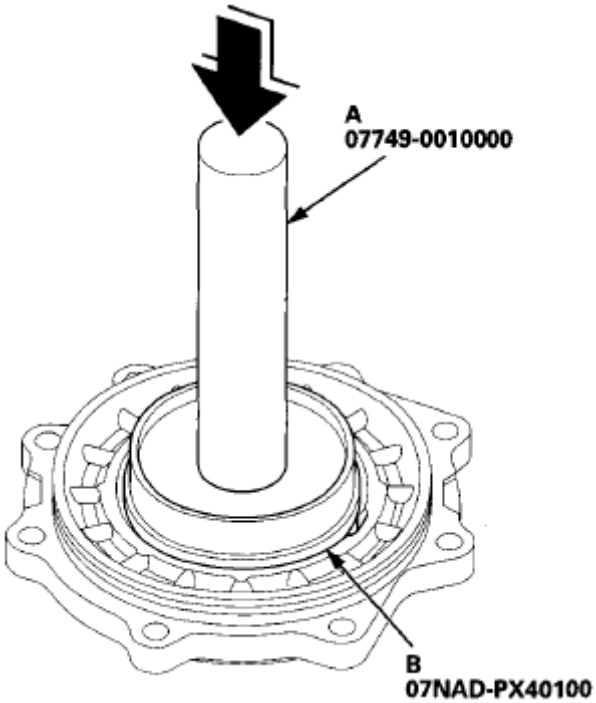


Fig. 350: Driving Bearing Outer Race Securely In Transfer Cover Using Driver Handle And Bearing Driver Attachment
Courtesy of AMERICAN HONDA MOTOR CO., INC.

46. Install a new oil seal (see **TRANSFER COVER OIL SEAL REPLACEMENT**).

47. After replacing the 80 mm thrust shim, recheck and make sure that the total starting torque is within the standard.
48. Install a new O-ring (A) on the transfer cover (B), then install the transfer cover on the transfer housing (C).

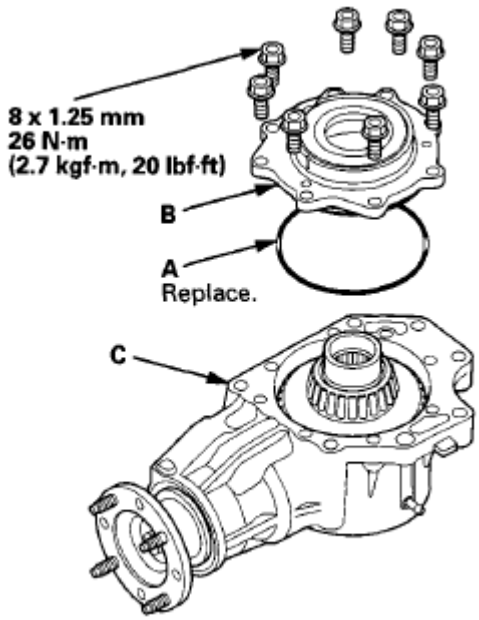


Fig. 351: Identifying Transfer Housing, Transfer Cover And O-Ring With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

49. Remove the filler plug (A), then refill the transfer assembly with transfer fluid (hypoid gear oil). Use an SAE 90 viscosity hypoid gear oil, API classified GL4 or GL5 only.

Viscosity:

SAE 90: Above 0 °F (-18 °C)

Transfer Fluid (Hypoid Gear Oil) Capacity: 0.45 L (0.48 US qt)

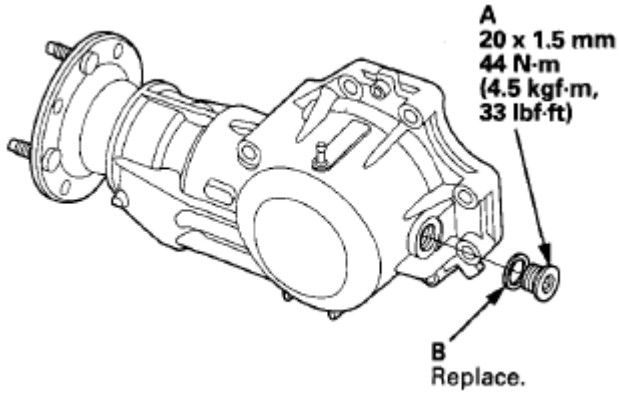


Fig. 352: Identifying Sealing Washer And Filler Plug With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

50. Install the filler plug with a new sealing washer (B).

SUPPLEMENTAL RESTRAINT SYSTEM (SRS) (If automatic transmission maintenance is required)

The Acura TL SRS includes a driver's airbag in the steering wheel hub, a front passenger's airbag in the dashboard above the glove box, front seat belt tensioners in the front seat belt retractors, side curtain airbags in the sides of the roof, and side airbags in the front seat-backs. Information necessary to safely service the SRS is included in this Service Information. Servicing, disassembling, or replacing SRS items requires special precautions and tools, and should be done by an authorized Acura dealer.

- To avoid rendering the SRS inoperative, which could lead to personal injury or death in the event of a severe frontal or side collision, all SRS service work should be done by an authorized Acura dealer.
- Improper service procedures, including incorrect removal and installation of the SRS, could lead to personal injury caused by unintentional deployment of the front airbags, side airbags, side curtain airbags, and/or front seat belt tensioners.
- Do not bump or impact the SRS unit, front impact sensors, side impact sensors, or rear safing sensor, especially when the ignition switch is in ON (II), or the engine start/stop button is in the ON mode, for at least 3 minutes after the ignition switch is turned to LOCK (0), or after the engine start/stop button is pressed to select the OFF mode; otherwise, the system may fail in a collision, or the airbags or the tensioners may deploy.
- SRS electrical connectors are identified by yellow color coding. Related components are located in the steering column, center console, dashboard, dashboard undercover, in the dashboard above the glove box, in the front seats, in the roof side, and around the floor. Do not use electrical test equipment on these circuits.

AIR CONDITIONING

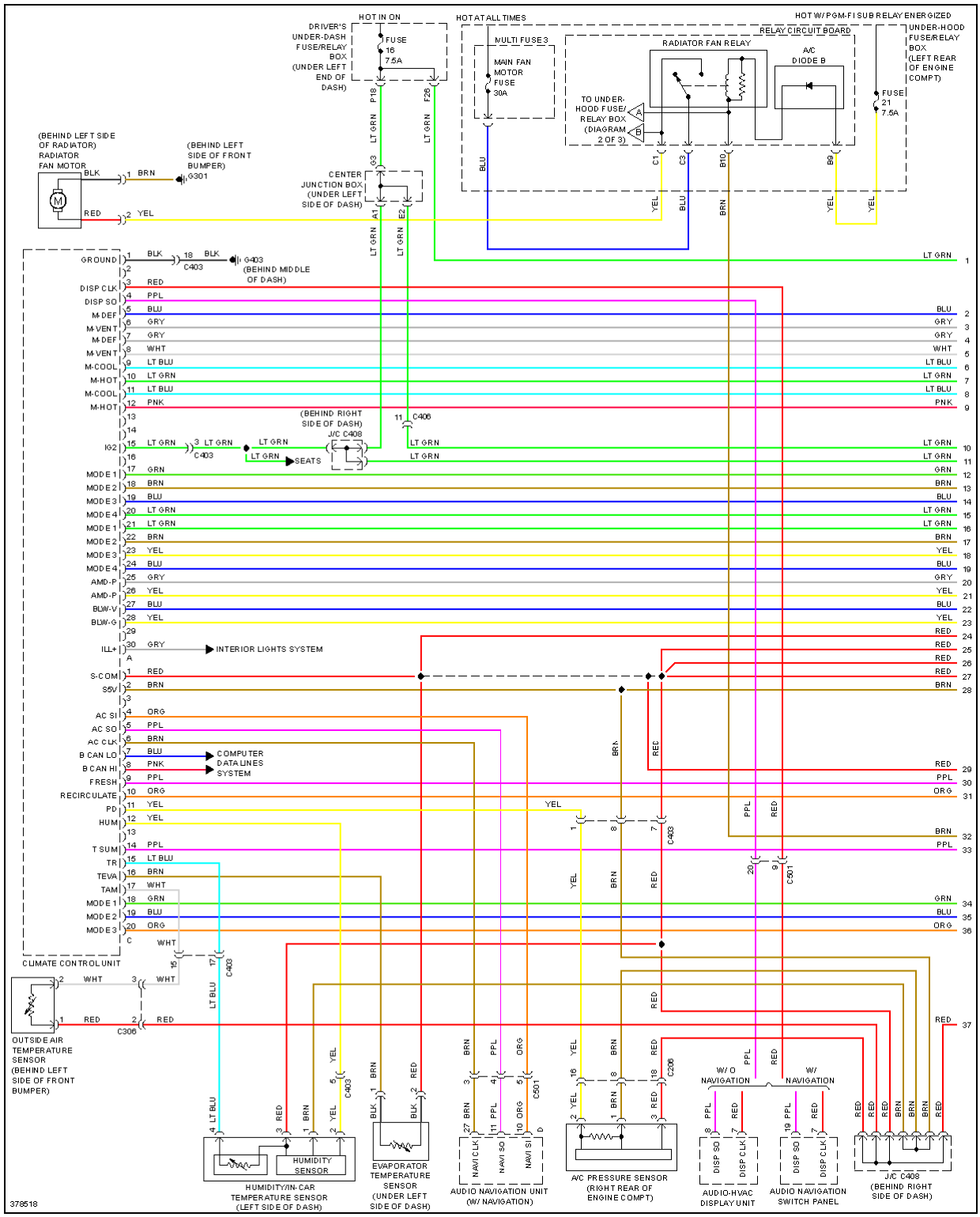


Fig. 1: Automatic A/C Circuit (1 of 3)

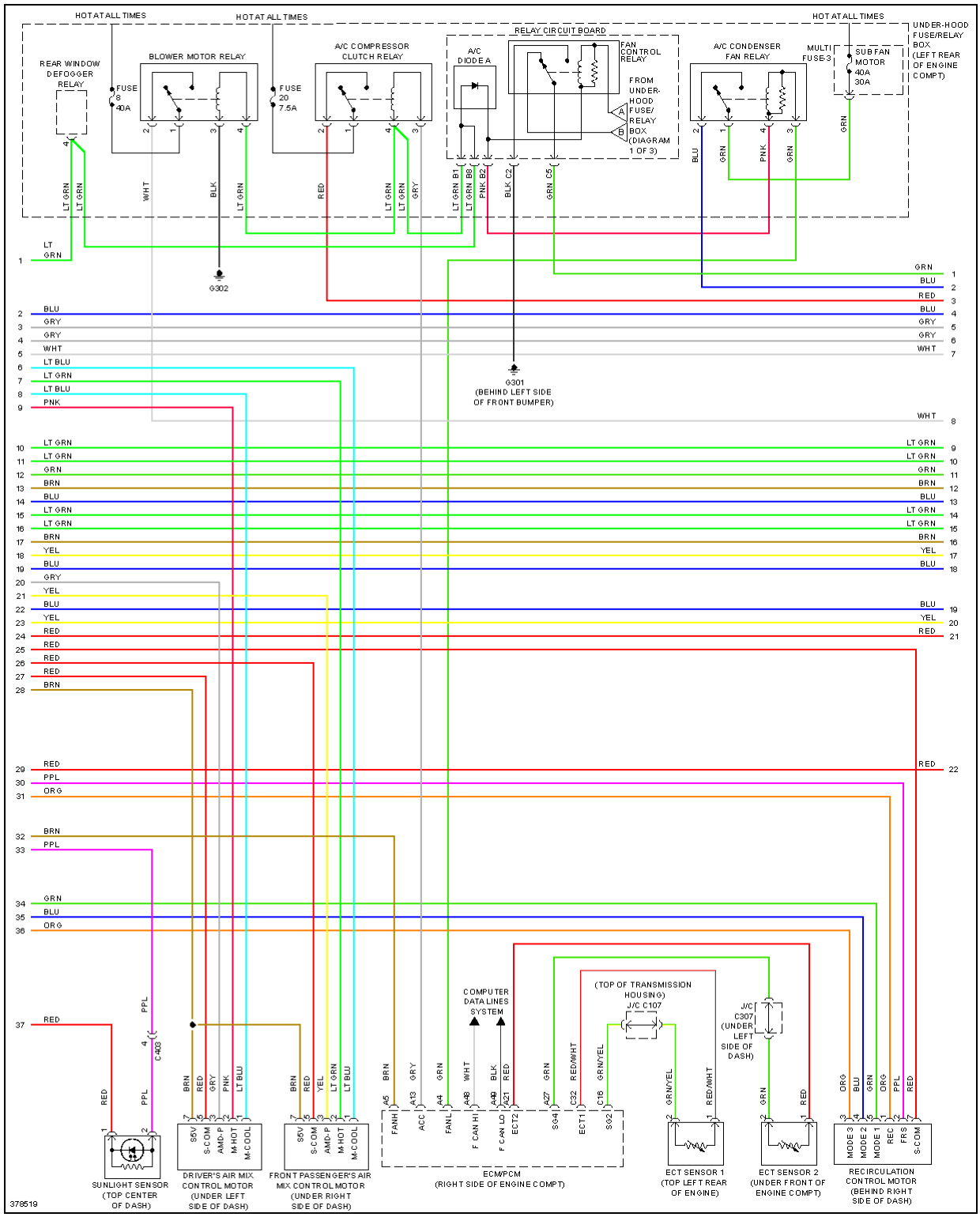


Fig. 2: Automatic A/C Circuit (2 of 3)

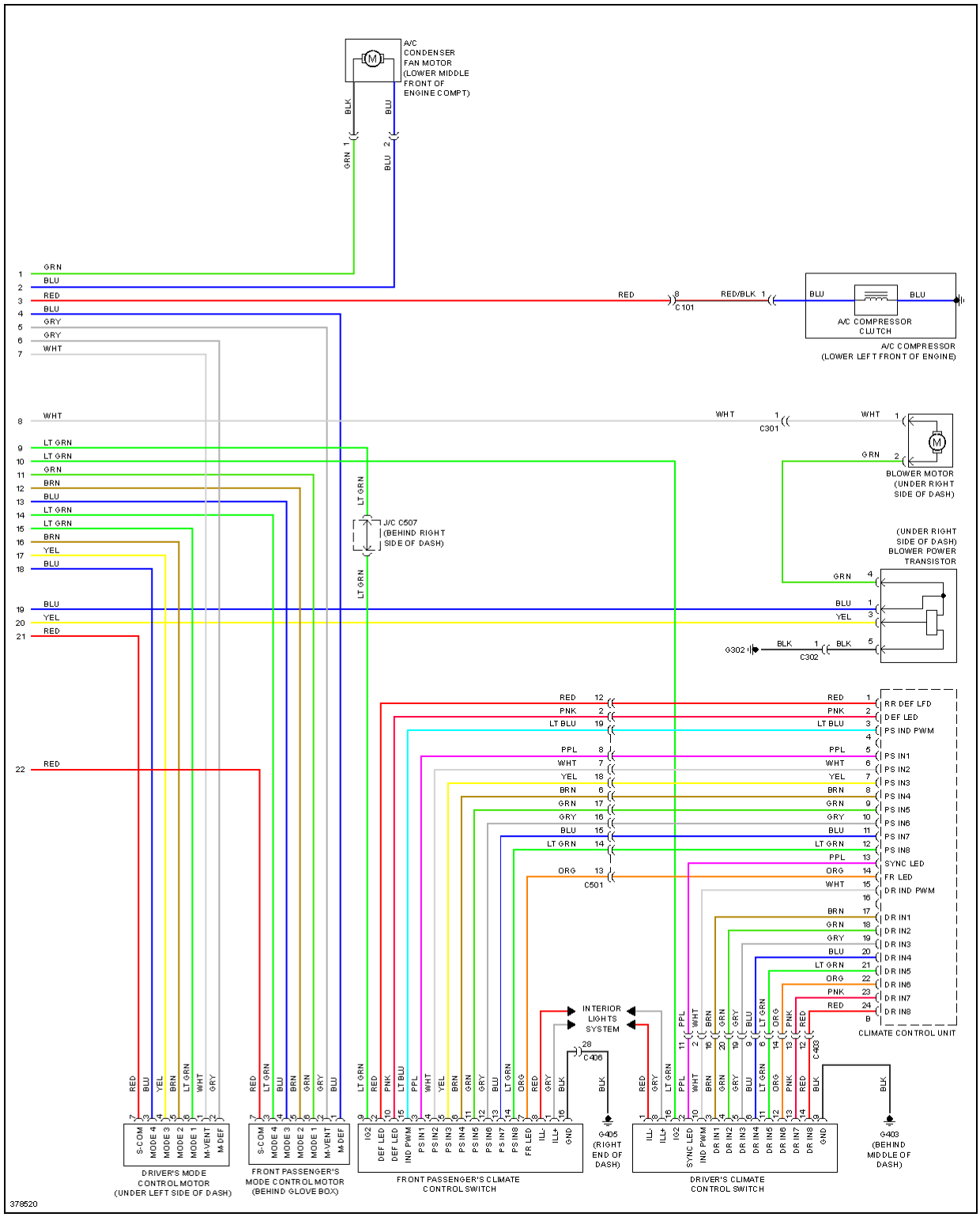


Fig. 3: Automatic A/C Circuit (3 of 3)

ANTI-LOCK BRAKES

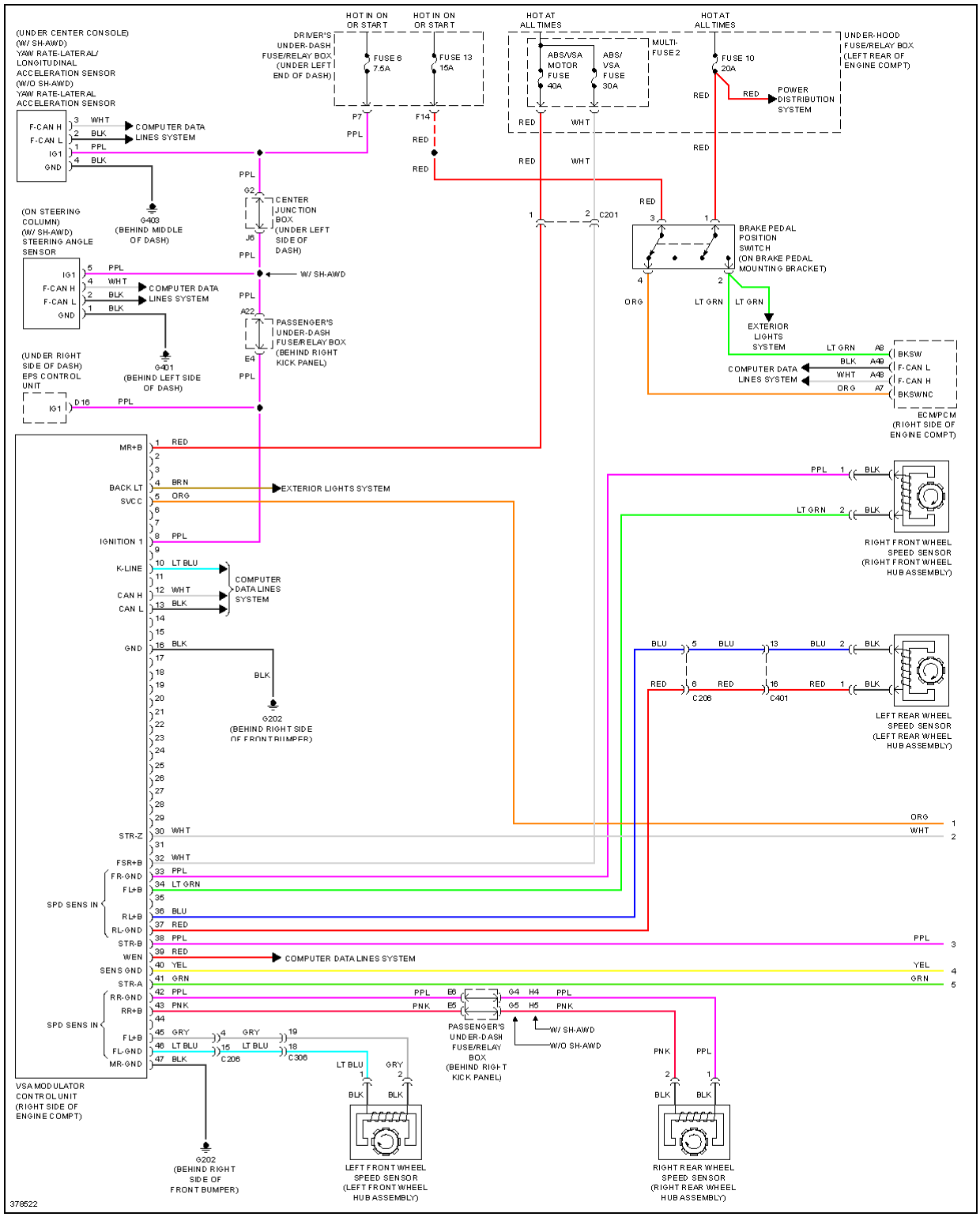


Fig. 4: Anti-lock Brakes Circuit (1 of 2)

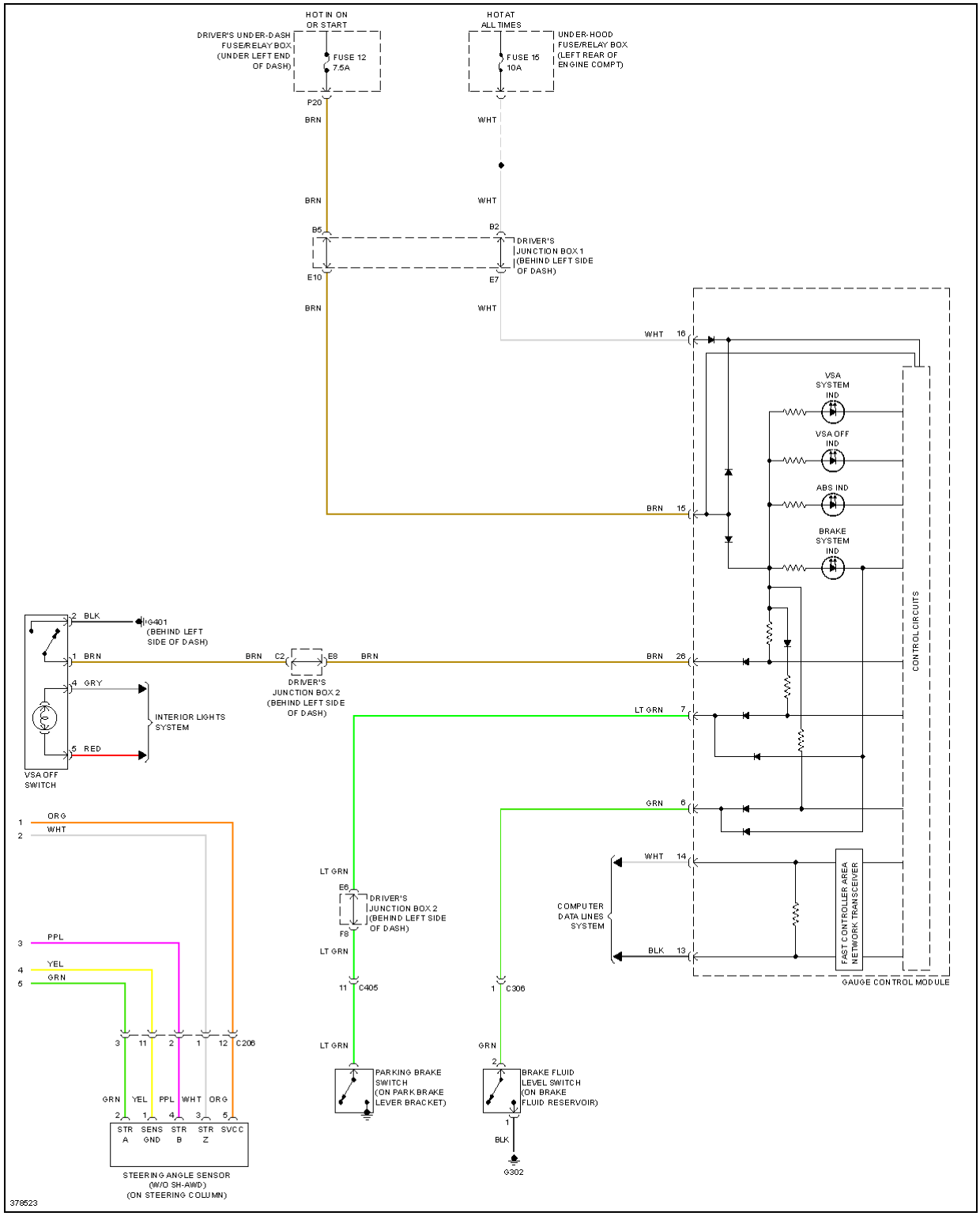


Fig. 5: Anti-lock Brakes Circuit (2 of 2)

ANTI-THEFT

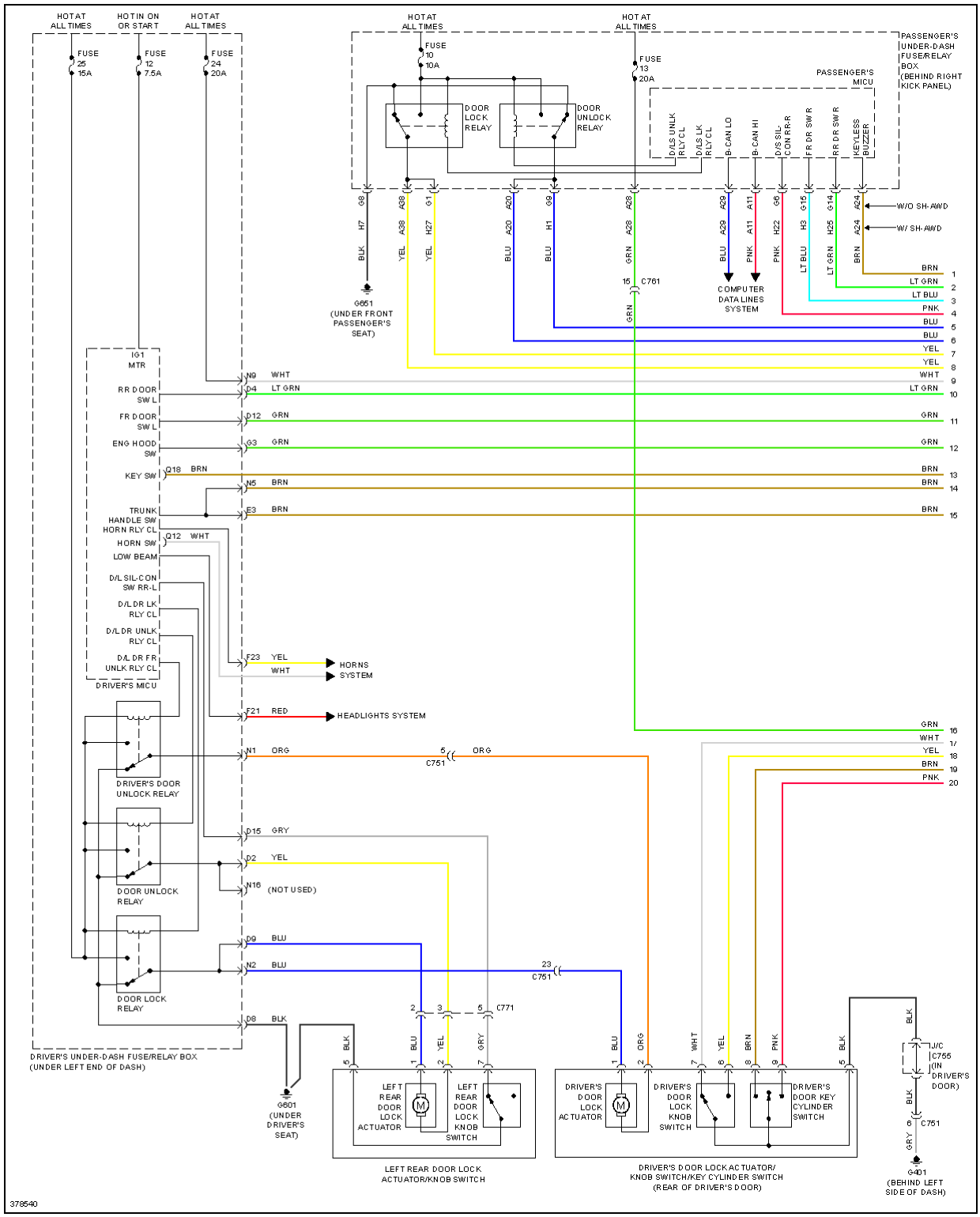


Fig. 6: Forced Entry Circuit, W/ Keyless Access (1 of 5)

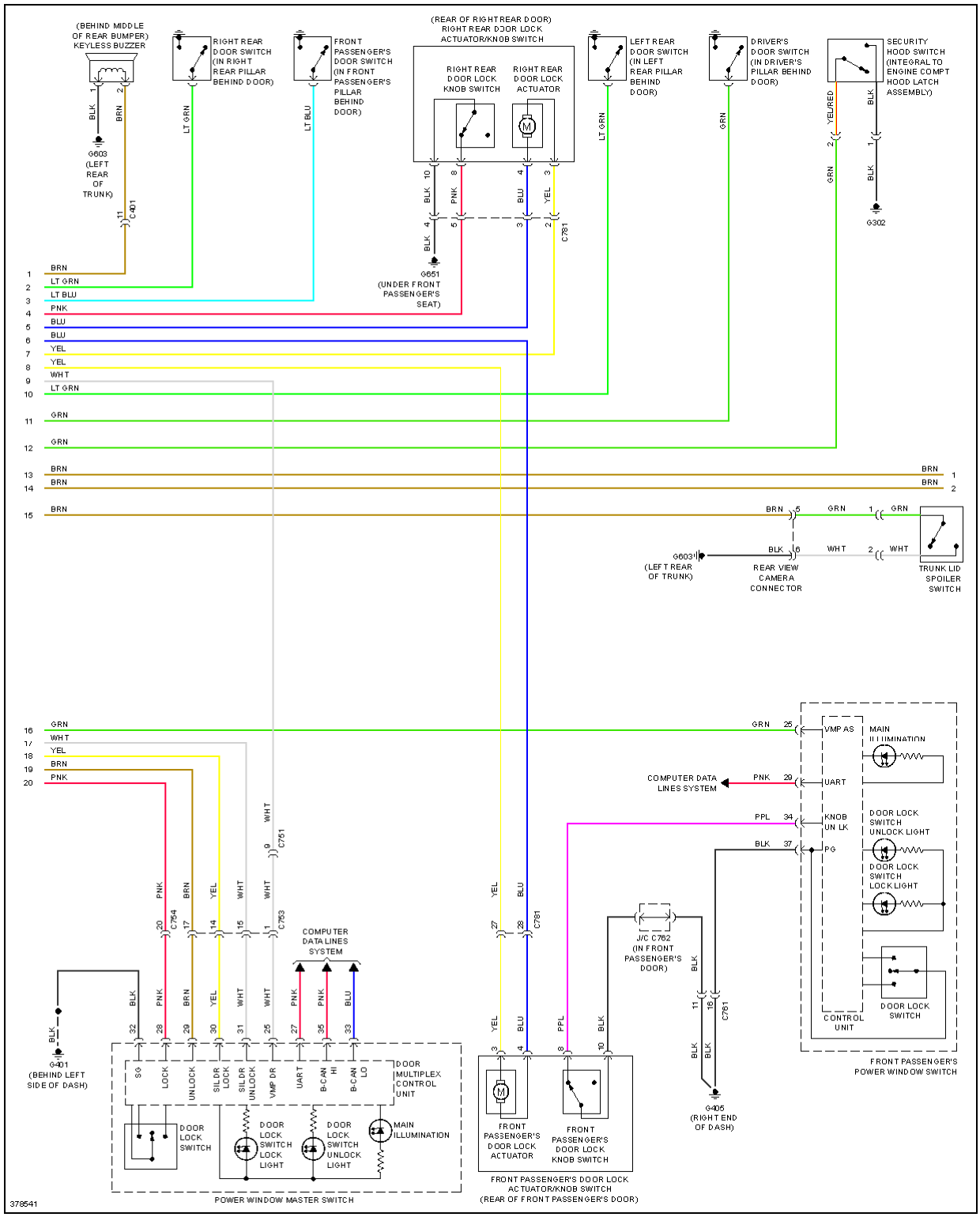


Fig. 7: Forced Entry Circuit, W/ Keyless Access (2 of 5)

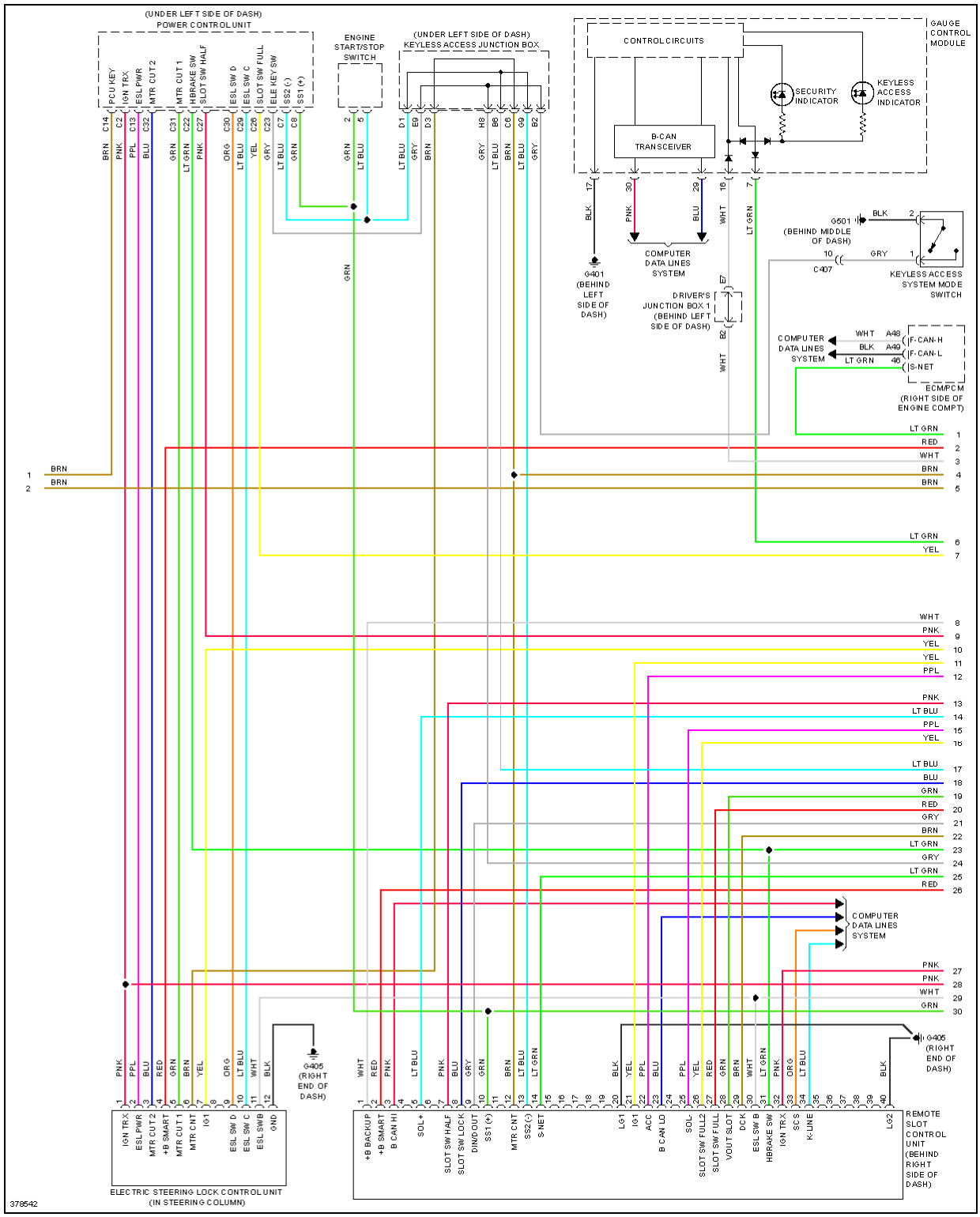


Fig. 8: Forced Entry Circuit, W/ Keyless Access (3 of 5)

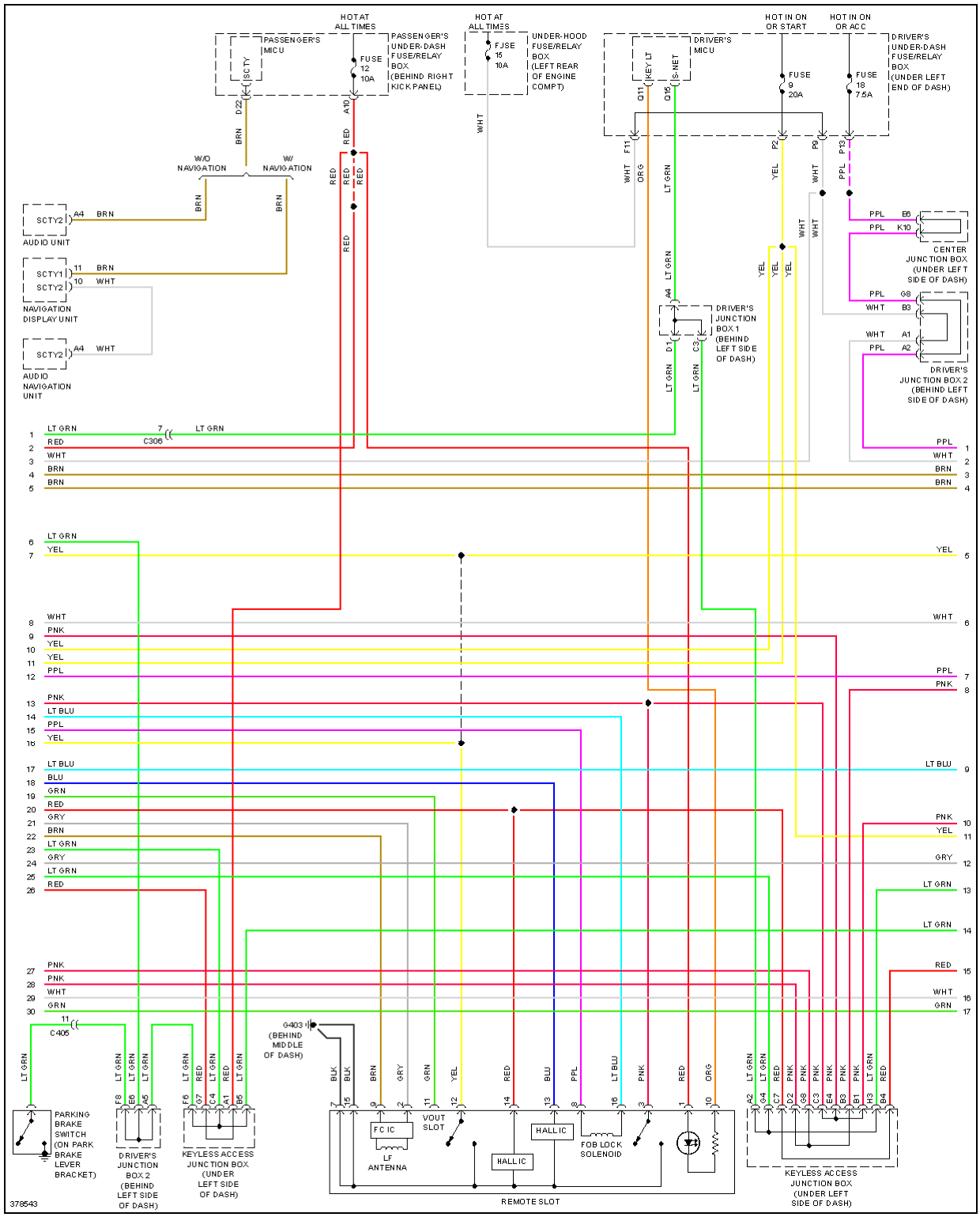


Fig. 9: Forced Entry Circuit, W/ Keyless Access (4 of 5)

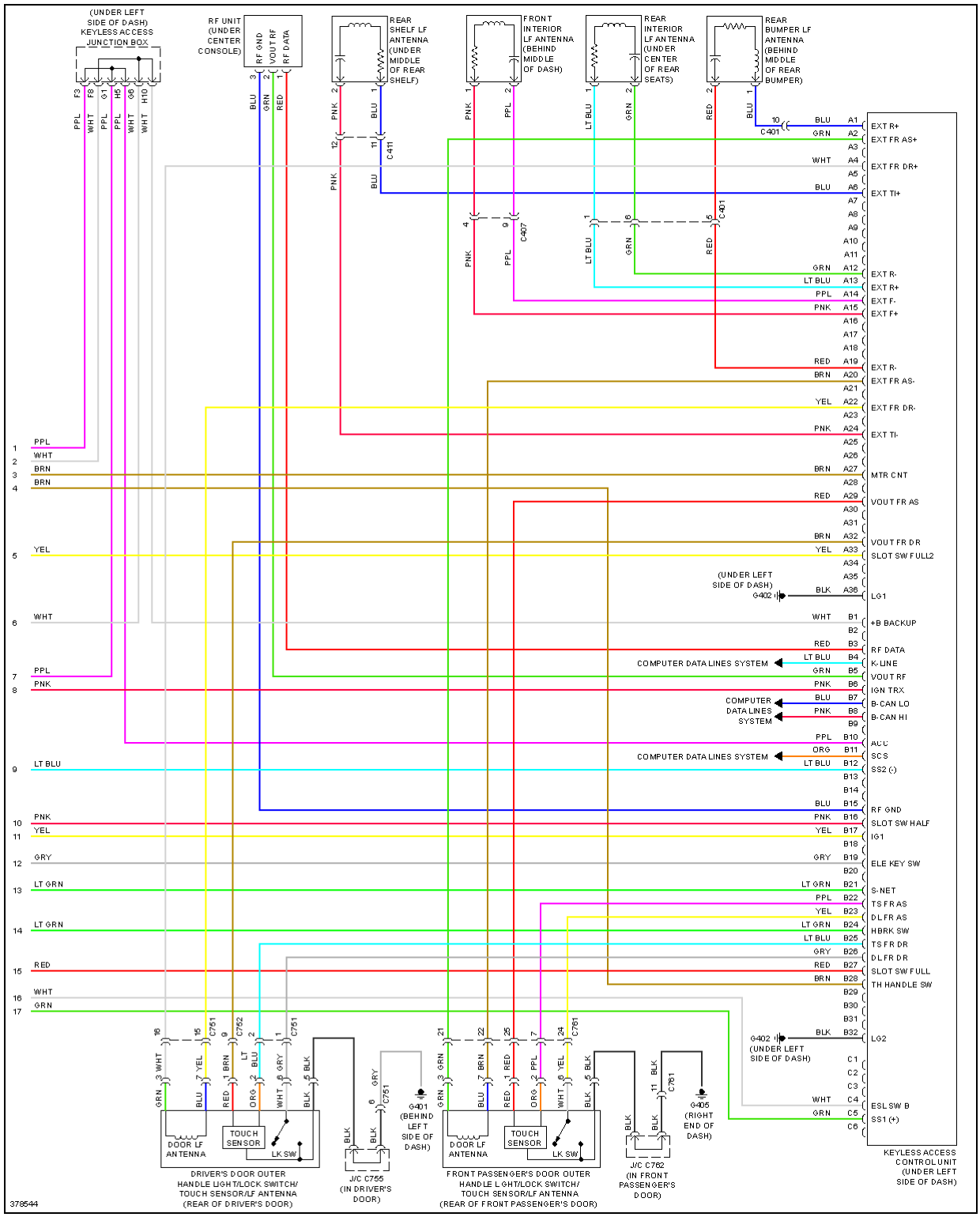


Fig. 10: Forced Entry Circuit, W/ Keyless Access (5 of 5)

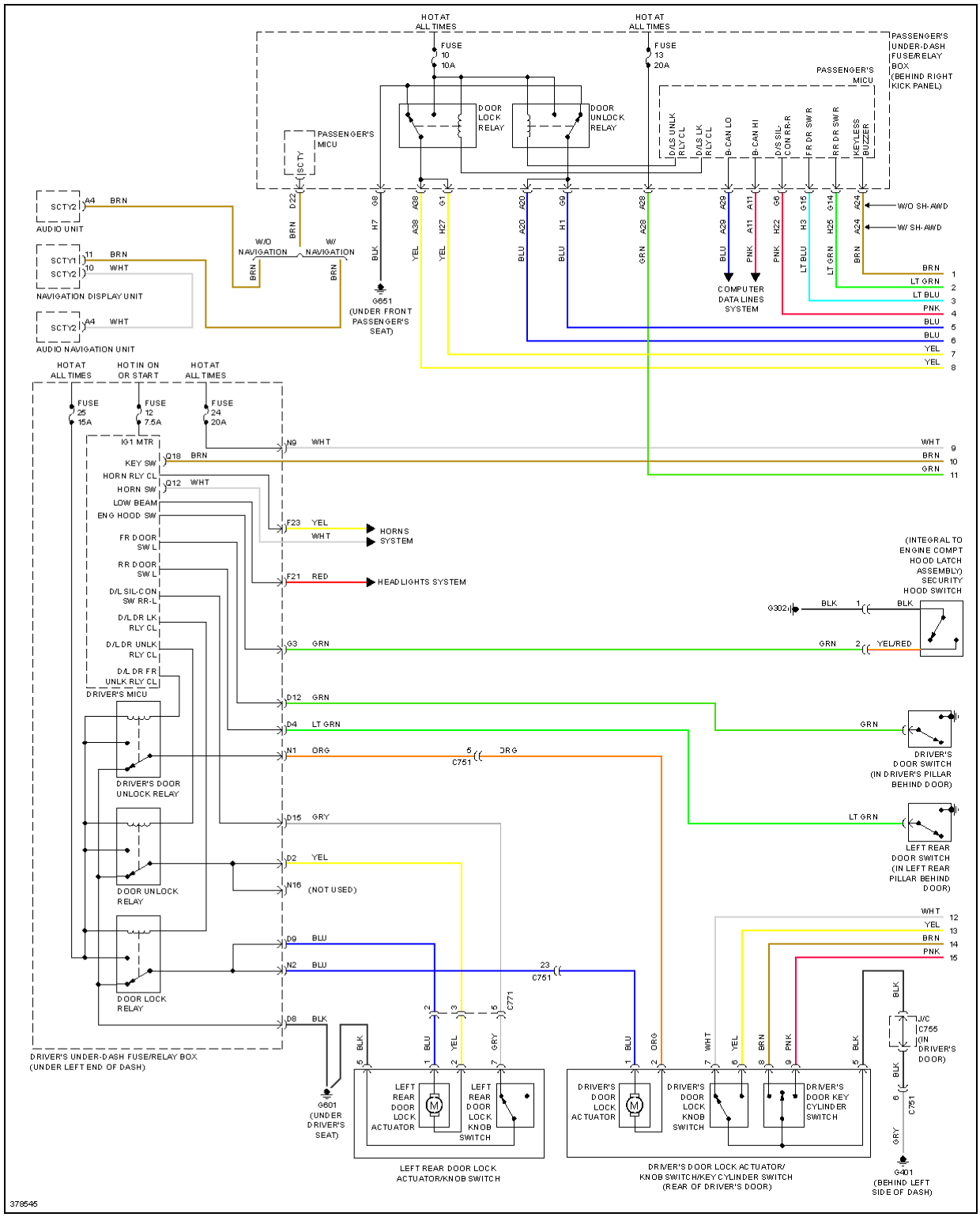


Fig. 11: Forced Entry Circuit, W/O Keyless Access (1 of 2)

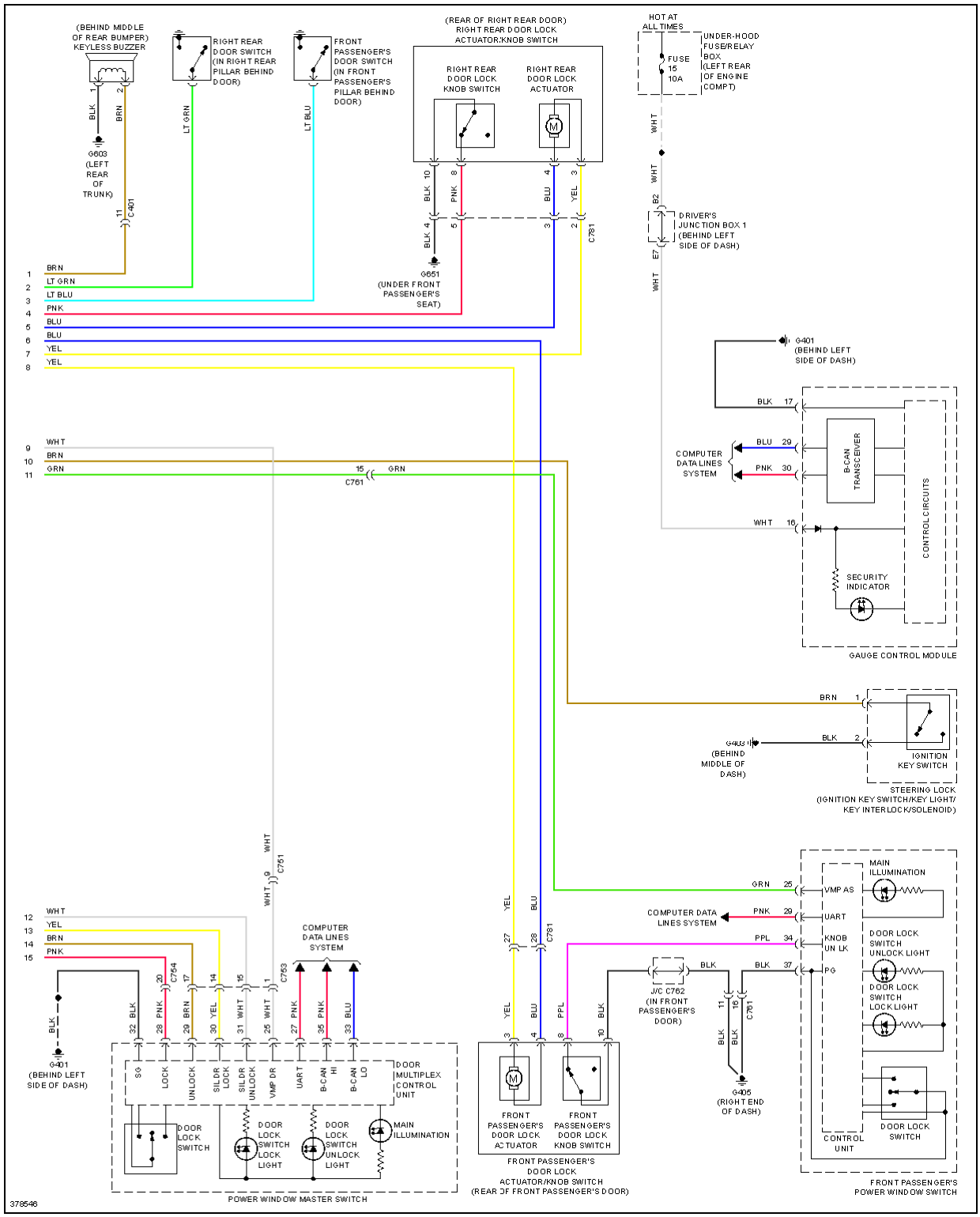


Fig. 12: Forced Entry Circuit, W/O Keyless Access (2 of 2)

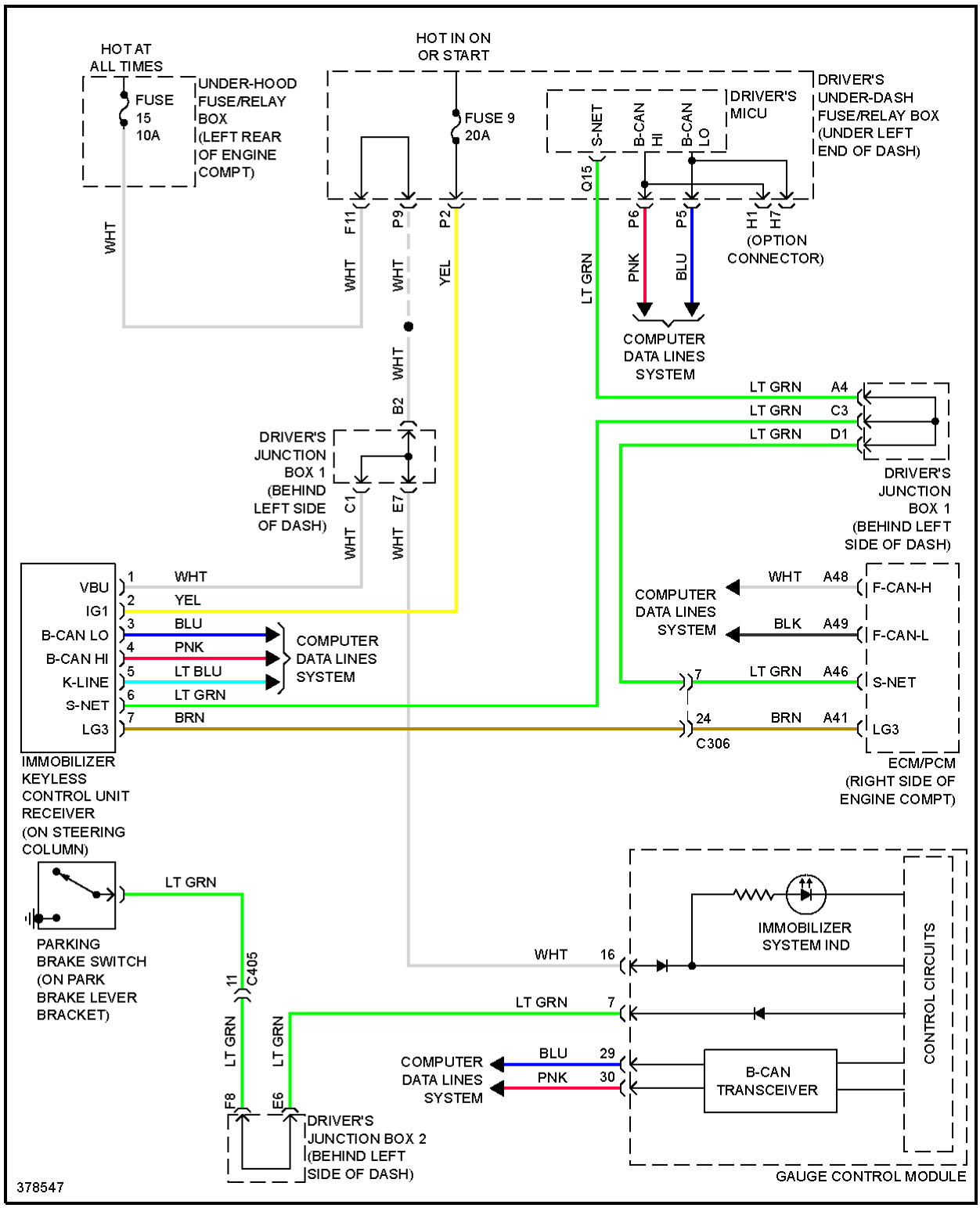


Fig. 13: Immobilizer Circuit

BODY CONTROL MODULES

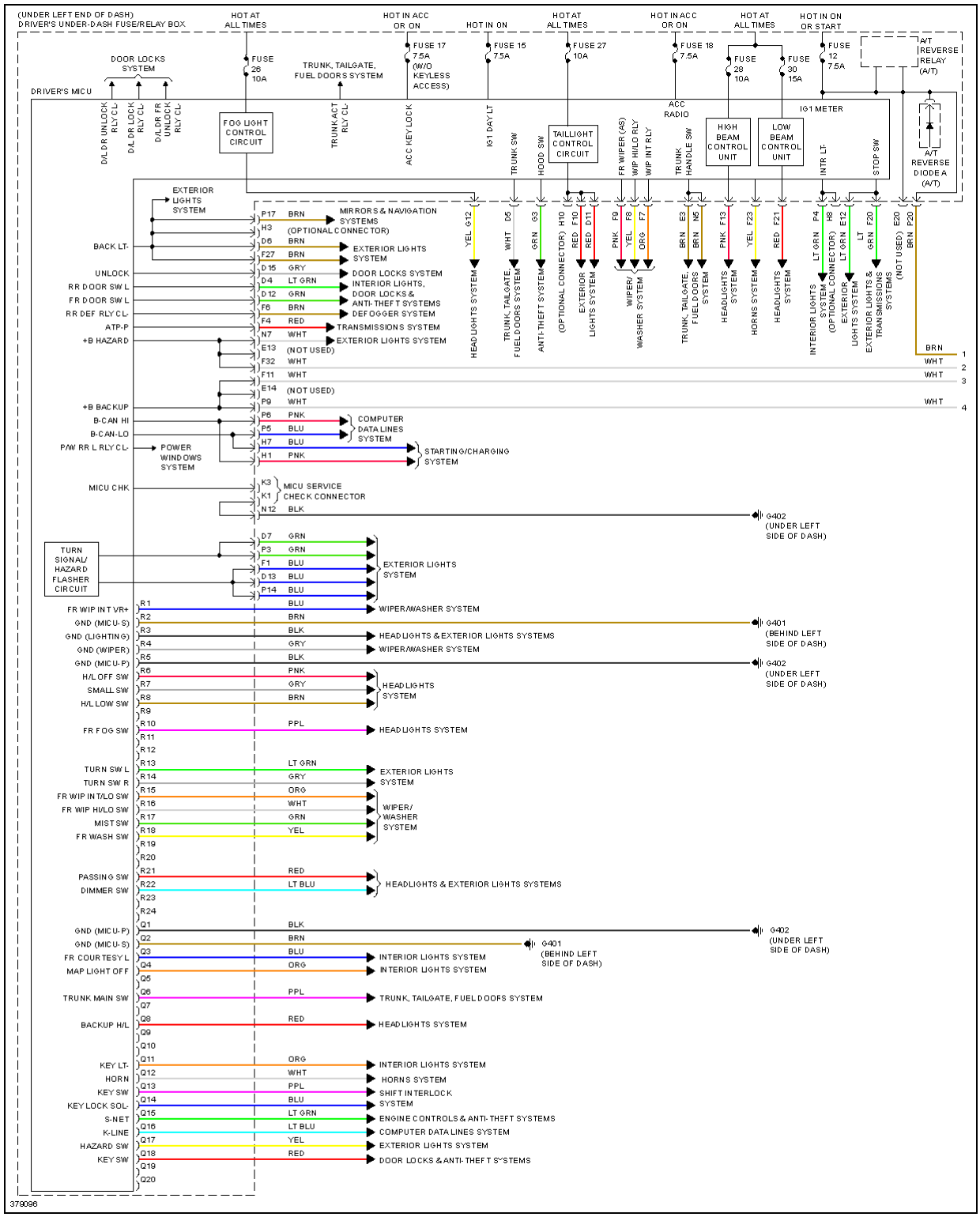


Fig. 14: Body Control Modules Circuit (1 of 2)

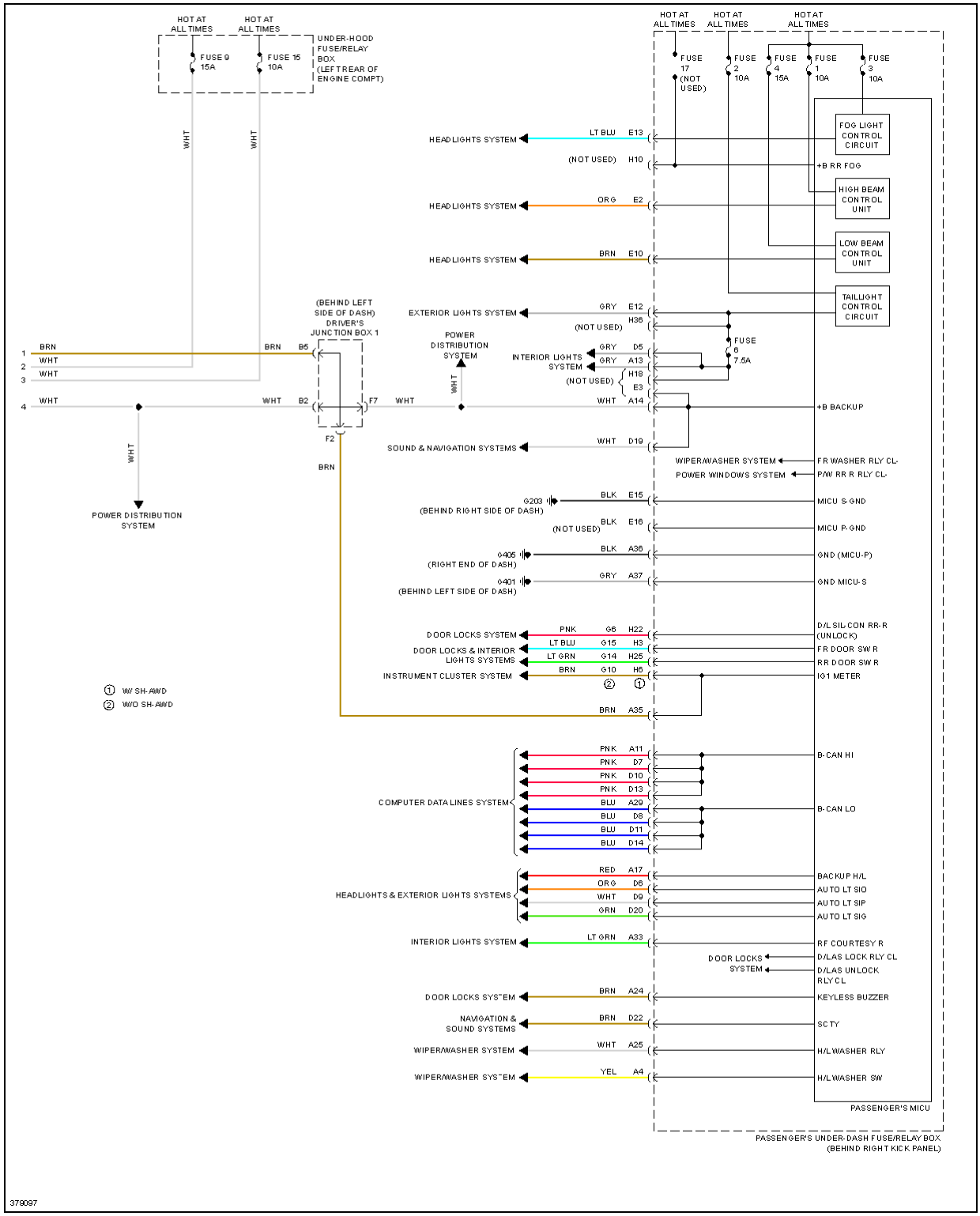


Fig. 15: Body Control Modules Circuit (2 of 2)

COMPUTER DATA LINES

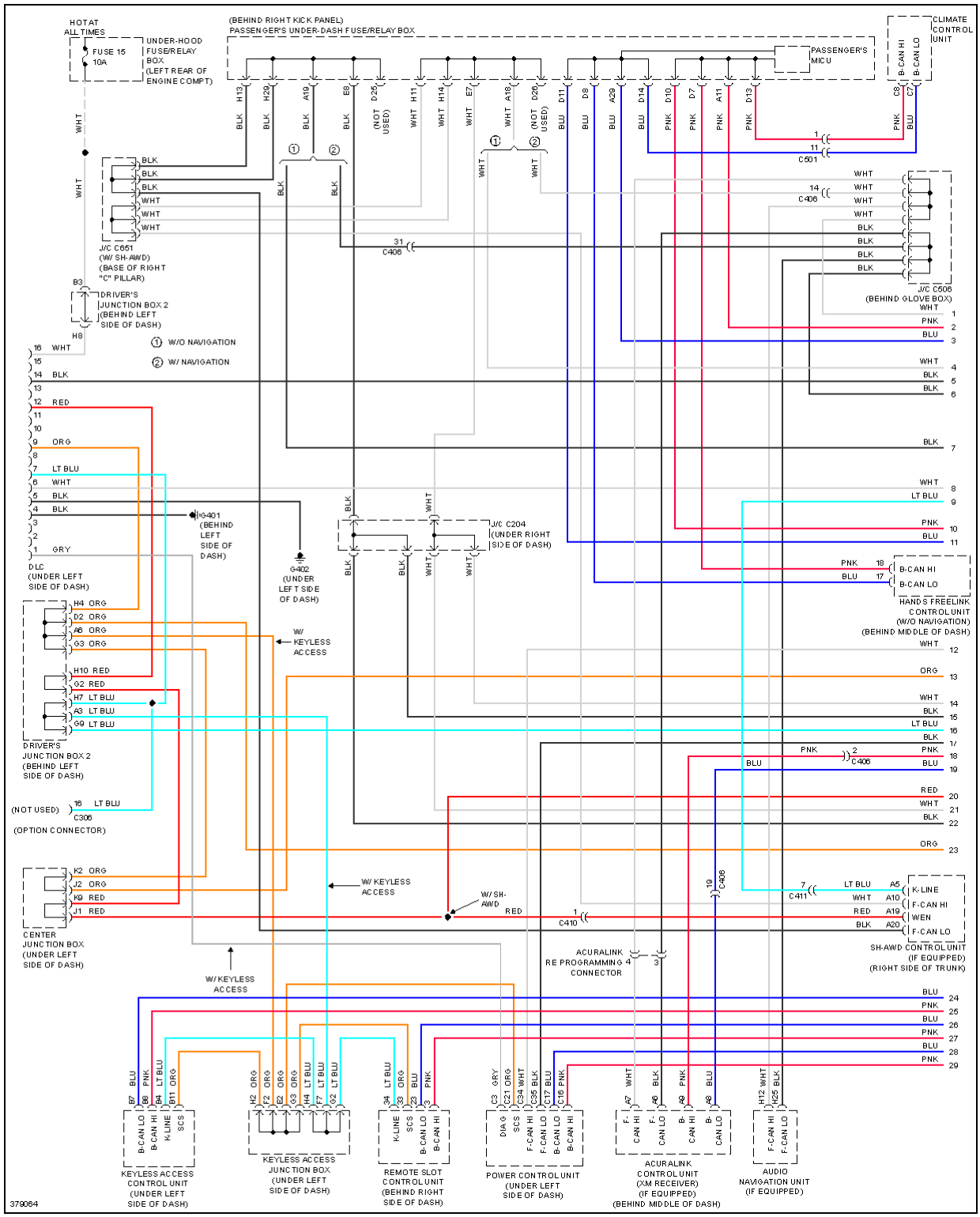


Fig. 16: Computer Data Lines Circuit (1 of 3)

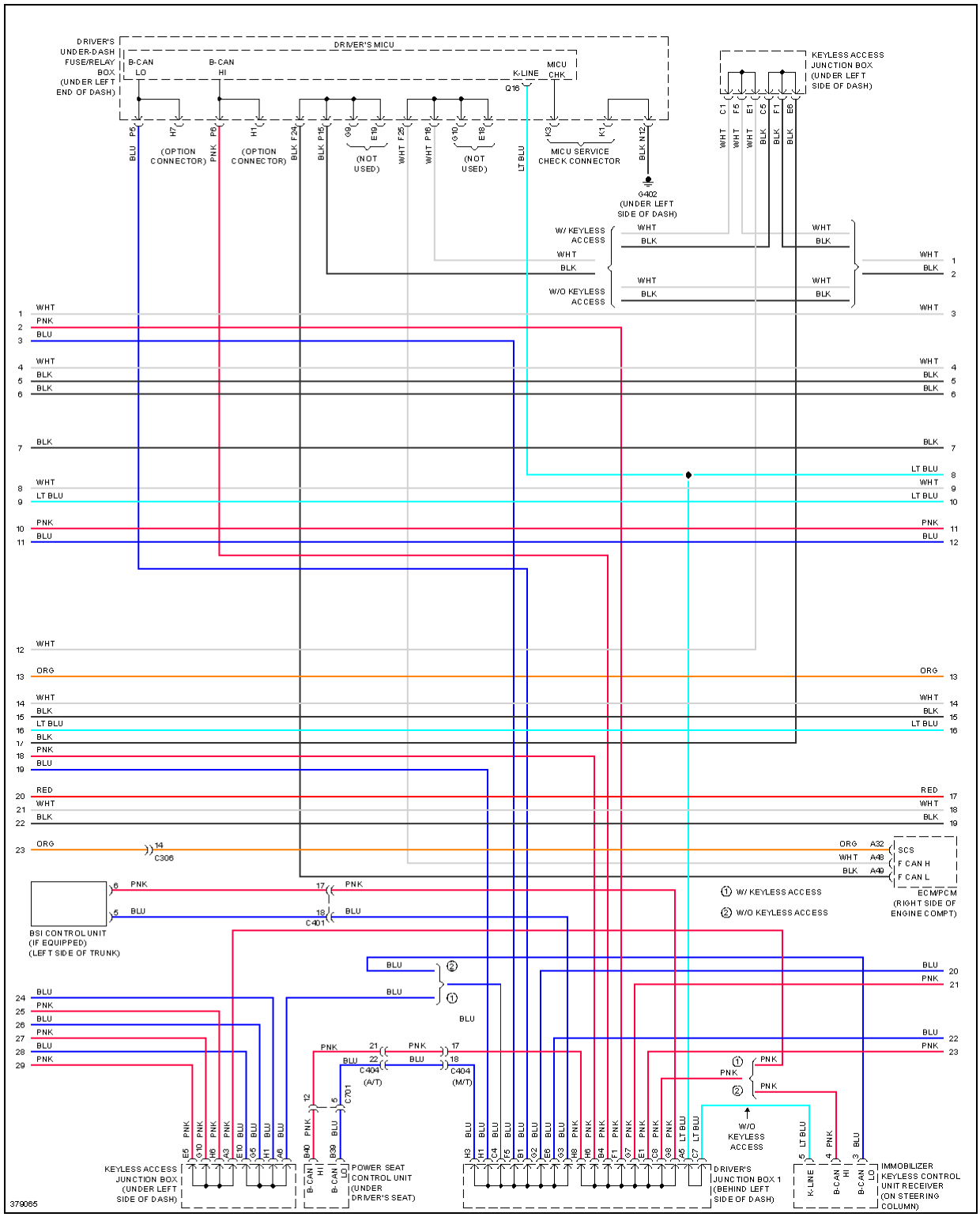


Fig. 17: Computer Data Lines Circuit (2 of 3)

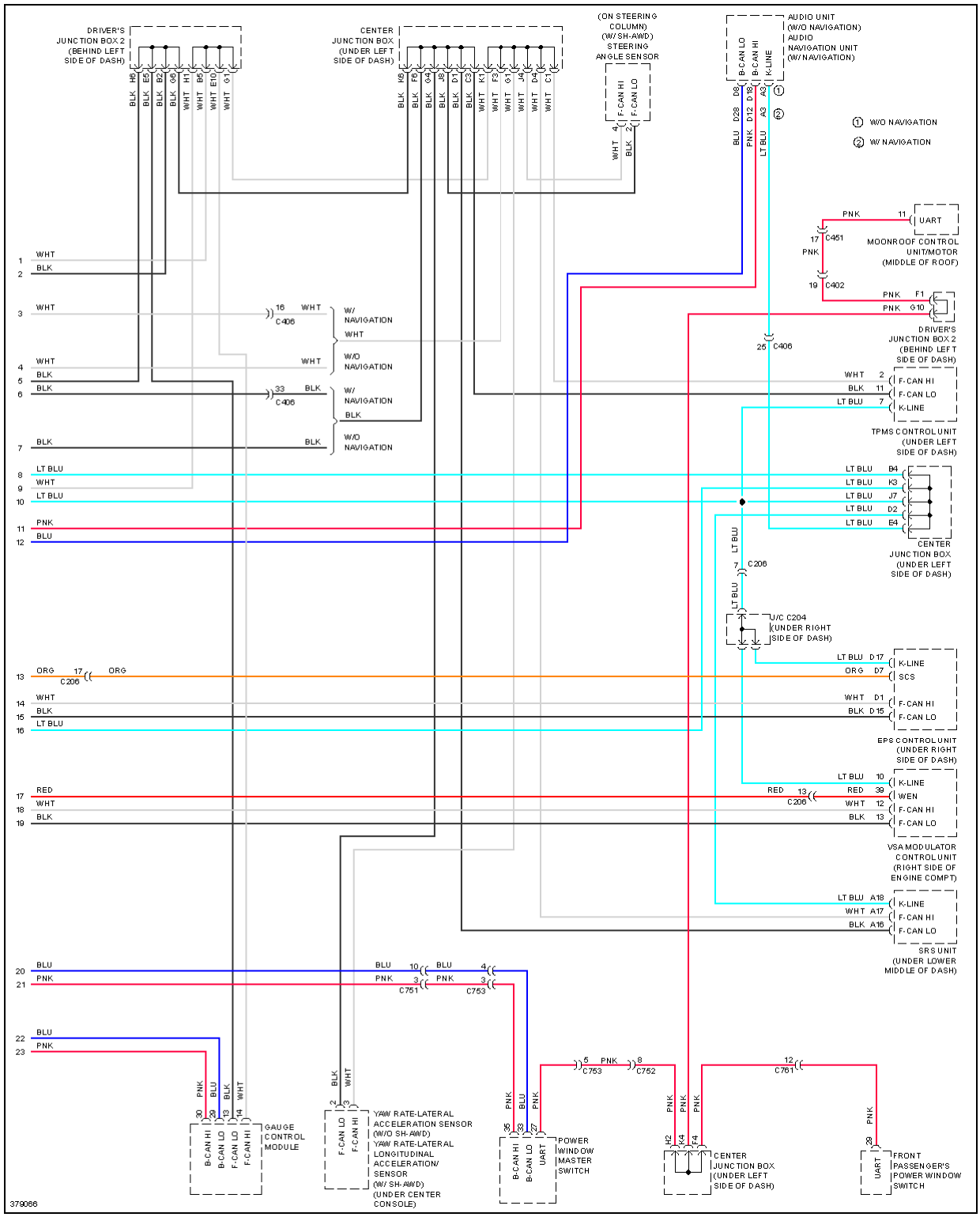


Fig. 18: Computer Data Lines Circuit (3 of 3)

COOLING FAN

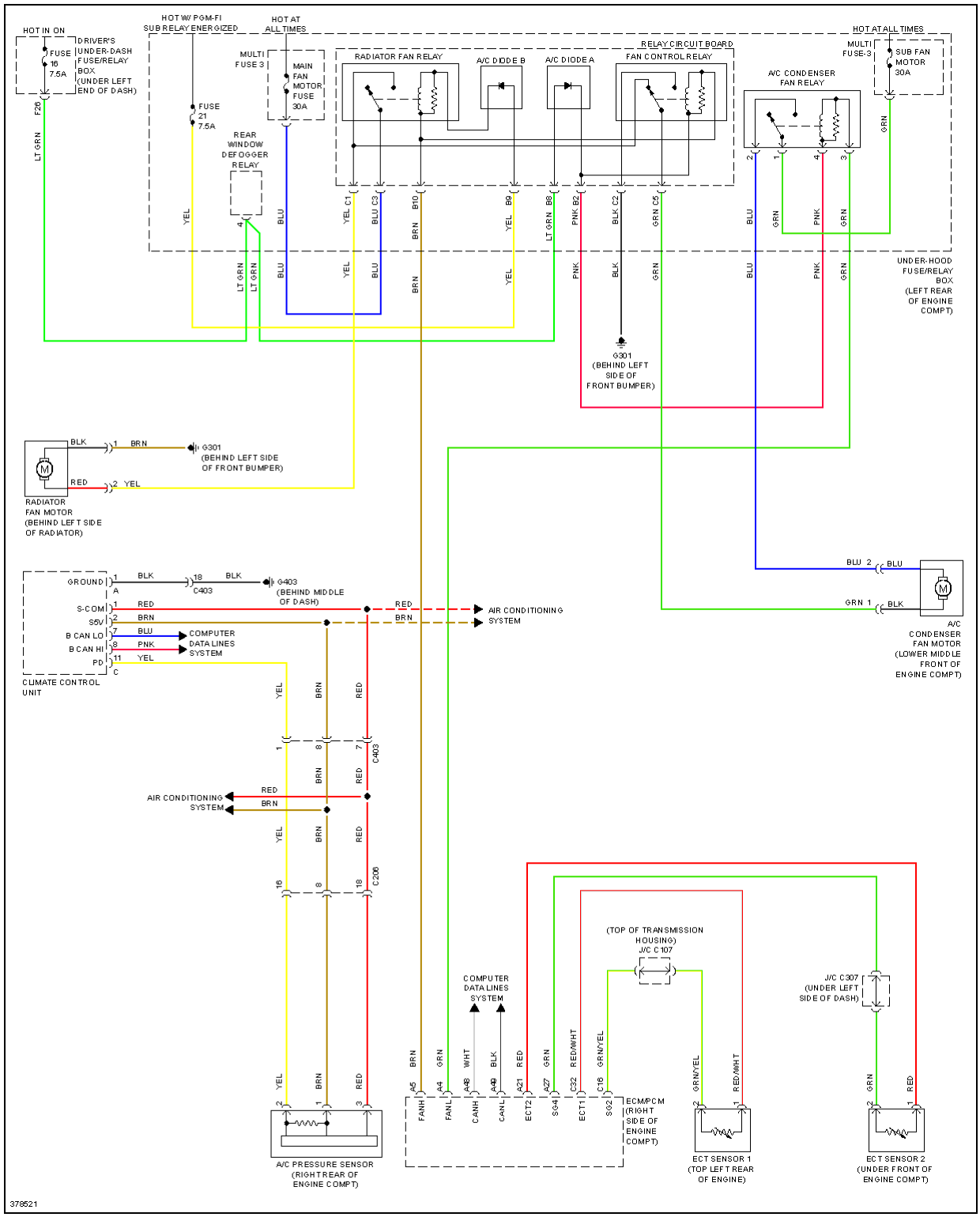


Fig. 19: Cooling Fan Circuit

CRUISE CONTROL

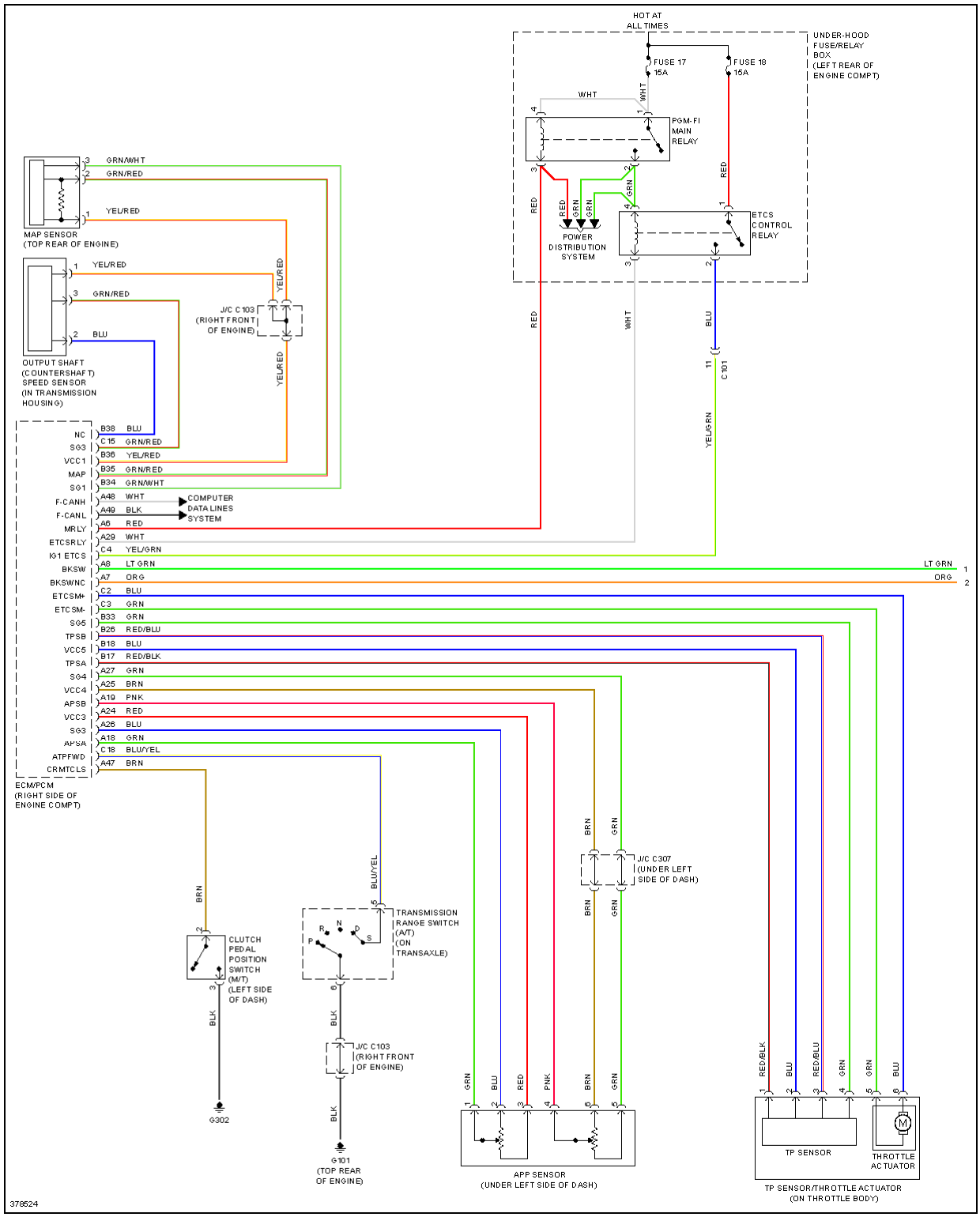


Fig. 20: Cruise Control Circuit (1 of 2)

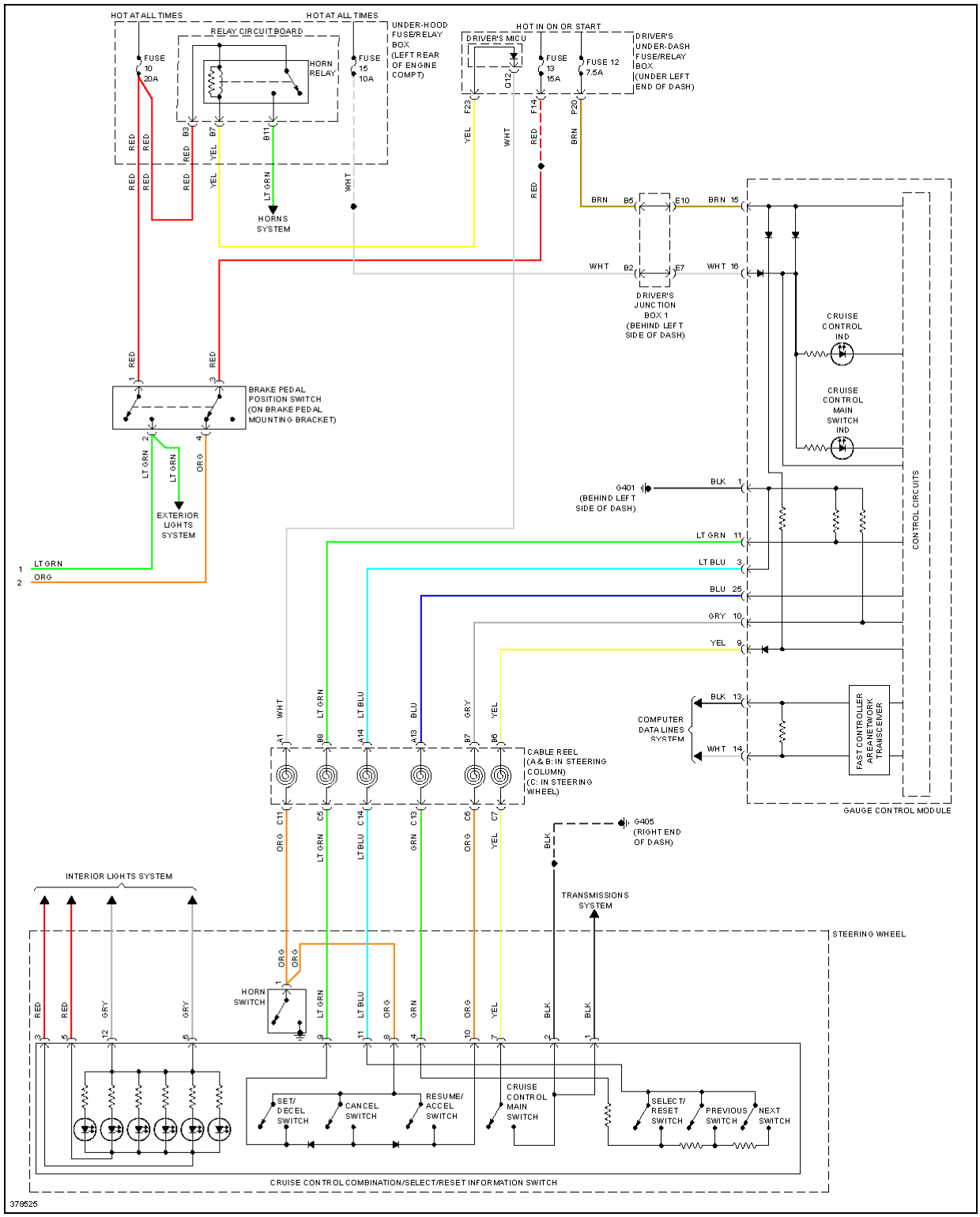


Fig. 21: Cruise Control Circuit (2 of 2)

DEFOGGERS

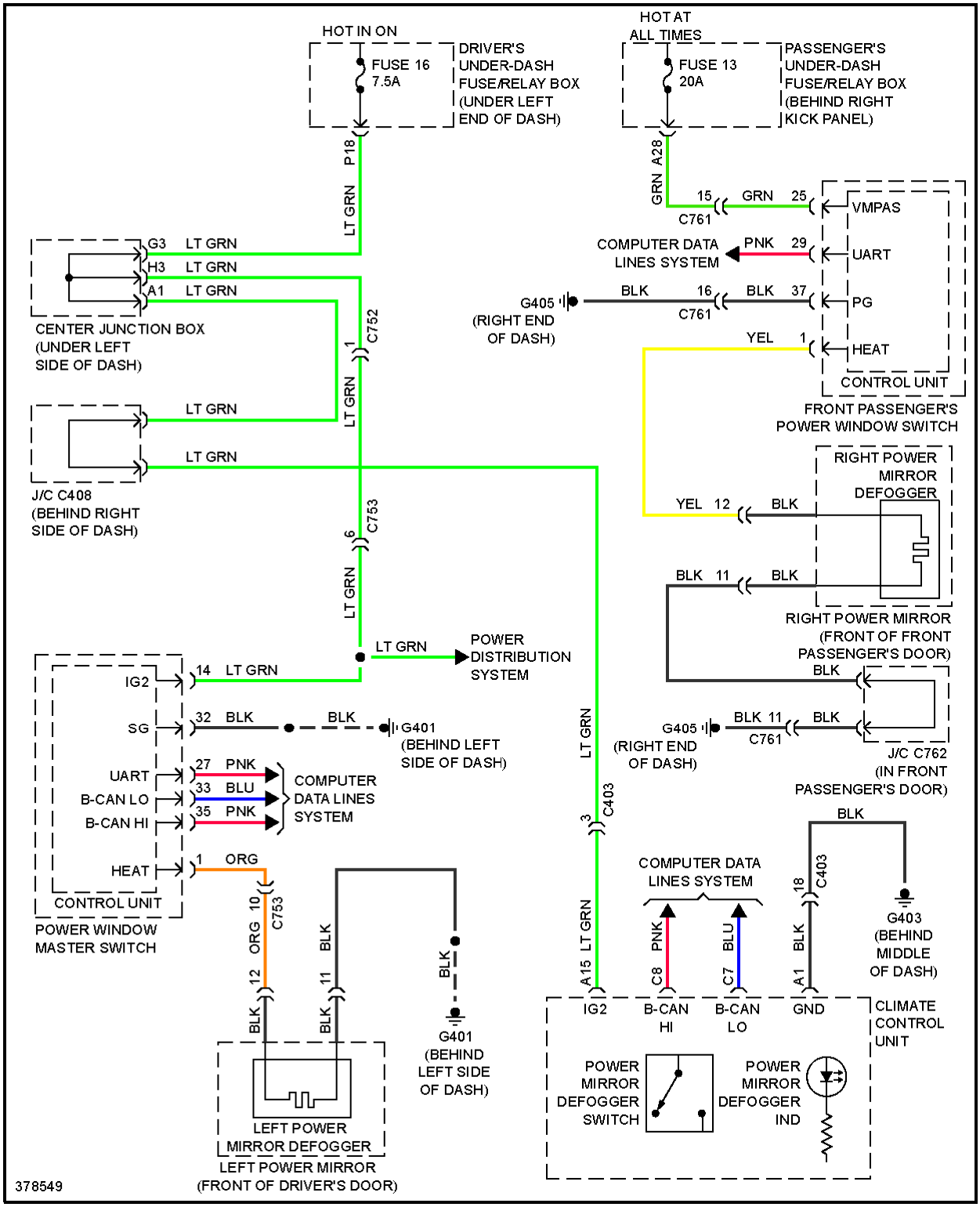


Fig. 22: Heated Mirrors Circuit

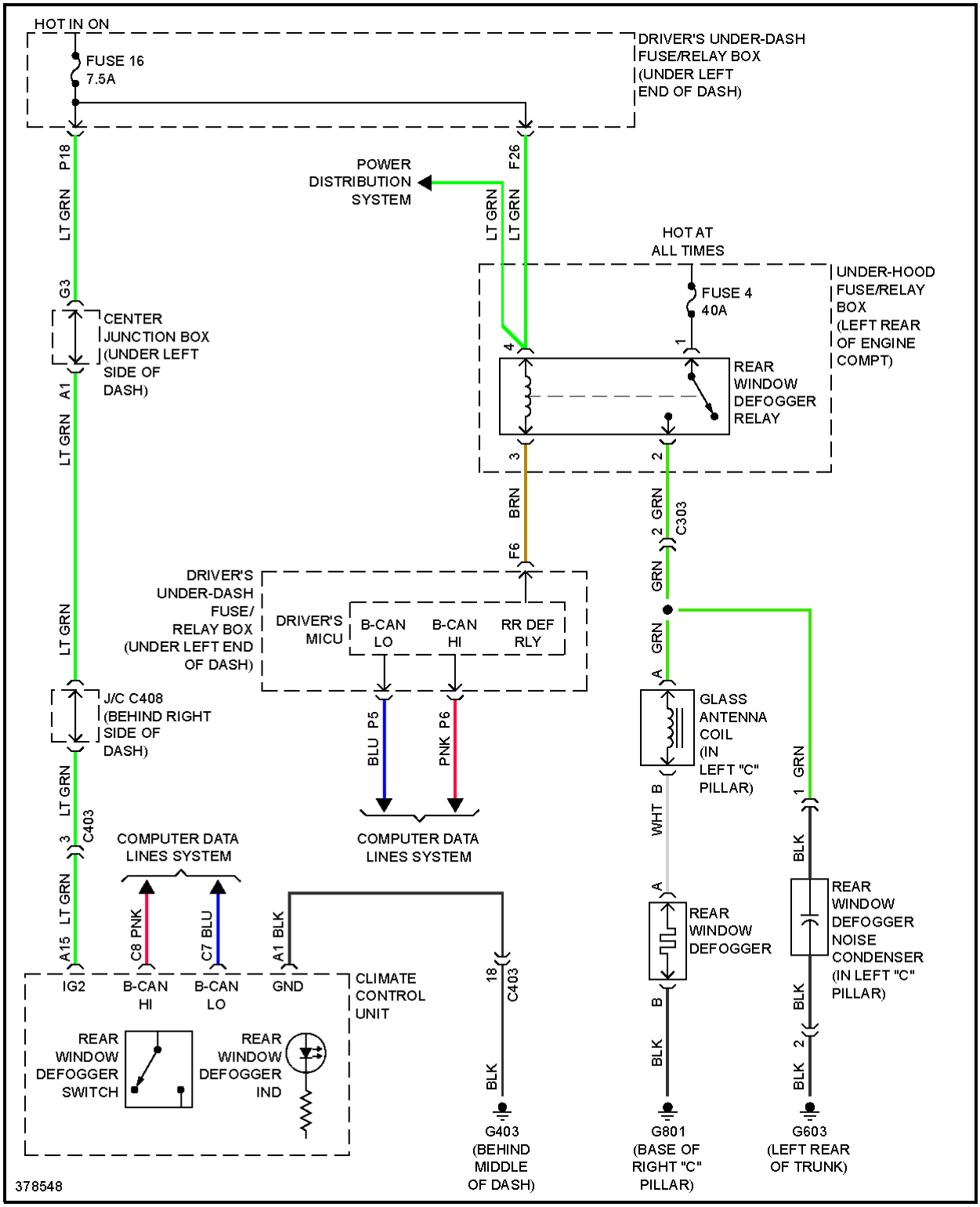


Fig. 23: Rear Defogger Circuit

ELECTRONIC POWER STEERING

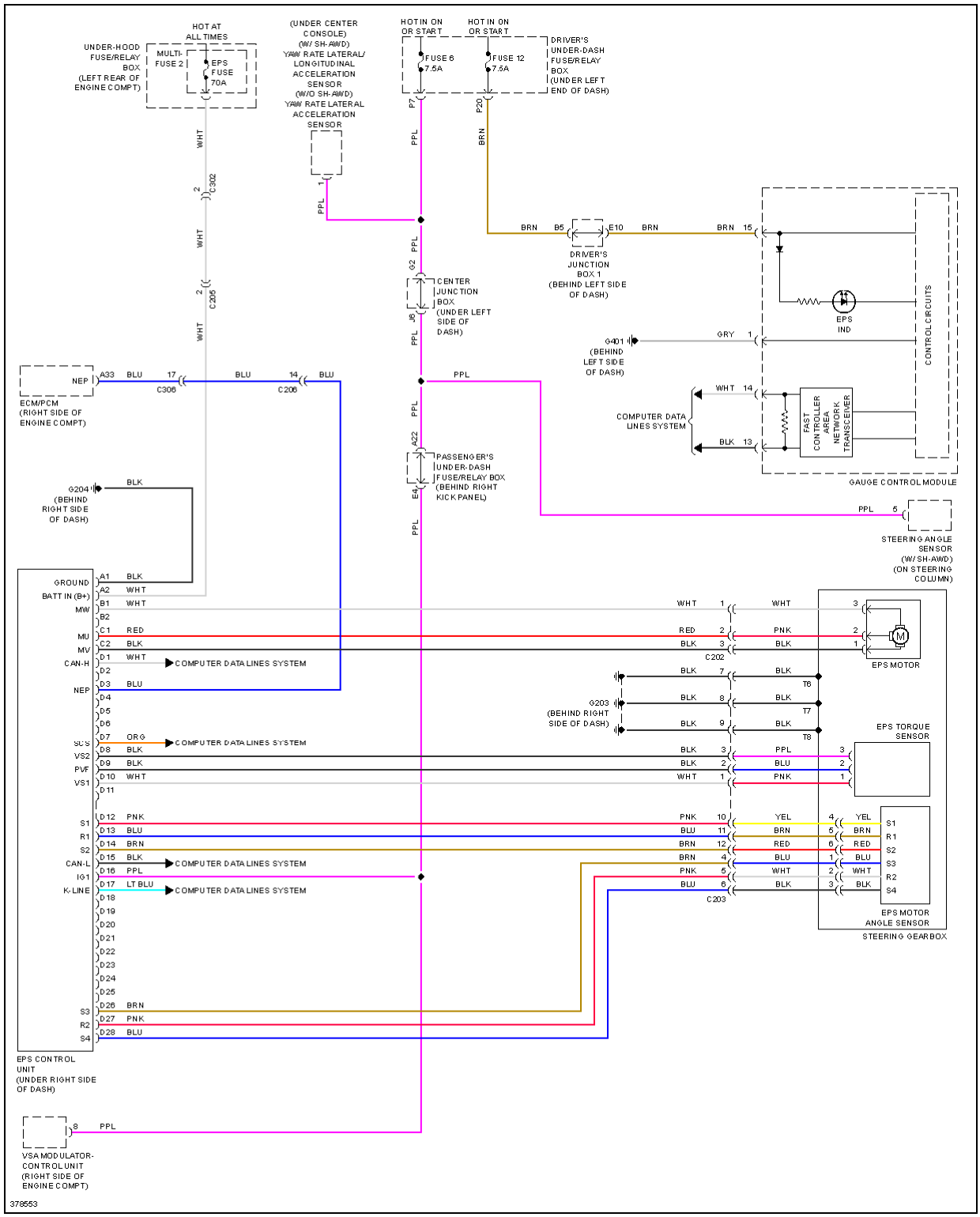


Fig. 24: Electronic Power Steering Circuit

ENGINE PERFORMANCE

3.5L

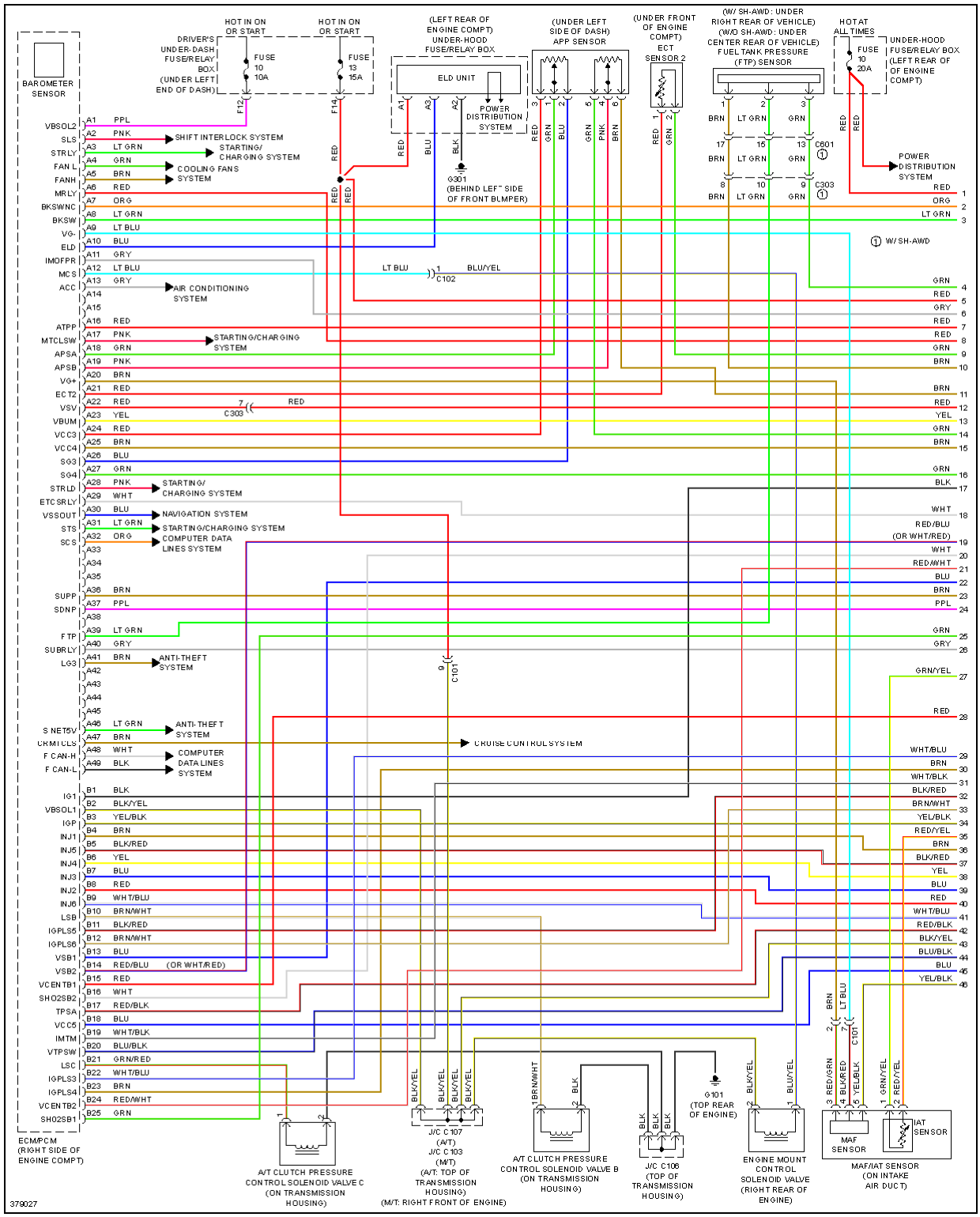


Fig. 25: 3.5L, Engine Performance Circuit (1 of 6)

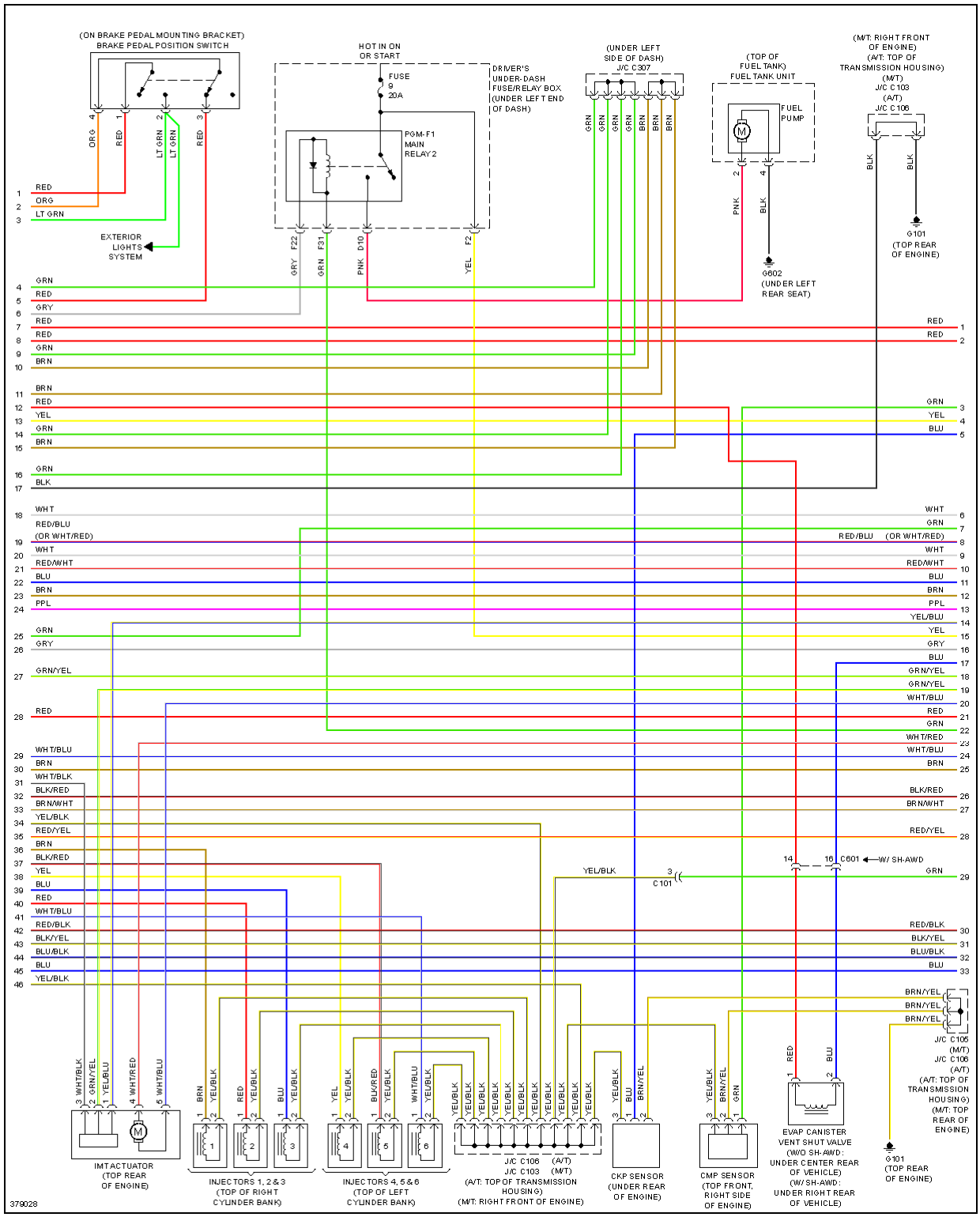


Fig. 26: 3.5L, Engine Performance Circuit (2 of 6)

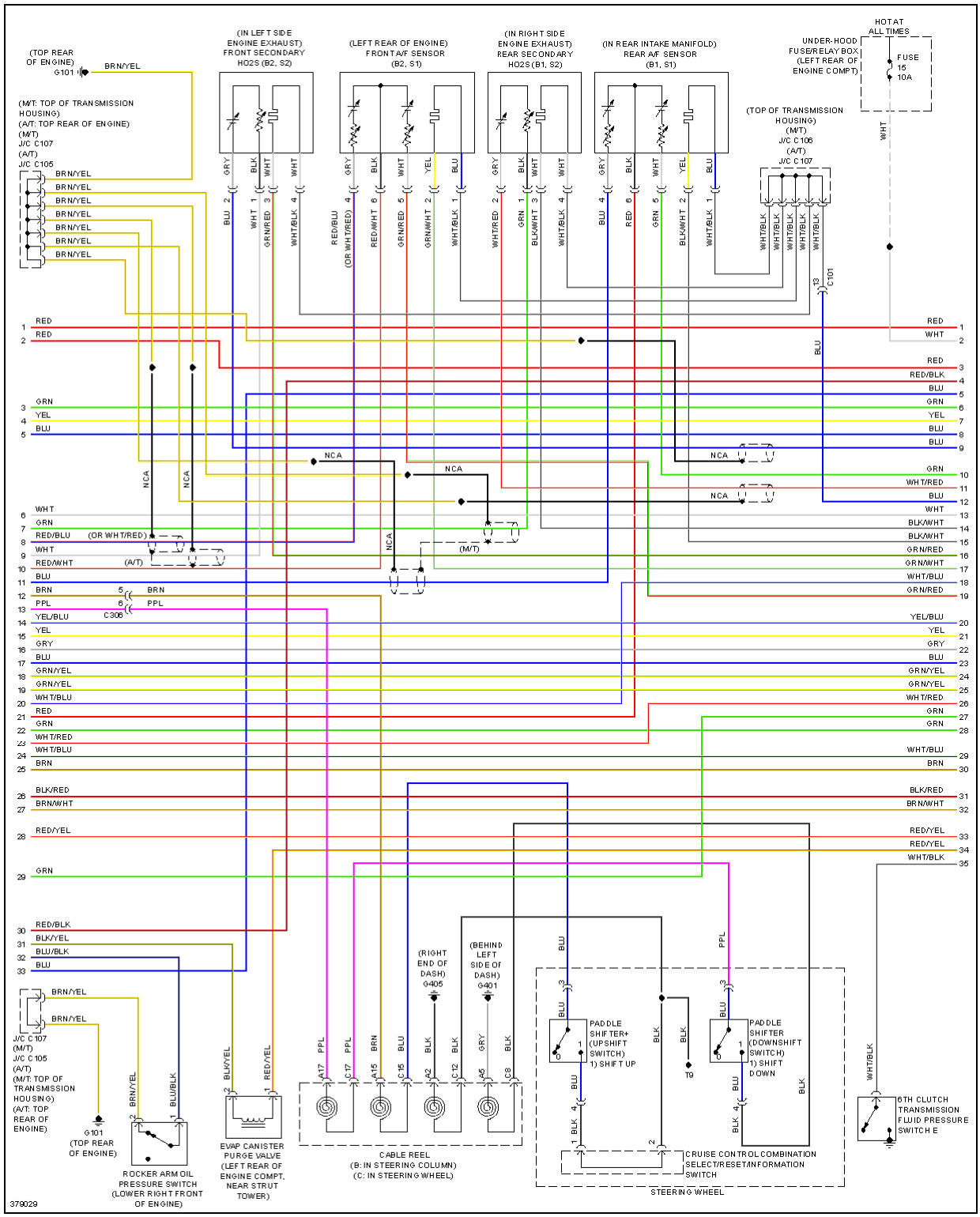


Fig. 27: 3.5L, Engine Performance Circuit (3 of 6)

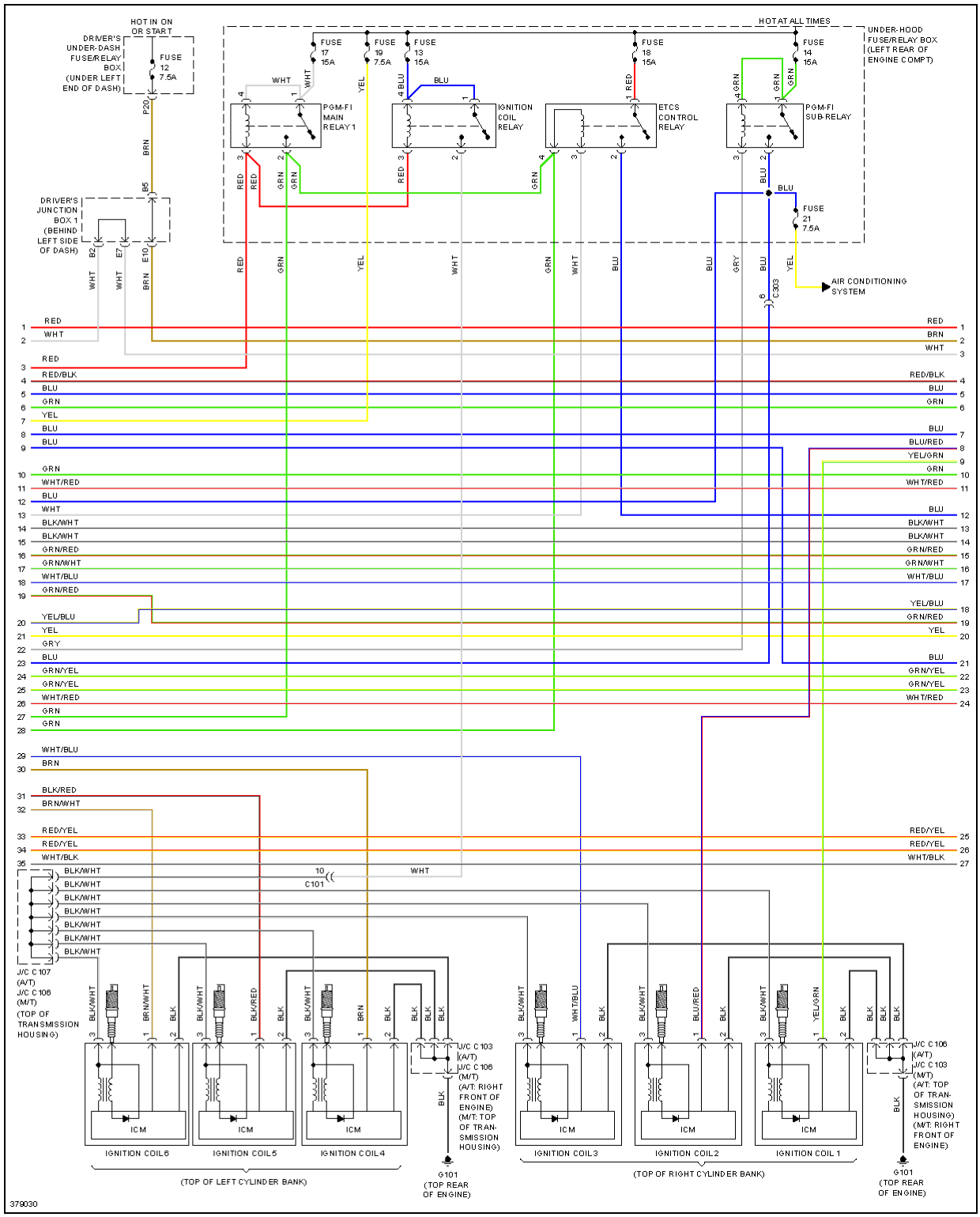


Fig. 28: 3.5L, Engine Performance Circuit (4 of 6)

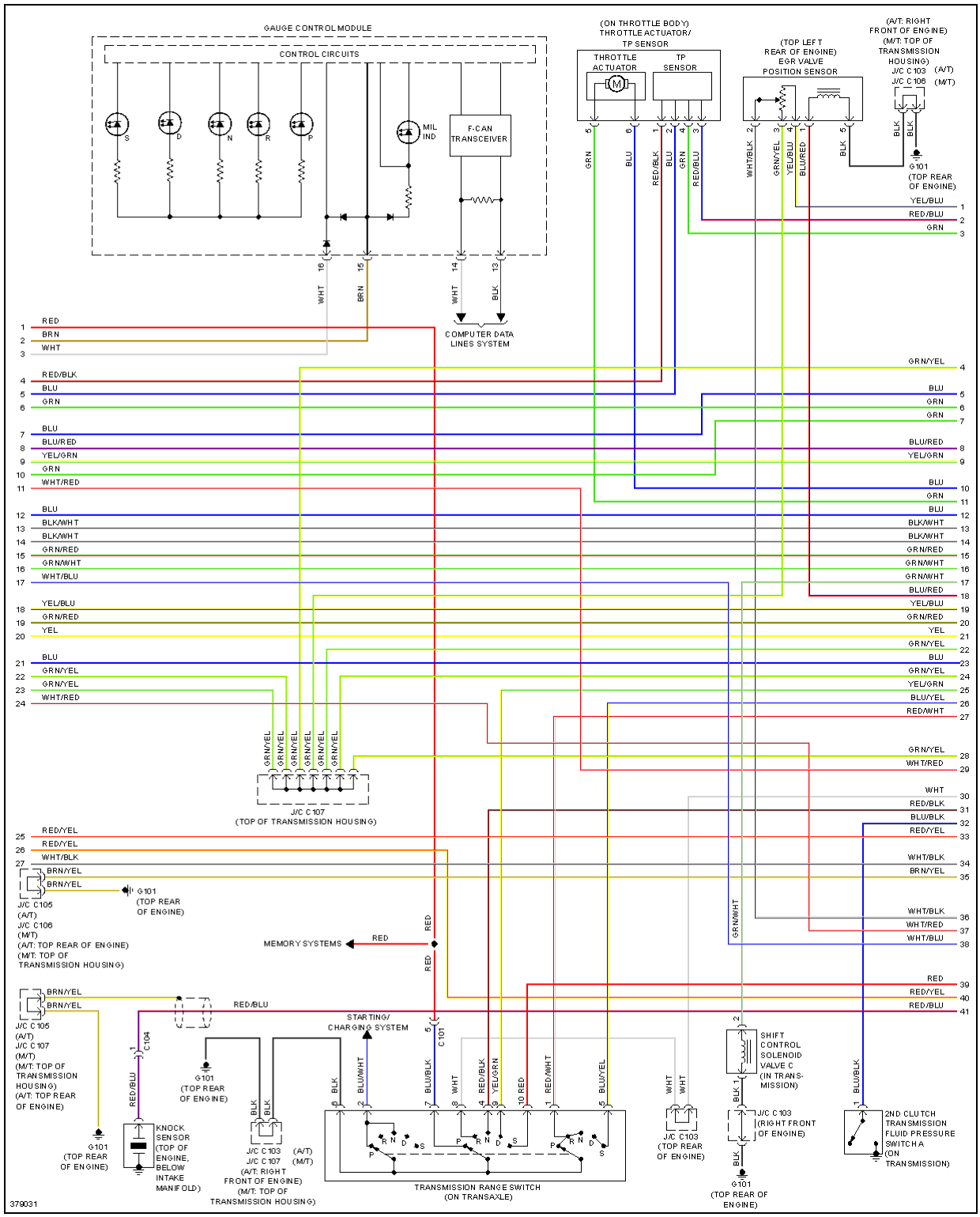


Fig. 29: 3.5L, Engine Performance Circuit (5 of 6)

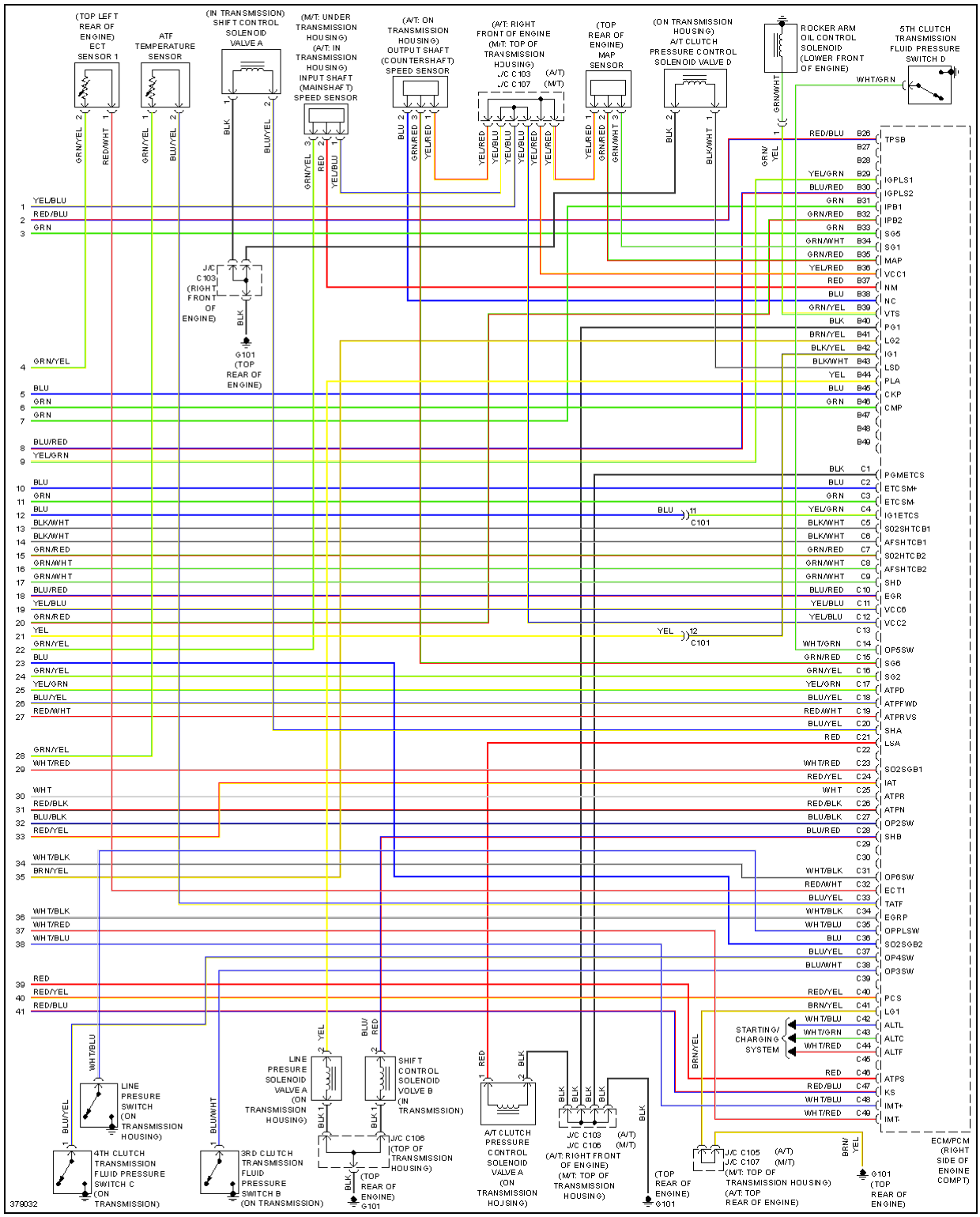


Fig. 30: 3.5L, Engine Performance Circuit (6 of 6)

3.7L

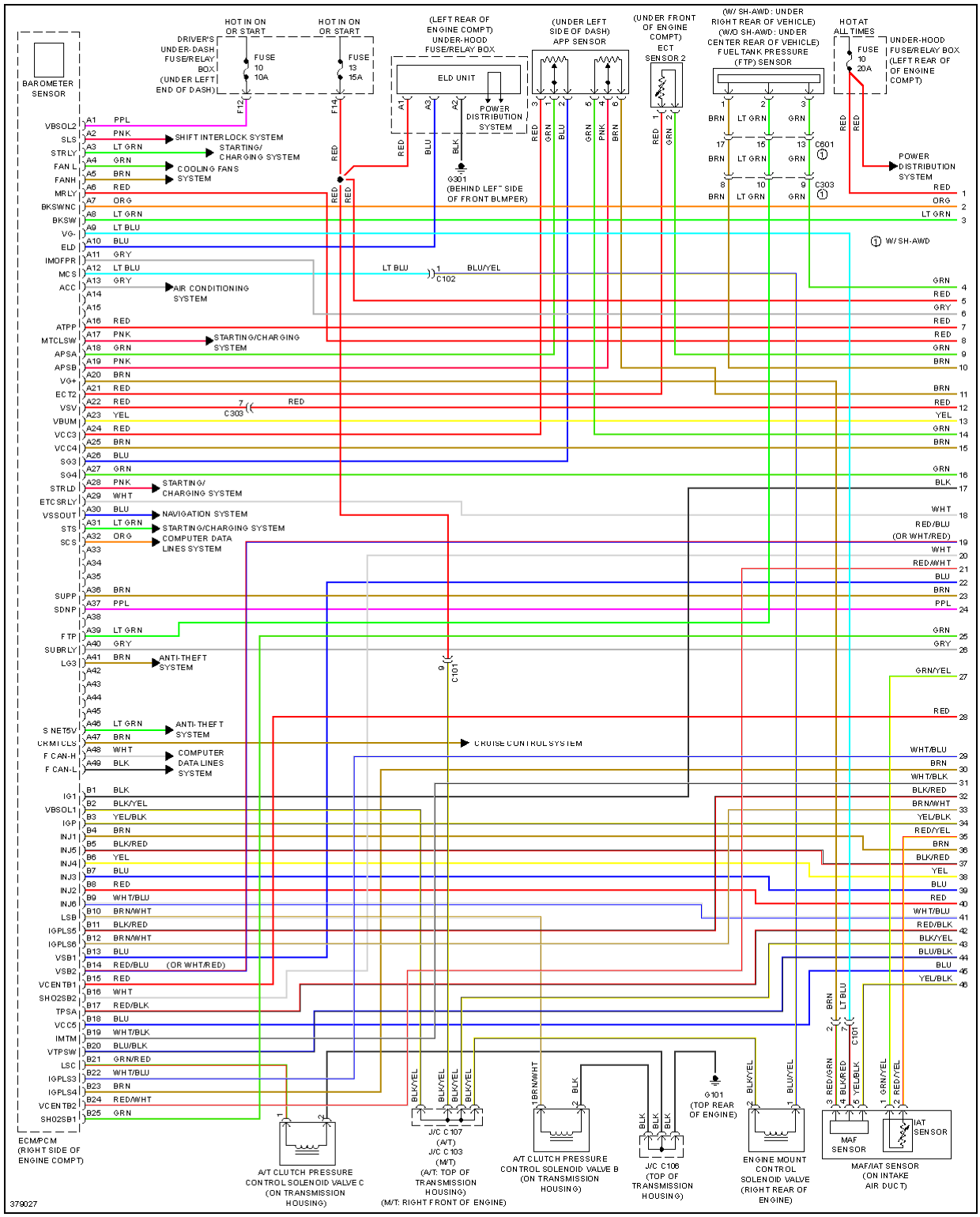


Fig. 31: 3.7L, Engine Performance Circuit (1 of 6)

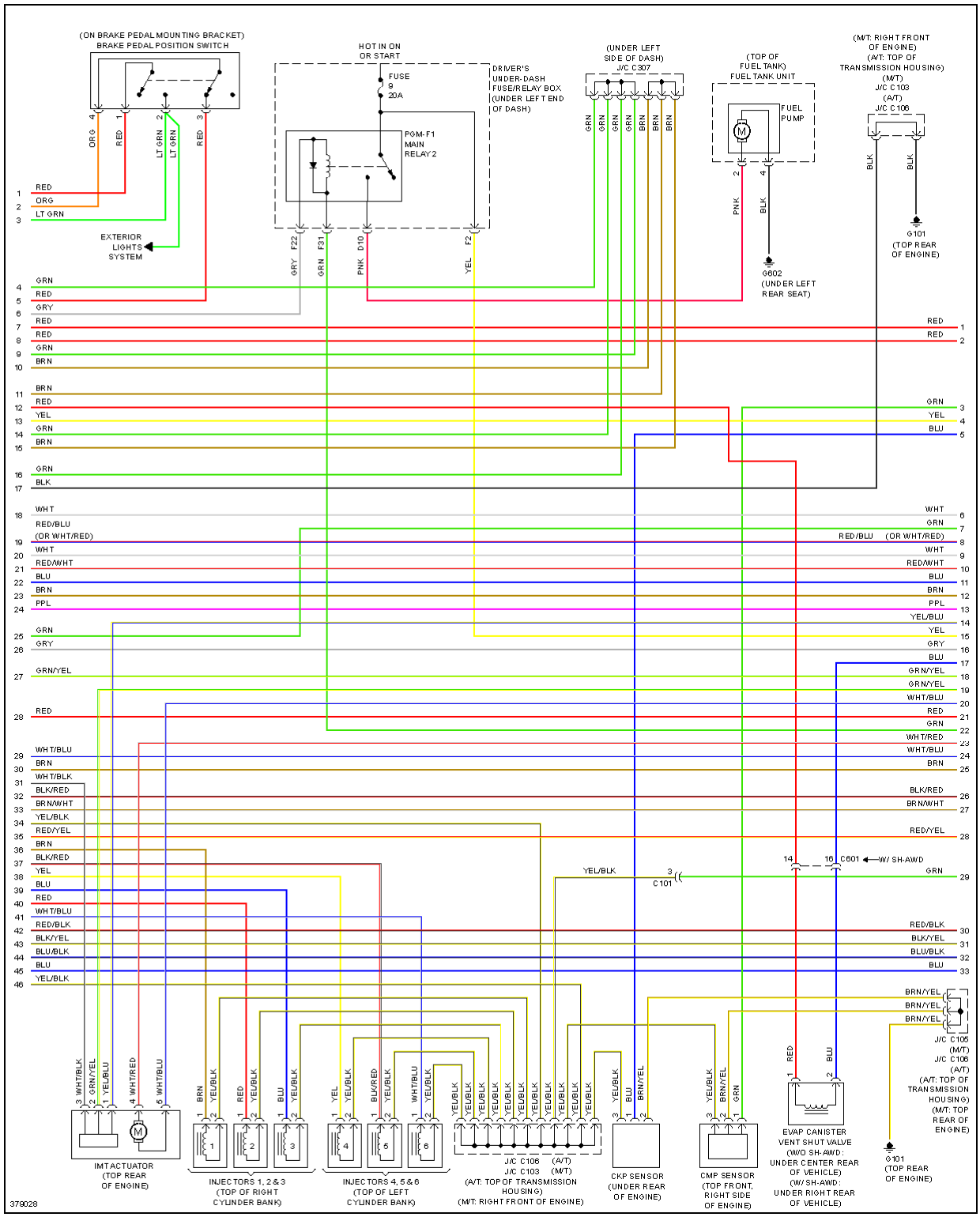


Fig. 32: 3.7L, Engine Performance Circuit (2 of 6)

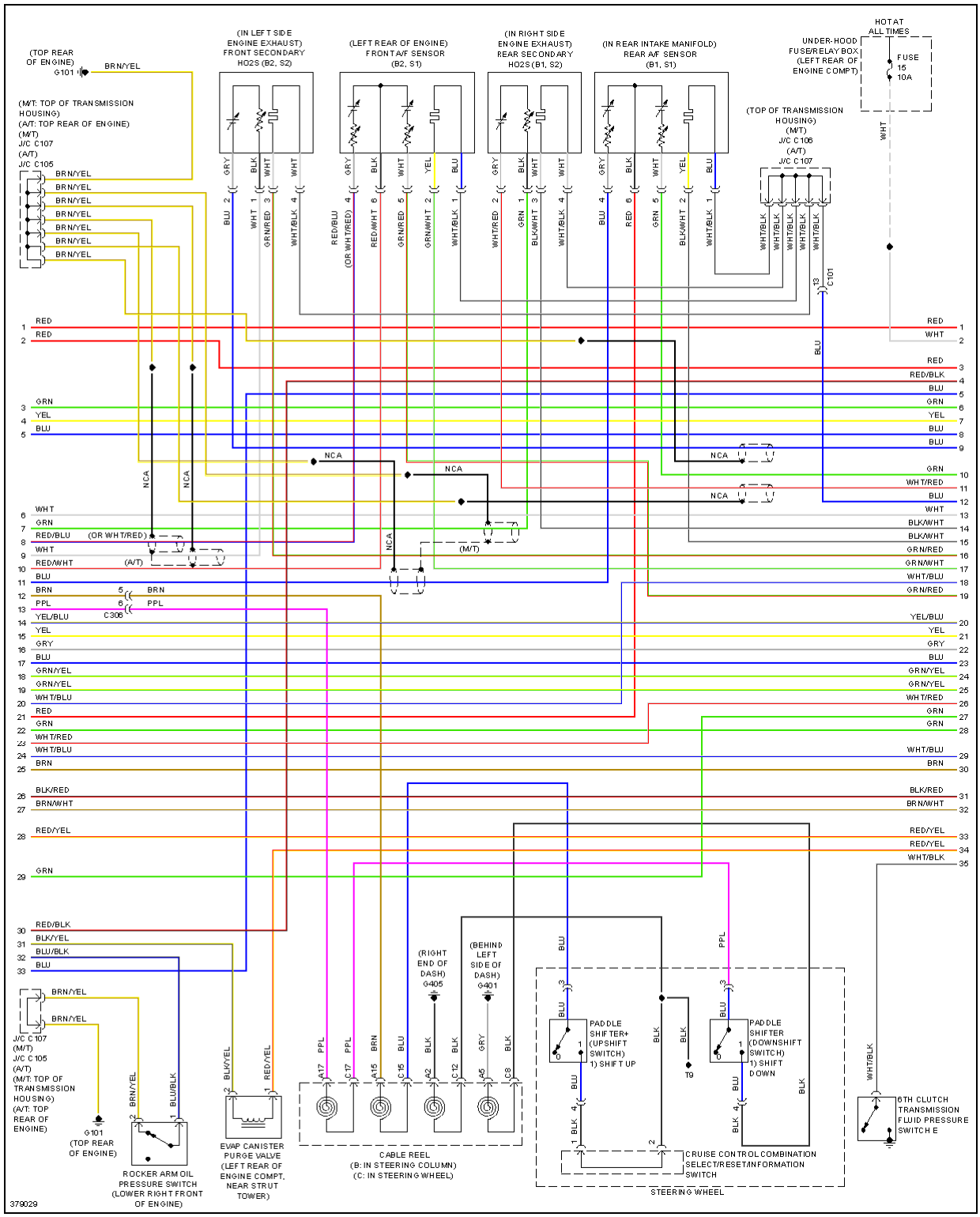


Fig. 33: 3.7L, Engine Performance Circuit (3 of 6)

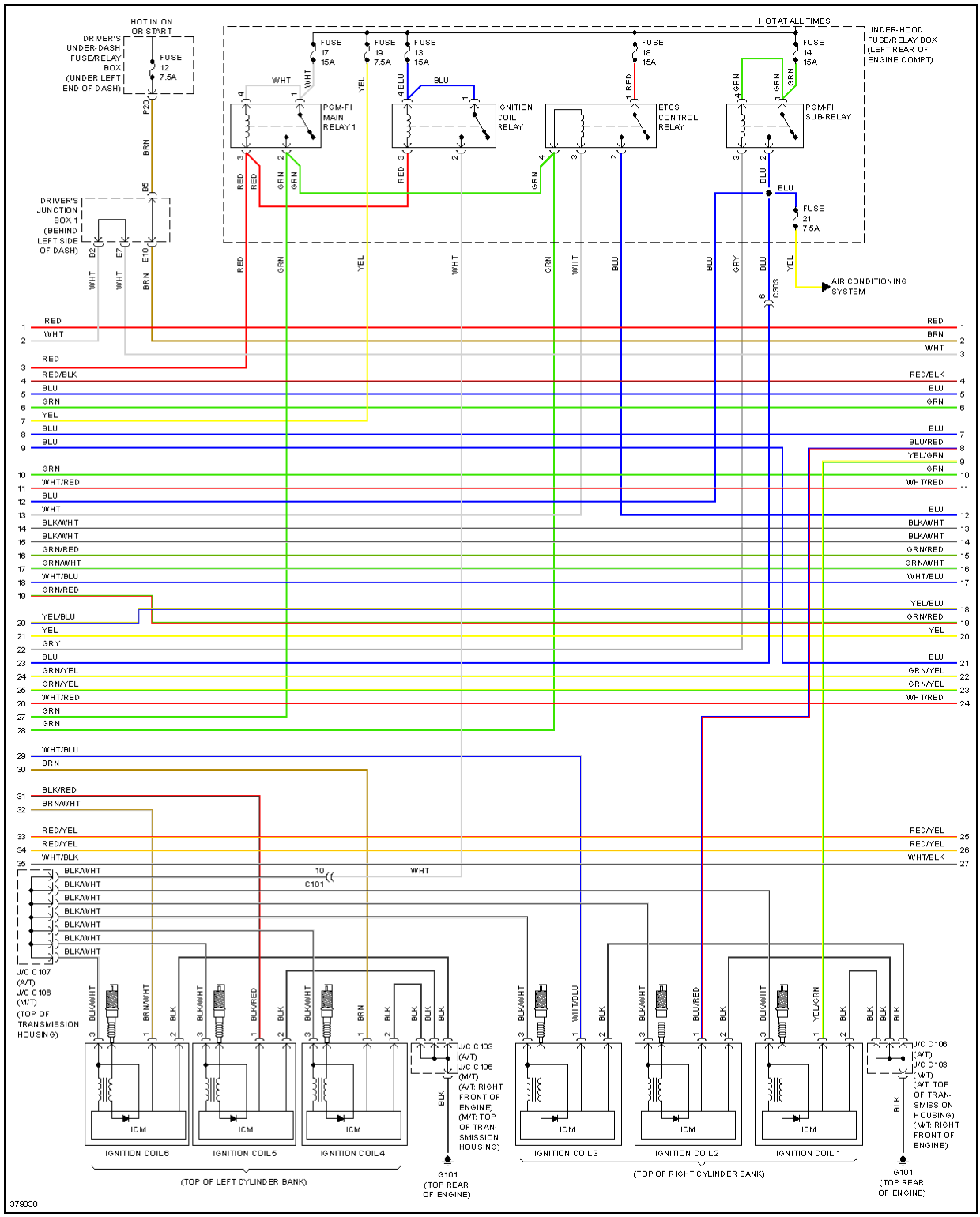


Fig. 34: 3.7L, Engine Performance Circuit (4 of 6)

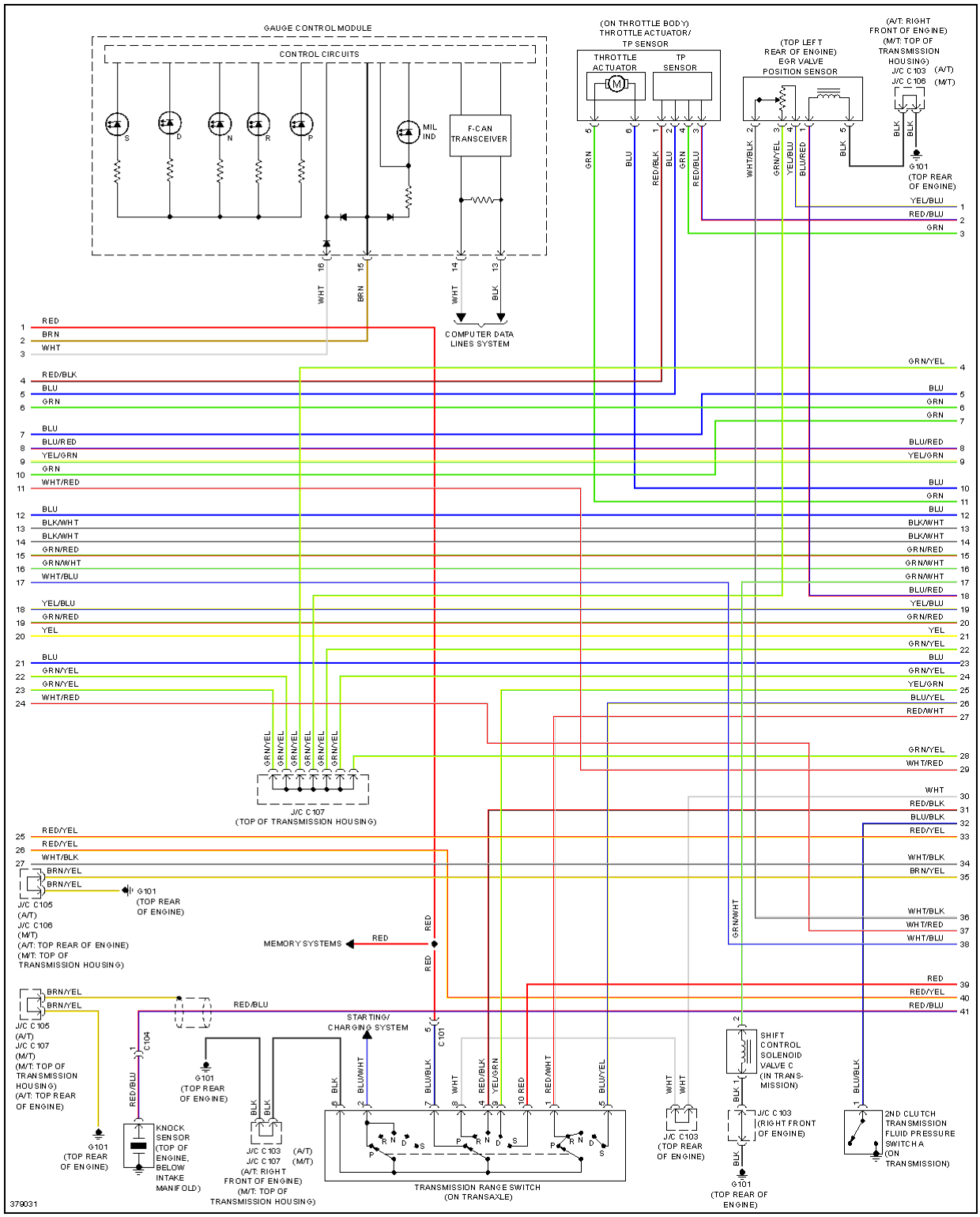


Fig. 35: 3.7L, Engine Performance Circuit (5 of 6)

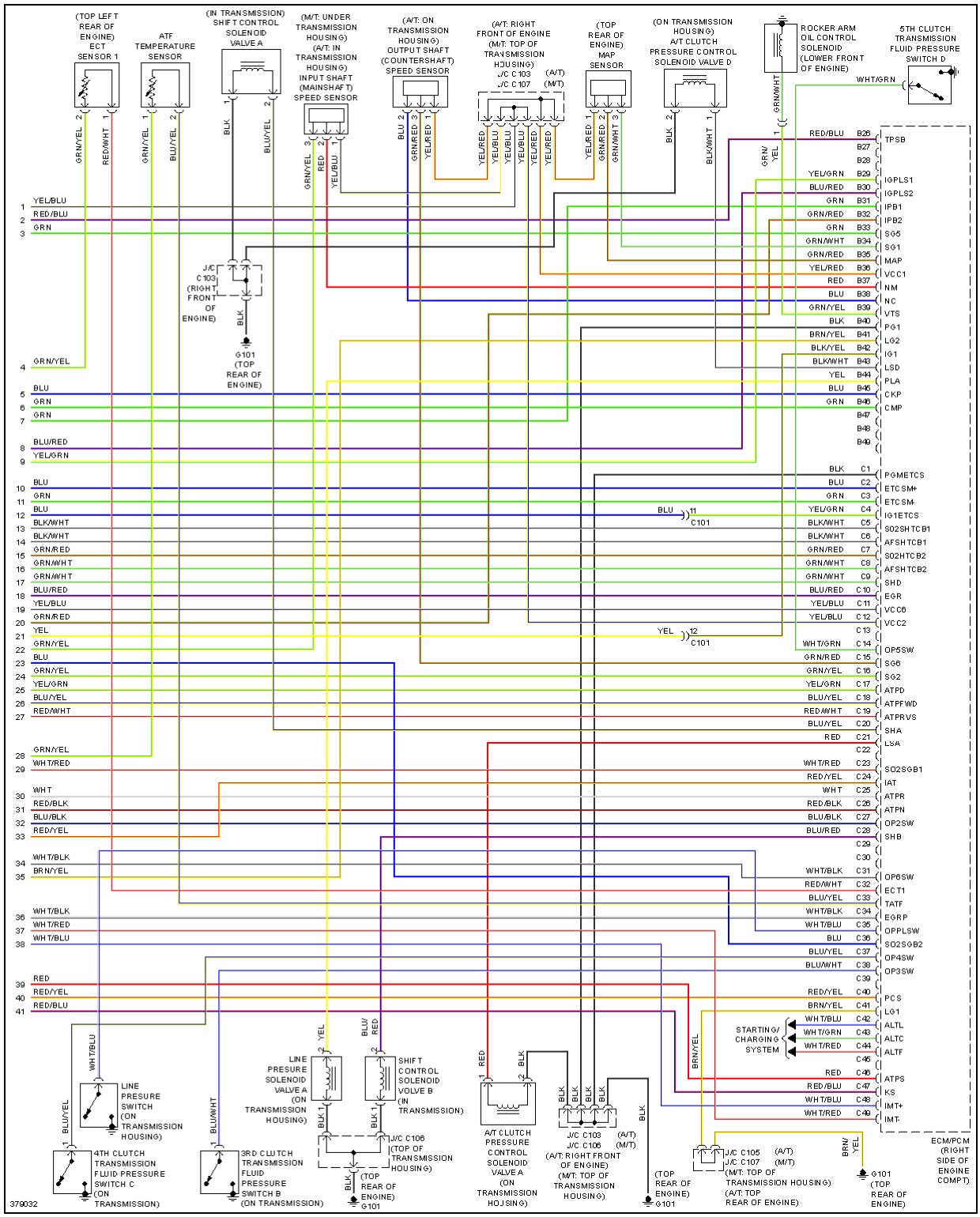


Fig. 36: 3.7L, Engine Performance Circuit (6 of 6)

EXTERIOR LIGHTS

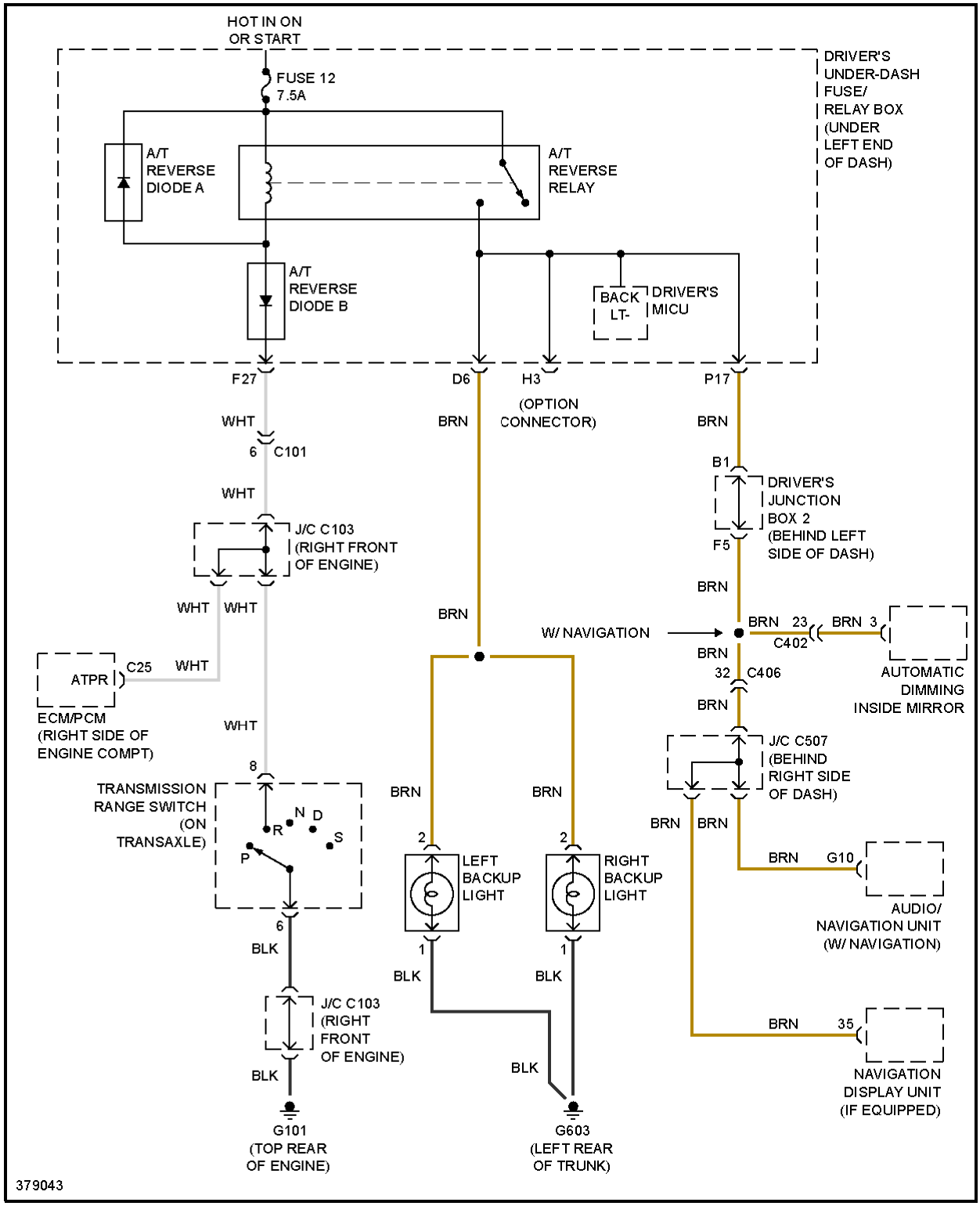


Fig. 37: Backup Lamps Circuit, A/T

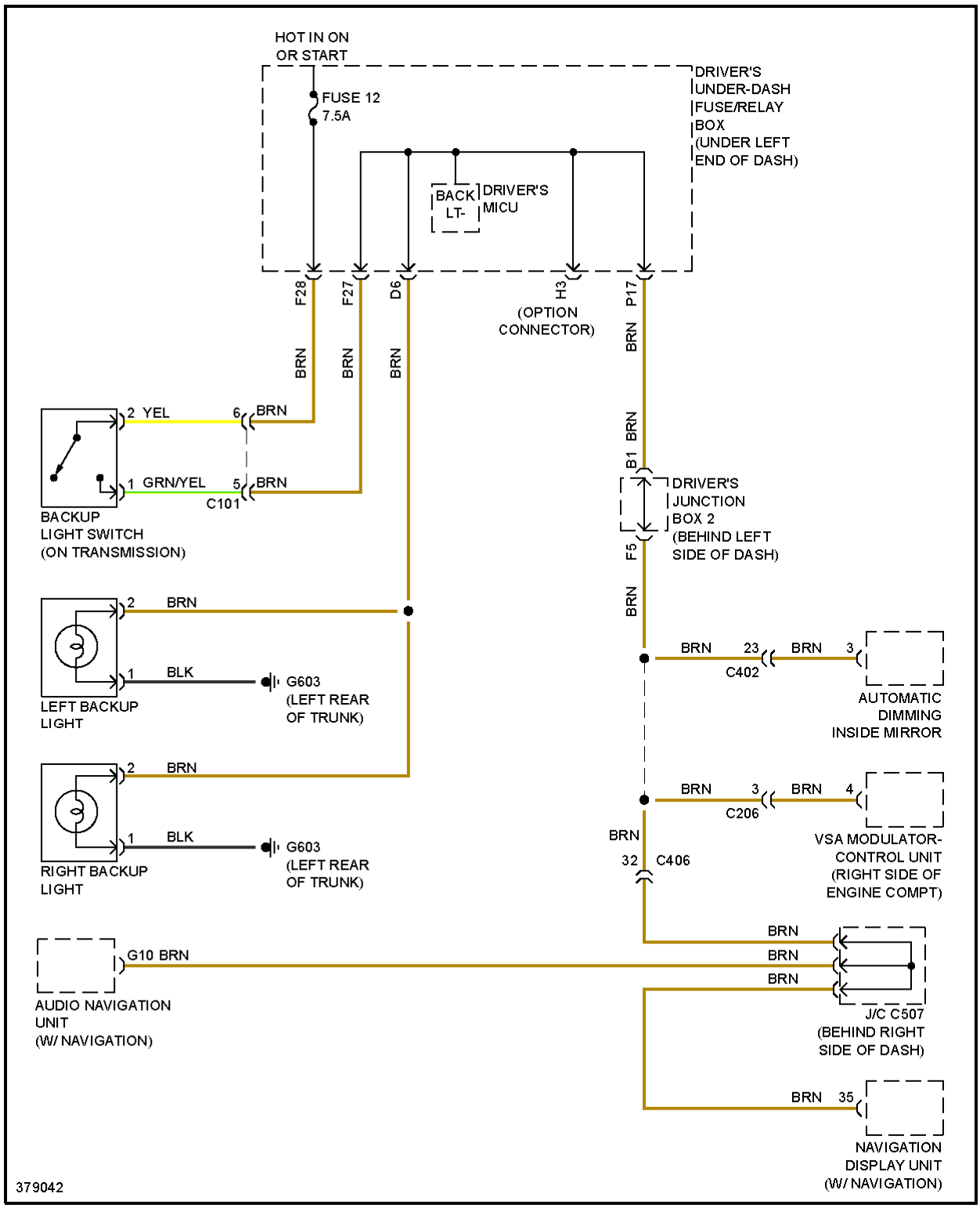


Fig. 38: Backup Lamps Circuit, M/T

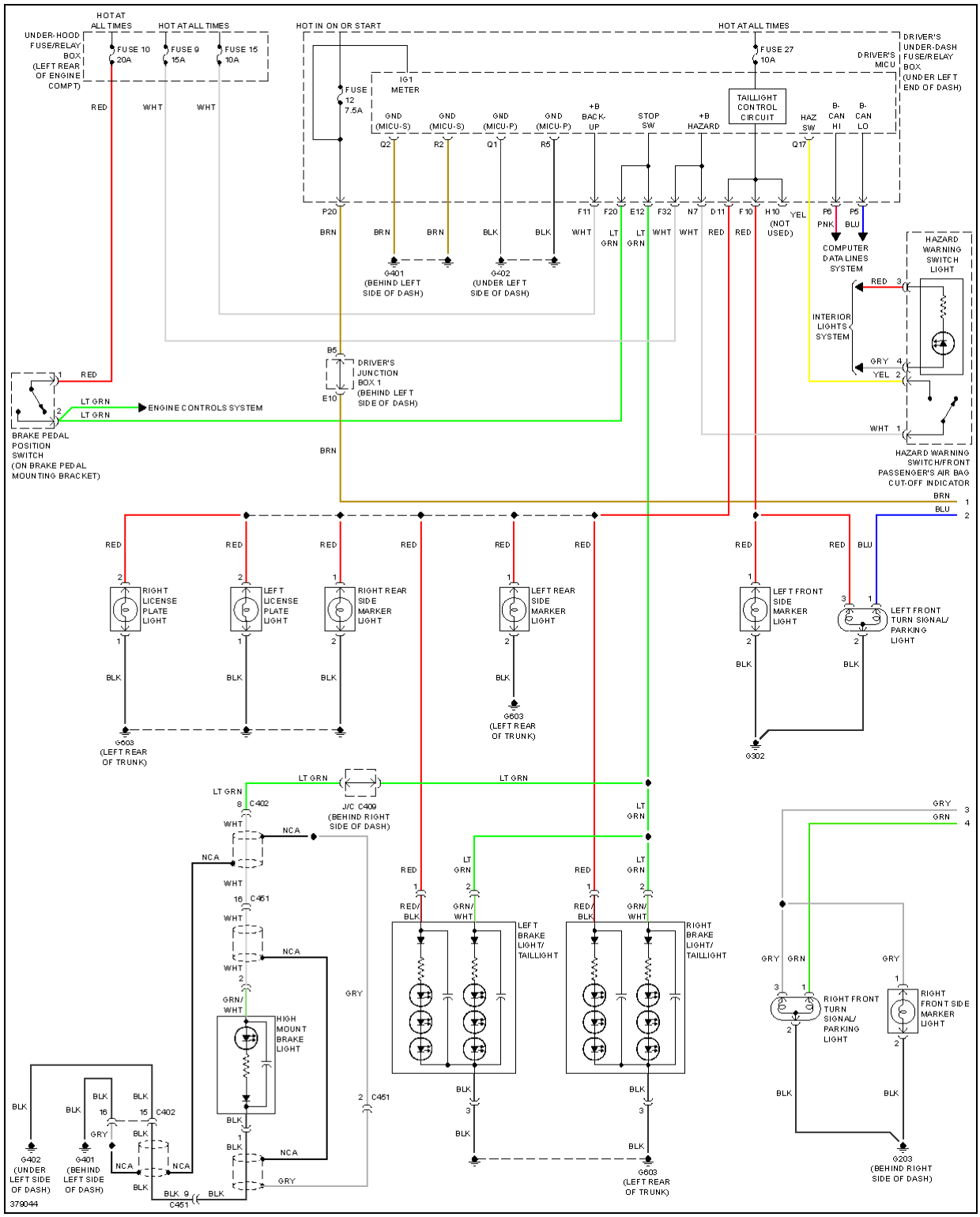


Fig. 39: Exterior Lamps Circuit (1 of 2)

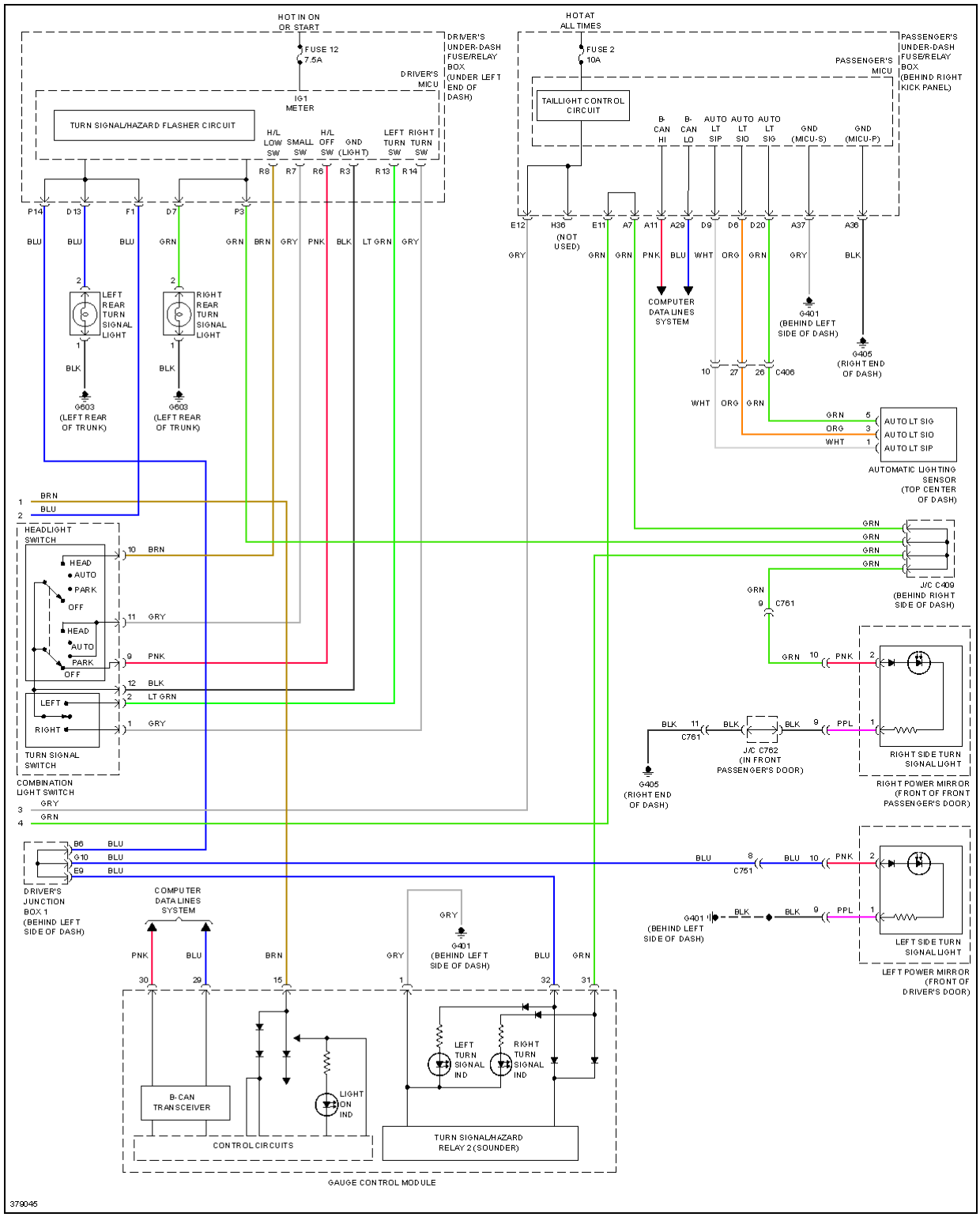


Fig. 40: Exterior Lamps Circuit (2 of 2)

GROUND DISTRIBUTION

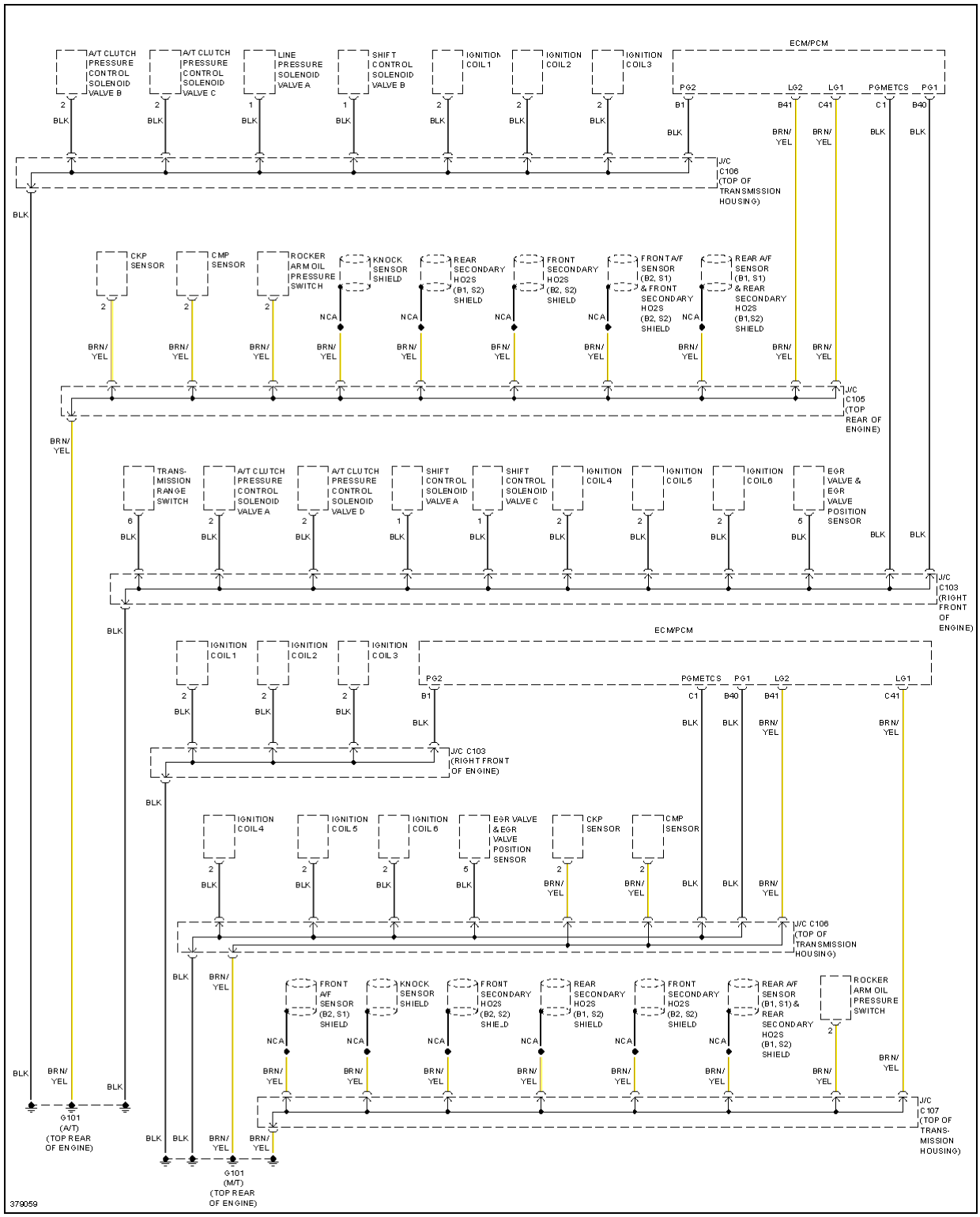


Fig. 41: Ground Distribution Circuit (1 of 5)

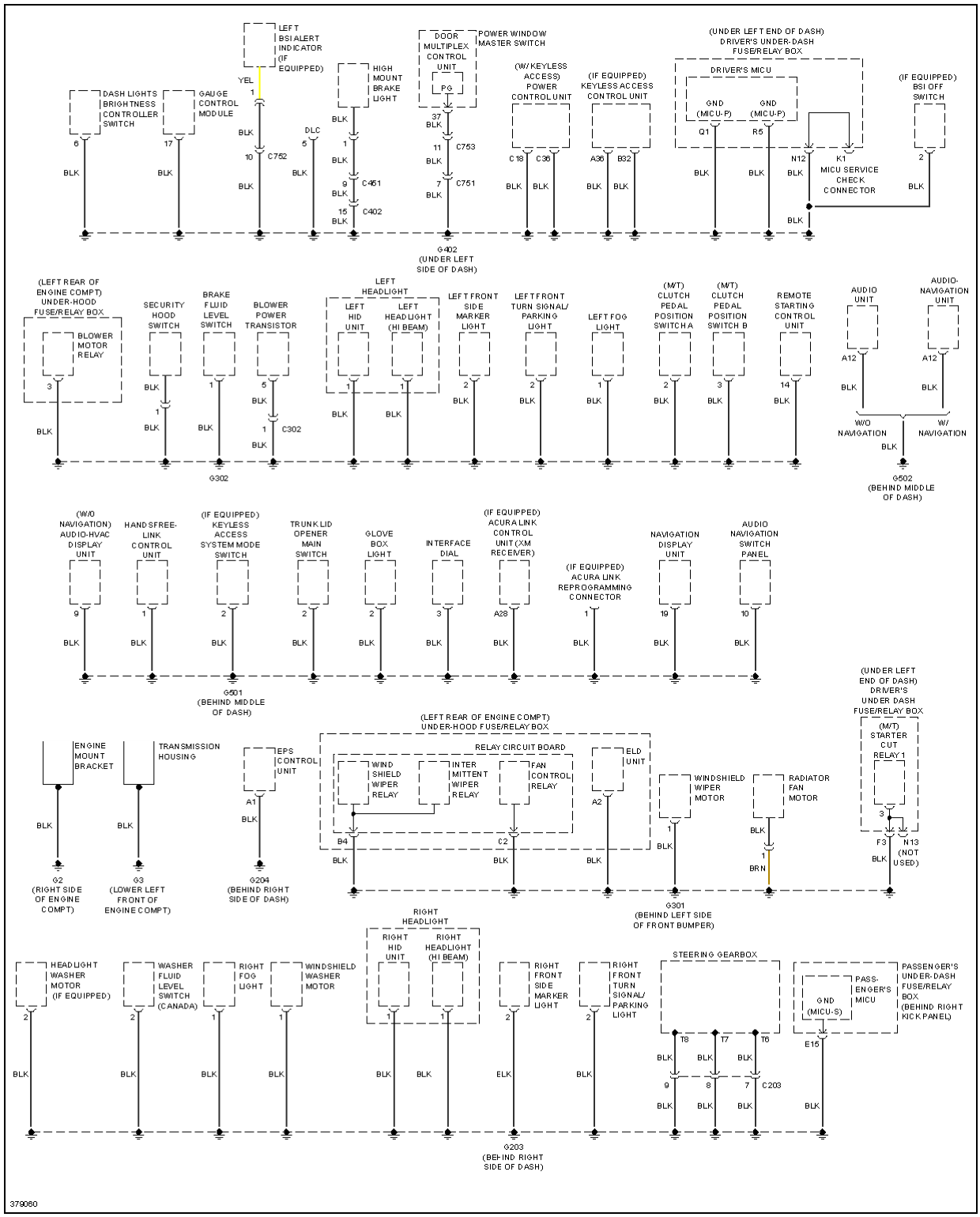


Fig. 42: Ground Distribution Circuit (2 of 5)

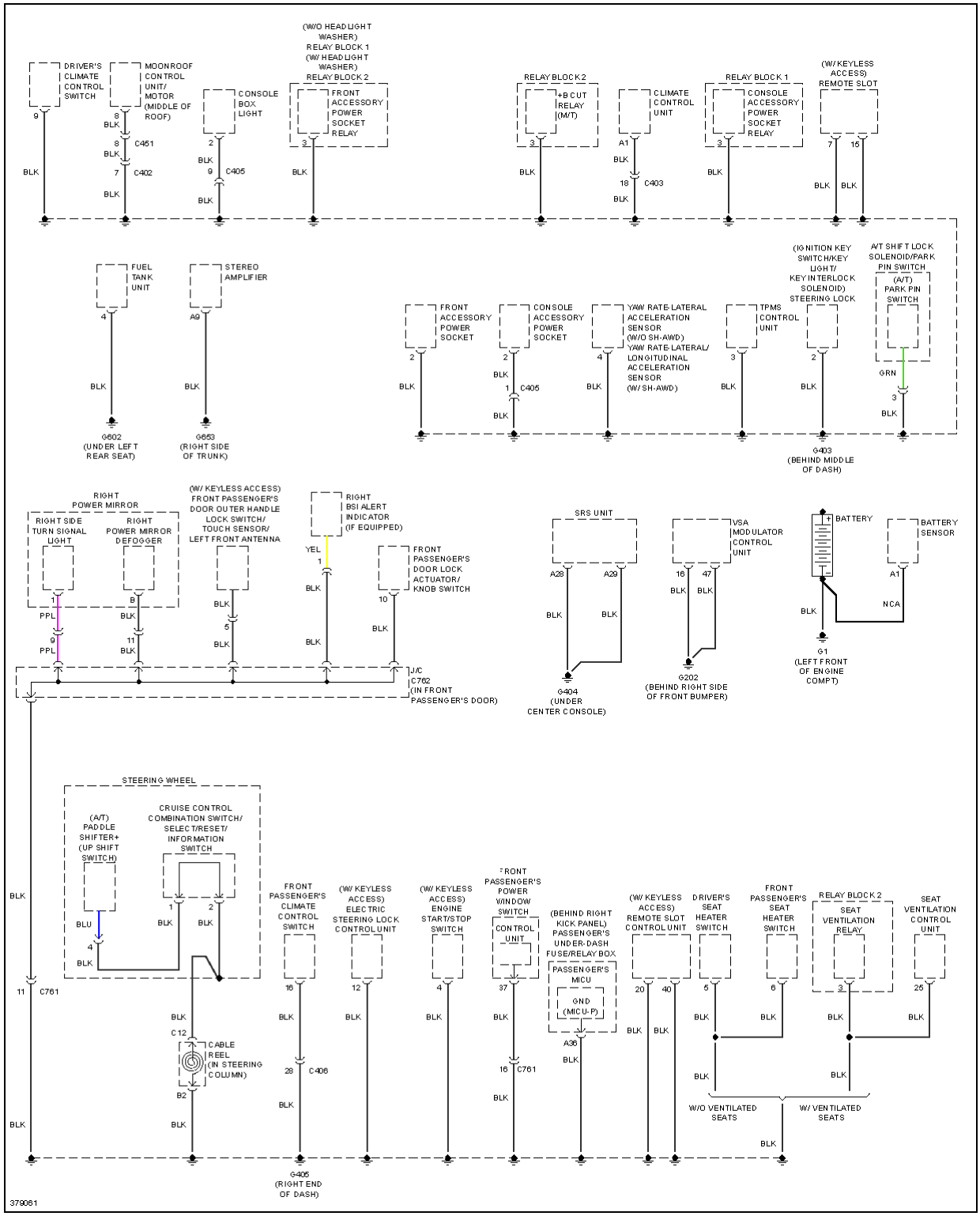


Fig. 43: Ground Distribution Circuit (3 of 5)

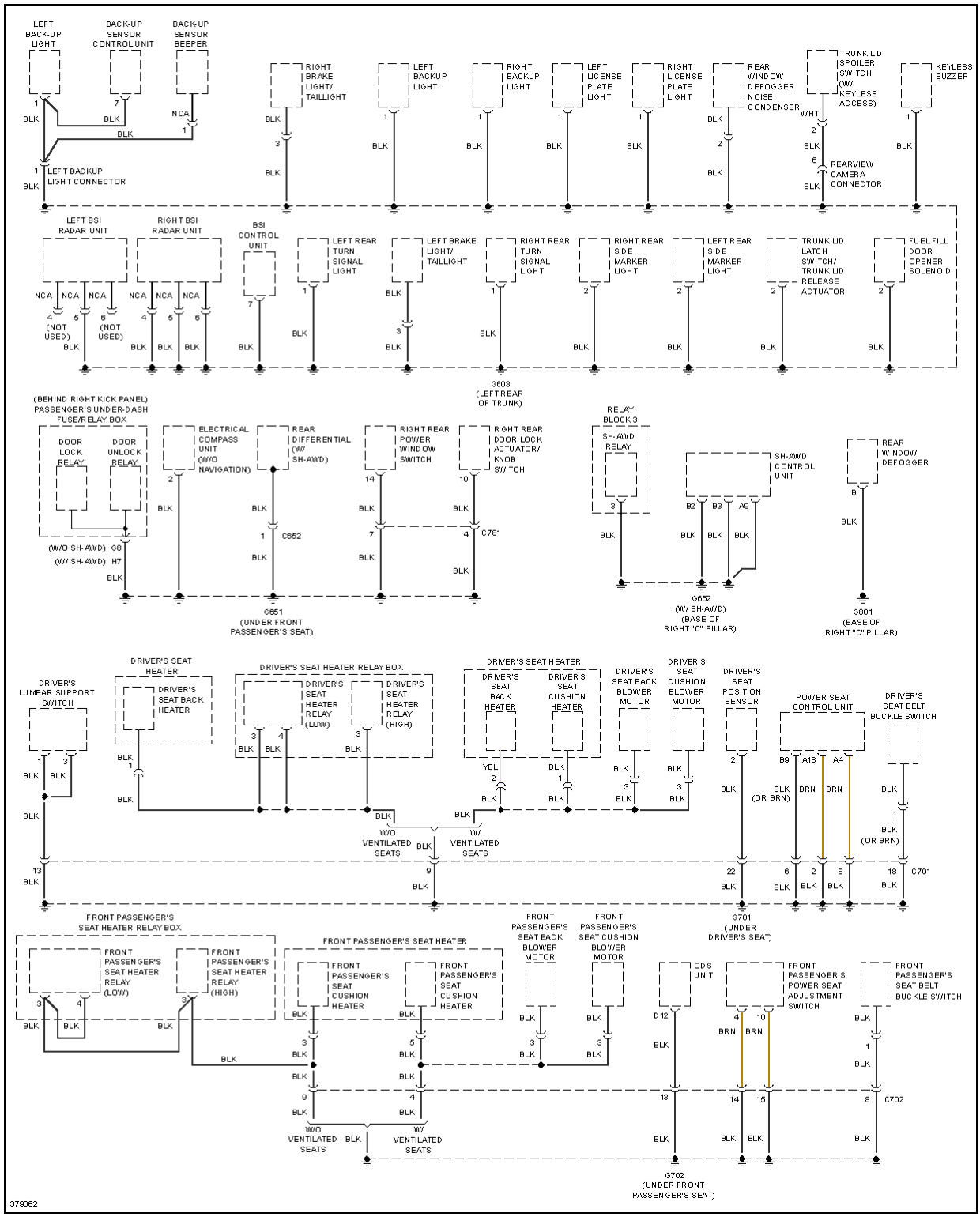


Fig. 44: Ground Distribution Circuit (4 of 5)

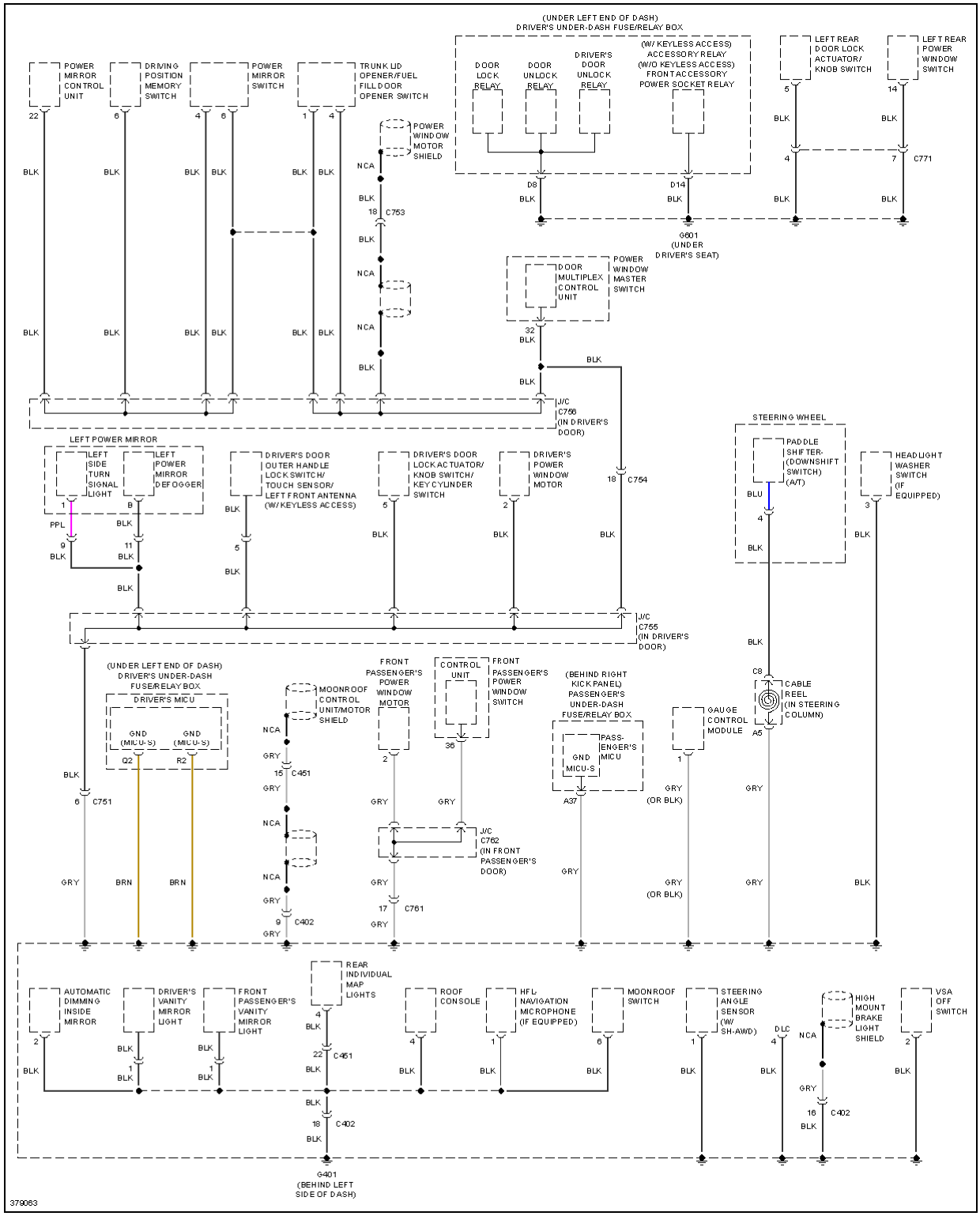


Fig. 45: Ground Distribution Circuit (5 of 5)

HEADLIGHTS

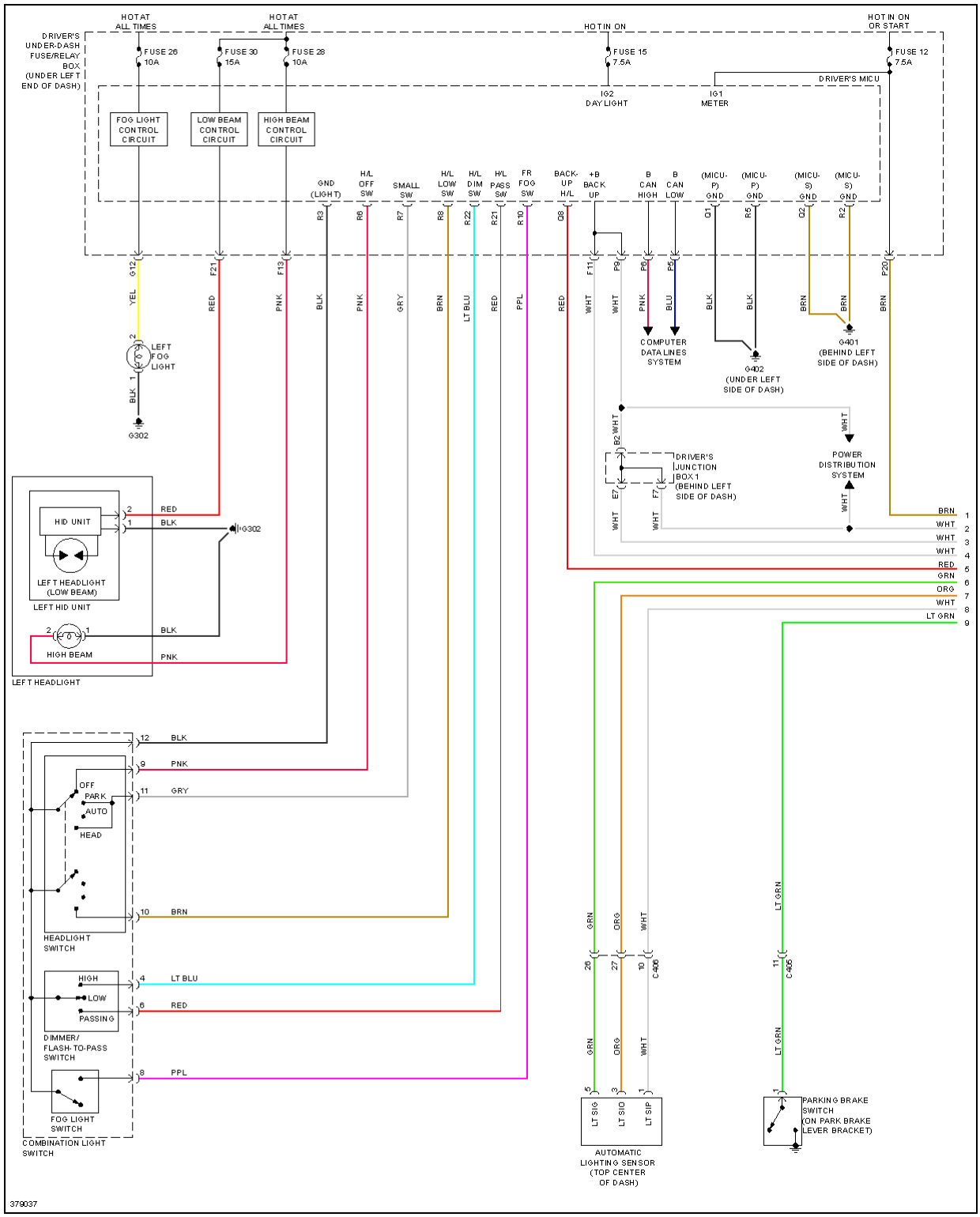


Fig. 46: Headlights Circuit (1 of 2)

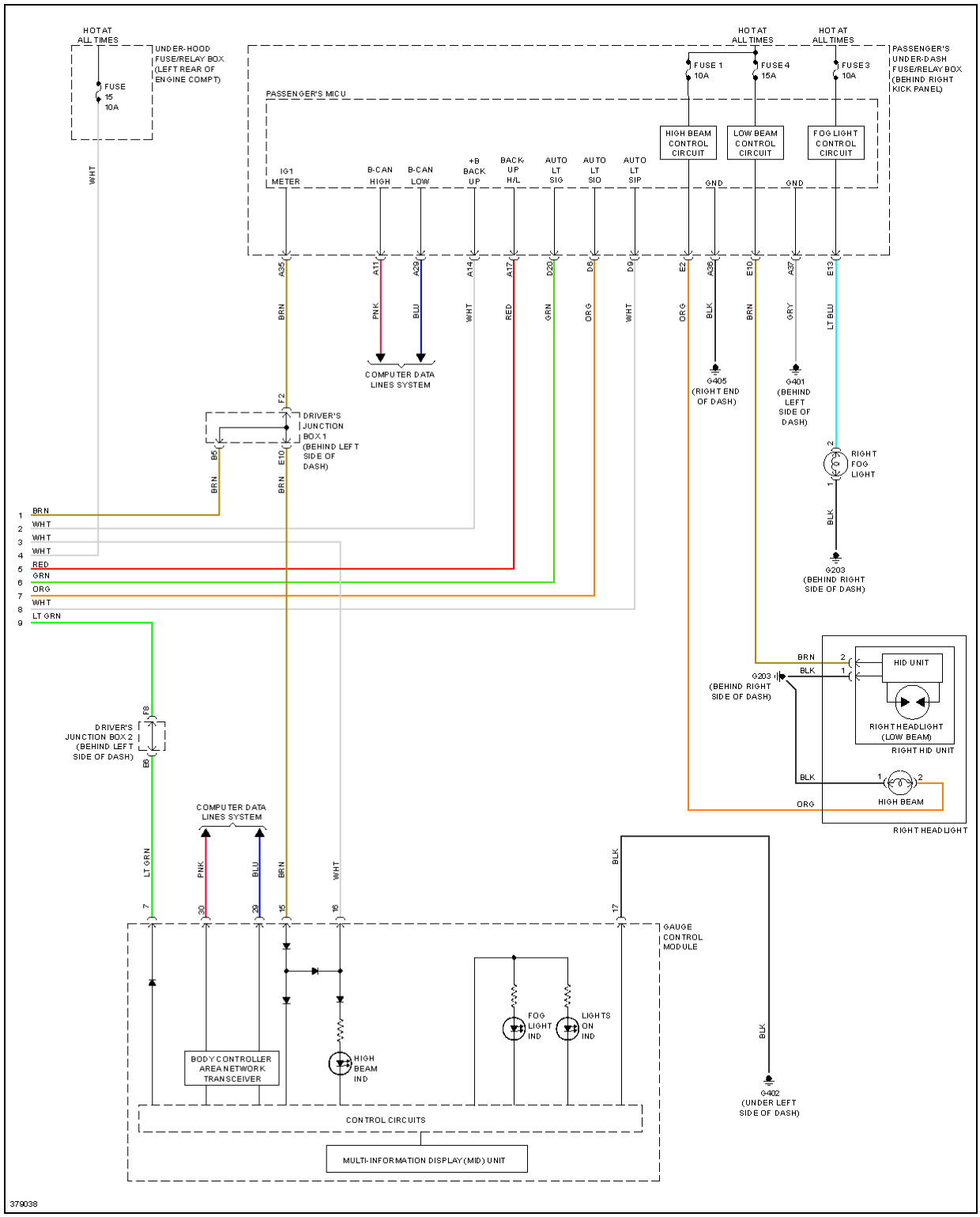


Fig. 47: Headlights Circuit (2 of 2)

HORN

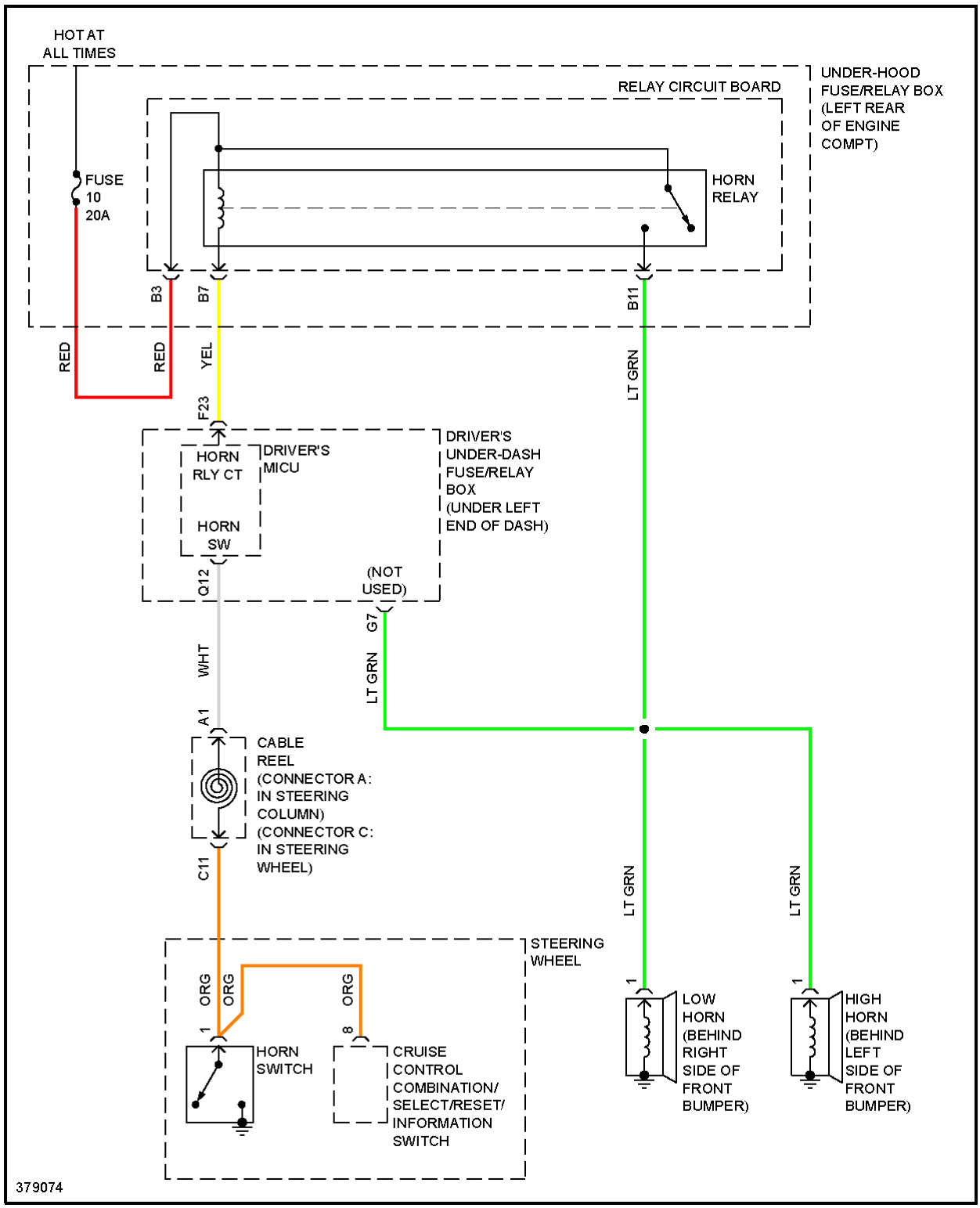


Fig. 48: Horn Circuit

INSTRUMENT CLUSTER

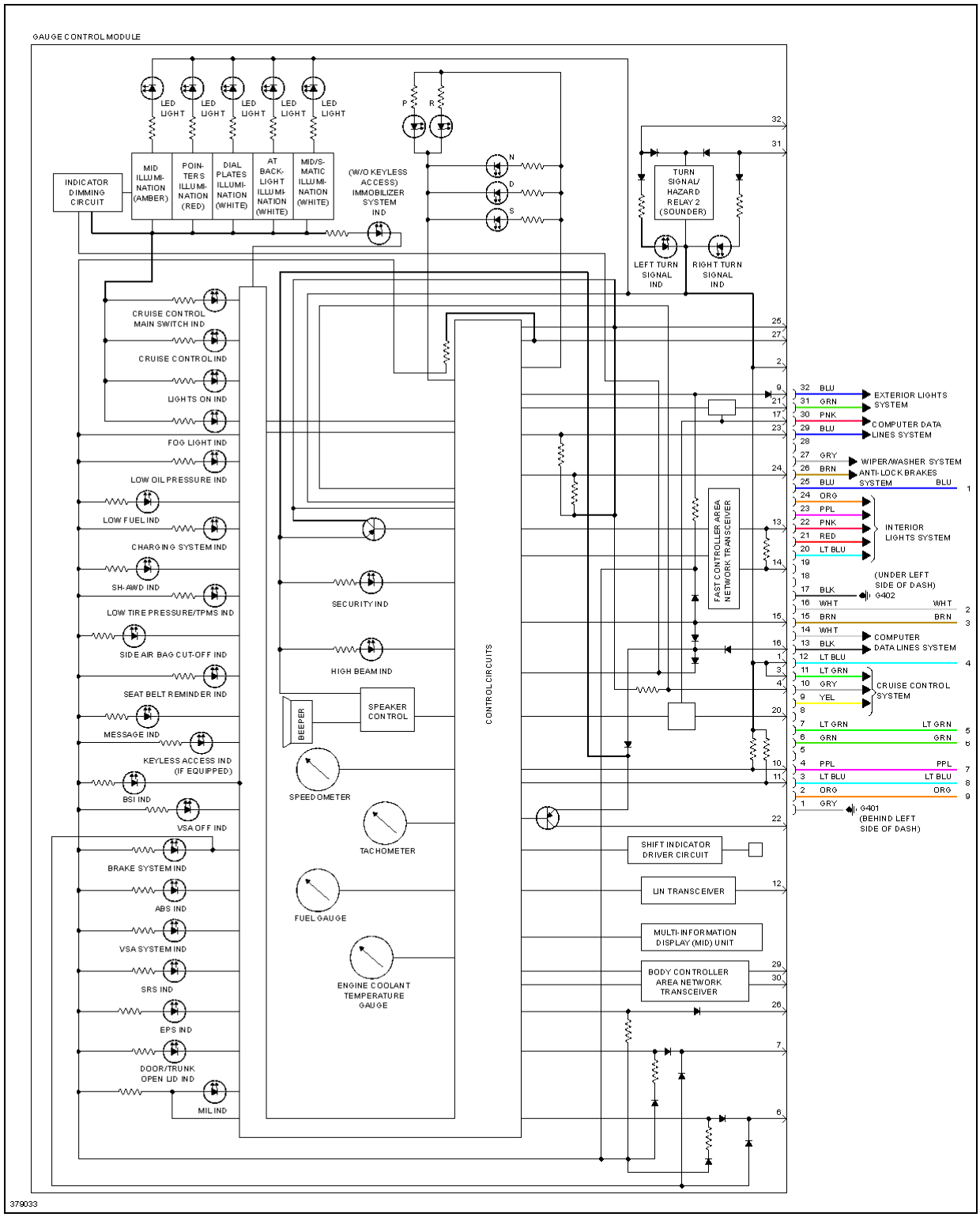


Fig. 49: Instrument Cluster Circuit (1 of 2)

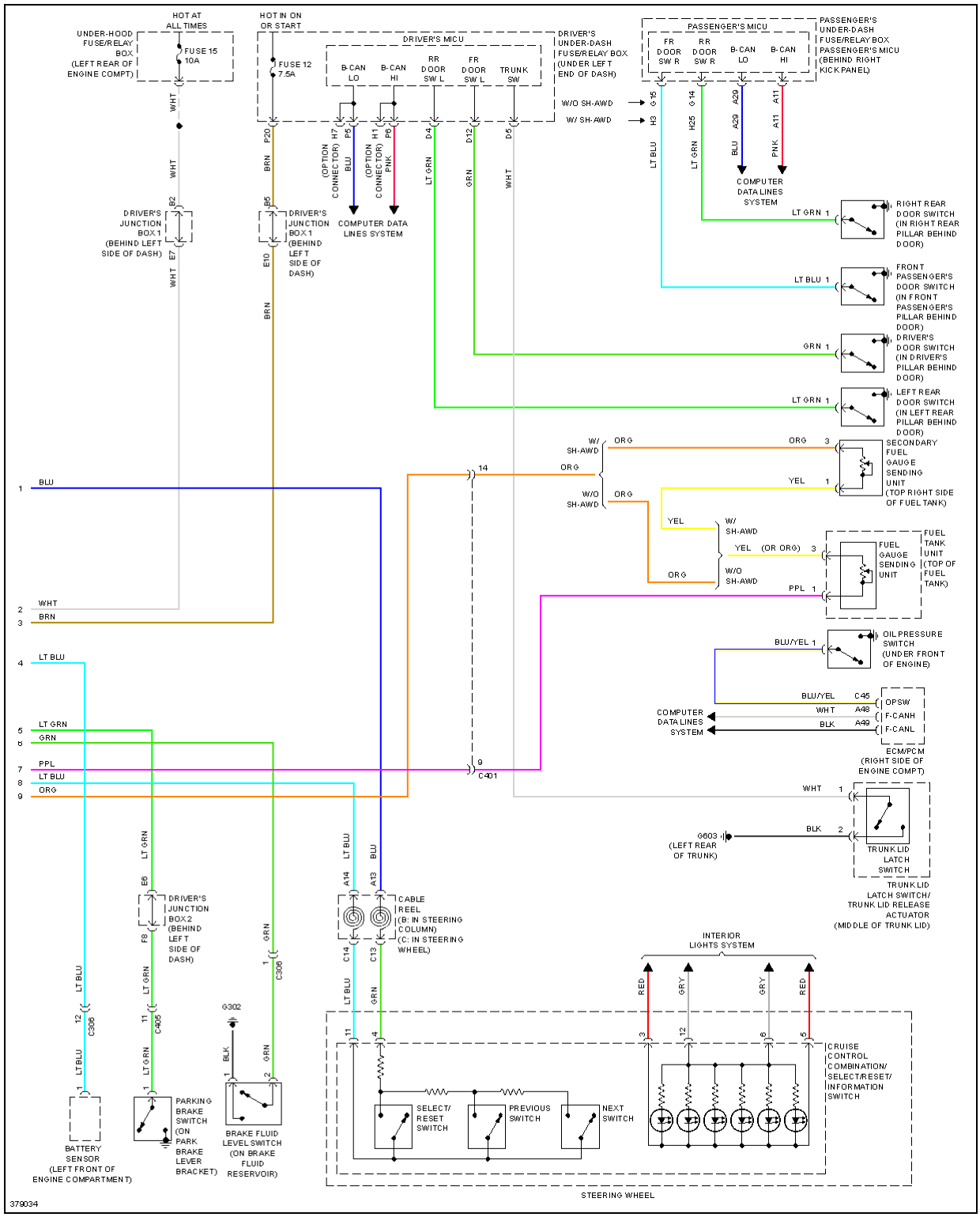


Fig. 50: Instrument Cluster Circuit (2 of 2)

INTERIOR LIGHTS

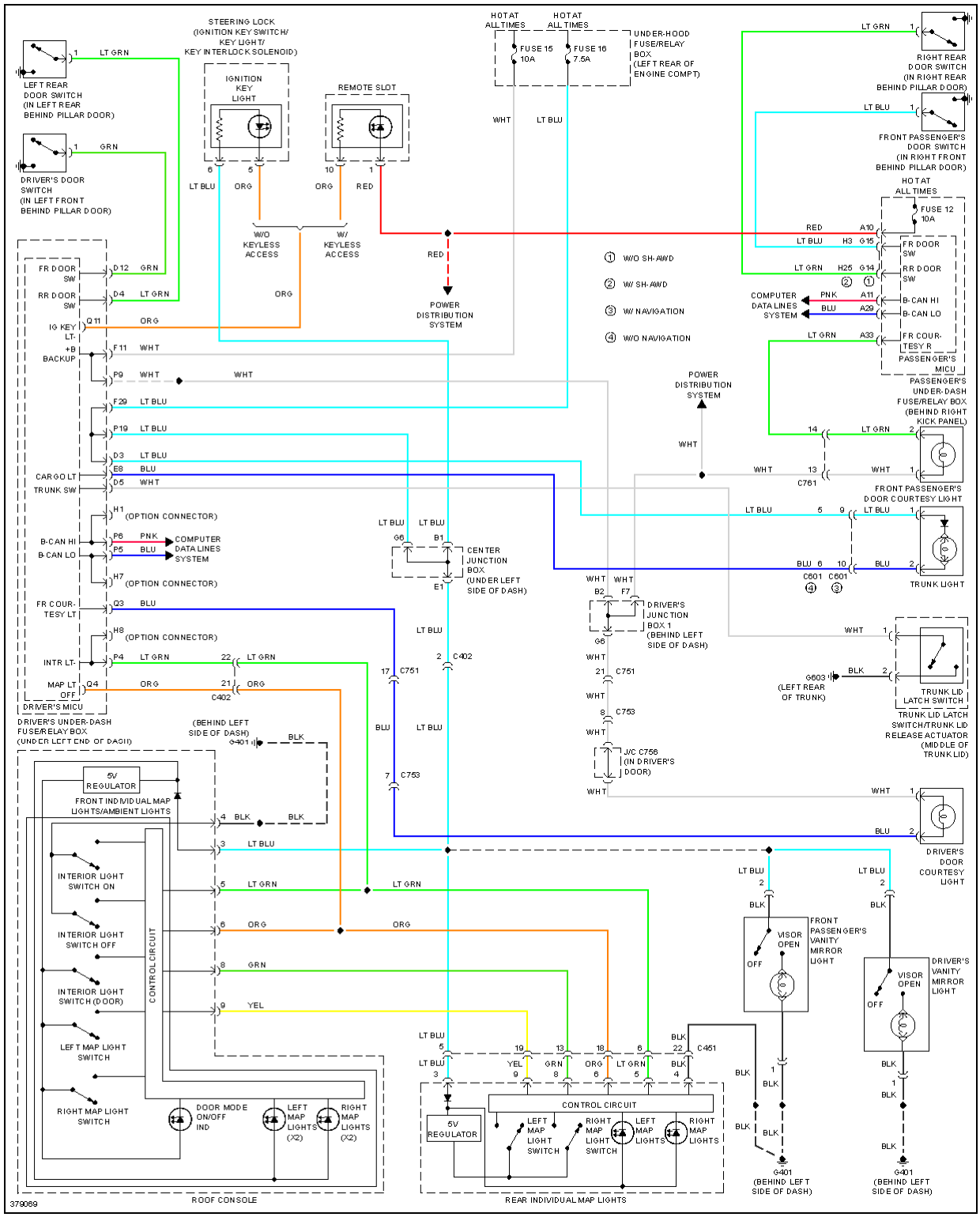


Fig. 51: Courtesy Lamps Circuit

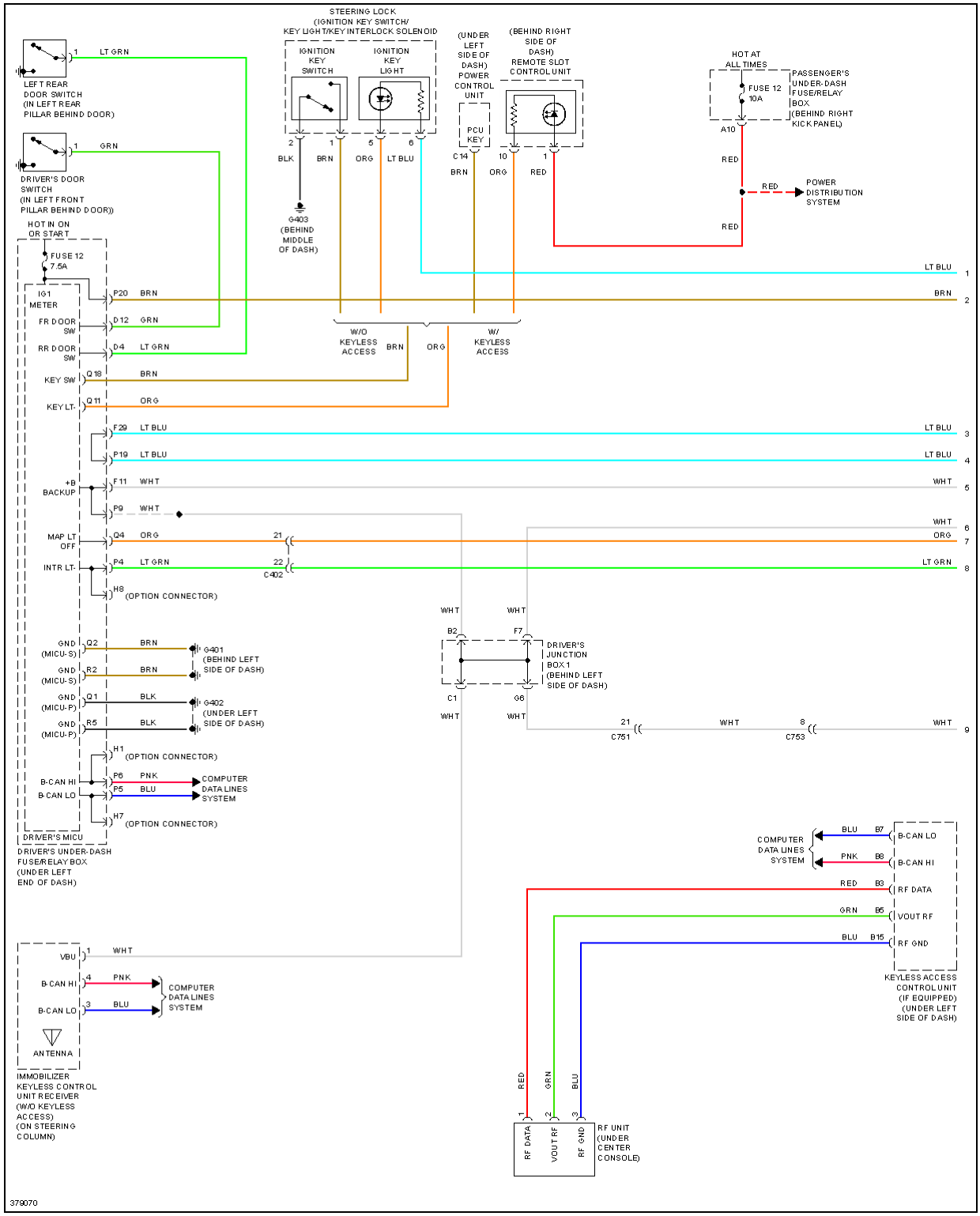


Fig. 52: Entry Light Timer Circuit (1 of 2)

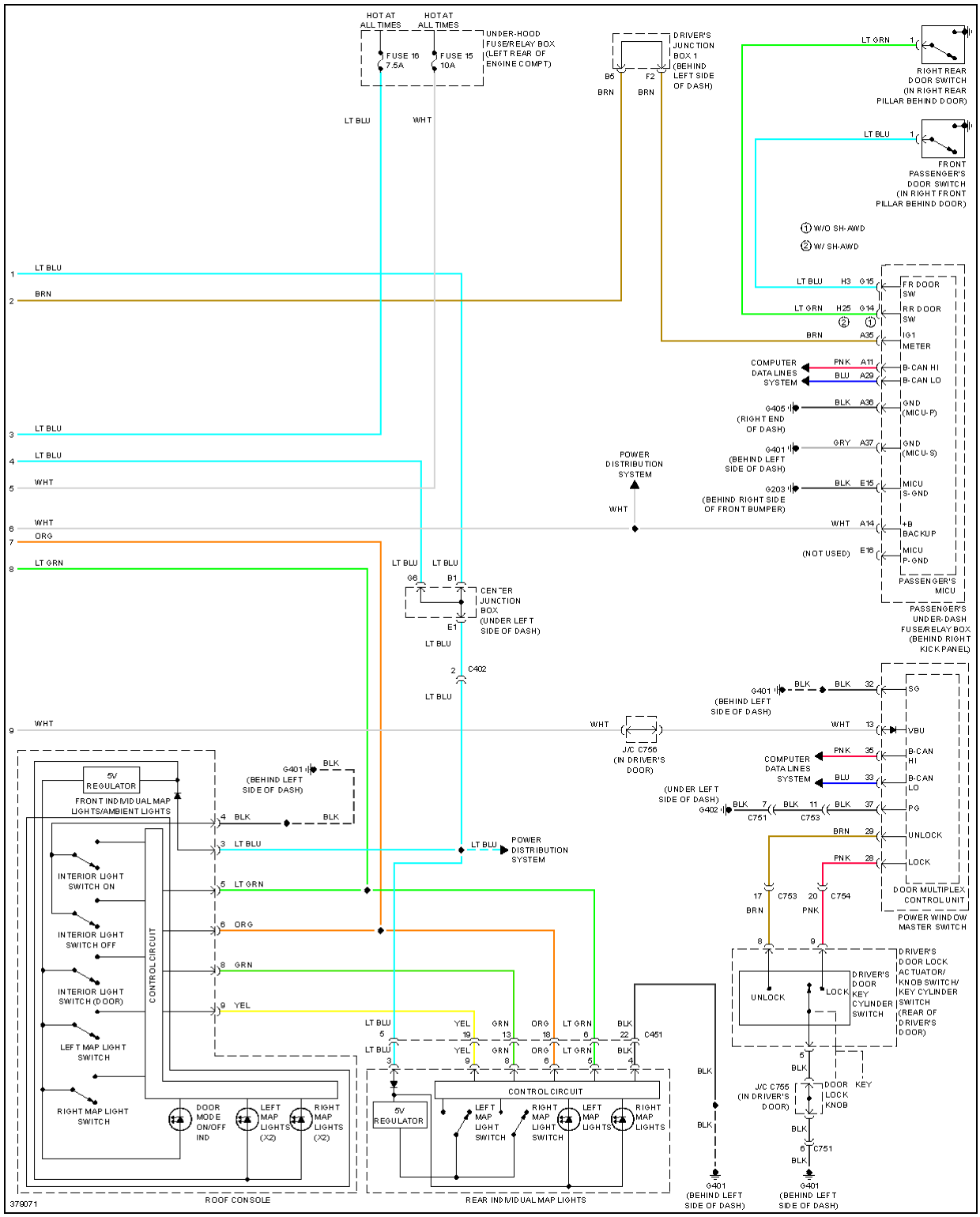


Fig. 53: Entry Light Timer Circuit (2 of 2)

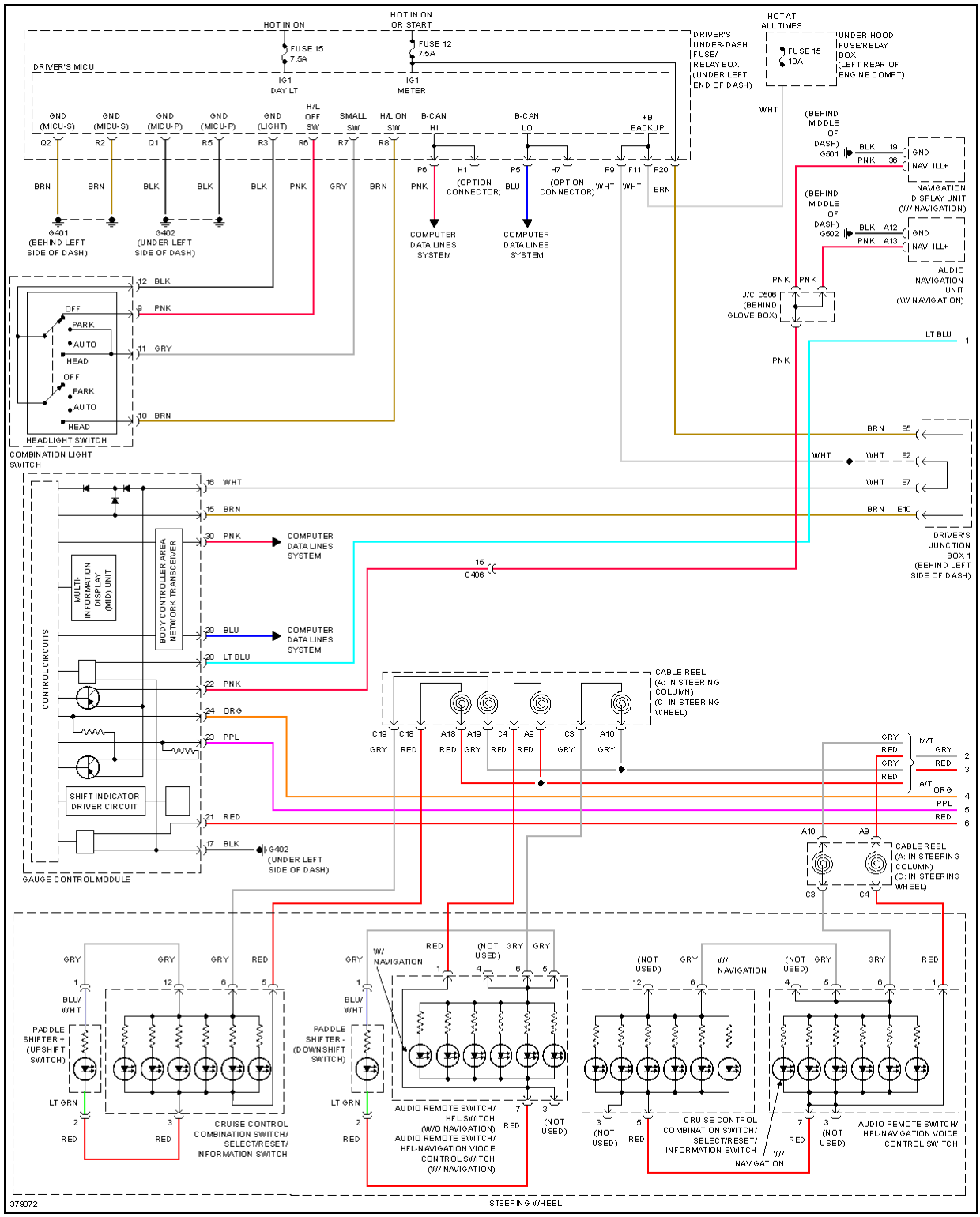


Fig. 54: Instrument Illumination Circuit (1 of 2)

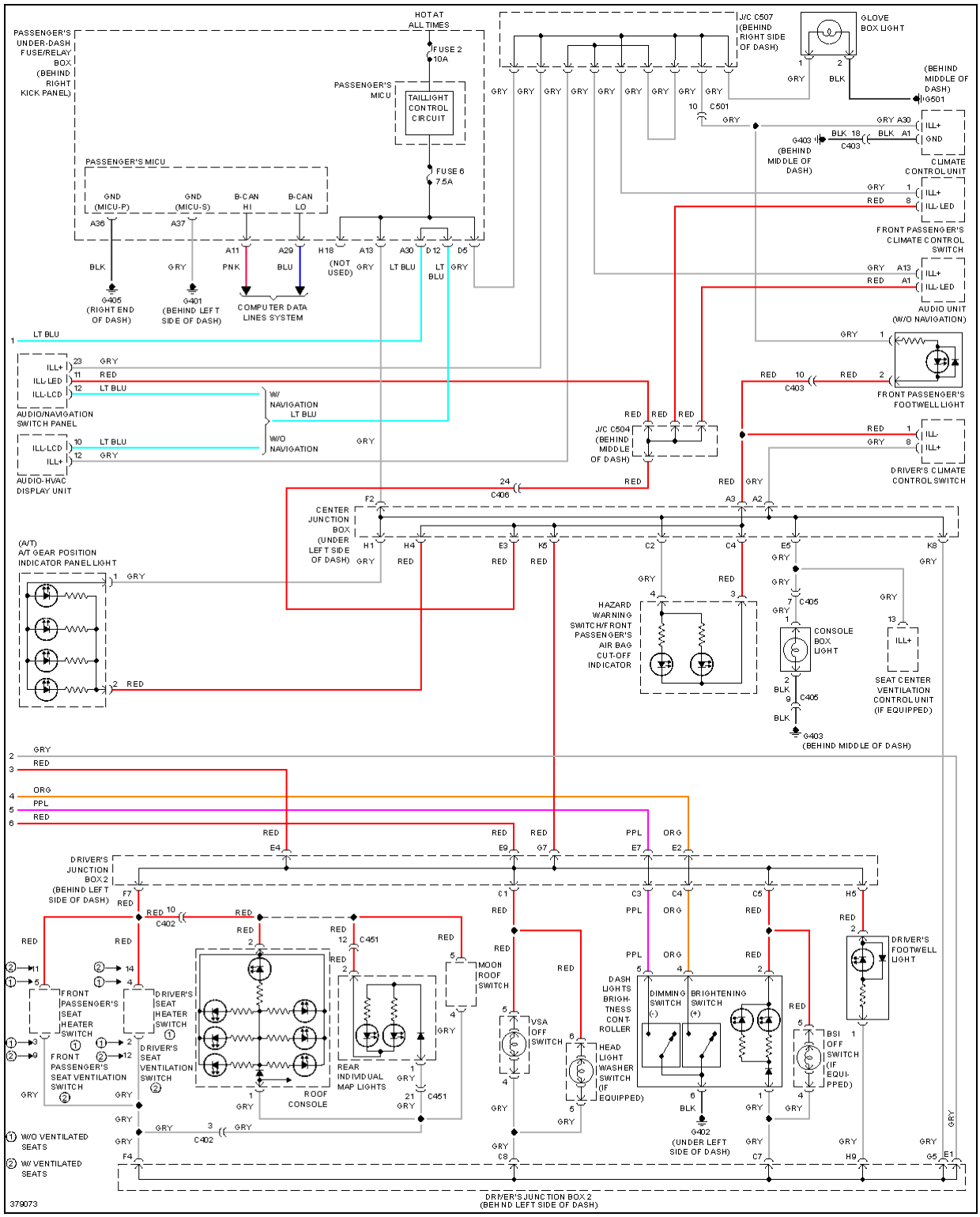


Fig. 55: Instrument Illumination Circuit (2 of 2)

MEMORY SYSTEMS

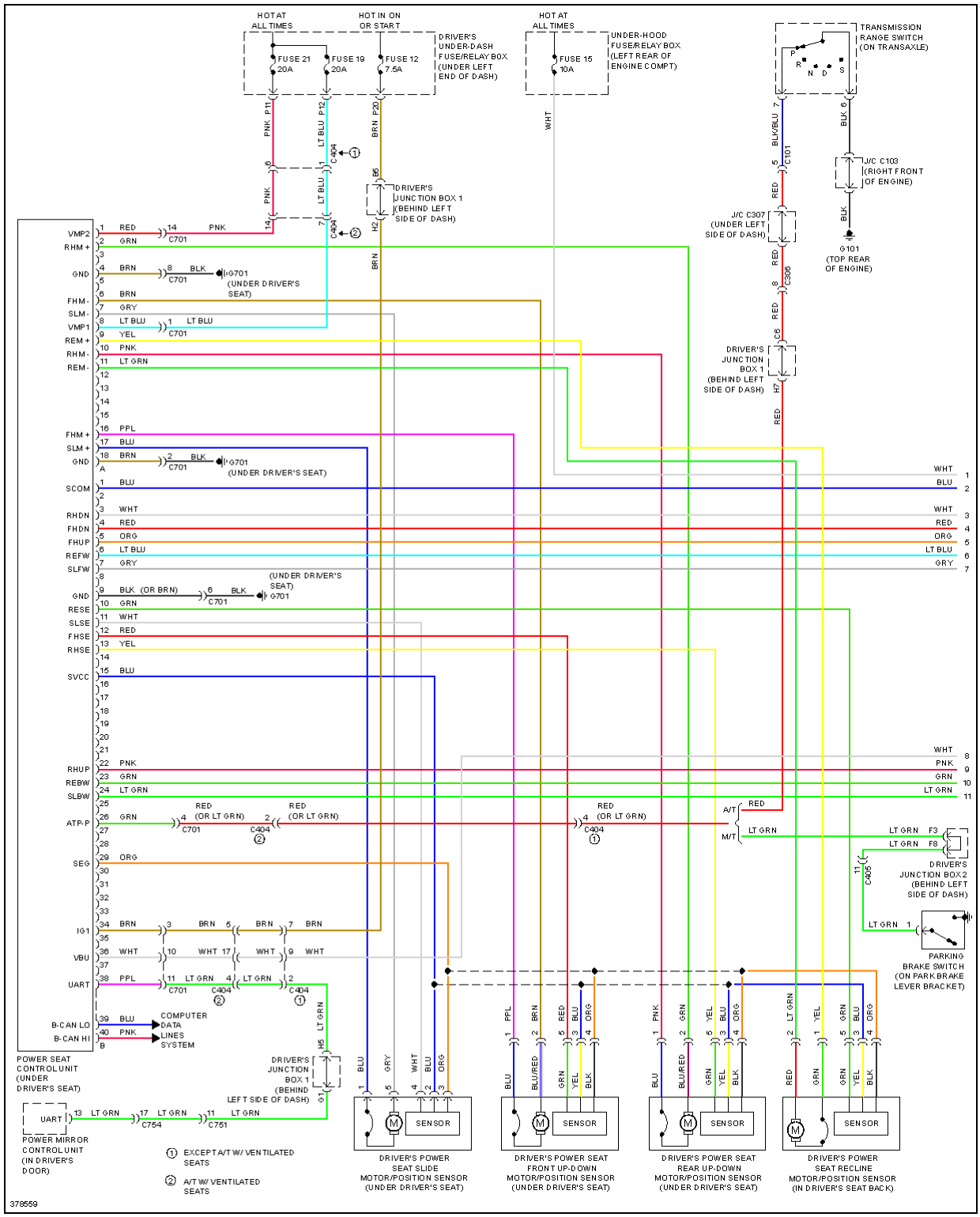


Fig. 56: Driver"s Memory Seat Circuit (1 of 2)

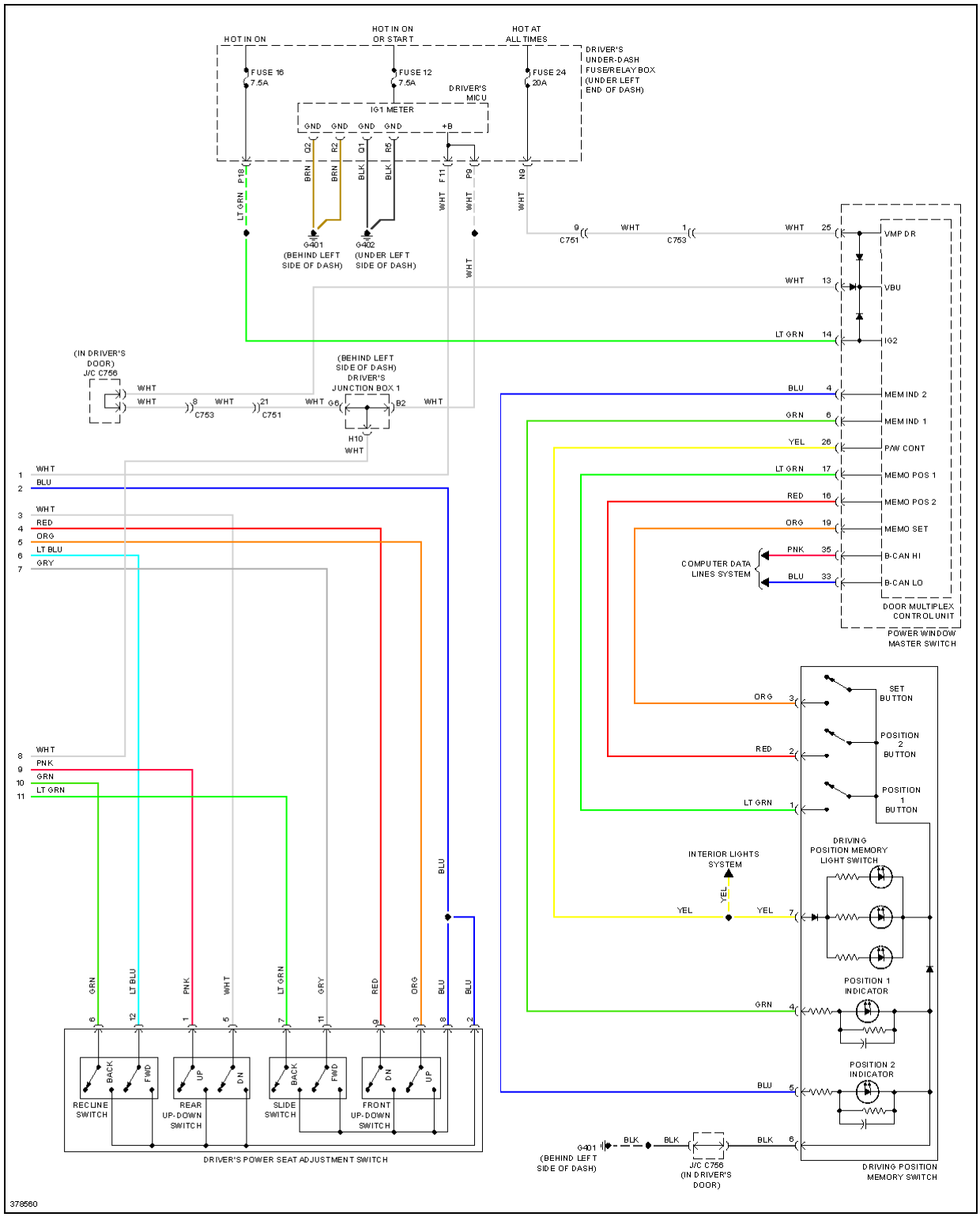


Fig. 57: Driver"s Memory Seat Circuit (2 of 2)

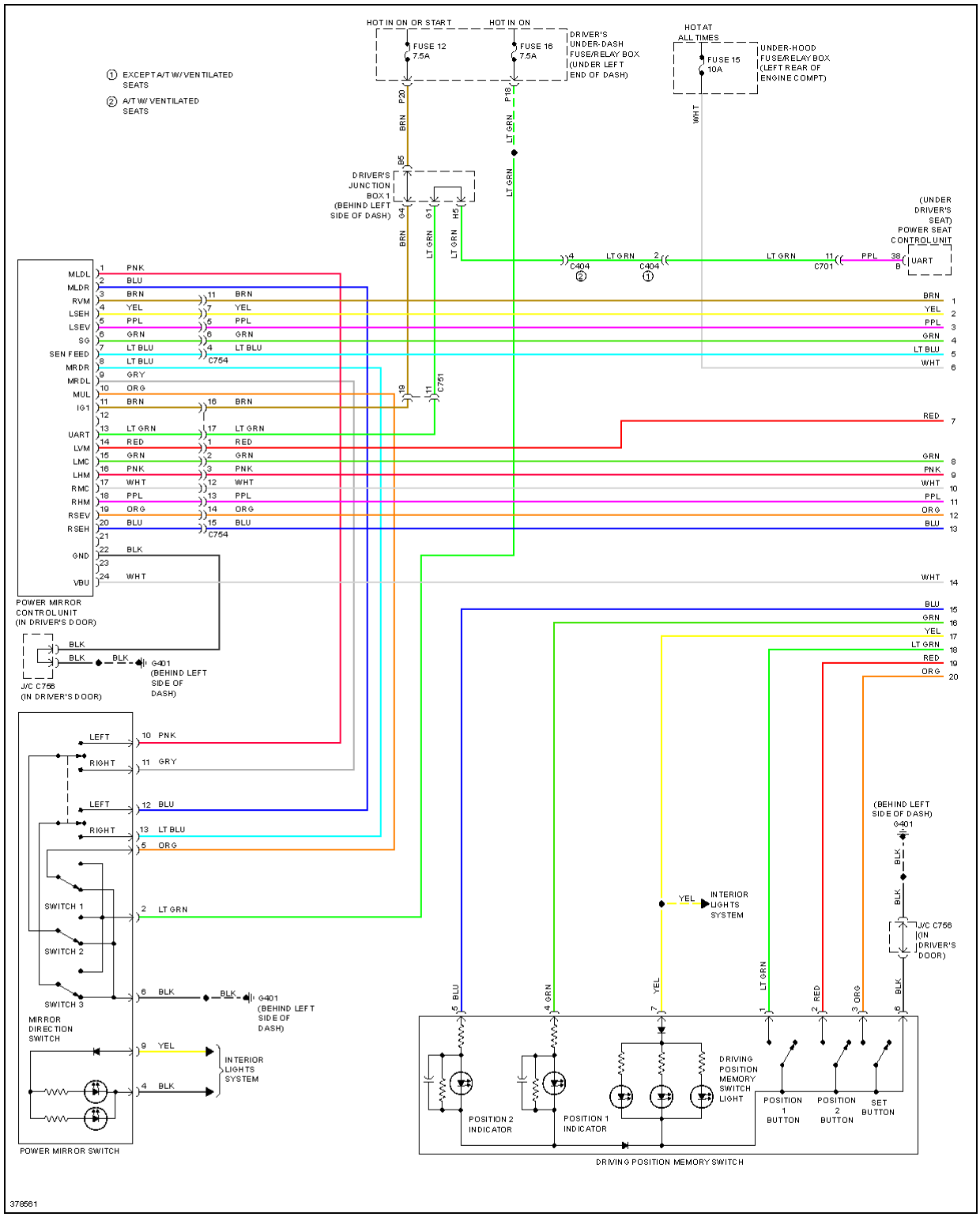


Fig. 58: Memory Mirrors Circuit (1 of 2)

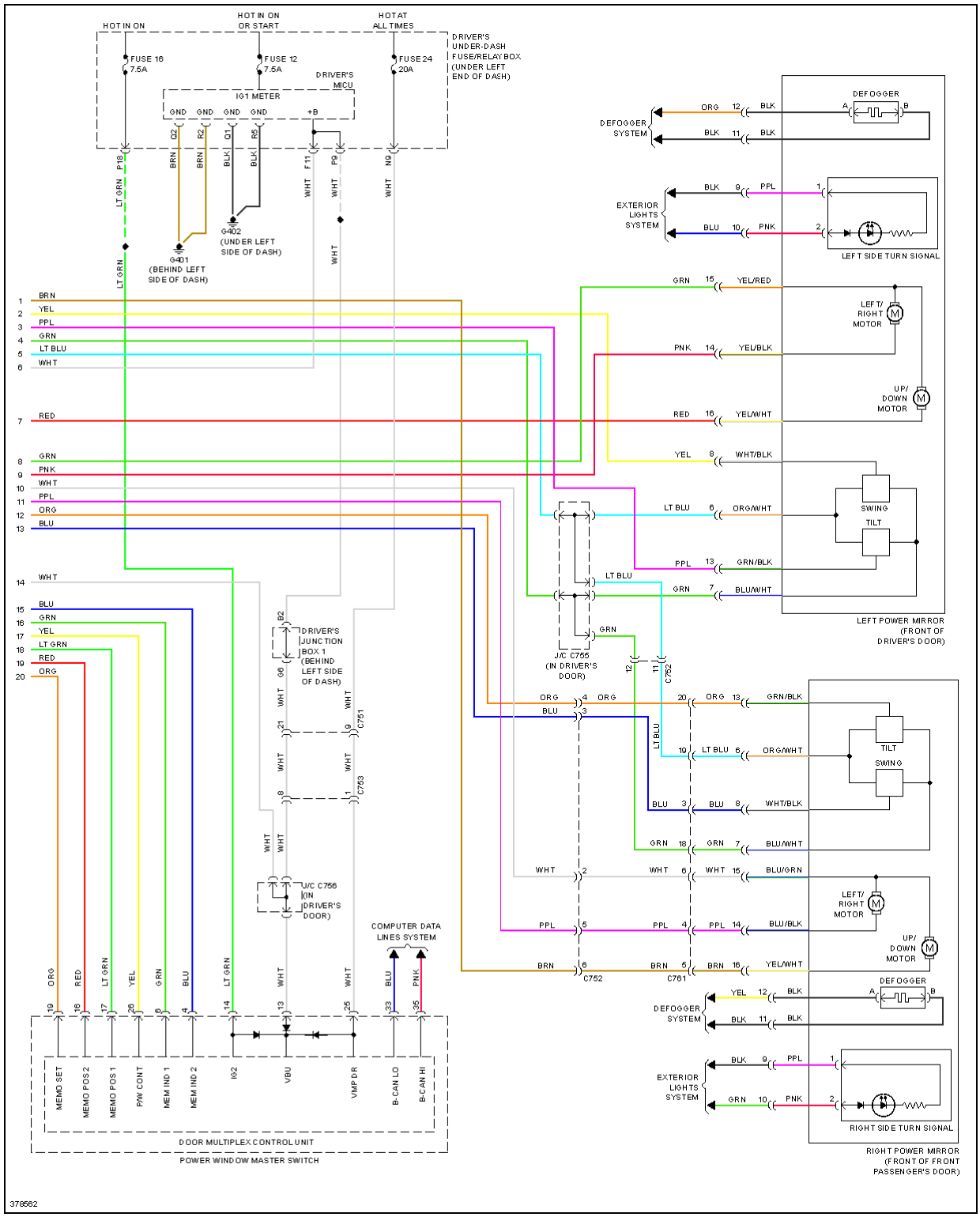


Fig. 59: Memory Mirrors Circuit (2 of 2)

NAVIGATION

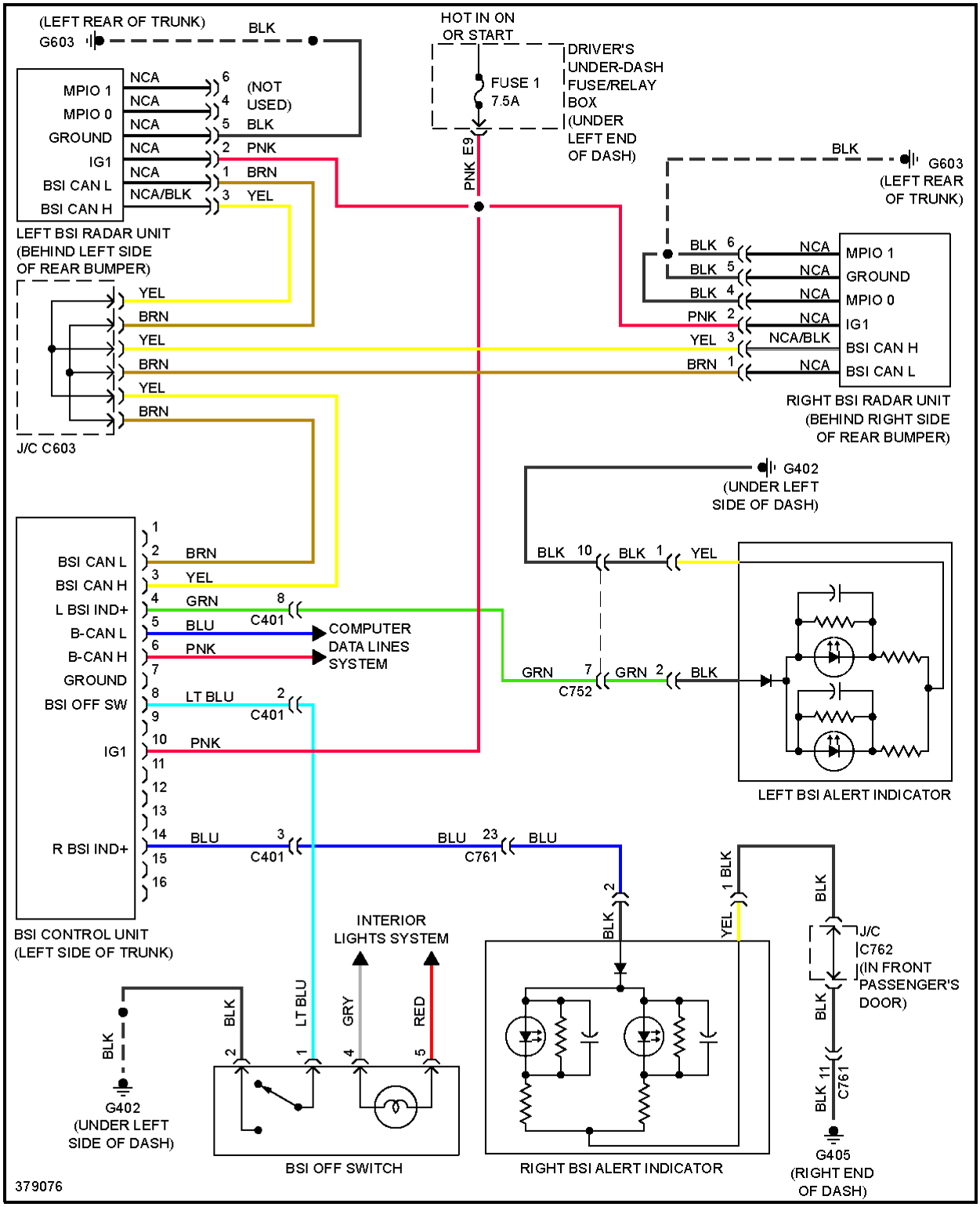


Fig. 60: Blind Spot Monitoring Circuit

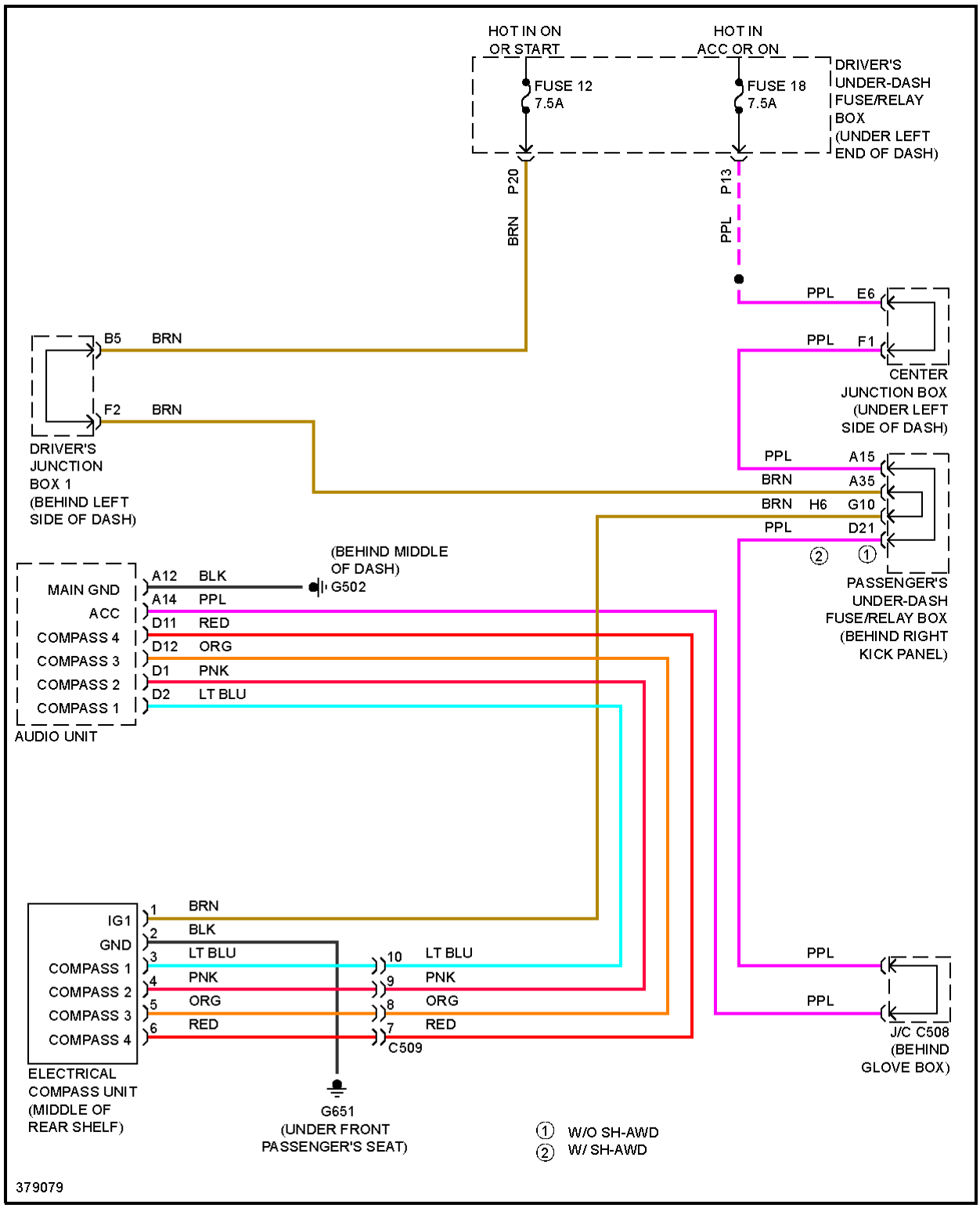


Fig. 61: Compass Circuit

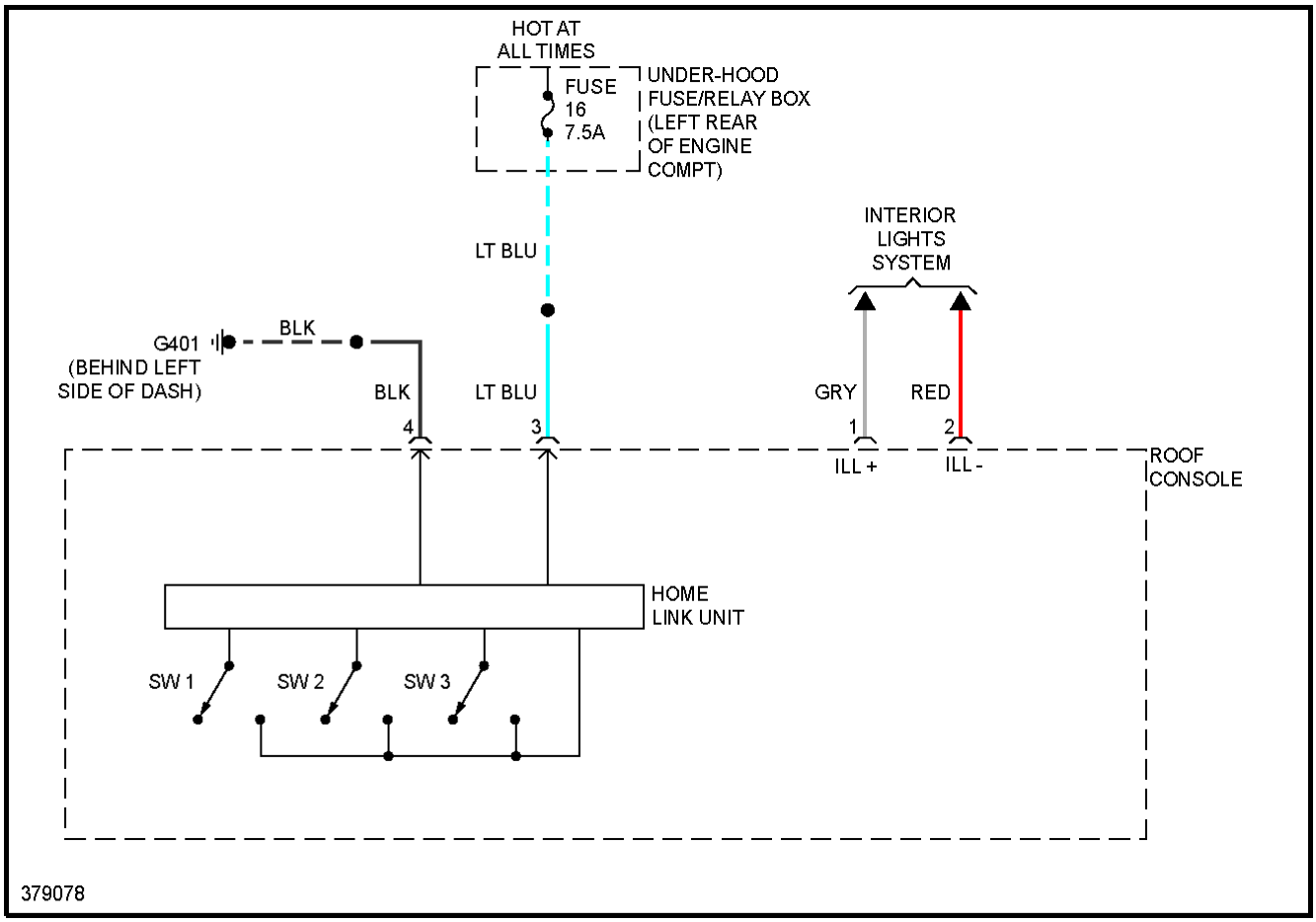


Fig. 62: Home Link Remote Control Circuit

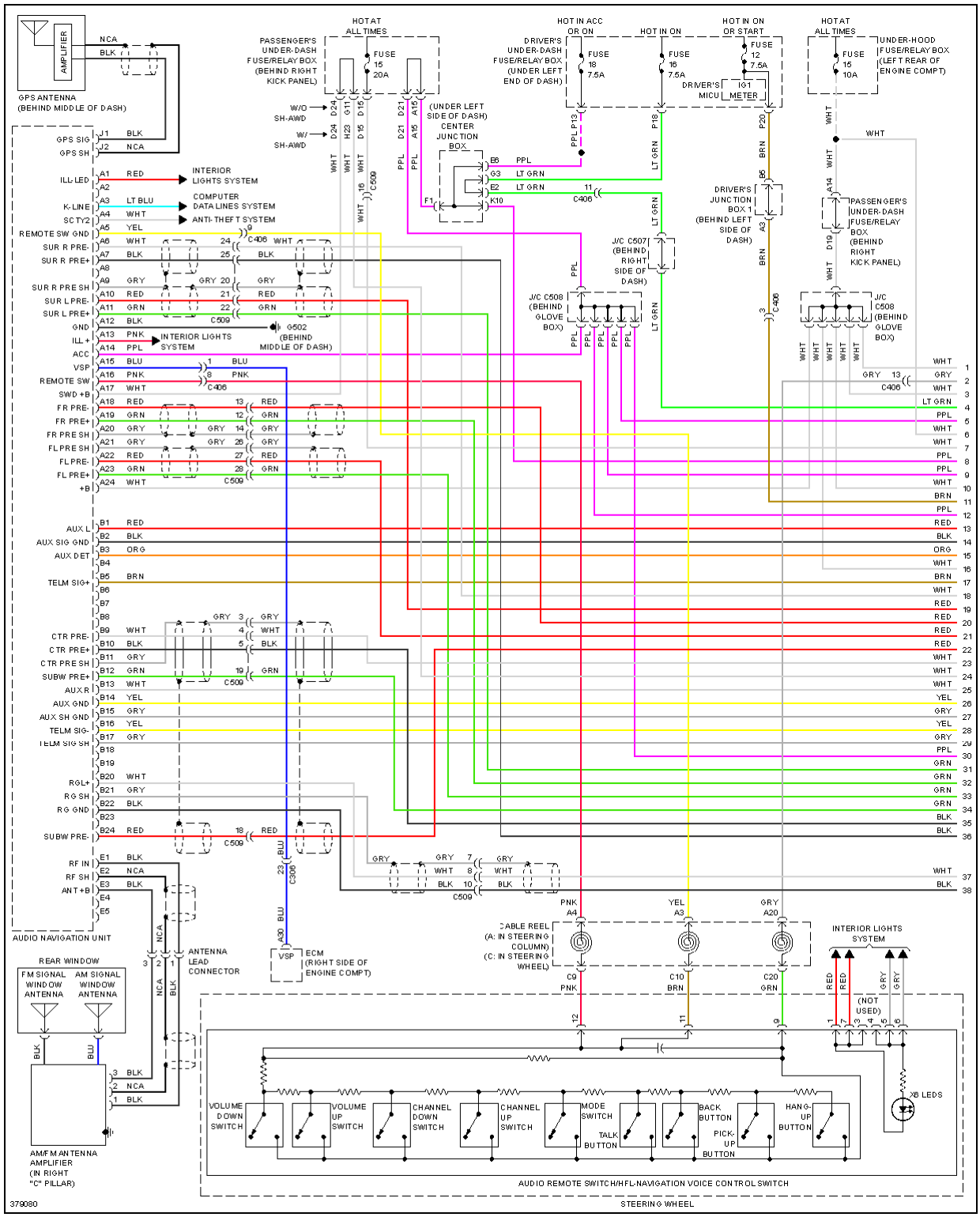


Fig. 63: Navigation Circuit (1 of 5)

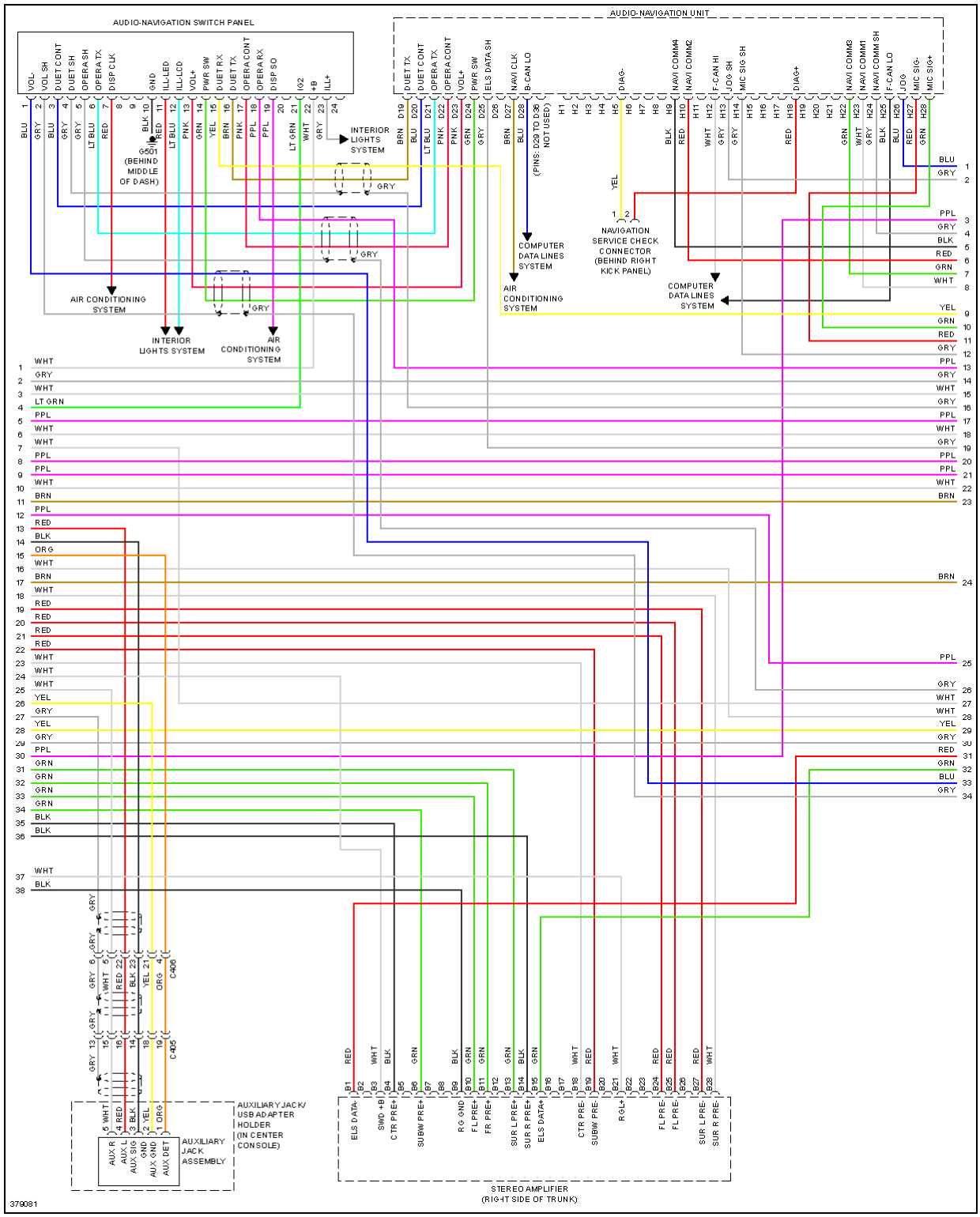


Fig. 64: Navigation Circuit (2 of 5)

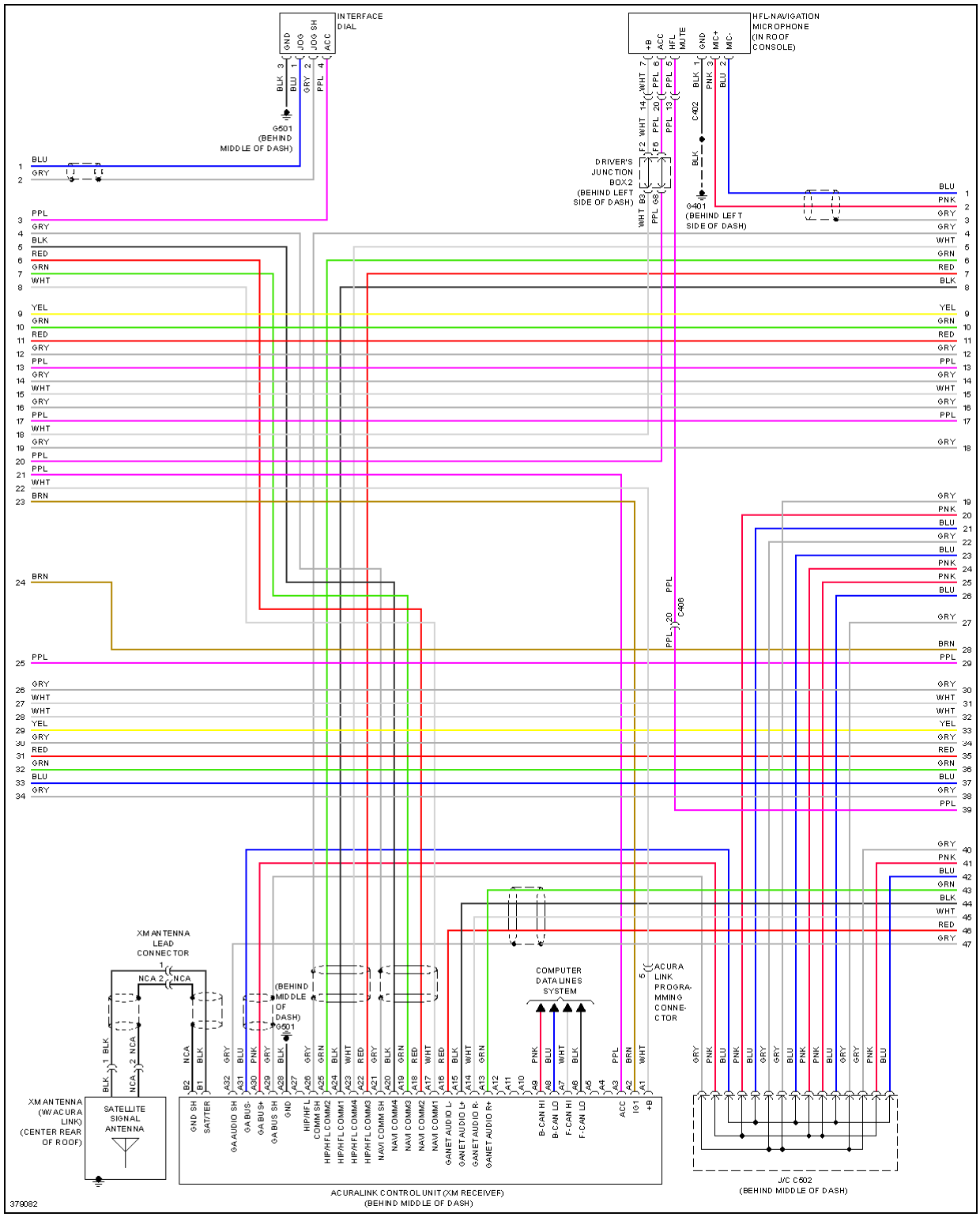


Fig. 65: Navigation Circuit (3 of 5)

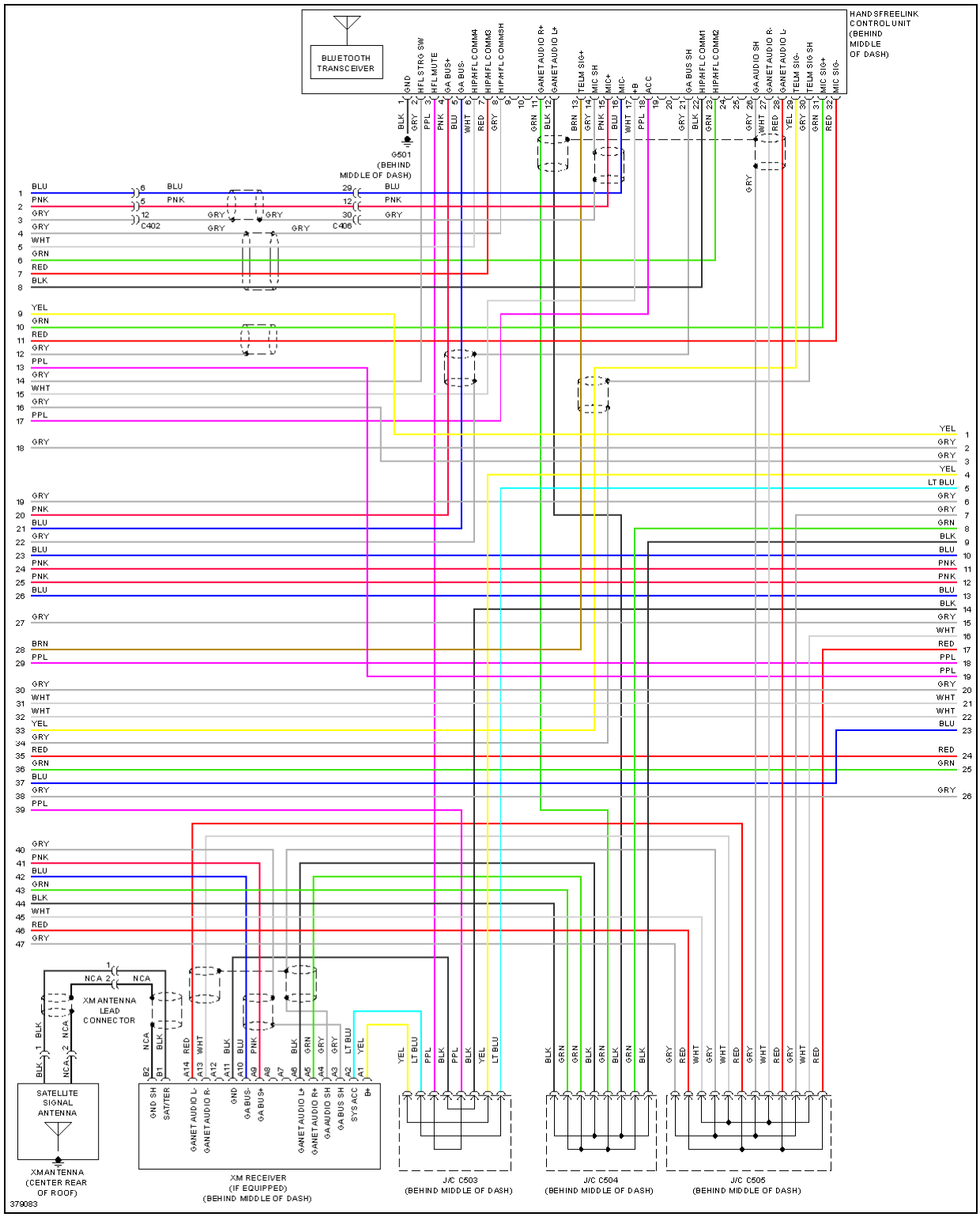


Fig. 66: Navigation Circuit (4 of 5)

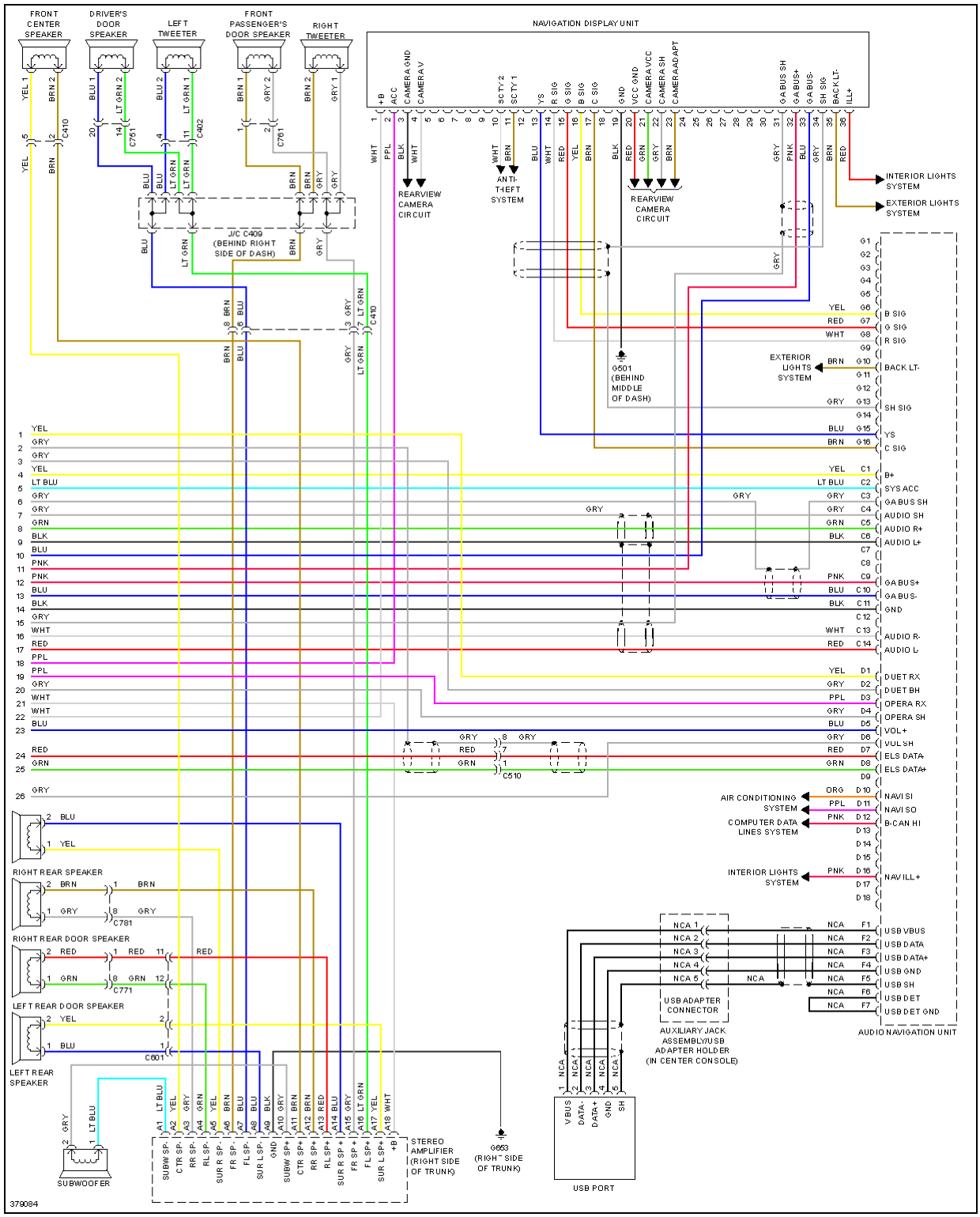


Fig. 67: Navigation Circuit (5 of 5)

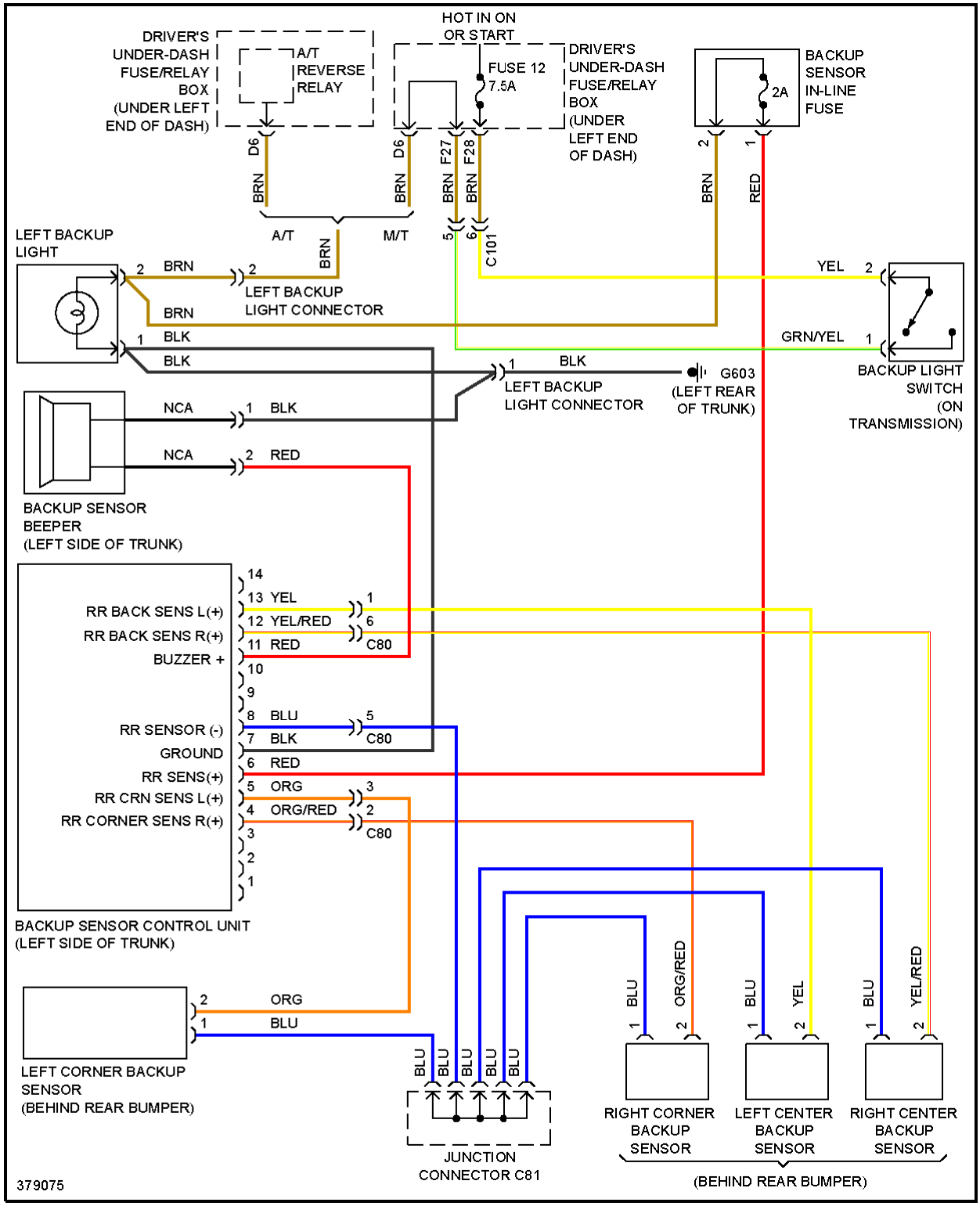


Fig. 68: Parking Assistant Circuit

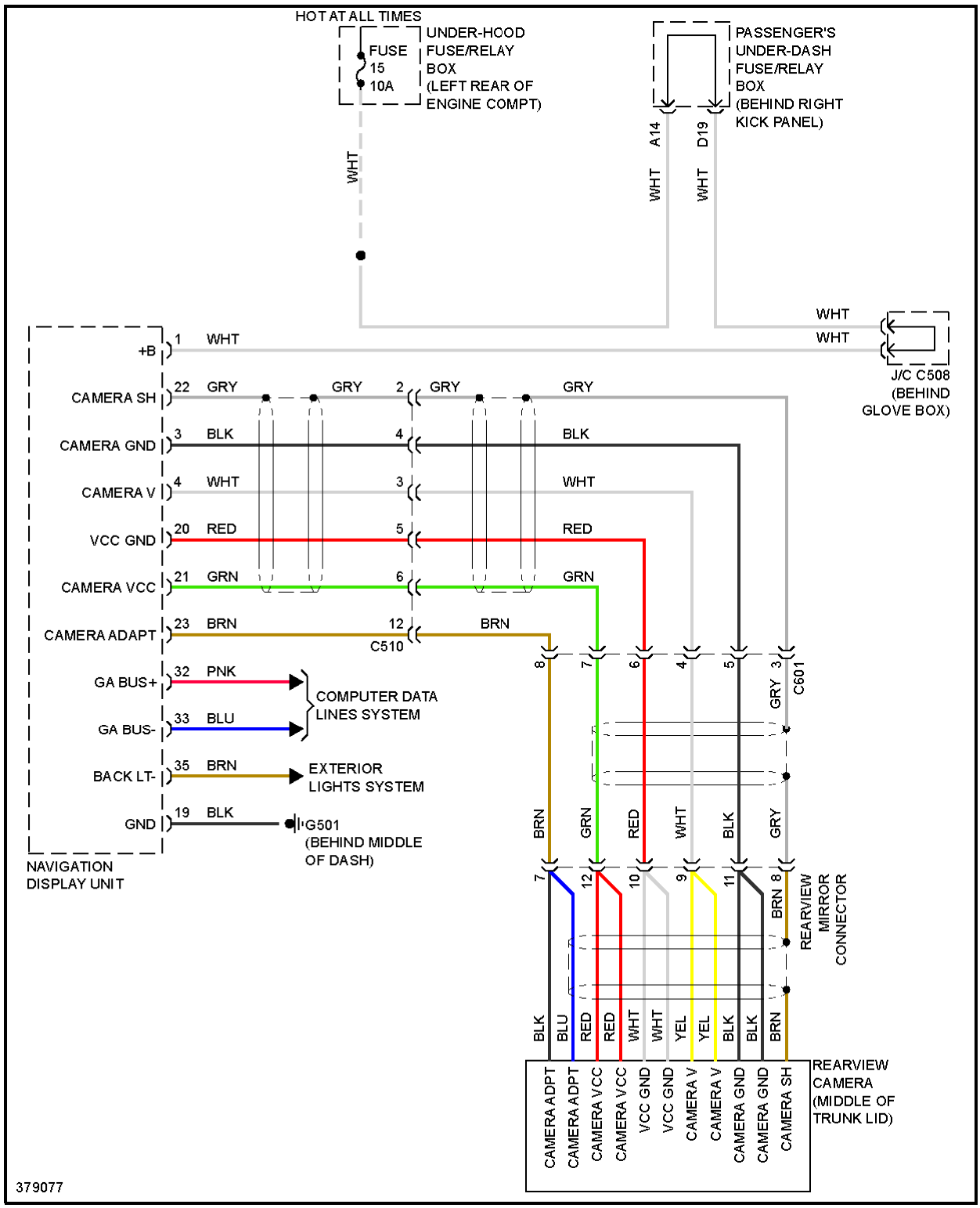


Fig. 69: Rear Camera Circuit

POWER DISTRIBUTION

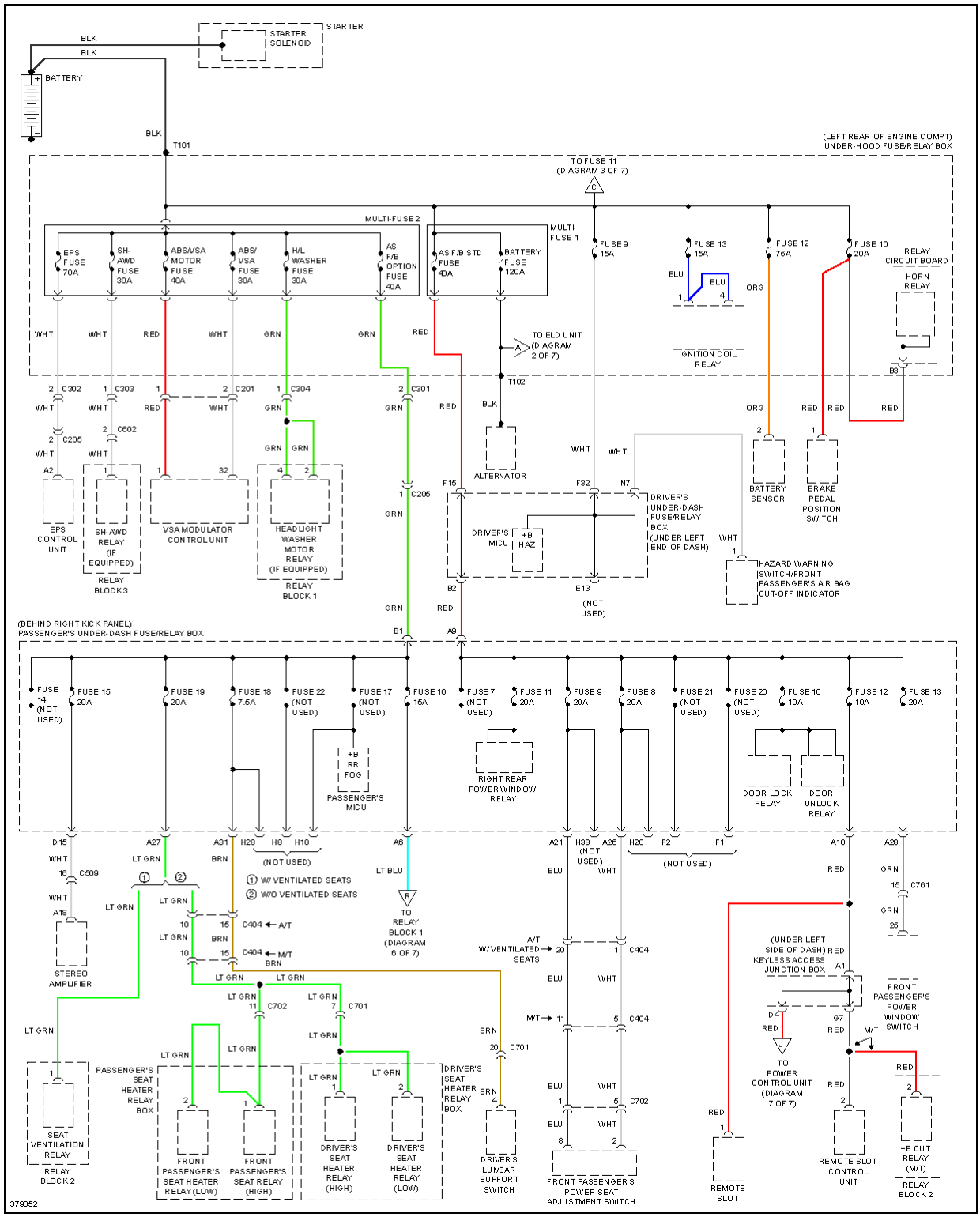


Fig. 70: Power Distribution Circuit, W/ Keyless Access (1 of 7)

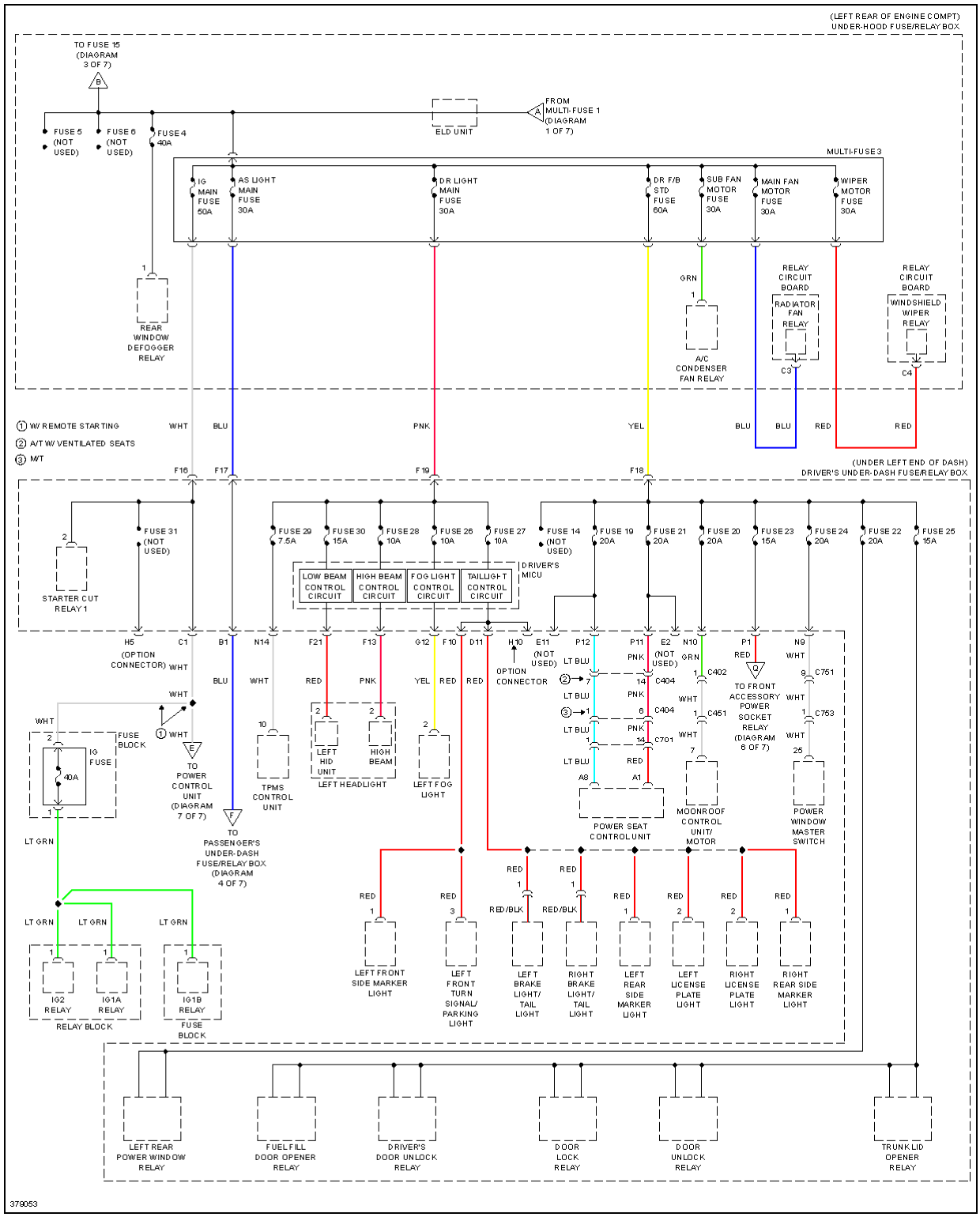


Fig. 71: Power Distribution Circuit, W/ Keyless Access (2 of 7)

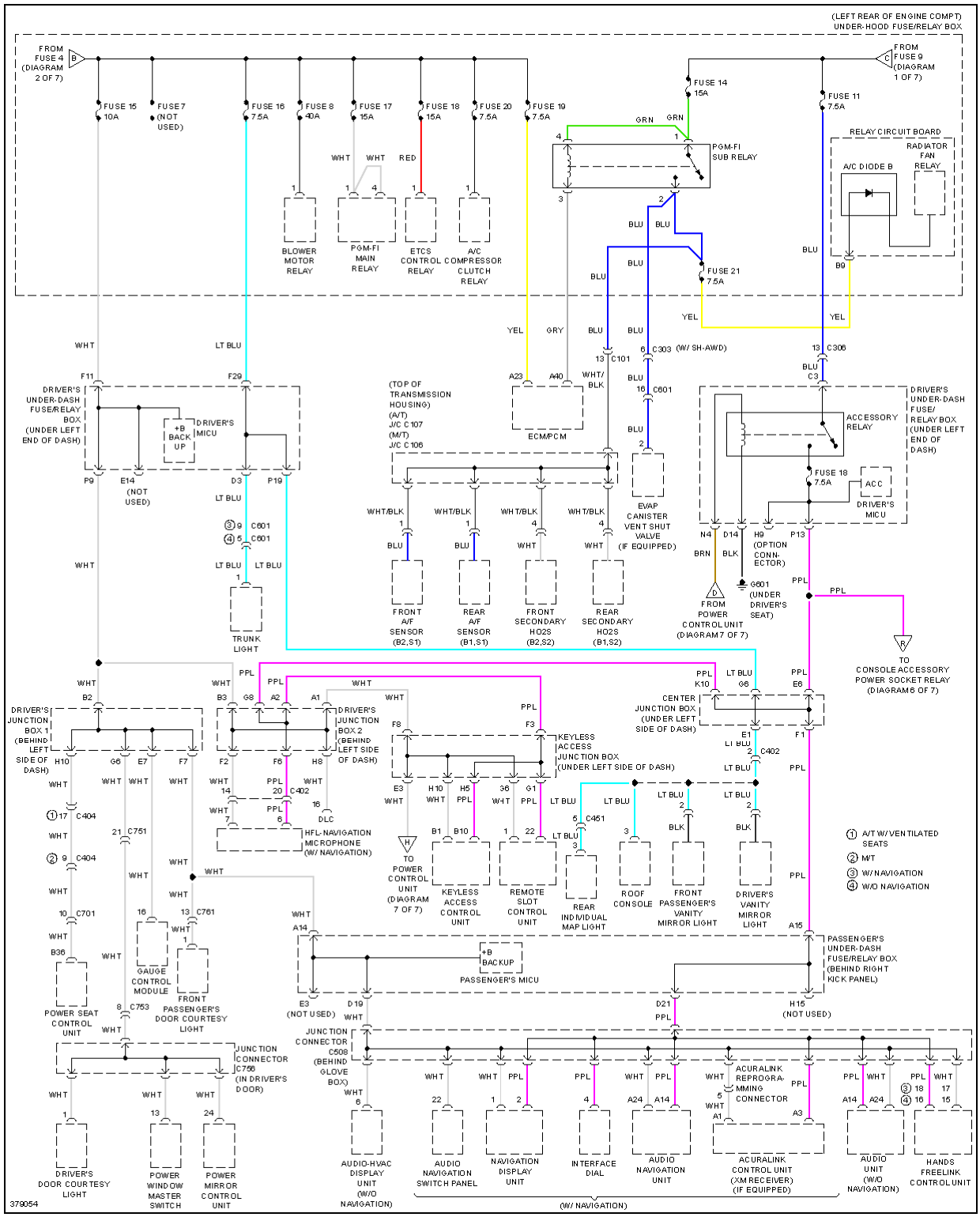


Fig. 72: Power Distribution Circuit, W/ Keyless Access (3 of 7)

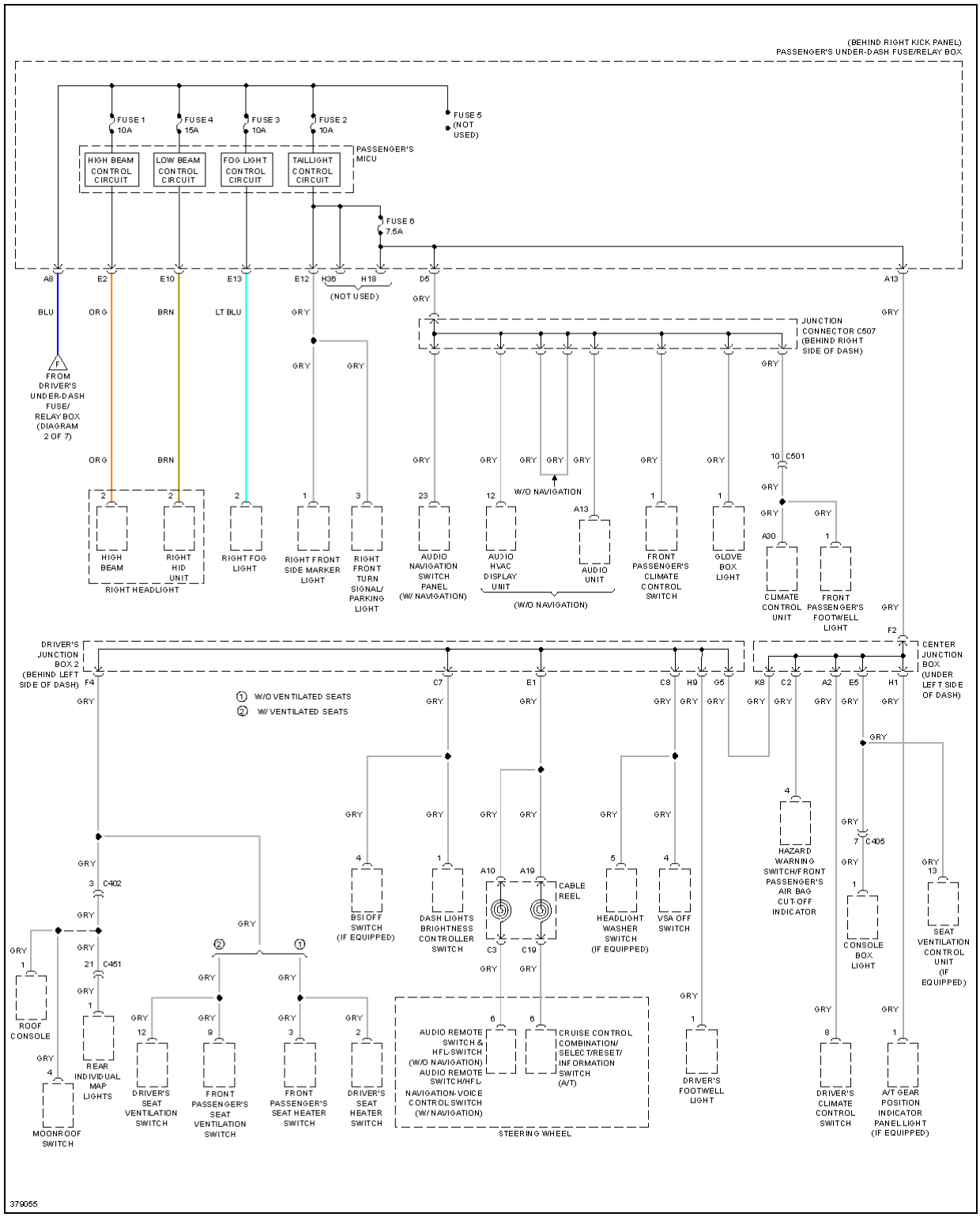


Fig. 73: Power Distribution Circuit, W/ Keyless Access (4 of 7)

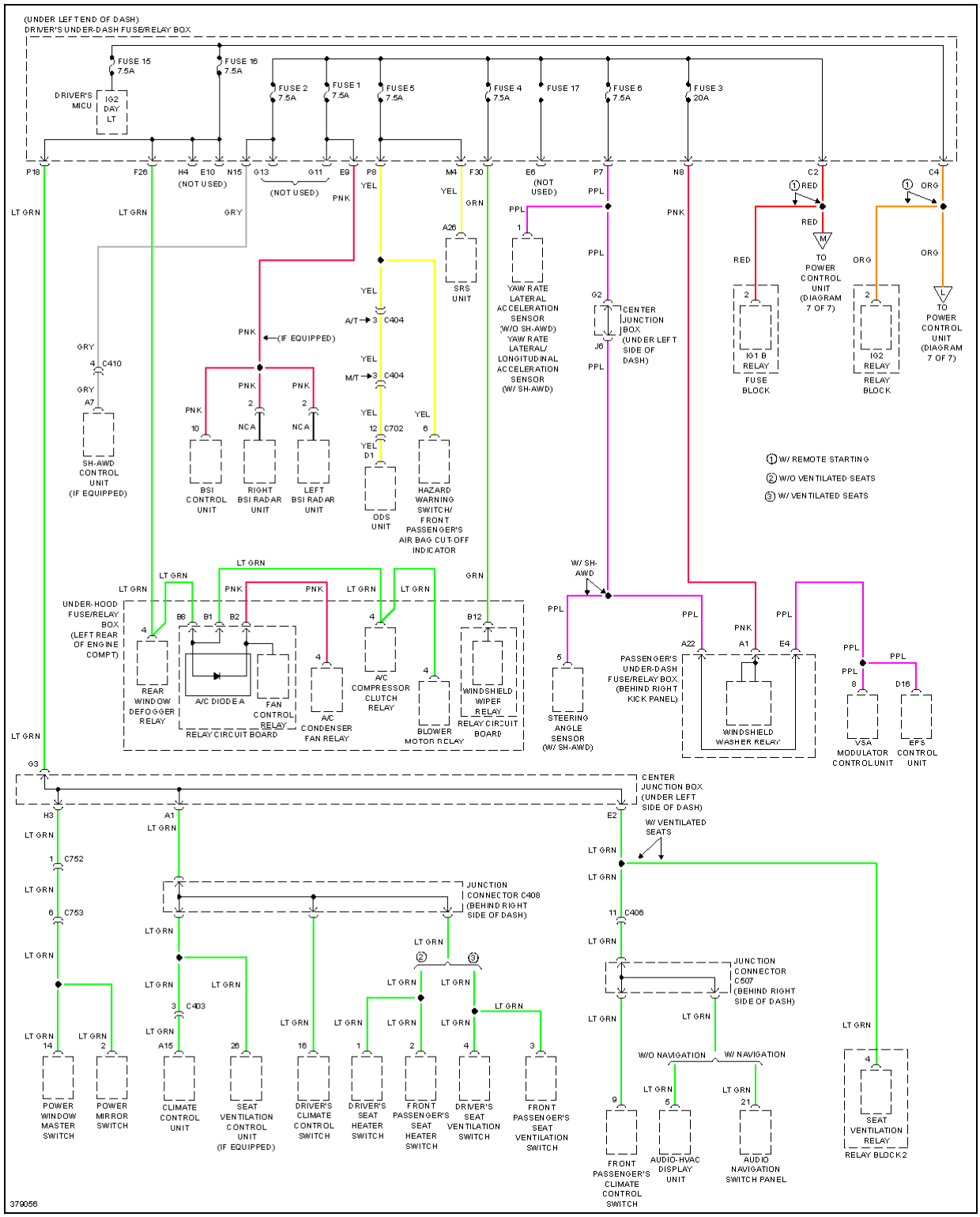


Fig. 74: Power Distribution Circuit, W/ Keyless Access (5 of 7)

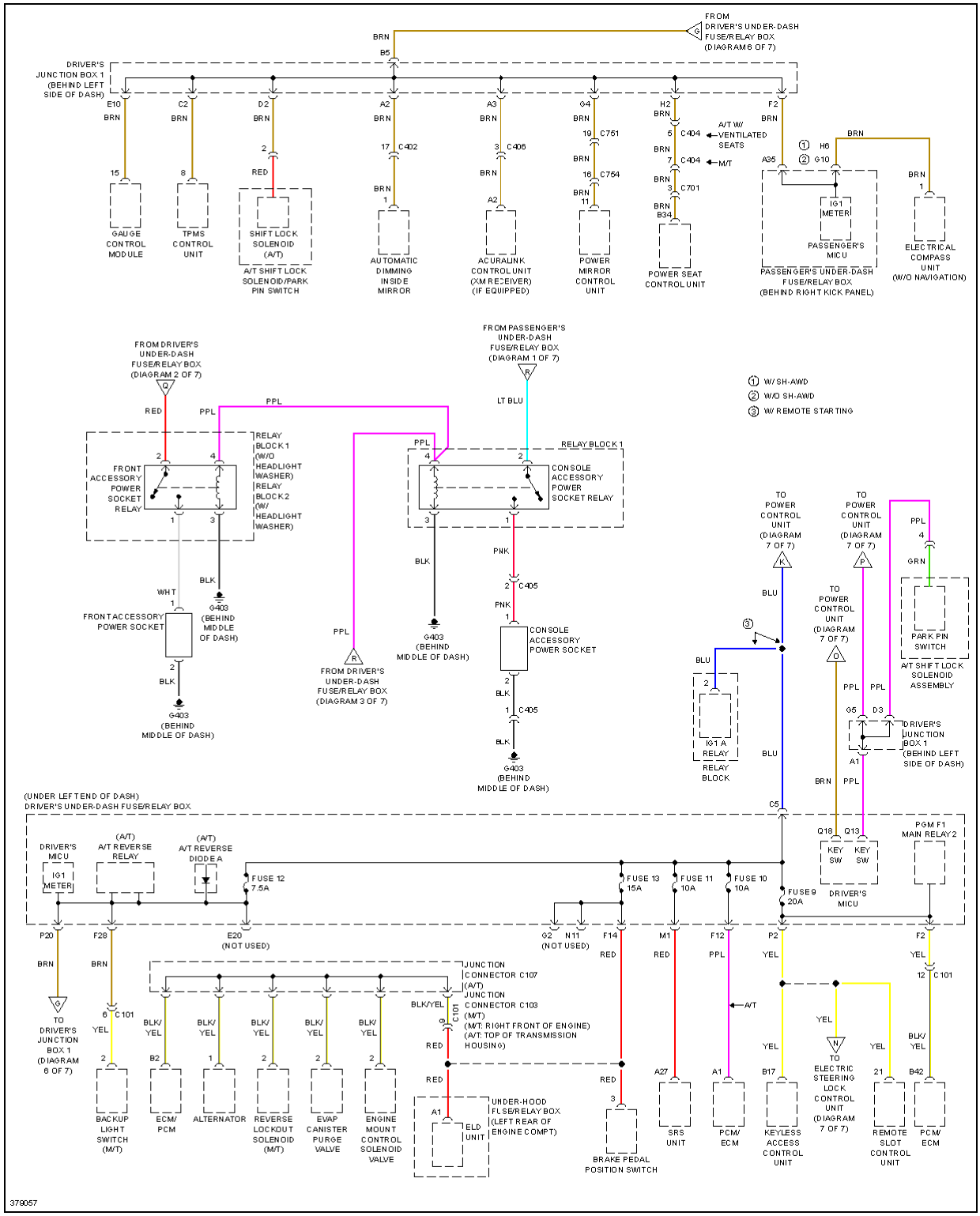


Fig. 75: Power Distribution Circuit, W/ Keyless Access (6 of 7)

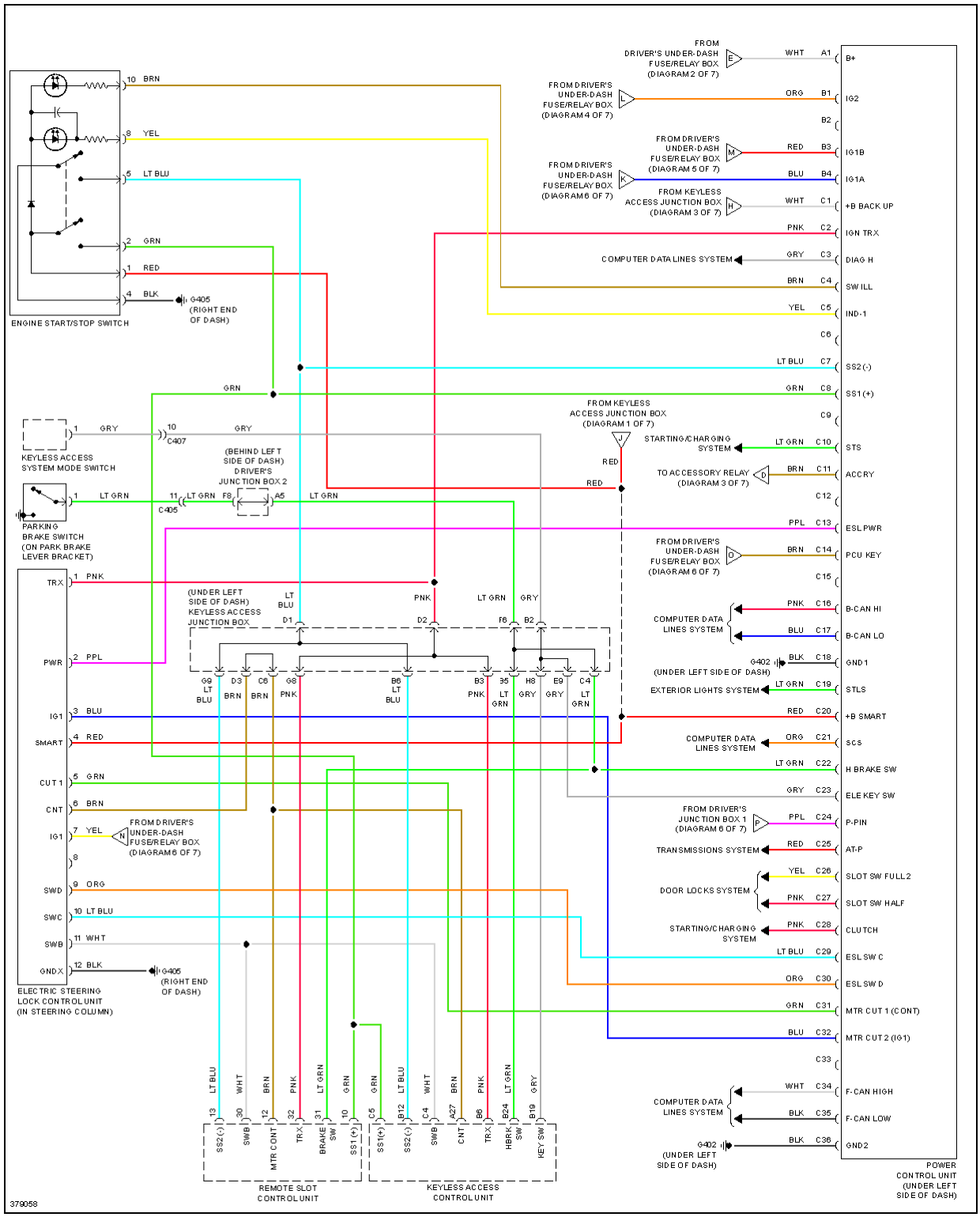


Fig. 76: Power Distribution Circuit, W/ Keyless Access (7 of 7)

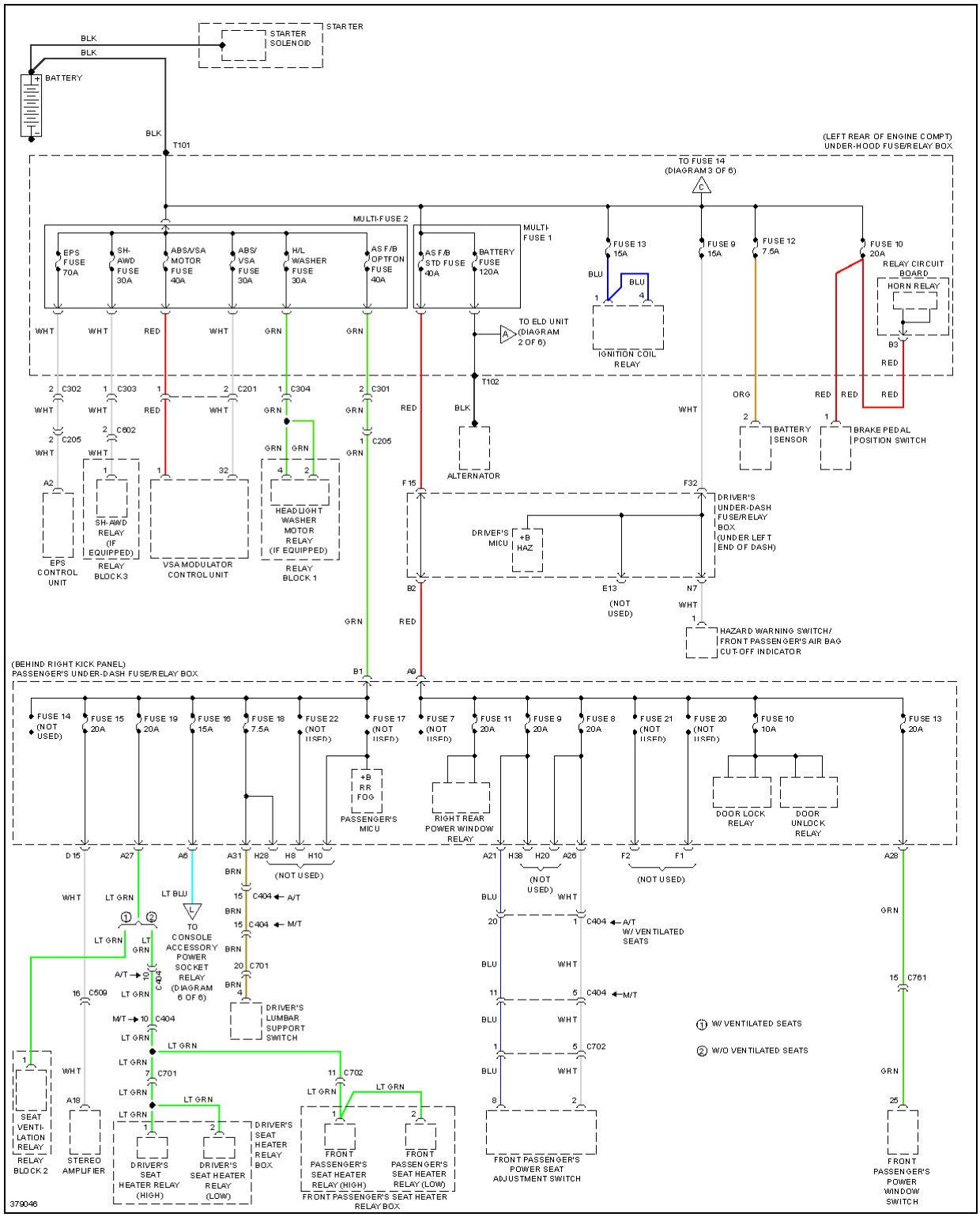


Fig. 77: Power Distribution Circuit, W/O Keyless Access (1 of 6)

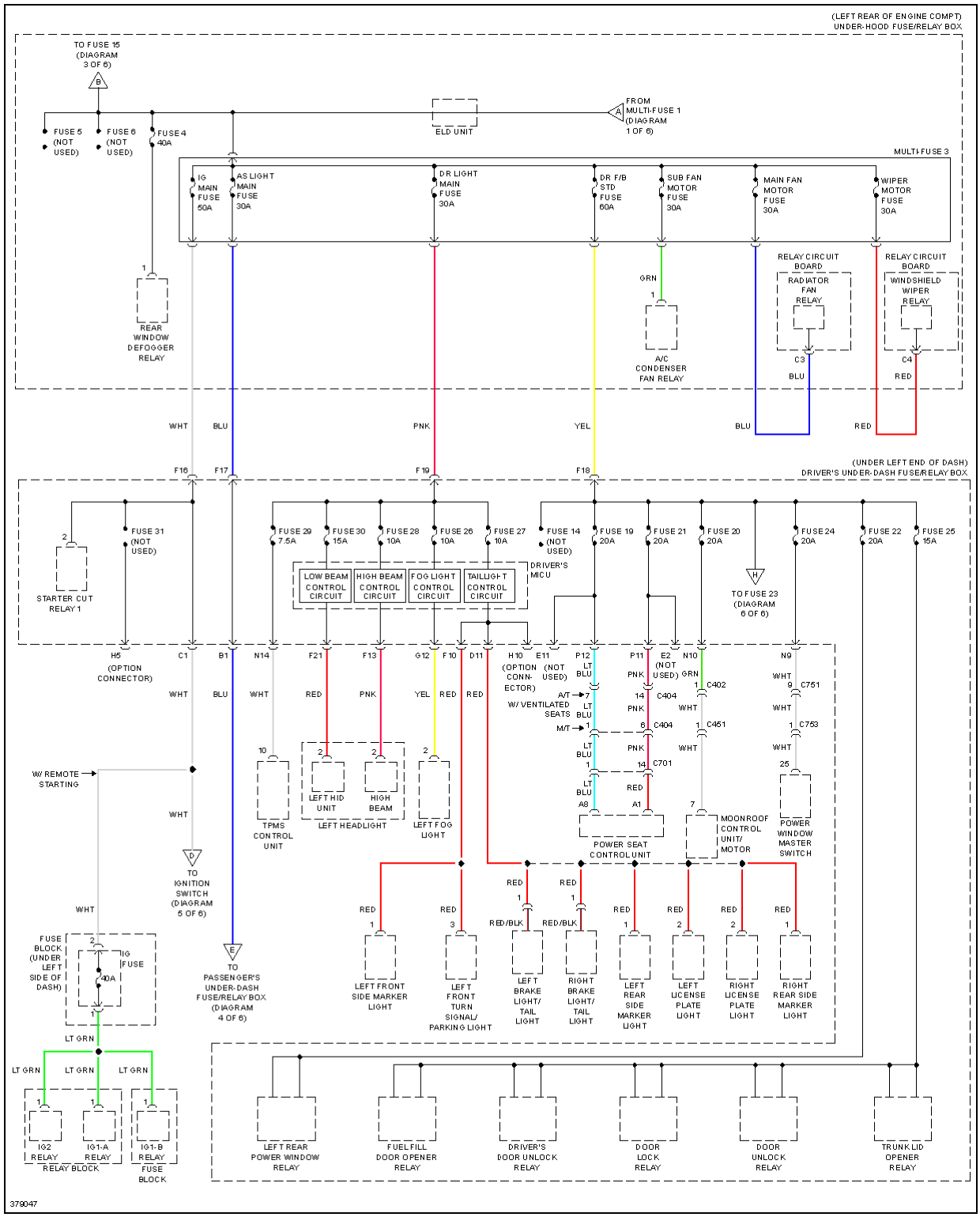


Fig. 78: Power Distribution Circuit, W/O Keyless Access (2 of 6)

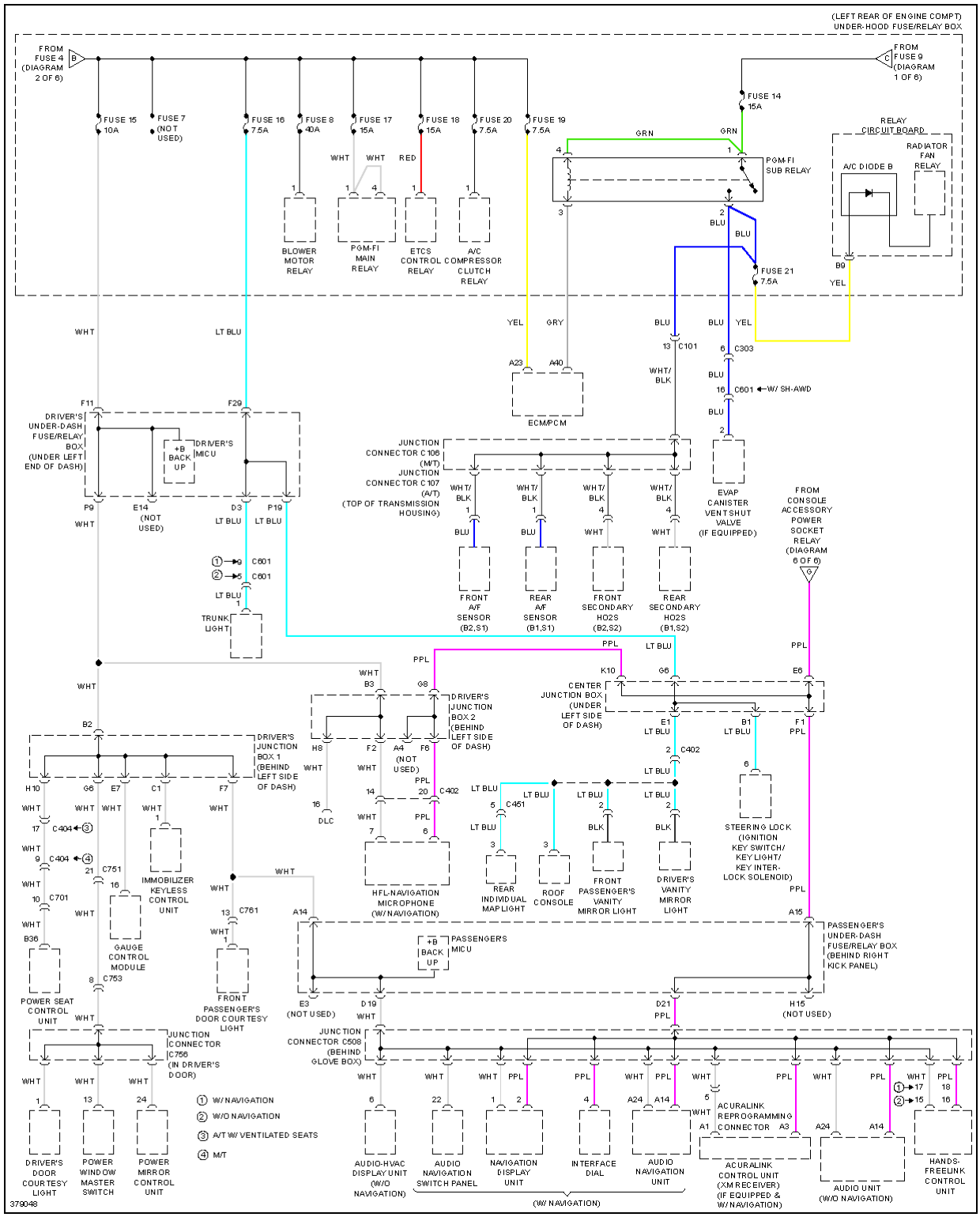


Fig. 79: Power Distribution Circuit, W/O Keyless Access (3 of 6)

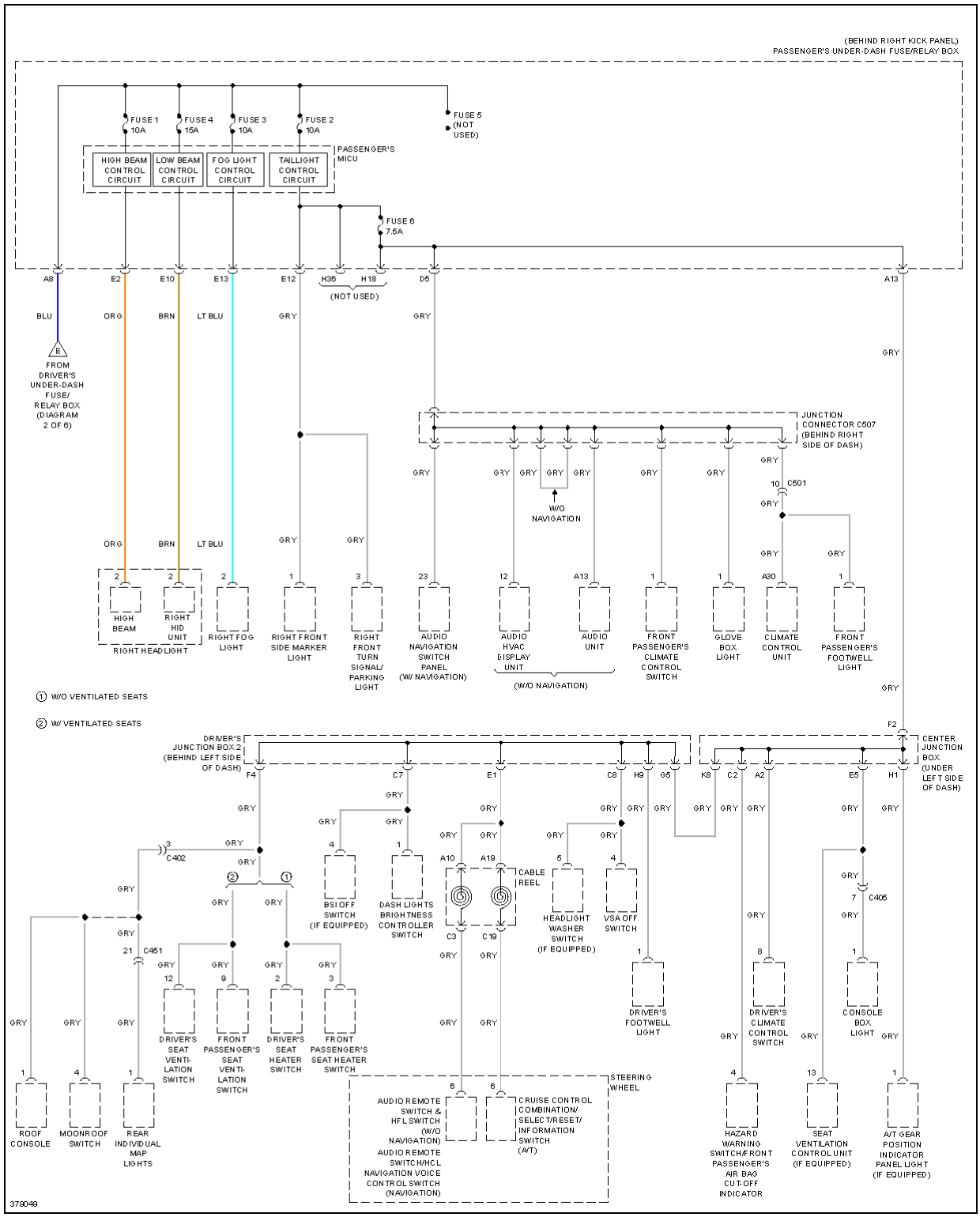


Fig. 80: Power Distribution Circuit, W/O Keyless Access (4 of 6)

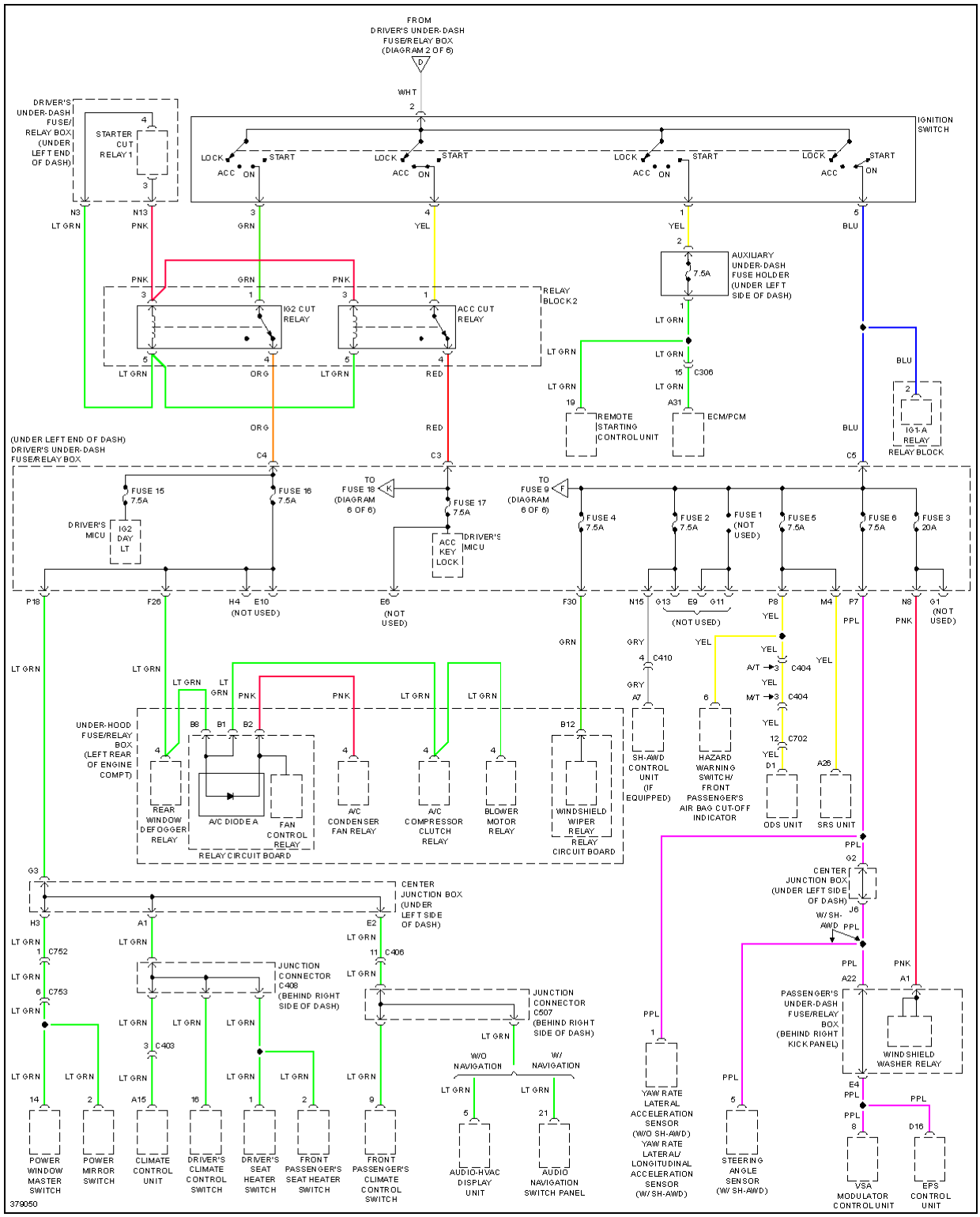


Fig. 81: Power Distribution Circuit, W/O Keyless Access (5 of 6)

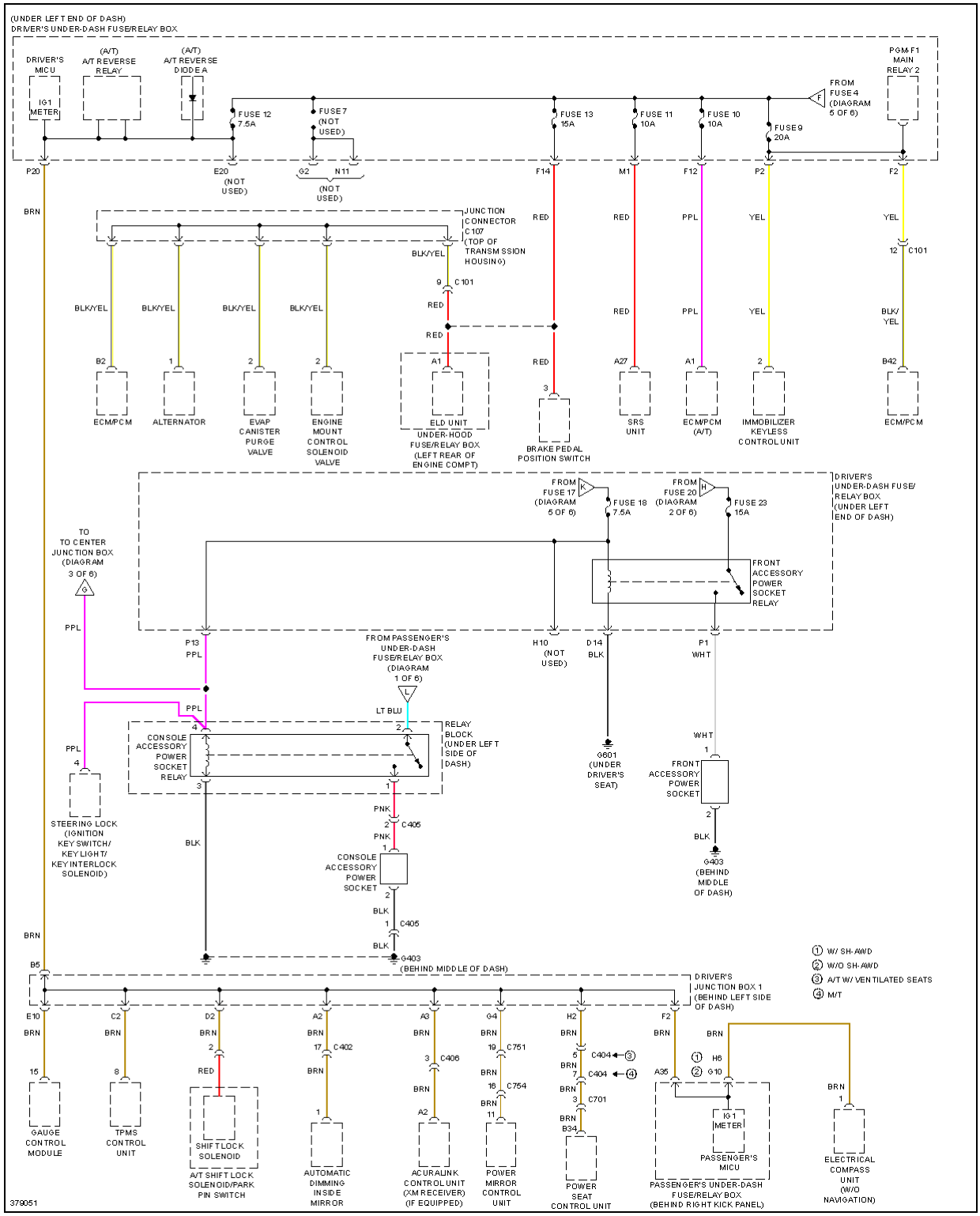


Fig. 82: Power Distribution Circuit, W/O Keyless Access (6 of 6)

POWER DOOR LOCKS

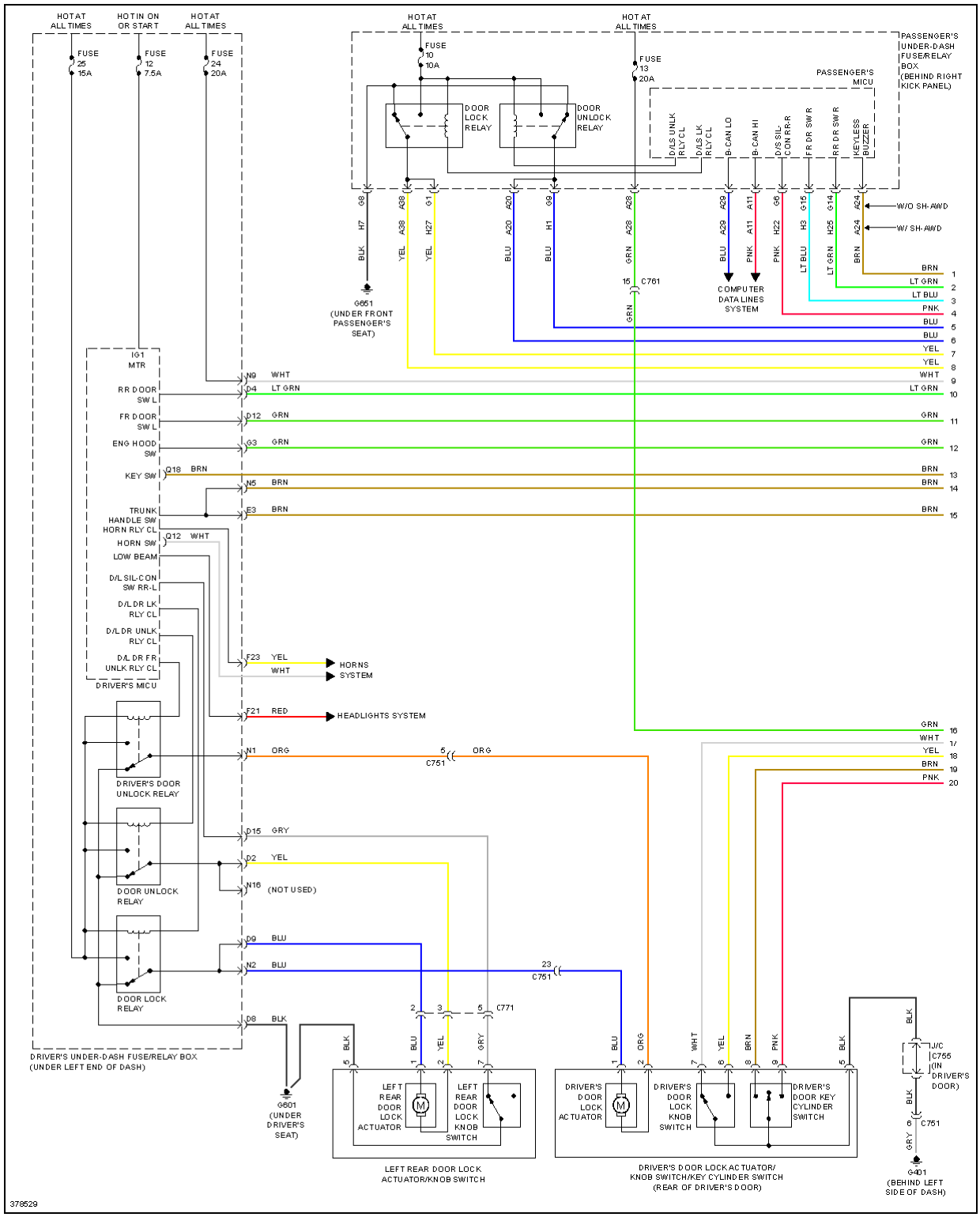


Fig. 83: Power Door Locks Circuit, W/ Keyless Access (1 of 5)

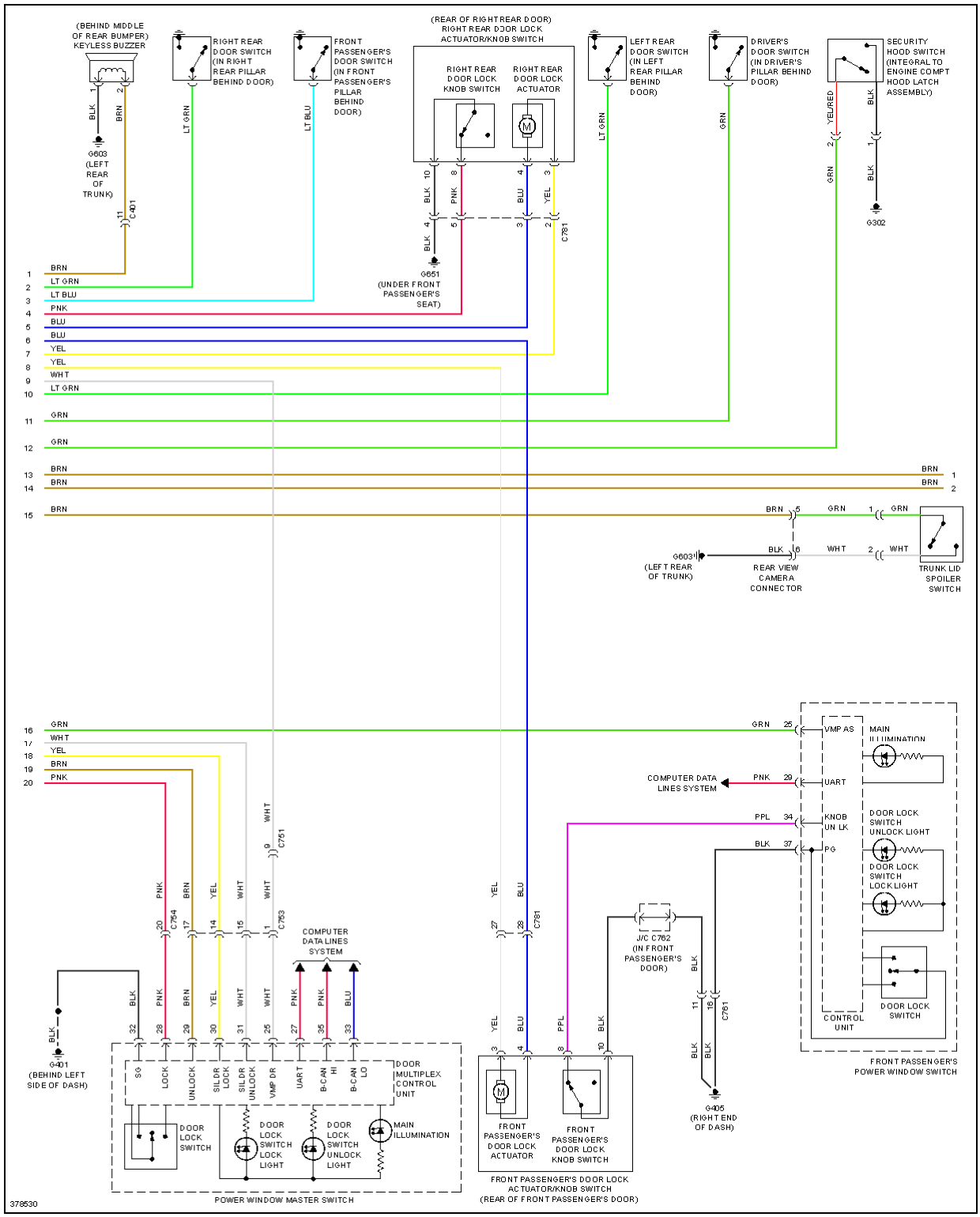


Fig. 84: Power Door Locks Circuit, W/ Keyless Access (2 of 5)

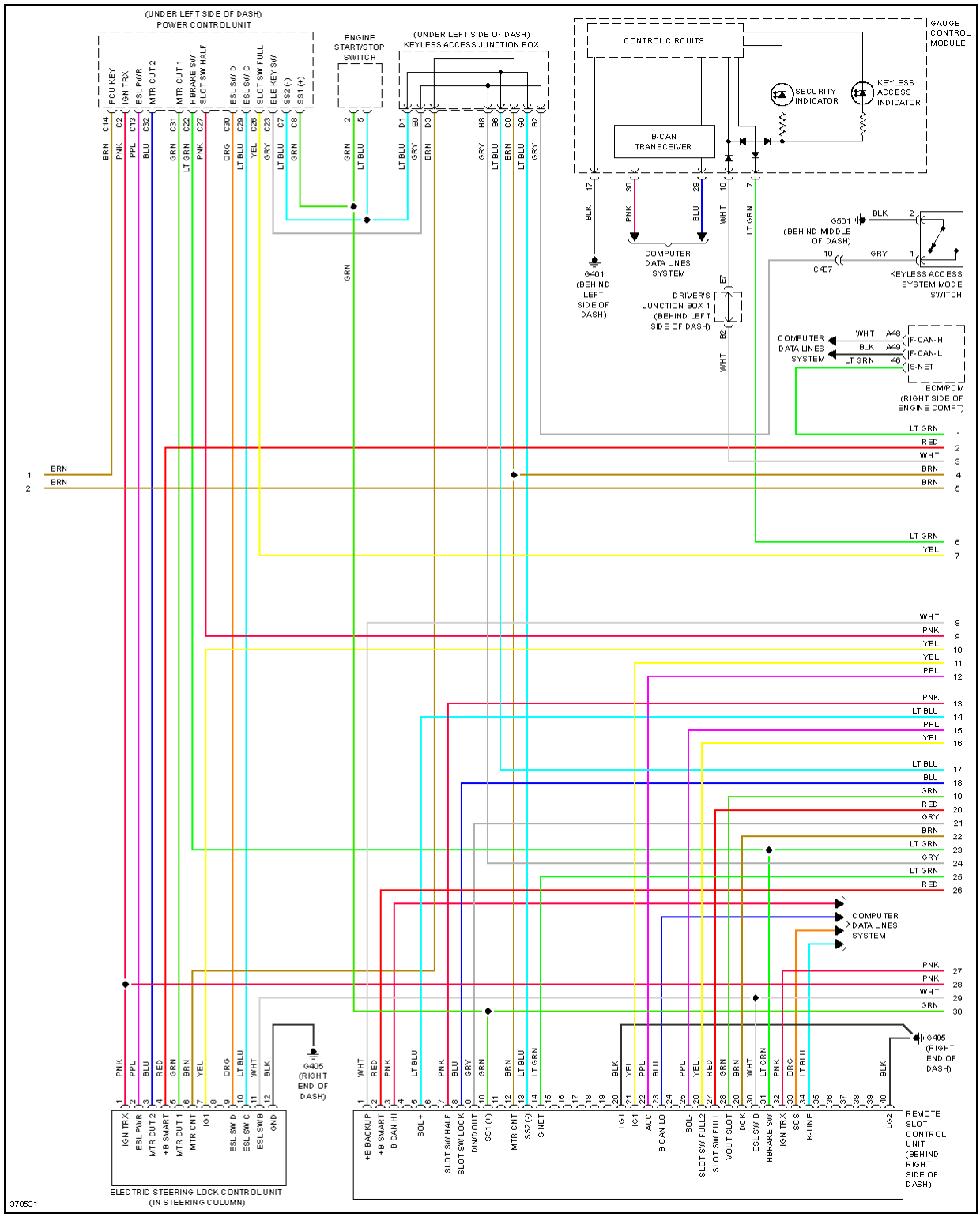


Fig. 85: Power Door Locks Circuit, W/ Keyless Access (3 of 5)

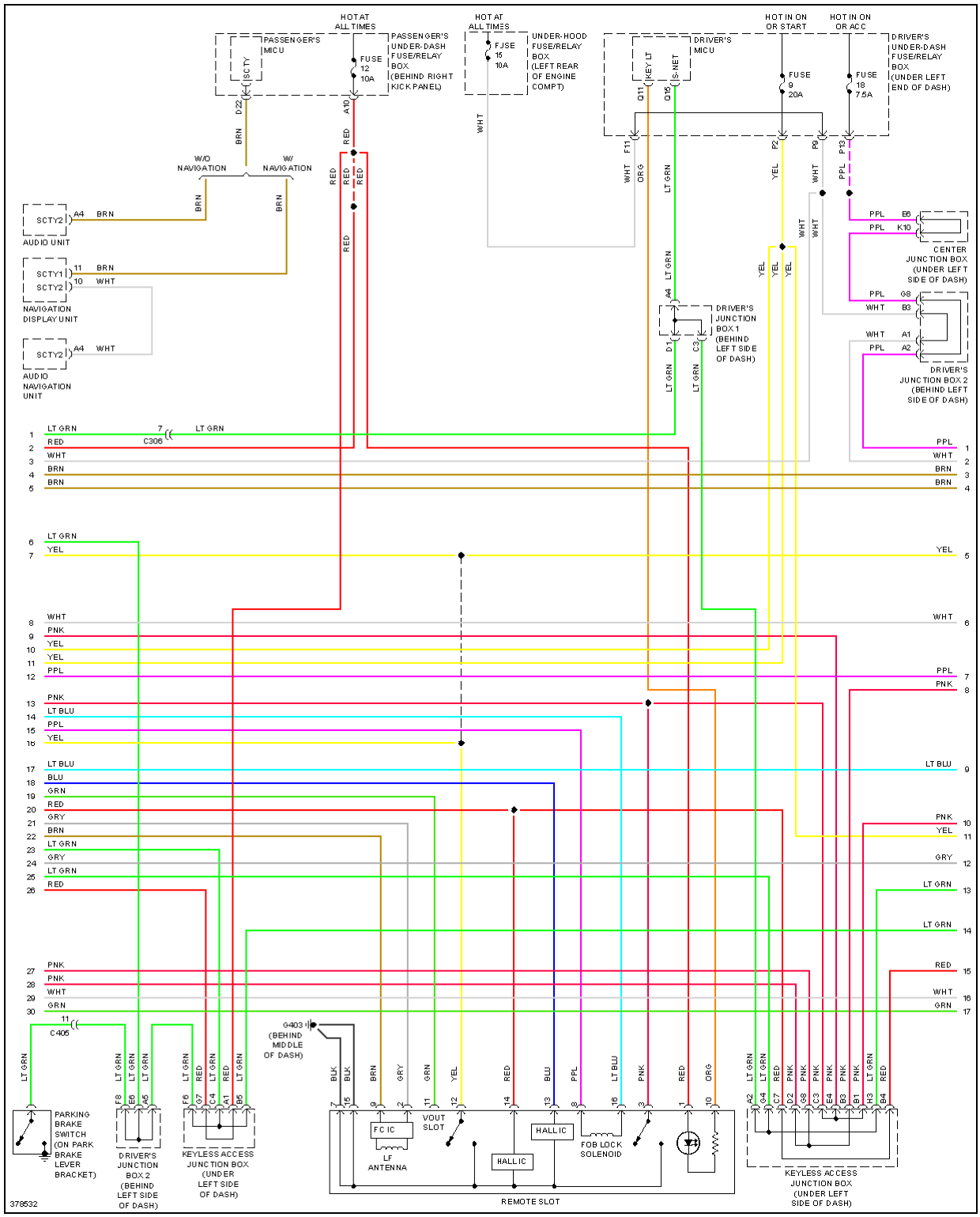


Fig. 86: Power Door Locks Circuit, W/ Keyless Access (4 of 5)

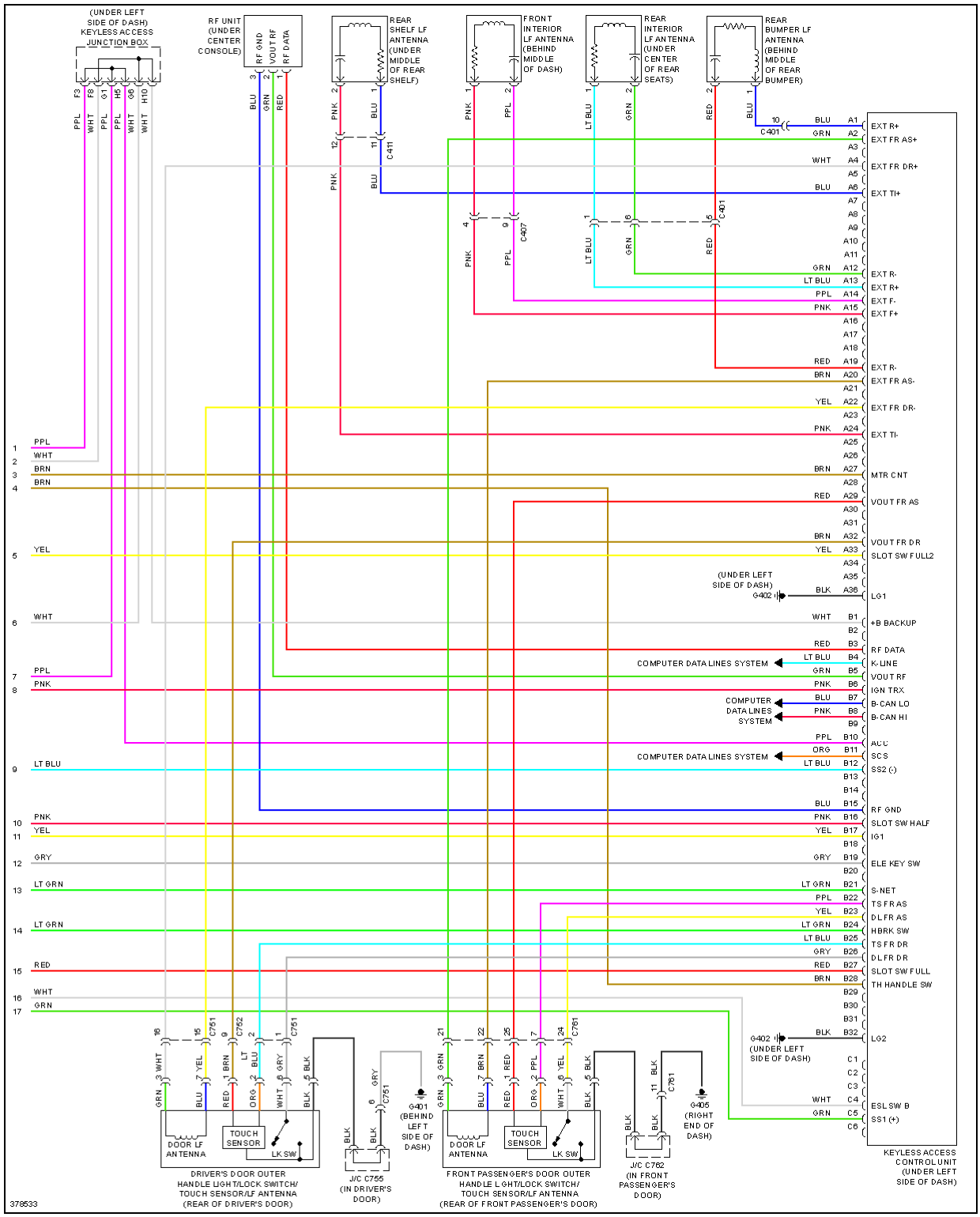


Fig. 87: Power Door Locks Circuit, W/ Keyless Access (5 of 5)

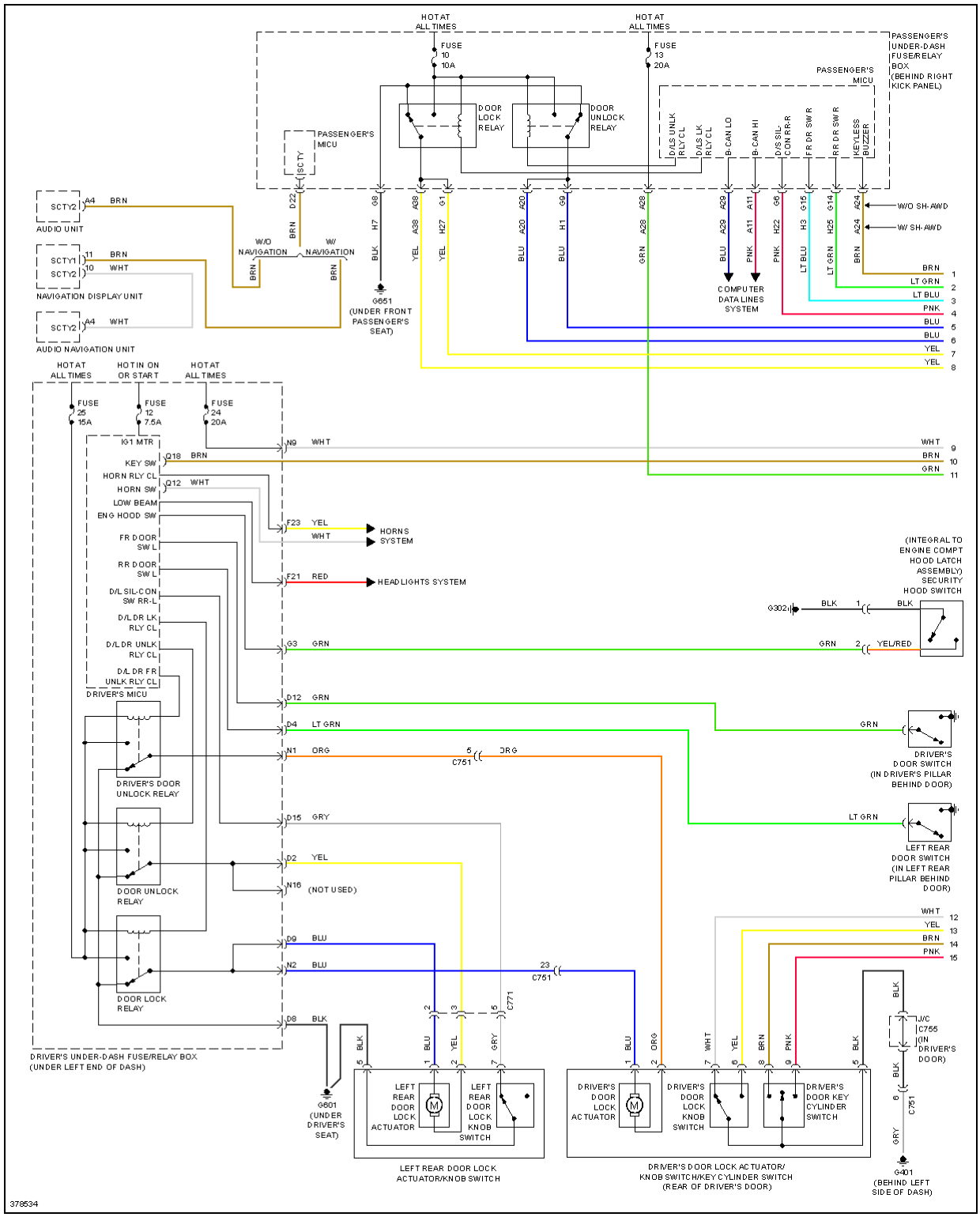


Fig. 88: Power Door Locks Circuit, W/O Keyless Access (1 of 2)

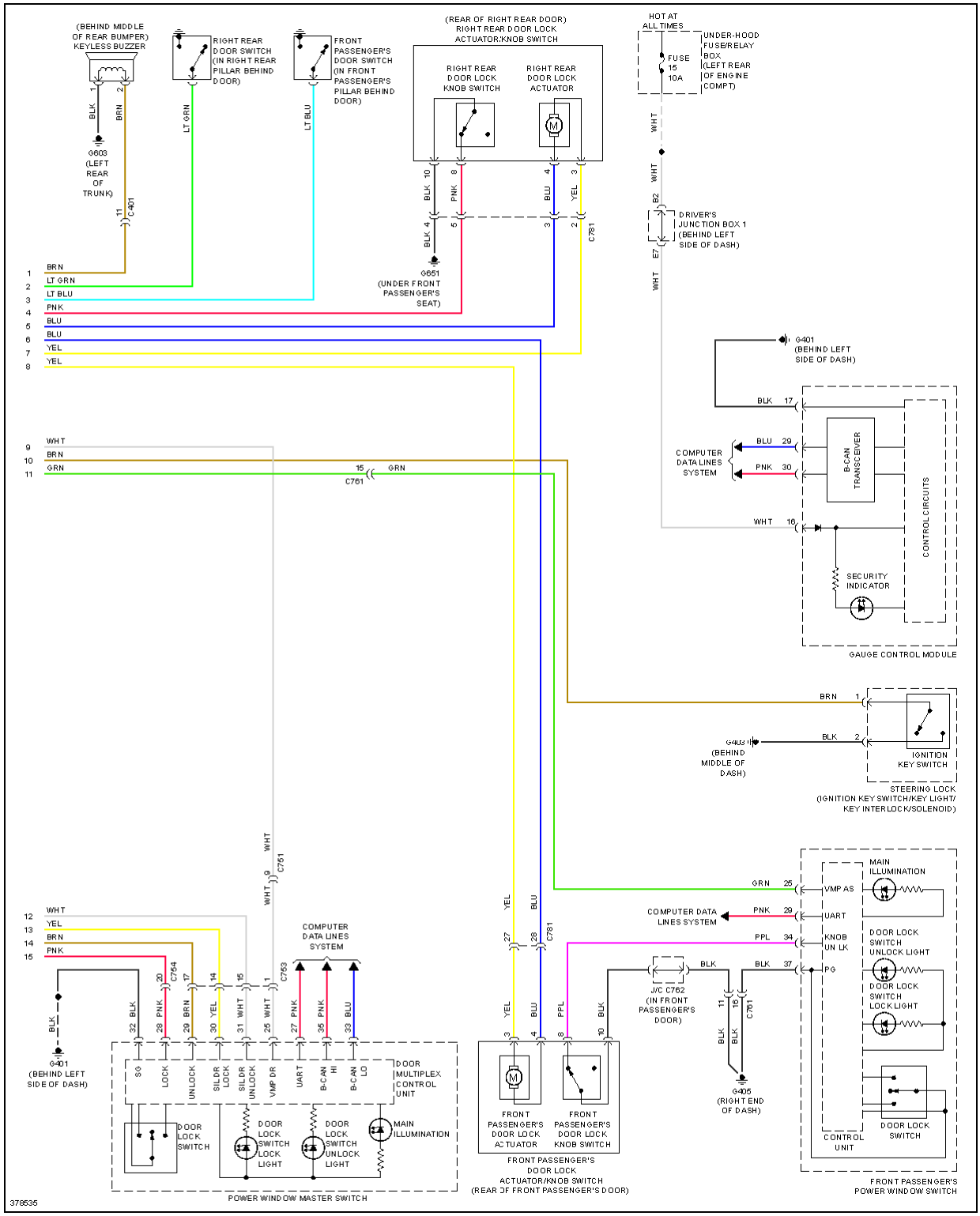


Fig. 89: Power Door Locks Circuit, W/O Keyless Access (2 of 2)

POWER MIRRORS

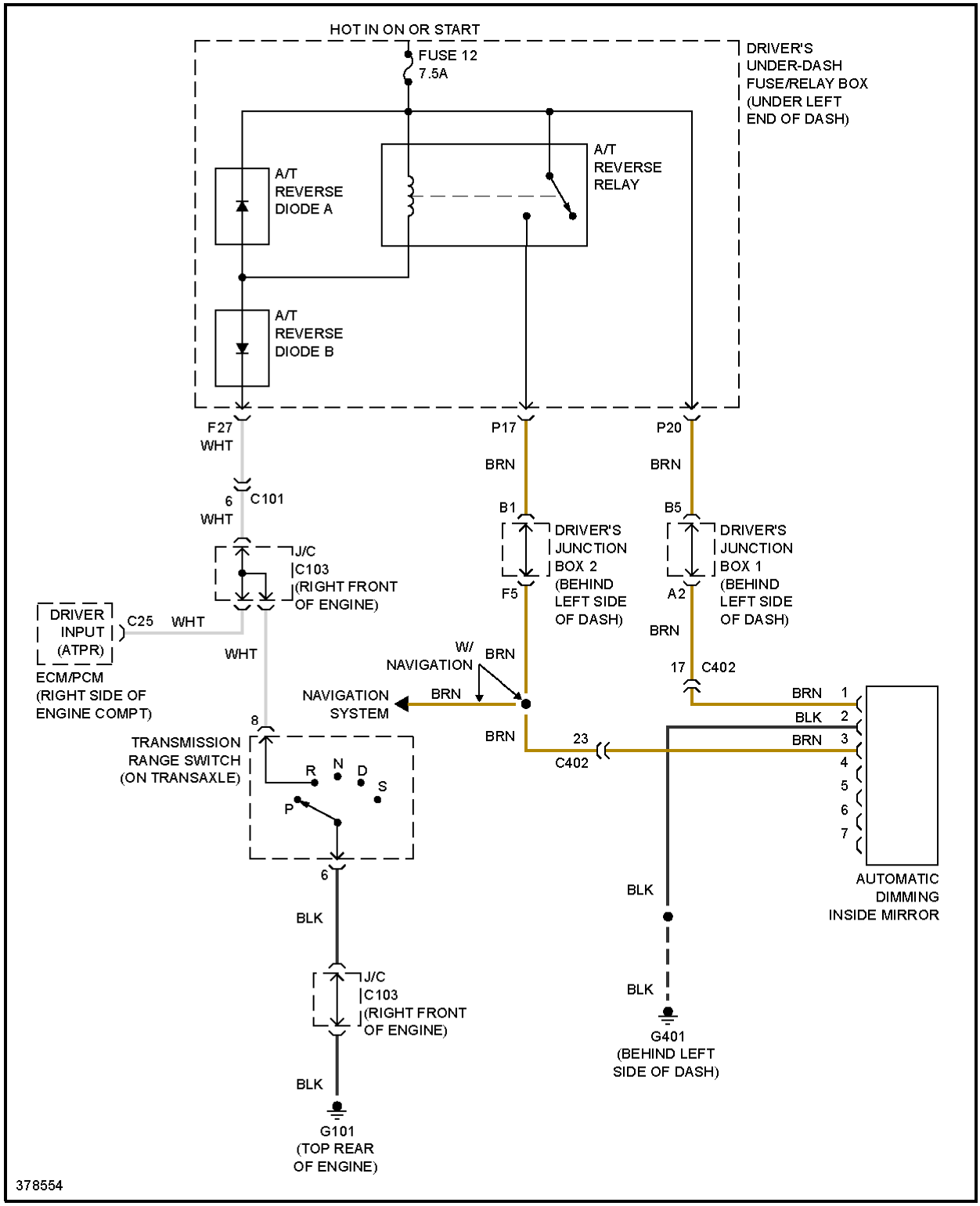


Fig. 90: Power Mirrors Circuit, A/T

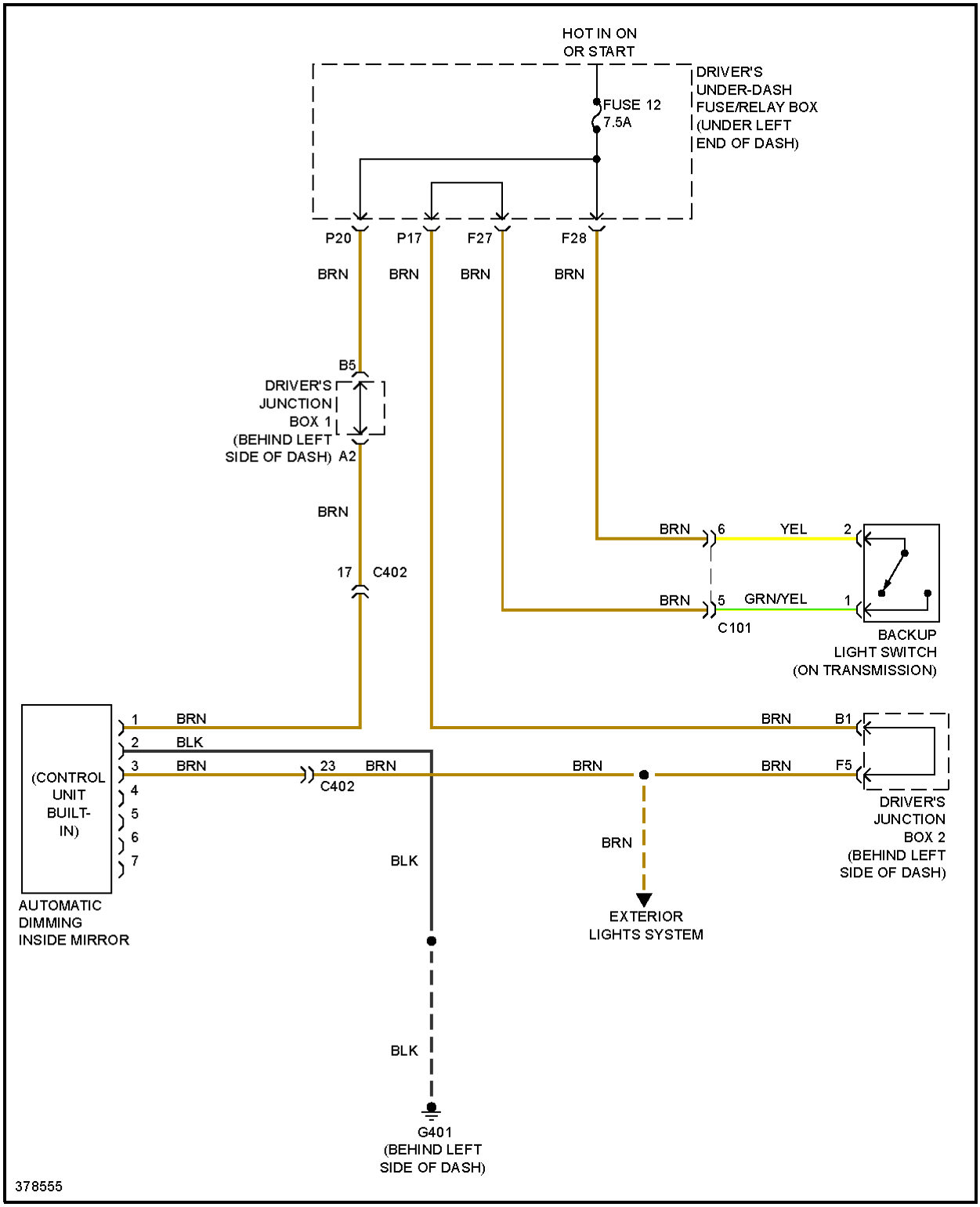


Fig. 91: Power Mirrors Circuit, M/T

POWER SEATS

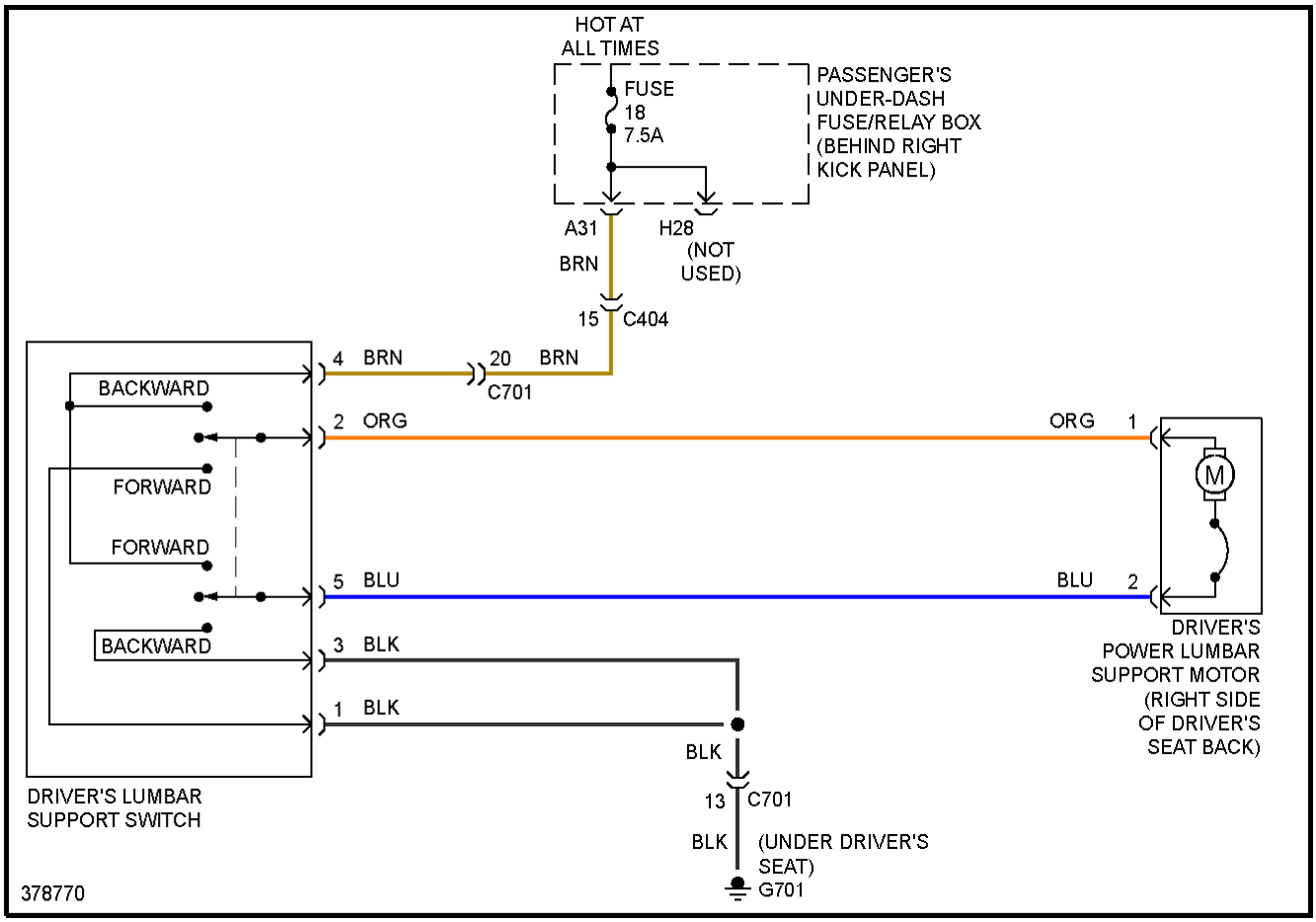


Fig. 92: Driver"s Lumbar Circuit

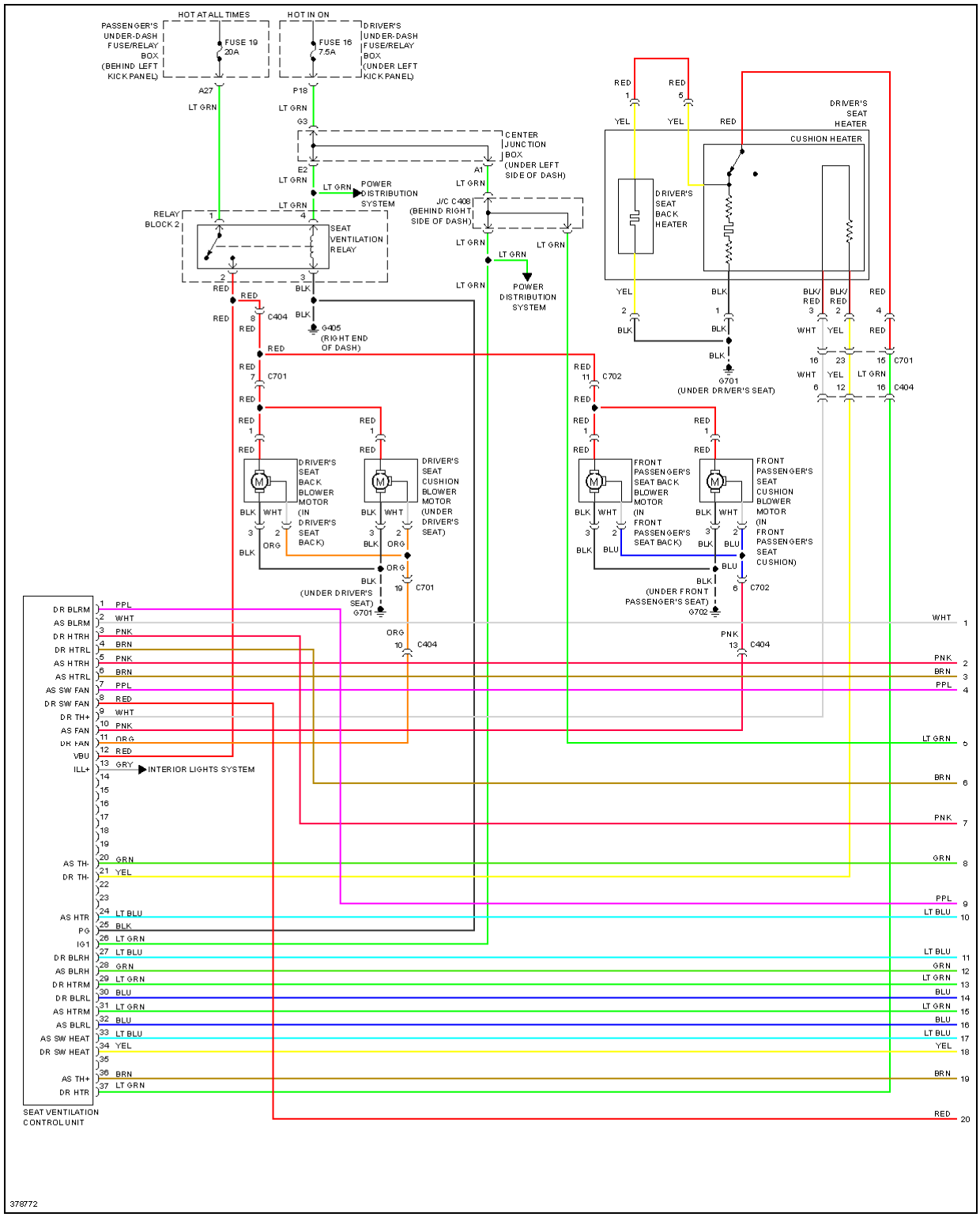


Fig. 93: Heated Seats Circuit, W/ Ventilated Seats (1 of 2)

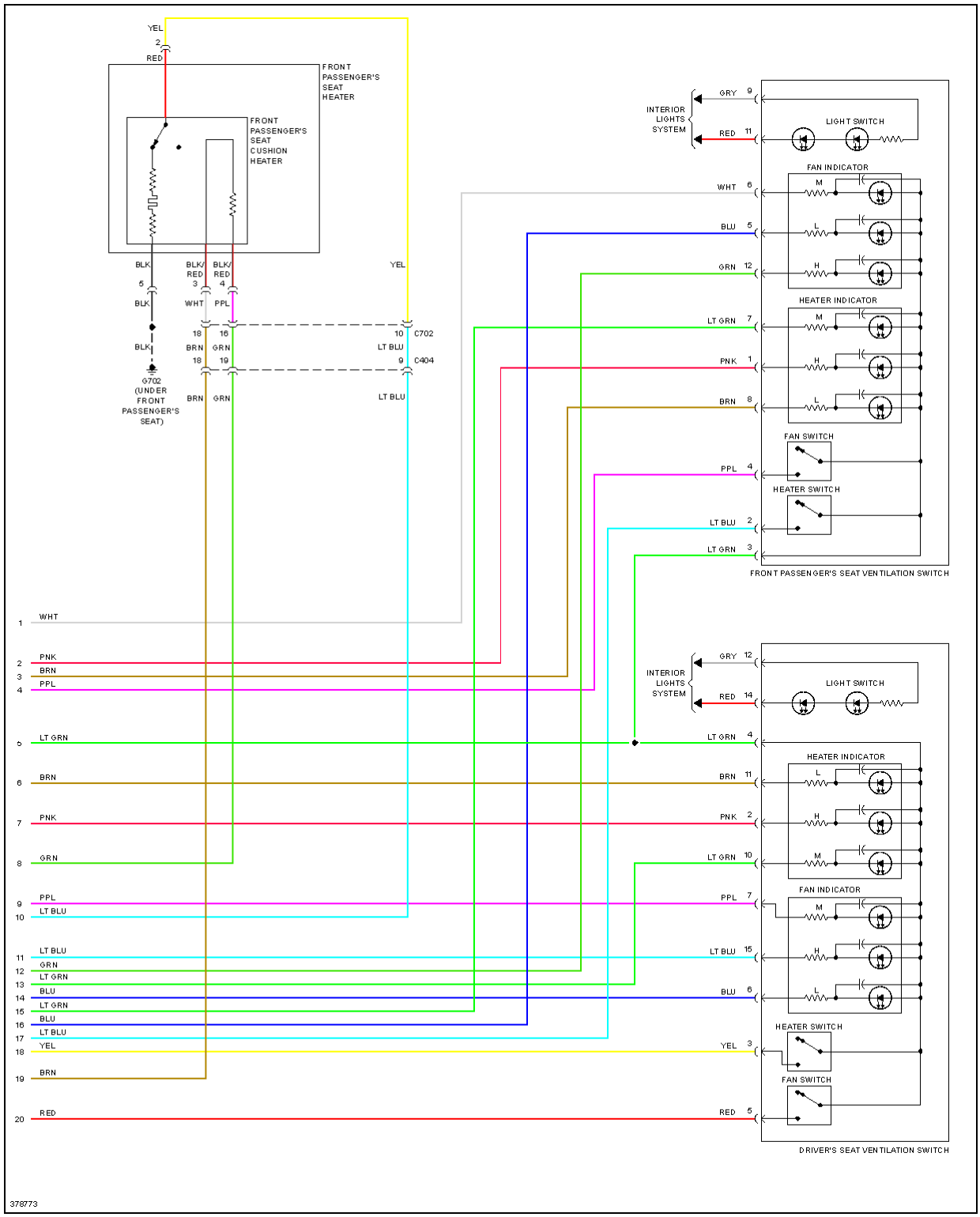


Fig. 94: Heated Seats Circuit, W/ Ventilated Seats (2 of 2)

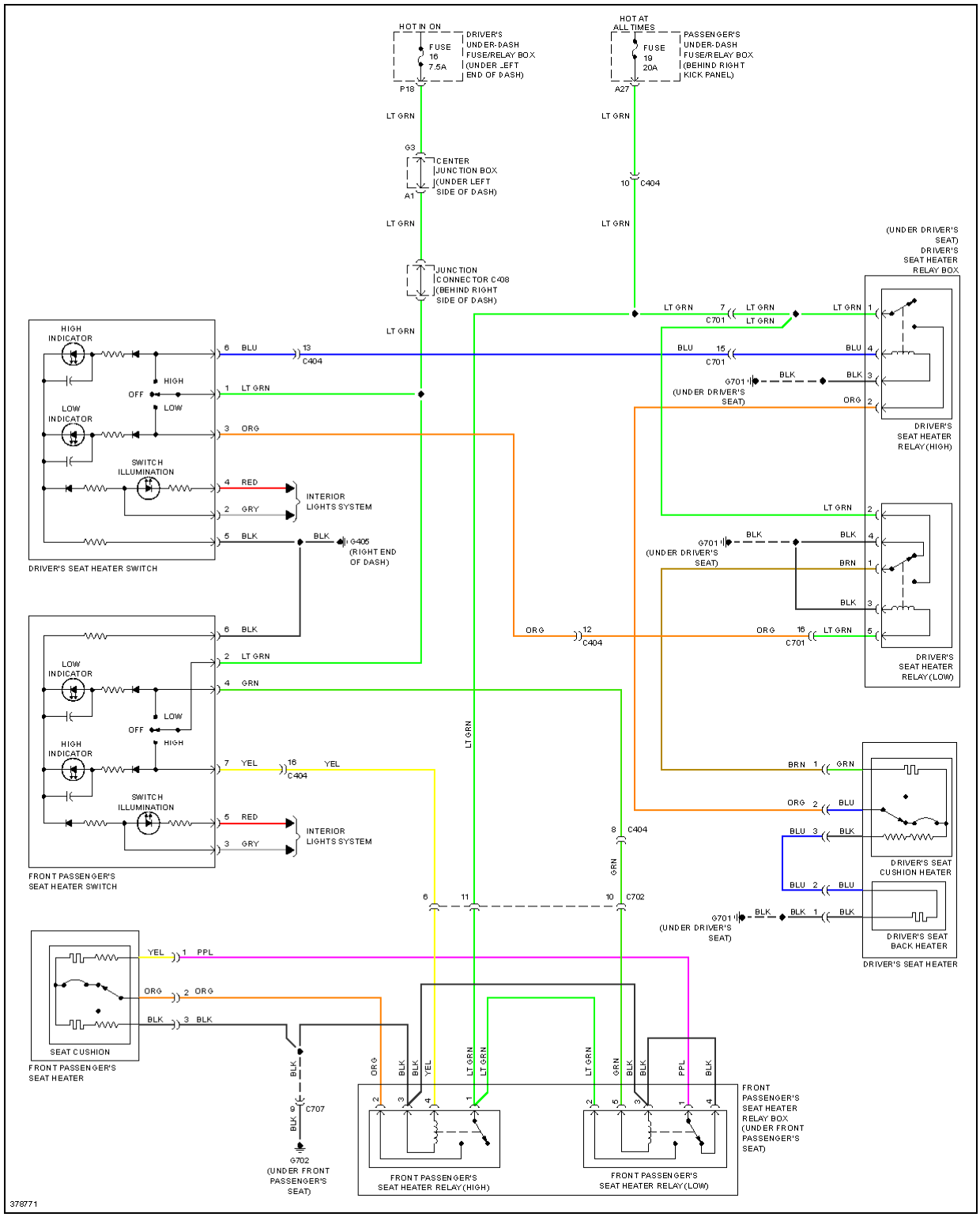


Fig. 95: Heated Seats Circuit, W/O Ventilated Seats

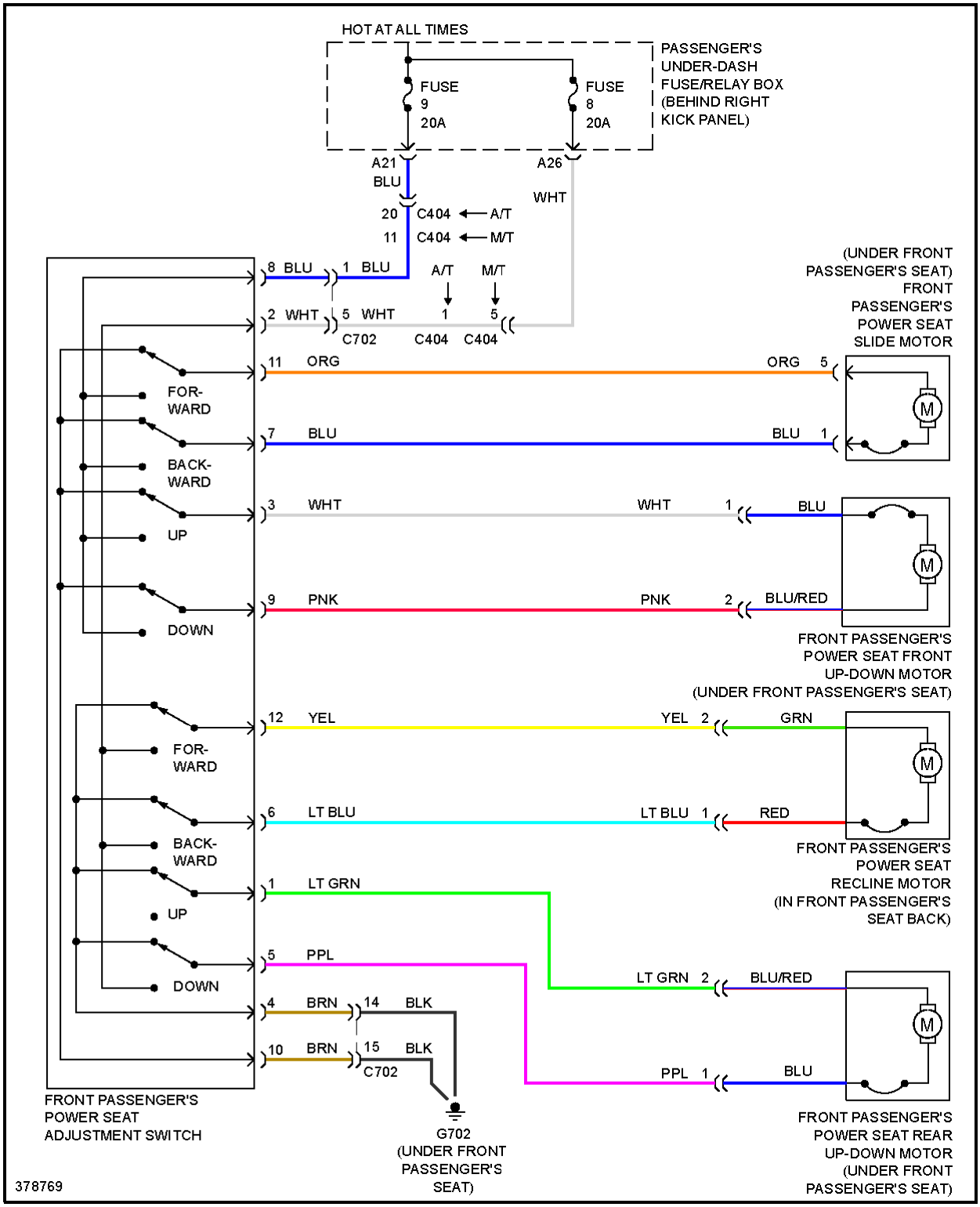


Fig. 96: Passenger Power Seat Circuit

POWER TOP/SUNROOF

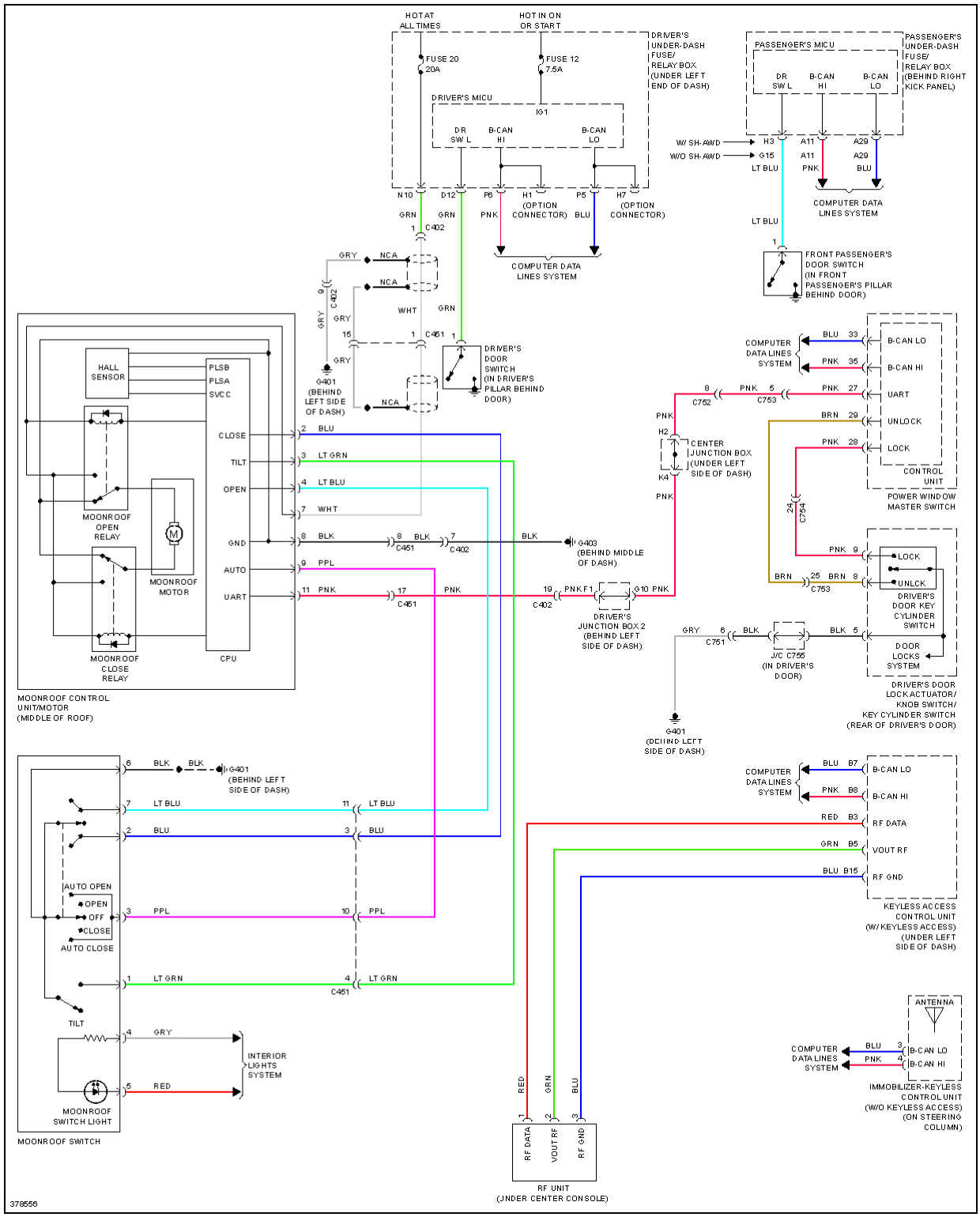


Fig. 97: Power Top/Sunroof Circuit

POWER WINDOWS

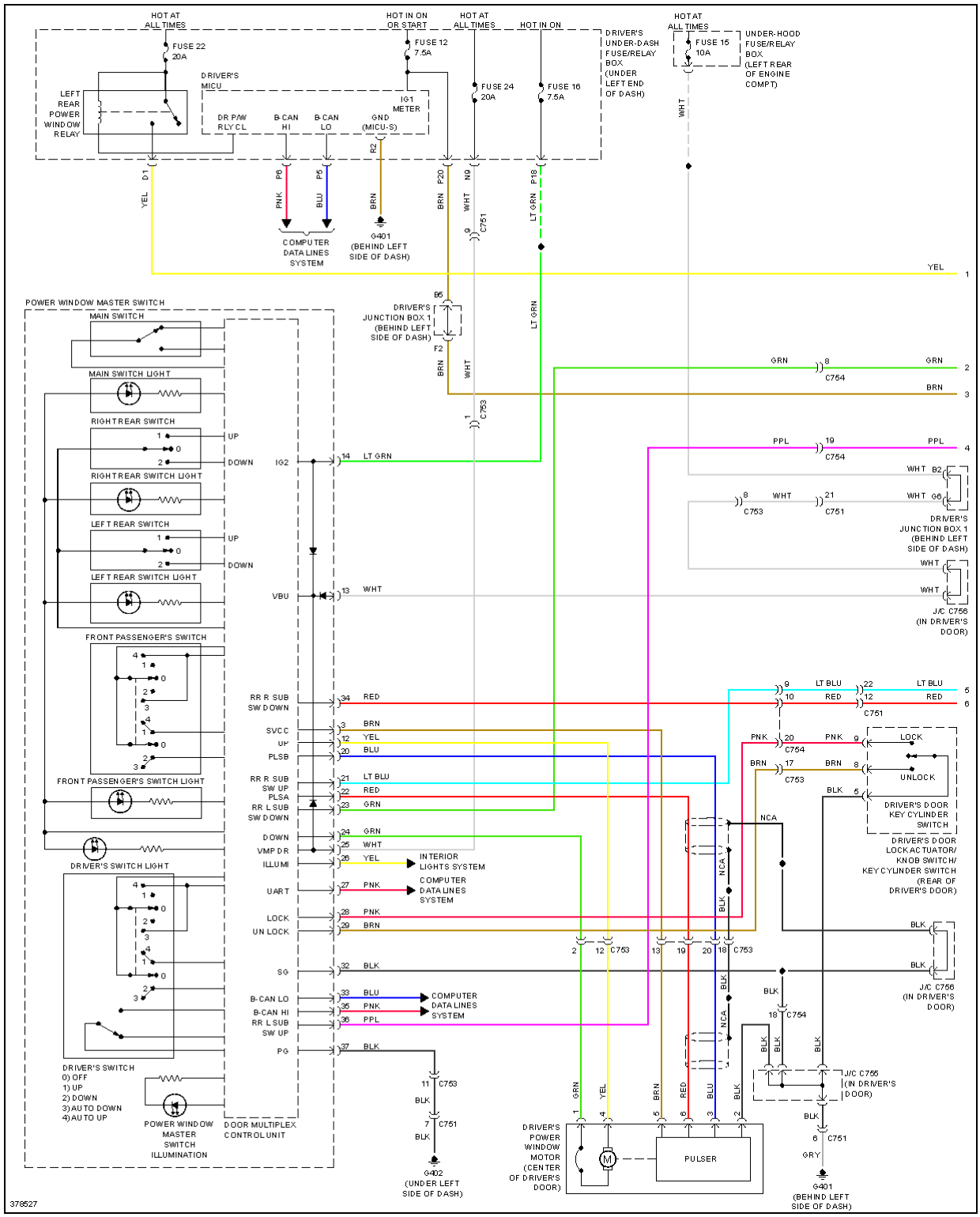


Fig. 98: Power Windows Circuit (1 of 2)

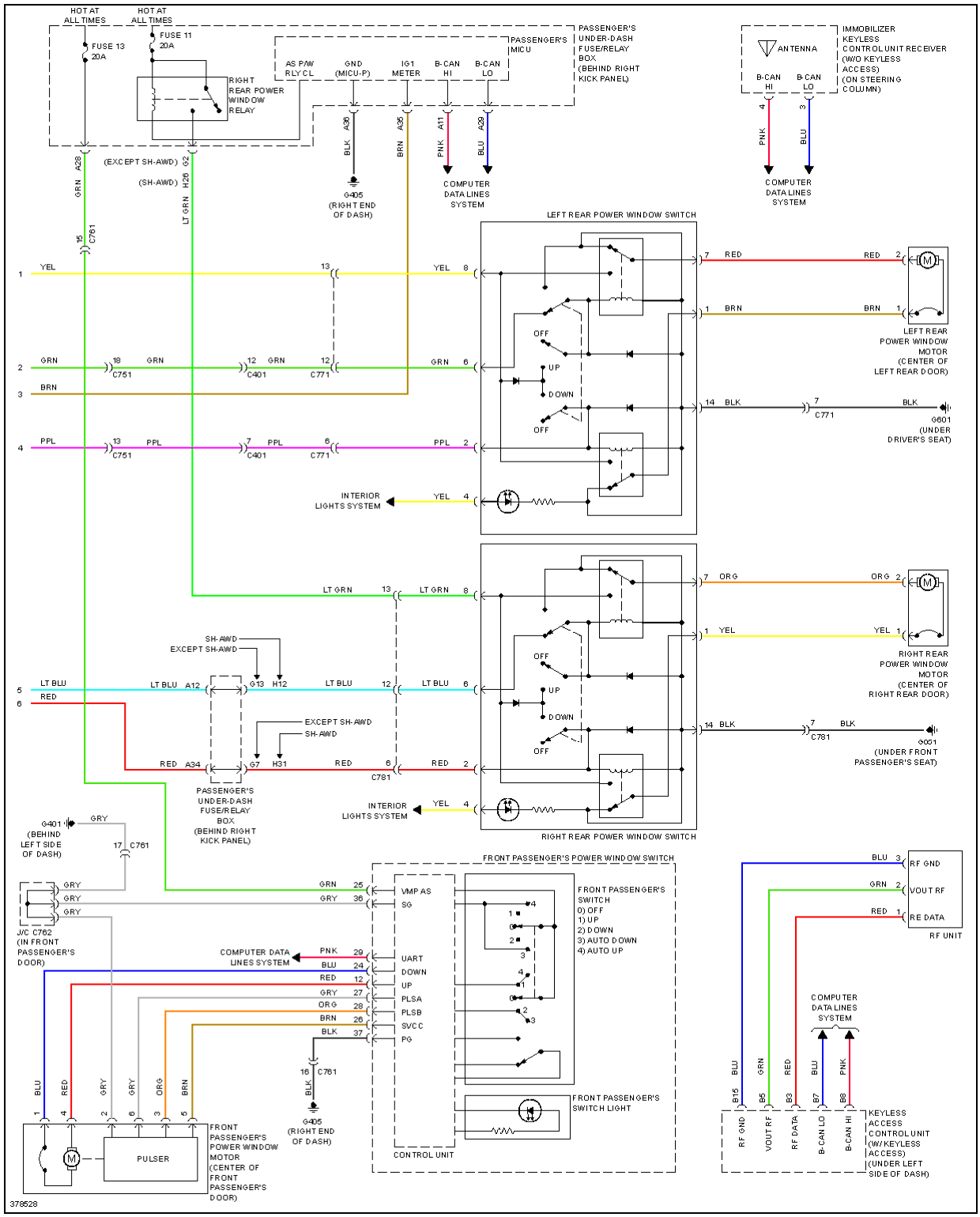


Fig. 99: Power Windows Circuit (2 of 2)

RADIO

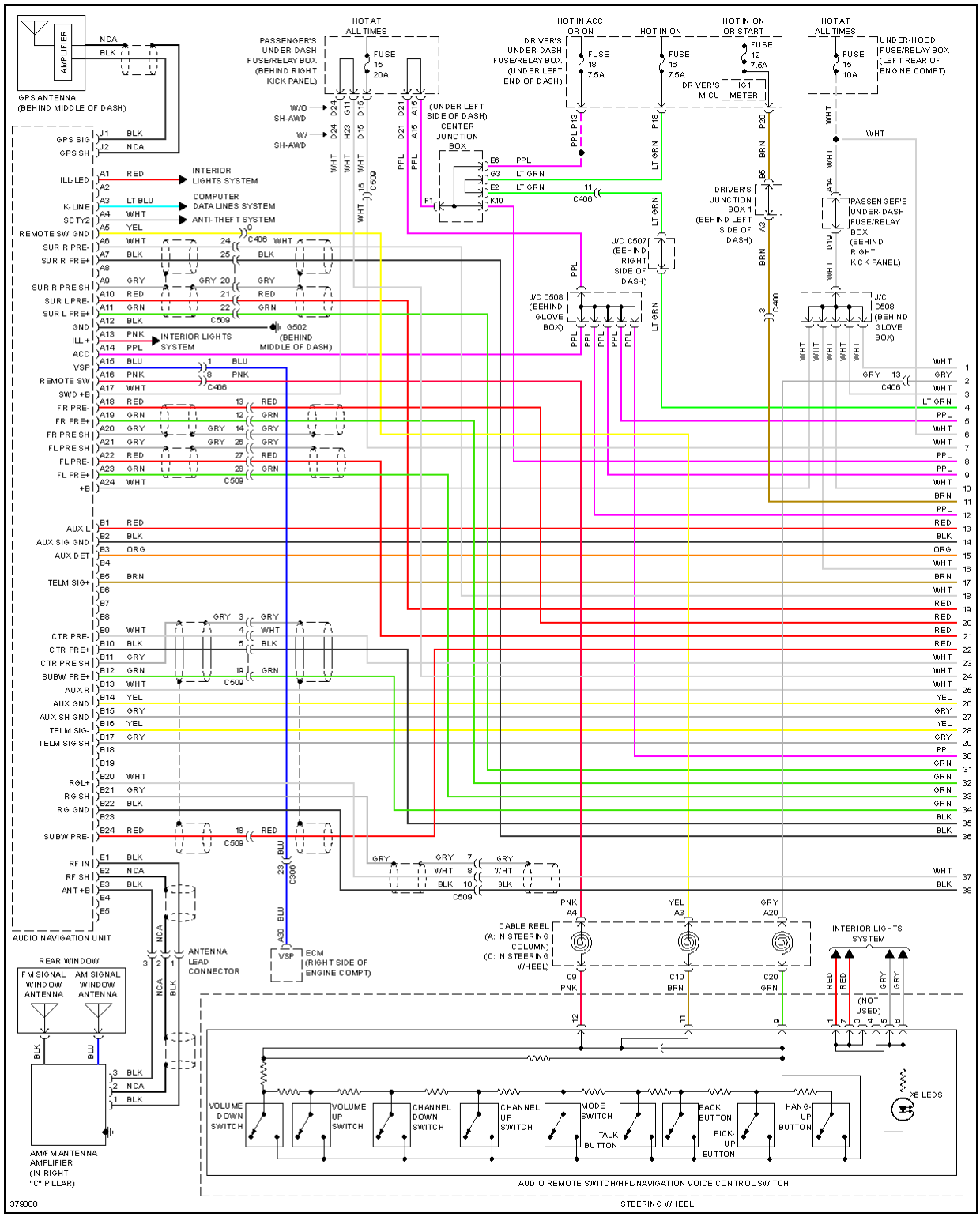


Fig. 100: Radio Circuit, W/ Navigation (1 of 5)

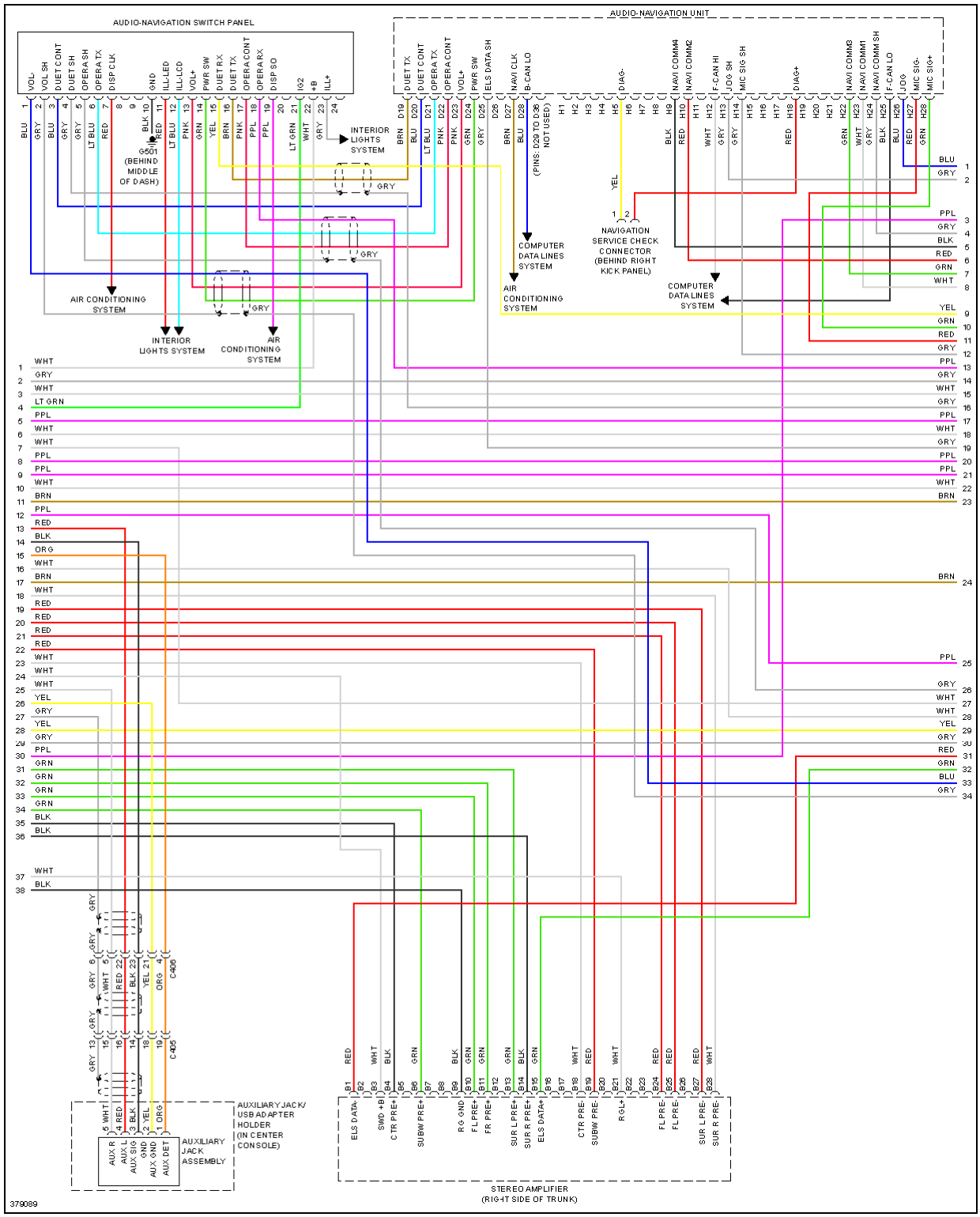


Fig. 101: Radio Circuit, W/ Navigation (2 of 5)

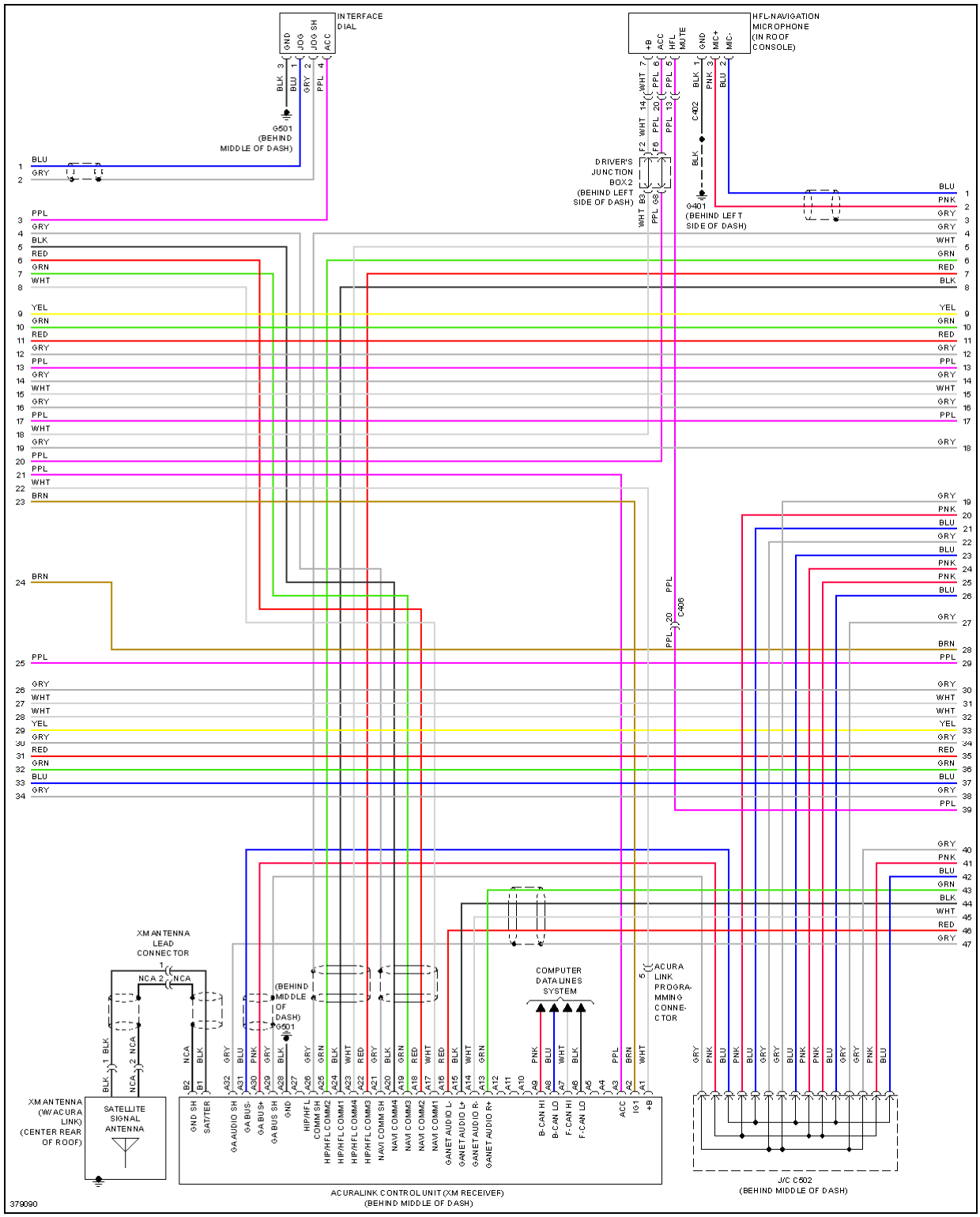


Fig. 102: Radio Circuit, W/ Navigation (3 of 5)

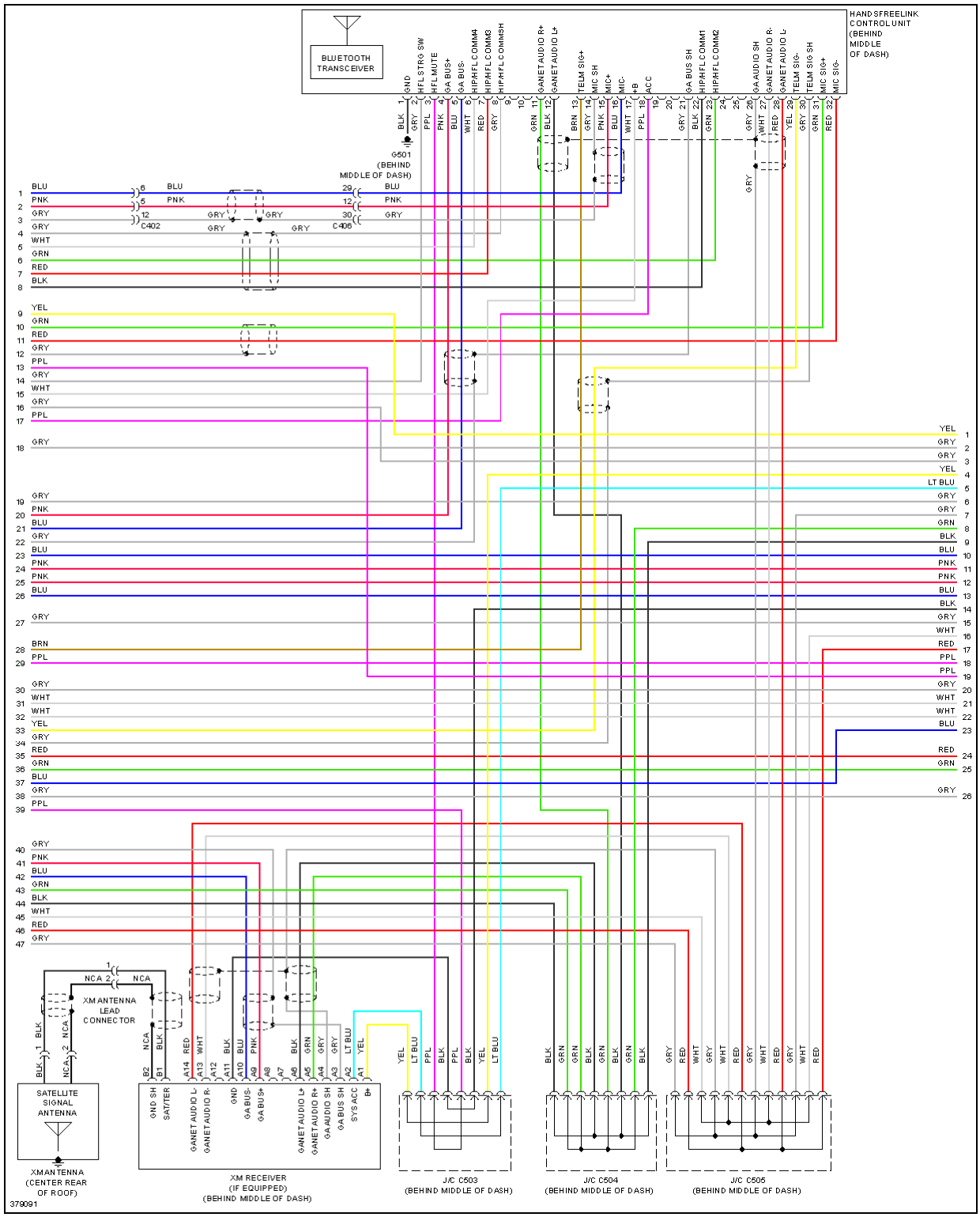


Fig. 103: Radio Circuit, W/ Navigation (4 of 5)

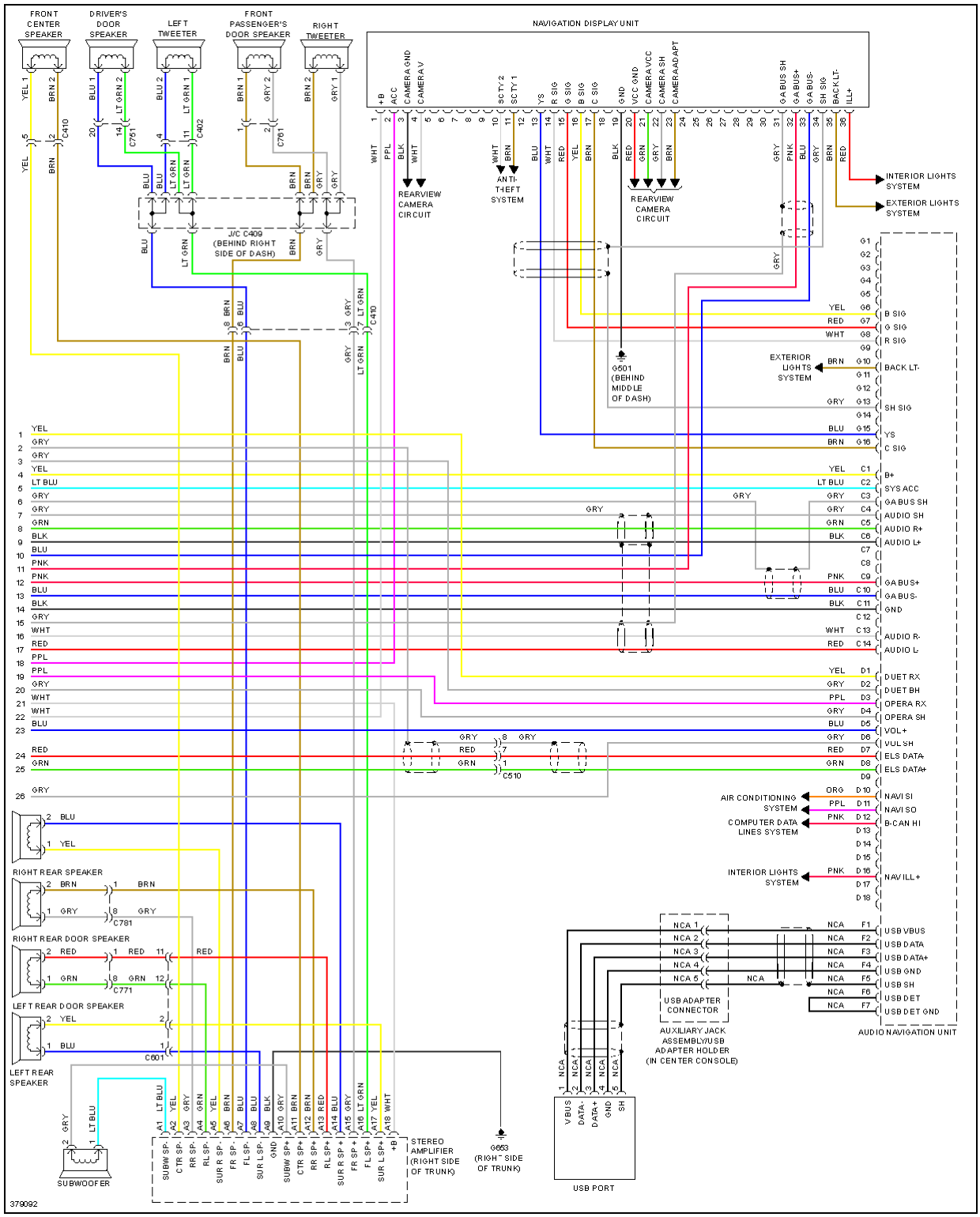


Fig. 104: Radio Circuit, W/ Navigation (5 of 5)

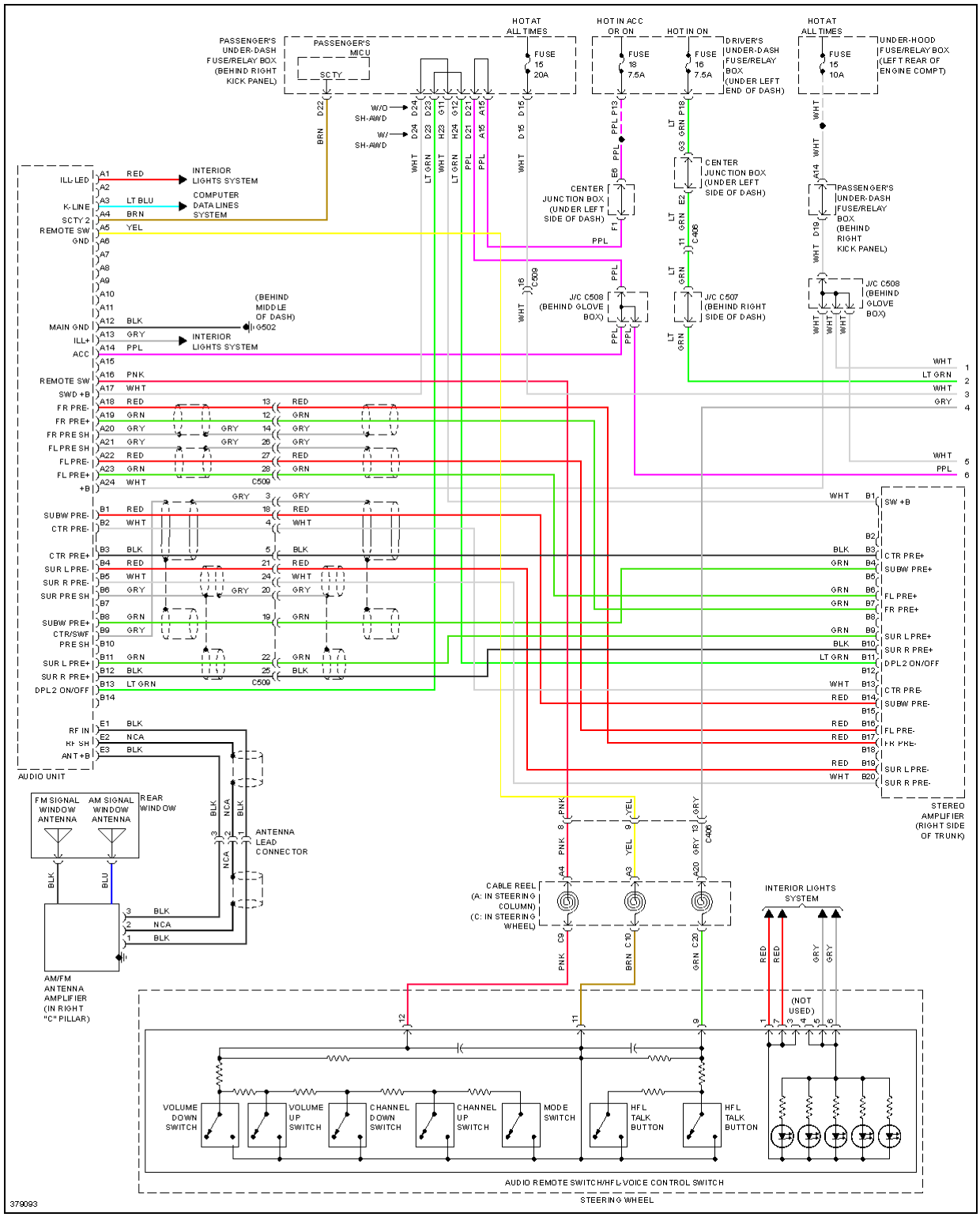


Fig. 105: Radio Circuit, W/O Navigation (1 of 3)

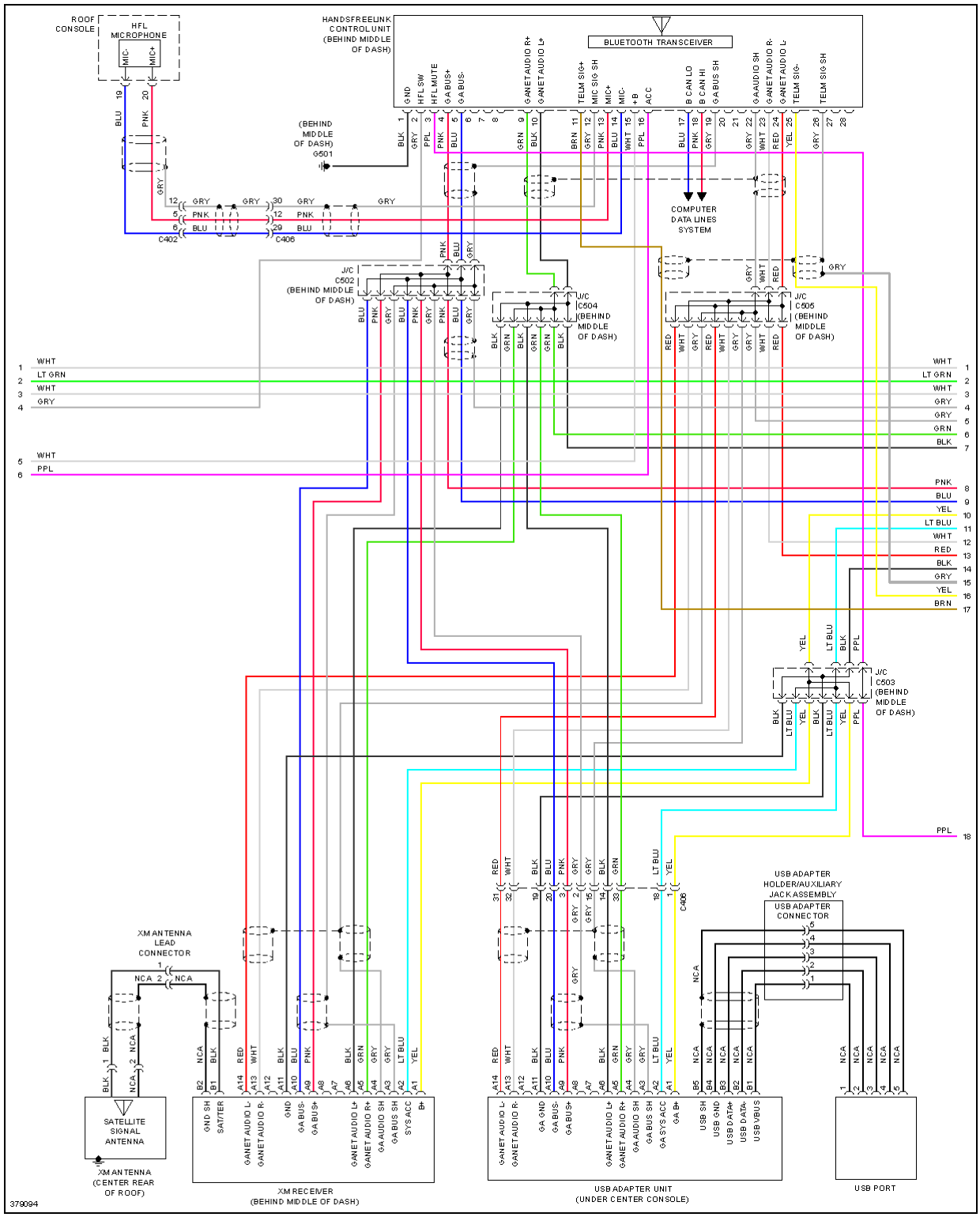


Fig. 106: Radio Circuit, W/O Navigation (2 of 3)

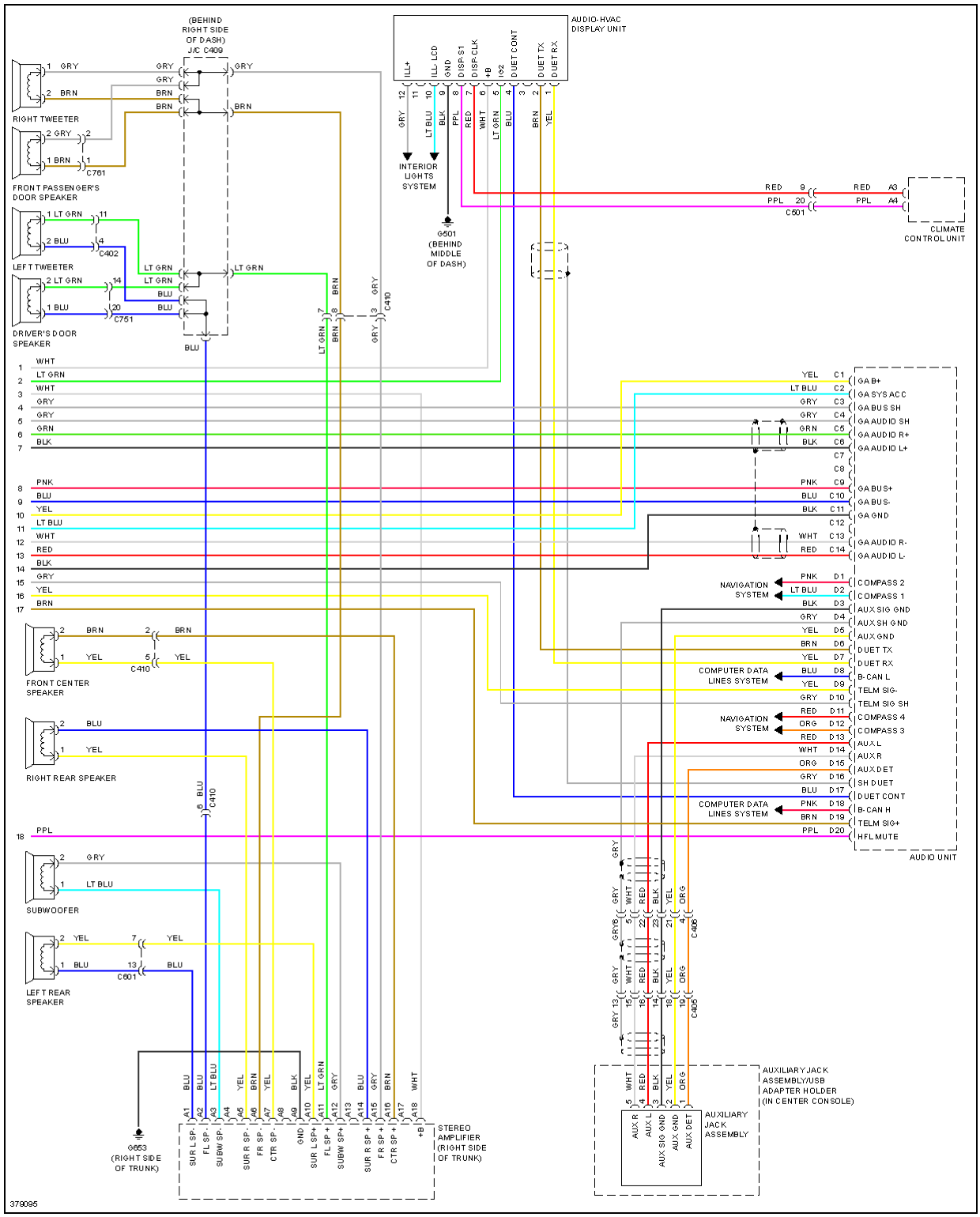


Fig. 107: Radio Circuit, W/O Navigation (3 of 3)

SHIFT INTERLOCK

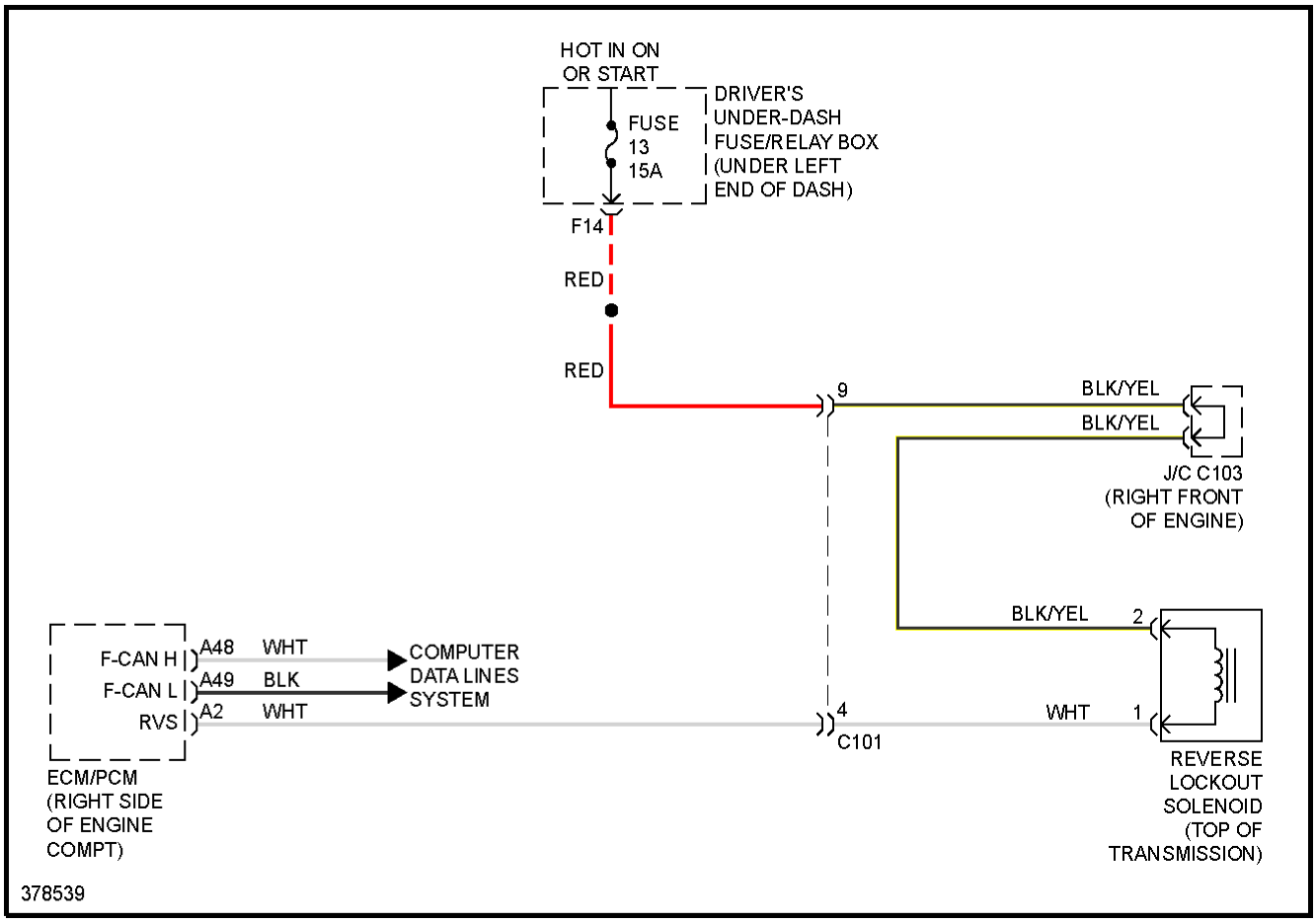


Fig. 108: Reverse Lockout Circuit

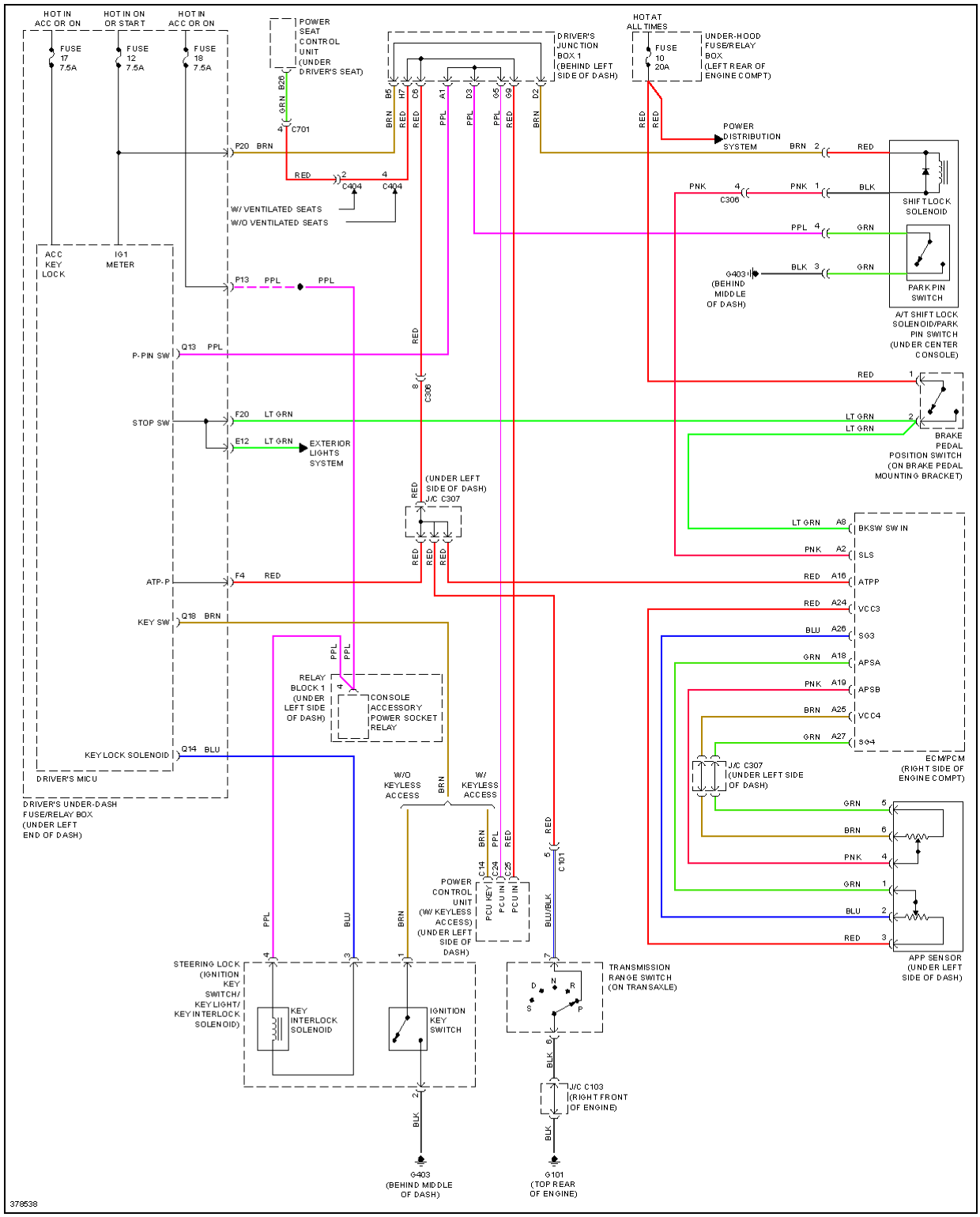


Fig. 109: Shift Interlock Circuit

STARTING/CHARGING

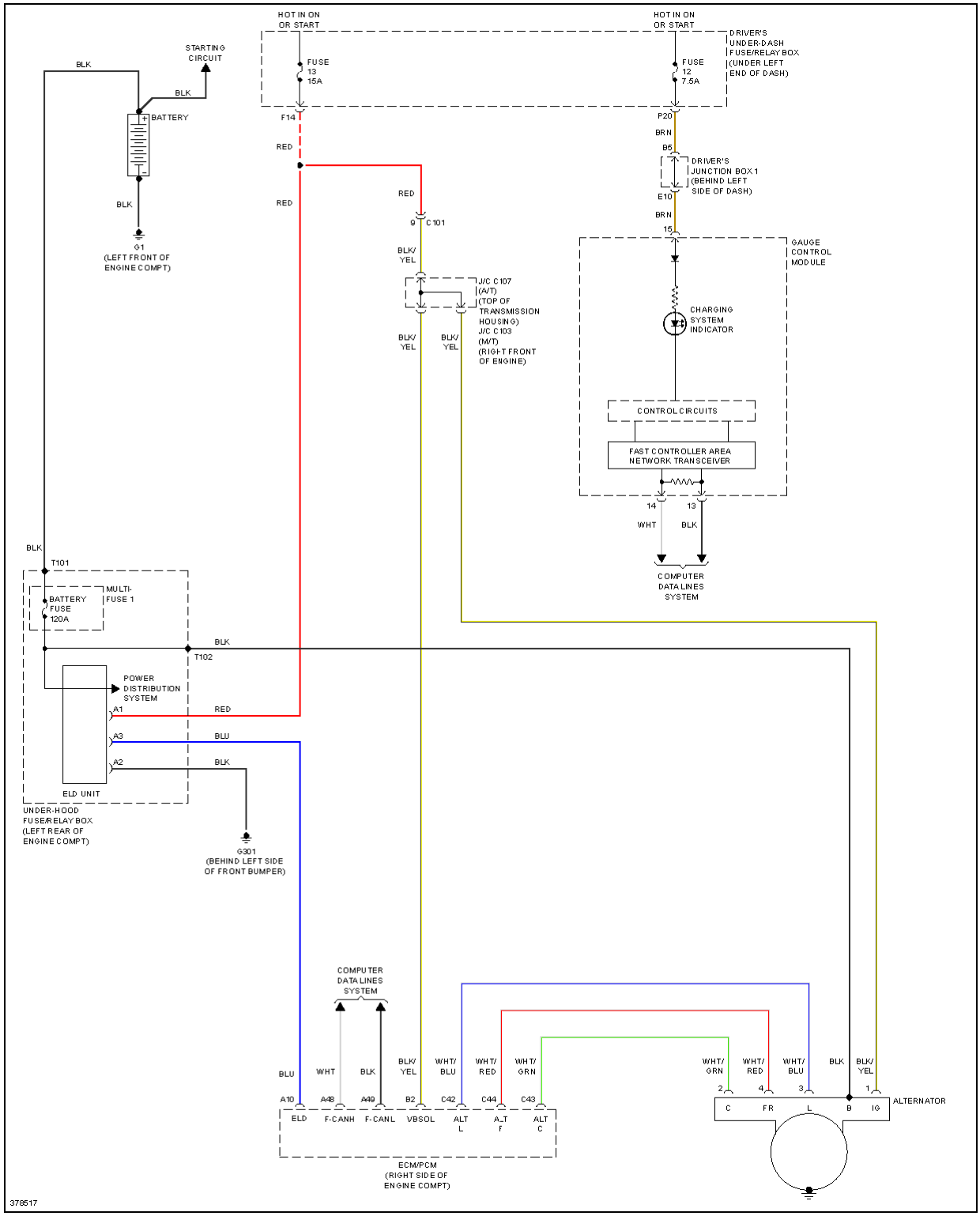


Fig. 110: Charging Circuit

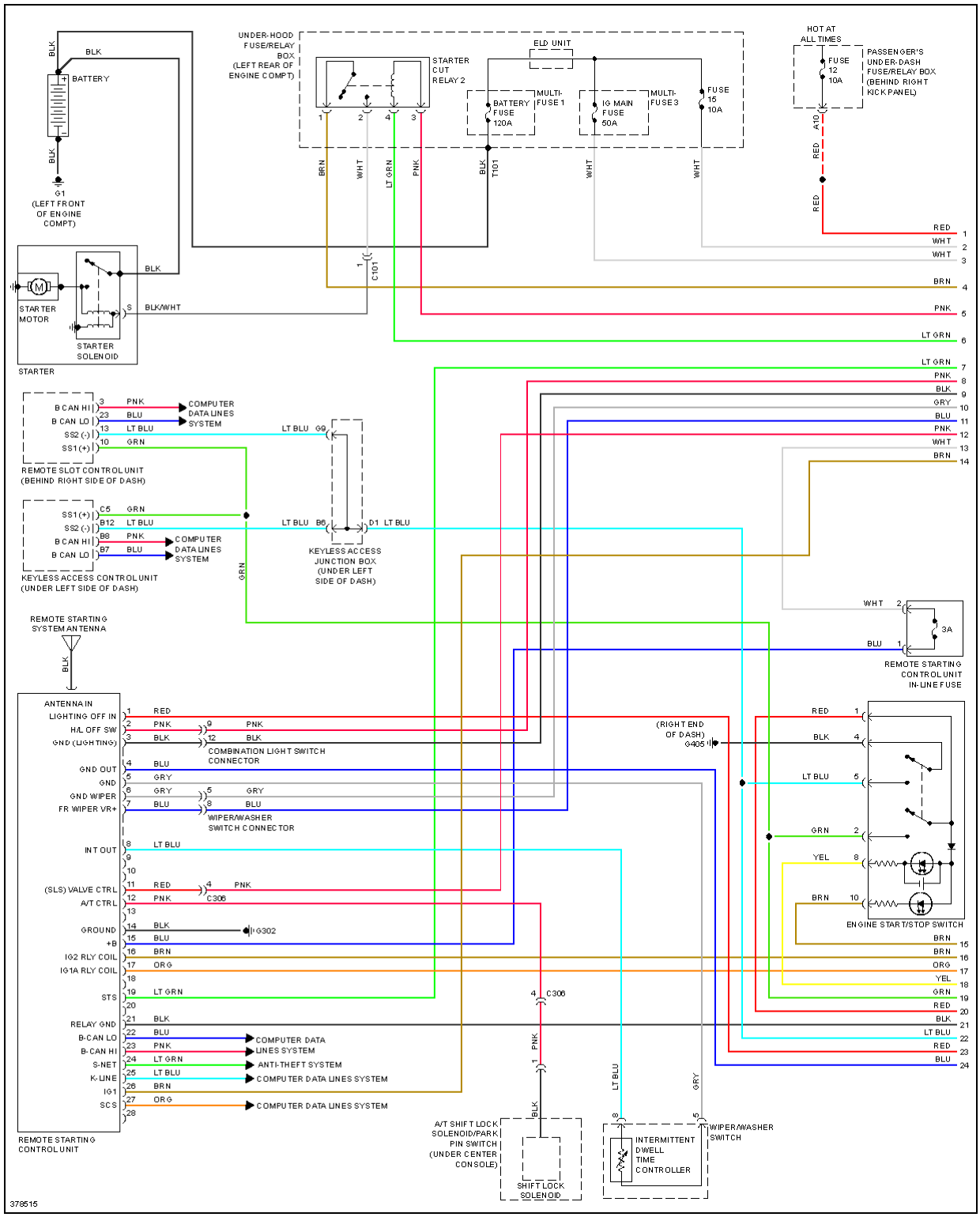


Fig. 111: Remote Starting Circuit, W/ Keyless Access (1 of 2)

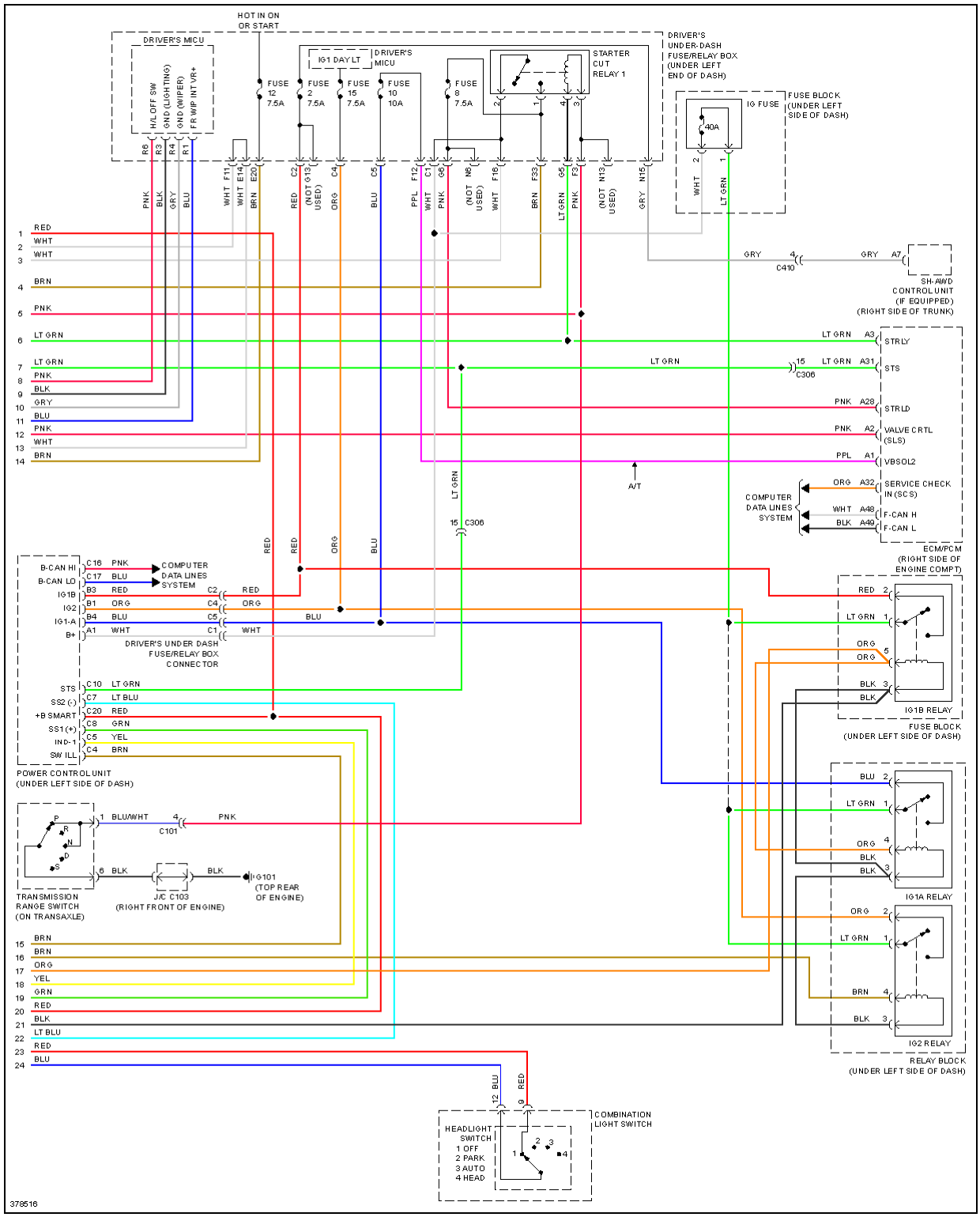


Fig. 112: Remote Starting Circuit, W/ Keyless Access (2 of 2)

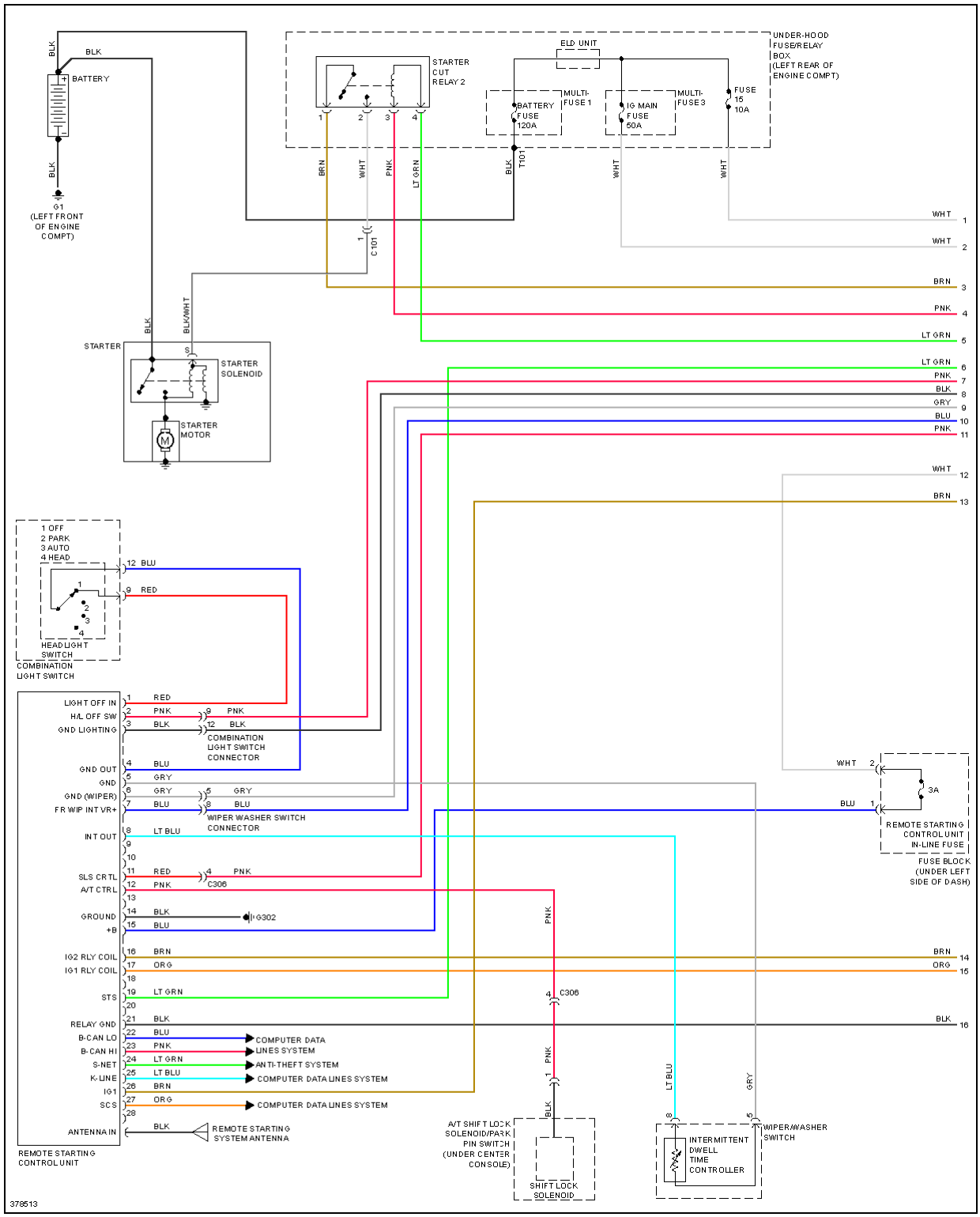


Fig. 113: Remote Starting Circuit, W/O Keyless Access (1 of 2)

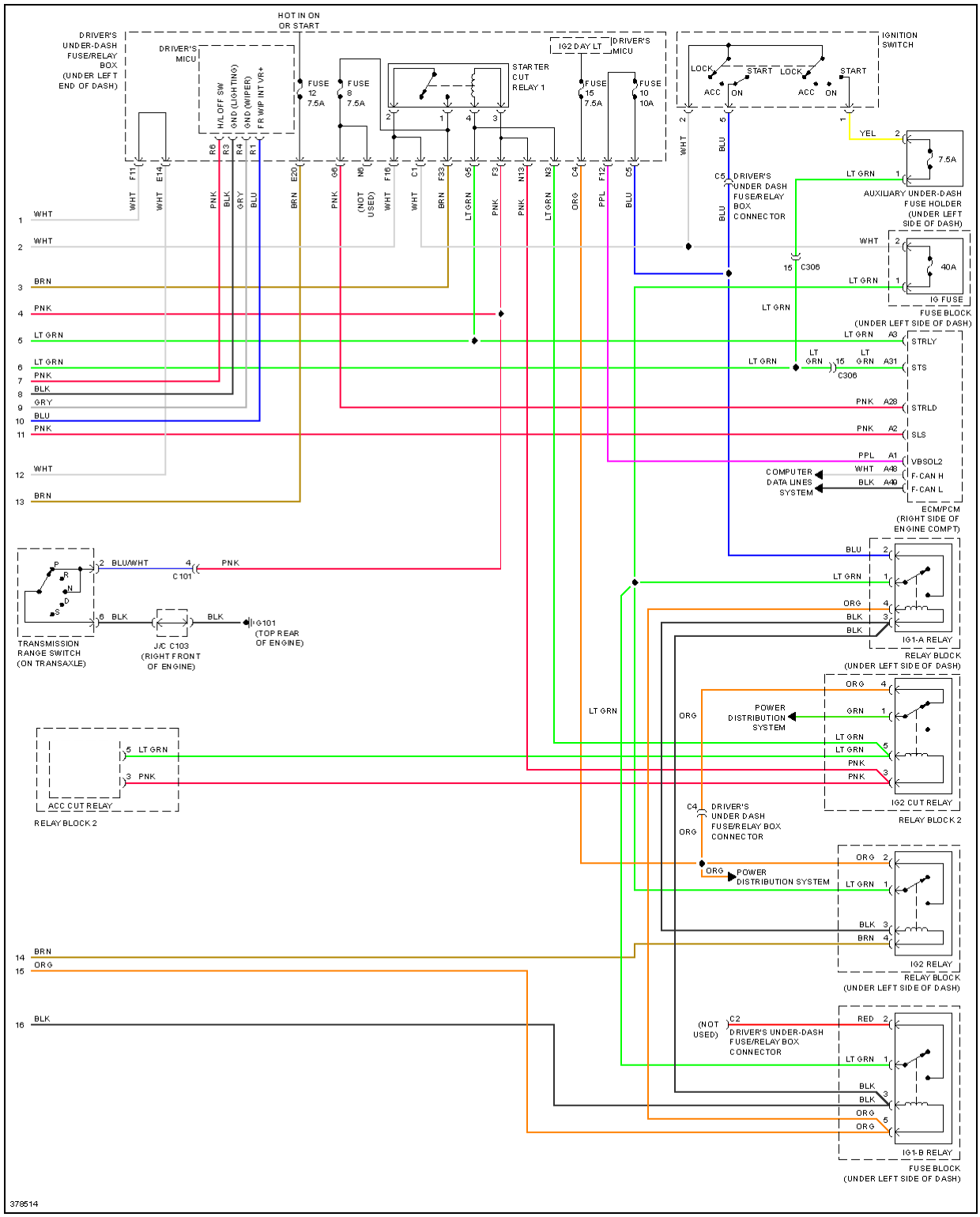


Fig. 114: Remote Starting Circuit, W/O Keyless Access (2 of 2)

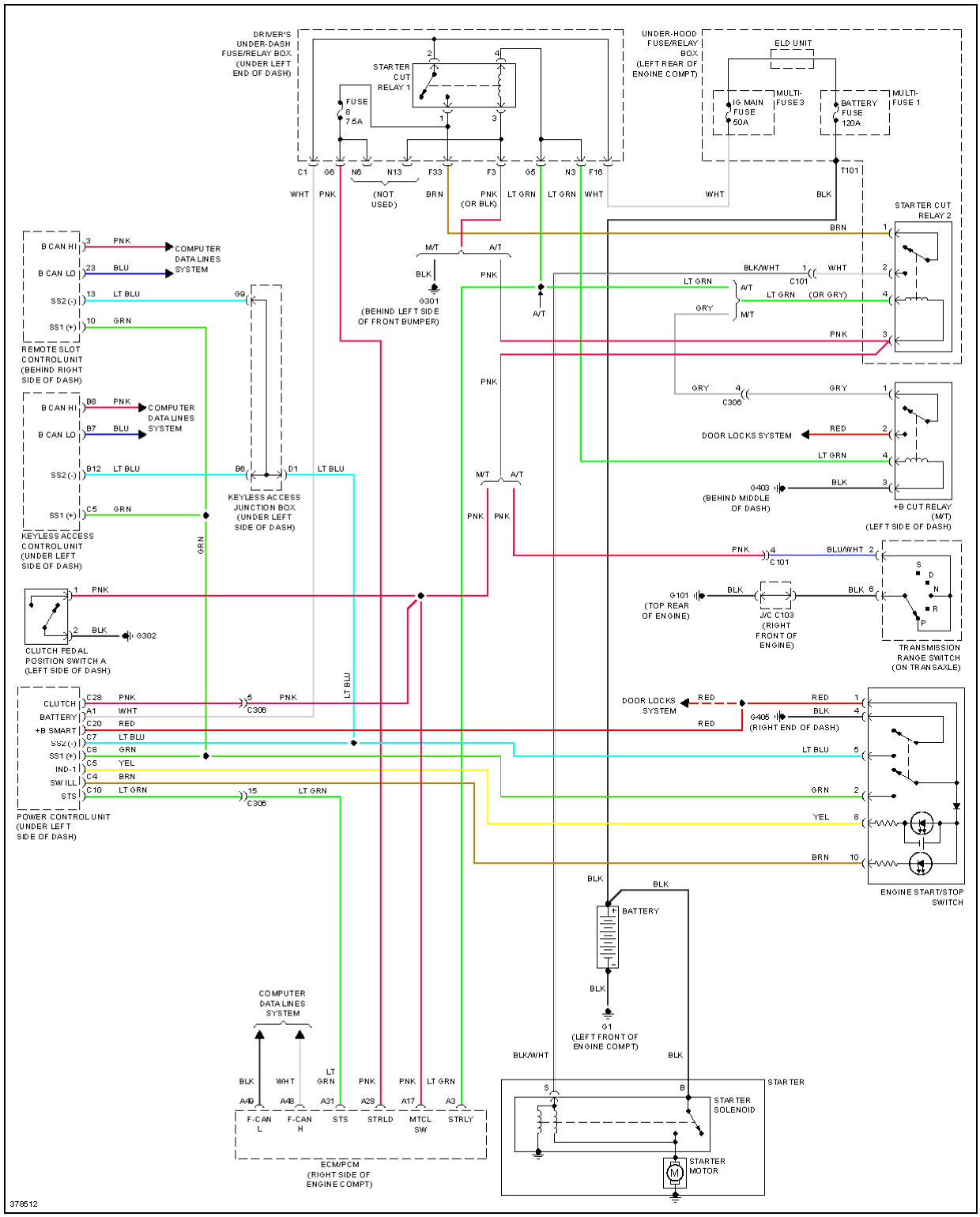


Fig. 115: Starting Circuit, W/ Keyless Access

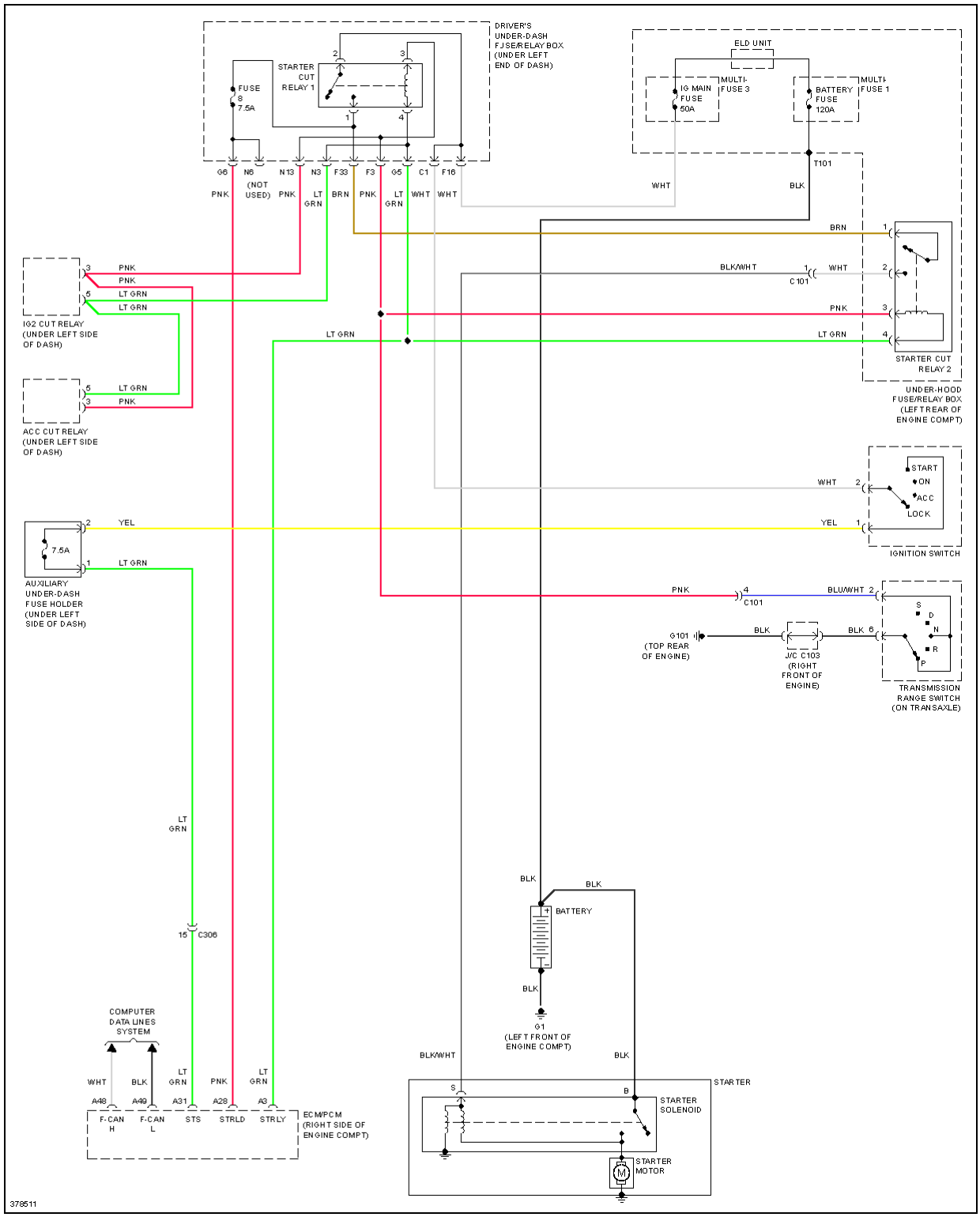


Fig. 116: Starting Circuit, W/O Keyless Access

SUPPLEMENTAL RESTRAINTS

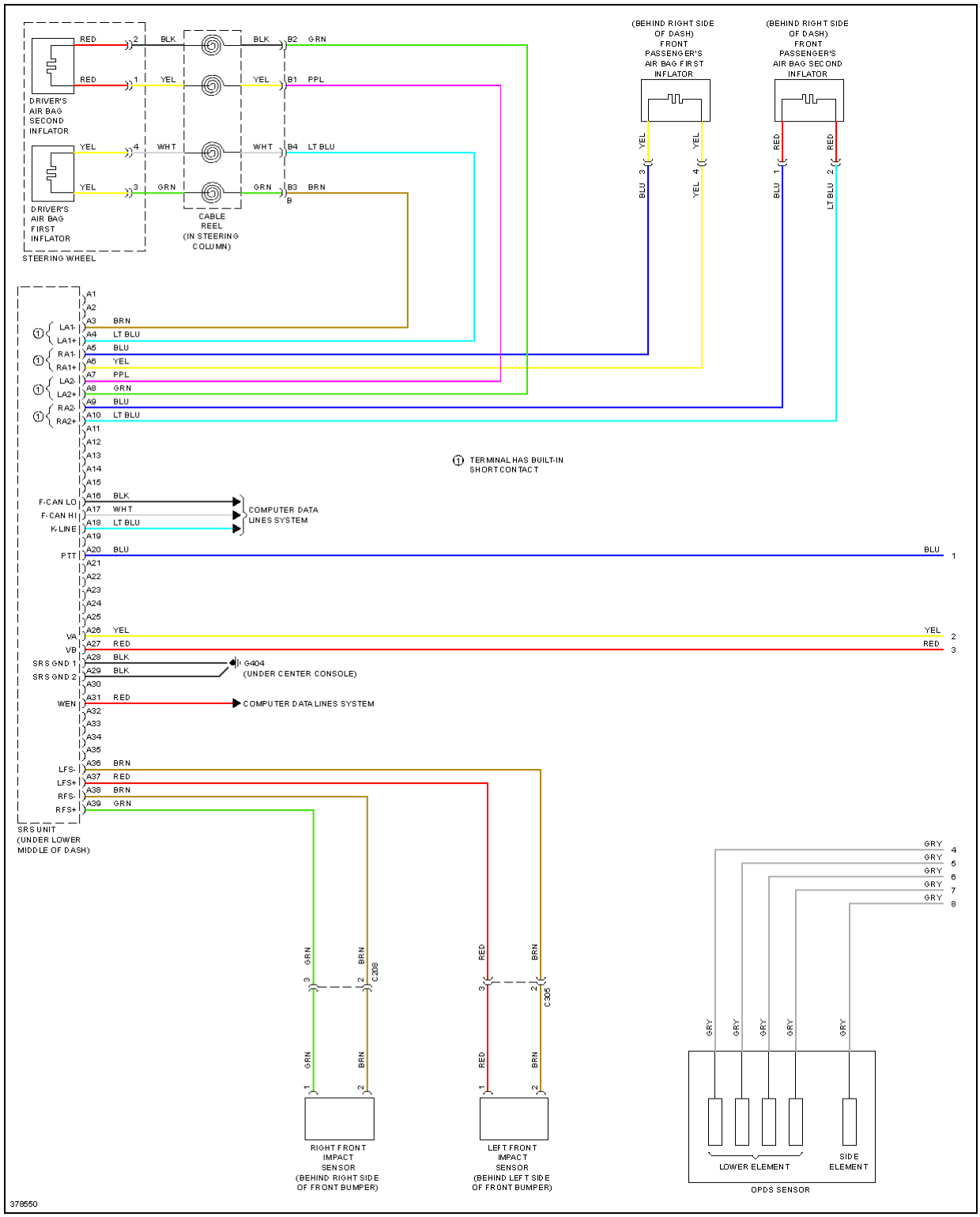


Fig. 117: Supplemental Restraints Circuit (1 of 3)

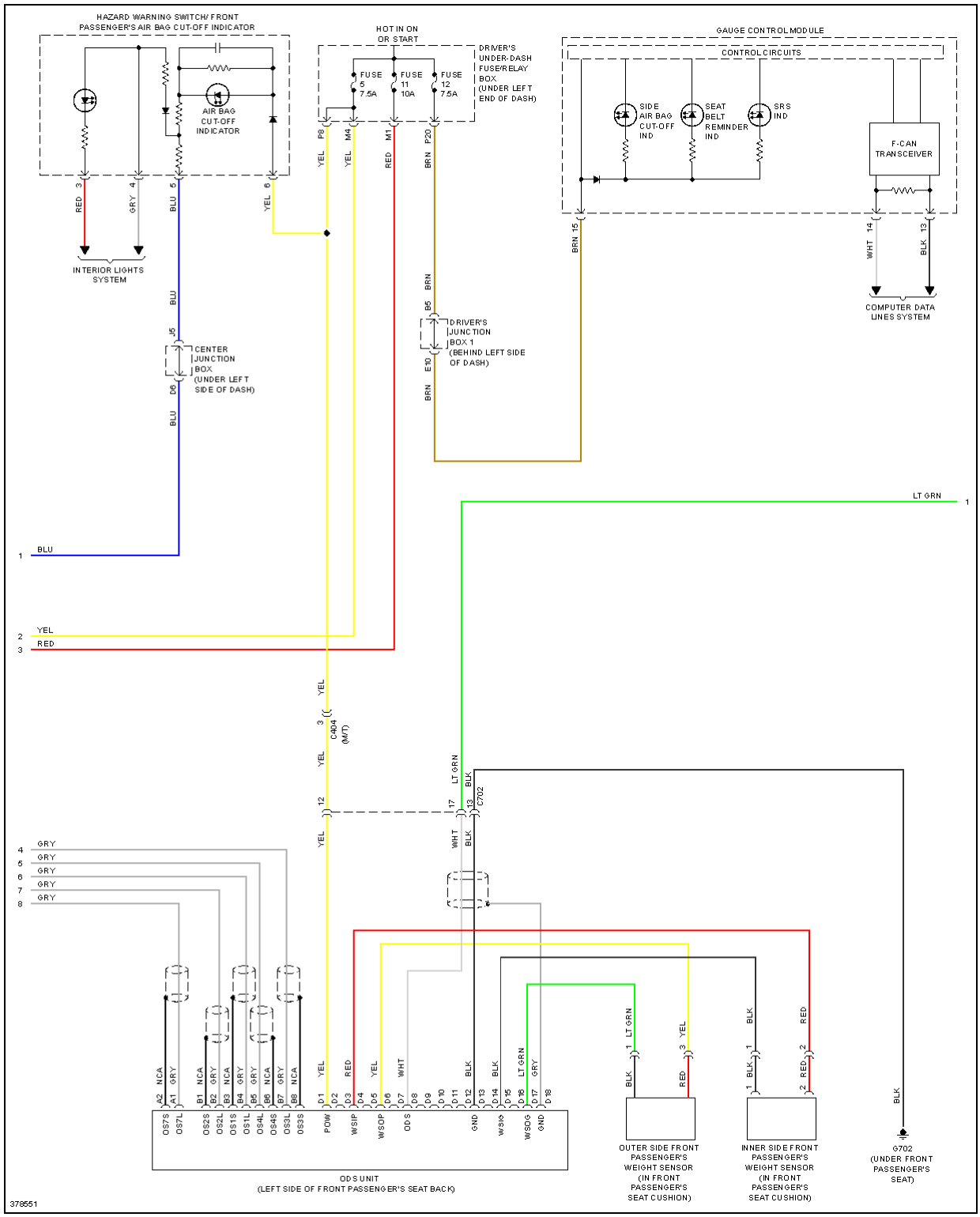


Fig. 118: Supplemental Restraints Circuit (2 of 3)

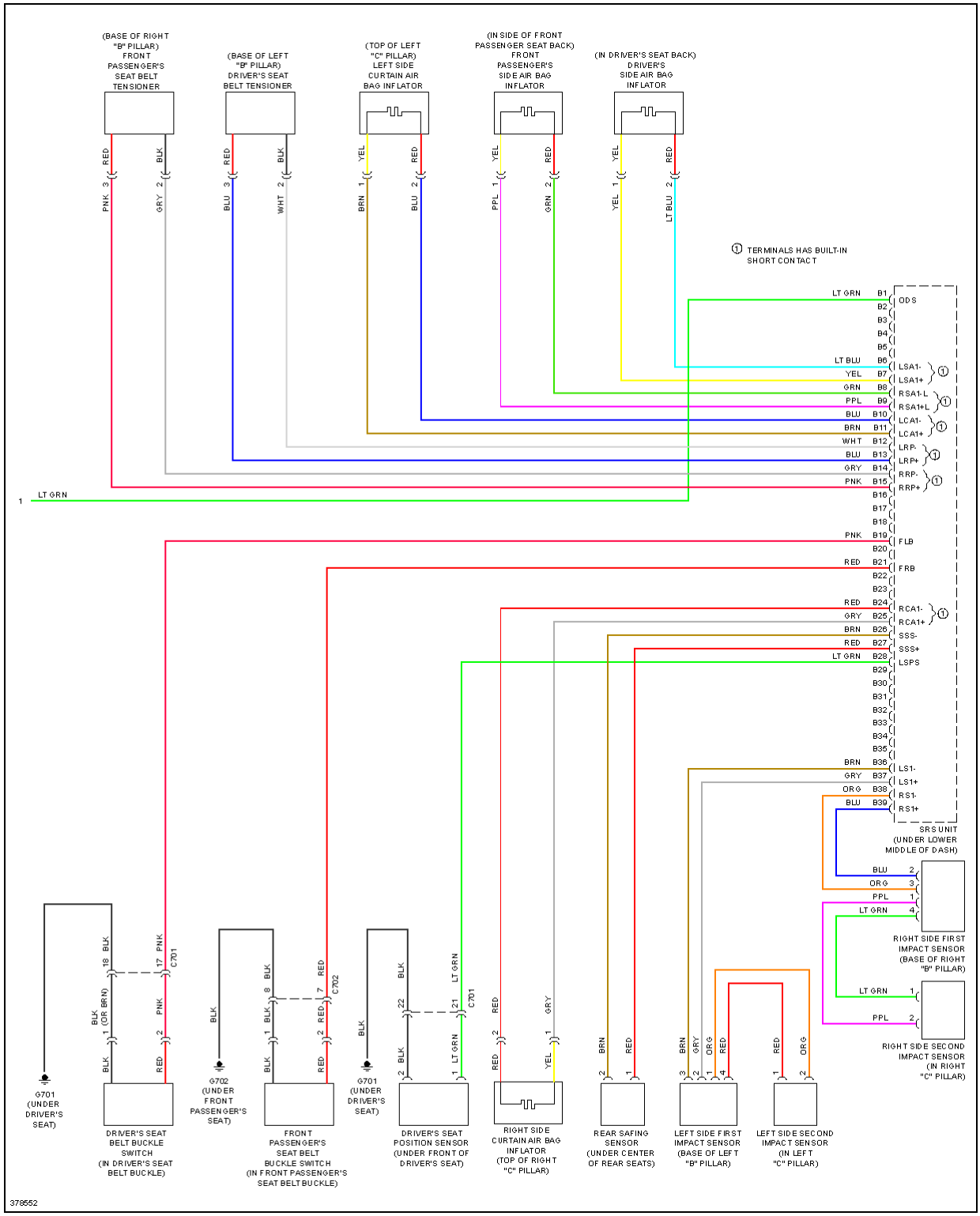


Fig. 119: Supplemental Restraints Circuit (3 of 3)

TRANSMISSION

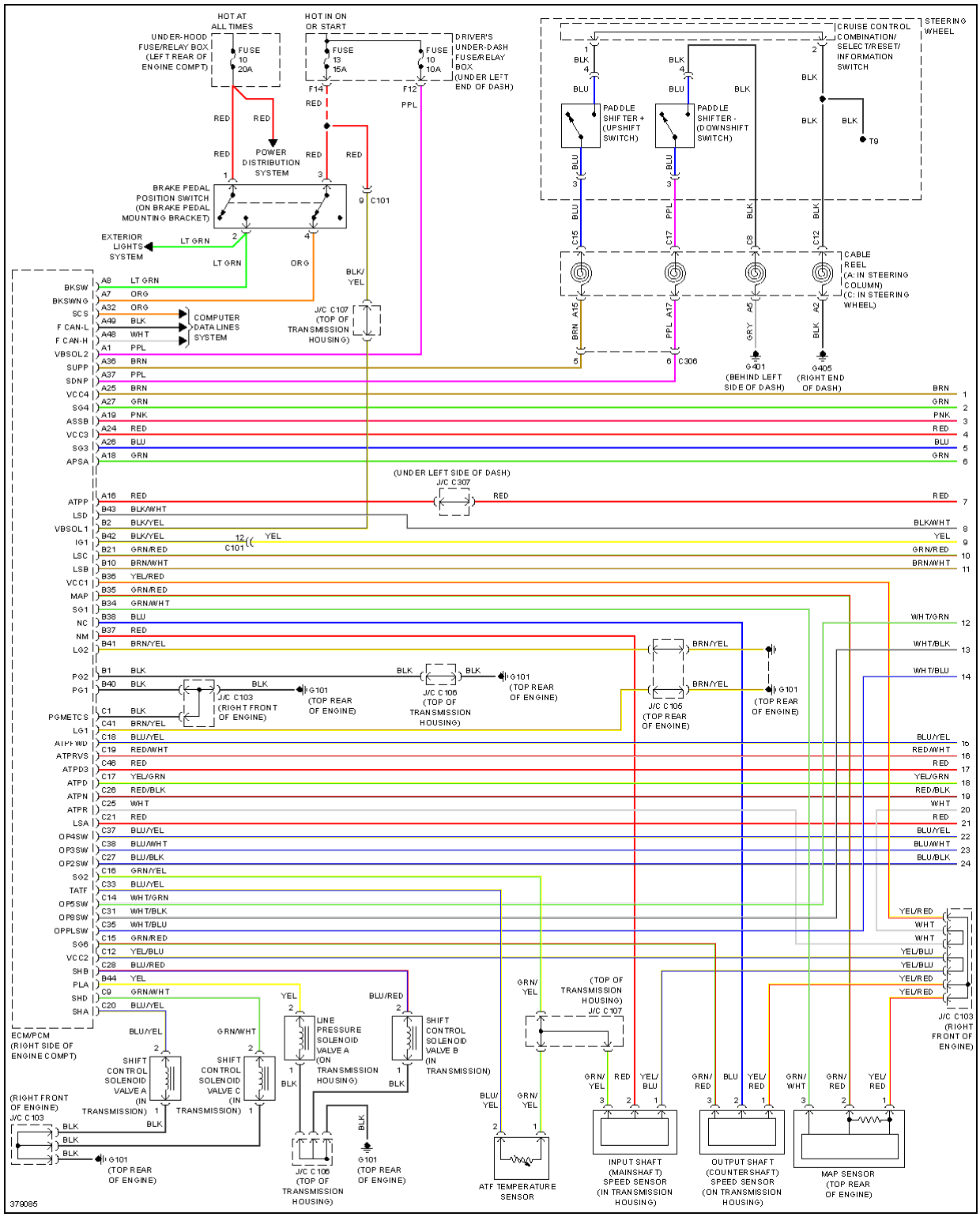


Fig. 120: A/T Circuit (1 of 2)

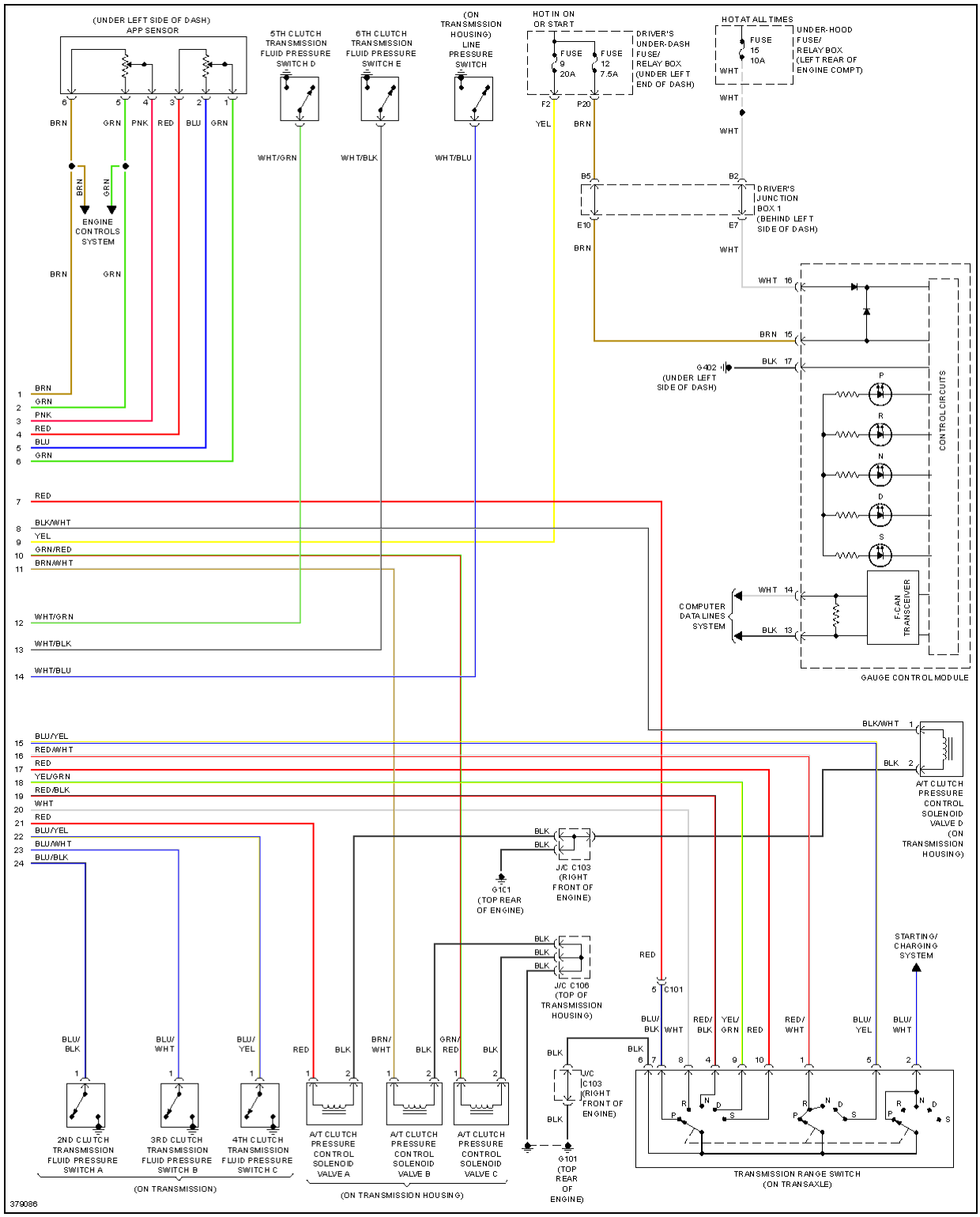


Fig. 121: A/T Circuit (2 of 2)

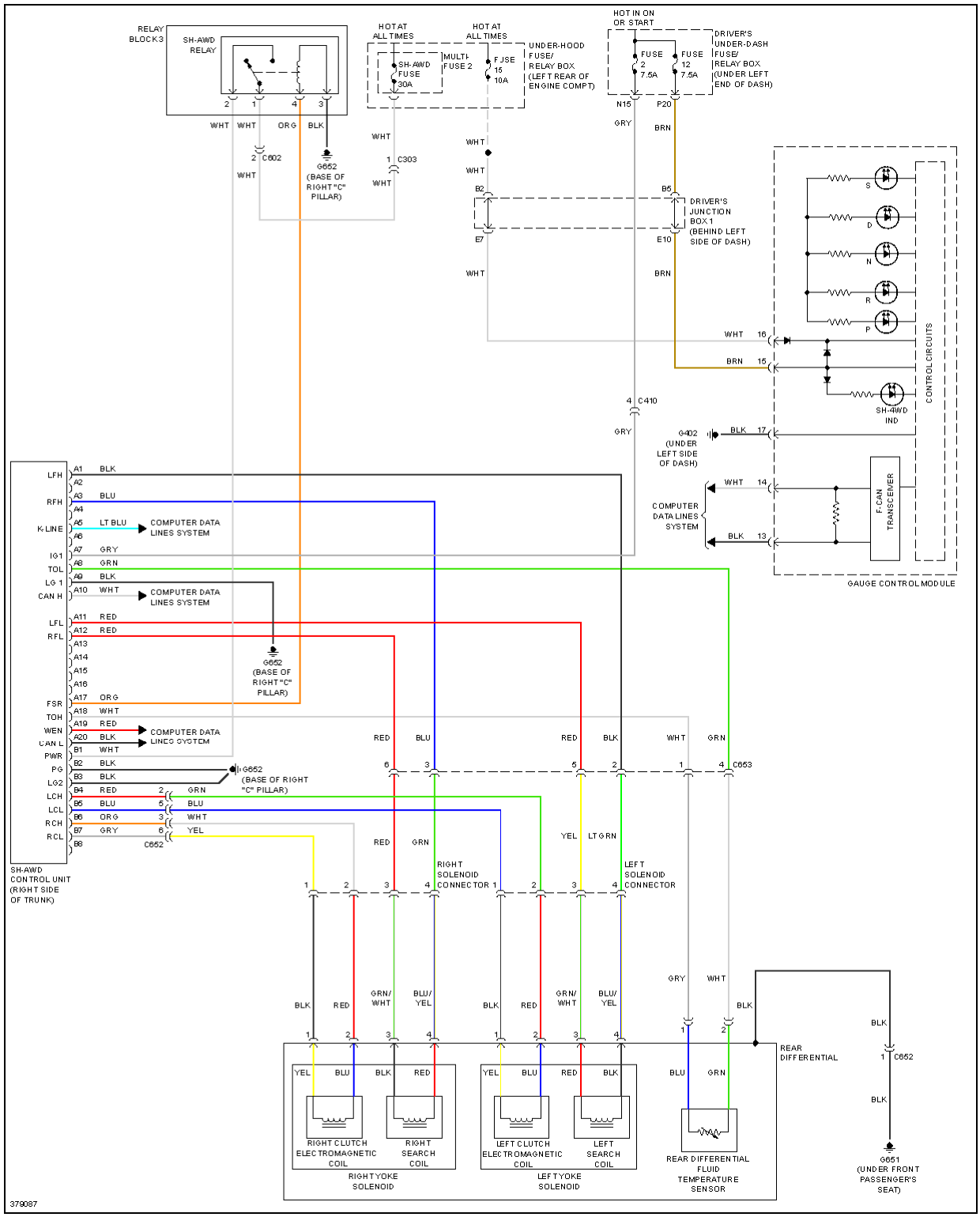


Fig. 122: AWD Circuit

TRUNK, TAILGATE, FUEL DOOR

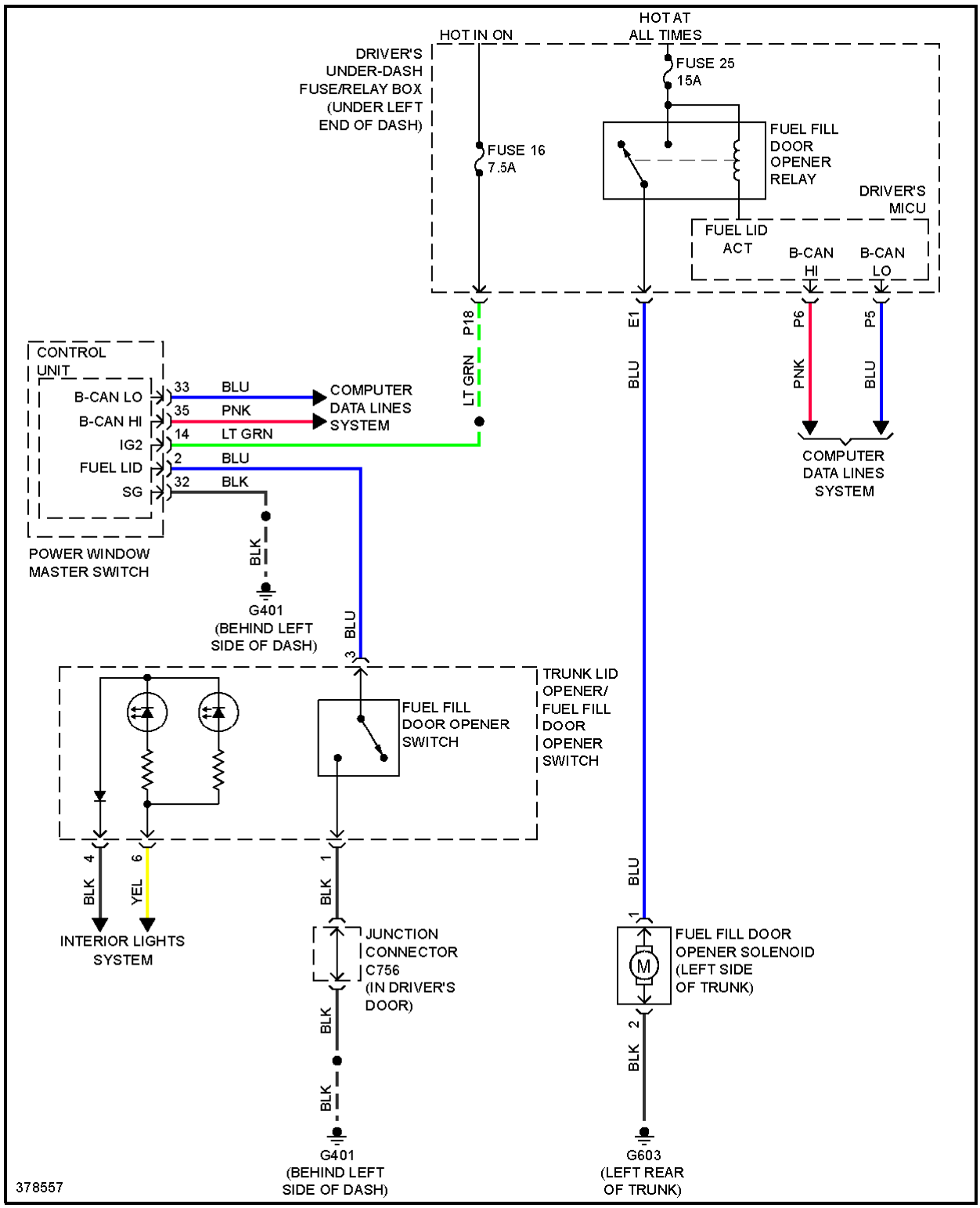


Fig. 123: Fuel Door Release Circuit

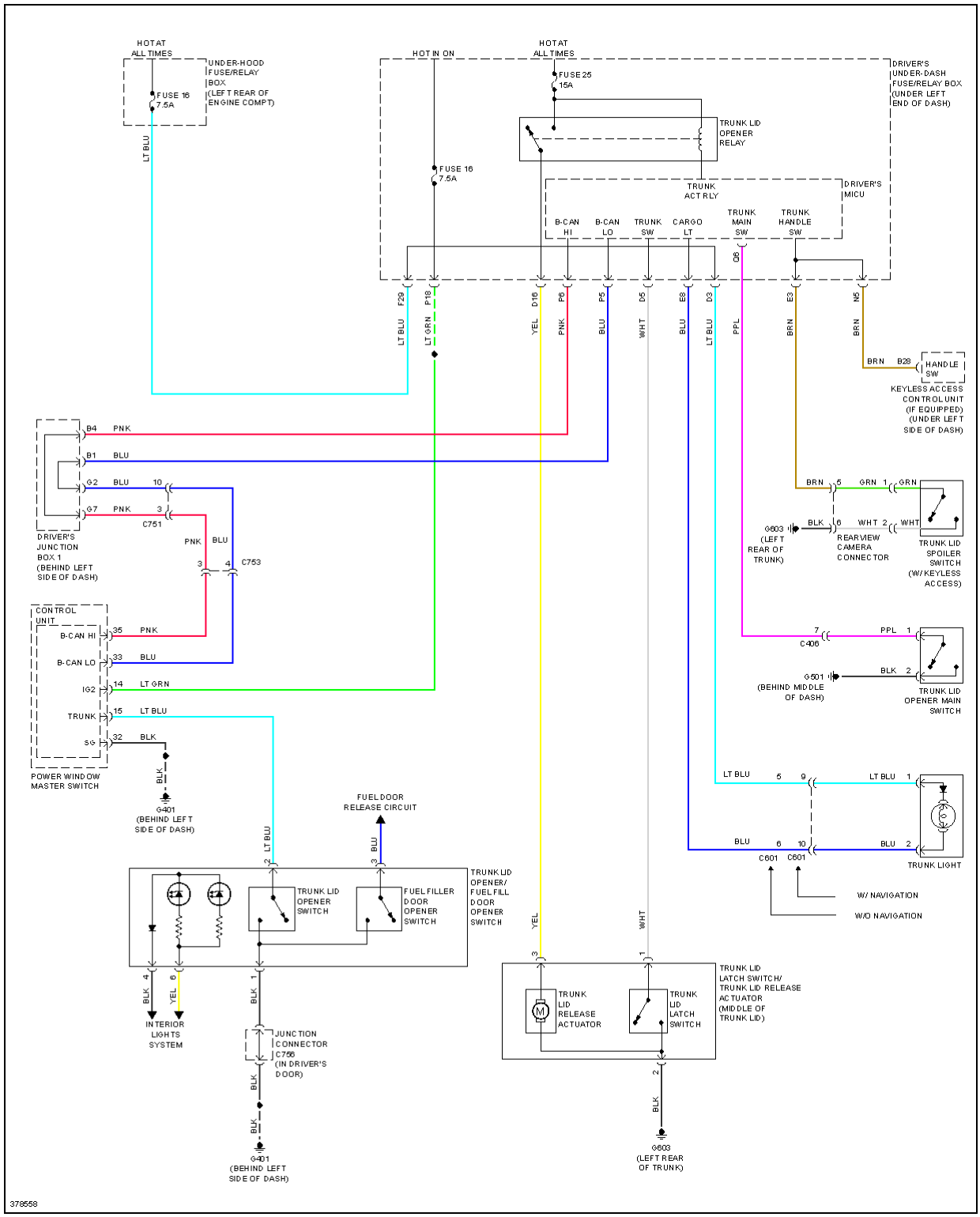


Fig. 124: Trunk Release Circuit

WARNING SYSTEMS

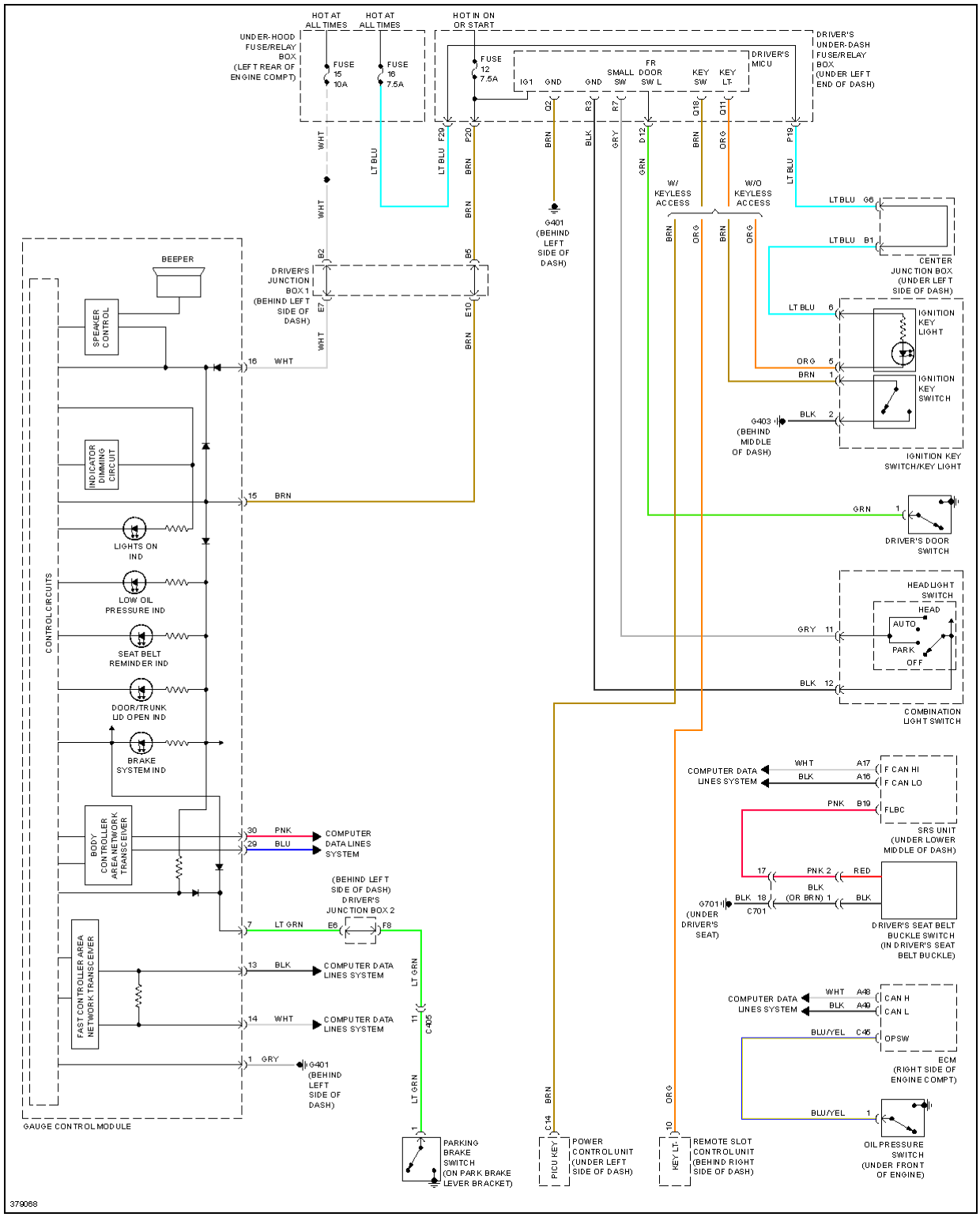


Fig. 125: Chime Circuit

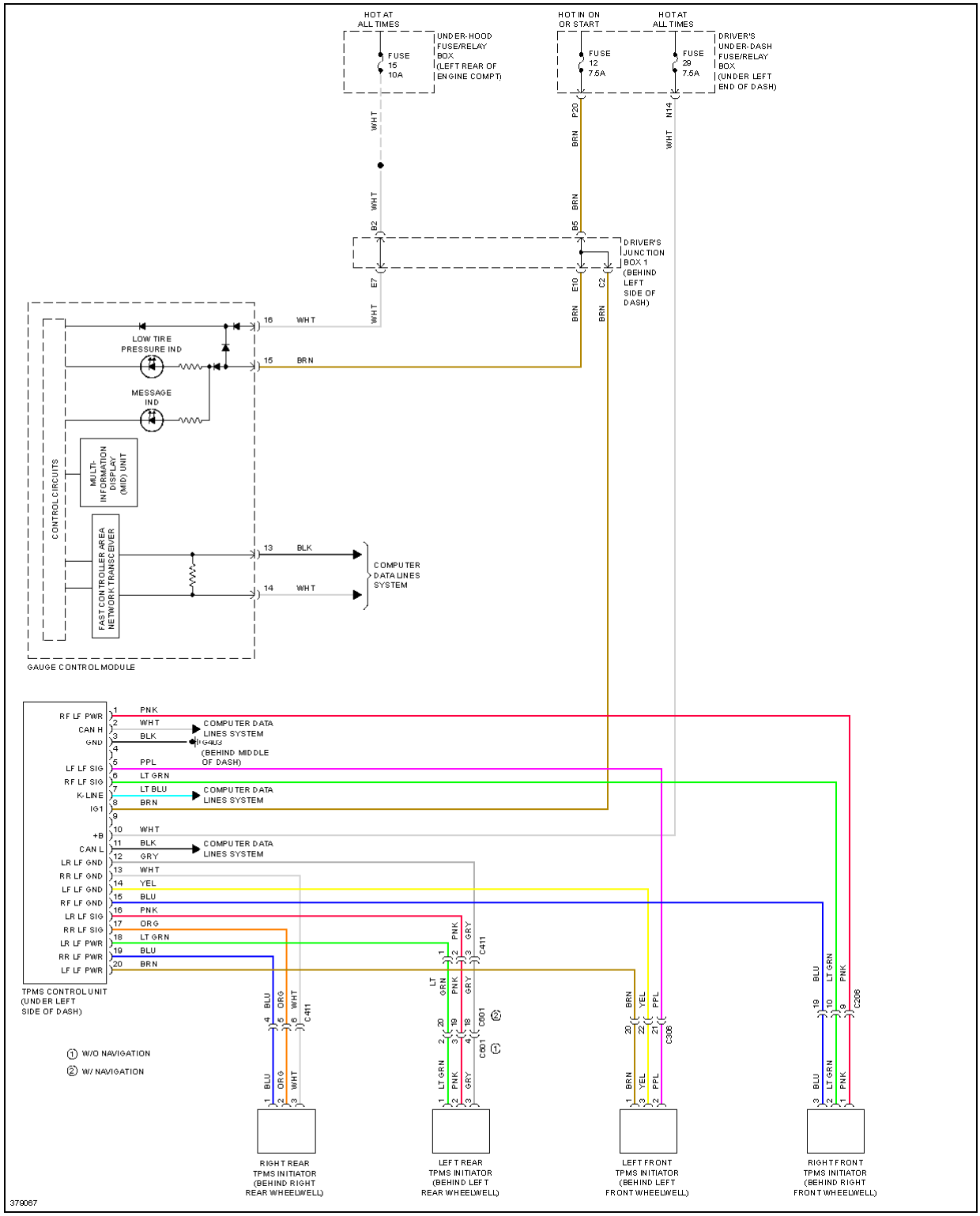


Fig. 126: Tire Pressure Monitoring Circuit

WIPER/WASHER

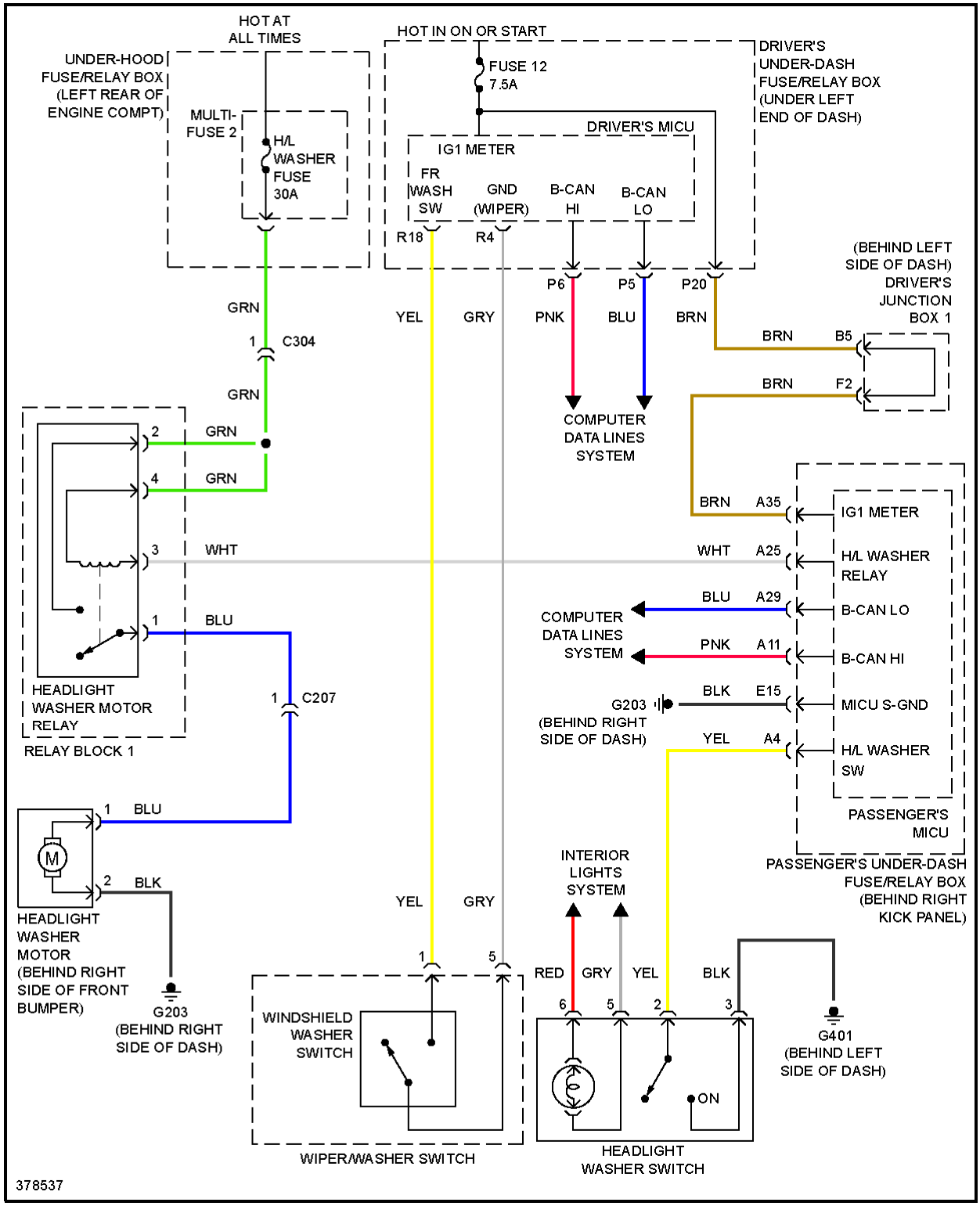


Fig. 127: Headlamp Washer Circuit

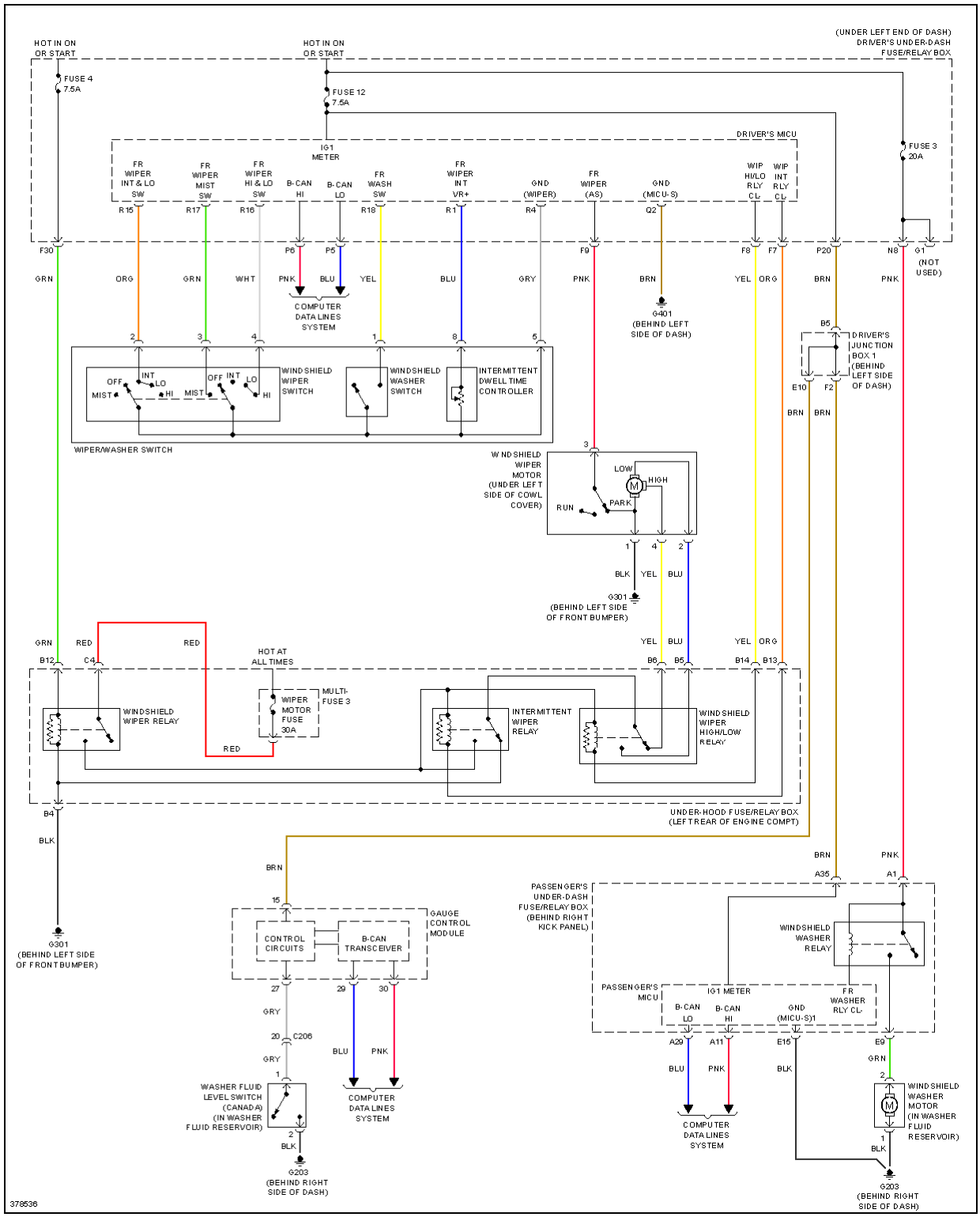


Fig. 128: Wiper/Washer Circuit